

TM 9-2350-261-10

OPERATOR'S MANUAL

**CARRIER, PERSONNEL,
FULL TRACKED, ARMORED, M113A2
2350-01-068-4077**

**CARRIER, COMMAND POST,
LIGHT TRACKED, M577A2
2350-01-068-4089**

**CARRIER, MORTAR, 107-MM, M30;
SELF-PROPELLED, M106A2
2350-01-069-6931**

**CARRIER, MORTAR, 81-MM, M29A1;
SELF-PROPELLED, M125A2
2350-01-068-4087**

**CARRIER, MORTAR, 120-MM,
SELF-PROPELLED, M1064
2350-01-338-3116**

**CARRIER, SMOKE GENERATOR,
FULL TRACKED, M1059
2350-01-203-0188**

**CARRIER, STANDARDIZED
INTEGRATED COMMAND POST
SYSTEM, M1068
2350-01-354-5657**

This manual supersedes TM 9-2350-261-10 dated 8 May 1984.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

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12 JULY 1990

Change 5

CHANGE
No. 5

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 15 July 1997

OPERATOR'S MANUAL
CARRIER, PERSONNEL, FULL TRACKED, ARMORED, M113A2
2350-01-068-4077
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2350-01-338-3116
CARRIER, SMOKE GENERATOR, FULL TRACKED, M1069
2350-01-203-0188
CARRIER, STANDARDIZED INTEGRATED COMMAND POST
SYSTEM, M1068
2350-01-354-5657

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Remove Pages
c thru h
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c thru h
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i and ii

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C5

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B-37 and B-38	B-37 and B-37 (B-38 blank)
C-1 and C-3 (C-4 blank)	C-1 and C-3 (C-4 blank)
D-1 and D-2	D-1 and D-2
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Index-7 and Index-8	Index-7 and Index-8
DA 2028-2 (Sample) and DA 2028-2 (Sample Reverse)	DA 2028-2 (Sample) and DA 2028-2 (Sample Reverse)
DA 2028-2 and DA 2028-2 (Reverse)	DA 2028-2 and DA 2028-2 (Reverse)
DA 2028-2 and DA 2028-2 (Reverse)	DA 2028-2 and DA 2028-2 Reverse)

DA 2028-2 and
DA 2028-2 (Reverse)
Cover 1 and 2

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DA 2028-2 and DA 2028-2 (Reverse)
Cover 1 and 2

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TM 9-2350-261-10
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No.4

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DEPARTMENT OF THE ARMY
Washington D.C., 1 March 1995

OPERATOR'S MANUAL
CARRIER, PERSONNEL, FULL TRACKED, ARMORED, M113A2
2350-01-068-4077

CARRIER, COMMAND POST, LIGHT TRACKED, M577A2
2350-01-068-4089

CARRIER, MORTAR, 107-MM, M30; SELF-PROPELLED, M106A2
2350-01-069-6931

CARRIER, MORTAR, 81-MM, M29A1; SELF-PROPELLED, M125A2
2350-01-068-4087

CARRIER, SMOKE GENERATOR, FULL TRACKED, M1059
2350-01-203-0188

CARRIER, MORTAR, 120-MM, SELF-PROPELLED, M1064
2350-01-338-3116

CARRIER, STANDARDIZED INTEGRATED
COMMAND POST SYSTEM, M1068
2350-01-354-5657

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2-83 and 2-84
2-119 and 2-120
2-141 thru 2-144
A-3 and A-4
B-5 and B-6
B-19 thru B-28
B-35 and B-36
C-1 thru C-4 (Blank)

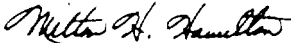
Insert pages

k and l
2-82.1 (blank) and 2-82.2
2-83 and 2-84
2-119 and 2-120
2-141 thru 2-144
A-3 and A-4
B-5 and B-6
B-19 thru B-28
B-35 and B-36
C-1 thru C-4 (Blank)

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GORDON R. SULLIVAN
*General, United States Army
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No. 3

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- OPERATOR'S MANUAL**
- CARRIER PERSONNEL, FULL TRACKED, ARMORED, M113A2
2350-01-068-4077**
 - CARRIER COMMAND POST, LIGHT TRACKED, M577A2
2350-01-068-4089**
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k and l
i thru iv
1-1 thru 1-4
None
1-29 thru 1-32

k thru m (n blank)
i thru iv
1-1 thru 1-4
1-14.1 thru 1-14.5 (1-14.6 blank)
1-29 thru 1-32

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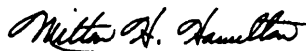
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C3 None	1-36.1 and 1-36.2
2-19 and 2-20	2-19 and 2-20
2-43 and 2-44	2-43 and 2-44
2-71 and 2-72	2-71 and 2-72
2-119 and 2-120	2-119 and 2-120
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2-135/(2-136 blank)	2-135 and 2-136
2-203 and 2-204	2-203 and 2-204
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None	4-30.1 and 4-30.2
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A-1 thru A-4	A-1 thru A-4
B-1 and B-2	B-1 and B-2
None	B-6.1 and B-6.2
B-17 thru B-30	B-17 thru B-30
C-1 thru C-3 (C-4 blank)	C-1 thru C-3 (C-4 blank)
D-1 and D-2	D-1 and D-2
E-1 and E-2	E-1 and E-2
None	E-14.1 thru E-14.7 (E-14.8 blank)
Index-1 thru Index-10	Index-1 thru Index-11 (Index-12 blank)
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*Administrative Assistant to the
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CHANGE
NO. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., 7 February 1992

OPERATOR'S MANUAL

**CARRIER, PERSONNEL, FULL TRACKED, ARMORED, M113A2
2350-01-068-4077**

**CARRIER, COMMAND POST, LIGHT TRACKED, M577A2
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2350-01-338-3116**

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Remove Pages

c and d
k (l blank)
i thru vi
1-1 thru 1-4
None

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c and d
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i thru vi
1-1 thru 1-4
1-24.1 thru 1-24.5 (1-24.6 blank)

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TM 9-2350-261-10


C2

1-29 thru 1-32	1-29 thru 1-32
2-1 thru 2-4	2-1 thru 2-4
2-25 and 2-26	2-25 thru 2-26.1 (2-26.2 blank)
2-36 thru 2-138	2-36 thru 2-135/(2-136 blank)
2-185 thru 2-188	2-185 thru 2-188
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2-235 and 2-236	2-235 and 2-236
2-243 thru 2-246	2-243 thru 2-246.1 (2-246.2 blank)
2-275 and 2-276	2-275 and 2-276
2-283 and 2-284	2-283 and 2-284
3-1 thru 3-6	3-1 thru 3-6
3-13 thru 3-16	3-13 thru 3-16
3-19 and 3-20	3-19 and 3-20
3-35 thru 3-38	3-35 thru 3-38
5-1 thru 5-4	5-1 thru 5-4
5-11 and 5-12	5-11 and 5-12
A-1 thru A-3 (A-4 blank)	A-1 thru A-3 (A-4 blank)
B-1 thru B-4	B-1 thru B-4
B-27 thru B-38	B-27 thru B-38
C-1 and C-2	C-1 and C-2
D-1 and D-2	D-1 and D-2
E-1 and E-2	E-1 and E-2
None	E-39 thru E-47 (E-48 blank)
Index-1 thru Index-10	Index-1 thru Index-10

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HEADQUARTERS

DEPARTMENT OF THE ARMY

No. 1

Washington D.C., 2 September 1991

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**CARRIER, SMOKE GENERATOR, FULL TRACKED, M1059
2350-01-203-0188**

TM 9-2350-261-10, dated 12 July 1990, is changed as follows:

1. Add the following supersession notice to the cover:

This manual supersedes TM 9-2350-261-10, dated 8 May 1984; also supersedes those portions pertaining to the M113A2 Family of Vehicles (FOV) of TM 9-2300-257-10, dated August 78 and all changes.

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Remove Pages

k and l
i and ii
1-3 and 1-4
2-1 and 2-2
2-9 and 2-10
2-21 and 2-22
2-25 and 2-26
2-39 thru 2-44
2-47 thru 2-64
None
2-89 and 2-90
None
None
2-101 thru 2-104
None
2-107 and 2-108
2-109 thru 2-112

Insert Pages

k and l
i and ii
1-3 and 1-4
2-1 and 2-2
2-9 and 2-10
2-21 and 2-22
2-25 and 2-26
2-39 thru 2-43 (2-44 deleted)
2-47 thru 2-64
2-74.1 (2-74.2 blank)
2-89 and 2-90
2-94.1 (2-94.2 blank)
2-96.1 (2-96.2 blank)
2-101 thru 2-104
2-104.1 and 2-1042
2-107 (2-108 deleted)
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TM 9-2350-261-10

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E-1 thru E-4	E-1 thru E-4
E-7 thru E-16	E-7 thru E-16
E-23 and E-24	E-23 and E-24
E-31 thru E-38	E-31 thru E-38
F-1 and F-2	F-1 and F-2
F-7 thru F-11 (F-12 blank)	F-7 thru F-11 (F-12 blank)
Index-1 thru Index-9 (Index-10 blank)	Index 1 thru Index 10

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Chief of Staff

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Brigadier General, United States Army
The Adjutant General

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To be distributed in accordance with DA Form 12-37 (Block 1200) Operator
Maintenance requirements TM 9-2350-261-10.

SUMMARY OF WARNINGS AND FIRST AID

This list summarizes critical WARNINGS in this manual. They are repeated here to let you know how important they are. Study these WARNINGS carefully; they can save your life and the lives of soldiers with whom you work.



W A R N I N G

HEATER AND ENGINE EXHAUST FUMES CONTAIN DEADLY
POISONOUS GASES.

SEVERE EXPOSURE CAN CAUSE DEATH OR PERMANENT
BRAIN DAMAGE.

EXHAUST GASES ARE MOST DANGEROUS IN PLACES WITH
POOR AIR FLOW.

To protect yourself and your partners, always obey the following rules:

Do not run heater or engine indoors unless you have VERY GOOD AIR FLOW.

Do not idle engine for a long time unless there is VERY GOOD AIR FLOW.

Do not drive earner with any power plant access covers open or removed.

BE ALERT at all times. Check for the smell of exhaust fumes. If you notice any fumes, OPEN HATCH COVERS, RAMP ACCESS DOOR OR RAMP, RIGHT AWAY.

Exhaust gas poisoning causes dizziness, headache, loss of muscle control, sleepiness, coma, and death. If anyone shows signs of exhaust gas poisoning, get ALL PERSONNEL out of the earner. Make sure they have lots of fresh air. KEEP THEM WARM, CALM, AND INACTIVE. GET MEDICAL HELP. If anyone stops breathing, give artificial respiration. See FM 21-11 for first aid.

WARNING



Noises from earner or weapons can damage hearing of personnel in earner. All personnel in carrier **MUST WEAR DOUBLE HEARING PROTECTION** when gun or carrier

is operated. Hearing protection devices must be properly worn to provide effective protection.

If DOUBLE HEARING PROTECTION is not worn, the safe level of noise exposure will be exceeded in a short time. Hearing loss occurs gradually. Each noise exposure that exceeds the ear protection guidelines below will cause a temporary hearing loss. Over time, the loss in hearing will become permanent. Plan each day's operation, and be sure all crew and riders have the required ear protectors. Spare foam earplugs must be available.

DEFINITIONS:

DH-132 — The "tankers helmet," also called "CVC" helmet. Must be in good condition, with liner and earcups fitted tightly, and chin strap worn at all times.

EARPLUGS — Only standard issue earplugs are acceptable. All of the dismounted squad soldiers must be trained in how to use them. Since they may be removed and lost, spares must be carried.

DOUBLE HEARING PROTECTION — Use of two hearing protection devices at the same time. For this carrier, use earplugs with the DH-132 helmet.

EAR PROTECTION GUIDELINES

DRIVER

1. Must wear DH-132 helmet at all times.
2. Must wear DH-132 helmet plus earplugs for operations exceeding 14 miles (23 km) in 24 hours.
3. Must close hatch immediately if .50 caliber machine gun is fired over front part of carrier.
4. Hatch may remain open and locked during carrier operation.

COMMANDER

1. Must wear DH-132 helmet at all times.
2. Must wear DH-132 helmet plus earplugs for all operations exceeding 14 miles (23 km) in 24 hours.
3. Hatch may be locked open at all times.

SQUAD MEMBERS

1. Must wear helmet and ear plugs at all times.

USE OF RADIO WITH EARPLUGS

Wearing foam earplugs in addition to your DH-132 helmet can actually improve your ability to hear the radio in a high level noise area. DO NOT remove the earplugs to use the radio.

WARNING



Dry cleaning solvent P-D-686 is toxic and flammable. Wear protective goggles and gloves; use only in well ventilated area; avoid contact with skin, eyes, and clothes, and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flash point for Type I dry cleaning solvent is 100°F (38°C) and for Type II is 138°F (50°C). Failure to do so may result in injury or death to personnel. If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes immediately flush eyes with water and get immediate medical attention.

WARNING



Rapid starts, sudden stops, and sharp turns can throw riders off carrier. Riders thrown from carrier can be killed or injured. Riders must sit inside carrier on seats that are provided. Riders must secure seat belts and wear cvc or regular helmet. If riding with open hatches do not expose more than head and shoulders to level of name tag, except when firing weapons.

WARNING



Gas from batteries can explode and injure you. Ventilate battery compartment before you disconnect or connect battery cables. Do not have open flames, make sparks, or smoke near batteries. Battery acid can bum or blind you. Do not get acid on your skin or eyes. ALWAYS disconnect negative lead (circuit 7) first and connect it last.

WARNING



Sparks from static electricity can cause a fire or explosion. Metal nozzle must touch metal in filler neck when fueling carrier or ground wire must be installed to carrier being refueled. Fuel can catch fire and burn you. Do not smoke. Wipe up spilled fuel.

Starting engine right after a fire can restart fire. Do not move MASTER SWITCH to ON until cause of fire has been repaired or removed.

WARNING



Exposure to CO2 can cause dizziness, shortness of breath, muscular weakness. Stop engine before you discharge CO2. If CO2 is discharged, open hatch covers, or get all personnel out of carrier.

WARNING



Discharging CO2 gas can freeze your skin. Keep away from discharging gas.

WARNING



If fire occurs due to equipment malfunction or damage, personnel can be killed or injured and equipment can be damaged. If fire extinguishers are empty, and there is a possibility of fire occurring, offload all ammunition.

WARNING



Hot parts can burn you. Let hot parts cool before you start work.

WARNING



Hot oil and coolant can burn you. Let power unit cool before start work.

WARNING



Lowering ramp could injure personnel. Make sure no one is in ramp zone before you lower ramp. Unlocked ramp can fall open suddenly. Personnel can be killed or injured. Check that ramp cable is connected with no slack. Ramp system and hull can get damaged if ramp unlocks when carrier is in operation. Do not operate carrier if locks do not secure ramp properly. Keep away from ramps that have come open during carrier operation.

WARNING



You could get hurt by misuse of pivot steer. NEVER use the pivot steer brakes when moving except in an emergency. NEVER use pivot steer brakes and differential brakes at the same time. Personnel can be killed or injured and differential can be damaged.



WARNING
A fire can breakout any time. Personnel can be killed or injured. Equipment can be damaged. Make sure both fire extinguishers are ready to use before you operate carrier.



WARNING
Operating carrier in reverse is dangerous due to limited vision and reversed steering. Always post ground guides before you back up.



WARNING
Hot radiator coolant can burn you. Use hand to remove cap only if cool to touch. Turn cap slowly to release pressure. Replace cap by pressing down and turning cap until tight.



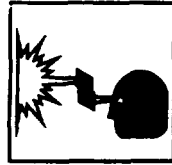
WARNING
Unlatched hatch covers can swing and injure personnel. Make sure hatches are latched open or closed and safety pins installed.



WARNING
Never touch lock buttons while carrier is moving. If you lock up the steering while moving, you could be injured and/or damage the carrier.



WARNING
Make sure machine gun is clear and locked, and barrel is free of obstructions.



WARNING

Do not look directly into infrared lights. You may damage your eyes.



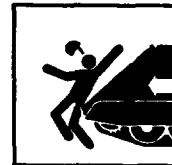
WARNING

Buoyancy pods add weight to trim vane. Personnel can be injured and equipment damaged. Raise and stow trim vane slowly. Have helper assist. Avoid being caught between trim vane and hull or ground.



WARNING

Be careful when you touch road or idler wheel hubs, shock absorbers, or final drive housings. They can heat up enough to burn you.



WARNING

Always use a tow bar when universal joints are disconnected for towing. The carrier has no steering or braking control with universal joints disconnected, so don't use tow cables, personnel could be injured.



WARNING

Do not swim carrier. Carrier may sink and personnel may drown or be injured. Only fording to a depth of 40 inches is allowed.

WARNING



Carrier can sink and personnel can be trapped inside and drown when hatches are closed. All hatches must be in open position with locking pins installed during water

operations.

WARNING



Carrier can sink and personnel drown if load is not distributed evenly. Check trim vane and freeboard after entering water. Shift cargo and personnel if needed to get

good trim.

WARNING



Make sure seat belts are worn at all times when earner is in motion, except when performing water operation.

WARNING



Fording Smoke Generator Carrier with fog oil tank can shift earner balance and could cause carrier to swamp. Do not allow carrier to rock in the water. Always ford carrier

with fog oil tank full or empty, never partly filled.

WARNING



HIGH VOLTAGE IN THE M19 periscope can cause serious injury or death. To avoid accidents:

ALWAYS connect power cable to periscope BEFORE turning MASTER SWITCH and I.R. power switch to ON.

ALWAYS wait at least 2 minutes **BEFORE** you disconnect the power cable from the periscope when turning I.R. **POWER** switch and **MASTER SWITCH OFF**.

NEVER disconnect the power cable from the periscope until the image disappears from the periscope screen.

NEVER touch the end of the cable. Voltage could exceed 16,000 volts.

WARNING



Before hooking up a tow bar or tow cables, or disconnecting the drive shafts between the differential and final drives, block the earner so it can't move.

WARNING



Vehicle operation during hot weather may result in potential heat stress to crew members. Crew members should limit their exposure based on TB med 507 using PHEL Chart (Appendix C) curve as a guide.

WARNING



Fire resistant fluid (FRH) may contain Tricresyl Phosphate which, if taken internally, can produce paralysis. Hydraulic fluid may be absorbed through the skin. Wear long sleeves, gloves, goggles, and face shield. If FRH gets in eyes, wash them immediately and get medical aid immediately. If FRH gets on skin, thoroughly wash with soap and water. Wash hands thoroughly prior to eating or smoking.

For artificial respiration and frost aid, see FM 21-11.

WARNING

If you lose a track (break a track shoe or vehicle throws a track), extreme caution must be exercised in maintaining control. Immediately release accelerator and let the vehicle coast to a stop. Do not apply braking action, i.e. brake pedal, laterals, pivot or any type of steering controls. This causes the vehicle to pull to the active or good track and could result in a rollover. If it is absolutely necessary, apply braking action only, and we stress only, if you perceive the outcome to be catastrophic, probably resulting in fatalities. When rollover is imminent, all crewmembers should immediately withdraw inside the vehicle, tighten seat belts and hold onto a secure fixture, until the vehicle comes to a complete stop.

WARNING

When a track vehicle gets out of control and overturns, it is safer to stay in the vehicle than to try to get out while the vehicle is still moving. You may receive slight injuries from being thrown against metal parts; but if you try to leave the vehicle, it may roll over and crush you. Once the vehicle stops moving, get out as fast as possible because spilled fuel and oil may catch on fire. Immediately the driver should shut off the engine and turn off the master switch to minimize the fire hazard.

WARNING

Battery posts and cables touched by metal objects can short circuit and burn you or injure you. Use caution when you work with tools or other metal objects. Do not wear jewelry when you work on electrical system.

WARNING



Power cable connections should not be attempted until grounding system and signal/data cabling have been completed.

System grounding must be completed prior to making any power connections. Failure to do so may result in personal injury and/or damage to the equipment.

Improper or loose connection between the surface wire grounding systems and ground lugs could cause a short in the system, which may cause personal injury.

WARNING



When using external power, ensure proper grounding procedures are followed. Failure to do so may result in personal injury and/or damage to the equipment.

WARNING

Fuel lines may vibrate loose or crack during mortar firing. Fuel leaks can cause fumes or fires which cause serious bodily harm or death to personnel. If fuel leaks, STOP FIRING. Repair leaks or cracks, wipe up any excess fuel before you resume firing.

WARNING

If mission requirements permit allow the ramp door to remain open, to ensure adequate ventilation.

WARNING



HIGH VOLTAGE is used in the operation of this equipment.

DEATH ON CONTACT may result if personnel fail to observe safety precautions.

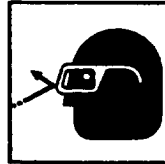
NEVER work on equipment unless at least one other person familiar with the operation and hazards of the equipment is nearby. That person should also be competent in giving first aid. When an operator helps a technician, that operator must be warned about dangerous areas.

SHUT OFF POWER supply to equipment before beginning work. Make sure all external power is off/disconnected.

BE CAREFUL not to contact high-voltage connections when installing or operating this equipment.

KEEP one hand away from the equipment to reduce the hazard of current flowing through life-sustaining organs of the body.

WARNING



Always wear eye protection when using a hammer. Eye injury may result if metal chips contact eyes.



WARNING



Vehicle operation during hot weather may result in potential heat stress to crew members. Crew members should limit their exposure based on TB med 507 using PHEL Chart (Appendix C) curve as a guide. Ramp door should be opened to ensure ventilation is adequate, when appropriate.

WARNING



Fire resistant fluid (FRH) may contain Tricresyl Phosphate which, if taken internally, can produce paralysis. Hydraulic fluid may be absorbed through the skin. Wear long sleeves, gloves, goggles, and face shield. If FRH gets in eyes, wash them immediately and get medical aid immediately. If FRH gets on skin, thoroughly wash with soap and water. Wash hands thoroughly prior to eating or smoking.

For artificial respiration and first aid, see FM 21-11.

OPERATOR'S MANUAL
CARRIER, PERSONNEL, FULL TRACKED,
ARMORED, M113A2
2350-01-068-4077
CARRIER, COMMAND, POST LIGHT,
TRACKED, M577A2
2350-01-068-4089
CARRIER, MORTAR, 107-MM, M30,
SELF-PROPELLED, M106A2
2350-01-069-6931
CARRIER, MORTAR, 81-MM, M29A1,
SELF-PROPELLED, M125A2
2350-01-069-4087
CARRIER, SMOKE GENERATOR,
FULL TRACKED, M1069
2350-01-203-0188
CARRIER, MORTAR,, 120-MM,
SELF-PROPELLED, M1064
2350-01-338-3116
CARRIER, STANDARDIZED INTEGRATED
COMMAND POST SYSTEM, M1068
2350-01-354-5657

Reporting Errors and Recommending Improvements

You can help improve this manual. If you find any mistakes, or if you know a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual, directly to: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN AMSTA-AC-NML Rock IL, 61201-9948. A reply will be furnished to you.

*This manual supersedes TM 9-2350-261-10 dated 8 May 1984.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

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HOW TO USE THIS MANUAL

This manual tells you how to use the M113A2 Armored Personnel Carrier, M577A2 Command Post Carrier, M106A2 Self-propelled Mortar Carrier, M125A2 self-Propelled Mortar Carrier, M1064 Self-propelled Mortar Carrier, M1059 Smoke Generator Carrier, and M1068 Standardized Integrated Command Post System. The M1068 Standardized Integrated Command Post System Operations is covered by TM 11-7010-256-12&P.

Before starting a task or procedure, read HOW TO USE THIS MANUAL and CHAPTER 2, Section 1, DESCRIPTION AND USE OF OPERATORS CONTROLS AND INDICATORS.

WHAT'S IN THE MANUAL - FRONT TO BACK

SUMMARY OF WARNINGS AND FIRST AID lists the warnings and first aid information in this manual. The warnings cover hazards that could kill or injure personnel. Shorter versions of these warnings may appear in the task procedure.

TABLE OF CONTENTS tells you where each chapter, section and appendix starts. Information you need most often is listed on the front cover index.

CHAPTER 1 covers general information. It gives a brief description of the major parts and features of the carrier.

CHAPTER 2 covers descriptions and functions of all controls and indicators. It also includes Preventive Maintenance Checks and Services (PMCS) and operation procedures.

CHAPTER 3 covers troubleshooting and maintenance procedures authorized for crew performance.

CHAPTER 4 covers information peculiar to the M577A2 Command Post Carrier and M1068 Standardized Integrated Command Post System.

CHAPTER 5 covers operation and maintenance of the M106A2, M1064, and M125A2 Mortar Carriers. For 81-mm, M29A1, see TM 9-1015-200-10. For 170-mm mortar, M30, see TM 9-1015-215-10. For 120-mm mortar, M121, see TM 9-1015-250-10.

CHAPTER 6 covers information peculiar to the M1059 Full Tracked Smoke Generator Carrier. For operating under usual or unusual conditions refer to TM 3-1040-279-12&P.

APPENDIX A lists references to be used by personnel in operating and maintaining this carrier. These references include technical manuals and other publications.

APPENDIX B lists the components of the end item and basic issue items. Components of the end item are those items which are assembled and become a permanent part of the carrier. Basic issue items are items needed to put the earner in operation, operate it and do emergency repairs.

APPENDIX C lists additional items required to support the earners during operation.

APPENDIX D lists the expendable/durable supplies and materials.

APPENDIX E is a stowage guide for all removable equipment carried in and on the carriers. This appendix includes a guide to identification (ID) plates on the earners.

APPENDIX F provides standard load plan for the carriers.

ALPHABETICAL INDEX lists the page number where major controls, procedures, indicators, systems, and subsystems are found in this manual.

DA FORM 2028-2 is used to report errors and to recommend improvements for procedures in this manual. Three blank DA Forms 2028-2 are in the back of this manual. A sample is provided to show you how to fill out the DA Form 2028-2.

METRIC CONVERSION CHART converts U.S. customary measurements to metric equivalents. Measurements in the manual are given both in U.S. customary and metric units.

Which type of procedure do you use?

There are four different types of procedures or tasks in this manual. They are: operation tasks, maintenance tasks, Preventive Maintenance Checks and Services (PMCS) tasks, and troubleshooting tasks. Decide which type of task you need to use.

How do you find the correct task or procedure?

Pick a key word from the carrier part or system to be used during the task. Look in the ALPHABETICAL INDEX for this key word or the name of the action you will perform. Turn to the page indicated.

The ALPHABETICAL INDEX lists each task under one or more headings. The task, ADJUST DRIVER'S SEAT, could be found:

Under "A"

Adjust:

Driver's seat page 2-155

Under "S"

Seats, Driver's

Adjust page 2-155

Under "D"

Driver's seat:

Adjust page 2-155

How do you read the tasks?

Pay attention to all warnings, cautions, and notes. These can appear in all four types of tasks. They help you avoid harm to yourself, other personnel and equipment. They also tell you things you should know about the task. Before starting, get all tools, supplies, and personnel you need to do the task.

Start with step 1 and do each step in given order.

Look at the illustrations. These show you where the equipment and parts are located on the earner. Illustrations in this manual show you close-ups of equipment, special tools, parts, and other helpful information.

The following examples show you what to look for when reading a task.

Operation Tasks and Maintenance Tasks

Operation tasks tell you how to operate the carrier and its equipment. Each operation task details steps which need to be performed to complete the task.

Maintenance tasks help the crew keep the carrier in operating condition. Crew members are authorized to remove, clean, inspect, lubricate, and install certain parts on the carrier.

Both operation and maintenance tasks use the same format. Look at the sample given below.

Sample of Setup Items

The sample below shows the DESCRIPTION and INITIAL SETUP sections on the first page of a task. Items to watch for are listed in the legend. Match them with the sample.

TM 9-2350-261-10

① _____

② **TOW START DISABLED CARRIER**

② **DESCRIPTION**
 This task covers: Install Tow Bar on Disabled Carrier and Recovery Vehicle (page 2-254). Tow Start Disabled Carrier (page 2-255).
 Remove Tow Bar From Disabled Carrier and Recovery Vehicle (page 2-258).

③ **INITIAL SETUP**

<p>Tools:</p> <p>Crowbar (Item 8, App B) Tow Cable (Item 5, App B)</p> <p>Personnel Required:</p> <p>Driver (2) Helper (4)</p>	<p>References:</p> <p>TM 11-5820498-12</p> <p>Equipment Conditions:</p> <p>Recovery vehicle Disabled carrier</p>
--	---

⑥ _____

Legend to Sample Above

- | | | |
|---|------------------------------------|---|
| ① | TITLE | This is the name of the task. |
| ② | DESCRIPTION | This describes the overall actions you will perform. Also, it tells you the page where each action begins. |
| ③ | TOOLS | These are the tools and equipment you will need to do the task. |
| ④ | MATERIALS/
PARTS
(not shown) | These are the supplies and parts you will need to do the task. These can be obtained from unit maintenance. |
| ⑤ | PERSONNEL
REQUIRED | These are the personnel needed to do the task. |
| ⑥ | REFERENCES | These are the other technical publications you will need to do the task. |
| ⑦ | EQUIPMENT
CONDITIONS | These are the conditions the equipment must be in before you start the task. You will be referred to the task or technical publication needed to meet each equipment condition. This reference will be given in parentheses after each equipment condition. |

Some tasks will include all of the items above. Other tasks will only include some of the above items.

Read the INITIAL SETUP section carefully before you start each task. Get the tools and supplies listed and the personnel needed. Be sure the equipment is in the condition required.

Sample of Task Steps

The sample below shows you some things to watch for when performing a task. Read all steps, warnings, cautions and notes before starting each task. Items to watch for are listed in the legend. Match them with the sample.

1 — **REMOVE**

WARNING
 Failure to decontaminate and wear protective clothing after NBC attack could result in serious health hazards to personnel. Do not service air cleaner or vent system after NBC attack until carrier has been decontaminated.

2 — **CAUTION**
 Operating carrier with air cleaner missing or damaged can cause extensive engine damage. Do not operate carrier if air cleaner element is missing or door or gasket is missing or damaged.

3 — **1. Lower trim vane (page 2-216).**
2. Open power plant access door (page 2-151).

3. Release four latches. Remove air cleaner body and filter element from cover.

4. Remove filter element from air cleaner body.

4

5

COVER LATCH AIR CLEANER BODY
 FILTER ELEMENT DRAIN HOLE

Legend to Sample Above

- 1** **WARNING** This describes danger to yourself and other personnel.
- 2** **CAUTION** This describes possible damage to equipment.
- 3** **STEP** This tells you WHAT to do.
- 4** **LOCATOR** This helps you locate equipment on the carrier.
- 5** **CLOSE-UP** This shows you a close-up of the equipment.

Some tasks will include all of the above items. Some will not. In addition to the items listed, notes may be listed. Notes tell you about conditions that affect the step immediately following the note.

Read all the task before starting. Follow the steps in the order given. The words END OF TASK will tell you when you have finished the task.

Preventive Maintenance Checks and Services

Preventive Maintenance Checks and Services (PMCS) are made on a daily, weekly, and monthly basis. Preventive maintenance must be performed to keep your earner running.

There are five types of PMCS, as follows:

The BEFORE (B) PMCS should be done before you operate the earner.

The DURING (D) PMCS should be done when you operate the carrier. Monitor the carrier and its systems as you operate the carrier. Perform During (D) PMCS on a system only when the system is required to complete your mission.

The AFTER (A) PMCS should be done after completing your mission.

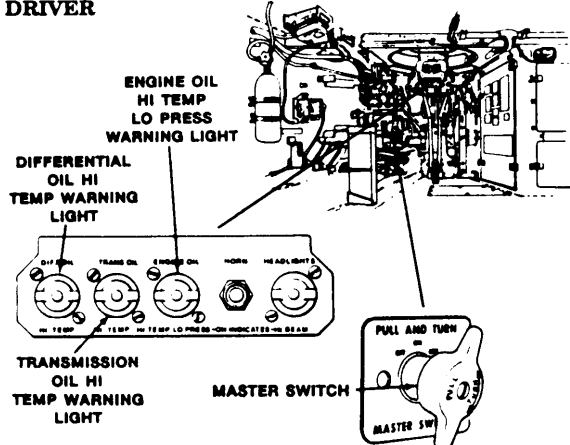
The WEEKLY (W) PMCS should be done weekly.

The MONTHLY (M) PMCS should be done monthly.

If anything seems wrong with the carrier or its systems and you cannot fix it yourself, notify unit maintenance. Common things to watch for in every area inspected are loose bolts or damaged welds. Watch for wear, leaks, loose clamps, and loose fittings when checking hoses and fluid lines.

The following sample shows you what to look for when you read a PMCS procedure. For more information on PMCS, see page 2-30.

**PREVENTIVE MAINTENANCE CHECKS AND SERVICES
BEFORE (B) OPERATION CHECKS (cont)**

ITEM No.	ITEM TO BE INSPECTED Procedure	Equipment will be reported NOT READY/AVAILABLE if:
①	<p>DRIVER</p> 	
②	<p>INSTRUMENT PANEL WARNING LIGHTS</p>	
③	<p>20</p>	
④	<p>Check for damaged or missing instrument panel warning lights. Check that TRANS OIL HI TEMP and DIFF OIL TEMP warning lights are present and bulbs are not broken. Turn MASTER SWITCH to ON and check that ENGINE OIL HI TEMP LO PRESS warning light comes on.</p>	
⑤		<p>Any warning light missing or bulb broken. ENGINE OIL HI TEMP LOW PRESS warning light does not come on after turning MASTER SWITCH to ON.</p>

Legend to Sample Above

- ① PERSONNEL This tells you who should perform the PMCS task.
- ② TITLE This is the name of the carrier system or part being checked.
- ③ ITEM NO. This tells you the sequence for doing the PMCS.
- ④ CHECK This tells you what to check.
- ⑤ NOT READY/AVAILABLE CONDITION This tells you what conditions will have to be corrected before you perform your mission.

Troubleshooting Tasks

Troubleshooting tasks help the crew solve common problems and malfunctions. The Troubleshooting Symptom Index on page 3-2 lists some malfunctions common to your carrier. You will be guided to the Troubleshooting Table by the Troubleshooting Symptom Index.

Sample of a Troubleshooting Task

The sample below shows you things to watch for when performing a troubleshooting task. Items to watch for are listed in the legend. Match them with the sample.

TROUBLESHOOTING TABLE	
①	MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
②	● ENGINE
③	1. ENGINE DOES NOT CRANK WHEN YOU PRESS START SWITCH. Step 1. Check to see if MASTER SWITCH is OFF.
④	● Turn MASTER SWITCH ON (page 2-163). Step 2. Check to see if range selector controller is in N position. Place range selector in N position (page 2-162). Step 3. Check to see if batteries are in good condition. Troubleshoot electrical system (page 3-12).
	2. ENGINE CRANKS BUT DOES NOT START. Step 1. Check to see if fuel cutoff control is pulled out. Push fuel cutoff control in (page 2-164).

Legend to Sample Above

- ① SYSTEM This tells you which carrier system the troubleshooting task is covering.
- ② MALFUNCTION This tells you the carrier malfunction.
- ③ TEST OR INSPECTION This tells you the test or inspection you should make to find the cause of the malfunction.
- ④ CORRECTIVE ACTION This tells you what to do to fix the malfunction.

DEFINITION OF TASK TERMS**WARNINGS, CAUTIONS, AND NOTES**

Be sure to read all warnings and cautions in the task. Ignoring a warning could cause death or injury to yourself or other personnel. Ignoring a caution could cause damage to equipment. Notes contain facts to make the task easier. Warnings, cautions, and notes always appear just above the step to which they apply.

WARNINGS; *Call* attention to the things that could kill or injure personnel. Warnings are also listed at the front of the manual.

WARNING

Lowering ramp could injure personnel. Make sure no one is in ramp zone before you lower ramp. If tactical situation permits, sound horn before lowering ramp.

CAUTIONS: *Call* attention to actions or materials that could damage equipment.

CAUTION

Improper cable removal can cause a short circuit. Remove negative cable before you remove positive cable.

NOTES: Contain important facts to make the task easier.

NOTE

When quick release pin is removed, mirror control knob will spring back into locked position.

HELPER

Helpers are needed in tasks that require more than one person. A helper may be needed to help lift heavy objects or act as an outside observer.

If a helper is needed to perform a task, the INITIAL SETUP will tell you:

Example: 1. Personnel required:
Driver
Helper (H)

If a helper assists with a step, the step will include: "Have helper assist".

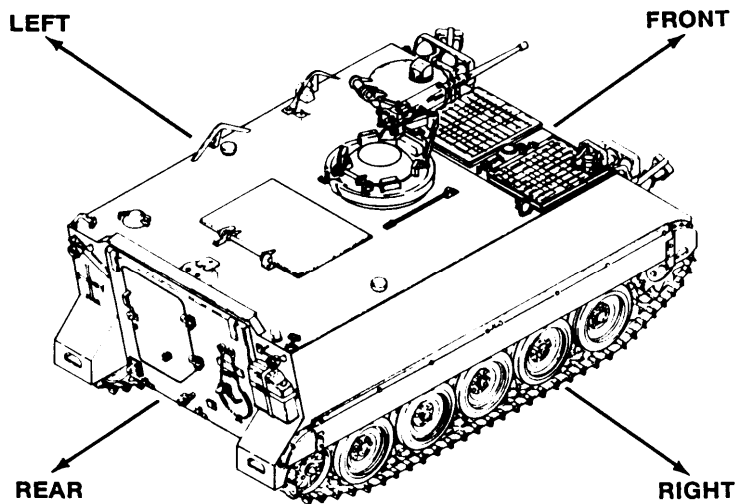
Example: 3. Push up trim vane.
Have helper assist.

If a helper performs the action alone, the step will start with (H).

Example: 2. (H) Turn MASTER SWITCH ON.

LOCATIONAL TERMS

The terms FRONT, REAR, LEFT AND RIGHT are used to describe where items are located on the carrier. Think of these locations as if you were standing on the ramp facing the inside of the carrier.



CHAPTER 1 INTRODUCTION

Section I. GENERAL INFORMATION

SCOPE

This manual tells how to operate and maintain the following carriers:

- M113A2 Full Tracked Armored Personnel Carrier
- M577A2 Light Tracked Command Post Carrier
- M106A2 Self-propelled 107-mm Mortar Carrier
- M125A2 Self-propelled 81-mm Mortar Carrier
- M1064 Self-propelled 120-mm Mortar Carrier
- M1059 Full Tracked Smoke Generator Carrier
- M1068 Standardized Integrated Command Post System

NOTE

The operation of the 107-mm, 4.2 inch Mortar, M30 used on the M106A2 Carrier is covered in TM 9-1015-215-10. The operation of the 81-mm Mortar, M29A1 used on the M125A2 Carrier is covered in TM 9-1015-200-10. The operation of the 120-mm Mortar, used on the M1064 Carrier is covered in TM 9-1015-250-10.

MAINTENANCE FORMS, RECORDS AND REPORTS

Department of the Army forms and procedure⁶ used for equipment maintenance will be those prescribed by DA Pamphlet 738-750, The Army Maintenance Management System⁶ (TAMMS).

REPORTING OF EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

EIR can and must be submitted by anyone who is aware of an unsatisfactory condition with the equipment design or use. It is not necessary to show design or list a better way to perform a procedure, just simply tell why the design is unfavorable or why a procedure is difficult. EIR maybe submitted on SF 368 (Quality Deficiency Report). Mail directly to Commander, U.S. ARMY Tank-automotive and Arma-ment Command, Attn: AMSTA-TR-QCL, Warren, ML, 48397-5000.

Change 5 1-1

TM 9-2350-261-10

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

See the following technical manuals for information on destruction of Army materiel:

TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use.
TM 750-244-5-1	Procedures for Destruction of Conventional Ammunition and Improved Conventional Munitions to Prevent Enemy Use.
TM 750-244-6	Procedures for Destruction of Tank Automotive Equipment to Prevent Enemy Use.
TM 750-244-7	Procedure for Destruction of Equipment in Federal Supply Classifications 1000, 1005, 1010, 1520, 2530, 5590, 5595 to Prevent Enemy Use.

NOMENCLATURE CROSS REFERENCE LIST

This listing includes nomenclature cross references used in this manual.

COMMON NAME	OFFICIAL NOMENCLATURE
CVC Helmet	DH 132 Helmet
Dipstick	Liquid measure gage rod
Track and sprocket gage	Track tension, track bushing and sprocket
Transmission	Transmission, Hydraulic

LIST OF ABBREVIATIONS

Many abbreviations are used in this manual. They are listed below. Learn what each one means. It will make your job easier.

ABBREVIATION	MEANING
A	After
B	Before
BATT	Battery
BO	Blackout
BRT	Bright
CVC	Combat Vehicle Communications
D	During
ENG	Engine
GEN	Generator
HI TEMP	High Temperature
Intercom	Intercommunication
IR	Infrared
KW	Kilowatt
LO	Lubrication Order
M	Monthly
MCPS	Modular Command Post System
NBC	Nuclear, Biological, Chemical
OVE	On Vehicle Equipment
PMCS	Preventive Maintenance Checks and Services
PRESS	Pressure
SICPS	Standardized Integrated Command Post System
TEMP	Temperature
TRANS	Transmission
Vent	Ventilation
W	Weekly

Section II. DESCRIPTION AND DATA

CARRIERS

The carriers covered in this manual are built for tough cross-country travel and high speed driving on good roads. All carriers can ford water up to 40 inches deep. All carriers can be transported by cargo aircraft. All carriers except the M577A2 and M1068 can be parachute-dropped to troops in the field.

DIFFERENCES BETWEEN CARRIERS

Carrier Function	M113A2	A577A2	M125A2	M106A2	M1059	M1064	M1068
Command Post .....	.....	X	.....	.....	.....	.....	X
Mortar Carrier .....	.....	.....	X	X	.....	X	.....
Personnel/Cargo Carrier	X	.....	.....	.....	.....	.....	.....
Smoke Generator Carrier .....	.....	.....	.....	.....	X	.....	.....
ARMAMENT/FIRE CONTROL							
■ Caliber .50 Machine Gun.....	X	.....	X	X	X	X	.....
81-mm Mortar .....	.....	.....	X	.....	.....	.....	.....
107-mm Mortar.....	.....	.....	.....	X	.....	.....	.....
120-mm Mortar.....	.....	.....	.....	.....	.....	X	.....
Periscope M17	X	X	X	X	X	X	X
I.R Periscope M19..	X	X	X	X	X	X	X
EQUIPMENT							
Ammo Stowage Adapter Kit....	.....	.....	.....	X	.....	.....	.....
Air Grill Curtain. ....	.....	.....	X	X	.....	X	.....
Capstan Kit.....	X	.....	.....	.....	X	.....	.....
Cupola Lock Kit.....	X	.....	.....	.....	.....	.....	.....
Driver's Windshield Kit.....	X	X	X	X	X	X	X
Electronic Heater Kit .....	.....	X	.....	.....	.....	.....	.....
Engine Coolant Heater Kit....	X	X	X	X	X	X	X
Generator Set and Cover.....	.....	X	.....	.....	.....	.....	X
Hospital Litter Kit	X	.....	.....	.....	.....	.....	.....
Machine Gun Stowage Kit.....	X	.....	.....	.....	.....	.....	.....
Marine Recovery Kit	X	.....	.....	.....	.....	.....	.....
■ NBC Kit	X	X	.....	.....	X	.....	X
■ Personnel Heater Kit.....	X	X	X	X	X	X	X
■ Smoke Generator System.....	.....	.....	.....	.....	X	.....	.....
Smoke Grenade Launcher Kit . .	X	.....	.....	.....	X	.....	.....
Tent (Covered Extension).....	.....	X	.....	.....	.....	.....	.....
■ MCPS (Covered Extension).....	.....	.....	.....	.....	.....	.....	X
Dragon Missile System.....	X	.....	.....	.....	.....	.....	.....
Night Observation Device System	X	.....	.....	.....	.....	.....	.....

LOCATIONAL TERMS

The terms right, left, front, or rear are used in this manual to describe areas and parts of the carriers and their locations relative to each other. The terms are used the same way you would use them if you stood at the ramp end of the carrier and looked forward.

PECULIAR COMPONENTS

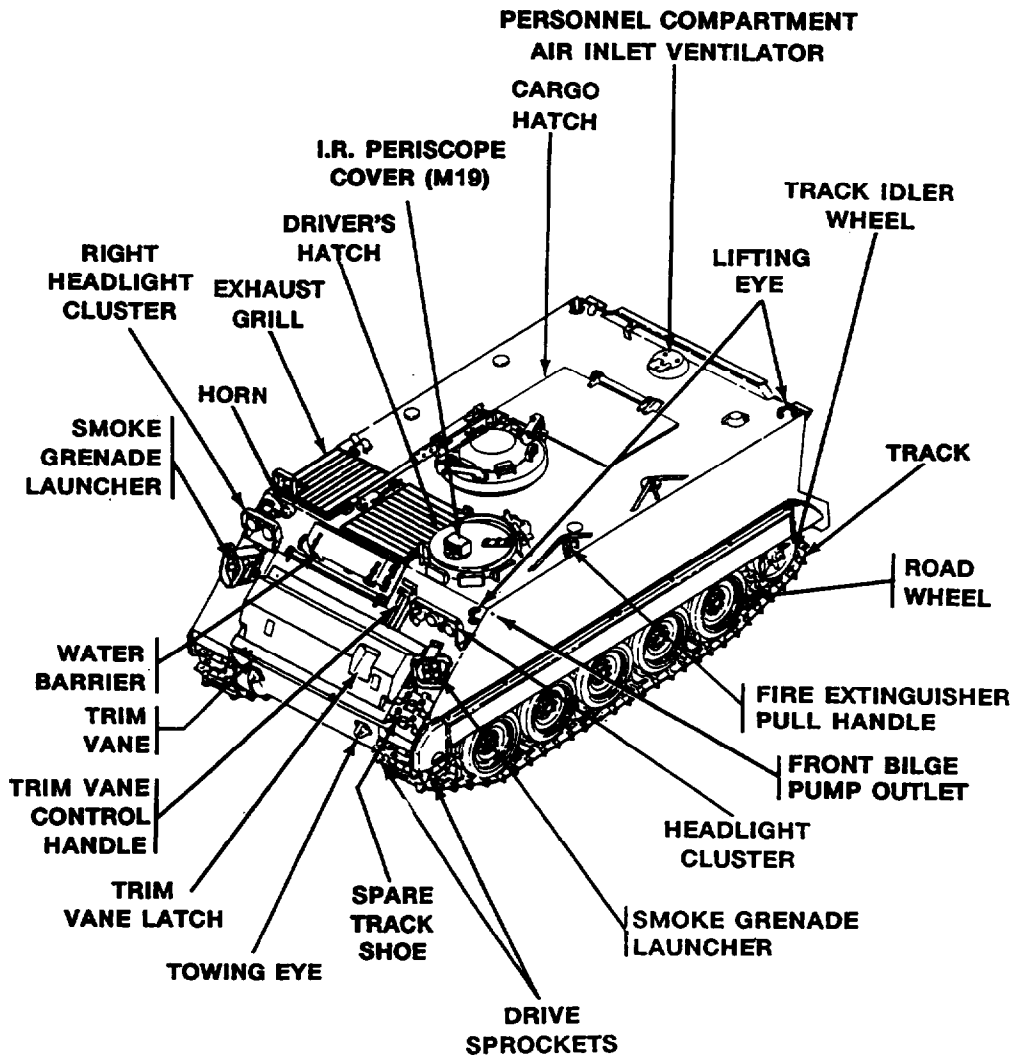
Components peculiar to a specific carrier are indicated within each title or illustration throughout this manual. All components and systems not indicated in this manner are common to all carriers.

M113A2 FULL TRACKED ARMORED PERSONNEL CARRIER

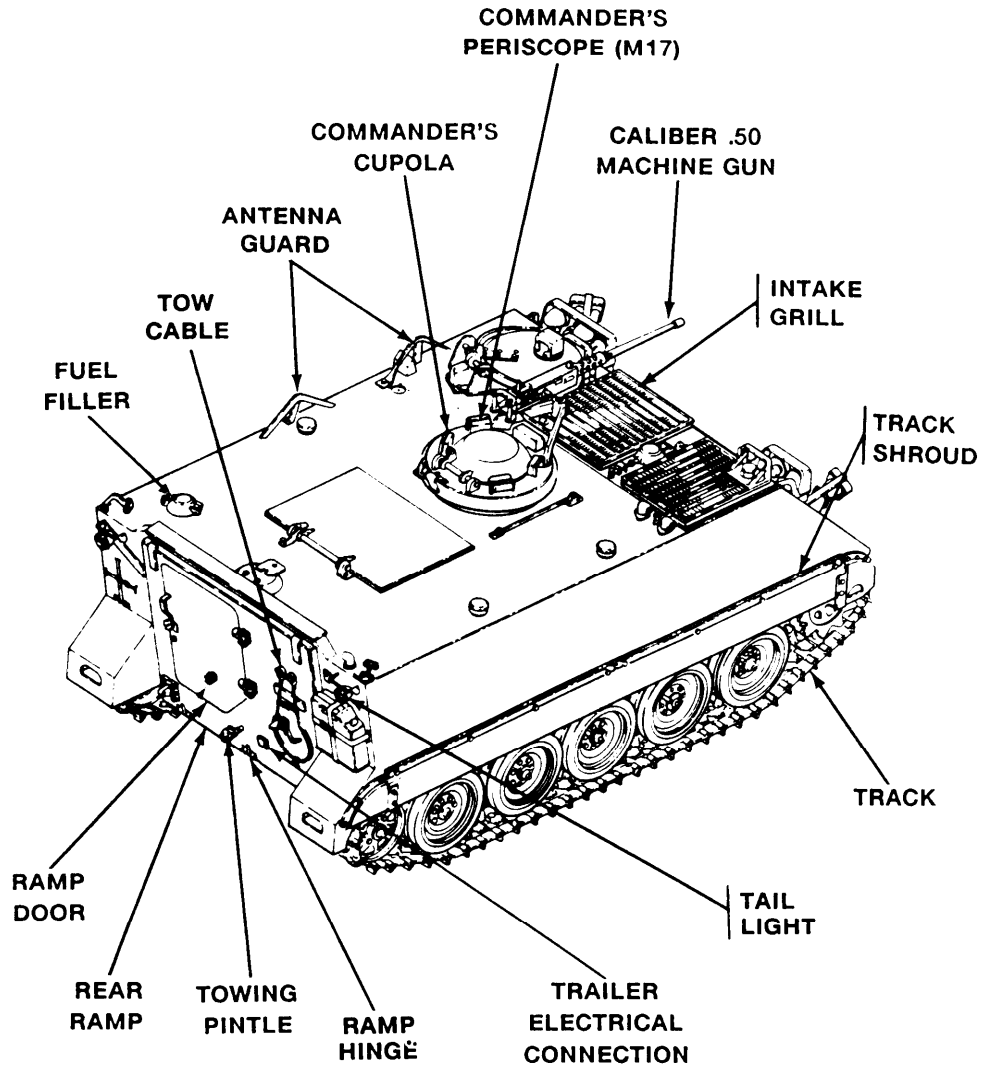
This carrier is designed to carry 12 troops plus the driver. It can be used for cargo, ambulance, or reconnaissance work. A caliber .50 machine gun is mounted on a cupola on top of the carrier. The M113A2's capabilities and features are:

- It travels easily over rough terrain.
- It fords water up to 40 inches deep.
- It can move at high speeds on improved roads and highways.
- It is air transportable and can be dropped by parachute to troops in the field.
- It is propelled and steered on land and in water by tracks.
- It has M17 periscopes around the driver's and commander's hatches for vision when buttoned up.
- It has an M19 infrared periscope stowed near the driver. The periscope can be installed in the driver's hatch to provide night vision under blackout conditions.
- It is equipped with smoke grenade launchers.
- It is equipped to carry a NBC (gas particulate filter) unit, driver's windshield bit, engine coolant heater kit, and personnel heater kit (for cold weather operation).
- It can be equipped to carry a hospital litter kit, marine recovery kit, capstan kit, Dragon missile system, and night observation device system.

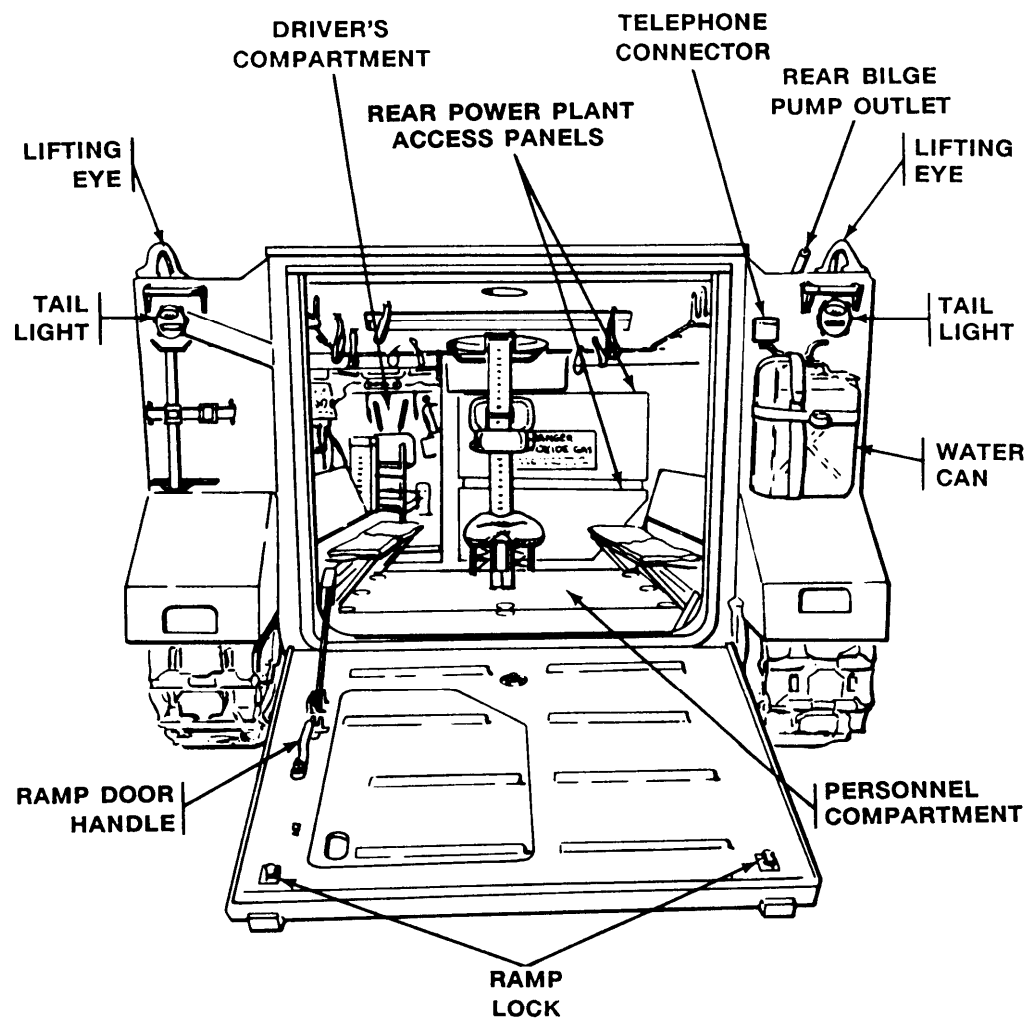
M113A2 CARRIER - LEFT FRONT VIEW



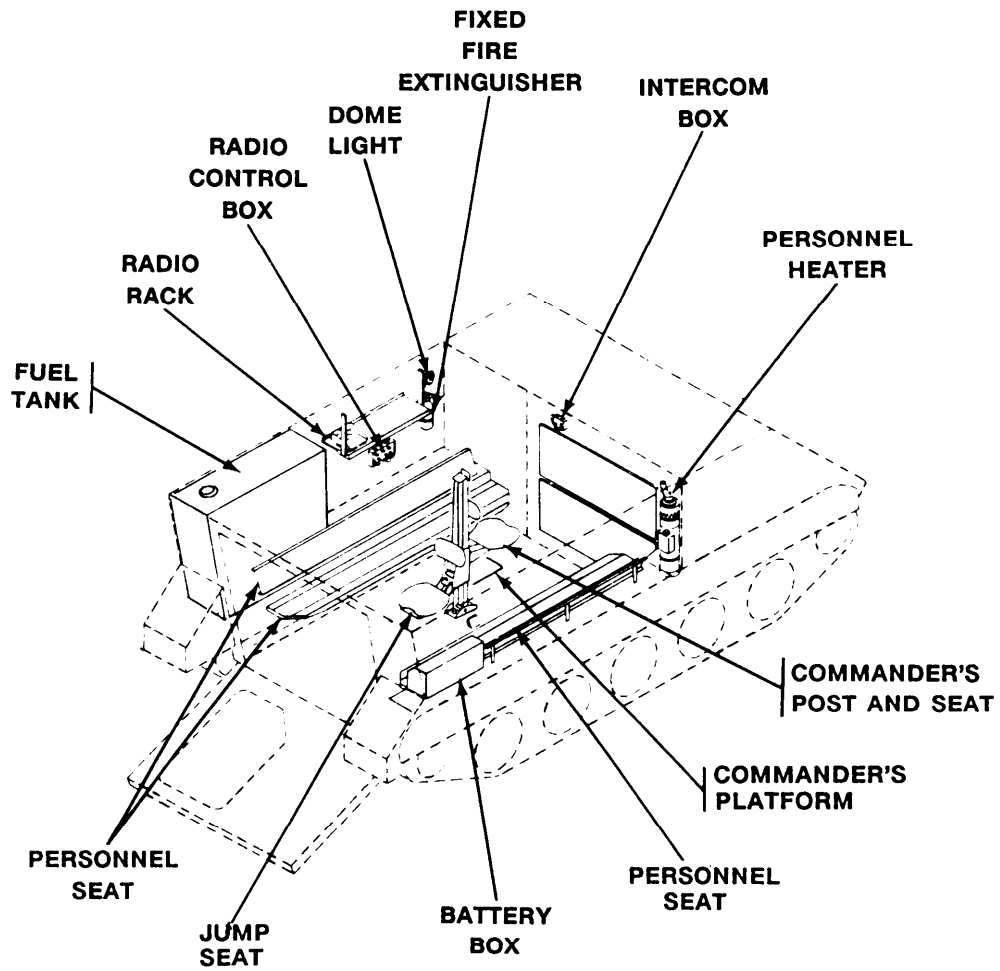
M113AZ CARRIER — RIGHT REAR VIEW



M113A2 CARRIER — REAR VIEW



M113A2 CARRIER — PERSONNEL COMPARTMENT VIEW



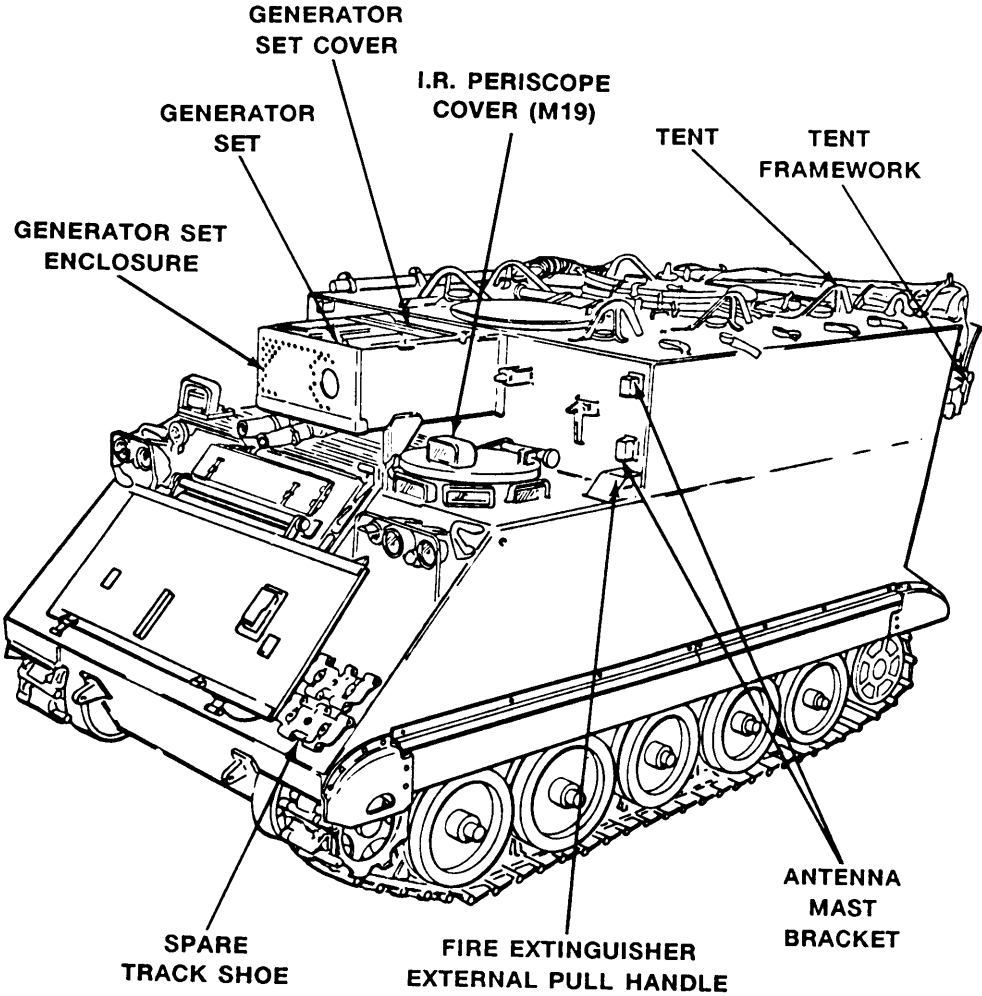
M577A2 COMMAND POST CARRIER

This carrier is designed as a command post and staff office. It has a crew of five, including the driver. The M577A2's capabilities and features are:

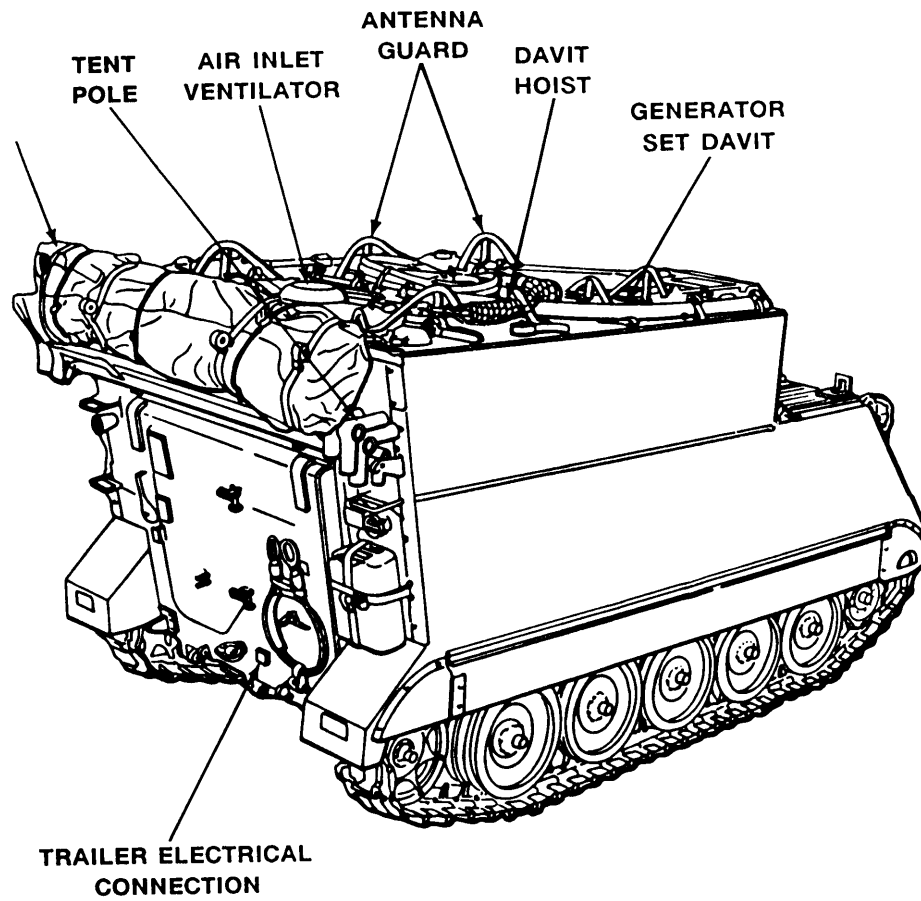
- It travels easily over rough terrain.
 - It fords water up to 40 inches deep.
 - It can move at high speeds on improved roads and highways.
 - It is air transportable, but not air droppable.
 - It provides protection for field commanders in a tactical environment.
 - It has a 4.2 KW generator set for communication and lighting power.
 - It has a tent stowed *on* the rear top plate to extend the work area.
 - It is propelled and steered on land and in water by tracks.
 - It has M17 periscopes around the driver's hatch for vision when buttoned up.
 - It has an M19 periscope stowed near the driver. The periscope can be installed in driver's hatch to provide night vision under blackout conditions.
- It can be equipped to carry a NBC (gas particulate filter) unit, driver's windshield kit, engine coolant heater kit, and electronic equipment heater kit (for cold weather operation).

Operating procedures peculiar to the M577A2 Command Post Carrier are covered in Chapter 4.

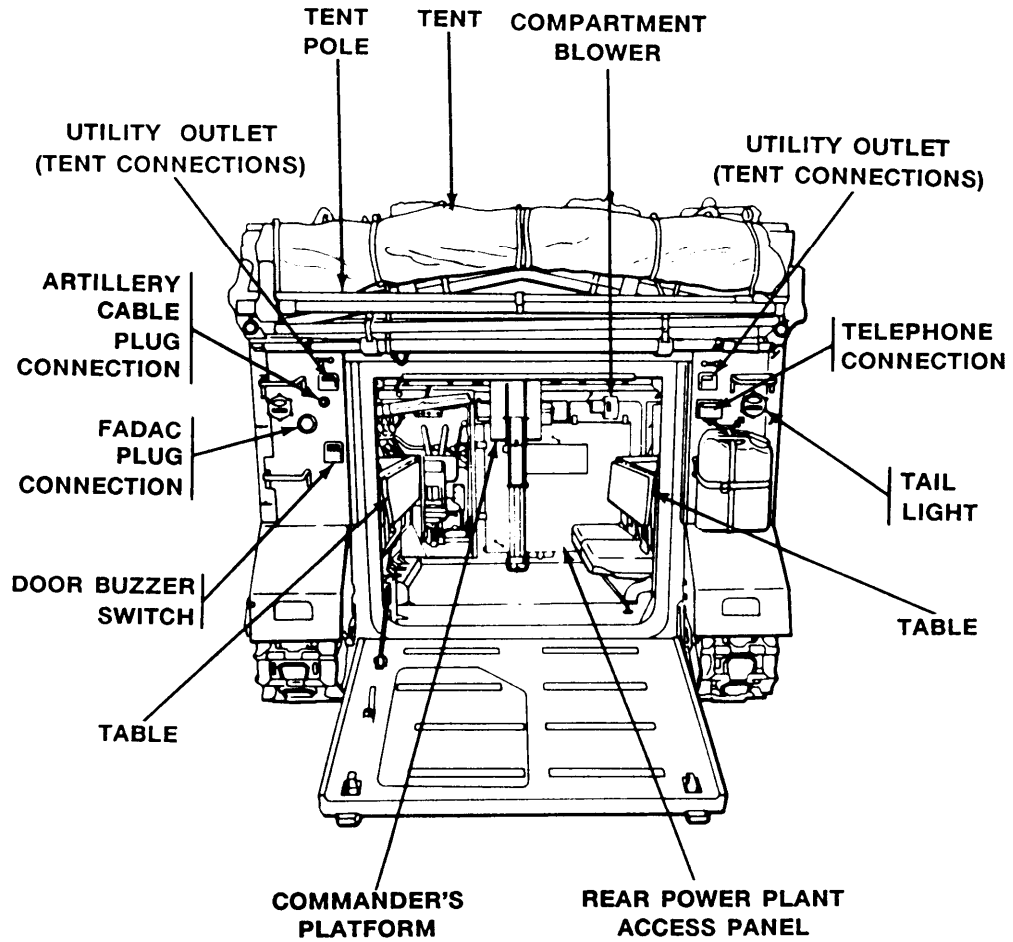
M577A2 COMMAND POST CARRIER — LEFT FRONT VIEW



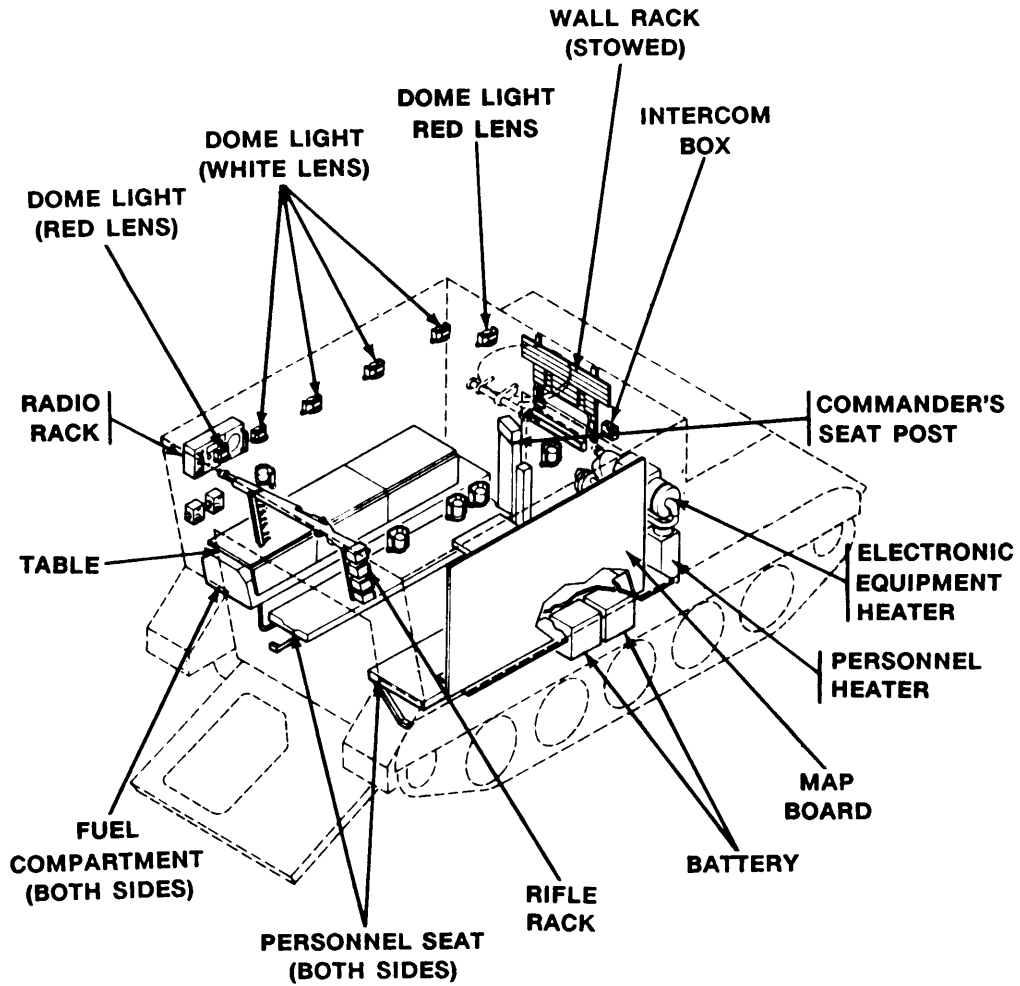
M577A2 COMMAND POST CARRIER — RIGHT REAR VIEW



M577A2 COMMAND POST CARRIER — REAR VIEW



M577A2 COMMAND POST CARRIER — REAR COMPARTMENT



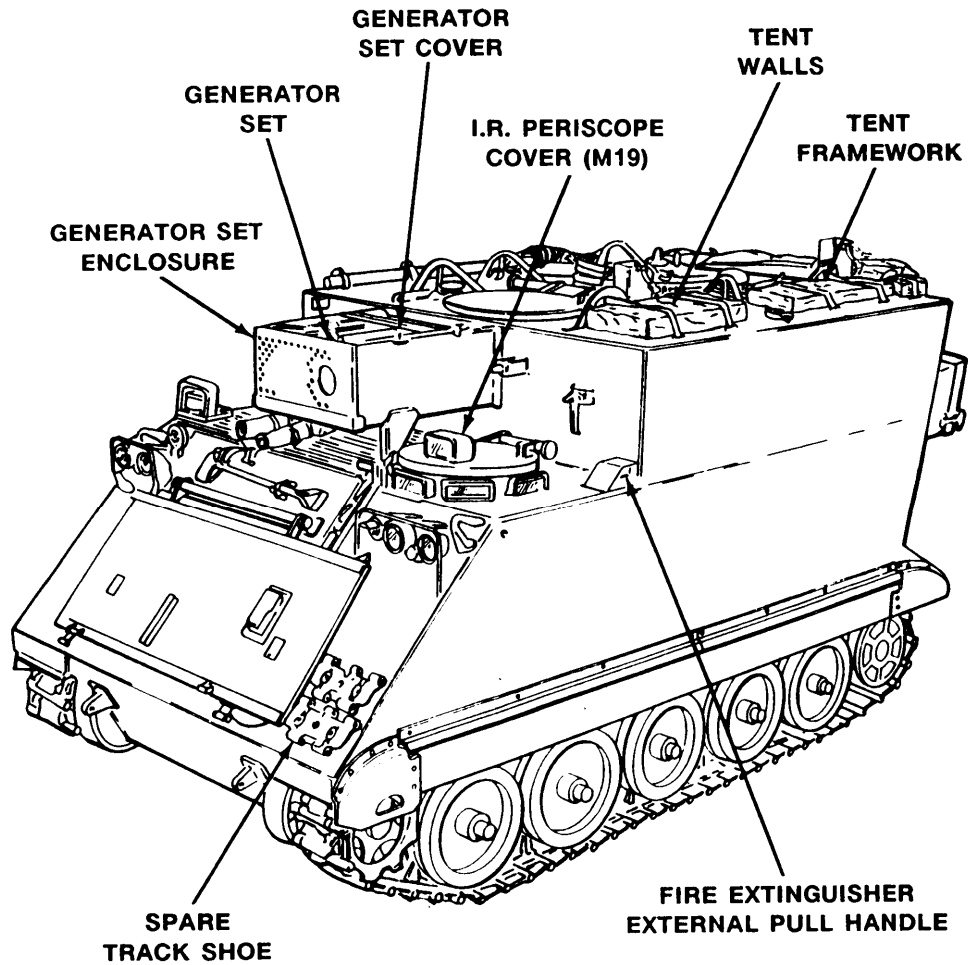
M1068 STANDARDIZED INTEGRATED COMMAND POST SYSTEM

This carrier is designed as a command post and staff office. It has a crew of four, including the driver. The M1068's capabilities and features are:

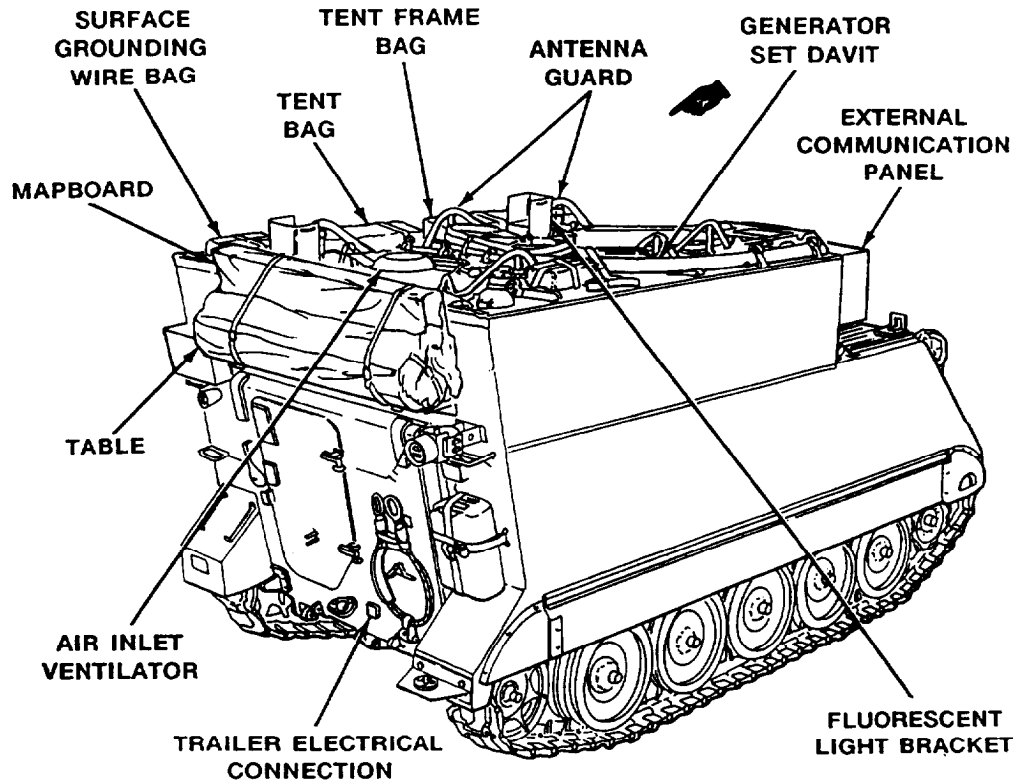
- It travels easily over rough terrain.
- It fords water up to 40 inches deep.
- It can move at high speeds on improved roads and highways.
- It is air transportable, but not parachute droppable.
- It provides protection for field commanders in a tactical environment.
- It has a 4.2 KW generator set for communication and lighting power.
- It has a tent stowed on the left side top plate to extend the work area.
- It is propelled and steered on land and in water by tracks.
- It has M17 periscopes around the driver's hatch for vision when buttoned up.
- It has an M19 periscope stowed near the driver. The periscope can be installed in driver's hatch to provide night vision under blackout conditions.
- It can be equipped to carry a NBC (gas particulate filter) unit, driver's windshield kit, and engine coolant heater kit (for cold weather operation).
- It has a power enclosure panel to provide AC & DC power to outlets around the interior of the vehicle.
- It has an external communications entry box.
- It has an external power entry box which provides the ability to receive or supply AC power and also contains a grounding lug for the surface wire grounding kit.
- It has two internal fluorescent work lights.

Operating procedures peculiar to the M1068 Standardized Integrated Command Post System are covered in Chapter 4.

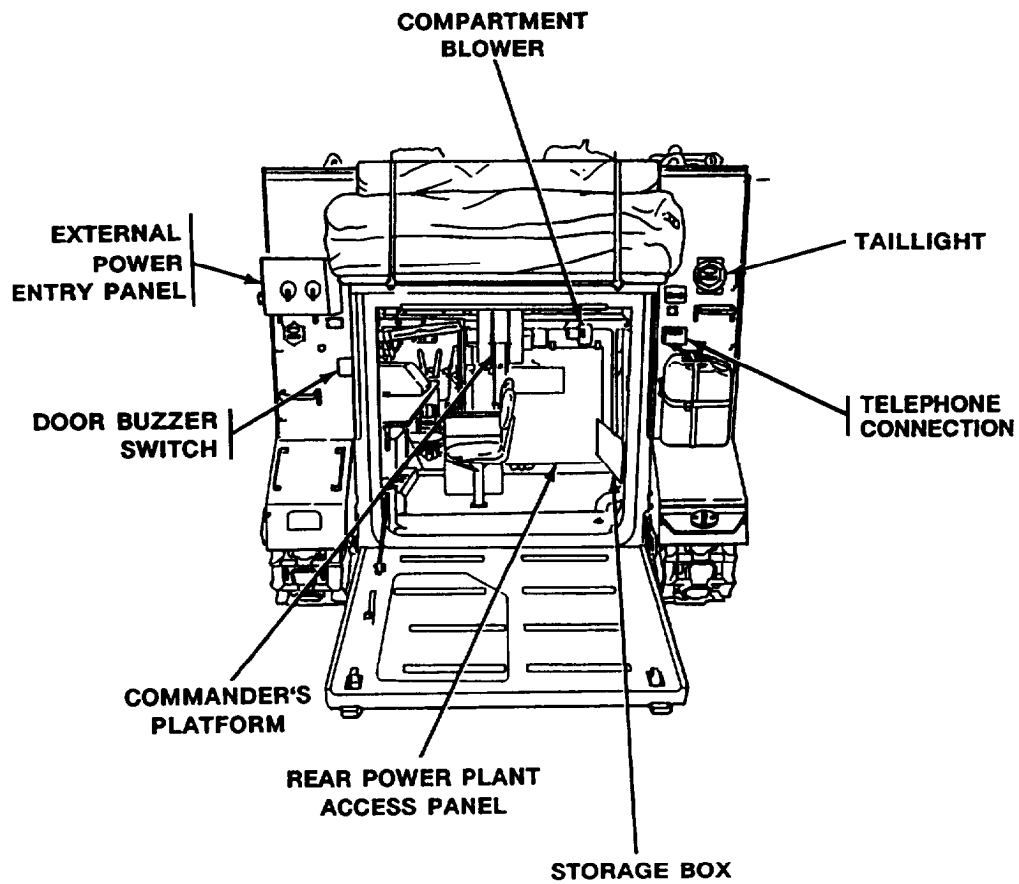
M1068 STANDARDIZED INTEGRATED
COMMAND POST SYSTEM — LEFT FRONT VIEW



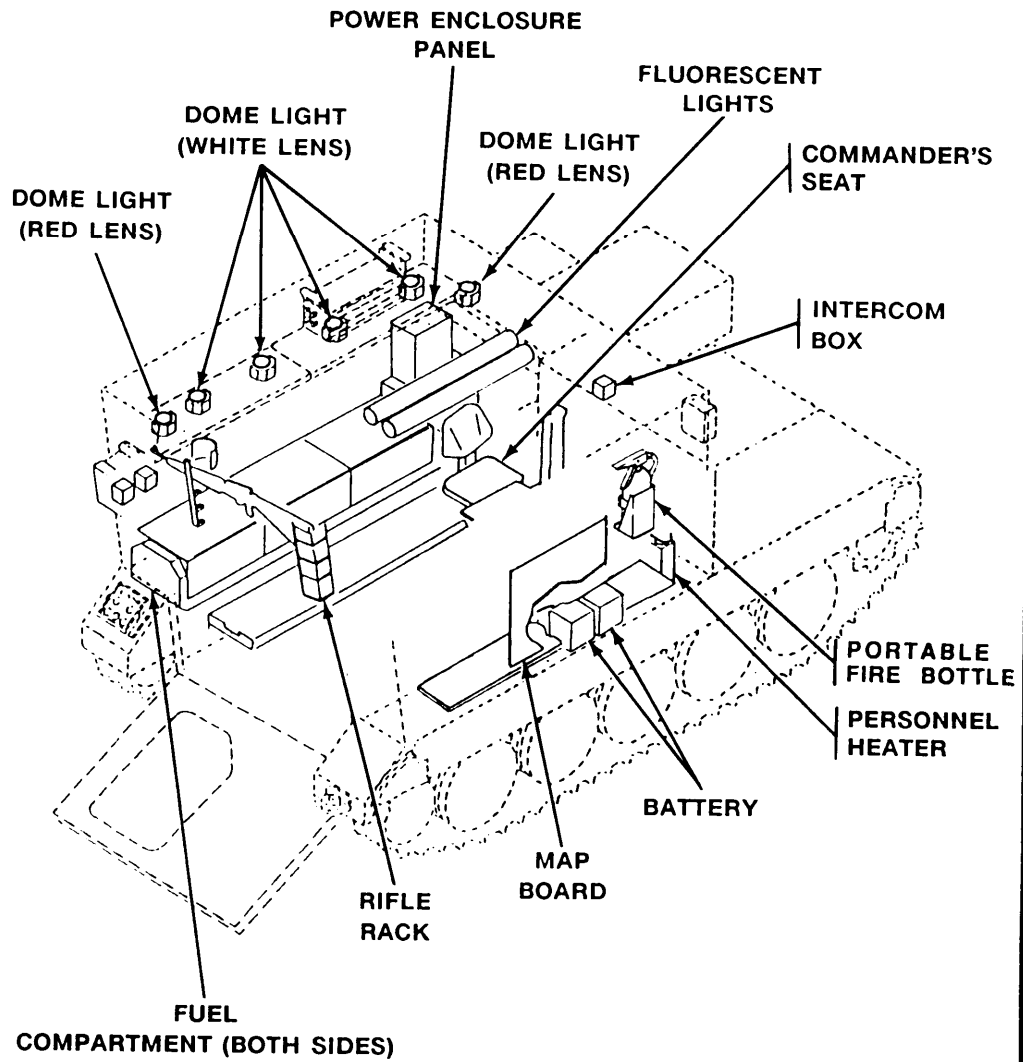
**M1068 STANDARDIZED INTEGRATED
COMMAND POST SYSTEM - RIGHT REAR VIEW**



**M1068 STANDARDIZED INTEGRATED
COMMAND POST SYSTEM - REAR VIEW**



M1068 STANDARDIZED INTEGRATED
COMMAND POST SYSTEM — REAR COMPARTMENT



M106A2 MORTAR CARRIER

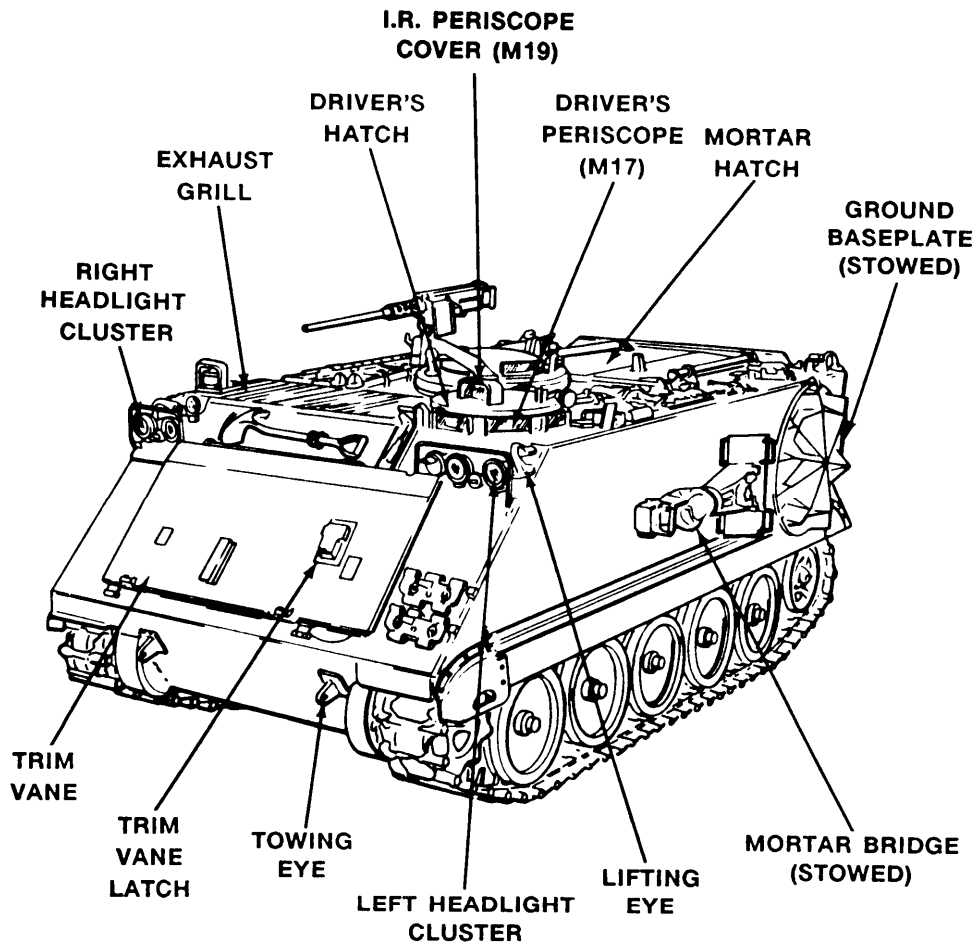
This carrier is designed to carry the 4.2-inch (107-mm) Mortar M30. The mortar can be fired from a turntable in the carrier, or removed and fired from a ground baseplate. The carrier has a crew of six, including the driver. The M106A2's capabilities and features are:

- It travels easily over rough terrain.
- It fords water up to 40 inches deep.
- It can move at high speeds on improved roads and highways.
- It is air transportable and can be dropped by parachute to troops in the field.
- It has an enlarged three-piece firing hatch. This permits mortar to be fired through an arc of 90 degrees over the rear of the carrier.
- It has a cupola with a caliber .50 machine gun.
- It is propelled and steered on land and in water by tracks.
- It has M17 periscopes around the driver's and commander's hatches for vision when buttoned up.
- It has an M19 periscope stowed near the driver. The periscope can be installed in the driver's hatch to provide night vision under blackout conditions.
- It can be equipped to carry a NBC (gas particulate filter) unit, a driver's windshield kit, an engine coolant heater kit, personnel heater kit (for cold weather operation), and an ammunition stowage adapter kit.

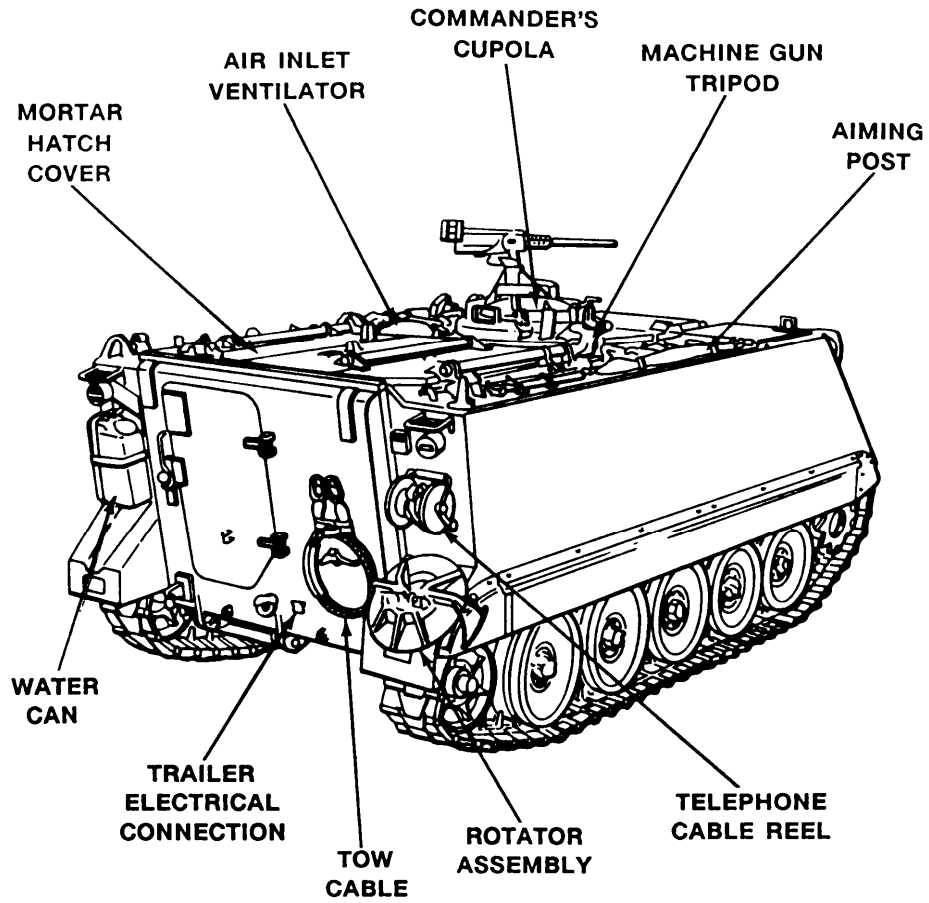
Operating procedures peculiar to the M106A2 Mortar Carrier are covered in Chapter 5.

The operation of the 107-mm, 4.2 inch Mortar, M30, used on the M106A2 Carrier is covered in TM 9-1015-215-10.

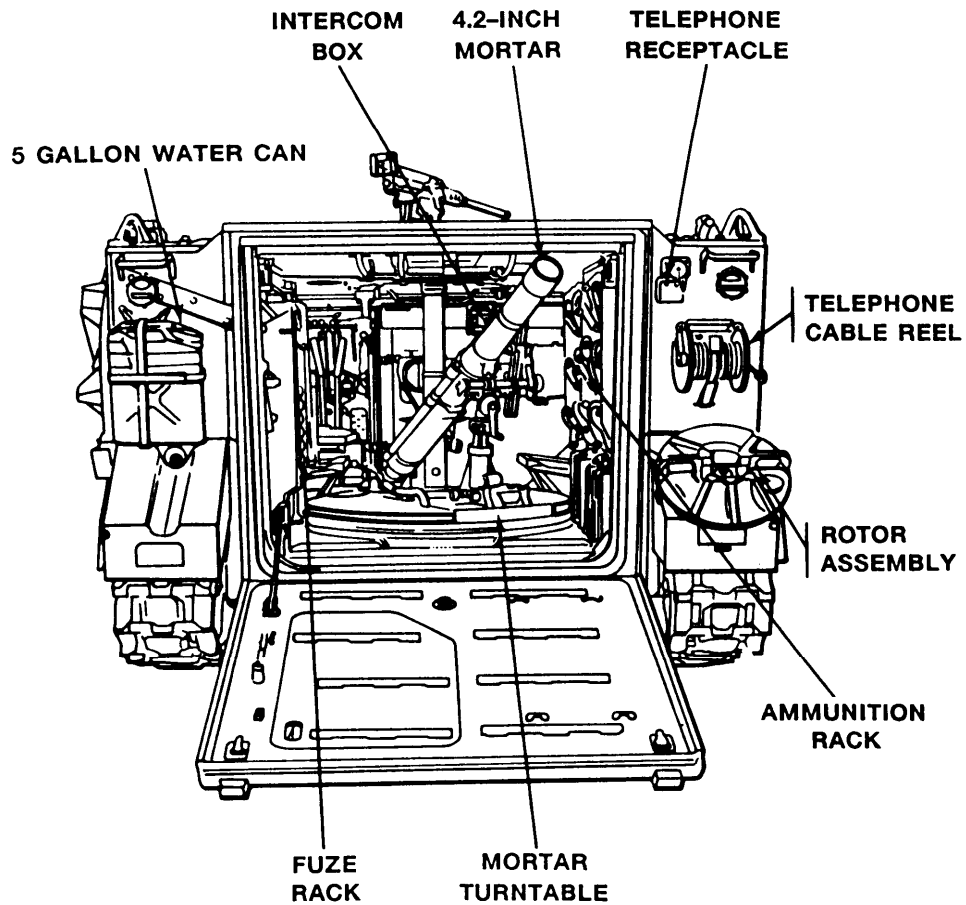
M106A2 MORTAR CARRIER — LEFT FRONT VIEW



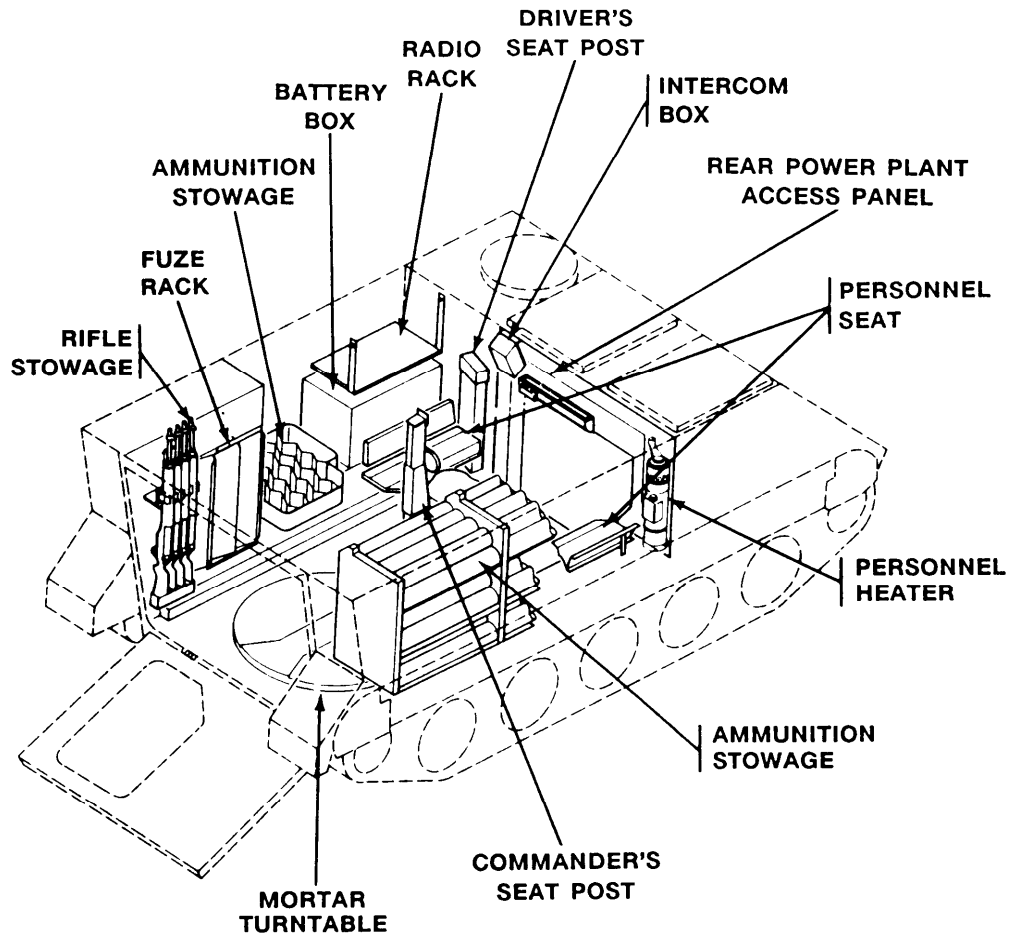
M106A2 MORTAR CARRIER — RIGHT REAR VIEW



M106A2 MORTAR CARRIER — REAR VIEW



M106A2 MORTAR CARRIER — REAR COMPARTMENT



M125A2 MORTAR CARRIER

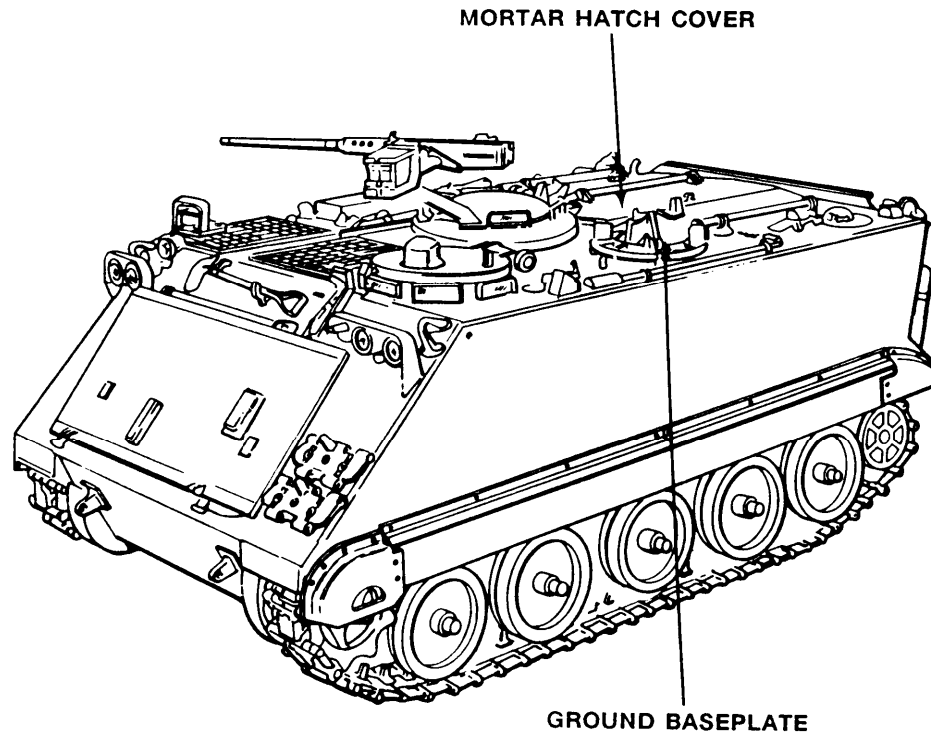
This carrier is designed to carry an 81-mm mortar cannon. The mortar can be fired from a turntable mounted in the carrier, or from a ground baseplate. The carrier has a crew of six, including the driver. The M125A2's capabilities and features are:

- It travels easily over rough terrain.
- It fords water up to 40 inches deep.
- It can move at high speeds on improved roads and highways.
- It is air transportable and can be dropped by parachute to troops in the field.
- It has an enlarged three-piece firing hatch. This permits the mortar to be fired a full 360 degrees.
- It has a cupola with a caliber .50 machine gun.
- It is propelled and steered on land and in water by tracks.
- It has M17 periscopes around the driver's and commander's hatches for vision when buttoned up.
- It has an M19 periscope stowed near the driver. The periscope can be installed in the driver's hatch to provide night vision under blackout conditions.
- It can be equipped to carry a NBC (gas particulate filter) unit, driver's windshield kit, engine coolant kit, and personnel heater kit (for cold weather operation).

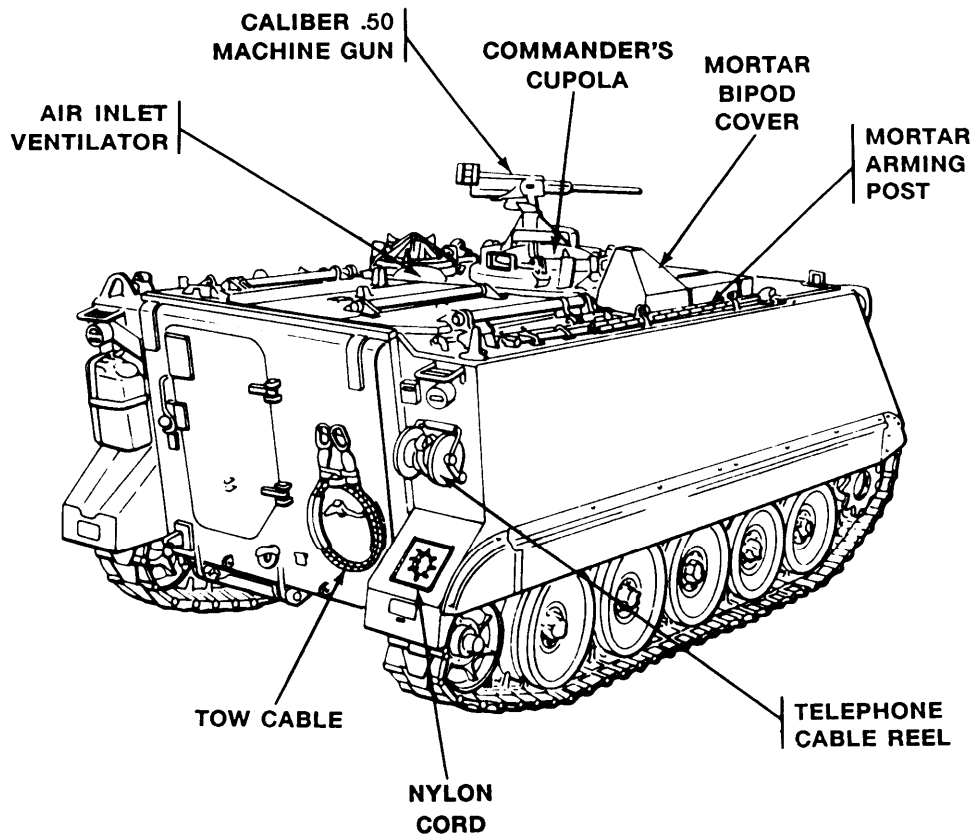
Operating procedures peculiar to the M125A2 Mortar Carrier are covered in Chapter 5.

The operation of the 81-mm Mortar, M29A1, used on the M125A2 Carrier, is covered in TM 9-1015-200-10.

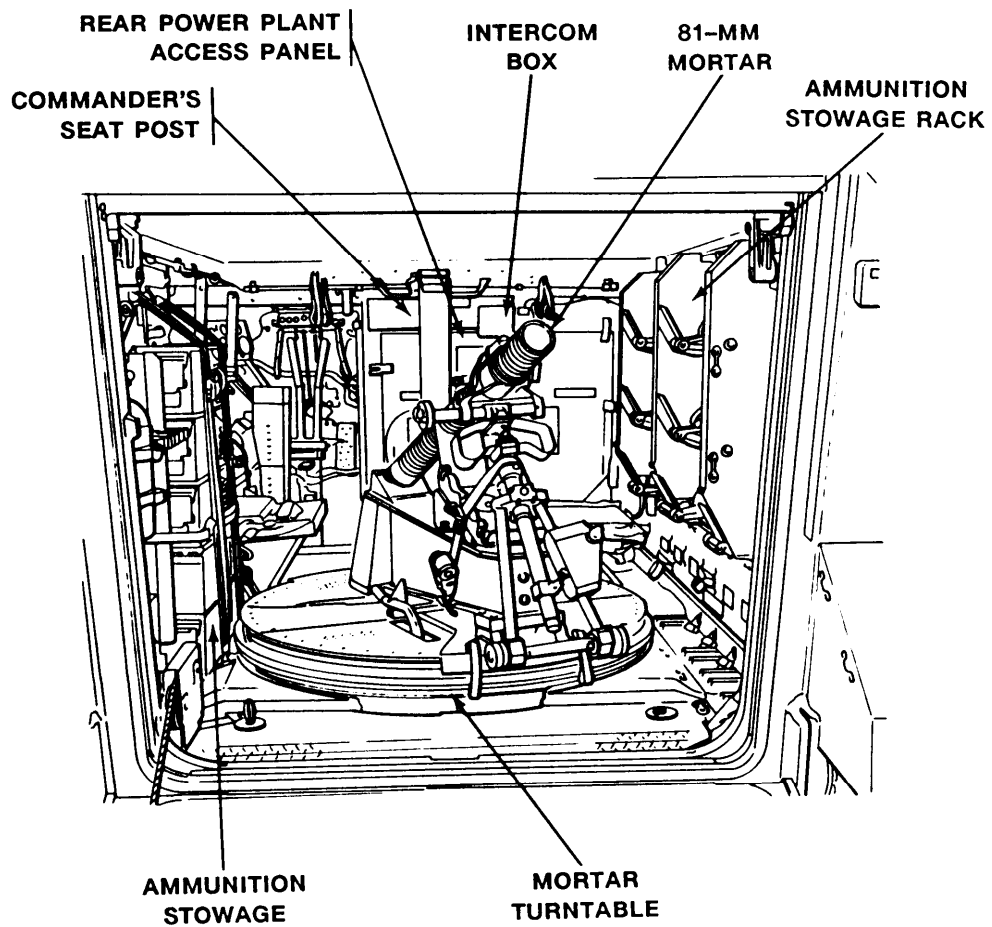
M125A2 MORTAR CARRIER — LEFT FRONT VIEW



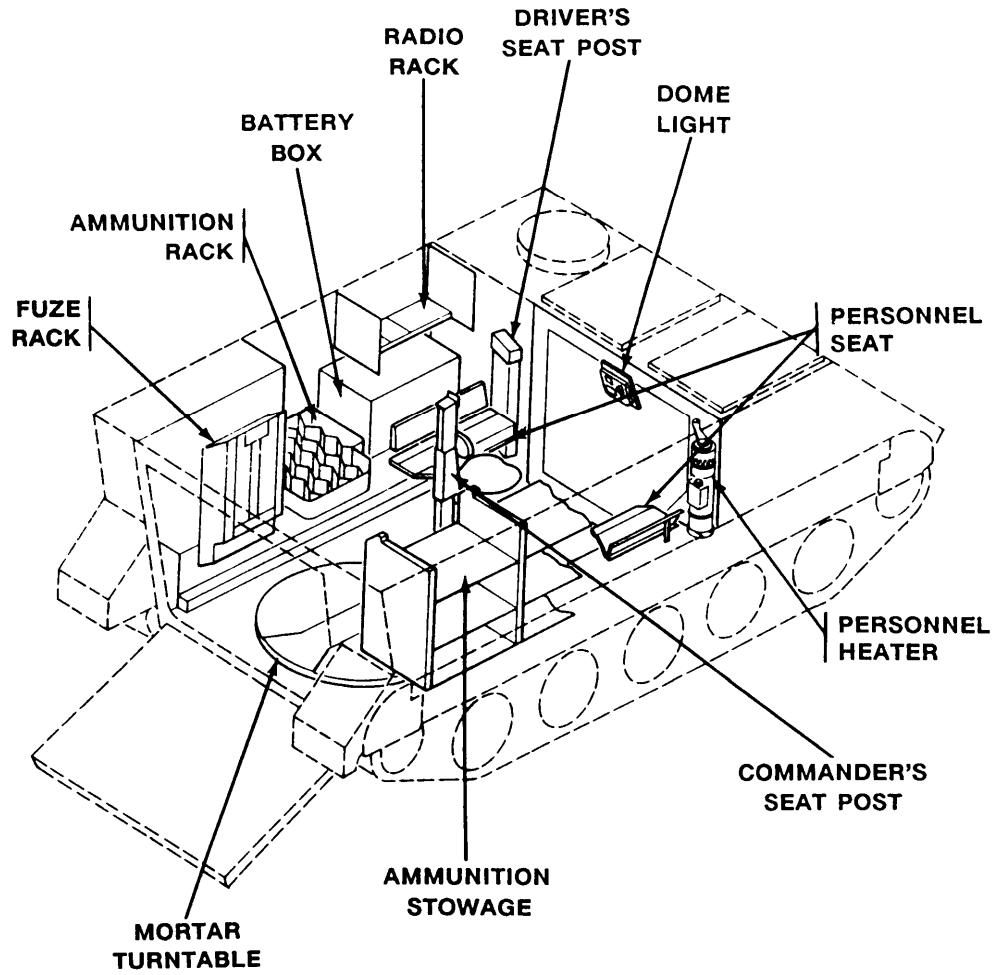
M125A2 MORTAR CARRIER — RIGHT REAR VIEW



M125A2 MORTAR CARRIER — REAR VIEW



M125A2 MORTAR CARRIER — REAR COMPARTMENT



M1064 MORTAR CARRIER

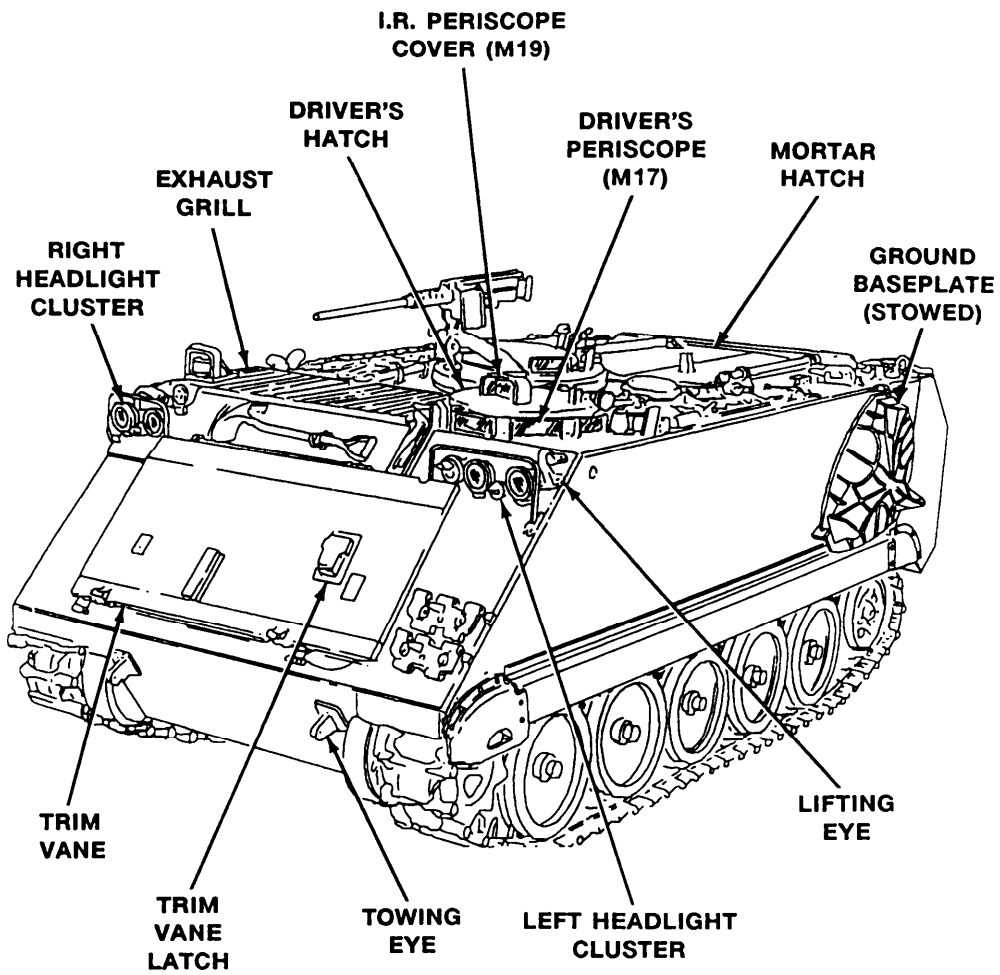
This carrier is designed to carry the 4.7 inch (120-mm) Mortar M121. The mortar can be fired from a turntable in the carrier, or removed and fired from a ground baseplate. The carrier has a crew of four, including the driver. The M1064's capabilities and features are:

- It travels easily over rough terrain.
- It fords water up to 40 inches deep.
- It can move at high speeds on improved roads and highways.
- It is air transportable and can be dropped by parachute to troops in the field.
- It has an enlarged three-piece firing hatch. This permits mortar to be fired through an arc of 90 degrees over the rear of the carrier.
- It has a cupola with a caliber .50 machine gun.
- It is propelled and steered on land and in water by tracks.
- It has M17 periscopes around the driver's and commander's hatches for vision when buttoned up.
- It has an M19 periscope stowed near the driver. The periscope can be installed in the driver's hatch to provide night vision under blackout conditions.
- It can be equipped to carry a NBC (gas particulate filter) unit, a driver's windshield kit, an engine coolant heater kit and personnel heater kit (for cold weather operation).

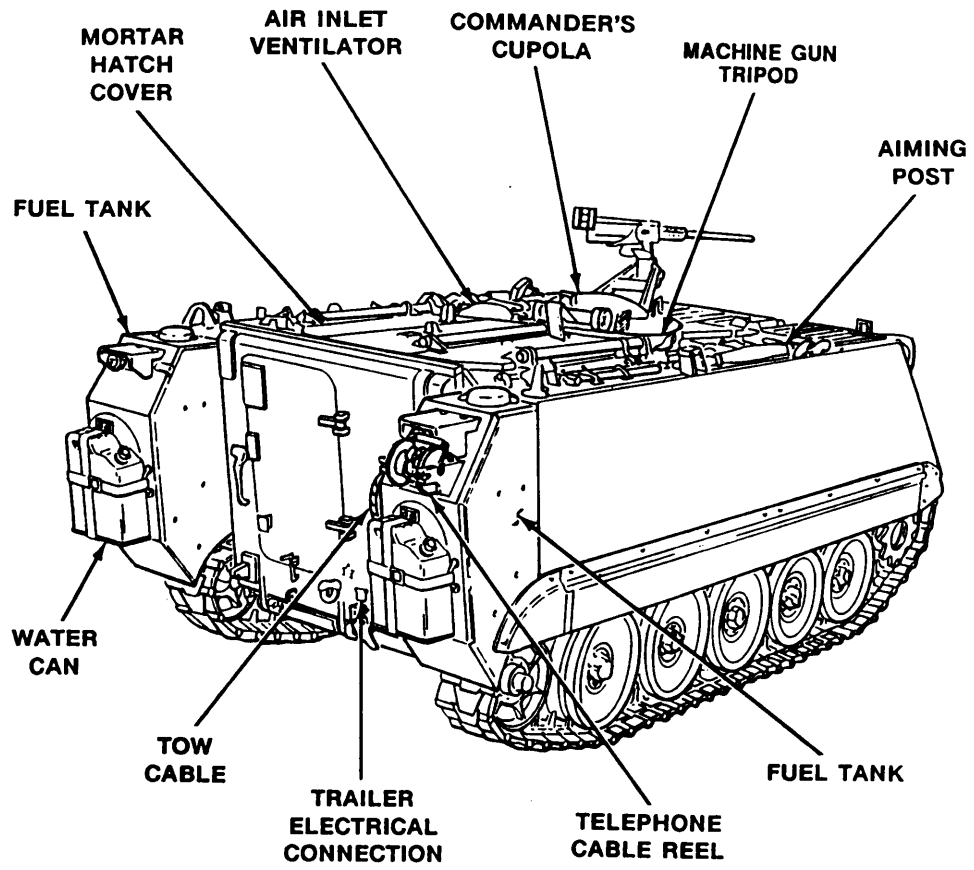
Operating procedures peculiar to the M1064 Mortar Carrier are covered in Chapter 5.

The operation of the 4.7-inch (120-mm) Mortar M121 used on the M1064 Carrier is covered in TM 9-1015-250-10.

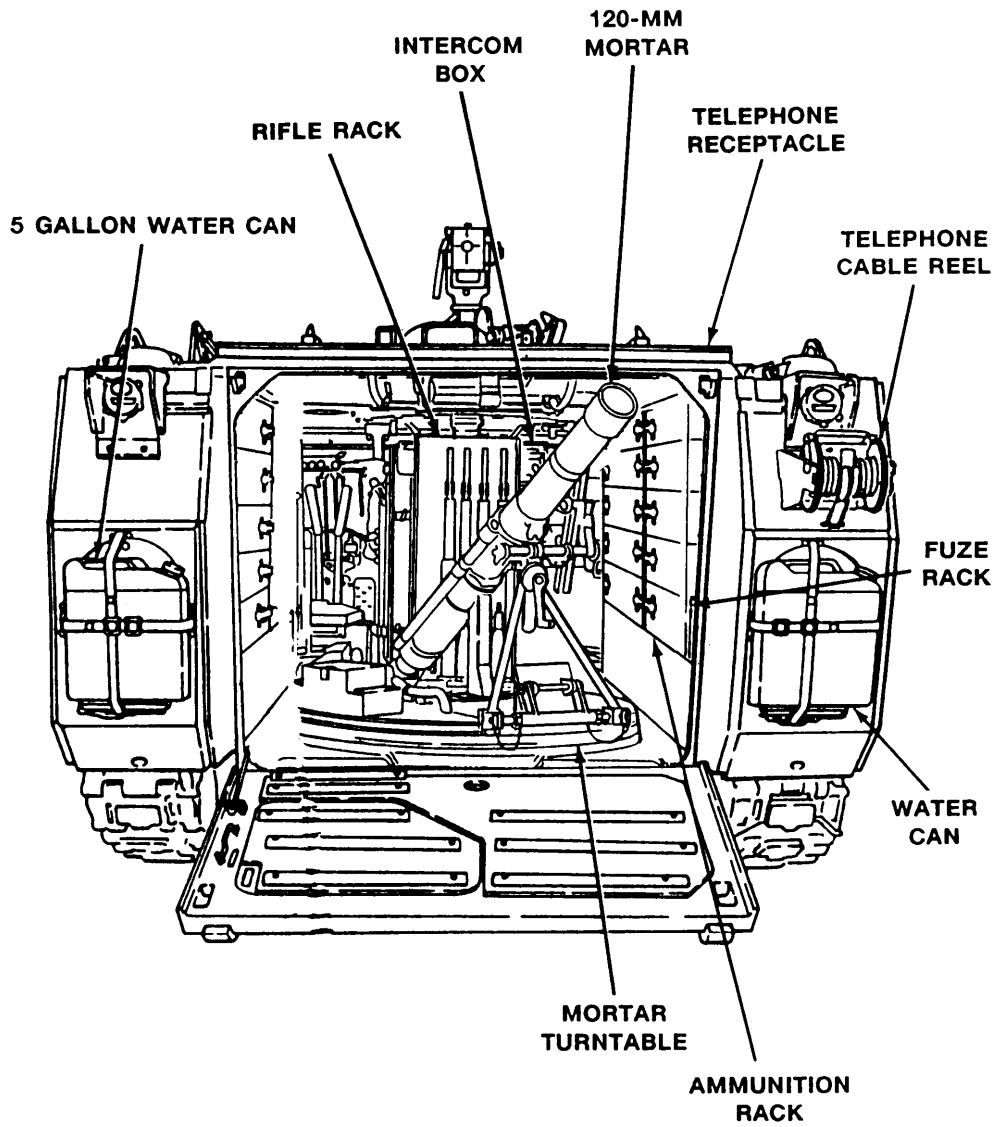
M1064 MORTAR CARRIER — LEFT FRONT VIEW



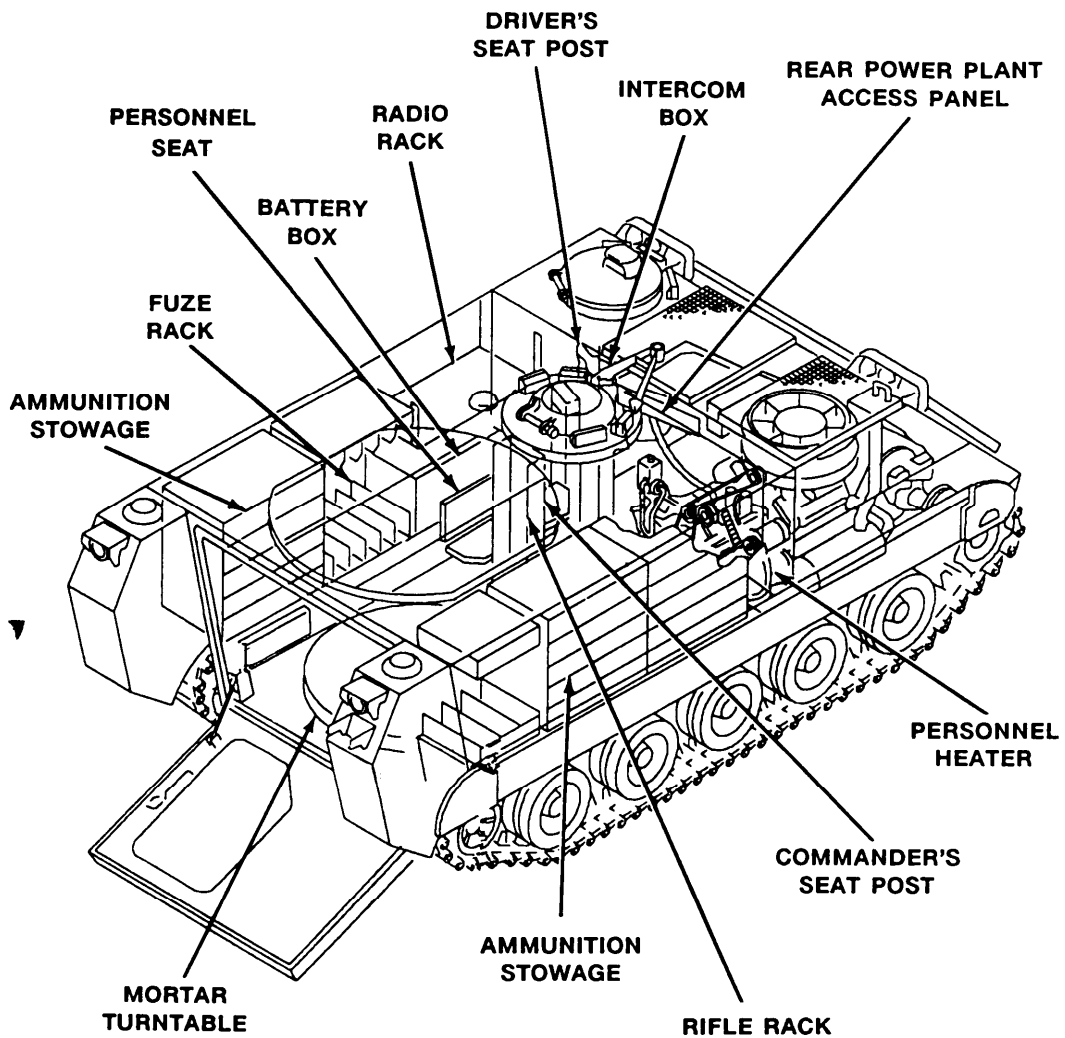
M1064 MORTAR CARRIER — RIGHT REAR VIEW



M1064 MORTAR CARRIER REAR VIEW



M1064 MORTAR CARRIER — REAR COMPARTMENT



Change 2

1-24.5 (1-24.6 blank)

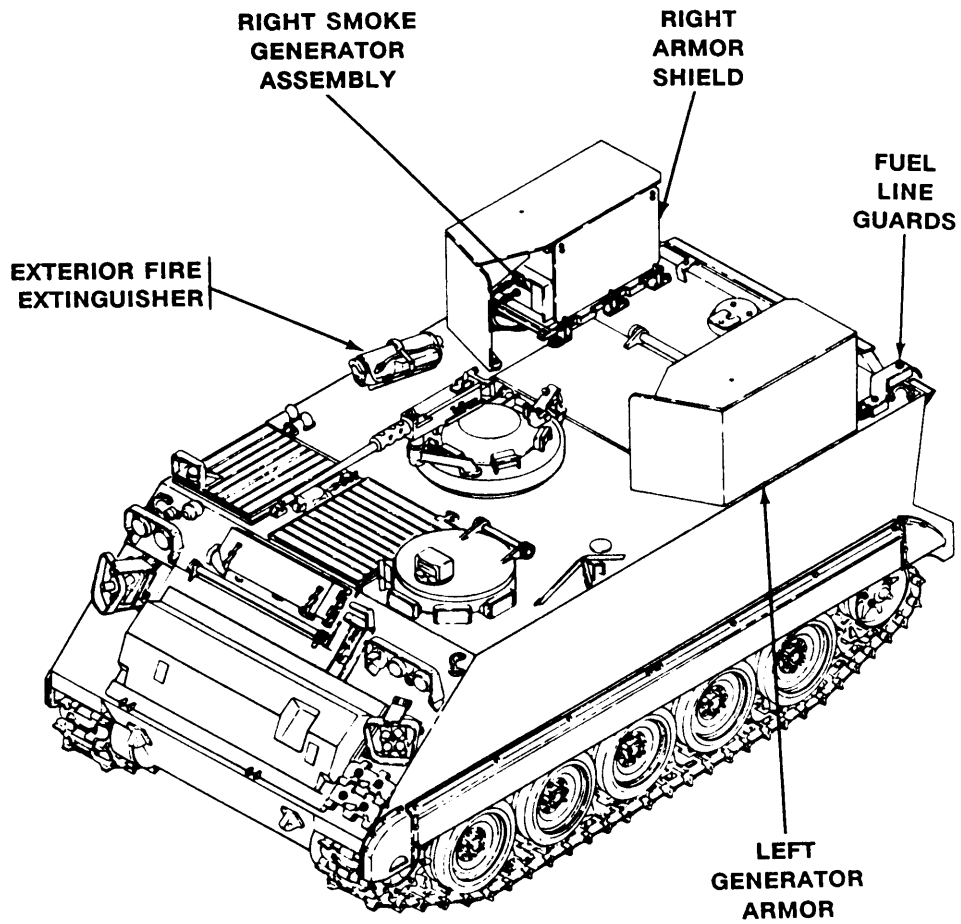
M1059 FULL TRACKED SMOKE GENERATOR CARRIER

This carrier is designed to generate a smoke screen in the battlefield environment. The M1059 carries a crew of three. A caliber .50 machine gun is mounted on a cupola on top of the carrier. The M1059's capabilities and features are:

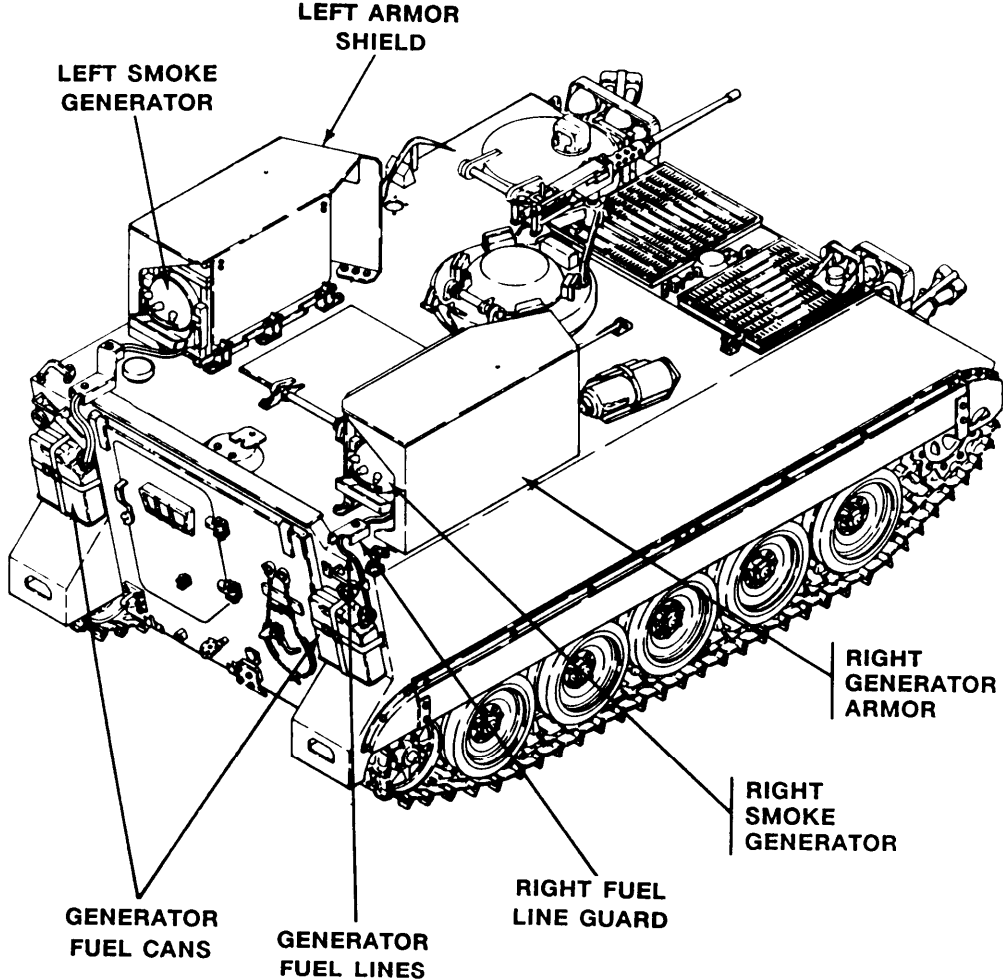
- It travels easily over rough terrain.
- It fords water up to 40 inches deep.
- It can move at high speeds on improved roads and highways.
- It is air transportable and can be dropped by parachute to troops in the field.
- It is propelled and steered on land and in water by tracks.
- It has M17 periscopes around the driver's and commander's hatches for vision when buttoned up.
- It has an M19 infrared periscope stowed near the driver. The periscope can be installed in the driver's hatch to provide night vision under blackout conditions.
- It is equipped with smoke grenade launchers.
- It is equipped to carry an NBC (gas particulate filter) unit, a driver's windshield kit, engine coolant heater kit, and personnel heater kit (for cold weather operation).
- It is equipped with the M157 smoke generator system with enough fuel and fog oil for 1 hour of continuous operation.
- It can be equipped to carry a marine set kit and a capstan kit.

Operating procedures peculiar to the M1059 Full Tracked Smoke Generator Carrier are covered in Chapter 6.

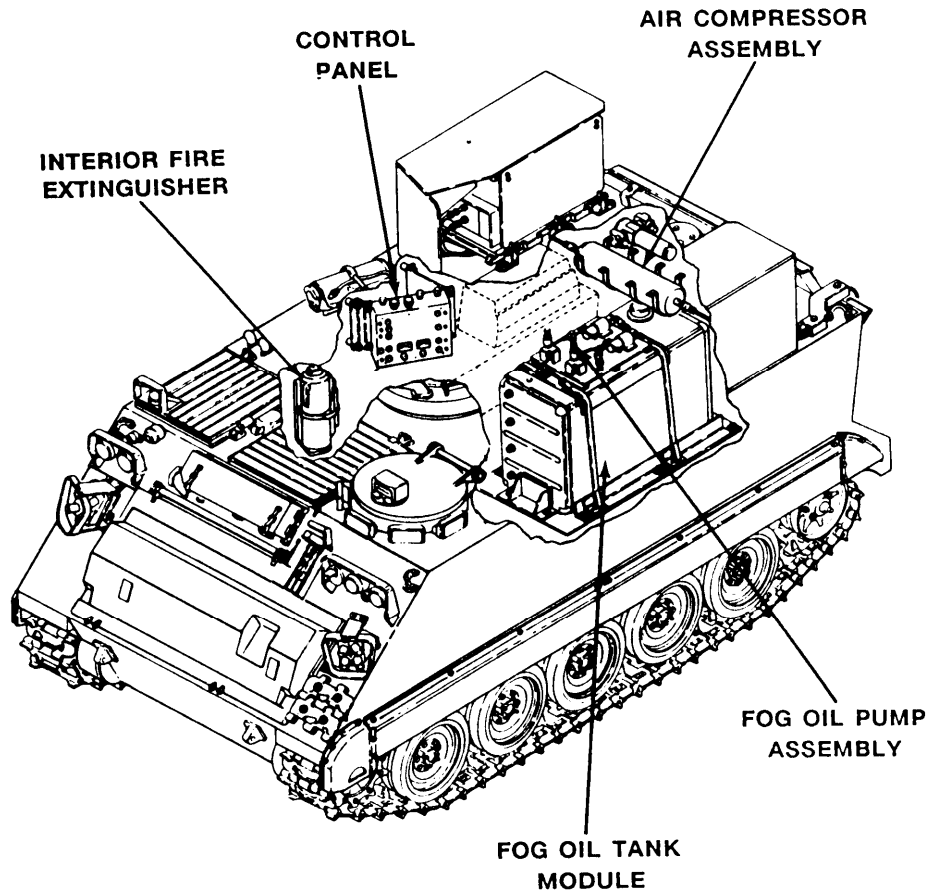
M1059 FULL TRACKED SMOKE GENERATOR CARRIER —
LEFT FRONT VIEW



M1059 FULL TRACKED SMOKE GENERATOR CARRIER -
RIGHT REAR VIEW



M1059 FULL TRACKED SMOKE GENERATOR CARRIER —
INTERIOR ARRANGEMENT



TABULATED DATA

a. General

Crew (including driver):

M113A2	13
M577A2	5
M106A2 and M125A2	6
M1059	3
M1064	4
M1068	4

b. Size

Length:

All earners expect M1064	191.00 in. (485.14 cm)
M1064	209.38 in. (531.83 cm)

Width:

Widest (overall)	105-3/4 in. (268.61 cm)
Narrowest (shrouds off	100 in. (254 cm)
M1064	83-3/4 in. (212.72 cm)

Height:

To top of machine gun pintle	
M113A2, M106A2, M125A2, and M1064	87-1/2 in. (222.25 cm)
To top of antenna guards	
M577A2 and M1068	106-1/2 in. (270.51 cm)

To top of smoke generator:

M1059	100-3/4 in. (255.91 cm)
Clearance above ground	17-1/8 in. (43.48 cm)

c. Weight

With full load (gross):

M113A2	25,007 lb (11,353 kg)
M577A2	25,813 lb (11,719 kg)
M106A2	26,876 lb (12,202 kg)
M125A2	25,256 lb (11,466 kg)
M1059	24,400 lb (11,077 kg)
M1064	27,635 lb (12,546 kg)
M1068	26,834 lb (12,182 kg)

Ground pressure (at gross):

M113A2	7.97 psi (54.9 kPa)
M577A2	8.22 psi (56.7 kPa)
M106A2	8.56 psi (59.0 kPa)
M125A2	8.05 psi (55.5 kPa)
M1059	7.77 psi (53.6 kPa)
M1064	8.77 psi (55.9 kPa)
M1068	8.52 psi (58.7 kPa)

TABULATED DATA (cont)

Bridge weight classification:	
Combat loaded.....	13
Empty	12

d. Center of Gravity

Above ground:

M113A2	39-3/4 in. (100.96 cm)
M577A2	44-3/8 in. (112.72 cm)
M106A2, M1064	39-11/16 in. (100.81 cm)
M125A2	39-1/16 in. (99.21 cm)
M1059	39 in. (99.06 cm)
M1068	44-3/16 in. (112.21 cm)

Distance behind center of sprockets

M113A2	82-5/8 in. (209.86 cm)
M577A2	81-3/8 in. (206.70 cm)
M106A2	81-1/2 in. (207.01 cm)
M125A2	79 in. (200.66 cm)
M1059	79 in. (200.66 cm)
M1064	83-3/4 in. (212.72 cm)
M1068	86-11/16 in. (219.96 cm)

e. Performance (land)

Fastest forward speed:

Range 1	10 mph (16 km/h)
Range 1-2	21 mph (34 km/h)
Range 1-3	40 mph (64 km/h)
Range 2-3	40 mph (64 km/h)

Cruising range at 25 mph average:

M113A2, M106A2, M125A2, M1059, M1064	300 m (480 km)
M577A2, M1068	425 m (680 km)

Steepest grade.....	60 percent
Steepest side slope.....	30 percent
Highest wall climb.....	2 ft. (0.7 m)
Widest trench.....	5-1/2 ft (1.67 m)
Maximum towed load	14,500 lb (6583 kg)

f. Performance (water)

Fastest forward speed.....	3.6 mph (5.79 km/h)
Fording depth	40 in. (101.6 cm)

g. Engine

Type	6 cylinder, V-type two-stroke Diesel
Horsepower	210 at 2800 rpm
Idle speed	650-700 rpm

Maximum governed speed:

Full load 2800 rpm
 No load..... 2950-3000 rpm

Normal operating temperature

range..... 160° to 230°F (71° to 110°C)

Cooling liquid cooled w/radiator and fan

Lubrication forced feed

Fuel:

DF-2 (VV-F-800) only at temperatures
 above 32°F (0°C)

DF-1 (VV-F-800) only at temperatures
 above -10°F (-23°C)

DF-A (VV-F-800) any temperature

CITE (MIL-F-46005) any temperature

Refill capacities

Coolant 14 gal (52.99 liter)

Radiator cap pressure rating... 13-18 psi (89.63-124.11 kPa)

Oil:

Engine 18 qt (17 liter)

Transmission 16 qt (15.11 liter)

Differential 20 qt (18.9 liter)

Transfer gearcase 2-1/2 qt (2.4 liter)

Final drive (each) 3-1/2 qt (3.3 liter)

Fan gearbox 1/2 pt (0.23 liter)

Diesel fuel:

Capacity:

M113A2, M106A2, M125A2, M1059, M1064 95 gal (359.6 liter)

M577A2, M1068 120 gal (456 liter)

Maximum filling rate 50 gpm (189.3 liter/m)

Ramp hydraulic system 2 qt (1.9 liter)

i M157 Smoke Generator (M1059 only)

Fuel gasoline (MIL-G-3056)

Capacity 10 gal (36.5 liter)

Consumption 6 gal/h (15 liter/h)

Fog oil SGF-2 (MIL-F-12070)

Capacity 120 gal (438 liter)

Consumption 60-100 gal/h (113 liter/h)

Operational temperature range -25° to +140°F (-32° to +60°C)

Normal operating temperature 650° to 950°F (343° to 510°C)

j Tracks

Track shoes, left (when new) 63

Track shoes, right (when new) 64

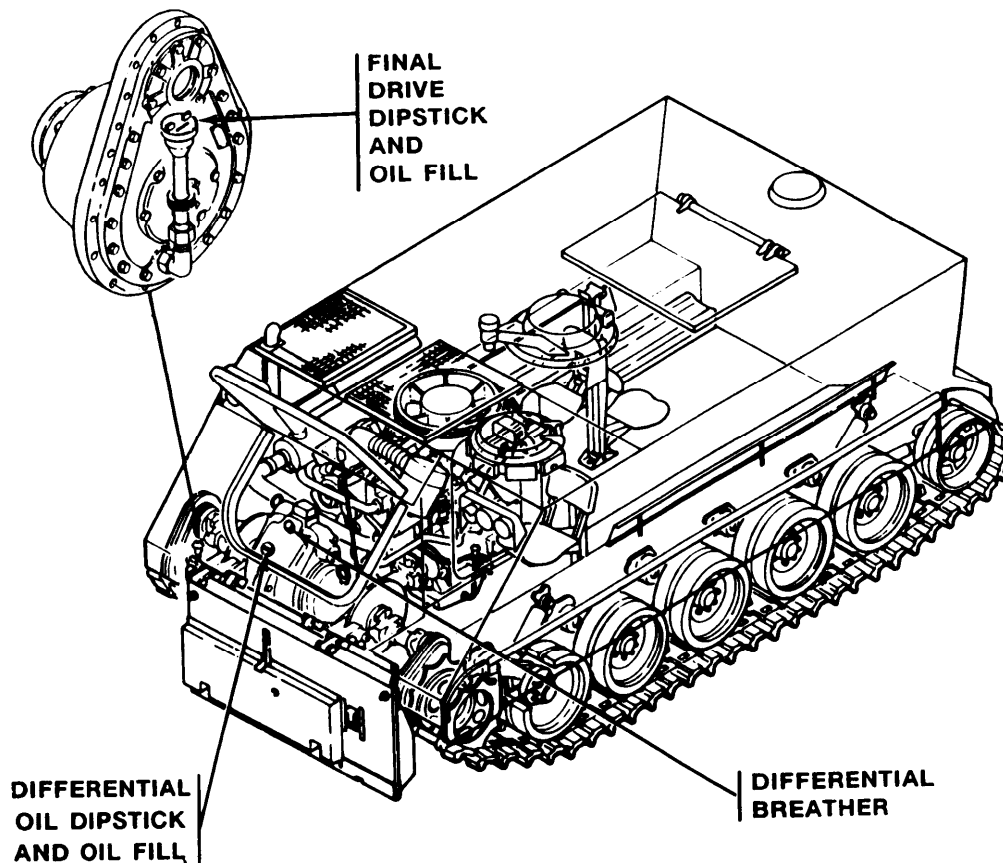
Section III. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

POWER PLANT COMPARTMENT — ALL CARRIERS

The power plant compartment is located in the front right of all carriers. It contains:

- Engine
- Transmission
- Transfer gearcase
- Differential.

Access to the power plant is through a front door, driver's compartment access panel, and rear compartment access panel. Access the differential, final drives dipsticks, and oil fills by opening front access door.

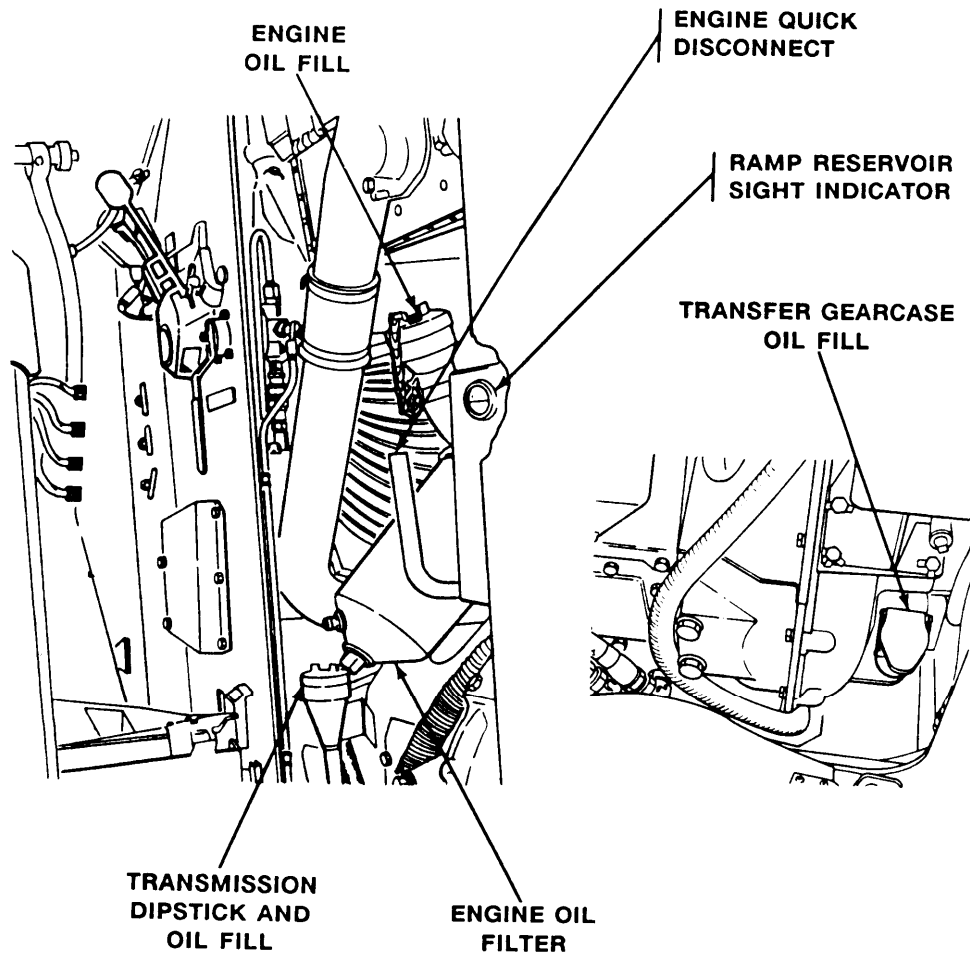


POWER PLANT COMPARTMENT — ALL CARRIERS (cont)

Removing the driver's compartment access panel provides access to the following:

- Engine oil fill
- Engine quick disconnect
- Ramp reservoir sight indicator
- Transfer gearcase oil fill
- Engine oil filter
- Transmission dipstick and oil fill
- Engine oil dipstick.

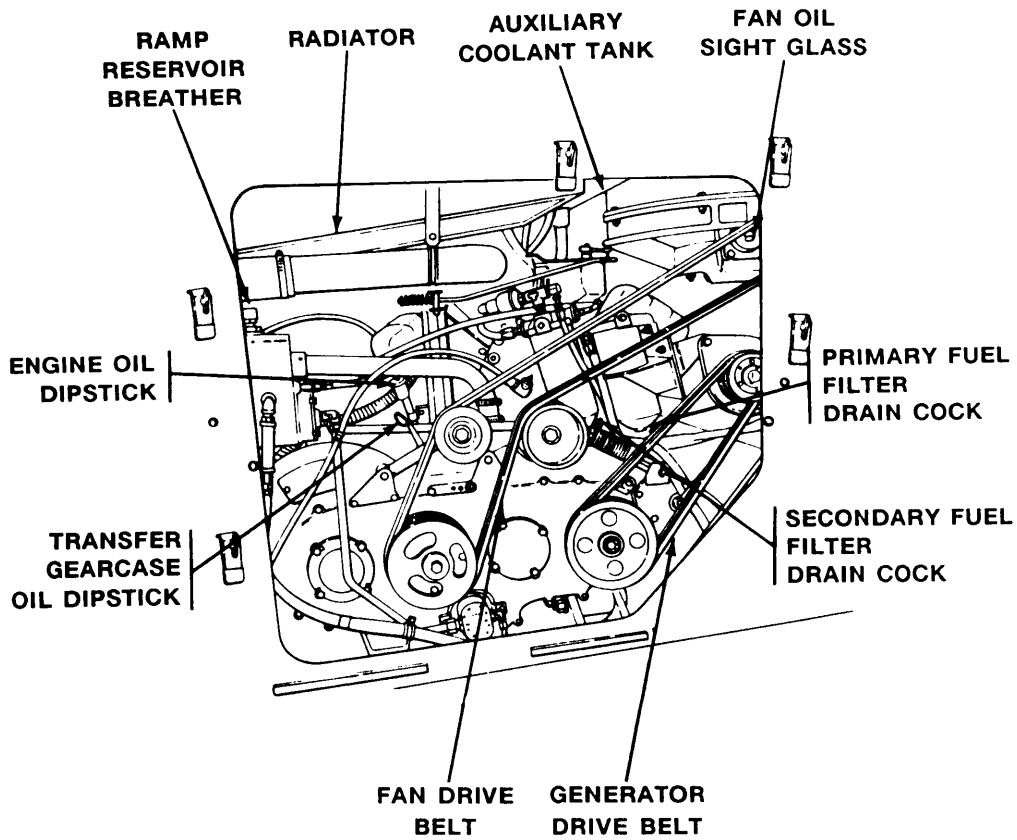
The engine oil dipstick can also be reached by removing the rear access panel.



POWER PLANT COMPARTMENT — ALL CARRIERS (cont)

Removing the rear compartment access panel provides access to the following:

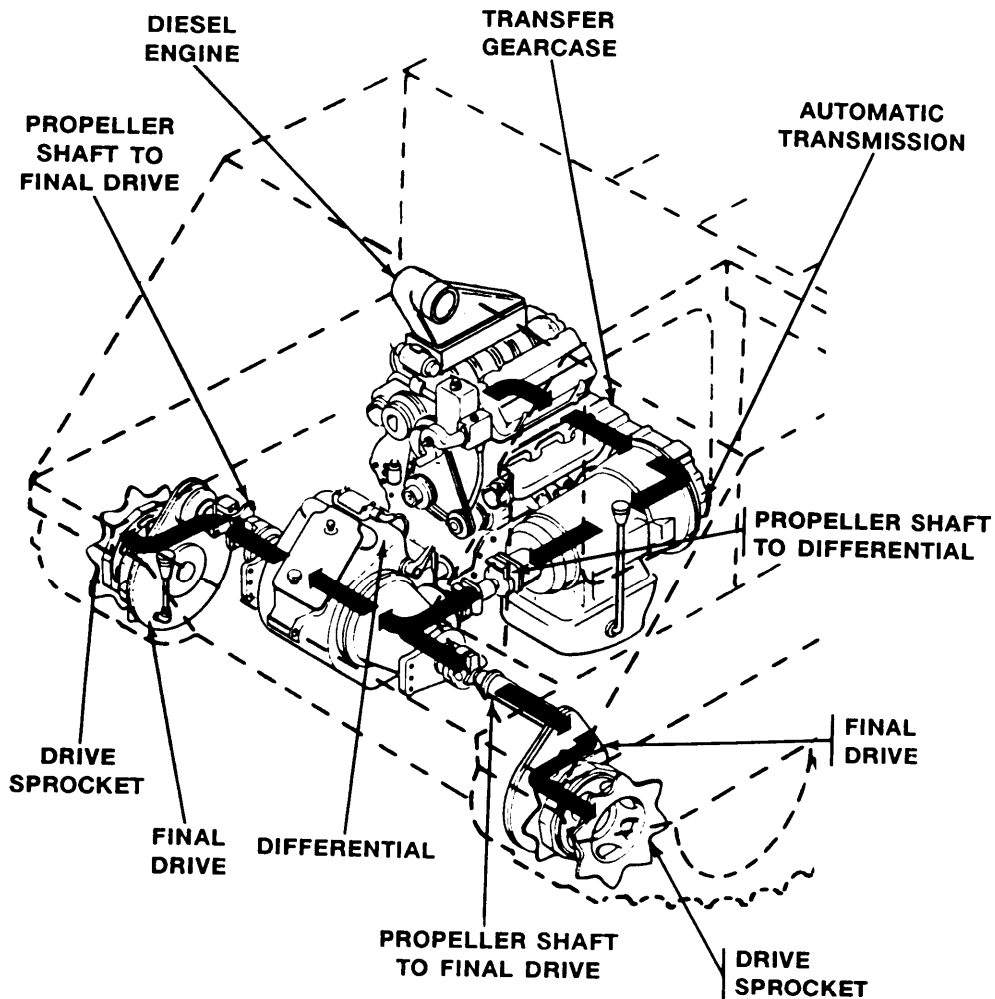
- Ramp reservoir breather
- Radiator
- Auxiliary coolant tank
- Fan oil sight glass
- Primary and secondary fuel filter drain cocks
- Generator drive belt
- Fan drive belt
- Transfer gearcase oil dipstick
- Engine oil dipstick.



POWER TRAIN — ALL CARRIERS

The power train consists of several major conneted components. These include:

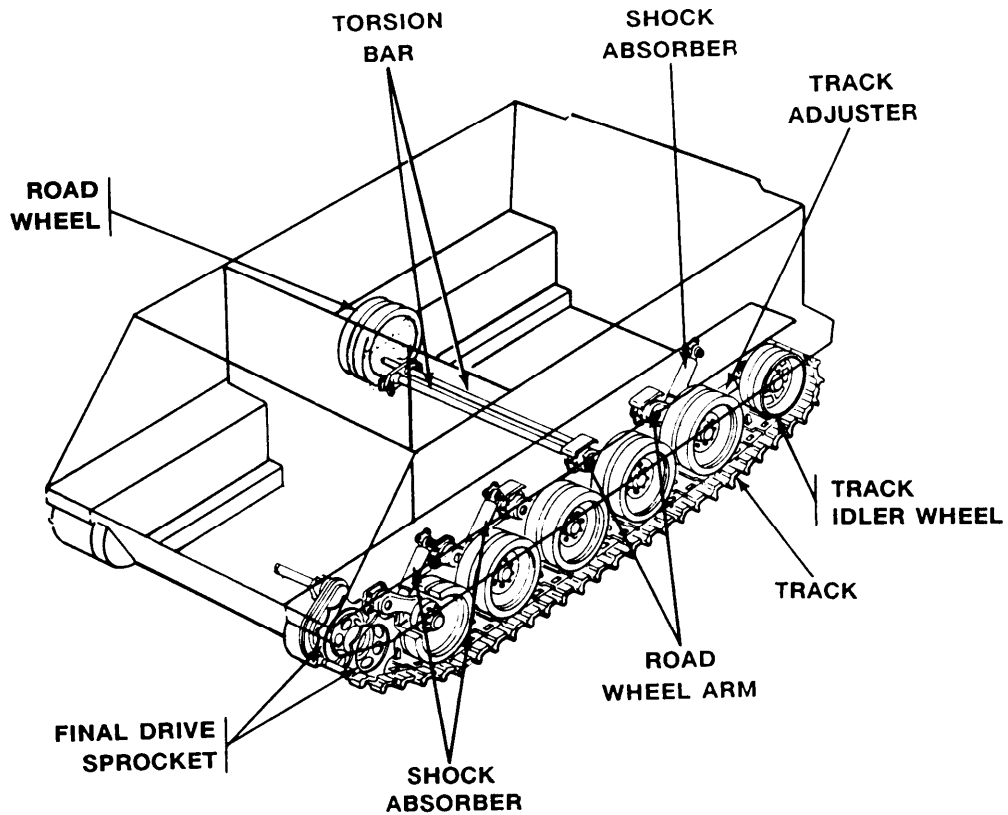
- 6V53 diesel engine — power source
- Transfer gearcase — transfers engine power to transmission
- Transmission — automatically selects correct gear range
- Propeller shaft — connects transmission to differential
- Differential — steers and brakes carrier
- Propeller shafts — connect final drives to differential
- Final drives — drive the track sprockets
- Final drive sprockets — power the tracks to move carrier.

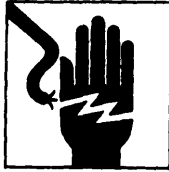


SUSPENSION SYSTEM — ALL CARRIERS

The carrier moves on its suspension system which includes the following components:

- Road wheels — ten on each side to support weight of carrier
- Road wheel arms — five on each side splined to individual torsion bars to suspend carrier
- Torsion bars — firmly anchored to carrier to keep road wheels on ground
- Tracks — on each side driven by final drive sprockets to propel carrier
- Track adjusters — secured to idler wheels to maintain track tension
- Shock absorbers — at first, second, and fifth road wheels to stabilize carrier.



POWER ENTRY BOX ASSEMBLY — M1068 ONLY**WARNING**

When using external power, ensure proper grounding procedures are followed. Failure to do so may result in personal injury and/or damage to the equipment. See TM 11-7010-256-12&P for installing surface wire grounding system.

WARNING

HIGH VOLTAGE is used in the operation of this equipment

DEATH ON CONTACT may result if personnel fail to observe safety precautions.

