

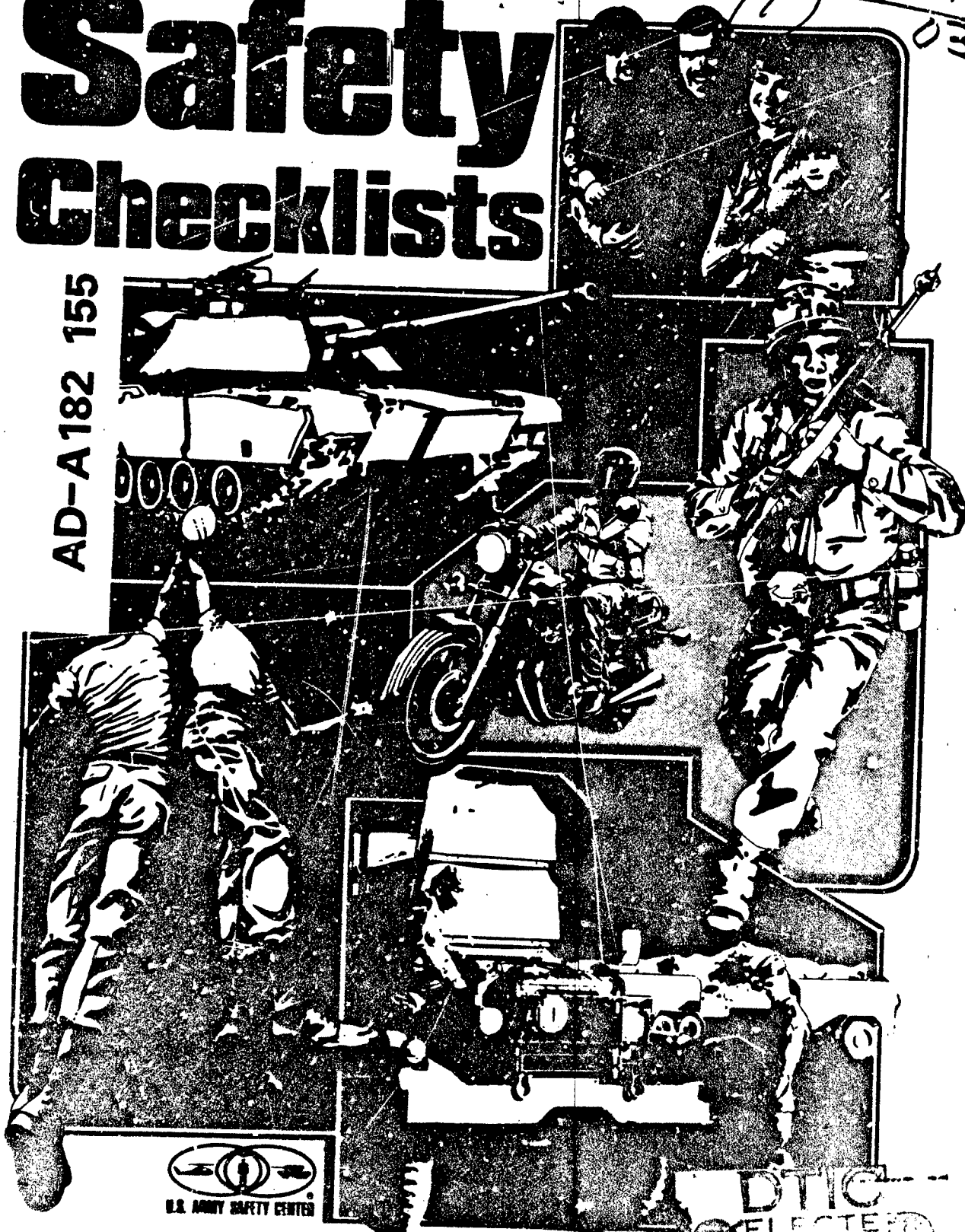
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Safety Checklists

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SAFETY CHECKLISTS

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CHAPTER 1
INTRODUCTION

INTRODUCTION

1. The purpose of this checklist is to provide commanders, directors, safety officers, and supervisors with a ready safety reference that encompasses most functions and tasks common to operations within a command, and includes pertinent references, where appropriate. This checklist should be used in conjunction with DA Pam 385-1. Users are encouraged to add additional checklist items that cover their particular mission needs.

2. Although the checklist is primarily directed to the tactical organizations, they can also be applied to any organization performing similar tasks.

3. Your changes, additions, or recommendations to this checklist are encouraged. Submit DA Form 2028, Recommended Changes to Publications and Blank Forms, direct to Commander, U.S. Army Safety Center, ATTN: PESG-SPG, Fort Rucker, AL 36362.