NEVER work on equipment unless at least one other person familiar with the operation and hazards of the equipment is nearby. That person should also be competent in giving first aid. When an operator helps a technician, that operator must be warned about dangerous areas.

SHUT OFF POWER supply to equipment before beginning work. When working inside equipment with power off, take special care to ground every capacitor likely to hold a dangerous potential.

BE CAREFUL not to contact high-voltage connections when installing or operating this equipment.

KEEP one hand away from the equipment to reduce the hazard of current flowing through life-sustaining organs of the body.

The power entry box assembly, located at the upper rear roadside exterior corner of the carrier, along with cable W1 (external power input pigtail), and cable W2 (external A.C. power cable) provides the ability to receive or supply A.C. power. A workstation can be powered by using the on-board generator, external power source, or the carrier's charging system.

The assembly has connections for A.C. power out and external power in. By connecting either cable W 1 or W2 to the assembly connections, the carrier can act as an alternate power source or receive power from some other alternate power source.

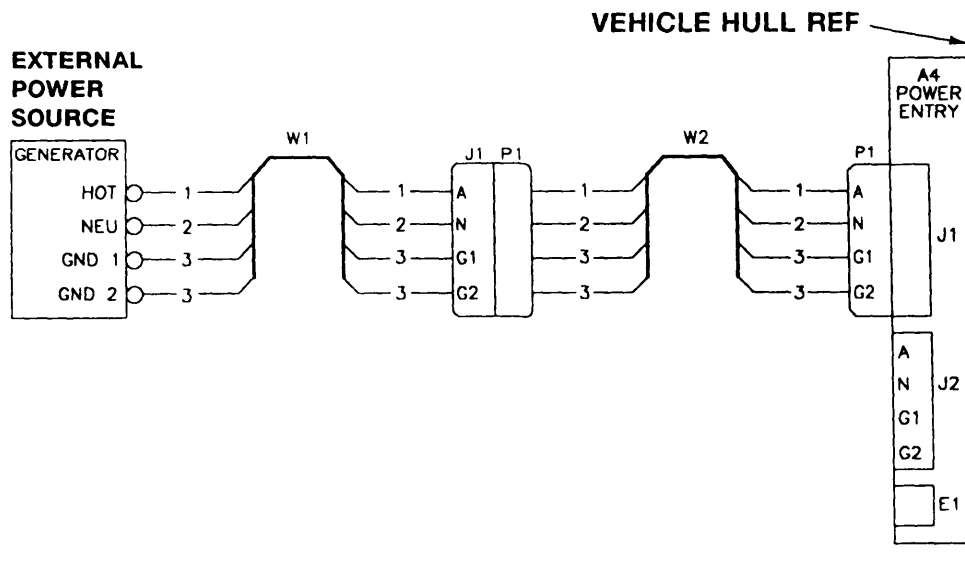
Cable W1 and W2 are located just behind the generator on top of the carrier. Cable 2 has connectors on both ends which allow it to be connected between other systems. Cable W1 has a connector on one end and pigtailed (loose wires) on the other end. This allows connection to power sources other than a common system. Cables W 1 and W 2 can also be connected in series when additional length is required.

Connections for cable W1 pigtailed are:

Items in parenthesis identify labels on each wire.

- Circuit 1 to HOT (Power)
- Circuit 2 to Neutral (Neutral)
- Circuit 3 to Ground 1 (GND 1)
- Circuit 3 to Ground 2 (GND 2)

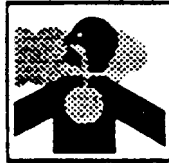
When operating on earner power, only essential systems should be operated to avoid overloading the power requirements.



ENGINE COOLING AND AIR INDUCTION - ALL CARRIERS

Air for engine combustion and cooling is drawn through the intake grill and radiator. Air sweeps down around the power plant and out through the exhaust grill above the fan. An air control valve allows driver a choice of drawing air from the rear compartment or power plant compartment for the engine. During operation, air in the power plant compartment warms up (becomes less dense). Drawing cooler (more dense) air from the rear compartment gives the engine a boost in horsepower. When the vent is open to draw from the crew compartment, less air is being drawn through the radiator. In hot climates, it should only be opened for short periods. The air cleaner is equipped with a restriction indicator to inform the driver when the element needs cleaning.

WARNING

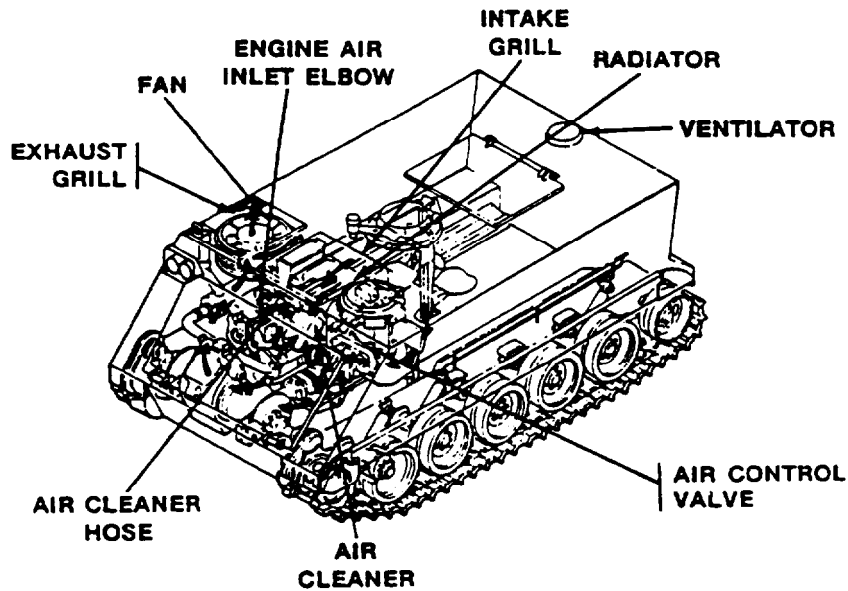


Failure to open ventilator, when operating carrier with all hatches closed,

will result in a serious lack of oxygen.

CAUTION

Avoid overheating of components during operation. Keep power plant door, access plates, and panels closed tightly for correct air flow.



MATERIAL USED WITH CARRIERS

Various kits can be applied to your carrier to prepare it for particular missions or operating conditions. Each kit is described and illustrated on the following pages. If you have the or more of these kits on board, be sure to check the PREVENTIVE MAINTENANCE CHECKS AND SERVICES (page 2-30). See chapters 4, 5, and 6 for operation of kits peculiar to the M577A2, M106A2, and M1059. These kits include:

- Personnel Heater Kit - All Carriers
- Engine Coolant Heater Kit - All Carriers
- Electronic Equipment Heater Kit - M577A2 Only
- Hospital Litter Kit - M113A2 Only
- Windshield Kit - All Carriers
- ● NBC Systems M8A3, M13, and M14 (NBC Kit) - All Carriers Except M1064
- Capstan and Anchor Kits - M113A2 and M1059
- Smoke Grenade Launcher Kit - M113A2 and M1059
- Ammunition Stowage Adapter Kit - M106A2 Only

PERSONNEL HEATER KIT — ALL CARRIERS. Provides heat to the rear compartment and driver's compartment during cold weather. It circulates warm air from the fresh air heater mounted in the right front corner of the rear compartment. A heat duct along the front floor is manually controlled to direct the heat. Heater intake air is drawn from outside. The exhaust is vented through the top deck. The heater control box is mounted to the left of the driver. It has a three-position RUN-OFF-START switch, HI-LO switch, and indicator light.

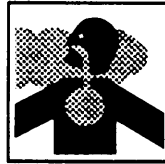
WARNING



Inspect heater fuel lines for leaks. DO NOT operate heater with a bad fuel line. You could

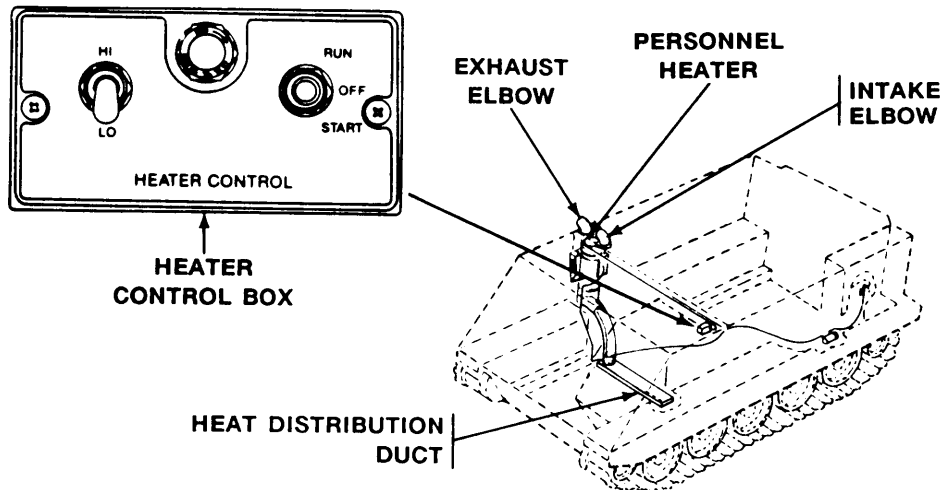
be badly burned.

WARNING

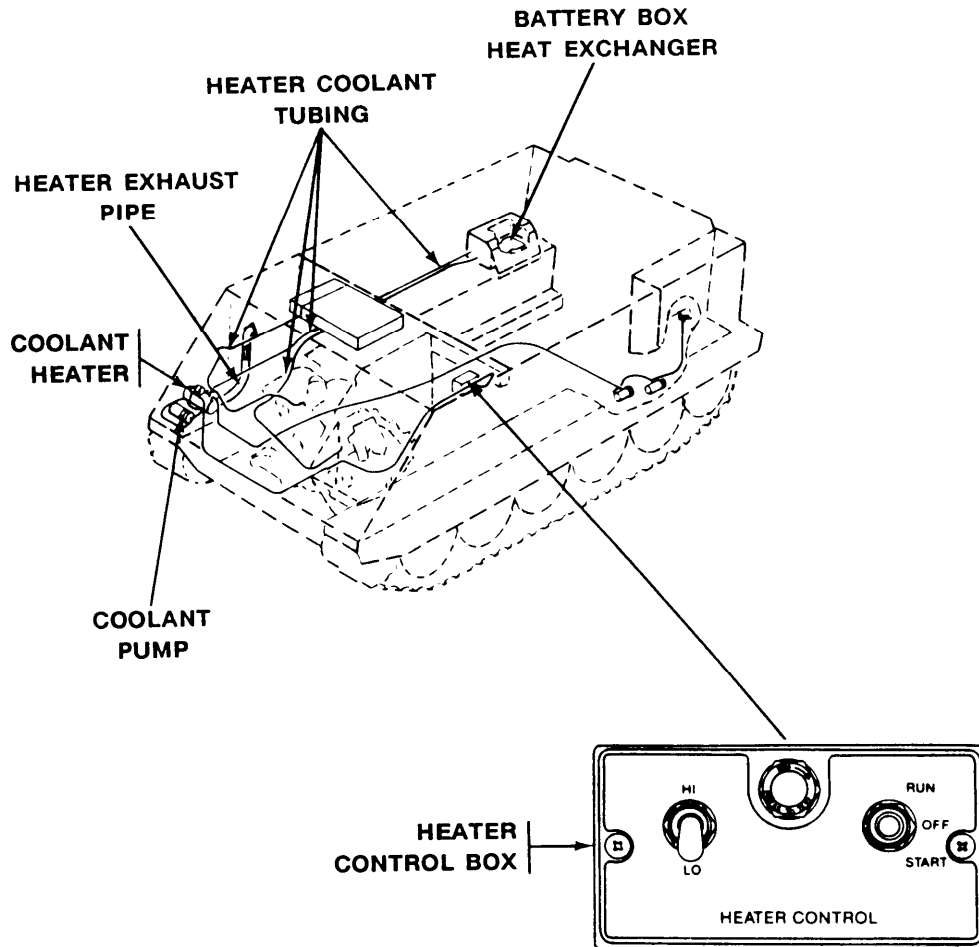


Heater exhaust fumes contain deadly poisonous gases. Severe exposure can

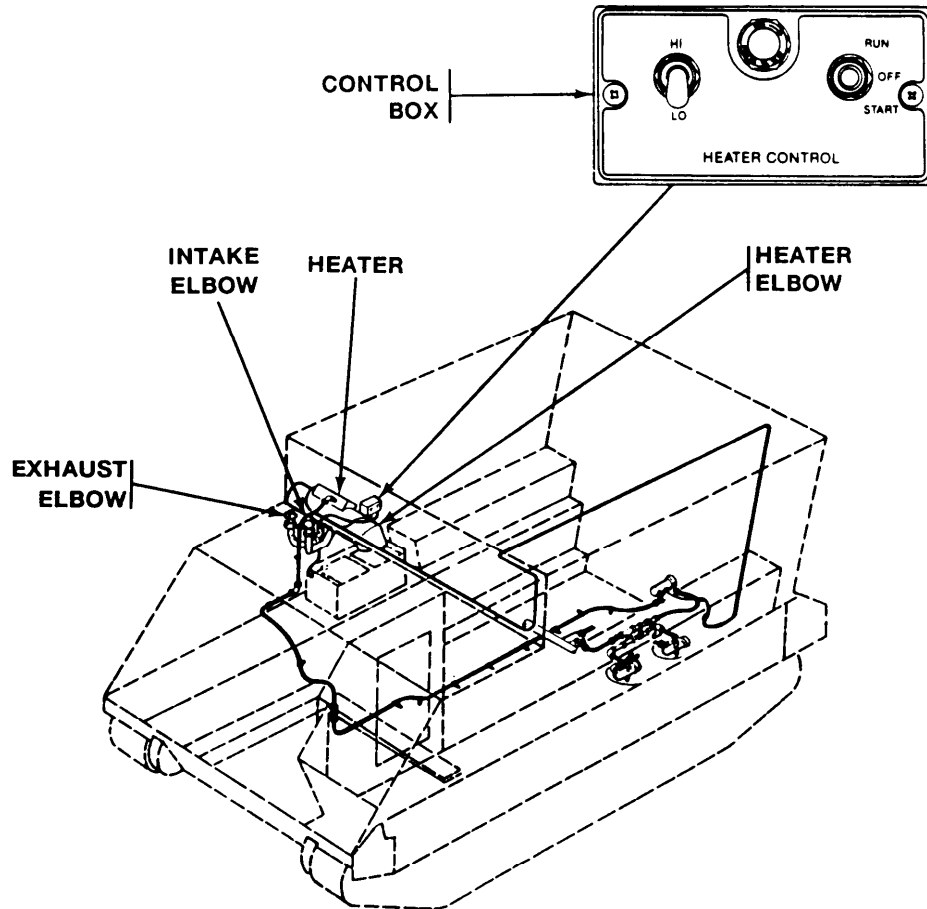
cause death or permanent brain damage. Turn heater off if you smell or suspect exhaust gas inside personnel compartment.



ENGINE COOLANT HEATER KIT — ALL CARRIERS. Heats and circulates coolant through the engine and battery box heat exchanger. After stopping a warm engine, the heater is started. It will keep engine oil, engine block, and batteries warm for 12 hours and permit restarting engine. The coolant heater is mounted in the power plant compartment. A coolant pump circulates coolant through tubing to the engine and battery box heat exchanger. The control box is mounted to the left of the driver. It has a three-position RUN-OFF-START switch, HI-LO switch, and indicator light. Coolant shutoff valves, at heater and engine block, control flow of coolant into heater.



ELECTRONIC EQUIPMENT HEATER KIT — M577A2 ONLY. Provides heat to the communication equipment carried by a command post. This heater is an addition to the personnel heater on all M577A2 carriers. Both heaters help maintain compartment temperature above +40°F (+4°C). This is necessary for the electronic equipment. The heater is mounted on the underside of the right front communication rack. An elbow directs the air flow toward the equipment. The heater intake air is drawn from outside. The exhaust is vented through the top deck. The heater control box, mounted next to the heater, has a three-position RUN-OFF-START switch, HI-LO switch, and indicator light.



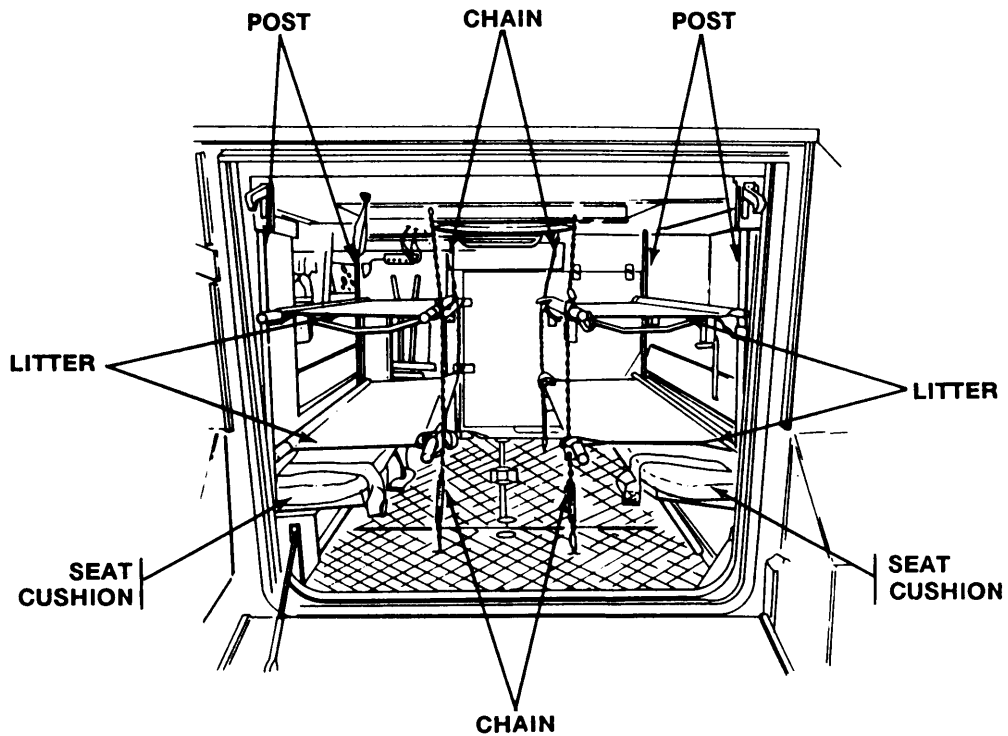
HOSPITAL LITTER KIT — M113A2 ONLY. Converts the M113A2 carrier into an ambulance to carry sick or wounded personnel. The kit has four support posts and four chains. These can be attached to brackets and eyes in the rear compartment. When in place, the posts support two litters on each side above the personnel seats.

WARNING

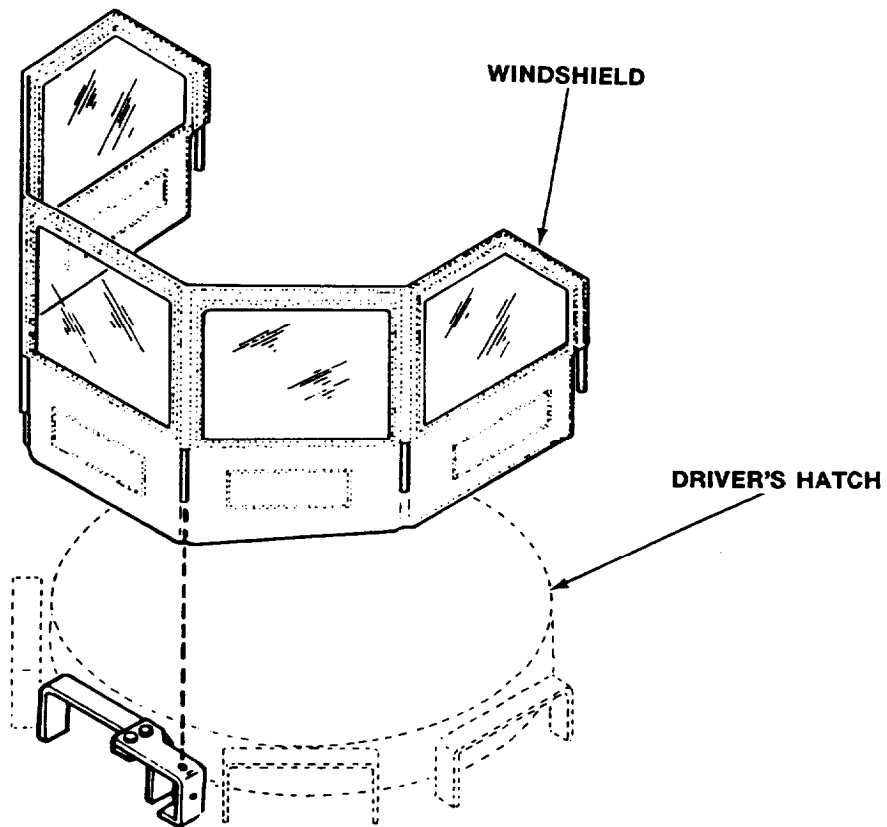


Remove machine gun and all ammunition when operating M113A2 as a

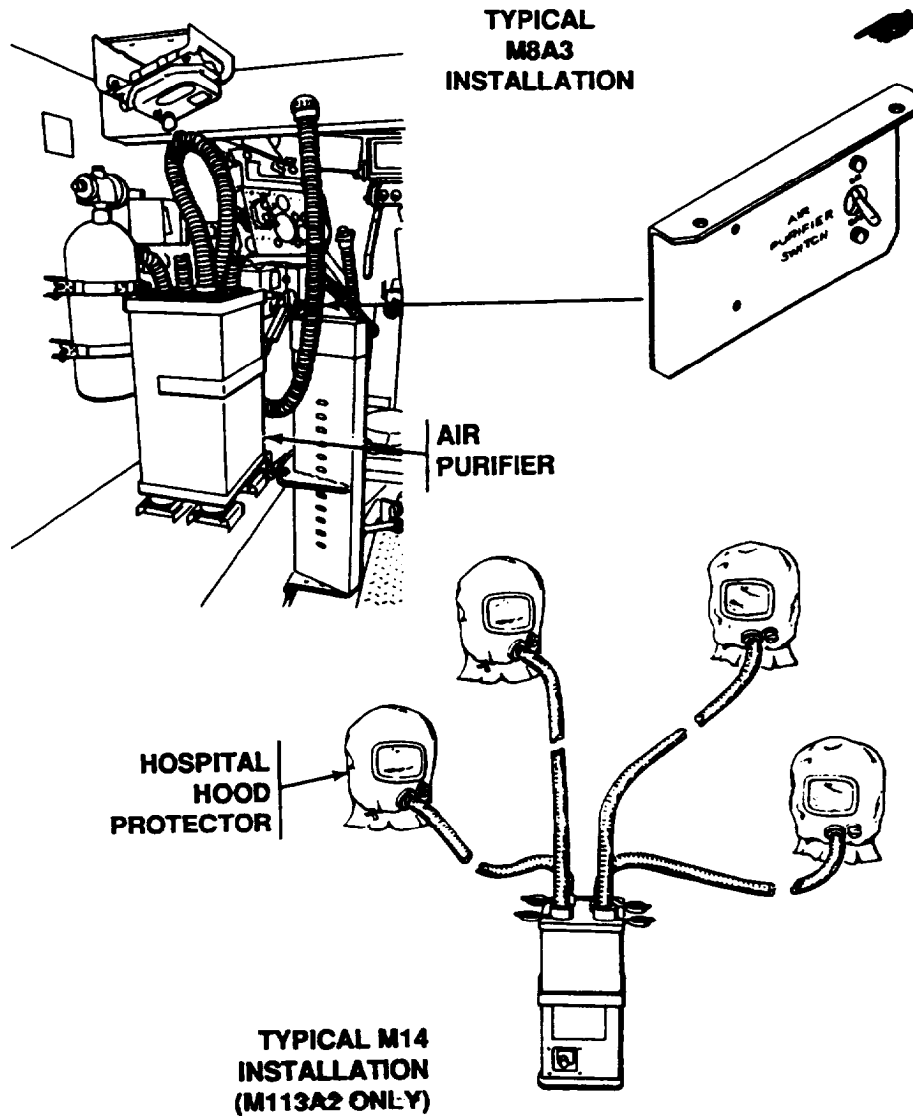
litter carrier. It is also recommended that the commander's seat and platform be removed. Display a red cross symbol on outside of carrier.



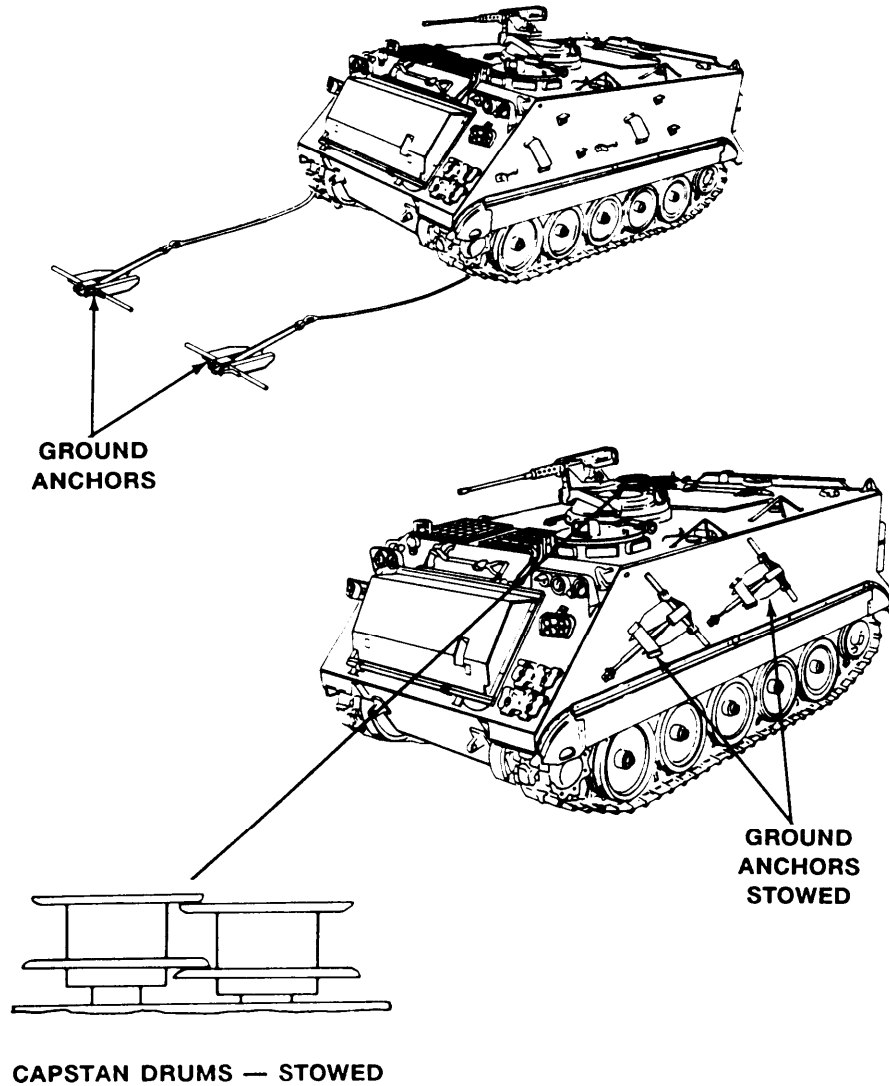
WINDSHIELD KIT - ALL CARRIERS. Provides driver with protection from cold winds when driving with hatch open. It has five windows curved around the driver's hatch and is removable. When not in use, kit is placed in stowage bag and stowed in carrier. See stowage diagrams, Appendix E.



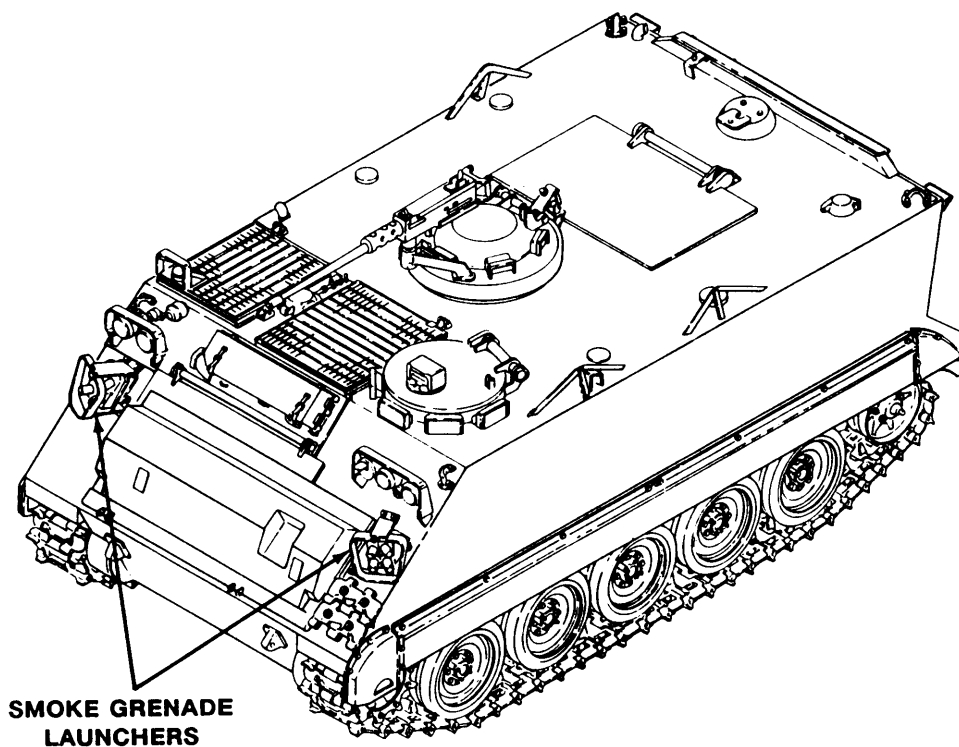
NBC SYSTEMS (M8A3, M13, and M14) -ALL CARRIERS EXCEPT M1064. Any of the NBC systems provide protection against Nuclear, Biological, and Chemical attacks. The NBC System will not filter exhaust gases and other potentially poisonous gases, nor will the air purifier provide oxygen to protect against asphyxiation. Carriers may be equipped differently. All of the NBC systems consist of an air purifier, hose assemblies, a circuit breaker, switch, and electric cables. In addition to the basic NBC system (M8A3), the M13 NBC system adds heaters to heat the purified air in cold weather, and the M14 NBC system provides hospital hood protectors for disabled patients. The M14 may also have heaters.



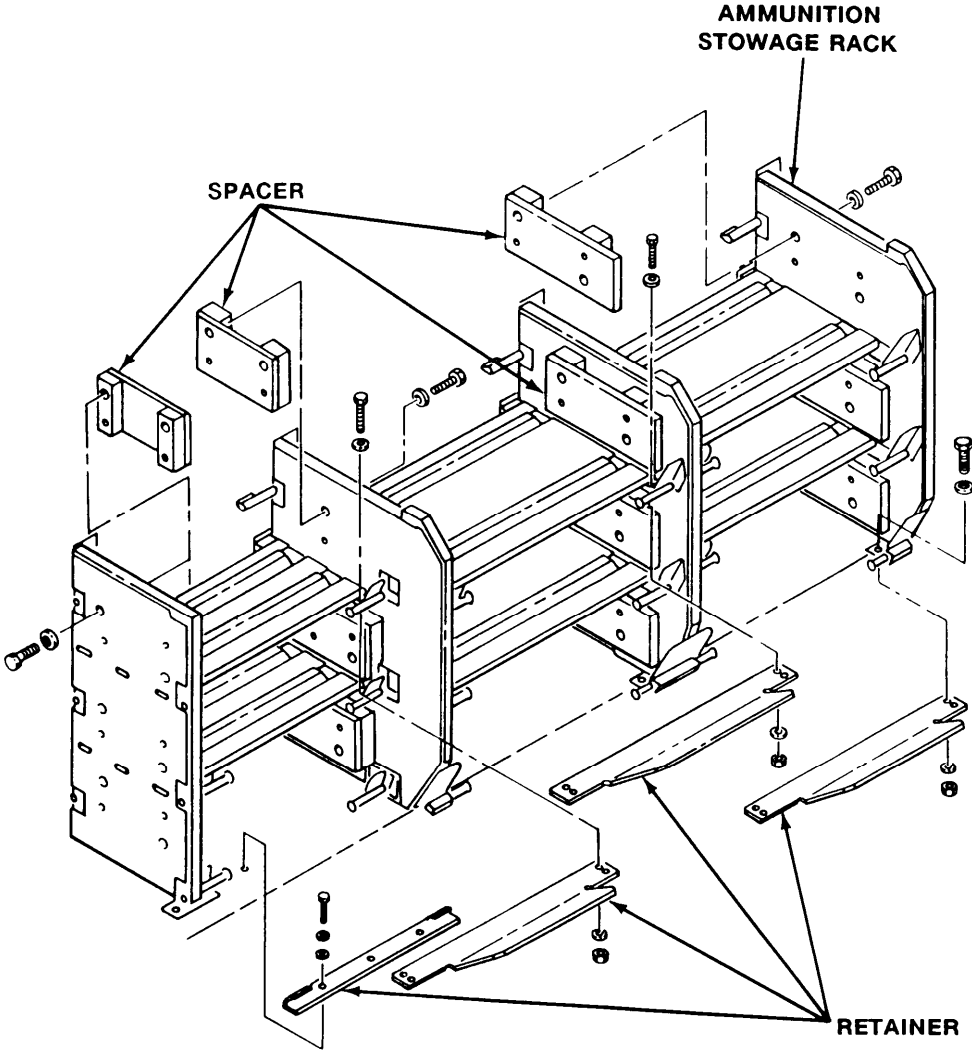
CAPSTAN AND ANCHOR KITS — M113A2 AND M1059. Provide a system to pull carriers out of mud, soft dirt, or swampy areas. Act as a self-recovery system for the personnel carrier. The Capstan Kit has two drums that attach to the final drives. The Anchor Kit anchors are placed in the ground, then attached to nylon ropes which are wound onto the capstan drums to pull the carrier free. When not in use, the kits are stowed on the top deck and on the left side of the carrier.



SMOKE GRENADE LAUNCHER KIT — M113A2 AND M1059. This kit allows installation of two smoke grenade launchers on the front of the carrier below the headlights. The smoke grenade launchers enable the carrier to generate a smoke screen to conceal the carrier from enemy observation. Each launcher contains a discharger with four launch tubes that hold one grenade each. The arming firing unit (control box) is mounted on the firewall in the crew compartment.



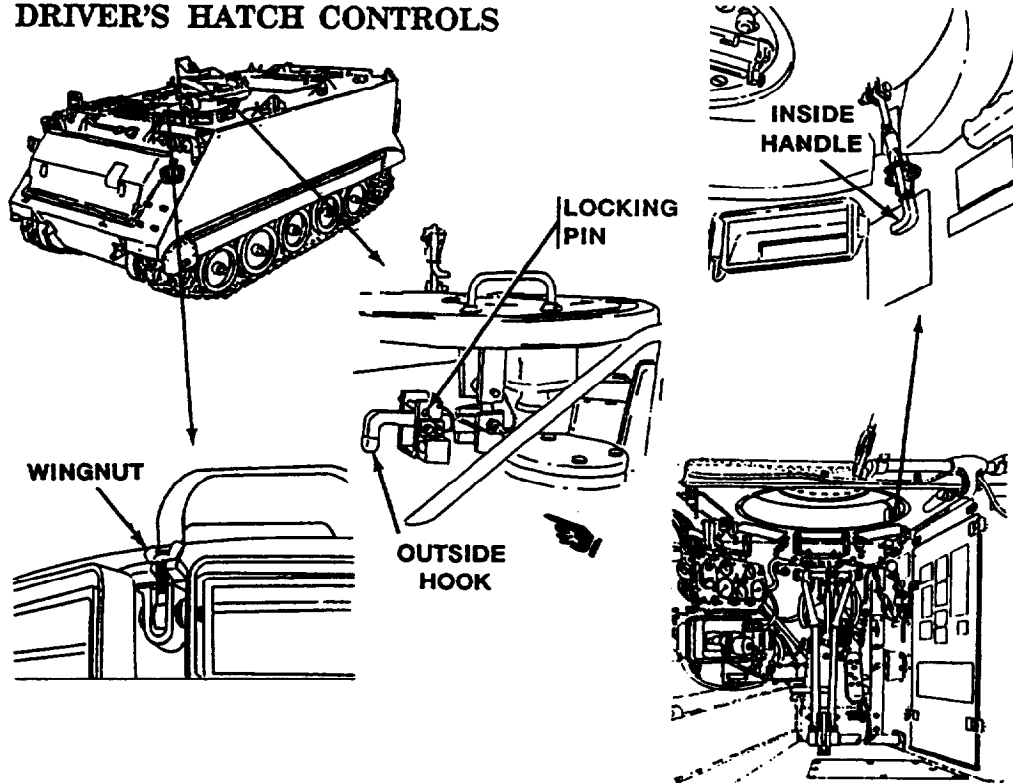
AMMUNITION STORAGE ADAPTER KIT — M106A2 ONLY. Provides storage for M329A1 and M329A2 mortar ammunition. This kit mounts inside the ammunition storage racks, and consists of spacers, retainers, and attaching hardware.



CHAPTER 2 OPERATING INSTRUCTIONS

Section. I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

DRIVER'S HATCH CONTROLS



OUTSIDE HOOK AND
LOCKING PIN

Locks hatch cover in fully open position. Locking pin is provided to secure hook and prevent accidental release of hatch cover.

INSIDE HANDLE

Locks and unlocks driver's hatch cover from inside the carrier. Driver's hatch cover opens slightly when unlocked.

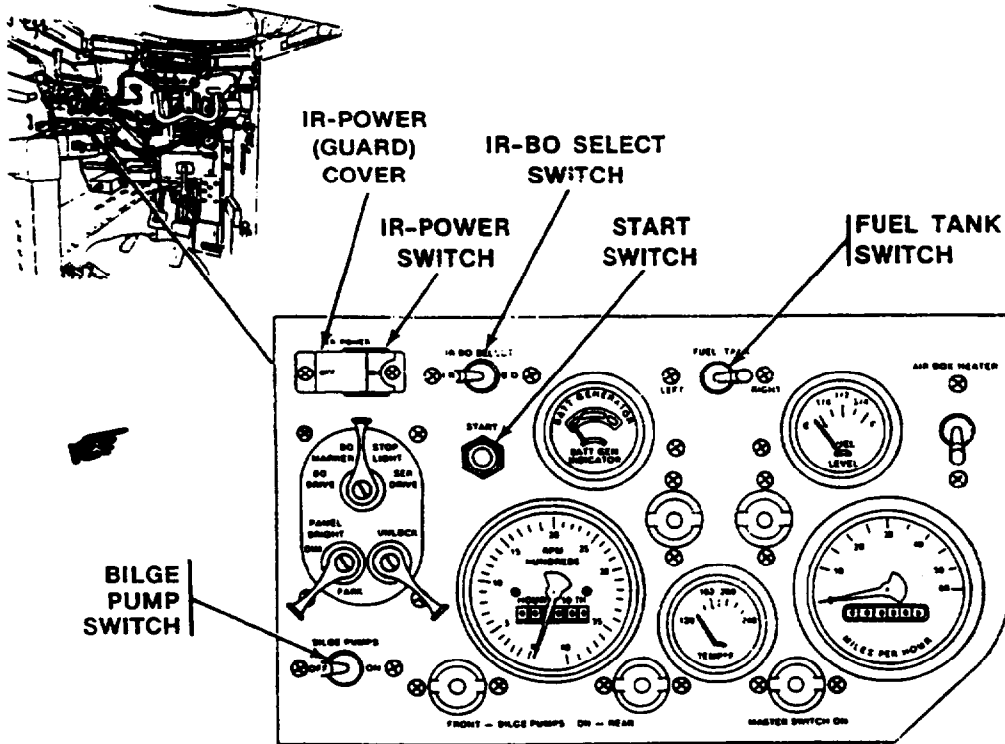
WINGNUT

Locks and unlocks driver's hatch cover from outside the carrier. Used when carrier is not being operated.

GO TO NEXT PAGE

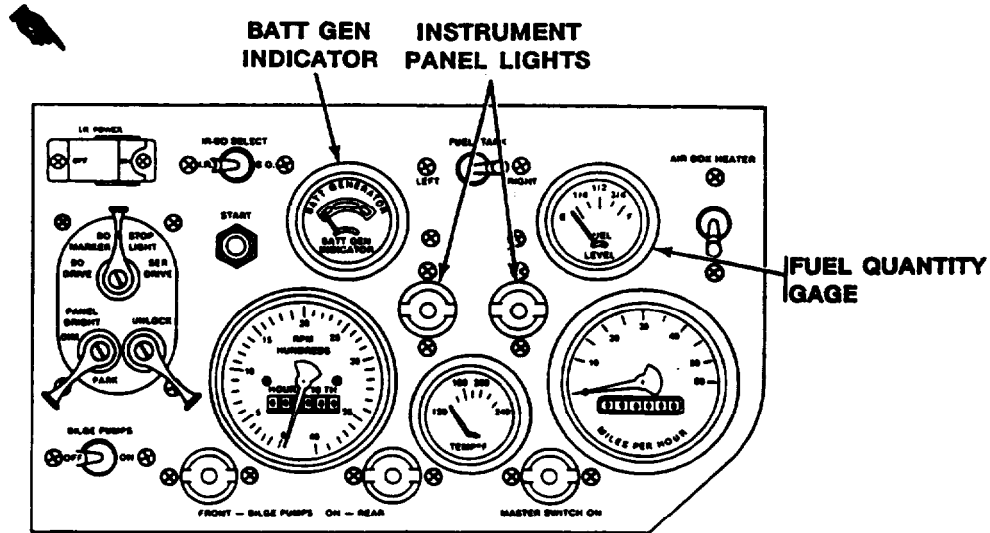
Change 1 2-1

DRIVER'S INSTRUMENT PANEL



- | | |
|---|---|
| <p>IR POWER SWITCH
GUARD COVER</p> | <p>Prevents accidental switching on the IR Periscope at night.</p> |
| <p>IR POWER SWITCH</p> | <p>Two-position toggle switch to turn power to the M19 periscope on or off.</p> |
| <p>IR-BO SELECT SWITCH</p> | <p>Two position toggle switch to select IR (infrared) or BO (blackout) mode of lights operation.</p> |
| <p>START SWITCH</p> | <p>Engages engine starter.</p> |
| <p>BILGE PUMPS SWITCH</p> | <p>Two-position toggle switch to turn power to front and rear bilge pumps on or off.</p> |
| <p>FUEL TANK SWITCH
(M1064 ONLY)</p> | <p>Two-position toggle switch allows driver to read fuel level in LEFT and RIGHT external fuel tanks.</p> |

DRIVER'S INSTRUMENT PANEL (cont)



BATT GEN INDICATOR

Indicates battery and generator conditions as follows:

Left red zone - Indicates low battery charge with engine off. Battery may not start engine.

Yellow zone - Indicates normal battery voltage with engine off. Indicates generator not charging with engine running.

Green zone - Indicates generator charging normally with engine running.

Right red zone - Indicates generator overcharging with engine running.

INSTRUMENT PANEL LIGHTS

Lights up gages and indicators on instrument panel when panel lights are turned on.

FUEL QUANTITY GAGE (ALL EXCEPT M1064)

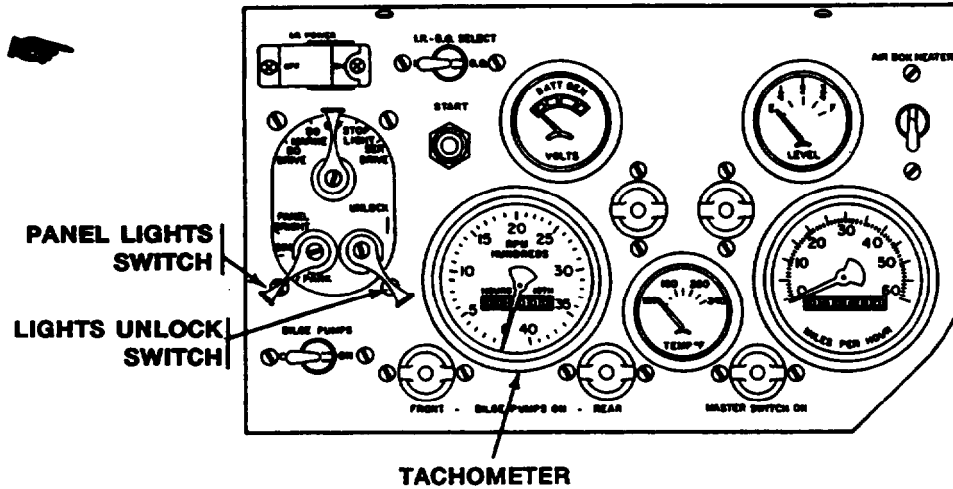
Indicates level of fuel in fuel tank.

FUEL QUANTITY GAGE (M1064 ONLY)

Indicates level of fuel in LEFT and RIGHT external fuel tanks as selected using the FUEL TANK switch.

GO TO NEXT PAGE

DRIVER'S INSTRUMENT PANEL (cont)



TACHOMETER

Indicates engine speed in revolutions per minute (rpm) and accumulated hours of engine operation.

LIGHTS UNLOCK SWITCH

Spring-loaded, two-position lever. Must be held in UNLOCK position when setting driving light switch to any position other than BO MARKER. Returns to locking position when released.

PANEL LIGHTS SWITCH

Four-position rotary switch controls panel lights as follows:

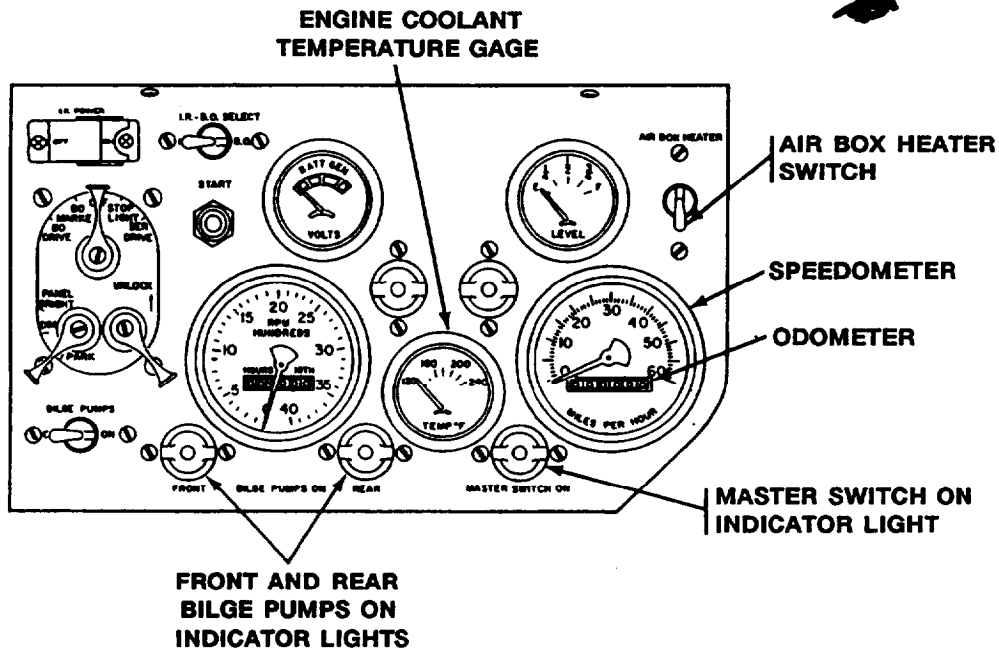
PANEL BRIGHT - Turns panel lights to bright.

DIM - Turns panel lights to dim.

OFF - Turns off panel light system.

PARK - Turns on stop light-taillight.

DRIVER'S INSTRUMENT PANEL (cont)



AIR BOX HEATER SWITCH

Used while starting engine during cold weather -25°F to +40°F (-31°C to +4°C). Switch is spring loaded to the off position.

SPEEDOMETER

Indicates carrier speed in miles per hour.

ODOMETER

Indicates total carrier distance traveled in miles.

MASTER SWITCH ON INDICATOR LIGHT

Light comes on when MASTER SWITCH is ON.

ENGINE COOLANT TEMPERATURE GAGE

Indicates engine operating temperature in degrees Fahrenheit.

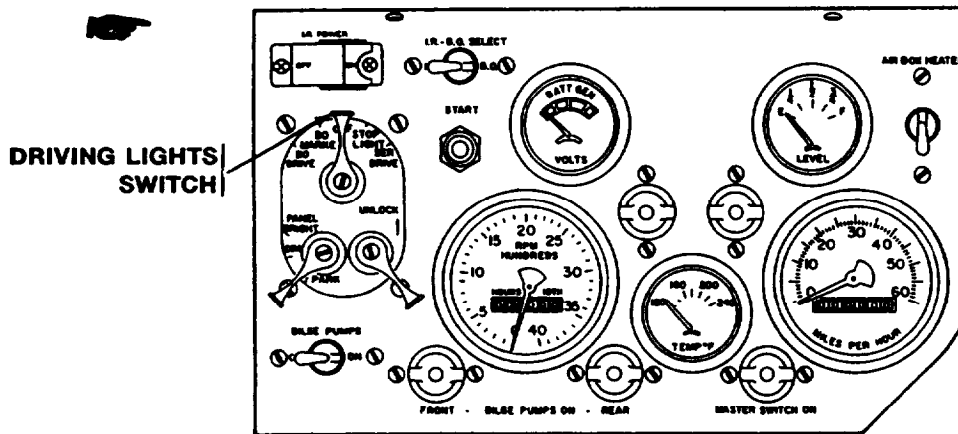
FRONT AND REAR BILGE PUMPS ON INDICATOR LIGHTS

Indicator lights come on when BILGE PUMPS switch is moved to ON.

GO TO NEXT PAGE

Change 5 2-5

DRIVER'S INSTRUMENT PANEL (cont)



DRIVING LIGHTS SWITCH

Five position rotary switch controls outside carrier lights as follows:

BO DRIVE - With IR-BO SELECT switch in BO, blackout headlight and four blackout marker lights are on. When brakes are applied, blackout stop light will come on. With IR-BO SELECT switch in IR, and IR POWER switch on, two infrared headlights and four blackout marker lights are on. When brakes are applied, blackout stop light will come on.

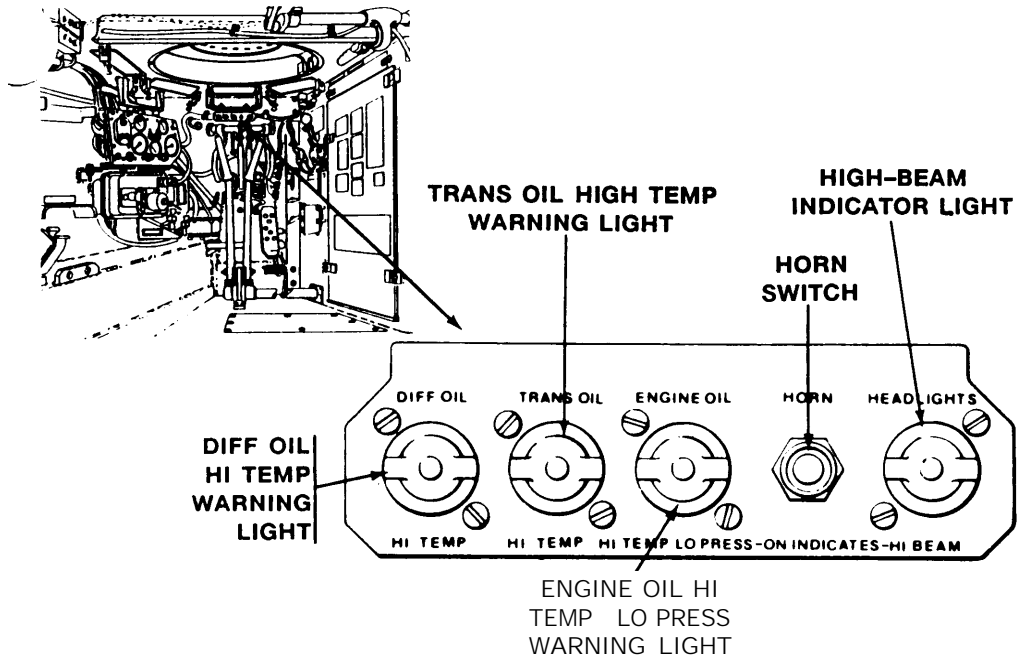
BO MARKER - Turns on four blackout marker lights. When brakes are applied, blackout stop light will come on.

OFF - Turns off all exterior lights.

STOP LIGHT - Allows stop light-taillight to function during daytime operation without headlights.

SER DRIVE - Turns on headlights and allows stop light-taillight to function.

WARNING LIGHT PANEL



DIFF OIL HI TEMP
WARNING LIGHT

Light comes on when the differential oil temperature is too high for safe operation.

TRANS OIL HI TEMP
WARNING LIGHT

Light comes on when transmission oil temperature is too high for safe operation.

ENGINE OIL HI TEMP
LO PRESS WARNING
LIGHT

Light comes on when oil pressure is too low for safe operation or too high in temperature for safe operation. Light should go off 10 seconds after engine starts.

NOTE

At idle speed (650-700 rpm), the engine low oil pressure light may stay on. If light remains on when engine speed increases to 800 rpm, stop engine and notify unit maintenance.

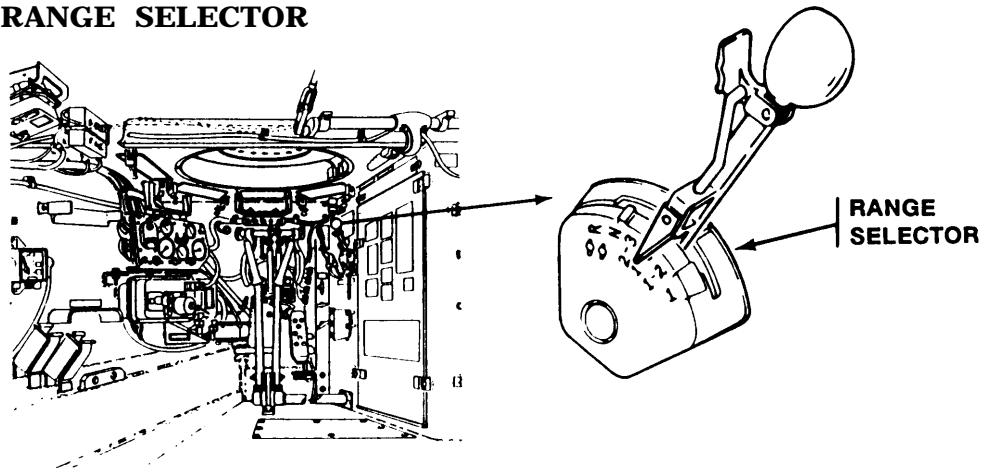
HORN SWITCH

Press switch to sound earner horn.

HI BEAM INDICATOR
LIGHT

Light comes on when headlight high beams are on.

RANGE SELECTOR



RANGE SELECTOR

Selects driving range of transmission.

1 RANGE

Used when going up or down steep grades, and when entering or leaving water. **DO NOT DOWNSHIFT TO THIS RANGE ABOVE 10 MPH.**

1-2 RANGE

Used for rough or soft terrain, going up or down long or moderately steep grades, and driving in water. **DO NOT DOWN SHIFT TO THIS RANGE ABOVE 21 MPH.**

1-3 RANGE

Used for normal driving on roads and level or rolling terrain. **DO NOT DOWNSHIFT TO THIS RANGE ABOVE 40 MPH.**

2-3 RANGE

Used for high-speed driving on roads or level terrain when earner is lightly loaded.

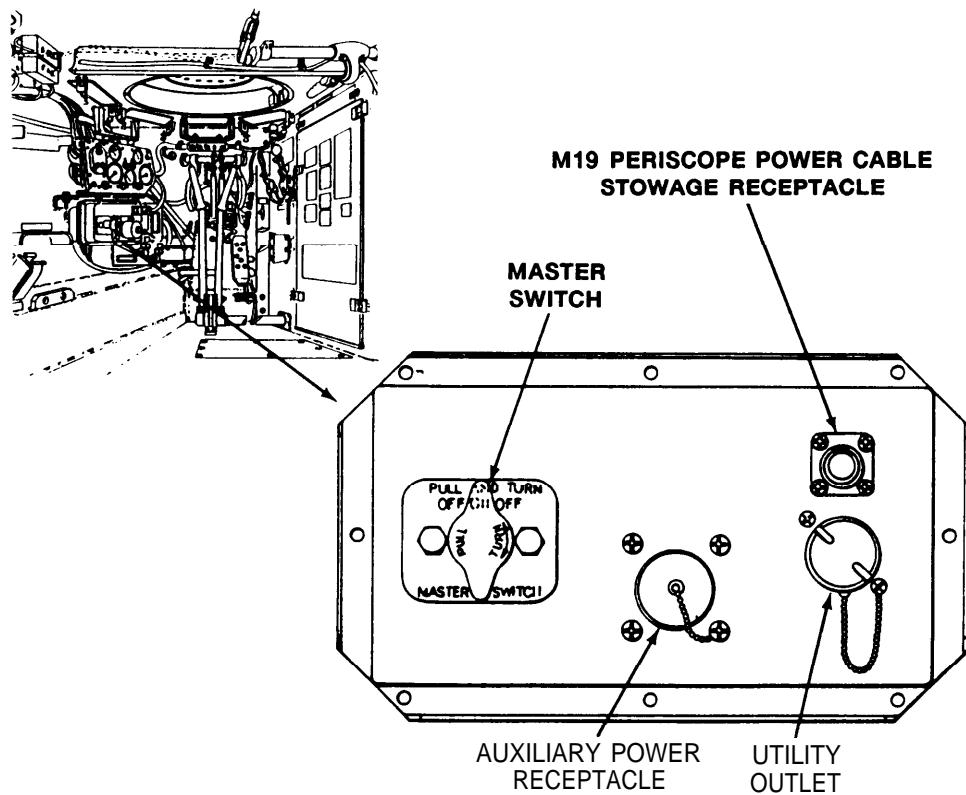
N (NEUTRAL) RANGE

Used when starting, idling, and operating the auxiliary equipment.

R (REVERSE) RANGE

Used for backing the earner under all conditions.

MASTER SWITCH PANEL



MASTER SWITCH

Turns carrier electrical power on or off.

AUXILIARY POWER RECEPTACLE

Used with a slave cable to start carrier engine using an outside power source.

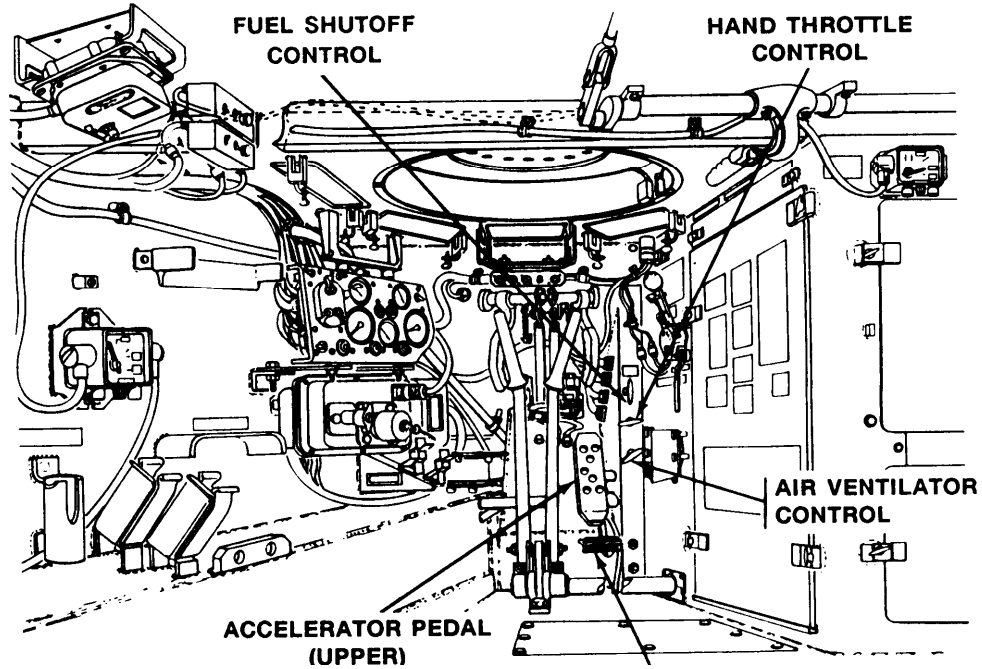
M19 PERISCOPE POWER CABLE STOWAGE RECEPTACLE

Used to stow M19 periscope power cable when periscope is not in use.

UTILITY OUTLET

Provides power for 24-volt accessories.

FUEL AND THROTTLE CONTROLS



FUEL SHUTOFF
CONTROL

Starts and stops fuel flow to engine. ■

HAND THROTTLE
CONTROL

Allows engine speed to be controlled by hand.

ACCELERATOR PEDAL
(UPPER)

Controls engine speed. Used with driver's seat in raised position.

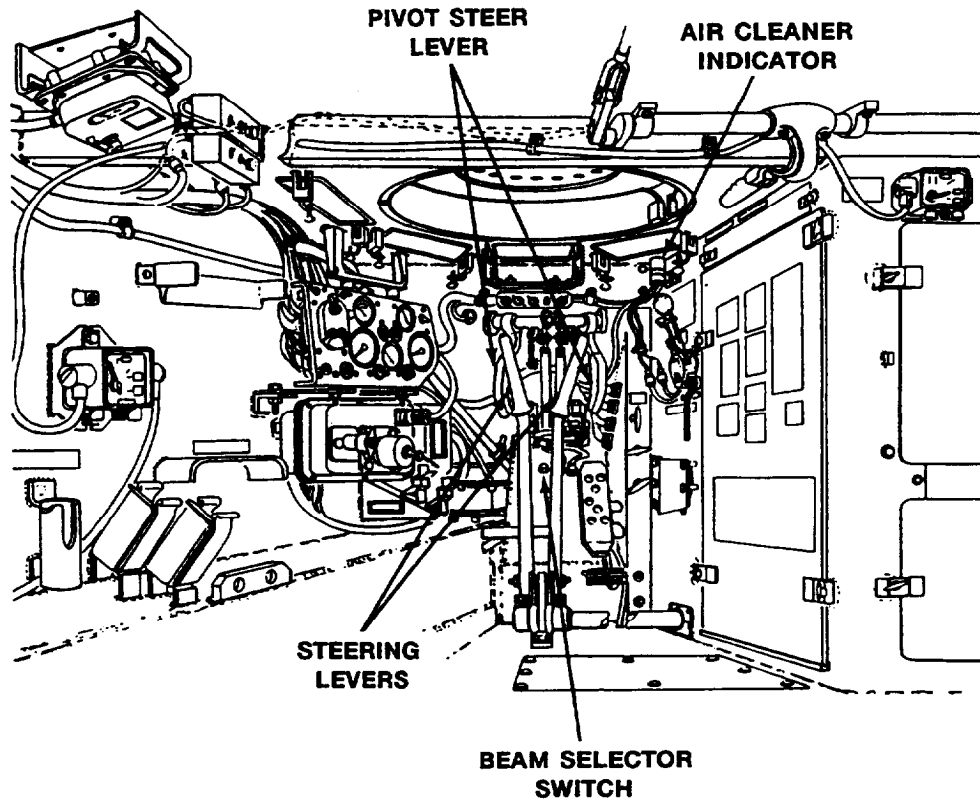
ACCELERATOR PEDAL
(LOWER)

Controls engine speed. Used with driver's seat in lowered position.

AIR VENTILATOR
CONTROL

Allows cooler air from the rear compartment to enter engine air cleaner. Cooler air increases horsepower.

DRIVER'S CONTROLS AND INDICATORS



STEERING LEVERS

Used to steer carrier and apply parking brakes.

PIVOT STEER LEVER

Used for quick turns at slow speed and steering in water.

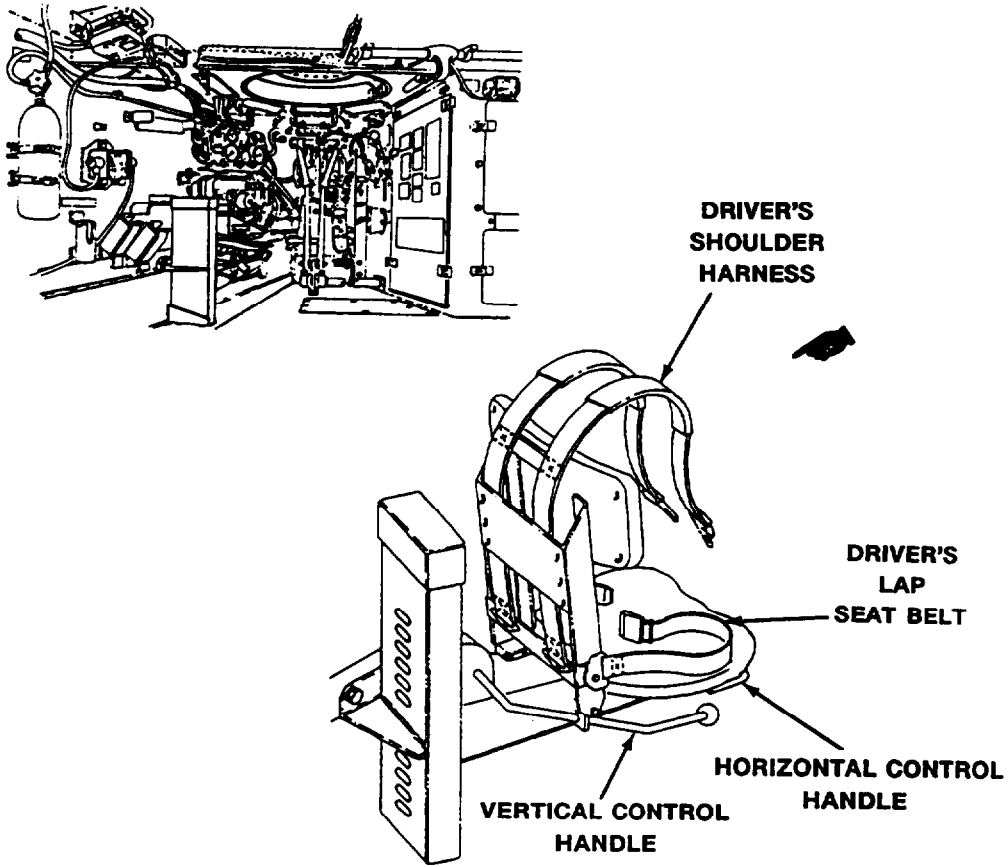
AIR CLEANER INDICATOR

Indicates condition of air cleaner element. With engine off, indicator should show all green in the window. With engine running, green sleeve should go part way up. If at any time only red is seen in the window, notify unit maintenance.

BEAM SELECTOR SWITCH

Selects high or low headlight beams.

DRIVER'S SEAT CONTROLS



HORIZONTAL CONTROL HANDLE

Locks and releases driver's seat. Allows seat to be moved to the front or rear.

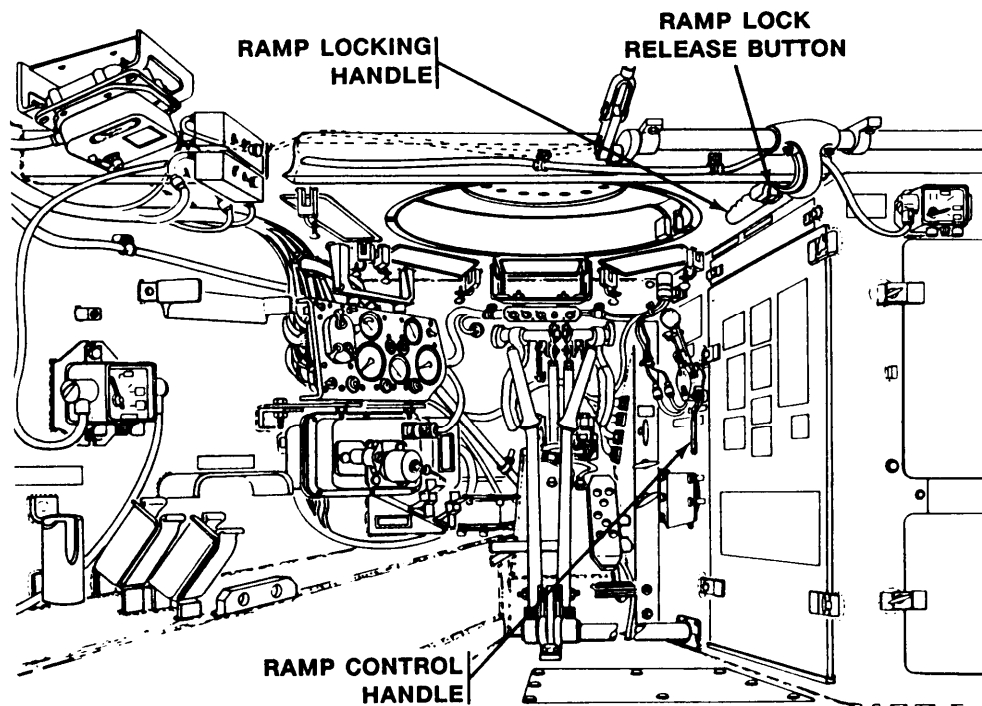
VERTICAL CONTROL HANDLE

Locks and releases driver's seat. Allows seat to be raised or lowered.

DRIVER'S LAP SEAT BELT AND SHOULDER HARNESS

Secures driver safely in seat. Lap and shoulder restraints are adjustable.

RAMP CONTROLS



RAMP LOCK RELEASE
BUTTON

Releases ramp locking handle.

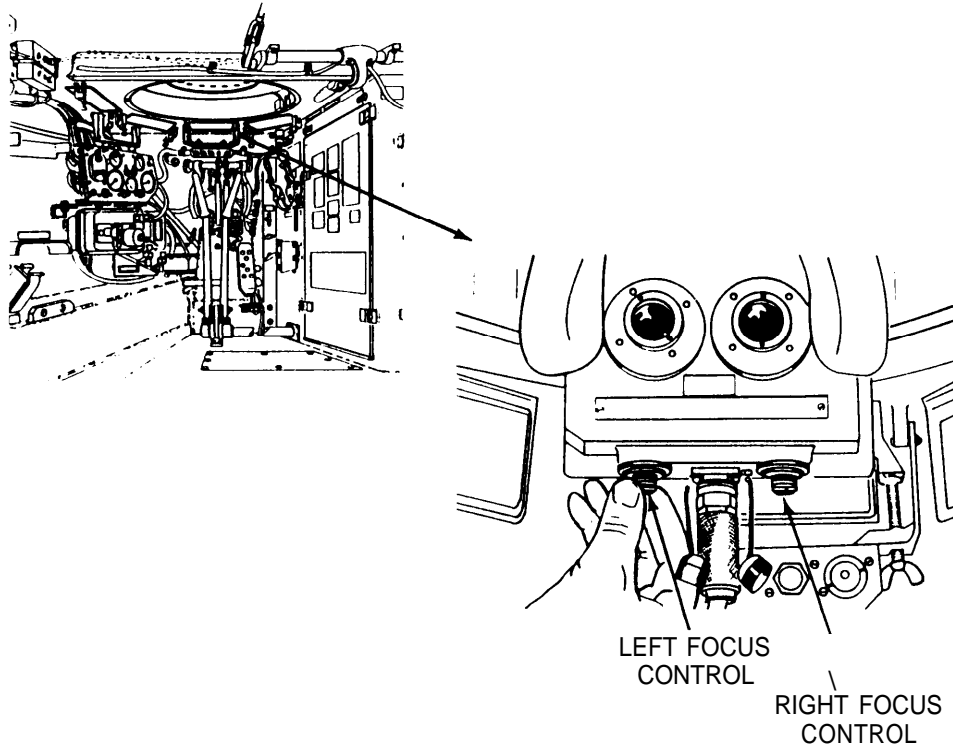
RAMP LOCKING
HANDLE

Locks ramp in raised position and unlocks
ramp for lowering.

RAMP CONTROL
HANDLE

Used to raise and lower ramp.

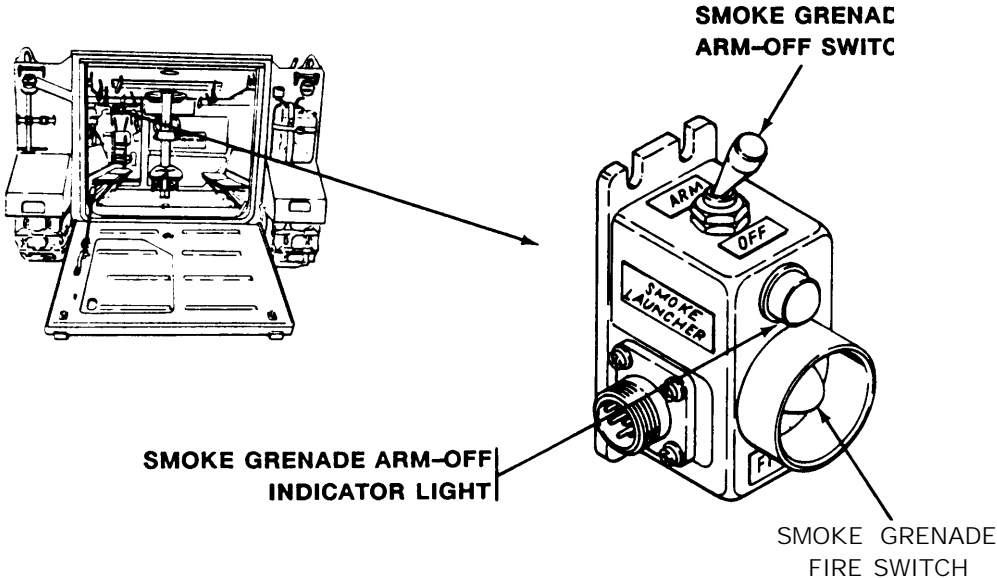
M19 PERISCOPE



LEFT FOCUS CONTROL Used to focus left eyepiece.

RIGHT FOCUS CONTROL Used to focus right eyepiece.

SMOKE GRENADE ARMING FIRING UNIT



**SMOKE GRENADE
ARM-OFF SWITCH**

Two-position toggle switch to arm and disarm smoke grenade FIRE switch.

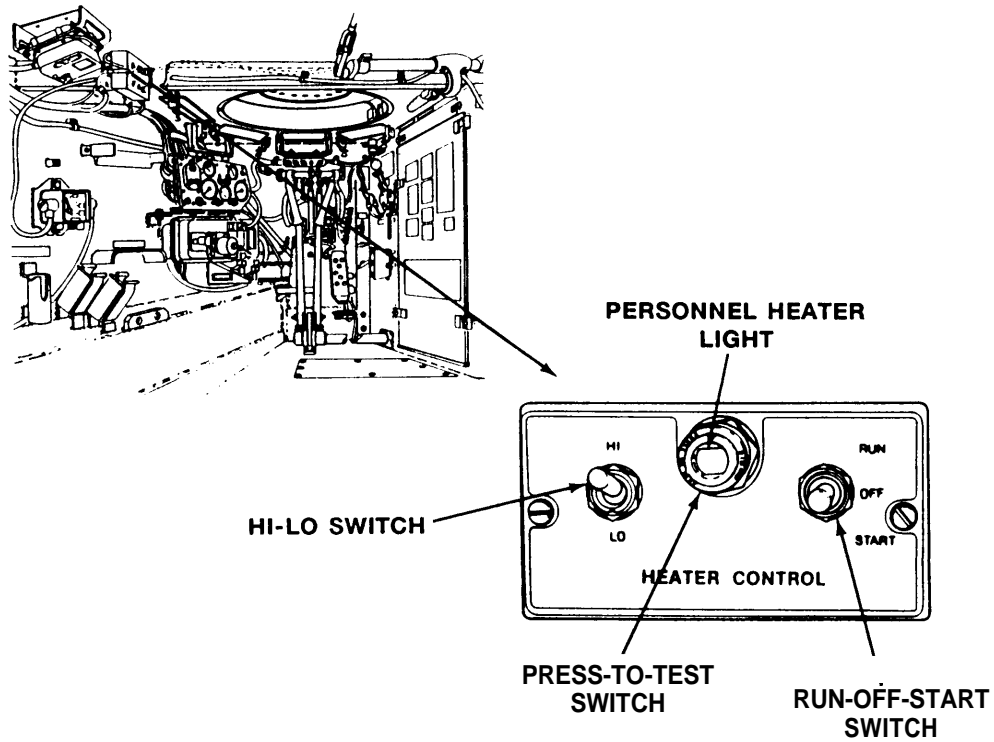
**SMOKE GRENADE
ARM-OFF INDICATOR
LIGHT**

Light comes on when smoke grenade FIRE switch is armed.

**SMOKE GRENADE FIRE
SWITCH**

Fires smoke grenades from discharger tubes when pushed.

PERSONNEL HEATER CONTROL BOX



HI-LO SWITCH

Controls personnel heater output .

RUN-OFF-START SWITCH

Controls operation of personnel heater.

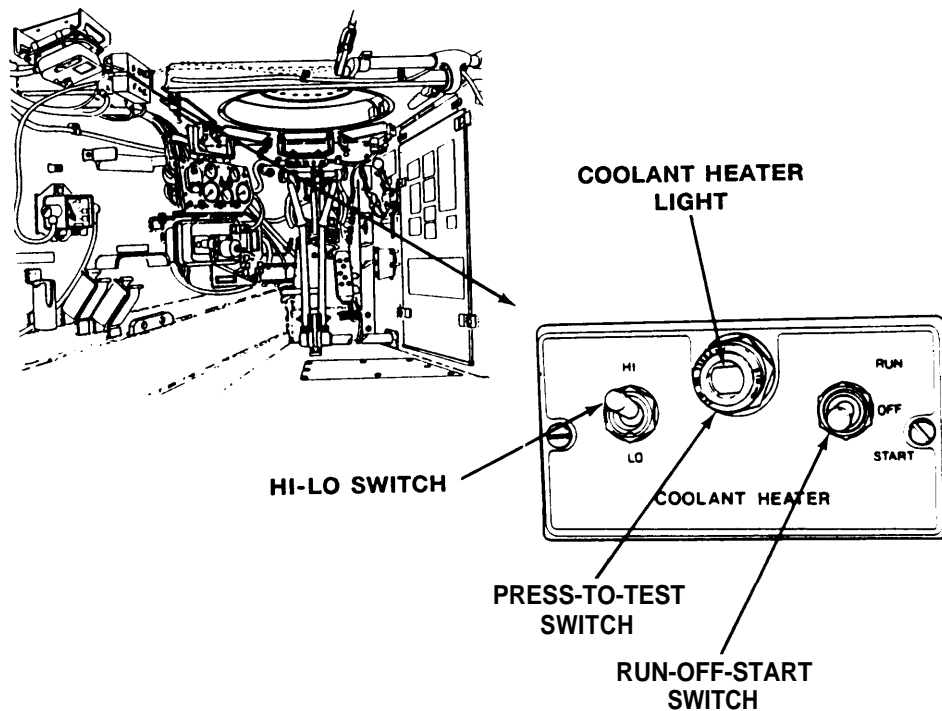
PERSONNEL HEATER LIGHT

Indicates that personnel heater is on.

PRESS-TO-TEST SWITCH

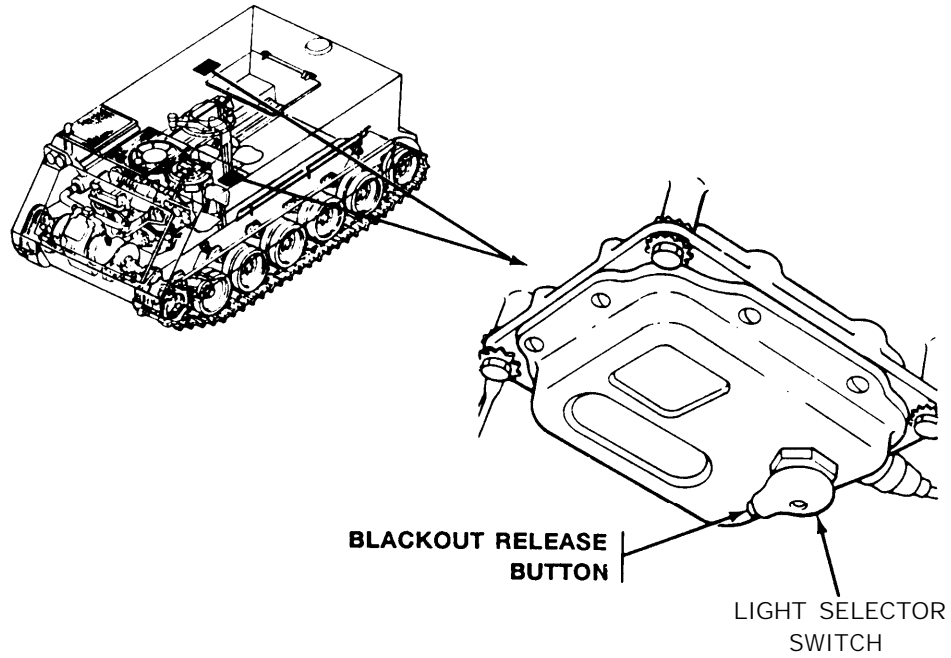
Test personnel heater light. When switch is pressed, light will come on if light bulb is good and if power is coming into control box.

ENGINE COOLANT HEATER CONTROL BOX



- | | |
|----------------------|---|
| HI-LO SWITCH | Controls engine coolant heater output. |
| COOLANT HEATER LIGHT | Indicates that coolant heater is on. |
| PRESS-TO-TEST SWITCH | When switch is pressed, light will come on if light bulb is good and if power is coming into the control box. |
| RUN-OFF-START SWITCH | Controls operation of coolant heater. |

DOME LIGHTS



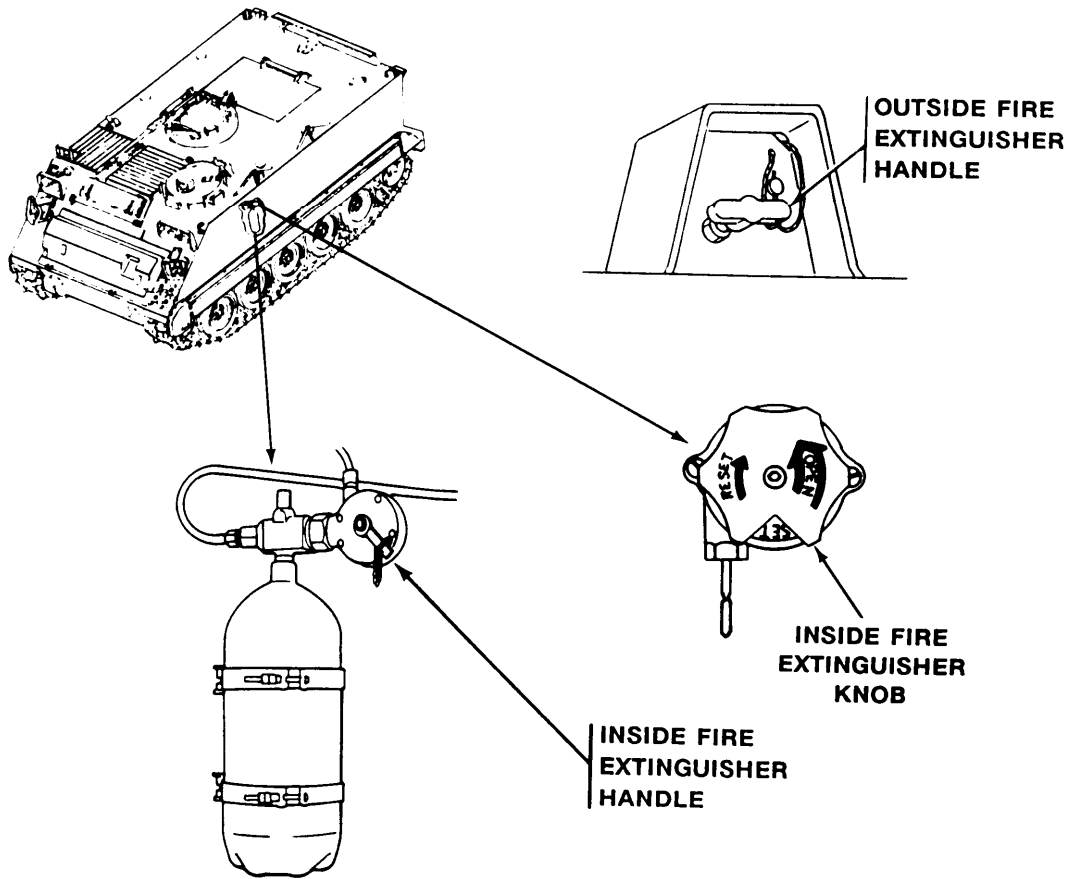
LIGHT SELECTOR SWITCH

Selects blackout or white light.

BLACKOUT RELEASE BUTTON

Releases light selector switch from blackout position.

FIXED FIRE EXTINGUISHER SYSTEM



OUTSIDE FIRE
EXTINGUISHER
HANDLE

Discharges fixed fire extinguisher manually from outside carrier.

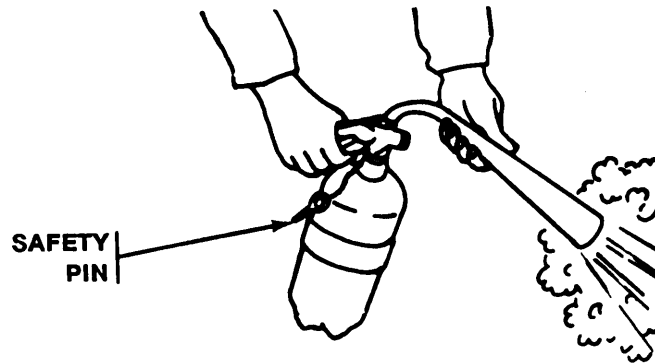
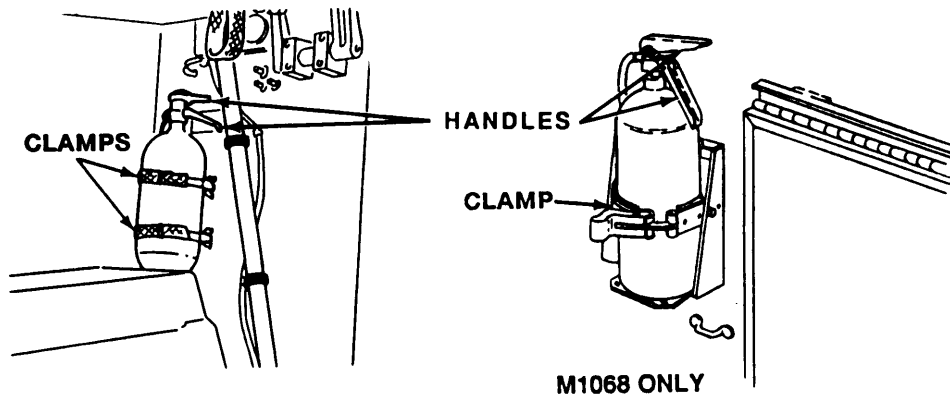
INSIDE FIRE
EXTINGUISHER KNOB

Discharges fixed fire extinguisher manually from inside earner.

INSIDE FIRE
EXTINGUISHER
HANDLE

Discharges fixed fire extinguisher manually from inside earner.

PORTABLE FIRE EXTINGUISHER



CLAMPS

Hold portable fire extinguisher in right rear of personnel compartment.

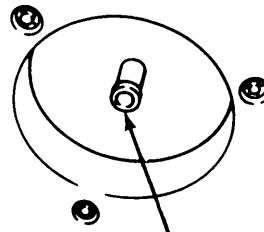
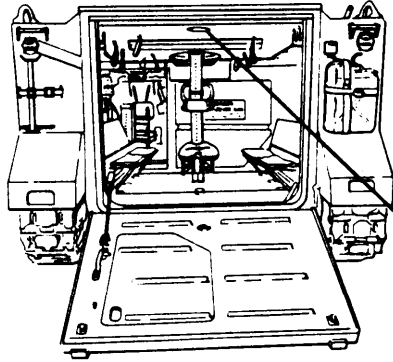
SAFETY PIN

Keeps fire extinguisher from accidentally discharging while stowed.

HANDLES

Discharges fire extinguisher when squeezed together.

PERSONNEL COMPARTMENT VENTILATOR CONTROL

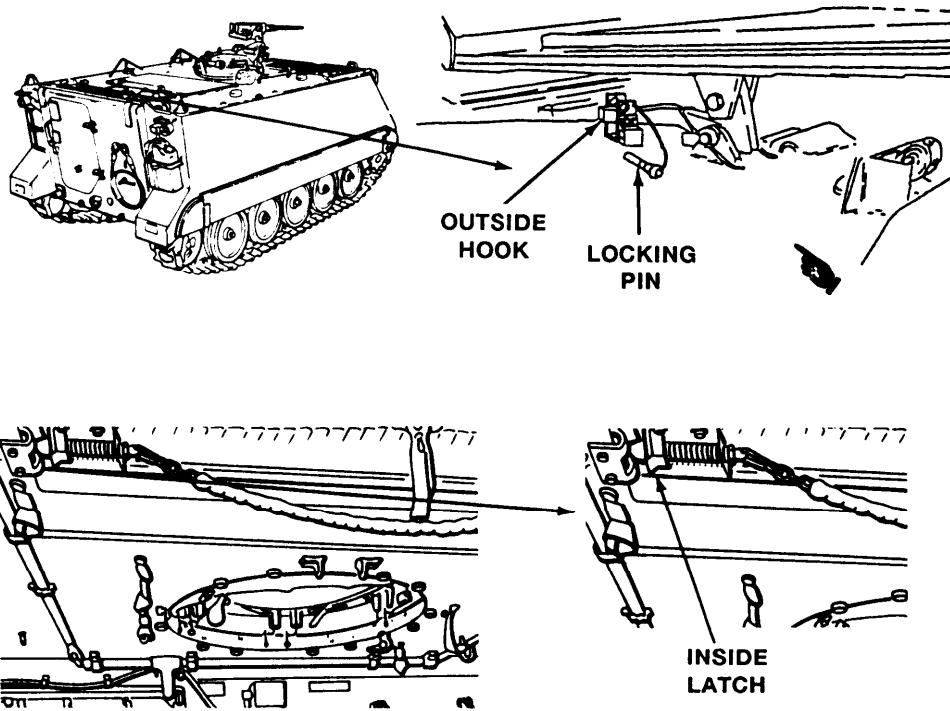


PERSONNEL COMPARTMENT
VENTILATOR CONTROL

PERSONNEL
COMPARTMENT
VENTILATOR CONTROL

Used to open and close personnel
compartment ventilator.

CARGO HATCH CONTROLS



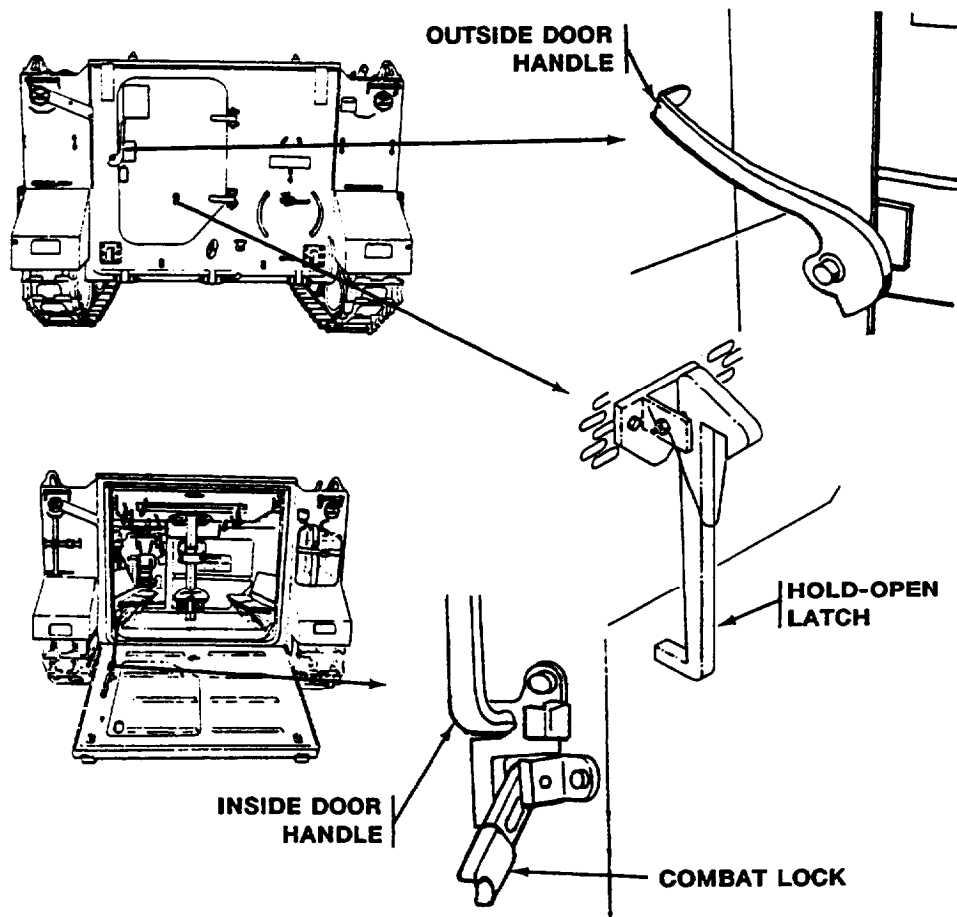
OUTSIDE HOOK AND LOCKING PIN

Locks cargo hatch cover in fully open position. Locking pin is provided to secure hook and prevent accidental release of hatch cover.

INSIDE LATCH

Locks and unlocks cargo hatch cover from inside earner.

RAMP ACCESS DOOR CONTROLS



**OUTSIDE DOOR
HANDLE**

Latches and unlatches ramp access door from outside carrier.

HOLD-OPEN LATCH

Secures ramp access door in open position.

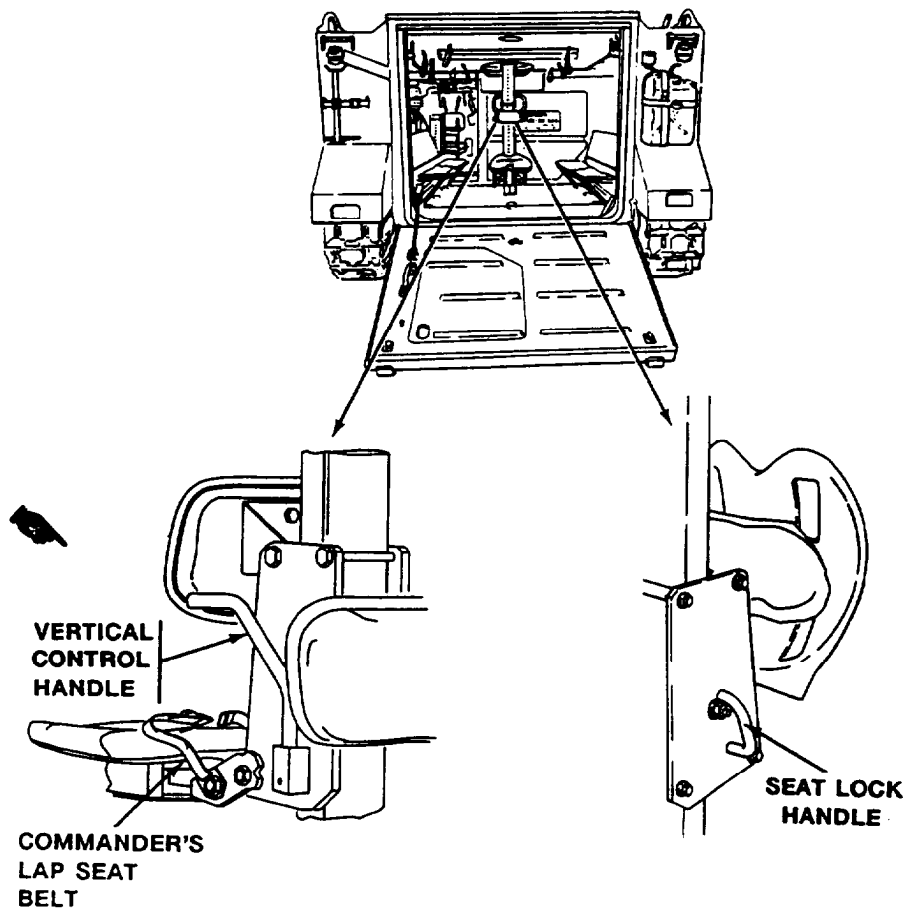
INSIDE DOOR HANDLE

Latches and unlatches ramp access door from inside carrier.

COMBAT LOCK

Locks ramp access door from inside carrier.

COMMANDER'S SEAT CONTROLS



VERTICAL CONTROL HANDLE

Allows seat to be raised or lowered.

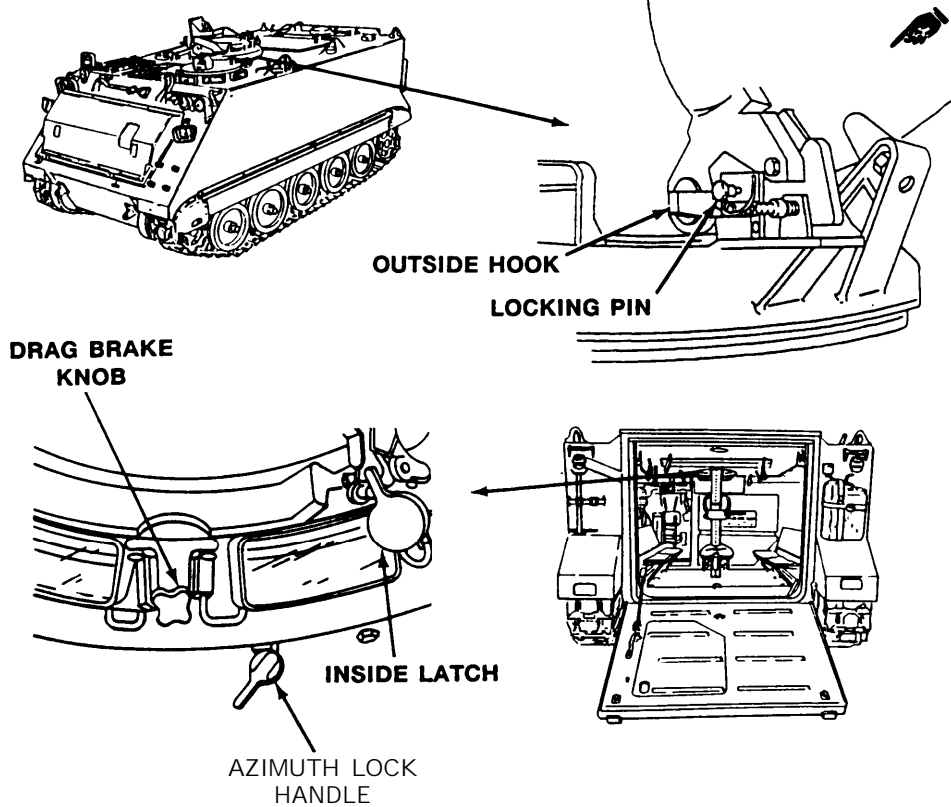
SEAT LOCK HANDLE

Releases seat from stowed position.

COMMANDER'S LAP SEAT BELT

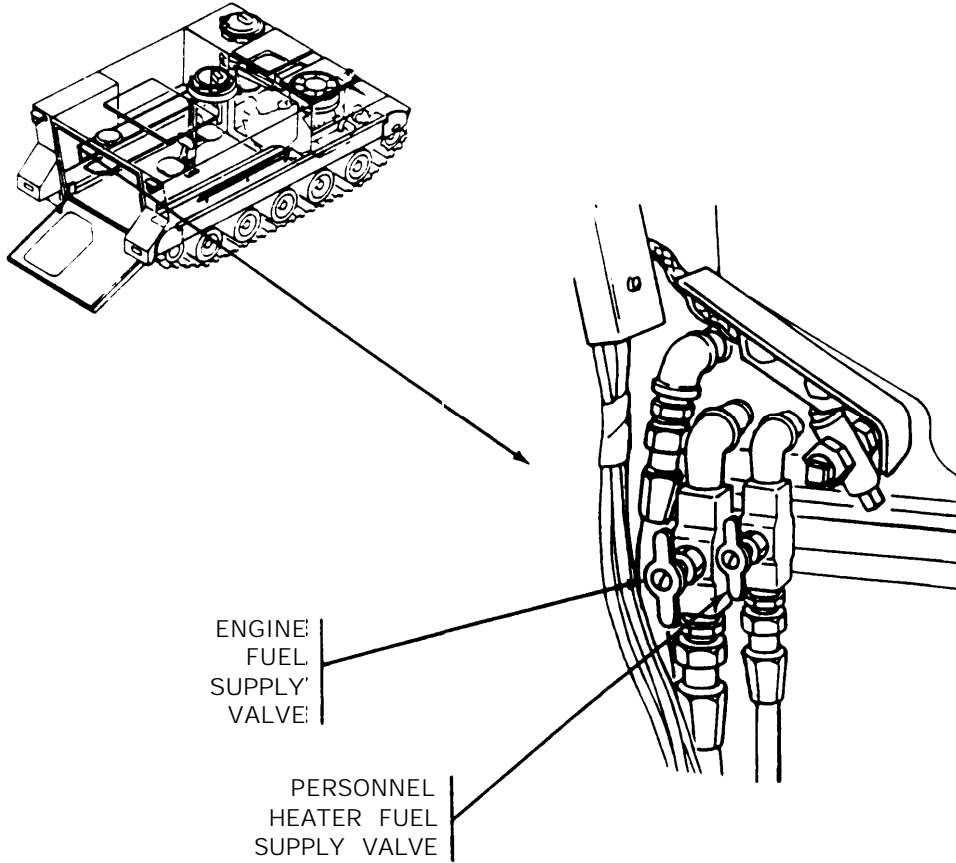
Secures commander safely in seat. Lap restraint is adjustable.

COMMANDER'S CUPOLA CONTROLS ,



- | | |
|--|--|
| <p>OUTSIDE HOOK AND LOCKING PIN</p> | <p>Locks commander's hatch cover in fully open position. Locking pin is provided to secure hook and prevent accidental release of hatch cover.</p> |
| <p>AZIMUTH LOCK HANDLE</p> | <p>Locks the cupola at any desired position. When released, allows rotation of cupola.</p> |
| <p>INSIDE LATCH</p> | <p>Locks and unlocks commander's hatch cover from inside carrier.</p> |
| <p>DRAG BRAKE KNOB</p> | <p>Controls drag brake to slow and stop cupola movement.</p> |

FUEL TANK MANUAL SHUTOFF VALVES (ALL EXCEPT M1064)



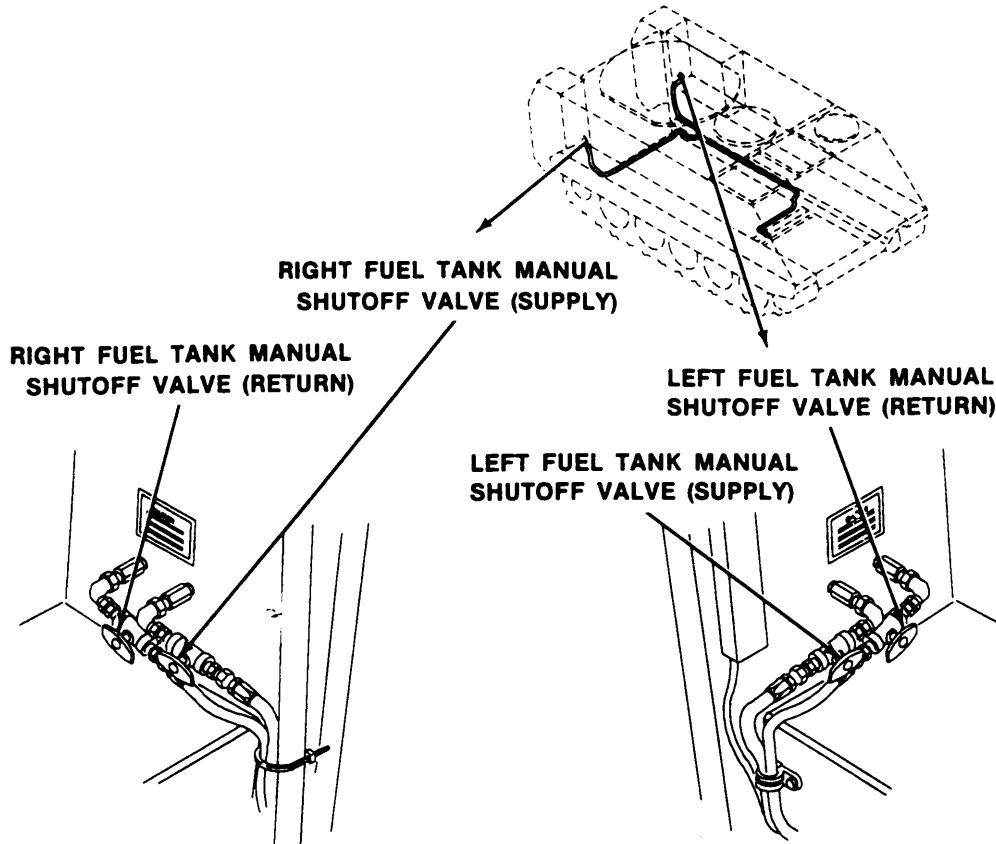
ENGINE FUEL SUPPLY VALVE

Starts and stops fuel flow from fuel tank to engine.

PERSONNEL HEATER FUEL SUPPLY VALVE

Starts and stops fuel flow to personnel and/or coolant heater.

FUEL TANK MANUAL SHUTOFF VALVES (M1064 ONLY)



**LEFT FUEL TANK
MANUAL SHUTOFF
VALVE (SUPPLY)**

Starts and stops fuel flow from left fuel tank to engine.

**LEFT FUEL TANK
MANUAL SHUTOFF
VALVE (RETURN)**

Starts and stops fuel flow from engine to left fuel tank.

**RIGHT FUEL TANK
MANUAL SHUTOFF
VALVE (SUPPLY)**

Starts and stops fuel flow from right fuel tank to engine.

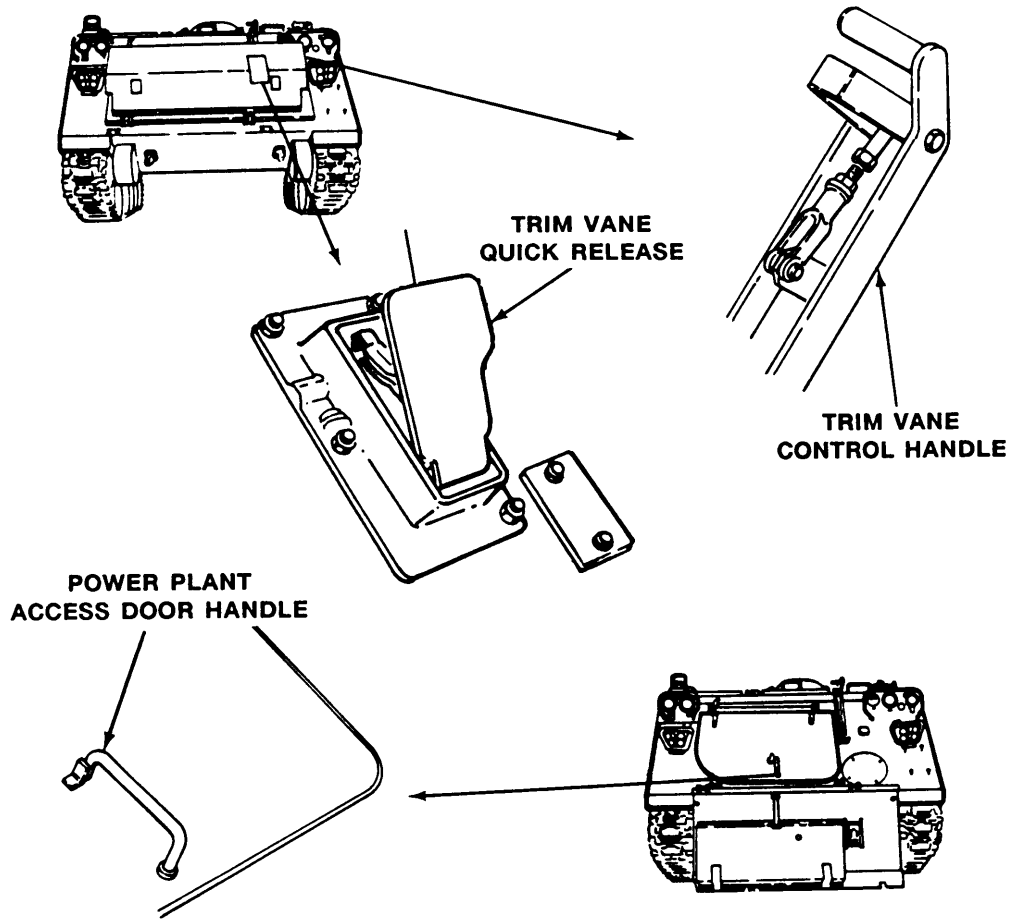
**RIGHT FUEL TANK
MANUAL SHUTOFF
VALVE (RETURN)**

Starts and stops fuel flow from engine to right fuel tank.

GO TO NEXT PAGE

Change 2 2-26.1 (2-26.2 blank)

TRIM VANE AND POWER PLANT ACCESS DOOR CONTROLS



TRIM VANE CONTROL HANDLE

Locks trim vane in position for water operation and in stowed position.

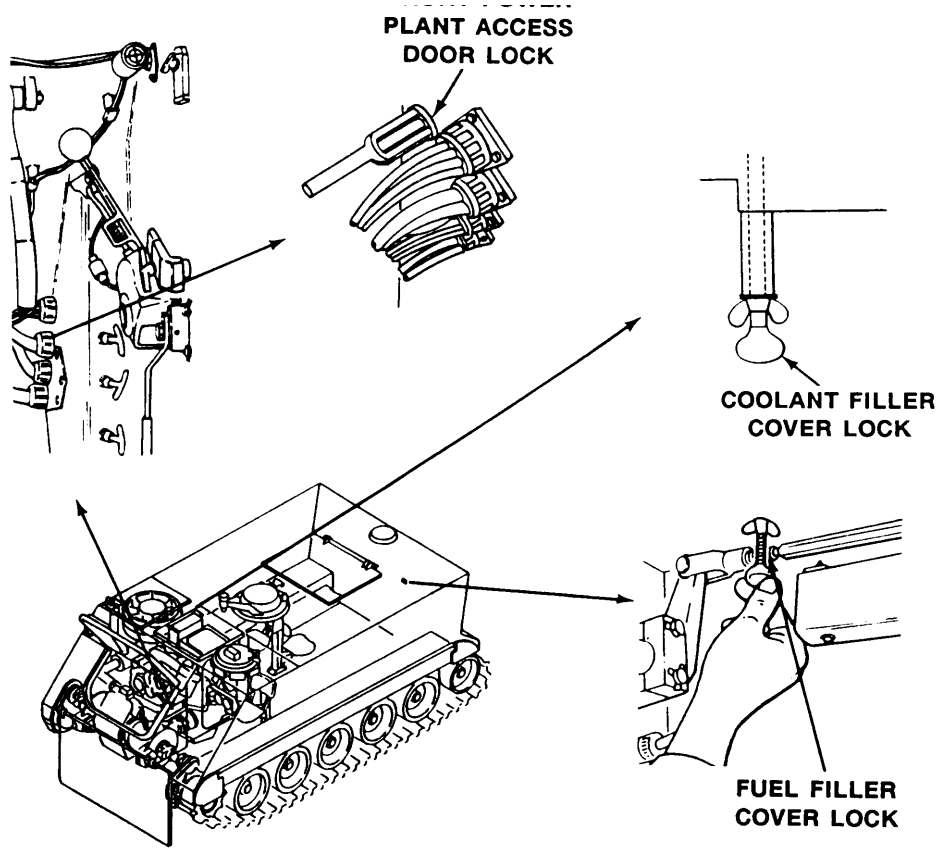
TRIM VANE QUICK RELEASE

Locks trim vane to actuator arm and unlocks trim vane for lowering.

POWER PLANT ACCESS DOOR HANDLE

Locks and unlocks power plant access door.

COMBAT LOCKS



FRONT POWER PLANT
ACCESS DOOR LOCK

Locks power plant access door from inside the carrier.

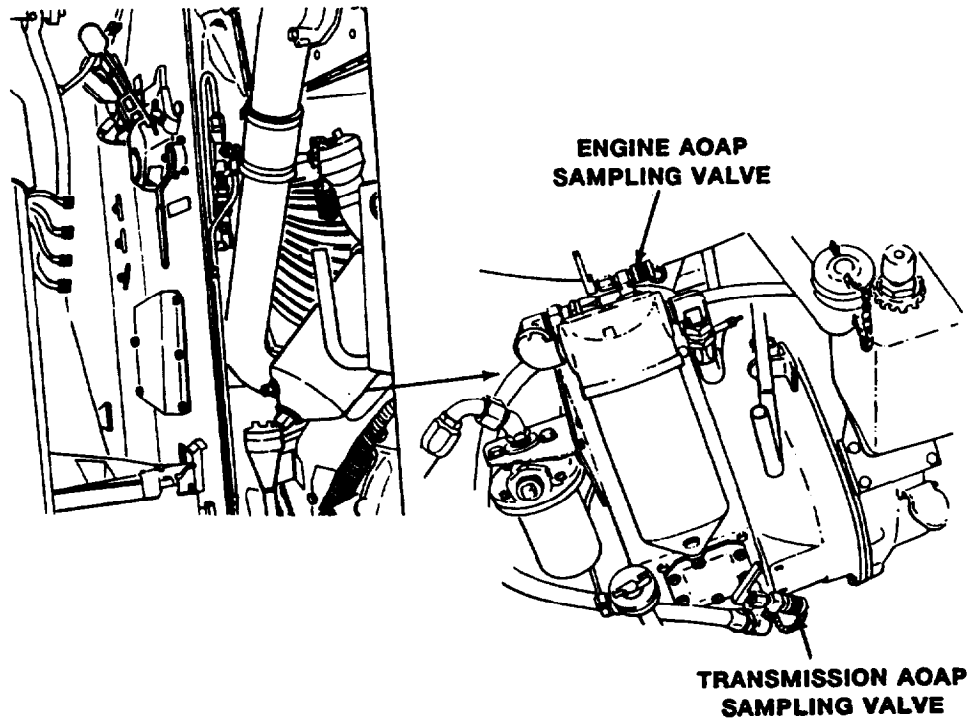
COOLANT FILLER
COVER LOCK

Locks coolant filler cover from inside the carrier.

FUEL FILLER COVER
LOCK

Locks fuel filler cover from inside the carrier.

ARMY OIL ANALYSIS PROGRAM (AOAP) SAMPLING VALVE



NOTE

See LO 9-2350-261-12 for instructions on taking transmission and engine AOAP oil sample.

**TRANSMISSION AOAP
SAMPLING VALVE**

Used to draw transmission oil sample for AOAP testing.

**ENGINE AOAP
SAMPLING VALVE**

Used to draw engine oil sample for AOAP testing.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

MAINTENANCE FORMS AND RECORDS

Every mission begins and ends with paperwork. There isn't much of it, but you have to keep it up. The forms and records you fill out have several uses. They are a permanent record of the services, repairs, and modifications made on your carrier. They are reports to unit maintenance and to your commander. They are a checklist that tells you what was wrong with the carrier after its last use. They tell you whether those faults have been fixed. For the information you need on forms and records, see DA PAM 738-750.

GENERAL

1. Do your (B) Before PREVENTIVE MAINTENANCE CHECKS AND SERVICES before the carrier leaves its containment area (motorpool or other control or dispatch point) or perform its intended mission. Pay attention to all CAUTIONS and WARNINGS. Before operation checks start on page 2-36.
2. Do your (D) During PREVENTIVE MAINTENANCE CHECKS AND SERVICES when the carrier is being used for its intended mission. During operation checks means to watch, feel, and listen to the carrier and its related components while they are actually being operated. During operation checks start on page 2-74.
3. Do your (A) After PREVENTIVE MAINTENANCE when the carrier has finished its intended mission. Pay attention to all CAUTIONS AND WARNINGS. After operations checks start on page 2-93.
4. Do your (W) Weekly PREVENTIVE MAINTENANCE once a week or if you are operating the carrier for the first time. Weekly operation checks start on page 2-113.
- 5. Deleted
6. When you find something wrong, fix it if you can. Use the operator's troubleshooting instructions starting on page 3-2. If you can't fix it, fill out your DA Form 2404 and present this form with your report to unit maintenance RIGHT NOW! For information on how to use DA Form 2404, see DA PAM 738-750.

7. The PMCS table is designed so that checks are grouped in sequence starting with the BEFORE (B) checks and ending with MONTHLY (M) checks. Each item checked is illustrated to help you find it on the carrier.
8. The "Equipment will be reported NOT READY/AVAILABLE if;" column tells you what conditions classify the earner as not ready/not available to perform its primary combat mission. If any of the faults listed in this block are found, do not operate the earner until the condition is corrected. Record fault on D A Form 2404 and notify Unit Maintenance.
9. Always perform the PMCS in the same order; soon it will become a smooth procedure. Once you've had some practice, you will quickly spot anything wrong.

WHEN YOU INSPECT FOR LEAKS

You need to know how fluid leaks affect your carrier. The following are definitions of the types or "classes" of leaks. You must know them to determine the status of your earner. Learn them. Become familiar with each kind of leak and what each looks like. Remember, when in doubt, NOTIFY YOUR SUPERVISOR!

CAUTION

Class III leaks may cause equipment to become damaged. Do not operate equipment with Class III leaks. Report Class III leaks to your supervisor or to unit maintenance as soon as possible.

- | | |
|------------|--|
| Class I. | Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops. |
| Class II. | Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected. |
| Class III. | Leakage of fluid great enough to form drops that fall from the item being checked/inspected. |

Keeping equipment capacity in mind, equipment may be operated with Class I or Class II leaks. Maintain fluid levels established by the PMCS. When in doubt, notify unit maintenance.

INSPECTION

1. Take along the tools you need to make all the checks. You ALWAYS need a rag or two and an adjustable wrench to tighten loose fittings.
2. When you inspect for GOOD CONDITION, you look at the item to see that it is safe and serviceable.
3. When you inspect for CORRECT ASSEMBLY AND STOWAGE, you look at the item to see if it is present and installed correctly and securely.
4. There are some items that need to be checked that are common to all parts of the carrier. Keep your wrench and rag handy and check these items each time you do your BEFORE (B) preventive maintenance.



WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Always use in an open area with good air flow, away from sparks, heat, or flames. Wear goggles and gloves. Do not breathe vapors. Avoid contact with skin, eyes, and clothes. If you get dizzy while using solvent, breathe fresh air and get medical help. If solvent gets on hands, wash them. If solvent gets in eyes, flush eyes with fresh water and get medical help immediately. Keep fire extinguisher nearby.

KEEP IT CLEAN

Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. While doing your PMCS, clean as you work and as needed. Use dry-cleaning solvent P-D-680 on all metal surfaces. Use soap and water when you clean rubber or plastic material.

BOLTS, NUTS, AND SCREWS

Check them all for obvious looseness, missing, bent, or broken condition. You can't try them all with a tool, but you can look for chipped paint, bare metal, or rust around bolt heads. If you find one you think is loose, tighten it. If you cannot tighten it, report it to unit maintenance.

WELDS

Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to unit maintenance.

ELECTRONIC WIRING AND CONNECTIONS

Look for cracked or broken wires, bare wires, and loose or broken connectors. Tighten loose connectors and make sure the wires are in good shape. If cracked or broken wires, bare wires, and/or broken connectors are found, report it to unit maintenance.

HOSES AND FLUID LINES

While doing your PMCS, look for wear, damage, and leaks in all hoses and fluid lines. Make sure clamps and fittings are tight. Wet spots mean leaks. A stain around a fitting or connector can mean a leak. Look for these telltale signs. If a leak comes from a loose fitting or connector, tighten it. If a hose or line appears broken or worn out, report it to unit maintenance.

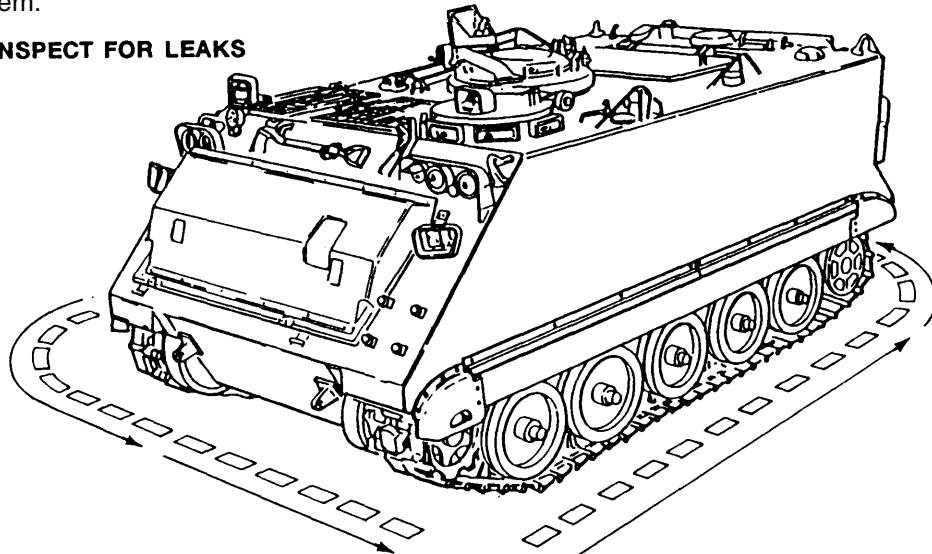
MOUNTED ACCESSORIES

Inspect that mounted accessories are secure and in place before you begin to operate your carrier.

BEFORE YOU GET GOING:

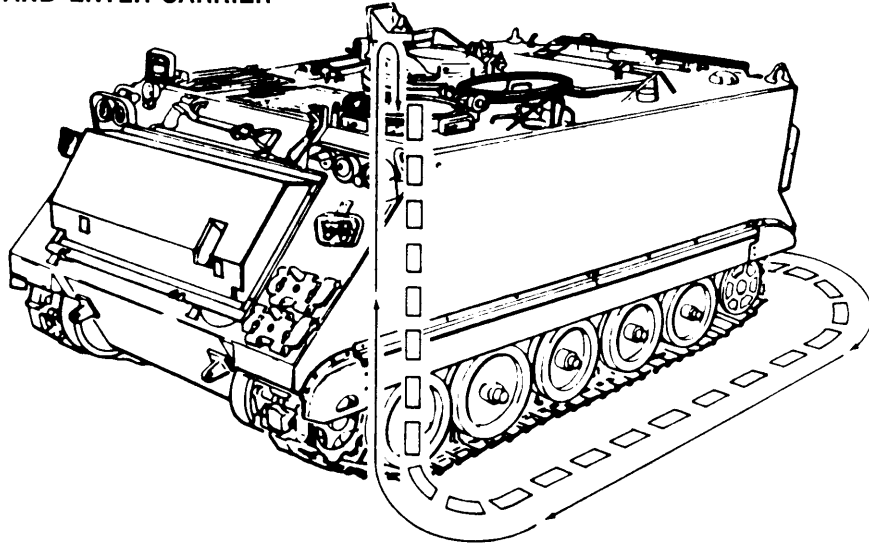
Take a quick walk-around. Be alert. Look for obvious leaks, damage, or missing parts. If trouble is clearly present, go directly to the PMCS step on the damaged item.

INSPECT FOR LEAKS



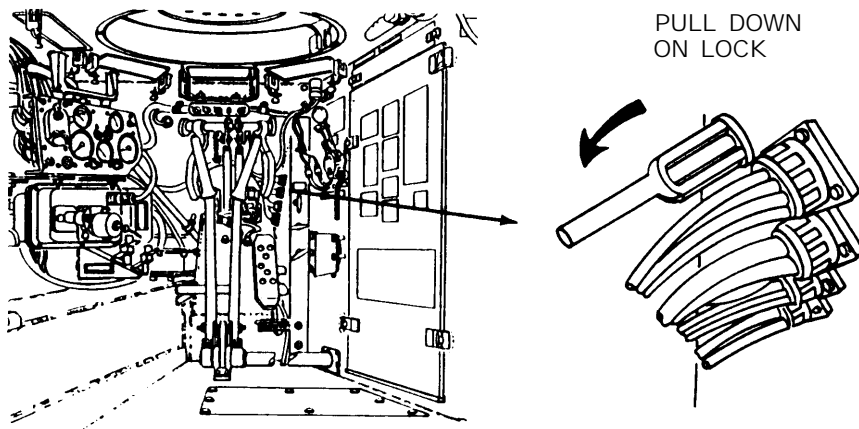
Most carriers are padlocked. Before you begin your PMCS, unlock the carrier and enter it.

OPEN AND ENTER CARRIER



First, make sure the carrier's brakes are SET AND LOCKED. Then unlock the power plant front access door. Pull down on lock to open door.

UNLOCK POWER PLANT FRONT ACCESS DOOR



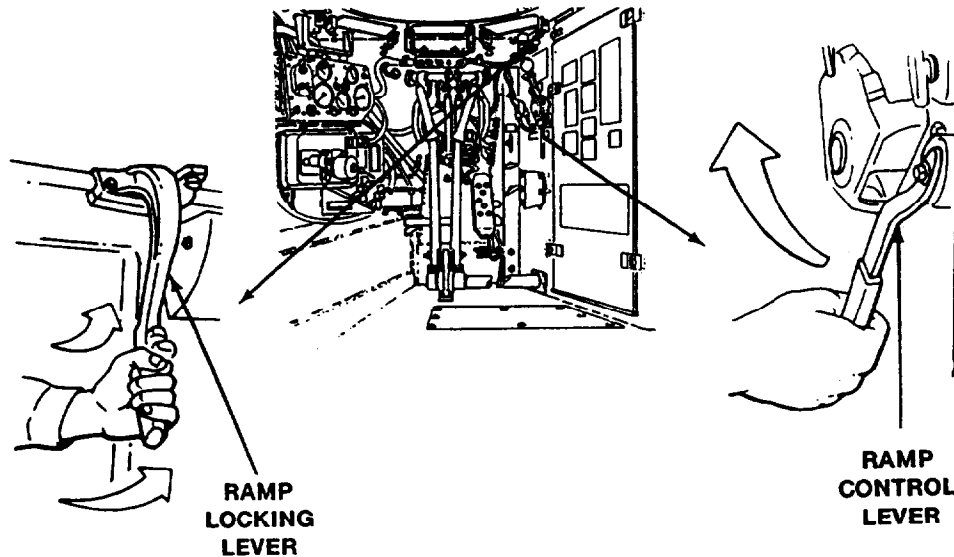
WARNING



Lowering ramp could injure personnel. Make sure no one is in ramp zone before you lower ramp. Unlocked ramp can fall open suddenly. Personnel can be killed or injured. Check that ramp cable is connected with no slack. Ramp system and hull can get damaged if ramp unlocks when carrier is in operation. Do not operate carrier if locks do not secure ramp properly. Keep away from ramps that have come open during carrier operation.

If space and tactical situation permits, you may also lower the rear ramp. This will make your PMCS flow easier. It will save needless climbing to enter and exit the carrier.

Release catch on ramp locking lever and swing it back as far as it will go.



CAUTION

Do not lower ramp on uneven ground or drop ramp too fast. Either will damage ramp.

Push forward on ramp control lever. The farther you push the faster the ramp drops. To stop lowering, release lever smoothly and it will stay put until you move the lever again.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/ service		
			<p style="text-align: center;"><u>WARNING</u></p> <p>Failure to set parking brake and block wheels can allow carrier to move and could result in personnel injury or death. Always set parking brake and block wheels before performing PMCS.</p> <p style="text-align: center;">NOTE</p> <p>Perform your WEEKLY as well as BEFORE PMCS if: You are the assigned operator but have not operated the carrier since your last weekly inspection. You are operating the carrier for the first time.</p> <p style="text-align: center;">THINK SAFETY</p> <p>Inspect and work safely. Protect yourself and your crew members. Read and observe all warnings.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember Procedure</u>	Not Fully Mission Capable If:
		Item to Check/Service		
1	Before	Vehicle Exterior	<p><u>DRIVER</u></p> <p>Walk around vehicle; check for signs of leaks, tampering, damage or missing parts.</p>	<p>Any Class III leak identified.</p> <p>Any damage that would prevent operation.</p>

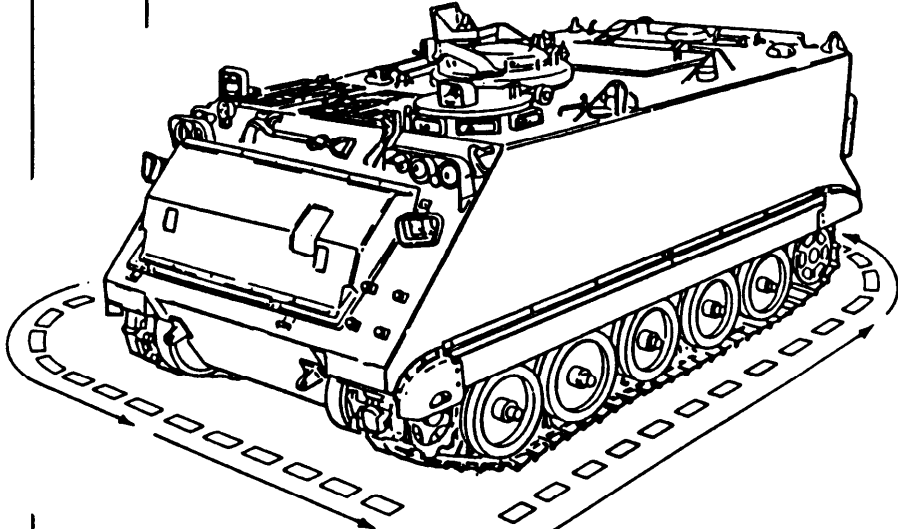


Table 2-1. Preventive Maintenance Checks and Semites for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember Procedure</u>	Not Fully Mission Capable If:
		Item to Check/Service		
2	Before	Carrier Exterior (Ground Level) Final Drive and Hull Plugs	<p><u>CARRIER COMMANDER</u></p> <p>Check beneath carrier for loose or missing hull access cover and drain plugs (five plugs).</p> <p>Tighten loose hull access cover and drain plugs.</p>	Any Class III leak. One or more hull access covers, drain plugs or seals missing.

The diagram shows a top-down view of the carrier hull. A 'HULL ACCESS COVER' is located on the left side. Five 'DRAIN PLUGS' are distributed across the hull: one on the left side, one in the center, and three on the right side. Arrows point from the text labels to these specific locations.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Internal	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check Service		
3	Before	Fire Extinguisher Exterior Pull Handle	<p><u>DRIVER</u></p> <p>Check seal on exterior pull handle. Make sure seal or lock wire is not broken. Report broken seal or lockwire to unit maintenance.</p>	Seal or lockwire missing or broken.
4	Before	Carrier Exterior (on deck) Coolant Level	<p>WARNING</p> <p>Check coolant level when engine is cold. Never try to check coolant level after carrier has been running and engine is still hot.</p> <p>Remove radiator cap. Check that coolant level is within 1/2 inch of bottom of filler neck. Add coolant as needed.</p>	Any Class III leak. Cap damaged or missing.

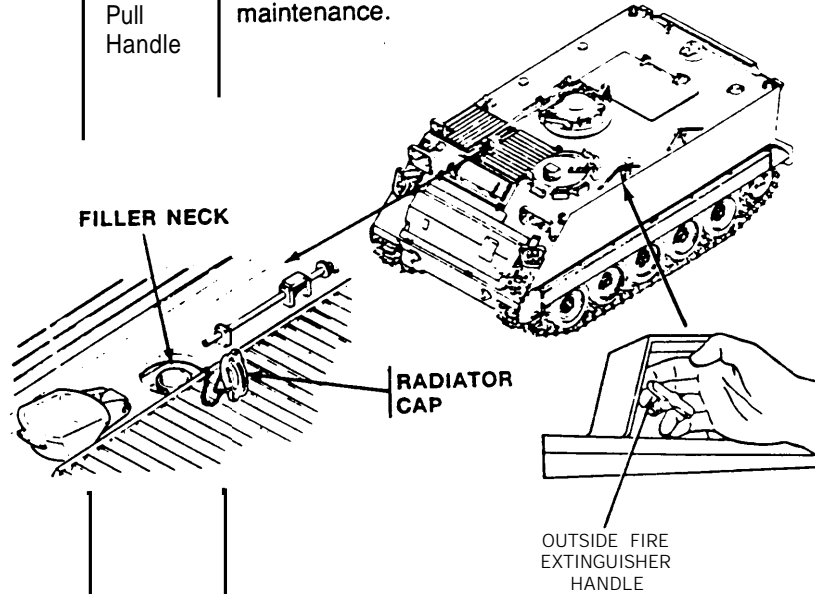


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
5	Before	Air Box	<p><u>DRIVER</u></p> <p>Air box heater accumulator (below +40° F (+4° C only).</p> <p>NOTE</p> <p>Skip this check if your carrier has the electrical air pump.</p> <p>Check accumulator pressure gage each day before you use air box. If gage reads in red zone, use hand pump to pump up system. Keep pumping until gage reads in yellow zone. If gage reads below green mark in red zone, you've lost pre-charge pressure. If so, notify unit maintenance.</p>	Gage reads below green mark in red zone.

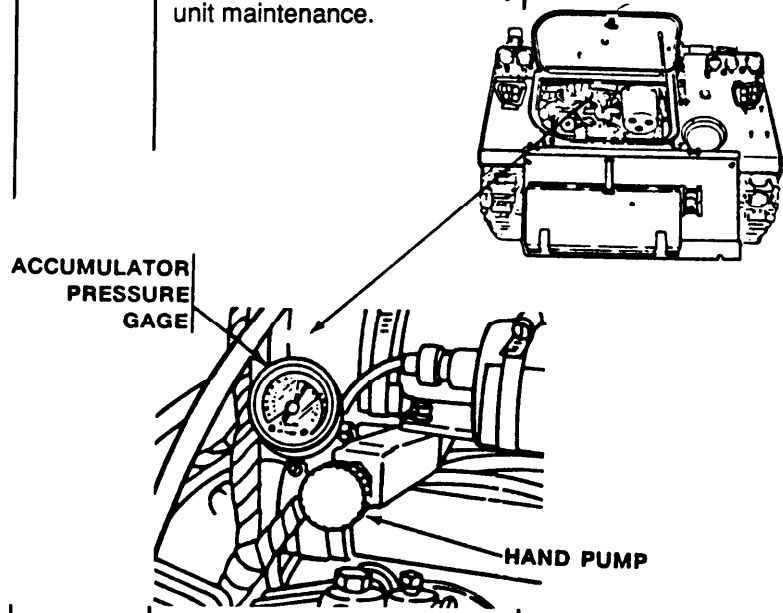


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
6	Before	Portable Fire Extinguishers (M1059 only)	<p><u>CARRIER COMMANDER</u></p> <p>Check exterior hand-held fire extinguisher seals. Check that red indicator stem on cap is not popped up.</p> <p>Check for availability and a full charge.</p>	<p>Fire extinguisher not present or seal is broken. Red stem popped up.</p> <p>Fire extinguisher is missing, pressure gage indicates in discharge area, or seal is broken.</p>

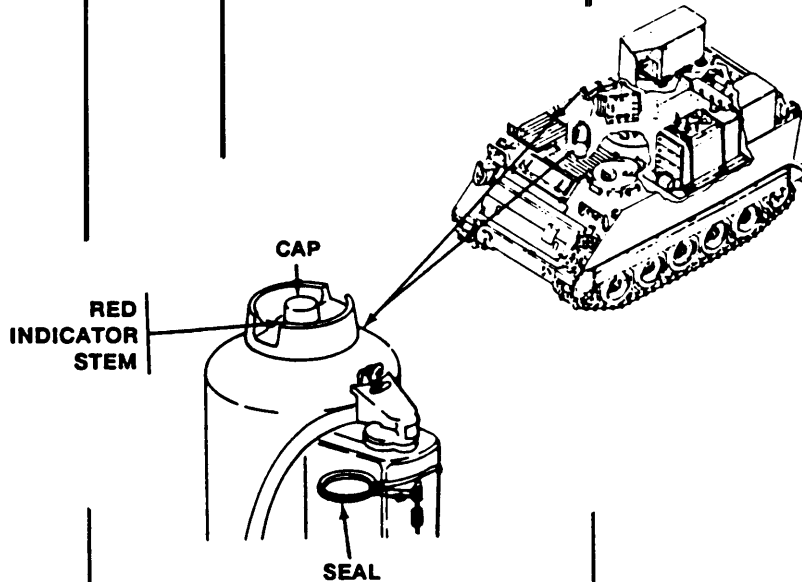


Table 2-1. preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/ Service		
7	Before	Vehicle Interior Fixed Fire Extinguisher	<p><u>DRIVER</u></p> <p><u>WARNING</u></p> <p>Do not operate carrier if portable or fixed fire extinguisher is missing or if either one has been discharged as indicated by a broken or missing lockwire and seal.</p> <p>a. Check fixed extinguisher control seal.</p> <p>Make sure seal or lockwire is not broken. Report broken seal to unit maintenance.</p> <p>b. Check for a full charge.</p>	<p>a. Extinguisher missing or seal or lockwire missing or broken.</p> <p>b. Pressure gage indicates in discharge area, or seal is broken.</p>

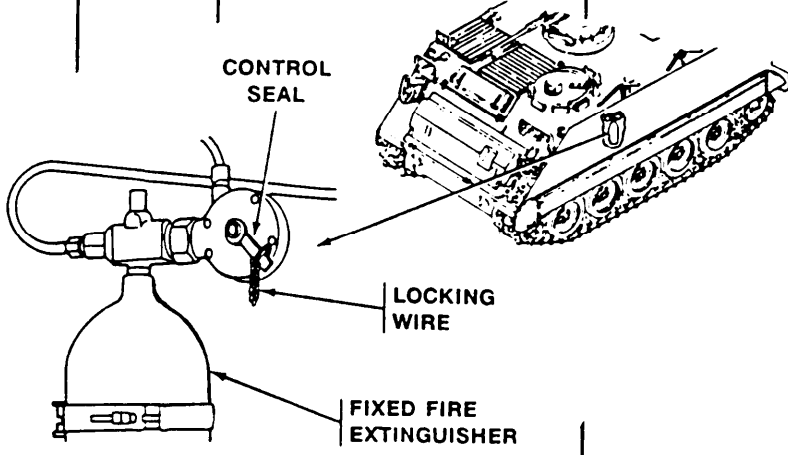


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
8	Before	Portable Fire Extinguisher	<p><u>CREWMEMBER</u></p> <p><u>WARNING</u></p> <p>A fire can break out any time. Personnel could be killed or injured. Equipment could be damaged. Make sure both fire extinguishers are ready to use before you operate carrier.</p> <p>NOTE</p> <p>Manually lower ramp before proceeding with PMCS.</p> <p>a. Check control seal to make sure seal or lockwire is not broken. Report broken seal to unit maintenance.</p> <p>b. Check for a full charge.</p> <p>c. Check fire extinguisher for security of mounting hardware.</p>	<p>a. Extinguisher missing, seal or lockwire missing or broken.</p> <p>b. Pressure gage indicates in discharge area, or seal is broken. Extinguisher feels light if no gage.</p>

M1068 ONLY

Table 2-1. Preventive Maintenance Checks and Services for Model M1132A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
9	Before	Instrument Panel Warning Lights	<p>DRIVER</p> <p>a. Air box heater (below +40°F or +4°C only)</p> <p>NOTE</p> <p>Skip this check if your carrier has air box heater accumulator (PMCS step 5).</p> <p>Turn MASTER SWITCH on, check air box heater as follows:</p> <p>Pull out fuel shutoff control. Press START switch.</p> <p>Turn AIR BOX HEATER switch to ON.</p> <p>Look for puffs of black smoke from engine exhaust. If you see smoke, the heater is OK.</p> <p>Notify unit maintenance if no smoke appears.</p>	

The diagram illustrates the components mentioned in the procedure. On the left, a hand is shown pulling and turning the MASTER SWITCH. In the center, the instrument panel is shown with the START SWITCH and AIR BOX HEATER SWITCH highlighted. On the right, the engine compartment is shown with the FUEL CUTOFF CONTROL highlighted.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/ Service		
9	Before	Instru- ment Panel Warning tight Continued	<p><u>DRIVER</u></p> <p>b. Check binding and sticking of throttle linkage by depressing and releasing the accelerator pedal.</p> <p>c. Start engine.</p> <p>While pressing on throttle pedal, set hand throttle to run engine at 800 to 1000 rpm and let engine warm up for 3 to 5 minutes. Release hand throttle.</p>	<p>b. Linkage binding and/or sticking.</p> <p>c. Engine will not start or runs rough.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
9	Before	Instrument Panel Warning lights Continued	<p><u>DRIVER</u></p> <p>CAUTION</p> <p>If temperature goes above 230°F (110°C), turn off engine and notify unit maintenance.</p> <p>d. Check instrument panel gages. Watch FUEL QUANTITY gage to see that it is operating properly. Check both positions for M1064.</p> <p>e. Watch TACHOMETER to see that it is operating properly. Check that idle speed is normal at 650 to 700 rpm.</p> <p>f. Watch ENGINE COOLANT TEMPERATURE gage to see that it is operating properly. Check that coolant temperature is normal at 160° to 225°F (71° to 110°C).</p>	f. ENGINE COOLANT TEMPERATURE gage is missing or not operating properly.

The diagram shows a rectangular instrument panel with several circular gauges and switches. Labels with arrows point to specific components: 'INSTRUMENT PANEL' at the top right, 'FUEL QUANTITY GAGE' in the middle right, 'FUEL TANK SWITCH (M1064)' at the bottom right, 'TACHOMETER (RPM GAGE)' at the bottom left, and 'ENGINE COOLANT TEMPERATURE GAGE' at the bottom center.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location Item to Check/Service	Crewmember Procedure	Not Fully Mission Capable If:
9	Before	Instrument Panel Warning Lights Continued	<p>DRIVER</p> <p>g. Check BATT GEN indicator. Indicator should read in green zone. Notify unit maintenance if indicator reads in the yellow zone or in the red zone.</p> <p>h. Check warning light panel lights. Watch DIFF OIL HI TEMP, TRANS OIL HI TEMP and ENGINE OIL HI TEMP LO PRESS warning lights for red warning.</p>	<p>g. Gage is not in green zone.</p> <p>h. Any oil warning light comes on.</p>

The diagram illustrates the instrument panel and warning light panel. The instrument panel features several gauges, with a prominent BATT GEN indicator showing a scale from 0 to 100 VOLTS, divided into yellow, green, and red zones. Below the instrument panel is the warning light panel, which contains four indicator lights: DIFF OIL HI TEMP INDICATOR LIGHT, TRANS OIL HI TEMP INDICATOR LIGHT, ENGINE OIL HI TEMP LO PRESS INDICATOR LIGHT, and a WARNING LIGHT PANEL.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

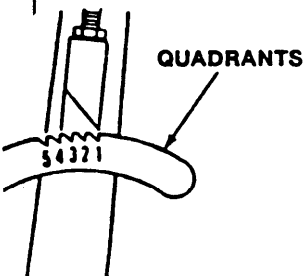
Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
10	Before	Ramp	<p><u>DRIVER</u></p> <p>a. Check ramp operation by raising and lowering.</p> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">Leave ramp lowered.</p> <p>b. Check ramp door operation. Make sure hinges work right and that door can be tightly secured by lock.</p>	<p>a. Ramp will not raise or lower. Ramp will not lock.</p> <p>b., Ramp will not raise or lower under, Power, ramp lock will not hold ramp in closed position.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

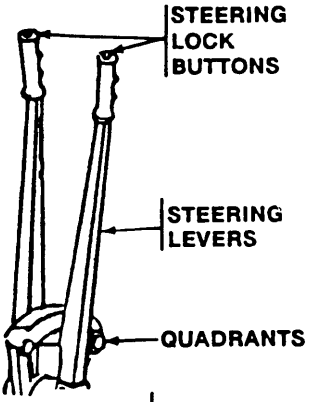
Item No.	Interval	Location	C r e w m e m b e r Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
11	Before	Steering and Braking Controls	<p>WARNING</p> <p>When carrier is moving, pushing down on steering lever lock buttons can cause brake(s) to be locked. Personnel can be killed or injured. Perform steering and braking PMCS only when the engine is stopped.</p> <p>When steering and braking occur before notch 1 or after notch 4 on the quadrant, carrier can skid and crash. Personnel can be killed or injured. if steering and braking is not between notch 2 and notch 3, do not operate carrier. Notify unit maintenance.</p> <p>if left and right steering lever positions are not within one notch difference when both are pulled to the fully applied position, carrier can skid and crash. Personnel can be killed or injured. Do not operate carrier. Notify unit maintenance.</p>	

Table 2-1. preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
11	Before	Steering and Braking Controls Continued	<p>DRIVER</p> <p>Inspect for proper installation of steering lever assemblies.</p> <p>a. Check that mounting bracket screws are tight.</p> <p>b. Check that quadrants are securely mounted and screws and nuts are tight.</p> <p>c. Inspect for proper operation of steering levers.</p> <p>NOTE</p> <p>Get to know the feel of your carrier's steering levers. If your carrier's steering levers do not feel right to you, notify unit maintenance.</p>	<p>a. Any screws or nuts are loose or missing.</p> <p>b. Quadrants loose or missing.</p> <p>c. If resistance is felt at notch 1 of quadrants.</p>



QUADRANTS



STEERING LOCK BUTTONS

STEERING LEVERS

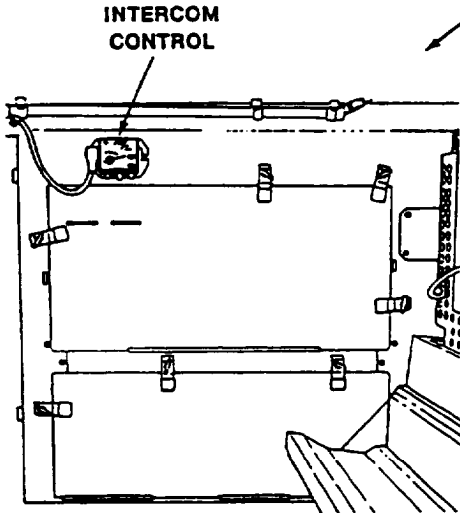
QUADRANTS

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
11	Before	Steering and Braking Controls Continued	DRIVER Unlock levers. 1. Push down on lock buttons and pull both levers rearward. If levers are properly adjusted, resistance will be felt in both levers between notch 2 and notch 3 of quadrants. 2. Pull back and release levers several times.	If resistance is not felt until levers are at notch 4 of quadrants. If difference between left and right steering lever is greater than one notch when fully applied.
11.1	Before	Throttle/Accelerator Pedal	Prior to start of engine check operation of accelerator pedal. Push pedal all the way to the floor. If accelerator pedal sticks notify unit maintenance immediately.	Accelerator pedal sticks.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
12	Before	Carrier Communications Equipment Radio	<p><u>CARRIER COMMANDER</u></p> <p>a. Check radio equipment for proper operation. See TM 11-5820498-12 and/or TM 11-5820-401-10-2. See TM 11-5965-286-14 for headset microphone.</p> <p>b. Check intercom system for proper operation.</p>	<p>a. Will not transmit or receive. Fault listed in "Not Fully Mission Capable If" column of radio TM.</p> <p>b. No intercom between commander and driver.</p>



INTERCOM CONTROL

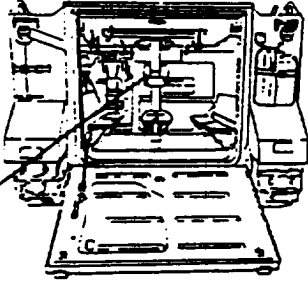


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
13	Before	Mortar-Cannon Tube Assembly (M106A2, M125A2, M1064)	<p><u>GUNNER</u></p> <p>CAUTION Make sure mortar tube is clean and dry before firing.</p> <p>See TM 9-1015-215-10 to conduct P M C S for 4.2 inch/107-mm Mortar.</p> <p>See TM 9-1015-200-10 to conduct PMCS for 81-mm Mortar.</p> <p>See TM 9-1015-250-10 to conduct PMCS for 4.7 inch, 120-mm Mortar.</p>	Fault listed in "Not Fully Mission Capable If" column of Mortar TM.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
14	Before	Machine Gun .50 Cal M2	<p>COMMANDER</p> <p>WARNING Make sure weapon is clear and safe before loading or testing, to prevent accidental firing of machine gun and injury to personnel.</p> <p>a. Check mounting of machine gun in mount.</p> <p>b. Check headspace and timing (see TM 9-1005-213-10) and PMCS.</p>	<p>a. Machine gun missing or unserviceable.</p> <p>b. Fault listed in "Not Fully Mission Capable If" column of machine gun TM.</p>

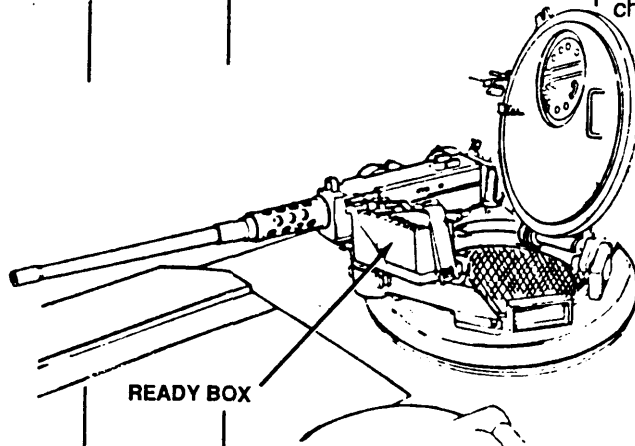


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
15	Before	Smoke Generator System (M1059 Only)	<p><u>GENERATOR OPERATOR</u></p> <p>For PMCS procedures, see TM 3-1040-279-12&P.</p> <p><u>WARNING</u></p> <p>All personnel within 75 feet (22.9 meters) of M1059 during operation must wear personnel hearing devices to prevent hearing damage. Personnel inside carrier in motion, with smoke generator in operation, must wear double hearing protection. Limit exposure of high noise levels to six hours to prevent hearing damage. Use of yellow/white foam ear plugs is prohibited for personnel operating M1059 carrier. Contamination is likely, and loss of hearing could occur.</p>	Fault listed in "Not Fully Mission Capable If" column of smoke generator TM.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
16	During	Controls and Indicators	<p><u>CARRIER COMMANDER</u></p> <p>Monitor all gages and warning lights during operation.</p>	Warning light or any gage indicates a system problem.
16.1	During	Seatbelts	<p>Ensure all personnel are buckled in their seats. Personnel sitting in open hatch area must not expose more than head and shoulders to name tag level, except when firing weapons.</p> <p>NOTE During long engine idling periods, the engine coolant temperature will fall below normal operating range.</p>	Personnel sitting in open hatch area must not expose more than head and shoulders to name tag level, except when firing weapons.
16.2	During	RPM gage	<p>Monitor gage during prolonged engine idle and maintain 1000 rpm.</p>	
17	During	Personnel Heater	<p><u>DRIVER</u></p> <p>NOTE Item checked only if heater is to be used during operation.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
17	During	Personnel Heater	<p><u>DRIVER</u></p> <p>NOTE Item checked only if heater is to be used during operation and vehicle is being used as an ambulance.</p> <p><u>WARNING</u> Ammunition can explode and kill you. Do not start heater until ammunition and combustible explosive materials are properly stored at least 30 inches from heater vents. Combustible materials must be stored 12 inches or more from metal surfaces of heater.</p> <p>Do not operate personnel heater if any fuel leak is found in heater or in fuel lines.</p> <p>NOTE During long engine idling periods, the engine coolant temperature will fall below normal operating range.</p>	Heater must be completely functional.

Change 5 2-56.1 (2-56.2 blank)

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember Procedure</u>	Not Fully Mission Capable If:
		Item to Check/Service		
17	During	Personnel Heater Continued	<p><u>CARRIER/COMMANDER</u></p> <p>a. Check personnel heater fuel lines.</p> <p>b. Check for leaks in fuel lines, especially near connections.</p> <p>c. Make sure nothing is blocking the personnel heater exhaust, air inlet or heater ducts.</p>	a. Any Class III fuel leaks in heater or fuel lines.

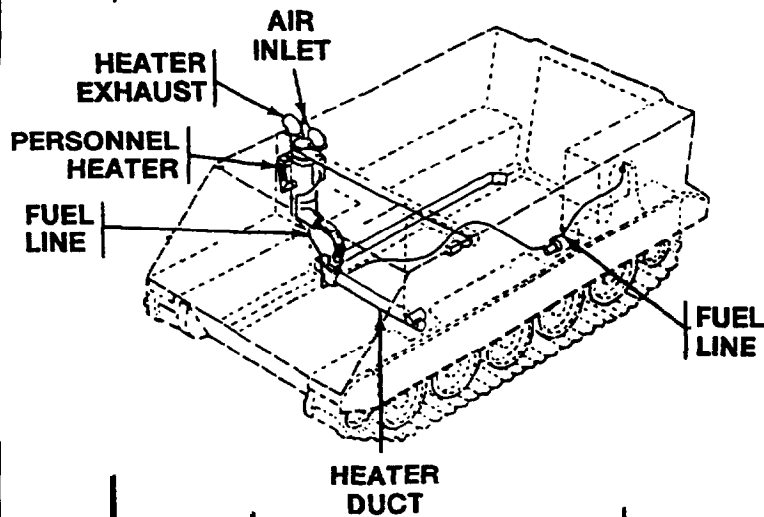


Table 2-1. Preventive Maintenance Checks and Services for Model M11342 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
17	During	Personnel Heater (Electrical Circuits) Continued	<p><u>DRIVER</u></p> <p>d. Check operation of personnel heater electrical circuits.</p> <p>Push the PRESS-TO-TEST light cover. Make sure indicator light comes ON before you start heater.</p> <p>Make sure Hi-Lo switch is on Lo before you start heater.</p>	

A perspective view of a personnel heater unit. A dashed line indicates the unit's outline. A person is shown sitting on the unit, interacting with a control panel. Two labels with leader lines point to the 'PERSONNEL HEATER' and 'PERSONNEL HEATER INDICATOR LIGHT'.

A top-down view of a rectangular control panel labeled 'HEATER CONTROL'. On the left, there is a 'HI-LO SWITCH' with 'HI' and 'LO' positions. In the center is a circular 'PERSONNEL HEATER INDICATOR LIGHT'. On the right, there is a 'PRESS-TO-TEST SWITCH' with 'RUN' and 'OFF' positions, and a 'START' button below it.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
17	During	Personnel Heater (Electronic Equipment Heater M577A2) Continued	<p><u>DRIVER</u></p> <p>e. Check operation of electronic equipment heater. Check exhaust and intake ports for blockage. Check air outlet elbow for blockage. Check for leaks in fuel lines.</p> <p><u>WARNING</u></p> <p>Do not operate heater if any fuel leak is found in heater or in fuel lines.</p>	a. Any Class III fuel leaks.