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CHAPTER 2
ADMINISTRATION

ADMINISTRATION REQUIREMENTS

1. Has the commander appointed, in writing, a unit safety officer and safety noncommissioned officer (NCO)? Is a copy of the appointment letter maintained on file, and was a copy forwarded to the installation safety office?
2. Have the directors and chiefs of activities involving industrial-type operations appointed, in writing, a safety representative?
3. Have the unit/activity safety officer and NCO attended any required safety orientation conducted by the installation safety office?
4. Are monthly safety briefings being conducted? Do quarterly briefings include health hazard training? Are these briefings documented?
5. Does the unit/activity conduct safety/health briefings for all newly arrived military/civilian personnel? Does the briefing include on-duty and off-duty activities? (AR 385-10)
6. Prior to field training exercises, are all personnel briefed on the items covered by AR 385-10?
7. Are personnel trained on specialized job safety and occupational health hazards associated with their specialty? (AR 385-10, para 5-5b(1))
8. Are supervisors receiving safety training to assist them with the recognition and elimination of hazards? (AR 385-10, para 5-5b(2))
9. Has each unit/activity published a standing operating procedure (SOP) that covers all safety responsibilities, and specifically includes areas, such as motor pools, field training, sports, office safety, weapons safety, etc? (DA Pam 750-1)
10. Have safety committees been established, in writing, at battalion level and higher?
11. Do the assigned safety officers at company/detachment level and higher maintain or have immediate access to the directives/regulations listed in AR 385-10?
12. Does the commander ensure that all accidents resulting in injuries, occupational illness, or property damage are reported, investigated, and recorded? (AR 385-40, para 1-3a)
13. Have all personnel required to drive Army motor vehicles (AMVs) attended the installation Driver Improvement Course? (AR 385-55, Appendix A)
14. Are medical examinations scheduled for all workers, and are all personnel provided with appropriate personal protective clothing and equipment (earplugs, safety glasses, safety shoes, gloves, etc., where required)? (AR 40-5, AR 385-32)
15. Have personnel who operate motorcycles been identified, and attended the installation Motorcycle Driver Improvement Course? (AR 385-55)

16. Are nonswimmers or weak swimmers identified? Have all personnel been drownproofed?
(AR 385-15)

17. Are unit commanders ensuring that safety-related posters/flyers are given the widest possible dissemination?

18. Are quarterly safety inspections conducted at company/detachment level?
Are quarterly safety inspections conducted by industrial-type operations?

CHAPTER 3
HOUSEKEEPING AND FIRE PREVENTION

HOUSEKEEPING/FIRE PREVENTION

1. Are flammable storage cabinets provided for storage of oil, paint, grease, or other flammable material (IAW AR 420-90, 29 CFR 1910.106)?
2. Are all rags, waste, etc., soiled by combustible or flammable materials kept in tightly closed metal containers for daily disposal?
3. Are fire plans posted in orderly rooms and billets?
4. Is a building identification card posted on the building where it can be seen from the outside?
5. Are "NO SMOKING IN BED" signs posted in the billets?
6. Are coffee pots and other appliances, for use in office areas, inspected by the Fire Department?
7. Are exits identified with exit signs, and are exits visible to all occupants?
8. Are placards reading "In Case of Fire - Dial (Emergency number, as appropriate)" placed near telephones in buildings?
9. Are the proper type fire extinguishers placed in appropriate, well-designated locations, and are they properly inspected?
10. Are maintenance areas kept clean and orderly? (FM 29-2, page 12-5)
11. Are oil spills cleaned up immediately? (FM 29-2, page 12-5)
12. Are defective parts/components removed from vehicles and other controlled equipment, and removed from the work area? (FM 29-2, page 12-5)
13. Are tools properly maintained? (FM 29-2, page 12-5, TM 9-243)
14. In addition to job-by-job cleanup, is a scheduled period of 15 to 30 minutes each shift being utilized for housekeeping duties? (FM 29-2, page 12-5)
15. Are drip pans utilized in motor pool bays under vehicles which have seeps or leaks of petroleum, oil, and lubrication (POL) products?
16. Is smoking prohibited in shops, garages, or motor pool parking areas, except in areas specifically designated by competent authority? (AR 385-55, para 2-13c(1))
17. Is smoking prohibited within 50 feet of vehicles transporting or dispensing flammable liquids, explosives, or other combustible materials? (AR 385-55, para 2-13c(2))
18. Are vehicles operated with fuel leaks of any type? (AR 385-55, para 2-13a)