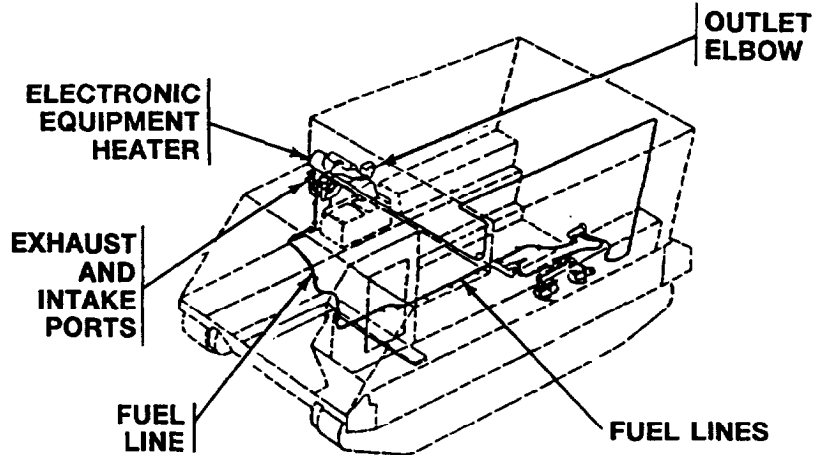


Table 2-1. Preventive Maintenance Checks and Services for Model M1132 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
18	During	Coolant Heater	<p><u>DRIVER</u></p> <p>NOTE</p> <p>Item checked only if heater is to be used during operation.</p> <p>Make sure nothing is blocking coolant heater exhaust or air inlet.</p> <p>a. Check for leaks in fuel lines and coolant lines. Make sure coolant valves are open before you start heater.</p>	<p>a. Any Class III fuel leak. Any Class III coolant teak</p>

The diagram illustrates the coolant heater assembly. It shows a main unit with a dashed outline representing the housing. Labels point to various components: 'COOLANT HEATER EXHAUST' at the top, 'COOLANT HEATER' on the side, 'AIR INLET' at the front, 'COOLANT LINES' connecting to the bottom, and 'FUEL LINE' on the right. Below the main unit, two detailed views of 'COOLANT VALVE' are shown, one on the left and one on the right, connected to the coolant lines.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
18	During	Coolant Heater Continued	<p>b. Check operation of coolant heater electrical circuits.</p> <p>c. Push the PRESS-TO-TEST light cover. Make sure indicator light comes on before you start heater.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
19	During	Smoke Generator System (M1059 Only)	<p><u>GENERATOR OPERATOR</u></p> <p>For PMCS procedures, see TM 3-1040-279-12&P.</p> <p><u>WARNING</u></p> <p>All personnel within 75 feet (22.9 meters) of M1059 during operation must wear personnel hearing devices to prevent hearing damage. Personnel inside carrier in motion, with smoke generator in operation, must wear double hearing protection. Limit exposure of high noise levels to six hours to prevent hearing damage. Use of yellow/white foam ear plugs is prohibited for personnel operating M1059 carrier. Contamination is likely, and loss of hearing could occur.</p>	Fault listed in "Not Fully Mission Capable If" column of smoke generator TM.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
20	During	Mortar-Carrier Tube Assembly (M106A2, M125A2, M1064)	<p>GUNNER</p> <p>See TM 9-1015-215-10 to conduct PMCS for 4.2 inch/107-mm Mortar.</p> <p>See TM 9-1015-200-10 to conduct PMCS for 81-mm Mortar.</p> <p>See TM 9-1015-250-10 to conduct PMCS for 4.7 inch, 120-mm Mortar.</p>	Fault listed in "Not Fully Mission Capable If" column of mortar TM.
21	During	Generator Set (M577A2 Only)	See TM 5-6115-596-14 for PMCS procedures.	Fault listed in "Not Fully Mission Capable If" column of generator TM.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
22	During	Air Cleaner Indicator	<p>DRIVER</p> <p>a. Check air cleaner restriction indicator.</p> <p>b. Watch air cleaner window. Any time sleeve is locked up so you can see only red in window, clean air cleaner element. When element is clean, press rubber dome to reset air cleaner restriction indicator.</p> <p>c. Check hose at back of indicator for proper connection between indicator and air cleaner. If hose is loose, damaged, broken or missing, notify unit maintenance.</p>	<p>a. Air remains restricted after resetting.</p> <p>c. Hose or indicator cracked or damaged.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember	Not Fully Mission Capable If:
		Item to Check/Service	Procedure	
23	During	Steering, Braking, Shifting and Throttle Controls	<p><u>DRIVER</u></p> <p><u>WARNING</u></p> <p>Make sure seat belts are worn at all times when carrier is in motion, except when performing water operation.</p> <p>a. Check steering levers, pivot steer levers, range selector, hand throttle and accelerator.</p> <p>b. Operate steering levers, pivot steer levers, range selector (in all ranges), hand throttle and accelerator pedal.</p>	<p>a. If binding, grabbing, unusual noise or vibration is felt during operation of any of these items.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
24	After	Neutral Start Switch	<p>DRIVER</p> <p>NOTE</p> <p>After Operation PRE-VENTIVE MAINTENANCE begins the moment the carrier engine shuts off after mission mode is completed.</p> <p>a. Check for proper operation of neutral start switch. Engine should only start with range selector in N range.</p> <p>b. Check range selector mounting screws. If screws are loose or missing, report it to unit maintenance.</p>	<p>a. Switch missing. Engine can be started in any forward or reverse range.</p> <p>b. Mounting screws loose or missing.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location Item to Check/ Service	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
25	After	Trans- mission Oil Level (Hot Check)	<p>DRIVER</p> <p><u>WARNING</u></p> <p>Make sure carrier is on level surface and steering levers are locked to the rear.</p> <p>Check transmission oil level while engine is running at normal operating temperature of 160° to 230°F (71° to 110°C).</p> <p>Lock steering levers. Shift range selector to 2-3 range. Run engine at 1000 rpm for 3 to 5 minutes. Reduce engine speed to idle (650 to 700 rpm). Shift range selector through all ranges. Shift range selector to N range. Set hand throttle to run engine at 1500 rpm.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
26	After	Engine Shut-down	<p><u>DRIVER</u></p> <p>a. Check engine for proper shutdown.</p> <p>Pull out hand throttle and run engine at 800 to 1000 rpm until normal idle temperature of 160° to 185°F (71° to 85°C) is reached as indicated by temperature gage.</p> <p>Push handle throttle in and let engine idle for a few seconds, then pull the fuel cutoff control out to shut engine off.</p> <p>Turn MASTER SWITCH to OFF.</p> <p>b. Check fuel shut-off cable for any binding, grabbing, or looseness that would prevent engine from being shut down.</p> <p>Notify unit maintenance if engine will not shut down.</p>	<p>a. Engine won't shut down.</p> <p>b. Fuel shut-off cable unserviceable.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
27	After	Operator's Power Plant Access	<p><u>DRIVER</u></p> <p>Remove operator's power plant access panel and check for signs of leaks in fuel lines, coolant hoses, oil lines and air intake ducts.</p> <p><u>WARNING</u></p> <p>Carbon monoxide gas is deadly poison. Make sure operator's power plant access panel is closed tightly.</p>	Any Class III leak. Any holes or tears in flexible ducts.

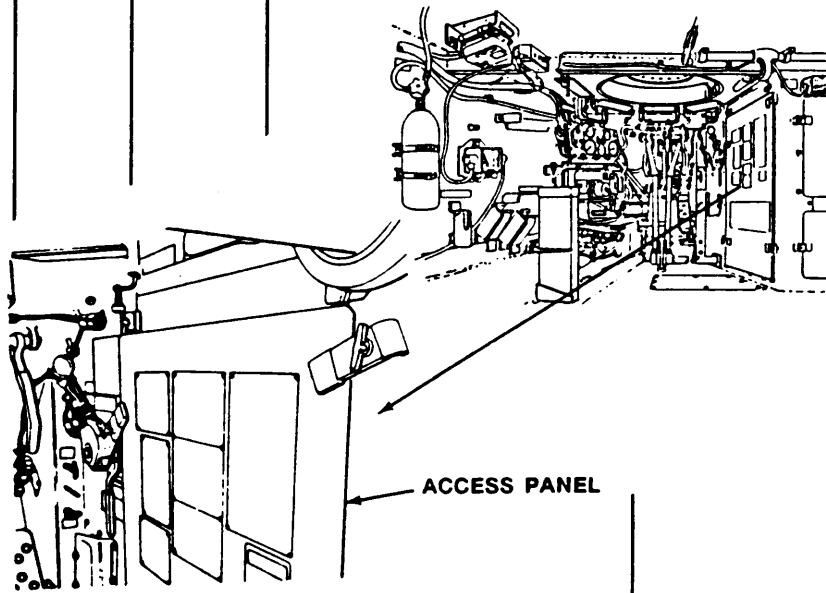
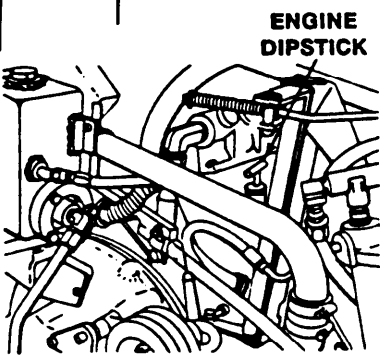


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
28	After	Engine Oil Level	<p>DRIVER</p> <p>CAUTION</p> <p>Carrier must be on level surface with cap on dipstick loosened for proper oil reading.</p> <p>Check engine oil level.</p> <p>Oil level on engine dipstick should be between L (low) and F (full). Add oil as needed. Do not overfill. Oil level between L and F is OK. Oil level should not be above F mark. Tighten cap on dipstick after oil check.</p>	Any Class III leak.



ENGINE DIPSTICK

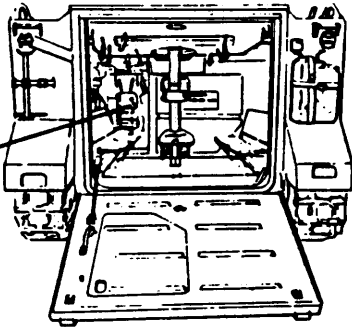


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
29	After	Driver's Compartment Power Plant Access Panel and Seal	<p><u>DRIVER</u></p> <p>Check operator's power plant access panel to make sure it seals tightly.</p> <ol style="list-style-type: none"> 1. Check panel for damage or warps. 2. Check panel latches for looseness. 3. Tighten loose latches. Report missing latches to unit maintenance. 4. Check rubber seals for breaks, brittleness, cracks or poor seating. 	<ol style="list-style-type: none"> 1. Panel will not seal. 3. Latch missing or will not tighten. 4. Seals torn or missing.

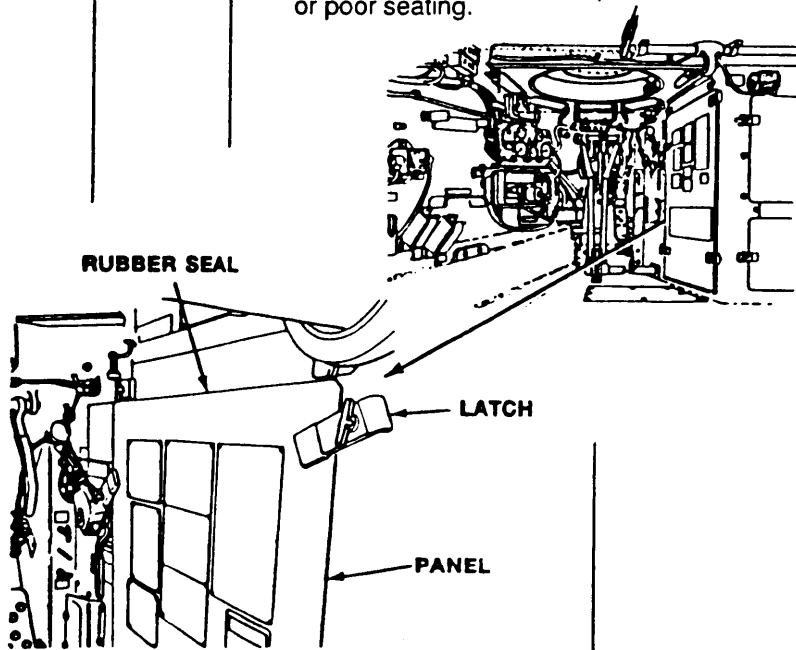


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location Item to Check/ Service	Crewmember Procedure	Not Fully Mission Capable if:
30	After	Rear Power Plant Access	<p><u>CARRIER COMMANDER</u></p> <p>WARNING</p> <p>Carbon monoxide gas is deadly poison. Make sure rear power plant access panel is closed tightly.</p> <p>Remove rear power plant access panel and check for signs of leaks in fuel lines, coolant hoses, oil lines and air intake ducts. Report Class I and Class II fluid leaks after operation.</p>	<p>Any Class III leak. Any holes or tears in flexible ducts.</p>

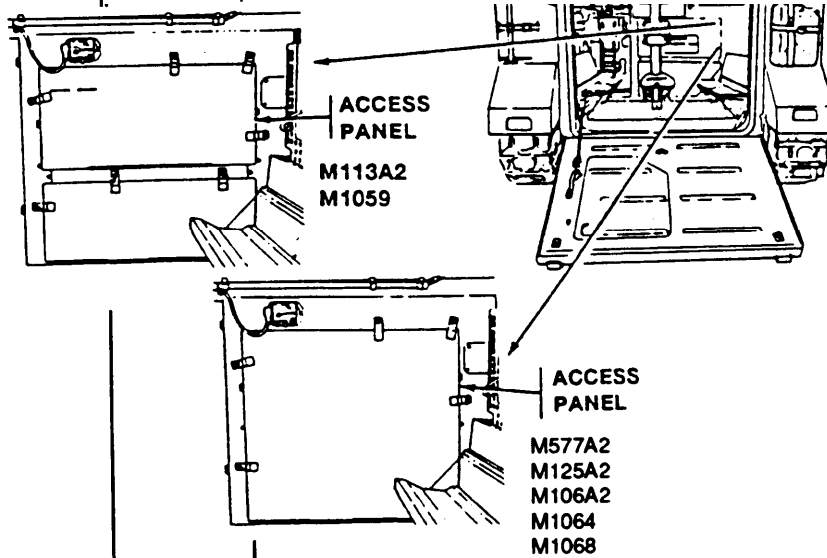


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
31	After	Fuel Filters	<p>CARRIER COMMANDER</p> <p>Drain any water and deposits out of the primary and secondary fuel filters. To drain fuel filters:</p> <p>Place container under drain valve of primary fuel filter. Slowly turn petcock to open valve. Allow all water and deposits to drain into container. Drain until clear fuel runs out. Repeat the above for secondary fuel filter.</p>	Will not drain. Class III leak or dirt in secondary filter.

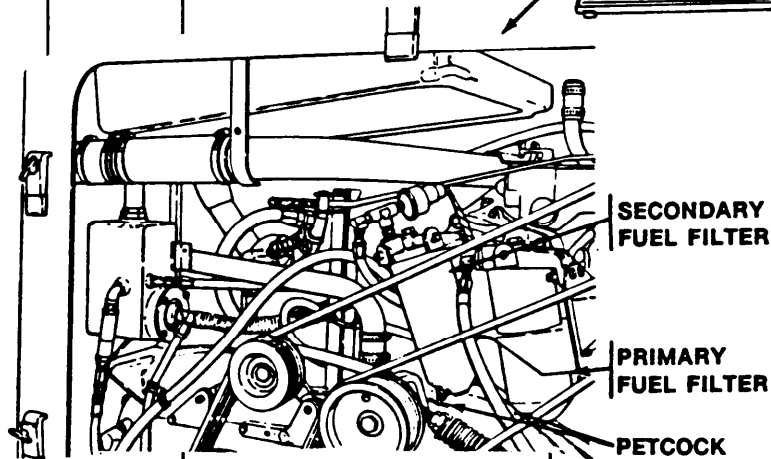
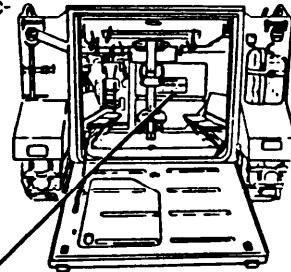
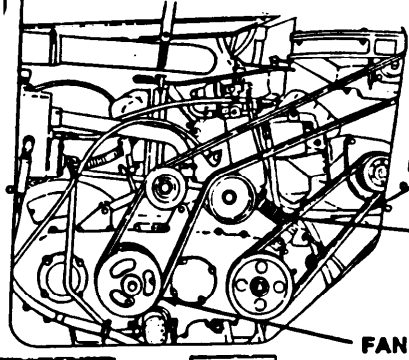
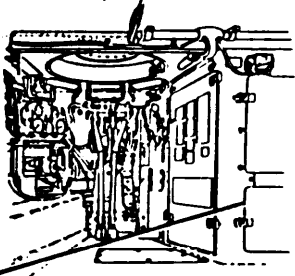
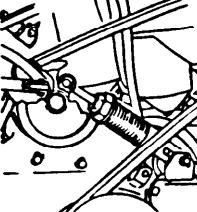


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
32	After	Transfer Gearcase Oil Level	<p>CARRIER COMMANDER</p> <p>Check transfer gearcase oil level.</p> <p>Oil level on transfer gearcase dipstick should be between ADD and FULL. Add oil as needed.</p>	Any Class III oil leak.
33	After	Fan Gearbox Oil Level	<p>Check oil level of fan gearbox. Oil level should be between ADD and FULL marks on sight glass indicator. Add oil as needed. Do not overtighten fill plug on fan gearbox.</p>	No oil in sight glass. Any Class II oil leak.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
34	After	Belts	<p>CARRIER COMMANDER</p> <p>a. Check for missing, broken, cracked or frayed drivebelts. Check generator and fan belts 1/2-inch to 5/8-inch adjustment for looseness, dry rot, excessive fraying and cracks.</p> <p>b. Check idler adjuster for correct adjustment. Report any idler adjustment rod that is not between the operating range marks to unit maintenance.</p>	<p>a. Any drivebelt is missing or broken. Belt fiber has more than one crack (1/8 inch in depth or 50% of belt thickness) or has frays more than 2 inches long.</p> <p>b. Any pulley cracked, broken, or bolts loose or missing.</p>

FAN BELT
GENERATOR BELT
IDLER ADJUSTER

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
35	After	Rear Compartment Power Plant Access Panels and Seal	<p><u>CARRIER COMMANDER</u></p> <p>Check rear compartment access panel for good sealing.</p> <ol style="list-style-type: none"> 1. Check panel for damage or warps. 2. Check panel latches for looseness. 3. Tighten loose latches. Report missing latches to unit maintenance. 4. Check rubber seals for breaks, brittleness, cracks or poor seating. 	<ol style="list-style-type: none"> 1. Panel will not seal. 3. Latch missing or will not tighten. 4. Seals torn, missing.

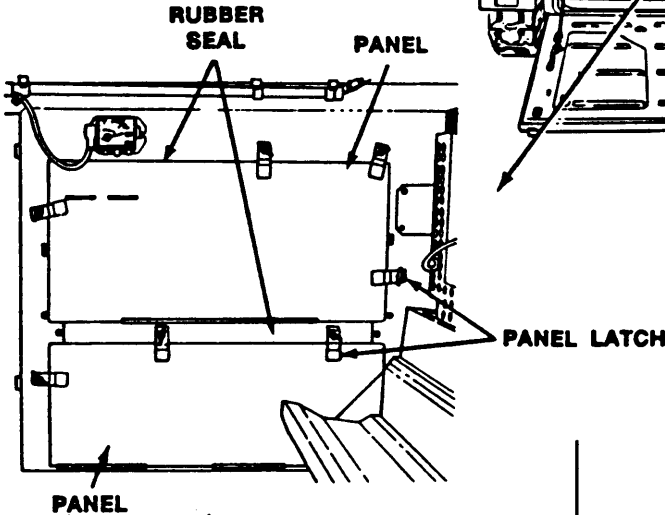
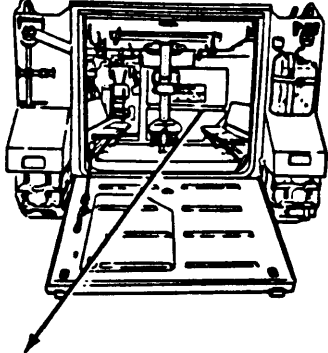



Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
36	After	Machine Gun And Mount	<p><u>CARRIER COMMANDER</u></p> <p><u>WARNING</u></p> <p>Make sure machine gun is clear and locked and barrel is free of obstructions.</p> <p>a. Check gun mount for missing pins. Check for tightness of all fasteners and operating parts. Operate ammo box locking latch. When locked, ammo box must be sturdy and secure.</p> <p>b. Check machine gun, see TM 9-100-213-10 for after operation cleaning, lubrication and PMCS.</p>	<p>a. Any pin or fastener missing.</p> <p>b. Fault listed in "Not Fully Mission Capable If" column of machine gun TM.</p>

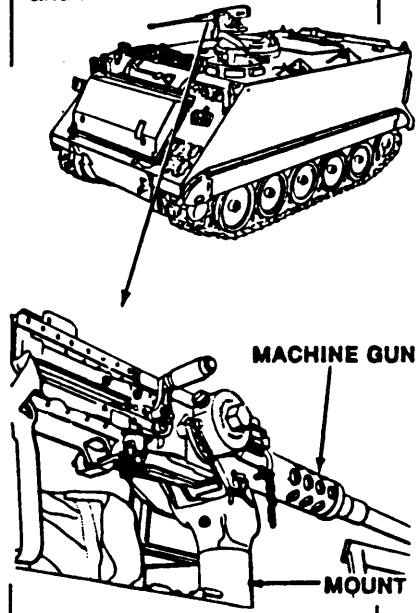


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
37	After	Com-mander's Cupola	<p>CARRIER COMMANDER</p> <p>Check that cupola lock stops movement of cupola. Release lock and test cupola for ease of movement. Test drag brake. Report damaged lock or drag brake.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember Procedure</u>	Not Fully Mission Capable If:
		Item to Check/Service		
38	After	Smoke Grenade Launcher Controls (M113A2 and M1059)	<p>CARRIER COMMANDER</p> <ul style="list-style-type: none">a. Indicator light comes on when ARM/OFF switch is set to ON.b. Check electrical connector to launcher control for bent pins, frayed wires, tears or any damage rendering the cable unserviceable.	

The diagram illustrates the Smoke Grenade Launcher Controls (M113A2 and M1059). It shows a perspective view of the control unit with its top cover removed, revealing internal components. A line points from the text 'SMOKE GRENADE ARM-OFF SWITCH' to a toggle switch on top of the unit, which has 'ARM' and 'OFF' positions. Another line points from 'SMOKE GRENADE ARM-OFF INDICATOR LIGHT' to a small circular light on the front panel. A third line points from 'SMOKE GRENADE FIRE SWITCH' to a large, circular rotary switch on the front panel. The unit is labeled 'SMOKE GRENADE LAUNCHER' on its front face. A perspective view of the unit installed in a carrier's control console is shown to the left, with a line pointing to the unit's location.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
38	After	Smoke Grenade Launcher (M113A2 and M1059) Continued	<p>CARRIER COMMANDER</p> <p>c. Clean smoke grenade launcher tubes.</p> <p>During continued firing, clean tubes with cleaning compound (RBC, Item 4, Appen. D). Do not wipe dry or lubricate. Immediately after firing and on two consecutive days thereafter, thoroughly clean tubes with cleaning compound. Make sure all surfaces are well-coated. Do not wipe dry. On third day after firing, clean tubes with cleaning compound. Wipe dry with clean cloth.</p>	

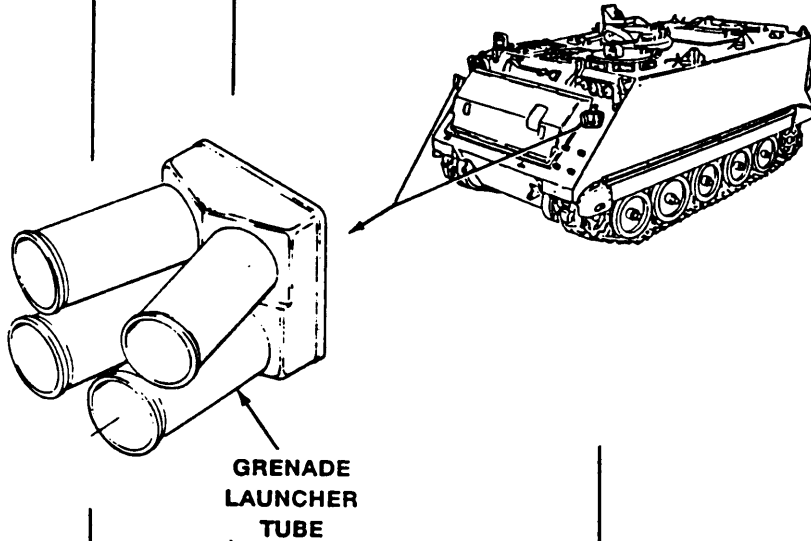


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
39	After	Fuel Lines	<u>CARRIER COMMANDER</u>	Any Class III fuel leak.
			Check carrier fuel lines for leaks. Report any leak to unit maintenance.	

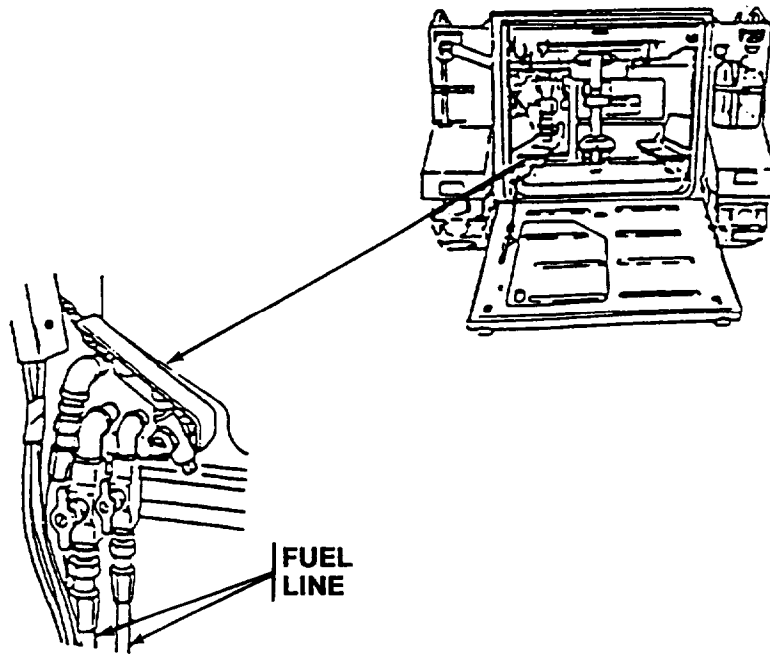


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
40	After	Fuel Tank and Filler Cap	<p><u>CARRIER COMMANDER</u></p> <p>CAUTION Make sure carrier is properly grounded during refueling.</p> <p>Fill fuel tank after operation. Allow about 5 inches of space in filler neck for fuel expansion.</p> <p>Make sure filler screen is clean and in good shape. If the screen needs cleaning, do it before you fill up on fuel. Install screen before refueling. Make sure filler cap is OK and seals tightly on filler neck.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
41	After	Mortar Carrier (M105A2, M125A2, M1064)	<p><u>GUNNER</u></p> <p>See TM 9-1015-215-10 to conduct PMCS for 4.2 inch, 107-mm mortar.</p> <p>See TM 9-1015-200-10 to conduct PMCS for 81-mm mortar.</p> <p>See TM 9-1015-250-10 to conduct PMCS for 4.7 inch, 120-mm mortar.</p> <p>NOTE</p> <p>Assist carrier commander and driver in performing PMCS on carrier.</p>	Fault listed in "Not Fully Mission Capable If" column of mortar TM.
41.1	After	Ammo Racks, Door, Posts and Hinges (M106A2, M125A2, M1064)	<p>Check racks, door, posts and hinges for cracks and breaks. Report damaged racks, hinges, doors or posts to unit maintenance.</p> <p>WARNING</p> <p>Fuel lines may vibrate loose or crack during mortar firing. Fuel leaks can cause fumes or fires which cause serious bodily harm or death to personnel. if fuel leaks, <u>STOP FIRING</u>. Repair leaks or cracks, wipe up any excess fuel before you resume firing.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

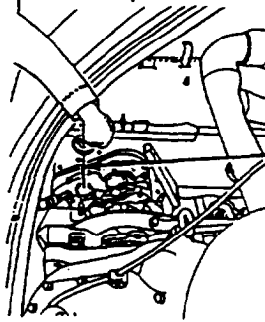
Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
42	After	Front Access Power Plant Compartment	<p><u>DRIVER</u></p> <p>a. Lower trim vane.</p> <p>b. Check inside power plant compartment for leaks and damage.</p> <p>c. Check air intake ducts, fuel lines and coolant hoses for signs of damage and loose fittings.</p> <p><u>CAUTION</u></p> <p>Make sure you check all flexible air intake ducts for damage. Do not operate carrier with any holes or tears in flexible ducts.</p>	<p>b. Any Class III leak.</p> <p>c. Any holes or tears in flexible air intakes ducts.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

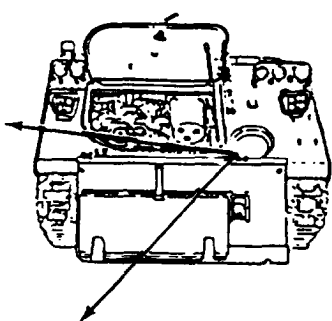
Item No.	Interval	Location	<u>Crewmember Procedure</u>	Not Fully Mission Capable If:
		Item to Check/Service		
43	After	Final Drive Housings	<p><u>DRIVER</u></p> <p><u>WARNING</u> Final drive housings can heat up enough to bum you.</p> <p>a. Check final drive housings for overheating. Feel each final drive housing. If it is too hot to touch, report overheated final drive housing to unit maintenance.</p> <p>b. Check for drain plugs.</p>	<p>a. Any overheated drive housing.</p> <p>b. Drain plug missing.</p>

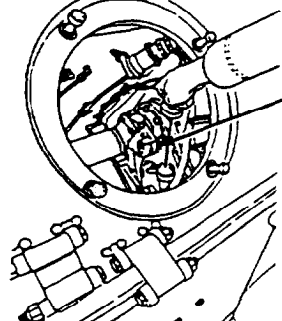
Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
44	After	Final Drives Oil Levels	<p>DRIVER</p> <p>Check oil levels of left and right final drives.</p> <p>Oil level of final drive dipstick should be between ADD and FULL. Add oil as needed. Do not overfill.</p>	Missing dipstick.



RIGHT FINAL DRIVE DIPSTICK





LEFT FINAL DRIVE DIPSTICK

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
45	After	Propeller Shafts, Universal Joints (Three Locations)	<u>DRIVER</u> Check propeller shafts, universal joints, mating coupling and yokes for loose or missing mounting hardware, corrosion and evidence of wear/damage.	Any bolt or washer loose, broken or missing.

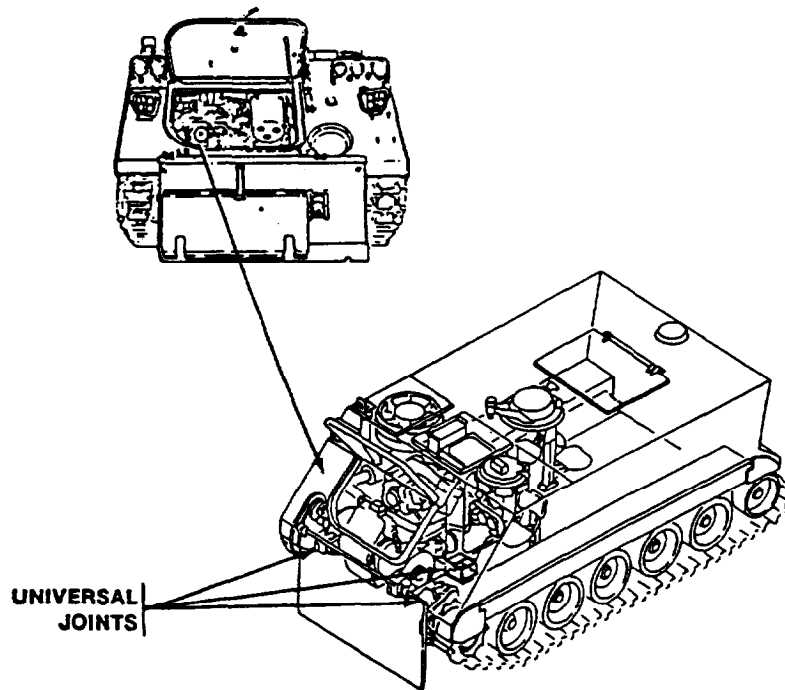
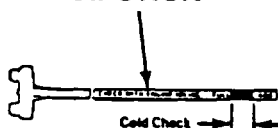



Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

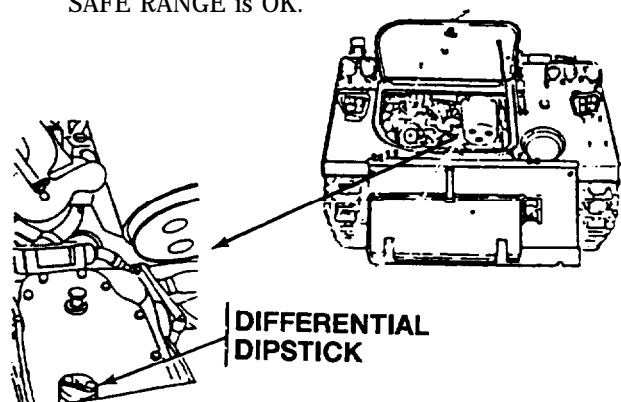
Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
46	After	Differential Oil Level	<p><u>DRIVER</u></p> <p>CAUTION Make sure differential filler cap is closed tight after oil level inspection.</p> <p>NOTE If engine has been running, wait 10 or 15 minutes after stopping engine before checking differential oil level.</p> <p>Check differential oil level.</p> <p>Oil level on old style dipstick should be between ADD and FULL.</p> <p>Oil level on new dipstick should be in the SAFE RANGE.</p> <p>Add oil as needed. Do not overfill. Oil level between ADD and FULL or in SAFE RANGE is OK.</p>	Missing dipstick.

OLD STYLE DIPSTICK



NEW STYLE DIPSTICK

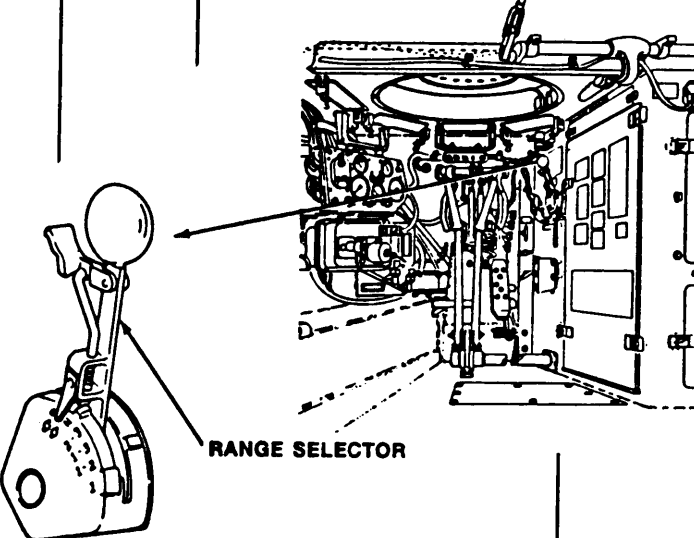




DIFFERENTIAL DIPSTICK

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
47	After	Track Tension	<p>DRIVER</p> <p>WARNING</p> <p>Area in front of carrier must be clear and level before coasting stop.</p> <p>NOTE</p> <p>Drive carrier onto hard, level ground. Shift range selector to N range and let carrier coast to a stop. Do not use brakes. After carrier has stopped, shut off engine and exit carrier.</p>	



RANGE SELECTOR

The diagram shows a close-up of the range selector lever on the left, which has a spherical knob and a base with markings. An arrow points from this lever to a larger diagram of the driver's compartment on the right. In the compartment diagram, an arrow points to the location of the range selector lever on the floor near the driver's seat.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

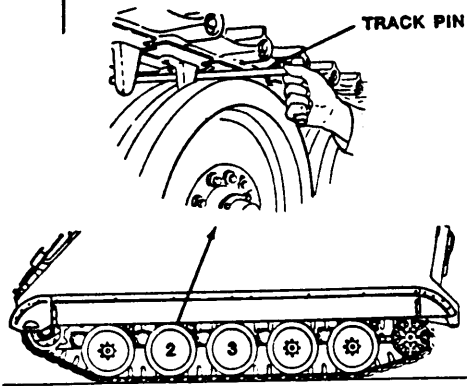
Item No.	Interval	Location	<u>Crewmember Procedure</u>	Not Fully Mission Capable If:
		Item to Check/Service		
47	After	Track Tension Continued	<p><u>DRIVER</u></p> <p>a. Check track tension and adjust as needed. Measure track tension as follows:</p> <p style="text-align: center;">NOTE</p> <p>Punch is located in carrier's tool bag.</p> <p>Insert handle of track pin punch between top of number two roadwheel and bottom of track. If handle can be inserted freely and track touches top of number three roadwheel, track tension is correct. If handle cannot be inserted freely between top of number two roadwheel and bottom of track, track tension is too loose. Tighten track tension.</p>  <p>The diagram consists of two parts. The top part is a close-up view of a track pin punch being inserted between the top of roadwheel 2 and the bottom of the track. An arrow points to the punch with the label 'TRACK PIN'. The bottom part is a side view of the track system with roadwheels numbered 1 through 5. An arrow points from roadwheel 2 to the punch in the top diagram.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
47	After	Track Tension Continued	<p>b. Check for missing, damaged, or leaking track adjusters.</p> <p style="text-align: center;">CAUTION</p> <p>Track adjuster extended too far may buckle and become damaged during operation. Do not extend track adjuster beyond 17 inches (maximum), as measured between centers of track adjuster and mounting screws.</p> <p style="text-align: center;">NOTE</p> <p>Use track pin punch for measurement if longer than punch. Remove track shoe.</p> <p>Repeat the inspection procedure on the other track. Adjust track tension as needed.</p>	<p>b. Track adjuster missing or unserviceable. Any class II or class III leaks.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
48	After	Sprockets and Cushions	<p><u>DRIVER</u></p> <p>a. Check sprockets for cracked, broken or missing teeth and loose or missing mounting bolts.</p> <p>Tighten loose mounting bolts as needed. Report cracked, broken, or missing sprocket teeth and missing mounting bolts to unit maintenance.</p>	<p>a. Any sprocket tooth cracked, broken, or missing. Any sprocket to sprocket carrier mounting bolt missing. Two or more sprocket carrier to hub mounting bolts missing.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
48	After	Sprockets and Cushions Continued	<p><u>DRIVER</u></p> <p>b. Check sprocket teeth for wear. Use track and sprocket gage to measure sprocket teeth. If any part of sprocket tooth does not extend beyond gage, notify unit maintenance.</p> <p>c. Check cushions for wear and damage. If cushions appear to be moving on sprocket hub, notify unit maintenance. If track shoes are contacting sprocket hub flange, a thumping sound will be heard. Cushions should be replaced.</p>	b. Any sprocket tooth fails gage test.

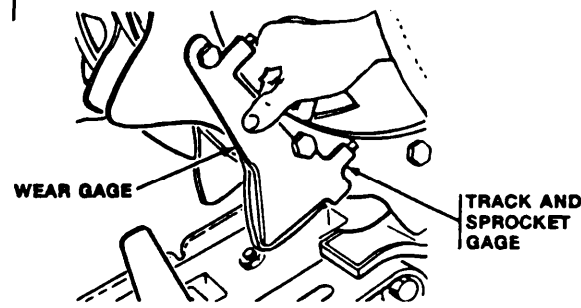
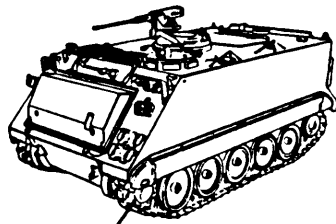


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
49	After	Roadwheels and Idler Wheels	<p>DRIVER</p> <p>WARNING</p> <p>Roadwheel hubs and idler wheel hubs can heat up enough to burn you.</p> <p>a. Check roadwheels and idler wheels for overheating, worn mounting holes and separation of rubber from metal.</p> <p>b. Check for missing, bent or cracked roadwheels and idler wheels.</p>	<p>a. Separation of one half of rubber contact from the hub. Chunking across one-half width of outer rubber surface.</p> <p>b. Missing, bent, warped or cracked roadwheel or idler wheel. Mounting holes elongated.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
49	After	Road-wheels and Idler Wheels Continued	<p>NOTE</p> <p>If a hub feels hotter than any other or is hotter than normal, you may have a bearing that needs service.</p> <p>c. Feel roadwheel hubs and idler wheel hubs.</p> <p>Report any hub that feels hotter than others to unit maintenance.</p>	c. Any studs or nuts loose or missing.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
49	After	Road-wheels and Idler Wheels Continued	<p>NOTE</p> <p>See if your carrier has reworked hubs or new grease filled hubs.</p> <p>d. The reworked hub will have a sight glass in the middle of the cover, a grease fitting and a relief valve in the hub. Make sure glass is not broken or cracked.</p> <p>NOTE</p> <p>If you see bubbles in the grease or if grease looks milky, there is water in it. Report it to maintenance.</p>	d. Cracked or broken sight glass allowing a Class III leak. Any grease fitting or relief valve missing.

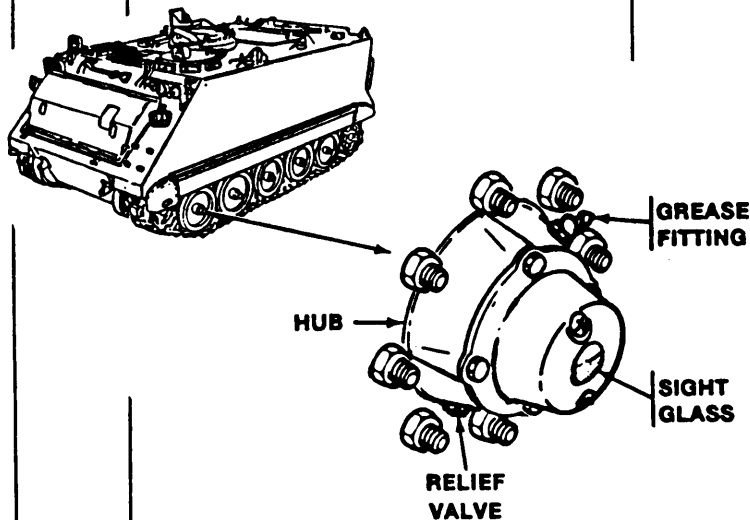


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
49	After	Road-wheels and Idler Wheels Continued	<p>NOTE</p> <p>The new grease fitted hub will have a grease fitting, a relief valve and a solid cover.</p> <p>e. Check this type of hub by adding grease to fitting until it comes out of pressure relief valve. Service grease filled hubs in accordance with Chapter 3.</p>	e. Any grease fitting or relief valve missing.

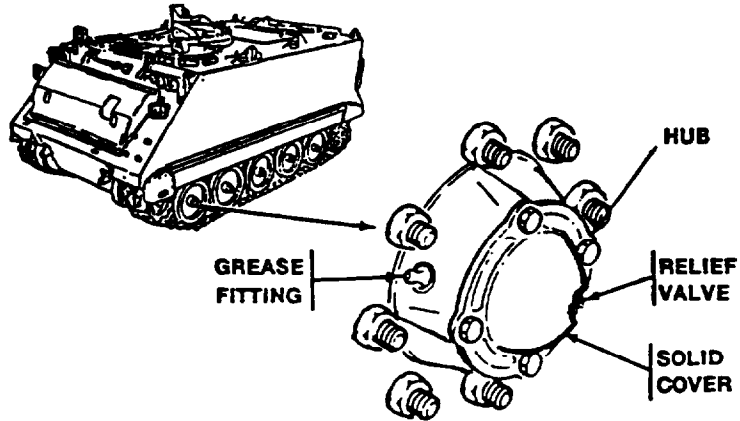
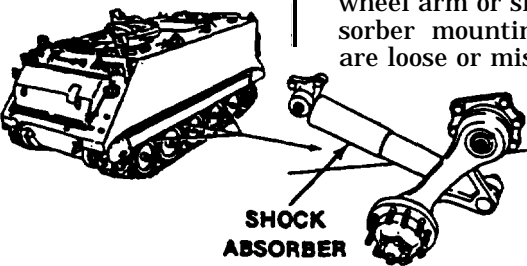


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
50	After	Shock Absorbers	<p>DRIVER</p> <p>WARNING Shock absorbers can heat up enough to burn you.</p> <p>NOTE Small dents in shock absorber should not effect its performance. Feel all shock absorbers after use. A cold shock is defective and should be replaced. Check for leaks. If shock is cold or has a class II leak, report it to Unit Maintenance.</p> <p>a. Check shock absorbers. After a good run on rough terrain or bumpy course, shock absorbers should be warm enough so you can tell they have been operating properly.</p> <p>b. Check for missing or loose roadwheel arm or shock absorber mounting bolts.</p> <p>CAUTION Do not perform water operations if roadwheel arm or shock absorber mounting bolts are loose or missing.</p>	<p>a. Any shock absorber is broken or cold after operation. Any Class III leak. Any shock absorber missing.</p> <p>b. Any bolt loose or missing.</p>



The diagram shows a side view of a tank chassis on the left. To its right is a detailed view of a shock absorber assembly, which includes a cylindrical shock absorber, a roadwheel arm, and mounting bolts. An arrow points from the chassis to the assembly. The text 'SHOCK ABSORBER' is printed below the assembly.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
51	After	Track Shoes And Bushings	<p>DRIVER</p> <p><u>WARNING</u></p> <p>If you lose a track (break a track shoe or vehicle throws a track), extreme caution must be exercised in maintaining control. Immediately release accelerator and let the vehicle coast to a stop. Do not apply braking action, i.e. brake pedal, laterals, pivot or any type of steering controls. This causes the vehicle to pull to the active or good track and could result in a rollover. If it is absolutely necessary, apply braking action only and we stress only, if the vehicle is approaching a ravine, a cliff, or if you perceive the outcome to be catastrophic, probably resulting in fatalities. When rollover is imminent, all crewmembers should immediately withdraw inside the vehicle, tighten seat belts and hold onto secure fixture, until the vehicle comes to a complete stop.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
51	After	Track Shoes And Bushings Continued	<p><u>DRIVER</u></p> <p>NOTE</p> <p>Visually check for unusual or uneven gaps between two adjacent shoes. Check any suspect bushing using the track and sprocket gage. If a "NO/GO" reading is obtained on either the inside or outside of the block, the un-serviceable shoe/shoes must be replaced.</p> <p>a. Check track shoes for damage. Damage includes cracked or broken shoe body, bent, broken or missing center guides, chunked or missing roadwheel path rubber.</p>	<p>a. Any one track shoe body bent, cracked or broken. Any one track pin bent, broken or missing.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
51	After	Track Shoes And Bushings Continued	<p><u>DRIVER</u></p> <p>NOTE</p> <p>Worn or missing track pads will cause the track shoe to mark the road surface.</p> <p>b. Replace worn or missing track pads and track pad nuts.</p> <p>c. Check track shoe for damaged pins, missing pin nuts and any unusual or uneven gaps between two adjacent track shoes which indicate worn bushings.</p> <p>NOTE</p> <p>Worn bushings are very difficult to locate. Worn bushings may cause the track pin to appear off-center. It may have protruding track pin or track pin nut and unusual gaps between two adjacent shoes.</p>	<p>c. Any one track shoe with worn bushing, protruding track pin or missing track pin nut. Any one bushing deemed un-serviceable.</p>

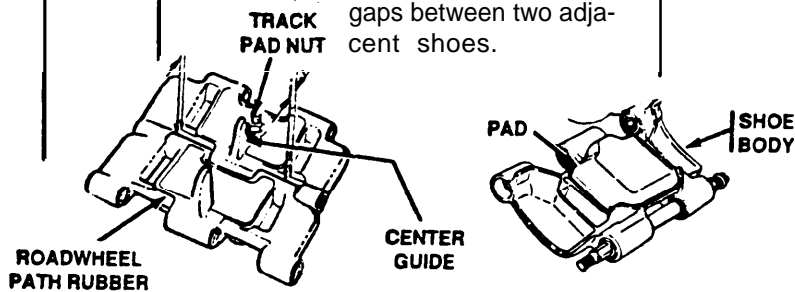


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
51	After	Track Shoes And Bushings Continued	<p><u>DRIVER</u></p> <p>NOTE</p> <p>Check left and right side of vehicle for damage to track shoes.</p> <p>d. Check for any suspect bushings which should be tested with the track and sprocket gage. Gage pins must be fully inserted into bushing bore. Any track shoe failing track gage inspection is unserviceable. Replace any worn shoe bushing with shoe.</p>	<p>d. Any one track shoe with worn bushing, protruding track pin or missing track pin nut. Any one bushing deemed unserviceable.</p>

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
52	After	Road-wheel Arms and Torsion Bars	<p><u>DRIVER</u></p> <p>Check for bent, broken or missing roadwheel arm or torsion bars.</p> <p>Try to lift each roadwheel with a crowbar.</p> <p>If any roadwheel comes up easily, you have a broken or missing torsion bar.</p> <p>Report any broken or missing torsion bar to unit maintenance.</p>	Any broken, bent or missing roadwheel arm or torsion bar.

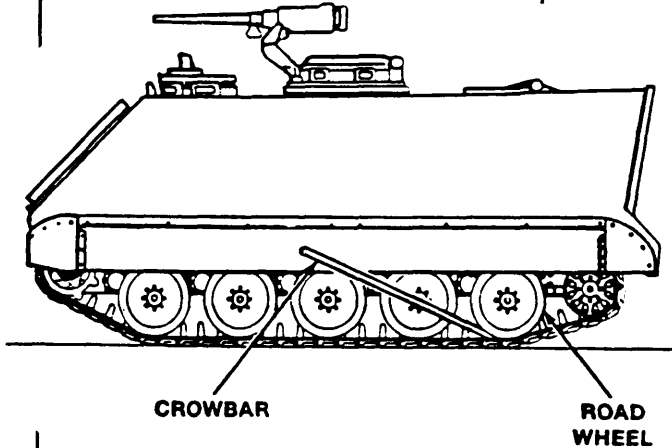


Table 2-1. Preventive Maintenance Checks and Service for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
53	After	Smoke Generator System (M1059)	<p>GENERATOR OPERATOR M1059 ONLY</p> <p>For PMCS procedures see TM 3-1040-279-12&P</p> <p>WARNING</p> <p>Sparks from static electricity can cause a fire or explosion. Fuel cans should be removed before being filled. Metal nozzle must touch metal in filler neck when filling or ground wire must be attached to fuel can be filled. Fuel can catch fire and burn you. Do not smoke. Wipe up spilled fuel.</p> <ol style="list-style-type: none"> Check generator fuel cans. Check fuel supply of fog tank and fuel cans and fill as required. Using indicator sights on fog oil tank, check fog oil level and replenish if not full. 	Fault listed in "Not Fully Mission Capable If" column of smoke generator TM.

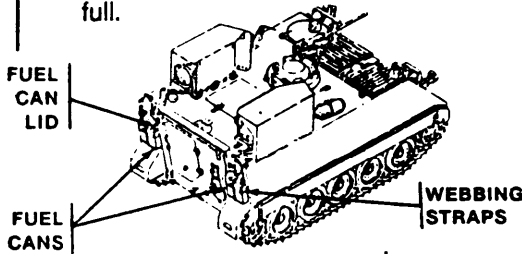


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
53	After	Smoke Generator System (M1059) Continued	<p><u>GENERATOR OPERATOR</u></p> <p>d. Check strainer element and clean if required.</p> <p>e. Check fuel can lids for leaks.</p> <p>f. Check for security of fuel cans to carrier.</p> <p>g. Check serviceability of webbing straps.</p> <p>h. Check all fuel, air and fog oil hoses, electric cable assembly connectors, mount bolts and clamps. Ensure they are not loose, damaged, twisted, torn or leaking.</p> <p>i. Drain waste oil from drip pan by removing and re-installing plug.</p>	<p>f. Fuel cans cannot be secured to carrier.</p> <p>h. Any leak of fuel, Class III oil, or air from any component of smoke generator system or any electric wire damaged.</p>

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Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
54	After	Generator Set (M577A2 ONLY)	Refer to TM 5-6115-596-14 for PMCS procedures.	Fault listed in "Not Fully Mission Capable If" column of generator TM.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
55	Weekly	Power Plant Access Door and Trim Vane	<p>NOTE</p> <ul style="list-style-type: none"> • Do PREVENTIVE MAINTENANCE steps each week or before operation if you are operating the carrier for the first time. • Carrier commander will direct and assist in weekly and monthly PMCS. <p>a. Check that access door, door seal and trim vane are serviceable.</p> <p>b. Check rubber seal for breaks, brittleness, cracks and poor seating.</p> <p>c. Check access door for watertight fit. Make sure door locks.</p> <p>d. Check trim vane for cracks, warps and separation of plywood. Operate trim vane control handle. Make sure adjustment is right in both the stowed and open position.</p>	<p>a. Rubber seal damaged, worn or poorly seated.</p> <p>c. Access door will not close, seal and lock.</p> <p>d. Trim vane missing or not operating properly.</p>

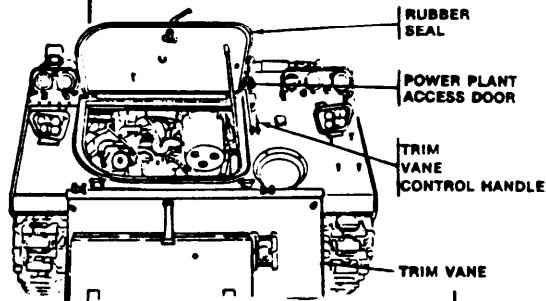
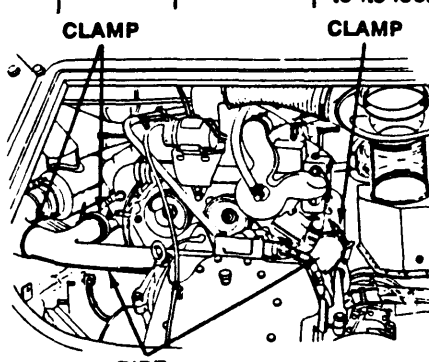


Table 2-1. Preventive Maintenance Checks and Services for Model M113 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
56	Weekly	Exhaust Pipes	<p>NOTE</p> <p>Carriers leak exhaust gas when cold. for this reason, carbon will be present around joint and exhaust pipe connecting clamps. This is normal. Exhaust system joints will seal after pipes heat up. Check for exhaust leaks only after engine reaches normal operating temperature of 160° to 230° F(71° to 110° C).</p> <p>Check exhaust pipes for leaks and damage.</p> <p>Check for exhaust through pipes and pipe connections. Shut off engine and let system cool before tightening loose clamps. Notify unit maintenance if a loose clamp is found but is too difficult to service due to its location.</p>	Any part is missing, damaged, poorly aligned or not securely mounted.



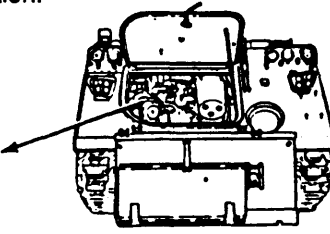


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
57	Weekly	Air Cleaner Element	<p style="text-align: center;"><u>WARNING</u></p> <ul style="list-style-type: none"> ● Failure to decontaminate and wear protective clothing after NBC attack could result in serious health hazards to personnel. Do not service air cleaner or vent system after NBC attack until carrier has been decontaminated. . Unlatched hatch covers can swing and injure personnel. Make sure hatches are latched open or closed. <p style="text-align: center;"><u>CAUTION</u></p> <p>Operating carrier with air cleaner missing or damaged can cause extensive engine damage. Do not operate carrier if air cleaner element is missing or door or gasket is missing or damaged.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
57	Weekly	Air Cleaner Element Continued	<p><u>CAUTION</u> Do not drop or rap filter element when cleaning it.</p> <p>Service air cleaner element weekly, or when the engine seems to lose power. Also, service element whenever air cleaner restriction indicator stays in red zone after resetting.</p>	Indicator in red zone after cleaning.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable if:
		Item to Check/Service		
57	Weekly	Air Cleaner Element Continued	<p>NOTE You will have one of two air cleaner configurations. Body and elements are not interchangeable, except as sets.</p> <p>Remove air cleaner container with element inside.</p> <ul style="list-style-type: none">a Take out element. Clean.b. Check rubber gasket on element. If damaged, notify unit maintenance.c. Install container with element inside.	Container, latches or element is missing, damaged or broken. Gasket torn or separated from filter element.

The diagram illustrates the air cleaner assembly and its maintenance. At the top, a perspective view of the engine compartment shows the location of the air cleaner. Below this, two exploded views show the disassembly and reassembly process. On the left, the 'AIR CLEANER BODY' is shown with a 'FILTER ELEMENT' and a 'GASKET' being removed. On the right, the 'AIR CLEANER BODY' is shown with a 'FILTER ELEMENT' and a 'GASKET' being reinstalled. A small black arrow points to the gasket on the right-hand assembly.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/ Service		
58	Weekly	Lights	<p><u>DRIVER</u></p> <p>NOTE Driver will turn on lights and crew member will check for operation.</p> <p>a. Check driving lights by turning driving lights switch on. Depress high-beam switch to make sure lights operate properly on high and low beams.</p> <p>Turn MASTER SWITCH to ON and lift up on safety lock lever.</p>	

The diagram illustrates the location of the vehicle's lighting components. At the top, a side view of the M113A2 FOV vehicle is shown with a line pointing to the front-mounted headlights, labeled 'HEADLIGHTS'. Below this, a detailed view of the instrument panel is shown, with a line pointing to the 'MAIN LIGHT SWITCH' on the left side. To the right of the instrument panel, a line points to the 'HIGH BEAM SWITCH' located on the vehicle's control console. The instrument panel itself contains several gauges and indicators.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
58	Weekly	Lights Continued	DRIVER b. Check HI BEAM indicator light. MASTER SWITCH ON indicator light.	

FRONT AND REAR BILGE PUMPS ON INDICATOR LIGHTS

MASTER SWITCH ON INDICATOR LIGHT

HI BEAM INDICATOR LIGHT

c. Check that turn signals operate properly on both sides of carrier.

FRONT TURN SIGNAL LIGHTS

STOP AND REAR TURN SIGNAL LIGHTS

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
58	Weekly	Lights Continued	<p><u>DRIVER</u></p> <p>d. Check stop light and tail-lights to see that they operate properly. Make sure lights brighten during braking.</p>	

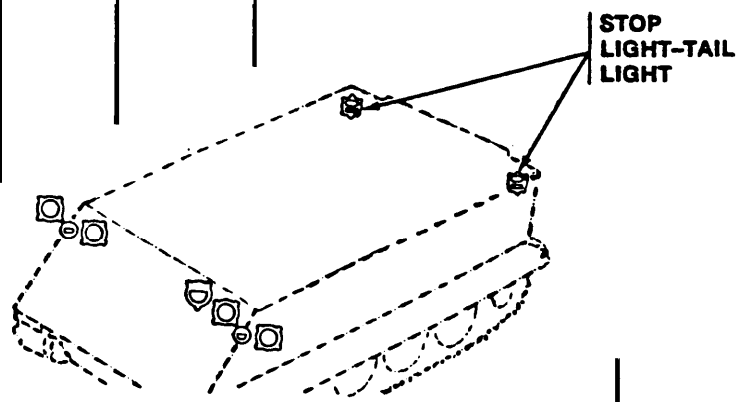


Table 2-1. Preventive Maintenance Checks and Services for Model M113142 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
58	Weekly	Lights Continued	<p><u>DRIVER</u></p> <p>e. Check blackout drive lights.</p> <p>Set main light switch lever to B.O. DRIVE. SET I.R. - B.O. SELECT switch to B.O.</p>	

The diagram illustrates the driver's cockpit environment. At the top, a perspective view shows the driver's seat and the instrument panel. Below this, a detailed view of the instrument panel is shown with several gauges and switches. Labels with arrows point to specific components: 'I.R.-B.O. SELECT SWITCH' points to a switch on the left side of the panel; 'MAIN LIGHT LEVER' points to a lever below the I.R.-B.O. switch; 'SAFETY LOCK LEVER' points to another lever below the main light lever; and 'MASTER SWITCH' points to a large, hand-operated switch on the right side of the cockpit with the text 'PULL AND TURN' above it.

Table 2-1. Preventive Maintenance Checks and Services for Model M11342 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
58	Weekly	Lights Continued	<p><u>DRIVER</u></p> <p>Blackout headlight and four blackout marker lights will light.</p> <p>Blackout stop right will light when brakes are applied.</p>	

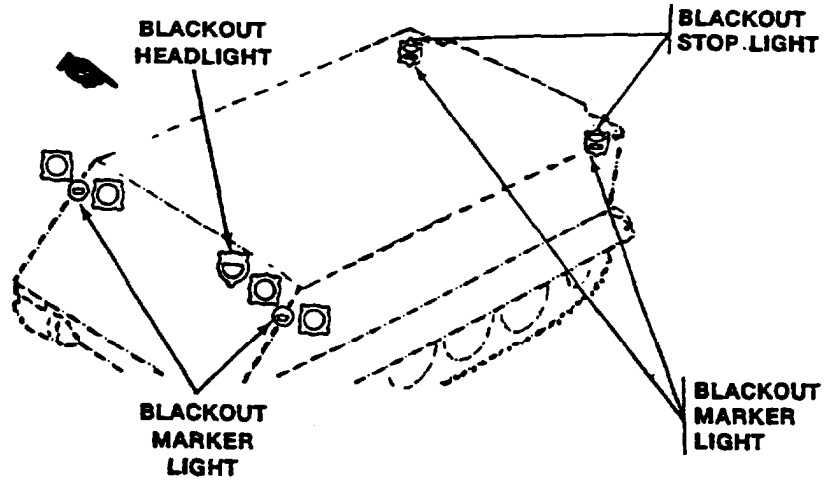


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
58	Weekly	Lights Continued	<p><u>DRIVER</u></p> <p><u>WARNING</u></p> <p>Do not look directly into infrared lights. You may damage your eyes.</p> <p>Do not touch lens. You may burn your fingers.</p> <p>f. Check infrared lights on both high and low beam. Do this by HOLDING YOUR HANDS OVER THE LENS, but do not touch the lens. If light is operating properly, you will feel heat.</p>	

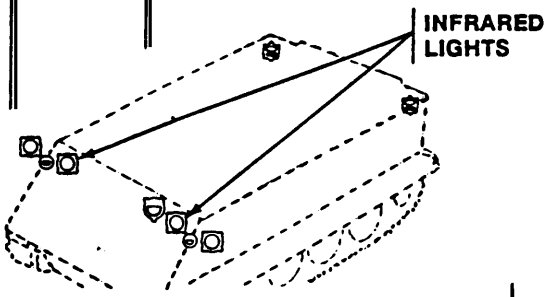


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
59	Weekly	Slave Cable Receptacle	Check slave cable receptacle and cap for damage, burnt-out condition and corrosion.	

AUXILIARY POWER (SLAVE CABLE) RECEPTACLE

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable if:
		Item to Check/Service		
60	Weekly	Slave Receptacle, Cable and Generator for (M577A2 and M1068 ONLY)	<p>NOTE</p> <p>Make sure slave receptacle cap on M577A2 and M1068 is secure. Report damage to Unit Maintenance.</p> <p>a. Check receptacle and cable for damage, burn-out condition and corrosion.</p> <p>NOTE</p> <p>Operate Generator to get correct voltage readings.</p> <p>b. Check that correct voltage is provided by generator.</p> <p>c. Check generator set for mud, dirt and excess oil and grease. Clean as required.</p>	<p>a. Receptacle or cable damage burnt out, or missing.</p> <p>b. Battery generator indicator gage is NOT in the green zone (page 2-3).</p> <p>c. Generator set missing or inoperative.</p>

The diagram shows a mechanical assembly with several components labeled. On the left, there is an 'AUXILLARY POWER RECEPTACLE' with a thick 'AUXILLARY POWER CABLE' extending from it. This cable connects to a 'RECEPTACLE' on the right. Further right is the 'GENERATOR SET', which is partially enclosed by a 'COVER'.

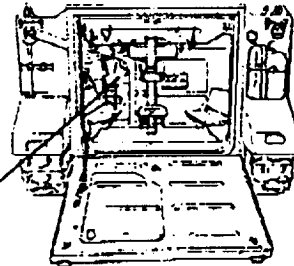
Table 2-1. Preventive Maintenance Checks and Services for Model M1213A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable if:
		Item to Check/Service		
61	Weekly	Rear Ramp and Ramp Door	<p>a. Check rear ramp door for proper operation and seal.</p> <ol style="list-style-type: none"> 1. Check rear door operation. Make sure hinges operate properly and door can be tightly secured by lock. 2. Check rear door seal for breaks, brittleness, cracks or poor seating. Check rear ramp wire rope for frayed or broken strands. 3. Check ramp-to-hull seals for breaks, brittleness, cracks or poor seating. 4. Check ramp locks for proper operation and missing part. <p>Make sure cotter pin on tow pintle is present and properly secured.</p>	<p>Rear ramp or ramp door will not seal. Rear ramp will not raise or lower under power. Ramp lock will not hold ramp in closed position. Ramp wire rope is frayed or broken.</p>

The diagram shows a top-down view of the rear ramp mechanism. Labels with leader lines point to various components: 'RAMP SEAL' at the top left, 'WIRE ROPE' on the left side, 'DOOR LOCK' below the wire rope, 'REAR DOOR SEAL' at the bottom left, 'REAR DOOR' at the bottom center, 'RAMP LOCKS' on the right side, and 'TOW PINTLE' at the bottom right.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
61	Weekly	Rear Ramp and Ramp Door Continued	<p>WARNING</p> <p>Hydraulic fluid is poisonous and can be absorbed through your skin. Wash off any hydraulic fluid that contacts your skin. Read the hydraulic fluid warning in the front of this manual.</p> <p>b. Check ramp hydraulic fluid level with ramp down. Fluid must be visible halfway up in ramp hydraulic fluid level sight glass.</p> <p>c. Fill to halfway if fluid is not visible at least halfway up in sight glass when ramp is down. Check for leaks.</p> <p>d. Check for missing breather cap.</p>	<p>b. Fluid is not visible half way up in sight glass.</p> <p>c. Any Class III leak.</p> <p>d. Breather cap is missing.</p>



RAMP HYDRAULIC FLUID SIGHT GLASS

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
62	Weekly	Gas Particulate Units	<p>NOTE</p> <p>Rediness reporting applies only to carriers equipped with gas particulate unit and litter kit.</p> <p>Check gas particulate units.</p> <p>Check air purifier housing for damage. Make sure spring clip is there.</p> <p>Check hoses for wear, cracks and holes.</p> <p>Operate air purifier blower to make sure it operates properly.</p> <p>After blower is operating, place hand over air flow control cap. You should feel a flow of air at center hole.</p>	Blower does not operate properly. Air flow at any station is restricted.

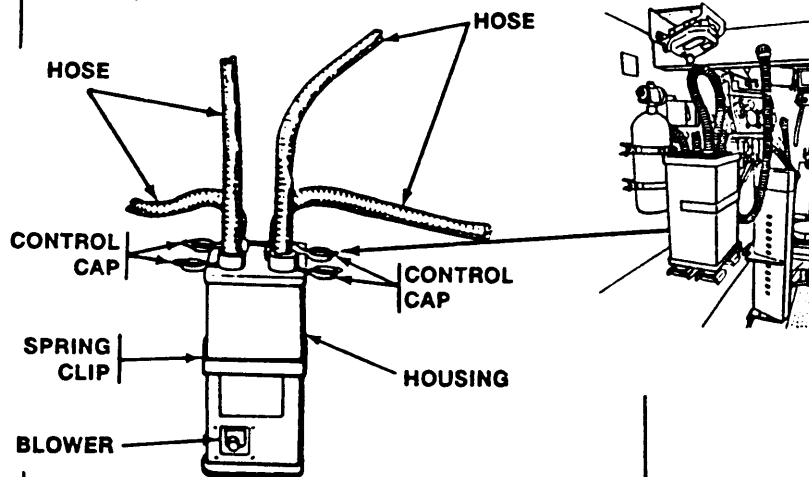


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
63	Weekly	M17 Periscope	<p>CAUTION</p> <p>Handle periscope carefully during removal to avoid damaging the frame and glass of perscope.</p> <p>Remove periscope by loosening two thumbscrews.</p> <p>Check between carrier wall and periscope for dirt or moisture.</p>	50% vision in any periscope blocked.

The diagram consists of two parts. The upper part is a perspective view of the front of an M113A2 carrier, showing the engine compartment and the periscope mounted on the carrier wall. A dashed line indicates the location of the periscope. The lower part is a close-up view of the periscope being removed. A hand is shown using a thumb to turn a thumbscrew on the left side of the periscope frame. Another thumbscrew is shown on the right side. Labels 'M17 PERISCOPE', 'THUMBSCREW', and 'THUMBSCREW' are used to identify the respective parts.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
64	Weekly	Periscope (M19)	<p><u>WARNING</u></p> <p>HIGH VOLTAGE in the M19 periscope can cause serious injury or death. To avoid accidents:</p> <p>ALWAYS connect power cable to periscope BEFORE turning MASTER SWITCH and I.R. POWER switch to ON.</p> <p>ALWAYS wait at least two minutes BEFORE you disconnect power cable from periscope, when turning L.R. POWER switch and MASTER SWITCH to OFF.</p> <p>NEVER disconnect power cable from periscope until Image disappears from periscope screen.</p> <p>NEVER touch end of cable. Voltage could exceed 16,000 volts.</p> <p><u>CAUTION</u></p> <p>Do not expose this instrument to direct sunlight during inspection.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
64	Weekly	Periscope (M19) Continued	<p>CAUTION</p> <p>Direct sunlight or large amounts of light will damage the M19 periscope.</p> <p>a. Check periscope for damage. Make sure periscope operates properly. Make sure you can see through periscope.</p> <p>b. Make sure MASTER SWITCH and I.R. POWER switch are in OFF position.</p>	Inoperative and no other night sight available.

The diagram illustrates the M19 periscope system. It includes a 'MASTER SWITCH' with a 'PULL AND TURN' handle and 'ON'/'OFF' markings. An 'I.R. SWITCH' is shown with 'UPPER' and 'LOWER' positions. The 'PERISCOPE' is shown with a 'RECEPTACLE' and an 'ELECTRICAL CONNECTOR'. A 'POWER CABLE' is also indicated. The diagram shows the internal components of the periscope and the external electrical connections.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

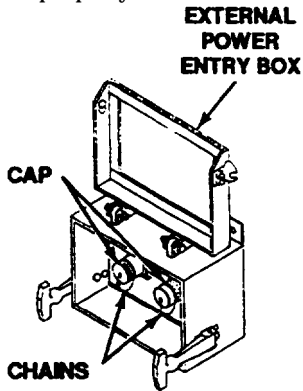
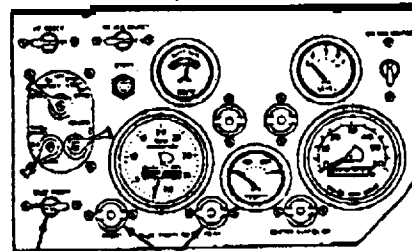
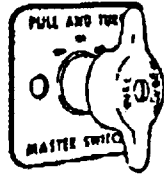
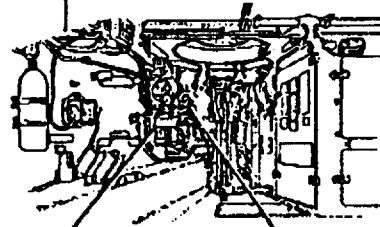
Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable if:
		Item to Check/Service		
64	Weekly	Periscope (M19) Continued	<p>c. Check power cable electrical connector for bent or missing pins or bare wires. Report damaged connector to unit maintenance. Attach power cable to periscope receptacle.</p> <p>Make sure connection is tight. Stow excess cable behind fixed fire extinguisher line.</p> <p>d. Turn MASTER SWITCH and I.R. POWER switch to ON. Test periscope operation.</p>	
	Weekly	External Power Entry Box (M1068 Only)	<p>a. Check to ensure plug caps are secure and chains are not broken.</p> <p>b. Check for external damage.</p> <p>c. Make sure unit locks properly.</p> <div style="text-align: center;">  <p>The diagram shows a rectangular metal box with a hinged lid. The lid is open, revealing internal components. A label 'CAP' points to a small cap on the lid. Two labels 'CHAINS' point to metal chains attached to the bottom of the box. A label 'EXTERNAL POWER ENTRY BOX' points to the top of the box.</p> </div>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
	Weekly	Bilge Pumps	<p>NOTE</p> <p>Rear bilge pump is below rear floor plate. Front bilge pump is in left front corner of power plant compartment. Check bilge pumps weekly and before any water operations.</p> <p>a. Turn MASTER SWITCH to ON.</p> <p>Turn BILGE PUMPS switch to ON. Make sure front and rear bilge pump lights are on.</p>	



BILGE PUMPS SWITCH

BILGE PUMPS LIGHT

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
35	Weekly	Bilge Pumps Continued	<p>Feel bilge pump outlet for a stream of water if there is water in the carrier, or feel for a stream of air if water is absent.</p> <p>b. Check bilge pump intake screens and pump vent holes for clogging.</p> <p>c. Clear screen of all trapped debris.</p> <p>d. Clear pump vent holes by running a wire in and out.</p> <p>e. Check pumps and areas around each pump for fuel leaks in bilge.</p>	<p>Any pump does not operate properly.</p> <p>Any Class III leak.</p> <p>Outlet tube clogged or tube/hose has Class III leak.</p>

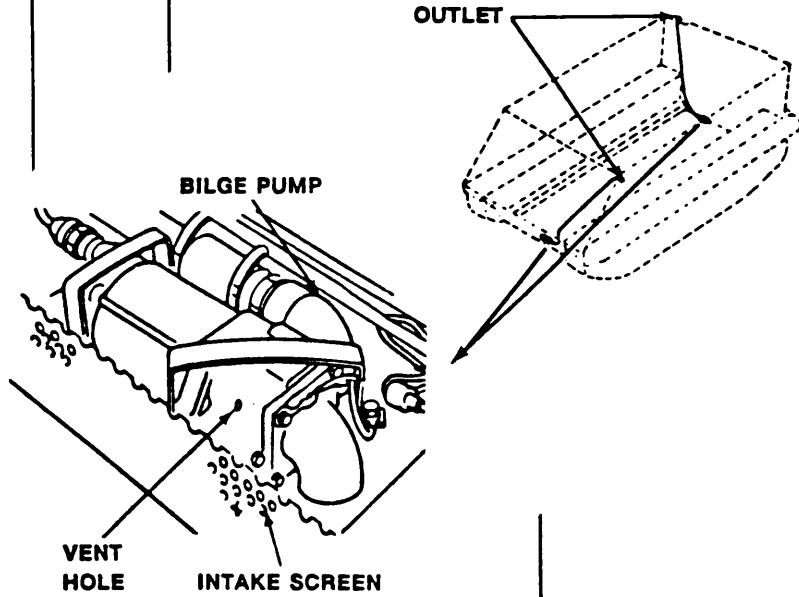


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
66	Weekly	Batteries	<p><u>WARNING</u></p> <p>. Don't smoke, have open flames, or make sparks around the batteries, especially if the caps are off. Batteries can explode and cause injury or death.</p> <p>. Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short will result in instant heating of metals, damage to equipment and injury to personnel.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

tern No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
66	Weekly	Batteries Continued	<p>a. Check condition of batteries and electrolyte level.</p> <p>Remove caps. Make sure electrolyte is filled to the level/split ring in the battery filler opening (vent). Add distilled water as needed. If fluid is gassing (boiling) notify organizational maintenance.</p> <p>b. Check that vent holes in caps are clear before reinstalling caps.</p> <p>c. Check battery casings for damage.</p> <p>d. Make sure cables and terminals are clean and tight on posts.</p>	Batteries unusable. Obvious visual damage to battery, terminals, battery casings, posts or retainers. Loose or broken cable or terminal. Any battery retainer missing.

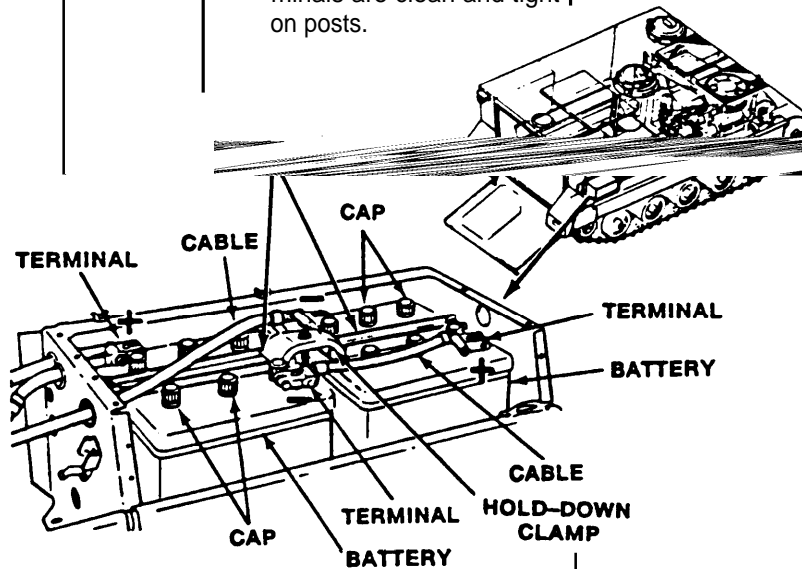


Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
66	Weekly	Batteries	<p>e. Make sure hold-down clamp and retainers are tight.</p> <p>f. Check that rubber grommets are on battery compartments. Notify unit maintenance if grommets are missing. See TM 9-6140-200-14 for weekly battery preventive maintenance.</p> <p>CAUTION</p> <p>In cold weather, unit maintenance must charge batteries immediately after adding water. This allows water to combine with electrolyte and prevent freezing.</p>	<p>e. Batteries unusable. Obvious visual damage to battery, terminals, battery castings, posts or retainers.</p>
		Continued		

The diagram illustrates the battery compartment assembly. The main view shows a perspective of the compartment with several components labeled: 'GROMMET' pointing to a small circular seal, 'HOLD-DOWN CLAMP' pointing to a metal bracket, and 'RETAINER' pointing to a metal plate. An inset diagram shows a battery pack with a 'HOLD-DOWN CLAMP' attached to its top.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
67	Weekly	Hatches	<p>a. Check operation and security of driver's and commander's hatches.</p> <p>b. Check mortar carrier latches.</p> <p>c. Check operation of exterior catches on all hatches. Check interior latches.</p> <p>d. Check hatch seals for breaks, brittleness, cracks and poor sealing. Report any damaged hatch, seal, catches, missing or inoperable locking pins to unit maintenance.</p>	Latches on any hatch that do not hold the hatch in open or closed position. Any hatch locking pins missing or inoperable.

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember</u> Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
67	Weekly	Hatches Continued	<p>e. Check carrier hatches for movement, locking and sealing.</p> <p>f. Check personnel carrier cargo hatch. Make sure hatch opens and closes smoothly and can be tightly secured in both open and closed positions.</p>	<p>Latches on any hatch that do not hold hatch in open or closed position.</p> <p>Any hatch locking pins missing or inoperable.</p>

EXTERIOR LATCH

CARGO HATCH

LOCKING PIN

INTERIOR LATCH

CARGO HATCH

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	<u>Crewmember Procedure</u>	Not Fully Mission Capable If:
		Item to Check/Service		
68	Weekly	Engine Air Box Drain	<p>Check air box drain can and plastic element.</p> <p>Remove air box drain can. Dump waste and element out of can. Clean element as needed.</p> <p>Put element in can and install on bracket.</p>	

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
69	Weekly	Trailer Light Receptacle	Check trailer light receptacle cable for damage. Check receptacle for damage and corrosion.	
0	Weekly	Tow Pintle	Check tow pintle for looseness, lube and safety pin.	

Change 3 2-135

Pages 2-137 and 2-138 are deleted

Table 2-1. Preventive Maintenance Checks and Services for Model M113A2 FOV

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable if:
		Item to Check/Service		
71	M113A2 M1059	Dome Lights (M113A2 M125A2 M577A2 M1068) And Floor Plates (All)	a. Check operation of dome lights. b. Check floor plates for cracks and missing bolts. c. Report inoperable dome lights or damaged floor plates to Unit Maintenance.	M577A2 M1068

M113A2
M1059

M125A2

M577A2
M1068

M106A2

**Section III. OPERATION UNDER USUAL
CONDITIONS**

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Adjust Driver's Lap Seat Belt and Shoulder Harness	2-156. 1	Operate Portable Fire Extinguisher	2-204
Stow/Unstow Commander's Seat	2-157	Install/Remove M19 Periscope	2-205
Stow/Unstow Jump Seat	2-158	Operate M19 Periscope	2-208
Adjust Commander's Platform	2-159	Install/Remove Machine Gun	2-212
Connect CVC Helmet To Intercom Control Box	2-160	Secure Machine Gun For Travel	2-215
Start Engine	2-161	Stow Machine Gun	2-216
Start Engine With Outside Power Source	2-174	Lower/Stow Trim Vane	2-217
		Remove/Install Driver's Power Plant Access Panel	2-219

GO TO NEXT PAGE

Change 1 2-139

TASK INDEX (Cent)

<u>Task</u>	<u>Page</u>	<u>Task</u>	<u>Page</u>
Remove/Install Rear Power Plant Access Panel	2-220	Capstan and Anchor Kits (M113A2 Only)	2-222
Block/Unblock Carrier Tracks	2-221		

OPEN/CLOSE RAMP ACCESS DOOR

DESCRIPTION

This task covers: Open Ramp Access Door From Inside Carrier (page 2-141).
 Close Ramp Access Door From Inside Carrier (page 2-142).
 Open Ramp Access Door From Outside Carrier (page 2-142).
 Close Ramp Access Door From Outside Carrier (page 2-143).

INITIAL SETUP

Personnel Required:

Soldier

Equipment Conditions:

Carrier parked

OPEN RAMP ACCESS DOOR FROM INSIDE CARRIER

WARNING

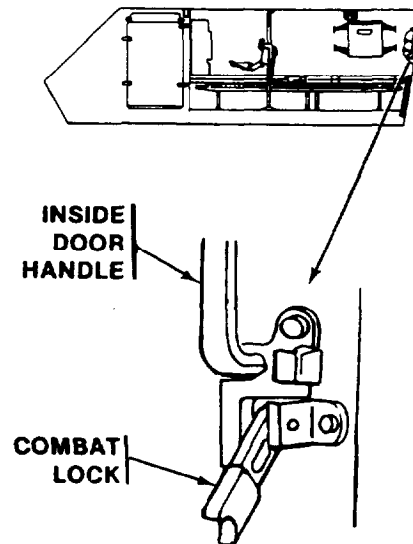


Ramp access door is heavy. It can swing and injure personnel. Make sure no one is in the area of ramp access door when it is opening. Secure door in ramp door hook before you go out.

NOTE

If mission requirements permit, allow the ramp door to remain open to ensure adequate ventilation.

1. Release combat lock and raise inside door handle until ramp access door is released.



GO TO NEXT PAGE

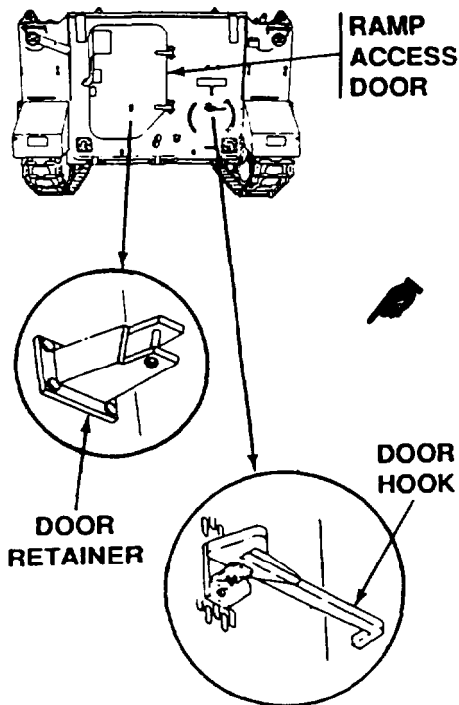
Change 5

2-141

NOTE

Position of door hook and door retainer varies with model. M981 and M1064 are opposite as shown.

2. Swing ramp access door outward until ramp access door hook engages in door retainer.



CLOSE RAMP ACCESS DOOR FROM INSIDE CARRIER

WARNING

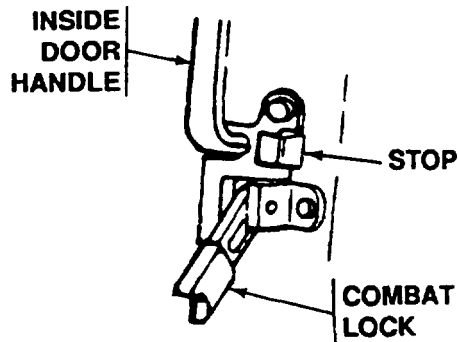


Ramp access door is heavy. It can swing and injure personnel. Stand clear when you release ramp access door hook.

1. Pull ramp access door hook to release ramp access door.
2. Swing ramp access door closed. Lower inside door handle until it bits stop on combat lock. Set combat lock.

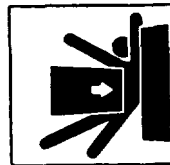
NOTE

Position of door hook and door retainer varies with model. M981 and M1064 are opposite as shown.



OPEN RAMP ACCESS DOOR FROM OUTSIDE CARRIER

WARNING

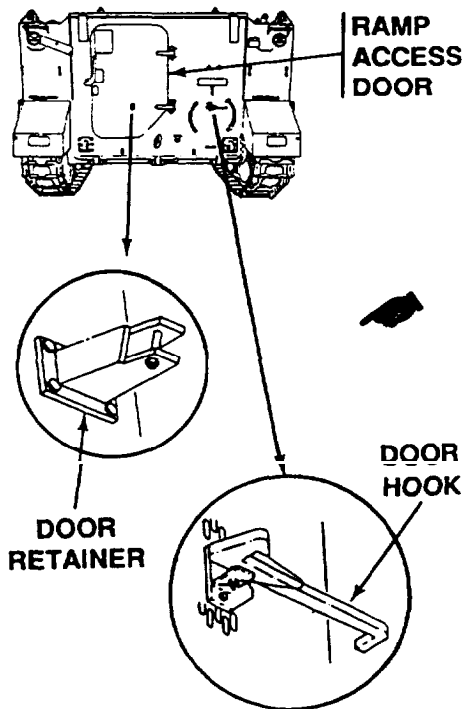
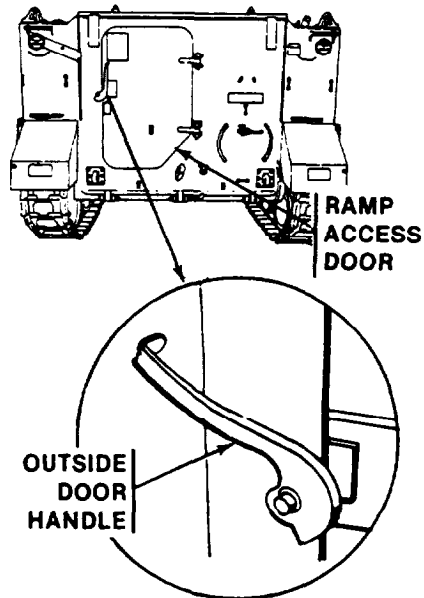


Ramp access door is heavy. It can swing and injure personnel. Do not stand behind ramp access door. Keep hands out from between handle and ramp access door.

NOTE

Combat lock must be released to open ramp access door from outside carrier.

1. Pull outside door handle down until ramp access door is released.
2. Swing ramp access door outward until ramp access door hook engages in door retainer.



NOTE

Position of Door Hook and Door Retainer varies with vehicle model. M981 and M1064 are opposite as shown.

CLOSE RAMP ACCESS DOOR FROM OUTSIDE CARRIER

1. Pull ramp access door hook to release ramp access door.

END OF TASK

OPEN/CLOSE DRIVER'S HATCH COVER

DESCRIPTION

This task covers: Open Driver's Hatch Cover (page 2-144).
Close Driver's Hatch Cover (page 2-145).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

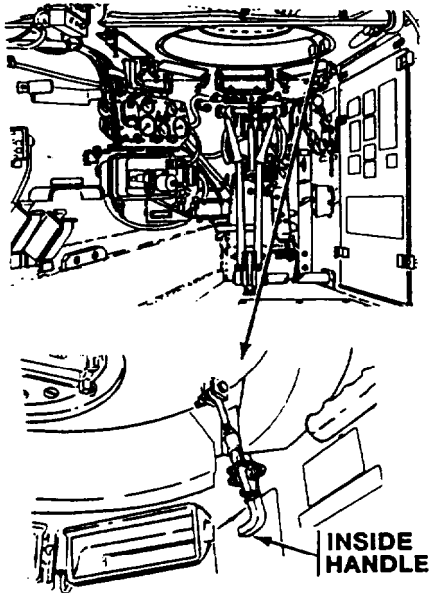
Carrier parked

OPEN DRIVER'S HATCH COVER

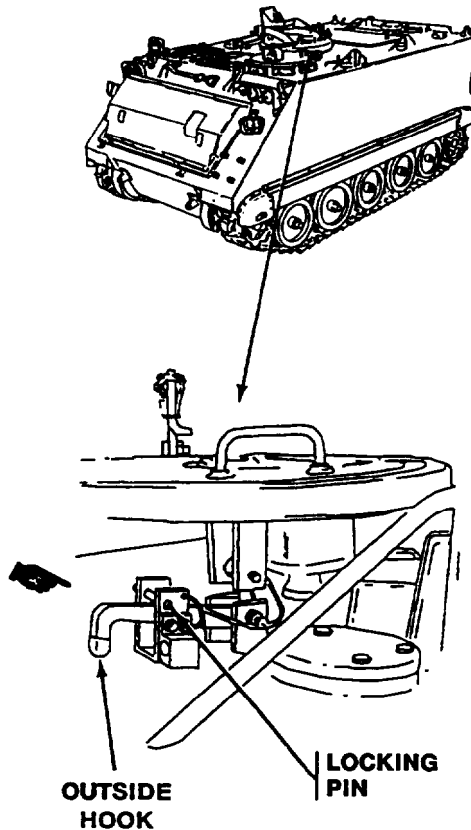
WARNING
Driver's hatch cover could fall and injure you. Keep your head and hands clear when you open or close driver's hatch cover.



1. Lift inside handle to release driver's hatch cover.



2. Swing hatch cover open until it engages outside hook.
3. Install locking pin in outside hook to secure hatch cover in fully open position.



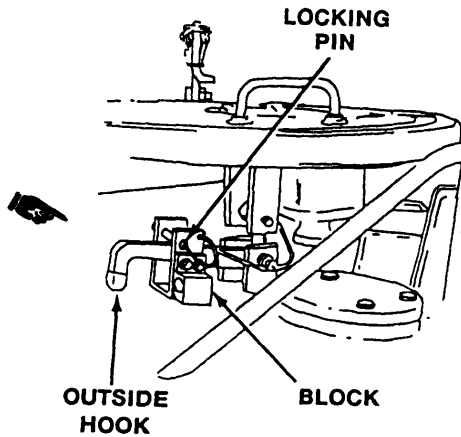
CLOSE DRIVER'S HATCH COVER

WARNING



Driver's hatch cover could fall and injure you. Keep your head and hands clear when you open or close driver's hatch cover.

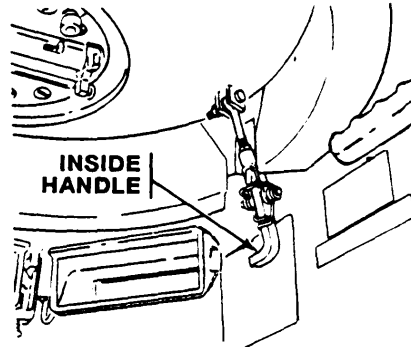
1. Remove locking pin from outside hook. Place locking pin in block.
2. Lift outside hook to release hatch cover from fully open position.



NOTE

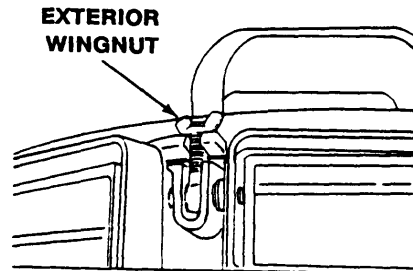
Do not exit carrier through commanders hatch or cargo hatch after securing both driver's inside handle and ramp door combat lock. You may be locked out of carrier.

3. Swing hatch cover closed and secure with inside handle.



NOTE

Exterior wingnut may be used to secure hatch cover closed when carrier is not being operated.



END OF TASK

OPEN/CLOSE CARGO HATCH COVER

DESCRIPTION

This task covers: Open Cargo Hatch Cover (page 2-146).
Close Cargo Hatch Cover (page 2-147).

INITIAL SETUP

Personnel Required:

Soldier

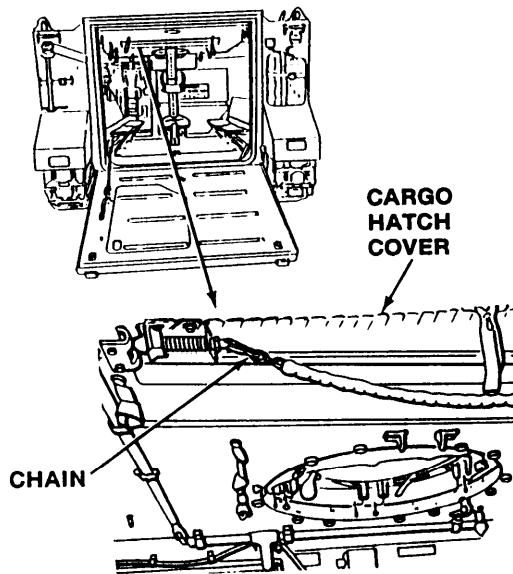
OPEN CARGO HATCH COVER



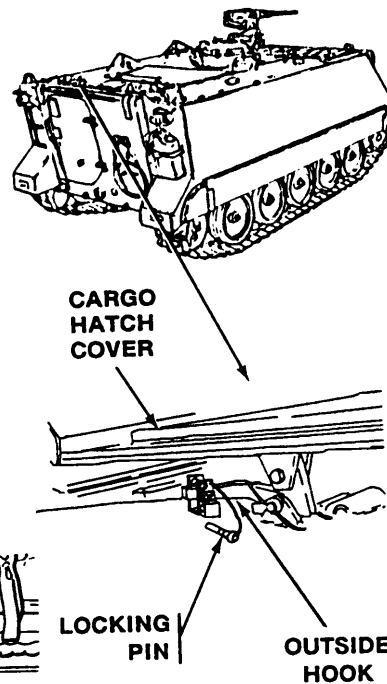
WARNING

Cargo hatch cover is heavy. It can fall and injure you. When opening or closing cover, keep your head clear of the cover and keep your hands clear of the rim.

1. Pull chain to release cargo hatch cover.



2. Swing hatch cover open until it engages in outside hook.
3. Install locking pin in outside hook to secure hatch cover in fully open position.



2-146

Change 1

CLOSE CARGO HATCH COVER

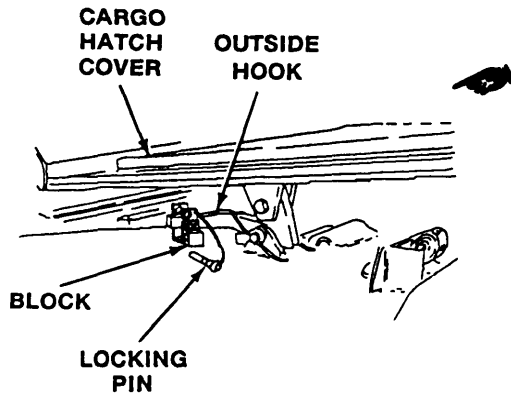
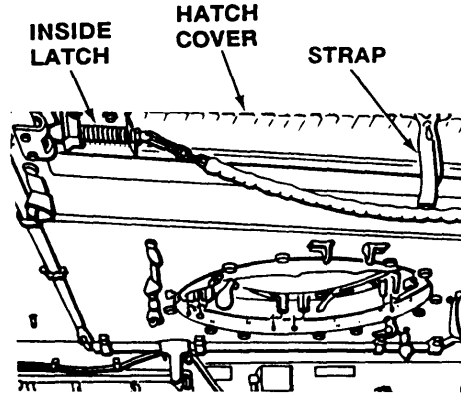
WARNING



Cargo hatch cover is heavy. It can fall and injure you. When opening or closing cover, keep your head clear of the cover and keep your hands clear of the rim.

1. Remove locking pin from outside hook. Place locking pin in block.
2. Lift outside hook to release hatch cover from fully open position.

Swing hatch cover to closed position and pull strap until inside latch engages to secure hatch cover closed.



END OF TASK

OPEN/CLOSE COMMANDER'S HATCH COVER

DESCRIPTION

This task covers: Open Commander's Hatch Cover (page 2-148).
Close Commander's Hatch Cover (page 2-149).

INITIAL SETUP

personnel Required:

Soldier

Equipment Conditions:

Carrier stopped

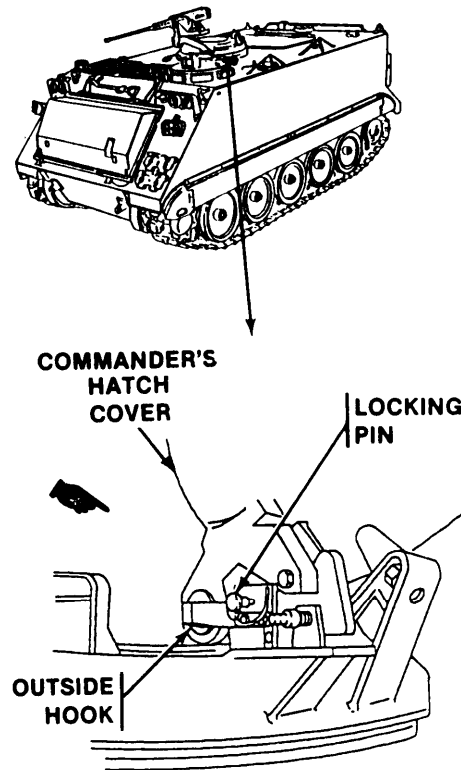
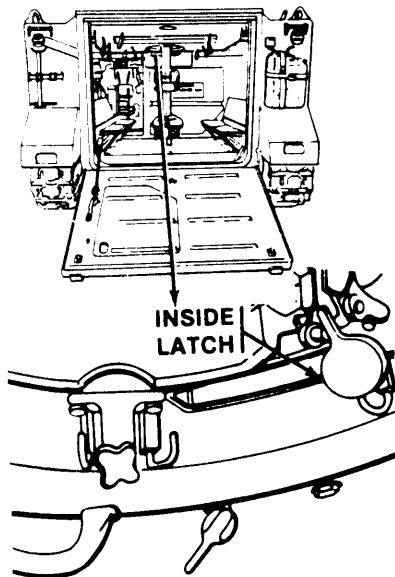
WARNING

Commander's hatch cover could fall and injure you. Keep hands clear when you open or close commander's hatch cover.

2. Swing hatch cover open until it engages outside hook.
3. Install locking pin in outside hook to secure hatch cover in fully open position.

OPEN COMMANDER'S HATCH COVER

1. Press inside latch to release commander's hatch cover.



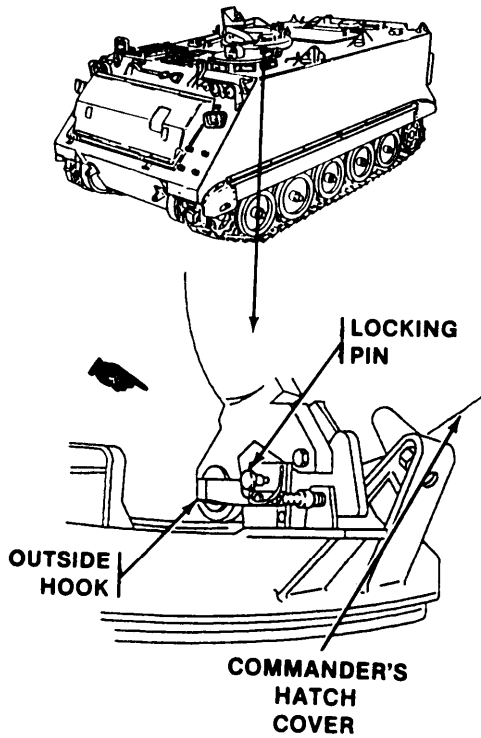
CLOSE COMMANDER'S HATCH COVER

WARNING

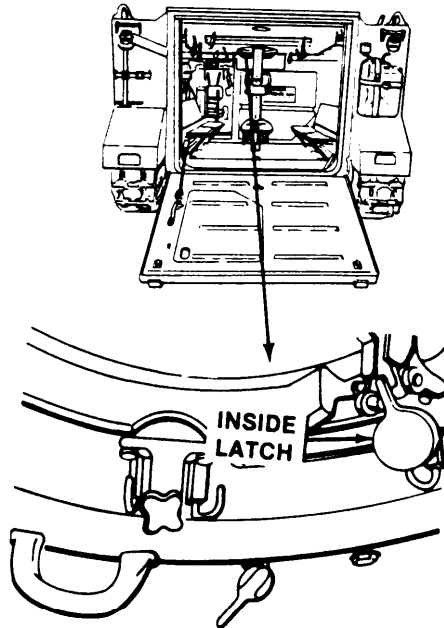


Commander's hatch cover could fall and injure you. Keep hands clear when you open or close commander's hatch cover.

1. Remove locking pin from outside hook.
2. Lift outside hook to release hatch cover from fully open position.



3. Swing hatch cover closed and secure with inside latch.



END OF TASK

OPERATE COMMANDER'S CUPOLA

INITIAL SETUP

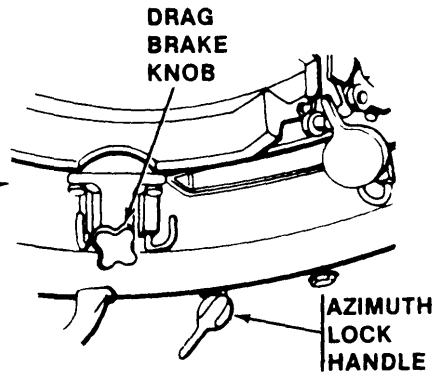
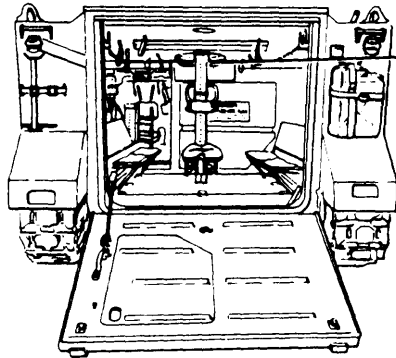
Personnel Required:

Commander

Equipment Conditions:

Commander's hatch open
(page 2-148)

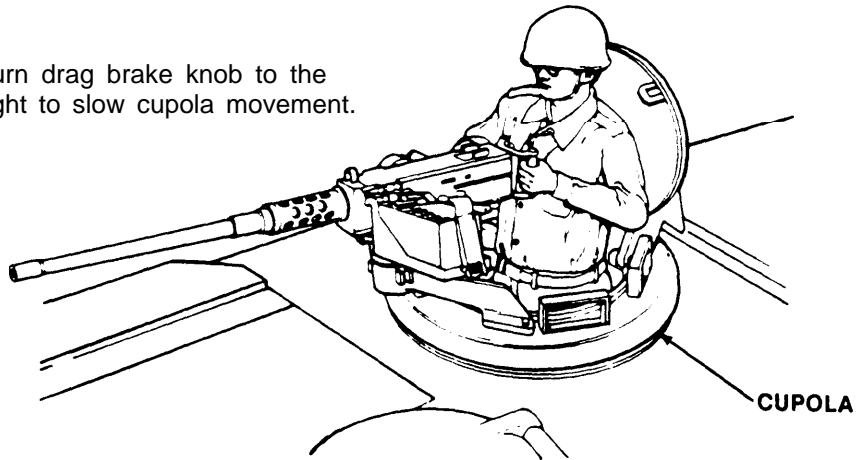
1. Turn azimuth lock handle straight down to allow cupola to rotate.



4. Turn azimuth lock handle to lock position to lock cupola at desired position.

2. Rotate cupola to aim machine

3. Turn drag brake knob to the right to slow cupola movement.



END OF TASK

OPEN/CLOSE POWER PLANT ACCESS DOOR

DESCRIPTION

This task covers: Open Power Plant Access Door (page 2-151).
Close Power Plant Access Door (page 2-152).

INITIAL SETUP

Personnel Required:

Soldier

Equipment Conditions:

Engine stopped (page 2-184)
Trim vane lowered (page 2-217)

OPEN POWER PLANT ACCESS DOOR

2. Turn handle to the right, and raise power plant access door.

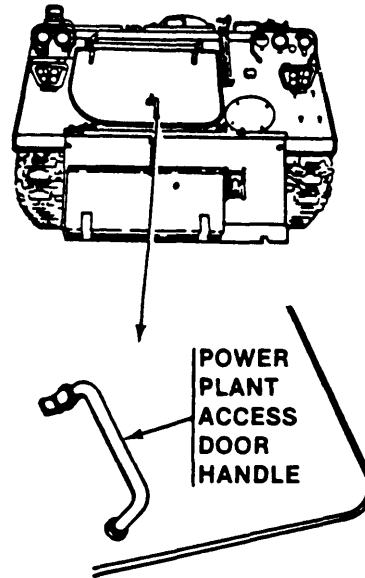
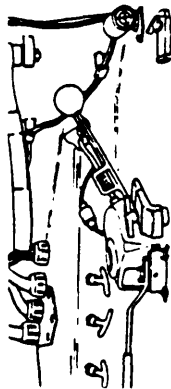
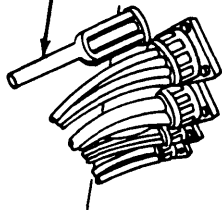
WARNING



Power plant access door could fall and injure you. Install door brace before you work under door.

1. Release combat lock handle to unlock power plant access door.

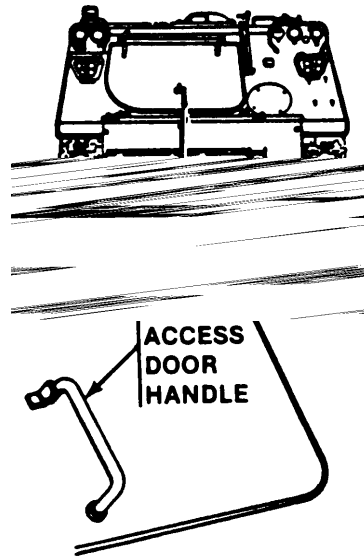
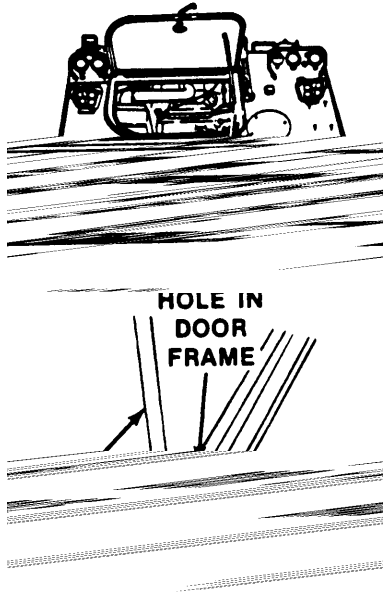
COMBAT LOCK HANDLE



POWER PLANT ACCESS DOOR HANDLE

GO TO NEXT PAGE

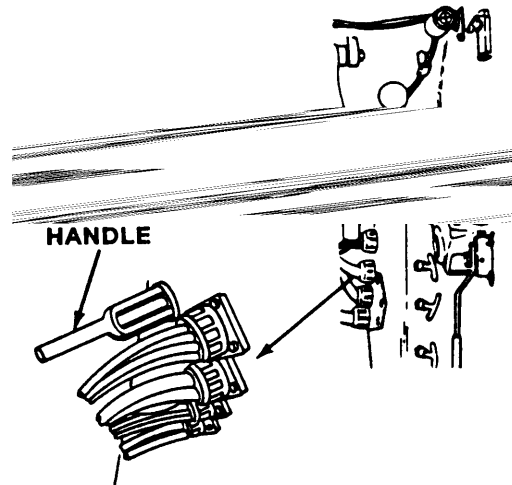
3. Place end of door brace in hole in door frame to secure power plant access door open.



9. Rotate combat lock handle to lock power plant access door.
4. Stow trim vane (page 2-217).

CLOSE POWER PLANT ACCESS DOOR

1. Raise power plant access door to remove brace from hole in door frame. Stow brace in clip on door.
2. Lower power plant access door to closed position and secure with handle.



END OF TASK

LOWER/RAISE RAMP

DESCRIPTION

This task covers: Lower Ramp (page 2-153). Raise Ramp (page 2-154).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions (cont):

Engine started (page 2-161)

Ramp access door closed

(page 2-141)

Equipment conditions:

Carrier parked

WARNING



Lowering ramp could injure personnel. Make sure no one is in ramp zone before you lower ramp. Un-

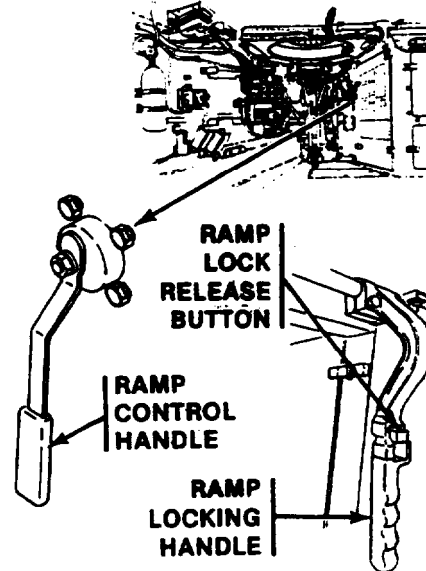
locked ramp can fall open suddenly. Personnel can be killed or injured. Check that ramp cable is connected with no slack. Ramp system and hull can get damaged if ramp unlocks when carrier is in operation. Do not operate carrier if locks do not secure ramp properly. Keep away from ramps that have come open during carrier operation.

NOTE

Ramp may be lowered with the engine started or with the engine stopped. Engine must be started to raise ramp. Sound horn before lowering ramp if tactical situation permits.

LOWER RAMP

1. Push ramp lock release button and move ramp locking handle to the rear as far as it will go.



2. Push ramp control handle forward to lower ramp. The farther you push, the faster the ramp will drop.
3. Release ramp control handle to stop ramp.

GO TO NEXT PAGE

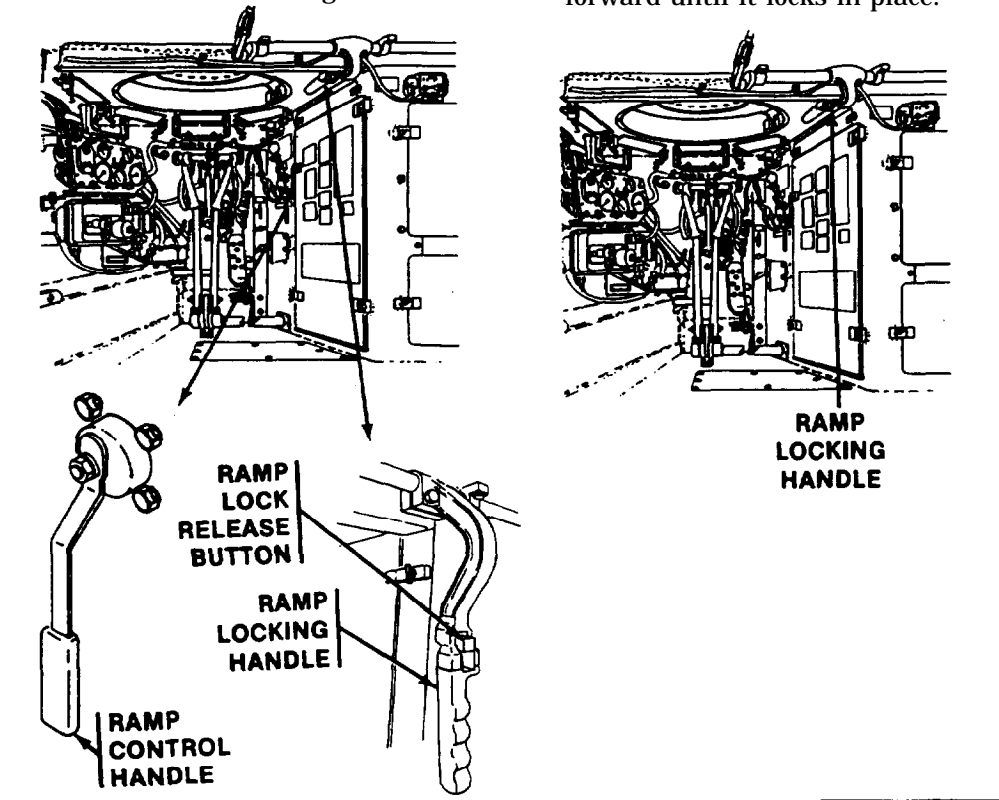
RAISE RAMP

NOTE

Horn should be sounded before raising ramp if tactical situation permits.

1. Move ramp locking handle to the rear as far as it will go.

2. Increase engine speed to 1200 rpm.
3. Pull ramp control handle to the rear and hold it until ramp is closed.
4. Push ramp locking handle forward until it locks in place.



END OF TASK

ADJUST DRIVER'S SEAT

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Carrier stopped

RAISE OR LOWER DRIVER'S SEAT

WARNING



Seat can spring up and hit you when vertical control handle is released. Make sure you are sitting in the seat

before releasing vertical control handle.



Unlatched hatch covers can swing and injure personnel. Make sure hatches are latched open or closed and safety pins installed.

NOTE

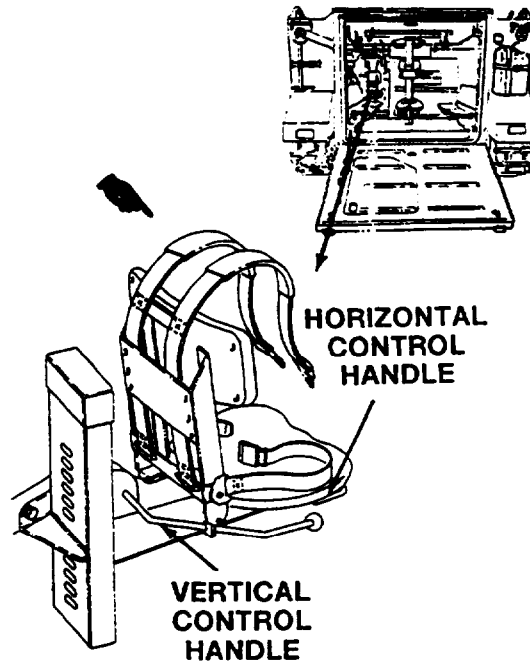
When adjusting seat to the up position, make sure the hatch has the securing pin in place.

1. Sit in driver's seat.
2. Pull up vertical control handle and let your weight control the up and down movement of the seat.

3. When positioned, release vertical control handle to lock seat in place.

MOVE DRIVER'S SEAT TO FRONT OR REAR

1. Pull up horizontal control handle and move driver's seat to front or rear.
2. When positioned, release horizontal control handle to lock seat in place.



END OF TASK

ADJUST COMMANDER'S SEAT AND LAP SEAT BELT

INITIAL SETUP

Personnel Required:

Soldier

Equipment Conditions:

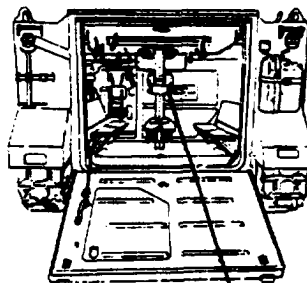
Carrier stopped

WARNING

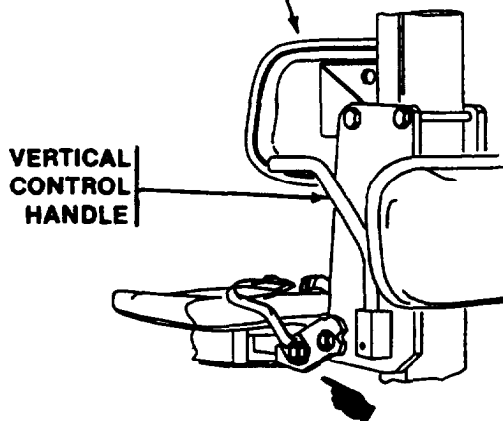


The seat can fly up and hit you. Do not lift the vertical control handle unless you are sitting in the seat.

Make sure the handle is locked before you relax.



1. Sit in the seat.
2. Adjust lap seat belt so that belt buckle is centered over your lap and fasten belt together.
3. To go up or down, push in vertical control handle and let your weight control the up or down movement.
4. When positioned, release vertical control handle to lock commander's seat in place.



END OF TASK

ADJUST DRIVER'S LAP SEAT BELT AND SHOULDER HARNESS

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Carrier stopped

WARNING

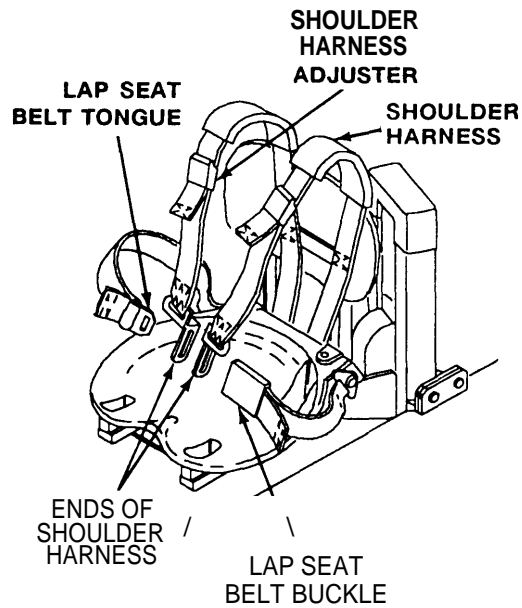
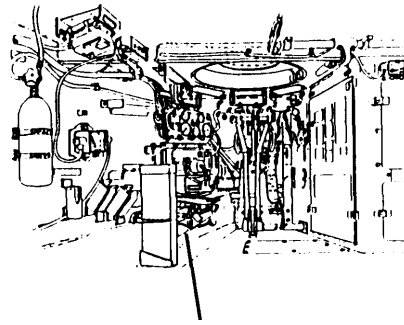


Sudden carrier movement can throw you out of seat. Wear seat belt while carrier is in motion. Do not use any seat with missing or inoperative seat belt.

NOTE

If seat is not equipped with a shoulder harness, do steps 1, 2, and 5 only.

1. Sit in driver's seat.
2. Adjust lap seat belt so that lap seat belt buckle is centered over your lap.
3. Position shoulder harness over your shoulders.
4. Slide ends of shoulder harness over lap seat belt tongue.
6. Fasten lap seat belt.
6. Adjust shoulder harness using shoulder harness adjusters, as needed.



END OF TASK

Change 1

2-156.1 (2-156.2 blank)

STOW/UNSTOW COMMANDER'S SEAT

INITIAL SETUP

Personnel Required:

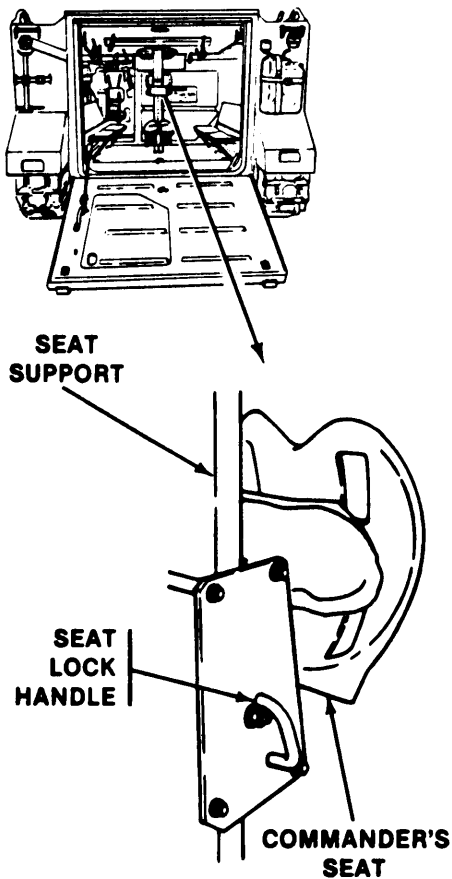
Soldier

Equipment Conditions:

Carrier stopped

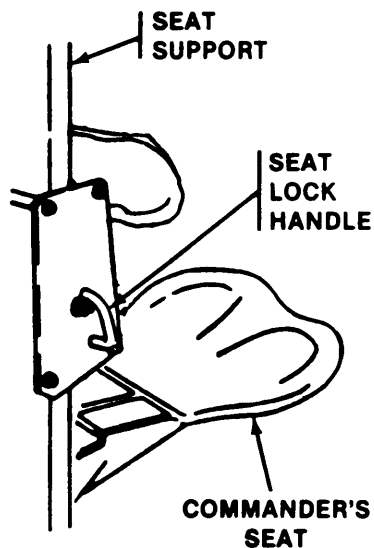
STOW COMMANDER'S SEAT

1. Lift commander's seat toward seat support until it locks in stowed position.



UNSTOW COMMANDER'S SEAT

1. Pull seat lock handle forward to release commander's seat from stowed position. Lower seat until it locks in down position.



END OF TASK

STOW/UNSTOW JUMP SEAT

INITIAL SETUP

Personnel Required:

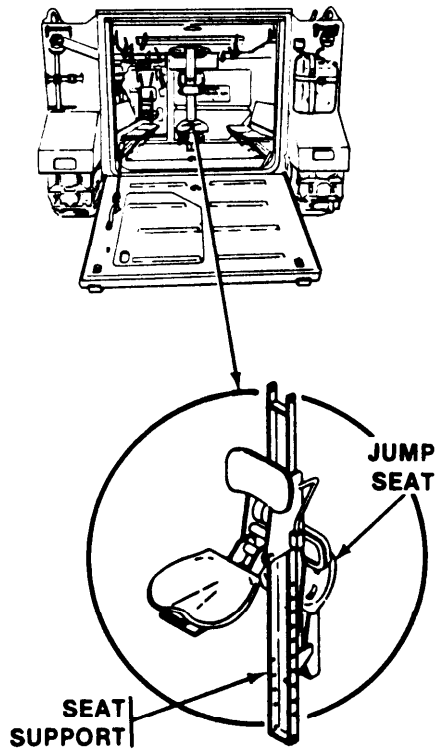
Soldier

Equipment **Conditions:**

Carrier stopped

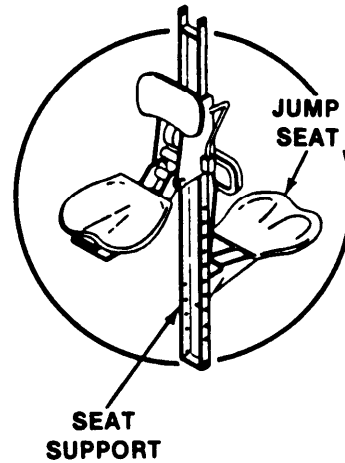
STOW JUMP SEAT

1. Pull jump seat up towards seat support until it locks in stowed position.



UNSTOW JUMP SEAT

1. Pull jump seat up and to the rear to release seat from stowed position. Lower seat to down position.



END OF TASK

ADJUST COMMANDER'S PLATFORM

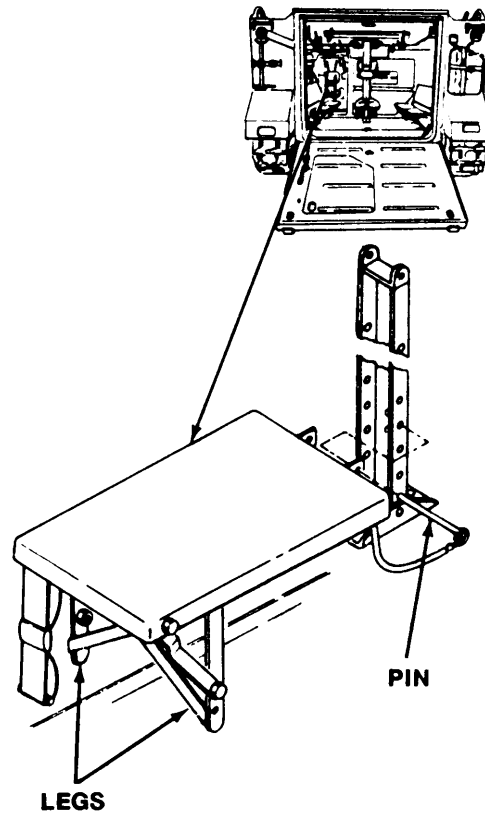
INITIAL SETUP

Personnel Required

Soldier

Equipment **Conditions:**Carrier stopped

1. Remove pin.
2. Move platform either up or down to desired height.
3. Adjust legs.
4. Install pin.



END OF TASK

CONNECT CVC HELMET TO INTERCOM CONTROL BOX

INITIAL SETUP

Personnel Required:

- Driver
- Commander

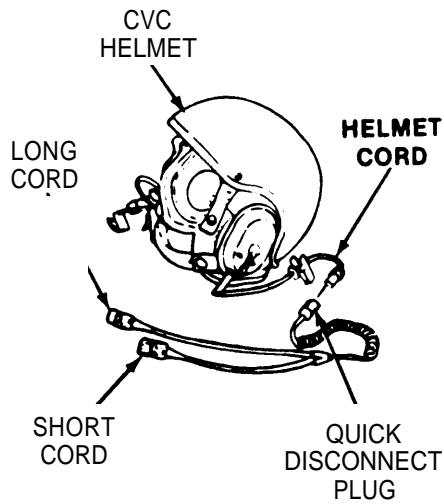
References:

- TM 11-5820-498-12
- TM 11-5916-224-14

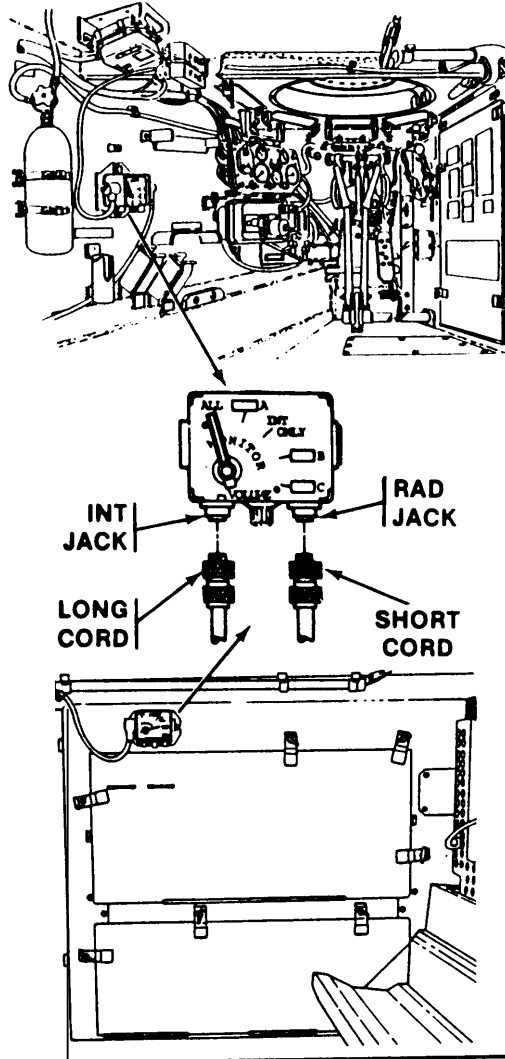
NOTE

Procedure is the same at both driver's and commander's station.

1. Connect helmet cord to quick disconnect plug.



2. Connect long cord to INT jack on intercom control box.
3. Connect short cord to RAD jack on intercom control box.



END OF TASK

START ENGINE

DESCRIPTION

This task covers: Prepare to Start Engine (page 2-161).

Start Engine (above +40°F (+4°C)) (page 2-164).

Start Engine (-25° to +40°F (-32° to +4°C)) (page 2-166).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page 2-184)

Reference

TM 11-5820-498-12

PREPARE TO START ENGINE

CAUTION

Do not start vehicle if batteries are frozen.

WARNING



Engine exhaust gas is deadly poison. Make sure power plant access panels are closed tight before

you start engine.

1. Check that power plant compartment access panels are closed tight (pages 2-219 and 2-220).

WARNING



Sudden carrier movement can throw you out of seat. Wear seat belt while carrier is in motion. Do

not use any seat with missing or inoperative seat belt.

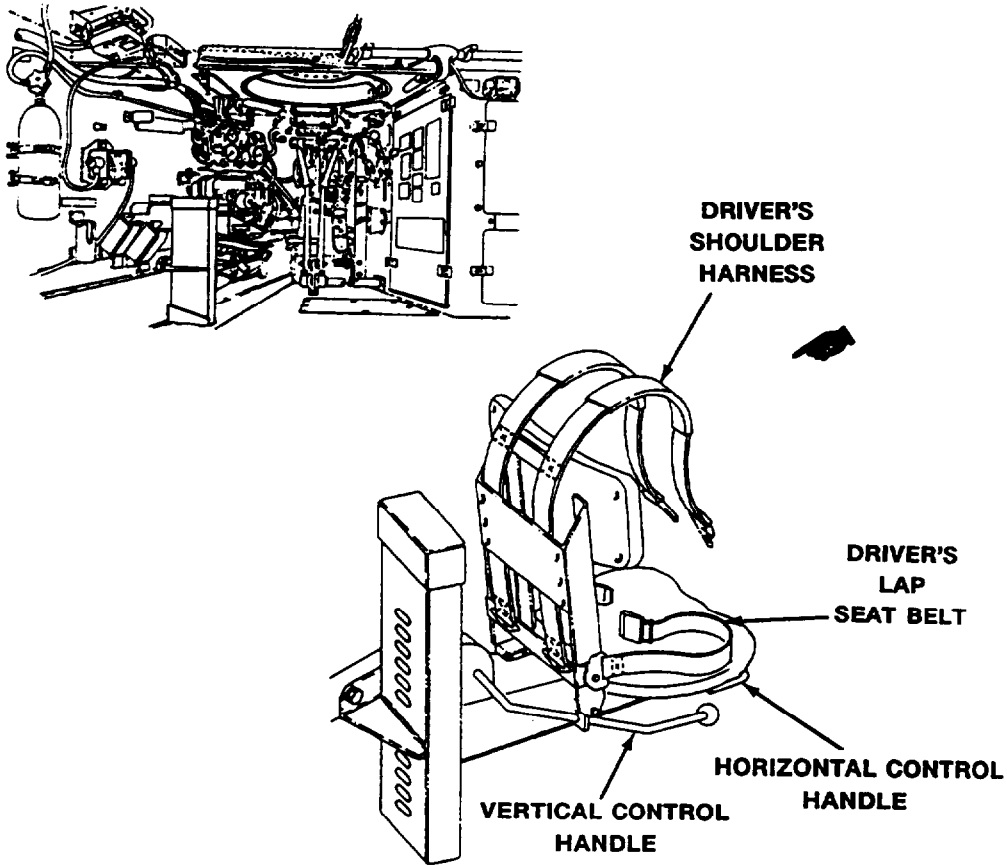
2. Fasten driver's lap seat belt and shoulder harness (page 2-156.1).
- 2.1 Adjust driver's Seat (page 2-155).

GO TO NEXT PAGE

Change 5

2-161

DRIVER'S SEAT CONTROLS



HORIZONTAL CONTROL HANDLE

Locks and releases driver's seat. Allows seat to be moved to the front or rear.

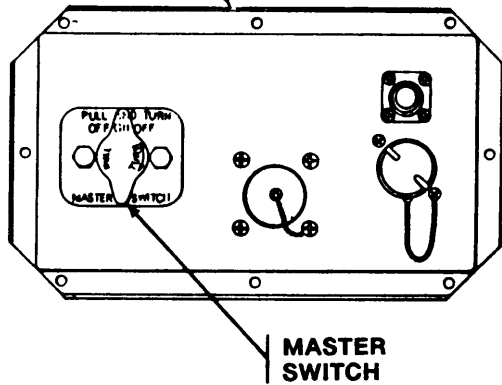
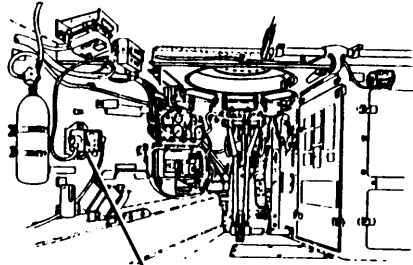
VERTICAL CONTROL HANDLE

Locks and releases driver's seat. Allows seat to be raised or lowered.

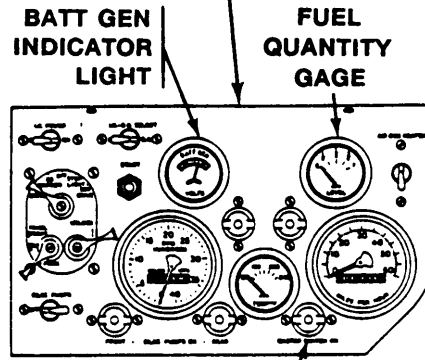
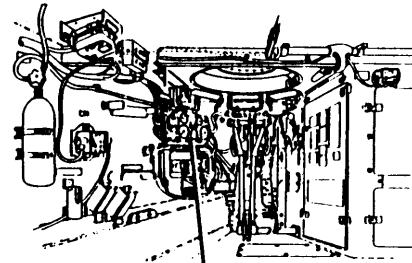
DRIVER'S LAP SEAT BELT AND SHOULDER HARNESS

Secures driver safely in seat. Lap and shoulder restraints are adjustable.

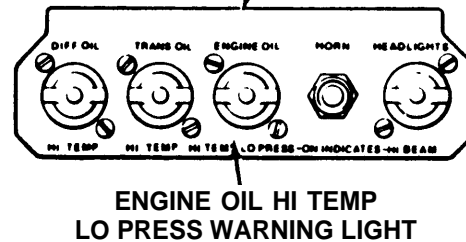
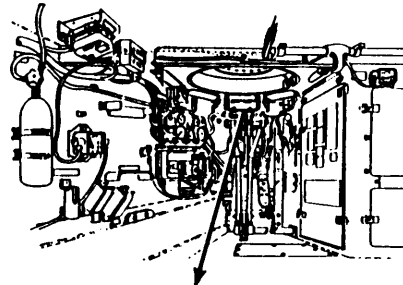
5. Put on CVC helmet and connect to intercom control box (page 2-160).
6. Turn MASTER SWITCH ON.



7. Check that MASTER SWITCH ON indicator light is on.
8. Check that BATT GEN indicator points to yellow or green zone.
9. Check that FUEL QUANTITY gage indicates amount of fuel in fuel tanks.



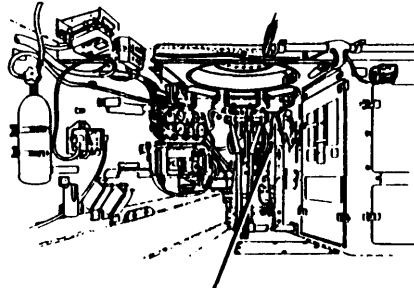
10. Check that ENGINE OIL HI TEMP LO PRESS warning light is on.



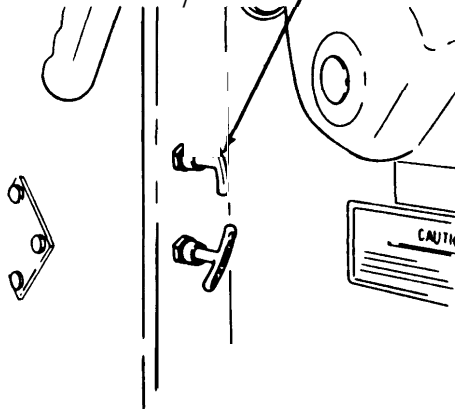
GO TO NEXT PAGE

11. Push fuel cutoff control in.

12. Pull air ventilator control out.



FUEL CUTOFF CONTROL



AIR Ventilator CONTROL

NOTE

See next column for procedure to start engine when air temperature is above +40°F (+4°C).

NOTE

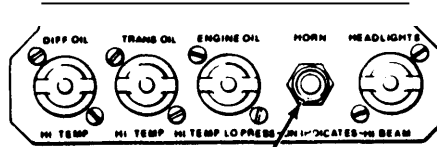
Go to page 2-166 for procedure to start engine when air temperature is -25° to +40°F (-32° to +4°C).

START ENGINE (ABOVE +40°F(+4°C))

NOTE

If tactical situation permits, horn should be sounded to warn personnel that engine is about to be started.

1. Press HORN switch.



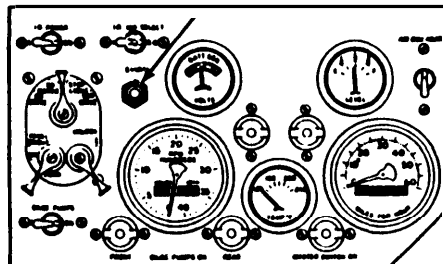
Horn SWITCH

CAUTION

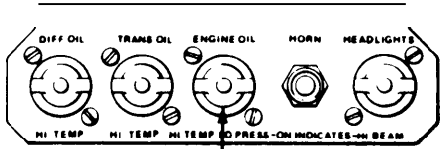
Pressing START switch for more than 15 seconds at temperatures above +4°F can damage starter. Do not press START switch for more than 15 seconds at a time. If engine does not start on first try, wait at least 30 seconds and try again.

2. Press START switch and hold until engine starts, but no longer than 15 seconds.

START SWITCH

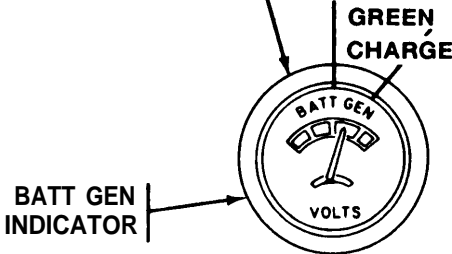
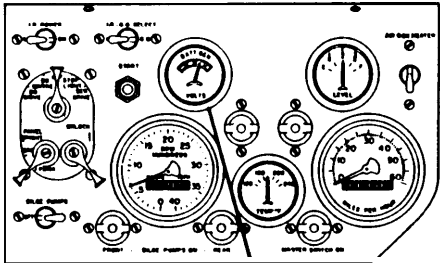


- 3. If engine does not start on first try, wait 30 seconds and try again. If engine does not start after three tries, notify unit maintenance.
- 4. Check that **ENGINE OIL HI TEMP LO PRESS** warning light goes off within 10 seconds after engine starts.

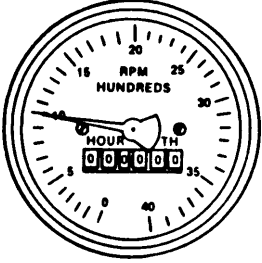
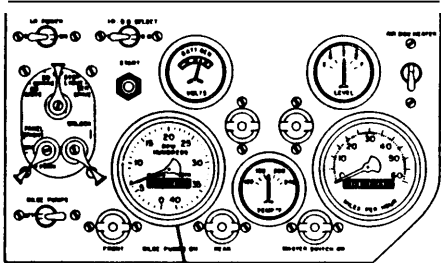


ENGINE OIL HI TEMP LO PRESS WARNING LIGHT

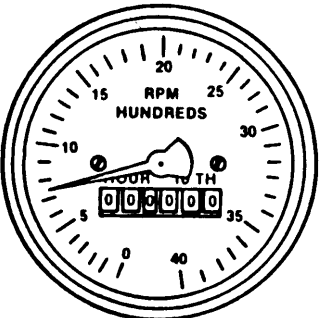
- 5. Check that **BATT GEN** indicator points to green zone.



- 6. Run engine at 800-1000 rpm for 3-5 minutes.



- 7. Reduce engine to idle speed (650-700 rpm). Drive carrier (page 2-176).



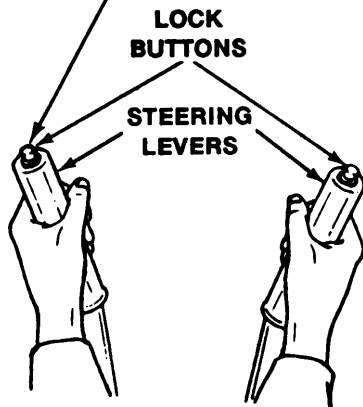
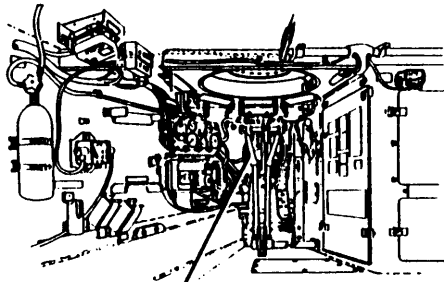
GO TO NEXT PAGE

START ENGINE (-25° to +40°F (-32° to +4°C))

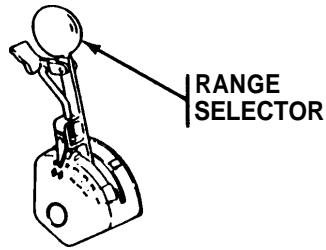
NOTE

If temperature is below -25°F (-32°C) and engine coolant heater was used to warm coolant prior to engine start procedures, turn coolant heater off (page 2-231).

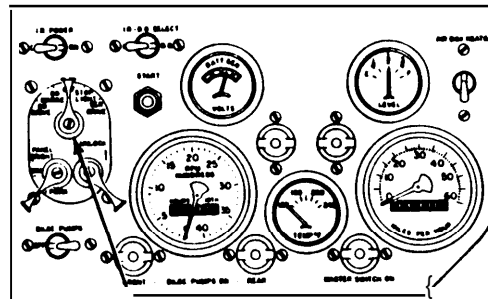
1. Do your preventive maintenance checks and services (page 2-36 thru 2-73).
2. Lock steering levers. Pull back on both levers and press the lock buttons down.



3. Shift range selector lever to N range.

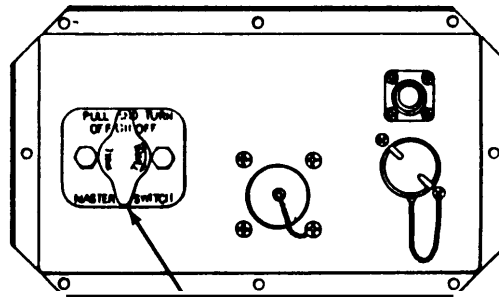


4. Make sure driving lights switch is OFF.



DRIVING LIGHTS SWITCH

5. Turn MASTER SWITCH ON.

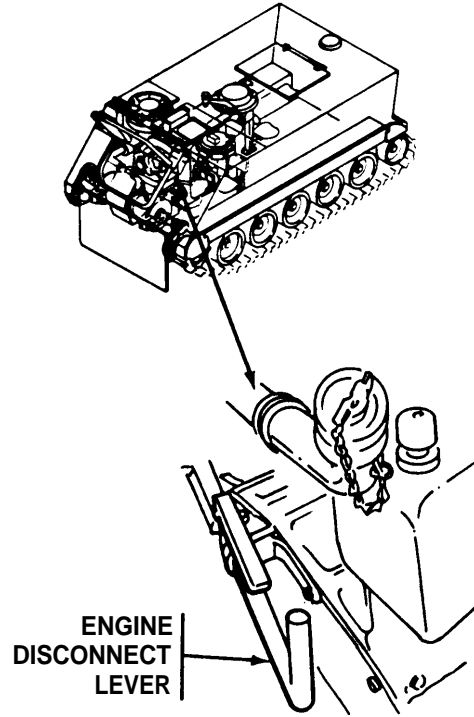
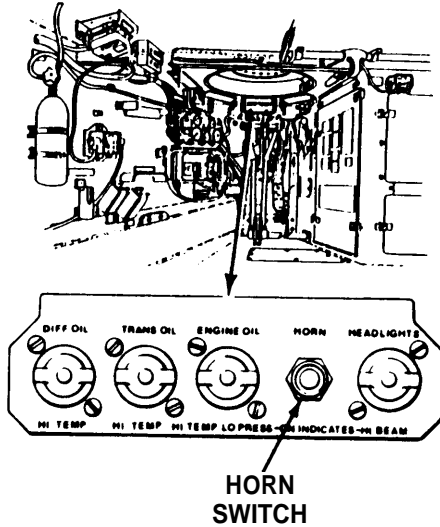


MASTER SWITCH

NOTE

If tactical situation permits, horn should be sounded to warn personnel that engine is about to be started.

6. Press HORN switch.

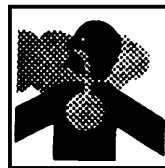


7. Remove driver's power plant access panel (page 2-219).

CAUTION

Never try to move the engine disconnect lever when the engine is running. Do not leave engine disengaged more than 10 minutes while engine is running. Damage to the transfer gearcase can result.

WARNING



Exhaust gas is deadly poison. Make sure power plant access panels are closed tight before you

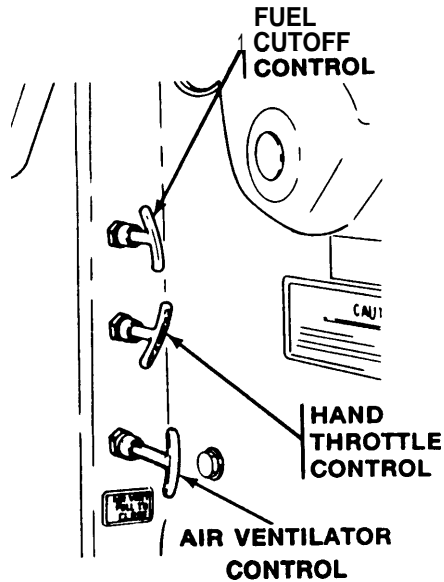
start the engine.

8. Lift lock on disconnect lever and push lever in as far as it will go to disengage engine from transfer gearcase.

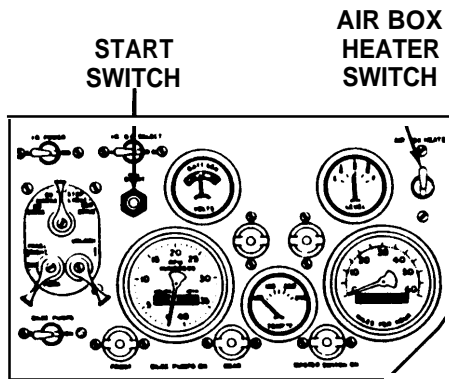
9. Install driver's power plant access panel (page 2-219).

GO TO NEXT PAGE

10. Push in engine fuel cutoff and hand throttle controls.
11. Pull out air ventilator control.



12. Press and hold **START** switch.
13. Press and hold **AIR BOX HEATER** switch.
14. Hold both **START** and **AIR BOX HEATER** switches for approximately 45 seconds.

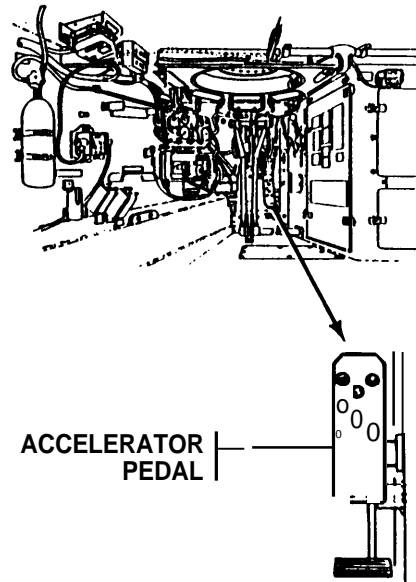


NOTE

Within the first 10 seconds engine should give signs of "firing up" or trying to start. When this happens, continue to hold the **START** and **AIR BOX HEATER** switches for another 25 Seconds. This adds Up to the total of 45 seconds for pre-start.

If within the first 20 seconds engine does not give signs of "firing up" or trying to start, stop starting procedures and go to step 19.

15. After the 45 seconds of pre-start, release **AIR BOX HEATER** switch and depress accelerator pedal approximately half way.

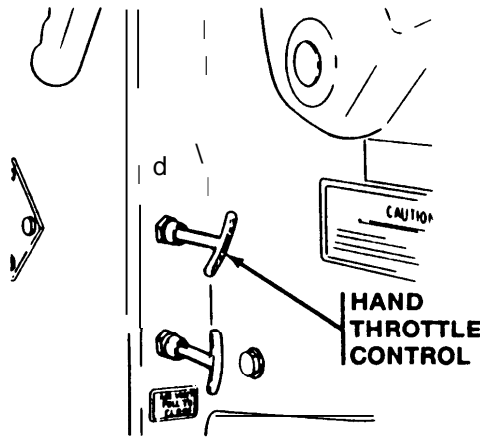
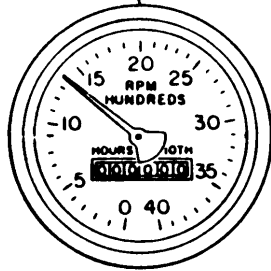
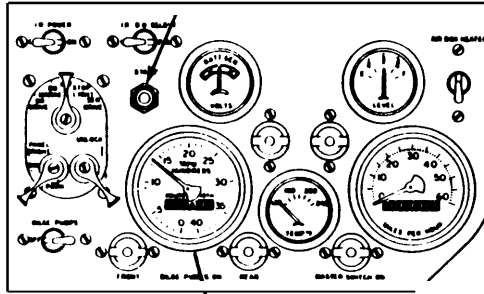


NOTE

If you do not release the **AIR BOX HEATER** switch, engine will not start or run.

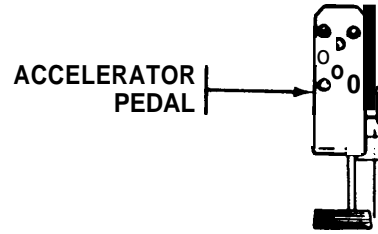
16. If engine starts, release **START** switch. Immediately set hand throttle to adjust engine speed to 1200-1500 rpm and go to step 20.

START SWITCH



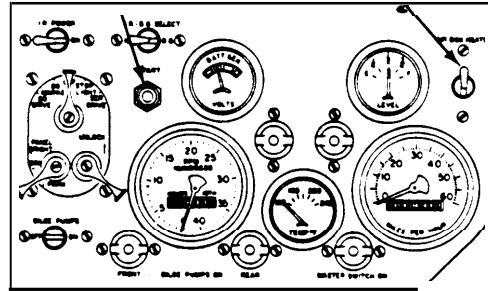
GO TO NEXT PAGE

17. If engine does not start, return accelerator pedal to idle position. Press and hold both **START** and **AIR BOX HEATER** switches.



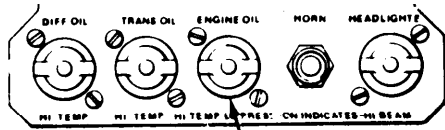
START SWITCH

AIR BOX HEATER SWITCH



18. Hold **AIR BOX HEATER** switch for 10 seconds, then release for 3-4 seconds. The engine should start within two of these attempts. If engine starts, go to step 20.
19. If engine does not start, release **AIR BOX HEATER** and **START** switches. Notify unit maintenance that **AIR BOX HEATER** and/or engine should be checked.

- Check that ENGINE OIL HI TEMP LO PRESS warning light goes off within 10 seconds after engine starts.



ENGINE OIL HI TEMP
LO PRESS WARNING LIGHT

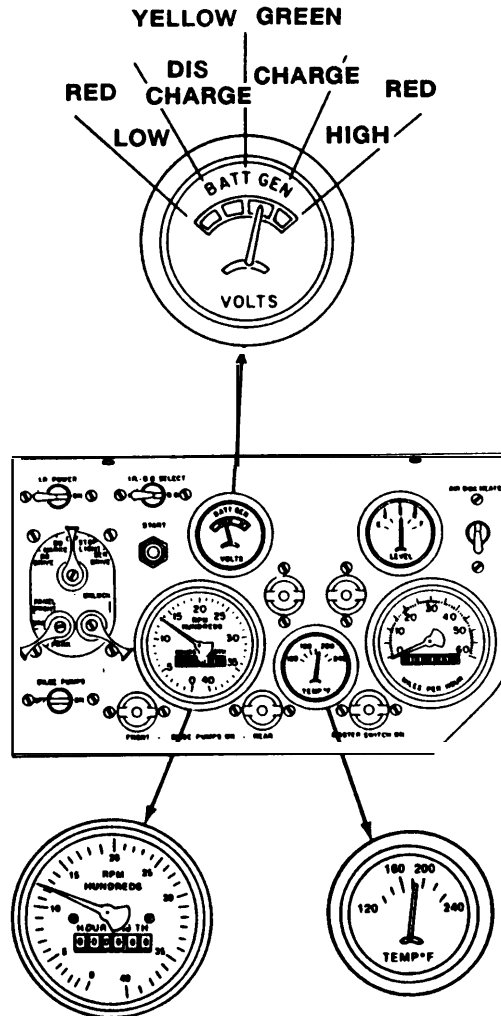
NOTE

All lights on warning panel should be OFF. If not troubleshoot engine (page 3-3).

BATT GEN GAGE CHECKS:

- Low (red zone): Dead battery or short circuit.
- DISCHARGE (yellow zone) engine OFF: OK if in upper half, LOW battery if in lower half.
- CHARGE (green zone) engine ON: OK if in lower half, high charge if in upper half.
- HIGH (red zone) engine ON: Overcharge. Shut down engine. Report it to organizational maintenance.

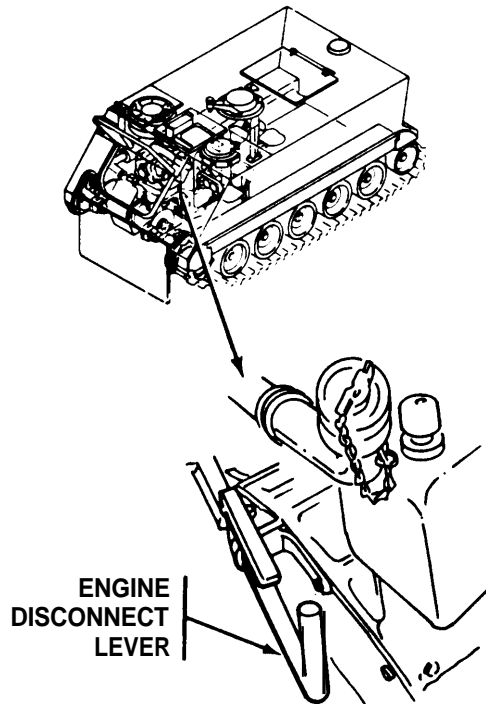
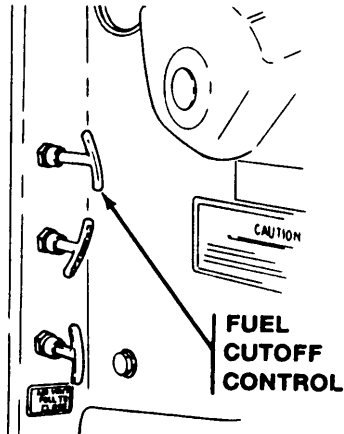
- Check that BATT GEN indicator points to green zone.
- Run engine at 1200 to 1500 rpm for about 5 minutes or until engine coolant temperature gage indicates 185°F (85°C).
- Reduce engine to idle speed (650-700 rpm).



NOTE

If the engine started without disengaging the engine disconnect lever, skip steps 28 thru 32, and go directly to step 33.

28. Pull fuel cutoff control out and stop engine.



29. Remove driver's power plant access panel (page 2-219).

CAUTION

Never try to move the engine disconnect lever when the engine is running. Do not leave engine disengaged more than 10 minutes while engine is running. Damage to the transfer gearcase can result.

30. Pull engine disconnect lever out as far as it will go to connect the engine to the rest of the power plant. If the disconnect lever is hard to move, press the START switch for a moment to turn the engine a little.

WARNING



Exhaust gas is deadly poison. Make sure power plant access panels are closed tight before you

start the engine.

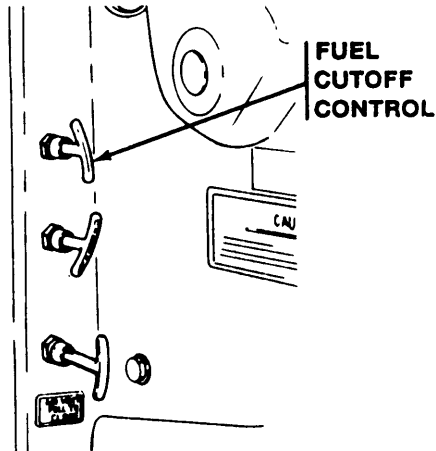
31. Install driver's power plant access panel (page 2-219).