CHAPTER 4

MOTOR POOL OPERATIONS CHECKLISTS

TRAINING AND SUPERVISION

1. Are periodic shop maintenance inspections conducted by the commander? (FM 29-2, page 4-2)
2. Do training schedules reflect adequate time for preventive maintenance services for operators, crews, and maintenance personnel? (FM 29-2, page 12-3)
3. Do commanders, motor officers, and NCOs assign inexperienced mechanics to work with an experienced senior supervisor for on-the-job training and skill verification? (FM 29-2, page 10-2)
4. Does the unit safety SOP cover the following common maintenance hazards and take into consideration all conditions peculiar to the specific operations of the unit? (FM 29-2, page 10-3)
 - a. Quality control.
 - b. Fire prevention.
 - c. Equipment operations.
 - d. Moving hazardous materials.
 - e. Personal Protective Clothing and Equipment (PPCE).
 - f. Explosive/weapons safety.
 - g. Carbon monoxide.
 - h. Electrical/tool safety.
 - i. Lifting devices.
 - j. Painting.
5. Are personnel briefed as to their individual responsibilities to follow all safety instructions and to use all safeguards incident to the use of tools, machinery, equipment, and processes? (FM 29-2, page 10-3)
6. Do operators, repairmen, section chiefs, platoon sergeants, and platoon leaders work together to develop safe working procedures to prevent injuries to personnel and damage to materials and facilities? (FM 29-2, page 12-2)
7. Are personnel in critical organizational maintenance positions certified as proficient in the technical aspects of their duties?
8. Are maintenance and equipment publications accessible to equipment operators, mechanics, and leaders? Are they current?
9. Are safety inspections conducted by the unit safety officer/NCO, supervisors, and maintenance personnel? (FM 29-2, page 10-3)

10. Do supervisors conduct regular safety meetings in the work area? (FM 29-2, page 10-2)

11. Are personnel cross-trained to operate vehicles, materials handling equipment, generators, space and immersion heaters, and other equipment? (FM 29-2, page 10-3)

12. Do supervisors: (FM 29-2, page 10-1)

- a. Orient new personnel?
- b. Teach safe practices?
- c. Enforce rules and regulations?
- d. Investigate accidents?
- e. Prepare and submit Accident Reports, DA Forms 285?
- f. Ensure unsafe conditions are corrected?

13. Do individuals: (FM 29-2, page 10-1)

- a. Follow established safety rules and procedures?
- b. Correct or report unsafe conditions?
- c. Report all accidents?
- d. Warn others of hazards?
- e. Use protective devices (earplugs, safety glasses, safety shoes, gloves, etc.), when required?

SHOP STANDING OPERATING PROCEDURES

1. Does the unit have a shop safety SOP? (FM 29-2, page 12-7)
2. Does the SOP include the following safety precautions and procedures applicable to most units? (FM 29-2, pages 10-2 thru 10-5)
 - a. Never, under any circumstances, use gasoline as a cleaning agent, as a solvent, or to start fires.
 - b. Never permit a radio antenna to contact high-tension wires.
 - c. Never use or observe the use of grinding machines without safety goggles.
 - d. Never weld or observe welding without prescribed safety glasses or helmets.
 - e. Always properly secure machines, such as lathes and drill presses.
 - f. Always use the proper tool for the job (a screwdriver is not a chisel nor pry bar).
 - g. Always keep the heads of tools, such as punches, chisels, and drifts, properly maintained.
 - h. Always wear protective headgear when riding in tracked vehicles.
 - i. Always secure tracked vehicle hatches when operating vehicles.
 - j. Always use ground guides when backing vehicles, and at any other time the operator's vision is obscured.
 - k. Always ground electrical equipment during operations.
 - l. Inspect firefighting equipment (in accordance with AR 420-90) often to ensure that it is properly located on a bracket, not blocked in by parts or equipment, designated for type use, and in proper working condition (minimum inspection each month).
 - m. Inspect first aid kits often to ensure that they contain the proper items.
 - n. Ensure that all lifting devices, i.e., hoists, lifts, cranes, booms, etc., are properly inspected and marked showing maximum lift capacity, and that proper use is enforced. (TB 43-0142)
3. Does the unit SOP require platoon leaders and section chiefs to have frequent and regular meetings to brief their personnel on safety procedures, to elicit any suggestions on improvements of safety practices, and to publicize any newly adopted safety procedures? (FM 29-2, page 12-1)

4. Do SOPs clearly identify safety procedures for instruction to all personnel to prevent horseplay, practical jokes, and unauthorized recreation? Do platoon leaders and section chiefs prohibit such actions, and is disciplinary action taken when such behavior occurs? (FM 29-2, page 12-5)

5. Are shop cleanup and notification procedures for POL spills included in the SOPs?

6. Does the unit SOP include hearing protection requirements? (TB Med 501, pages 1-5)

7. Are vehicle dispatch procedures included in SOPs for motor pool operations? (FC 43-2)

8. When low temperatures prevent setting the parking brake, do SOPs instruct personnel to chock wheels when vehicles are left unattended? (AR 385-55, para 2-13(3)d)

9. Is there an approved SOP posted in the battery shop? (TM 9-6140-200-14, para 4-2)

10. Does the SOP include standard procedures for proper use of respirators by assigned personnel? (29 CFR 1910.134(e))

11. Does the shop SOP define the specific respirator required for each job? (29 CFR 1910.134(a)(2))

12. Does the shop SOP include proper procedures for draining all gasoline-operated equipment (generators, stove fire units, lawn mowers, lanterns, etc.) prior to placing in temporary storage?