GO TO NEXT PAGE

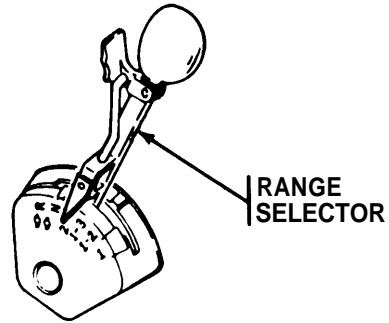
CAUTION

If the engine doesn't start after 30 seconds of cranking, release the START switch and let the starter cool for 30 seconds before you try again. If you can't restart the engine in five tries, troubleshoot it.

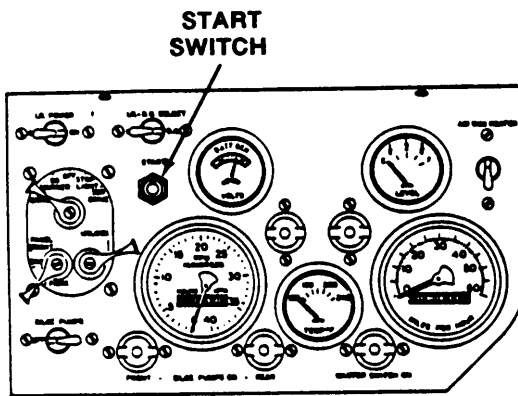
32. Push fuel cutoff control in and press START switch to restart engine.



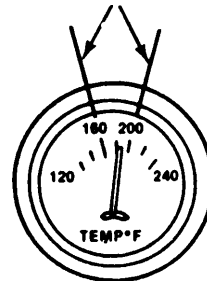
33. With brakes firmly engaged, shift the range selector lever to 2-3 range, and position hand throttle control to run the engine at 800 to 1000 rpm for about 10 minutes to warm up transmission.



34. ENG COOL TEMP GAGE. The coolant temperature gage during normal ambient temperatures, may show a normal operating temperature between 160° and 200°F (71.1° and 93.3°C). Any temperature in this range is O K

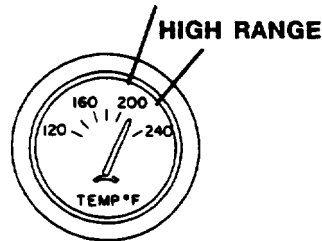


NORMAL RANGE

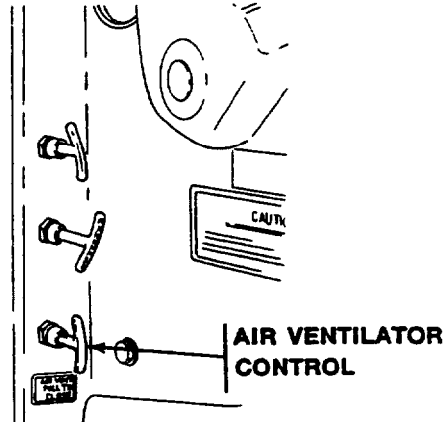


ENGINE COOLANT TEMPERATURE GAGE

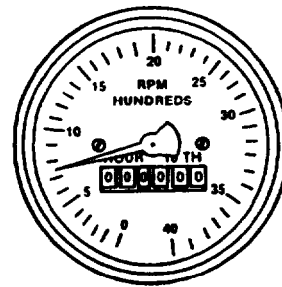
35. During conditions of high ambient temperatures (85°F or above), the coolant temperature may exceed 200°. If the coolant temperature exceeds 200°F, under these conditions, the operator will reduce vehicle speed to determine if the high ambient temperature is causing the higher engine coolant temperature.



38. Push air ventilator control in to allow cooler air from rear compartment to enter engine.



36. If after operating the vehicle at reduced speed the engine coolant temperature does not decrease, stop the engine, check the coolant level (page 3-43), and follow overheating troubleshooting procedures (page 3-7). Normally the temperature won't go below 160°F once the engine warms up, unless you have to idle in arctic temperatures (below -25°F (-32°C)).



37. If the coolant temperature drops to 140°F (60°C), run the engine at 1200-1500 rpm until it warms up. If the temperature gage doesn't work, report it to organizational maintenance.

39. Drive carrier (page 2-176).

END OF TASK

START ENGINE WITH OUTSIDE POWER SOURCE

INITIAL SETUP

Tools:

Slave cable
source carrier

Personnel Required:

Driver (2)

Equipment Conditions:

Carrier unable to start under own
power
Source carrier parked alongside of
disabled carrier
Source carrier engine stopped
(page 2-184)

CAUTION

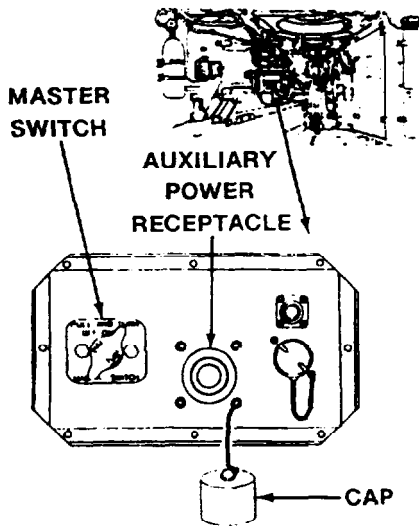
Do not start vehicle if batteries
are frozen.

WARNING



When starting,
carriers can move
suddenly and
crush personnel.
Personnel should
stay clear of area
between carriers.

1. Check that MASTER SWITCH is OFF on both carriers.

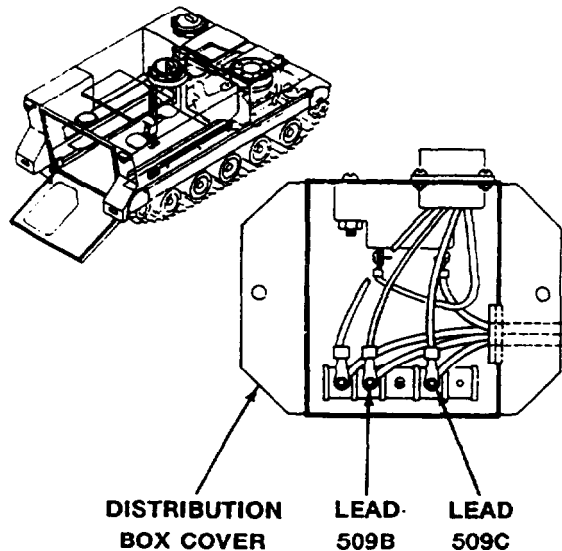


2. Remove cap from auxiliary power receptacle on both carriers.

NOTE

Step 3 should be done if your
carrier is equipped with an M8
alarm system. If you do step 3,
connect leads and install distri-
bution box cover after starting
problem has been corrected.

3. Remove distribution box cover
and disconnect M182 mount cable
leads 509B and 509C before
jump-starting.

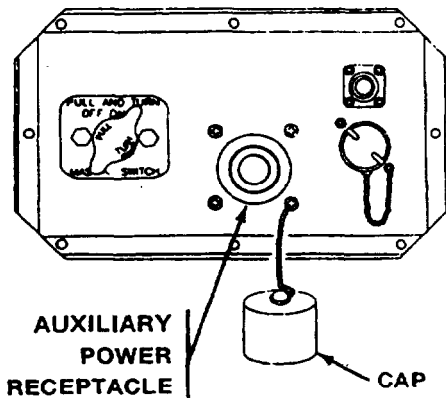


WARNING

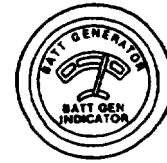
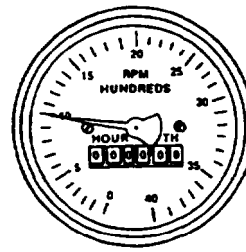


Electrical slave cable can be improperly connected causing electrical spark or fire. Personnel can be killed or injured. Equipment can be damaged. Match connector guide lug and cable prongs with receptacle hole.

4. Connect slave cable to auxiliary power receptacle on disabled carrier.



5. Connect slave cable to auxiliary power receptacle on source carrier.
6. Start engine of source carrier (page 2-161).
- 6.1. Turn MASTER SWITCH ON in disabled vehicle
7. Run engine on source carrier at a fast idle (1000-1200 rpm) to show charging on BATT GEN indicator.



- 7.1. Run engine on source carrier at fast idle for 3-5 minutes before starting disabled vehicle.

NOTE

In cold weather areas, air box heater can be switched on to heat engine on disabled carrier before attempting to start it.

8. Start engine on disabled carrier (page 2-161).

WARNING



Electric sparking can burn you. Equipment can be damaged. Make sure to disconnect slave cable carefully not to cause any sparks.

9. Turn MASTER SWITCH OFF on both carriers.
10. Disconnect slave cable from auxiliary power receptacle on both carriers.
11. Install cap on auxiliary power receptacle on both carriers.
12. Turn MASTER SWITCH ON on both carriers.

END OF TASK

DRIVE CARRIER

DESCRIPTION

This task covers: Driving Precautions (page 2-177).
Drive Carrier (page 2-179).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions: (cont):

Commander's hatch cover secured
open or closed (page 2-148)
cargo hatch cover closed
(page 2-146)

Equipment Conditions:

Driver's hatch cover secured open
or closed (page 2-144)

WARNING



Applying brake pressure hard can cause carrier to stop suddenly. Personnel could be injured. Apply brake pressure lightly and with caution.



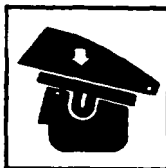
Vehicle operation during hot weather may result in potential heat stress to crew members. crew members should limit their exposure based on TB med 507, using PHEL Chart (Appendix C) curve as a guide.



Carrier noise can cause permanent hearing damage. Double hearing protection must be worn. See warning in front of manual.



Sticking or failed linkages can cause carrier to crash. Personnel can be killed or injured. If accelerator pedal does not operate smoothly, or engine does not return to idle when accelerator pedal is released, do not drive carrier.



Unlatched hatch cover could swing and injure personnel. Make sure hatches are latched and secure.

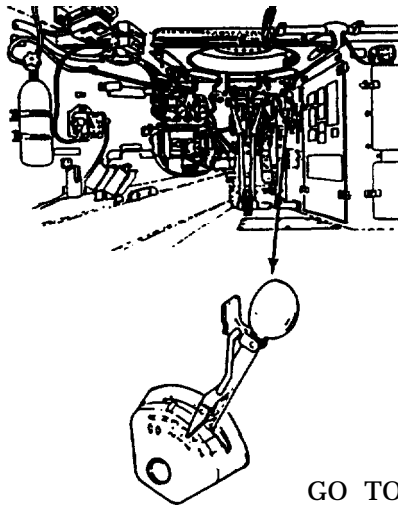


Carrier movement can throw you from your seat and injure you. Use of seat belts is mandatory. See warning in front of manual.

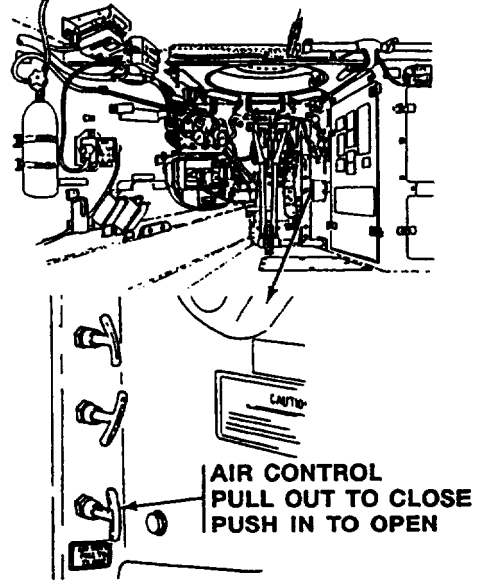
1. Engine started (page 2-161)
2. Ramp raised and locked (page 2-153)
- 2.1 Ensure that all personnel are in their proper positions secured with seat belts and wearing protective headgear. Check that the intercom is connected to the Track Commander (TC). Prior to moving, ensure personnel in hatches are not exposed more than head and shoulders to the level of their name tags, exception is made when firing weapons.

DRIVING PRECAUTIONS

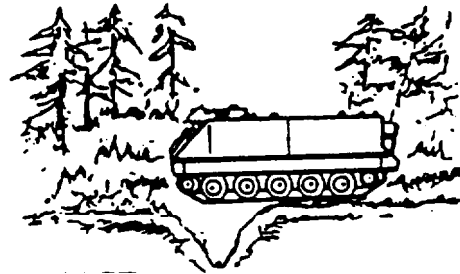
3. Use the 1-2 range until you get used to driving the carrier.



4. Take care not to oversteer or go too fast, especially on hard pavement. You could lose control of the carrier.
5. Push the air control in to open the valve and let the engine breathe cooler air from the rear compartment. This will give the engine a boost in horsepower.

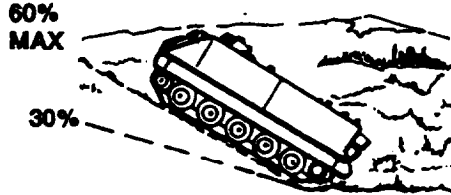
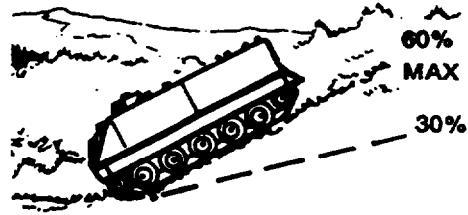


6. Decelerate as the carrier approaches the edge of a ditch or trench. Use gear range 1 or 1-2. Just as carrier bottoms out in a ditch or trench, accelerate and use full power as the carrier starts to climb. Maximum width of trench safely crossed is 5-1/2 feet (1.67 m).



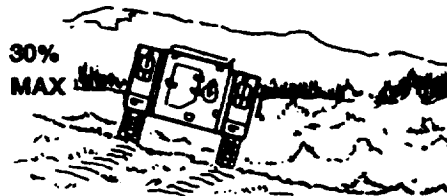
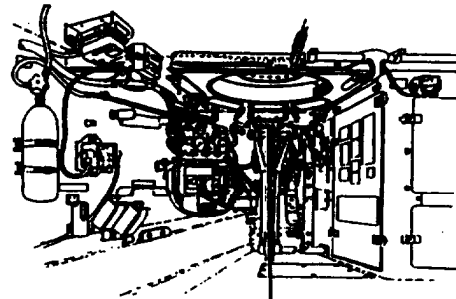
GO TO NEXT PAGE

7. Accelerate as the carrier climbs a grade. Decelerate at the top of the grade and during descent. Use 1 range for 30% to 60% grades and 1-2 range for up to 30% grades.

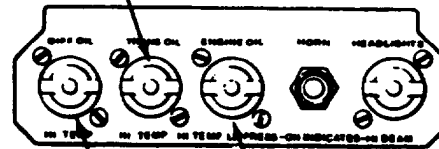


10. If any warning light comes on, stop engine (page 2-184). Troubleshooting (page 3-2).

a. Steer in a series of short turns on side slopes rather than one long even turn. This allows debris to feed out of the tracks. use gear range 1 or 1-2.



TRANSMISSION
OIL HIGH
TEMP
WARNING
LIGHT

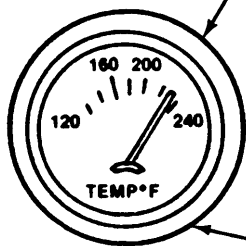
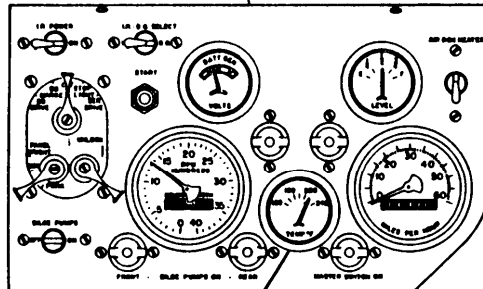
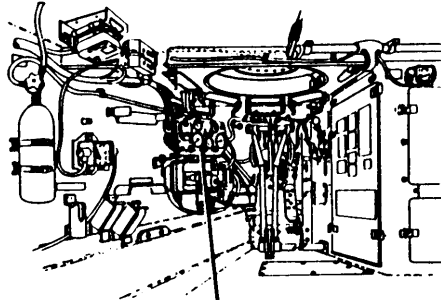


DIFFERENTIAL
HI TEMP
WARNING LIGHT

ENGINE
OIL HI
TEMP LOW
PRESS
WARNING
LIGHT

9. Descend grades slowly. Shift to a lower range before starting down. Approach bottom cautiously to avoid digging. Use 1 range for 30% to 60% grades and 1-2 range for up to 30% grades. Do not use engine and transmission to hold carrier on a slope.

11. Check engine coolant temperature gage. If temperature rises above 230°F (110°C), stop engine (page 2-184). Troubleshoot problem (page 3-2).

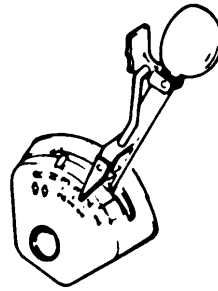


ENGINE COOLANT TEMPERATURE GAGE

DRIVE CARRIER

1. Shift the range selector lever to the driving range you want.

RANGE SELECTOR Selects driving range of transmission.



R (REVERSE) RANGE Used for backing the carrier under all conditions.

N (NEUTRAL) RANGE Used when starting, idling, and operating the auxiliary equipment.

2-3 RANGE Used for high-speed driving on roads or level terrain when carrier is lightly loaded.

1-3 RANGE Used for normal driving on roads and level or rolling terrain. **DO NOT DOWNSHIFT TO THIS RANGE ABOVE 40 MPH.**

1-2 RANGE Used for rough or soft terrain, going up or down long or moderately steep grades, and driving in water. **DO NOT DOWNSHIFT TO THIS RANGE ABOVE 21 MPH.**

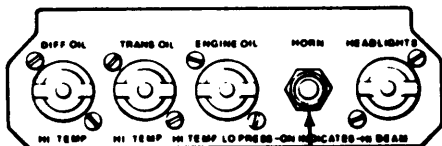
1 RANGE Used when going up or down steep grades, and when entering or leaving water. **DO NOT DOWNSHIFT TO THIS RANGE ABOVE 10 MPH.**

GO TO NEXT PAGE

NOTE

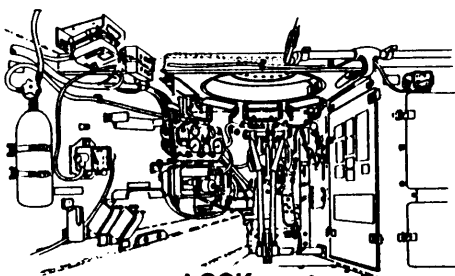
If tactical situation permits, sound horn to warn personnel earner is about to move.

2. press HORN switch.

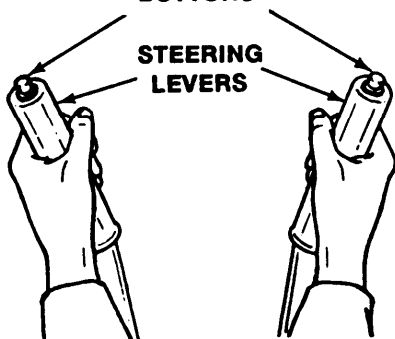


HORN SWITCH

3. Release steering levers. Pull back on both levers so the lock buttons pop up, then let levers go forward.



LOCK BUTTONS



STEERING LEVERS

4. Step on the accelerator pedal. Go easy. Take off nice and smooth. Push on the pedal to control the speed. The transmission will shift automatically within the range you set for it. To hold in a range past the normal shift point for a few seconds, or to shift down for extra power, push the pedal all the way to the floor.

CAUTION

The full-throttle transmission detent (pedal to the floor) is not a tradeoff for selecting the proper range. Use the detent for short bursts of power, not as a way to gear down for heavy hauling.

WARNING



When a track vehicle gets out of control and overturns, it is safer to stay in the vehicle than to try to get

out while the vehicle is still moving. You may receive slight injuries from being thrown against metal parts; but if you try to leave the vehicle, it may roll over and crush you. Once the vehicle stops moving, get out as fast as possible because spilled fuel and oil may catch on fire. The first thing the driver should do in such an emergency is shut off the engine and turn off the master switch to minimize the fire hazard.

WARNING

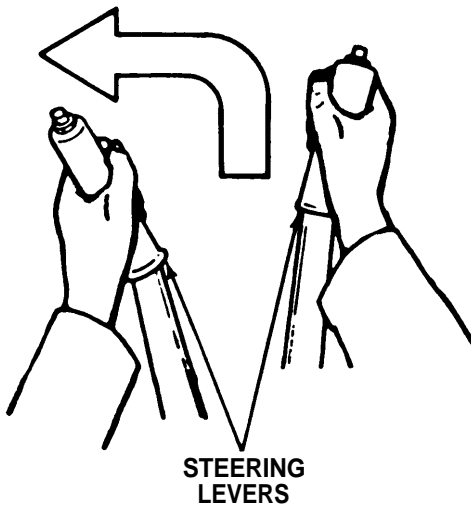


Pressing lock buttons while carrier is moving can cause carrier brakes to lock up. You could hit another vehicle or soldier. The buttons are strictly hands-off, except for parking.

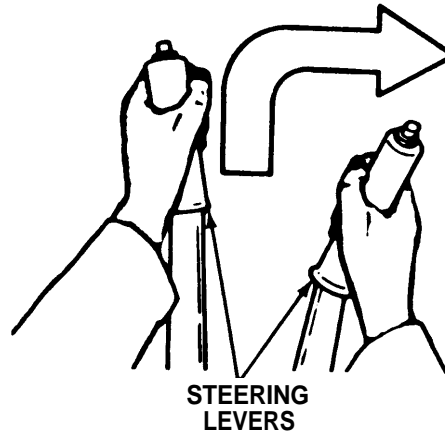
NOTE

Going in forward or reverse, the carrier will always turn toward the track that is moving slower.

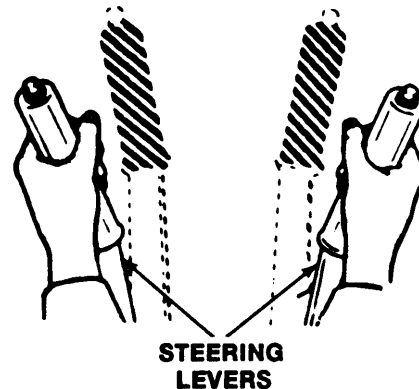
5. Pull back on the left-hand steering lever to turn left.



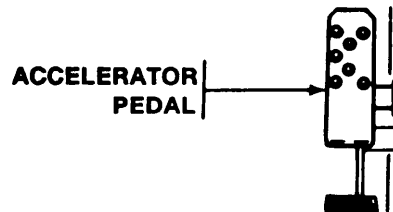
6. Pull back on the right-hand steering lever to turn right.



7. To slow the carrier, slowly pull both levers back.

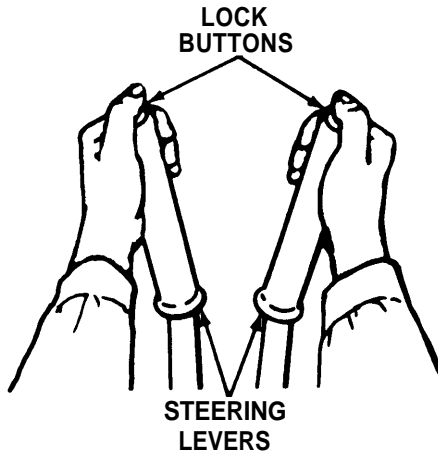


8. To stop the carrier, pull both levers at once using a pumping movement and remove your foot from the accelerator pedal.

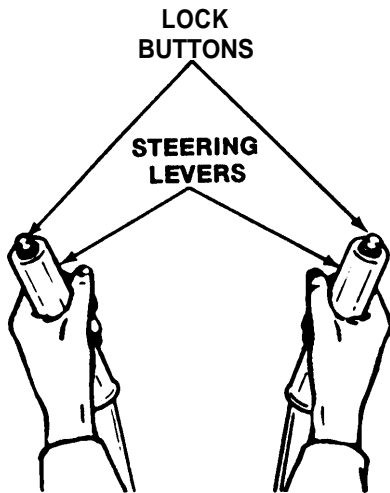


GO TO NEXT PAGE

9. To lock the brakes for parking, pull back hard on both levers and press the lock buttons down.



10. To unlock the brakes, pull back on the levers without touching the lock buttons. The buttons will pop up and release the levers.



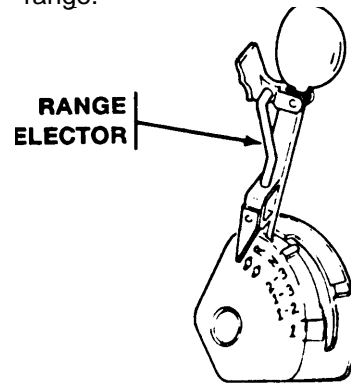
WARNING



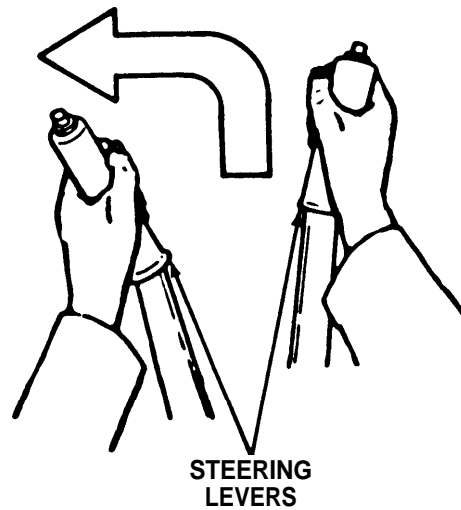
Operating carrier in reverse is dangerous due to limited vision. Always post ground guides before you

back up.

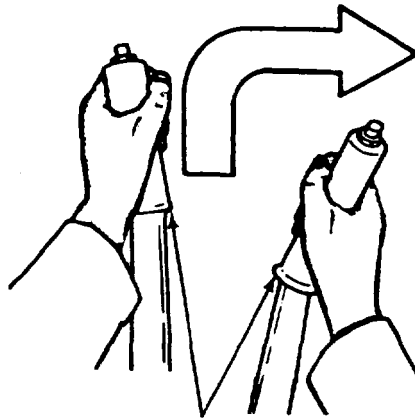
11. Shift range selector lever to R range.



12. Pull back on the left-hand steering lever to turn left.



13. Pull back on the right-hand steering lever to turn right.



STEERING LEVERS

WARNING



Pivot steering while moving can kill or injure personnel and damage equipment. STOP vehicle and

CHECK for clearance before operating pivot steer, except when swimming. Always post ground guides before you pivot when near personnel or equipment.

CAUTION

Avoid pivot steering on soft soil or gravel. Tracks may come off. After pivoting, drive ahead at least one carrier length to clear track.

CAUTION

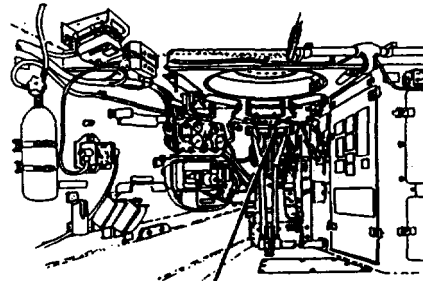
Power plant can be damaged. Do not pivot steer when carrier is moving.

NOTE

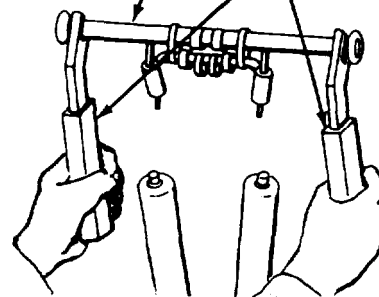
Use pivot steer only when normal turns cannot be made in close areas. Stop carrier before making pivot steer.

The pivot steer brakes work like the differential brakes, only quicker because they are disk brakes. When you pull the handle, they lock up immediately.

14. Pull the left handle to pivot left.
15. Pull the right handle to pivot right.
16. Pull both handles to make a sudden stop from a slow speed.



PIVOT STEER HANDLES



END OF TASK

STOP ENGINE

INITIAL SETUP

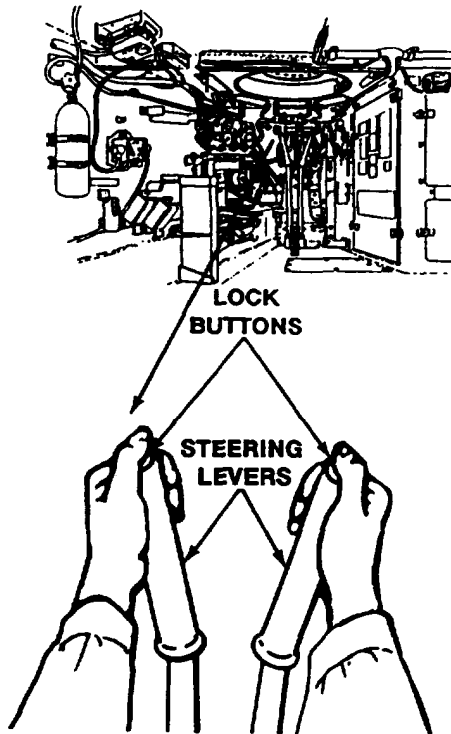
Personnel Required:

Driver

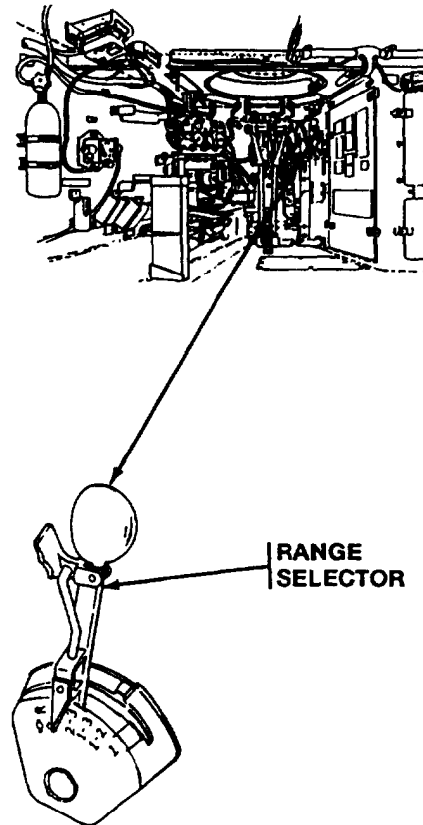
Equipment Conditions:

Engine running (page 2-161)

1. Lock steering levers. Pull back on both levers and press the lock buttons down.



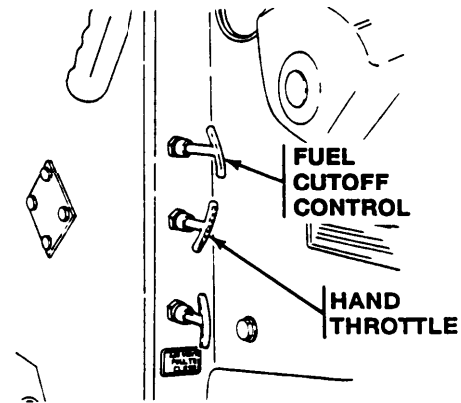
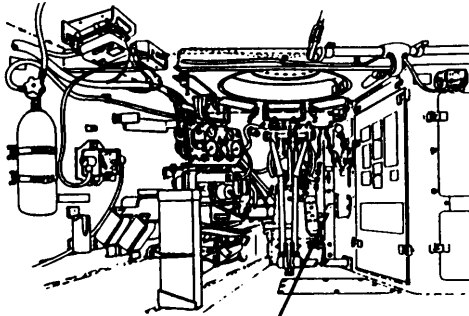
2. Shift range selector lever to N range (page 2-8).



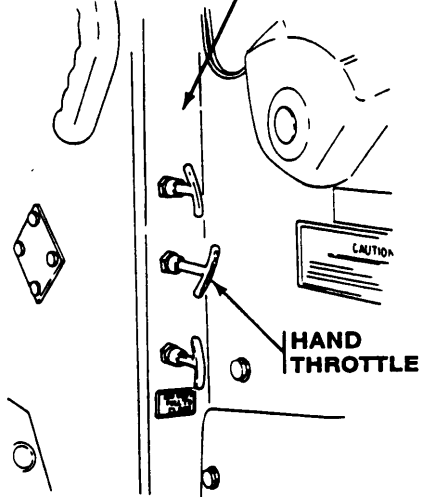
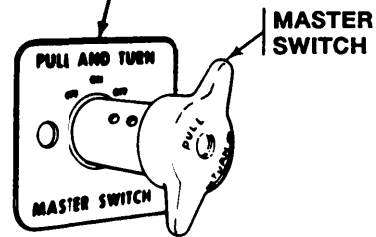
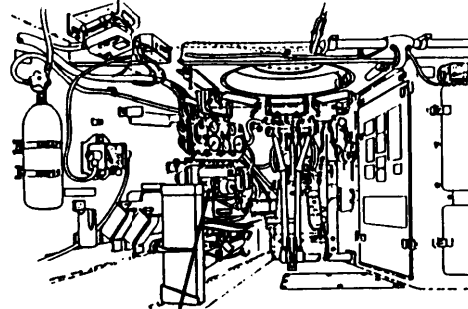
CAUTION

In cold weather, do not leave brakes locked when you park. Brakes should be locked only long enough to allow you to safely block the carrier tracks. Release brakes after blocking tracks. Brakes could freeze if left locked in cold weather.

3. Pull out hand throttle and run engine at 800-1000 rpm until normal idle temperature of 160°F to 185°F (71°C to 85°C is indicated on temperature gage.



5. Turn MASTER SWITCH OFF.



CAUTION

In cold weather, do not shut off engine until coolant temperature is 180°F (82°C) or lower.

4. Push hand throttle in and allow engine to idle for a few seconds. Then, pull fuel cutoff control out to shut the engine off.

NOTE

If air temperature is below -25°F (-32°C), start engine coolant heater (page 2-235).

END OF TASK

FUEL CARRIER

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

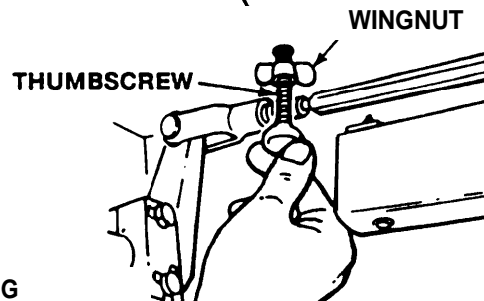
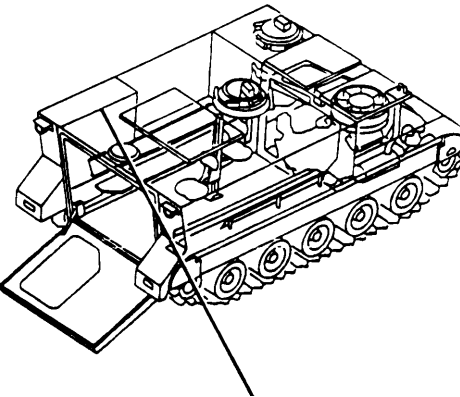
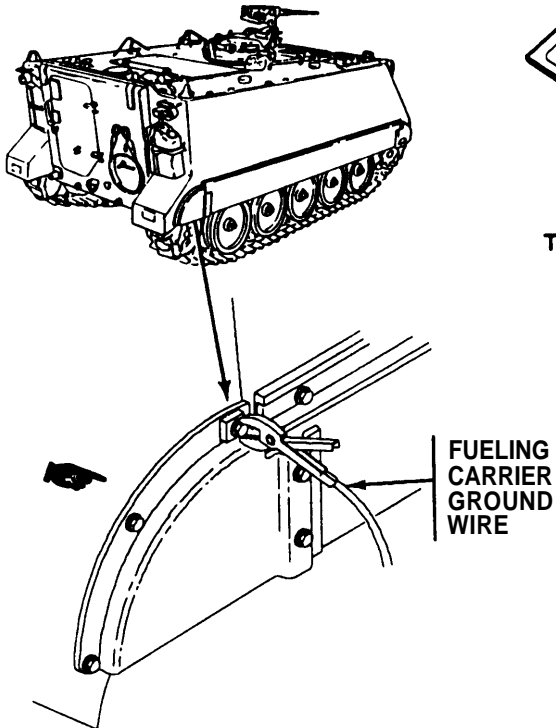
Engine stopped (page 2-184)



WARNING

Fuel can catch fire and burn you. Do not smoke or allow open flame near carrier when refueling.

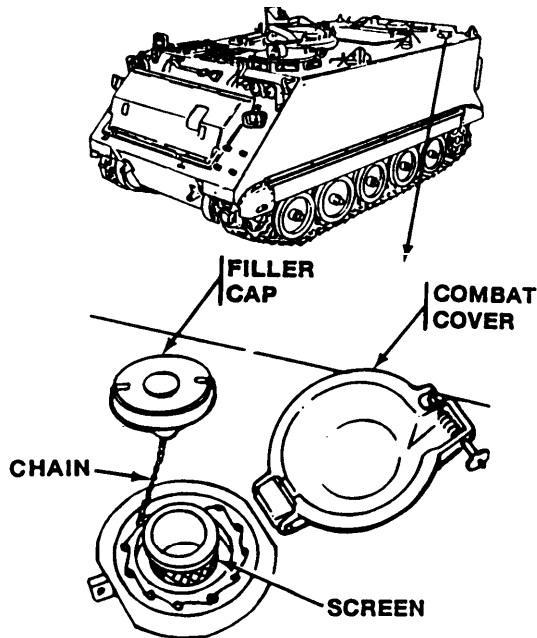
1. Scrape paint from screw on carrier to be fueled and install fueling earner ground wire to screw.



- From outside carrier, open combat cover.

CAUTION
Contamination can damage fuel system. Remove dirt and water from fuel filler area before opening fuel filler cap.

- Clean off dirt and water that could get into filler neck. Use wiping rag (Item 5, App D) .
- Unscrew filler cap.
- Check screen in filler neck. If there is any dirt in screen, take screen out and clean it. Install screen before refueling.

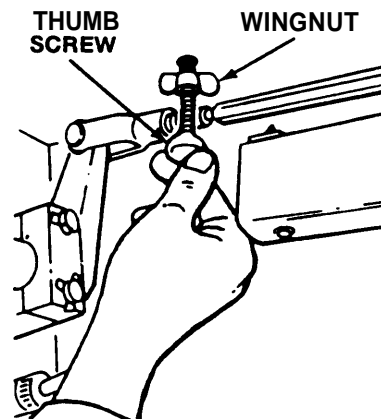


WARNING



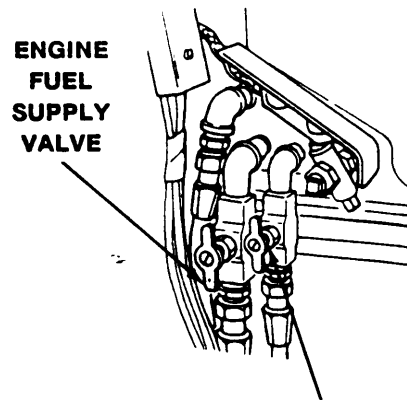
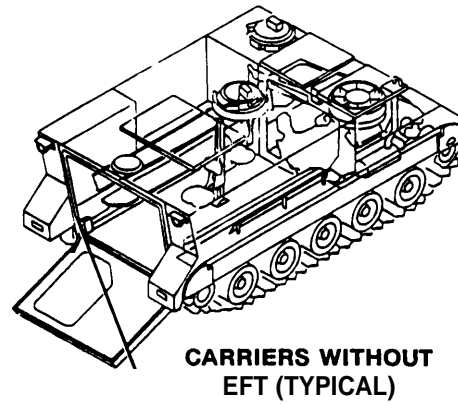
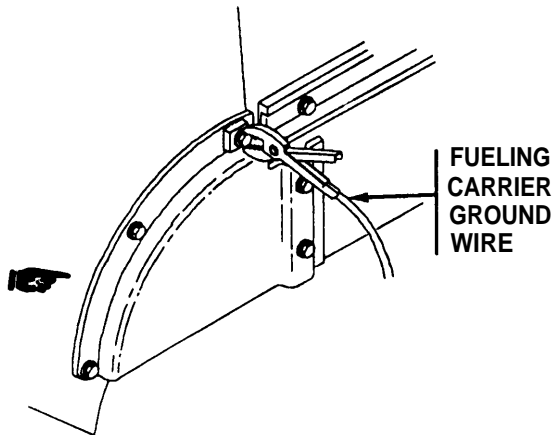
Sparks from static electricity could cause a fire or explosion. Metal nozzle must touch metal in fuel filler neck when fuel is running.

- Insert nozzle in fuel filler neck. Fill fuel tank allowing 5 inches in fuel filler neck for expansion.
- Remove fuel nozzle from fuel filler neck.
- Install fuel filler cap. Make sure keeper chain is all inside so cap goes on tight.
- Close combat cover.
- Lock combat cover from inside carrier by turning thumbscrew to the right. Tighten wingnut.



GO TO NEXT PAGE

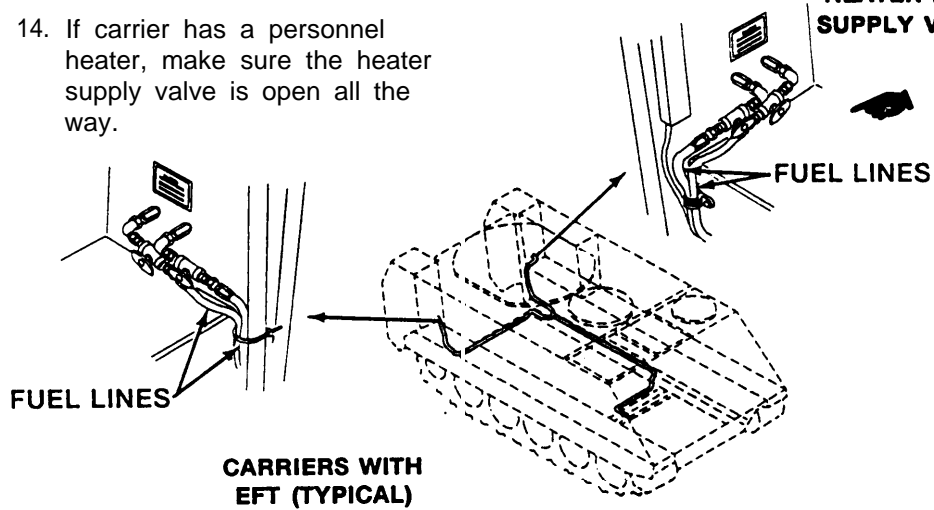
12. Remove fueling carrier ground wire from earner.



CAUTION
If fuel supply valve is not fully open, it will leak fuel. When you open valve, make sure it is open all the way. When you close valve, make sure it is tight.

13. Make sure engine fuel supply valve is open all the way.
14. If carrier has a personnel heater, make sure the heater supply valve is open all the way.

PERSONNEL HEATER FUEL SUPPLY VALVE



END OF TASK

INSTALL/REMOVE WINDSHIELD

DESCRIPTION

This task covers: Install Windshield (page 2-189).
Remove Windshield (page 2-190).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page 2-184)

INSTALL WINDSHIELD

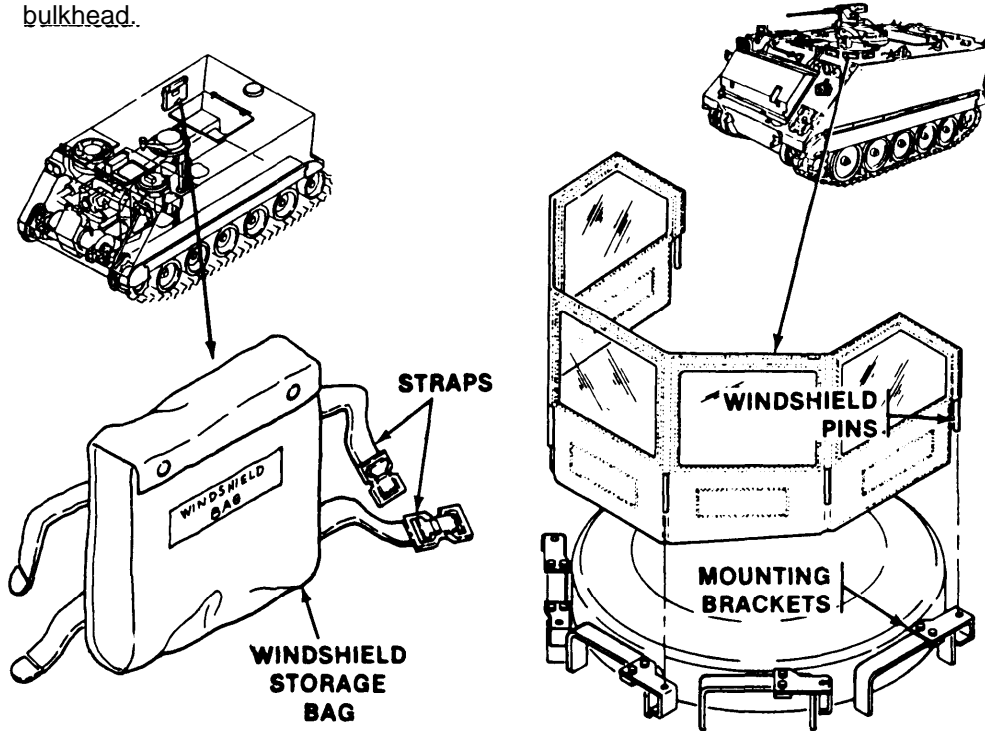
CAUTION

Windshield panels are easily scratched. Handle windshield with care.

1. loosen two straps and remove windshield storage bag from rear bulkhead.

2. Remove windshield from storage bag.

3. Install windshield pins in mounting brackets. Tuck skirt of windshield between driver's hatch and periscope guards.



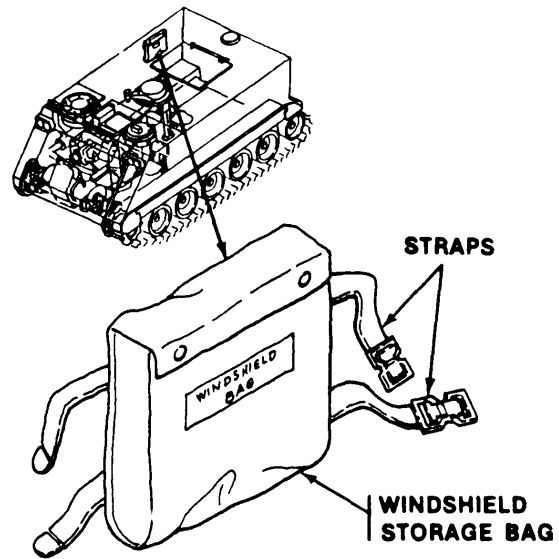
GO TO NEXT PAGE

REMOVE WINDSHIELD

CAUTION

Window panels will crack if folded after use in extreme cold weather. Warm windshield before folding.

1. Remove windshield pins from mounting brackets.
2. Fold windshield and stow in storage bag.
3. Return storage bag to rear bulkhead and secure with two straps.



END OF TASK

INSTALL/REMOVE M17 PERISCOPIES

DESCRIPTION

This task covers: Install M17 Periscopes (page 2-191).
 Remove M17 Periscopes (page 2-192).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

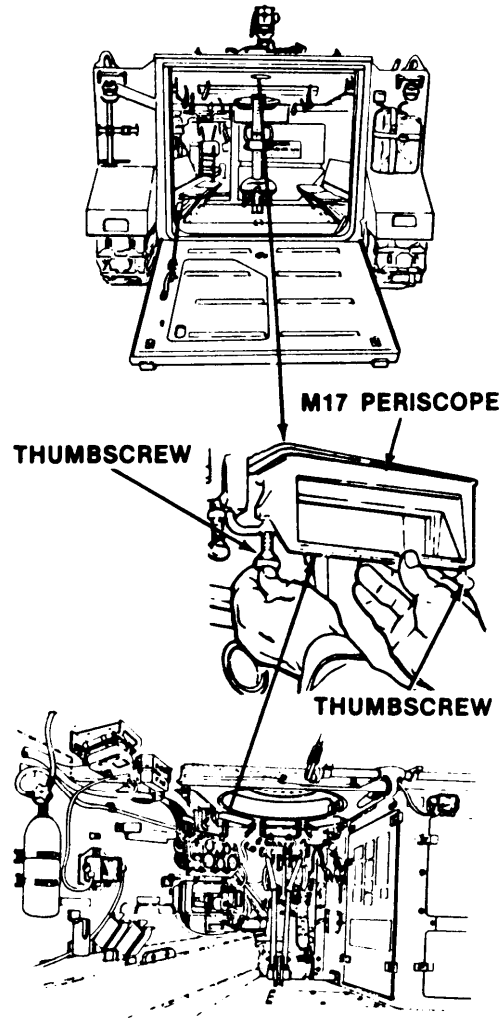
Engine stopped (page 2-184)

INSTALL M17 PERISCOPIES

NOTE

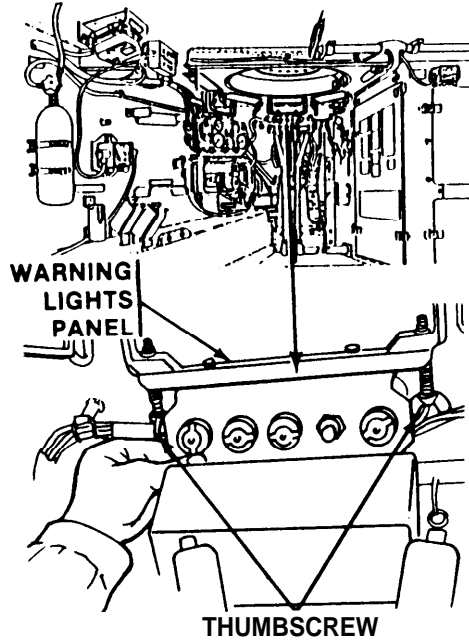
All M17 periscopes are installed the same way except the periscope mounted over the warning lights panel. Steps 3 through 5 tell how to install periscope over warning lights panel.

1. Push M17 periscope straight up into channel in driver's bulkhead or commander's cupola.
2. Tighten two thumbscrews to secure periscope in place.



GO TO NEXT PAGE

- Loosen two thumbscrews. Swing and hold warning lights panel out of the way.



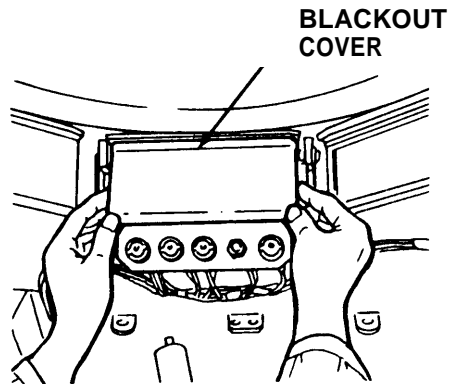
- Install periscope in channel.
- Return warning lights panel to normal position. Tighten two thumbscrews to secure periscope and warning lights panel in place.

PERISCOPE THUMBSCREW

THUMBSCREW

WARNING LIGHTS PANEL

- During blackout operations, cover periscope window with blackout cover located behind each periscope.



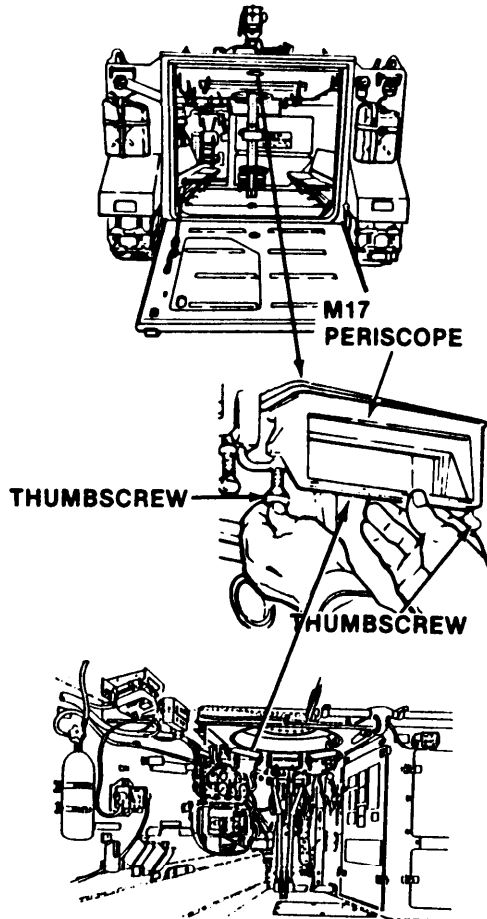
REMOVE M17 PERISCOPES

NOTE

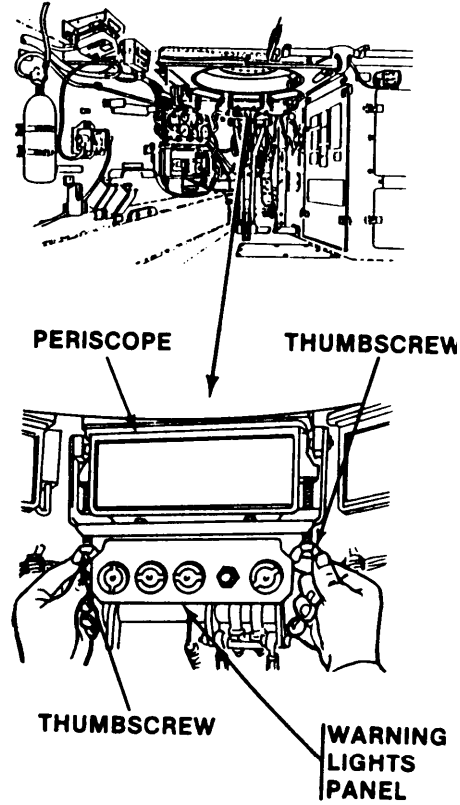
All M17 periscopes are removed the same way except the periscope mounted over the warning lights panel. Steps 3 and 4 tell how to remove periscope from over warning — lights panel.

- If installed, remove blackout cover from periscope window and stow on back of periscope.

- Loosen two thumbscrews and remove periscope from channel in driver's bulkhead or commander's cupola.



- Loosen two thumbscrews. Swing warning lights panel out of the way and remove periscope from channel.
- Return warning lights panel to normal position.



END OF TASK

OPERATE PERSONNEL HEATER

DESCRIPTION

This task covers: Turn Personnel Heater On (page 2-194).
 Turn Personnel Heater Off (page 2-196).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Cold weather

WARNING



Exhaust from personnel heater can kill you. Do not breathe exhaust gases. If you detect or suspect fumes, turn heater off and open all hatches right away. See warning in the front of this manual.

WARNING



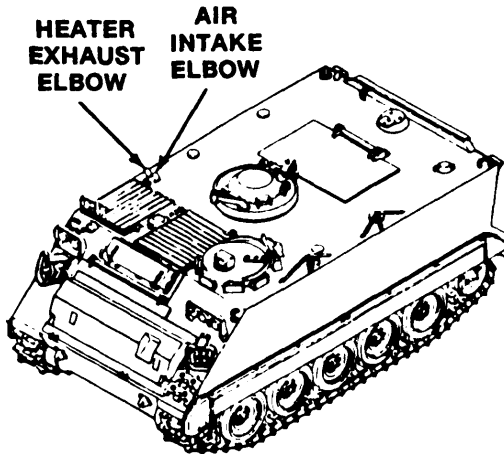
Ammunition can explode and kill you. Do not start heater until ammunition and combustible/explosive materials are properly stored at least 30 inches from heater vents. Combustible materials must be stored 12 inches or more from metal surfaces of heater.

TURN PERSONNEL HEATER ON

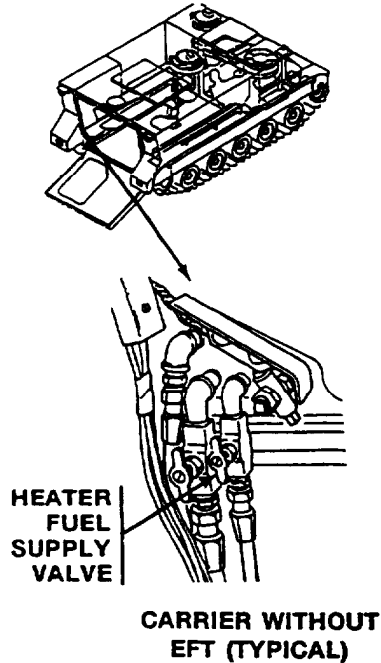
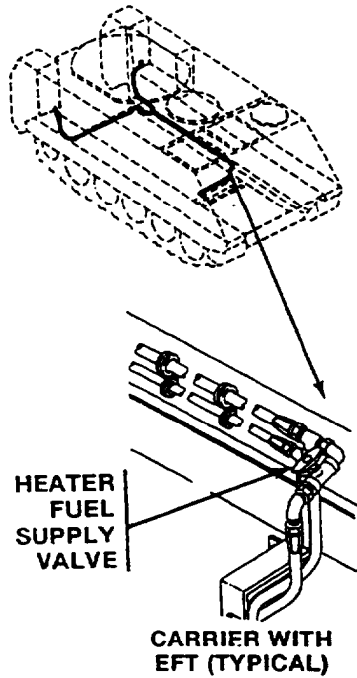
NOTE

Heater startup varies with the type of heater (Stewart Warner or Hupp) installed in your carrier. Steps 1, 2, 3, and 8 apply to both heaters. Steps 4 and 5 apply if your carrier is equipped with a Stewart Warner (South Wind) heater. Steps 6 and 7 apply if your carrier is equipped with a Hupp (Perfection) heater.

1. Check air intake elbow and heater exhaust elbow to make sure they are clear of debris.

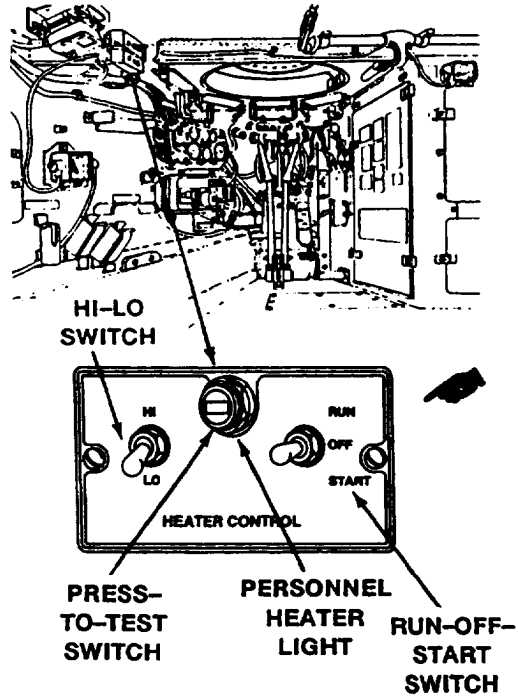


2. Make sure heater fuel supply valve is open.



3. Press PRESS-TO-TEST switch. Check that HEATER light comes on.

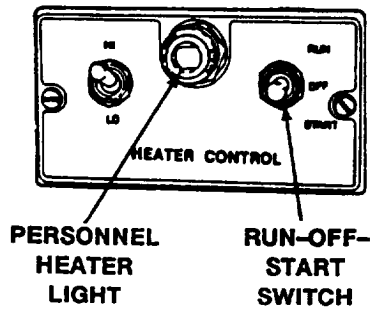
- 3.1. Make sure HI-LO switch is set to LO before starting.



4. Move RUN-OFF-START switch to START for 2 minutes. If HEATER light does not come on, move RUN-OFF-START switch to OFF for 10 seconds. Move RUN-OFF-START switch to START for 1 minute. If HEATER light does not come on, move RUN-OFF-START switch to OFF for 10 seconds. Move RUN-OFF-START switch to START for 1 minute. If heater fails to start after third try, troubleshoot heater (page 3-14).

GO TO NEXT PAGE

5. Move RUN-OFF-START switch to RUN as soon as HEATER light comes on. Do not stop in OFF position.



6. Move RUN-OFF-START switch to START for 4 minutes. If HEATER light does not come on, move RUN-OFF-START switch to OFF. Wait at least 15 minutes. Move RUN-OFF-START switch to START for 4 minutes. If heater fails to start after second try, troubleshoot heater (page 3-14).
7. Move RUN-OFF-START switch to RUN as soon as HEATER light comes on. Do not stop in OFF position.

NOTE

Personnel heater always starts at low heat. It changes to high heat if HI-LO switch is set at HI.

8. Move HI-LO switch to HI or LO.

NOTE

If you operate heater for an extended time, start engine to keep batteries charged (page 2-161).

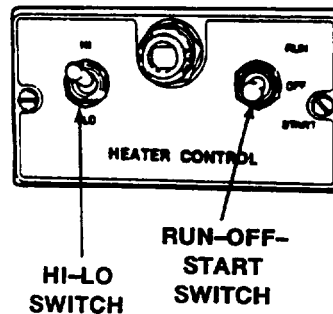
TURN PERSONNEL HEATER OFF

NOTE

When personnel heater is turned off, blower will run until Personnel heater cools off. HEATER light will go off when personnel heater cools off.

Driver should stay in carrier until blower stops.

1. Move RUN-OFF-START switch to OFF.



2. Let personnel heater purge itself.

END OF TASK

**OPERATE PERSONNEL COMPARTMENT
VENTILATOR**

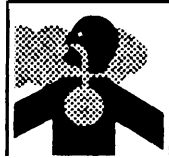
INITIAL SETUP

Personnel Required:

Soldier

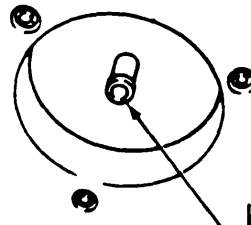
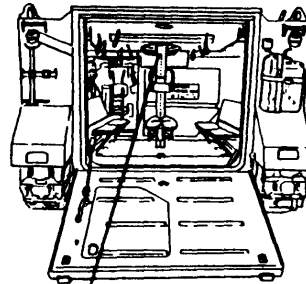
Equipment Conditions:

All hatch covers closed

WARNING

Lack of air in carrier can cause personnel serious injury or death. When operating carrier with hatch covers closed, make sure personnel compartment ventilator is open.

1. Push up on personnel compartment ventilator control until ventilator locks in open position.
2. Pull down on personnel compartment ventilator control to close ventilator.

**PERSONNEL
COMPARTMENT
VENTILATOR
CONTROL**

END OF TASK

OPERATE CARRIER LIGHTS

DESCRIPTION

This task covers: Operate Heattights (page 2-198).
 Operate Blackout Marker (page 2-199).
 Operate Blackout Marker and Driving Lights (page 2-199).
 Operate Stop Light (page 2-200).
 Operate Infrared Headlights (page 2-200).
 Operate Panel Lights (page 2-201).
 Operate White Dome Lights (page 2-201).
 Operate Blackout Dome Lights (page 2-201).

INITIAL SETUP

Personnel Required:

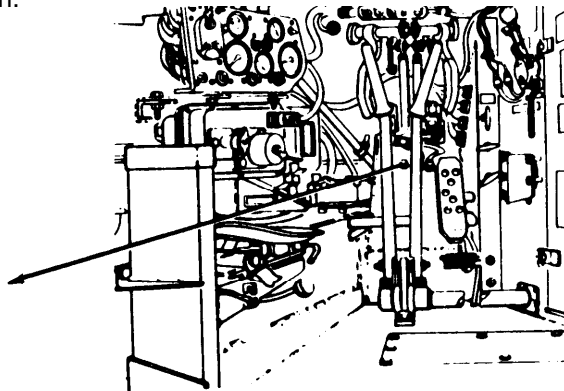
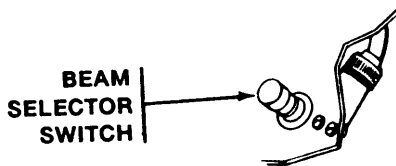
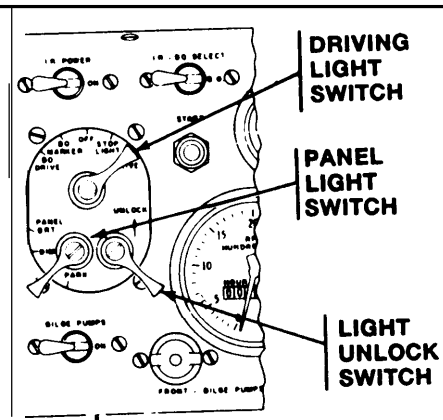
Equipment Condition

Driver

Master switch on (page 2-163)

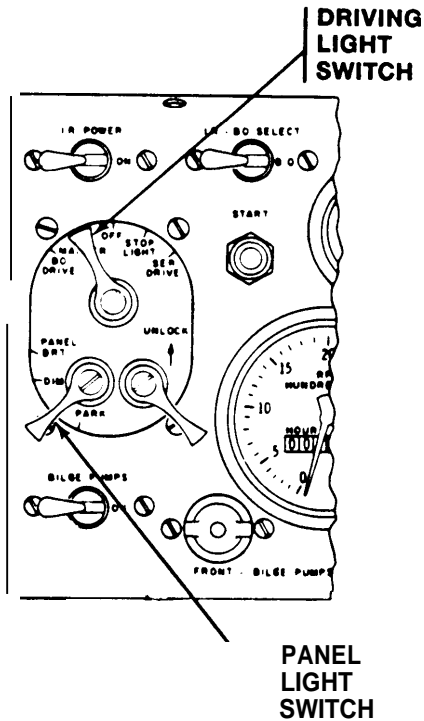
OPERATE HEADLIGHTS

1. Move light **UNLOCK** switch to **UNLOCK**, and hold.
2. Move panel light switch to **OFF**.
3. Move driving light switch to **SER DRIVE**.
4. press beam selector switch for high or low beam.
5. Release light **UNLOCK** switch.
6. Move driving light switch to **OFF**.



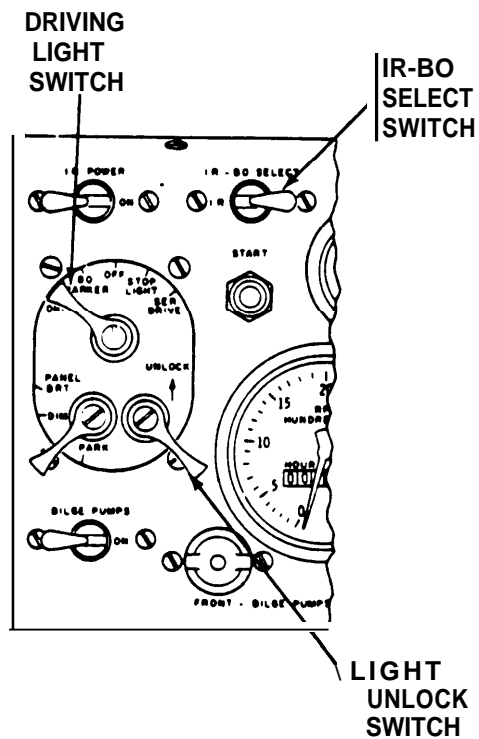
**OPERATE BLACKOUT
MARKER**

1. Move driving light switch to **BO MARKER**.
2. Move panel light switch to **OFF**.
3. Move driving light switch to **OFF**.



**OPERATE BLACKOUT
MARKER AND BLACKOUT
DRIVING LIGHTS**

1. Move light **UNLOCK** switch to **UNLOCK**, and hold.
2. Move panel light switch to **OFF**.
3. Move driving light switch to **BO DRIVE**.
4. Release light **UNLOCK** switch.
5. Move **IR-BO SELECT** switch to **BO**.
6. Move driving light switch to **OFF**.



GO TO NEXT PAGE

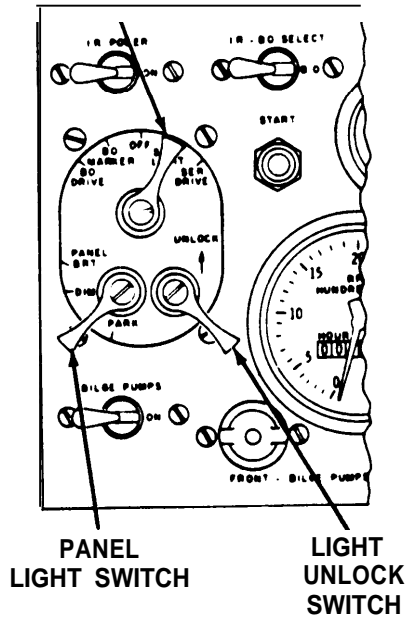
OPERATE STOP LIGHT

1. Move light **UNLOCK** switch to **UNLOCK**, and hold.
2. Move panel light switch to **OFF**.
3. Move driving light switch to **STOP LIGHT**.
4. Release light **UNLOCK** switch.
5. Press brake pedal.
6. Release brake pedal.
7. Move driving light switch to **OFF**.

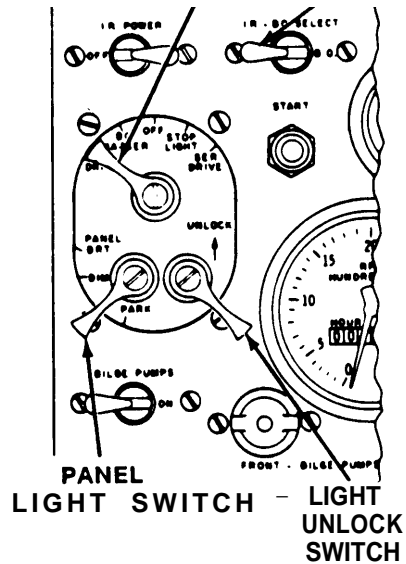
OPERATE INFRARED HEADLIGHTS

1. Move light **UNLOCK** switch to **UNLOCK**, and hold.
2. Move panel light switch to **OFF**.
3. Move driving light switch to **BO DRIVE**.
4. Release light **UNLOCK** switch.
5. Move **IR-BO SELECT** switch to **IR**.
6. Press beam selector switch for high or low beam.
7. Move driving light switch to **OFF**.

DRIVING LIGHT SWITCH



DRIVING LIGHT SWITCH IR-BO SELECT SWITCH

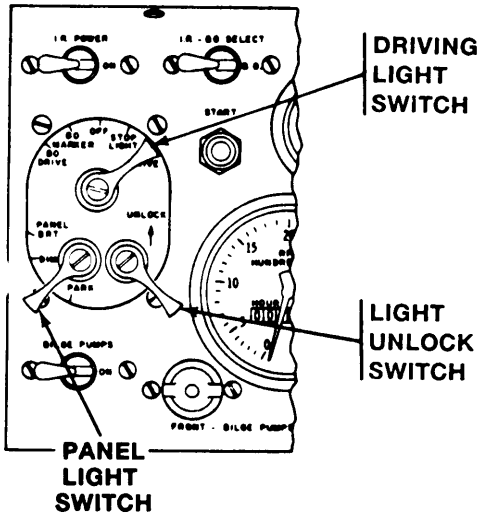


OPERATE PANEL LIGHTS

NOTE

To operate panel light, driving light switch can be in any position except OFF.

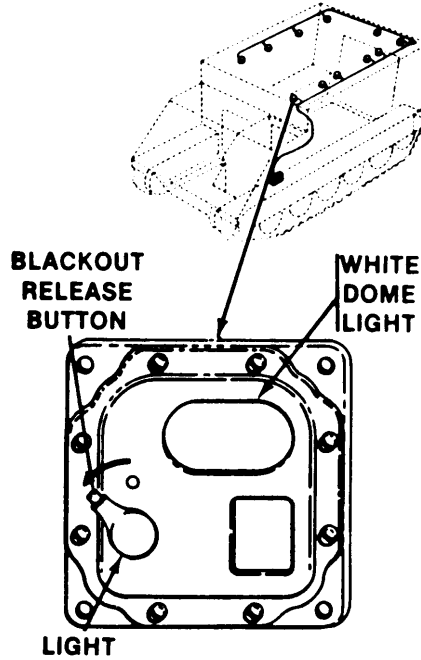
1. Move panel light switch to DIM or to PANEL BRT.
2. Move panel light switch to OFF.
3. Move driving light switch to OFF.



OPERATE WHITE DOME LIGHTS

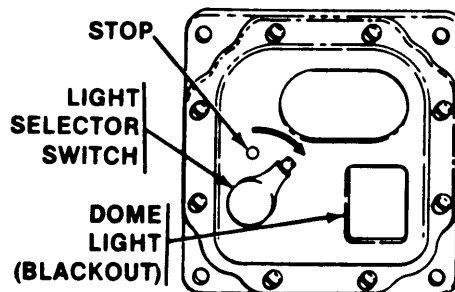
1. Press blackout release button. Turn light selector switch past stop toward edge of dome light.

2. Press blackout release button. Turn light selector switch past stop to off position.



OPERATE BLACKOUT DOME LIGHTS

1. Turn light selector switch toward center of dome light.
2. Turn light selector switch to off position.



END OF TASK

OPERATE FIXED FIRE EXTINGUISHER SYSTEM

DESCRIPTION

This task covers: Operate Fixed Fire Extinguisher (Outside) (page 2-202).
Operate Fixed Fire Extinguisher (Inside) (page 2-203).

INITIAL SETUP

Personnel Required:

Driver or soldier

Equipment Conditions:

Fire extinguisher installed and seal unbroken

WARNING



If CO₂ is discharged into engine compartment while engine is running, exhaust may be poisonous. Poisonous gas can injure you. Stop engine before you discharge CO₂. If CO₂ is discharged while engine is running, do not breathe engine exhaust.

WARNING



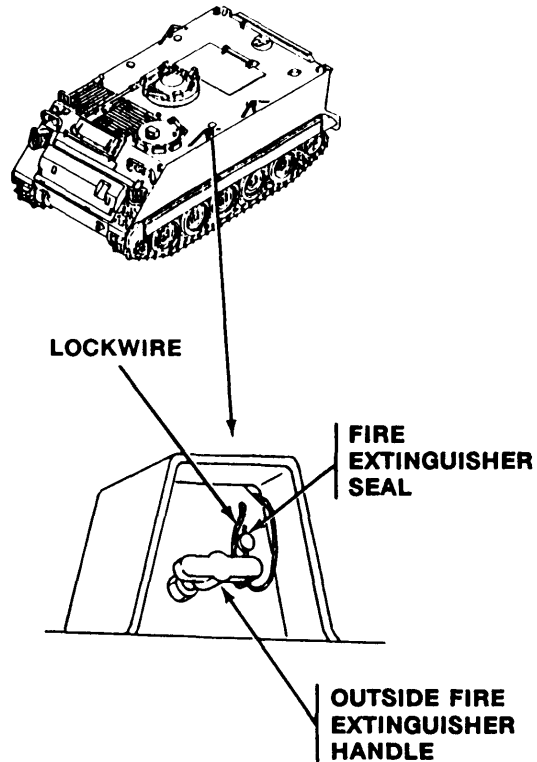
Engine fan can blow away CO₂ before fire is extinguished. Personnel can get burned. Equipment can get damaged. Stop engine before you operate fire extinguisher.

NOTE

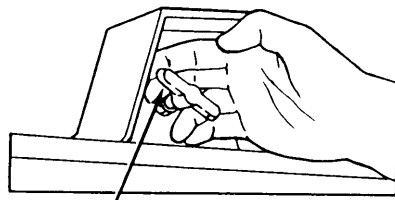
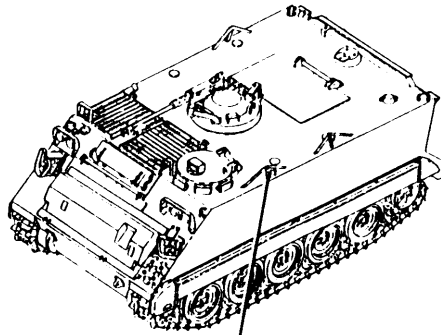
Unit maintenance should be notified after fixed fire extinguisher is discharged.

OPERATE FIXED FIRE EXTINGUISHER (OUTSIDE)

1. Stop engine (page 2-184).
2. Break fire extinguisher seal and remove lockwire from outside fire extinguisher handle .



3. Pull outside fire extinguisher handle to activate fire extinguisher.



**OUTSIDE FIRE
EXTINGUISHER
HANDLE**

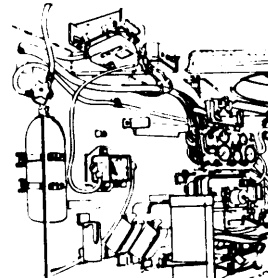
OPERATE FIXED FIRE EXTINGUISHER (INSIDE)

1. Stop engine (page 2-184).

NOTE

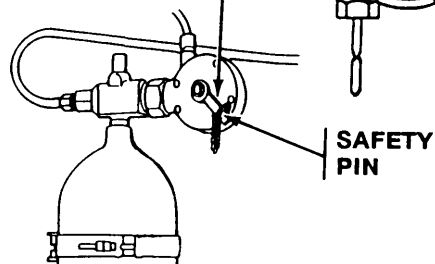
Fixed fire extinguisher inside release is not the same in all earners. If your carrier has a release handle, go to step 2. If your carrier has a release knob, go to step 3.

2. Remove safety pin and rotate inside fire extinguisher handle upward to activate fire extinguisher.
3. Turn freed fire extinguisher knob to the left to activate fire extinguisher.



**INSIDE FIRE
EXTINGUISHER
HANDLE**

**FIXED FIRE
EXTINGUISHER
KNOB**



**SAFETY
PIN**

END OF TASK

OPERATE PORTABLE FIRE EXTINGUISHER

INITIAL SETUP

Personnel Required:

Driver or soldier

OPERATE



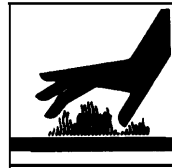
WARNING

Fire extinguisher CO₂ can cause suffocation and/or severe burns. Handle the fire extinguisher carefully. Do not bang or drop cylinder.

fully. Do not bang or drop cylinder.

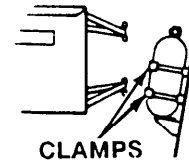
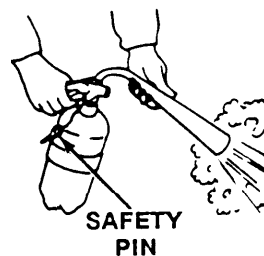
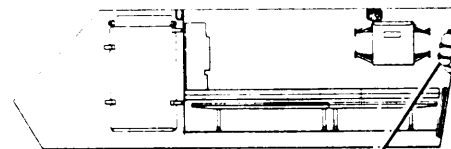
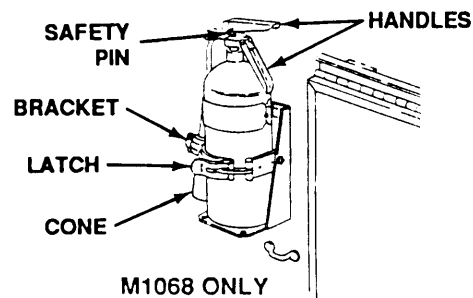
1. Open two clamps and remove portable fire extinguisher from stowed position in personnel compartment.
2. For M1068 only, pull latch and remove fire extinguisher from the bracket.
3. To operate fire extinguisher:
 - a. Break fire extinguisher seal and remove safety pin from handle.
 - b. Point cone at base of fire.
 - c. Squeeze handles.

WARNING



Do not touch cone when using extinguisher. Hands will be severely burned.

4. Return empty fire extinguisher to unit maintenance.



END OF TASK

INSTALL/REMOVE M19 PERISCOPE

DESCRIPTION

This task covers: Install M19 Periscope (page 2-205).
 Remove M19 Periscope (page 2-207).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions (cont):

Driver's hatch cover closed
 (page 2-144)

Equipment Conditions:

Engine stopped (page 2-184)

Carrier blocked (page 2-221)

WARNING



High voltage in the M19 periscope can cause serious injury or death. Voltage could exceed 16,000 volts.

To avoid accidents, observe the following:

Always connect power cable to periscope before turning **MASTER SWITCH** and **I.R. POWER** switch ON.

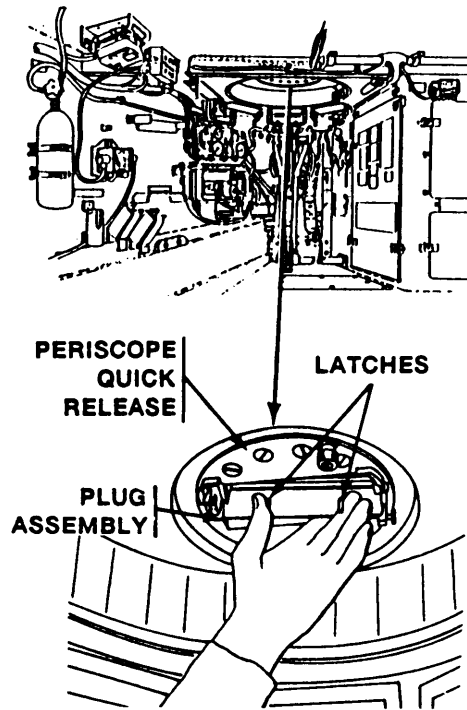
Before disconnecting power cable from M19 periscope, always wait at least two minutes after turning **I.R. POWER** and **MASTER SWITCH** OFF.

Do not disconnect power cable until image disappears from periscope screen.

Never touch end of power cable, or allow it to contact metal surfaces.

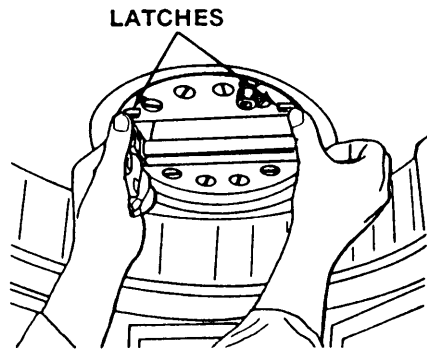
INSTALL M19 PERISCOPE

1. Squeeze latches and push up on plug assembly to release plug assembly from quick release. Tilt plug assembly to remove through opening in quick release.

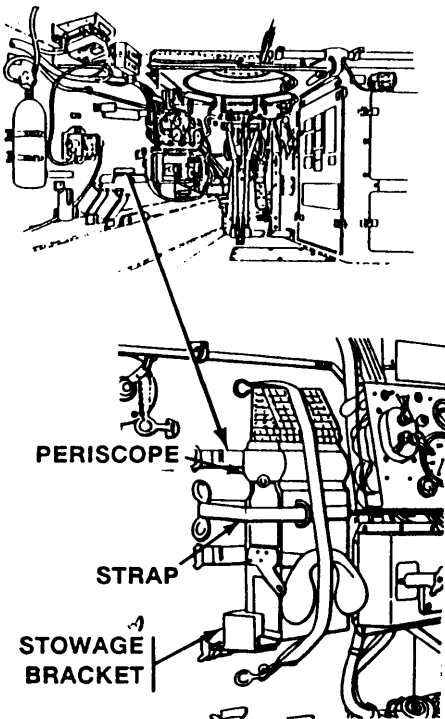


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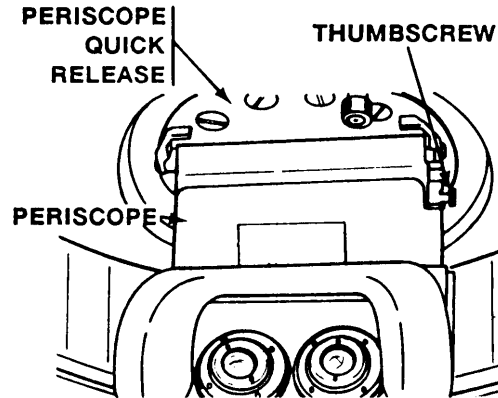
2. Push two latches upward and lock in position with thumbscrews.



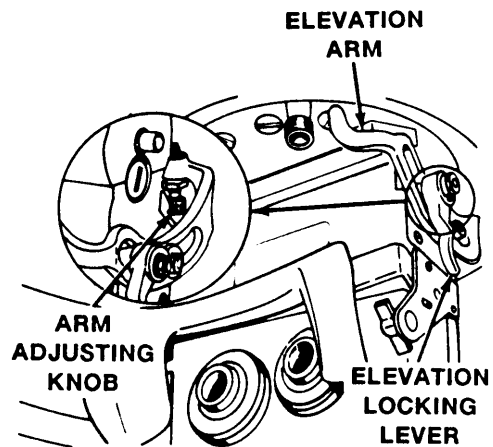
3. Remove straps securing M19 periscope to stowage bracket and remove periscope.



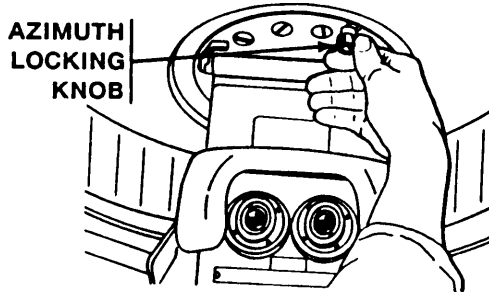
4. Carefully insert periscope in opening in periscope quick release and push upward.
5. Turn thumbscrew to the right to secure periscope to periscope quick release.



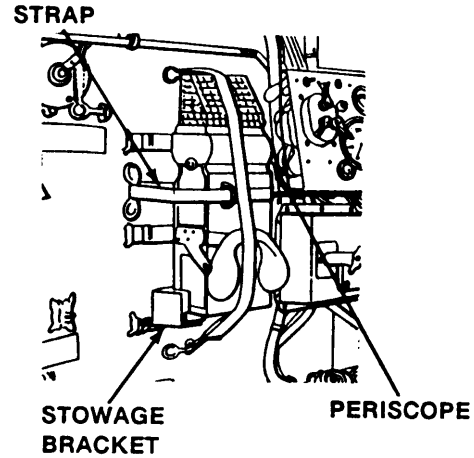
6. Turn periscope to locate arm adjusting knob. Loosen elevation locking lever and set arm adjusting knob so both ends of elevation arm contact periscope quick release.



7. Loosen azimuth locking knob and rotate periscope to check for proper movement.

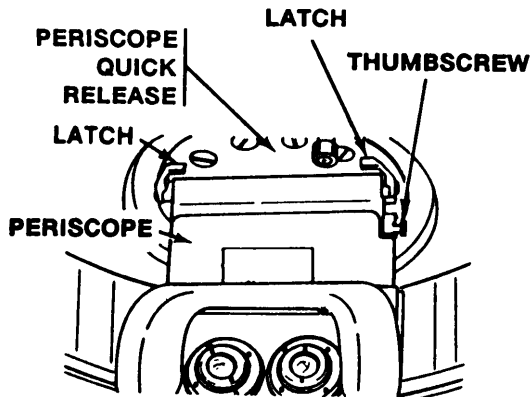


2. Place M19 periscope in stowage bracket and secure with straps.

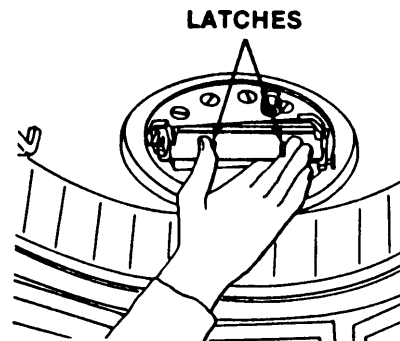


REMOVE M19 PERISCOPE

1. Loosen thumbscrew and grip periscope with both hands. Disengage latches and remove periscope from quick release.



3. Insert plug assembly through top of opening in periscope quick release.
4. Squeeze latches on plug assembly and align pins in plug assembly with opening in periscope quick release. Release latches to secure plug assembly in periscope quick release.



END OF TASK

OPERATE M19 PERISCOPE

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

M19 periscope installed
(page 2-205)

WARNING



High voltage in the M19 periscope can cause serious injury or death. Voltage could exceed 16,000 volts.

To avoid accidents, observe the following:

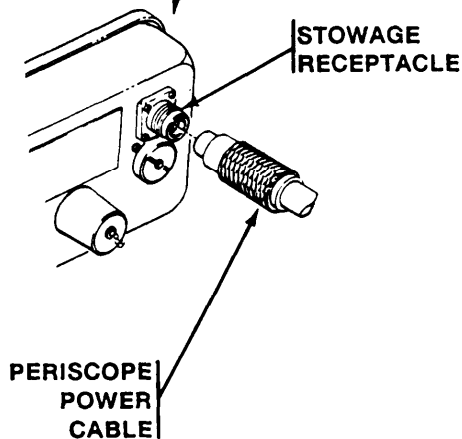
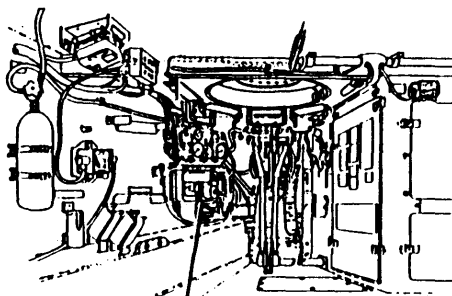
Always connect power cable to periscope before turning MASTER SWITCH and I.R. POWER switch ON.

Before disconnecting power cable from M19 periscope, always wait at least two minutes after turning I.R. POWER and MASTER SWITCH OFF.

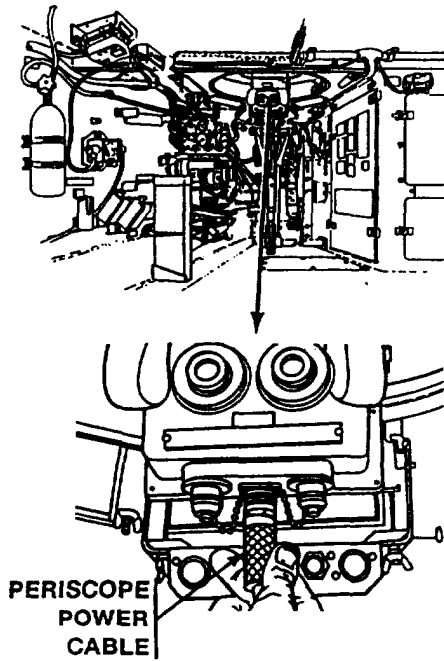
Do not disconnect power cable until image disappears from periscope screen.

Never touch end of power cable, or allow it to contact metal surfaces.

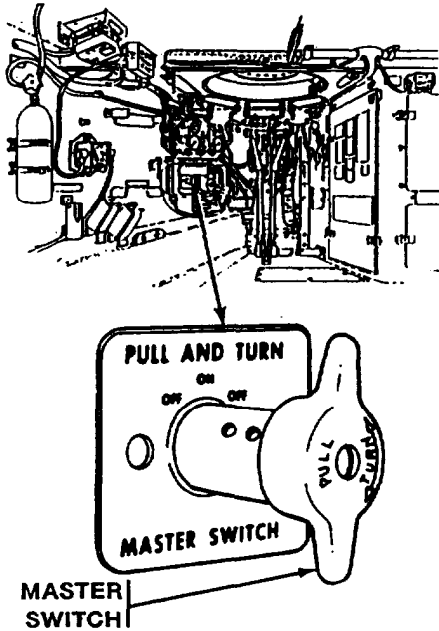
1. Remove periscope power cable from stowage receptacle on master switch panel.



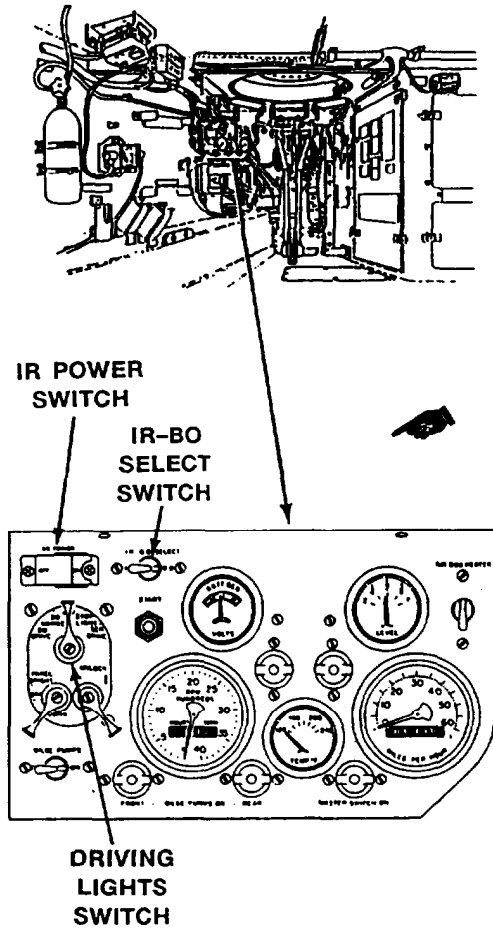
2. Connect periscope power cable to periscope.



3. Turn MASTER SWITCH ON.



4. Move I.R. POWER switch to ON.

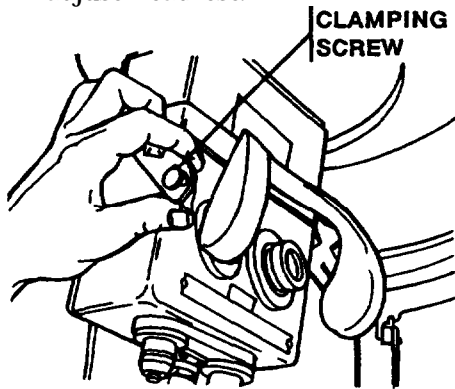


5. Move driving lights switch to BO DRIVE.

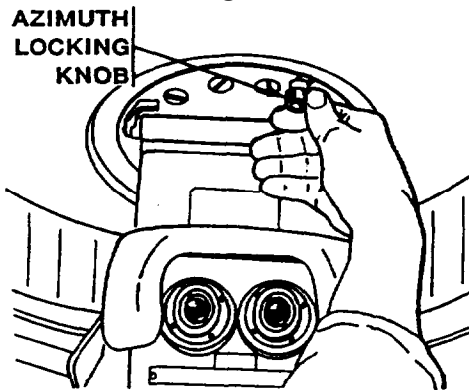
6. Move I.R.-BO SELECT switch to I.R..

GO TO NEXT PAGE

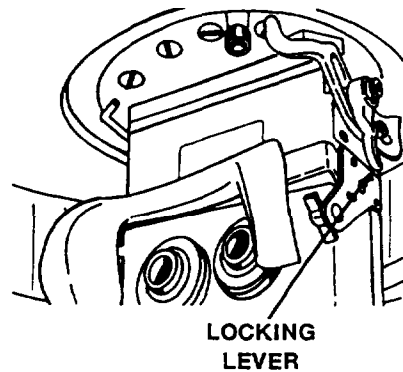
7. Loosen clamping screw and adjust headrest.



8. Turn periscope to the right or left, as needed, and tighten azimuth locking knob.



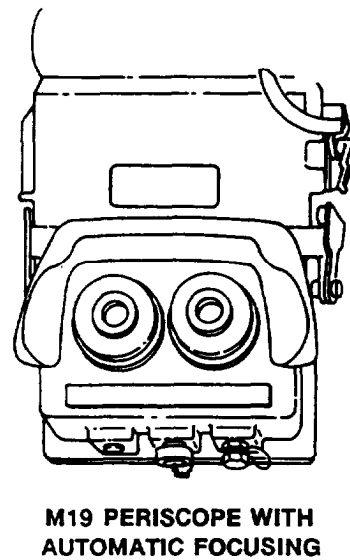
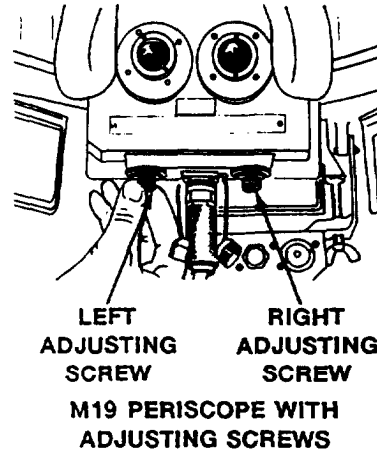
9. Adjust periscope in elevation and tighten locking lever.



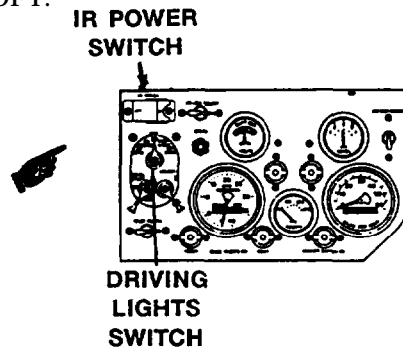
NOTE

Some M19 periscopes have adjusting screw to focus eyepiece. Others have automatic focusing. Both are shown below.

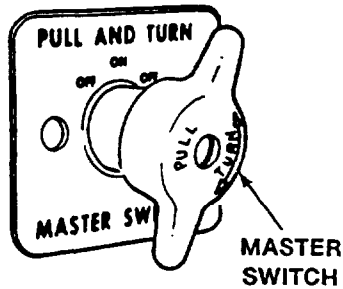
10. Focus eyepiece with right and left adjusting screws.



11. Move driving lights switch to OFF.
12. Move I.R. POWER switch to OFF.



13. Turn MASTER SWITCH OFF.



WARNING



High voltage in the M19 periscope can cause serious injury or death. Voltage could exceed 16,000 volts.

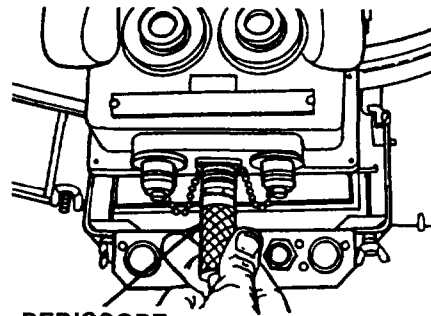
To avoid accidents, observe the following:

Before disconnecting power cable from M19 periscope, always wait at least two minutes after turning I.R. POWER and MASTER SWITCH OFF.

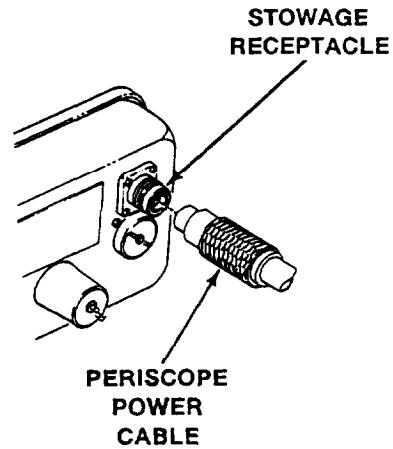
Do not disconnect power cable until image disappears from periscope screen.

Never touch end of power cable or allow it to contact metal surfaces.

14. Remove periscope power cable from periscope.



15. Connect periscope power cable to stowage receptacle on master switch panel. Stow excess cable against bulkhead behind fixed fire extinguisher tube.



END OF TASK

INSTALL/REMOVE MACHINE GUN

DESCRIPTION

This task covers: Install Machine Gun (page 2-212).
Remove Machine Gun (page 2-214).

INITIAL SETUP

Personnel Required:

Soldier

Equipment Conditions:

Engine stopped (page 2-184)
Commander's cupola locked at
desired position (page 2-150)

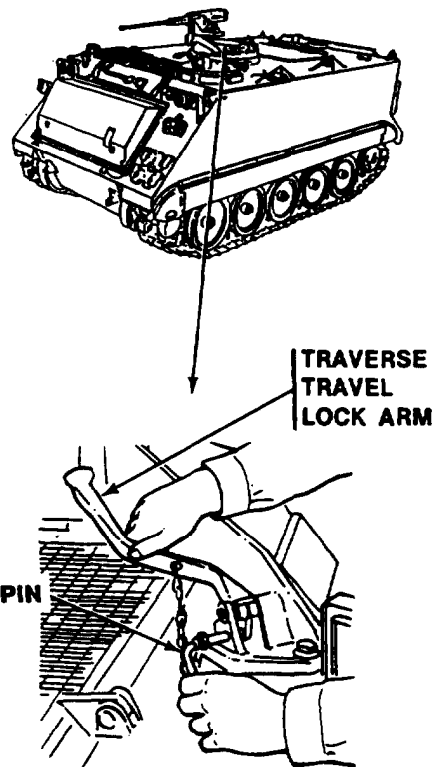
INSTALL MACHINE GUN

NOTE

On some carriers the traverse travel lock is an arm on left side of machine gun mount. On other carriers the traverse travel lock is a hinged lug on right side of machine gun pintle. Both are shown.

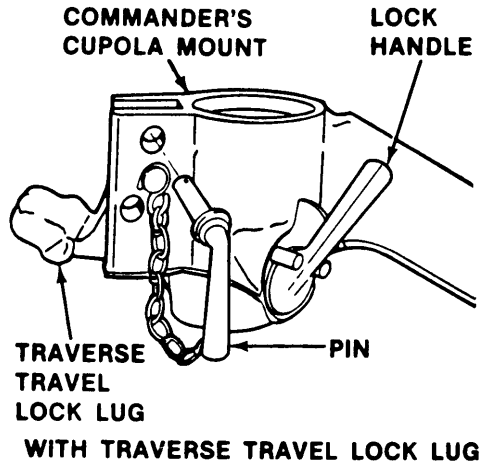
If your carrier is equipped with traverse travel lock arm, go to step 1. If it is equipped with traverse travel lock lug, go to step 2.

- 1 Remove pin from commander's cupola mount to release traverse travel lock arm.

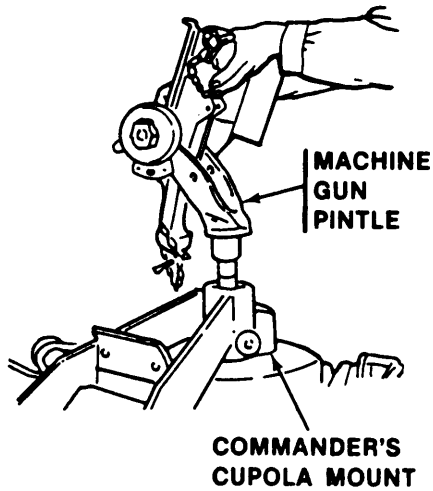


WITH TRAVERSE TRAVEL LOCK ARM

- Remove pin from commander's cupola mount to release traverse travel lock lug.

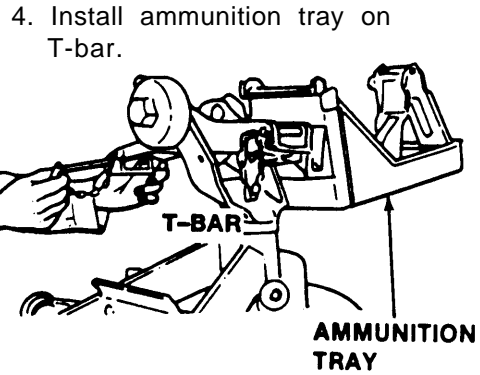


- Push lock handle down and install machine gun pintle in commander's cupola mount.

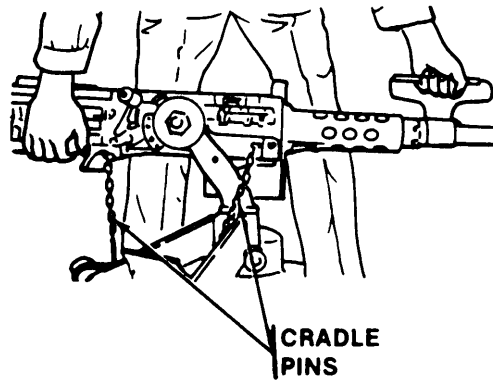


NOTE

If lock handle did not come up when you installed machine gun pintle in step 3 above, push lock handle up.



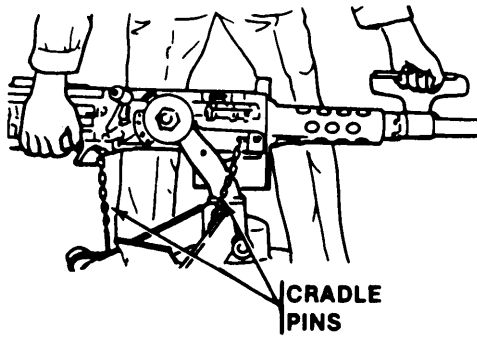
- Remove cradle pins from machine gun pintle.
- Align front and rear holes in machine gun with holes in cradle and install cradle pins.



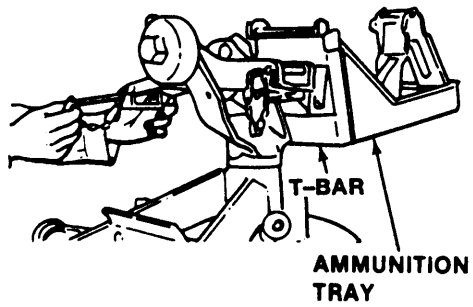
GO TO NEXT PAGE

REMOVE MACHINE GUN

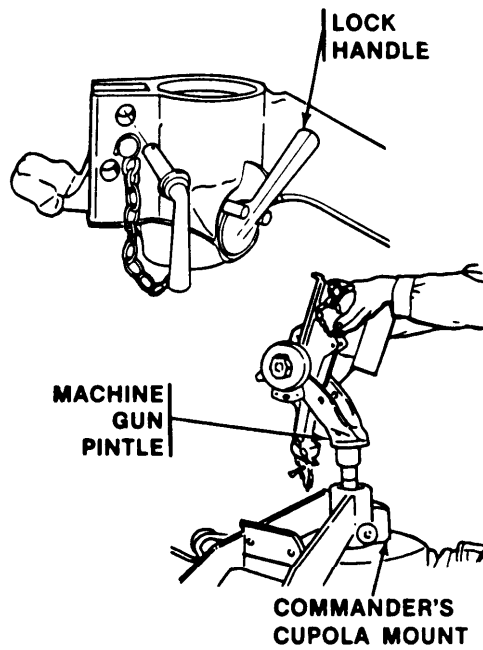
1. Remove cradle pins and lift machine gun out of pintle.



2. Remove ammunition tray from T-bar.



3. Push lock handle down and remove machine gun pintle from commander's cupola mount.



END OF TASK

SECURE MACHINE GUN FOR TRAVEL

INITIAL SETUP

Personnel Required:

Soldier

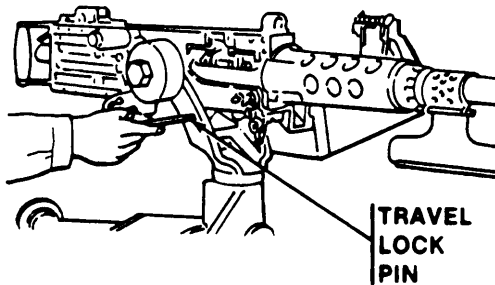
Equipment Conditions:

Machine gun installed (page 2-212)

NOTE

On some carriers the traverse travel lock is an arm on left side of machine gun mount. On other carriers the traverse travel lock is a hinged lug on right side of machine gun pintle. Both are shown.

1. Install travel lock pin in machine gun pintle.

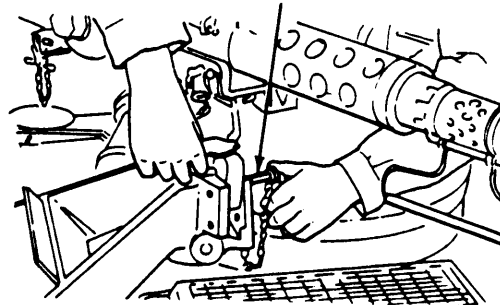


NOTE

If carrier is equipped with traverse travel lock lug, go to step 2. If carrier is equipped with traverse travel lock arm, go to step 3.

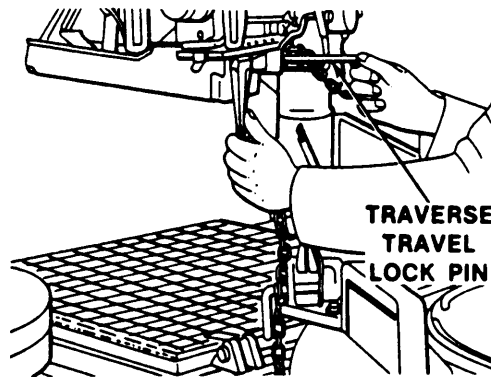
2. Install traverse travel lock pin in machine gun mount.

TRAVERSE TRAVEL LOCK PIN



WITH TRAVERSE TRAVEL LOCK LUG

3. Install traverse travel lock pin in machine gun mount.



WITH TRAVERSE TRAVEL LOCK ARM

END OF TASK

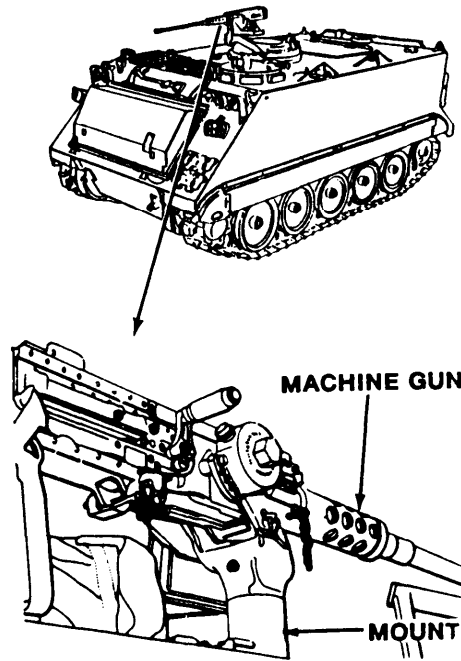
STOW MACHINE GUN

INITIAL SETUP

Personnel Required:

Driver

1. Stow caliber .50 machine gun on pintle mount located on right side of carrier.



END OF TASK

LOWER/STOW TRIM VANE

DESCRIPTION

This task covers: Lower Trim Vane (page 2-217).
Stow Trim Vane (page 2-218).

INITIAL SETUP

Personnel Required:

Soldier
Helper

Equipment Conditions:

Carrier stopped

WARNING



Trim vane can fall and injure personnel. Make sure trim vane zone is clear when you lower or stow

trim vane.

WARNING

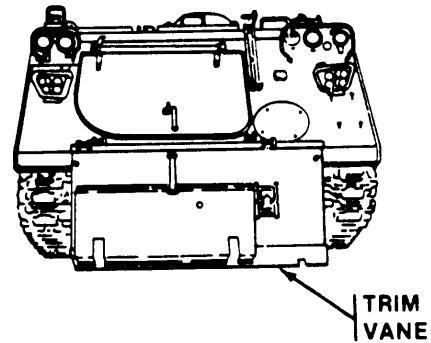
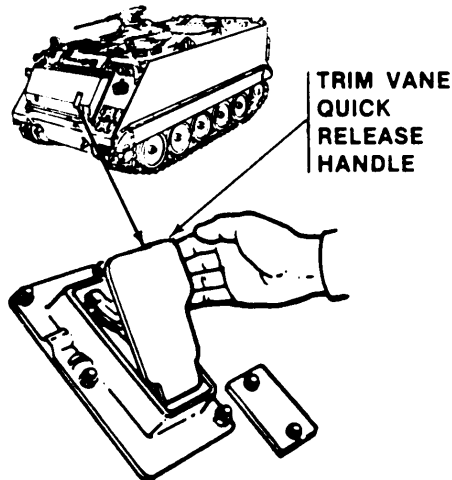


Buoyancy pods add weight to trim vane. Personnel can be injured and equipment damaged. Open and lower trim vane slowly. Have helper assist. Avoid being caught between trim vane and hull or ground.

LOWER TRIM VANE

1. Pull trim vane quick release handle to disengage quick release from extension linkage.

2. Lower trim vane. Have helper assist.



GO TO NEXT PAGE

STOW TRIM VANE

WARNING

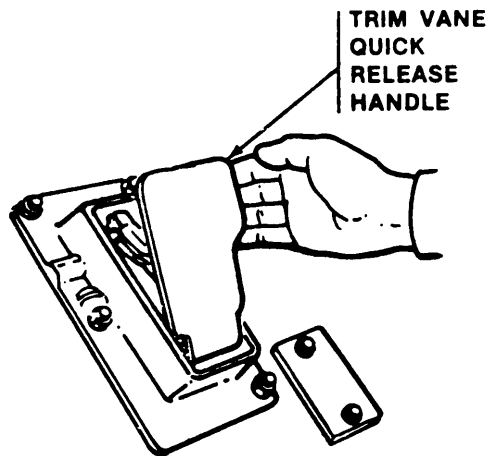


Buoyancy pods add weight to trim vane. Personnel can be injured and equipment damaged. Raise and

stow trim vane slowly. Have helper assist. Avoid being caught between trim vane and hull or ground.

1. Raise and hold trim vane in stowed position. Have helper assist.
2. Pull trim vane quick release handle. Align quick release with extension linkage.

3. Release quick release handle to secure trim vane in stowed position.



END OF TASK

**REMOVE/INSTALL DRIVER'S POWER PLANT
ACCESS PANELS**

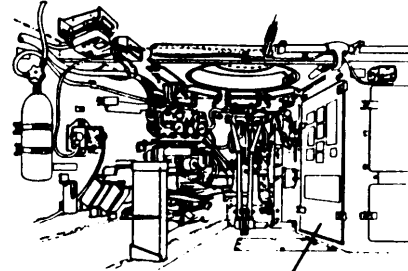
INITIAL SETUP**Personnel Required:**

Driver

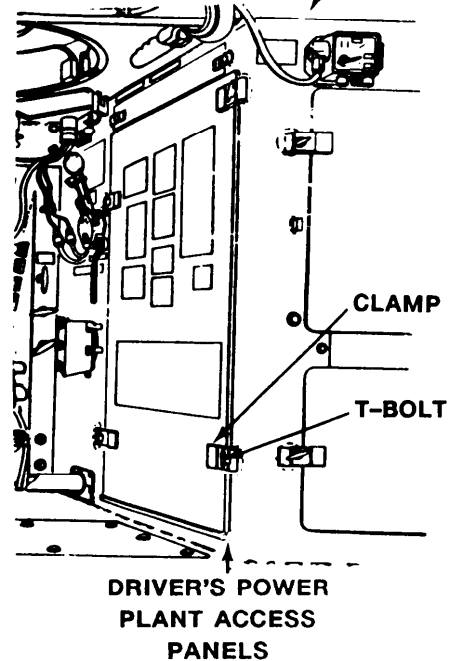
Equipment Conditions:Engine stopped (page 2-184)

REMOVE

1. Loosen T-bolts and clamps securing power plant access panels to bulkhead.
2. Remove power plant access panels from bulkhead supports.

**INSTALL**

1. Place power plant access panels in bulkhead supports and center between vertical stops.
2. Position clamps over power plant access panels and tighten T-bolts.



END OF TASK

REMOVE/INSTALL REAR POWER PLANT ACCESS PANELS

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

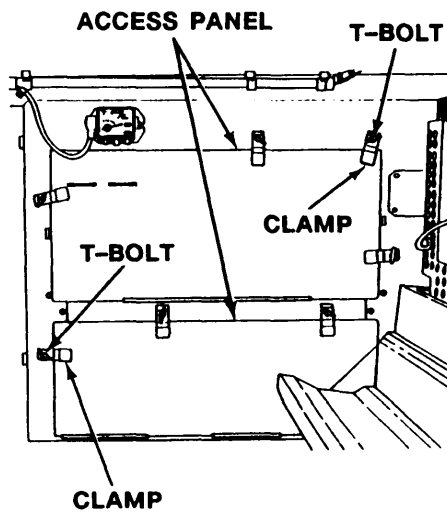
Engine stopped (page 2-184)

REMOVE REAR POWER PLANT ACCESS PANEL

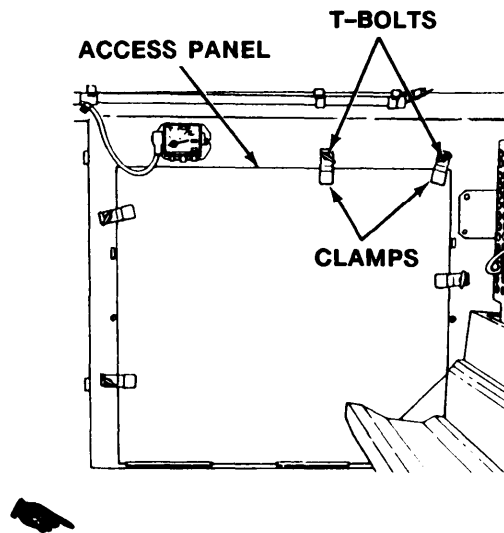
1. Loosen four T-bolts and clamps securing access panel to bulkhead. Turn clamps.
2. Remove access panel from bulkhead.

INSTALL REAR POWER PLANT ACCESS PANEL

1. Install access panel on bulkhead.
2. Secure with four T-bolts and clamps.



M113A2, M1059



M1068, M577A2, M106A2, M125A2

END OF TASK

BLOCK/UNBLOCK CARRIER TRACKS

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

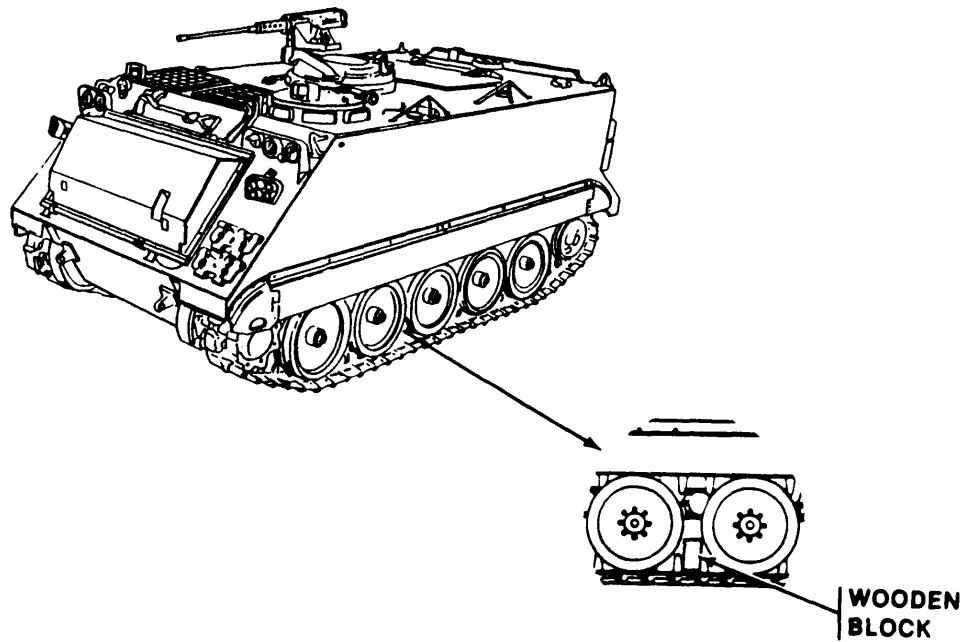
Carrier stopped

BLOCK CARRIER TRACKS

1. Place a block of wood or other suitable object between track guides and two sets of road wheels. Make sure object extends full width of both road wheels.

UNBLOCK CARRIER TRACKS

1. Remove block of wood or other object from between track guides and road wheels.



END OF TASK

CAPSTAN AND ANCHOR KITS (M113A2 ONLY)

DESCRIPTION

This task covers: Prepare Carrier Before Water Operation (page 2-222).
Recover Immobile Carrier (page 2-223).
Recover Anchors (page 2-227).
Stow Kit (page 2-228).

INITIAL SETUP

Personnel Required:

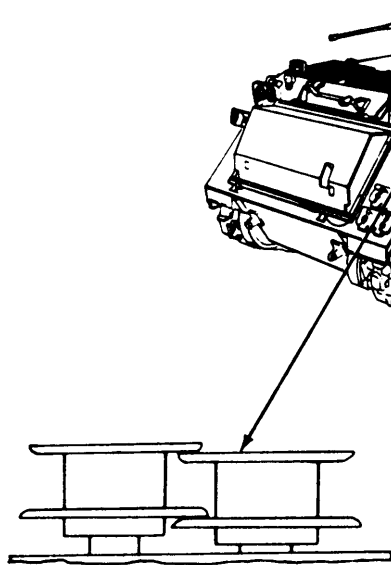
Driver
Crew

Equipment Condition:

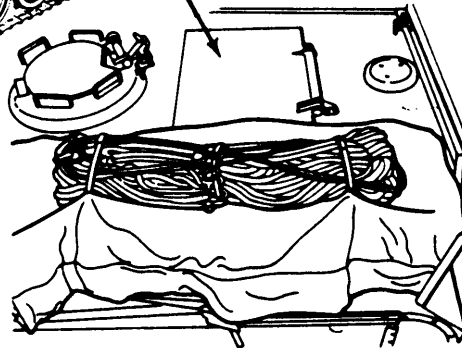
Engine stopped (Page 2-184)

**PREPARE CARRIER
BEFORE WATER
OPERATION**

1. Remove two capstan drums stowed on top deck of carrier.
2. Loosen four straps securing anchor kit and stowage tarpaulin to top deck of carrier.
3. Loosen three stowage straps and remove nylon ropes and two shackles.
4. Fasten three stowage straps and close tarpaulin.
5. Secure tarpaulin to carrier top deck with four straps.

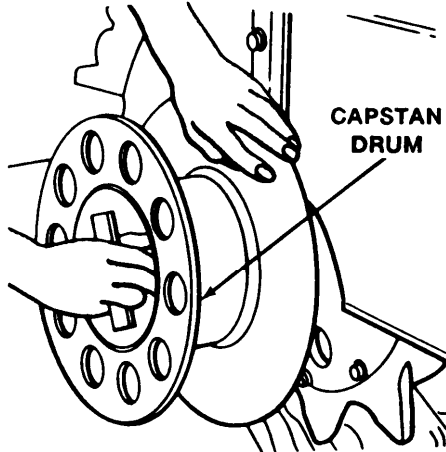


CAPSTAN DRUMS STOWED



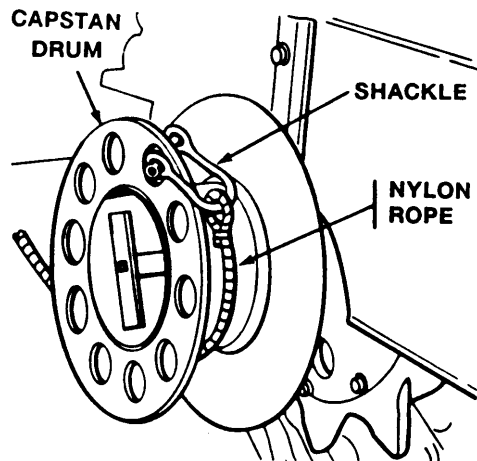
ANCHOR KIT STOWED

6. Attach and tighten capstan drums to adapters.



7. Wrap nylon ropes around capstan drums. Make sure ropes will extend from the underside of each drum.

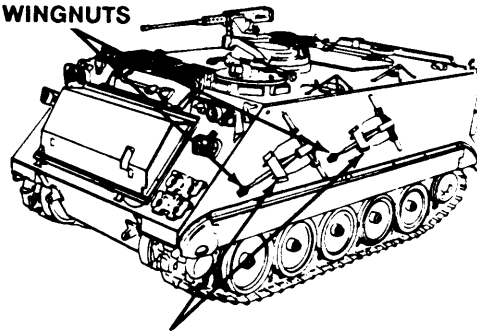
8. Secure nylon rope ends to capstan drums with two shackles.



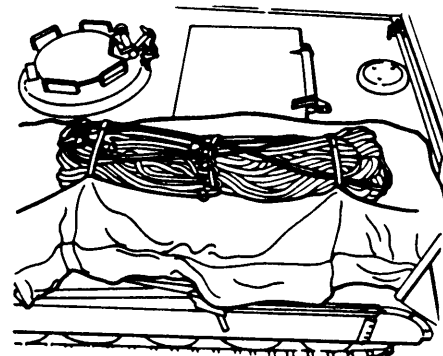
RECOVER IMMOBILE CARRIER

1. Loosen four straps securing anchor kit stowage tarpaulin to carrier top deck.
2. Loosen three stowage tarpaulin straps and remove two cable assemblies, four shackles, and one rounded pin (fid) from tarpaulin.
3. Loosen two wingnuts and remove two anchors from left side of carrier.

WINGNUTS



GROUND ANCHORS STOWED



ANCHOR KIT STOWED

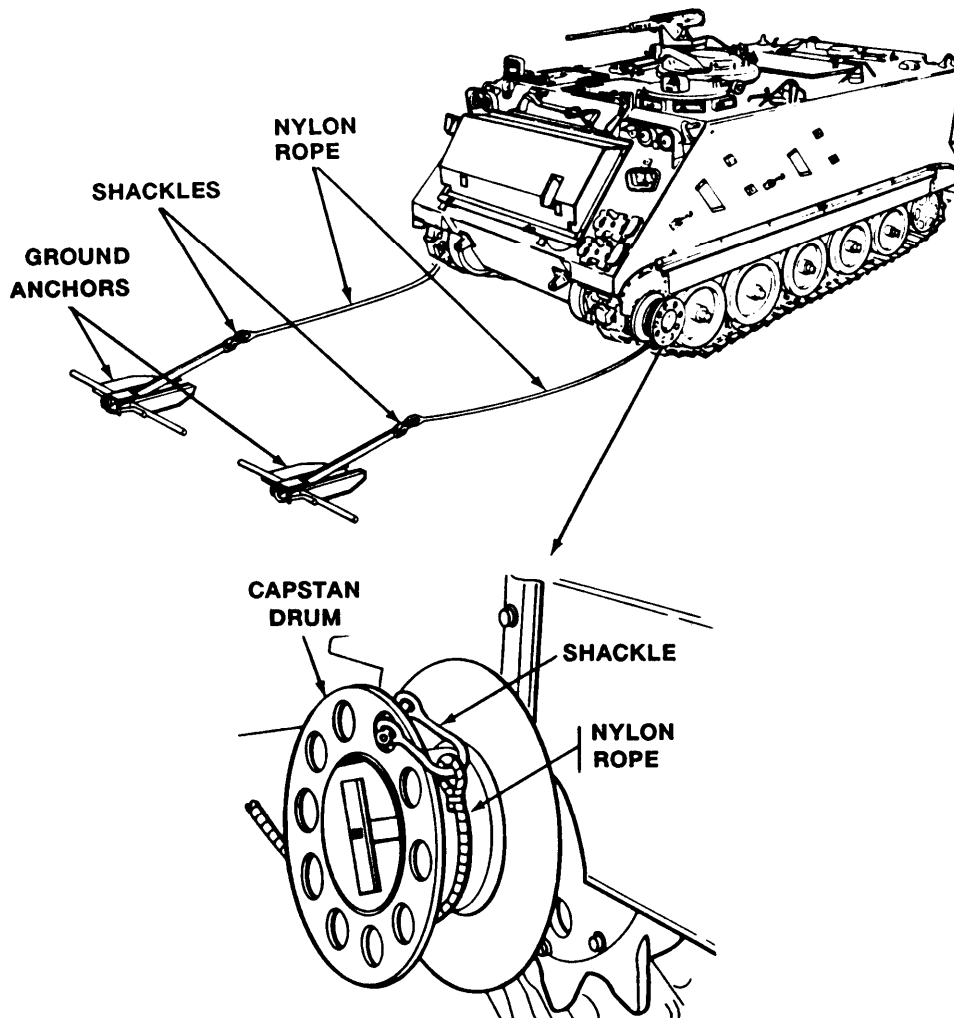
GO TO NEXT PAGE

4. Position two anchors in line with two capstan drums at a suitable location from the carrier.
5. Remove two shackles and unwind nylon ropes from capstan drum.

NOTE

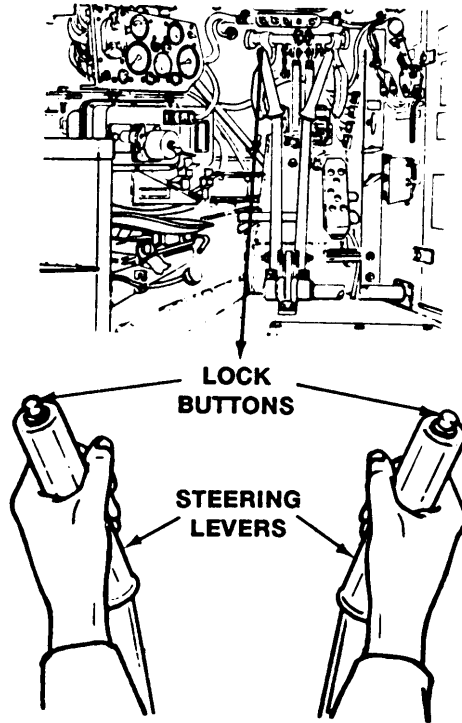
Ropes must be pulled tight and kept away from capstan drum to prevent winding into drum or catching in carrier track.

6. Secure nylon ropes to two anchors with two shackles.

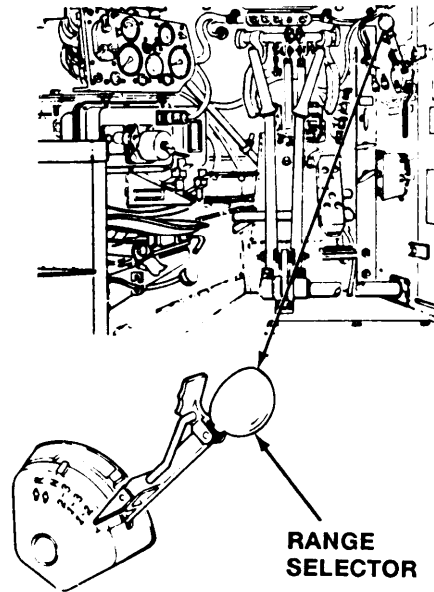


7. Start engine (page 2-161).

8. Release steering levers. Pull back on both levers so lock buttons pop up, then ease the levers all the way forward.



9. Shift range selector to 1 range (page 2-8).



10. Apply power slowly until ground anchors are embedded and carrier starts forward motion.

11. Continue forward motion until carrier is clear and mobile.

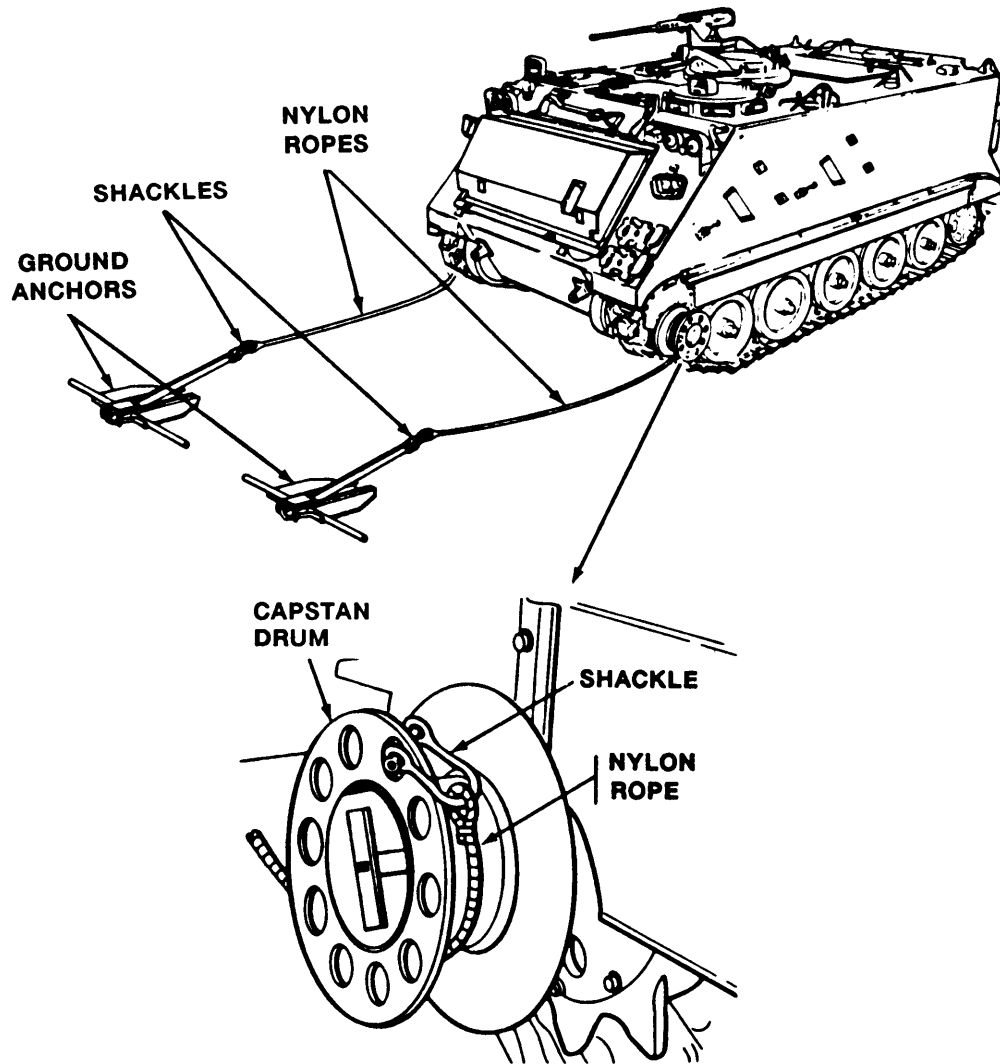
12. After carrier is clear and mobile, steer to the right or left to create slack in the opposite rope to be removed.

13. Stop carrier (page 2-184).

GO TO NEXT PAGE

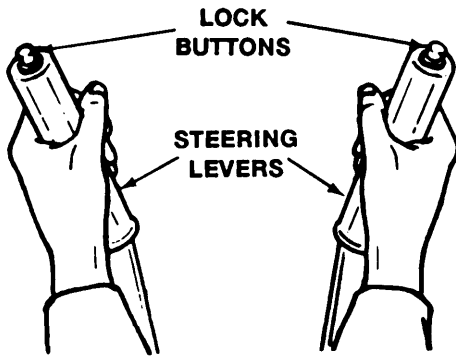
14. Remove two shackles and nylon ropes from ground anchors.

15. Remove nylon ropes from capstan drums.

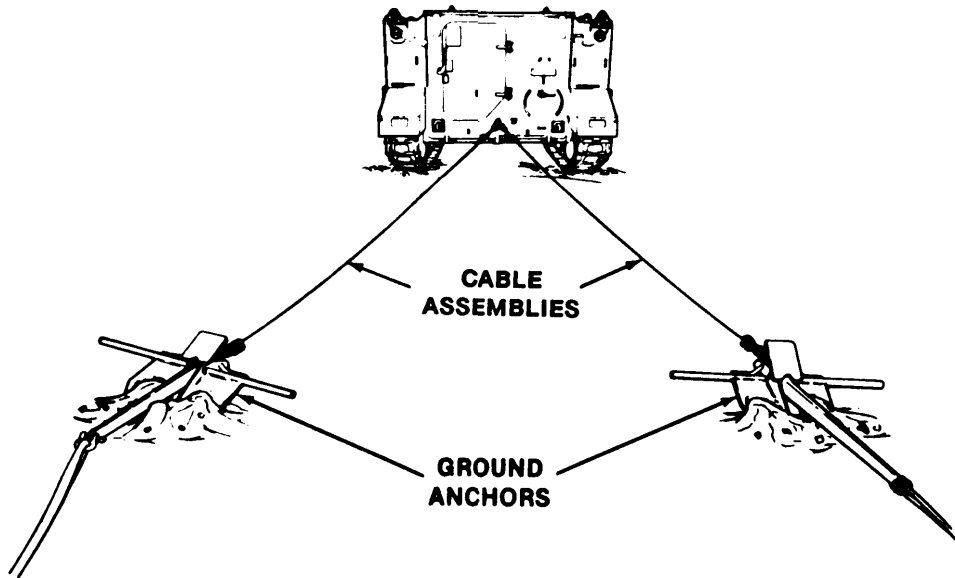


RECOVER ANCHORS

1. Start engine (page 2-161).
2. Release steering levers. Pull back on both levers so lock buttons pop up, then ease the levers all the way forward.

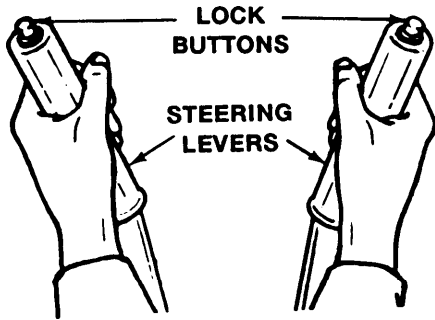


3. Move carrier behind embedded anchors.
4. Stop engine (page 2-184).
5. Attach two cable assemblies to two ground anchors with two shackles.
6. Attach two cable assemblies to carrier towing pintle with two shackles.
7. Start engine (page 2-161).



GO TO NEXT PAGE

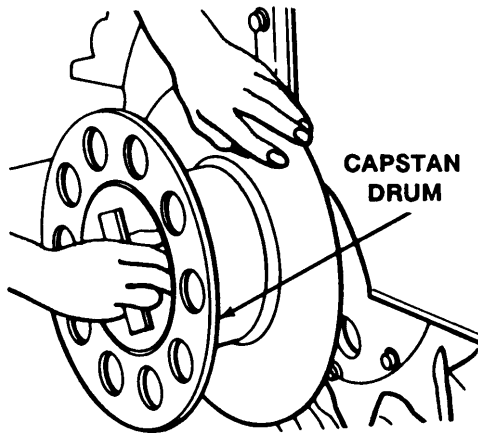
8. Release steering levers. Pull back on both levers so the lock buttons pop up, then ease the levers all the way forward.



9. Move earner forward until ground anchors are dislodged from embedded position.
10. Stop engine (page 2-184).

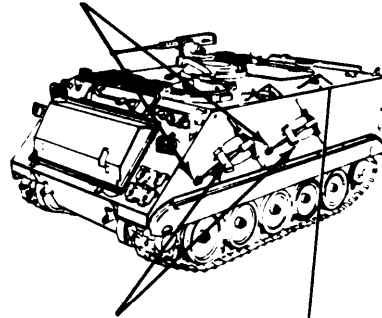
STOW KIT

1. Remove two capstan drums from two capstan adapters.
2. Stow two capstan drums on carrier top deck.

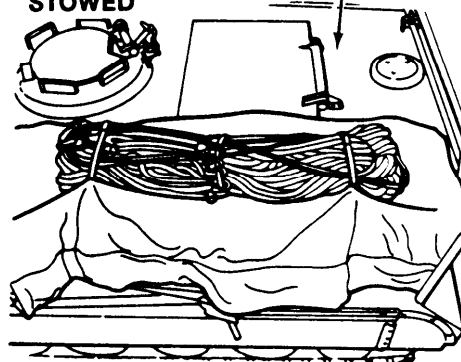


3. Stow ground anchors on left side of earner and tighten two wingnuts to secure.
4. Stow two cable assemblies, six nylon ropes, six shackles, and one round tapered pin (fid) in stowage tarpaulin on carrier top deck.
5. Fasten three stowage tarpaulin straps and use tapered pin (fid) to tuck nylon ropes into stowage tarpaulin.
6. Secure stowage tarpaulin to top deck of came; with four straps.

WINGNUTS



GROUND ANCHORS STOWED



END OF TASK

**Section IV. OPERATION UNDER UNUSUAL
CONDITIONS**

TASK INDEX

<u>Task</u>	<u>Page</u>	<u>Task</u>	<u>Page</u>
Operate In Extreme Cold: Below -25°F (-31°C)	2-230	Operate NBC Kit	2-268
Operate Engine Coolant Heater Below -25°F (-31°C)	2-235	Cover/Uncover Intake and Exhaust Grills	2-272
Operate Carrier Over Rough Terrain	2-238	Preparation Before Water Operations	2-275
Operate Carrier In Extreme Heat, Humidity, or Salty conditions	2-241	Ford Water Up To 40 Inches Deep	2-284
Securing Inoperable/Unsafe Ramp	2-244	Carrier Dip Check	2-287
Towing Disabled Carrier with a Recovery Vehicle	2-247	Water Operations: Entering Water	2-290
Tow Start Disabled Carrier	2-253	Steering Carrier in the Water	2-296
Towing Trailer With Carrier..	2-259	Stopping Carrier in the Water	2-297
Operate Smoke Grenade Launchers	2-261	Leaving the Water	2-298
		After Water Operations	2-299

**OPERATE IN EXTREME COLD:
BELOW -25°F (-31°C)**

DESCRIPTION

This task covers: Prepare Carrier for Extreme Cold (page 2-230).
Do's and Don'ts for Operation in Extreme Cold (page 2-231).
Operate Carrier in Extreme Cold (page 2-232).
Shutdown Carrier in Extreme Cold (page 2-234).

INITIAL SETUP

Personnel Required:

Driver

References (cont):

FM 21-306

References:

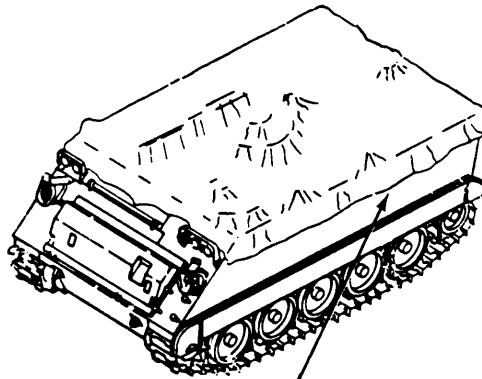
LO 9-2350-261-12

Equipment Conditions:

Engine coolant heater kit installed

**PREPARE CARRIER FOR
EXTREME COLD**

1. Check that driver's hatch cover is closed (page 2-144).
2. Check that cargo hatch cover is closed (page 2-146).
3. Check that commander's hatch cover is closed (page 2-148).
4. Check that ramp is raised (page 2-153).
5. Cover the intake grill and exhaust grill (page 2-272).
6. Place tarpaulin over carrier.



TARPAULIN

**DO'S AND DON'TS FOR
OPERATION IN EXTREME**

1. Do be alert for the effects of cold on the carrier.
2. Do install air inlet and exhaust grill covers and adjust for conditions.
3. Do start engine coolant heater as soon as you stop for more than a few hours.
4. Do read FM 21-306 to learn about the methods and special hazards of driving on snow, ice, and unusual terrain.
5. Do park in shelter whenever you can. If there's no shelter, park so the carrier doesn't face the wind.
6. Do, if you can't park in shelter, put a footing of planks or brush under the tracks so they won't get frozen in. Clean off snow, ice, or mud as soon as you can.
7. Do drain fuel filters as soon as you can. Close valves when clean fuel appears.
8. Do fill the fuel tank as soon as you can. Water collects in an empty tank when it cools down. Ice will block fuel flow.

COLD

DO'S:

9. Do keep the carrier covered as much as you can. Use tarpaulins or anything available to protect the carrier. Cover machine gun when you're not using it. Keep gun clean and lightly lubed.
10. Do remove drain plugs when water collects in hull.
11. Do your AFTER operation preventive maintenance checks and services (PMCS) .

DON'TS:

1. Don't operate lights or electrical equipment for very long when coolant heater is ON.
2. Don't run engine while coolant heater is operating.
9. Don't let the ends of tarpaulins touch the ground. They could freeze in place.
4. Don't touch external metal surfaces with bare hands. Hands could freeze to the metal surface.
5. Don't leave the brakes locked when you stop. If water is present, it could freeze them in the locked position.

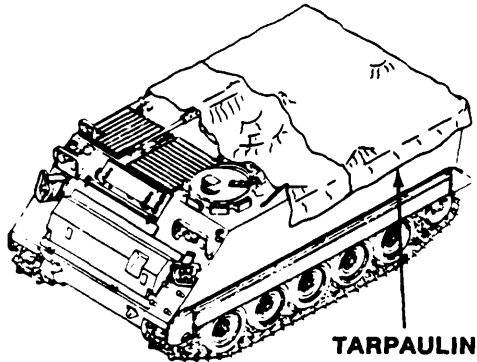
GO TO NEXT PAGE

**OPERATE CARRIER IN
EXTREME COLD**

NOTE

**DO'S and DON'TS task
(page 2-231) must be read before
operation in extreme cold.**

1. Fold tarpaulin back to uncover
exhaust grill.



NOTE

**If carrier has been shutdown for a
long period in extreme cold
weather it may be necessary to
use external source to warm-up
engine prior to starting.**

2. Operate engine coolant heater
(page 2-235).
3. Stop engine coolant heater when
engine temperature gage reads
above 120°F (49°C) (page 2-235).

CAUTION

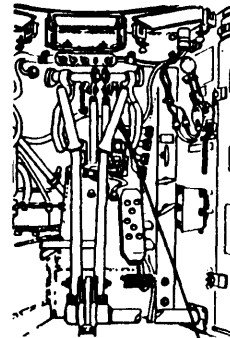
**Running engine at high speed
after cold start could damage
engine. Do not race engine when
cold.**

NOTE

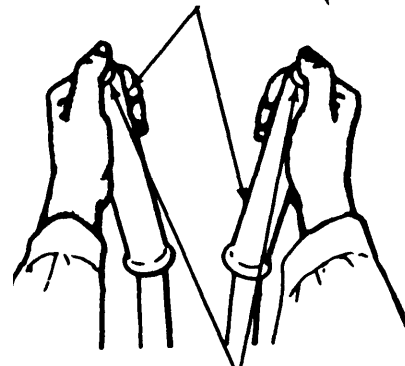
**Exhaust grill should be
uncovered and intake grill
covered when starting engine.**

Both personnel and winteriza-
tion heaters should be turned
off before trying to start engine.

4. Start engine. Let engine run for
15 minutes (page 2-161).
6. Set steering levers. Pull back on
steering levers and press lock
buttons down to lock brakes for
parking.



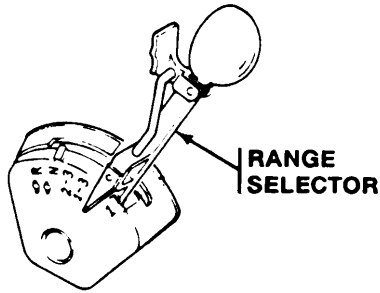
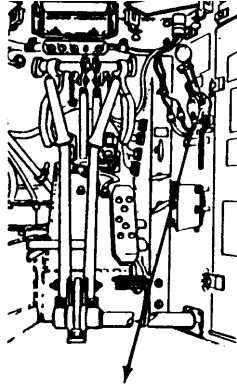
**STEERING
LEVERS**



**LOCK
BUTTONS**

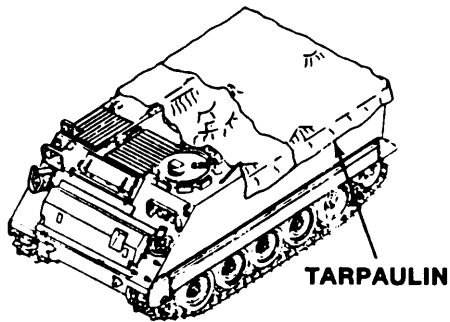
6. Shift range selector to 1-2 range (page 2-8) and hold for 5 minutes while slowly raking engine idle. Raise idle until engine runs smoothly.

7. Lower engine idle to slow and shift range selector to N.



8. Open one or more flaps on intake grill (page 2-272).

9. Remove tarpaulin from carrier.

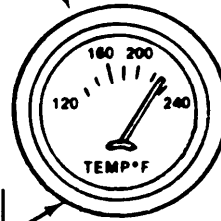
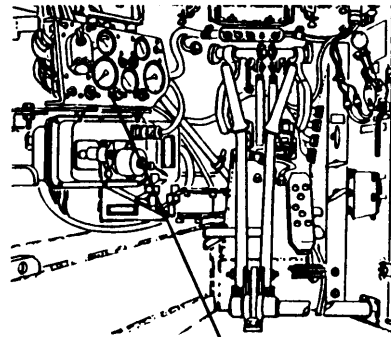


CAUTION

Running engine at high speed after cold start could damage engine. Drive carrier slowly for first kilometer.

10. Drive carrier and perform mission (page 2-176).

11. If engine coolant temperature gage is above 230°F (110°C) during mission, do steps 7 and 12.



ENGINE COOLANT TEMPERATURE GAGE

12. Remove cover from intake grill (page 2-272).

GO TO NEXT PAGE

**SHUTDOWN CARRIER IN
EXTREME COLD**

1. Stop engine (page 2-184).
2. Remove driver's power plant access panel (page 2-219).

CAUTION

Condensation in fuel tanks and lines can freeze. Fuel lines can get blocked. Drain water from fuel filters and keep fuel tanks full.

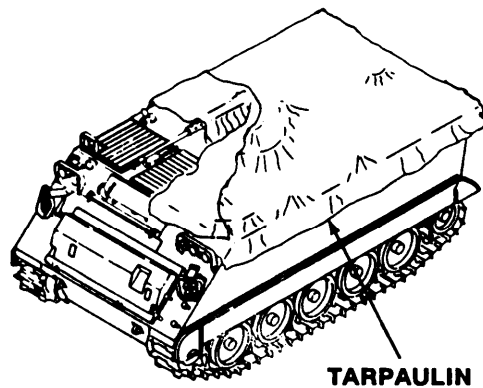
9. Drain fuel filters of water (LO 9-2350-261-12).
4. Install driver's power plant access panel (page 2-219).
5. Cover intake grill (page 2-272).
6. Check that driver's hatch cover is closed (page 2-144).
7. Check that cargo hatch cover is closed (page 2-146).

8. Check that commander's hatch cover is closed (page 2-148).

9. Check that ramp is raised (page 2-153)

10. Place tarpaulin over carrier, but leave exhaust grill uncovered.

11. If carrier will be shutdown for more than a few hours, start engine coolant heater (page 2-235) or run engine periodically to keep engine warm and batteries charged (page 2-161).



END OF TASK

**OPERATE ENGINE COOLANT HEATER
BELOW -25°F (-31°C)**

DESCRIPTION

This task covers: Turn Coolant Heater On (page 2-235).
Turn Coolant Heater Off (page 2-237).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions (cont):

Trim vane lowered (page 2-217)
Power plant access door opened
(page 2-151)
Personnel heater fuel supply valve
open (page 2-26)

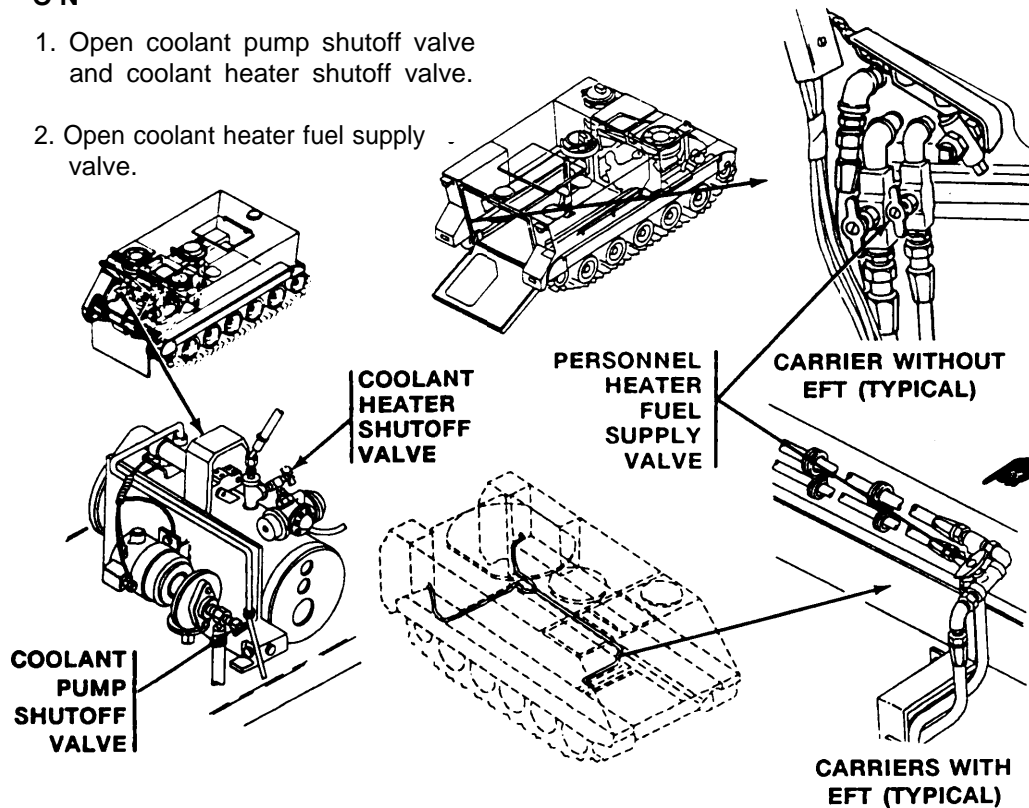
Equipment Conditions:

Engine coolant heater kit installed

**TURN COOLANT HEATER
ON**

1. Open coolant pump shutoff valve and coolant heater shutoff valve.
2. Open coolant heater fuel supply valve.

3. Check to make sure personnel heater fuel supply valve is open.



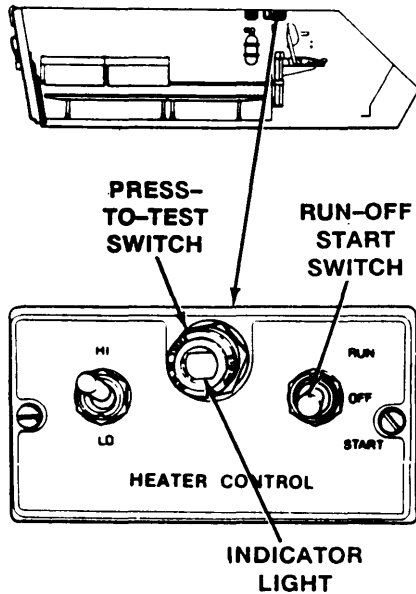
GO TO NEXT PAGE

CAUTION

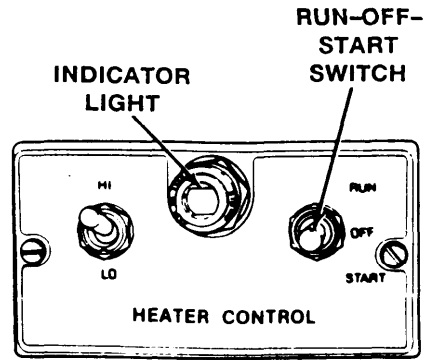
Overheating will damage batteries. Do not use coolant heater if temperature is above -25°F (-31°C).

Carrier batteries can discharge. Do not operate earner lights, radios, or other electrical equipment while coolant heater is running.

4. Press PRESS-TO-TEST switch. Check that indicator light comes on.
5. Move RUN-OFF-START switch to START. Hold switch in START until indicator light comes on.



6. Move RUN-OFF-START switch to RUN as soon as indicator light comes on. Do not stop in OFF position.

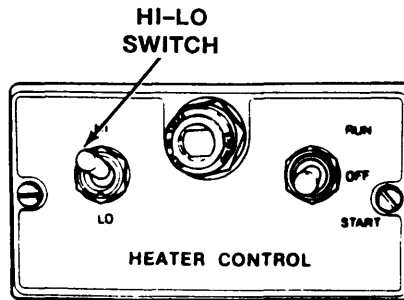


7. If coolant heater does not start, repeat steps 4 and 5 above. If coolant heater does not start after three tries, troubleshoot heater (page 3-15).

NOTE

Coolant heater always starts at low heat. It switches to high heat if HI-LO switch is set at HI.

8. Move HI-LO switch to HI or LO.



NOTE

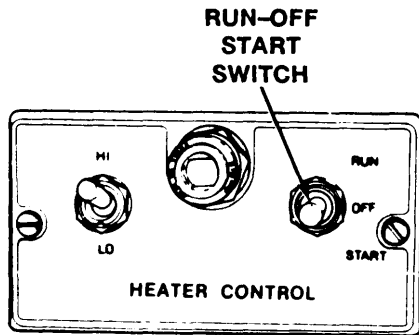
When HI-LO switch is at HI, heater will automatically go to low heat if coolant temperature reaches 190°F (88°C). It will go back to high heat if coolant temperature drops to 120°F (49°C). If coolant reaches a temperature of 245° to 260°F (118° to 126°C), heater will stop and must be restarted.

**TURN COOLANT HEATER
OFF**

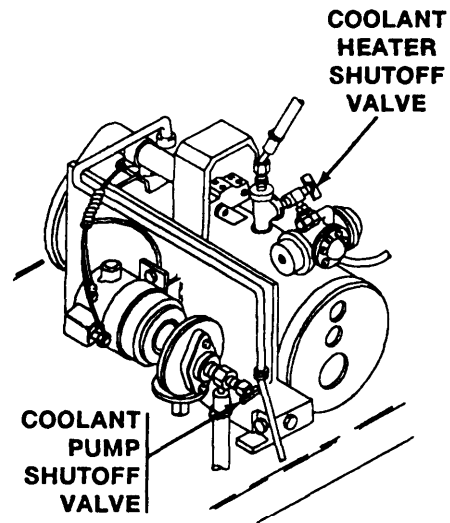
NOTE

When coolant heater is turned off, blower will run until heater is purged of fuel and burner is COOL Indicator light will stay on until blower stops. Driver should stay in carrier until blower stops.

1. Move RUN-OFF-START switch to OFF.



2. Allow coolant heater to purge itself.
3. Close coolant pump shutoff valve and coolant heater shutoff valve.



4. Close power plant access door (page 2-151).
5. Stow trim vane (page 2-217).

CAUTION

Carrier batteries can discharge. If carrier is not to be driven after 12 hours of running coolant heater, start and run engine until batteries are fully charged.

NOTE

Always turn coolant heater off and close coolant shutoff valves before starting engine.

END OF TASK

OPERATE CARRIER OVER ROUGH TERRAIN

DESCRIPTION

This task covers: Drive Carrier Over Trenches (page 2-238).
Drive Carrier Over Obstacles (page 2-239).
Drive Carrier On Grades (page 2-239).
Drive Carrier On Side Slopes (page 2-239).
Drive Carrier On Snow, Ice, Or Mud (page 2-240).
Park Carrier On Snow, Ice, Or Mud (page 2-240).

INITIAL SETUP

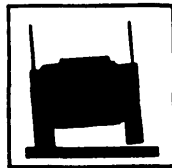
Personnel Required:

Driver
Crew

Equipment Conditions:

Engine started (page 2-161)

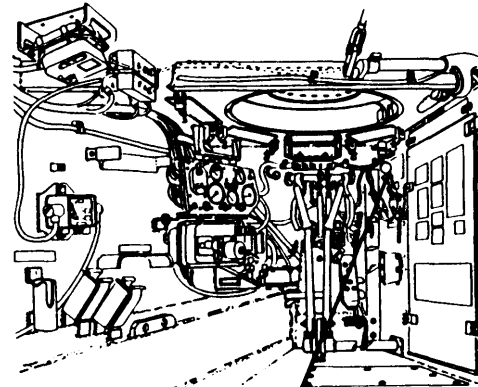
WARNING



Carrier can roll over and kill or injure personnel. Avoid high speeds and sudden turns when driving on

hills or rough terrain. Wear seat belts.

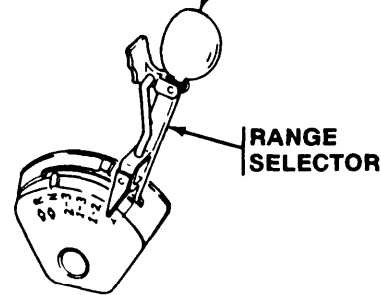
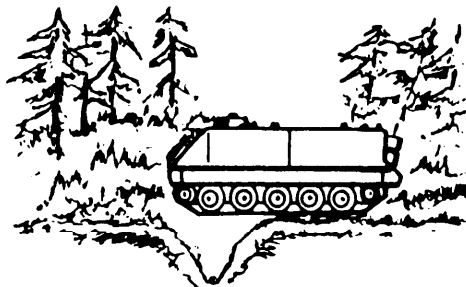
1. Shift range selector to 1 or 1-2 range (page 2-8).



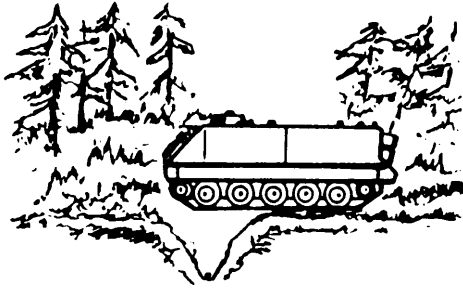
DRIVE CARRIER OVER TRENCHES

CAUTION

Carrier will get stuck in trenches wider than 5-1/2 feet (1.67 m). Do not cross trenches wider than 5-1/2 feet (1.67 m).



2. Approach trench straight on and drive slowly over trench. Accelerate when track contacts far side of trench,

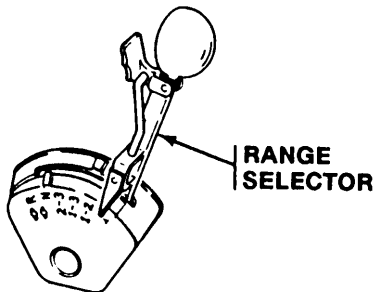


DRIVE CARRIER OVER OBSTACLES

CAUTION

Obstacles higher than 24 inches (61 cm) can damage carrier. Do not drive over obstacles higher than 24 inches (61 cm).

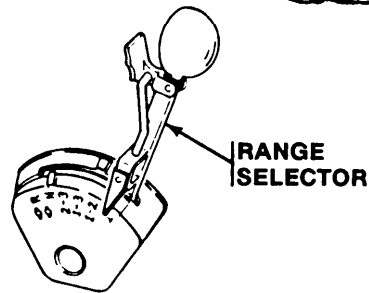
1. Shift range selector to 1 or 1-2 range (page 2-8).



2. Approach obstacle straighten and drive slowly over obstacle.

DRIVE CARRIER ON GRADES

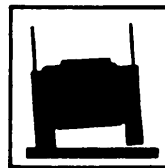
1. Shift range selector to 1-2 range for grades up to 30% and 1 range for grades from 30% to 60%.



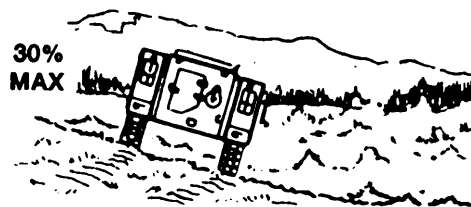
2. Accelerate as carrier climbs a grade. Decelerate when you reach top of grade and during descent.

DRIVE CARRIER ON SIDE SLOPES

WARNING

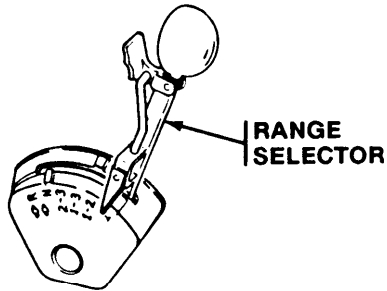


Carrier can roll over and kill or injure personnel. Do not drive on side slopes steeper than 30%.



GO TO NEXT PAGE

1. Shift range selector to 1 or 1-2 range (page 2-8).



2. Steer in a series of small wide turns rather than one sharp turn.

DRIVE CARRIER ON SNOW, ICE, OR MUD

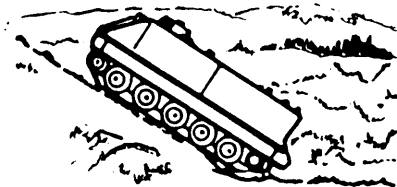
CAUTION

Sharp turns on snow, ice, or mud can cause earner to throw a track. Make a series of small wide turns instead of one sharp turn.

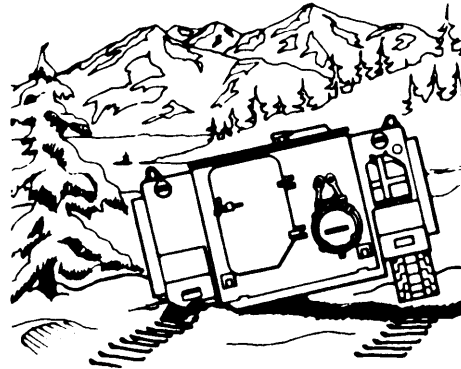
NOTE

If you operate often in snow, ice, mud, or heavy brush, have unit maintenance remove the track shrouds.

Do not drive on snow-covered grades unless you have to. If you do, go as straight up and down the slope as you can.



1. Use a low transmission range that moves earner smoothly without digging in. Drive slowly to avoid skidding.
2. Slow carrier smoothly before making a turn.
3. If earner breaks through crest of deep snow or soft soil, steer carrier straight to get back on crest.



PARK CARRIER ON SNOW, ICE, OR MUD

1. If possible, stop earner on firm surface.
2. When mission is completed, park earner in a sheltered area with front of earner faced away from the wind.
3. Clear snow, ice, and mud off road wheels and tracks after parking.
4. If carrier is parked in low area where water may freeze under tracks, put brush or branches under tracks.

END OF TASK

OPERATE CARRIER IN EXTREME HEAT, HUMIDITY, OR SALTY CONDITIONS

INITIAL SETUP

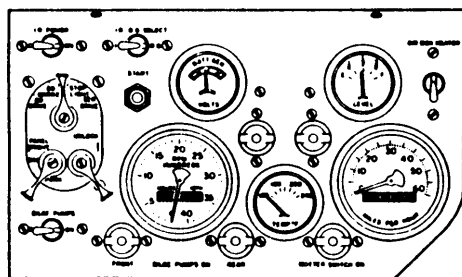
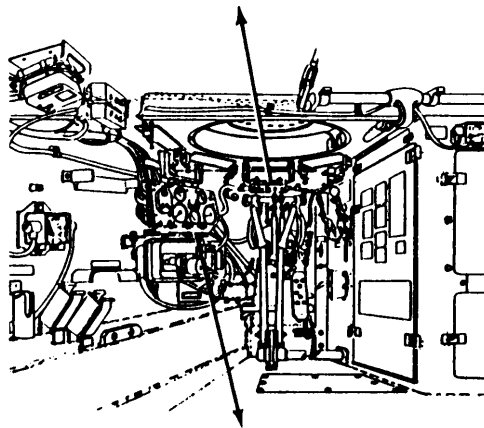
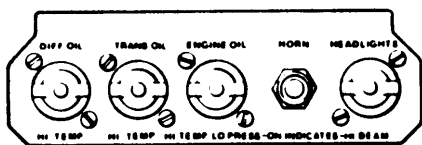
Personnel Required:

Driver

References:

LO 9-2350-261-12

1. Check gages and warning lights often when driving. If any warning light comes on, stop engine (page 2-184). Troubleshoot problem (page 3-8).



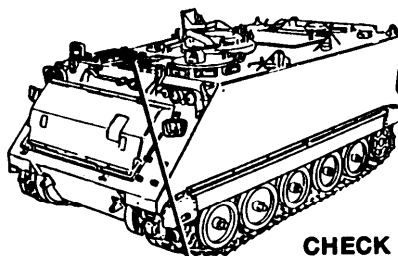
WARNING



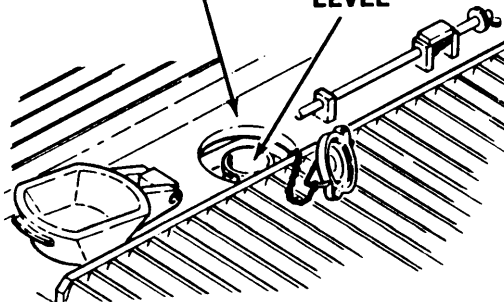
Vehicle operation during hot weather may result in potential heat stress to crew members. crew

members should limit their exposure based on TB med 507 using PHEL Chart (Appendix C) curve as a guide.

2. Check engine coolant level often (page 3-43).

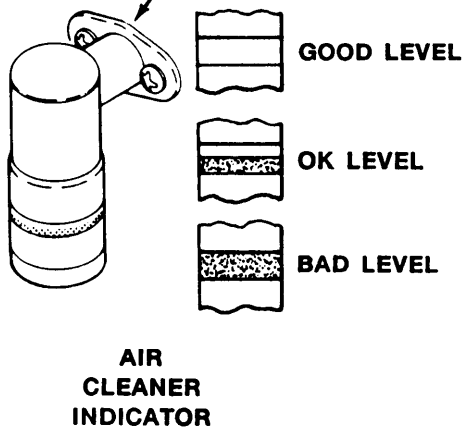
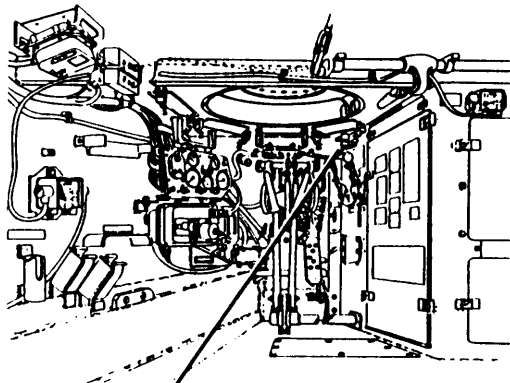


CHECK COOLANT LEVEL

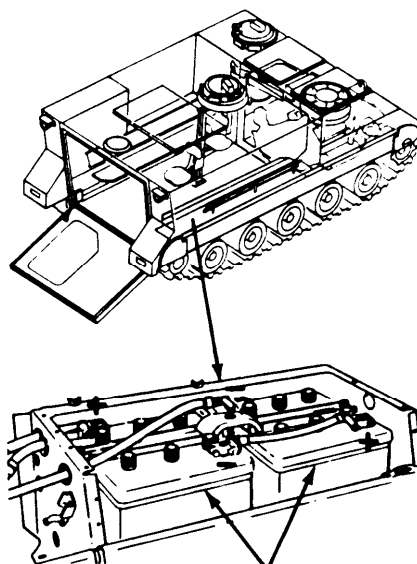


GO TO NEXT PAGE

3. Check air cleaner indicator often.
If at any time only red shows in the window, notify unit maintenance.

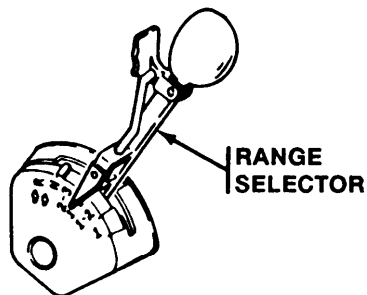
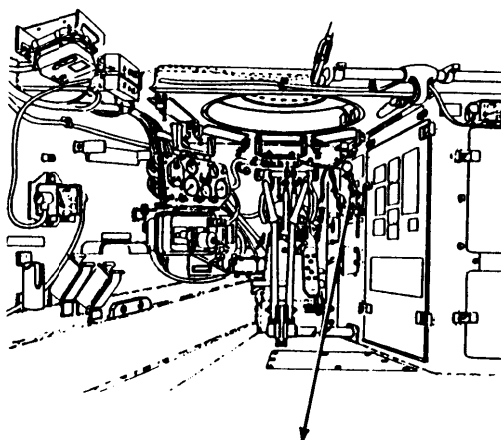


4. Check level of water in batteries (page 3-35).



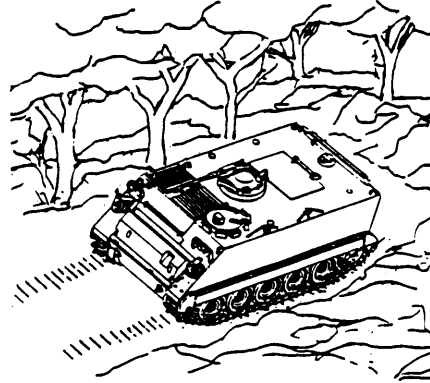
BATTERIES

5. Don't drive in any transmission range below 1-3 when you don't have to.



RANGE SELECTOR

6. Don't let dirt, sand, or bugs build up in the radiator fins. Have unit maintenance clean fins with water pressure.
7. Lubricate frequently. Heat, sand, dust, humidity, and salt all have a bad effect on lubricants and moving parts (LO 9-2350-261-12).
8. Stop and fix any problem as soon as it comes up, or as soon as tactical situation allows.
9. Keep carrier clean. Fungus and mildew can grow fast in conditions of high heat and humidity. Look carrier over and clean it often.
10. Keep carrier in shelter or shade as much as possible. Cover carrier with tarpaulins when it is parked. If you cannot cover entire carrier, at least cover intake and exhaust grills (page 2-272).



END OF TASK

SECURING INOPERABLE/UNSAFE RAMP

INITIAL SETUP

Personnel Required

Driver

Equipment Conditions:

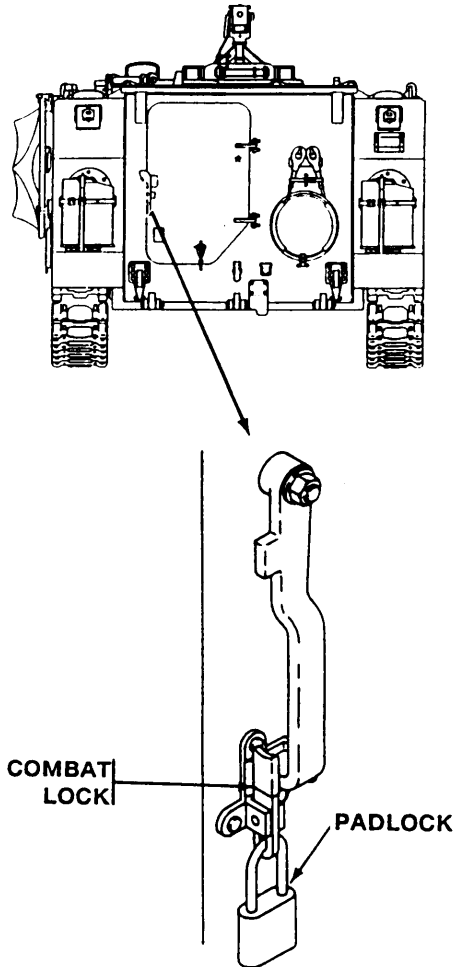
Engine stopped (page 2-184)
Carrier tracks blocked (page 2-221)
Ramp inoperable

WARNING



An inoperable/unsafe ramp can fall and kill you. Do not attempt to manually raise or lower an inoperable/unsafe ramp. Notify unit maintenance to raise or lower an inoperable/unsafe ramp.

1. Close ramp access door and secure with combat lock (page 2-141).
2. Secure combat lock using padlock in tool bag.
3. Notify unit maintenance to raise inoperable ramp using powered lifting equipment.
4. Secure ramp closed using ramp lock (page 2-153).



WARNING

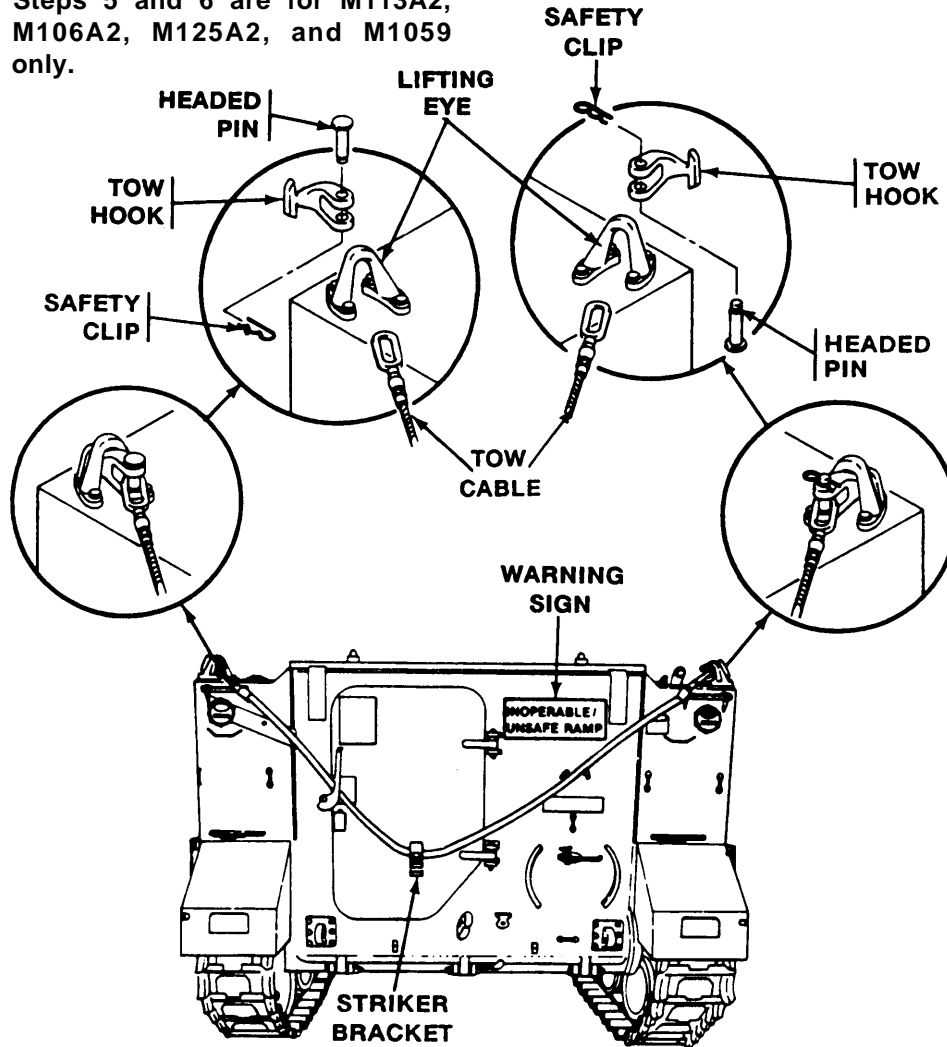


An inoperable/unsafe ramp can fall and kill you. Do not remove any device securing an inoperable/unsafe ramp. Notify unit maintenance to remove lifting equipment.

5. With ramp lock engaged and lifting equipment holding ramp up, install tow hooks in both rear lifting eyes.
6. Connect tow cable to both tow hooks with headed pins and safety clips. Secure tow cable to ramp door striker bracket with screw, washer, and nut.

NOTE

Steps 5 and 6 are for M113A2, M106A2, M125A2, and M1059 only.



GO TO NEXT PAGE

WARNING

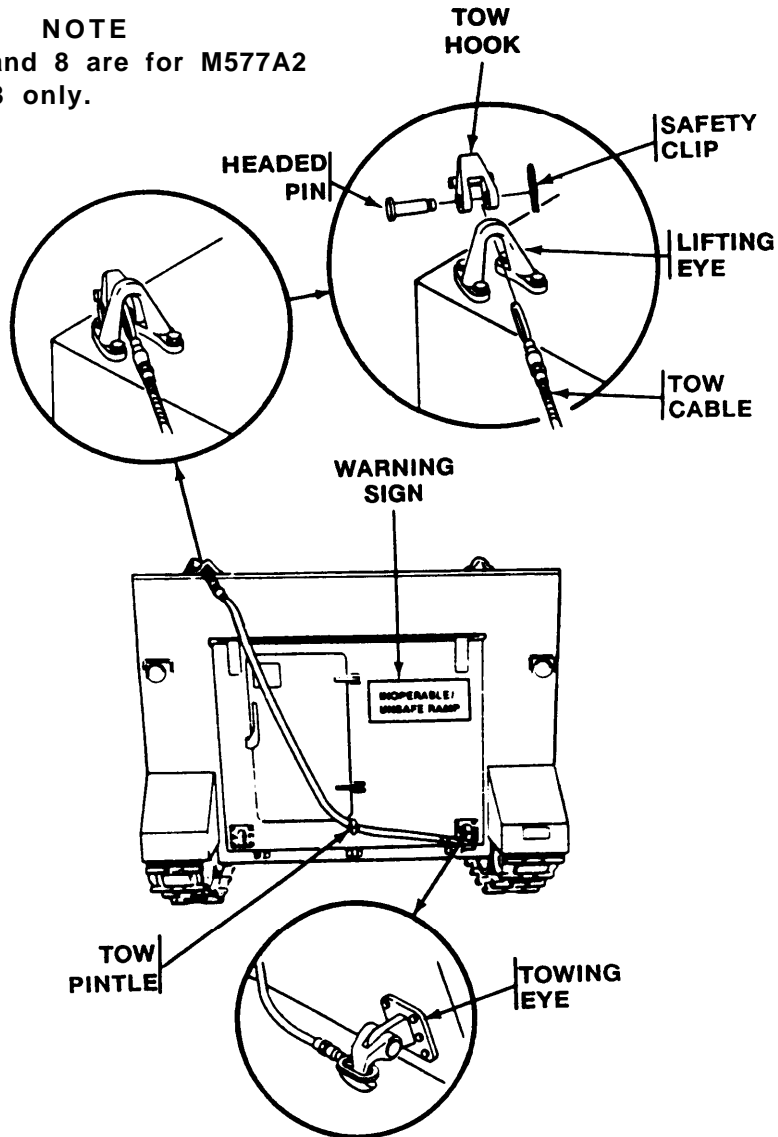


An inoperable/unsafe ramp can fall and kill you. Do not remove any device securing an inoperable/unsafe ramp. Notify unit maintenance to remove lifting equipment.

7. With ramp lock engaged and lifting equipment holding ramp up, install tow hooks in right-hand towing eye and rear left-hand lifting eye.
8. Route tow cable through tow pintle and connect to both tow hooks with headed pins and safety clips.

NOTE

Steps 7 and 8 are for M577A2 and M1068 only.



WARNING



An inoperable unsafe ramp can fall and kill you. Do not remove any device securing an inoperable/unsafe ramp. Notify unit maintenance to remove lifting equipment.

NOTE

Steps 9 thru 11 are for earners with external fuel tanks.

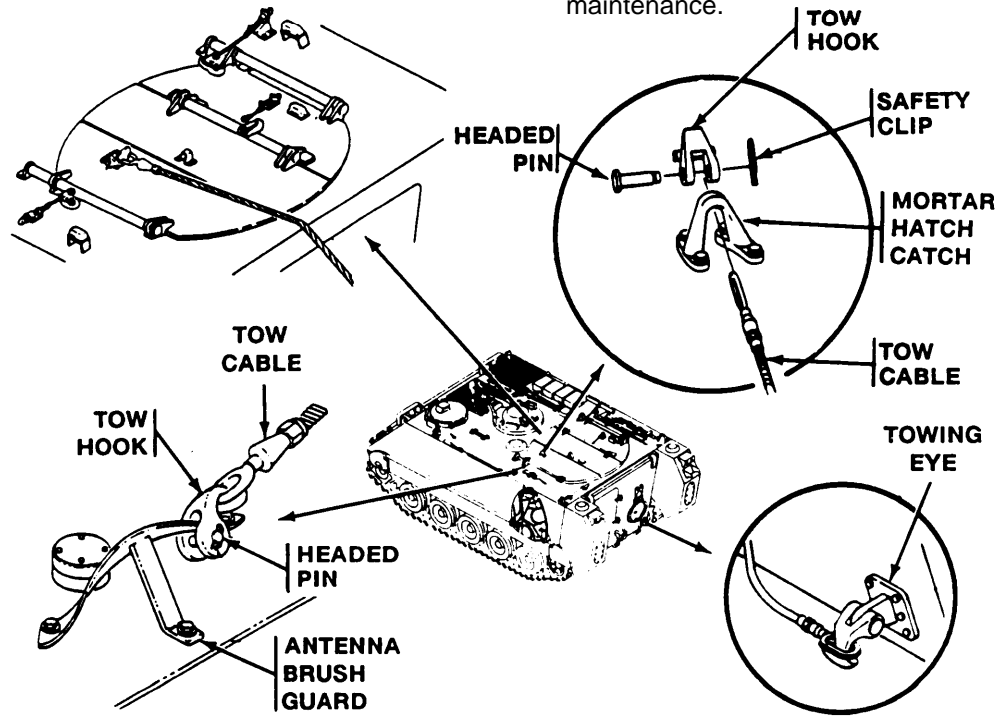
9. With ramp lock engaged and lifting equipment holding ramp up, install tow hook in right towing eye. Secure tow hook with headed pin and safety clip.

10. Secure tow cable to tow hook and route cable toward driver's hatch.
11. Connect tow cable to antenna brush guard or mortar hatch catch with tow hook. Secure tow hook with headed pin and safety clip.
12. Post a warning sign on ramp as follows:

WARNING

This inoperable/unsafe ramp can fall and kill you. Do not remove any cable unless proper lifting equipment is attached.

13. Record fault on DA Form 2404 and report it to unit maintenance.



END OF TASK

TOWING DISABLED CARRIER WITH A RECOVERY VEHICLE

DESCRIPTION

This task covers: Install Tow Bar on Disabled Carrier and Recovery Vehicle (page 2-248). Install Tow Cables on Disabled Carrier and Recovery Vehicle (page 2-249). Tow Disabled Carrier (page 2-249). Remove Tow Bar From Disabled Carrier and Recovery Vehicle (page 2-251). Remove Tow Cables From Disabled Carrier and Recovery Vehicle (page 2-252).

INITIAL SETUP

Tools:

Crowbar (Item 8, App B)
Tow Cable (Item 5, App B)

Personnel Required (cont):

Helper (H) (4)

Equipment Conditions:

Personnel Required:

Driver (2)

Recovery vehicle
Disabled carrier

WARNING



Use tow bar or two crossed tow cables and use steering levers to stop carrier, when necessary.



Carrier could roll and kill or injure personnel when final drive shafts are disconnected. Block carrier



Steering and braking control are lost when final drive shafts are disconnected.

Personnel can be killed or injured. Do not use tow cables when drive shafts have been disconnected.

Block carrier tracks and connect tow bar to disabled carrier and to tow vehicle before disconnecting drive shafts.

You will damage transmission and/or differential if you tow at speeds higher than 10 mph (16 km/hr), or for a distance of more than 30 miles. Have unit maintenance disconnect drive shaft between differential and final drives if you **MUST** tow faster than 10 mph (16 km/hr) or farther than 30 miles.

CAUTION

To prevent damage to ramp. Do not tow a disabled carrier with another carrier.

GO TO NEXT PAGE

NOTE

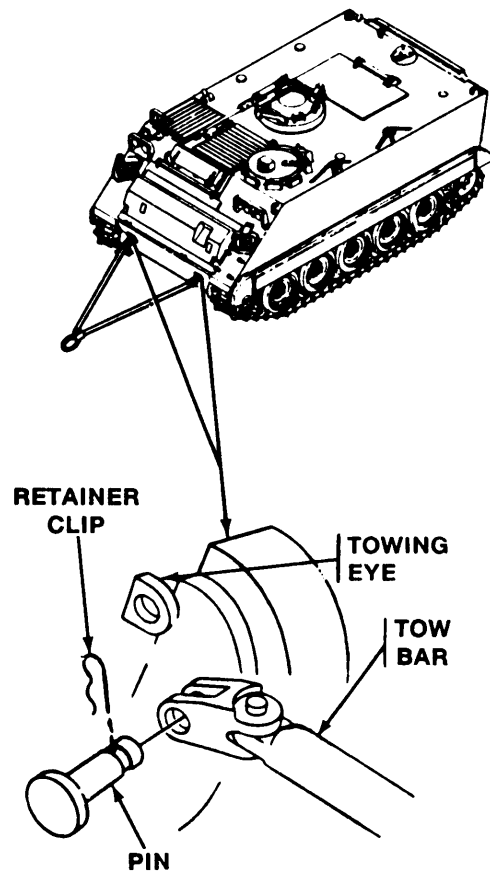
A small vehicle will not tow a larger one. Tow vehicle must be same size or larger than disabled earner.

Personnel will disembark disabled earner before towing operation begins when using tow bar. When using tow cables, driver will remain with earner during towing operations.

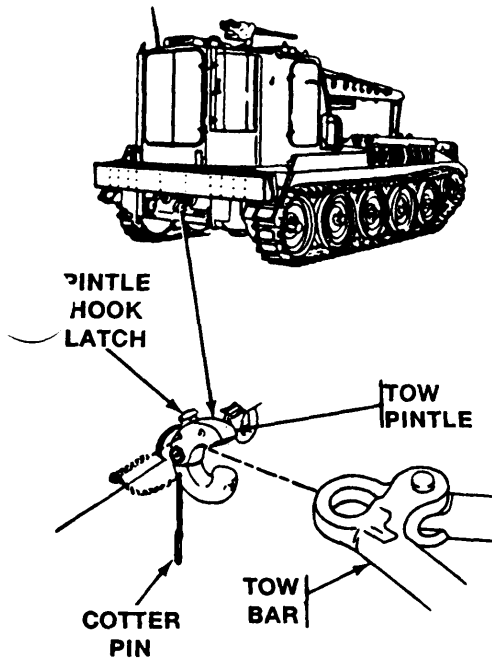
Two helpers, one at left front and one at left rear of recovery vehicle, act as road guides. Two other helpers install tow bar.

INSTALL TOW BAR ON DISABLED CARRIER AND RECOVERY VEHICLE

1. Align rear of recovery vehicle with front of disabled carrier.
2. Remove two retainer clips and pins from tow bar.
3. Connect tow bar to towing eyes of disabled carrier and secure with two pins and safety clips.



4. Remove cotter pin from tow pintle on recovery vehicle.
5. Pull up on pintle hook latch and open pintle.
6. Connect tow bar to tow pintle. Close tow pintle over tow bar. Check that tow pintle latches closed.
7. Install cotter pin to secure pintle hook latch closed.



INSTALL TOW CABLES ON DISABLED CARRIER AND RECOVERY VEHICLE

NOTE

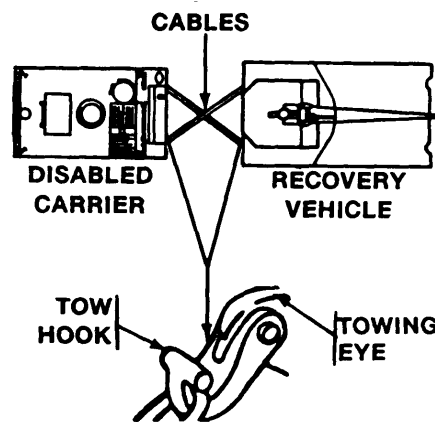
Left rear of recovery vehicle is connected to right front of disabled carrier. Right rear of recovery vehicle is connected to left front of disabled earner.

WARNING



When towing with tow cables, do not disconnect disabled carrier's drive shafts between differential and final drives. Also, do not use cables to tow a carrier more than 30 miles or faster than 10 mph (16 km/hr).

1. Install two tow cables to tow hooks on front of disabled carrier and to tow hooks on rear of recovery vehicle in an X pattern.



TOW DISABLED CARRIER

WARNING



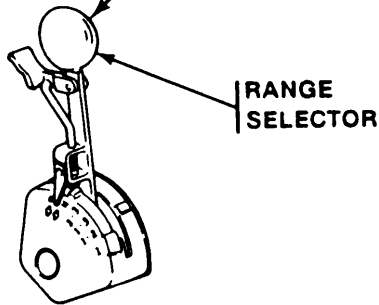
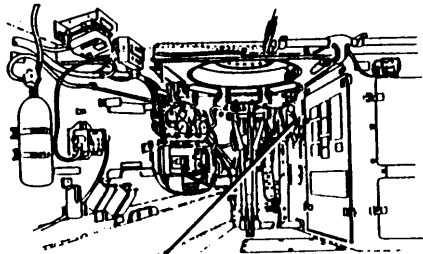
Braking from high speeds when you tow with tow cables or tow bar can jackknife vehicles.

Jackknife could injure personnel and damage vehicles. Do not tow at speeds over 10 mph (16 km/hr) with tow bar.

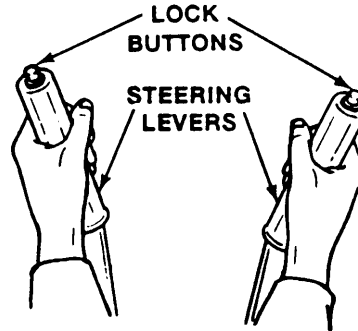
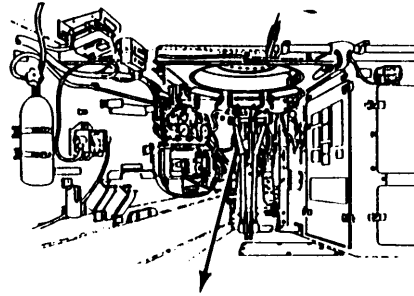
GO TO NEXT PAGE

Tow cables can snap and injure personnel. Close all hatch covers before you use tow cables to tow carrier. Clear personnel out of danger area.

1. If blocked, unblock carrier tracks (page 2-221).
2. Shift range selector of disabled carrier to N range (page 2-0).



3. Release steering levers in disabled carrier. Pull back on both levers so the lock buttons pop up, then ease the levers all the way forward.



4. Start engine in recovery vehicle.

NOTE

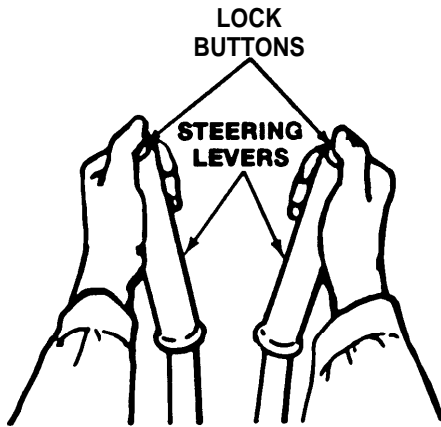
Constant speed must be maintained while towing carrier.

CAUTION

You will damage transmission and/or differential if you tow at speeds higher than 10 mph (16 km/hr) or for a distance of more than 30 miles. Have unit maintenance disconnect drive shaft between differential and final drives if you **MUST** tow faster than 10 mph (16 km/hr) or farther than 30 miles.

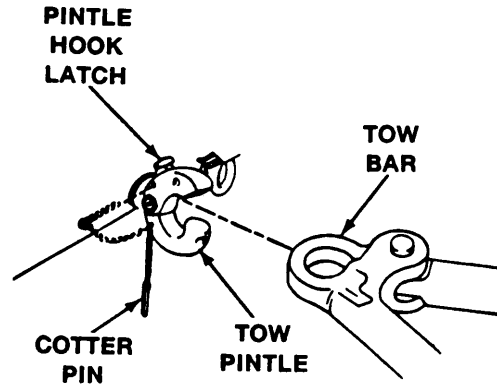
5. Tow the carrier slowly. Do not exceed 10 mph (16 km/hr). Do not tow more than 30 miles.

6. Slowly bring both vehicles to a stop by releasing accelerator pedal in recovery vehicle.
7. Lock steering levers in disabled carrier. Pull back on both levers and push the lock buttons down.

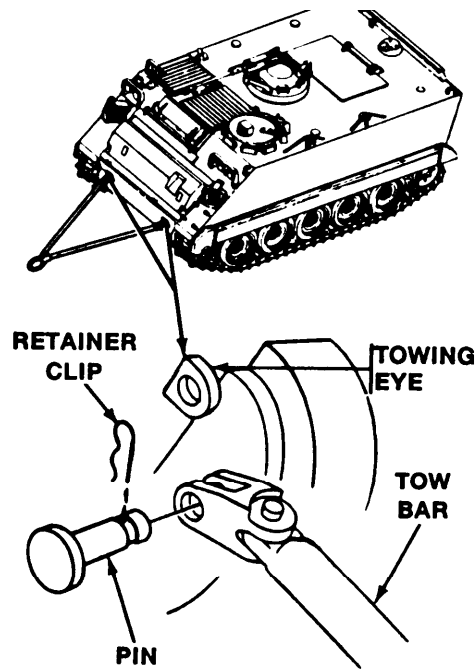


REMOVE TOW BAR FROM DISABLED CARRIER AND RECOVERY VEHICLE

1. Stop engine on recovery vehicle.
2. Remove cotter pin from tow pintle on recovery vehicle.
3. Pull up on pintle hook latch and open pintle.
4. Remove tow bar from tow pintle. Close tow pintle and check that tow pintle latches closed.
5. Install cotter pin to secure pintle hook latch closed.



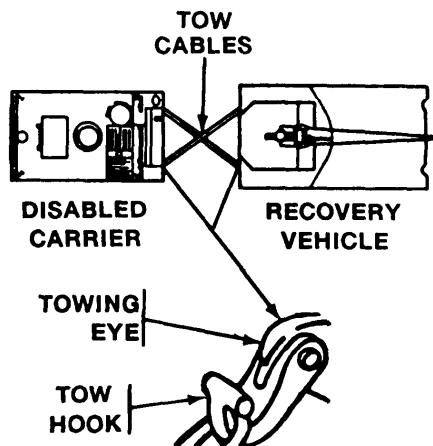
6. Remove two safety clips and pins securing tow bar to towing eyes of disabled earner. Remove tow bar.
7. Install two pins in tow bar and secure with retainer clips.



GO TO NEXT PAGE

**REMOVE TOW CABLES
FROM DISABLED CARRIER
AND RECOVERY VEHICLE**

1. Drive recovery vehicle backward until tow cables are slack.
2. Stop engine on recovery vehicle.
3. Remove two tow cables from tow hooks on front of disabled carrier and from tow hooks on rear of recovery vehicle.



END OF TASK

TOW START DISABLED CARRIER

DESCRIPTION

This task covers: Install Tow Bar on Disabled Carrier and Recovery Vehicle (page 2-254). Tow Start Disabled Carrier (page 2-255).
Remove Tow Bar From Disabled Carrier and Recovery Vehicle (page 2-258).

INITIAL SETUP

Tools:

Crowbar (Item 8, App B)
Tow Cable (Item 5, App B)

References:

TM 11-5820-498-12

Personnel Required:

Driver (2)
Helper (4)

Equipment Conditions:

Recovery vehicle
Disabled carrier

WARNING



Make sure carrier steering levers are locked and carrier tracks are blocked before removing or hooking up tow bar or removing U-joints. Personnel could be killed or injured.



Never touch the lock buttons while the carrier is moving. If you lock up the steering levers while moving, you can damage the carrier and hurt yourself as well.

CAUTION

To prevent damage to ramp. Do not tow a disabled carrier with another carrier.

NOTE

The method for tow starting a carrier is to use a tow bar. All personnel except driver will disembark disabled carrier before towing operation begins.

Thoroughly inspect towing equipment before towing operation begins.

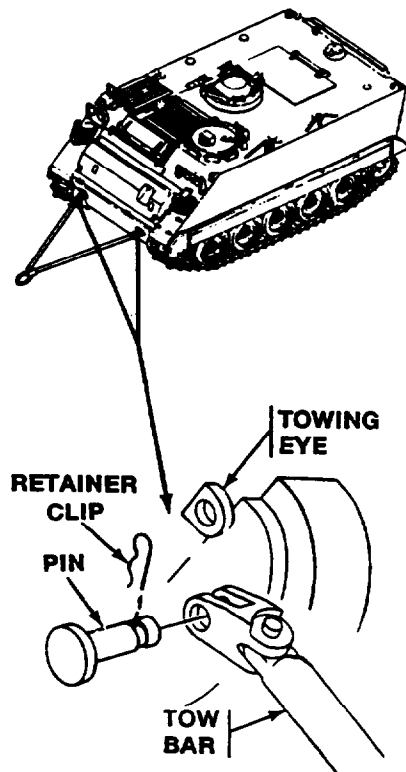
Two helpers, one at left front and one at left rear of recovery vehicle, act as road guides. Two other helpers install tow bar.

If batteries are dead after tow start, the radios and lights will not work. Engine and transmission will be able to function properly.

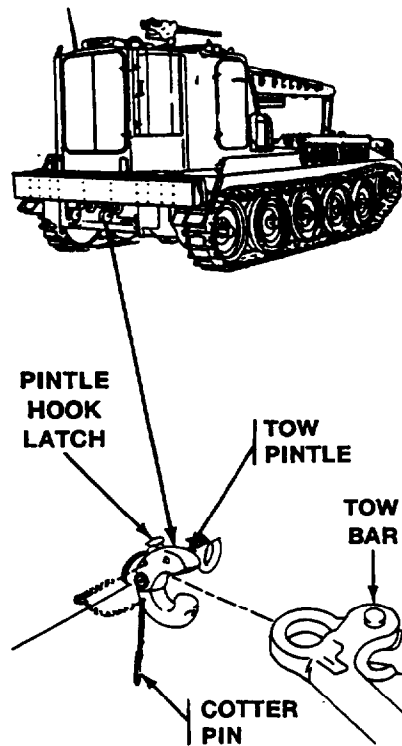
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INSTALL TOW BAR ON DISABLED CARRIER AND RECOVERY VEHICLE

1. Align rear of recovery vehicle with front of disabled carrier.
2. Remove two retainer clips and pins from tow bar.
3. Connect tow bar to towing eyes of disabled carrier and secure with two pins and retainer clips.



4. Remove cotter pin from tow pintle on recovery vehicle.
5. Full up on pintle hook latch and open pintle.
6. Connect tow bar to tow pintle. Close tow pintle over tow bar. Check that tow pintle latch is closed.
7. Install cotter pin to secure pintle hook latch closed.



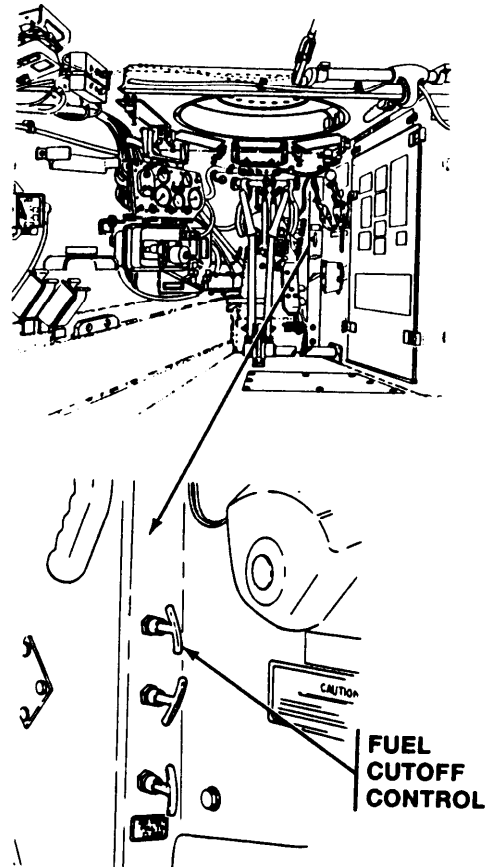
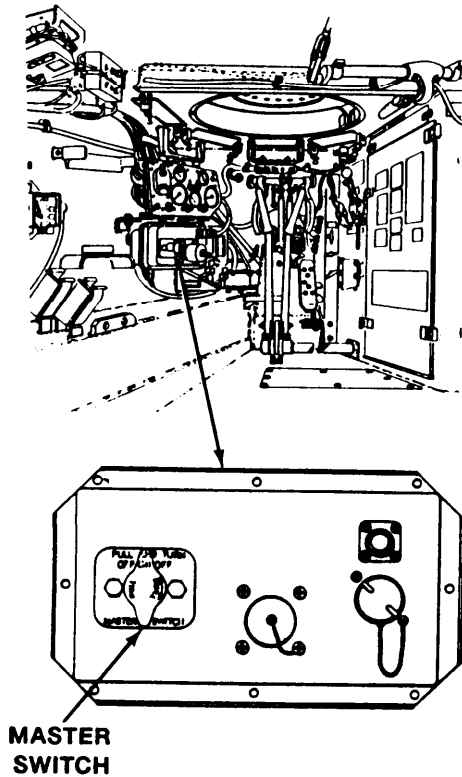
**TOW START DISABLED
CARRIER**

1. Do Before (B) Preventive Maintenance Checks and Services on disabled carrier.
2. Place MASTER SWITCH in disabled earner ON.

CAUTION

During engine start damage to radio components can occur. Make sure radio power switch is OFF before starting engine. See TM 11-5820-498-12.

3. Push fuel cutoff control in all the way.

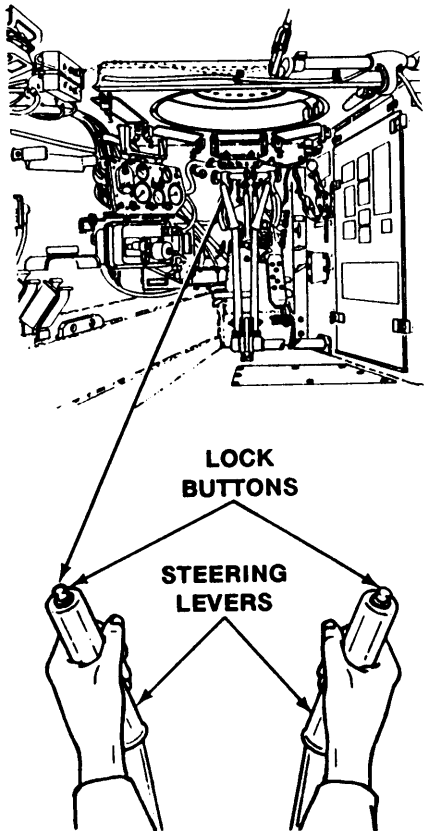


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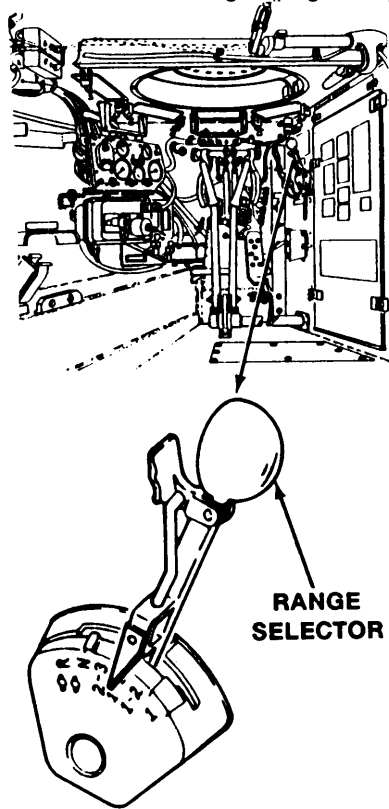
WARNING

Never touch the lock buttons while the carrier is moving. If you lock up the steering levers while moving, you can damage the carrier and hurt yourself as well.

4. Release the steering levers. Pull back on both levers so the lock buttons pop up, then ease the levers all the way forward.



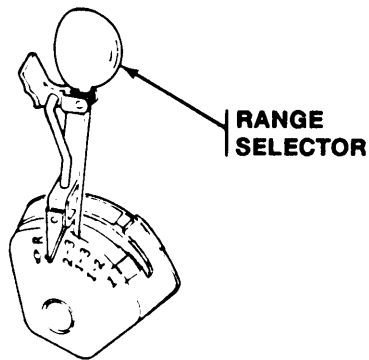
5. Start engine of recovery vehicle.
6. Move out. Find a straight, flat stretch of road or ground and have the tow vehicle pull you at 20 to 25 mph. When you get up to about 20 mph, shift the range selector to 1-3 range (page 2-8).



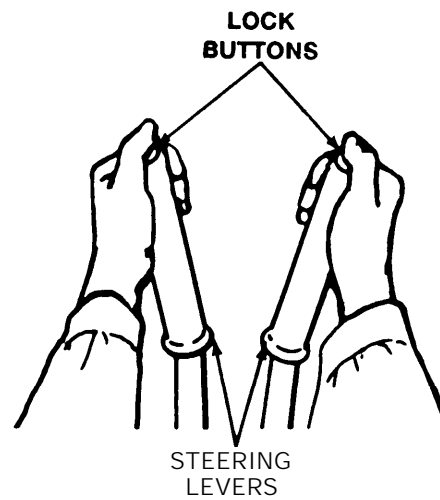
CAUTION

Don't leave the range selector in any driving range for more than about 5 seconds under tow. If the engine doesn't start, shift back to N range and let the transmission rest for a few seconds.

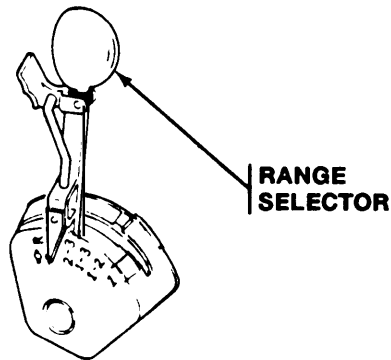
7. When engine starts, shift the range selector to N range. Pull back a little on both steering levers to slightly brake the towed earner. Signal the towing driver to stop. If you don't get a start in three tries, stop and troubleshoot the engine, (page 3-5).



10. Lock steering levers in disabled carriers. Pull back on both levers and press the lock buttons down.



8. After disabled earner starts, slowly bring both vehicles to a stop.
9. Shift range selector in disabled carrier to N range.

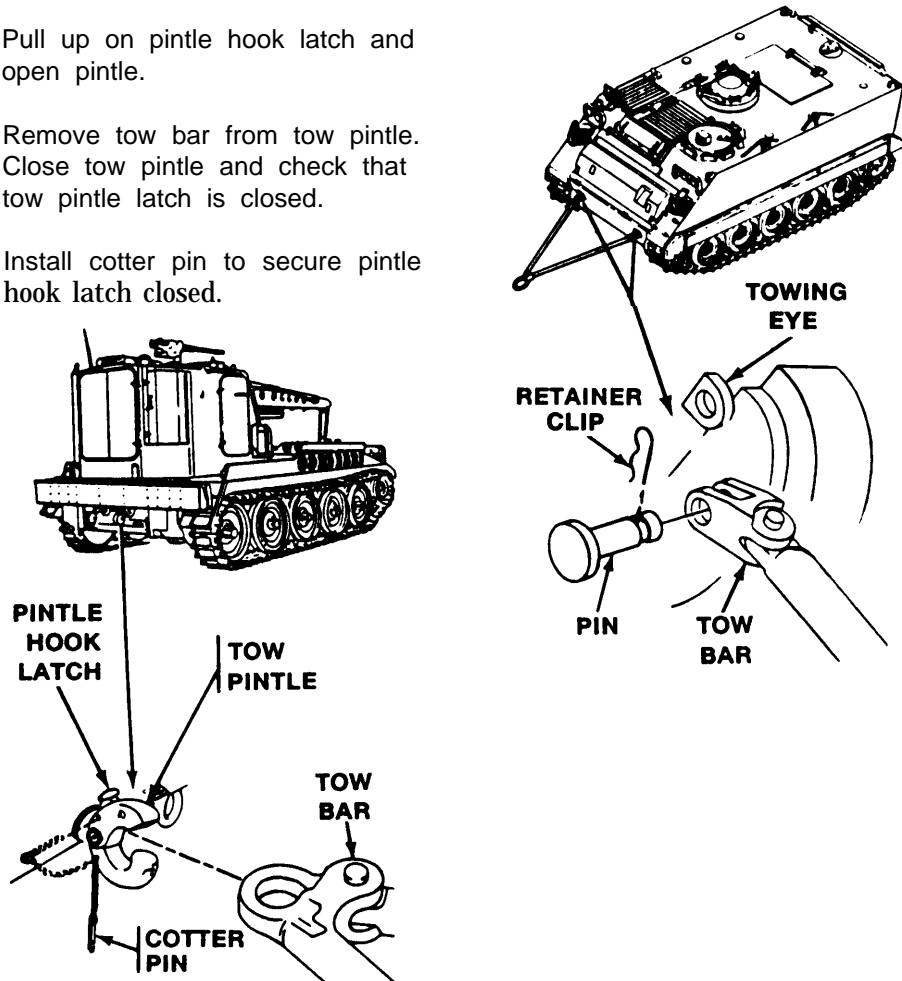


GO TO NEXT PAGE

**REMOVE TOW BAR FROM
DISABLED CARRIER AND
RECOVERY VEHICLE**

1. Stop engine on recovery vehicle.
2. Remove cotter pin from tow pintle on recovery vehicle.
3. Pull up on pintle hook latch and open pintle.
4. Remove tow bar from tow pintle. Close tow pintle and check that tow pintle latch is closed.
5. Install cotter pin to secure pintle hook latch closed.

6. Remove two retainer clips and pins securing tow bar to towing eyes of disabled carrier. Remove tow bar.
7. Install two pins in tow bar and secure with retainer clips.



END OF TASK

TOWING TRAILER WITH CARRIER

DESCRIPTION

This task covers: Connect Trailer to Carrier (page 2-259).
Disconnect Trailer from carrier (page 2-260).

INITIAL SETUP**Personnel Required:**

Driver

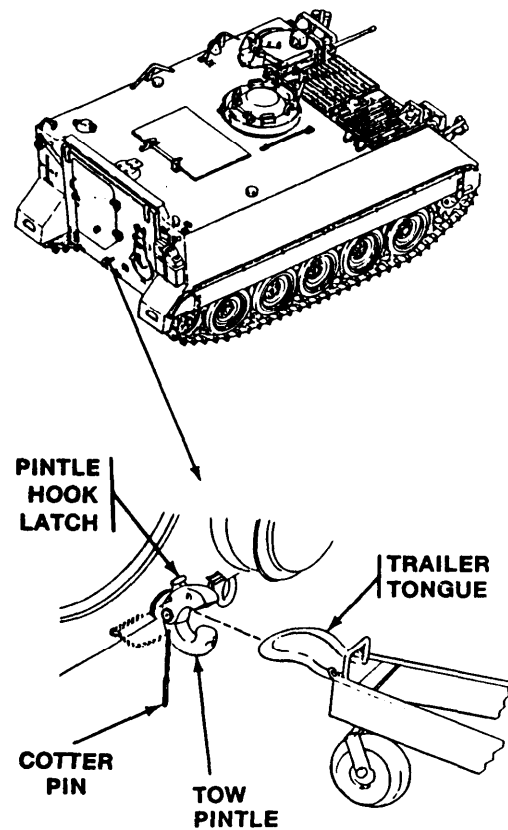
Equipment Conditions:

Engine stopped (page 2-184)

CONNECT TRAILER TO CARRIER
CAUTION

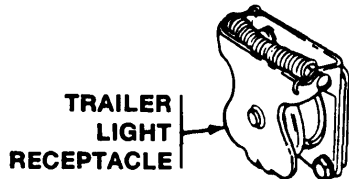
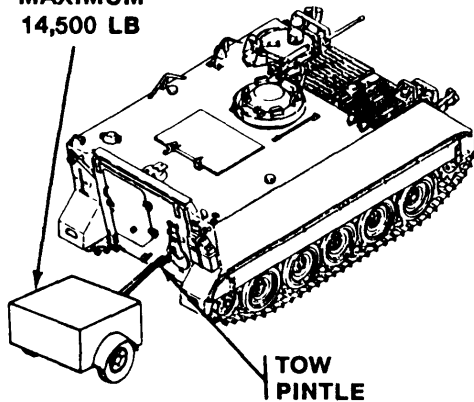
Carrier ramp could be damaged.
Maximum weight of towed load
is 14,500 pounds (6,577 kg).

1. Position trailer so tongue lines up with tow pintle on carrier.
2. Remove cotter pin. Pull up on pintle hook latch and open pintle.
3. Hook *trailer* tongue on *carrier* tow pintle.
4. Close tow pintle. Check that pintle latches closed. Install cotter pin to secure latch closed.

**GO TO NEXT PAGE**

- If trailer has an electrical connector, plug connector into earner's trailer light receptacle. This will allow trailer's taillight and stop light to work with carrier lights.

**TRAILER
MAXIMUM
14,500 LB**

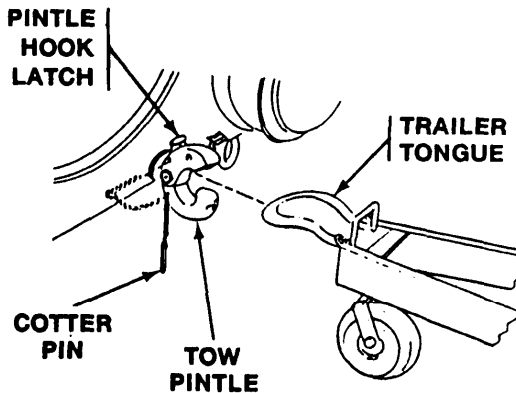


CAUTION

You could damage trailer or carrier if you pivot or make sharp turns at high speeds when towing a trailer. Go slow. Use caution when making turns.

**DISCONNECT TRAILER
FROM CARRIER**

- Stop engine (page 2-184).
- If connected, unplug trailer electrical connector from earner trailer light receptacle.
- Remove cotter pin. Pull up on pintle hook latch and open pintle.
- Remove trailer tongue from carrier tow pintle.
- Close tow pintle. Check that tow pintle latches closed. Install cotter pin to secure latch.



- Start engine (page 2-161).
- Drive carrier (page 2-176).

END OF TASK

OPERATE SMOKE GRENADE LAUNCHERS

DESCRIPTION

This task covers: Loading Smoke Grenade Launchers (page 2-261).
 Launching Smoke Grenades (page 2-263).
 Misfires (page 2-265). Duds (page 2-266).
 Unloading Smoke Grenade Launchers (page 2-266).

INITIAL SETUP

Personnel Required:

Commander

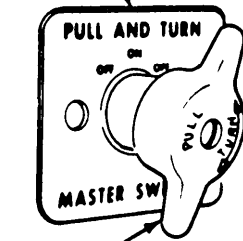
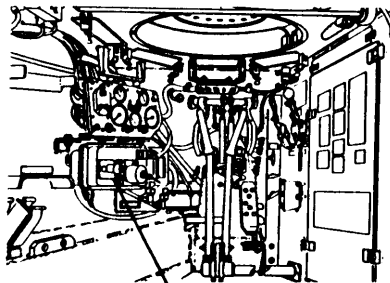
Equipment Conditions:

Carrier parked

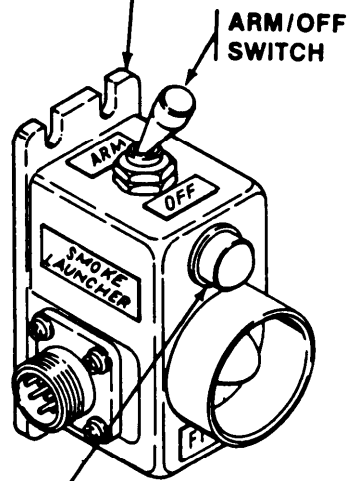
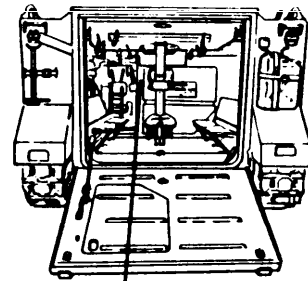
LOADING SMOKE GRENADE LAUNCHERS

1. Turn MASTER SWITCH OFF.

2. Place ARM/OFF switch to OFF.
 Check that indicator light is off.



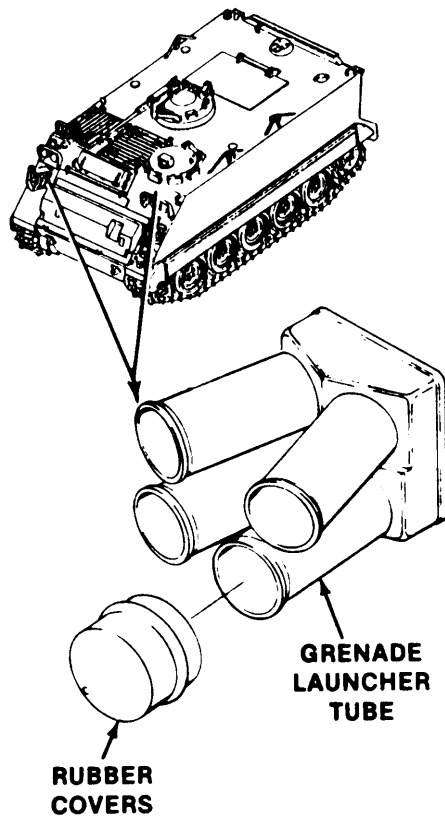
MASTER SWITCH



INDICATOR LIGHT

GO TO NEXT PAGE

3. Remove rubber covers from launcher tubes and check that tubes are free of damage and debris. Retain rubber covers.



WARNING

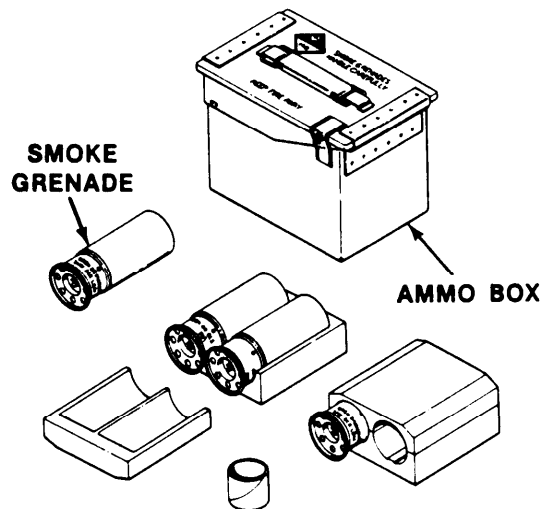


Smoke grenades can explode and kill or injure personnel. Handle grenades with care. Do not drop or throw grenades. Do not use damaged grenades. Keep grenades away from electric sparks. Keep containers sealed until you are ready to use grenades.



Heat could set off smoke grenades and kill or injure personnel. Do not place smoke grenades on hot surfaces.

4. Remove and unpack eight smoke grenades from ammo box.



WARNING



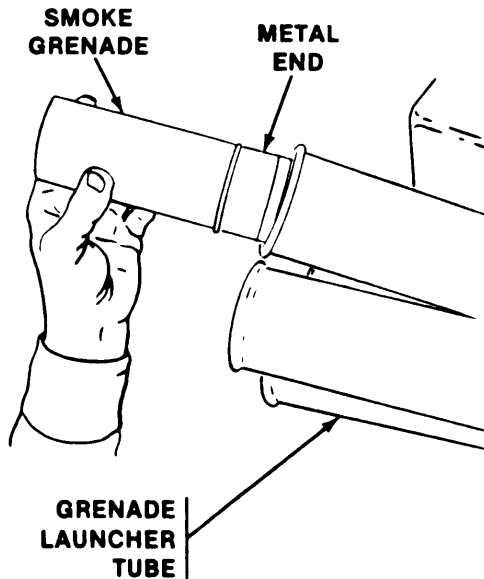
Electrical trouble could cause smoke grenades to launch and kill or injure personnel. Make sure

ARM/OFF switch is OFF before you load smoke grenades. Do not place any part of your body in front of smoke grenade launchers.

CAUTION

Smoke grenades can fail to fire. Keep grenades free of dirt and grease. Do not let firing contacts be damaged.

5. Grip top of grenade and insert grenade into launcher tube with metal end down. With palm of hand, gently push grenade down into launcher tube so that spring clip at base of grenade engages tip plug at bottom of tube.



6. Rotate grenade 1/2 turn to ensure good electrical contact.



LAUNCHING SMOKE GRENADES

WARNING



Smoke grenades explode and burn. Handle them with care. Except when using your hand to load grenade

launcher, never put any part of your body in front of loaded launcher tubes. You could be killed or injured. Check that personnel are clear of firing lines when launching grenades.

1. Close driver's hatch cover (page 2-144).
2. Close commander's hatch cover (page 2-148).

GO TO NEXT PAGE

3. Close cargo hatch cover (page 2-146).
4. Point front of earner directly at area where smoke is desired to conceal the maneuver of the earner from enemy observation.

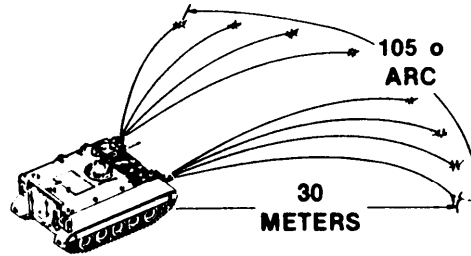
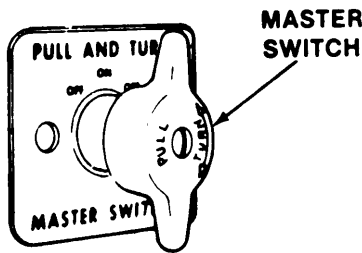
NOTE

Before launching grenades, make sure there are no obstacles directly in front of carrier.

NOTE

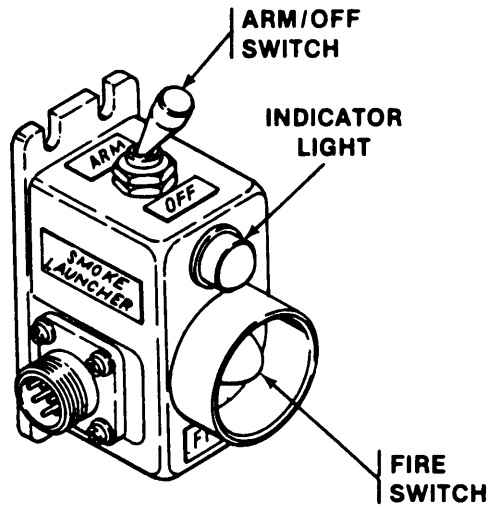
When fire switch is pressed, eight grenades will detonate around a 105 degree arc, 98 feet (30 meters) from carrier. The smoke cloud will be approximately 30 feet (9 meters) high and will last about 1 to 3 minutes, depending on wind conditions.

5. Turn MASTER SWITCH ON.



7. Press FIRE switch to launch smoke grenades.

6. Place ARM/OFF switch to ARM. Check that indicator light comes on.
8. Place ARM/OFF switch to OFF. Check that indicator light goes off.

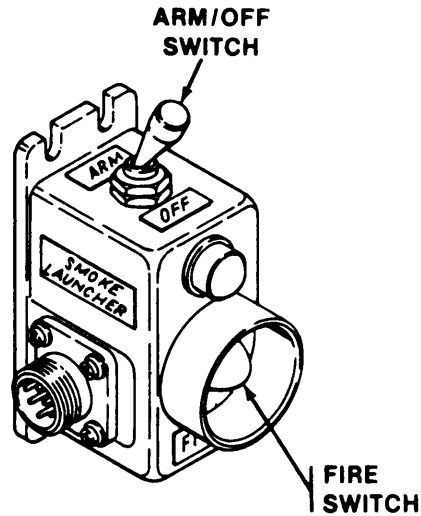


9. As soon as tactical situation permits, check that all eight smoke grenades have been launched. If any of the smoke grenades did not fire see below for procedure on MISFIRES.

NOTE

Smoke grenade launchers must be cleaned and inspected daily when smoke grenades have been launched. Notify unit maintenance.

10. If all smoke grenades have fired, reload smoke grenade launchers as required by mission. Do steps 1, 2, and 4 thru 6 of procedure on LOADING SMOKE GRENADE LAUNCHERS.



MISFIRES

WARNING



If misfired smoke grenades launch during unloading, personnel in the area could be killed or injured.

Keep carrier pointed down range until grenades are removed.

NOTE

A misfire is the failure of a smoke grenade to launch from grenade launcher tube.

1. Place ARM/OFF switch to ARM and press FIRE switch.

2. If grenade does not fire, place ARM/OFF switch OFF. Check that grenade is firmly seated in launcher tube.
3. Place ARM/OFF switch to ARM and press FIRE switch.
4. If grenade does not fire, attempt to fire grenade from another launcher tube. If grenade fires, notify unit maintenance of defective launcher tube.
5. If grenade still does not fire, treat as a dud, see below.

GO TO NEXT PAGE

DUDS



WARNING

Misfired smoke grenades could kill or injure personnel if mishandled. Do not attempt to move a dud grenade.

NOTE

In a training situation when a grenade fails to ignite after being launched, wait 15 minutes; then notify EOD personnel. Give type, quantity, and precise location of dud.

UNLOADING SMOKE GRENADE LAUNCHERS



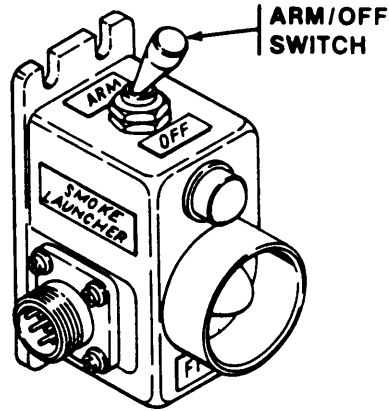
WARNING

Electrical trouble could cause smoke grenades to launch and kill or injure personnel. Make sure ARM/OFF switch is OFF before unloading smoke grenades. Do not place any part of your body in front of smoke grenade launchers.

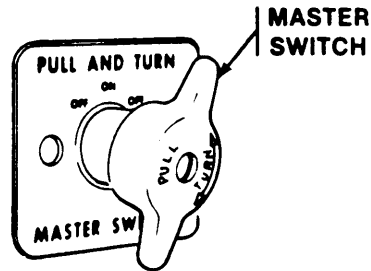


Heat could set off smoke grenades and kill or injure personnel. Do not place smoke grenades on hot surfaces.

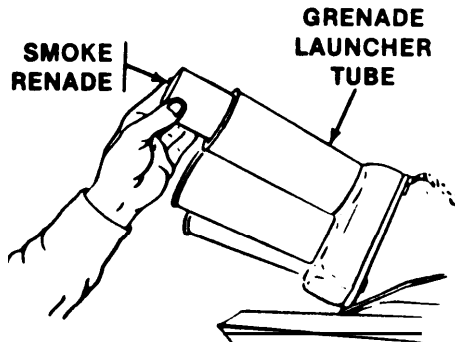
1. Place ARM/OFF switch to OFF.



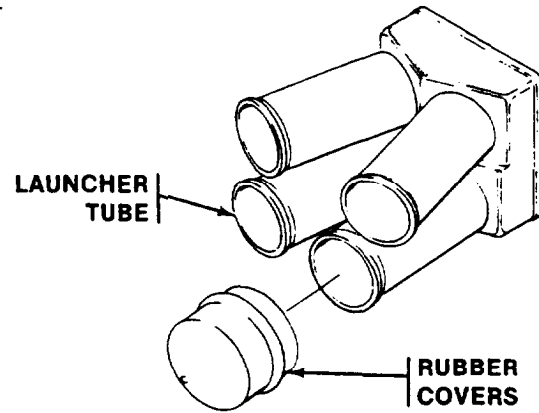
2. Turn MASTER SWITCH OFF.



3. Remove smoke grenades from launcher tubes and place in ammo box.



4. Install rubber covers on launcher tubes.
5. Secure grenades in accordance with unit SOP.



END OF TASK

OPERATE NBC KIT

DESCRIPTION

This task covers: Turn NBC Kit On In Ambulance With Litter Kit (page 2-268). Turn NBC Kit Off In Ambulance With Litter Kit (page 2-269). Turn NBC Kit On In Carrier Without Litter Kit (page 2-270). Turn NBC Kit Off In Carrier Without Litter Kit (page 2-271).

INITIAL SETUP

Personnel Required:

Soldier

Equipment Conditions:

NBC kit installed

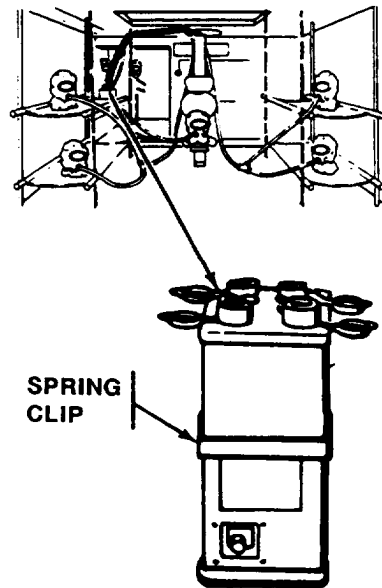
TURN NBC KIT ON IN AMBULANCE WITH LITTER KIT

WARNING



Breathing excessive carbon monoxide gas can kill you. Keep fresh air flow. NBC kit and M25 or M42 protective mask will not protect you from carbon monoxide gas nor provide oxygen.

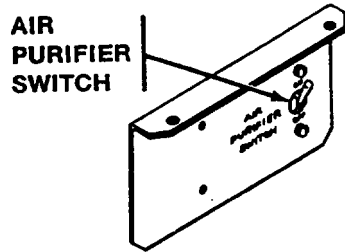
1. Remove spring clip from air intake openings on air purifier.



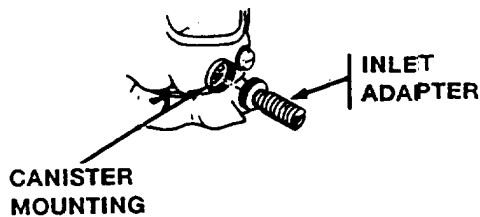
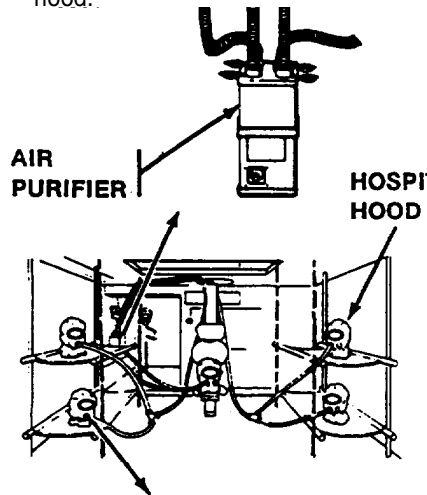
NOTE

Air purifiers switches are located in various places, such as the instrument panel, transverse beam, near the driver's seat, and in the rear compartment.

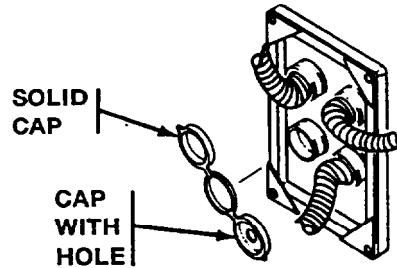
2. Turn AIR PURIFIER SWITCHES ON.



3. Assist patients in putting on their hospital hoods. Adjust the facepieces tie the strap, and attach hoses to inlet adapter on hood.



4. Make sure each patient is supplied with air.
5. If only three outlets are used, cover the fourth with a solid cap. when less than three are used, cover one of the unused outlets with a solid cap and the other with a cap with a hole.

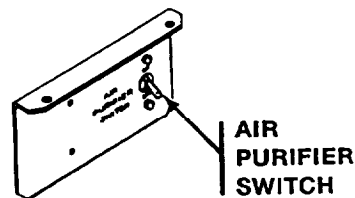


NOTE

Attach a hospital hood, with its bottom folded, to any open hose to prevent too much air loss.

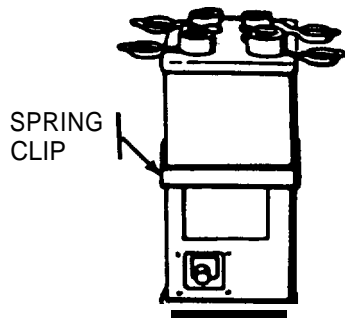
TURN NBC KIT OFF IN AMBULANCE WITH LITTER KIT

1. Help the patients in removing their hospital hoods. Uncouple the hoses from the inlet adapters on the hoods.
2. Turn the AIR PURIFIER SWITCHES OFF.



GO TO NEXT PAGE

3. Stow hoses connected to Y connectors out of the way.
4. Install spring clip over air intake openings on the air purifier.



5. Clean air purifier housing with a clean cloth as soon as possible after operation.

TURN NBC KIT ON IN CARRIER WITHOUT LITTER KIT

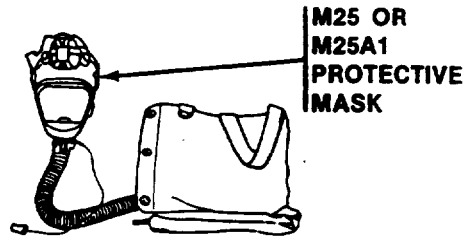
WARNING



Breathing excessive carbon monoxide gas can kill you. Keep fresh air flow. NBC kit and M25 or M42

protective mask will not protect you from carbon monoxide gas nor provide oxygen.

1. All crew members must put on their M25 or M25A1 protective masks. Adjust the facepieces.

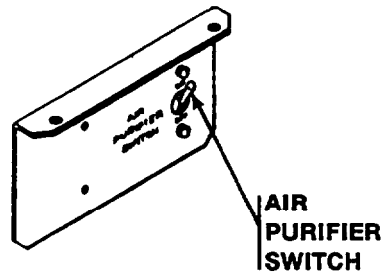


2. Remove spring clip from air intake openings on air purifier.

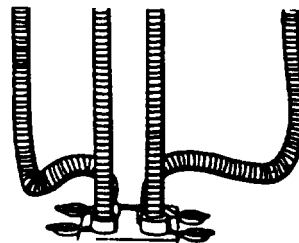
NOTE

Air purifier switches are located in various places, such as the instrument panel, transverse beam, near the driver's seat, and in the rear compartment.

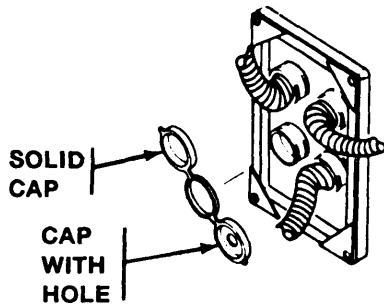
3. Turn AIR PURIFIER SWITCHES ON.



4. Couple the hoses leading from the air purifier to the canisters of the M25 or M25A1 protective masks.

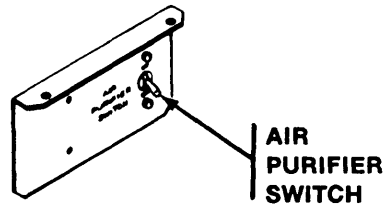


5. If only three outlets are used, cover the fourth with a solid cap. When less than three outlets are used, cover one of the unused outlets with a solid cap and the other with a cap with a hole.

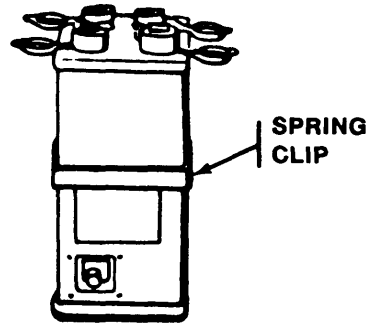


TURN NBC KIT OFF IN CARRIER WITHOUT LITTER KIT

1. Uncouple hoses from the mask canisters.
2. Turn the AIR PURIFIER SWITCHES OFF.



3. Remove and stow mask and hoses.
4. Install spring clip over air intake openings on the air purifier.



5. Clean air purifier housing with a clean cloth as soon as possible after operation.

END OF TASK

COVER/UN COVER INTAKE AND EXHAUST GRILLS

DESCRIPTION

This task covers: Cover Exhaust Grill (page 2-272).
Cover Intake Grill (page 2-273).
Uncover Exhaust Grill (page 2-274).
Uncover Intake Grill (page 2-274).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page 2-184)

CAUTION

Extended operation with intake and exhaust grills covered can cause engine to overheat and be damaged. Uncover exhaust grill and open one or more flaps on intake grill before starting engine. Avoid extended operation with intake grill covered.

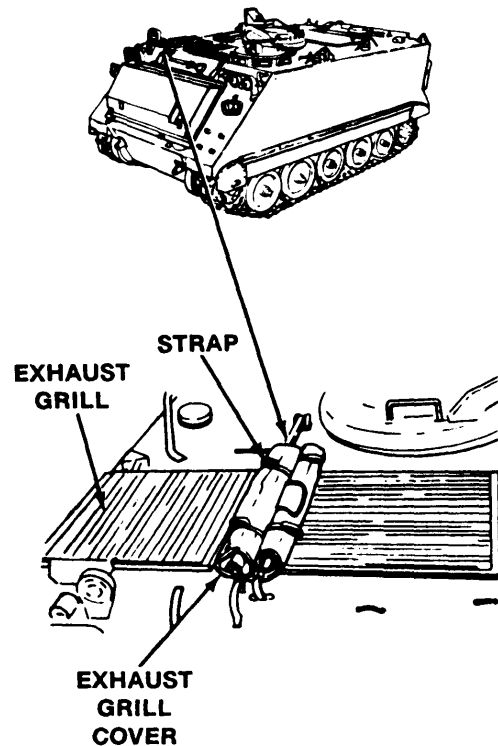
NOTE

Intake and exhaust grill covers prevent ice, snow and other debris from entering power plant compartment and exhaust well when carrier is not in use.

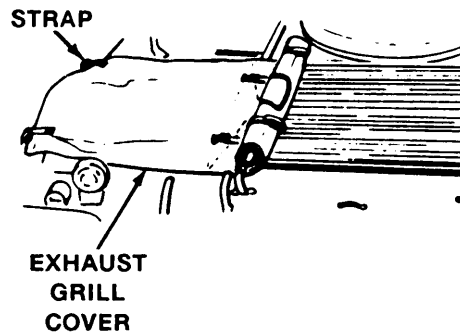
When not in use, intake and exhaust grill covers are rolled up and secured to area between intake and exhaust grills.

COVER EXHAUST GRILL

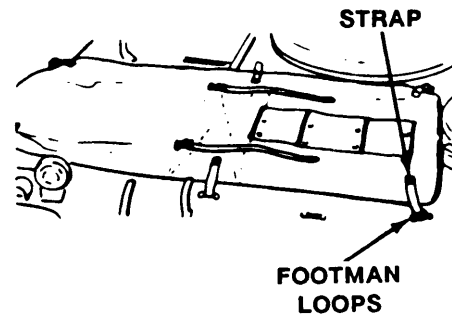
1. Release two straps and unroll exhaust grill cover over exhaust grill.



- Secure two straps to footman loops on right side of exhaust grill,

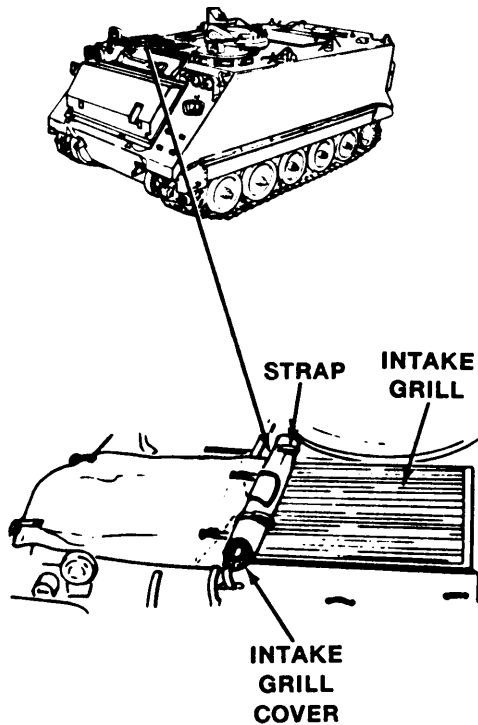


- Secure two straps to footman loops on left side of intake grill.

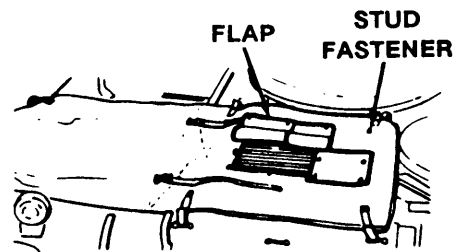


COVER INTAKE GRILL

- Release two straps and unroll intake grill cover over intake grill.



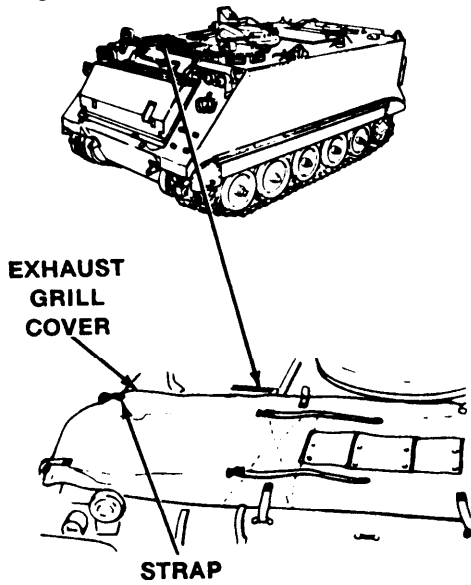
- To open one or more flaps on intake grill cover, release stud fasteners and fold flap open. Secure flap open with stud fasteners.



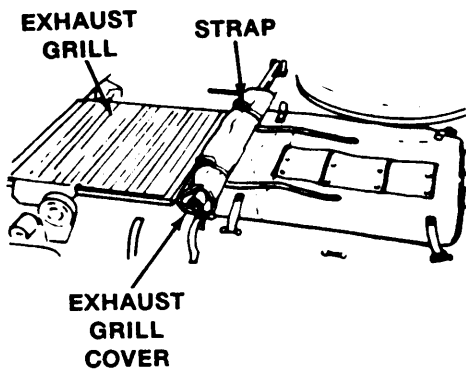
GO TO NEXT PAGE

UNCOVER EXHAUST GRILL

1. Release two straps from footman loops on right side of exhaust grill.

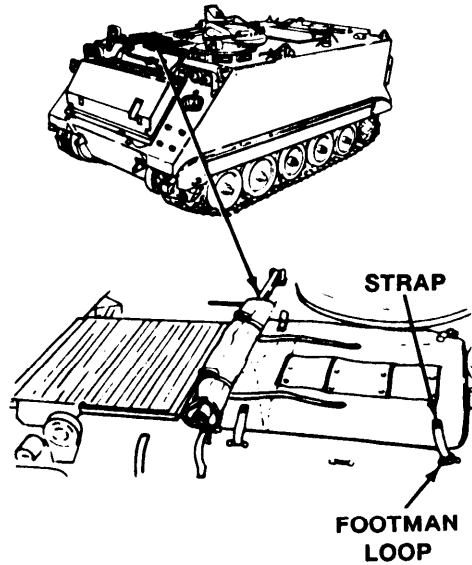


2. Roll exhaust grill cover toward area between intake and exhaust grills and secure with two straps.

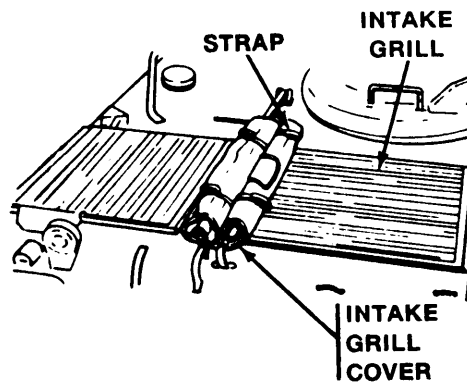


UNCOVER INTAKE GRILL

1. Release two straps from footman loops on left side of intake grill.



2. Roll intake grill cover toward area between intake and exhaust grills and secure with two straps.



END OF TASK

PREPARATION BEFORE WATER OPERATIONS

INITIAL SETUP

Personnel Required:

Driver
Crew

References:

FM 7-7
TM 11-7010-256-12&P

Equipment Conditions:

Engine stopped (page 2-184)
Carrier tracks blocked (page 2-221)
Power control enclosure turned off
(M1068 Only)
(TM1-7010-256-12&P)

NOTE

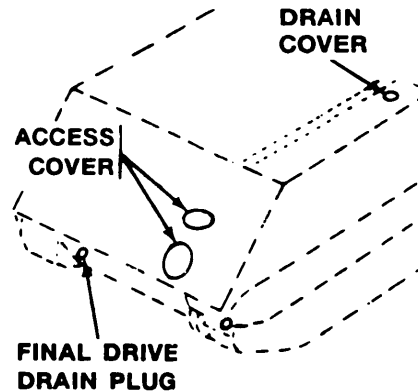
The following procedures are applicable to the M1068, M106A2, M1064, M125A2, M113A2, M577A2, and M1059 earners, unless otherwise stated.

1. Check that engine is off, steering levers are locked, and earner is blocked.
2. Check that access covers, drain cover, and final drive drain plugs are flush, tight, and not tilted.

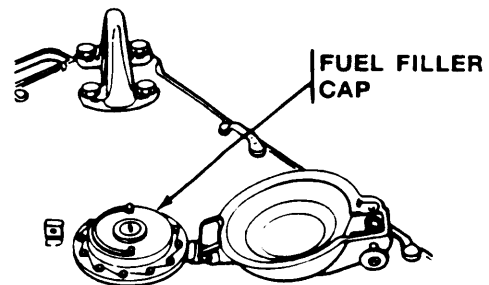
WARNING



Prior to water operations, perform all carrier PMCS and Preparation Before Water Operation. Pay particular attention to drain plugs and access covers which must be in place, straight and tight. Failure to do this could result in earner sinking and loss of life. A plywood trim vane with bolt-on buoyancy pods is required on the M113A2 and M1059, extended/secured in forward position before entering water. A plywood trim vane (only) is required on the M106A2, M577A2, M1068, and M1064, extended/secured in forward position before entering water. Failure to do this could result in earner sinking and loss of life.



3. Check that fuel filler cap is snug and not held out of place by keeper chain.



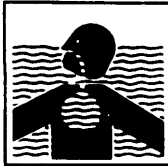
GO TO NEXT PAGE

NOTE

Step 4 applies to the M106A2, M1064, and M125A2 On1y.

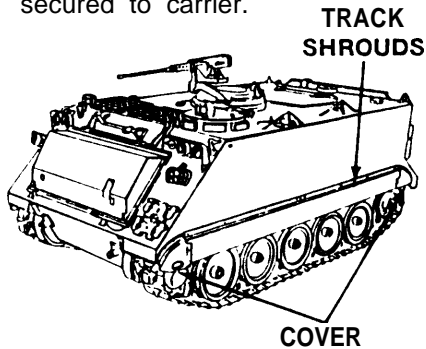
4. Install the air grille curtain (page 5-11).
5. Check that all periscopes are installed (page 2-191).

WARNING



Carrier could sink and personnel could drown without track shrouds secured in place. Carrier can have loss of steering without track shrouds. Do not attempt water operations without them.

6. Check that track shrouds and covers are in good condition and secured to carrier.

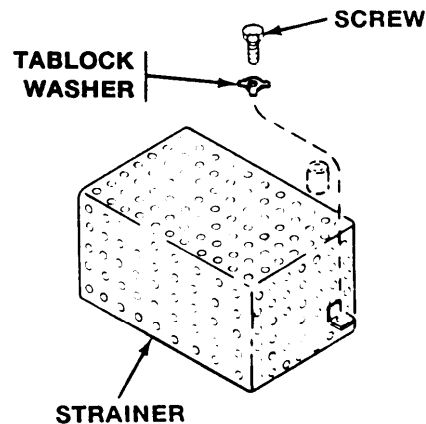
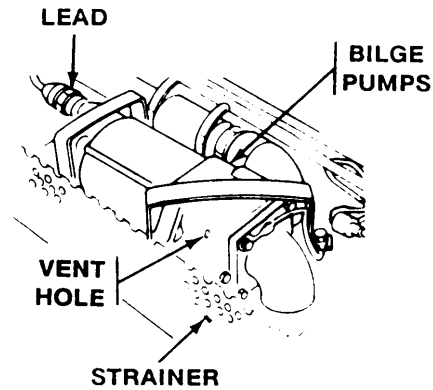


7. Check front and rear bilge pumps for debris or obstructions.
8. Clean bilge pump screens of debris.

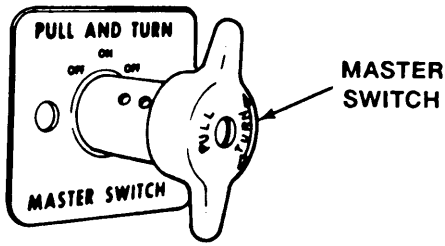
NOTE

To clean vent hole in front bilge pump, remove strainer.

9. Clean bilge pump vent holes of obstruction:
 - a. Disconnect lead from front bilge pump.
 - b. Remove two screws and tablock washers securing bilge pump strainer to weld nuts.
 - c. Clean vent hole. Use a wire and run it back and forth in vent hole a few times.
 - d. Install bilge pump strainer. Secure with two tablock washers and screws.
 - e. Reconnect lead to front of bilge pump.



10. Turn MASTER SWITCH ON.

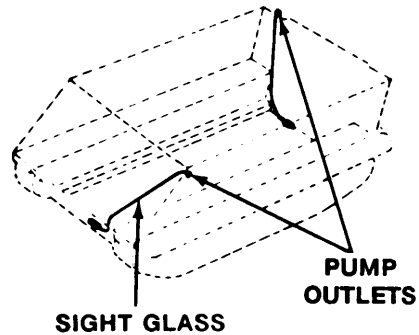


- b. Check that front and rear bilge pump indicator lights are ON.
- c. Observe bilge pump outlets for discharge of water if present in carrier bilges.
- d. Check sight glass.

WARNING

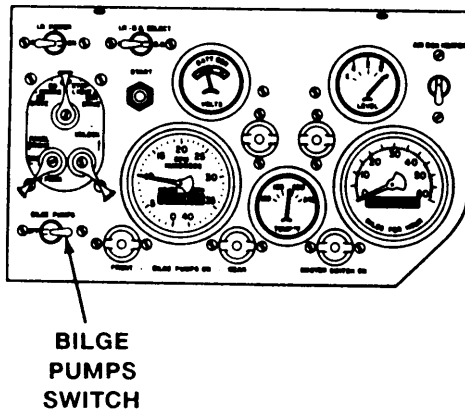


Carrier can sink during water operations when bilge pumps do not work. Personnel can be killed. Do not attempt water operations when bilge pumps do not operate.



11. Check operation of bilge pumps:

- a. Turn BILGE PUMPS switch ON.



NOTE

If carrier bilges are dry, test bilge pumps using alternate air method. Do not enter water until bilge pumps have been turned on and are operational.

ALTERNATE AIR METHOD

12. Check operation of bilge pumps:
- a. Place your hand over bilge pump outlets and feel for a stream of air. If air is not present, repeat step 6.
 - b. Turn BILGE PUMPS switch OFF.

GO TO NEXT PAGE

WARNING

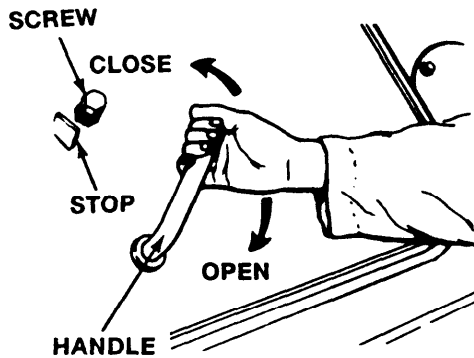


When power plant door detent screw is missing or does not rub against handle when handle is moved to closed position, power plant door can open and take in water during water operations. Carrier can sink and personnel can drown. Do not attempt water operations when detent screw is missing or improperly adjusted.

NOTE

If detent screw is missing or does not rub against the handle, notify unit maintenance to have screw replaced/adjusted or handle replaced.

13. Secure power plant door.
 - a. Rotate handle past detent screw to vertical position between screw and metal stop.



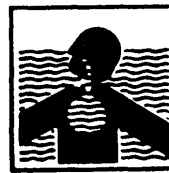
- b. Check power plant door seals for breaks, brittleness, cracks, or poor seating.

14. From inside the driver's compartment, push the combat lock handle down to lock the power plant door (page 2-151).

WARNING



Unsecured stowage/load can shift or fail during carrier motion. Personnel can be injured. Secure all stowage/load to eliminate movement regardless of carrier attitude, including inverted position.



Carrier can sink and personnel can drown when maximum load (weight of personnel, fuel and/or cargo) is exceeded and/or not properly distributed. Distribute weight of cargo and/or personnel evenly before entering water, per load plan in Appendix F.

15. Stow carrier in accordance with load plan (see Appendix F).

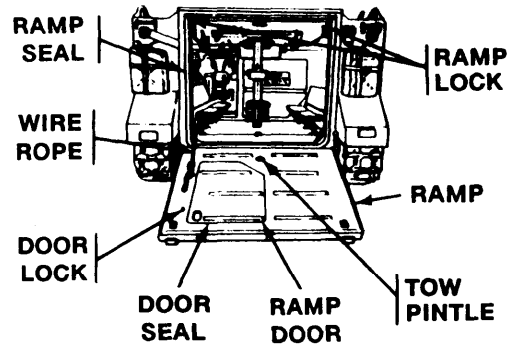
WARNING



Displaced or damaged ramp/ personnel door seals may let water enter cargo area. Personnel can

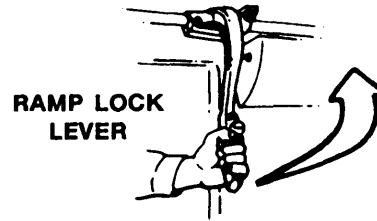
drown. Check ramp/ personnel door seal before closing. Do not attempt water operations with leakage.

g. If ramp is not operating properly or parts are faulty, notify unit maintenance.



16. Check ramp and ramp door for proper operation and seal.
 - a. Check ramp door operation. Make sure hinges work right and that door can be tightly secured by lock.
 - b. Check ramp door seal for breaks, brittleness, cracks or poor seating.
 - c. Check ramp wire rope for frayed or broken strands.
 - d. Check ramp seals for breaks, brittleness, cracks, or poor seating.
 - e. Check ramp locks for proper operation and missing parts.
 - f. Make sure cotter pin on tow pintle nut is present and properly secured.

17. Raise and lock ramp (page 2-153).
18. Make sure ramp lock lever rotates forward so ramp is latched tight and secured against seal.



19. Close and lock ramp personnel door. Make sure ramp door is tight and secured against seal.
20. Turn interior dome lights on (page 2-198).

GO TO NEXT PAGE

WARNING



Carrier can sink and personnel can be trapped inside and drown when hatches are closed. All hatches must be in open position with locking pins installed during water operations.

21. Open driver's hatch and install locking pin (page 2-144).
22. Open commander's cupola cover and install locking pin (page 2-148).
23. Open cargo hatch and install locking pin (page 2-146).

WARNING



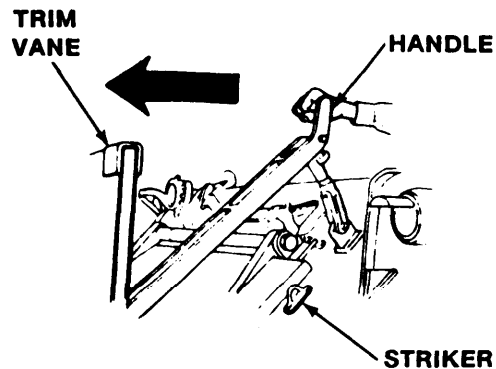
Carrier can sink during water operations when trim vane is not extended and locked in place.

Personnel can be killed. Extend and lock trim vane in extended position before entering water.

NOTE

Although vehicles have the ability to float, swimming is not allowed. However since bottom beneath surface of the water may conceal holes, gullies, soft spots, and other hazards, vehicles must be prepared to float and to move out of dangerous areas.

24. Extend and lock trim vane by lifting handle and pushing trim vane forward until handle catches in the striker on the hull.



NOTE

Freeboard is determined by measuring the distance from hull top plate (lowest portion) to the water level. Freeboard will change when carrier is traveling in the water.

25. Measure and mark front and rear freeboard every 2 inches on each corner of carrier with tape. For the M113A2, minimum front freeboard is 8 inches and minimum rear freeboard is 12 inches. Note that rear freeboard is higher than front freeboard. Note different rear freeboard measurements for the M577A2 and M1068 carriers, indicated in the following table.

FRONT FREEBOARD

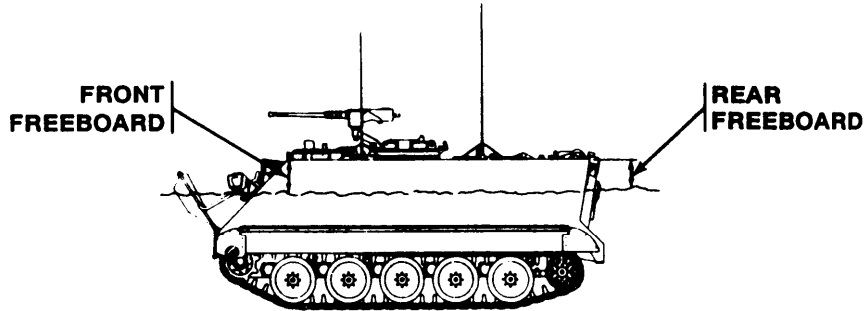
REAR FREEBOARD

M113A2/M1059/
M577A2/M1068

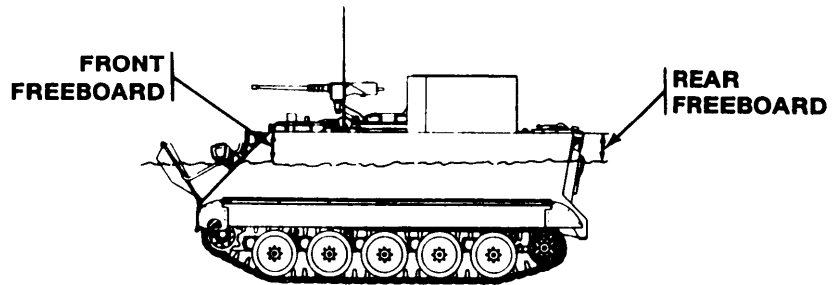
M113A2/M1059

M577A2/M1068

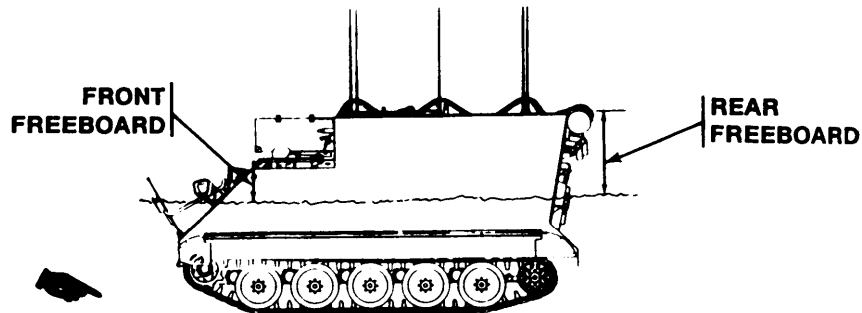
8-9 inches	+ 4 inches = 12-13 inches	+24 inches = 32-33 inches
9-10 inches	+ 5 inches = 14-15 inches	+25 inches = 34-35 inches
10-11 inches	+ 7 inches = 17-18 inches	+27 inches = 37-38 inches
11-12 inches	+ 8 inches = 19-20 inches	+28 inches = 39-40 inches
12-13 inches	+ 9 inches = 21-22 inches	+29 inches = 41-42 inches
13-14 inches	+10 inches = 23-24 inches	+30 inches = 43-44 inches



M113A2



M1059



M577A2/M1068

GO TO NEXT PAGE

WARNING



Personnel can drown when safety belts are fastened. Release safety belts prior to water

operations.

- 26. Ensure that seat belts remain unfastened.
- 27. Perform final safety check using WATER OPERATIONS SAFETY CHECKLIST before swimming earner.

WATER OPERATIONS SAFETY CHECKLIST

Track shrouds and covers. Installed; no damage.

Power plant door. Closed; seals tight.

Hull access plates, drain covers, and final drive plugs. Installed.

Trim vane. Extended forward and locked.

Engine grill water barrier. swimming position, and secured.

Bilge pumps. ON and operational.

Front and rear bilge pump. Indicator lights ON.

Ramp. Closed; and ramp lock lever handle locked.

Ramp personnel door. Closed and handle locked.

Hatches. Opened and locking pins installed.

Interior dome lights. On (except in blackout conditions).

Cargo and personnel. Distributed per load plan (App F) .

Cargo and equipment. Secured.

Freeboard lines. Marked and legible.

WARNING



An inflated lift vest could prevent emergency exit from carrier. Personnel can drown. When inflatable

life vests are used, inflate vest after exiting earner.

NOTE

Type I (NSN 4220-00542-2110) or (NSN 4220-00-555-9006) life vest will be worn by all personnel participating in water operations. To obtain life vest, see Transportation Officer.

- 28. Obtain life vests for all personnel.

WARNING

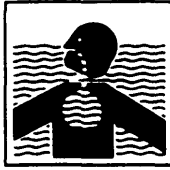


If carrier sinks, personnel can drown when safety belts are fastened. Release safety belts prior

to water operations.

- 29. Keep safety belts unfastened during water operations.

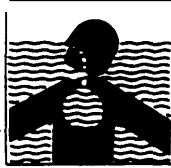
WARNING



If carrier sinks, personnel could drown when web gear and packs are worn. Remove all web gear and packs before water operations.

30. When water rises above floor plates, instruct personnel to climb to top of carrier.
31. Specify an emergency order of exit for each person in the carrier. Practice emergency exit procedures before water operations.

WARNING



Exceeding terrain and water obstacle limits greatly increases chance of sinking. Entering/operating carrier in water containing a large amount of debris or ice, water moving faster than 2 mph or with waves above 6 inches is high risk. Do not enter/operate carrier in water containing large amounts of debris, water current greater than 2 mph, or with waves over 6 inches high. Do not exceed limits. The carrier could sink and personnel can drown.

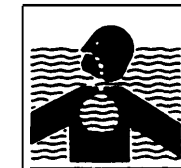
carrier in water containing a large amount of debris or ice, water moving faster than 2 mph or with waves above 6 inches is high risk. Do not enter/operate carrier in water containing large amounts of debris, water current greater than 2 mph, or with waves over 6 inches high. Do not exceed limits. The carrier could sink and personnel can drown.

32. See Steps 3 thru 7 (pages 2-290 thru 2-293) for terrain and water obstacle limits for water operation.

WARNING



Do not jump the carrier into the water. This could cause the carrier to sink and loss of life. Do not stay in the water if your bilge pumps are pumping a steady stream for more than 30 seconds.



Personnel should not move during water operations. Personnel movement may upset the balance of the carrier causing death or injury.

33. For good operating tips before water operation, see FM 7-7.

END OF TASK

FORD WATER UP TO 40 INCHES DEEP

INITIAL SETUP

Tools:

- Socket Wrench Adapter
(Item 1, App B)
- Socket Wrench Handle
(Item 21, App B)

Personnel Required:

- Driver

References:

TM 11-7010-256-12&P

Equipment Conditions:

- Engine stopped (page 2-184)
- Carrier tracks blocked (page 2-221)
- Power control enclosure turned off
(M1068 **Only**)
(TM 11-7010-256-12&P)

WARNING



When water depth is unknown or deeper than 40 inches, do not attempt to ford stream. Carrier

may sink and personnel could drown. See task: PREPARATION BEFORE WATER OPERATION, page 2-275.

NOTE

The following fording procedures apply to the M113A2, M1068, M577A2, M106A2, M1064, and M1059 carriers.

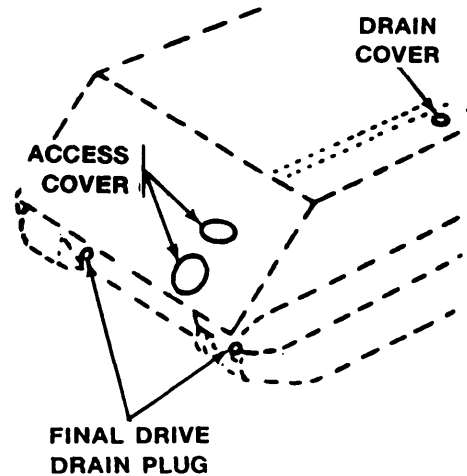
WARNING



Personnel could be killed or injured if carrier moves with someone under it.

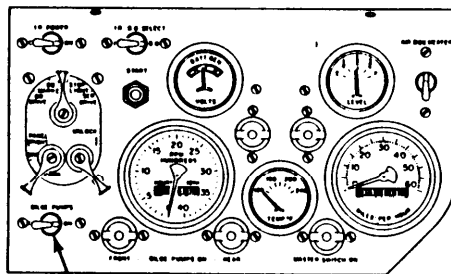
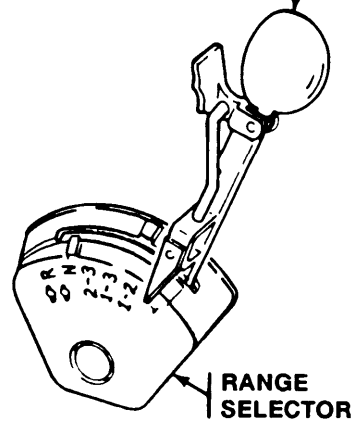
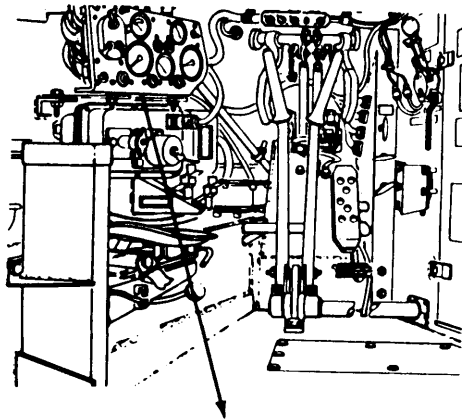
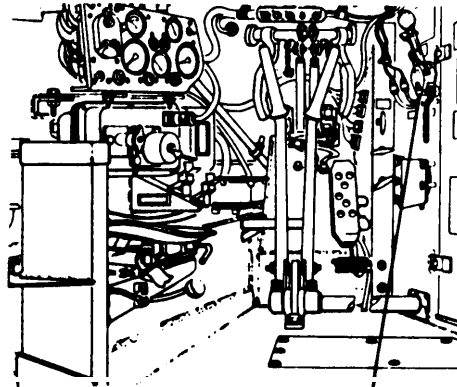
Make sure engine is stopped, parking brake set, and carrier tracks blocked before crawling under carrier.

1. Check that access covers, drain covers, and final drive drain plugs are in place, straight, and tight. Use socket wrench handle and adapter to check or install final drive drain plugs.



2. Check bilge pumps operation (page 3-37).
3. Choose spot to enter and exit water. Look for firm ground without rocks, stumps, or other obstacles. Avoid steep slopes and soft ground.
4. Unblock carrier tracks (page 2-221).
5. Start engine (page 2-161).
6. Place BILGE PUMPS switch ON.

7. Shift range selector to 1 range (page 2-8).



**BILGE
PUMPS
SWITCH**

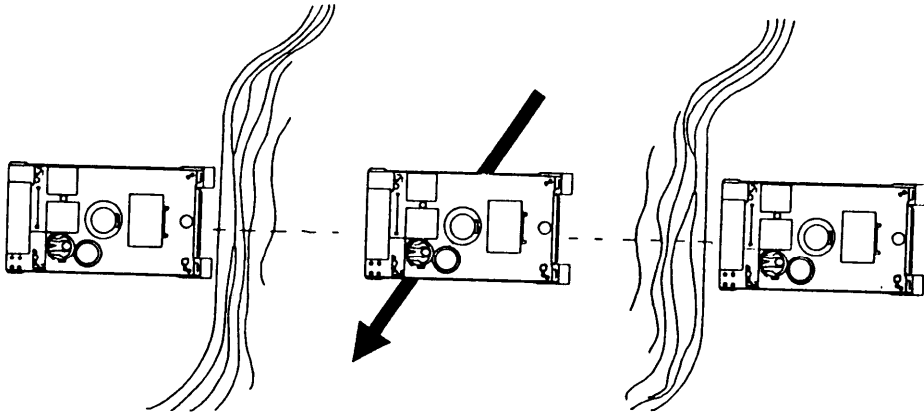
GO TO NEXT PAGE

8. Enter water at crawl speed.

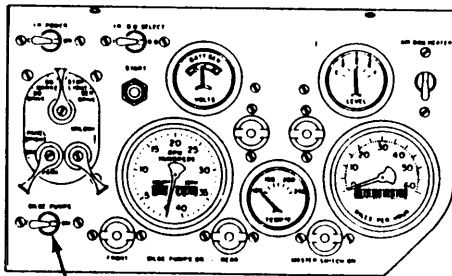
9. Proceed slowly. Watch out for obstacles under water.

NOTE

Carrier crawl speed is equal to a slow walk. When entering water at crawl speed, stop earner, as required, to make sure all conditions are safe.



10. Exit water. After bilges empty, place BILGE PUMPS switch to OFF.



**BILGE
PUMPS
SWITCH**

END OF TASK

CARRIER DIP CHECK

INITIAL SETUP

Personnel Required:

Driver
Crew

Equipment Conditions:

Power control enclosure turned off
(M1068 Only)
(TM 11-7010-256-12&P)

References:

TM11-7010-256-12&P

WARNING



Carrier can sink and personnel can drown if dip (trial water operation) exercise is not conducted prior to actual water operation in streams or rivers with personnel aboard.



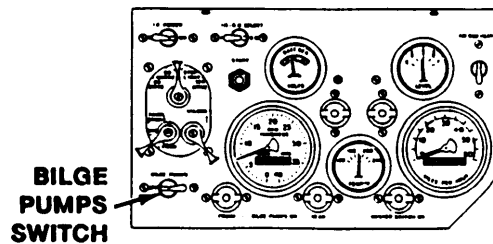
Carrier can sink during water operations when trim vane is not extended and locked in place. Personnel can be killed. Extend and lock trim vane in water operations position before entering water.

NOTE

A plywood trim vane with bolt-on buoyancy pods is required on M113A2 and M1059 carriers before attempting water operations. A plywood trim vane is required on the M577A2 and M1068 before attempting water operations. If not installed, notify unit maintenance.

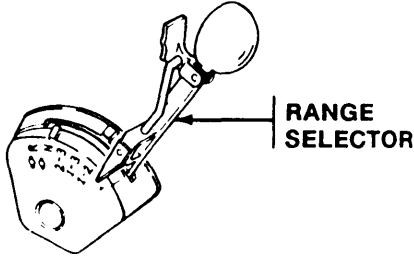
Conduct dip exercise in calm waters with the actual water operation payload.

1. Perform PREPARATION BEFORE WATER OPERATION, steps 1 thru 33 (page 2-275) before entering water.
2. Practice emergency exit procedures with personnel riding in carrier before entering the water.
3. Attach one or more marker buoys to earner.
4. Attach a recovery carrier winch cable to carrier towing eyes. Play out winch as carrier enters the water.
5. Turn both BILGE PUMPS ON.



GO TO NEXT PAGE

6. Place range selector lever in range 1 and enter water at crawl speed (slow walk). Once earner is floating, shift range selector lever to range 1-2 (page 2-8).



7. During dip exercise, check earner for leaks. When bilge pumps provide a steady stream of water for more than 30 seconds, move carrier to nearest exit. Notify unit maintenance.

WARNING



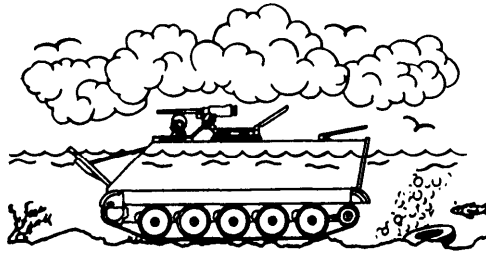
Carrier can sink and personnel can drown when maximum load (weight of personnel cargo) is

exceeded and/or not properly distributed. Do not attempt water operations with water above the water level strip on trim vane.

8. Determine carrier freeboard, and check amount of freeboard available at each corner of carrier.
9. Adjust personnel/cargo as required to obtain the following minimum freeboard.
 - a. Front freeboard is 8 inches (no more than 2-inch difference between right and left sides).
 - b. Rear freeboard shall be higher than front freeboard per the following table.

FRONT FREEBOARD		REAR FREEBOARD	
M113A2/M1059/ M577A2/M1068	M113A2/M1059	M577A2/M1068	
8-9 inches	+ 4 inches =	12-13 inches	+24 inches = 32-33 inches
9-10 inches	+ 5 inches =	14-15 inches	+25 inches = 34-35 inches
10-11 inches	+ 7 inches =	17-18 inches	+27 inches = 37-38 inches
11-12 inches	+ 8 inches =	19-20 inches	+28 inches = 39-40 inches
12-13 inches	+ 9 inches =	21-22 inches	+29 inches = 41-42 inches
13-14 inches	+10 inches =	23-24 inches	+30 inches = 43-44 inches

10. Operate carrier for a minimum of 20 minutes before exiting from the water.
11. Play in winch cable from recovery vehicle as carrier exits water.
12. After carrier is on level ground, detach winch cable leading from recovery vehicle.



END OF TASK

WATER OPERATIONS: ENTERING WATER

INITIAL SETUP

Personnel Required:

Driver
Crew

Equipment Conditions:

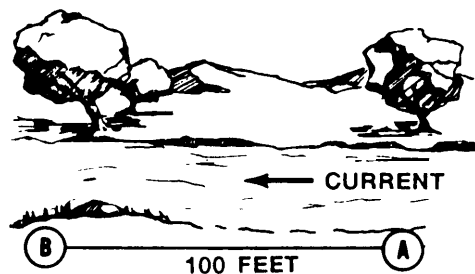
Engine stopped (page 2-184)

NOTE

Use earner loaded as determined from dip check (page 2-287).

1. Perform PREPARATION BEFORE WATER OPERATION, steps 1 thru 33 (page 2-275) and CARRIER DIP CHECK, steps 1 thru 12 (page 2-287).
2. Measure speed of the water current prior to entering water as follows:
 - a. Position two personnel (or objects) at least 100 feet apart near the stream bank. (Position at entry point is A and position 100 feet downstream is point B.)
 - b. Toss in any object which will float to point B.
 - c. Measure the time it takes the floating object to go from point A to point B. When object takes less than 35 seconds, stream is too fast — DO NOT ENTER WATER.

- d. Test the stream near the bank, along the edges of the stream, and in the middle of the stream.



NOTE

The maximum speed of the water in which the carrier can safely cross depends on such factors as water choppiness, amount of ice or other debris, overhanging tree limbs, underwater obstacles and the maximum acceptable downstream drift distance.

3. Water must be free of ice and debris. Use the terrain and water obstacle limits below before entering the water.

Current 2.0 mph (Maximum)
Waves 6 inches (Maximum)

WARNING

Carrier can sink and personnel could be injured or killed if carrier enters or exits on a slope greater than 30% grade. Do not exceed a 30% entry/exit slope.

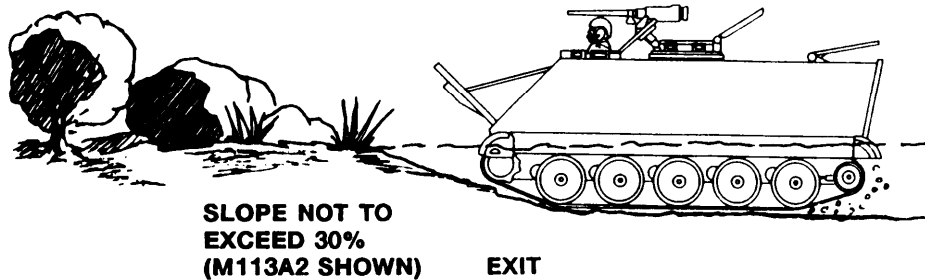
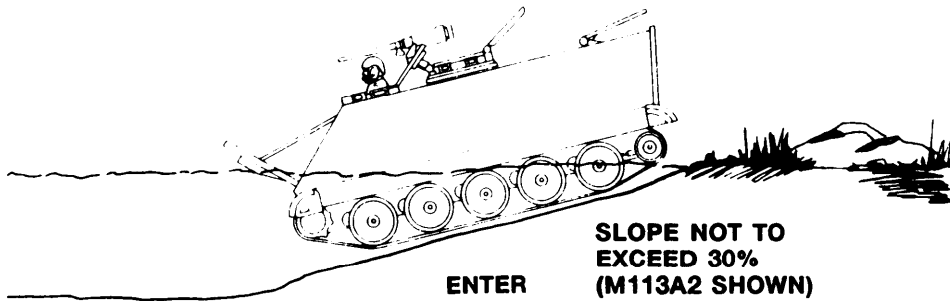
4. Enter water on an slope no greater than a 30% grade. Enter water at crawl speed. Slope should be firm with no drop-off for at least one earner length under or above water.

5. Exit slope must be clear, gradual and firm. Do not exceed a 30% exit slope.
6. Measure slope percentage using plumb line as follows:

NOTE

Before slope percentage is measured using plumb line, be sure that carrier is completely on the slope and squared to water line.

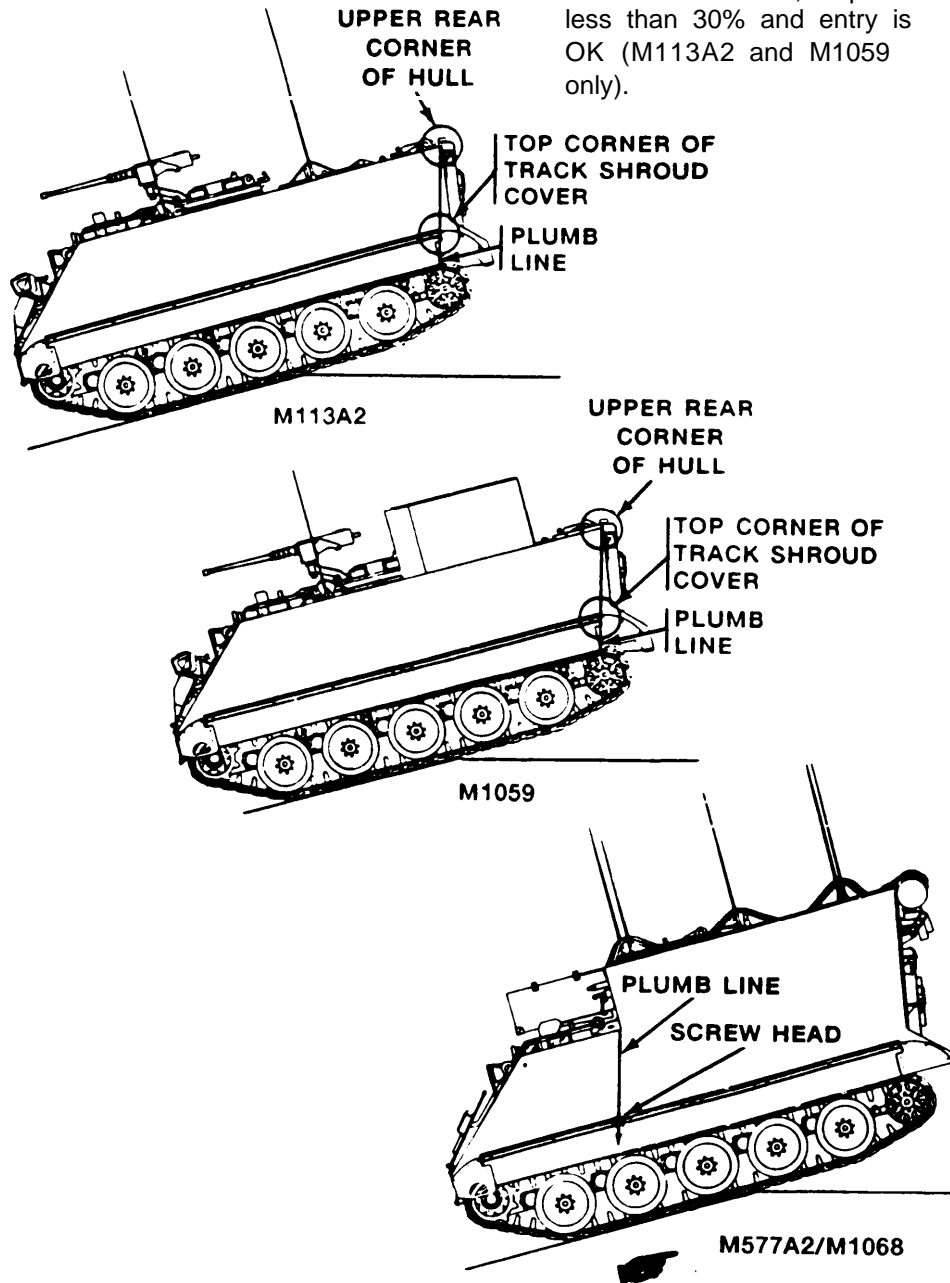
- a. Drive earner onto slope to be measured.
- b. Set brakes and block earner.



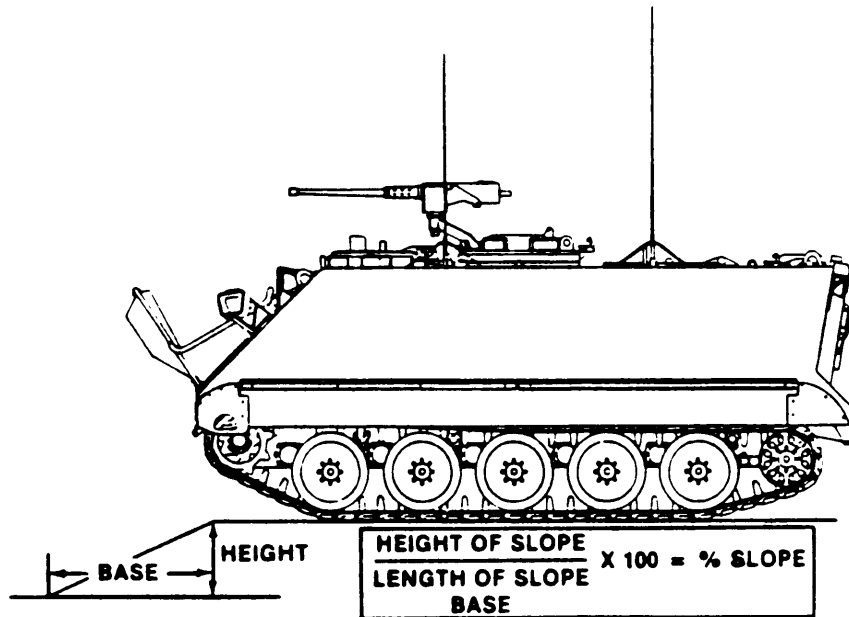
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c. Tie a plumb bob or any heavy object to end of a long string. Hold other end of string at left upper rear corner of carrier (M113A2 and M1059 only).

d. If plumb line aligns with top corner of track shroud cover, slope is about 30%. This is maximum slope. Entry is OK at crawl speed. If plumb line falls to rear of top corner of track shroud cover, slope is less than 30% and entry is OK (M113A2 and M1059 only).



- e. Tie a plumb bob or any heavy object to end of a long string. Hold other end of string at intersection of side plate and extension plate behind driver's hatch (M577A2 and M1068 only).
 - f. If plumb line aligns with third track shroud cover screw, slope is about 30%. This is maximum slope. Entry is OK at crawl speed. If plumb line falls to rear of screw, slope is less than 30% and entry is OK (M577A2 and M1068 only).
7. Determine slope percentage by measurement as follows:
 - a. Height of slope. Measure vertically from top of slope to base of slope.
 - b. Length of slope's base. Measure horizontally from base of slope to point where slope starts.
 - c. Divide base into height then multiply answer by 100 to obtain slope percentage.



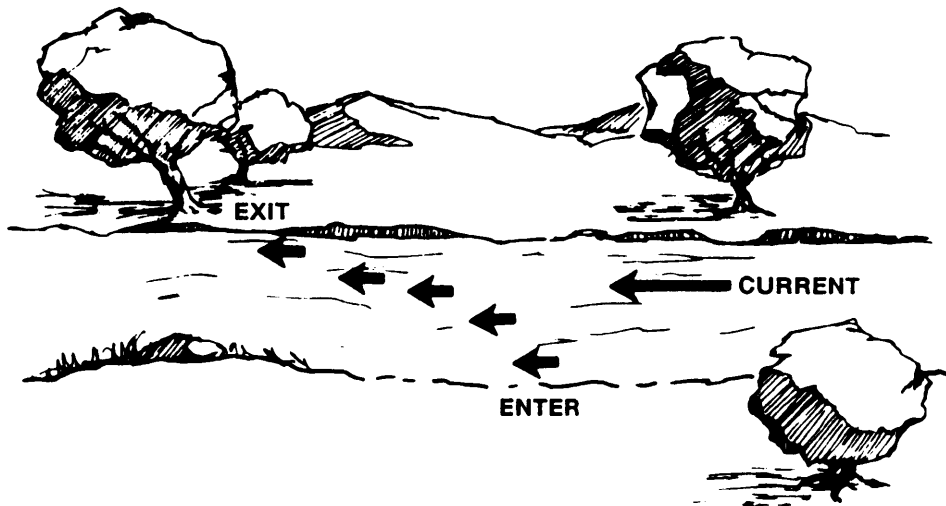
M113A2

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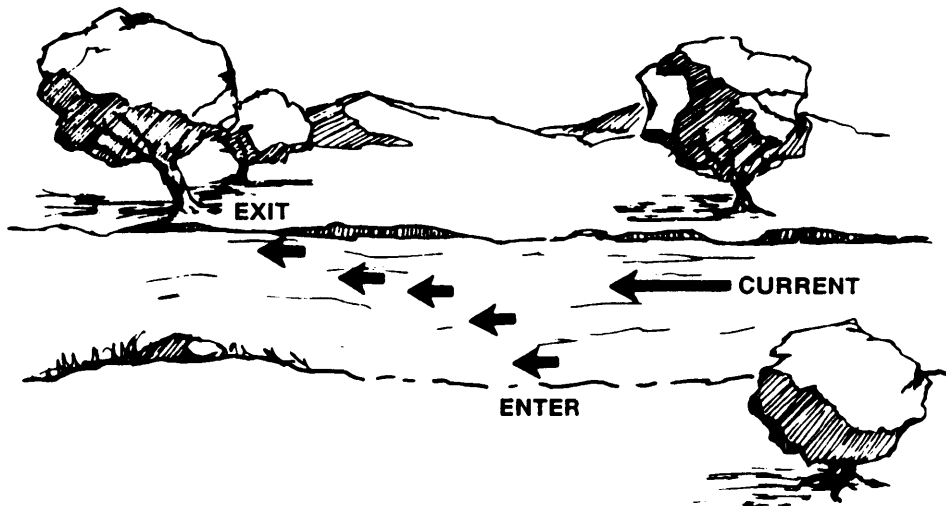
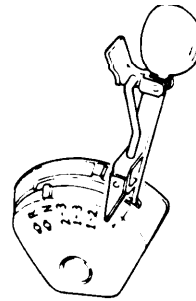
Change 3

2-293

8. Driver must combine the carrier capabilities with the current flow and distance to cross rivers and streams and keep in mind the following:
 - a. Select water entry and exit points.
 - b. Current flow can carry carrier downstream.
 - c. The fastest way across is to attempt to steer straight across; however, allow current to carry you downstream to an acceptable exit point.
 - d. The carrier has limited capability to traverse upstream.
 - e. Avoid steering excessively upstream (above 2 mph) as carrier may tailspin.
 - f. Do not attempt to cross a stream with a current greater than 2 mph.
9. Shift range selector lever to 1 range.



8. Driver must combine the carrier capabilities with the current flow and distance to cross rivers and streams and keep in mind the following:
 - a. Select water entry and exit points.
 - b. Current flow can carry carrier downstream.
 - c. The fastest way across is to attempt to steer straight across; however, allow current to carry you downstream to an acceptable exit point.
 - d. The carrier has limited capability to traverse upstream.
 - e. Avoid steering excessively upstream (above 2 mph) as carrier may tailspin.
 - f. Do not attempt to cross a stream with a current greater than 2 mph.
9. Shift range selector lever to 1 range.



CHAPTER 3 MAINTENANCE OF CARRIER

Section I. TOOLS AND EQUIPMENT

BASIC ISSUE ITEMS

Tools and equipment that you need to use when you drive or maintain your carrier are listed in Appendix B. These items are issued with the earner, and they must be turned in with the earner. Keep them on your carrier all the time. You can't take proper care of the carrier without the basic issue items, so keep them all clean and in good shape. Don't use the tools for jobs they are not designed to do. You won't get the job done right, and you could break the tools.

EXPENDABLE/CONSUMABLE MAINTENANCE SUPPLIES

Supplies that you need to take care of your earner are listed in Appendix D. These supplies are items that you normally will use up or wear out when you use them. Maintenance supplies work for you. Try to get the most out of them.

Section II. LUBRICATION

SERVICE INTERVALS — NORMAL CONDITIONS

For safer, more trouble-free operation, see to it that your carrier is service when it needs it. For the proper lubricant and service intervals, see LO 9-2350-261-12.

SERVICE INTERVALS — UNUSUAL CONDITIONS

Your carrier will often need extra service and care when you operate under unusual conditions. High or low temperatures, long periods of hard use, continued use in sand, water, mud, or snow, will breakdown the lubricant. Then you have to add or change lubricant more often. But during periods when the earner isn't used, the service intervals can be stretched out.

Section III. TROUBLESHOOTING

GENERAL

The troubleshooting table lists common malfunctions found while operating or servicing the M113A2 FOV and its components. The troubleshooting table is divided into sections. Each section covers malfunctions common to the different systems of the carrier (e.g., engine, track and suspension, etc.).

The troubleshooting table has three divisions: malfunction, test or inspection, and corrective action. The malfunctions are numbered in sequence through the troubleshooting table. The malfunction is what will bring you to the troubleshooting table.

Test or inspection is a step you take to isolate the malfunction. Each test or inspection has a corrective action. You should perform the test or inspection and corrective action in the order listed.

Troubleshooting tables for the M577A2, M106A2, M1064, and M125A2 are listed in the symptom index as Command Post (M577A2, M1068) or Mortar Carrier (M106A2, M1064, and M125A2).

The manual cannot list all possible malfunctions, nor all tests or inspections and corrective actions. It is essential that you record all faults on form DA 2404 and report it to unit maintenance. If a malfunction is not listed, or is not corrected by the listed corrective action, notify unit maintenance.

The troubleshooting symptom index is below. Note that the malfunctions are listed in alphabetical order.

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 below +40°F (+4°C) and air box heater is used..... 3-6
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Battery drawer does not stay closed..... 3-18.2
 Battery drawer does not open or close freely3-18.2
 Mortar hatch covers do not stay locked in closed position.3-18.2
 Mortar hatch covers do not stay locked in open position 3-18.2

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 No power flows through the transfer gearcase when
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TROUBLESHOOTING TABLE

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

ENGINE

1. ENGINE DOES NOT CRANK WHEN YOU PRESS START SWITCH.

Step 1, Check to see if MASTER SWITCH is OFF.

Turn MASTER SWITCH ON (page 2-163).

Step 2, Check to see if range selector controller is in N position.

Place range selector in N position (page 2-162).

Step 3, Check to see if batteries are in good condition.

Troubleshoot electrical system (page 3-12).

2. ENGINE CRANKS BUT DOES NOT START.

Step 1, Check to see if fuel cutoff control is pulled out.

Push fuel cutoff control in (page 2-164).

Step 2, Check to see if there is enough fuel in fuel tank.

Refuel carrier; M113A2, M106A2, M1064, M125A2, M1059 (page 2-186), and M577A2, M1068 (page 4-35).

Step 3, Check to see if fuel tank manual shutoff valve is closed.

Open fuel tank manual shutoff valve; M113A2, M106A2, M1064 (2-26.1), M125A2, M1059 (2-26), and M577A2, M1068 (page 4-35).

Step 4 If temperature is colder than +40°F (+4°C), check to see if AIR BOX HEATER switch is ON.

Use air box heater (page 2-168).

Step 5 Check to see if there is water in the fuel.

Drain primary and secondary fuel filters (page 3-48).

Step 6 Check to see if engine is getting enough air.

Check air cleaner restriction indicator (page 2-81). If indicator shows only red in the window, notify unit maintenance.

Clear intake grill of any debris.

If engine still does not start, notify unit maintenance.

TROUBLESHOOTING TABLE (cont)

**MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION**

ENGINE (cont)

3. ENGINE CRANKS BUT DOES NOT START WHEN THE TEMPERATURE IS BELOW +40°F (+4°C) AND THE AIR BOX HEATER IS USED.

Step 1. Have unit maintenance check to see if air box heater system is operating properly.

Step 2. Have unit maintenance check to see if air box heater fuel and air lines and electrical connections are tight.

Tighten any loose connections.

4. ENGINE CRANKS TOO SLOW TO START.

step 1. Check to see if battery cable connections are clean and tight, and battery water is up to correct level (page 3-12).

Use outside power source (page 2-174) or tow start (page 2-253) the carrier. If the cause of slow cranking is not obvious, have unit maintenance troubleshoot the electrical system.

step 2. If temperature is colder than -25°F (32°C) check to see if engine disconnect lever is engaged (page 2-167).

CAUTION

Never try to move the engine disconnect lever when the engine is running. Do not leave engine disconnected more than 10 minutes. Damage to the transfer gearcase can result.

Disengage the engine disconnect lever (page 2-167).

If engine still cranks too slowly, record fault on form DA 2404 and notify unit maintenance.

5. ENGINE LABORS, RUNS ROUGH, STALLS, OR DOES NOT PUT OUT FULL POWER.

Step 1. Check to see if engine is getting enough air.

Check air cleaner restriction indicator (page 2-81). If indicator shows only red in the window, notify unit maintenance.

Step 2. Check to see if there is water in the fuel.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ENGINE (cont)

Drain primary and secondary fuel filters (page 3-48).

Step 3. High elevation operation.

The carrier will normally lose power at high elevations (mountain passes or high plateaus). If carrier runs rough or has a power loss, push air control valve in (page 2-177) to draw cooler air from rear compartment and increase horsepower.

If carrier runs rough or without much power, notify unit maintenance.

6. ENGINE OVERHEATS.**CAUTION**

Driving carrier with an overheated engine can damage engine. When ENGINE COOLANT TEMPERATURE GAGE indicates above 230°F (110°C), stop carrier and run engine at 1000 to 1200 rpm until coolant temperature drops below 230°F (110°C).

step 1. Check to see if all power plant access panels are in place and mounting clamps are tight. Install panels (pages 2-219 and 2-220).

step 2. Hard running in hot weather.

Follow the precautions for driving in extreme heat (page 2-241). When engine overheats, stop carrier and run engine at 1000 to 1200 rpm until coolant temperature drops below 230°F (110°C).

step 3. Check to see if coolant level is low. Add coolant as needed (page 3-43). Check for coolant leaks. If you find any leaks, notify unit maintenance.

step 4. Check to see if radiator cap is sealed right.

Make sure the cap is on straight and tight (page 3-43). If cap is damaged or seal is broken, notify unit maintenance.

Step 5. Check to see if there is enough air moving through intake grill and radiator.

TROUBLESHOOTING TABLE (cont)

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

ENGINE (cont)

Remove any debris from intake grill, exhaust grill, and radiator fins.

step 6. Check to see if coolant fan is operating properly.

Look for loose or broken fan belts (page 2-118). If any belt is broken, worn, or loose, notify unit maintenance.

step 7. Check to see if engine oil level is low.

Add oil as needed (LO 9-2350-261-12).

step 8. Check coolant fan drive system.

Stop engine (page 2-184).

Remove top rear power plant access panel (page 2-219).

Pull on coolant fan drive belt to see if coolant fan will turn (page 2-118).

If coolant fan does not turn, coolant fan drive system is broken.

Do not operate carrier.

Notify unit maintenance.

7. ENGINE OIL LOW PRESS WARNING LIGHT COMES ON.

CAUTION

Operating carrier with ENGINE OIL LOW PRESS warning light on can damage engine. If ENGINE OIL LOW PRESS warning light does not go off within 10 seconds after engine starts, stop engine.

step 1. Check to see if engine oil level is low.

Add oil as needed (LO 9-2350-261-12).

step 2. Check to see if engine is overheating.

See ENGINE OVERHEATS (page 3-7).

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

TRANSMISSION

8. TRANSMISSION DOES NOT DRIVE IN ANY RANGE.

- Step 1. Transmission to final drive shafts have been disconnected.
Notify unit maintenance.
- Step 2. Check for low transmission oil level.
Add oil as needed (LO 9-2350-261-12).
- Step 3. Check for broken track.
Repair track (page 3-24).
- Step 4. Defective range selector.
Notify unit maintenance.
- Step 5. Check to see if engine disconnect lever is engaged.

CAUTION

Never try to move engine disconnect lever when engine is running. Do not leave engine disconnected more than 10 minutes. Damage to transfer gearcase can result.

Engage the engine disconnect lever (page 2-167).

9. TRANS OIL HI TEMP WARNING LIGHT COMES ON.

CAUTION

Operating carrier with TRANS OIL HI TEMP warning light on can damage transmission. Do not operate carrier with TRANS OIL HI TEMP warning light on.

- Step 1. Bad driving habits.
Do not drive with range selector in range 1 any longer than you have to.
- Step 2. Check to see if transmission oil level is low.
Add oil as needed (LO 9-2350-261-12).
- Step 3. Check to see if coolant level is low.

TROUBLESHOOTING TABLE (cont)

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

TRANSMISSION (cont)

Add coolant as needed (page 3-43). Check for coolant leaks. leaks are found, notify unit maintenance.

DIFFERENTIAL

10. DIFFERENTIAL HIGH OIL TEMPERATURE WARNING LIGHT COMES ON.

CAUTION

Do not operate the earner if the warning light comes on.

Step 1. Check to see if differential oil level is low.

Add oil as needed (LO 9-2350-261-12).

Step 2. Check to see if coolant level is low.

Add coolant as needed (page 3-43). Check for coolant leaks. If leaks are found, record fault on form DA 2404 and report it to unit maintenance.

TRANSFER GEARCASE

11. TRANSFER GEARCASE RUNS HOT OR NOISY.

Step 1. Check to see if transfer gearcase oil level is low.

Add oil to the transfer gearcase as needed (LO 9-2350-261-12).

12. NO POWER FLOWS THROUGH THE TRANSFER GEARCASE WHEN THE ENGINE IS RUNNING.

Step 1. Check to see if engine disconnect lever is engaged.

CAUTION

Never try to move engine disconnect lever when engine is running. Do not leave engine disconnected more than 10 minutes. Damage to transfer gearcase can result.

Engage the engine disconnect lever (page 2-167).

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

FINAL DRIVE

13. FINAL DRIVE RUNS HOT.

Step 1. Check to see if final drive oil level is low.

Add oil as needed (LO 9-2350-261-12).

TRACKS AND SUSPENSION

14. CARRIER PULLS TO ONE SIDE.

Step 1. Crown & road or sloping ground.

The earner will normally pull to one side of any slope.

Step 2. Check to see if track tension is equal on both sides.

Adjust track tension (page 3-21).

Step 3. Check to see if mud, dirt, or snow has built up on one track.

15. CARRIER THROWS TRACK.

Step 1. Check to see if track is loose or worn.

Adjust track tension (page 3-21).

Step 2. Bad driving habits.

Do not use pivot steer when earner is moving. Avoid sharp turns at high speed or in soft ground.

Step 3. Check to see if dirt, mud, or other material has built up in the track.

Keep the track clear. If you have to run through mud or snow, have unit maintenance remove track shrouds. On soft ground or in heavy brush, turn in a series of short turns so the track can clear itself.

16. TOO MUCH NOISE IN THE TRACK OR SUSPENSION.

Step 1. Check to see if wrong tension is on track.

Adjust track tension (page 3-21).

Step 2. Check to see if track shoes are badly worn.

If shoes are worn, notify unit maintenance.

TROUBLESHOOTING TABLE (cont)

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

TRACKS AND SUSPENSION (cont)

Step 3. Check to see if track pads are loose, worn, or missing.
Tighten loose pads. If any pads are worn or missing, notify unit maintenance.

Step 4. Cushions are worn (page 3-33).
If sprockets or cushions are worn, notify unit maintenance.

17. CARRIER RIDES TOO HARD

Step 1. Check to see if carrier has one or more faulty shock absorbers.
Check shock absorbers for leaks. If shock absorbers leak, notify unit maintenance.
Feel the shocks after running, Good shocks will be noticeably warmer than the hull. A cool shock is a faulty one. Notify unit maintenance.

Step 2. Check to see if carrier has any broken torsion bars (page 2-53).
If earner has broken torsion bar, notify unit maintenance.

ELECTRICAL SYSTEM

18. BATTERIES DISCHARGED.

Step 1. Check to see if battery water level is low (page 3-35).
If water level is low, notify unit maintenance.

Step 2. Too much use of electrical equipment when the engine is not running.

Step 3. Check to see if battery cable connectors are loose, disconnected, or corroded.
Notify unit maintenance to install disconnected connectors or tighten loose connectors. If connectors are corroded, notify unit maintenance.

Step 4. Check generator drive belt.
If belt is loose, broken, or missing, notify unit maintenance.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

ELECTRICAL SYSTEM (cont)

19. NO BATTERY CURRENT.

Step 1. Check to see if battery cable connectors are loose, disconnected, or corroded.

Notify unit maintenance to install disconnected connectors or tighten loose connectors. If connectors are corroded, notify unit maintenance.

20. FUEL LEVEL GAGE FAILS TO REGISTER.

Step 1. Check to see if there is fuel in the fuel tank.

Refuel earner; M132A2, M106A2, M1064, M125A2, M1059 (page 2-186) and M577A2, M1068 (page 4-35).

step 2. Check to see if MASTER SWITCH is in OFF position.

Turn MASTER SWITCH ON (page 2-163).

Step 3. Check for disconnected or faulty fuel quantity gage lead.

Connect disconnected lead. If lead is faulty, notify unit maintenance.

21. WITH MASTER SWITCH ON, MASTER SWITCH ON INDICATOR LIGHT DOES NOT COME ON.

Step 1. Lamp may be burned out or there are loose connections in the lamp leads.

If battery gage shows normal reading (page 2-80) and other electrical equipment and lights are operating properly, lamp is faulty. You can drive carrier, but be sure to turn MASTER SWITCH OFF when you shut down carrier. Notify unit maintenance of faulty lamp.

Step 2. Check battery indicator gage to see if batteries are dead. Check for faulty or loose battery connectors.

Notify unit maintenance to tighten loose battery cable connectors. If you have to operate carrier with dead batteries, tow start (page 2-253) or use outside power source (page 2-174) to start the engine. Notify unit maintenance.

TROUBLESHOOTING TABLE (cont)

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

BILGE PUMPS

22. BILGE PUMPS DO NOT OPERATE WITH THE BILGE PUMPS SWITCH ON.

Step 1. Check to see if MASTER SWITCH is OFF.

Turn MASTER SWITCH ON (page 2-163).

Step 2. Check to see if bilge pump screens or I outlets are clogged.

Clean bilge pump screens or outlets (page 3-39).

Step 3. Check to see if bilge pump vents are blocked.

Clean bilge pump vents (page 3-39). If you cannot get to the bilge pump to clean it because of a load in the personnel compartment, cycle the BILGE PUMPS switch ON and OFF a few times (page 3-41). That will usually start the pump.

PERSONNEL HEATER

23. HEATER DOES NOT START WITH THE RUN-OFF-START SWITCH HELD IN START POSITION. HEATER MOTOR RUNS.

Step 1. Check to see if fuel tank manual shutoff valve is closed.

Open fuel tank manual shutoff valve; M113A2, M106A2, M1064 (page 2-26.1), M125A2, M1059 (page 2-26), and M577A2, M1068 (page 4-35).

24. HEATER DOES NOT START WITH THE RUN-OFF-START SWITCH HELD IN START POSITION. HEATER MOTOR DOES NOT RUN.

step 1. Push PRESS-TO-TEST switch on personnel heater control box to test for electrical power. If light does not light, check for loose electrical connections at control box and heater.

Tighten loose connections.

Step 2. Check to see if battery connections are tight.

Notify unit maintenance to tighten loose battery connections.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

PERSONNEL HEATER

25. HEATER OVERHEATS AND STOPS.

Step 1. Check to see if heater air intake elbow, exhaust elbow, or warm air outlet is blocked.

Remove whatever is blocking the heater system (page 2-194).

26. HEATER OVERHEATS AND DOES NOT STOP.

Step 1. Check to see if personnel heater fuel supply valve is OFF.

Turn personnel heater fuel supply valve OFF (page 2-195).

Allow heater to run for 2 to 3 minutes to burn off fuel in heater. Heated air should change to cool air if fuel burns off.

Step 2. Disconnect electrical connector from heater.

Notify unit maintenance.

27. HEATER DOES NOT PUT OUT ENOUGH HEAT.

Step 1. Check to see if HI-LO switch is in LO position.

Move HI-LO switch to HI position (page 2-196).

28. ELECTRONIC EQUIPMENT HEATER KIT (M577A2 ONLY).

Step 1. Use steps 23 thru 27 for troubleshooting electronic equipment heater kit. Heater is same as personnel heater.

ENGINE COOLANT HEATER

29. HEATER DOES NOT START WITH RUN-OFF-START SWITCH HELD IN START POSITION. HEATER MOTOR RUNS.

Step 1. Check to see if fuel tank manual shutoff valve is closed.

Open fuel tank manual shutoff valve; M113A2, M106A2, M1064 (page 2-26.1), M125A2, M1059 (page 2-26), and M577A2, M1068 (page 4-35).

TROUBLESHOOTING TABLE (cont)

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

ENGINE COOLANT HEATER (cont)

30. HEATER DOES NOT START WITH RUN-OFF-START SWITCH HELD IN START POSITION. HEATER MOTOR DOES NOT RUN.

Step 1. Push PRESS-TO-TEST switch on engine coolant heater control box to test for electrical power. If light does not light, check for loose electrical connections at control box and heater.

Tighten loose connections.

Step 2. Check to see if battery connections are tight.

Notify unit maintenance to tighten loose battery connections.

31. COOLANT HEATER OVERHEATS.

Step 1. Check to see if one or both coolant shutoff valves are closed.

Open coolant shutoff valves (page 2-235).

32. COOLANT HEATER OUTPUT IS TOO LOW.

Step 1. Check to see if the HI-LO switch is in LO position.

Move HI-LO switch to HI position (page 2-236).

33. BATTERIES OVERHEAT.

Step 1. Air temperature is too warm to need engine coolant heater.

Turn off engine coolant heater (page 2-235). You do not need to use heater if temperature is above -25°F (-32°C).

step 2. Engine is running at same time as engine coolant heater.

Turn off engine coolant heater (page 2-237) as soon as engine starts.

Step 3. Batteries are overcharged and boiling out liquid.

Record faults on form DA 2404 and notify unit maintenance.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

NBC KIT**34. INSUFFICIENT AIR FLOW AT ALL STATIONS.**

step 1. Check to see if spring clip is down over air intake openings on air purifier.

Raise spring clip from air intake openings on air purifier (NBC Kit) (page 2-268).

Step 2. Check to See if air hoses are kinked or pinched.

Straighten or replace air hoses (page 2-268).

step 3. Check to See if there are any loose air hose connections.

Tighten loose connections (page 2-268).

35. AIR FLOW TOO HIGH AT ALL STATIONS.

Step 1. Check to See if air purifier is out of adjustment.

If air purifier is out of adjustment, notify unit maintenance.

36. GAS PARTICULATE FILTER WILL NOT OPERATE WHEN SWITCH IS IN ON POSITION.

step 1. Check to see if AIR PURIFIER SWITCH is in OFF position.

Turn AIR PURIFIER SWITCH ON (page 2-269).

step 2. Check to see if ground wire is loose or missing.

Notify unit maintenance of loose or missing ground wire.

step 3. Check to see if electrical cable assemblies are loose or missing.

Notify unit maintenance of loose or missing cables.

TROUBLESHOOTING TABLE (cont)

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

COMMAND POST (M577A2, M1068)

37. BLOWER FAILS TO OPERATE.

Step 1. Check to see if MASTER SWITCH is in OFF position.

Turn MASTER SWITCH ON (page 2-163).

Step 2. Check for faulty or disconnected blower or electrical circuit leads.

Record disconnected lead on form DA 2404 and notify unit maintenance.

38. REAR ENTRANCE BUZZER DOES NOT SOUND.

Step 1. Check to see if MASTER SWITCH is in OFF position.

Turn the MASTER SWITCH ON (page 2-163).

Step 2. Check for faulty or disconnected switch, buzzer, or electrical circuit leads.

Connect any disconnected leads.

Record faulty items on form DA 2404 and notify unit maintenance.

39. DOME LIGHTS FAIL TO COME ON.

Step 1. Check to see if MASTER SWITCH is in OFF position.

Turn the MASTER SWITCH ON (page 2-163).

Step 2 Check for faulty lamps or disconnected electrical lead.

Connect disconnected lead.

Record faulty items on form DA 2404 and notify unit maintenance.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

COMMAND POST (M577A2, M1068) (cont)

40. BLACKOUT LIGHTS FAIL TO COME ON.

- step 1. Check to see if MASTER SWITCH is in OFF position.
Turn the MASTER SWITCH ON (page 2-163).
- step 2. Check for incorrect position of the blackout bypass switch and dome light switch.
Open the rear door and place the blackout bypass switch in the OFF position (page 4-4). Move the dome light switch; blackout lights should come on.
- Step 3. Check for faulty bulbs, or loose or faulty switch or electrical leads.
Connect disconnected lead.
Record faulty items on form DA 2404 and notify unit maintenance.

40.1 FLUORESCENT LIGHTS FAIL TO LIGHT.

- Step 1. Check power source.
Select proper power source (110V AC 50/60 HZ.)
- Step 2. Check to make sure all connectors are properly connected.
Connect electrical connectors.
- step 3. Check for bad fuse (glass enclosed wire will be broken/burnt).
Replace fuse if necessary as described in TM 10-5410-229 - 13&P.
- step 4. Check for burnt-out fluorescent lamp (lamp will be gray/black).
Replace lamp as described in TM 10-5410-229-13&P.
Record faulty items on form DA 2404 and notify unit maintenance.

TROUBLESHOOTING TABLE (cont)

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

COMMAND POST (M577A2, M1068) (cont)

41. TENT (COVERED EXTENSION) LIGHTS FAIL TO COME ON.

Step 1. Check to see if MASTER SWITCH is in OFF position.

Turn the MASTER SWITCH ON (page 2-163), (M577A2 only).

Step 2 Check for loose connection of light cord at receptacle on rear of earner, (M577A2 only).

Tighten connector.

Step 3. Check for faulty bulbs, or loose or faulty switches or electrical leads, (M577A2 only).

Connect disconnected leads.

Step 4. (For M1068 only) See TM 10-5410-229-13&P for troubleshooting tent light set.

Record faulty items on form DA 2404 and notify unit maintenance.

42. COMMANDER'S PLATFORM DOES NOT POSITION RIGHT.

Step 1. Check for bent handle, broken spring, or damaged pin (page 4-11).

If any item is damaged, record it on form DA 2404 and notify unit maintenance.

43. COMMANDERS PLATFORM CANNOT BE STOWED.

Step 1. Check for faulty latch or spring (page 4-11).

If platform is faulty, record it on form DA 2404 and notify unit maintenance.

44. See TM 10-5410-229-13&P FOR TROUBLESHOOTING MCPS.

MORTAR CARRIERS (M106A2, M1064, AND M125A2)

45. BATTERY DRAWER DOES NOT STAY CLOSED.

Step 1. Check to see if locking handle is out of adjustment (page 5-6).

Record fault on form DA 2404 and notify unit maintenance.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

MORTAR CARRIERS (M106A2, M1064, AND M125A2) (cont)

46. BATTERY DRAWER DOES NOT OPEN OR CLOSE FREELY.

Step 1. Check to see if drawer slides are faulty or out of adjustment (page 5-6).

Record fault on form DA 2404 and notify unit maintenance.

47. MORTAR HATCH COVERS DO NOT STAY LOCKED IN CLOSED POSITION.

Step 1. Check to see if interior latch is bent, broken, jammed, or out of adjustment (page 5-3).

If latch is faulty, record it on form DA 2404 and notify unit maintenance.

48. MORTAR HATCH COVERS DO NOT STAY LOCKED IN OPEN POSITION.

Step 1. Check to see if exterior latch is bent, broken, jammed, or out of adjustment (page 5-3).

If latch is faulty, record it on form DA 2404 and notify unit maintenance.

See TM 9-1015-200-10 for troubleshooting 81-mm mortar and turntable on M125A2. See TM 9-1015-215-10 for troubleshooting 4.2-inch, 107-mm mortar and turntable on M106A2. See TM 9-1015-250-10 for troubleshooting 120-mm mortar and turntable on M1064.

SMOKE GENERATOR (M1059)

49. See TM 3-1040-279-12&P for troubleshooting smoke generator system.

Section IV. MAINTENANCE PROCEDURES

TASK INDEX

<u>Task</u>	<u>Page</u>	<u>Task</u>	<u>Page</u>
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Remove/Install Track Shoe	3-29	Drain Fuel Filters	3-48
Track Shoe Wear Limits	3-33	Army Oil Analysis Program (AOAP) Check	3-49
Measuring Sprocket Wear	3-34	Clean/Inspect Smoke Grenade Launchers and Tubes	3-52
Check Carrier Batteries	3-35	Replace Webbing Strap (Typical)	3-54
Service Bilge Pumps	3-38		

ADJUST TRACK TENSION

INITIAL SETUP**Tools:**

Drive Bin Bunch (Item 29, App B)
 Grease Gun (Item 18, App B)
 Open End Wrench, 5/8 inch
 (Item 40, App B)
 Track and Sprocket Gage
 (Item 17, App B)

Personnel Required:

Driver
 Soldier

Equipment Conditions:

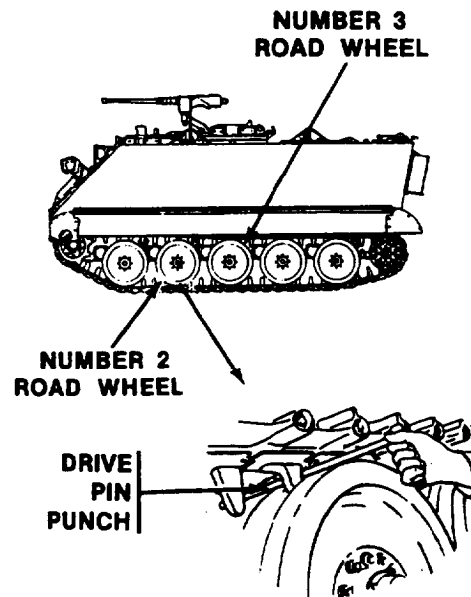
Engine stopped (page 2-184)

1. Start engine (page 2-161).
2. Drive carrier slowly to firm level ground (page 2-176).
3. Let carrier coast to a stop. Do not use steering levers to stop carrier.
4. Stop engine (page 2-184).
5. To check track tension using drive pin punch, insert drive pin punch between top of number two road wheel and bottom of track. If drive pin punch can be inserted freely and track touches top of number three road wheel, track tension is correct.
6. If drive pin punch can be inserted freely but track does not touch top of number three road wheel, track tension is too tight. Loosen track tension, see step 10. If drive pin punch cannot be inserted freely, track tension is too loose. Tighten track tension, see step 9.

NOTE

Either drive pin punch or track and sprocket gage may be used to check track tension. If using drive pin punch, do steps 5 and 6. If using track and sprocket gage, do steps 7 and 8.

5. To check track tension using drive pin punch, insert drive pin punch between top of number two road wheel and bottom of track. If drive pin punch can be inserted freely and track touches top of number three road wheel, track tension is correct.

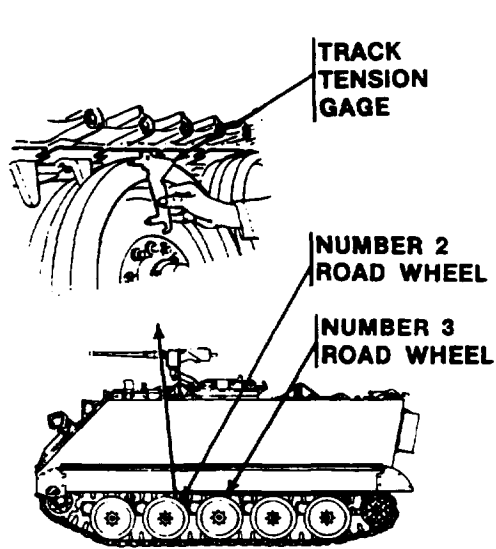


GO TO NEXT PAGE

Change 5

3-21

7. To check track tension using track and sprocket gage, position gage lightly against bottom of track at centerline of second road wheel. Look through hole in gage. If top of second road wheel can be seen (3/8 to 5/8 inch) and track touches number three road wheel, track tension is correct
8. If top of second road wheel cannot be seen or track does not touch third road wheel, track needs adjusting. To tighten track tendon, see step 9. To loosen track tension, see step 10.



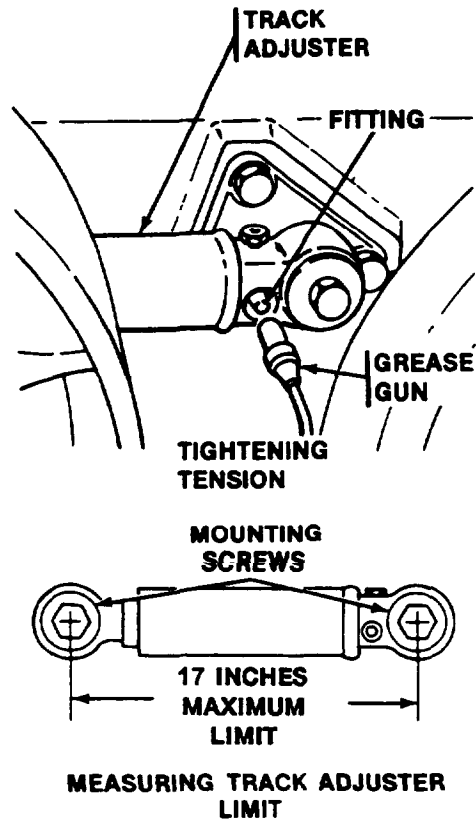
CAUTION

Dirt can damage fitting and cylinder. Clean all dirt from fitting on track tension adjuster.

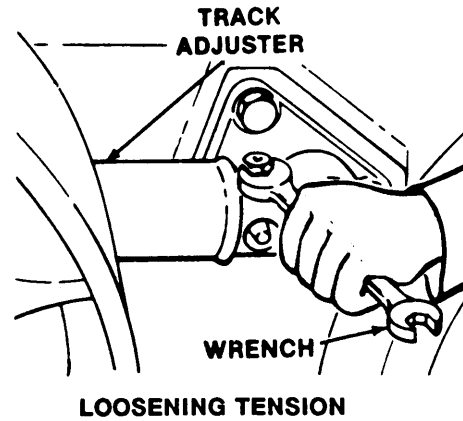
Servicing the fitting can damage the track adjuster, idler wheel and final drive bearings. Track adjuster fitting is not a true lubrication point. Do not service when lubricating the carrier.

Track adjuster can be damaged during carrier operation. Do not extend adjuster beyond 17 inches.

9. To tighten track tension add grease through fitting on track tension adjuster. If track adjuster is extended to its maximum limit of 17 inches and the track is still too loose, remove one track shoe (page 3-29). Readjust the track tension, steps 5 thru 9.



10. To loosen track tension, slowly open bleed valve on track tension adjuster to let grease out. Wipe up excess grease. If track adjuster is in as far as it will go, and track is still too tight, add one track shoe (page 3-29). Readjust track tension, steps 5 thru 9.



END OF TASK

BREAK/JOIN TRACK

DESCRIPTION

This task covers: Break Track (page 3-24). Join Track (page 3-27).

INITIAL SETUP

Tools:

Crowbar (Item 8, App B)
Drive Pin Punch (Item 29, App B)
Grease Gun, (Item 18, App B)
Hammer, 2 lb (Item 19, App B)
Open End Wrench, 1-5/16 inch
Item 38, App B)
Socket Handle, 1/2 inch drive
Item 21, App B)
Socket, 11/16 inch
(Item 34, App B)

Tools (cont):

Track Fixture (2) (Item 16, App B)

Personnel Required:

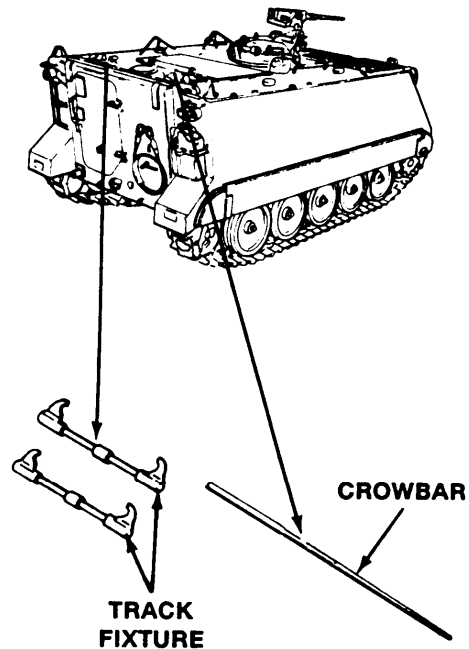
Driver
Crew

Equipment Conditions:

Engine stopped (page 2-184)

BREAK TRACK

1. Unstow crowbar and track fixtures from rear top deck. Remove hammer from tool bag.



2. Start engine (page 2-161).
3. Drive carrier to firm level ground (page 2-176).
4. Drive carrier slowly so the track pin to be removed is about halfway between the first road wheel and the drive sprocket or halfway between the idler wheel and fifth road wheel. Do not use steering levers to stop carrier.

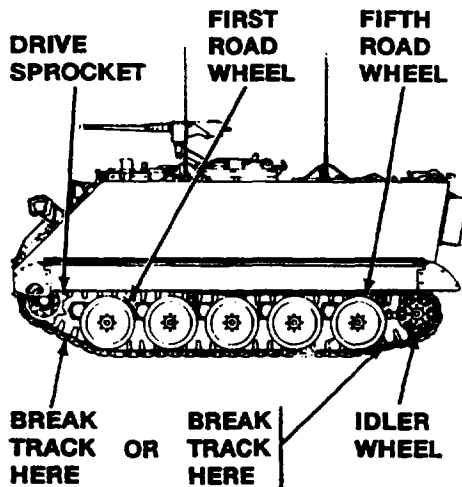
7. Release track tension all the way on track to be broken (page 3-21).



WARNING

You could be injured if track swings out and bits you. Do not stand in front of track being

broken.

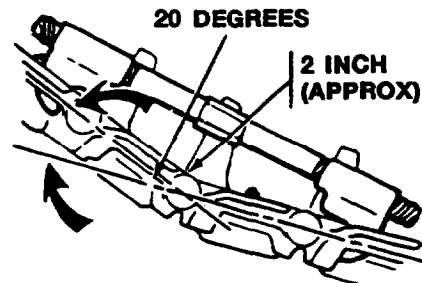
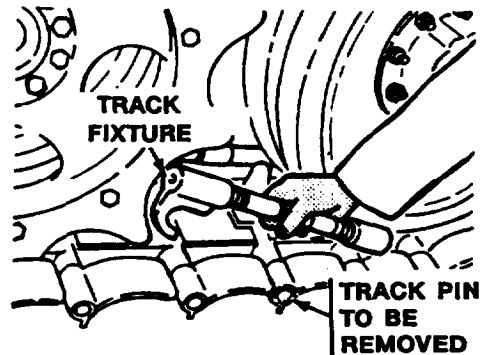


NOTE

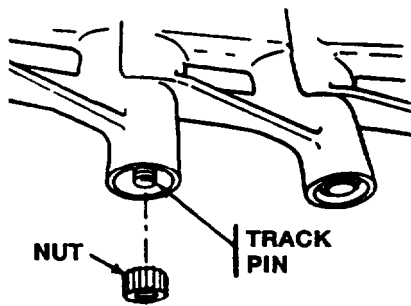
Block track with suitable object.

5. Block track on side which is not being broken (page 2-221).
6. Stop engine (page 2-184).

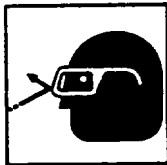
8. Install two track fixture across the pin to be removed. Tighten track fixtures to about a 20 degree angle between the shoes to be disconnected. There should be about 2 inches between the fixture.6 and the track at the pin. Use 1-5/16 inch open end wrench.



9. Remove track pin nut from track pin to be removed. Use 1/2 inch drive socket handle and 11/16 inch socket.



WARNING

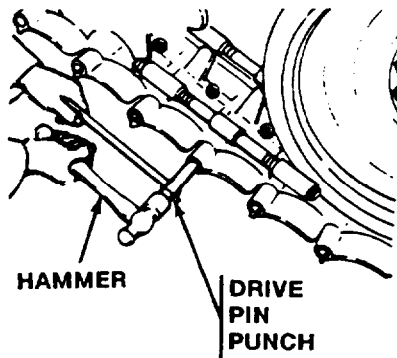


Always wear eye protection when using a hammer. Eye injury may result if metal chips contact eyes

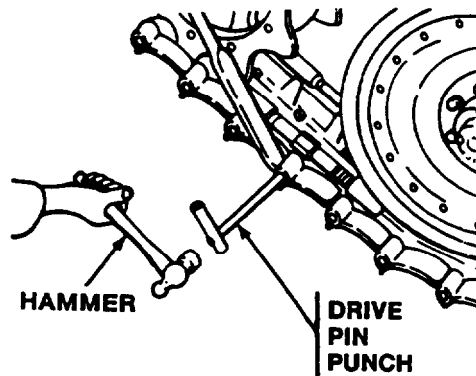
CAUTION

Track pin threads are easily damaged. Do not force track pin. Tap track pin lightly with hammer.

10. Drive track pin part way out with short end of drive pin punch. Use hammer. Remove drive pin punch.



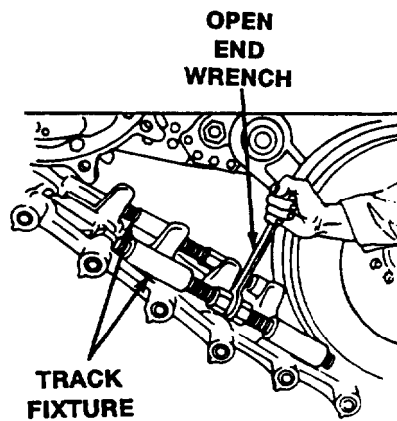
11. Drive track pin all the way out with long end of drive pin punch.



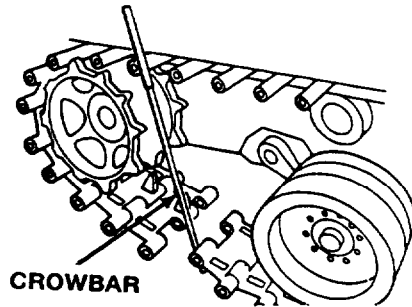
NOTE

Inside track fixture is removed first.

12. If you're planning to add or remove a track shoe, remove two track fixtures. Use 1-5/16 inch open end wrench.



13. Disconnect track. Use crowbar to break track apart.



JOIN TRACK

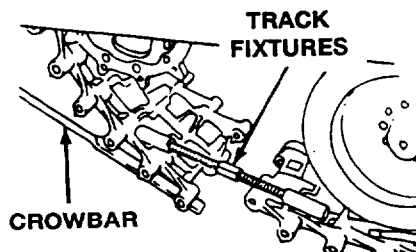
CAUTION

Track pin threads are easily damaged. Do not force track pin. Tap track pin lightly with hammer.

NOTE

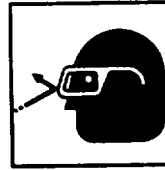
If track is difficult to join, step 7 can be repeated to release more track tension. As track pin moves through track hole, track pin will push drift pin out ahead of it.

1. Install two track fixtures across place where track is to be connected. Install track fixture on outside track first. Use 1-5/16 inch open end wrench.
2. Move ends of track together with crowbar.



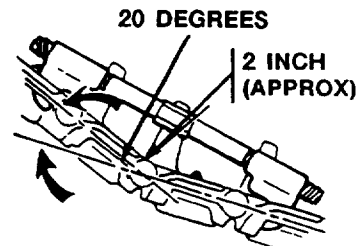
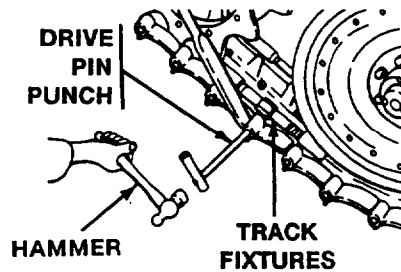
3. Coat the track pin with oil or grease. Install a nut flush with one end of the pin.

WARNING



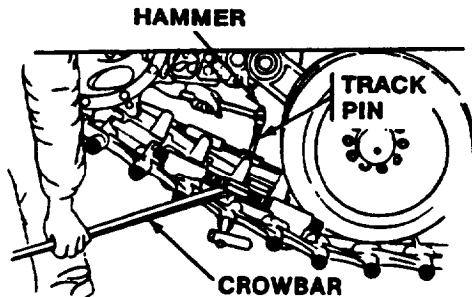
Always wear eye protection when using a hammer. Eye injury may result if metal chips contact eyes

4. Tighten each track fixture an equal amount to line up track pin holes. Tap long end of chive pin punch through track pin holes to other side of track. Use hammer. Tighten track fixture as needed to obtain 20 degree angle between shoes to be connected. Use 1-5/16 inch open end wrench.

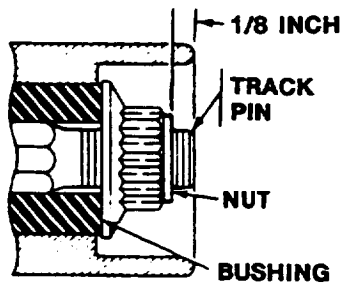


GO TO NEXT PAGE

5. From inside of track install track pin in track pin hole. As helper aligns track pin holes with crowbar, lightly tap in track pin. Drive track pin all the way through track. use hammer.

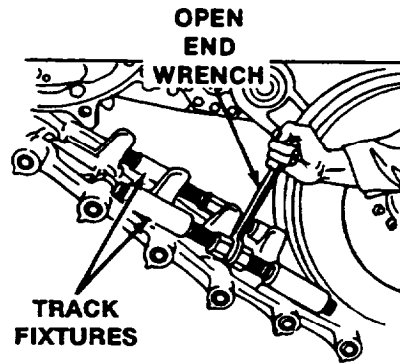


6. Install a nut on the other end of the track pin. Tighten both nuts until 2 or 3 threads show between the nuts and the ends of the pin or about 1/8 of an inch. Use 1/2 inch drive socket handle and 11/16 inch socket.

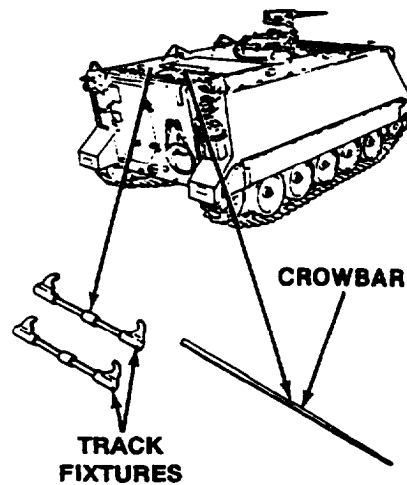


7. Mark nut so unit maintenance can torque it.
8. Remove two track fixtures. Use 1-5/16 inch open end wrench.

9. Adjust track tension (page 3-21).



10. Stow crowbar and track fixtures on rear top deck. Stow hammer in tool bag.



11. Unblock carrier tracks (page 2-221).
12. Fill out DA Form 2404 to notify unit maintenance to torque marked track pin nut.

END OF TASK

REMOVE/INSTALL TRACK SHOE

DESCRIPTION

This task covers: Remove Track Shoe (page 3-29).
Install Track Shoe (page 3-31).

INITIAL SETUP**Tools:**

Crowbar (Item 8, App B)
Drive Pin Punch (Item 29, App B)
Grease Gun, (Item 18, App B)
Hammer, 2 lb (Item 19, App B)
Open End Wrench, 1-5/16 inch
(Item 38, App B)
Socket Handle, 1/2 inch drive
(Item 21, App B)
Socket, 11/16 inch
(Item 34, App B)
Socket, 3/4 inch (Item 34, App B)

Tools (cont)

Track Fixture (Item 16, App B)

Personnel Required:

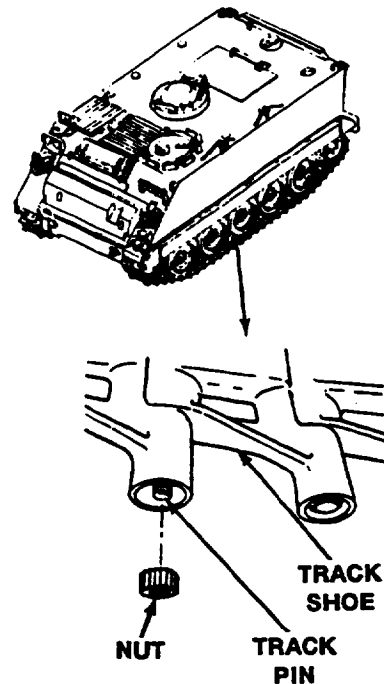
Driver
Helper

Equipment Conditions:

Carrier on level surface
Engine stopped (page 2-184)

REMOVE TRACK SHOE

1. Break track to remove track shoe (page 3-24).
2. Remove nut from track pin of shoe to be removed. Use 1/2 inch drive socket handle and 11/16 inch socket.

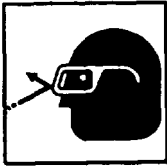


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CAUTION

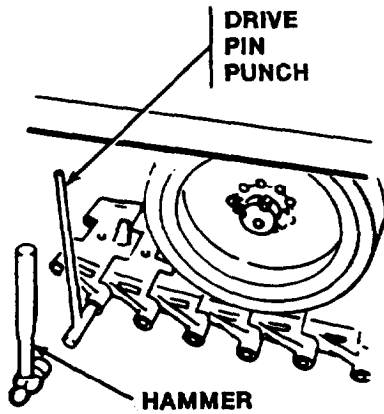
Track pin threads are easily damaged. Do not force track pin. Tap track pin lightly with hammer.

WARNING

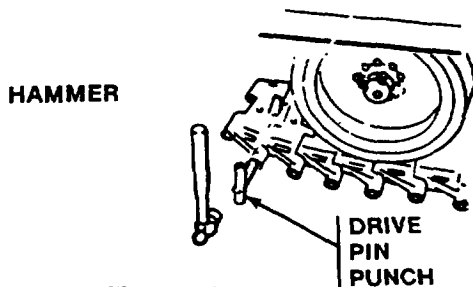


Always wear eye protection when using a hammer. Eye injury may result if metal chips contact eyes

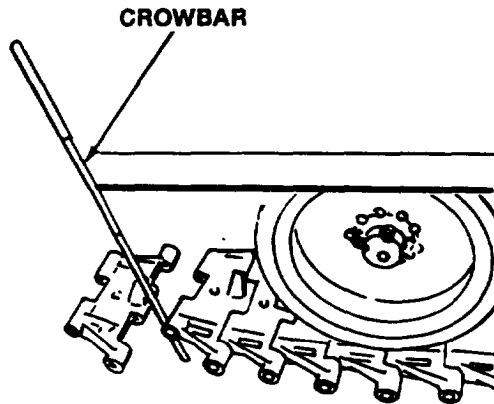
3. Drive track pin part way out with short end of drive pin punch. Use hammer. Remove drive pin punch.



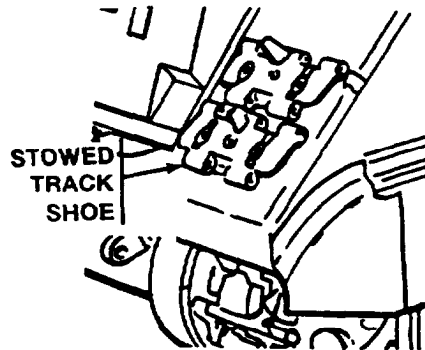
4. Drive track pin all the way out with long end of drive pin punch. Keep short end up and remove drive pin punch.



5. Remove track shoe from track. Use crowbar.

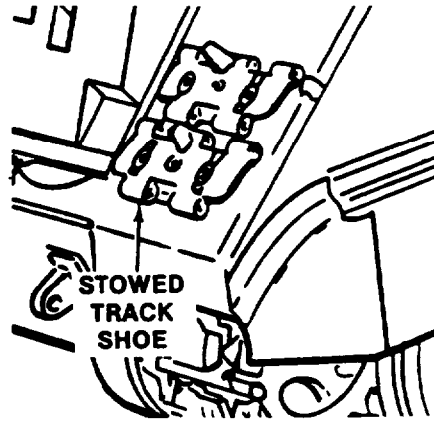


6. If removed shoe is not serviceable, discard shoe. If removed shoe is serviceable, install the pin and nuts in the shoe. Stow shoe on left front of carrier just above the track. Use 1/2 inch drive socket handle and 3/4 inch socket.

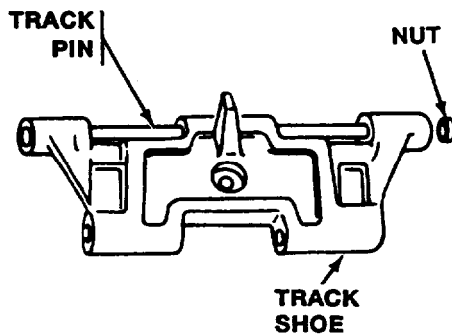


INSTALL TRACK SHOE

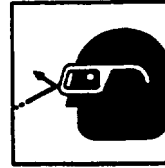
1. Unstow a spare track shoe from left front of carrier. Use 1/2 inch drive socket handle and 3/4 inch socket.



2. Remove nut from track pin. Use 1/2 inch drive socket handle and 11/16 inch socket.



WARNING

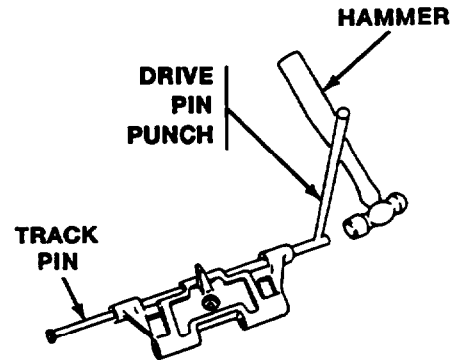


Always wear eye protection when using a hammer. Eye injury may result if metal chips contact eyes

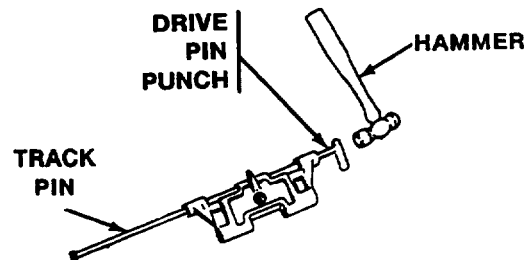
CAUTION

Track pin threads are easily damaged. Do not force track pin. Tap track pin lightly with hammer.

3. Drive track pin part way out with short end of drive pin punch. Use hammer. Remove drive pin punch.

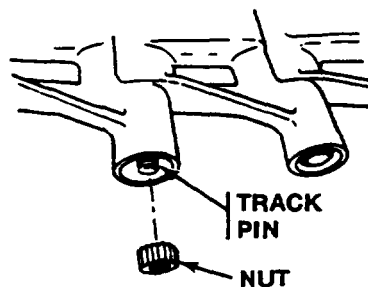
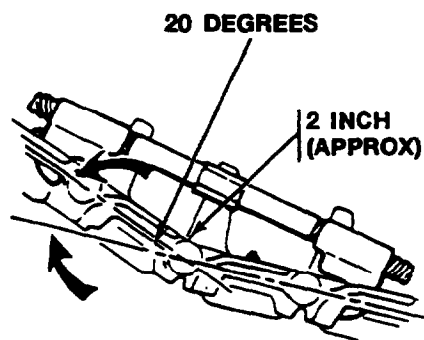
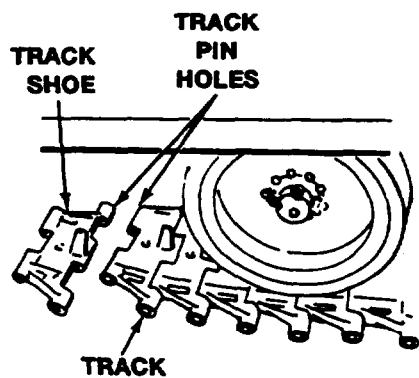


4. Drive track pin all the way out. Use hammer and long end of drive pin punch.



GO TO NEXT PAGE

5. Coat track pin with oil or grease. Install nut flush on track pin. Use 1/2 inch drive socket handle and 11/16 inch socket.
6. Place track shoe in lower part of track. Align track pin holes.
7. Obtain 20 degree angle between track shoe to be connected.
8. Install track pin in track shoe.
9. Join track (page 3-24).
10. Install nut on track pin. use 1/2 inch drive socket handle and 11/16 inch socket.
11. Adjust track tension (page 3-21).
12. Mark nut so unit maintenance can torque it. Fill out DA Form 2404 to notify unit maintenance to torque marked track pin nuts.



END OF TASK

TRACK SHOE WEAR LIMITS

INITIAL SETUP

Tools:

Track and Sprocket Gage
(Item 17, App B)

Equipment Conditions:

Carrier parked on level ground
Engine stopped (page 2-184)

Personnel Required:

Soldier

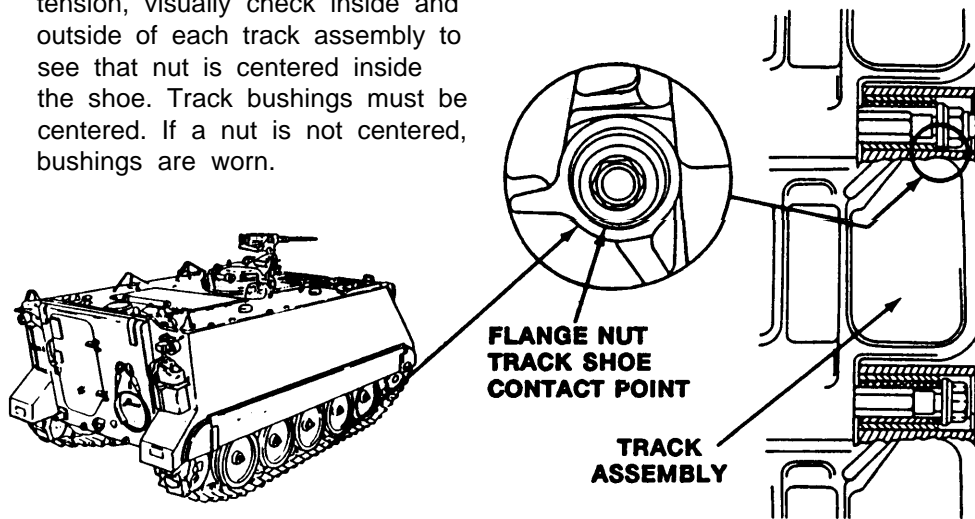
TRACK SHOE WEAR LIMITS

NOTE

All M113A2 family carriers were built with the T130E1 track shoe assembly. However, your carrier may have a T130 track shoe assembly installed as a replacement for the original. A track assembly should be made up of all T130E1 pads or all T130 pads. Mixing these two pads in a track assembly should NOT be done.

1. Bushing wear. With the track on the carrier and under normal tension, visually check inside and outside of each track assembly to see that nut is centered inside the shoe. Track bushings must be centered. If a nut is not centered, bushings are worn.

2. Dead shoes. Look for shoes with one end that sticks up above the same side of the next shoes on upper side of track. This is caused by the rubber bushing rotating in the shoe. Record fault on DA Form 2404 and report to unit maintenance. If carrier has extra shoes stowed on front of carrier, replace dead shoes (page 3-29).
3. For suspect track shoe measurement, notify Unit Maintenance



END OF TASK

MEASURING SPROCKET WEAR

INITIAL SETUP

Tools:

Track and Sprocket Gage
(Item 17, App B)

Equipment Conditions:

Engine stopped (page 2-184)
Carrier parked on level ground

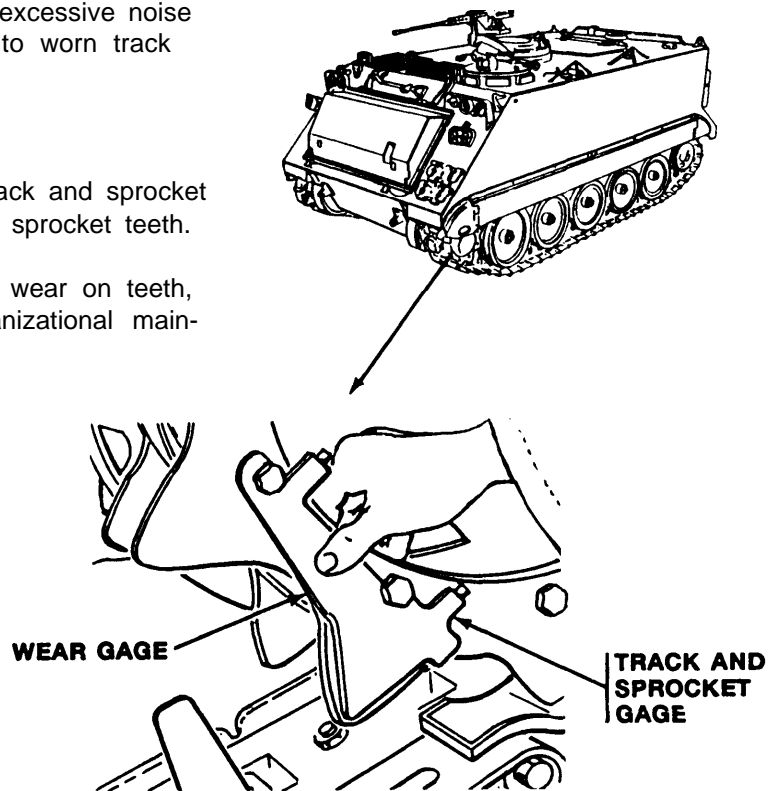
Personnel Required

Soldier

1. If carrier throws the track, or the tracks make excessive noise it could be due to worn track drive sprockets.

CHECK

2. To check, use track and sprocket gage to measure sprocket teeth.
3. If gage indicates wear on teeth, report it to organizational maintenance.



END OF TASK

CHECK CARRIER BATTERIES

INITIAL SETUP

Tools:

Flashlight (Item 7, App D)

References:

TM 9-6140-200-14

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page 2-184)

WARNING

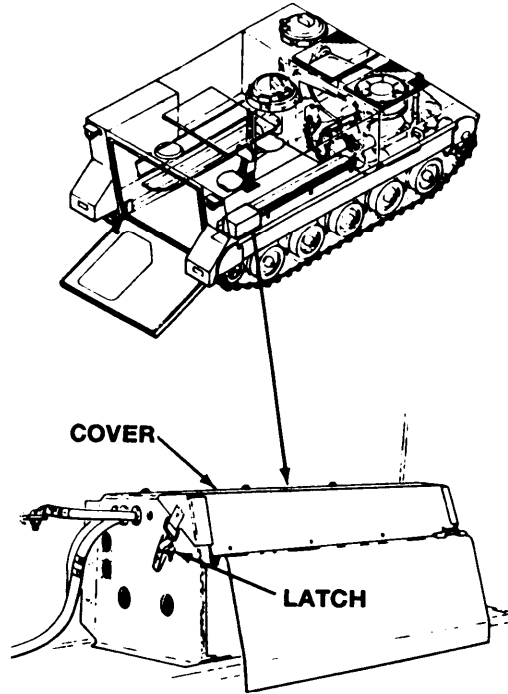


Battery posts and cables touched by metal objects can short circuit and burn you or injure you. Use caution when you work with tools or other metal objects. Do not wear jewelry when you work on electrical system.

WARNING



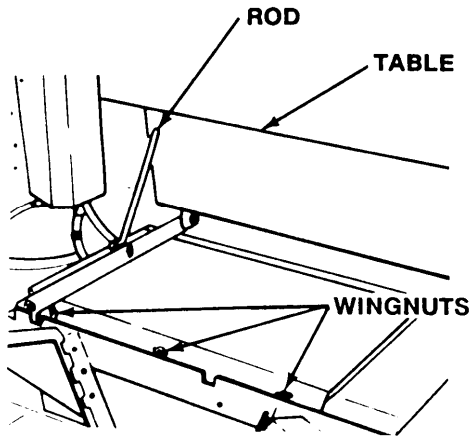
Gas from batteries can explode and injure you. Do not allow sparks near batteries. Battery acid can blind or bum you. Do not get acid on your skin or eyes.



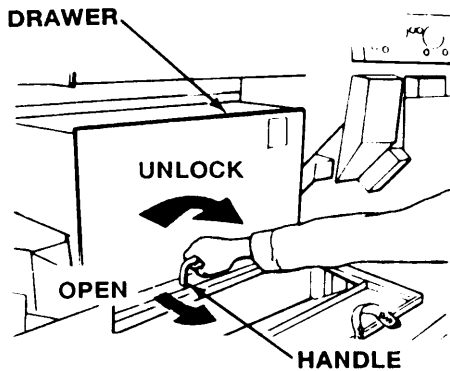
1. To access battery connections:
 - a. On M113A2 and M1059, release two latches on side of box. Lift and slide cover from battery box.

GO TO NEXT PAGE

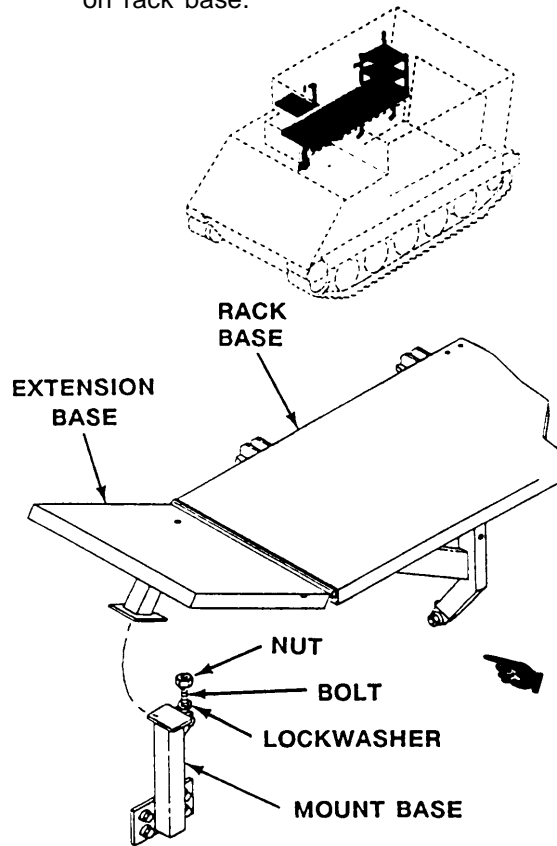
- b. On M577A2, raise right forward table or extension. Secure table with support rod and remove three wingnuts. Lift and slide cover from battery box.



- c. On M106A2, M125A2, and M1064, lower left crew seat back rest and turn handle. Then pull drawer out.



- d. On the M1068, raise extension base by loosening nut. Pivot bolt to free extension base.
e. Raise extension base and rest on rack base.

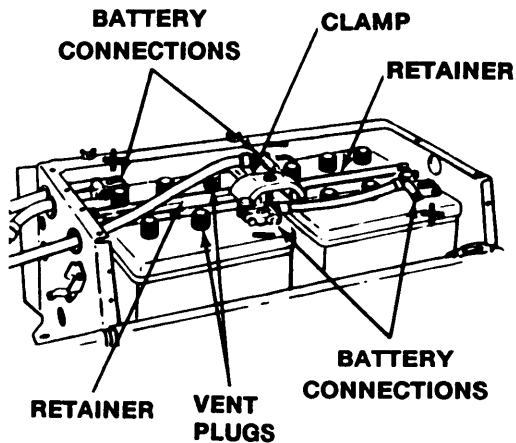


2. Check battery retainers and clamp with both hands and try to move them. If batteries move or seem loose, report it to unit maintenance.
3. Check battery connections. Try to twist clamp with thumb and first two fingers. Check to see if cables are securely connected to clamp. If clamp or connection is loose, report it to unit maintenance.

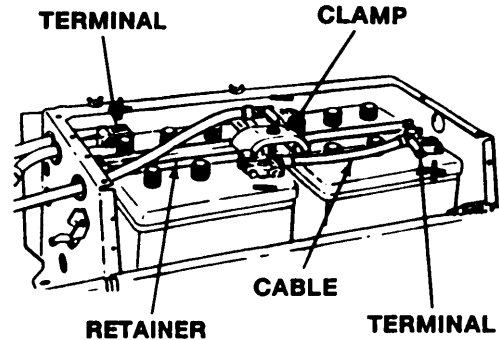
NOTE

Check the water level more frequently in hot weather.

4. Remove vent plugs from batteries and check battery electrolyte level. Use a flashlight. Look down into each battery cell. The electrolyte level should be covering the plates and to the lower edge of the vent. If battery cells are low or dry, add distilled water. Install vent plugs on battery cells.

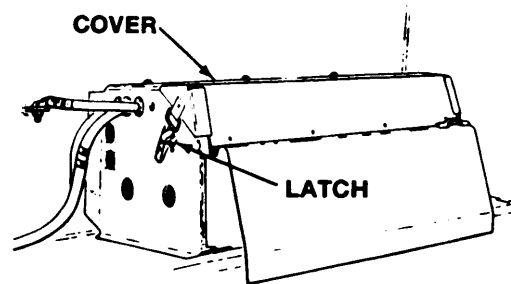


5. Clean battery. Wipe off battery casing and surrounding metal parts. Use clean dry wiping rag. Check terminals, clamp, cables and retainers for corrosion. If wiping rag will not remove dirt, notify unit maintenance.
6. Coat terminals with a small amount of grease (GAA).



7. To install battery box covers:

- a. On M113A2 and M1059, slide cover onto battery box and secure two latches on side of box.

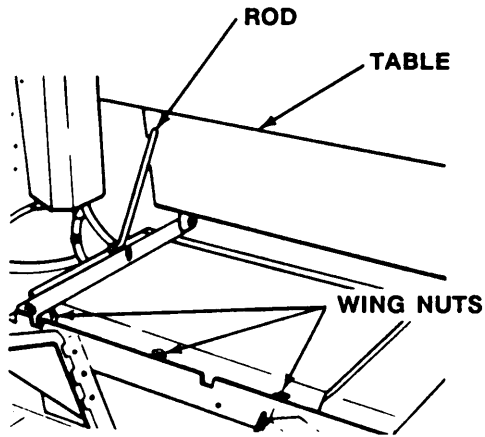


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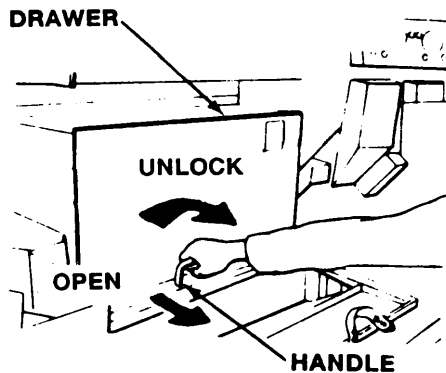
Change 3

3-36.1 (3-36.2 blank)

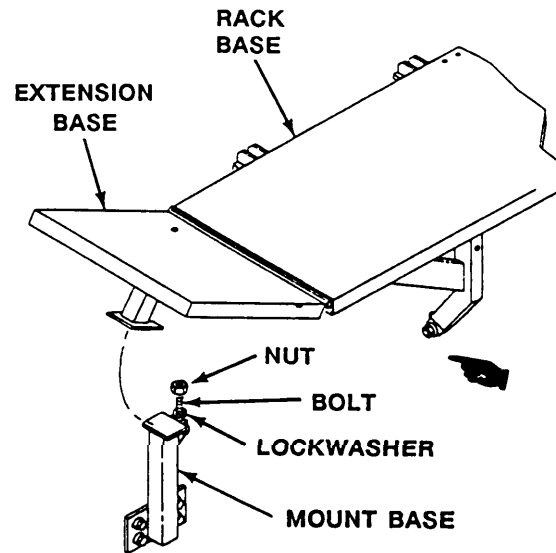
- b. On M577A2, slide cover onto battery box and install three wing nuts. Remove support rod and lower table.



- c. On M106A2, M125A2, and M1064, install drawer on battery box and turn handle. Raise left crew seat back rest.



- d. On the M1068, position the extension base on mount base and secure with bolt, lockwasher, and nut.



8. For more information on batteries, see TM 9-6140-200-14.

END OF TASK

SERVICE BILGE PUMPS

DESCRIPTION

This task covers: Front Bilge Pump (page 3-38).
Rear Bilge Pump (page 3-40).
Bilge Pumps Operation Check (page 3-41).

INITIAL SETUP

Tools:

Cross Tip Screwdriver
(Item 30, App B)
Flashlight (Item 7, App D)
Socket Wrench Handle, 1/2 inch
drive (Item 21, App B)
Socket Wrench, 1/2 x 3/4
(Item 34, App B)

Personnel Required:

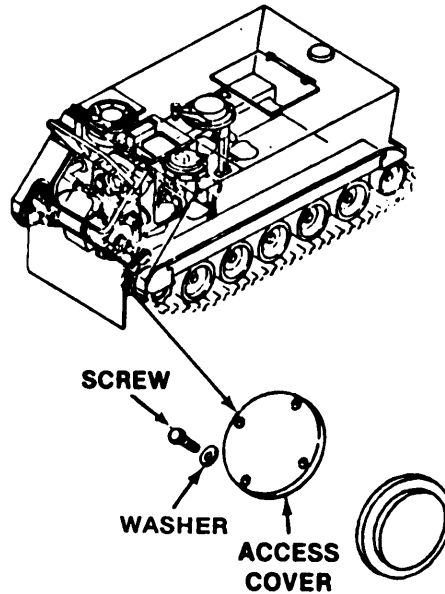
Driver
Helper (H)

Equipment Condition:

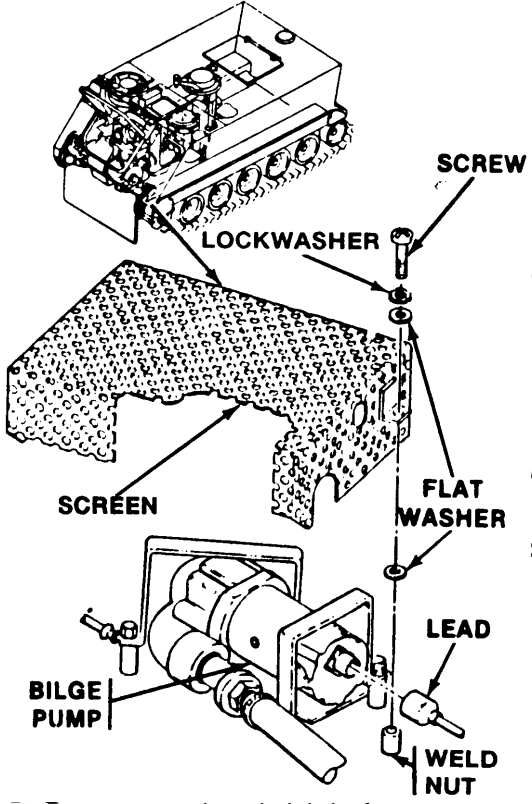
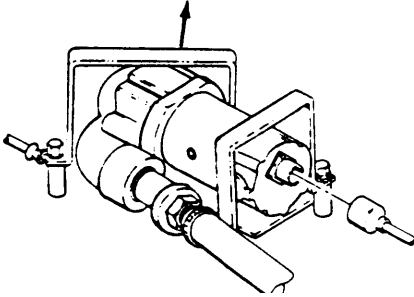
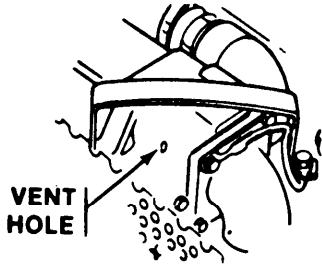
Engine stopped (page 2-184)

FRONT BILGE PUMP

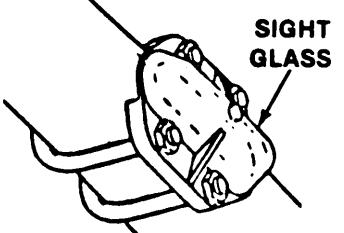
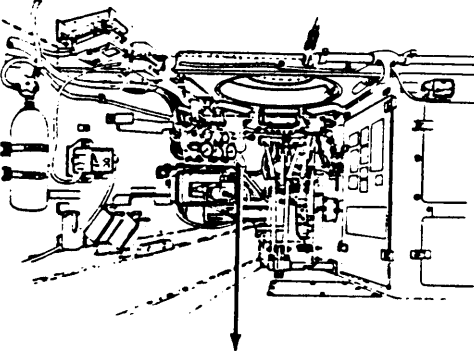
1. Lower trim vane (page 2-217).
2. Open power plant access door (page 2-151).
3. Remove four screws, washers and front access cover from hull. Use 1/2 inch drive socket wrench handle and 3/4 inch socket.



- 4. Service front bilge pump. Use flashlight.
- 5. Disconnect lead from bilge pump.
- 6. Remove two screws, lockwashers, and flat washers securing bilge pump screen to weld nuts. Remove screen. Use cross tip screwdriver.



- 9. Clean front bilge pump outlet line sight glass as needed. If sight glass must be removed to get it clean, notify unit maintenance.

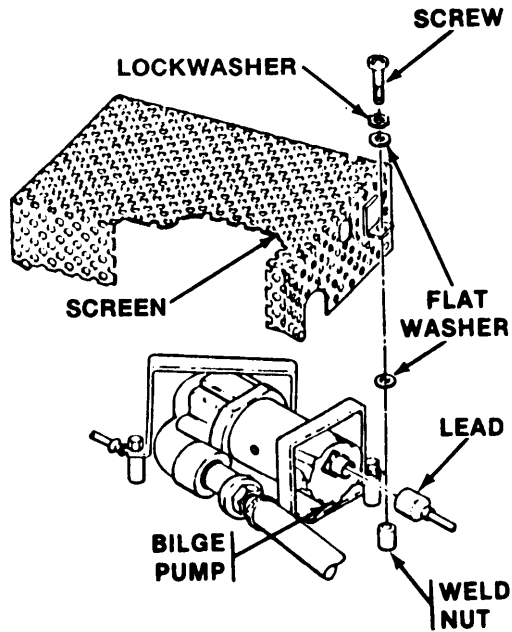


- 7. Remove mud and debris from bilge pump and screen. If bilge pump needs additional cleaning, notify unit maintenance,
- 8. Clean vent hole. Use a wire and run it back and forth in vent hole a few times.

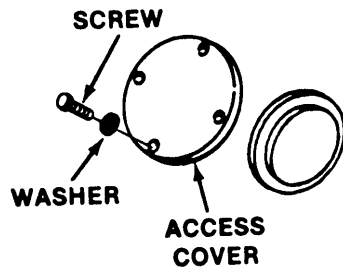
GO TO NEXT PAGE

- Position bilge pump screen on weld nuts and secure with two flat washers, lockwashers and screws. Use cross tip screwdriver.

- Connect lead to bilge pump.



- Install front access cover on hull and secure with four washers and screws. Use 1/2 inch drive socket wrench handle and 3/4 inch socket.

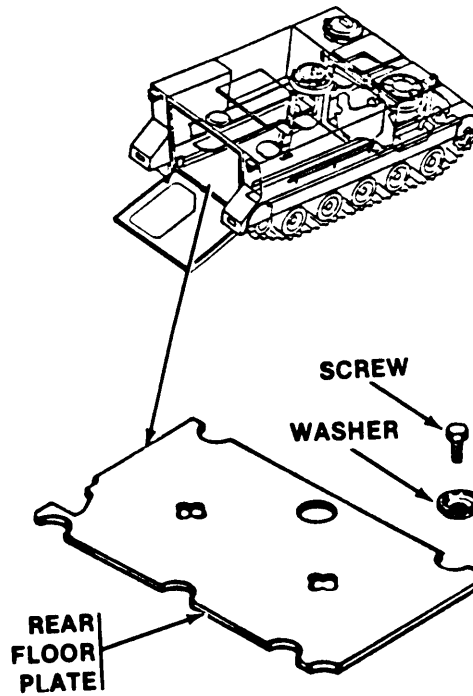


- Close power plant access door (page 2-151).

- Stow trim vane (page 2-217).

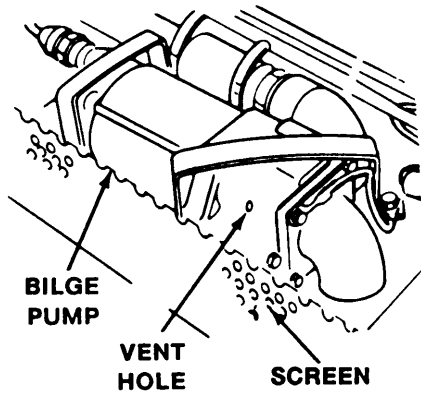
REAR BILGE PUMP

- Lower ramp (page 2-153).
- Remove six screws, washers and rear floor plate from floor supports. Use 1/2 inch drive socket wrench handle and 3/4 inch socket.



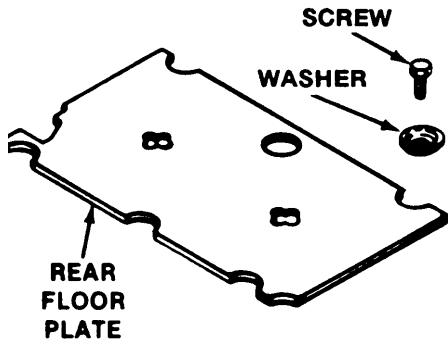
- Service rear bilge pump. Use flashlight.

Remove mud and debris from bilge pump and screen. If bilge pump needs additional cleaning, notify unit maintenance.



5. Clean vent hole. Use a wire and run it back and forth in vent hole a few times.

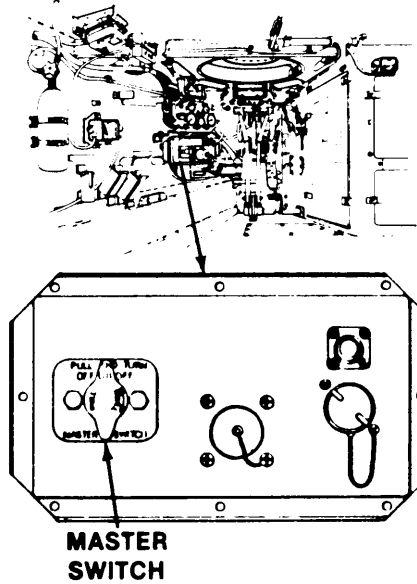
6. Install rear floor plate on floor supports and secure with six washers and screws. Use 1/2 inch drive socket wrench handle and 3/4 inch socket .



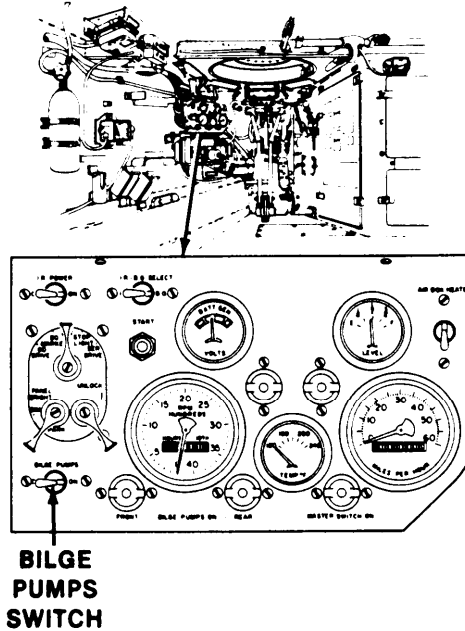
7. Raise ramp (page 2-153).

BILGE PUMPS OPERATION CHECK

1. Move MASTER SWITCH to ON.

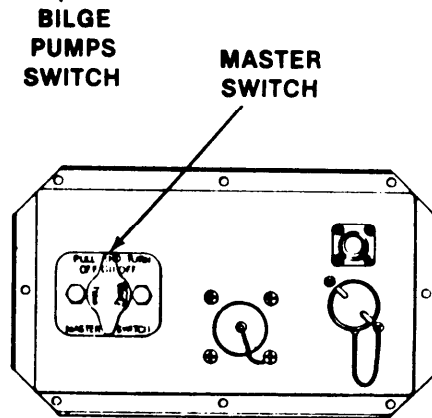
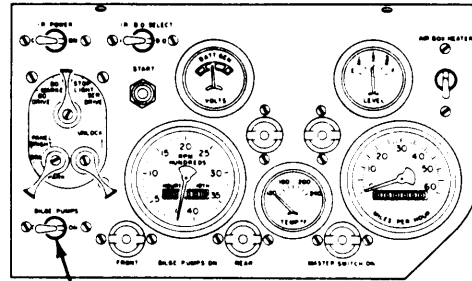
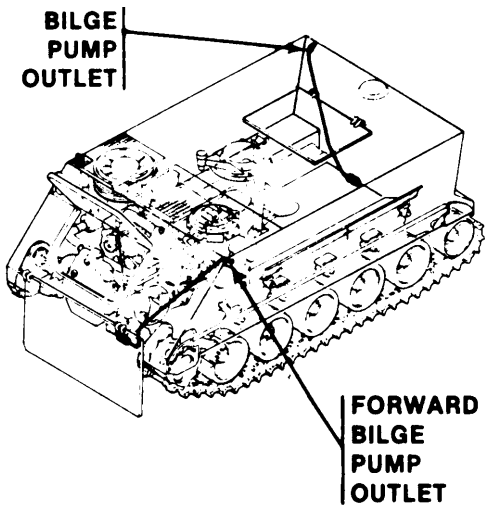


2. Move BILGE PUMPS switch to ON.



GO TO NEXT PAGE

3. (H) Check for air flow at forward and rear bilge pump outlets.



5. Move MASTER SWITCH to OFF.

6. If faulty bilge pump(s) is (are) found, notify unit maintenance.

END OF TASK

CHECK/FILL COOLING SYSTEM

INITIAL SETUP

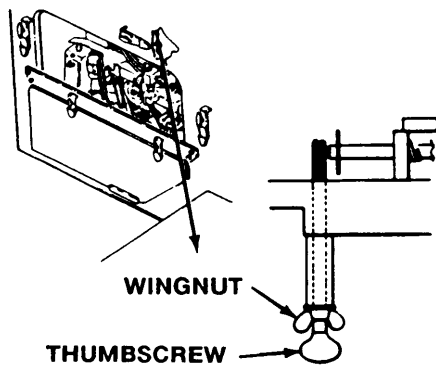
Personnel Required:

Driver

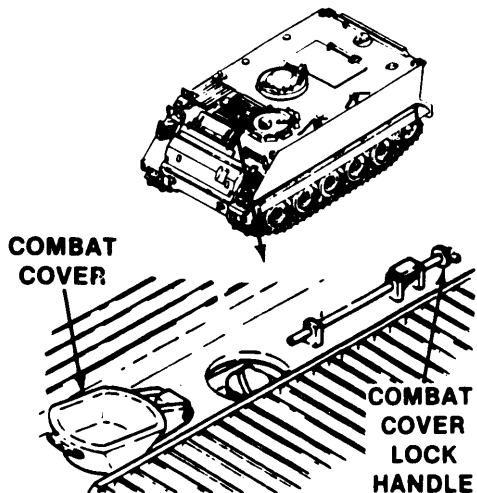
Equipment Conditions:

Engine stopped (page 2-184)

1. Remove top rear power plant access panel (page 2-220).
2. Reach into power plant compartment and loosen wingnut. Turn thumbscrew to your left to unlock radiator cap combat cover.

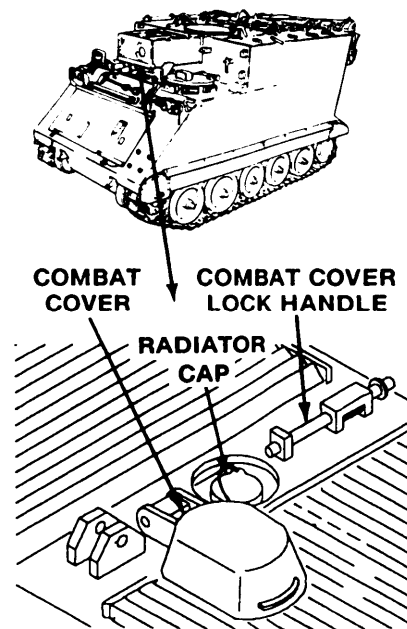


3. Pull combat cover lock handle and open combat cover.



NOTE
Do step 3.1 for M577A2 and M1068 only.

- 3.1. Pull combat cover lock handle. Rotate combat cover to the left or right to access radiator cap.



WARNING



Hot radiator coolant can bum you. Use hand to remove cap only if cool to touch. Turn cap slowly to release pressure. Replace cap by pressing down and turning cap until tight.

GO TO NEXT PAGE

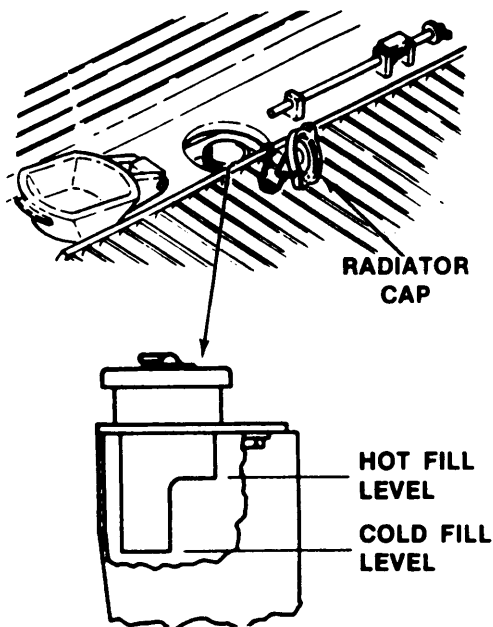
CAUTION

Adding coolant to an overheated engine could damage engine. Do not add coolant to an overheated engine unless engine is running.

NOTE

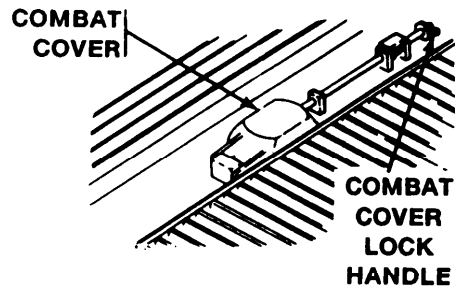
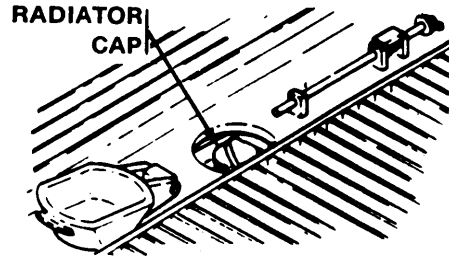
Approved antifreeze coolant only may be added to radiator. In an emergency, water may be added if specified coolant is not available.

4. Remove radiator cap and check level of coolant. If coolant is hot, check that coolant reaches **HOT FILL LEVEL** in filler neck. If coolant is cold, check that coolant reaches **COLD FILL LEVEL** in filler neck. Add coolant as needed.



5. If water was added, ask unit maintenance to check antifreeze protection level.

6. Install radiator cap.



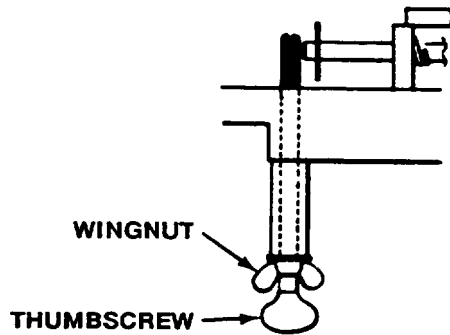
7. Close combat cover. Secure combat cover closed with combat cover lock handle.

NOTE

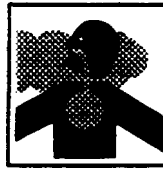
Do step 7.1 for M577A2 and M1068 only.

- 7.1. Rotate combat cover over radiator cap. Secure combat cover closed with combat cover lock handle.

8. Reach into power plant compartment and turn thumbscrew to your right until tight. Secure with wingnut.



WARNING



Engine exhaust fumes can kill you. Do not operate the carrier with access panels off. Make sure the panels are sealed tight. See warning in the front of this manual.

9. Install top rear power plant access panel (page 2-220).

END OF TASK

MAINTENANCE OF AIR CLEANER

DESCRIPTION

This task covers: Remove (3-46). Clean (3-47). Install (3-47).

INITIAL SETUP

Personnel Required:

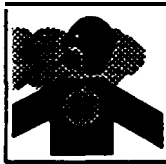
Driver

Equipment Conditions:

Engine stopped (page 2-184)

REMOVE

WARNING



Failure to decontaminate and wear protective clothing after NBC attack could result in serious health hazards to personnel. Do not service air cleaner or vent system after NBC attack until carrier has been decontaminated.

NOTE

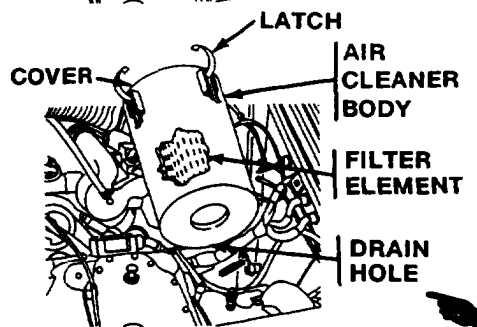
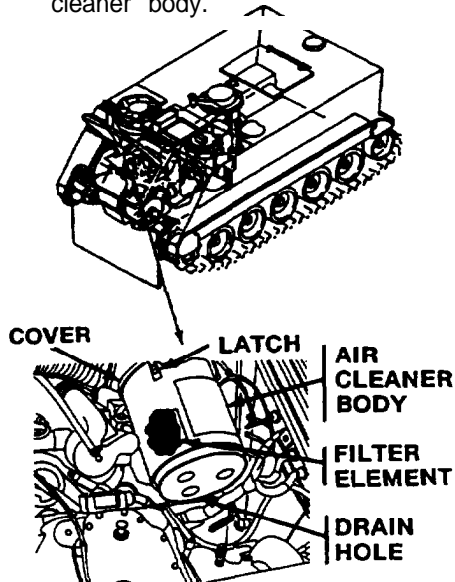
You will have one of two air cleaner configurations. Body and elements are not interchangeable except as sets.

CAUTION

Operating carrier with air cleaner missing or damaged can cause extensive engine damage. Do not operate carrier if air cleaner element is missing or door or gasket is missing or damaged,

1. Lower trim vane (page 2-217).
2. Open power plant access door (page 2-151).

3. Release four latches. Remove air cleaner body and filter element from cover.
4. Remove filter element from air cleaner body.



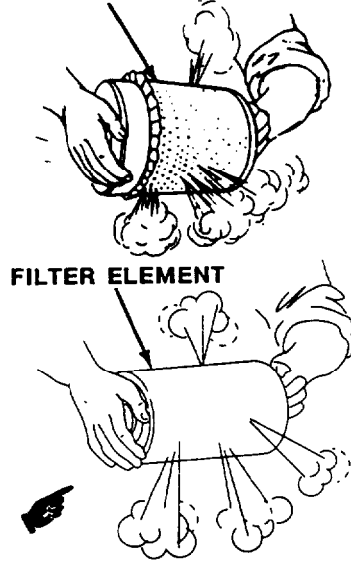
CLEAN

CAUTION

You will damage the element if you clean it in gasoline or dry cleaning solvent.

1. Clean filter element by jarring.
Tap sides of filter element gently with your hands.

FILTER ELEMENT



NOTE

If filter element cannot be cleaned satisfactorily by jarring, record fault on form DA 2404 and report it to unit maintenance. Unit maintenance will clean the filter element by either the recommended air hose or washing method.

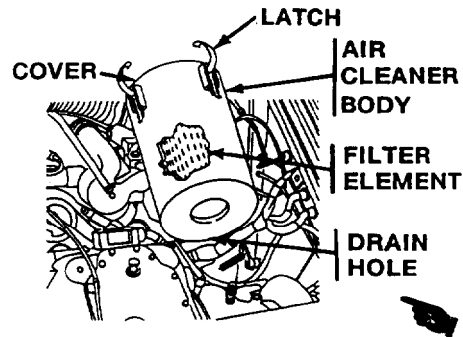
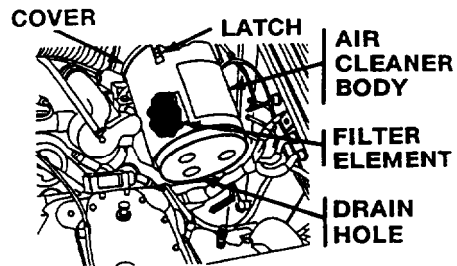
INSTALL

1. Install filter element in air cleaner body. Turn the filter element until the slot on the bottom is between stops in the air cleaner body.

NOTE

Drain hole in air cleaner body must be positioned as shown to align latches.

2. Secure air cleaner body to cover with four latches.



3. Close power plant access door (page 2-151).
4. Stow trim vane (page 2-217).

END OF TASK

DRAIN FUEL FILTERS

INITIAL SETUP

Personnel Required:

Driver

Materials/Parts (cont):

Wiping rag

Materials/Parts

Hose, 1/4 inch, 2-foot long
Suitable container

Equipment Conditions:

Engine stopped (page 2-184)

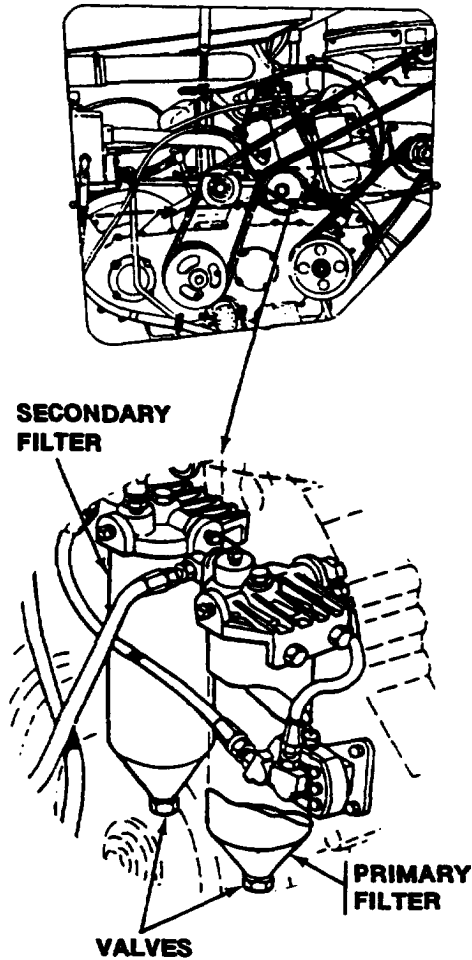
DRAIN

1. Remove power plant rear access panels (page 2-220).
2. Place a 2 foot length of 1/4 inch or other suitable bulk hose past the drive belts and idlers, and slip one end of the hose over the drain cock. Run the other end of hose into a suitable container resting on the crew compartment floor in order to catch the drained fuel. Open drain valve and remove bleed plug to drain filter.

CAUTION

open drain valves slowly so you do not spill fuel on the power plant.

3. Slowly open valve and let it run until all water is drained. When clean fuel starts to run from the fuel filter, close the valve.
4. Drain secondary fuel filter the same way.
5. Install power plant rear access panels (page 2-220).



END OF TASK

ARMY OIL ANALYSIS PROGRAM (AOAP) CHECK

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page 2-184)

References:

LO 9-2350-261-12

TAKING OIL SAMPLES

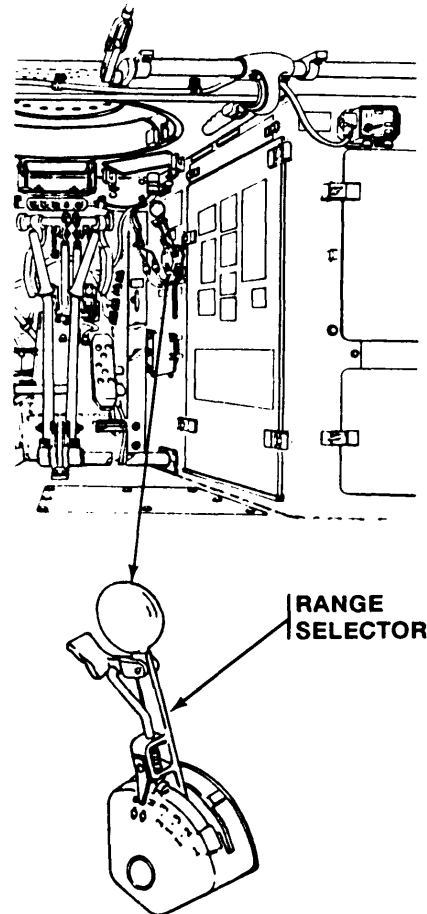
NOTE

There are two sampling valves. One is on the engine oil filter, and the other is on the transmission oil cooler elbow on the transmission.

AOAP is not a replacement for hard time replacement of engine and transmission oil filters, only for condition of oil.

1. Perform BEFORE operation checks and services prior to taking oil samples (page 2-36).
2. Obtain two sample bottles and two DA Forms 2026s from your unit AOAP monitor.
3. Start engine (page 2-161).
4. Drive carrier a short distance (about 5 miles) to bring the engine and transmission up to normal operating temperatures (page 2-176).
5. Stop carrier and lock steering levers. Keep engine running (page 2-176).

6. Place range selector in N position and keep engine running.

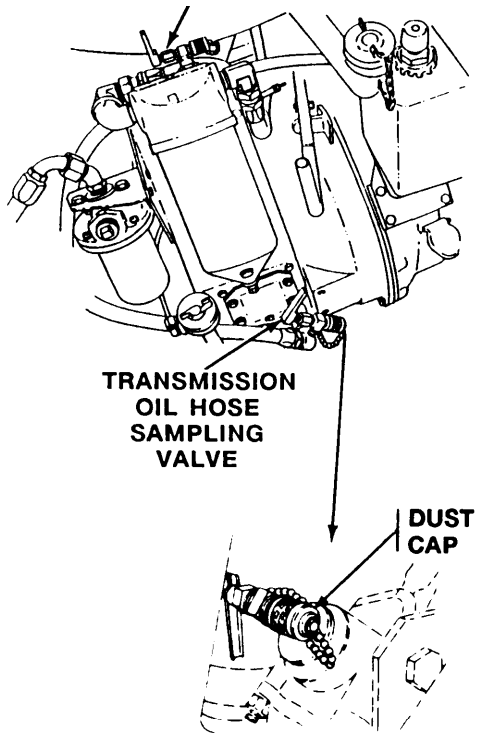


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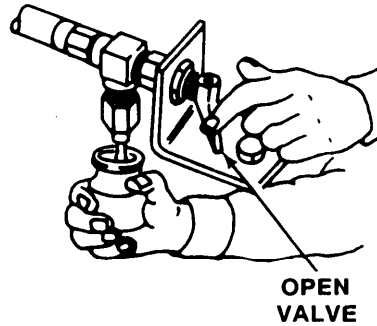
Change 3

3-49

7. Remove driver's compartment power plant access panel (page 2-219).
8. With the engine running, remove dust caps from the engine and transmission oil sampling valves.

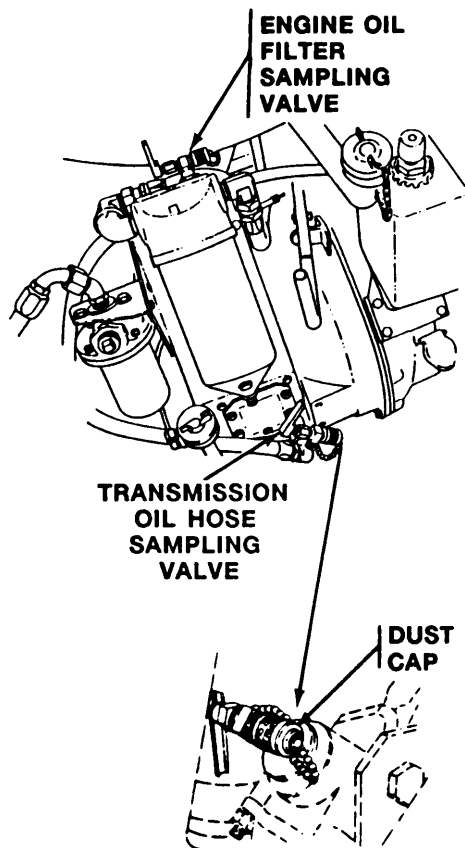


9. Open valve on engine oil filter and drain a small amount of oil into a disposable container. Then, fill sampling bottle to the bottom of the neck and seal it.



10. Return any excess oil to the engine.
11. Repeat steps 9 and 10 for the transmission.

12. Close both drain valves and reinstall the dust caps.



13. Stop engine (page 2-134).
14. Install driver's compartment power plant access panel (page 2-219).
15. Close up the carrier.
16. Attach DA Form 2026 to each sample bottle and deliver bottles to your unit AOAP monitor.

END OF TASK

CLEAN/INSPECT SMOKE GRENADE LAUNCHERS AND TUBES

INITIAL SETUP

Materials/Parts:

Pipe cleaner (Item 2, App D)
Rifle bore cleaner (Item 3, App D)

Equipment Conditions:

Engine stopped (page 2-184)
Carrier blocked (page 2-221)

Personnel Required:

Driver

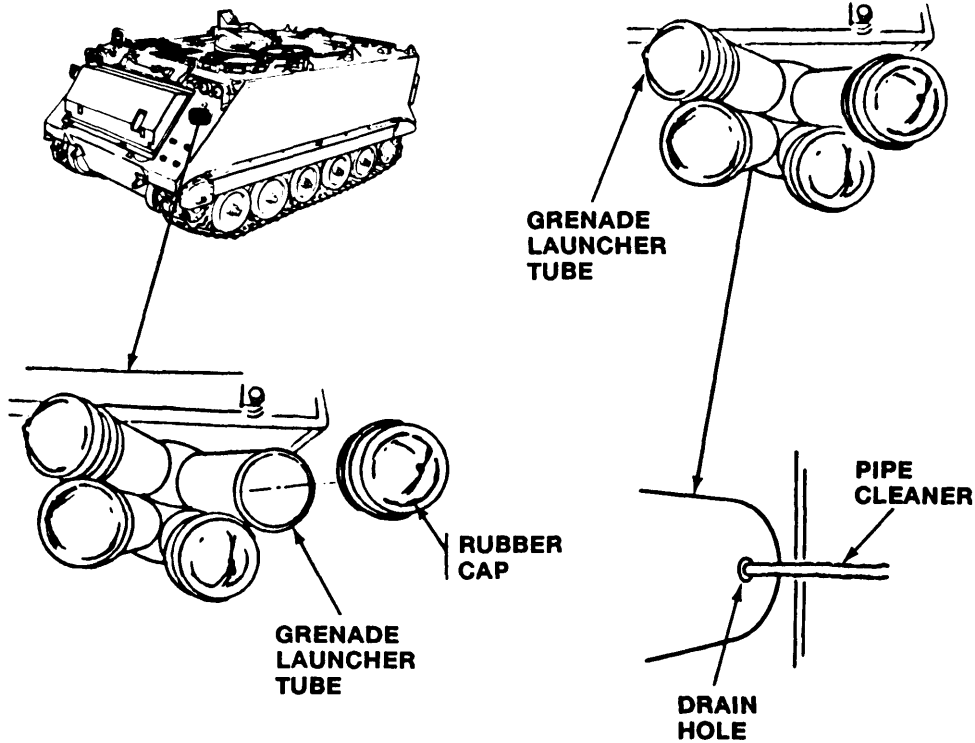
CLEAN/INSPECT

NOTE

Report any damaged grenade launcher tubes to unit maintenance.

1. Remove rubber caps from smoke grenade launcher tubes.

2. Use pipe cleaner to clean drain hole at bottom of each grenade launcher tube.
3. Loosen and push out any dirt or debris from drain holes.



WARNING

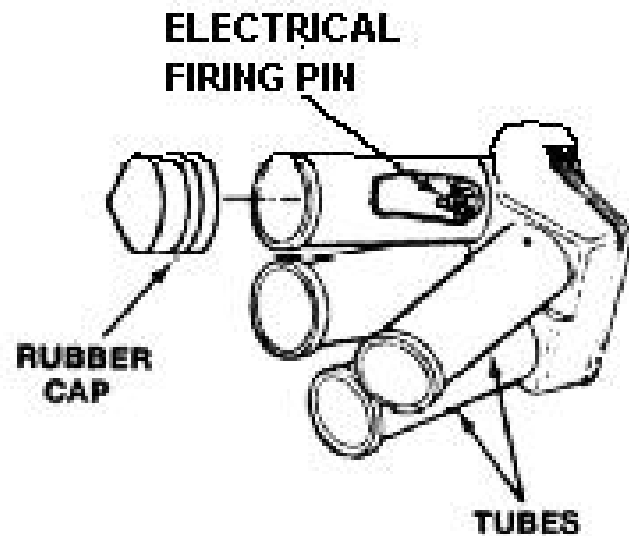


Rifle bore cleaner can burn and could poison you. Use in well ventilated area. If cleaner gets on

your hands, wash them. If cleaner gets in your eyes, flush with water and get medical help immediately.

4. Put rifle bore cleaner on appropriate cleaning brush.
5. Clean inside of smoke grenade launcher tubes with brush.
6. Dry with clean wiping rag.
7. Check smoke grenade launcher assembly for crushed or bent grenade launcher tubes.

8. Check that electrical firing pin is not corroded.
9. Check for secureness of grenade launcher tubes on smoke grenade launcher assembly.
10. Install rubber caps on tubes.



END OF TASK

REPLACE WEBBING STRAP (TYPICAL)

INITIAL SETUP

Personnel Required:

Soldier

Equipment Conditions:

Engine stopped/shutdown
Carrier blocked (page 2-221)

REMOVE

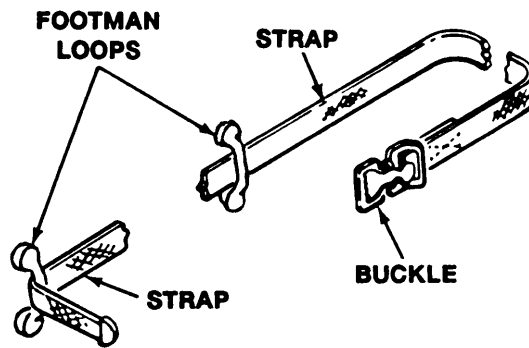
NOTE

Webbing straps are normally belted on footman loops. See Appendix E for strap locations.

1. Release buckle and remove strap from footman loop.

INSTALL

2. Pass strap through footman loops and secure with buckle.



END OF TASK

CHAPTER 4

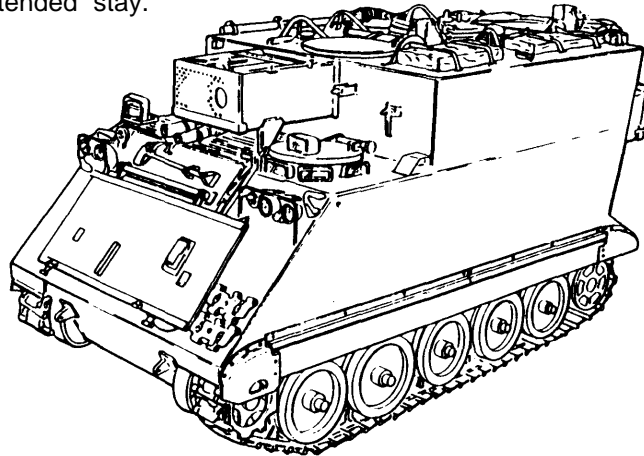
M577A2 COMMAND POST CARRIER AND M1068 STANDARDIZED INTEGRATED COMMAND POST SYSTEM

Section I. GENERAL INFORMATION

PURPOSE AND SCOPE

This chapter is for your use in operating and maintaining the M577A2 and M1068 Command Post Systems. If you do not find an item here, look in Chapters 1 through 3 covering the M113A2 Carrier. This chapter must be used with Chapters 1, 2, and 3 to get complete information on the M577A2 and M1068.

The M577A2 is built from the same plans as the M113A2 except that the M577A2 has a higher personnel compartment to house a command post and staff office. The command post is equipped with mapboards, tables, blackout curtain, interior blackout light controls, power and communication cables, and receptacles, and an auxiliary power unit to provide direct (DC) electrical power. A tent at the rear enlarges the command post area beyond the rear ramp when setting up a command post for an extended stay.

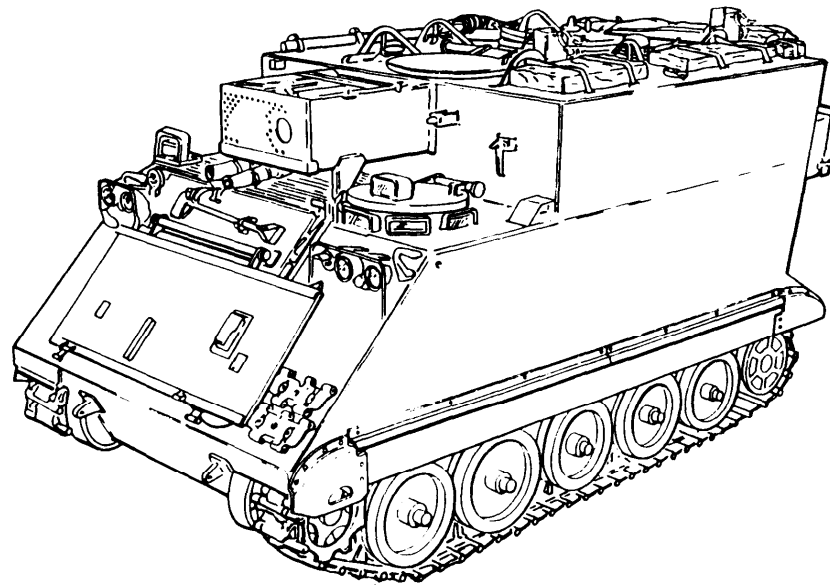


WARNING



Noise inside carrier can damage your hearing. Use earplugs or other hearing protection when operating carrier.

The M1068 is a converted M577A2 and is equipped with mapboards, tables, blackout curtain, interior fluorescent and blackout light controls, power and communication cables, receptacles, power enclosure panel, and an auxiliary power unit to provide direct (DC) electrical power. The power enclosure panel controls/uses all the external power (AC or DC) supplied as well as the generator set and vehicle engine charging system. Power is converted from AC to DC or DC to AC through two inverters and two power supplies. AC/DC outlets are positioned around the interior and exterior (Tent Interface Panel) to power equipment. Two AC outlet boxes are positioned on each side of the vehicle to supply conditioned AC power from the Uninterruptible Power Supply (UPS) to the Transportable Computer Unit (TCU), Mass Storage Expansion Unit (MSEU) and color monitors. A tent at the rear enlarges the command post area beyond the rear ramp when setting up a command post for an extended stay.



WARNING

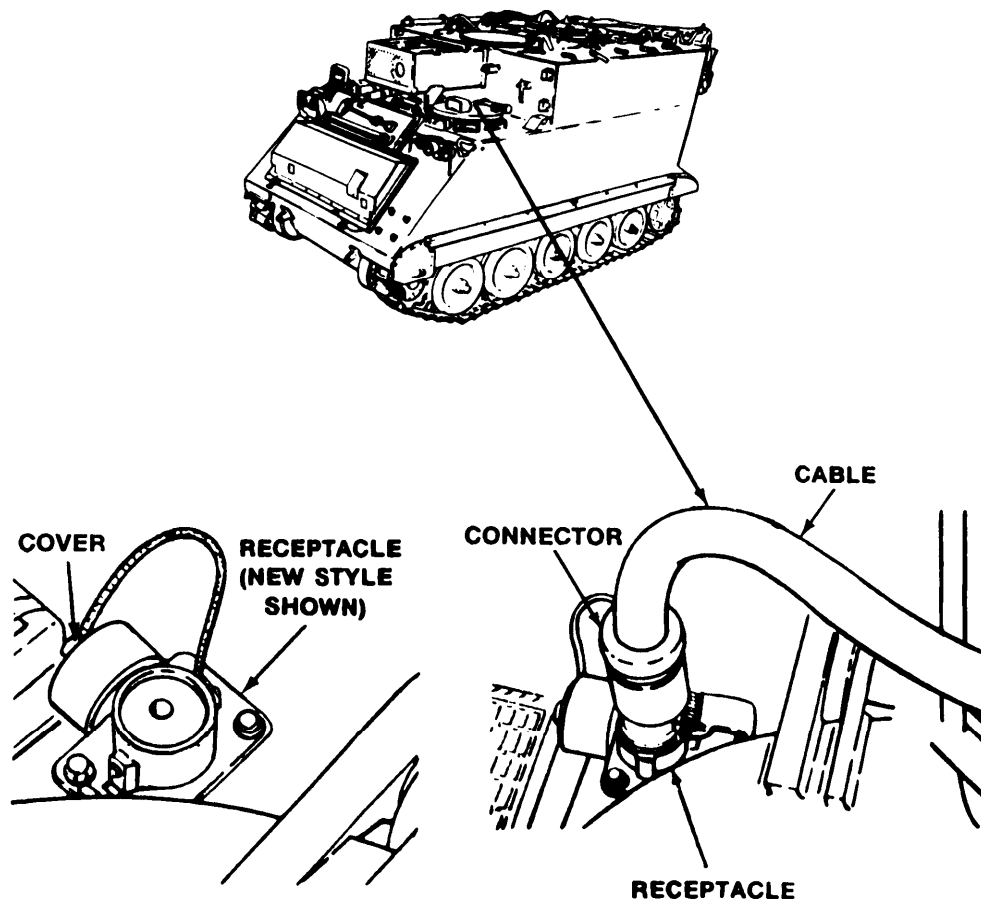


Noise inside carrier can damage your hearing. Use earplugs or other hearing protection when operating carrier.

Section II. DESCRIPTION OF EQUIPMENT AND CONTROLS (M577A2 AND M1068 ONLY)

AUXILIARY POWER RECEPTACLE (M577A2 AND M1068 ONLY)

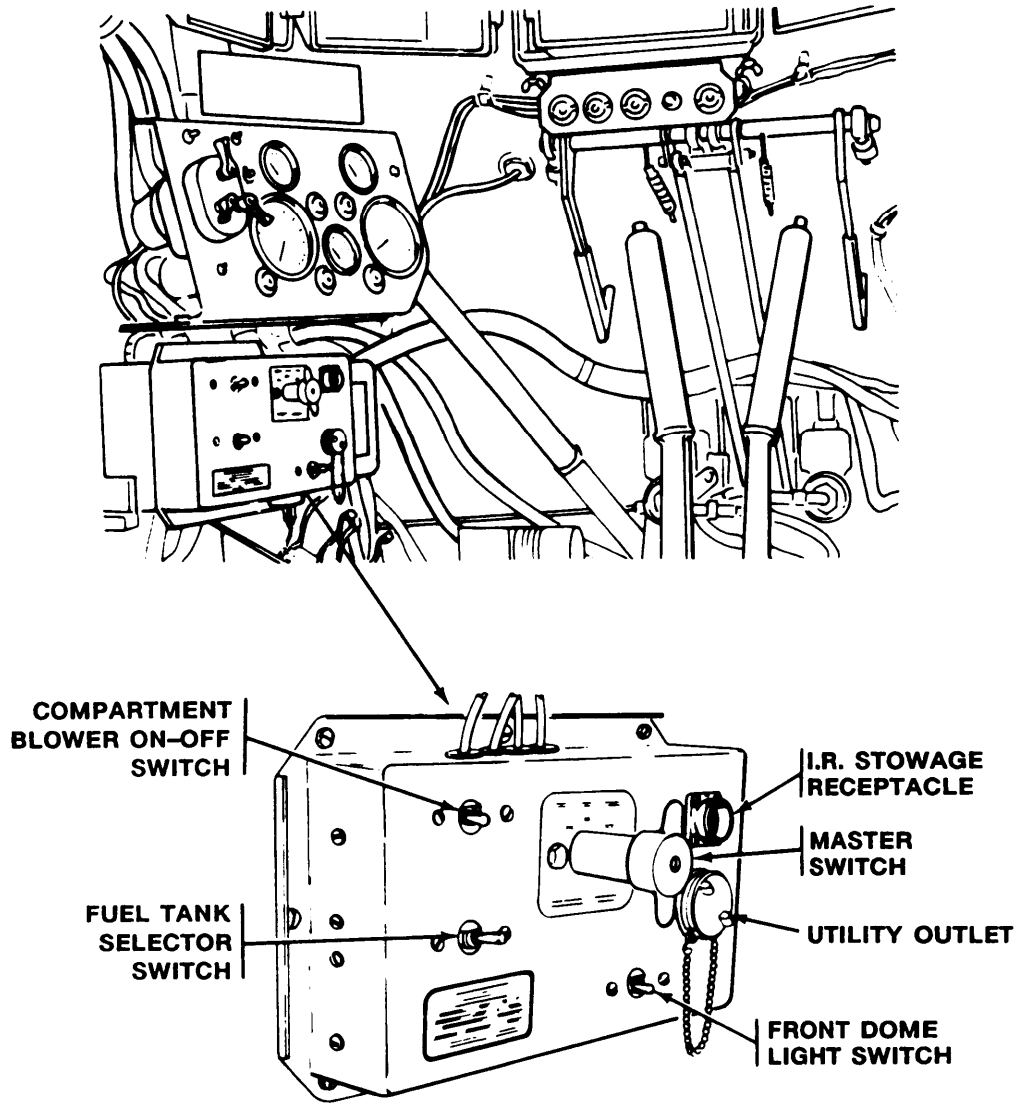
The auxiliary power receptacle, on top deck near driver's hatch, provides for use of 24-volt power dc from an outside source to start engine, charge batteries, and operate electrical equipment. See task: START ENGINE WITH OUTSIDE POWER SOURCE, page 2-174.



MASTER SWITCH PANEL (M577A2 AND M1068 ONLY)

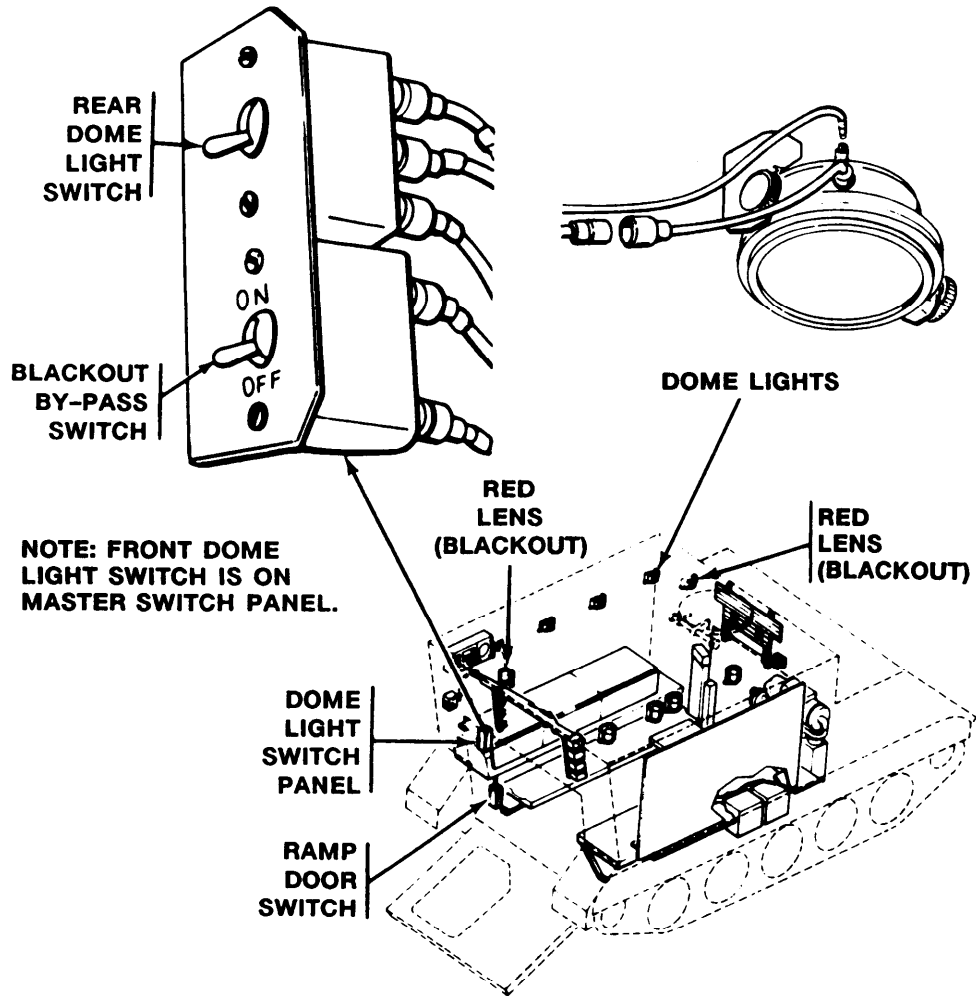
The master switch panel is located below the instrument panel and mounts the master switch, infrared (I.R.) stowage receptacle, utility outlet, fuel tank selector switch, compartment blower ON-OFF switch, and front dome light switch.

The fuel selector switch is set left or right to read the quantity of fuel in either tank. The compartment blower ON-OFF switch controls the compartment blower. The front dome light switch controls the dome lights.



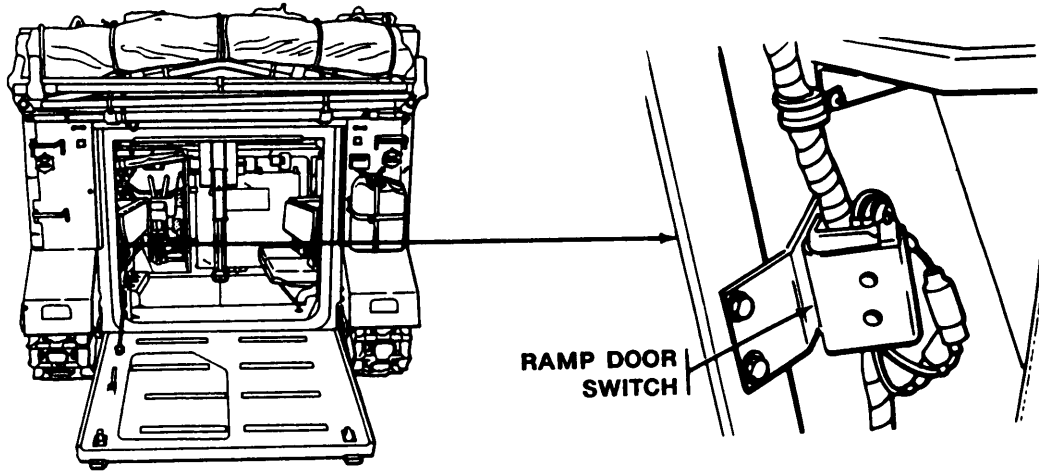
DOME LIGHTS AND SWITCHES (M577A2 AND M1068 ONLY)

The command post has nine dome lights (white lens) and two blackout dome lights (red lens) mounted on the ceiling. Each light can be adjusted individually.



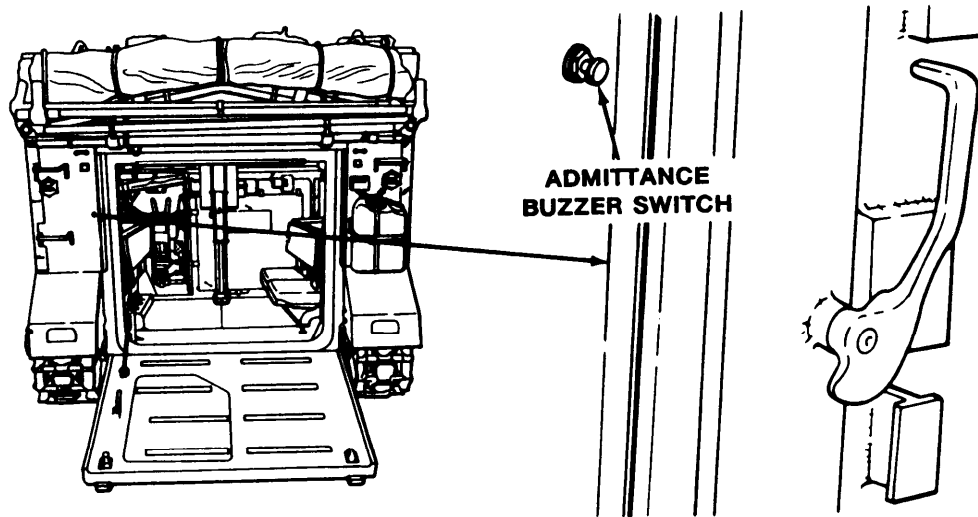
Turn on dome lights from either the front dome light switch (on master switch panel) or at the rear dome light switch near the ramp. To do this, the blackout by-pass switch must be OFF, the ramp up, and the rear door closed.

If the rear door is open, or the ramp is down, a ramp door switch automatically cuts off current to the nine dome lights (white lens) and directs current to the two blackout dome lights (red lens). The two blackout dome lights will then turn on or off depending upon the position of the dome light switch.



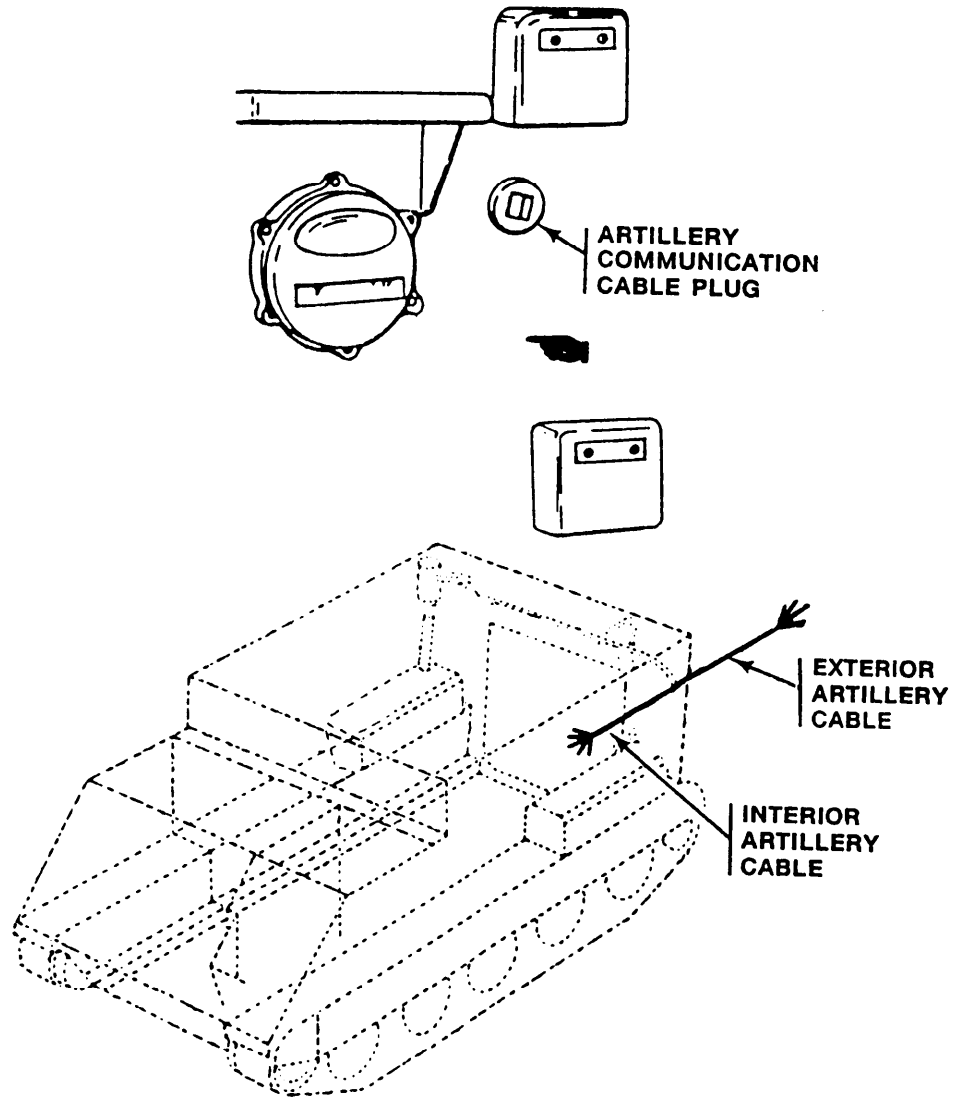
**ADMITTANCE BUZZER SWITCH
(M577A2 AND M1068 ONLY)**

Press the admittance buzzer switch to alert personnel inside the carrier so they can make sure the blackout lights are on before you enter the carrier.



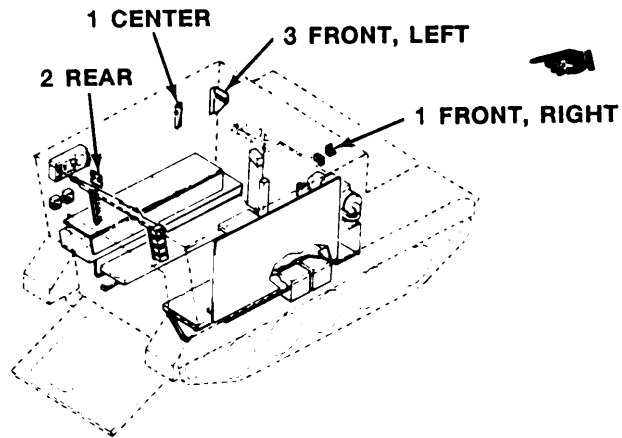
ARTILLERY COMMUNICATION CABLES (M577A2 ONLY)

When the M577A2 is operated as an artillery command post, the artillery communication cable plug on left rear hull plate is removed. Two cables (one inside carrier, one outside) connect with terminal boards to complete the communication network.



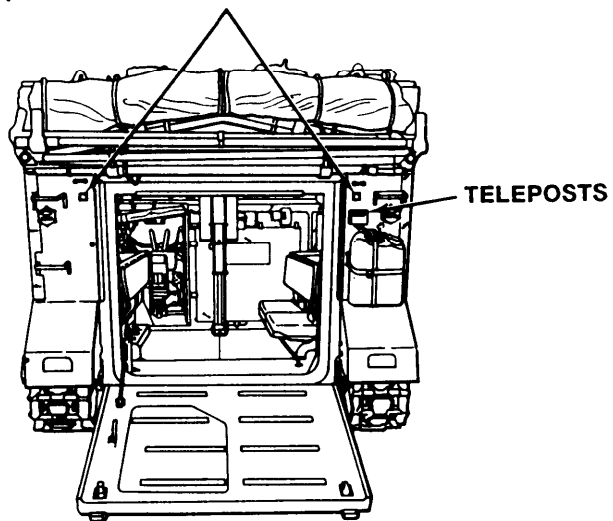
COMMUNICATION RECEPTACLES AND UTILITY OUTLETS (M577A2 ONLY)

Seven communication receptacles, three forward, one center, two rear, and one near the right radio rack, are used to hook up the radio and telephone lines.



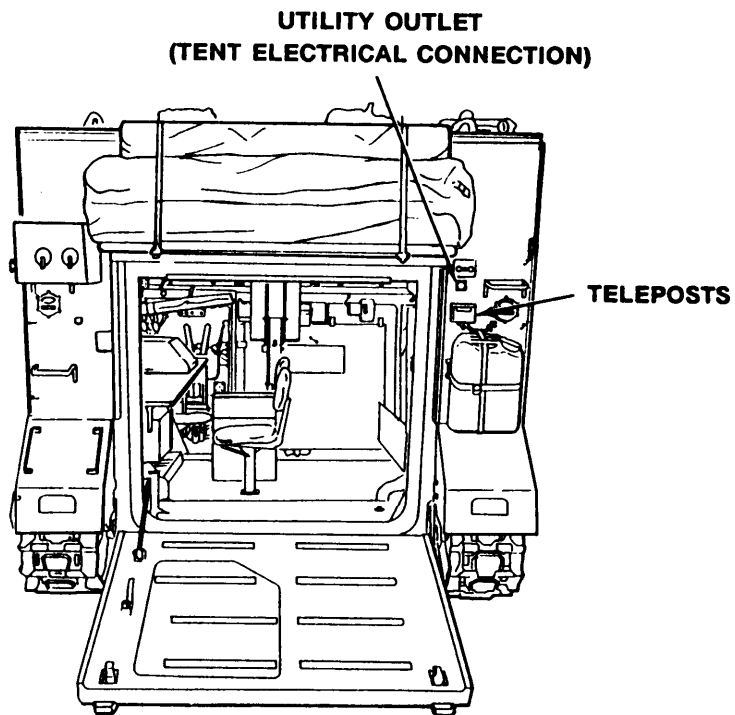
Two utility outlets, one on each side of the ramp, are used to operate 24-volt accessories or to light the tent.

UTILITY OUTLETS (TENT ELECTRICAL CONNECTIONS)



UTILITY OUTLET (M1068 ONLY)

The utility outlet located on the right side is used to operate 24-volt accessories.



ANTENNA MAST BRACKETS (M577A2 AND M1068 ONLY)

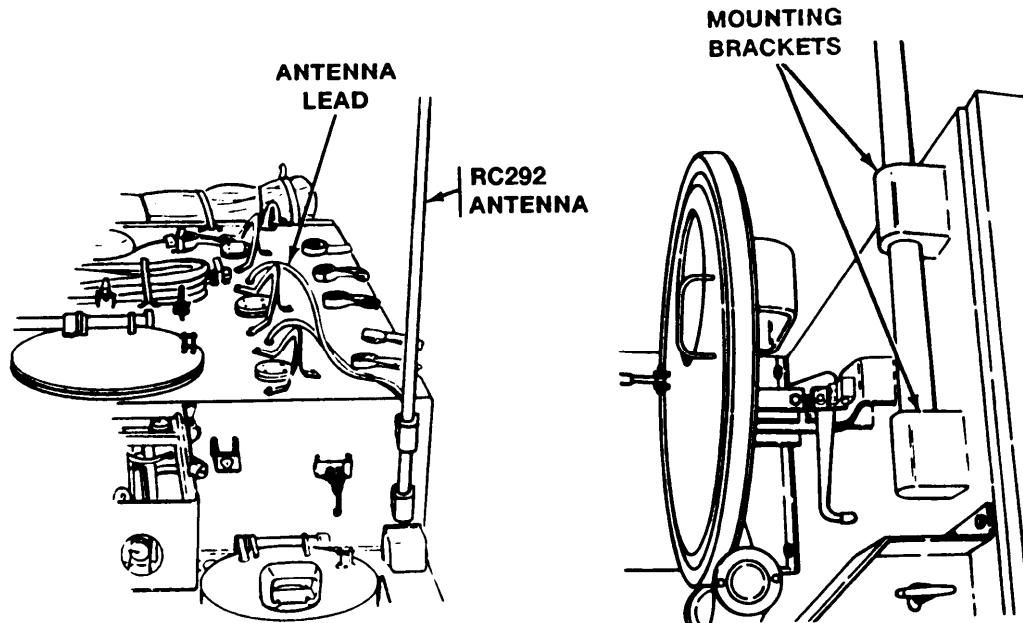
Two antenna mast brackets mounted behind the driver's hatch are used to mount the RC292 antenna. The RC292 is a ground plane whip antenna that will increase the communication range of the radio sets. It consists of a 30-foot mast, a 68-foot, 50-ohm lead-in cable, and antenna sections.

WARNING



If antennas touch electric power lines, you could be electrocuted. Make sure radio antennas have clearance when earner is operating near electric power lines.

Place antenna in mounting brackets. Remove and stop pipe plug from top deck, and insert antenna lead through hole. Connect lead to radio as shown in TM 11-5820-348-15.



Section III. OPERATION AND MAINTENANCE

TASK INDEX

<u>Task</u>	<u>Page</u>	<u>Task</u>	<u>Page</u>
■ Open/Close Commander's Hatch (M577A2 and M1068 Only)	4-10	Operate Auxiliary Power Unit Generator Set (M577A2 and M1068 Only)	4-23 ■
■ Operate Commander's Platform (M577A2 and M1068 Only)	4-11	Set Up Command Post Tent (Covered Extension) (M577A2 Only)	4-26
■ Open/Close Driver's Hatch (M577A2 and M1068 Only)	4-12	Set Up Modular Command Post System (MCPS) (M1068 Only)	4-30.1 ■
Raise/Lower Drop Leaf Tables (M577A2 Only)	4-14	Dismantle/Stow Modular Command Post System (M1068 Only)	4-30.2 ■
■ Install/Remove Driver's Blackout Curtain (M577A2 and M1068 Only)	4-15	Install/Remove Tent Liner for Extreme Cold Weather (M577A2 Only)	4-31
■ Unstow/Stow Wall Racks (M577A2)	Deleted	Dismantle/Stow Command Post Tent (Covered Extension) (M577A2 Only)	4-34
■ Unstow/Stow Map Table and Board (M577A2 and M1068 Only)	4-18	Refuel Carrier and Generator Set (M577A2 and M1068 Only)	4-35 ■
■ Remove/Install Auxiliary Power Unit (M577A2 and M1068 Only)	4-20	Operate Electronic Equipment Heater (M577A2 Only)	4-39

GO TO NEXT PAGE

OPEN/CLOSE COMMANDER'S HATCH (M577A2 AND M1068 ONLY)

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Carrier stopped

OPEN HATCH

WARNING



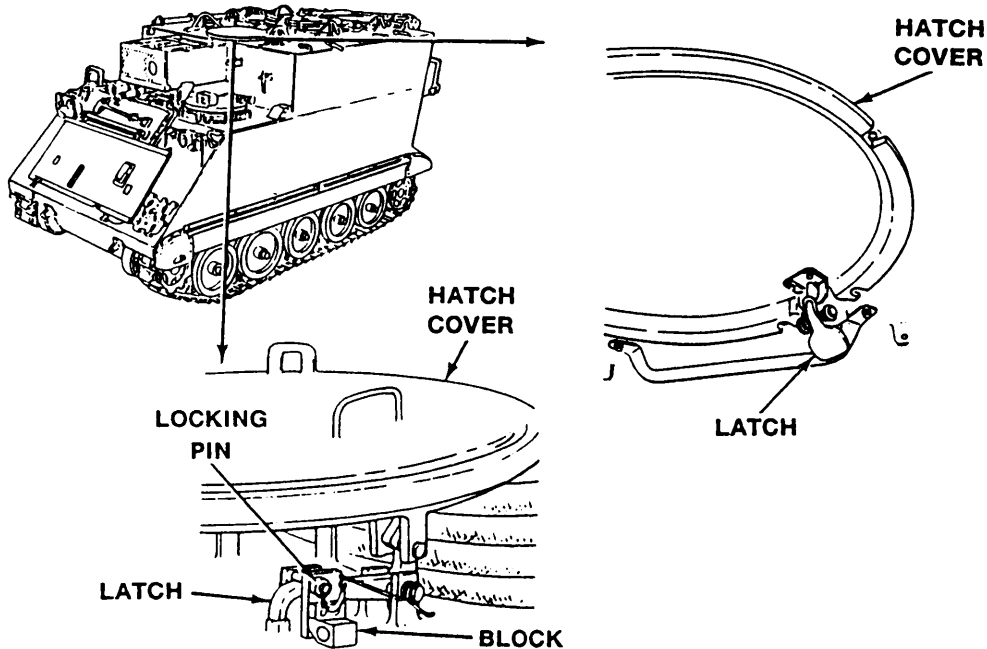
Unsecured hatch cover could move and hit you in the head. When hatch is open, secure latch with locking pin.

1. From inside carrier, press latch to release spring and open hatch cover.

2. Push hatch cover all the way back. Make sure it is secured by hold-open latch.
3. Remove locking pin from block. Secure hatch with locking pin.

CLOSE HATCH

1. Remove latch locking pin and stow pin in block.
2. Lift latch to release cover and close hatch.



END OF TASK

**OPERATE COMMANDER'S PLATFORM
(M577A2 AND M1068 ONLY)**

INITIAL SETUP**Personnel Required:**

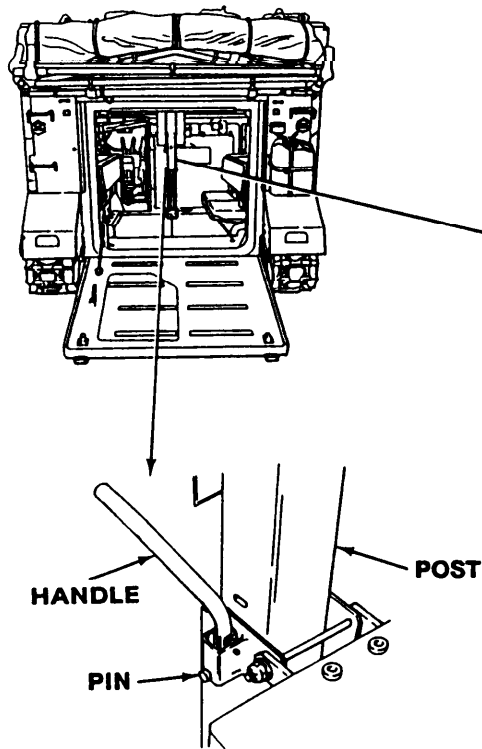
Soldier

Equipment Conditions:

Carrier stopped

ADJUST PLATFORM

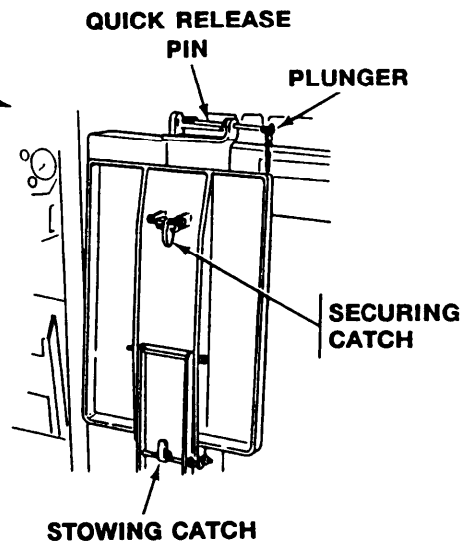
1. Move handle toward post to disengage pin from hole in post. Release handle when platform is at desired height. The securing catch will hold platform in position.

**STOW PLATFORM**

1. Fold platform against post. The stowing catch will secure platform against post.

LOWER PLATFORM

1. Depress plunger in pin and remove pin. Lower platform to floor.



END OF TASK

OPEN/CLOSE DRIVER'S HATCH (M577A2 AND M1068 ONLY)

DESCRIPTION

This task covers: Open Driver's Hatch (page 4-12). Close Driver's Hatch (page 4-13).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

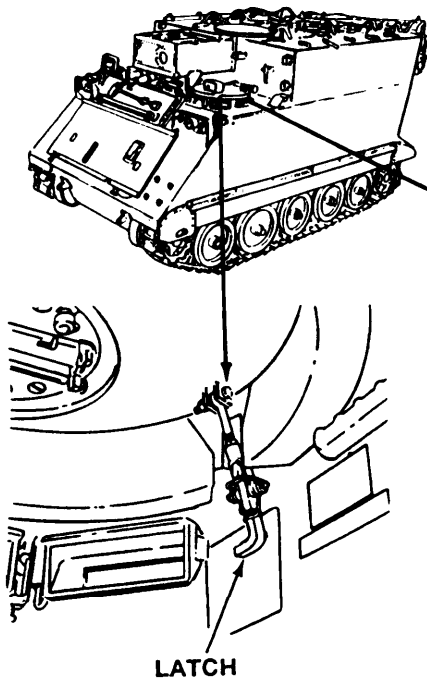
Carrier stopped

OPEN HATCH

WARNING



Unsecured hatch cover could move and hit you in the head. When hatch is open, secure latch with locking pin.

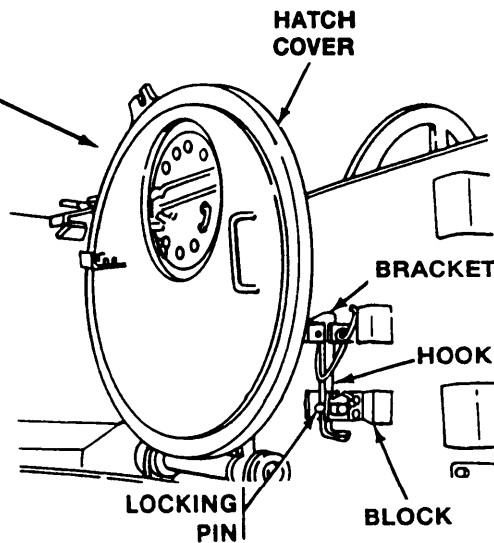


LATCH

NOTE

Exterior latch is spring loaded.

1. From inside earner, lift latch and push hatch cover back until bracket on cover is secured by hook.
2. Remove latch locking pin from block and install locking pin in bracket to secure hook.



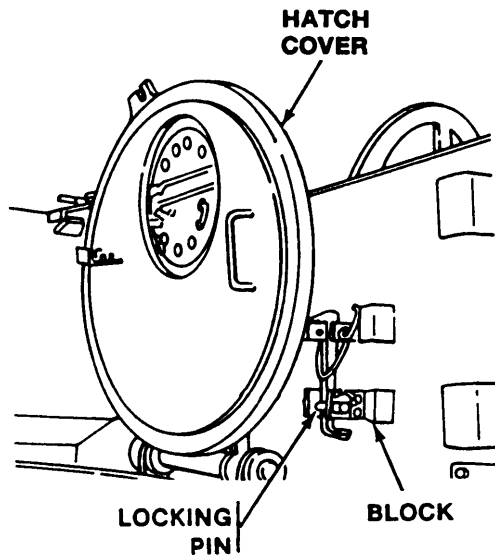
CLOSE HATCH

WARNING

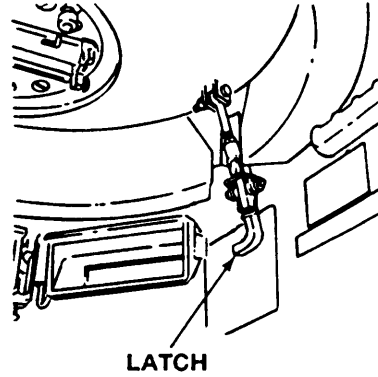


Unsecured hatch cover could move and hit you in the head. When hatch is closed, secure hatch with exterior locknut.

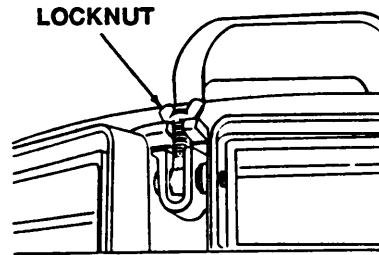
1. Remove latch locking pin and stow in block.



2. Pull latch to release hatch cover.



3. Secure hatch cover closed with exterior locknut.



END OF TASK

RAISE/LOWER DROP LEAF TABLES (M577A2 ONLY)

INITIAL SETUP

Personnel Required:

Crew

Equipment Conditions:

Carrier stopped

RAISE TABLES

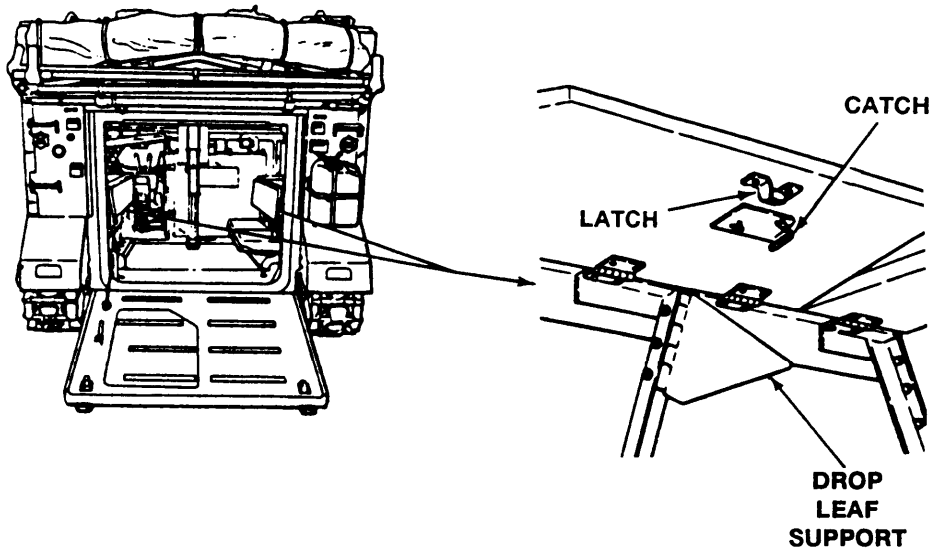
1. Raise tables and secure by turning supports 90 degrees from the stowed position. Support should rest against catch.

NOTE

The section of table over the battery box is raised to provide access to the battery box.

LOWER TABLES

1. Rotate supports 90 degrees toward stowed position, and lower tables.



END OF TASK

INSTALL/REMOVE DRIVER'S BLACKOUT CURTAIN (M577A2 AND M1068 ONLY)

INITIAL SETUP

Personnel Required:

Crew

Equipment Conditions:

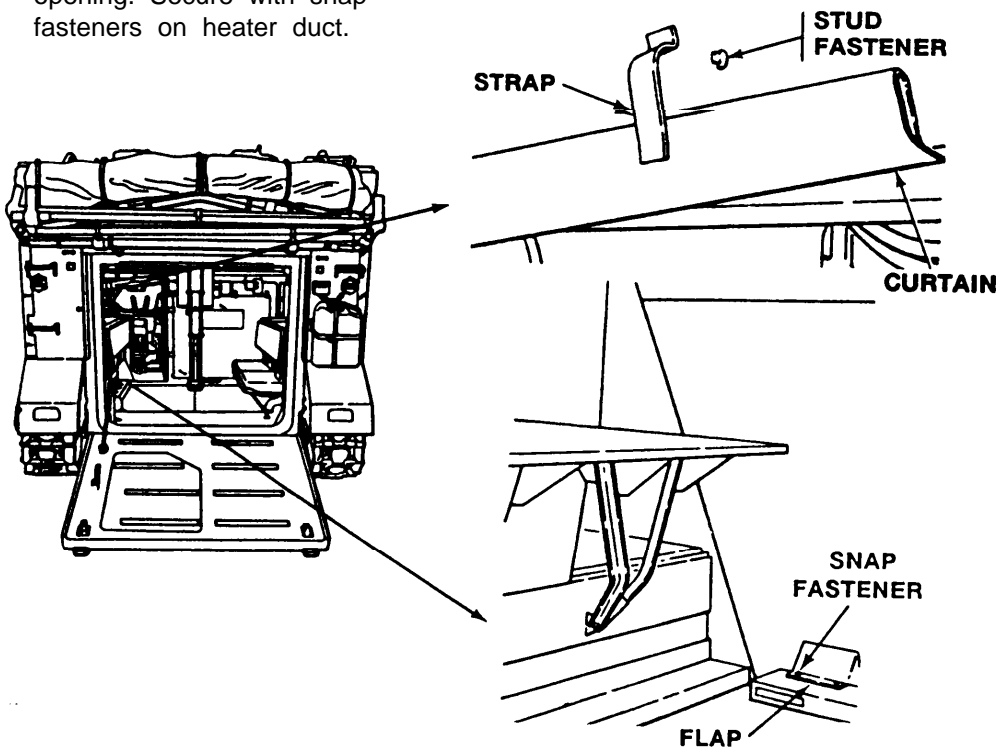
Carrier stopped

INSTALL CURTAIN

1. Unsnap straps from stud fasteners above entrance to driver's compartment.
2. Let curtain fall to bottom of opening. Secure with snap fasteners on heater duct.

REMOVE CURTAIN

1. Unsnap fasteners on heater duct.
2. Fold curtain up and snap straps to stud fasteners above entrance to driver's compartment.



END OF TASK

UNSTOW/STOW MAP TABLE AND BOARD (M577A2 AND M1068 ONLY)

DESCRIPTION

This task covers: Unstow (page 4-18). Stow (page 4-19).

INITIAL SETUP

Personnel Required:

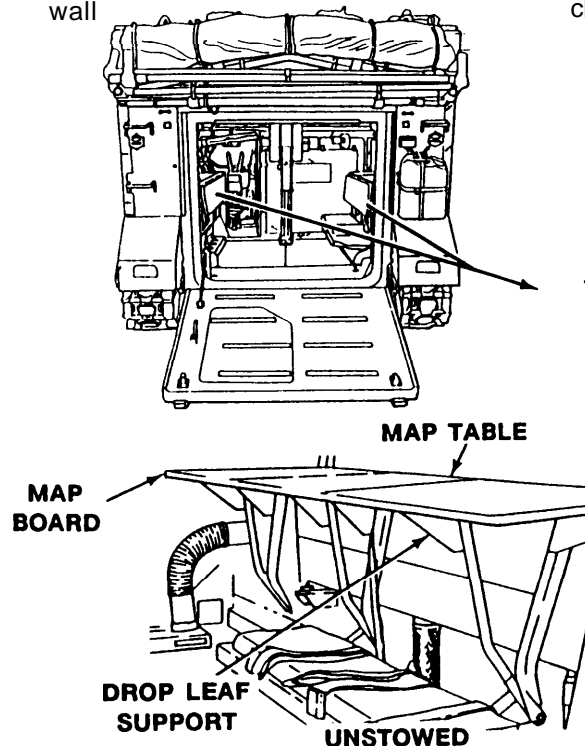
Crew

Equipment Conditions:

Carrier stopped

UNSTOW MAP TABLE (M577A2 ONLY)

1. Remove straps securing personnel seat to map table.
2. Open drop leaf supports on map table. Lock table in position directly below map board on right wall

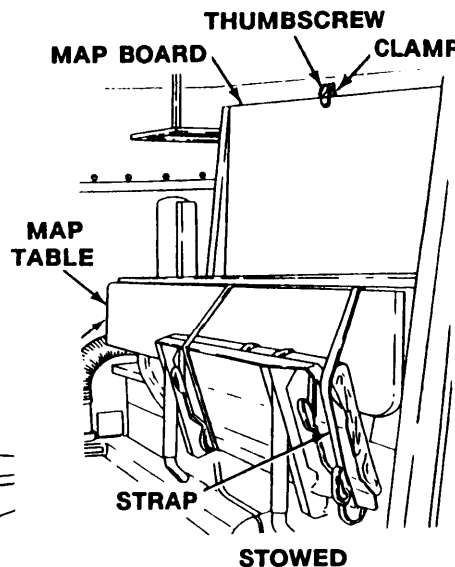


UNSTOW MAP BOARD (M577A2 ONLY)

NOTE

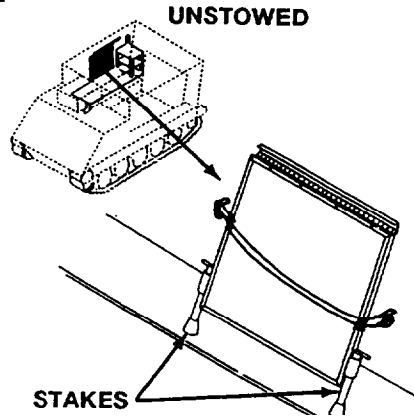
Map board can be removed and used in tent. Chains on back make it easy to hang.

1. Loosen thumbscrews, release clamps, and lower map board.



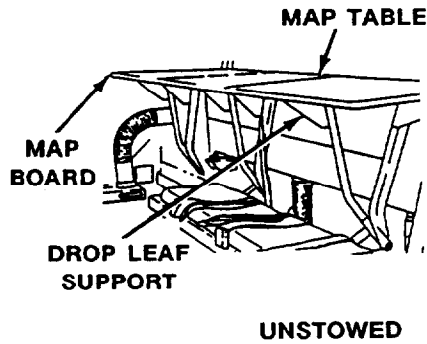
**UNSTOW MAP BOARD
(M1068 ONLY)**

1. Remove strap securing map board.
2. Raise two stakes and swing bottom end of map board out.
3. Slide two stakes down until they secure map board in desired position.



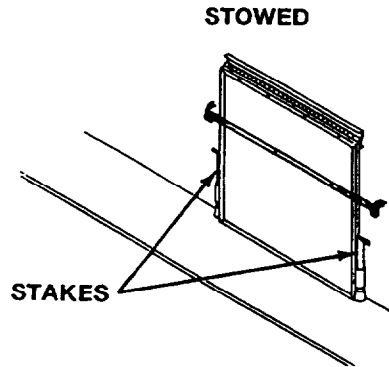
**STOW MAP TABLE
(M577A2 ONLY)**

1. Close drop leaf supports on map table.
2. Install straps to secure personnel seat to map table.



**STOW MAP BOARD
(M1068 ONLY)**

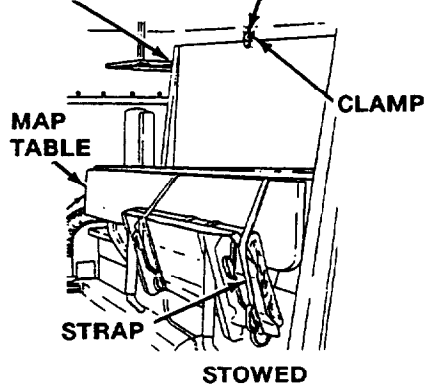
1. Pull bottom end of map board up and slide two stakes up.
2. Swing map board against hull and slide two stakes down to secure in stowed position.
3. Install strap to secure map board to stowed position.



**STOW MAP BOARD
(M577A2 ONLY)**

1. Raise map board to stowed position.
2. Tighten thumbscrews on clamps to secure map board.

MAP BOARD THUMBSCREW



END OF TASK

REMOVE/INSTALL AUXILIARY POWER UNIT (M577A2 AND M1068 ONLY)

DESCRIPTION

This task covers: Remove (page 4-20). Install (page 4-21).

INITIAL SETUP

Personnel Required:

Driver
crew

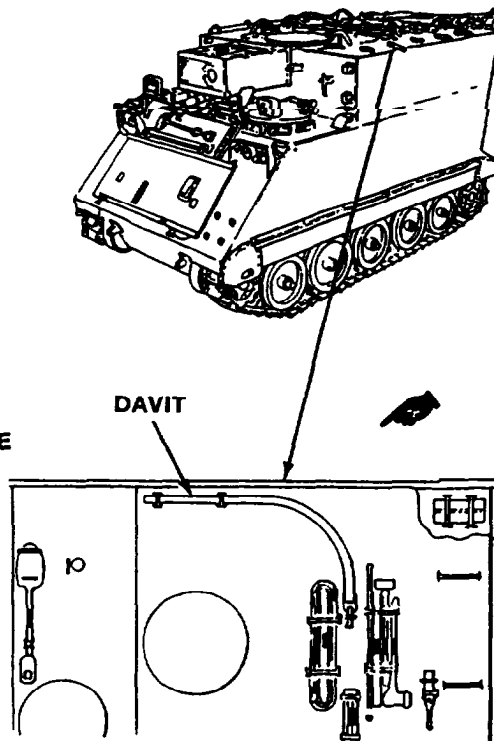
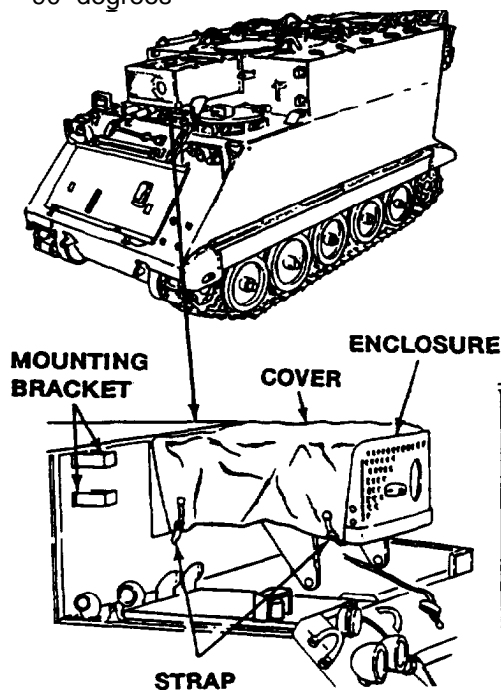
Equipment Conditions:

Carrier stopped

REMOVE

1. Remove waterproof cover if auxiliary power unit is to be removed from enclosure.
2. Loosen thumbscrews and clamps securing generator set to enclosure. Turn clamps 90 degrees

3. Remove davit and chain hoist from stowed position on top deck.



- Position davit in mounting brackets. Attach chain hoist hooks to davit and lifting bar on generator set.

WARNING



Hanging loads could kill or injure you. Keep away from hanging loads and overhead equipment.

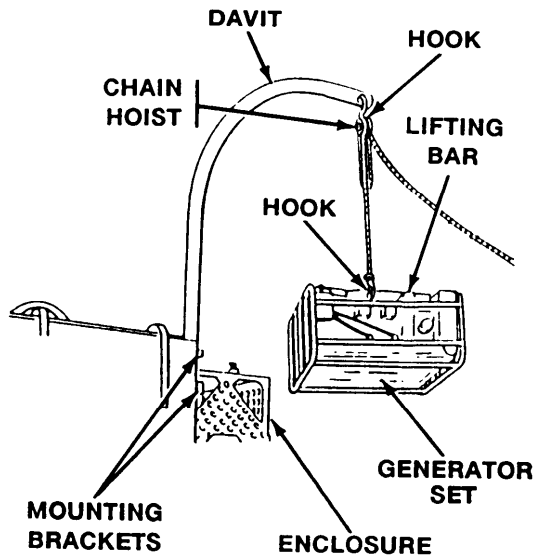
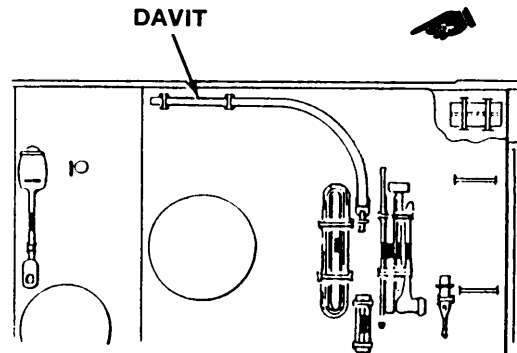
CAUTION

Use only 83 octane gasoline in M577A2 and M1068 generator sets.

INSTALL

- Remove davit from stowed position on top deck of carrier and chain hoist from bag.

- Hoist generator set enough to clear enclosure. Swing generator set clear of carrier and lower it to the ground.
- Stow davit on top deck. Stow chain hoist in bag inside carrier, right side sponson.



- Position davit in mounting brackets. Attach chain hoist hooks to davit and lifting bar on generator set.

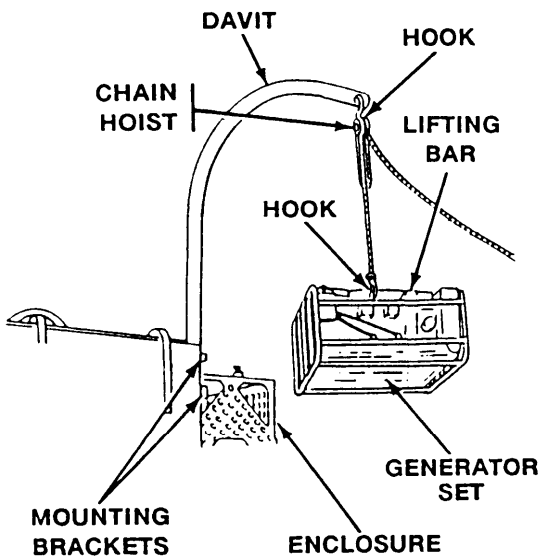
GO TO NEXT PAGE



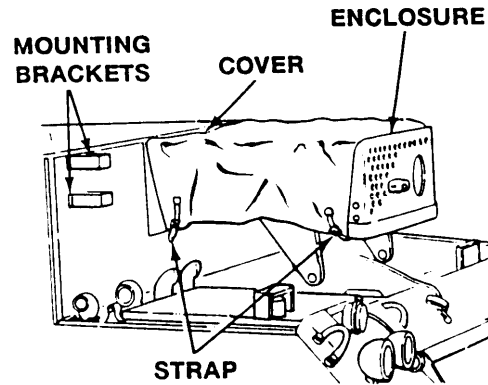
WARNING

Hanging loads could kill or injure you. Keep away from hanging load and overhead equipment.

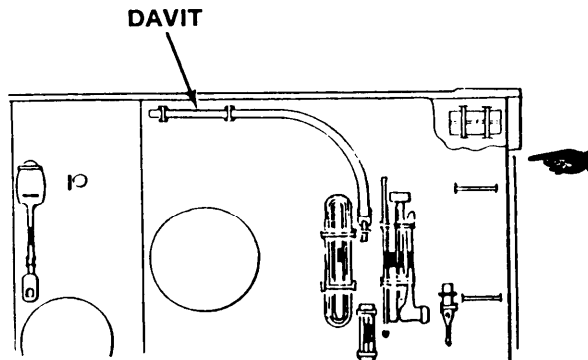
3. Hoist generator set enough to clear enclosure. Swing generator set over enclosure and lower slowly into enclosure.



4. Tighten thumbscrews and clamps securing generator set to enclosure. Turn clamps 90 degrees.
5. Install waterproof cover on auxiliary power unit.



6. Stow davit on top deck. Stow chain hoist in bag inside carrier, right side sponson.



END OF TASK

OPERATE AUXILIARY POWER UNIT GENERATOR SET (M577A2 AND M1068 ONLY)

INITIAL SETUP

Personnel Required:

Driver
Crew

Equipment Conditions:

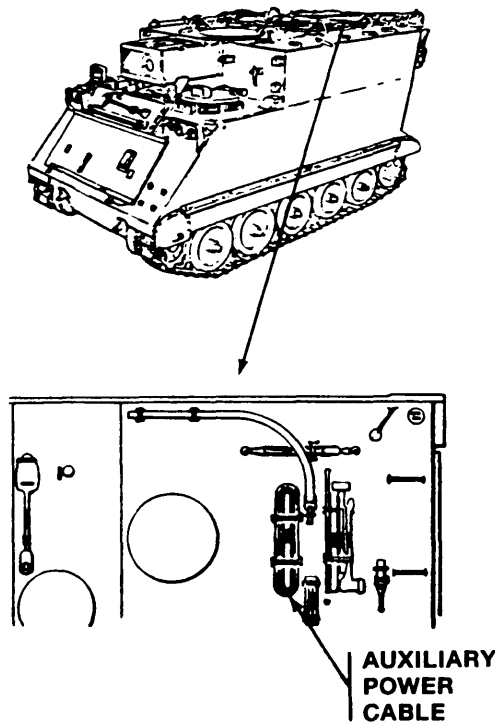
Engine stopped (page 2-184)
Carrier stopped
Auxiliary power unit removed and on level ground (page 4-20)

References:

TM 5-6115-596-14

OPERATE GENERATOR SET

1. Turn MASTER SWITCH OFF.
2. Remove auxiliary power cable from its stowed position on top deck of carrier.



GO TO NEXT PAGE

Change 3

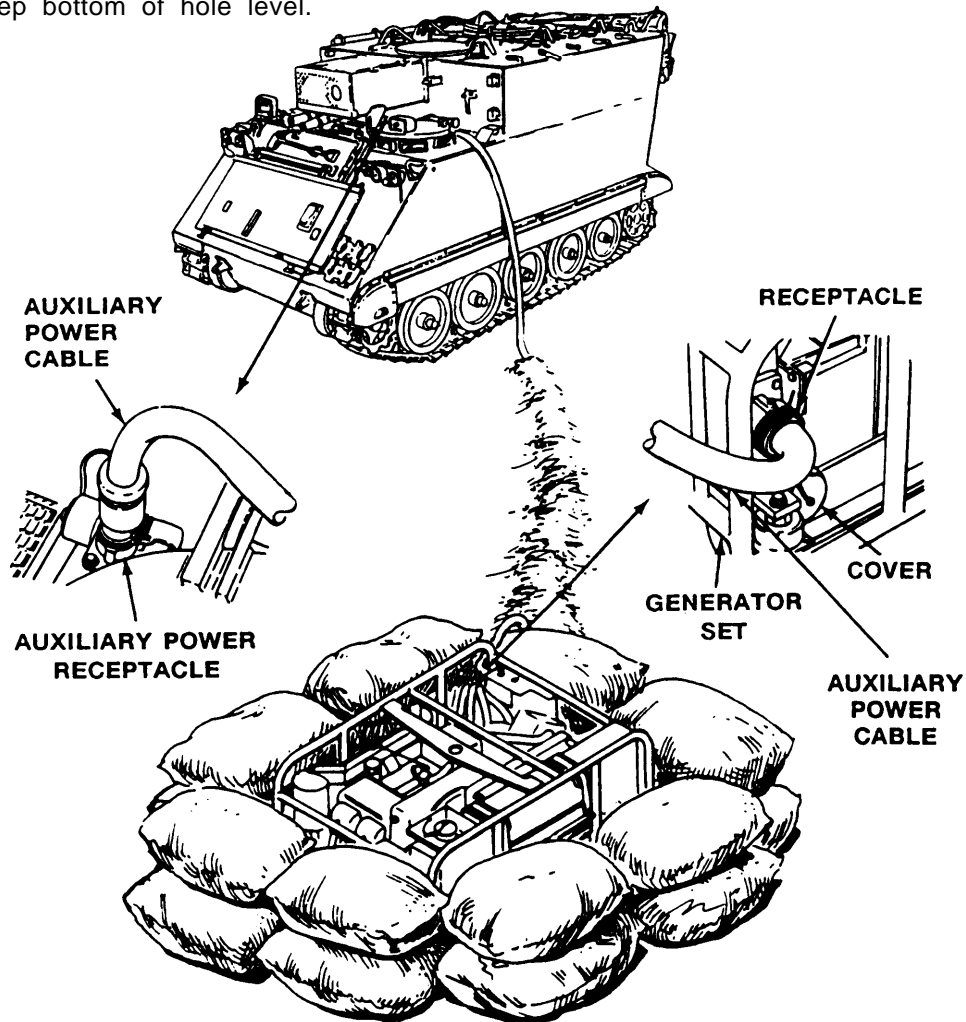
4-23

3. Connect auxiliary power cable to auxiliary power receptacle on top deck of earner near driver's hatch.
4. Unroll auxiliary power cable to its full length.
6. Set generator set in hole. Place sand bags around hole to camouflage generator set and help reduce noise during operation. Have crew help.

NOTE

Generator must be level to operate properly.

5. Locate a good position to set up generator set. Dig a shallow hole large enough for generator set. Keep bottom of hole level.

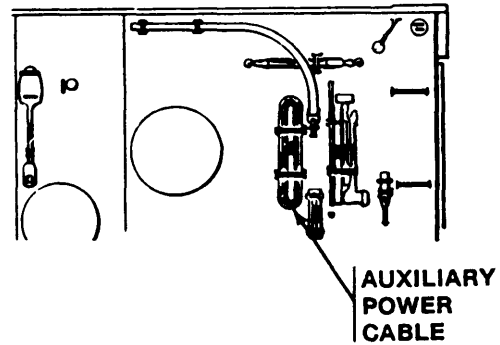


8. Turn MASTER SWITCH ON.
9. Start and operate the generator set, as described in TM 5-6115-596-14.
10. Shut down generator set, as described in TM 5-6115-596-14.
11. Turn MASTER SWITCH OFF.

CAUTION

■ Use only 83 octane gasoline in the M577A2 and M1068 generator sets.

12. Disconnect and stow auxiliary power cable.



END OF TASK

SETUP COMMAND POST TENT (COVERED EXTENSION) (M577A2 ONLY)

DESCRIPTION

This task covers: Set Up Tent (page 4-26).
Add Additional Tents (page 4-30).

INITIAL SETUP

Personnel Required:

Driver
crew

Equipment Conditions:

Carrier stopped

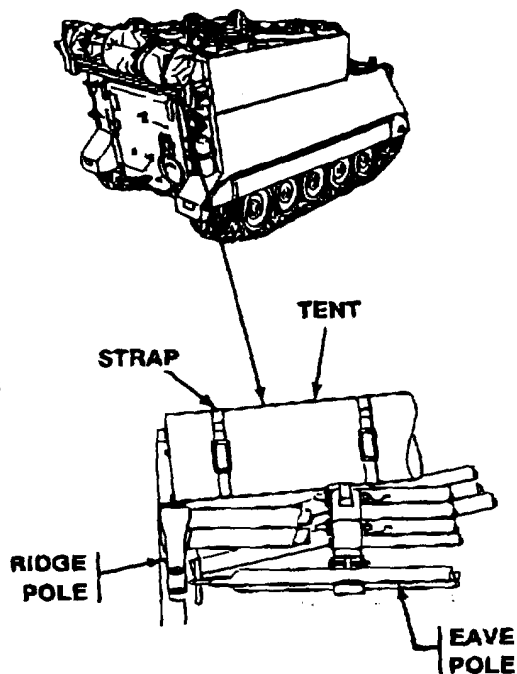
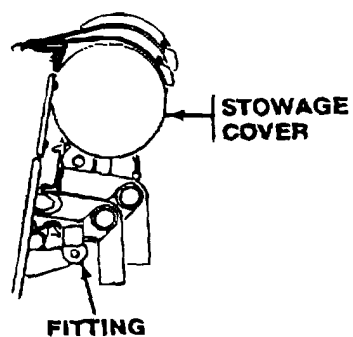
SET UP TENT

1. Lower ramp until it is level with carrier floor (page 2-153).

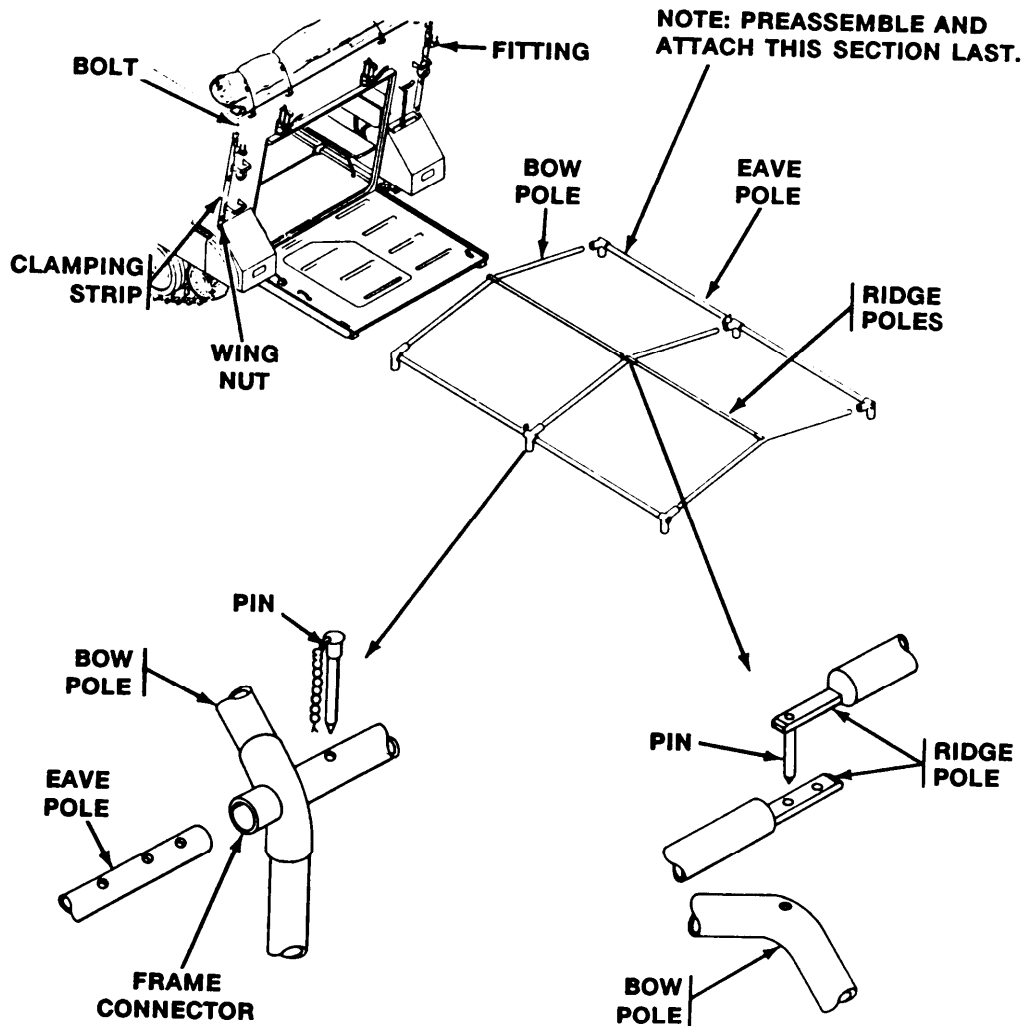
NOTE

Get the staking pins and tent lights from their stowed position under the left forward table and set them outside.

2. Unfasten four straps securing tent to top of carrier.
3. Remove framework poles and legs from stowed position at tear of carrier.



4. Arrange poles on ground.
5. Extend cave poles, insert pins, and partially assemble framework.
6. Insert ridge pole pins into bow poles.



GO TO NEXT PAGE

NOTE

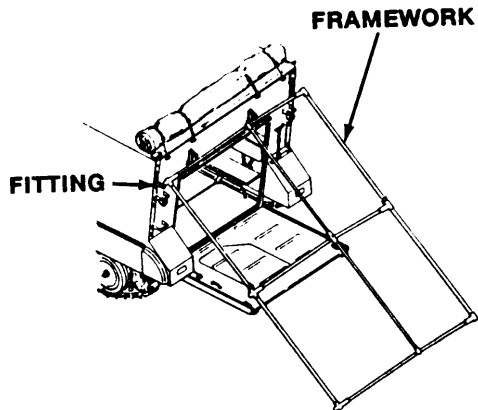
Two men are required on each side of frame to lift it into position on carrier.

7. Attach frame to carrier at two fittings.

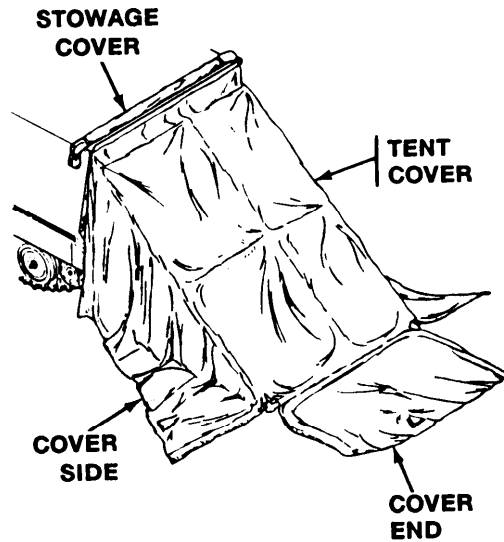
NOTE

If you need protection against extreme cold weather, install tent liner.

See task: **INSTALL/REMOVE TENT LINER FOR EXTREME COLD WEATHER**, (page 4-31).

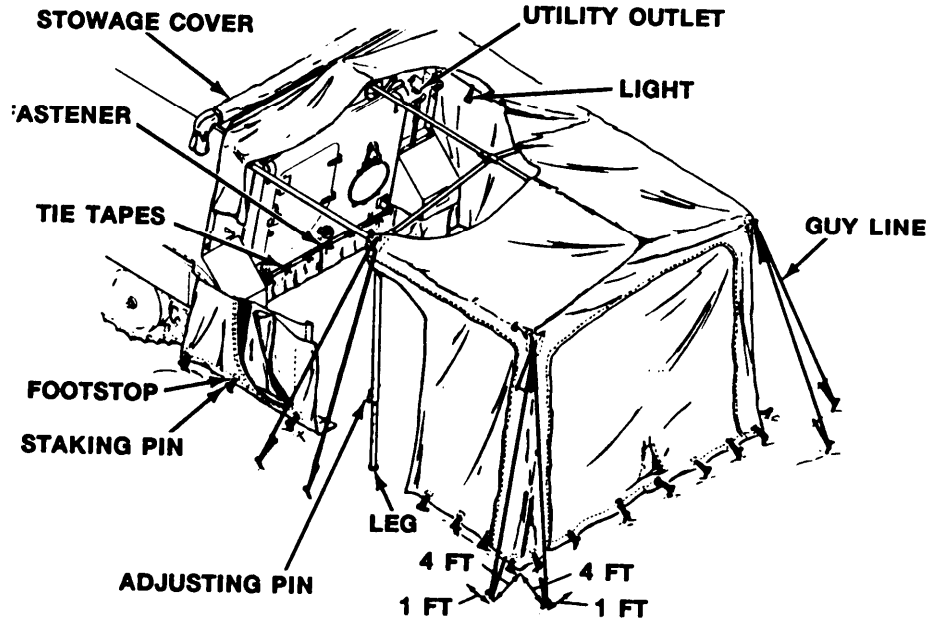


8. Unroll tent cover along framework, and unfold sides and end.



9. Lift rear of frame assembly and insert both rear legs at the same time.
10. Install two center legs in frame assembly.
11. Adjust all four legs to contour of ground.
12. Loosen the three wingnuts securing clamping strips to hull at each side of ramp.
13. Insert beaded edge of cover under clamping strip. Tighten wingnuts. Two soldiers are required (one on top of carrier and one on ground).
14. Raise and lock ramp (page 2-153).

15. Zip fastener and tie curtain under carrier.
16. Drive 34 staking pins through 34 footstops.
17. Drive eight staking pins for guy lines.
18. Secure and tighten guy lines.
19. Tie tapes around frame assembly legs.
20. Tie stowage cover to top edge of carrier and to sides of tent.
21. Unlock and lower ramp to ground (page 2-153).
22. Install electric light assembly and secure with tie.
23. Connect light assembly to one of two utility outlets on either side of ramp.
24. Secure eight straps inside enclosure, along junction of top and side, to frame.



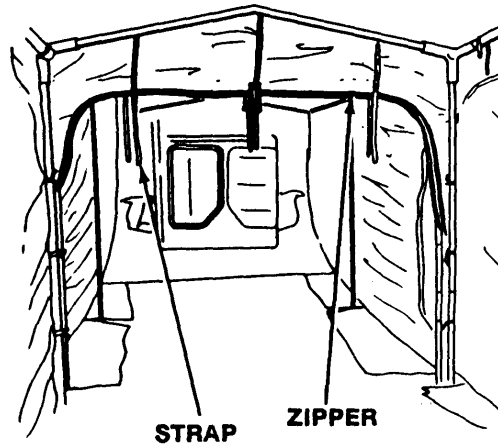
GO TO NEXT PAGE

ADD ADDITIONAL TENTS

NOTE

Many additional tents may be erected and attached as required for tactical operation.

1. Align and erect additional tents to any of three entrances of previously erected tent.
2. Remove entrance covers. Attach tents by zipping entranceways together. Secure with straps.



END OF TASK

**SET UP MODULAR COMMAND POST SYSTEM
(MCPS) (M1068 ONLY)**

INITIAL SETUP

Personnel Required:

Driver
Crew

Equipment Conditions:

Carrier stopped

SET UP MCPS

1. Lower ramp until it is level with carrier floor (page 2-153).
2. To set up MCPS, see TM 10-5410-229-13&P.

ADD ADDITIONAL TENTS

NOTE

Many additional tents may be erected and attached as required for tactical operation.

1. To add additional tents, see TM 10-5410-229-13&P.
-

END OF TASK

**DISMANTLE/STOW MODULAR COMMAND POST
SYSTEM (MCPS) (M1068 ONLY)**

INITIAL SETUP

Personnel Required:

Driver
Crew

Equipment Conditions:

Carrier stopped

DISMANTLE/STOW MCPS

1. To dismantle/stow MCPS, see
TM 10-5410-229-13&P.
-

END OF TASK

REFUEL CARRIER AND GENERATOR SET (M577A2 AND M1068 ONLY)

DESCRIPTION

This task covers: Refuel Carrier (page 4-36).
Refuel Generator Set (page 4-38).

INITIAL SETUP

Personnel Required:

Driver

References:

TM 5-6115-596-14

Equipment Conditions:

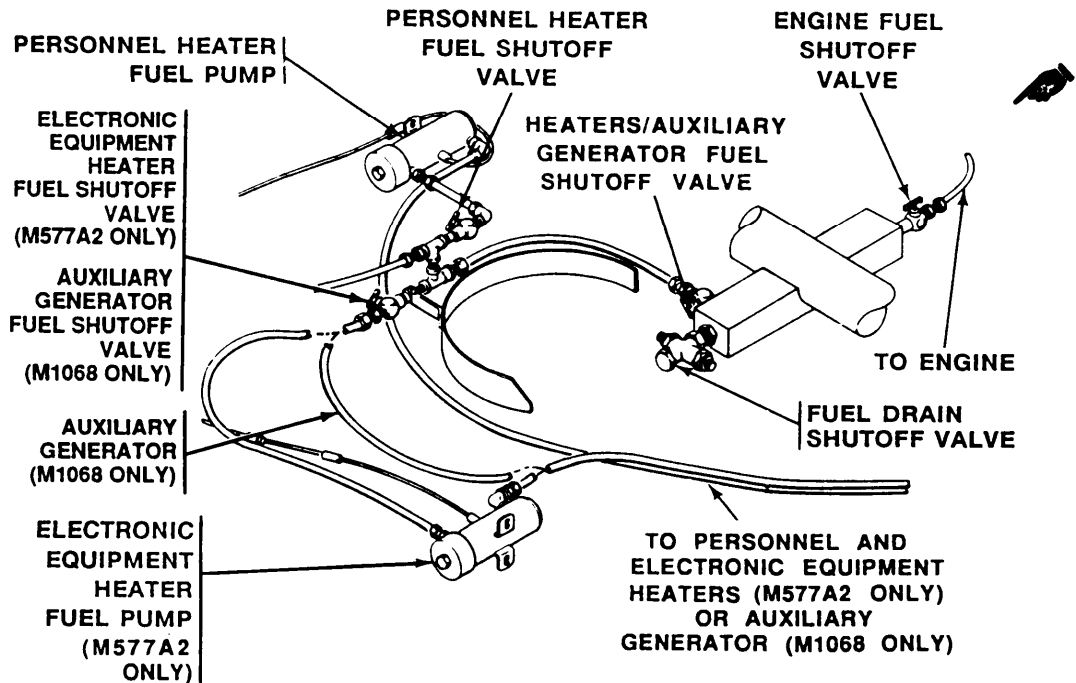
Engine stopped (page 2-184)

Carrier blocked (page 2-221)

Remove floor plates

NOTE

The engine fuel shutoff valve, personnel heater shutoff valve, electronic equipment heater shutoff valve, and fuel drain shutoff valve are all located beneath the floor plates on the M577A2 and M1068.



GO TO NEXT PAGE

REFUEL CARRIER

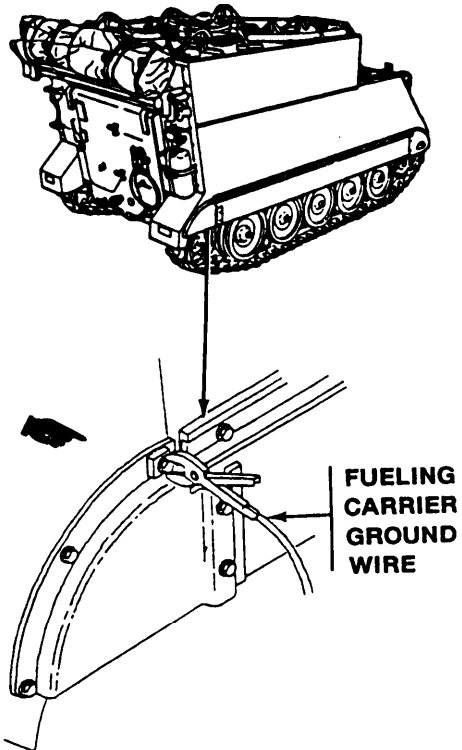


WARNING

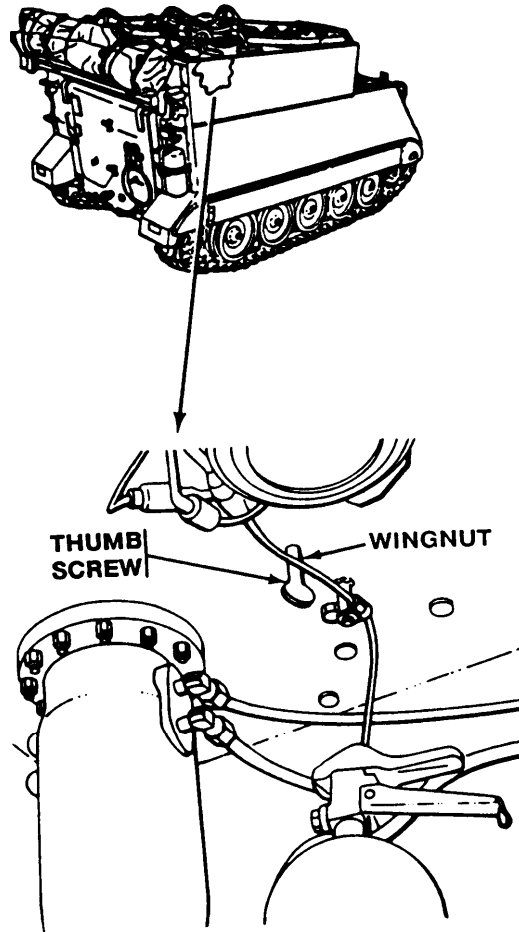
Diesel fuel can catch fire and bum you. Do not smoke or allow open flame near carrier when you

are refueling.

1. Install fueling earner ground wire to bare metal on earner to be fueled.



2. From inside carrier, unlock fuel filler combat cover by loosening wingnut and turning thumbscrew to the left.

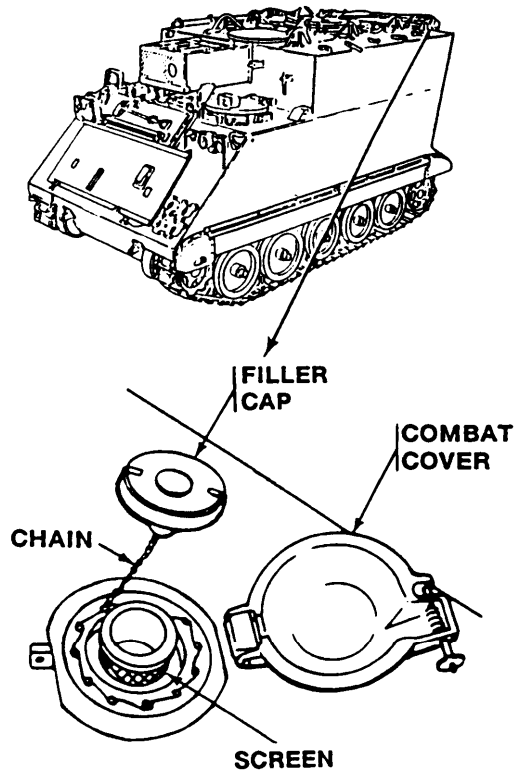


- From outside carrier, open combat cover.

CAUTION

Contamination can damage fuel system. Remove dirt and water from fuel filler area before opening fuel filler cap.

- Clean off any dirt and water that could get into filler neck. Use wiping rag.
- Unscrew filler cap.
- Check screen in filler neck. If there is any dirt in screen, take screen out and clean it. Install screen before refueling.



WARNING

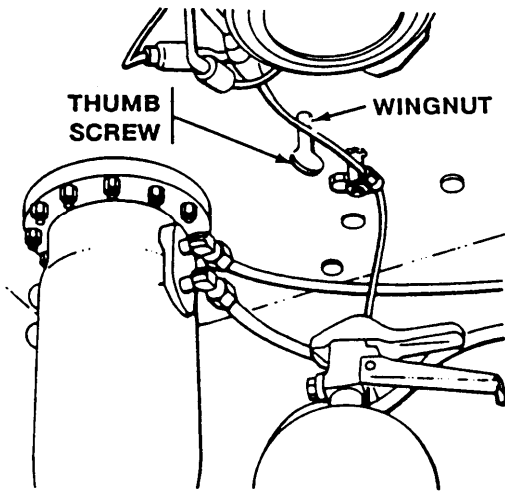


Sparks from static electricity could cause a fire or explosion. Metal nozzle must touch metal in fuel filler

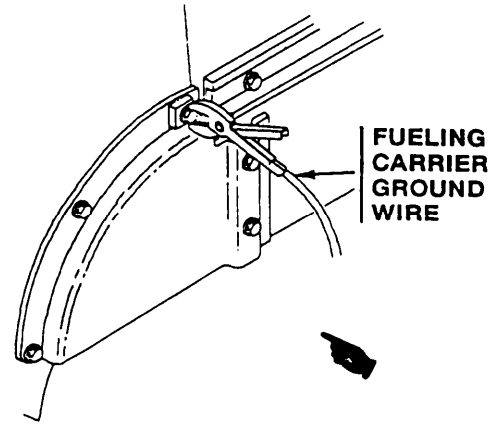
neck when fuel is running.

- Insert nozzle in fuel filler neck. Fill fuel tank allowing 5 inches in fuel filler neck for expansion.
- Remove fuel nozzle from fuel filler neck.
- Install fuel filler cap. Make sure keeper chain is all inside so cap goes on tight.
- Close combat cover

11. Lock combat cover from inside carrier by turning thumbscrew to the right. Tighten wingnut.



12. Remove fueling earner ground wire from carrier.



REFUEL GENERATOR SET

CAUTION

Use only 83 octane gasoline in M577A2 and M1068 generator sets.

To refuel generator set, see TM 5-6115-56-14.

END OF TASK

OPERATE ELECTRONIC EQUIPMENT HEATER (M577A2)

DESCRIPTION

This task covers: Turn Heater On (page 4-39).
Turn Heater Off (page 4-40).

INITIAL SETUP

Personnel Required:

Driver

NOTE

The electronic equipment heater helps maintain personnel compartment temperature above +40°F (4°C) which is necessary for operation of electronic equipment.

NOTE

If you operate heater for an extended time, start engine (page 2-161). Or, use the auxiliary power unit (APU) to keep batteries charged.

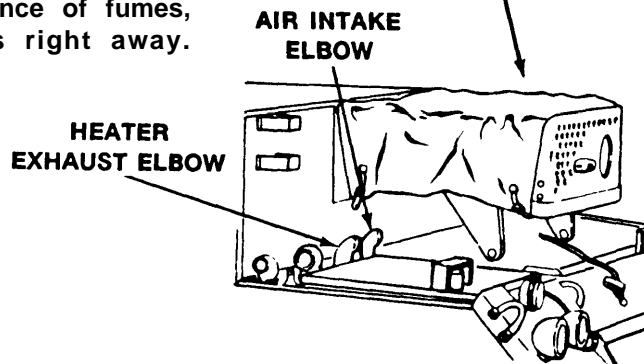
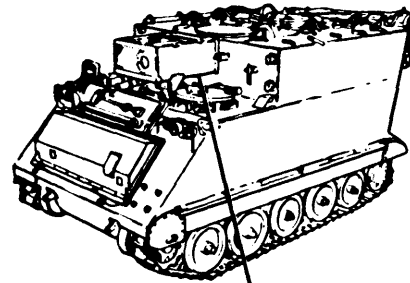
1. From outside carrier, check heater exhaust elbow and air intake elbow to make sure they are not blocked.

TURN HEATER ON

WARNING

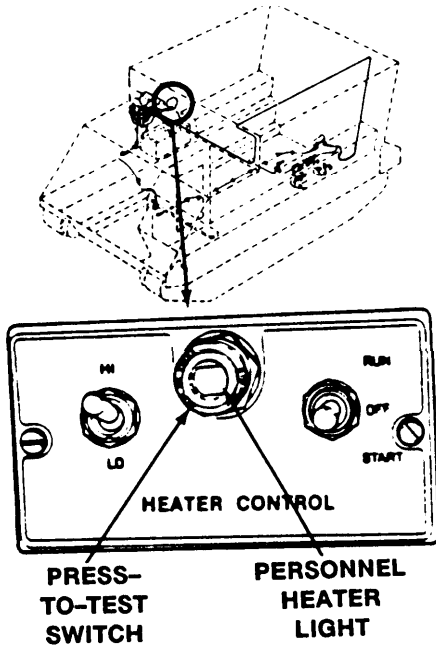


Heater exhaust fumes contain deadly poisonous gases. Severe exposure can cause death or permanent brain damage. Be alert at all times. Check for smell of exhaust fumes. If you detect or suspect the presence of fumes, open all hatches right away. Shut heater OFF.

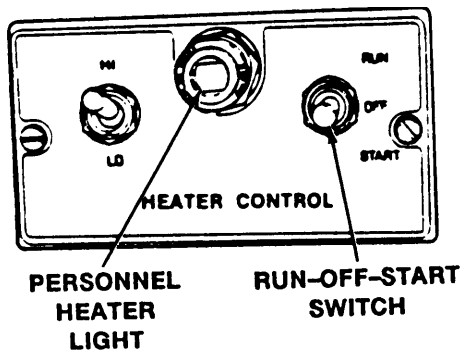


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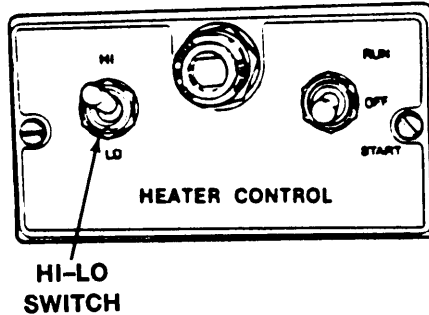
- From inside earner, press PRESS-TO-TEST switch. If light comes on, you have power. If light does not come on, troubleshoot heater (page 3-15).



- Hold RUN-OFF-START switch to START until indicator light comes on. Then move switch to RUN, without stopping in OFF position.



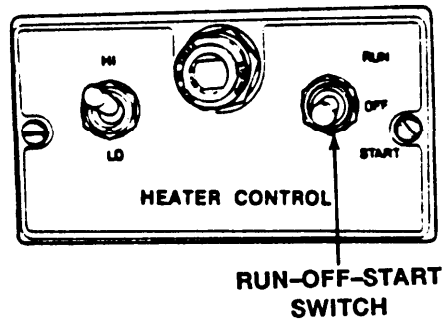
- Select high or low heat with HI-LO switch. Heater will always start on low heat no matter where switch is set. It will go to high after it starts if switch is at HI.



- If heater doesn't start, try again. If it doesn't start in three tries, troubleshoot heater (page 3-15).

TURN HEATER OFF

- Move RUN-OFF-START switch to OFF. Heater will continue to operate for a few minutes until fuel is burned. Then, it will shut itself off.



END OF TASK

CHAPTER 5

M106A2, M1064, AND M125A2 MORTAR CARRIERS

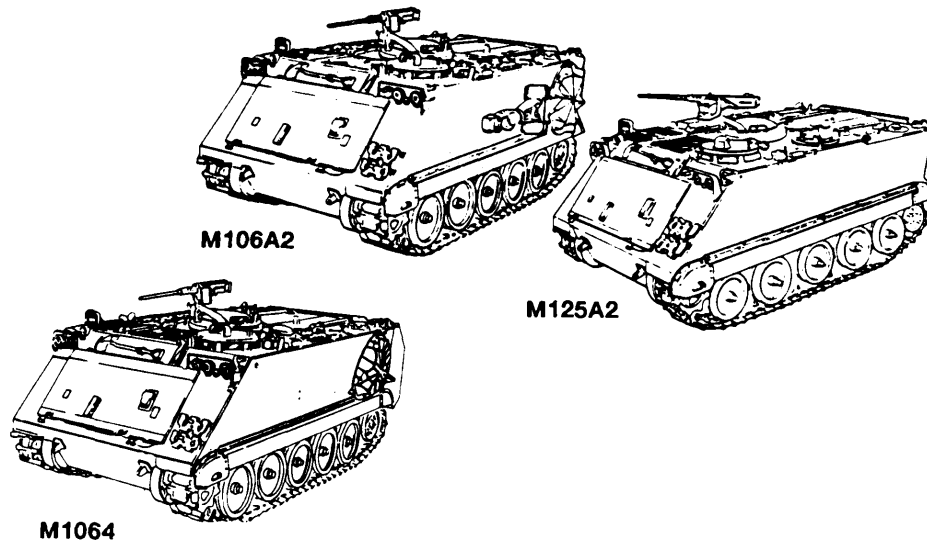
Section I. GENERAL INFORMATION

PURPOSE AND SCOPE

This chapter is for your use in operating and maintaining the M106A2, M1064, and M125A2 Mortar Carriers. If you do not find an item here, look in Chapters 1 through 3 covering the M113A2 Carrier. This chapter must be used with Chapters 1, 2, and 3 to get the full picture on the M106A2, M1064, and M125A2.

The M106A2, M1064, and M125A2 are built from the same plans as the M113A2 except they have a reinforced rear hull floor for firing the mortar. A three-piece hatch cover folds back on the carrier roof and opens up the hull to fire the mortar in an elevated position. The turntable directly under the hatch allows the mortar to be fired left and right of the carrier center line. Ammunition and fuze stowage racks are inside the mortar compartment.

The mortar misfire procedures, operations, maintenance, and ammunition for use on the carriers are found in operator manuals. Operation of the 107-mm, 4.2-inch mortar, M30, used on M106A2 Carriers, is covered in TM 9-1015-215-10. Operation of the 81-mm mortar, M29A1, used on M125A2 Carriers, is covered in TM 9-1015-200-10. Operation of the 120-mm, 4.7-inch mortar, M121, used on M1064 Carriers, is covered in TM 9-1015-250-10.



Section II. OPERATION AND MAINTENANCE

TASK INDEX

<u>Task</u>	<u>Page</u>	<u>Task</u>	<u>Page</u>
Open/Close Mortar Hatch Cover	5-3	Remove/Install 4.2 Inch Ammunition Stowage Spacer (M106A2)	5-9
Open/Close Battery Drawer . . .	5-6	Install Air Grille Curtain (M106A2, M1064, M125A2) . . .	5-11 ■
Remove/Install Antenna Tiedown Rope (M125A2)	5-7		
Remove/Install Mortar Mount Cover (M125A2)	5-8		

OPEN/CLOSE MORTAR HATCH COVER

DESCRIPTION

This task covers: Open (page 5-3). Close (page 5-4).

INITIAL SETUP

Personnel Required:

Indirect Fire Infantryman 11C10

Equipment Conditions:

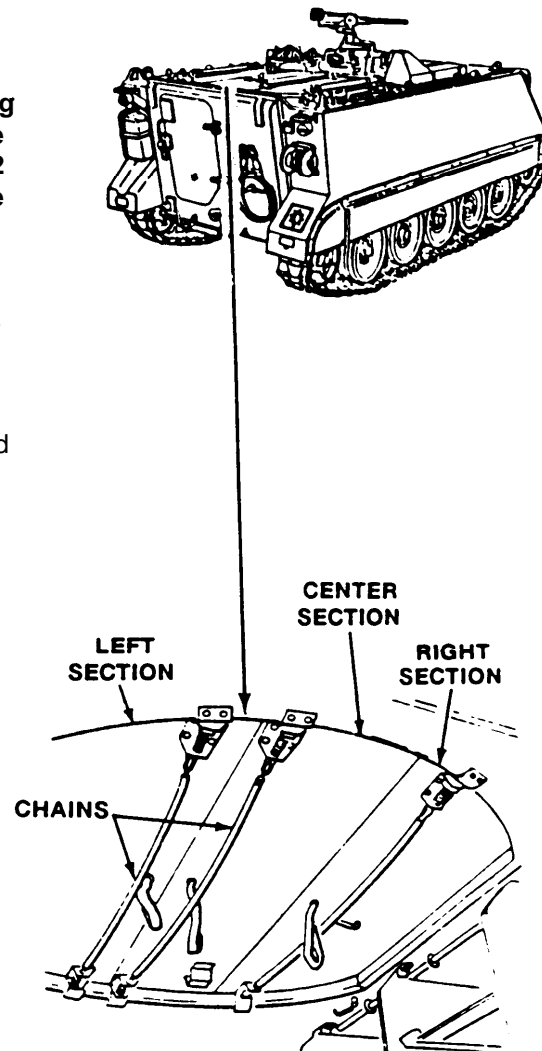
Engine stopped (page 2-184)

OPEN

NOTE

Procedures for opening/closing mortar hatch cover on the M106A2, M1064, and M125A2 carriers are the same. The M125A2 is shown.

1. Position commander's cupola sideways so it does not interfere with hatch cover opening.
2. Pull chains to release the inside door catches. Push hatch upward with free hand to open.
3. Fold center section back on the right section until it locks. Then push both sections back on the top deck.
4. Push left section and fold back on the top deck.

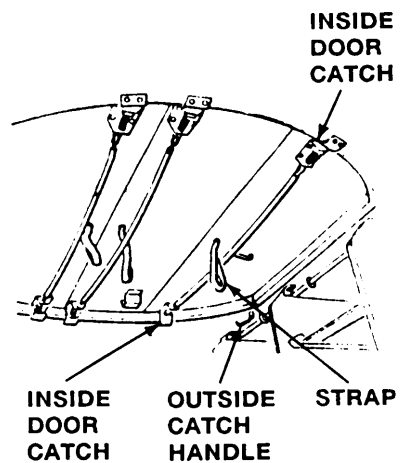
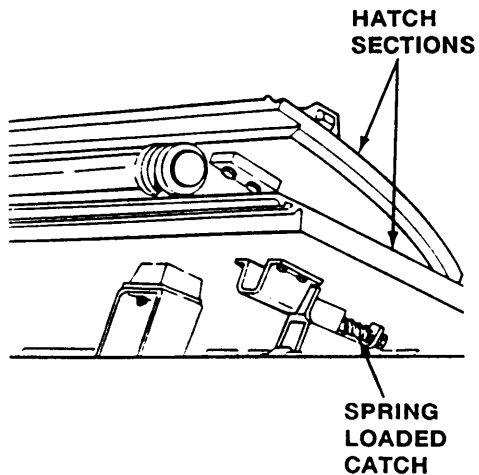


GO TO NEXT PAGE

Change 2

5-3

5. Make sure the hatch sections are locked in the spring loaded catches on the top deck. One catch secures center section to right section.



3. Turn outside catch handle to release catch holding left section to top deck.

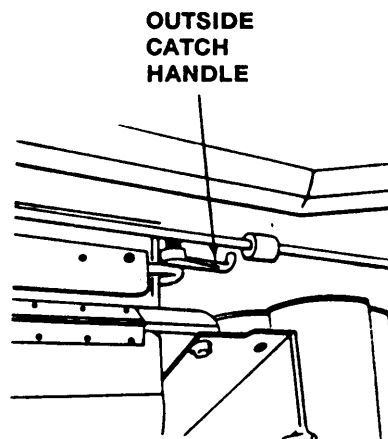
CLOSE

1. Turn outside catch handle to release catch holding right section to top deck.

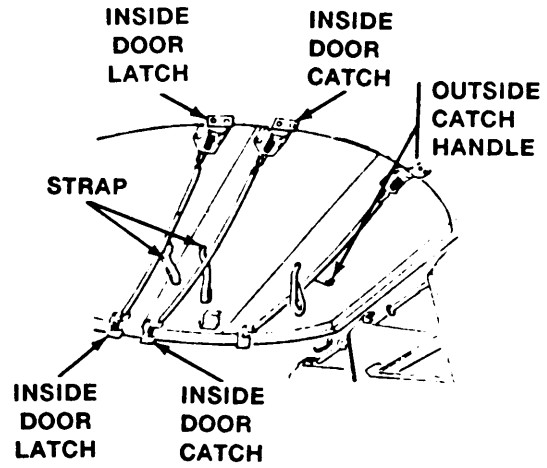
NOTE

Use hatch straps to pull down hatches. Use chains to lock.

2. Pull on strap to close right section of hatch and engage the inside door catches.



4. Pull on strap to close left section and engage inside door latches.
5. Turn outside catch handle to release catch holding center section of hatch to right section.
6. Pull strap to close center section and engage inside door catches.



END OF TASK

OPEN/CLOSE BATTERY DRAWER

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page 2-184)

OPEN

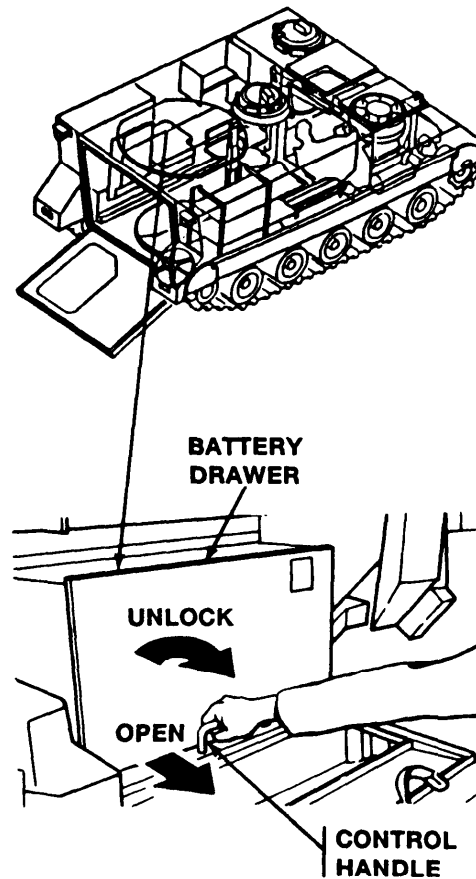
NOTE

Lower the left crew seat backrest before you open battery drawer.

Turn control handle to the right to unlock battery drawer. Pull battery drawer out to open.

CLOSE

Push battery drawer in to close. Turn control handle to the left to lock.



END OF TASK

INSTALL/REMOVE ANTENNA TIEDOWN ROPE (M125A2)

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page 2-184)

INSTALL

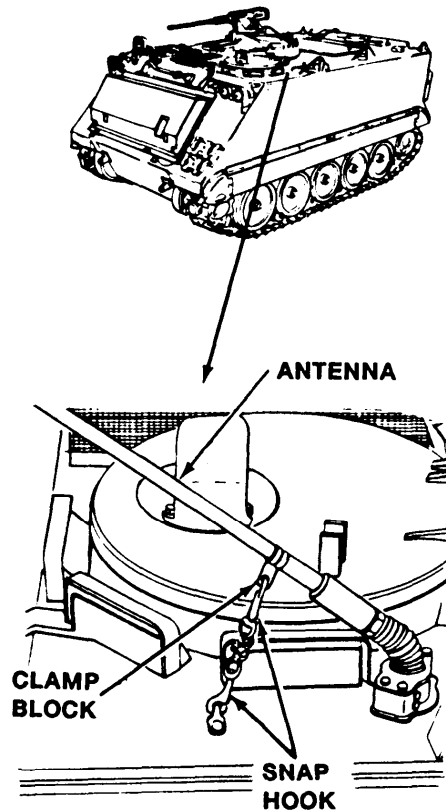
NOTE

The antenna tiedown rope is used to get the antenna out of the way when firing the mortar.

1. Pull antenna down over the front of the carrier.
2. Secure antenna with the rope snap hook on the antenna clamp block.

REMOVE

1. Disconnect snap hook from antenna clamp block.



END OF TASK

REMOVE/INSTALL MORTAR MOUNT COVER (M125A2)

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page-184)

REMOVE

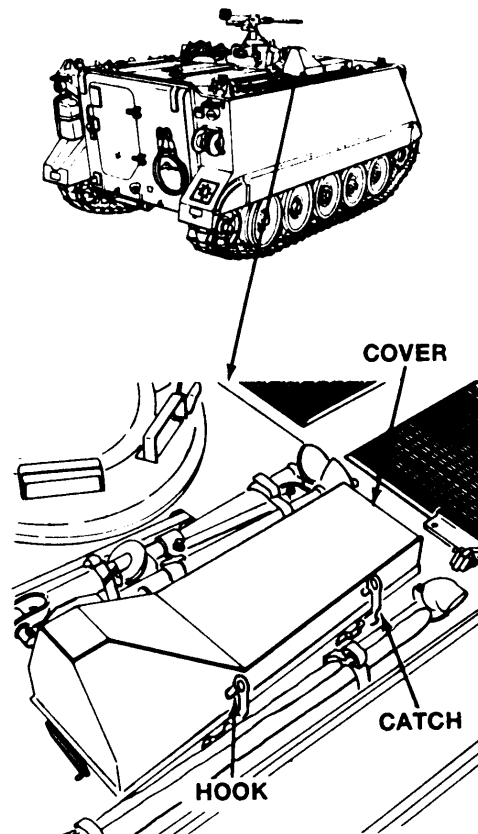
NOTE

The mortar mount cover protects the off-vehicle mortar mount in stowed position.

Pull up on catches and release hooks. Remove mortar mount cover.

INSTALL

Secure mortar mount cover on hooks and push down on catches.



END OF TASK

REMOVE/INSTALL 4.2 INCH AMMUNITION STOWAGE SPACER (M106A2)

INITIAL SETUP

Personnel Required:

Soldier
Helper

Equipment Conditions:

Engine stopped (page 2-184)

REMOVE



WARNING

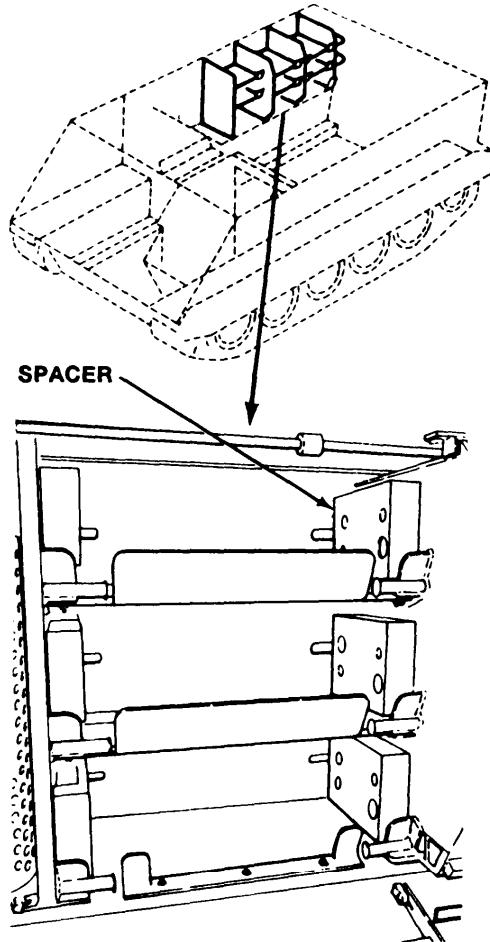
M329A2 mortar ammunition can explode if it is dropped or loose enough to move about when

stowed in racks without proper spacers. Personnel can be killed or injured. Check that correct size spacers are in place before stowing mortar ammunition.

NOTE

Notify unit maintenance for initial installation of ammunition spacer kit if M329A2 ammunition is issued. If carrier is equipped with a personnel heater and ammunition spacer kit and if M329A1 ammunition is to be stowed, the spacers at rear and center racks can be removed by the crew (using tools in the tool bag) to stow 54 rounds of M329A1 ammunition. Use care to prevent dropping screws and washers inside hollow supports. If carrier is equipped with a personnel heater the spacers in the forward ammunition rack must be removed. Notify unit maintenance.

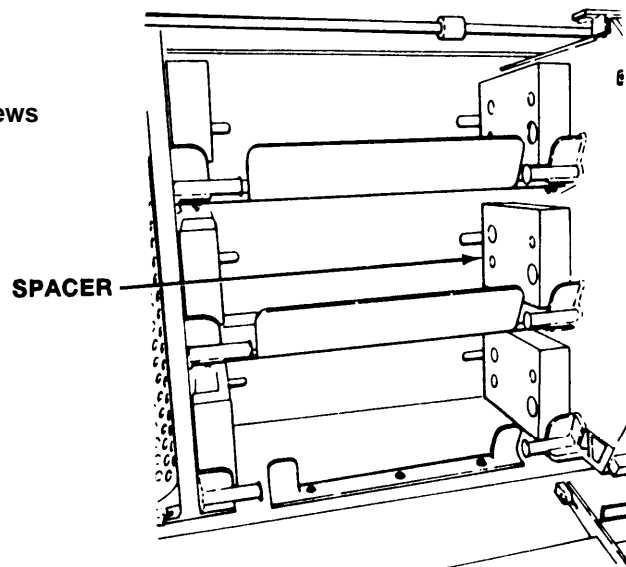
1. Remove screws and washers securing each spacer to supports. Retain all spacers, screws, and washers for future use. Use tools in tool bag,



GO TO NEXT PAGE

INSTALL

1. Install spacers on supports.
Secure each spacer with screws
and washers.



END OF TASK

INSTALL AIR GRILLE CURTAIN (M106A2, M125A2, M1064)

INITIAL SETUP

Personnel Required:

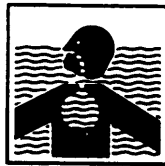
Driver

Equipment Conditions:

Engine stopped (page 2-184)

INSTALL AIR GRILLE CURTAIN (M106A2, M125A2, M1064)

WARNING



M106A2 earner can sink and personnel can drown if carrier is not balanced before it enters the water.

Balance earner by placing mortar ammo as follows:

1. With full combat load - shifting of ammo is not required.
2. With mortar bridge, baseplate, and rotator on vehicle and with 0-16 rounds in vehicle- place all rounds in right rear horizontal rack Dismount mortar bridge from left side of vehicle and place inside on right side of turntable. With 17-38 rounds in

vehicle, place all rounds in right rear and center horizontal racks, filling rear rack first. With 39-88 rounds in vehicle, place 38 rounds in right rear and center horizontal racks. Distribute remaining rounds equally between right horizontal rack and vertical rack on left side.

- 3* Without mortar bridge, baseplate, and rotator on vehicle and with 0-88 rounds in vehicle, divide total number of rounds equally between left and right sides. On the right side, fill the rear rack first. On the left side fill vertical rack. Stack any excess at left rear inside corner of vehicle.

After entering water, shift ammo or personnel to balance vehicle.

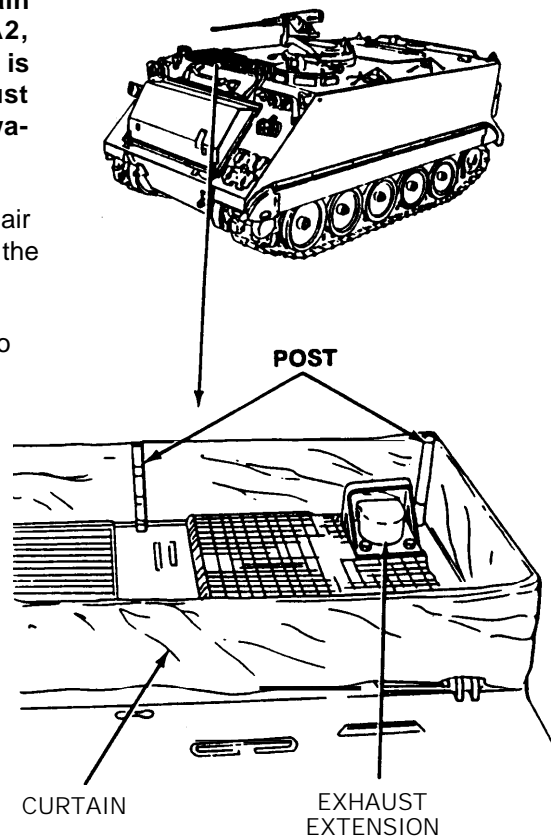
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Change 2 5-11

NOTE

Installation of air grille curtain is the same for the M106A2, M1064, and M125A2. M12SA2 is shown. Air grille curtain must be installed before fording water.

1. Install posts on studs around air grilles. Stretch the curtain on the posts.
2. Fit the edge of the curtain into the recess under the posts.



END OF TASK

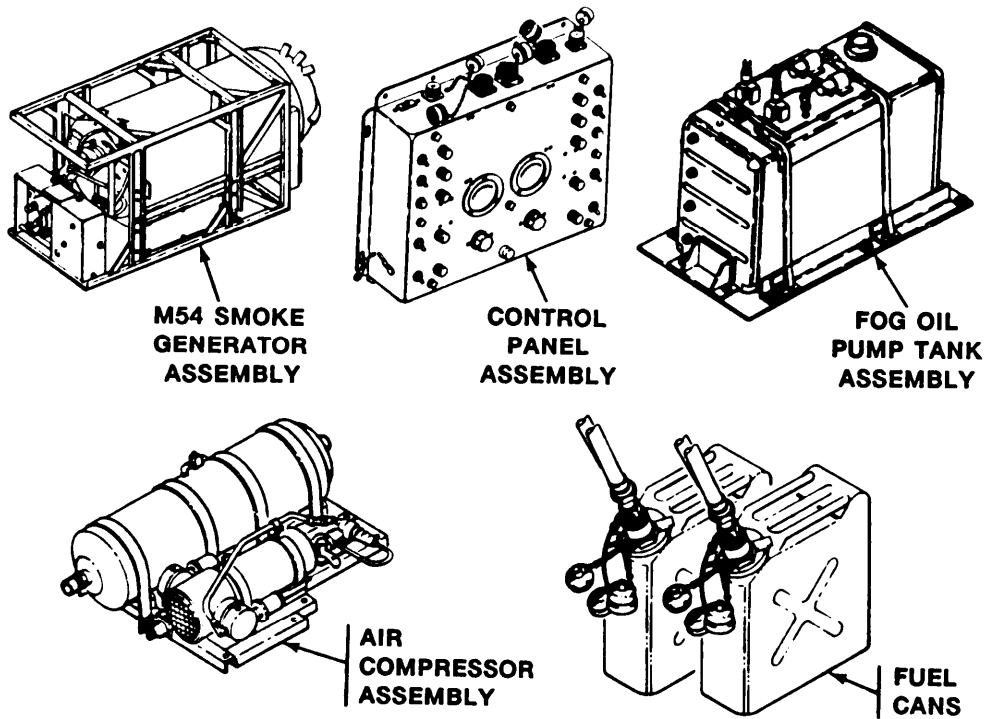
CHAPTER 6 M1059 FULL TRACKED SMOKE GENERATOR CARRIER

Section I. GENERAL INFORMATION

PURPOSE AND SCOPE

This chapter is for your use in maintaining the M1059 Smoke Generator Carrier. If you do not find an item here, look in Chapters 1 through 3 covering the M113A2 Carrier. This chapter must be used with Chapters 1,2 and 3 to get the full picture on the M1059. For more information and operating procedures under usual and unusual conditions, refer to TM 3-1040-279-12&P.

The M1059 is built from the same plans as the M113A2 except the M1059 has the M157 smoke generator system mounted. The M157 is a remote controlled unit which uses a pulse jet engine and fog oil to produce smoke. The system consists of six major assemblies: (1) two M54 smoke generator assemblies, (2) a control panel assembly, (3) a fog oil pump/tank assembly, (4) an air compressor assembly, and (5) two 5-gallon fuel cans with special plugs.



**Section II. MAINTENANCE OF
SMOKE GENERATING EQUIPMENT (M1059)**

**SERVICE SMOKE GENERATOR FUEL TANK/FOG
OIL TANK**

DESCRIPTION

This task covers: Remove Smoke Generator Fuel Tank (page 6-2).
 Service Smoke Generator Fuel Tank (page 6-3).
 Install Smoke Generator Fuel Tank (page 6-3).
 Service Fog Oil Tank (page 6-3).

INITIAL SETUP

Personnel Required:

Driver

Equipment Conditions:

Engine stopped (page 2-184)

Carrier blocked (page 2-221)

References

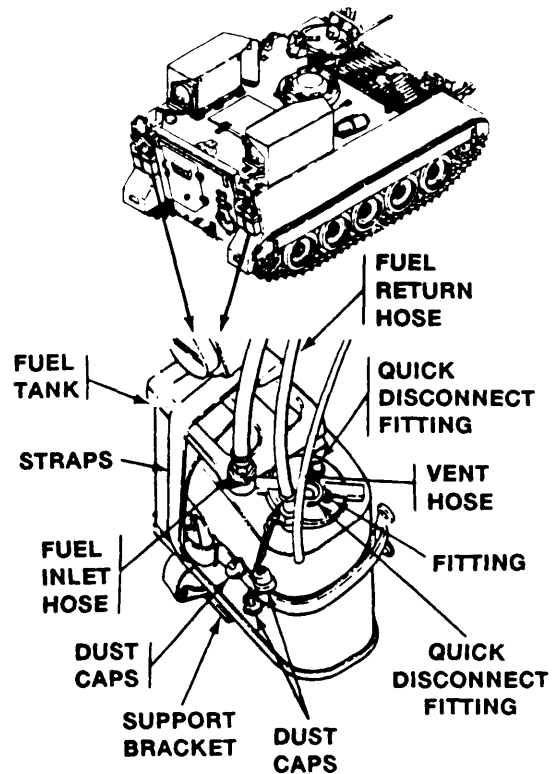
TM 3-1040-279-12&P

**REMOVE SMOKE
GENERATOR FUEL TANK**

NOTE

There are two smoke generator fuel tanks. Procedures for servicing the right and left fuel tanks are the same.

1. Disconnect fuel return and inlet hoses from quick disconnect fittings. Install dust caps on hoses and plug assembly quick disconnect fittings.
2. Disconnect vent hose from fitting.
3. Release fuel tank straps and lift fuel tank off support bracket on hull.
4. Remove plug assembly from fuel tank.

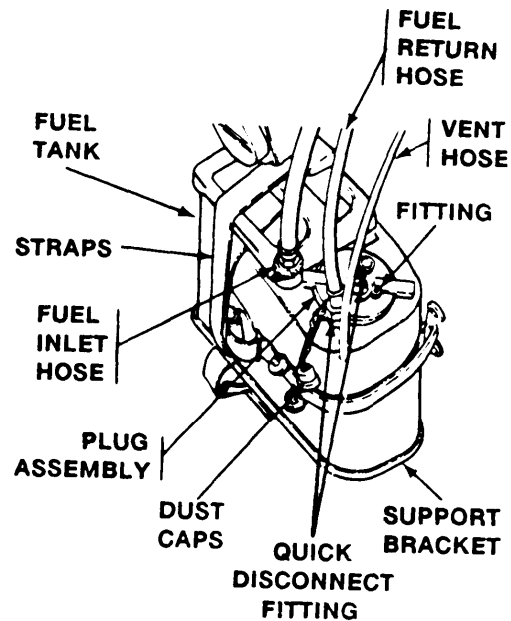


**SERVICE SMOKE
GENERATOR FUEL TANK**

5. Fill fuel tank with fuel (gasoline) as required.

**INSTALL SMOKE
GENERATOR FUEL TANK**

6. Install plug assembly on fuel tank,
7. Position fuel tank on support bracket on hull and secure with fuel tank straps.
8. Connect vent hose to fitting.
9. Remove dust caps from hose and plug assembly quick disconnect. Connect fuel inlet hose to quick disconnect fitting.
10. Remove dust caps from hose and plug assembly quick disconnect fitting. Connect fuel return hose to quick disconnect fitting.



SERVICE FOG OIL TANK

1. See TM 3-1040-279-12&P for proper servicing.

END OF TASK

A P P E N D I X A
R E F E R E N C E S

SCOPE

This appendix lists all forms, field manuals, technical manuals and miscellaneous publications referenced in this manual. Also listed are some manuals that will be helpful in the operation and maintenance of this carrier.

F O R M S

Equipment Inspection and Maintenance Worksheet..... DA Form 2404
 Maintenance Bequest..... DA Form 2407
 Recommended Changes to Equipment
 Technical Publications..... DA Form 2028

L U B R I C A T I O N

Lubrication Order for Full Tracked Armored
 Personnel Carrier, M113A2 LO 9-2350-261-12

F I E L D M A N U A L S

Basic Cold Weather Manual..... FM 31-70
 Desert Operations (How to Fight)..... FM 90-3
 Driver Selection, Training, and Supervision, Tracked
 Combat Vehicles FM 21-17
 Field Hygiene and Sanitation FM 21-10 ■
 First Aid for Soldiers..... FM 21-11
 Infantry Platoons, Infantry Squads, Mechanized Field Operations..... FM 7-7
 Manual for Tracked Combat Vehicle Driver..... FM 21-306
 Mountain Operations..... FM-90-6
 Northern Operations..... FM 31-71
 Operation and Maintenance of Ordnance Materiel
 in Cold Weather (0°F to -65°F)..... FM 9-207
 Vehicle Recovery Operations..... FM 20-22
 4.2 inch Mortar..... FM 23-92
 81 mm Mortar..... FM 23-90

TECHNICAL MANUALS

Operator's and Organizational Maintenance Manual
including Repair Parts and Special Tools List)
Generator Set, Smoke, Mechanical Pulse Jet, M157 TM 3-1040-279-12&P

Operator's and Organizational Maintenance Manual
including Repair Parts and Special Tool List)
Decontaminating Apparatus: Portable,
14 liter, M13, NSN 4230-01-133-4124 TM 3-4230-214-12&P

Operator, Organizational, Direct Support and General
Support Maintenance Manual for Generator Set; Gasoline
Driven 4.2 KW, 28V DC TM 5-6115-596-14

Use and Care of Hand Tools and Measuring Tools. TM 9-243

Operator's Manual: Machine Gun, Cal -50; Browning,
M2, Heavy Barrel Flexible TM 9-1005-213-10

Operator, Organizational, DS and GS Maintenance
Manual, Including Repair Parts and Special Tools List
(including Depot Maintenance Repair Parts and special
Tools): Various Machine Gun Mounts and Combinations
Used on Tactical Armored Vehicles TM 9-1005-245-14

Operator's Manual, Mortar 81 mm, M29A1
(1015-00-999-7794) TM 9-1015-200-10

Operator's Manual, Mortar, 4.2 inch, M30
(1015-00-840-1840) TM 9-1015-215-10

Operator's Manual, Mortar Improved 81 mm, M252
(1015-01-164-6651) TM 9-1015-249-10

Operators Manual, Mortar, 120 mm, 4.7 inch,
M121 TM 9-1015-250-10

Operator, Organizational, DS and GS Maintenance Manual
Identification, Inspection, Classification, Maintenance,
Storage, Disposition, and Issue of Solid Rubber Tires
and Track Components TM 9-2630-200-14

Operator, Organizational, DS and GS Maintenance
Manual for Lead-Acid Storage Batteries TM 9-6140-200-14

Operator's, Unit, and Direct Support Maintenance
Manual Including Repair Parts and Special Tools List
for Modular Command Post System (MCPS) TM 10-5410-229-13&P

Operator's Manual: Radio Sets AN/VRC-12, AN/VRC-43, AN/VRC-44, AN/VRC-45, AN/VRC-46, AN/VRC-47, AN/VRC-48, and AN/VRC-49 (Used without intercom system)..... TM 11-5820-401-10-1

Operator's Manual: Radio Sets AN/VRC-12, AN/VRC-43, AN/VRC-44, AN/VRC-45, AN/VRC-46, AN/VRC-47, AN/VRC-48, and AN/VRC-49 (Used with intercom system)..... T M 11-5820-401-10-2

Operator's and Organizational Maintenance Manual (including Repair Parts and Special Tools List) Radio Sets AN/VRC-12, AN/VRC-43, AN/VRC-44, AN/VRC-45, AN/VRC-46, AN/VRC-47, AN/VRC-48, AN/VRC-49, AN/VRC-54, AN/VRC-55; Mounting MT-1029/VRC and Mounting MT-1898/VRC; Antenna AT-912/VRC Control, Frequency Selector C2742 and Control Radio Set C2299/VRC..... TM 11-5820-401-12

Operator's and Organizational Maintenance Manual: Radio Sets AN/VRC-53, AN/VRC-64, and AN/GRC-160 . . . TM 11-5820-498-12

Operator's, Organizational, Direct Support and General Support Maintenance Manual: Suppressor, Electrical Transient MX-7778A/GRC (NSN 5915-00-413-6718).TM 11-5915-224-14

Operator, Organizational, Direct Support, General Support, and Depot Maintenance Manual (Including Repair Parts and Special Tool Lists) for Mast, AB-903/G (NSN 5965-00-933-2197) (Reprinted W/Basic Incl C1-2) TM 11-5985-263-15

Operator and Organizational Maintenance Manual (Including Repair Parts and Special Tool Lists) MI068 Command Post System TM 11-7010-256-12&P

Procedures for Destruction of Electronics Materiel to Prevent Enemy Use..... TM 750-244-2

Procedures for Destruction of Conventional Ammunition and Improved Conventional Munitions to Prevent Enemy Use TM 750-244-5-1

Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use (U.S. Army Tank-Automotive Command) TM 750-244-6

Procedures for Destruction of Equipment in Federal Supply Classifications 1000, 1010, 1520, 2530, 5590, 5595 to Prevent Enemy Use..... TM 750-244-7

OTHER PUBLICATIONS

Army Oil Analysis Program (AOAP) TB 43-0211
Use of Antifreeze Solutions, Antifreeze Extender,
Cleaning Compounds, and Test Kit in Engine
Cooling Systems TB 750-651
Prevention of Motor Vehicle Accidents. AR 385-55
The Army Maintenance Management stem (TAMMS) DA PAM 738-750
Preventive Medicine AR 40-5
Occupational and Environmental
Health Food Service Sanitation.. TM Med 530
Occupational and Environmental Health Sanitary Control and Surveillance of
Field Water Supplies.. TB Med 577

APPENDIX B COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

SCOPE

This appendix lists components of end item and basic issue items for the M113A2, M577A2, M1068, M106A2, M125A2, M1059, and M1064. This appendix is to help you inventory items required for safe and efficient operation.

See TM 9-1015-215-10 for components of end item and basic issue items for the 4.2-inch, 107-mm, M30 Mortar, used on the M106A2.

See TM 9-1015-200-10 for components of end item and basic issue items for the 81-mm, M29A1 Mortar, used on the M125A2.

See TM 9-1015-250-10 for components of end item and basic issue items for the 4.7-inch, 120-mm, M121 Mortar, used on the M1064.

GENERAL

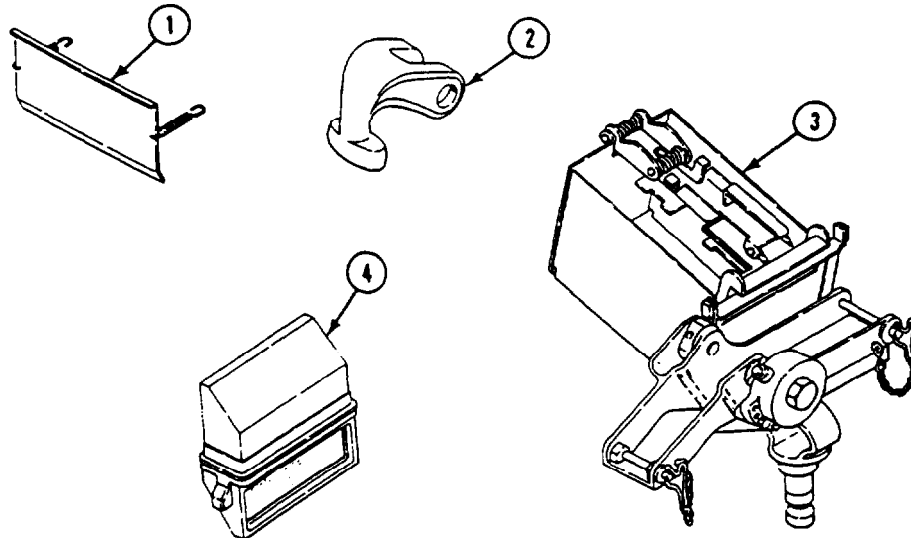
This Components of End Item List is divided into the following sections:

- a. *Section II. Components of End Item.* This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations will help you identify the items.
- b. *Section III. Basic Issue Items.* These are the minimum essential items required to place the M113A2, M557A2, M1068, M106A2, M125A2, M1064, and M1059 in operation and to perform emergency repairs. Although shipped separately packed, they must accompany the carrier during operation and whenever it is transferred between accountable officers. The illustrations will assist you with hard-to-identify items. This manual is your authority to requisition replacement BII, based on TOE/MTOE authorization of the end item.

EXPLANATION OF COLUMNS

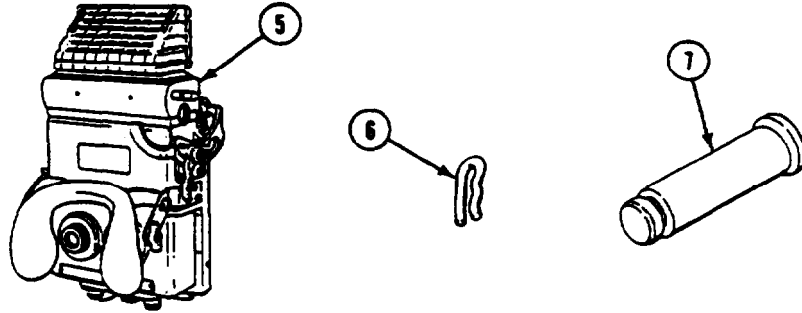
- a. *Column (1) - Illustration Number (Illus Number).* This column indicates the number of the illustration in which the item is shown.
- b. *Column (2) - National Stock Number.* Indicates the National stock number assigned to the item and will be used for requisitioning purposes.
- c. *Column (3) - Description.* Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the CAGE (in parentheses) followed by the part number.
- d. *Column (4) - Unit of Measure (U/M).* Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr).
- e. *Column (5) - Quantity Required (Qty rqr).* Indicates the quantity Of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM - M113A2, M106A2, M1064, AND M1059



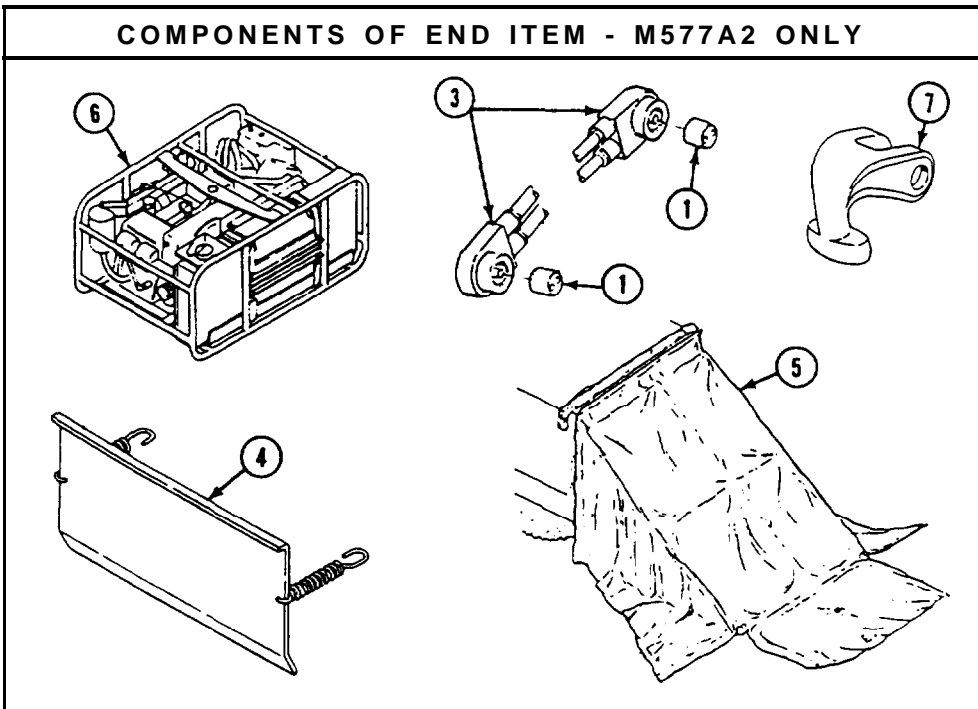
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
1	2590-00-898-6771	COVER, PERISCOPE (ON M17 PERISCOPE) (19207) 10866115	EA	9
2	2540-00-679-8035	HOOK, TOW (ON FRONT AND REAR TOWING EYES) (19207) 10861607	EA	2
3	1005-00-704-6650 OR 1005-00-836-7286	MOUNT, MACHINE GUN, (ON COMMANDER'S CUPOLA) (19204) 7046650 OR (19207) 83672862	EA	1
4	6650-00-704-3549 OR 6650-01-317-9138	PERISCOPE, M17 (NON-LASER PROTECTION) 9 - AROUND DRIVER'S AND COMMANDER'S STATION 1-M1059, M113A2 ONLY; ON LEFT REAR WALL 1- M106A2 AND M164 ONLY; ON FUEL CELL WALL IN BRACKET ON SPONSON, LEFT OF DRIVER (19200) 7043549 OR PERISCOPE, M17 (LASER PROTECTION) (19207) 12357918-2	EA	10

**COMPONENTS OF END ITEM - M113A2, M106A2, M1064
AND M1059 (cont)**



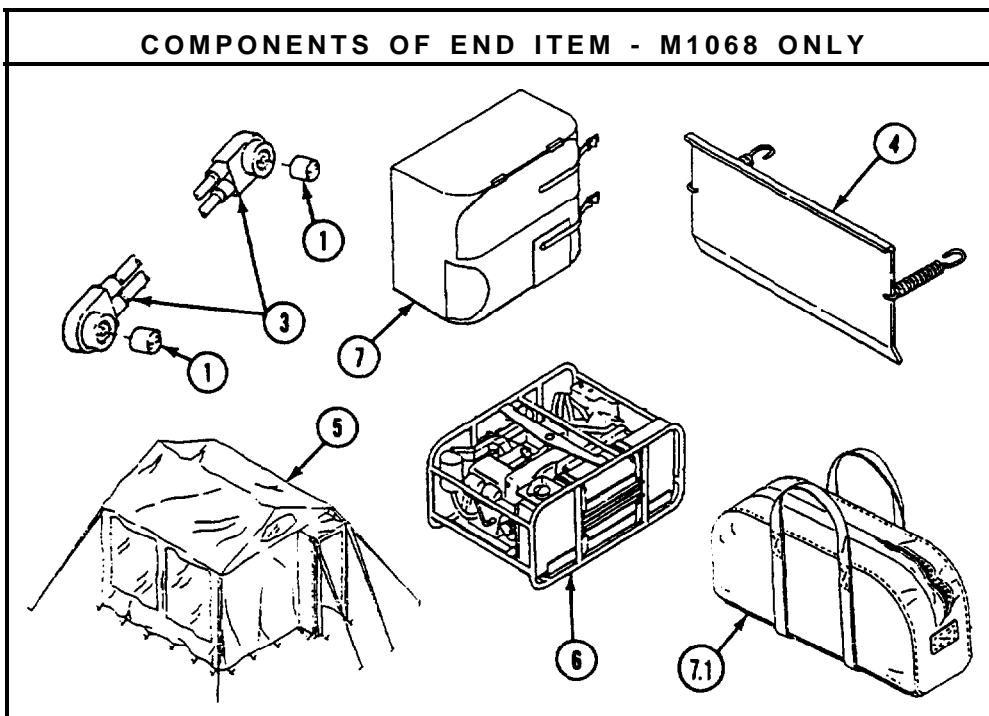
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
5	1240-00-765-2971 OR 1240-01-005-6035	PERISCOPE, M19 (ON WALL LEFT OF DRIVER) (19200) 7652971 OR PERISCOPE, M19A1 (19200) 11747126	EA	1
6	5315-00-598-5808	PIN, LOCK, TOW HOOK (ON TOW HOOK) (19207) 7752865	EA	2
7	5315-00-862-2683	PIN. STRAIGHT, TOW HOOK (ON TOW HOOK) (19207) 10890323	EA	2

COMPONENTS OF END ITEM - M577A2 ONLY



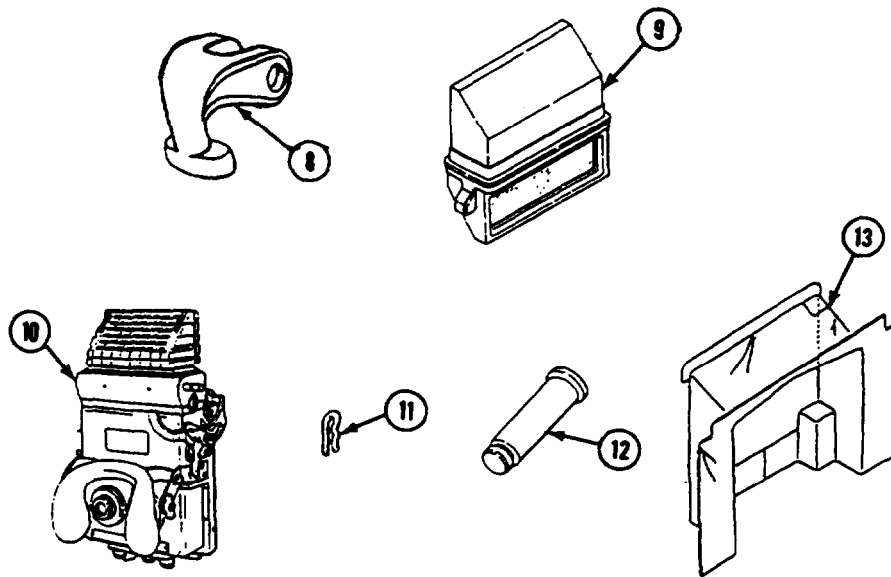
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
1	5935-00-322-8959	ADAPTER 11677570	EA	2
2	DELETED			
3	6150-01-310-1829	CABLE ASSEMBLY (NATO, ON TOP DECK) (19207) 1X62336-2 SEE TM 9-2350-261-24P FOR REPAIR PARTS FOR ITEMS 1&2	EA	1
4	2590-00-989-6771	COVER, PERISCOPE (ON PERISCOPE M17) (19207) 10866115	EA	4
5	8340-00-134-7512	COVER, TENT (19207) 11617260	EA	1
6	6115-00-857-1397	GENERATOR SET (19207) 10919300	EA	1
7	2450-00-679-8035	HOOK, TOW (ON REAR TOWING EYES) (19207) 10861607	EA	2

COMPONENTS OF END ITEM-- M1068 ONLY				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
8	6250-00-933-6964	LAMP HOLDER ASSEMBLY (IN TOOL BAG) (19207) 10918129	EA	2
9	6650-00-704-3649 OR 6550-01-317-9138	PERISCOPE, M17 (NONLASER PROTECTION) (ON DRIVER'S STATION) (19200) OR PERISCOPE, M17 (LASER PROTECTION) (19207) 12357918-2	EA	4
10	1240-00-765-2971 OR 1240-01-005-6035	PERISCOPE, M19 (ON WALL LEFT OF DRIVER) (19200) 7652971 OR PERISCOPE, M19A1 (19200) 11747126	EA	1
11	5315-00-598-5808	PIN, LOCK, TOW HOOK (ON TOW HOOKS) (19207) 7752865	EA	2
12	5315-00-862-2653	PIN, STRAIGHT, TOW HOOK (ON TOW HOOKS) (19207) 10890323	EA	2
13	2540-00-003-8339	TENT FRAME (19207) 10918155	EA	1



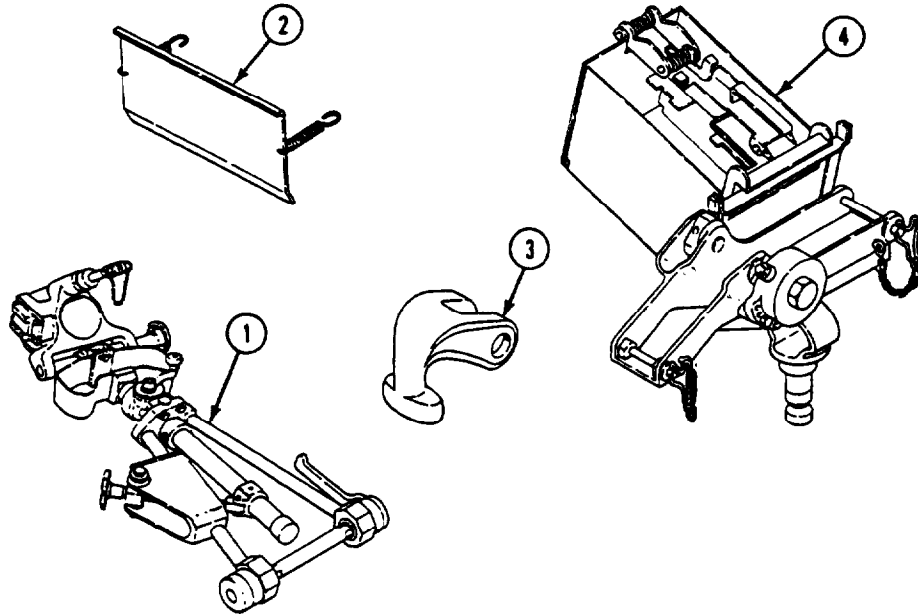
(1) ILLUS. No.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
1	5935-00-322-8959	ADAPTER 11677570	EA	2
2	DELETED			
3	6150-01-310-1829	CABLE ASSEMBLY (NATO, ON TOP DECK) (19207) 11682336-2 SEE TM 92350-261-24P FOR REPAIR PARTS FOR ITEMS 1 & 2	EA	1
4	2590-00-898-6771	COVER, PERISCOPE (ON PERISCOPE M17) (19207) 10866115	EA	4
5	5410-00-323-2454 OR 5410-00-334-7529	GREEN MODULAR COMMAND POST SYSTEM (81337) 5-4-6340-1 OR TAN MODULAR COMMAND POST SYSTEM (81337) 5-4-6340-2	EA	1
6	6115-00-657-1397	GENERATOR SET AND COVER (19207) 10919300	EA	1
7	2540-00-066-4281	COVER ASSEMBLY, AUXILIARY GENERATOR (19207) 10932720	EA	1
7.1	5820-01-263-1760	GROUNDING KIT (80063) SC-D-681610	EA	1

COMPONENTS OF END ITEM - M1068 ONLY (cont)



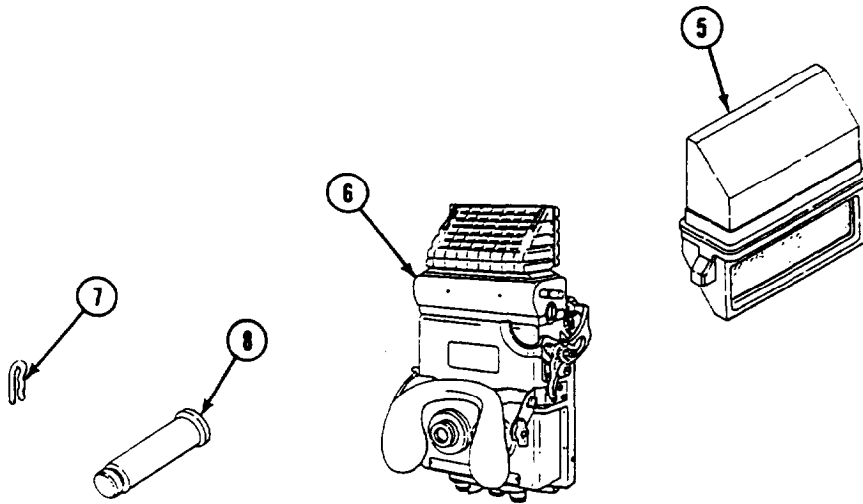
(1) ILLUS. No.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY
8	2450-00-679-8035	HOOK, TOW (ON REAR TOWING EYES (19207) 10861607	EA	2
9	6650-00-704-3549 OR 6650-01-317-9138	PERISCOPE, M17 (NONLASER PROTECTION) (ON DRIVER'S STATION) (19200) 7043549 OR PERISCOPE, M17 (LASER PROTECTION) (19207) 123571918-2	EA	4
10	1240-00-765-2971 OR 1240-01-005-6035	PERISCOPE, M19 (ON WALL LEFT OF DRIVER) (19200) 7652971 OR PERISCOPE, M19A1 (19200) 11747126	EA	1
11	5315-00-598-5808	PIN, LOCK, TOW HOOK (ON TOW HOOKS) (19207) 7752865	EA	2
12	5315-00-862-2683	PIN, STRAIGHT, TOW HOOK (ON TOW HOOKS) (19207) 10890323	EA	2
13		BOOTWALL ASSEMBLY (81537) 5-4-7484	EA	1

COMPONENTS OF END ITEM - M125A2 ONLY



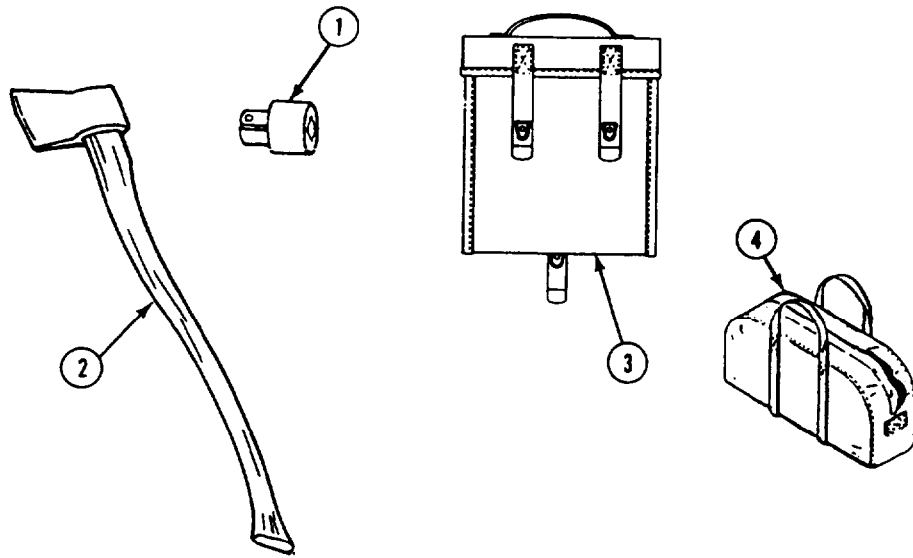
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
1	1015-00-436-4874	BIPOD ASSEMBLY, MORTAR 81-MM (ON TURN TABLE OR STOWED ON TOP DECK, RIGHT SIDE OF CUPOLA (19205) 11686597	EA	1
2	2590-00-898-6771	COVER, PERISCOPE (ON PERISCOPE M17) (19207) 10866115	EA	9
3	2540-00-679-8035	HOOK, TOW (ON REAR TOWING EYES) (19207) 10861607	EA	2
4	1005-00-704-6650 OR 1005-00-836-7286	MOUNT, MACHINE GUN, CAL .50 (ON COMMANDER'S CUPOLA (19204) 7046650 OR (19207) 8367286	EA	1

COMPONENTS OF END ITEM - M125A2 ONLY (cont)

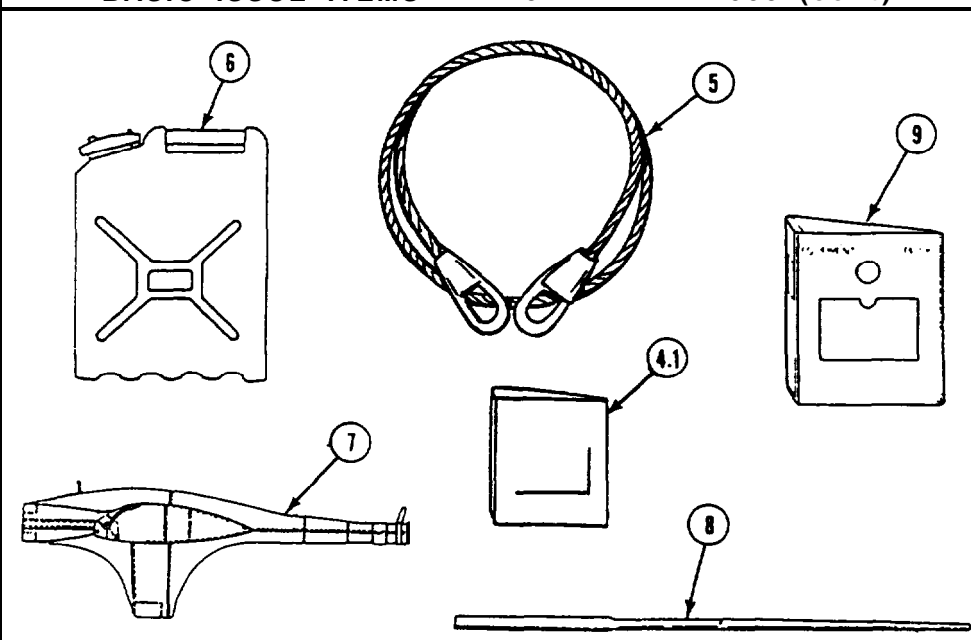


(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
5	6650-00-704-3549 OR 6650-01-317-9138	PERISCOPE, M17 (NON-LASER PROTECTION 9-AROUND DRIVER'S AND) COMMANDER'S STATION 1 - ON SPONSON LEFT OF DRIVER (19200) 7043549 OR PERISCOPE, M17 (LASER PROTECTION) (19207) 12357918-2	EA	10
6	1240-00-765-2971 OR 1240-01-005-6035	PERISCOPE, M19 (ON WALL LEFT OF DRIVER) (19200) 7652971 OR PERISCOPE, M19A1 (19200) 11747126	EA	1
7	5315-00-598-5808	PIN, LOCK, TOW HOOK (ON TOW HOOK) (19207) 7752865	EA	2
8	5315-00-862-2688	PIN, STRAIGHT, TOW HOOK (ON TOW HOOK) (19207) 10890323	EA	2

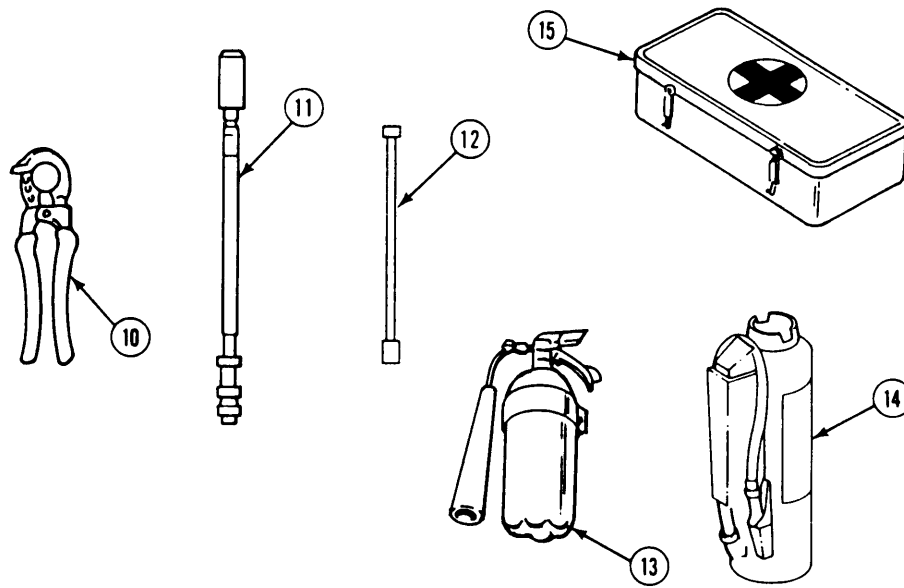
**Section III. BASIC ISSUE ITEMS - M113A2
AND M1059**



(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(8) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
1	5120-00-144-5207	ADAPTER, SOCKET WRENCH, 3/4 IN. MALE END x 1/2 IN. FEMALE END, (IN TOOL BAG), (19207) 11655733-3	EA	1
2	5110-00-293-2336	AXE, SINGLE BIT, 4 LB, (ON TOP REAR DECK), (19207) 61509252	EA	1
3	2540-00-670-2459	BAG, PAMPHLET, (ON POWER PLANT REAR PANEL) (19207) 7961712	EA	1
4	5140-00-473-6256	BAG, TOOL (ON RIGHT SPONSON) (19207) 11655979	EA	1

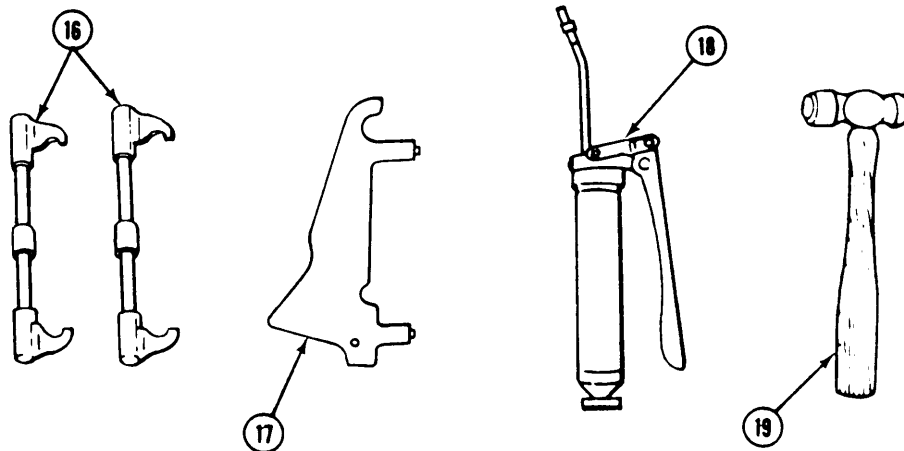
BASIC ISSUE ITEMS - M113A2 AND M1059 (cont)				
				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
4.1	7510-00-869-3494	BINDER, LOOSE LEAF (IN PAMPHLET BAG) (19207) 11677003	EA	1
5	4010-00-767-3149	CABLE, TOW (ON RAMP) (19207) 16861718	EA	1
6	7240-00-089-3827	CAN, WATER (ON BACK OF CARRIER), (81349) MIL-C-43613	EA	1
7	1005-00-487-4100	COVER, .50 CALIBER MACHINE GUN (ON .50 CALIBER MACHINE GUN OR ON TOP OF BATTERY BOX) (19204) 11631791	EA	1
8	5120-00-240-6040	CROWBAR, PINCH (ON TOP REAR DECK) (19207) 11677049	EA	1
9	7510-01-065-0166	FOLDER, EQUIPMENT RECORD (IN PAMPHLET BAG) (72094) 43986-1	EA	1

BASIC ISSUE ITEMS — M113A2 AND M1059 (cont)



(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
10	5110-00-595-8229	CUTTER, WIRE, M1938 (IN TOOL BAG) (19207) 11655981	EA	1
11	4930-00-288-1511	EXTENSION, ADAPTER, GREASE GUN (IN TOOL BAG) (19207) 6300333	EA	1
12	5120-00-227-8074	EXTENSION, BAR, 1/2 IN. x 10 IN. (IN TOOL BAG) (19207) 11655788-1	EA	1
13	4210-00-270-4512	EXTINGUISHER, FIRE, 5 LB (ON RIGHT REAR BULKHEAD) (19207) 7714780	EA	1
	OR	OR		
14	4210-01-107-9912	(19207) 7359703		
14	4210-01-251-6275	EXTINGUISHER, FIRE, PORTABLE, (ON TOP OF CARRIER)/(ON RIGHT REAR WALL) (19207) 12313974 (M1059 ONLY)	EA	2
15	6545-00-922-1200	FIRST AID KIT (IN DRIVERS COMPARTMENT) (19207) 11677011	EA	1

BASIC ISSUE ITEMS — M113A2 AND M1059 (cont)

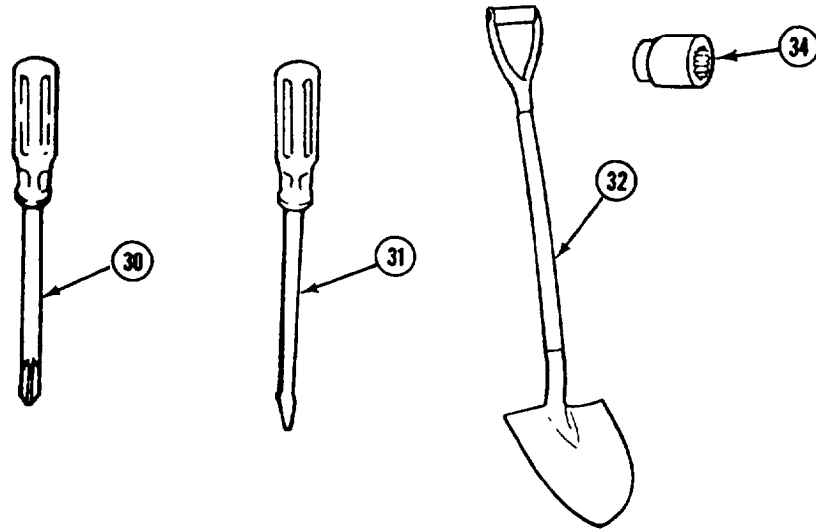


(1) ILLUS. No.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
16	5120-01-041-4624	FIXTURE, TRACL (ON TOP DECK, REAR) (19207) 12253183	EA	2
17	5220-01-041-9920	GAGE, TRACK TENSION AND SPROCKET WEAR (IN TOOL BAG) (19207) 12253280	EA	1
18	4930-00-253-2478	GREASE GUN, HAND (IN TOOL BAG) (19207) 10915142	EA	1
19	5120-00-061-8546	HAMMER, HAND, BALL PEEN, 2 LB (IN TOOL BAG) (19207) 11677028-3	EA	1

BASIC ISSUE ITEMS-- M113A2 AND M1059 (cont)				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
20	5120-00-288-6574	HANDLE, MATTOCK PICK (ON TOP DECK REAR) (19207) 11677021	EA	1
21	5120-00-236-7590	HANDLE, SOCKET WRENCH, 1/2 IN. DRIVE (IN TOOL BAG) (19207) 1x55766-1	EA	1
22	1240-00-768-8707	HEAD ASSEMBLY, SPARE INFRARED PERISCOPE M19 OR M19A1 (ON LEFT SPONSON, LEFT OF DRIVER) (19200) 7688707	EA	1
23		LUBRICATION ORDER (IN PAMPHLET BAG) LO-92350-261-12	EA	1
24	5120-00-243-2395	MATTOCK, PICK TYPE (ON TOP DECK REAR) (19207) 11677022	EA	1

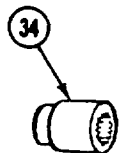
BASIC ISSUE ITEMS - M113A2 AND M1059 (cont)				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
25	4930-00-262-8868	OILER, HAND PUMP TYPE (IN POWER PLANT COMPARTMENT, LEFT SIDE) (19207) 6169931	EA	1
26	5340-00-682-1645 OR 5340-00-682-1508	PADLOCK, KEY OPERATED, (ON DRIVER'S HATCH) MS35647-6 OR PADLOCK, KEY OPERATED, (ON DRIVER'S HATCH) MS35644-3 (96906)	EA	1
27	5120-00-239-8251	PLIERS, LINEMANS. W/SIDE CUTTER (IN TOOL BAG) (95663) 41P1839	EA	1
28	5120-00-223-7397	PLIERS, SLIPJOINT. STRAIGHT NOSE W/CUTTER (IN TOOL BAG) (19207) 11655775-3	EA	1
29	5120-01-006-8847	PUNCH, DRIVE PIN (IN TOOL BAG) (19207) 11678718	EA	1

BASIC ISSUE ITEMS - M113A2 AND M1059 (cont)

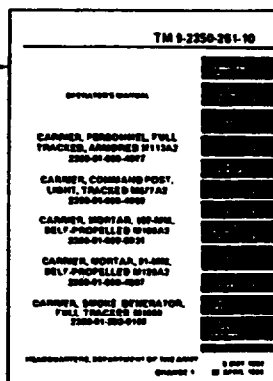


(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
30	5120-00-234-8913	SCREWDRIVER, CROSS TIP, NO. 2 (IN TOOL BAG) (19207) 11655777-12	EA	1
31	5120-00-278-1283	SCREWDRIVER, FLAT TIP (IN TOOL BAG) (19207) 11655777-11	EA	1
32	5120-00-293-3336	SHOVEL, HAND (ON TOP DECK FRONT) (19207), 11655784	EA	1
33	DELETED			
34	5120-00-189-7932	SOCKET, WRENCH, 1/2 IN. x 9/16 IN. (IN TOOL BAG) (19207) 11677025-1	EA	1
34	5120-00-189-7946	SOCKET, WRENCH, 1/2 IN. x 5/8 IN. (IN TOOL BAG) (19207) 11677025-2	EA	1

BASIC ISSUE ITEMS - M113A2 AND M1069 (cont)

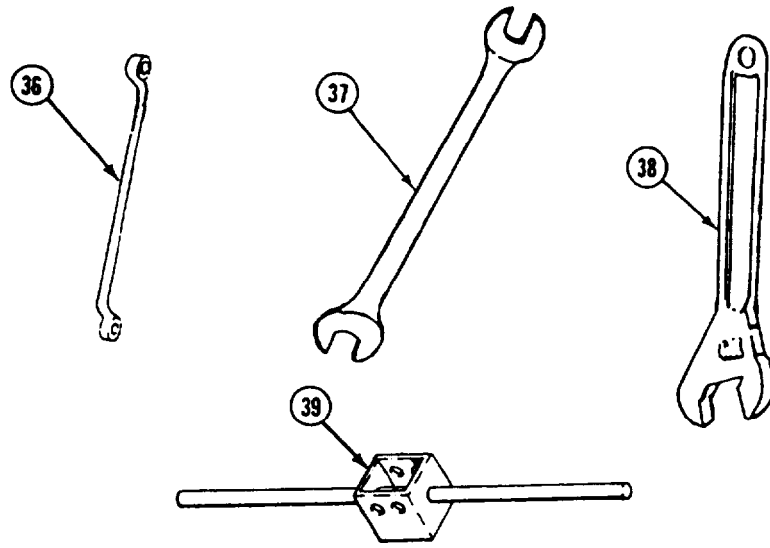


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(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
34	5120-00-235-5870	SOCKET, WRENCH, 1/2 IN. x 11/16 IN. (IN TOOL BAG) (19207) 11677025-3	EA	1
34	5120-00-189-7985	SOCKET, WRENCH, 1/2 IN. x 3/4 IN. (IN TOOL BAG) (19207) 11677025-4	EA	1
34	5120-00-189-7934	SOCKET, WRENCH, 1/2 IN. x 7/8 IN. (IN TOOL BAG) (19207) 11677025-5	EA	1
34	5120-00-189-7935	SOCKET, WRENCH, 1/2 IN. x 15/16 IN. (IN TOOL BAG) (19207) 11677025-6	EA	1
35		TECHNICAL MANUAL (IN PAMPHLET BAG) TM 9-2350-261-10	EA	1

BASIC ISSUE ITEMS - M113A2 AND M1059 (cont)



(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
36	5120-00-224-3141	WRENCH, BOX, DOUBLE OFFSET, 5/8 x 11/16 IN. (IN TOOL BAG) (19207) 11655785-2	EA	1
37	5120-00-277-2342	WRENCH, OPEN END, FIXED, 3/8 IN. x 7/16 IN. (IN TOOL BAG) (19207) 11655789-1	EA	1
37	5120-00-187-7126	WRENCH, OPEN END, FIXED, 9/16 IN. x 5/8 IN. (IN TOOL BAG) (19207) 11655789-2	EA	1
37	5120-00-277-8300	WRENCH, OPEN END, FIXED, 11/16 IN. x 13/16 IN. (IN TOOL BAG) (19207) 116557893	EA	1
38	5120-00-264-3796	WRENCH, OPEN END, ADJUSTABLE, 1-5/16 IN. x 12 IN. (IN TOOL BAG) (19207) 11655778-5	EA	1
39	5120-01-233-1938	WRENCH SPANNER (IN TOOL BAG) (81361) 31-15-2715 (M1059 ONLY)	EA	1

BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY				
(1) ILLUS NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
1	5120-00-144-5207	ADAPTER, SOCKET WRENCH, 3/4 IN. MALE END x 1/2 IN. FEMALE END, (IN TOOL BAG) (19207) 1x55766-3	EA	1
2	5110-00-293-2336	AXE, SINGLE BIT, 4 LB, (ON TOP REAR DECK) (19207) 6150925	EA	1
3	2540-00-670-2459	BAG, PAMPHLET (BEHIND DRIVER ON WALL) (19207) 7961712	EA	1
4	5140-00-473-6256	BAG, TOOL (ON RIGHT SPONSON) (19207) 11655979	EA	1
4.1	7510-00-889-3494	BINDER, LOOSE LEAF (IN PAMPHLET BAG) (19207) 11677003	EA	1
4.2	5120-00-935-4654	WRENCH, DRAIN PLUG (IN TOOL BAG) (19207) 11595203	EA	1

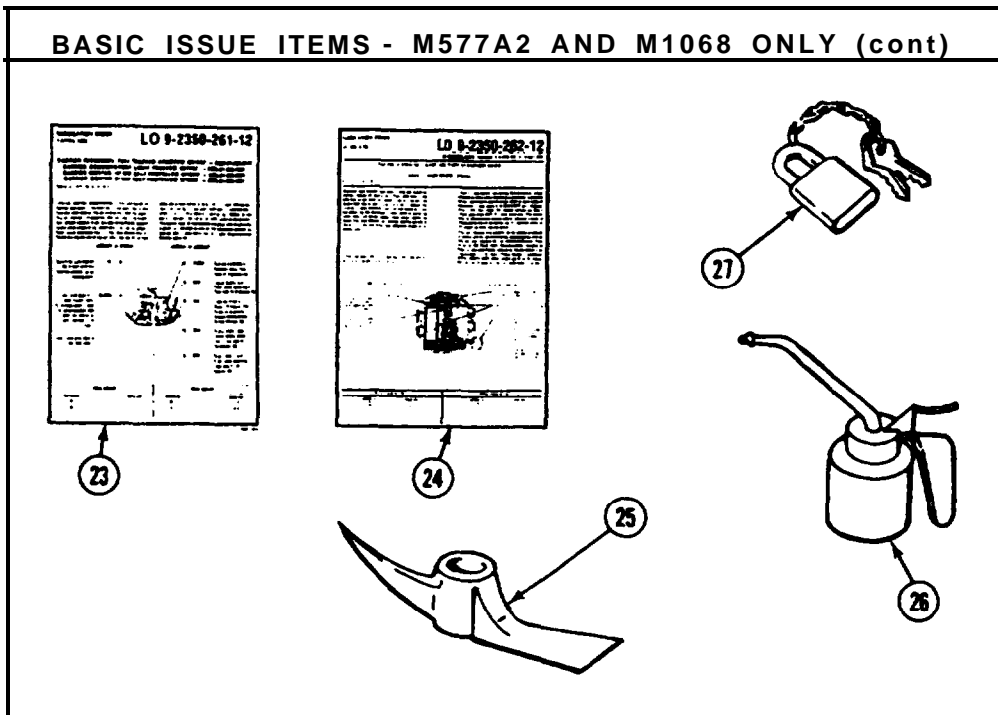
BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY (cont)				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
5	3590-00-889-8722	CHAIN HOIST (IN CHAIN HOIST TOOLBAG (19207) 12381800	EA	1
5.1	8105-01-420-4178	BAG, TOOL, CHAIN HOIST (ON RIGHT REAR SPONSON M1068 ONLY) (LEFT FORWARD SPONSON M577A2 ONLY) (19207) 12381815	EA	1
6	4010-00-767-3149	CABLE, TOW (ON RAMP) (19207) 10861718	EA	1
7	7240-00-089-3827	CAN, WATER (ON BACK OF CARRIER) (81349) MIL-C-43613	EA	1
8	7510-00-065-0166	FOLDER, EQUIPMENT RECORD (IN PAMPHLET BAG) (72094) 43986-1	EA	1

BASIC ISSUE ITEMS -- M577A2 (cont)				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
9	5120-00-240-6040	CROWBAR, PINCH (ON TOP DECK, REAR) (19207) 11677049	EA	1
10	5110-001-595-8229	CUTTER, WIRE, M1938 (IN TOOL BAG) (19207) 11655981	EA	1
11	2590-00-953-2172	DAVIT (ON TOP DECK) (19207) 10917960	EA	1
12	4930-00-288-1511	EXTENSION, ADAPTER, GREASE GUN (IN TOOL BAG) (19207) 6300333	EA	1
13	5120-00-227-8074	EXTENSION, BAR, 1/2 x 10 (IN TOOL BAG) (19207) 11655788-1	EA	1

BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY (cont)				
(1) ILLUS. No.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
14	4210-00-270-4512 OR 4210-01-107-9912	EXTINGUISHER, FIRE, 5 LB (ON RIGHT REAR WALL) (19207) 7714780 OR (19207) 7359703	EA	1
15	6545-00-922-1200	FIRST AID KIT (ON SPONSON, LEFT OF DRIVER) (19207) 11677011	EA	1
16	5120-01-041-4624	FIXTURE, TRACK (ON TOP DECK) (19207) 12253183	EA	2
17	5120-01-041-9920	GAGE, TRACK TENSION AND SPROCKET WEAR (IN TOOL BAG) (19207) 12253280	EA	1
18	4930-00-253-2478	GREASE GUN, HAND (IN TOOL BAG) (19207) 10915142	EA	1

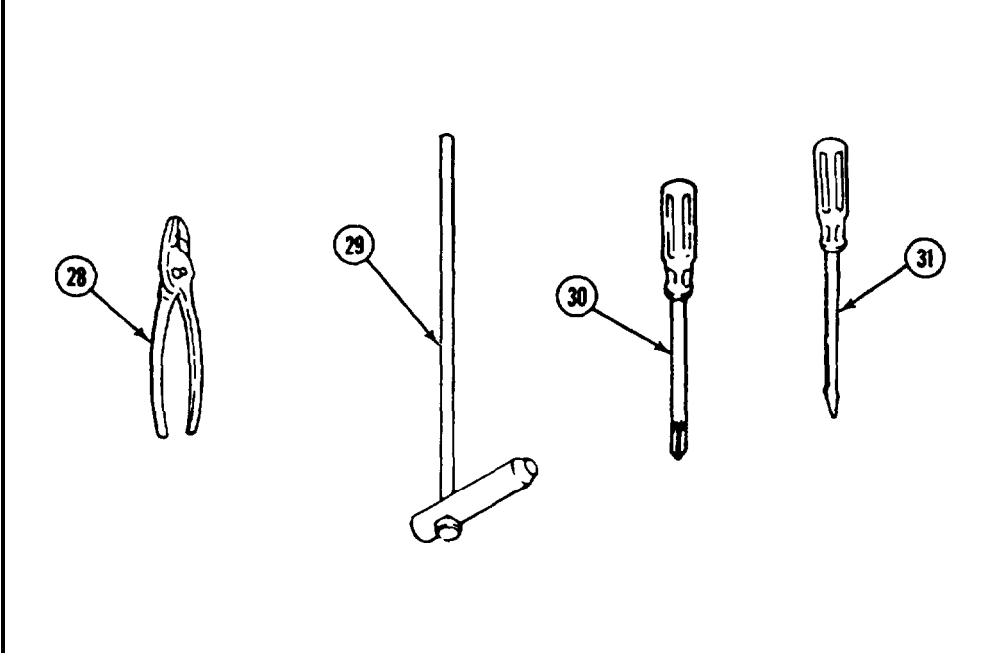
BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY (cont)				
(1) ILLUS. No.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
19	5120-00-061-8546	HAMMER, HAND, BALL PEEN, 2 LB (IN TOOL BAG) (19207) 11677028-3	EA	1
20	5120-00-288-6574	HANDLE, MATTOCK PICK (ON TOP DECK, REAR) (19207) 11677021	EA	1
21	5120-00-236-7590	HANDLE, SOCKET WRENCH, 1/2 IN. DRIVE (IN TOOL BAG) (19207) 11655786-1	EA	1
22	1240-00-768-8707	HEAD ASSEMBLY, SPARE INFRARED PERISCOPE M19 OR M19A1 (ON LEFT SPONSON, LEFT OF DRIVER) 19200) 7688707	EA	1
22.1	4030-01-369-7912	SHACKLE (IN TOOL BAG) (19207) 12381884	EA	2

BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY (cont)



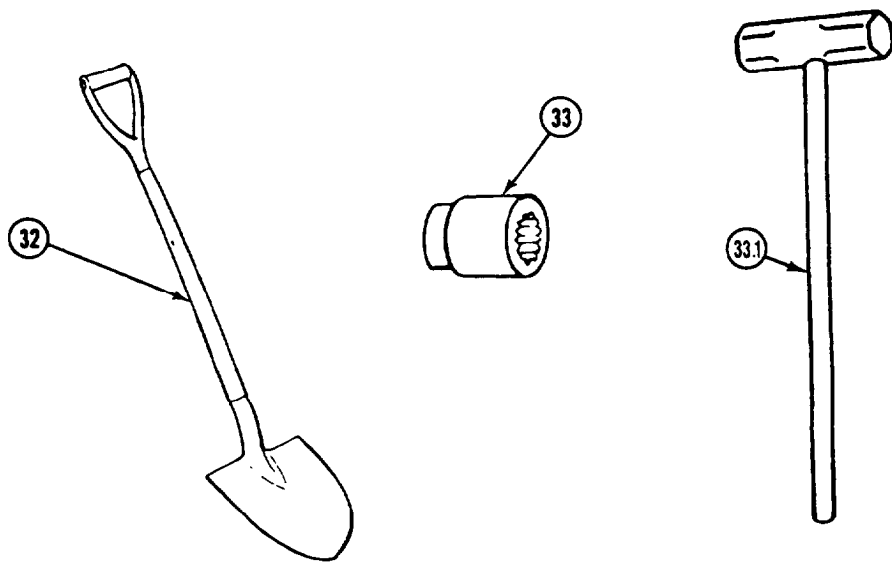
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY R Q R
23		LUBRICATION ORDER (IN PAMPHLET RAG) LO 9-2350-261-12	EA	1
24		LUBRICATION ORDER (IN PAMPHLET RAG) Lo 9-2805-262-12	EA	1
25	5120-00-243-2395	MATTOCK, PICK TYPE (ON TOP OF DECK, REAR) (19207) 11677022	EA	1
26	4930-00-262-8868	OILER, HAND PUMP TYPE (IN POWER PLANT COMPARTMENT, LEFT SIDE) (19207) 6169931	EA	1
27	5340-00-682-1645 OR 5340-00-682-1508	PADLOCK, KEY OPERATED (ON DRIVER'S HATCH) MS35647-6 OR PADLOCK, KEY OPERATED (ON DRIVER'S HATCH) MS35644-3	EA EA	1 1

BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY (cont)

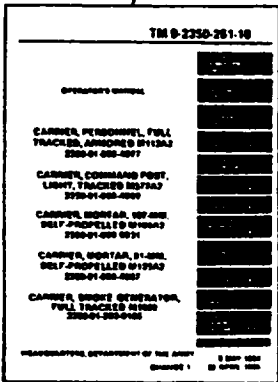
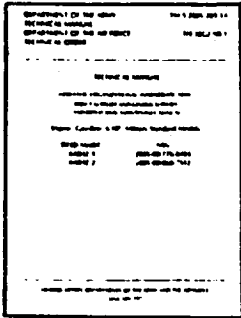
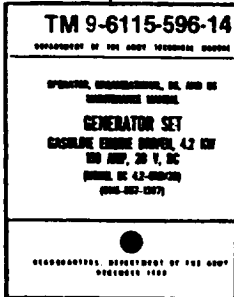


(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
28	5120-00-223-7397	PLIERS, SLIPJOINT, STRAIGHT NOSE W/CUTTER (IN TOOL BAG) (19207) 11665775-3	EA	1
29	5120-001-006-8847	PUNCH, DRIVE PIN (IN TOOL BAG) (19207) 11678718	EA	1
30	5120-00-234-8913	SCREWDRIVER, CROSS TIP, NO. 2 (IN TOOL BAG) (19207) 11655777-12	EA	1
31	5120-00-278-1283	SCREWDRIVER, FLAT TIP (IN TOOL BAG) (19207) 11655777-11	EA	1

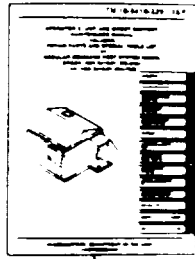
BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY (cont)



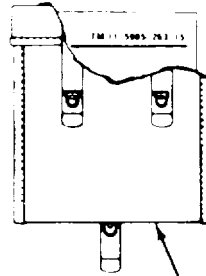
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(6) QTY RQR
32	5120-00-293-3336	SHOVEL, BAND (ON TOP DECK FRONT) (19207) 11655784	EA	1
33	5120-00-189-7932	SOCKET, WRENCH, 1/2 x 9/16 (IN TOOL BAG) (19207) 11677025-1	EA	1
33	5120-00-189-7946	SOCKET, WRENCH, 1/2 x 5/8 (IN TOOL BAG) (19207) 1X77025-2	EA	1
33	5120-00-235-5870	SOCKET, WRENCH, 1/2 x 11/16 (IN TOOL BAG) (19207) 11677025-3	EA	1
33	5120-00-189-7985	SOCKET, WRENCH, 1/2 x 3/4 (IN TOOL BAG) (19207) 11677025-4	EA	1
33	5120-00-139-7934	SOCKET, WRENCH, 1/2 x 7/8 (IN TOOL BAG) (19207) 11677025-S	EA	1
33	5120-00-189-7935	SOCKET, WRENCH, 1/2 x 15/16 (IN TOOL BAG) (19207) 11677025-6	EA	1
33.1	5120-00-265-7462	HAMMER, BAND, SLEDGE, 6 LB (ON TOP DECK, REAR CENTER) (19172) 41796	EA	1

BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY (cont)				
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>34</p>  </div> <div style="text-align: center;"> <p>35</p>  </div> <div style="text-align: center;"> <p>36</p>  </div> </div>				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(6) QTY ROR
34		TECHNICAL MANUAL (IN PAMPHLET BAG) TM 9-2350-261-10	EA	1
35		TECHNICAL MANUAL (IN PAMPHLET BAG) TM 9-2805-262-14 AND LO 9-2805-262-12 (GENERATOR SET, ENGINE)	EA	1
36		TECHNICAL MANUAL (IN PAMPHLET BAG) TM 9-6115-596-14 (GENERATOR SET, GENERATOR)	EA	1

BASIC ISSUE ITEMS - M577A2 AND M1068 ONLY (cont)



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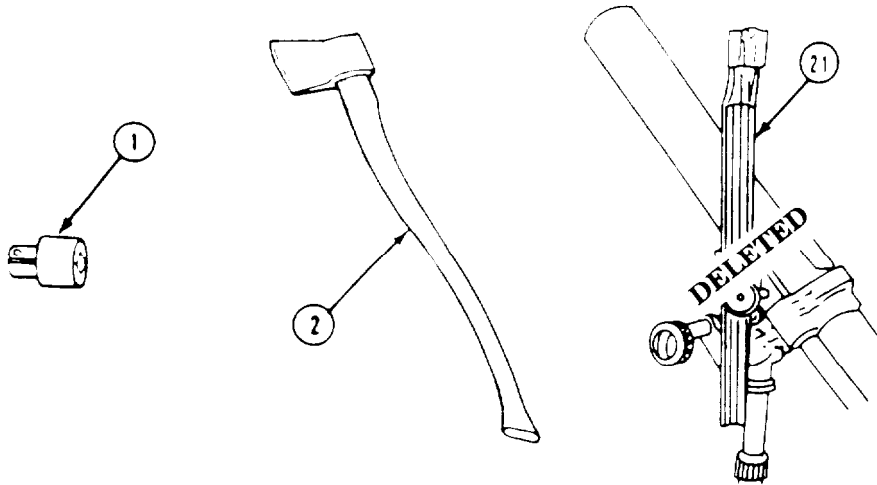


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(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
40		TECHNICAL MANUAL (IN PAMPHLET BAG) TM 10-5410-229-13&P (MODULAR COMMAND POST SYSTEM) (M1068 ONLY)	EA	1
41		TECHNICAL MANUAL (IN PAMPHLET BAG) TM 11-5985-263-15 (ANTENNA MAST) (M1068 ONLY)	EA	1

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BASIC ISSUE ITEMS - M106A2 AND MI064

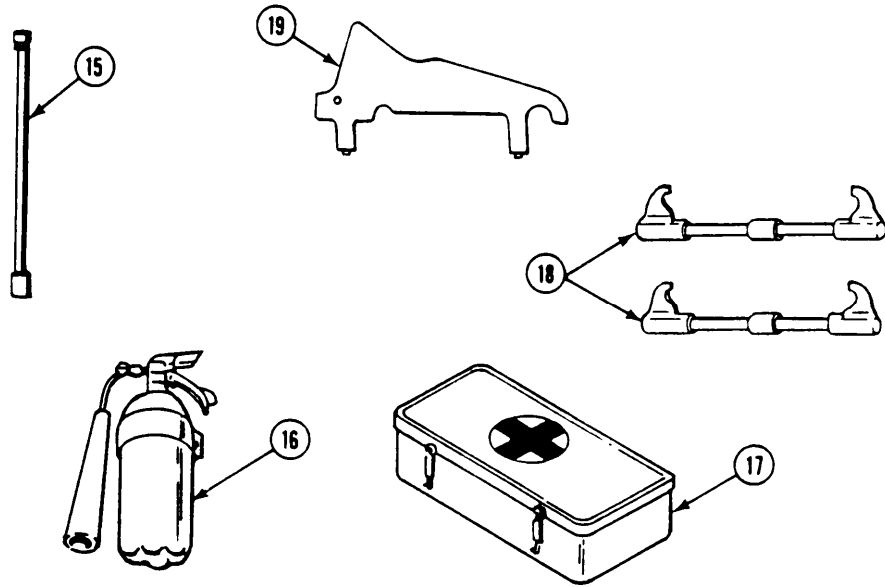


(1) ILLUS NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
1	5120-00-144-5207	ADAPTER, SOCKET WRENCH, 3/4 MALE, 1/2 FEMALE (IN TOOL BAG) (19207) 11655788-3	EA	1
2	5110-00-293-2336	AXE, SINGLE BIT, 4 LB (ON TOP DECK RIGHT SIDE) (19207) 6150925	EA	1

BASIC ISSUE ITEMS - M106A2 AND M1064 (cont)				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
3	2540-00-670-2459	BAG, PAMPHLET (ON POWER PLANT REAR PANEL) (19207) 7961712	EA	1
4	5140-00-473-6256	BAG, TOOL (ON LEFT SPONSON, REAR) (19207) 11655979	EA	1
4.1	7510-00-889-3494	BINDER, LOOSE LEAF (IN PAMPHLET BAG) (19207) 11677003	EA	1
5	4010-00-767-3149	CABLE, TOW (ON RAMP, OUTSIDE) (19207) 16861718	EA	1
6	DELETED			
7	DELETED			
8	7510-01-065-0166	FOLDER, EQUIPMENT RECORD (IN PAMPHLET BAG) (70294) 43986-1	EA	1

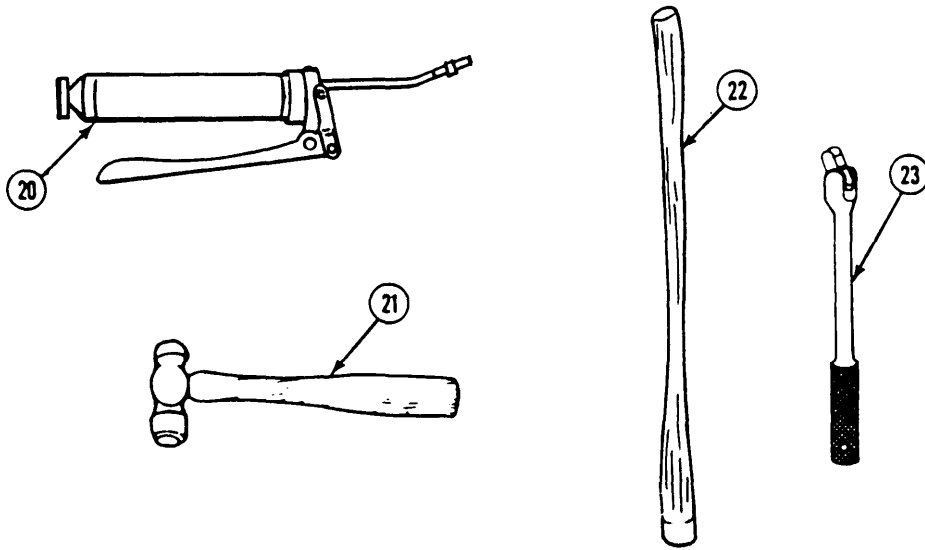
BASIC ISSUE ITEMS - M106A2 AND M1064 (cont)				
(1) ILLUS NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
9	7240-00-089-3827	CAN, WATER (ON LEFT REAR, OUTSIDE) (81349) MIL-C-43613	EA	1
10	1005-00-487-4100	COVER, .50 CALIBER MACHINE GUN (ON SO CALIBER MACHINE GUN OR ON TOP OF BATTERY BOX) (19204) 11631791	EA	1
11	5120-00-240-6040	CROWBAR, PINCH (ON TOP DECK, RIGHT) (19207) 11677049	EA	1
12	2540-00-923-4250	CURTAIN, AIR GRILL (ON ENGINE BULKHEAD, UPPER RIGHT) (19207) 10950064	EA	1
13	5110-00-595-8229	CUTTER WIRE, M1938 (IN TOOL BAG) (19207) 11655981	EA	1
14	4930-00-1511	EXTENSION, ADAPTER, GREASE GUN (IN TOOL BAG) (19207) 8300333	EA	1

BASIC ISSUE ITEMS — M106A2 AND M1064 (cont)



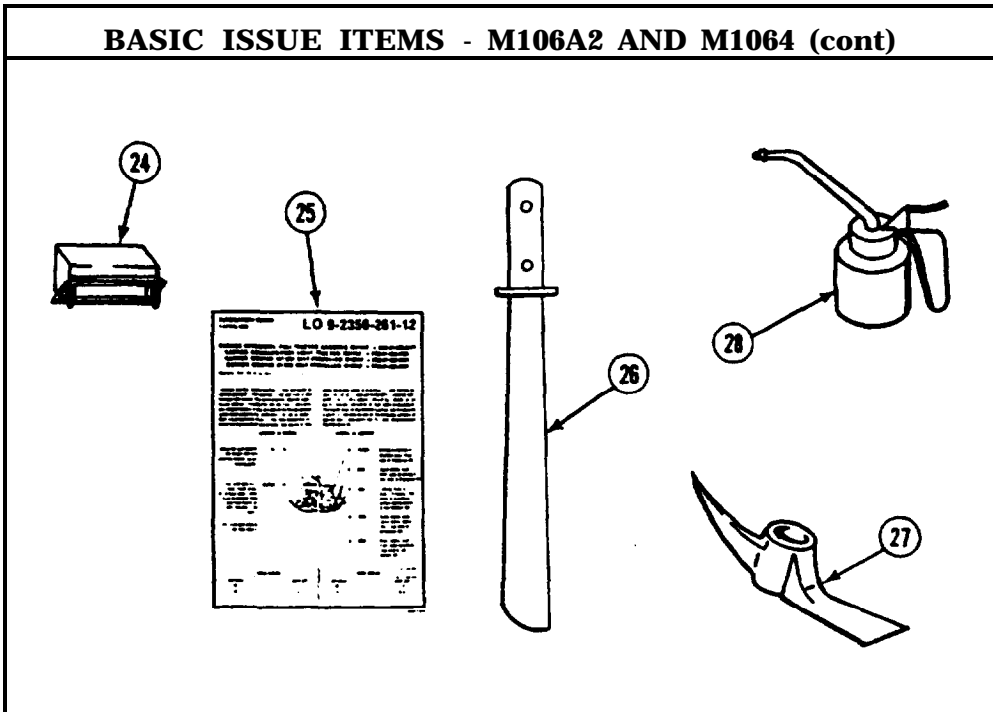
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
15	5120-00-227-8074	EXTENSION, SQ. DR. (IN TOOL BAG) (19207) 11655788-1	EA	1
16	4210-00-270-4512	EXTINGUISHER, FIRE, 5 LB (ON LEFT REAR FUEL CELL WALL) (19207) 7714780 OR		
	4201-01-107-9912	(19207) 7359703	EA	1
17	6545-00-922-1200	FIRST AID KIT (ON SPONSON, LEFT OF DRIVER) (19207) 11677011	EA	1
18	5120-01-0414624	FIXTURE, TRACK (ON TOP DECK, FRONT) (19207) 12253183	EA	2
19	5120-01-041-9920	GAGE, TRACK TENSION AND SPROCKET WEAR (IN TOOL BAG) (19207) 12253280	EA	1

BASIC ISSUE ITEMS — M106A2 AND M1064 (cont)



(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(s) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
20	4930-00-253-2478	GREASE GUN, HAND (IN TOOL BAG) (19207) 10915142	EA	1
21	5120-00-061-8546	HAMMER, HAND, BALL PEEN, 2 LB (IN TOOL BAG) (19207) 11677028-3	EA	1
22	5120-00-288-6574	HANDLE, MATTOCK PICK (ON TOP DECK, LEFT SIDE) (19207) 11677021	EA	1
23	5120-00-236-7590	HANDLE, SOCKET WRENCH (IN TOOL BAG) (19207) 11655786-1	EA	1

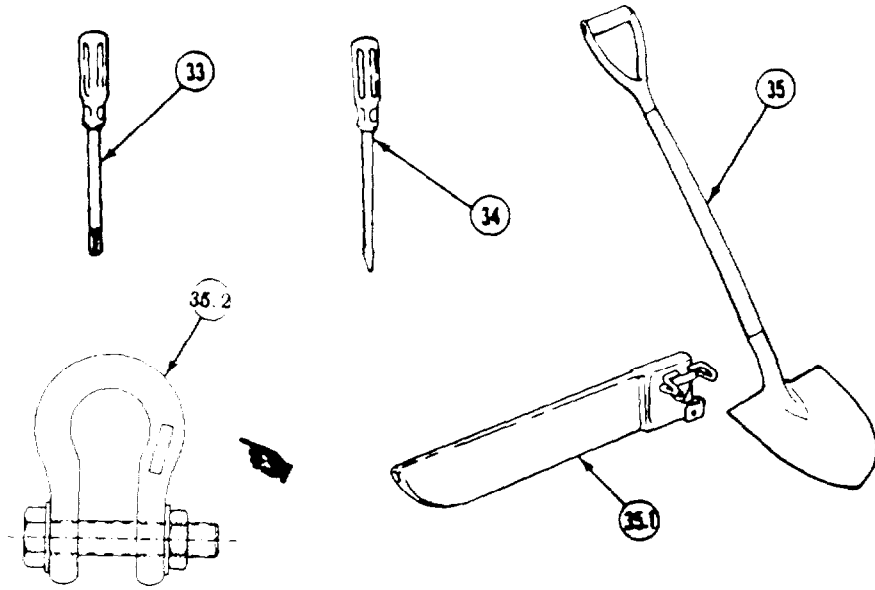
BASIC ISSUE ITEMS - M106A2 AND M1064 (cont)



(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
24	1240-00-768-8707	HEAD ASSEMBLY, SPARE INFRARED PERISCOPE M19 OR M19A1 (ON SPONSON, LEFT OF DRIVER) (19200) 7688707	EA	1
25		LUBRICATION ORDER (IN PAMPHLET BAG) LO 9-2350-261-12	EA	1
26	5110-00-813-1286	MACHETE (ON RIGHT PLATE, BEHIND CREW SEAT) 2-9-128GGG-M45	EA	1
27	5120-00-243-2395	MATTOCK, PICK TYPE (ON TOP DECK, RIGHT SIDE) (19207) 11677022	EA	1
28	4930-00-262-8868	OILER, HAND PUMP TYPE (IN POWER PLANT COMPARTMENT) (19207) 6169931	EA	1

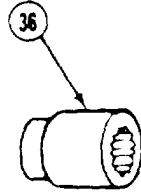
BASIC ISSUE ITEMS - M106A2 AND M1064 (cont)				
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
29	5340-00-682-1645 OR 5340-00-682-1508	PADLOCK, KEY OPERATED, (ON DRIVER'S HATCH) MS35647-6 OR PADLOCK, KEY OPERATED, (ON DRIVER'S HATCH) MS35644-3 (96906)	EA	1
30	5120-223-7397	PLIERS, SLIPJOINT (IN TOOL BAG) (19207) 11655775-3	EA	1
31	2540-00-923-4249	POST, CURTAIN (IN POCKET OF CURTAIN) (19207) 10950078	EA	5
32	5120-01-006-8847	PUNCH, DRIVE PIN (IN TOOL BAG) (19207) 11678718	EA	1

BASIC ISSUE ITEMS - M106A2 AND M1064 (cont)



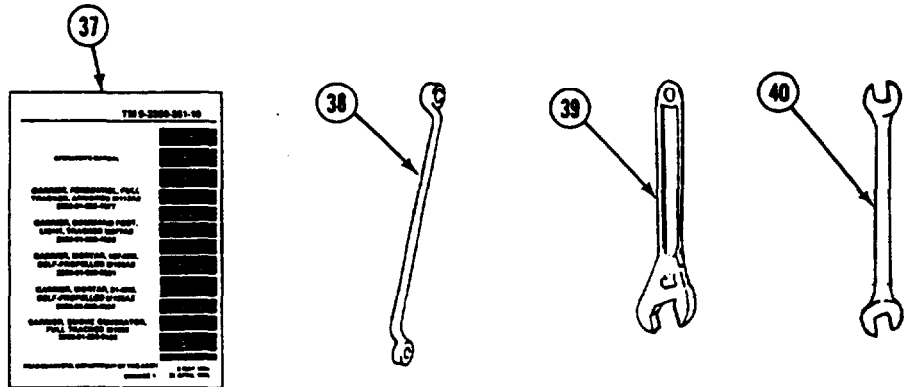
(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR
33	5120-00-234-8913	SCREWDRIVER, CROSSTIP, NO. 2 (IN TOOL BAG) (19207) 11655777-12	EA	1
34	5120-00-278-1283	SCREWDRIVER, FLAT TIP (IN TOOL BAG) (19207) 1X55777-11	EA	1
35	5120-293-3336	SHOVEL, HAND (ON FRONT SLOPE) (19207) 11655784	EA	1
35.1	8465-00-926-4932	SHEATH, MACHETE (ON RIGHT PLATE, BEHIND CREW SEAT) (81349) MIL-S-2329	EA	1
35.2	4030-01-369-7912	SHACKLE (IN TOOL BAG) (19207) 12381884	EA	4

BASIC ISSUE ITEMS - M106A2 AND M1064 (cont)



(1) ILLUS NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGE AND PART NUMBER	(4) U/M	(5) QTY RQR	
I	36	5120-00-189-7946	SOCKET, WRENCH, 1/2 x 5/8 (IN TOOL BAG) (19207) 11677025-2	EA	1
	36	5120-00-235-5870	SOCKET, WRENCH, 1/2 x 11/16 (IN TOOL BAG) (19207) 11677025-3	EA	1
	36	5120-00-189-7985	SOCKET, WRENCH, 1/2 x 3/4 (IN TOOL BAG) (19207) 11677025-4	EA	1
	36	5120-00-189-7934	SOCKET, WRENCH, 1/2 x 7/8 (IN TOOL BAG) (19207) 11677025-5	EA	1
	36	5120-00-189-7935	SOCKET, WRENCH, 1/2 x 15/16 (IN TOOL BAG) (19207) 11677025-6	EA	1
		5120-00-189-7932	SOCKET, WRENCH, 1/2 x 9/16 (IN TOOL BAG) (19207) 11677025-1	EA	1

BASIC ISSUE ITEMS - M106A2 AND M1064 (cont)



(1) ILLUS. NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION CAGEC AND PART NUMBER	(4) U/M	(5) QTY RQR
37		TECHNICAL MANUAL (IN PAMPHLET BAG) TM 9-2350-261-10	EA	1
38	5120-00-224-3141	WRENCH, BOX, DOUBLE OFFSET, 5/8 x 11/16 (IN TOOL BAG) (19207) 11655785-2	EA	1
39	5120-00-264-3796	WRENCH, OPEN END, ADJUSTABLE, 1-5/16 x 12 (IN TOOL BAG) (19207) 11655778-5	EA	1
40	5120-00-277-2342	WRENCH, OPEN END, FIXED, 3/8 x 7/16 (IN TOOL BAG) (19207) 11655789-1	EA	1
40	5120-00-187-7126	WRENCH, OPEN END, FIXED, 9/16 x 5/8 (IN TOOL BAG) (19207) 116557892	EA	1
40	5120-00-277-8300	WRENCH, OPEN END, FIXED, 11/16 x 13/16 (IN TOOL BAG) (19207) 11655789-3	EA	1

APPENDIX C ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

SCOPE

This appendix lists additional items you are authorized to help support the M113A2, M577A2, M1068, M106A2, M125A2, M1059, and M1064 carriers. ■

See TM 9-1015-215-10 for additional authorization list for the 4.2 inch, 107-mm, M30 Mortar, used on the M106A2.

See TM 9-1015-200-10 for additional authorization list for the 81-mm, M29A1 Mortar, used on the M125A2.

See TM 9-1015-250-10 for additional authorization list for the 4.7 inch, 120-mm, M121 Mortar, used on the M1064.

GENERAL

This list identifies items that do not have to accompany the M113A2, M577A2, M1068, M106A2, M125A2, and M1059, and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA. ■

EXPLANATION OF COLUMNS

- a. *Column (1) - National Stock Number.* Indicates the National Stock Number assigned to the item and will be used for requisitioning purposes.
- b. *Column (2) - Description.* Indicates the Federal item name and, if required, a minimum description to identify the item. Following the part name is the CAGE (in parentheses) and the part number.
- c. *Column (3) - Unit of Measure (U/M).* Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).
- d. *Column (4) - Quantity Authorized (Qty auth).* Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. ADDITIONAL, AUTHORIZATION LIST

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION CAGEC AND PART NUMBER	(3) U/M	(4) QTY AUTH
	M113A2, M106A2, M1064, M125A2, AND M1059		
4930-00-204-2550	ADAPTER, GREASE GUN: (81349) MIL-L-4387	EA	1
5120-00-926-5175	BRUSH, CLEANING, BATTERY: (36540) BT1	EA	1
5140-00-261-4994	CARRIER, WIRE CUTTER M1938: (19207) 11655787	EA	1
5120-01-105-0779	COVER, GRILL (19207) 12269299	EA	1
4230-01-133-4124	DECONTAMINATING APPARATUS, PORTABLE: (81361) E5-51-527	EA	1
■ 4240-00-052-3776	GOGGLES, INDUSTRIAL (58536) A-A-1110	PR	1
1331-01-020-0504	GRENADE, SMOKE SCREENING, RP, UK/LSA: (K7312) TW74GF (M113A2 AND M1059)	EA	12
■ 5120-00-265-7462	HAMMER, HAND, SLEDGE: (90172) 41796	EA	1
7240-00-255-8113	MEASURE, LIQUID, OIL CAN: (74640) N202	EA	1
8415-01-092-0039	MITTENS, CLOTH, HEAT PROTECTIVE: (81349) MIL-M-11199F (M1059 ONLY)	EA	2
2540-00-587-2532	TARPAULIN, 12 FT x 17 FT, (19207) 10936264	EA	1
2540-00-936-7801	TOW BAR: 11660660 (19207)	EA	1
5120-00-224-3154	WRENCH, BOX 1/2 x 9/16 IN, 11655785-1 (19207)	EA	1
5120-00-240-5609	WRENCH, OPEN END, FIXED: 3/4 x 7/8 IN, (19207) 11655789-4	EA	1

ADDITIONAL AUTHORIZATION LIST (cont)

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION CAGEC AND PART NUMBER	(3) U/M	(4) QTY AUTH
5120-00-277-7025	WRENCH, OPEN END, FIXED: 15/16 x 1 IN, (19207) 11655789-5 M577A2 AND M1068	EA	1
4930-00-204-2550	ADAPTER, GREASE GUN:(81349) MIL-L-4387	EA	1
5120-00-926-5175	BRUSH, CLEANING, BATTERY: (36540) BT1	EA	1
5140-00-261-4994	CARRIER, WIRE CUTTER M1938: (19207) 11655787	EA	1
2540-01-125-9653	COVER ASSEMBLY, PROTECTIVE: (19207) 12269326	EA	1
2540-00-966-2401	COVER, GRILL: (19207) 12269326	EA	1
4230-01-133-4124	DECONTAMINATING APPARATUS, PORTABLE: (81361) E5-51-527	EA	1
4240-00-052-3776	GOGGLES, INDUSTRIAL (58536) A-A-1110	PR	1
5120-00-265-7462	HAMMER, HAND, SLEDGE: (90172) 41796	EA	1
7240-00-255-8113	MEASURE, LIQUID, OIL CAN: (74640) N202	EA	1
2540-00-587-2532	TARPAULIN, 12 FT x 17 FT, (19207) 10936264	EA	1
2540-00-936-7801	TOW BAR: (19207) 11660660	EA	1
5120-00-224-3154	WRENCH, BOX: 1/2 x 9/16 IN, (19207) 11655785-1	EA	1
5120-00-240-5609	WRENCH, OPEN END, FIXED: 3/4 x 7/8 IN, (19207) 11655789-4	EA	1
5120-00-277-7025	WRENCH, OPEN END; FIXED: 15/16 x 1 IN, (19207) 11655789-5	EA	1

Change 5

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APPENDIX D EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

SCOPE

This appendix lists expendable/durable supplies and materials you need to operate and maintain the M113A2, M577A2, M1068, M106A2, M1064, M125A2, and M1059 carriers. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

See TM 9-1015-215-10 for expendable/durable supplies and materials list for the 4.2 inch, 107-mm, M30 Mortar, used on the M106A2.

See TM 9-1015-200-10 for expendable/durable supplies and materials list for the U-mm, M29A1 Mortar, used on the M125A2.

See TM 9-1015-250-10 for expendable/durable supplies and materials list for the 120-mm, M121 Mortar, used on the M1064.

EXPLANATION OF COLUMNS

- a. *Column (1) - Item Number.* This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., Use eight batteries, item 1, Appendix D).
- b. *Column (2) - Level.* This column identifies the lowest level of maintenance that requires the listed item (e.g., C - Operator/Crew).
- c. *Column (3) - National Stock Number.* This is the National Stock Number assigned to the item; use it to request or requisition the item.
- d. *Column (4) - Description.* Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial and Government Entity Code (CAGE) in parentheses followed by the part number.
- e. *Column (5) - Unit of Measure (U/M).* Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

**Section II. EXPENDABLE/DURABLE SUPPLIES
AND MATERIALS LIST M113A2, M577A2, M1068,
M106A2, M1064, M125A2, AND M1059**

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION CAGEC & PART NUMBER	(5) U/M
1	C	6135-00-120-1020	BATTERY, DRY, 1.5 VOLT (96906) MS75059	EA
2	C	9920-00-292-9946	CLEANER, PIPE	
3	C	6640-00-285-4894	CLEANER, RIFLE BORE	
4	C	6859-00-224-6657	CLEANING COMPOUND, SOLVENT (FOR BORE OF SMALL ARMS AND AUTOMATIC WEAPONS) (81349) MIL-C-372	OZ
5	C	8305-00-267-3015	CLOTH, CHEESECLOTH, COTTON, BLEACHED AND UNBLEACHED: (81348) CCC-C-440, TYPE II, CLASS 2	LB
6	C	6850-00-281-1985	DRY CLEANING SOLVENT, (81348) P-D-660	GL
7	C	6230-00-264-8261	FLASHLIGHT, ELECTRIC, HAND, 2-CELL, MX 991U	EA
7.1	C	9150-01-197-7690	GREASE, AUTOMOTIVE, 1.75 LB CAN (81349) MIL-10924	CN
	C	9150-01-197-7689	GREASE, AUTOMOTIVE, 6.5 LB CAN (81349) MIL-G-10924	CN
	C	9150-01-190-0906	GREASE, AUTOMOTIVE, 25 LB CAN (81349) ML-G-10924	CN
8	C	6640-00-285-4694	PAPER, LENS, 7 x 11 IN. NNN-P-40	BLK

APPENDIX E

STOWAGE AND SIGN GUIDE

SCOPE

This appendix shows the location for stowage of equipment and materiel required to be carried on the M113A2, M577A2, M1068, M106A2, M1064, M125A2, and M1059 earners.

GENERAL

The pictures on the following pages show where the equipment is stowed, and the decals, stencils, and straps at each position.

WARNING

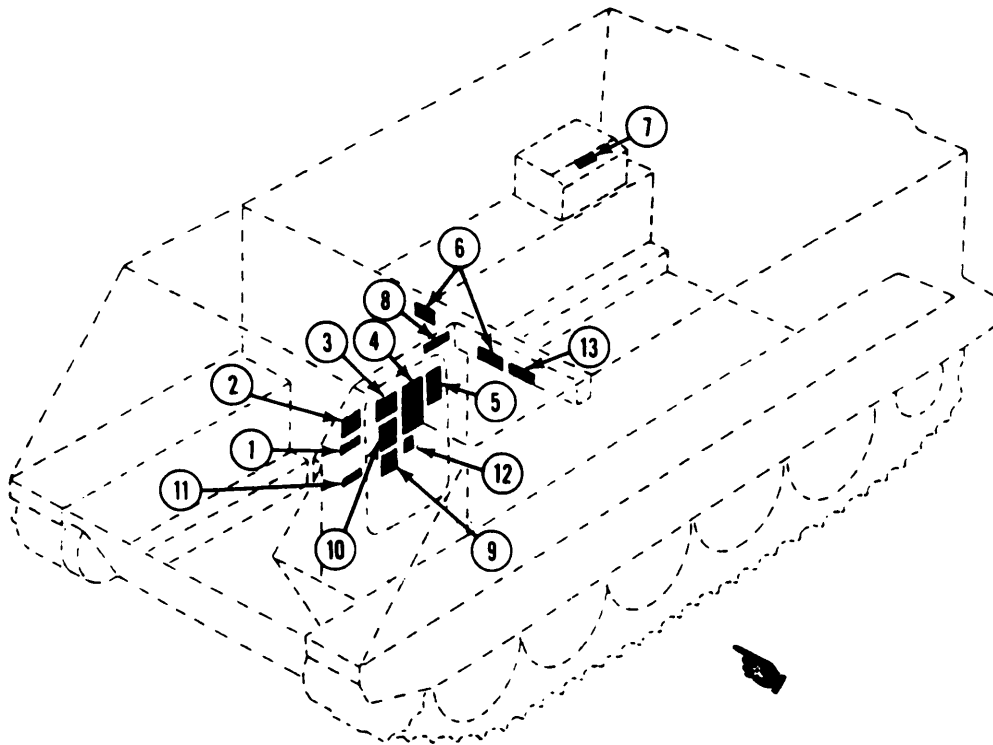


Ammunition can explode and kill you. Make certain ammunition and all other combustible/explosive materials are properly stored 30 inches or more from heater vents. Combustible materials must be stored 12 inches or more from metal surfaces of the heater.

NOTE

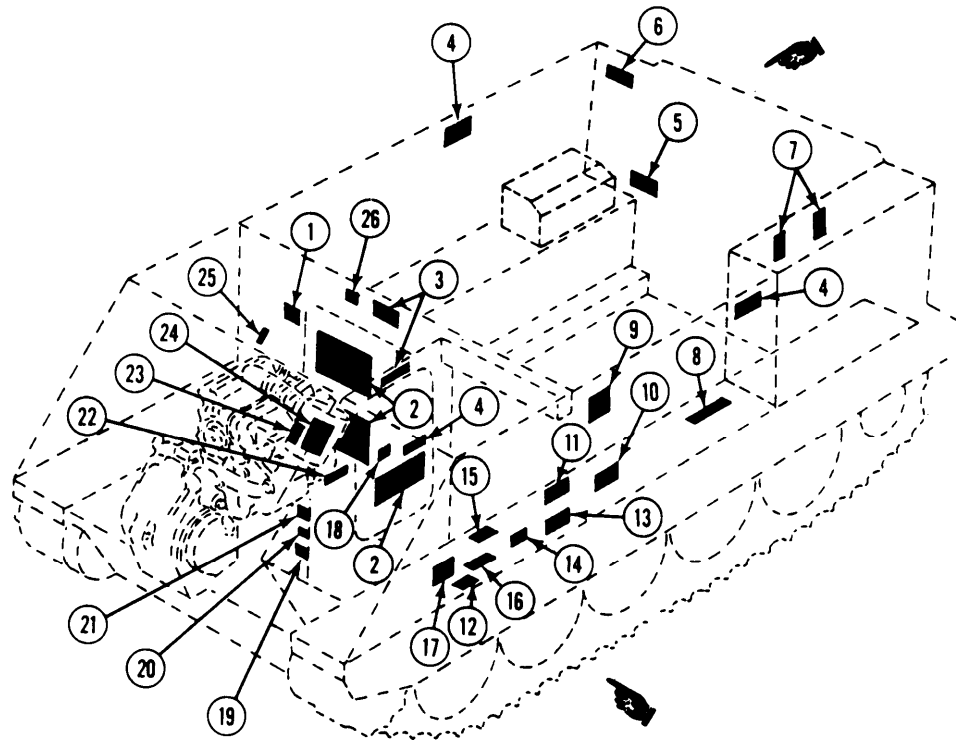
You can stow either 5.56 mm ammunition or 7.62 mm ammunition in storage spaces that have decals for 7.62 mm ammunition.

STOWAGE GUIDE — M113A2 ARMORED PERSONNEL CARRIER DATAPLATE AND MARKER LOCATIONS



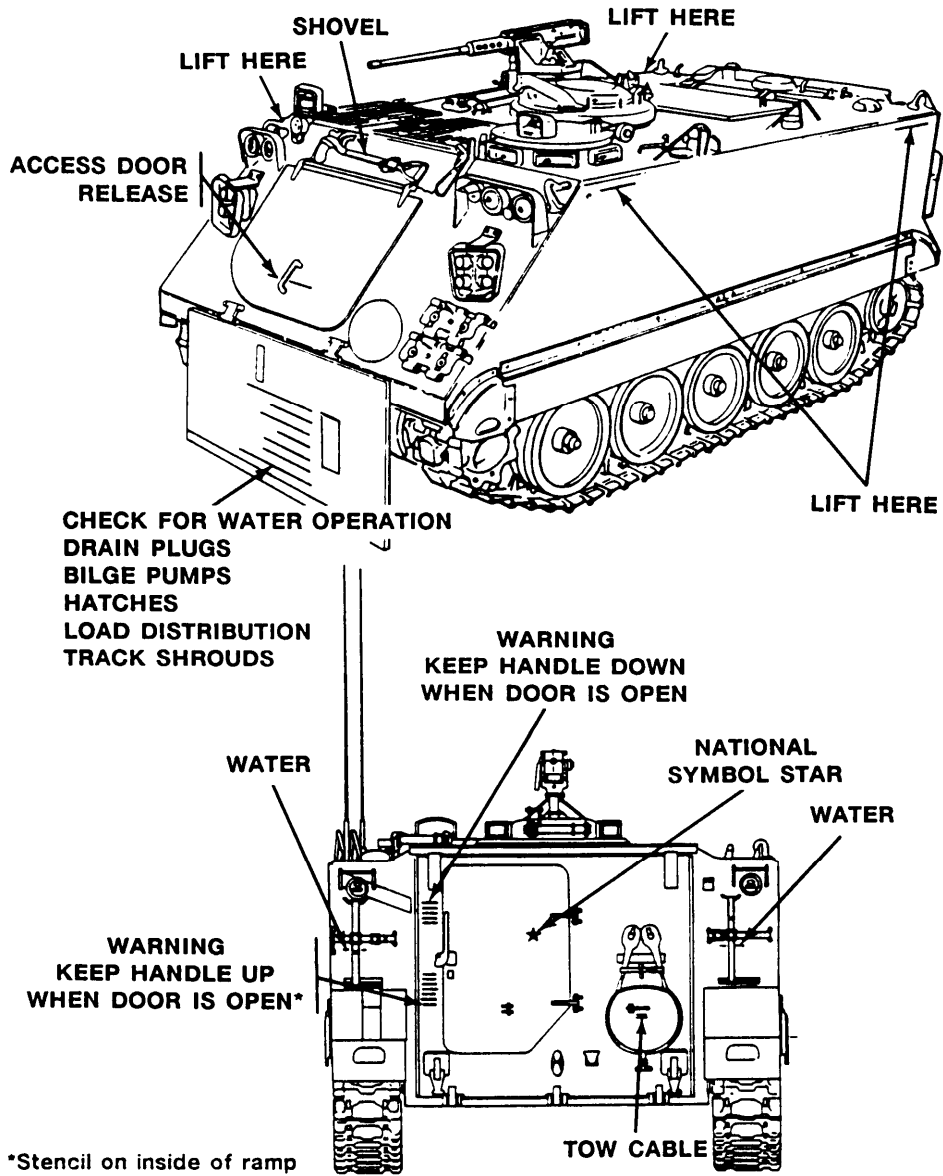
- | | |
|----------------------------|--------------------------|
| 1. Stall check WARNING | 8. Ramp lock lever |
| 2. Vehicle plate | 9. Vehicle shipping data |
| 3. Speed shift limit | 10. Ramp |
| 4. Vehicle operation | 11. Ramp actuating lever |
| 5. Power train maintenance | 12. Engine idle RPM |
| 6. Ramp lock WARNING | 13. Warranty information |
| 7. Battery service | |

STOWAGE GUIDE — M113A2 ARMORED PERSONNEL CARRIER MARKER AND DECAL LOCATIONS

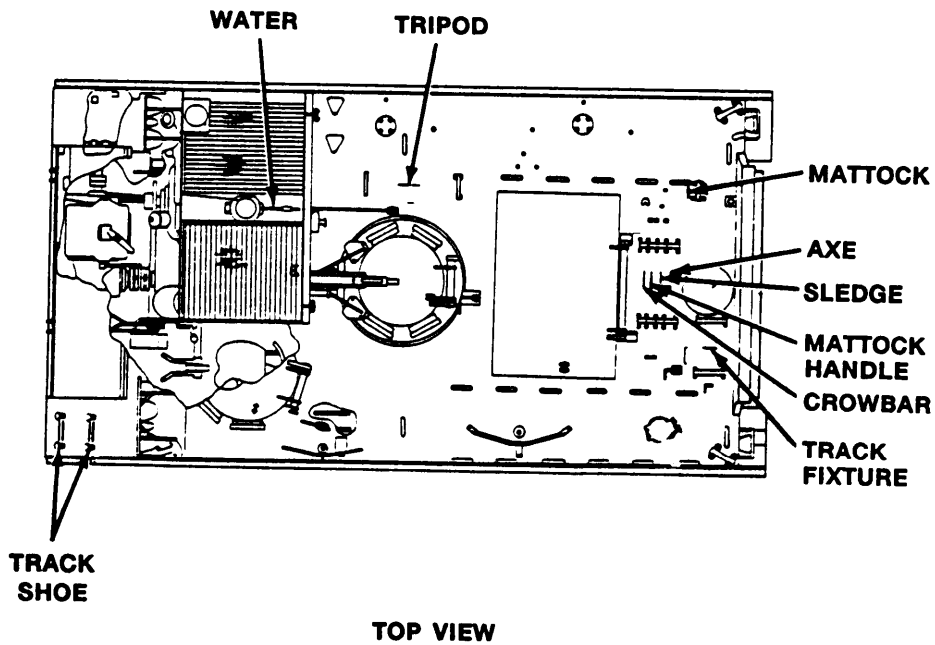
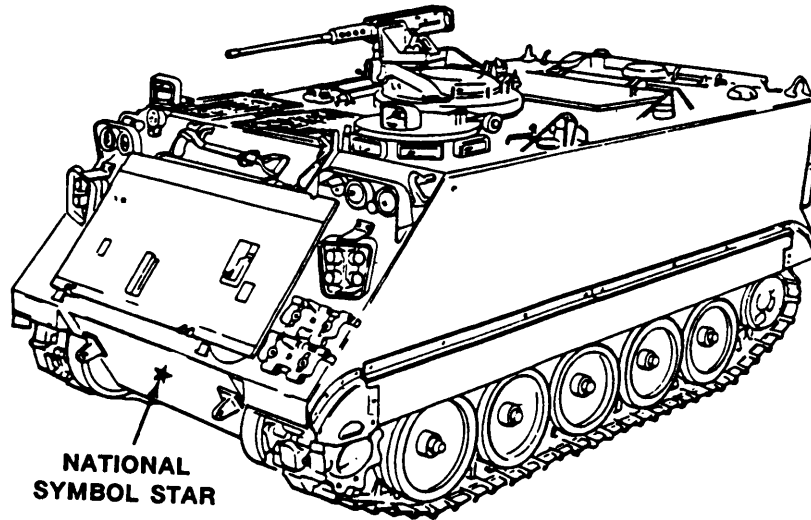


- | | |
|--|------------------------------------|
| 1. Personnel/equipment heater WARNING | 13. First aid kit |
| 2. Carbon monoxide WARNING, (LARGE) | 14. Rifle |
| 3. Carbon monoxide WARNING, (SMALL) | 15. Spare barrel |
| 4. Noise WARNING | 16. 7.62 ammunition |
| 5. Tools | 17. Master switch CAUTION |
| 6. Fire extinguisher | 18. Engine disconnect |
| 7. Spring adjustment | 19. Air vent |
| 8. Periscope | 20. Throttle |
| 9. Fire extinguisher safety wire CAUTION | 21. Fuel shutoff |
| 10. Flashlight | 22. Pivot steer CAUTION |
| 11. Infrared periscope | 23. NBC engine air cleaner WARNING |
| 12. Spare head | 24. Engine air cleaner |
| | 25. Fan oil gage and fill |
| | 26. Care paint |

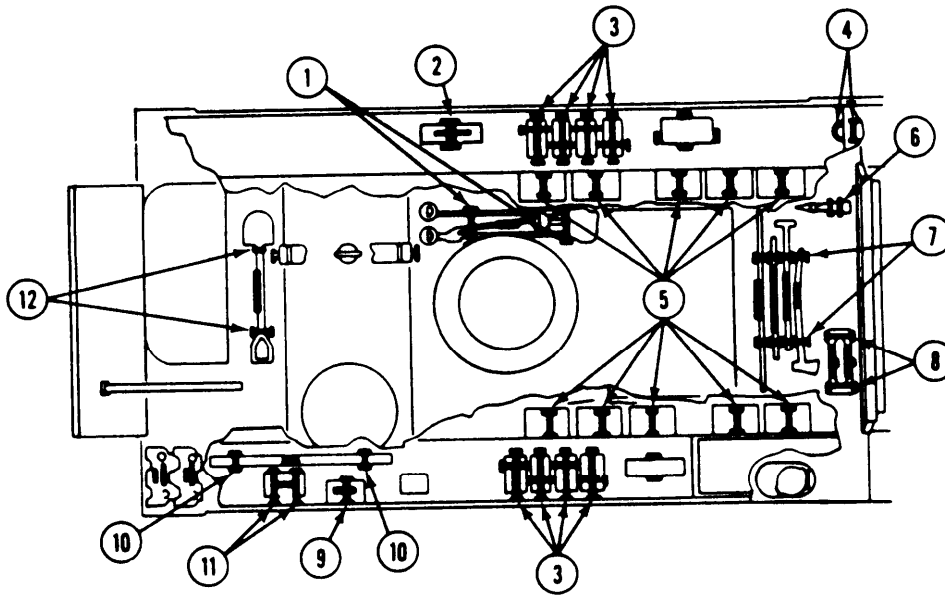
STORAGE GUIDE — M113A2 ARMORED PERSONNEL CARRIER STENCIL LOCATIONS



**STORAGE GUIDE — M113A2 ARMORED PERSONNEL
CARRIER STENCIL LOCATIONS (cent)**

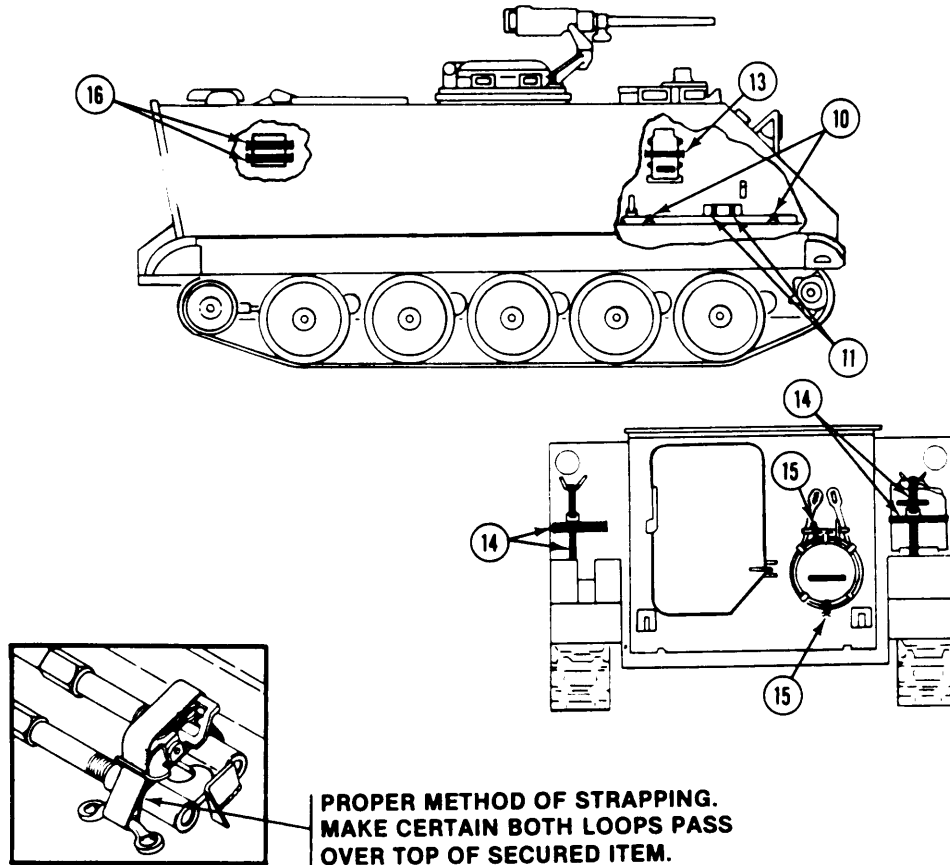


**STOWAGE GUIDE — M113A2 ARMORED RESONNEL
CARRIER STRAPPING DIAGRAM**



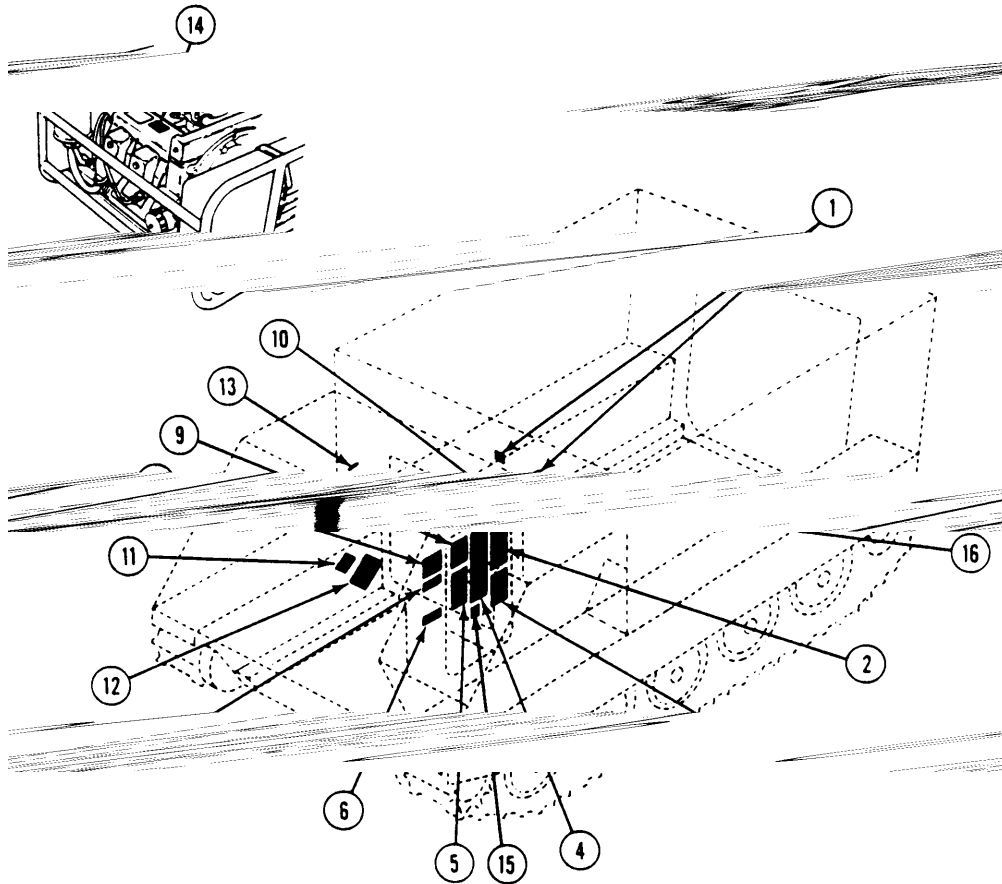
STRAP KEY			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
1	Tripod	2	36
2	Tool Bag	1	48
3	Ammunition box, caliber .50	Suggested use only, no straps furnished	
4	Fire extinguisher	2	24
5	Miscellaneous stowage	10	39
6	Mattock	1	24
7	Pioneer tools	2	36
8	Track fixture	2	28
9	First aid kit	1	24
10	Spare barrel, caliber .50	2	24
11	Ammunition cases, rifle	2	45
12	Shovel	2	33,20

STOWAGE GUIDE — M113A2 ARMORED PERSONNEL CARRIER STRAPPING DIAGRAM (cont)



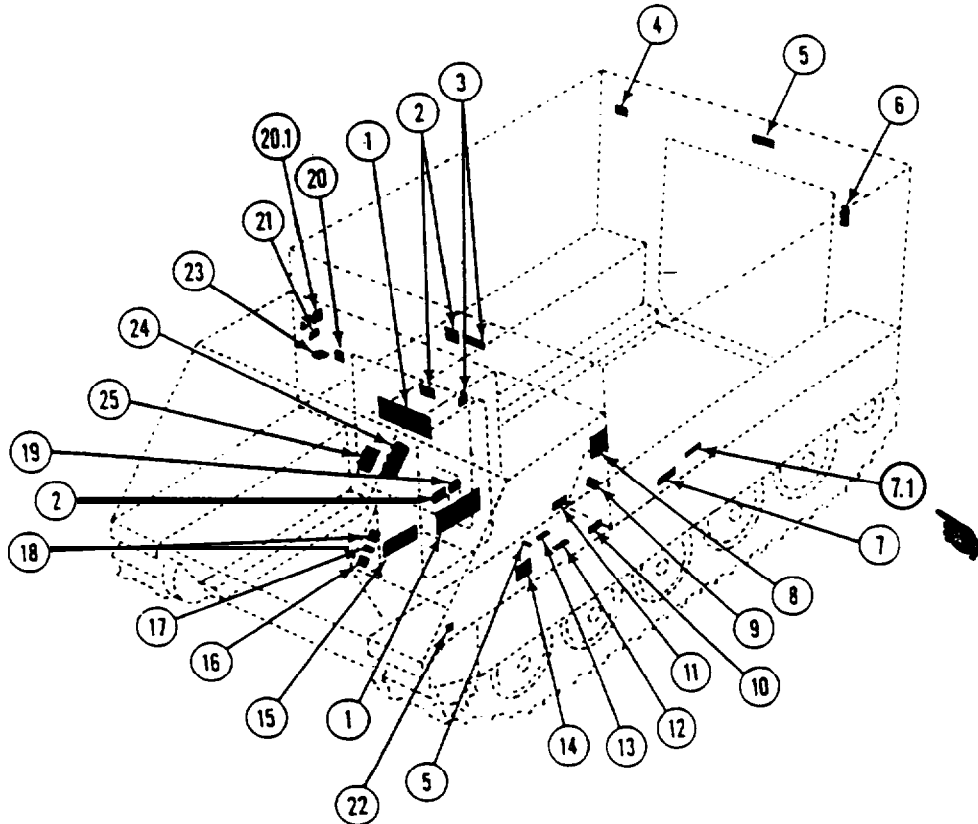
STRAP KEY (cont)			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
13	Infrared periscope M19	2	20,24
14	Water can or M13 decon can	4	72
15	Tow cable	2	18,30
16	Driver's windshield bag	2	68

STOWAGE GUIDE — M577A2 COMMAND POST CARRIER DATAPLATE AND MARKER LOCATIONS



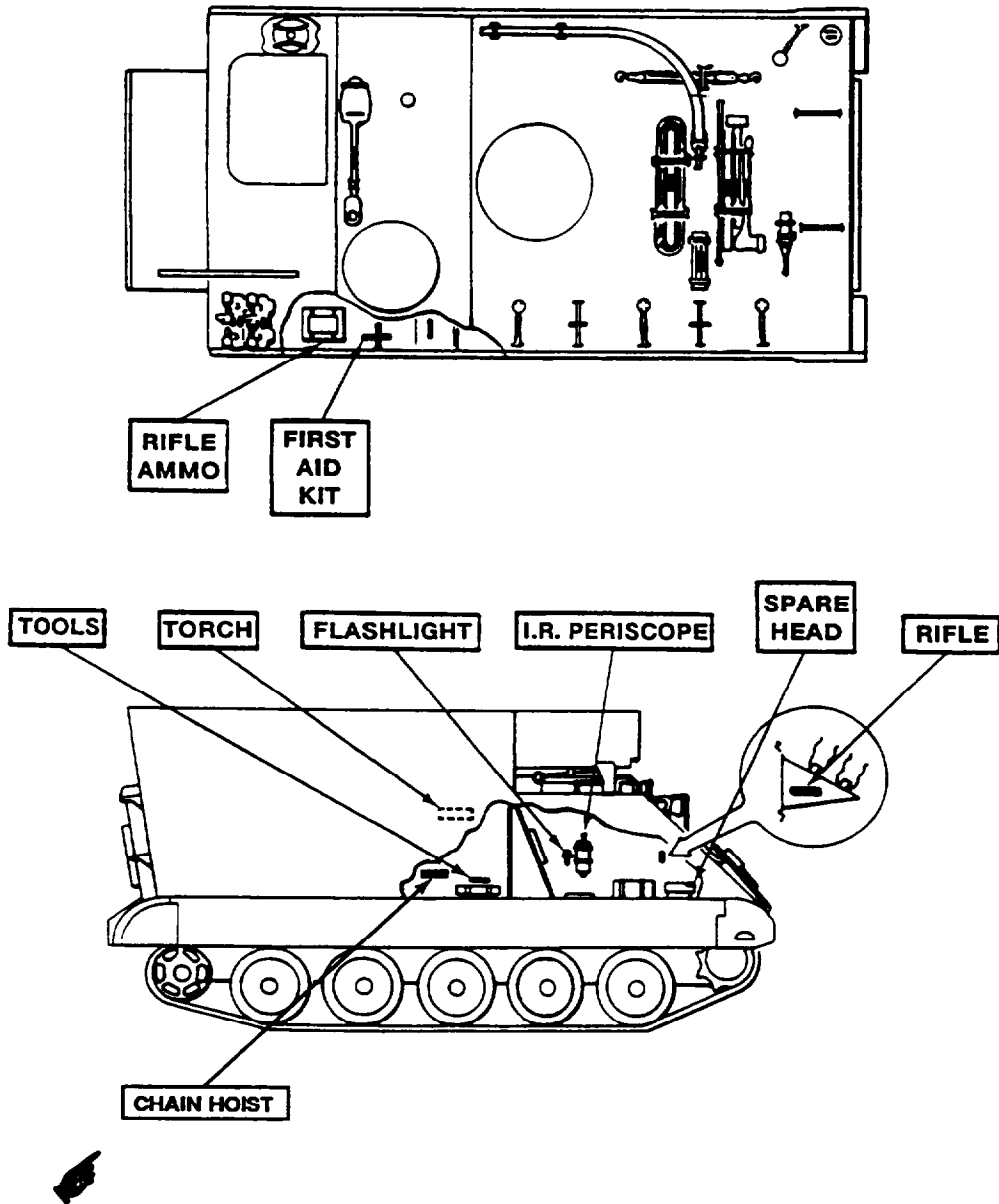
- | | |
|----------------------------|------------------------------|
| 1. Ramp lock WARNING | 10. Ramp lock lever |
| 2. Power train maintenance | 11. Engine air cleaner |
| 3. Vehicle shipping data | 12. Engine idle RPM |
| 4. Vehicle operation | 13. Warranty information |
| 5. Ramp instruction | 14. Equipment heater WARNING |
| 6. Ramp actuating lever | 15. Engine idle RPM |
| 7. Stall check WARNING | 16. Care paint |
| 8. Vehicle identification | |
| 9. Speed shift limit | |

STORAGE GUIDE - M577A2 ARMORED PERSONNEL CARRIER MARKER AND DECAL LOCATIONS

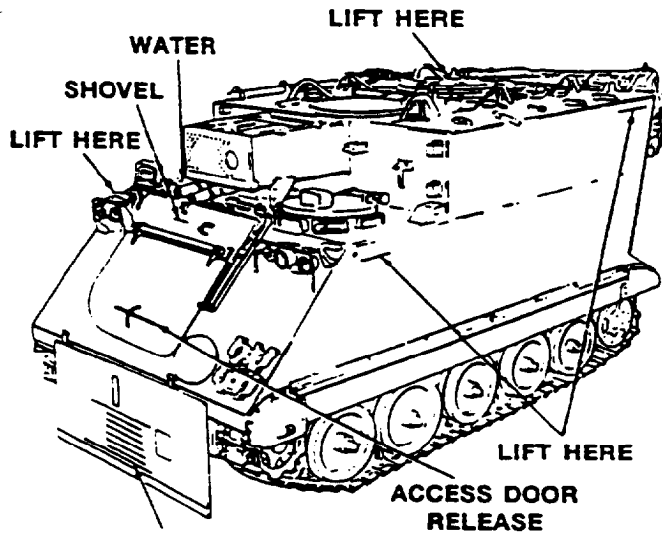


- | | |
|--|--|
| 1. Carbon monoxide WARNING (LARGE) | 14. Master switch CAUTION |
| 2. Noise WARNING | 15. Pivot steer CAUTION |
| 3. Carbon monoxide WARNING (SMALL) | 16. Air vent |
| 4. Fire extinguisher | 17. Throttle |
| 5. Rifle | 18. Fuel shutoff |
| 6. Wall switch | 19. Engine disconnect |
| 7. Tools | 20. Personnel/equipment heater WARNING |
| 7.1 Chain hoist tool bag | 21. Blowtorch |
| 8. Fire extinguisher safety wire CAUTION | 22. Spare head |
| 9. Pamphlet bag | 23. NBC engine air cleaner WARNING |
| 10. Flashlight | 24. NBC generator set, air cleaner WARNING |
| 11. Infrared periscope | 25. Fan oil gage and fill |
| 12. First aid kit | |
| 13. 7.62 ammunition | |

**STORAGE GUIDE - M577A2 COMMAND POST CARRIER
DECALS**



STOWAGE GUIDE - M577A2 COMMAND POST CARRIER STENCIL LOCATIONS

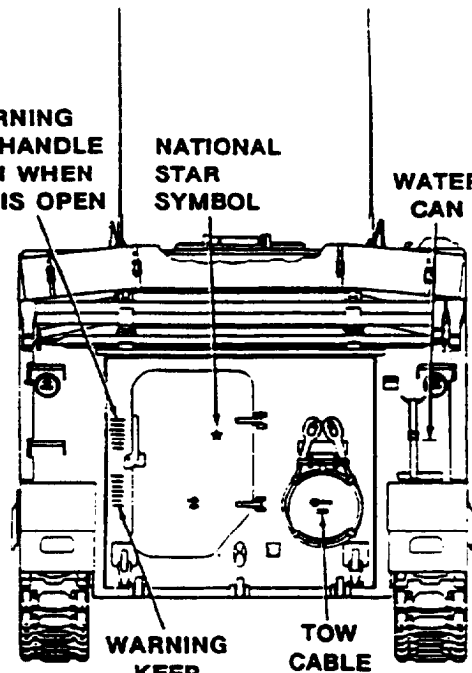


CHECK FOR WATER OPERATION
DRAIN PLUGS
BILGE PUMPS
HATCHES
LOAD DISTRIBUTION
TRACK SHROUDS

WARNING
KEEP HANDLE
DOWN WHEN
DOOR IS OPEN

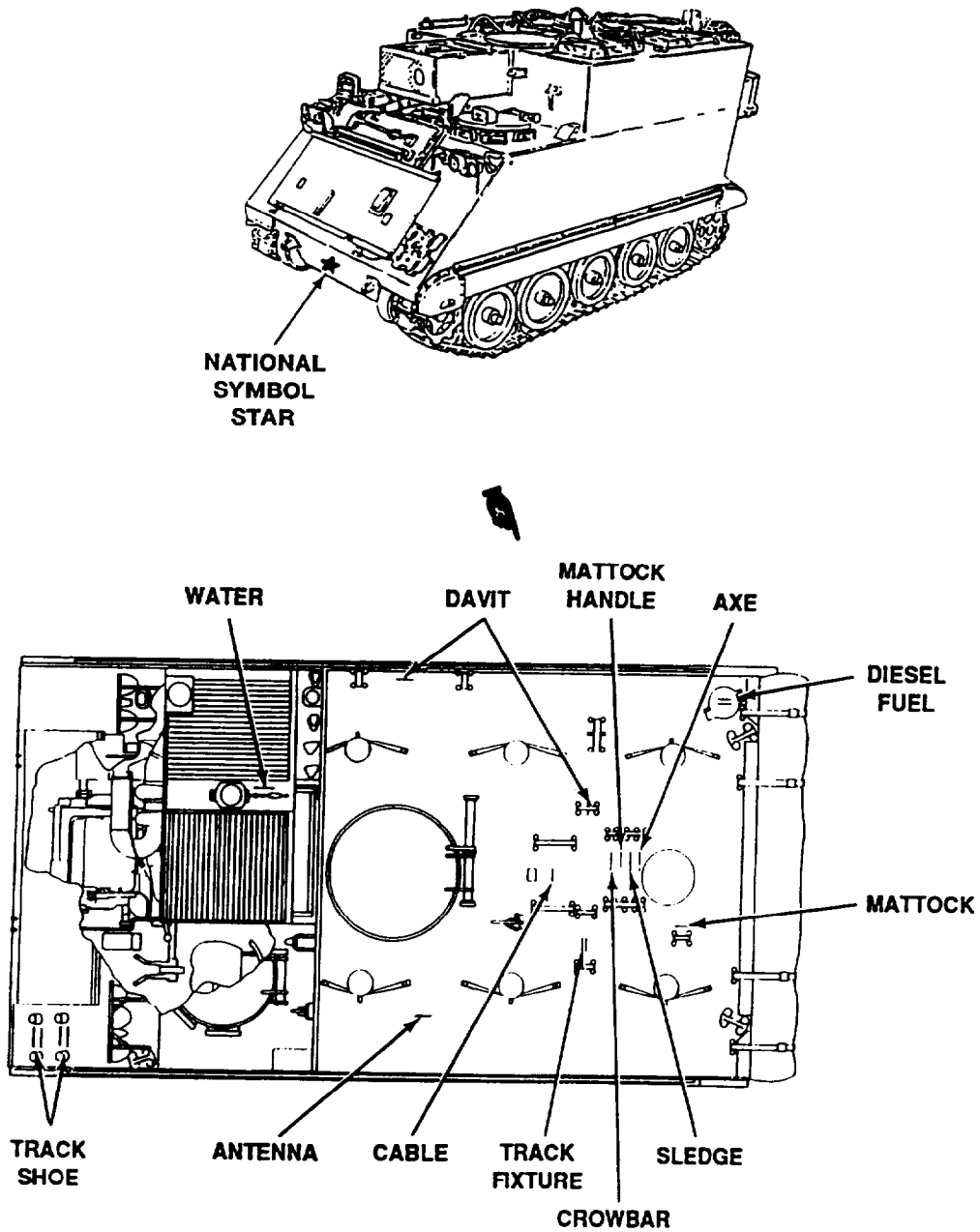
NATIONAL
STAR
SYMBOL

WATER
CAN

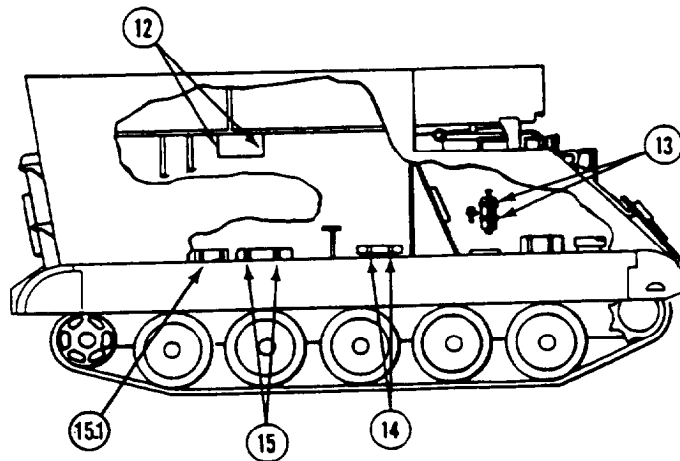
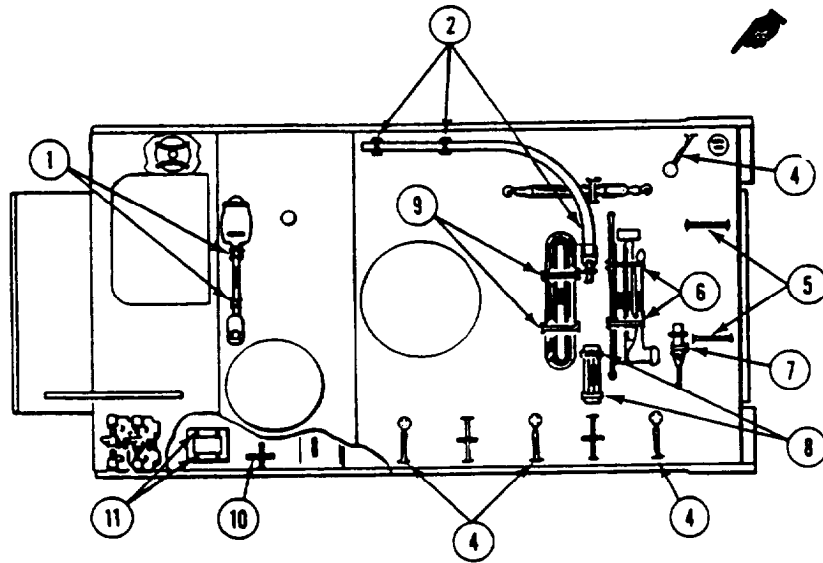


*STENCIL ON INSIDE OF RAMP

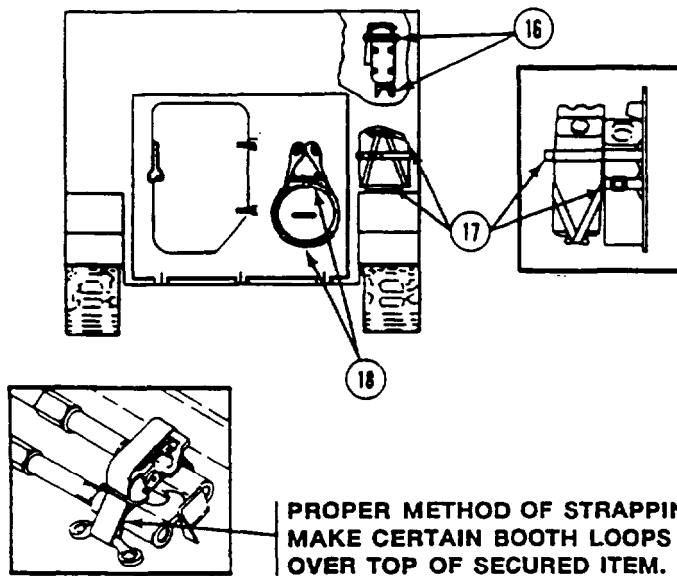
**STOWAGE GUIDE - M577A2 COMMAND POST CARRIER
STENCIL LOCATIONS (cont.)**



STOWAGE GUIDE - M577A2 COMMAND POST CARRIER STRAPPING DIAGRAM

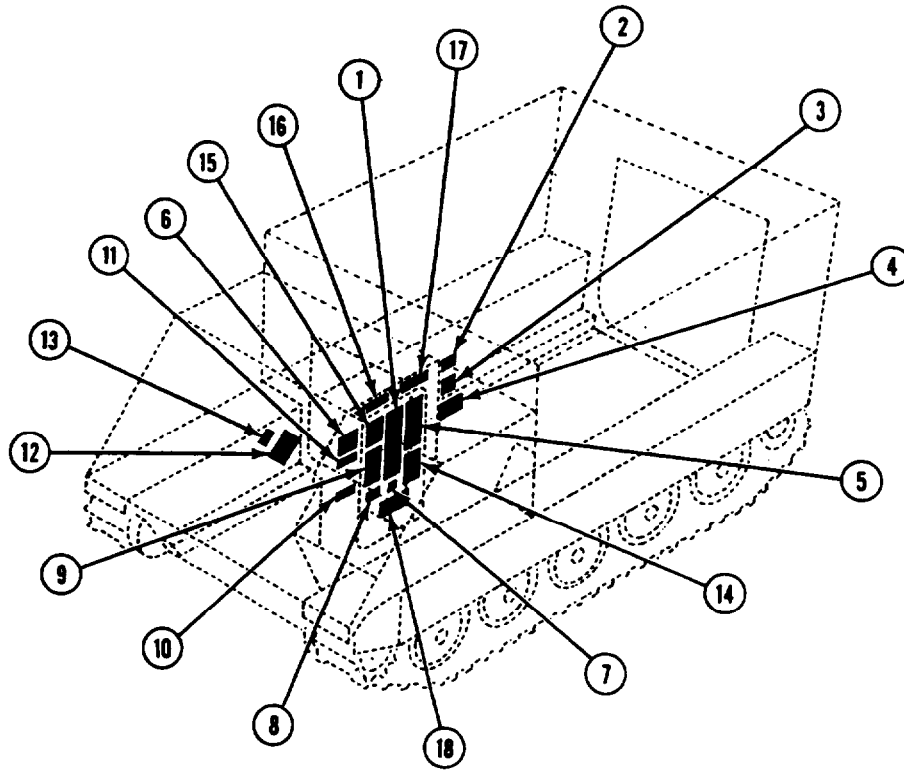


**STOWAGE GUIDE - M577A2 COMMAND POST CARRIER
STRAPPING DIAGRAM (cont)**



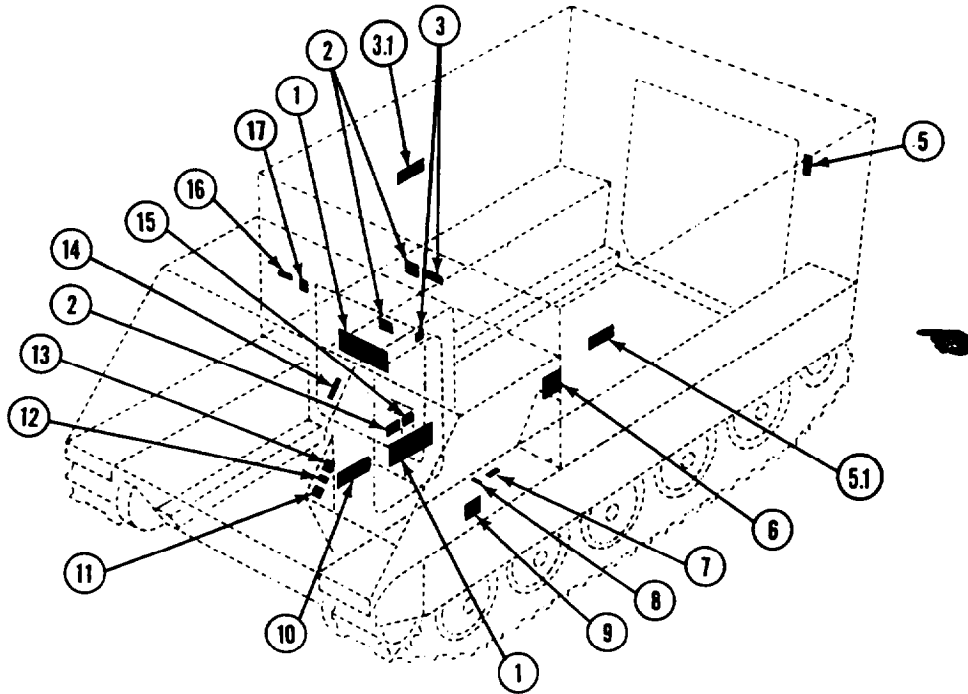
STRAP KEY			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
1	Shovel	2	33,20
2	Davit	3	22
3	Deleted		
4	Sleeping bag	4	72,96
5	Pack	2	72
6	Pioneer tools	2	36
7	Mattock	1	36
8	Track fixture	2	28
9	Cable	2	36
10	First aid kit	1	24
11	Ammunition case rifle	2	45
12	Radio	2	45
13	Infrared periscope, M19	2	24,20
14	Tool bag	2	36
15	Driver's windshield bag	2	68
15.1	Chain hoist tool bag	1	36
16	Fire extinguisher	2	24
17	Water can	3	72,88,108
18	Tow cable	2	18,30

**STOWAGE GUIDE - M1068 STANDARD INTEGRATED
COMMAND POST SYSTEM DATAPLATE AND MARKER
LOCATIONS**



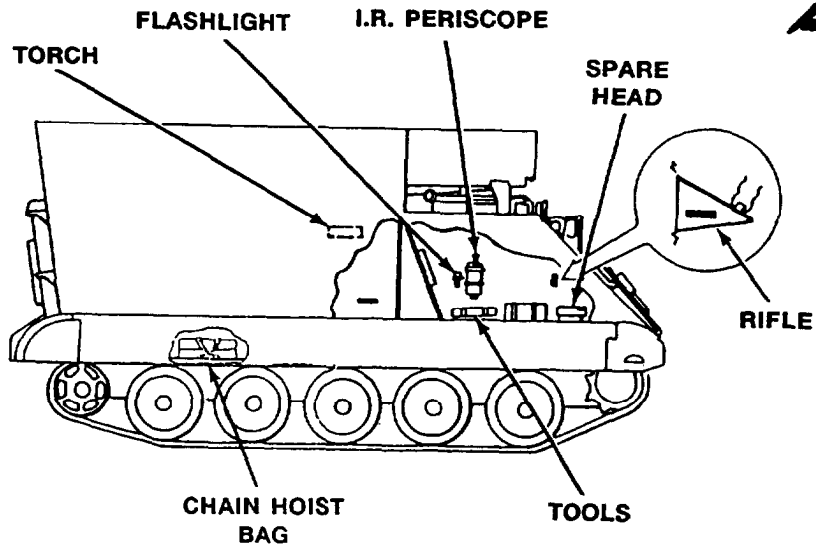
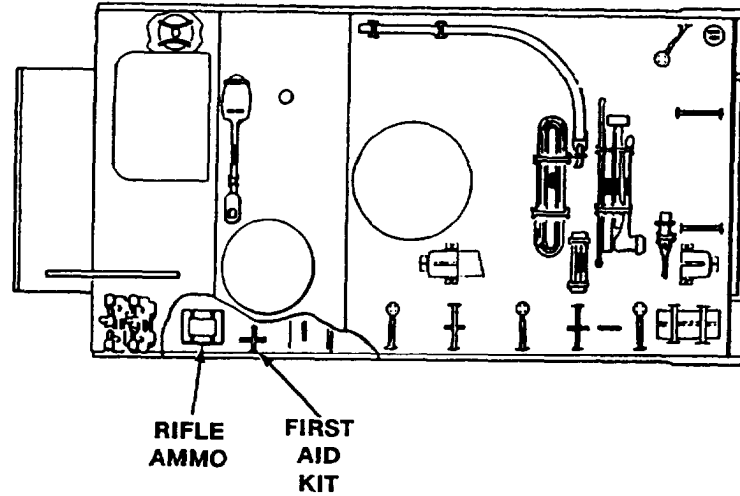
- | | |
|--|---|
| 1. Marker, instruction, vehicle operation | 12. Marker, instruction, engine air cleaner |
| 2. Marker, instruction, ramp lock warning | 13. Decal, WARNING, NBC, generator set, air cleaner |
| 3. Plate, warranty information | 14. Plate, identification, vehicle |
| 4. Marker, carc paint | 15. Marker, instruction, speed shift limit |
| 5. Marker, instruction, power train maintenance | 16. Decal, WARNING, carbon monoxide (small) |
| 6. Marker, identification, vehicle shipping data | 17. Marker, identification, ramp lock lever |
| 7. Plate, instruction, engine idle RPM | 18. Decal, WARNING, carbon monoxide (large) |
| 8. Marker, noise | |
| 9. Marker, instruction, ramp | |
| 10. Marker, instruction, ramp actuating lever | |
| 11. Marker, WARNING, stall check | |

**STOWAGE GUIDE - M1068 STANDARD INTEGRATED
COMMAND POST SYSTEM MARKER AND DECAL
LOCATIONS**

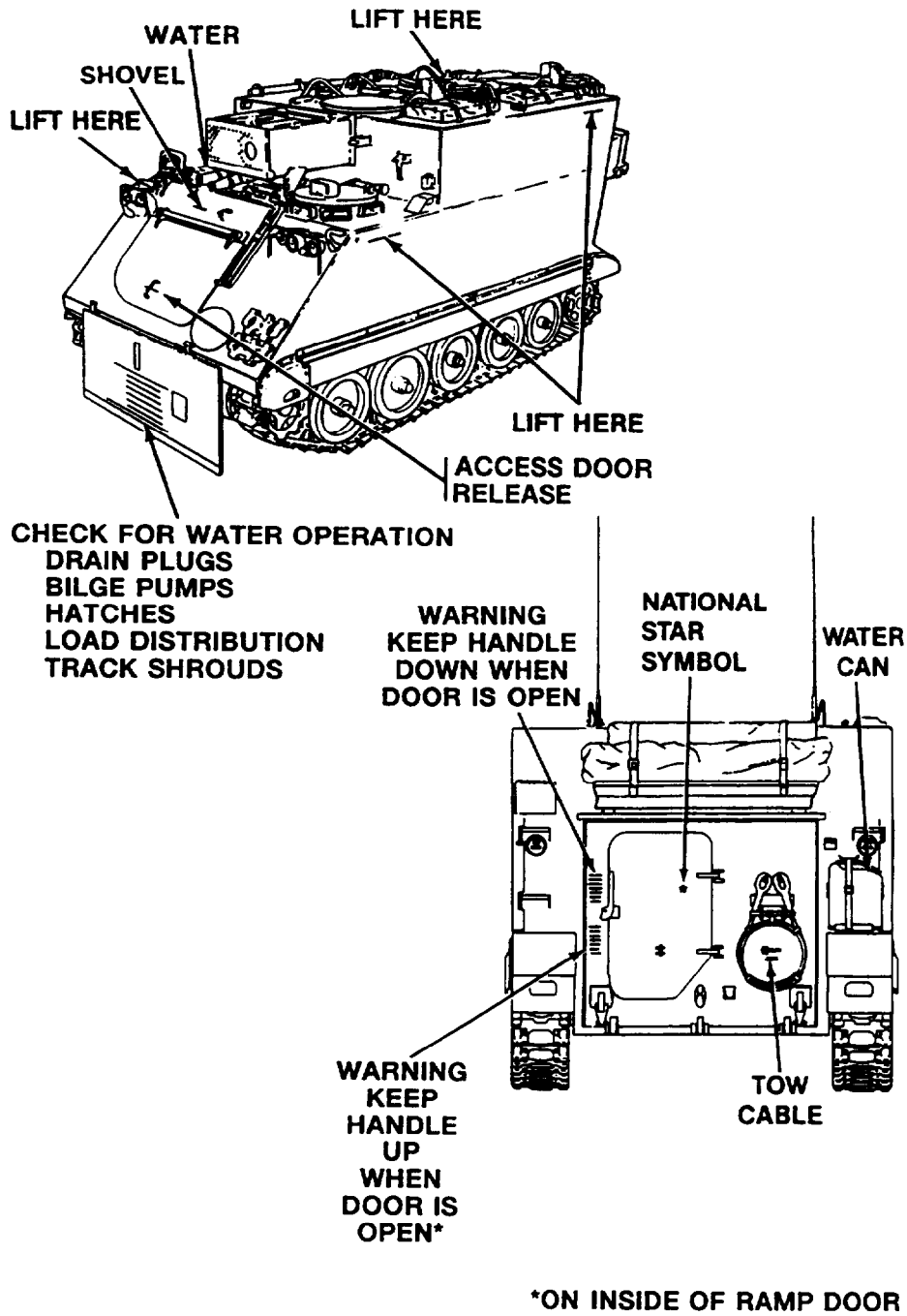


- | | |
|--|--|
| 1. Decal WARNING, carbon monoxide (LARGE) | 8. Decal, 5.56 ammunition |
| 2. Decal, WARNING, noise | 9. Decal, CAUTION, master switch |
| 3. Decal, WARNING, carbon monoxide (SMALL) | 10. Decal, CAUTION, pivot steer |
| 3.1 Decal, fire extinguisher | 11. Marker, air vent |
| 4. Marker, instruction, ramp lock warning | 12. Marker, throttle |
| 5. Decal, wall switch | 13. Decal, fuel shutoff |
| 5.1 Marker, WARNING, electrical hazard | 14. Marker, engine disconnect |
| 6. Decal, CAUTION, fire extinguisher safety wire | 15. Decal, identification, fan oil gage and fill |
| 7. Decal, tools | 16. Decal, WARNING, NBC, engine air cleaner |
| | 17. Marker, WARNING, personnel heater |

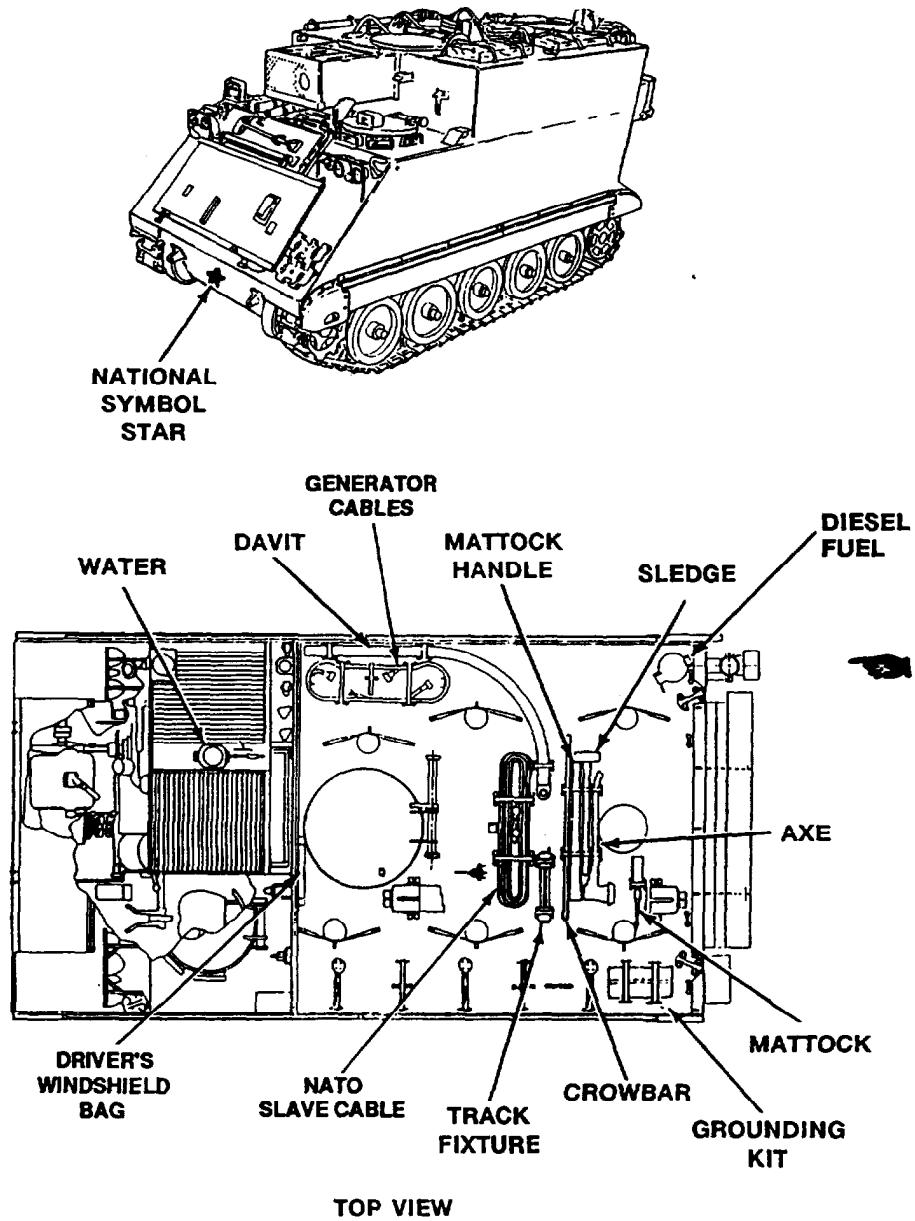
STOWAGE GUIDE - M1068 STANDARD INTEGRATED COMMAND POST SYSTEM DECALS



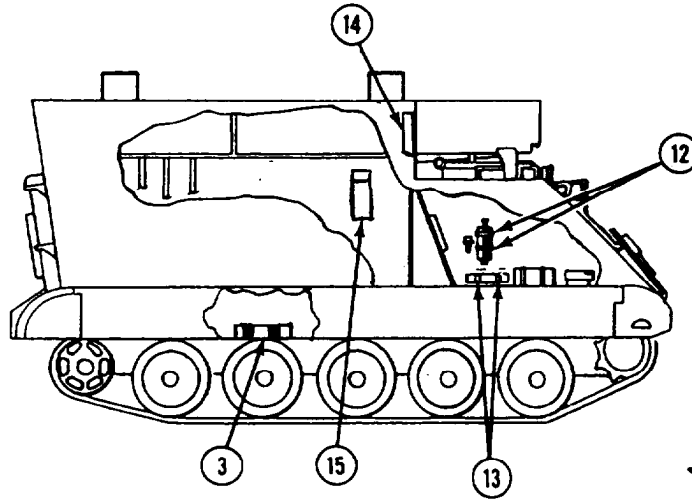
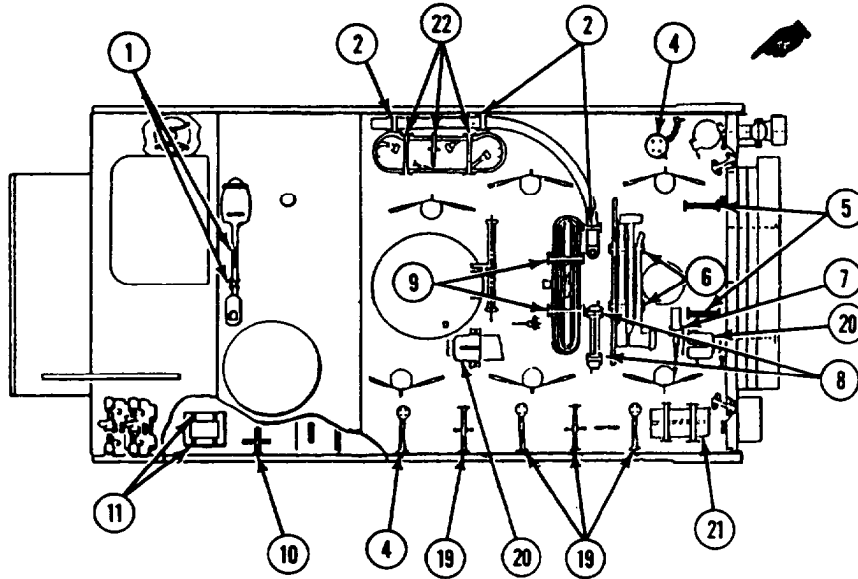
STOWAGE GUIDE - M1068 STANDARD INTEGRATED COMMAND POST SYSTEM LOCATIONS



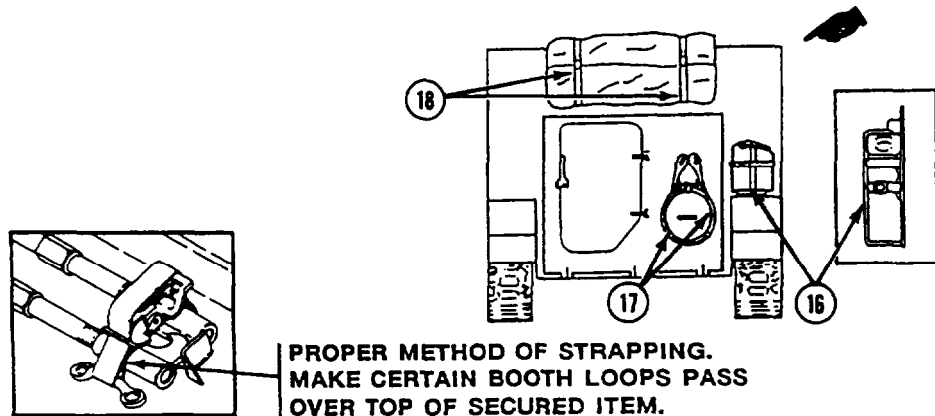
**STORAGE GUIDE - M1068 STANDARD INTEGRATED
COMMAND POST SYSTEM LOCATIONS (cont)**



**STOWAGE GUIDE - M1068 STANDARD INTEGRATED
COMMAND POST SYSTEM STRAPPING DIAGRAM**

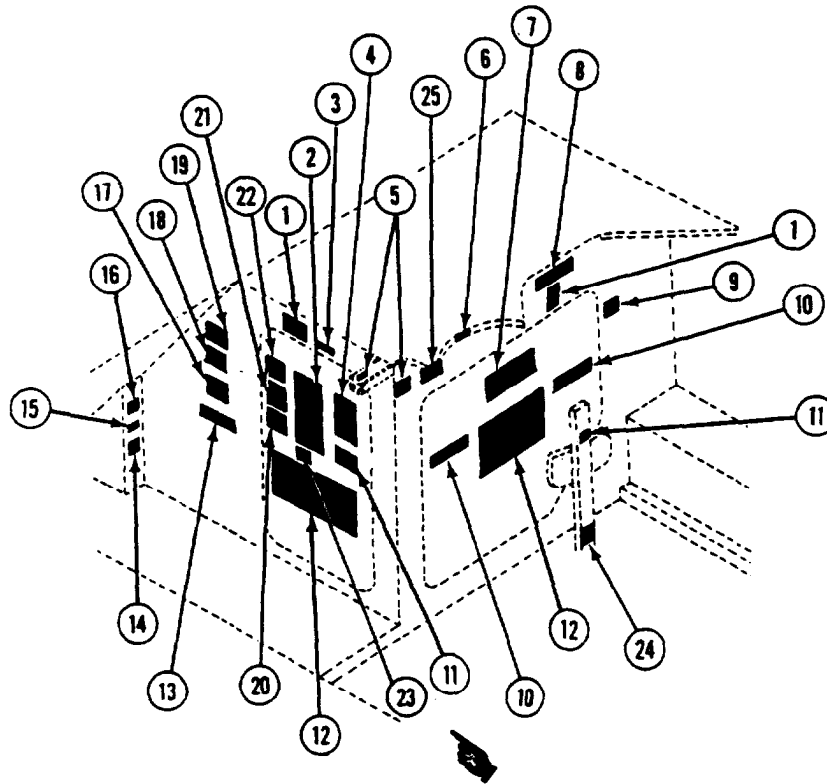


**STOWAGE GUIDE - M1068 STANDARD INTEGRATED
COMMAND POST SYSTEM STRAPPING DIAGRAM (cont)**



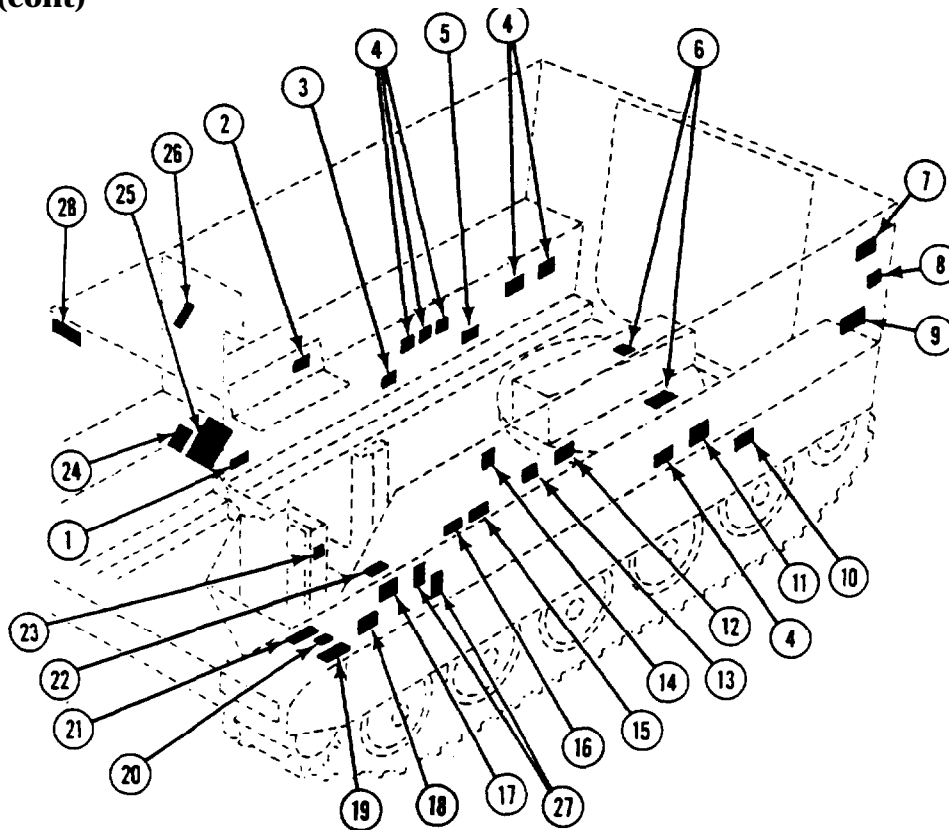
STRAP KEY			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
1	Shovel	2	33,20
2	Davit	3	22
3	Chain hoist bag	1	39
4	Duffle bag/pack	4	72,84
5	Pack	2	72
6	Pioneer tools	2	36
7	Mattock	1	36
8	Track fixture	2	28
9	Cable	2	36
10	First aid kit	1	24
11	Ammunition case, rifle	2	45
12	Infrared periscope, M19	2	24,20
13	Tool bag	2	36
14	Driver's windshield bag	2	68
15	Fire extinguisher	2	24
16	M13 decon can	2	72
17	Tow cable	2	18,30
18	Mapboard & table	2	114
19	Tent frame & fabric bags	4	100
20	Light set	2	45
21	Grounding kit	2	76
22	Generator cables (W1&W2)	3	39,45

**STOWAGE GUIDE - M106A2 107-MM SELF-PROPELLED MORTAR AND M125A2 81-MM SELF-PROPELLED MORTAR
PLATE, MARKER, AND DECAL LOCATIONS**



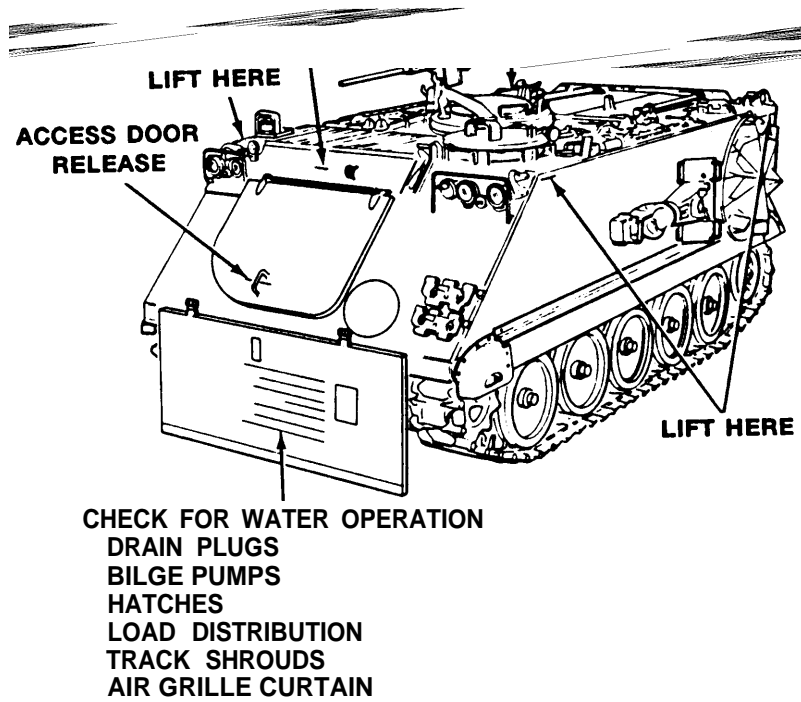
- | | |
|---------------------------------------|----------------------------|
| 1. Carbon monoxide WARNING | 14. Air vent |
| 2. Vehicle operation | 15. Throttle |
| 3. Ramp lock | 16. Fuel shutoff |
| 4. Power train maintenance | 17. Ramp actuating lever |
| 5. Ramp lock | 18. Stall check WARNING |
| 6. Mortar alinement | 19. Vehicle identification |
| 7. Water operation WARNING | 20. Vehicle shipping data |
| 8. Curtain air grille | 21. Ramp |
| 9. Personnel/equipment heater WARNING | 22. Speed shift limit |
| 10. Pamphlet bag | 23. Engine idle RPM |
| 11. Noise WARNING | 24. Mortar equipment bag |
| 12. Carbon monoxide WARNING (LARGE) | 25. Carc paint |
| 13. Pivot steer CAUTION | |

STORAGE GUIDE - M106A2 107-MM SELF-PROPELLED MORTAR AND M125A2 81-MM SELF-PROPELLED MORTAR PLATE, MARKER AND DECAL LOCATIONS (cont)



- | | |
|--|---|
| 1. Machete | 16. Infrared periscope |
| 2. Panel set | 17. Master switch CAUTION |
| 3. Sight unit | 18. Tools |
| 4. 50 cal ammunition | 19. Spare barrel |
| 5. Gun tool kit | 20. First aid kit |
| 6. 5.56 ammunition | 21. Periscope |
| 7. Radio spare parts | 22. Spare head |
| 8. Marker, rifle | 23. Engine disconnect |
| 9. Rifle | 24. NBC engine air cleaner WARN-
ING |
| 10. Boresight | 25. Engine air cleaner |
| 11. Reflector case | 26. Fan oil gage and fill |
| 12. Noise WARNING | 27. Grenades |
| 13. Battery service | 28. Personnel heater WARNING |
| 14. Fire extinguisher safety wire
CAUTION | |
| 15. Flashlight | |

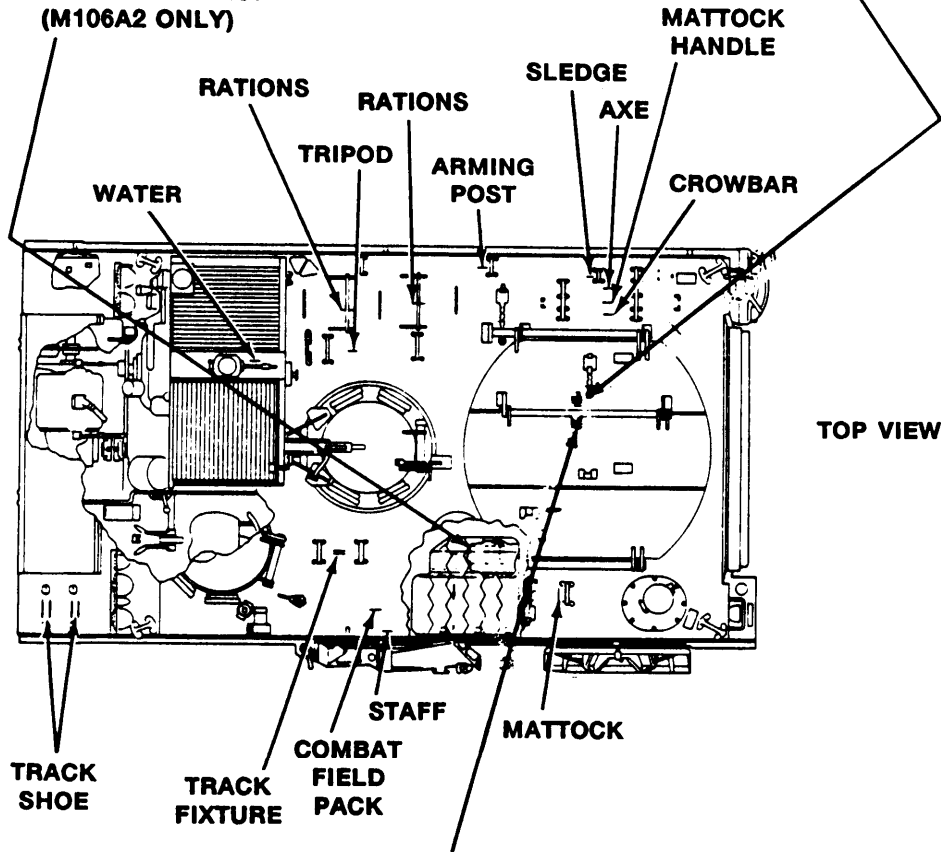
**STOWAGE GUIDE — M106A2 107-MM SELF-PROPELLED
MORTAR STENCIL LOCATIONS**



STOWAGE GUIDE — M106A2 107-MM SELF-PROPELLED MORTAR STENCIL LOCATIONS (cont)

(STENCIL ON INBOARD SIDE OF AMMO RACK DO NOT EXCEED CHARGE 32 WHEN FIRING ABOVE 900 MILS ELEVATION (M106A2 ONLY))

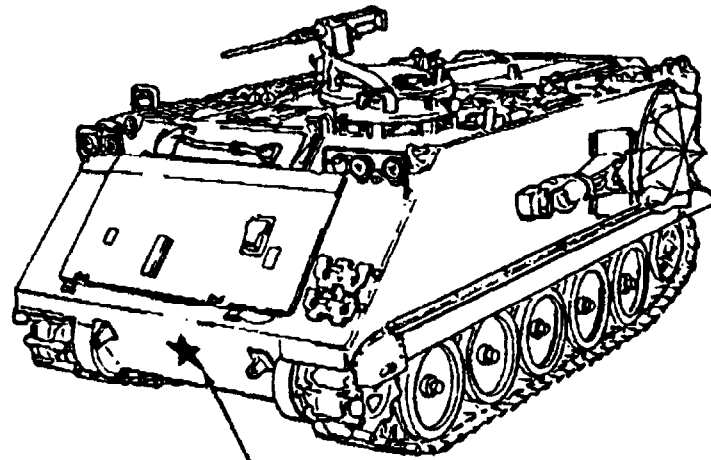
WARNING: THIS DOOR MUST BE CLOSED BEFORE TURNING CENTER DOOR RELEASE HANDLE*



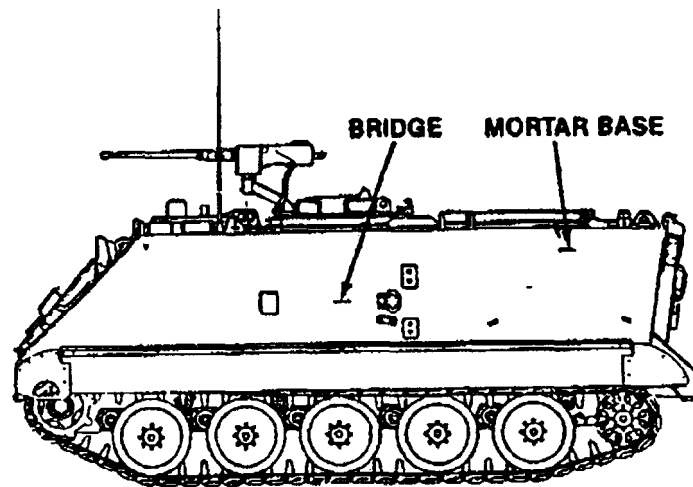
NOTE: POSITION COMMANDERS CUPOLA SIDWAYS BEFORE OPENING OR CLOSING THIS DOOR*

*STENCIL INSIDE OF MORTAR DOOR

STOWAGE GUIDE - M106A2 107-MM SELF-PROPELLED
MORTAR STENCIL LOCATIONS (cont)

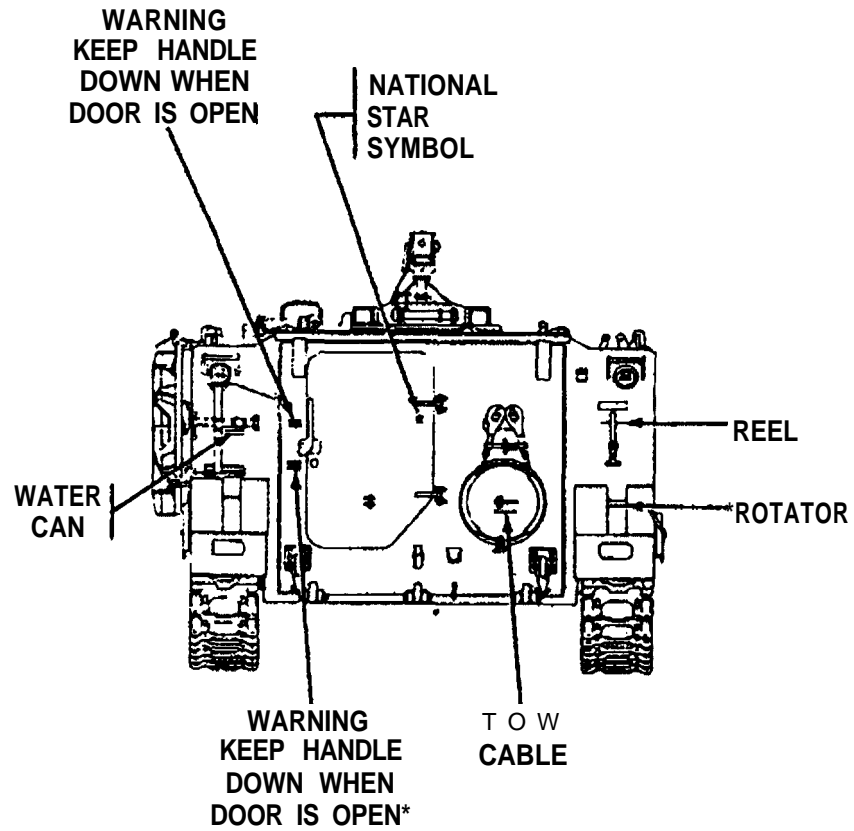


NATIONAL
SYMBOL
STAR



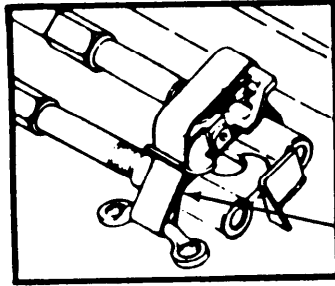
BRIDGE MORTAR BASE

**STORAGE GUIDE - M106A2 107-MM SELF-PROPELLED
MORTAR STENCIL LOCATIONS (cont)**

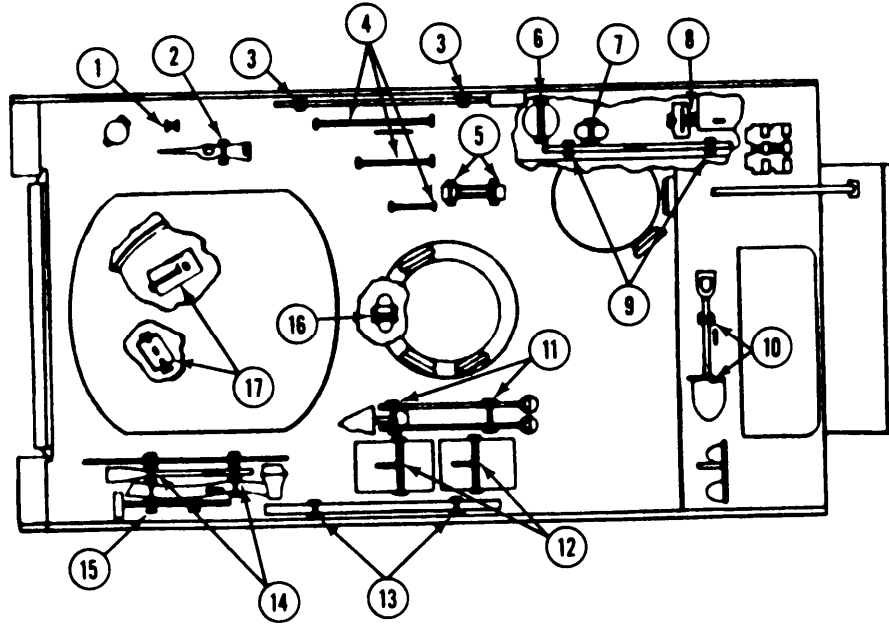


*STENCIL ON INSIDE OF RAMP

STORAGE GUIDE - M106A2 107-MM SELF-PROPELLED MORTAR STRAPPING DIAGRAM



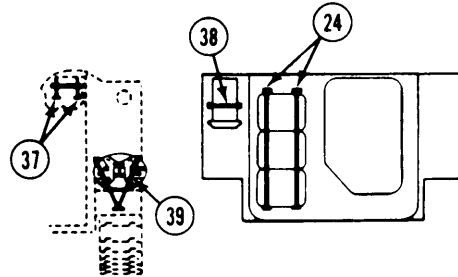
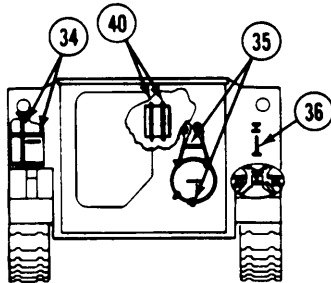
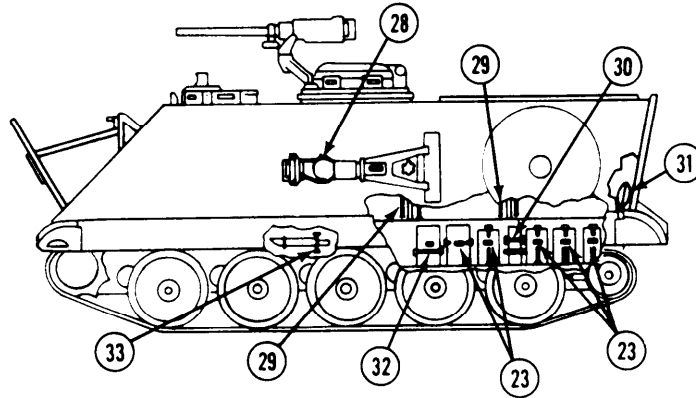
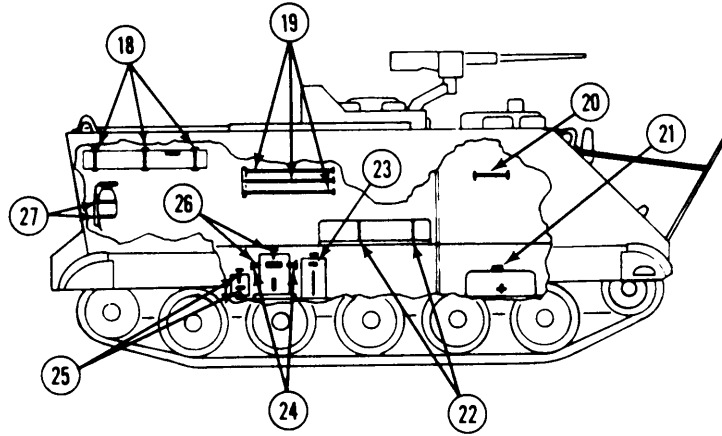
**PROPER METHOD OF STRAPPING.
MAKE CERTAIN BOTH LOOPS PASS
OVER TOP OF SECOND ITEM.**



**STOWAGE GUIDE — M106A2 107-MM SELF-PROPELLED
MORTAR STRAPPING DIAGRAM (cont)**

STRAP KEY			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
1	Mortar baseplate clamp	1	18
2	Mattock	1	24
3	Cleaning staff	2	12
4	Field packs	3	80,64,48
5	Track fixture	2	18
6	Cook set	1	36
7	Binoculars	1	48
8	First aid kit	1	39
9	Machine gun spare barrel, caliber .50	2	14
10	Shovel	2	20,33
11	Tripod	2	36
12	Field rations	2	64
13	Aiming post M1A2	2	16
14	Pioneer tools	2	30,39
15	Sledge hammer	1	12
16	Mortar equipment bag	1	30
17	Ammunition rack, rifle	2	51,57

STOWAGE GUIDE — M106A2 107-MM SELF-PROPELLED MORTAR STRAPPING DIAGRAM (cont)



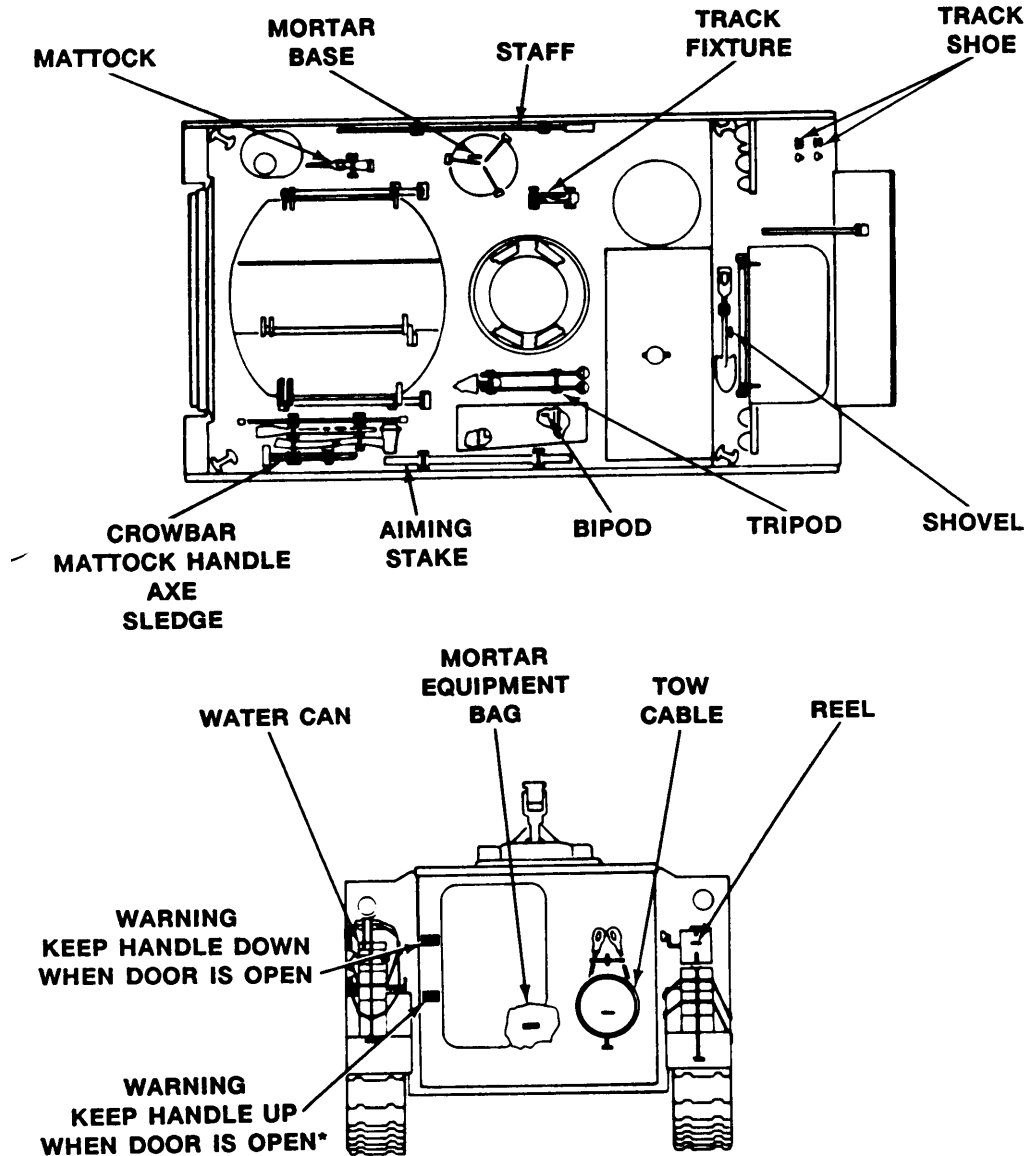
**STOWAGE GUIDE — M106A2 107-MM SELF-PROPELLED
MORTAR STRAPPING DIAGRAM (cont)**

STRAP KEY (cont)			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
18	Radio spare parts	3	30
19	Mortar ammo cartridges	3	108
20	Infrared periscope M19	2	20,24
21	Tool bag	1	36
22	Panel set	2	20
23	Ammo boxes, caliber .50	6	42,45
24	Sleeping bags	2	174
25	Boresight	1	28
26	Lighting chest	2	39,54
27	Fire extinguisher	2	24
28	Bridge handle	1	45
29	Mortar ammo cartridges	18	74
30	Roll, gun parts and tools	1	28
31	Driver's windshield bag	1	36
32	Sight unit carrying case	1	51
33	Machete	1	16
34	Water can or M13 decon can	2	72
35	Tow cable	2	30,18
36	Reel	1	48
37	Air grill curtain	2	30
38	Portable radio set	1	36
39	Rotator	1	126
40	Pamphlet bag	2	30

STORAGE GUIDE — M125A2 81-MM SELF-PROPELLED MORTAR DECALS AND STENCILS

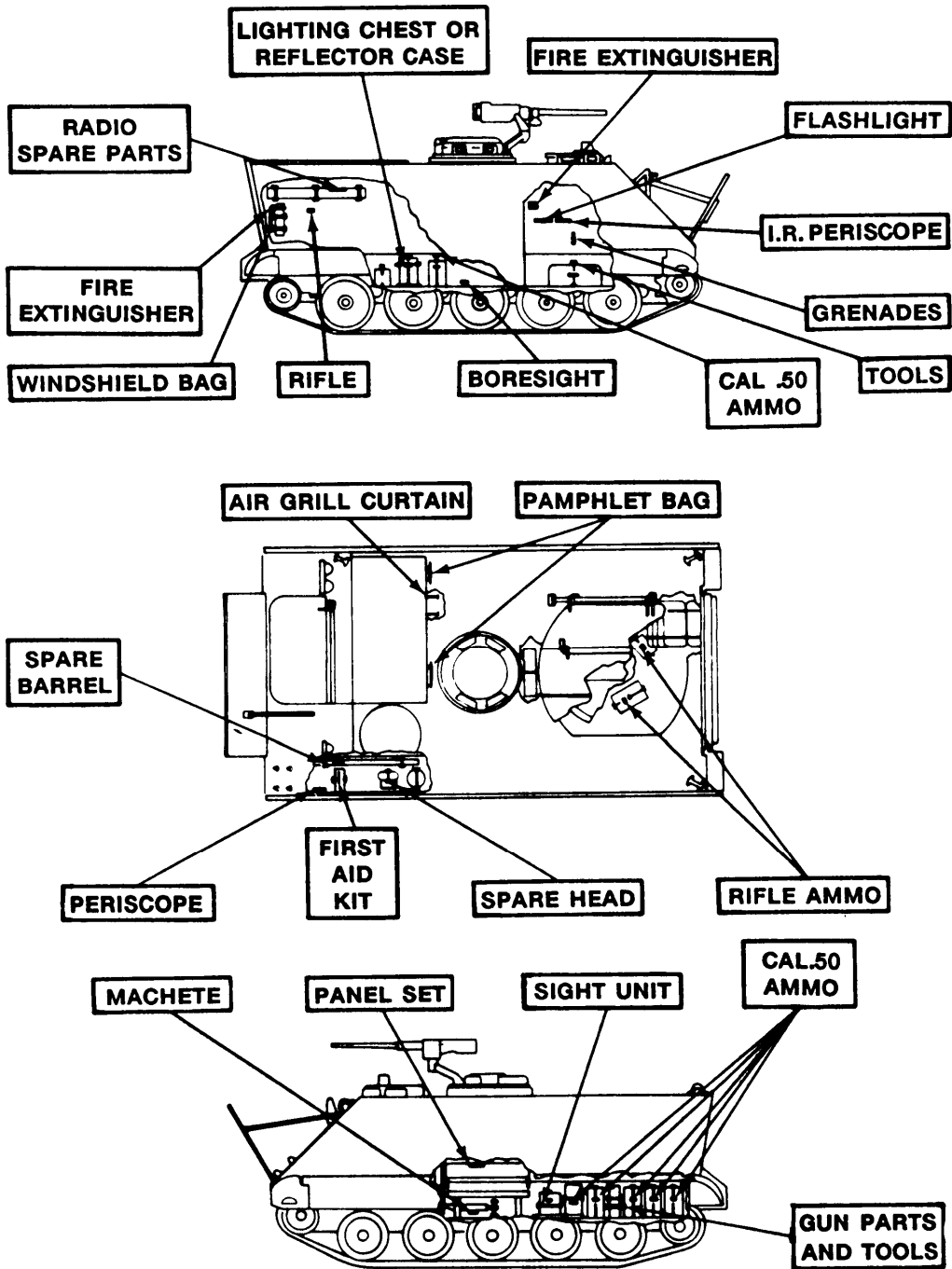
NOTE

Signs outlined with boxes and decals, applied in locations shown. Signs not outlined with boxes are stencils.

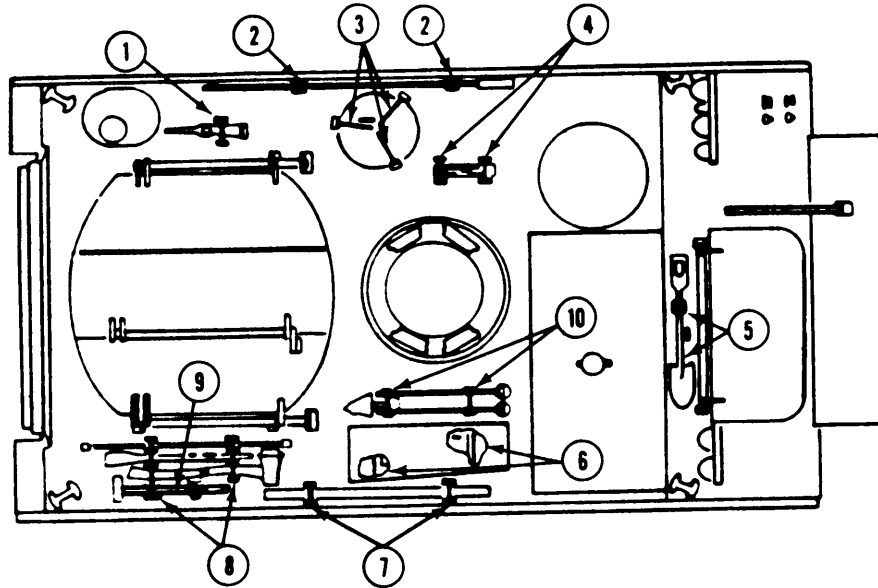


*STENCIL ON INSIDE OF RAMP

STOWAGE GUIDE — M125A2 81-MM SELF-PROPELLED MORTAR DECALS AND STENCILS (cont)

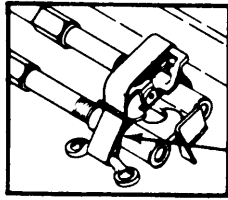


STOWAGE GUIDE — M125A2 81-MM SELF-PROPELLED MORTAR STRAPPING DIAGRAM

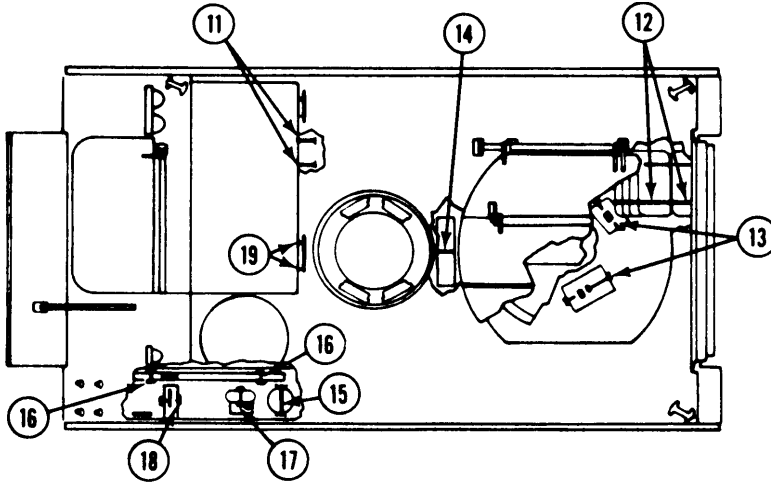


STRAP KEY			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
1	Mattock	1	24
2	Cleaning staff M8	2	12
3	Mortar baseplate	3	36,39
4	Track fixture	2	18
5	Shovel	2	20,33
6	Biped, 81-mm mortar mount	2	36,48
7	Aiming post M1A2	2	16
8	Pioneer tools	2	30,39
9	Sledge hammer	1	12
10	Tripod	2	36

STOWAGE GUIDE — M125A2 81-MM SELF-PROPELLED MORTAR STRAPPING DIAGRAM (cont)

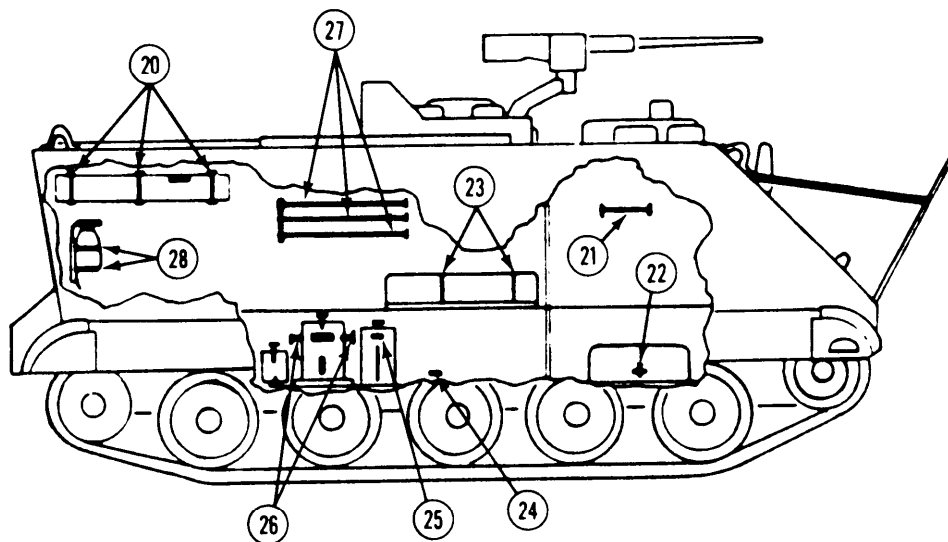


**PROPER METHOD OF STRAPPING.
MAKE CERTAIN BOTH LOOPS PASS
OVER TOP OF SECURED ITEM.**



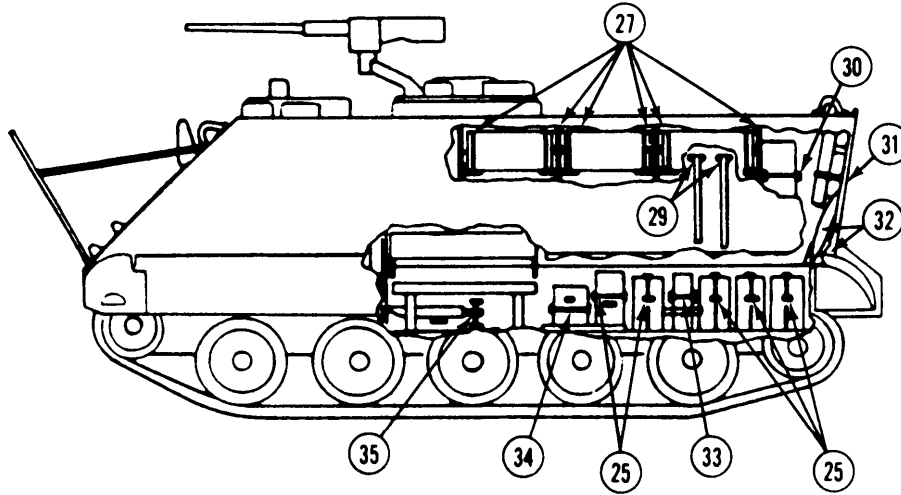
STRAP KEY (cont)			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
11	Air grill curtain	2	90
12	Sleeping bags	2	174
13	Ammunition box, rifle	2	51,67
14	Mortar equipment bag	1	30
16	Cook set	1	86
16	Machine gun spare barrel, caliber .50	2	14
17	Binoculars	1	48
18	First aid kit	1	39
19	Pamphlet bag	2	80

STORAGE GUIDE — M125A2 81-MM SELF-PROPELLED MORTAR STRAPPING DIAGRAM (cont)



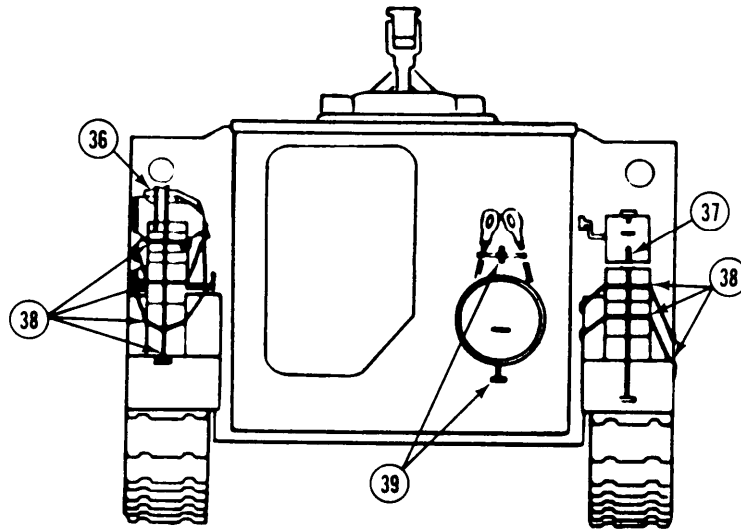
STRAP KEY (cont)			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
20	Radio spare parts	30	3
21	Infrared periscope, M19	2	20,24
22	Tool bag	1	36
23	Panel set	2	20
24	Boresight M45	1	36
25	Ammo boxes, caliber .50	6	42,45
26	Light chest or reflector case	2	39,54
27	Mortar ammo rounds	21	54,72,108
28	Fire extinguisher	2	24

STOWAGE GUIDE — M125A2 81-MM SELF-PROPELLED MORTAR STRAPPING DIAGRAM (cont)



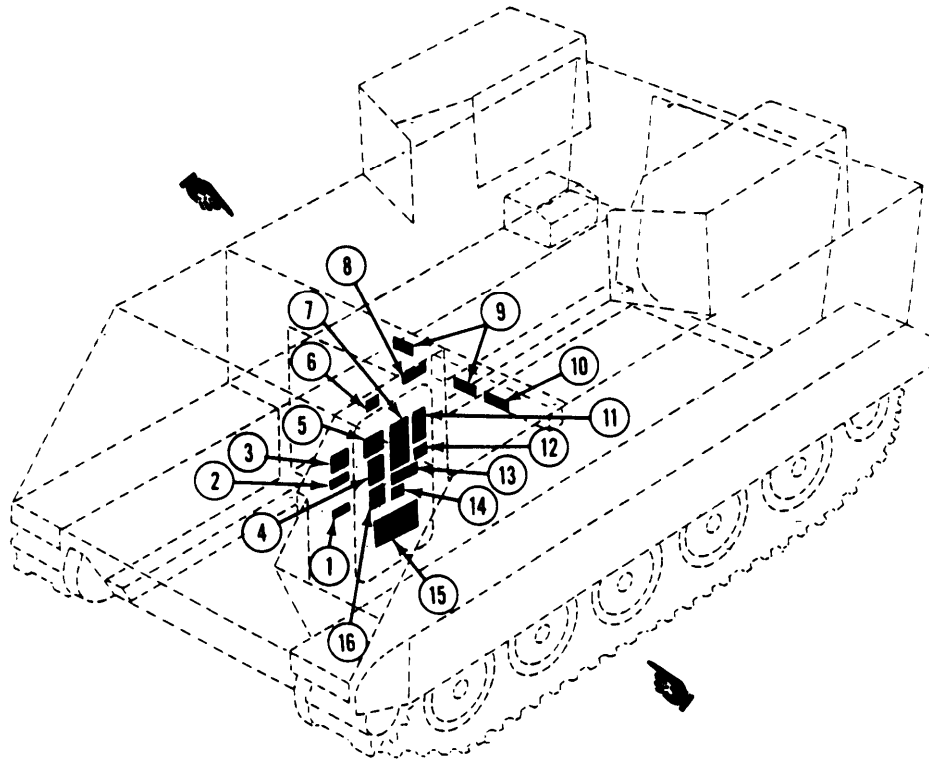
STRAP KEY (cont)			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
29	Fuse box	2	96
30	Field rations	2	68
31	Portable radio	1	36
32	Driver's windshield	2	33,126
33	Roll, gun parts and tools	1	28
34	Sight unit carrying case	1	51
35	Machete	1	16

STOWAGE GUIDE — M125A2 81-MM SELF-PROPELLED MORTAR STRAPPING DIAGRAM (cont)



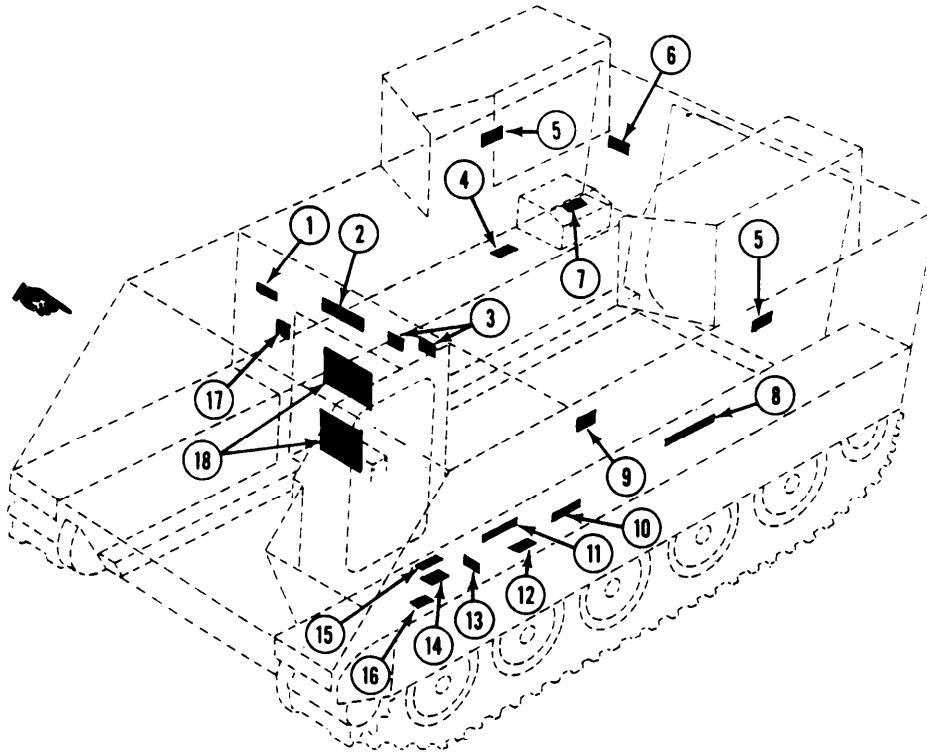
STRAP KEY (cont)			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
36	Water can or M13 decon can	1	72
37	Reel	1	48
38	Field packs	7	60,72,108,84
39	Tow cable	2	18,30

STORAGE GUIDE — M1059 FULL TRACKED SMOKE GENERATOR CARRIER DATAPLATE AND MARKER LOCATIONS



- | | |
|------------------------------------|-------------------------------------|
| 1. Ramp actuating lever | 9. Ramp lock WARNING |
| 2. Stall check WARNING | 10. Warranty information |
| 3. Vehicle identification | 11. Power train maintenance |
| 4. Ramp | 12. Noise WARNING |
| 5. Speed shift limit | 13. Multiple WARNING |
| 6. Carbon monoxide WARNING (small) | 14. Engine idle RPM |
| 7. Vehicle operation | 15. Carbon monoxide WARNING (large) |
| 8. Ramp lock lever | 16. Vehicle shipping data |

STOWAGE GUIDE — M1059 FULL TRACKED SMOKE GENERATOR CARRIER DATAPLATE AND DECAL LOCATIONS

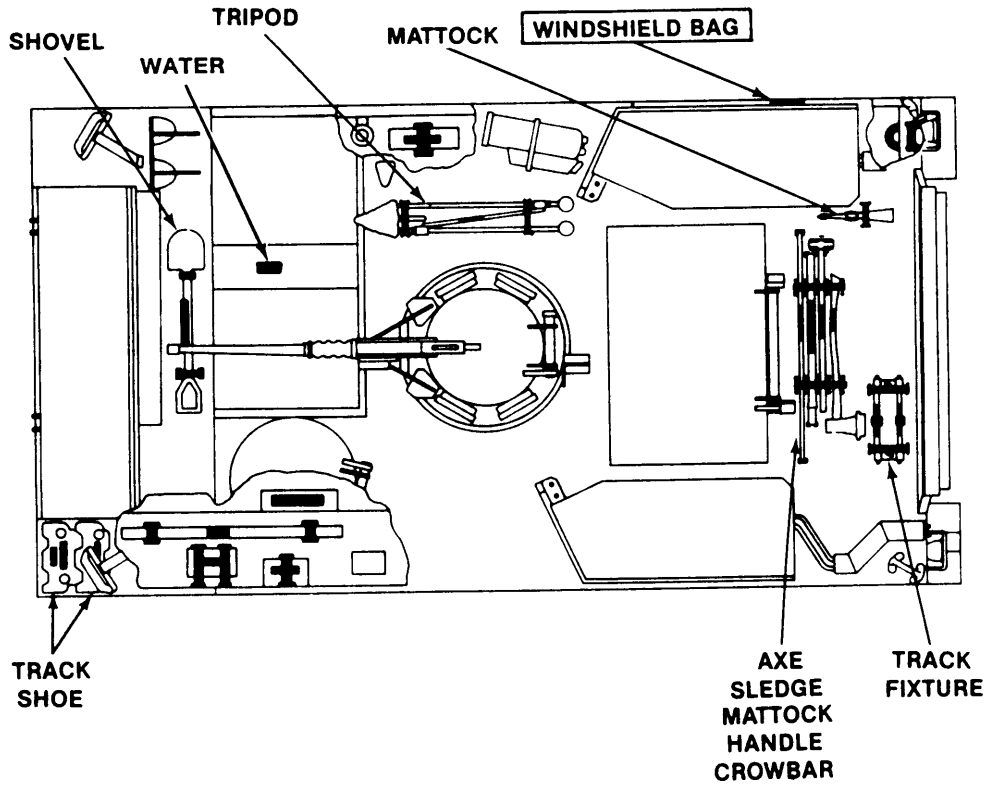


- | | |
|----------------------------|---|
| 1. Carbon monoxide WARNING | 11. Infrared periscope |
| 2. Multiple WARNING | 12. First aid |
| 3. Ramp lock | 13. Rifle |
| 4. Tools | 14. 7.62 ammunition |
| 5. Noise WARNING | 15. Spare barrel |
| 6. Fire extinguisher | 16. Spare head |
| 7. Battery service | 17. Personnel/equipment heater
WARNING |
| 8. Periscope | 18. Carbon monoxide WARNING
(large) |
| 9. Fire extinguisher | |
| 10. Flashlight | |

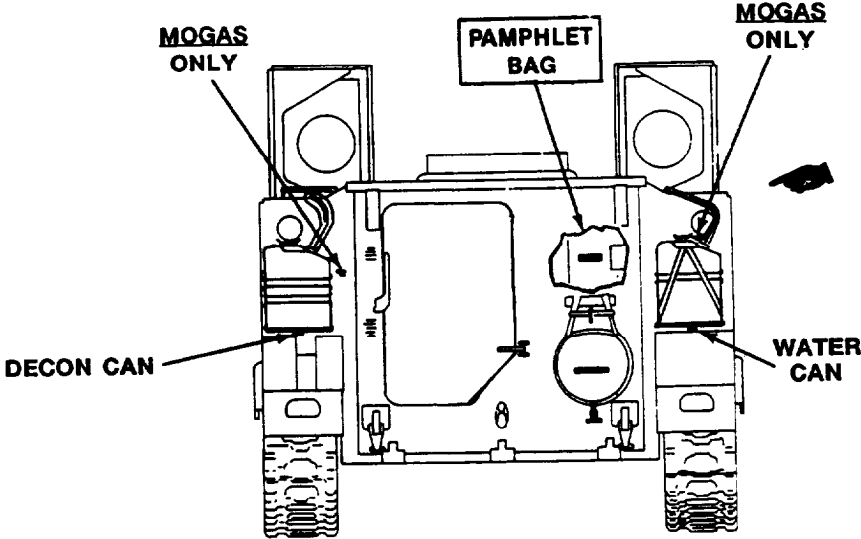
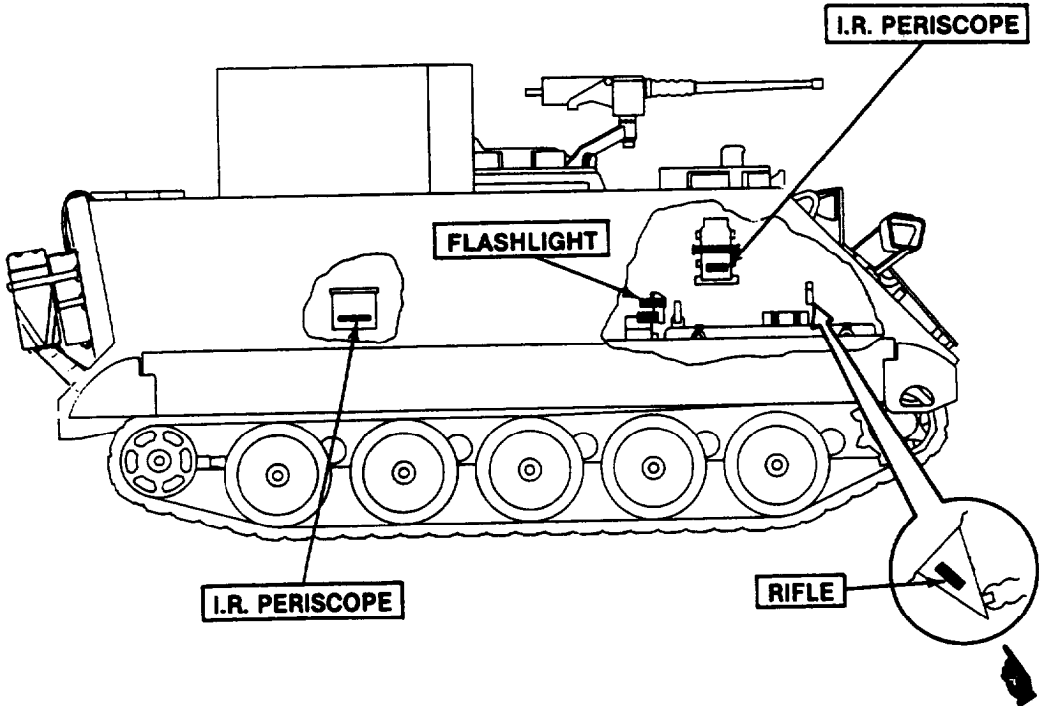
STORAGE GUIDE — M1059 FULL TRACKED SMOKE GENERATOR CARRIER DECALS AND STENCILS

NOTE

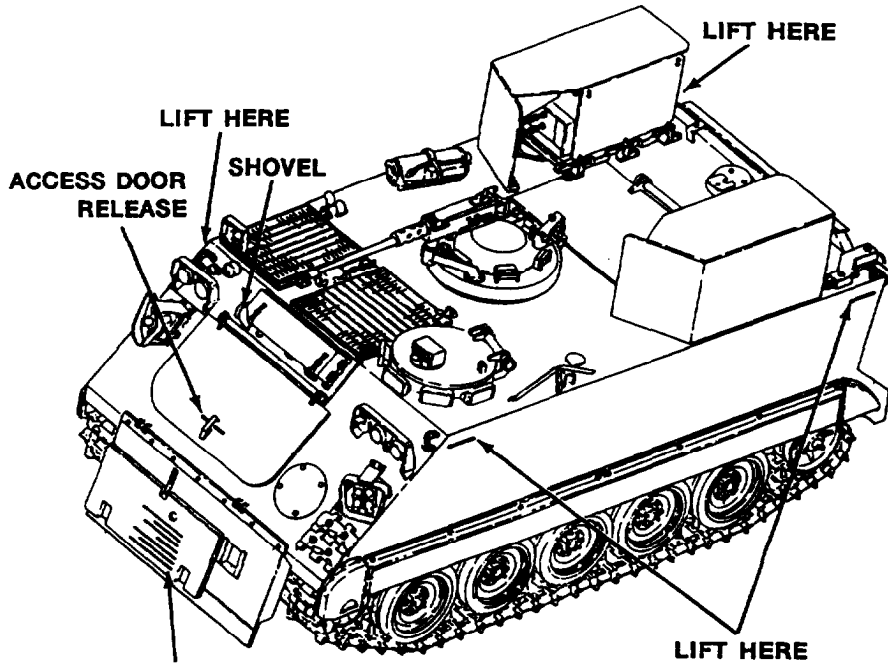
Signs outlined with boxes are decals applied in locations shown. Signs not outlined with boxes are stencils.



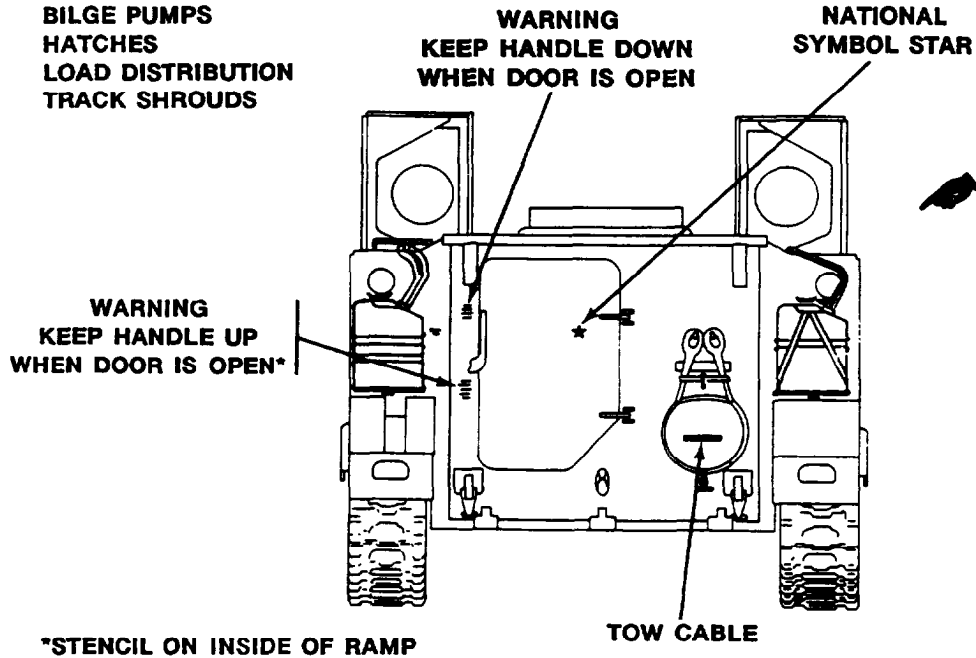
STOWAGE GUIDE - M1059 FULL TRACKED SMOKE GENERATOR CARRIER DECALS AND STENCILS (cont)



STOWAGE GUIDE - M1059 FULL TRACKED SMOKE GENERATOR CARRIER STENCILS

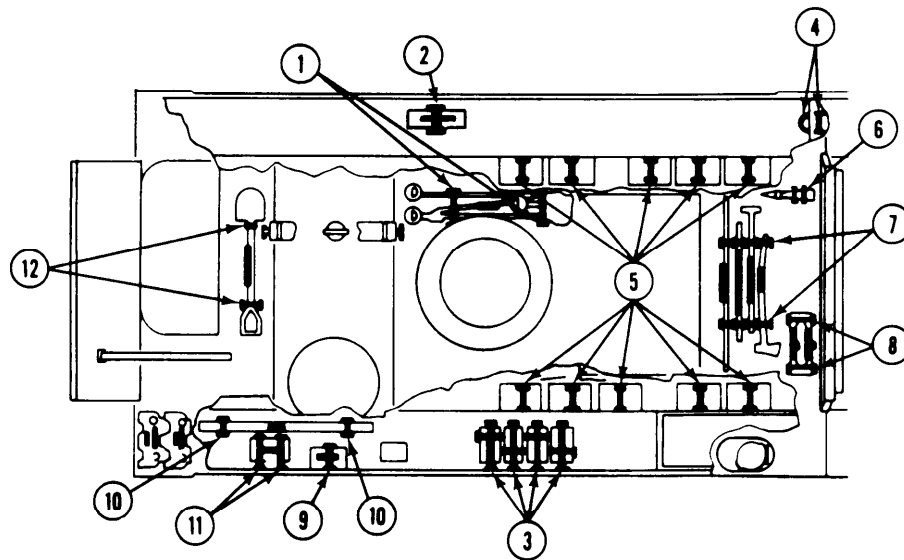


- CHECK FOR WATER OPERATION
- DRAIN PLUGS
- BILGE PUMPS
- HATCHES
- LOAD DISTRIBUTION
- TRACK SHROUDS



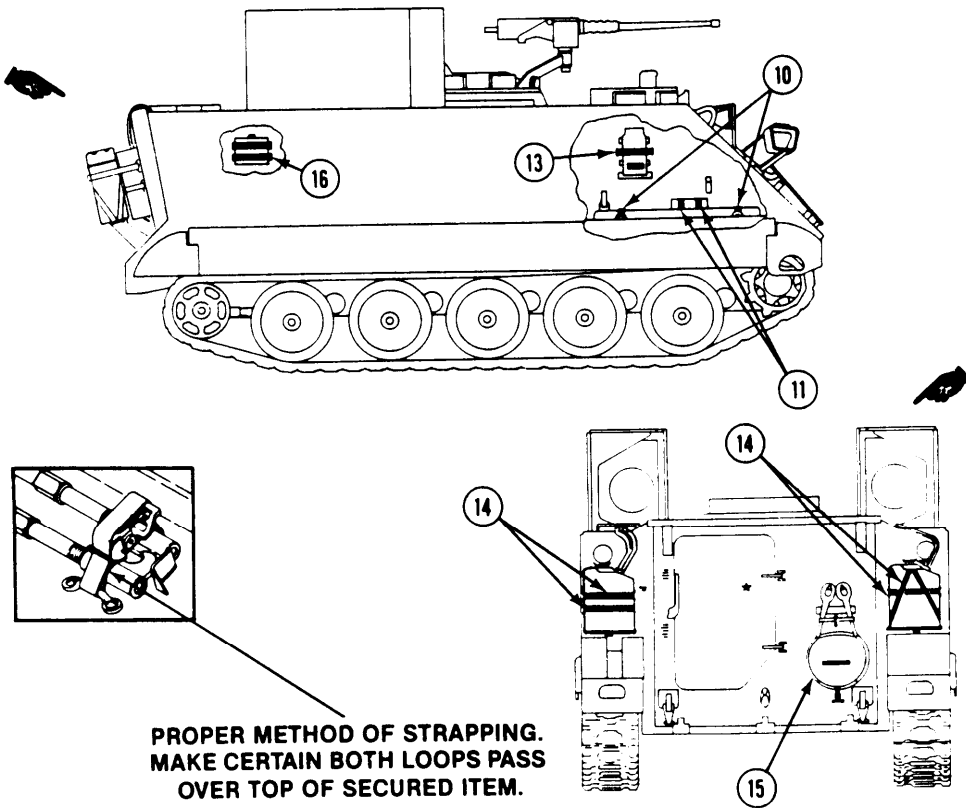
*STENCIL ON INSIDE OF RAMP

STOWAGE GUIDE — M10569 FULL TRACKED SMOKE GENERATOR CARRIER STRAPPING DIAGRAM



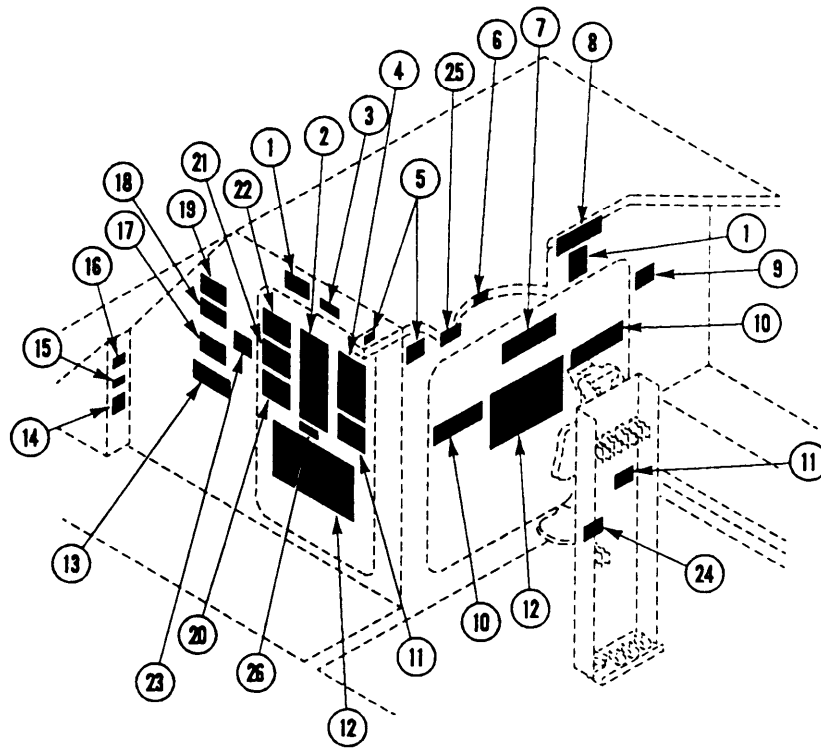
STRAP KEY			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
1	Tripod	2	36
2	Tool Bag	1	48
3	Ammunition box, caliber .50	Suggested use only, no straps furnished	
4	Fire extinguisher		2	24
5	Miscellaneous stowage	10	39
6	Mattock	1	24
7	Pioneer tools	2	36
8	Track fixture	2	28
9	First aid kit	1	24
10	Spare barrel, caliber .50	2	24
11	Ammunition cases, rifle	2	45
12	Shovel	2	33,20

STOWAGE GUIDE — M1059 FULL TRACKED SMOKE GENERATOR CARRIER STRAPPING DIAGRAM (cont)



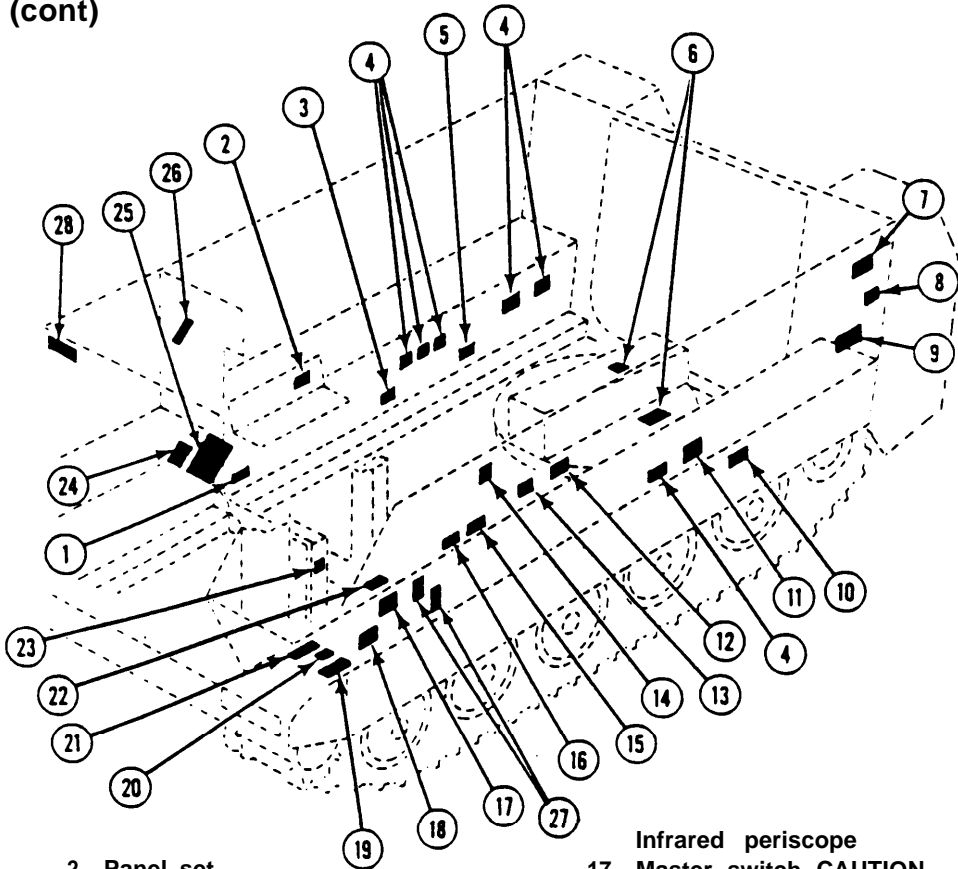
STRAP KEY (cont)			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
13	Infrared periscope M19	2	20,24
14	MOGAS, M13 decon or water cans	6	72,88,108
15	Tow cable	2	18,30
16	Driver's windshield bag	2	68

STOWAGE GUIDE — M1064 120-MM SELF-PROPELLED MORTAR PLATE, MARKER, AND DECAL LOCATIONS



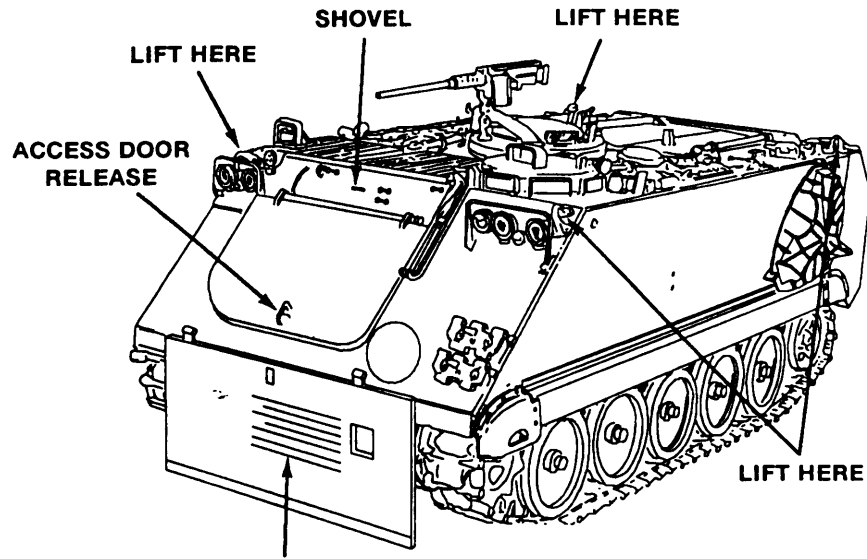
- | | |
|---------------------------------------|----------------------------|
| 1. Carbon monoxide WARNING | 14. Air vent |
| 2. Vehicle operation | 15. Throttle |
| 3. Ramp lock | 16. Fuel shutoff |
| 4. Power train maintenance | 17. Ramp actuating lever |
| 5. Ramp lock | 18. Stall check WARNING |
| 6. Mortar aimment | 190 Vehicle identification |
| 7. Water operation WARNING | 20. Vehicle shipping data |
| 8. Curtain air grille | 21. Ramp |
| 9. Personnel/equipment heater WARNING | 22. Speed shift limit |
| 10. Pamphlet bag | 23. Engine idle RPM |
| 11. Rifle | 24. Sight unit |
| 12. Carbon monoxide WARNING (LARGE) | 25. Care paint |
| 13. Pivot steer CAUTION | 26. Prolonged idle |

STOWAGE GUIDE — M1064 120-MM SELF-PROPELLED MORTAR PLATE, MARKER, AND DECAL LOCATIONS (cont)



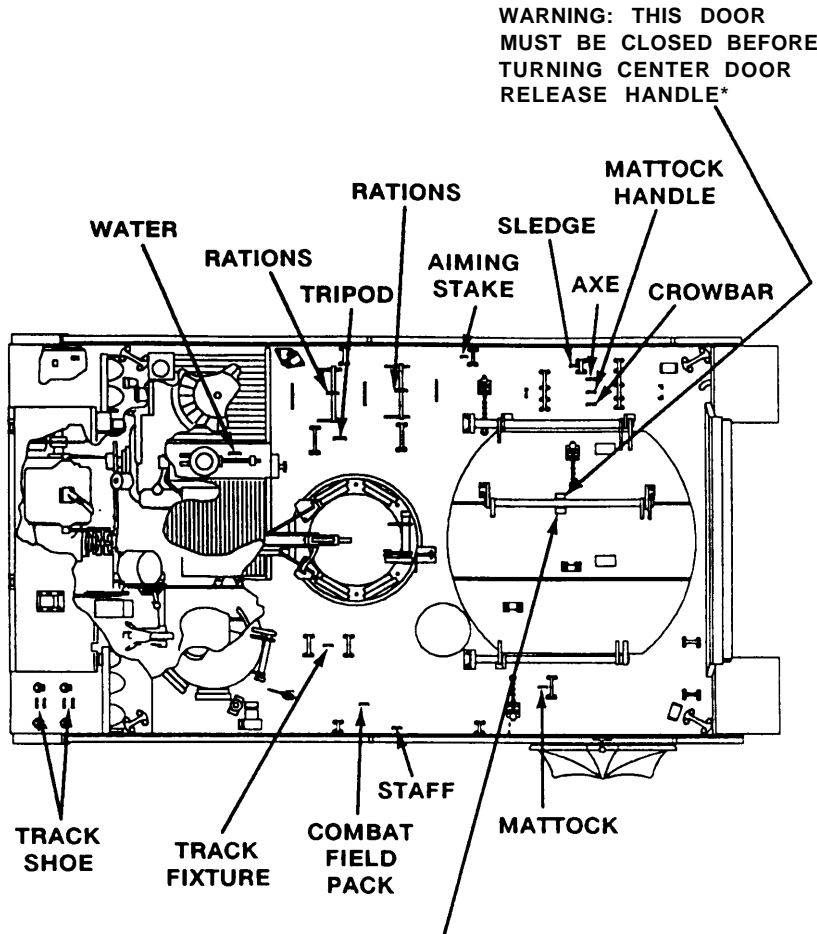
- | | |
|---|--|
| <ul style="list-style-type: none"> 2. Panel set 3. Sight unit 4. 50 cal ammunition 5. Gun tool kit 6. 5.6mm ammunition 7. Radio spare parts 8. Marker, rifle 9. Rifle 10. Boresight 11. Reflector case 12. Noise WARNING 13. Battery service 14. Fire extinguisher safety wire CAUTION 15. Flashlight | <ul style="list-style-type: none"> Infrared periscope 17. Master switch CAUTION 18. Tools 19. Spare barrel 20. First aid kit 21. Periscope 22. Spare head 23. Engine disconnect 24. NBC engine air cleaner WARNING 25. Engine air cleaner 26. Fan oil gage and fill 27. Grenades 28. Personnel heater WARNING |
|---|--|

STOWAGE GUIDE — M1064 120-MM SELF-PROPELLED MORTAR STENCIL LOCATIONS



- CHECK FOR WATER OPERATION
- DRAIN PLUGS
- BILGE PUMPS
- HATCHES
- LOAD DISTRIBUTION
- TRACK SHROUDS
- AIR GRILLE CURTAIN

STORAGE GUIDE — M1064 120-MM SELF-PROPELLED MORTAR STENCIL LOCATIONS (cont)

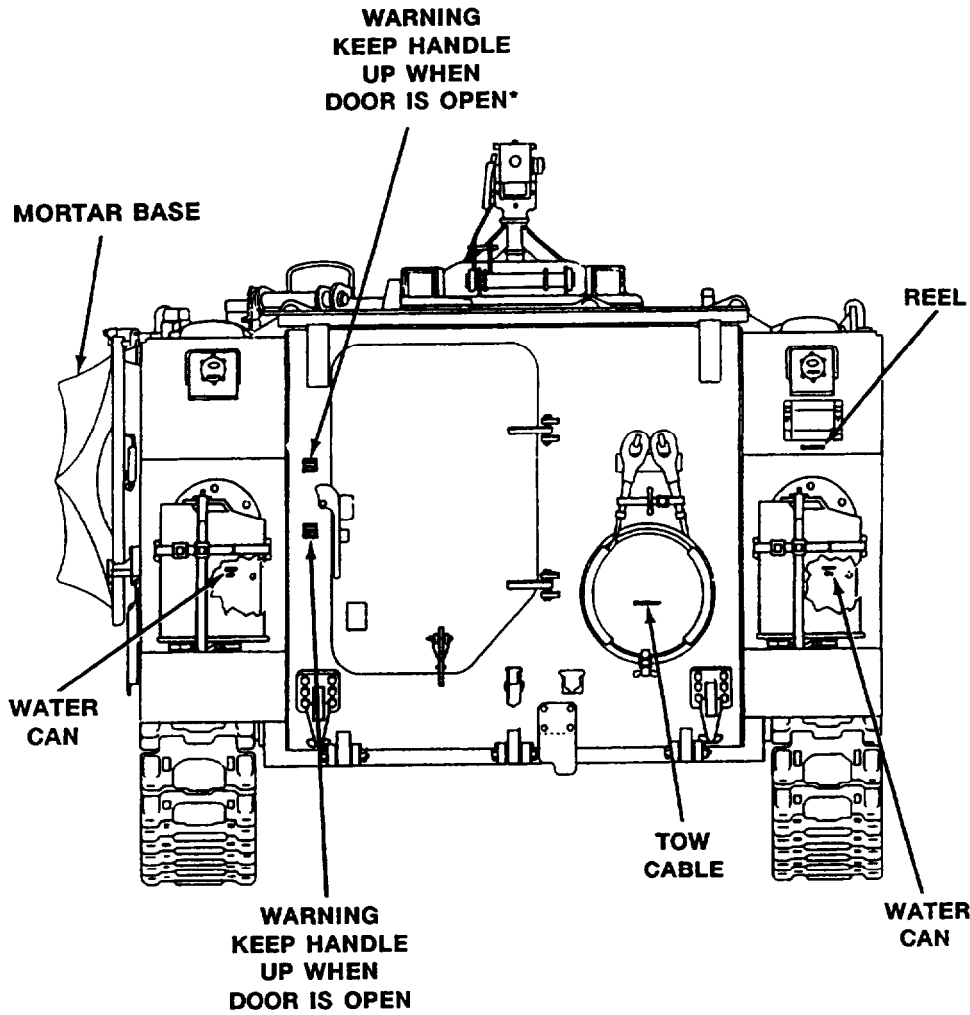


WARNING: THIS DOOR MUST BE CLOSED BEFORE TURNING CENTER DOOR RELEASE HANDLE*

NOTE: POSITION COMMANDER'S CUPOLA SIDWAYS BEFORE OPENING OR CLOSING THIS DOOR*

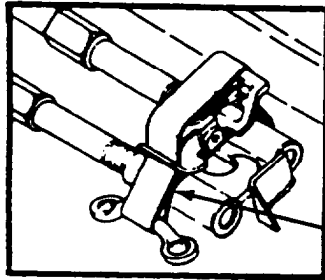
*STENCIL INSIDE OF MORTAR DOOR

**STOWAGE GUIDE - M1064 120-MM SELF-PROPELLED
MORTAR STENCIL LOCATIONS (cont)**

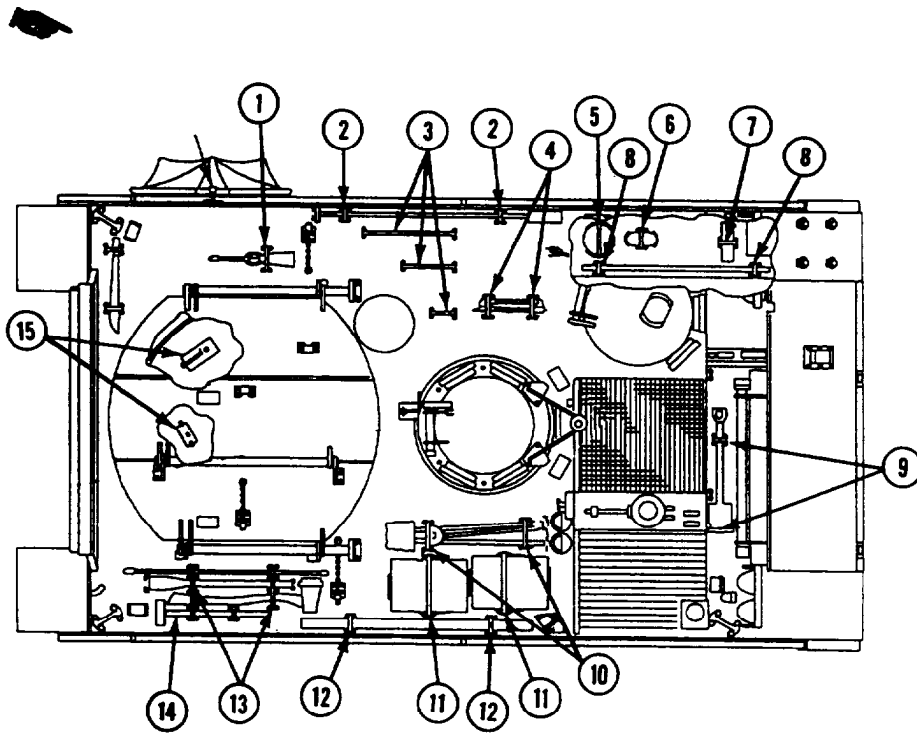


***STENCIL ON INSIDE OF RAMP**

STOWAGE GUIDE - M1064 120-MM SELF-PROPELLED MORTAR STRAPPING DIAGRAM



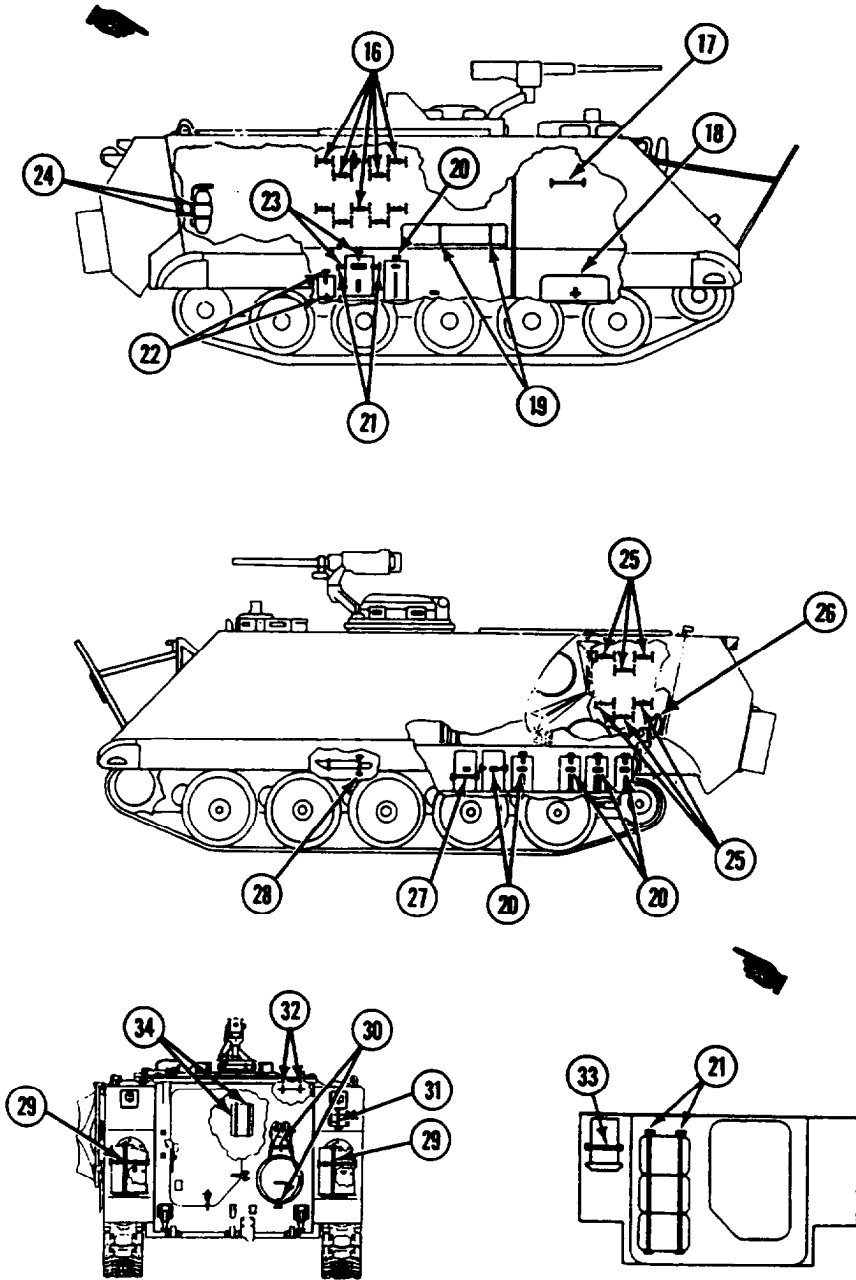
PROPER METHOD OF STRAPPING.
MAKE CERTAIN BOTH LOOPS PASS
OVER TOP OF SECURED ITEM.



**STOWAGE GUIDE - M1064 120-MM SELF-PROPELLED
MORTAR STRAPPING DIAGRAM (cont)**

STRAP KEY			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
1	Mattock	1	24
2	Cleaning staff	2	12
3	Field packs	3	80,64,48
4	Track fixture	2	18
5	Cook set	1	36
6	Binoculars	1	48
7	First aid kit	1	39
8	Machine gun spare barrel, caliber .50	2	14
9	Shovel	2	20,33
10	Tripod	2	36
11	Field rations	2	64
12	Aiming stake M1A2	2	16
13	Pioneer tools	2	30,39
14	Sledge hammer	1	12
15	Ammunition, rifle	2	51,57

**STOWAGE GUIDE - M1064 120-MM SELF-PROPELLED
MORTAR STRAPPING DIAGRAM (cont)**



**STOWAGE GUIDE M1064 120-MM SELF-PROPELLED
MORTAR STRAPPING DIAGRAM (cont)**

STRAP KEY (cont)			
NO.	ITEM	QUANTITY	LENGTH (INCHES)
16	Mortar ammo cartridges	10	80
17	Infrared periscope M19	2	20,24
18	Tool bag	1	36
19	Panel set	2	20
20	Ammo boxes, caliber .50	6	42,45
21	Sleeping bags	2	174
22	Boresight	1	28
23	Lighting chest	2	39,54
24	Fire extinguisher	2	24
25	Mortar ammo cartridges	6	80
26	Driver's windshield bag	1	36
27	Sight unit carrying case	1	51
28	Machete	1	16
29	Water can/M13 Decon Kit	4	72
30	Tow cable	2	30,18
31	Reel	1	48
32	Air grill curtain	2	30
33	Portable radio set	1	36
34	Pamphlet bag	2	30



**APPENDIX F
STANDARD LOAD PLAN**

This load plan supercedes all previously
published versions

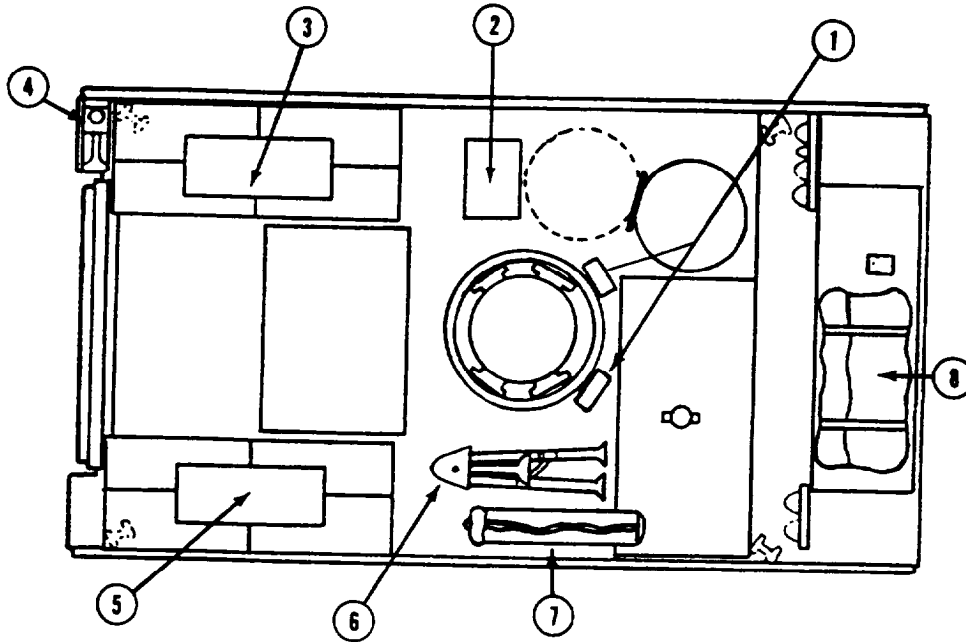
This appendix provides load plans for the M113A2, M106A2, M125A2, M1059, and M1064 carriers. These standard load plans are designed to supplement the stowage guide contained in Appendix E of this manual. These standard load plans include selected items of personal and unit equipment. These items are issued to most units within the Army equipped with various M113A2 family vehicles. Equipment not shown in either this Appendix or Appendix E may be loaded in accordance with local command policy.

Standard Load Plan Proponent

Commandant
U.S. Army Infantry School
Fort Benning, GA 31905

TA 479658

STANDARD LOAD PLAN - M113A2 PERSONNEL CARRIER

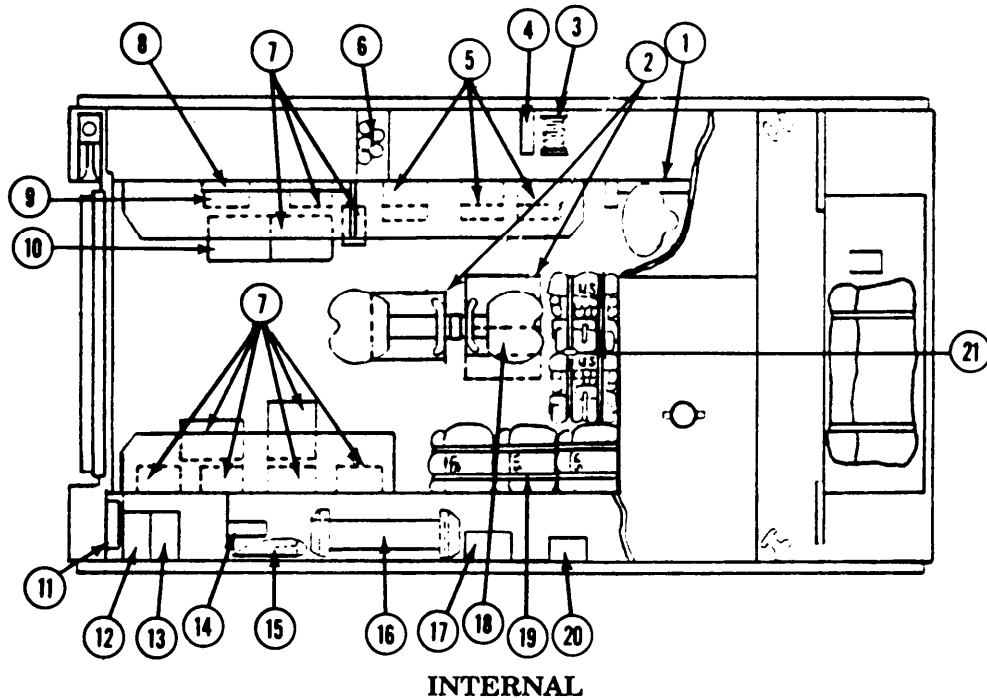


EXTERNAL

M113A2

1. Ammo cans, cal .50 (2 ea)
2. MRE-ration cases (2 ea)
3. Duffel bags (5 ea)
4. Water can
5. Duffel bags (5 ea)
6. Tripod, cal .50
7. Camouflage support system
8. Camouflage screen

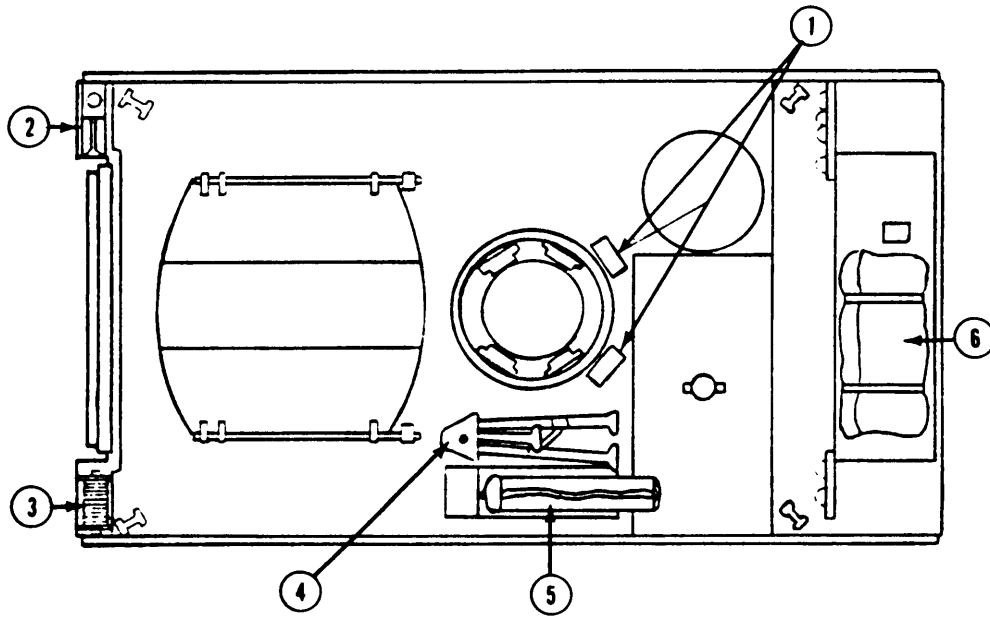
STANDARD LOAD PLAN - M113A2 PERSONNEL CARRIER



M113A2

- | | |
|---|---|
| 1. Map canister | 12. Night vision sight, AN/TVS2B |
| 2. MRE-ration cases (4 ea), 3 under TC seat and 1 under SL seat | 13. Night vision sight |
| 3. WD-1/TT, DR-8, 1320 ft | 14. Ammo can w/cal .50 cleaning rod and case: T&E mech, Cal .50 |
| 4. Binoculars | 15. M60 spare barrel bag W/T&E mech |
| 5. Ammo cans, cal .50 & 7.62 (3 ea) | 16. Dragon w/M202A1 rocket launcher or 4 laws |
| 6. Laws (5 ea) | 17. M21 mine box (for mines, flares, booby traps) |
| 7. Ammo cans, cal .50 (6 ea); cases (3 ea) | 18. Night vision goggles (PVS-5) / sight (PVS-4) |
| 8. Flag set | 19. Rucksacks (6 ea) |
| 9. Ammo can, 5.56 (1 ea) | 20. Dragon tracker and device box |
| 10. Ammo case, 7.62 (1 ea) | 21. Rucksacks (4 ea) |
| 11. Telephone set, TA-1 or TA-312 | |

STANDARD LOAD PLAN - M106A2 MORTAR CARRIER

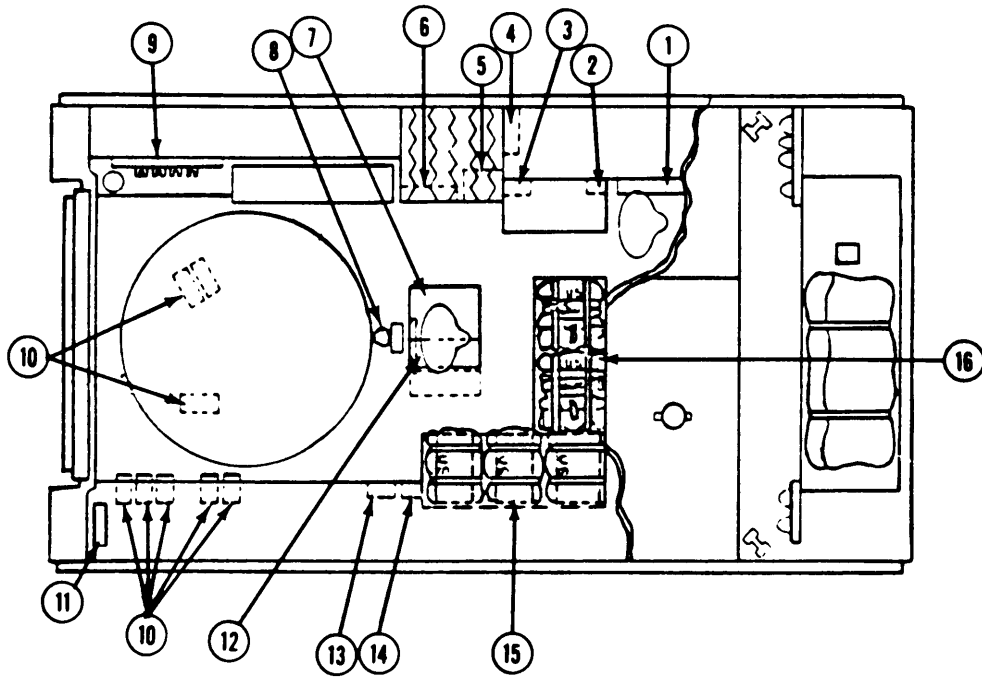


EXTERNAL

M106A2

1. Ammo cans, cal .50 (2 ea)
2. Water can
3. WD-1/TT, DR-8, 1320 ft
4. Tripod, Cal .50
5. Camouflage support system
6. Camouflage screen

STANDARD LOAD PLAN - M106A2 MORTAR CARRIER

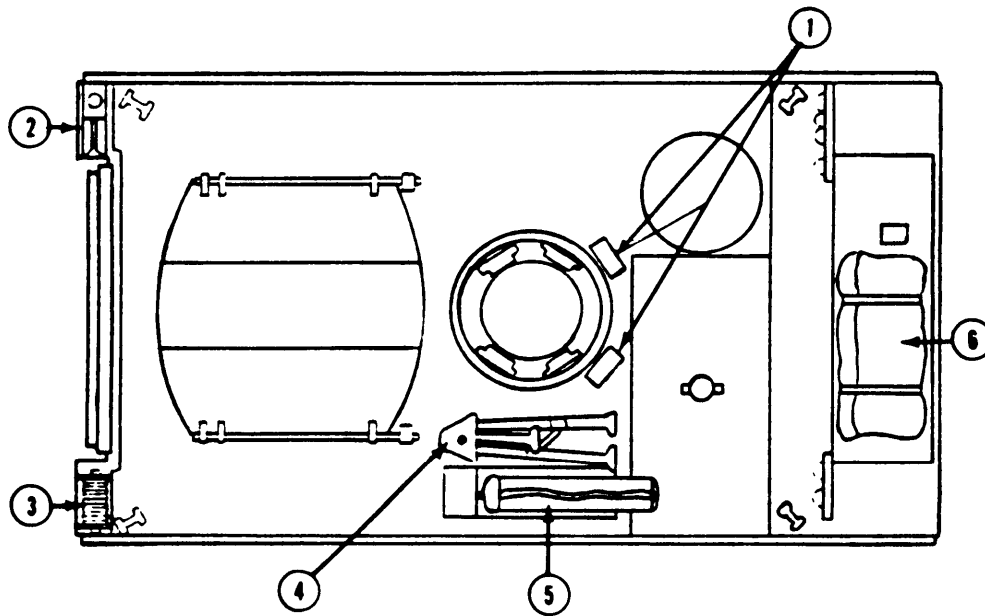


INTERNAL

M106A2

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. Map canister 2. M45 boresight 3. M14 nightsight 4. Binoculars 5. Ammo can, 5.56/cal .45 (1 ea) 6. Fuze setter 7. MRE-ration cases (3 ea) 8. Tripod, aiming circle 9. Flag set 10. Ammo canm cal .50 (8 ea) 11. Telephone set, TA-1 or TA-312 | <ul style="list-style-type: none"> 12. Night vision goggles, PVS-5 /sight (PSV-4) 13. Ammo can w/cal .50 cleaning rod and case: T&E mech, Cal .50 14. M53 sight gear 15. Duffle bags (3 ea) w/rucksacks (3 ea) on top 16. Duffle bags (2 ea) w/rucksacks (2 ea) on top |
|---|---|

STANDARD LOAD PLAN - M126A2 MORTAR CARRIER

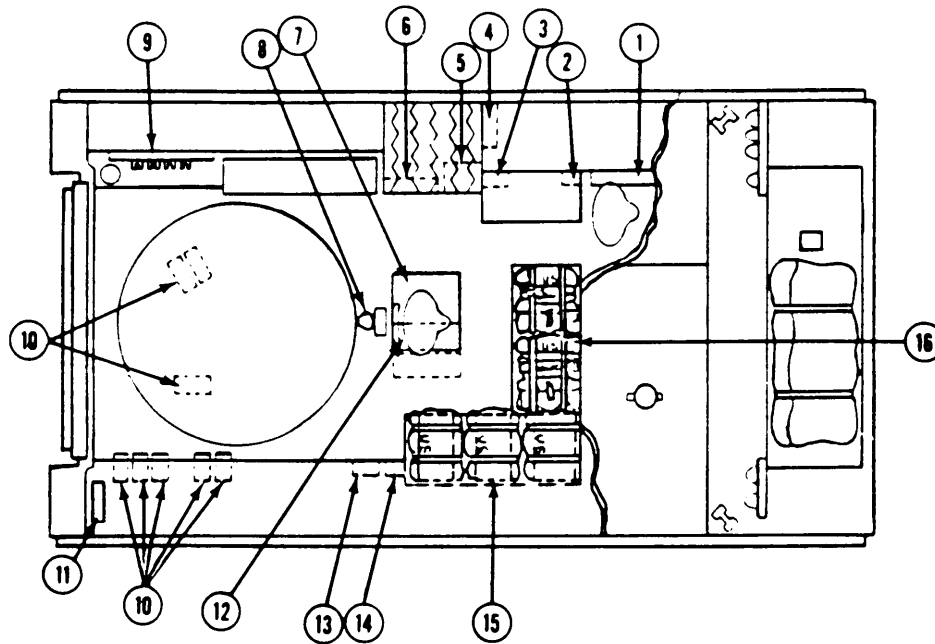


EXTERNAL

M125A2

- 1. Ammo cans, cal .50 (2 ea)
- 2. Water can
- 3. WD-1/TT, DR-8, 1320 ft
- 4. Tripod, Cal .50
- 6. Camouflage support system
- 6. Camouflage screen

STANDARD LOAD PLAN - M125A2 MORTAR CARRIER

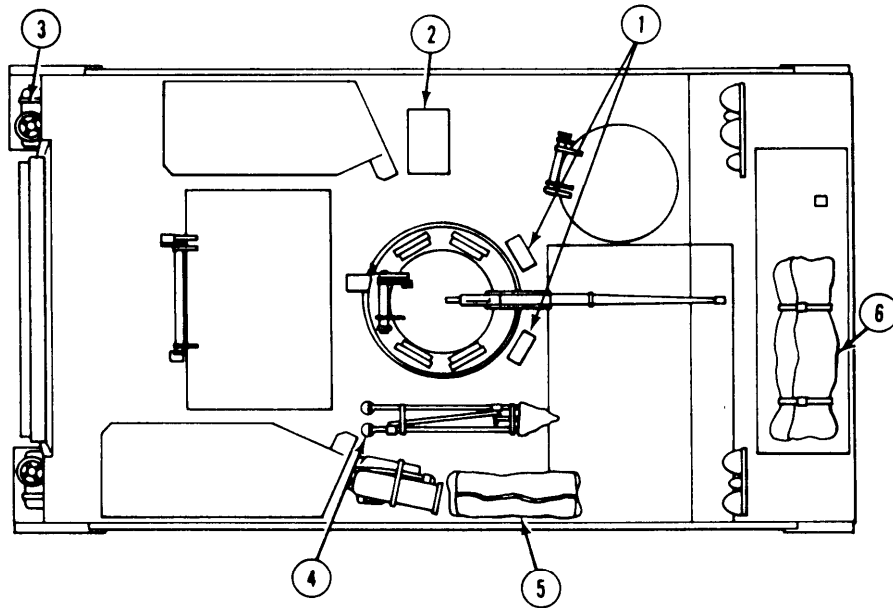


INTERNAL

M125A2

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Map canister 2. M45 boresight 3. M14 nightsight 4. Binoculars 5. Ammo can, 5.56/cal .45 (1 ea) 6. Fuze setter 7. MRE-ration cases (3 ea) 8. Tripod, aiming circle 9. Flag set 10. Ammo can, cal .50 (10 ea) 11. Telephone set, TA-1 or TA-312 | <ol style="list-style-type: none"> 12. Night vision goggles, (PVS-5) /sight (PSV-4) 13. Ammo can w/cal .50 cleaning rod and case: T&E mech, cal .50 14. M53 sight gear 15. Duffle bags (3 ea) w/rucksacks (3 ea) on top 16. Duffle bags (2 ea) w/rucksacks (2 ea) on top |
|--|---|

STANDARD LOAD PLAN - M1059 SMOKE GENERATOR CARRIER

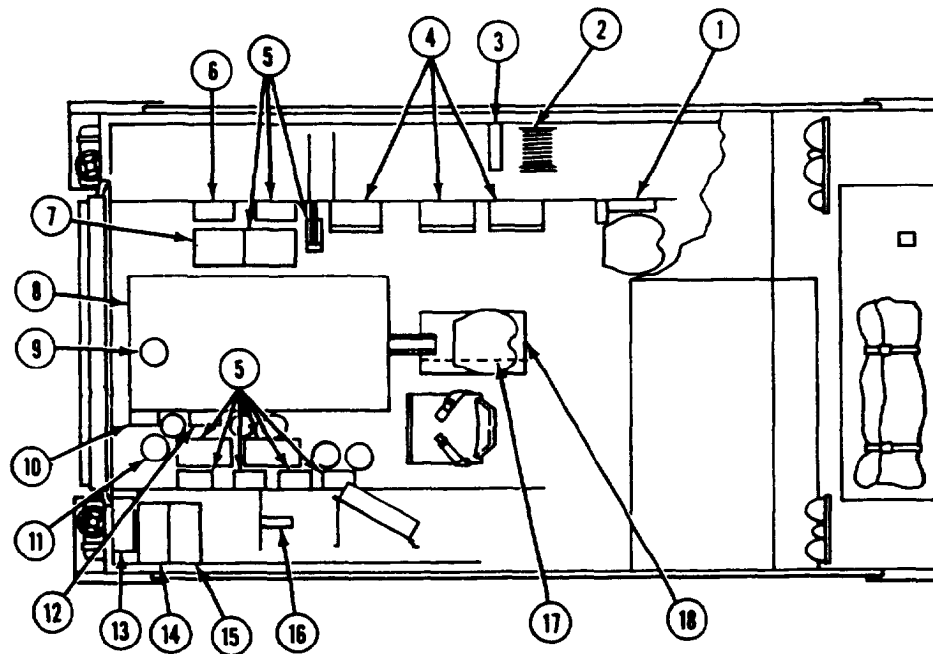


EXTERNAL

M1059

1. Ammo cans, cal .50 (2 ea)
2. MRE-ration cases (2 ea)
3. Smoke generator fuel (MOGAS)
4. Tripod, Cd. 50
5. Camouflage support system
6. Camouflage screen

STANDARD LOAD PLAN - M1059 SMOKE GENERATOR CARRIER

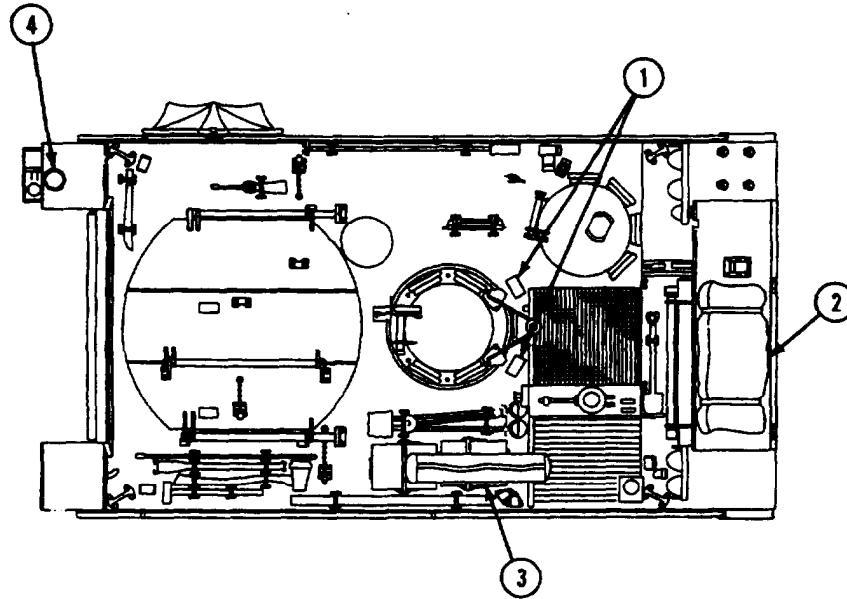


INTERNAL

M1059

- | | |
|--|--|
| <ul style="list-style-type: none"> 1. Map canister 2. WD-1/TT, DR-8, 1320 ft 3. Binoculars 4. Ammo cans, cal .50 & 5.56 (3 ea) 5. Ammo cans, cal .50 (6 ea); cases (3 ea) 6. Ammo can, 5.56 (1 ea) 7. Ammo can, 5.56 (1 ea) 8. Fog oil tank (120 gal) 9. Fill port 10. M13 Decon Kit | <ul style="list-style-type: none"> 11. Duffel bags (6 ea) 12. Water can 13. Telephone set, TA-1 or TA-312 14. Night vision sight, AN/TVS5 15. Night vision sight, AN/PVS4 16. Ammo can w/cal .50 cleaning rod and case: T&E mech, cal .50 17. Night vision goggles (PVS-5) 18. MRE-ration cases (4 ea) under TC seat |
|--|--|

STANDARD LOAD PLAN - M1064 MORTAR CARRIER

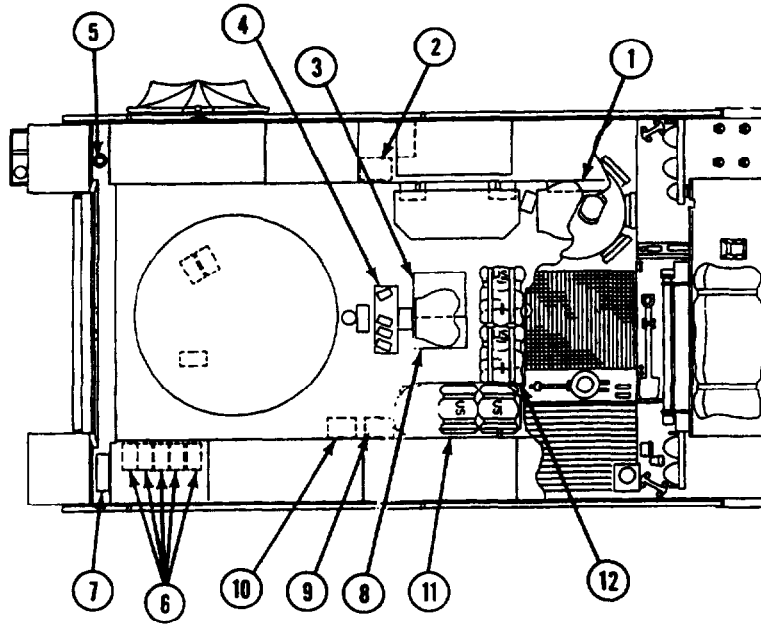


EXTERNAL

M1064

1. Ammo cans, cal .50 (2 ea)
2. Camouflage support system
3. Camouflage screen
4. WD-1/TT, DR-8, 1320 ft.

STANDARD LOAD PLAN - M1064 MORTAR CARRIER

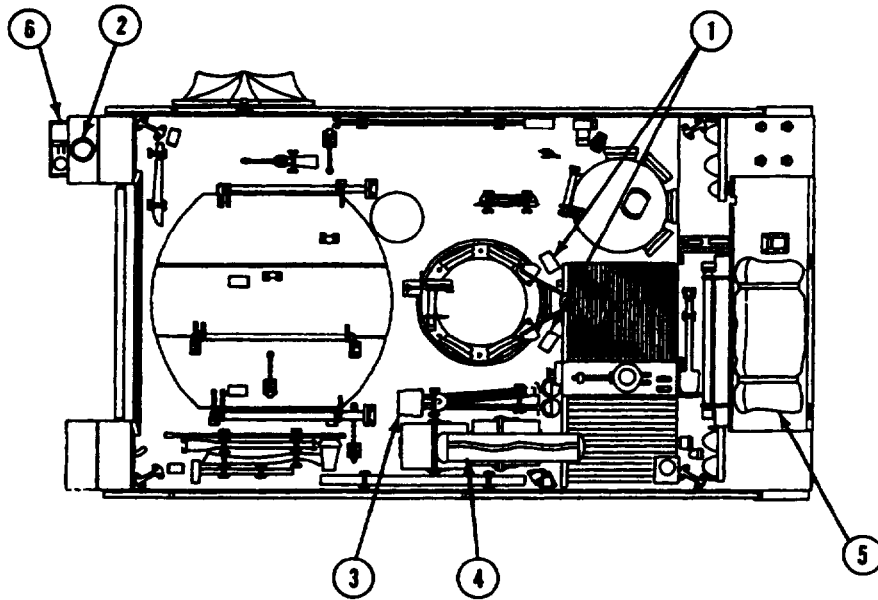


INTERNAL

M1064

- | | |
|---|--|
| <ul style="list-style-type: none"> 1. Map canister 2. Ammo can, 5.56 (1 ea) 3. MRE-ration cases (3 ea) 4. Tripod, aiming circle 5. Flag set 6. Ammo can, cal .50 (8 ea) 7. Telephone set, TA-1 or TA-312 | <ul style="list-style-type: none"> 8. Night vision goggles, (PVS-5)/sight (PSV-4) 9. Ammo can v/cal .50 cleaning rod and case: T&E mech, cal .50 10. M67 sight gear 11. Duffle bags (2 ea) 12. Duffle bags (2 ea) |
|---|--|

STANDARD LOAD PLAN - M1064 MORTAR CARRIER

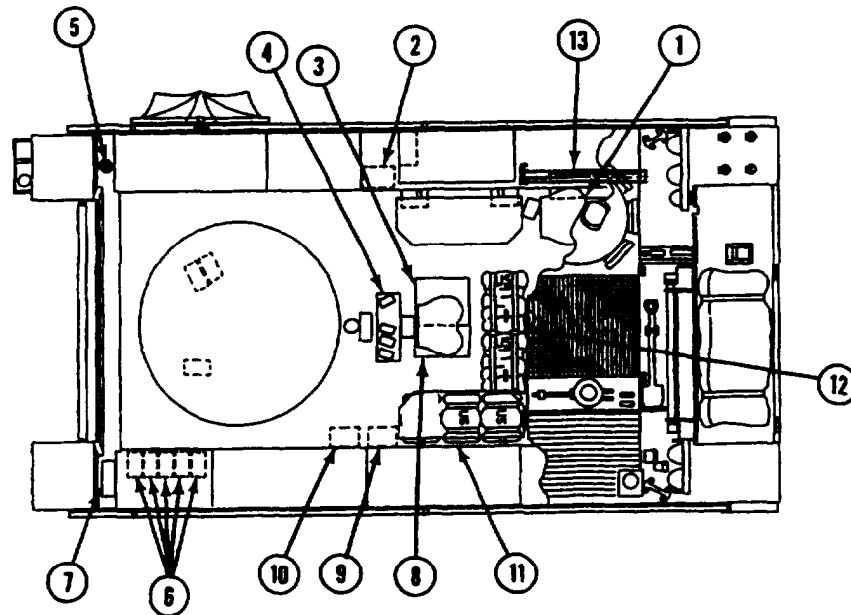


EXTERNAL

M1064

1. Ammo cans, cal .50 (2 ea)
2. WD-1/TT, DR-8, 1320 ft
3. Tripod, cal .50
4. Camouflage support system
5. Camouflage screen
6. M13 Decon Kit

STANDARD LOAD PLAN - M1064 MORTAR CARRIER



INTERNAL

M1064

- | | |
|---|--|
| <ul style="list-style-type: none"> 1. Map canister 2. Ammo can, 5.56/cal .45 (1 ea) 3. MRE-ration cases (3 ea) 4. Tripod, aiming circle 5. Flag set 6. Ammo can, cal .50 (6 ea) 7. Telephone set, TA-1 or TA-312 | <ul style="list-style-type: none"> 8. Night vision goggles, (PVS-5)/sight (PSV-4) 9. Ammo can v/cal .50 cleaning rod and case: T&E mech, Cal .50 10. M67 or M53 sight gear 11. Duffle bags (2 ea) 12. Duffle bags (2 ea) 13. Spare barrel, cal .50 |
|---|--|

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
 1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
 1 Kilogram = 1000 Grams = 2.2 Lb.
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
 1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
 1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

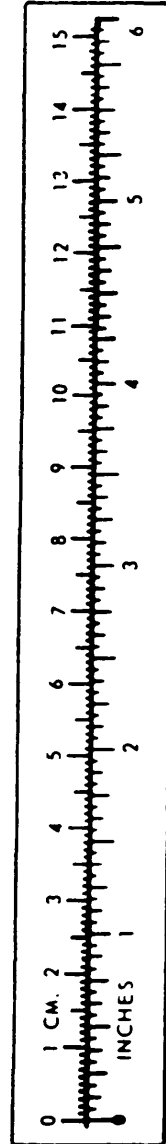
TEMPERATURE

$\frac{5}{9}(F - 32) = C$
 212° Fahrenheit is equivalent to 100° Celsius
 90° Fahrenheit is equivalent to 32.2° Celsius
 32° Fahrenheit is equivalent to 0° Celsius
 $\frac{9}{5}(C + 32) = F$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621



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