WELDING

1. Are only qualified and authorized personnel permitted to perform welding operations? (29 CFR 1910.252(a)(b)(c))
2. Are PPCE, such as helmets, eye protection shields, goggles, aprons, and gloves, provided? (29 CFR 1910.132)
3. Is an exhaust system provided whenever natural ventilation is inadequate to remove injurious fumes and gases? (29 CFR 1910.252)
4. Have flammable or explosive materials been removed or confined to eliminate the possibility of fire or explosion during welding work? (29 CFR 1910.252(v)(ii))
5. Are written SOPs governing the selection and proper use of respirators available? (29 CFR 1910.134(b)(1))
6. Are respirators selected on the basis of hazards to which the worker is exposed? (29 CFR 1910.134(b)(2))
7. Are the users instructed and trained in the proper use of respirators and their limitations? (29 CFR 1910.134(b)(3))
8. Are respirators assigned to individual workers for their exclusive use? (29 CFR 1910.134(b)(4); TB Med 502, para 2-8)
9. Are respirators thoroughly cleaned and disinfected after each use? (29 CFR 1910.134(b)(5); TB Med 502, para 2-8)
10. Are personnel who use respirators given a physical examination to determine if they are physically able to perform the work and use this equipment? (29 CFR 1910.134(b)(10))
11. Are curtains or screens provided around all welding locations? (29 CFR 1910.252)
12. Do personnel regulate the pressure when using compressed gas cylinders? (AR 700-68, para 5.1a3)
13. Are acetylene gas cylinders stored away from heat sources, stored in an upright position, and chained or secured to prevent falling? (AR 700-68)
14. If acetylene gas cylinders have been stored in a horizontal position, are they placed in an upright position for 2 hours prior to their use? (AR 700-68, para 2.1a)
15. Is acetylene gas used at a pressure not to exceed 15 pounds per square inch (PSI) (higher pressure may cause it to explode). (AR 700-68, para 2.1a, 29 CFR 1910.252(a)(ii))

16. When cylinders are not in use, are valves closed tightly and the valve protector caps installed? (AR 700-68, para 5.1a13)
17. Is the use of compressed gas prohibited from use for cleaning purposes; i.e., to dust off clothing or other objects? (AR 700-68, para 5.1a16)
18. Is smoking prohibited within 50 feet of compressed gas storage areas, and are no smoking signs posted? (AR 700-68, para 5.2b)
19. Are filled and empty cylinders stored separately? (AR 700-68, para 5.2c)

SPRAY PAINTING

1. Are only properly trained personnel allowed to perform spray painting operations?
2. Are personnel who perform spray painting operations provided and required to wear approved respirators, eye protection, overalls, and gloves? (29 CFR 1910.132)
3. Are written SOPs governing the selection and proper use of respirators available? (29 CFR 1910.134(b)(1); TB Med 502, para 2-3)
4. Are respirators selected on the basis of hazards to which the worker is exposed? (29 CFR 1910.134(b)(2); TB Med 502, para 2-4)
5. Are the users instructed and trained in the proper use of respirators and their limitation? (29 CFR 1910.134(b)(3); TB Med 502, para 2-7)
6. Are respirators assigned to individual workers for their exclusive use? (29 CFR 1910.134(b)(4); TB Med 502, para 2-8)
7. Are respirators thoroughly cleaned and disinfected after each use? (29 CFR 1910.134(b)(5); TB Med 502, para 2-8)
8. Are personnel who use respirators given a physical examination to determine if they are physically able to perform the work and use this equipment? (29 CFR 1910.134(b)(10); TB Med 502, para 2-10)
9. Is spray painting prohibited within buildings where standard spray booths or rooms are not constructed and arranged in accordance with NFPA Standard No. 33? (29 CFR 1910.94(c)(3)(4) and (5))
10. Are sufficient numbers of extinguishers suitable for Class B fires available at the operation site? (29 CFR 1910.107(f))
11. Are signs reading "No Smoking Within 50 Feet" posted at all paint and other flammable liquid storage areas?
12. Is the spray booth constructed of steel, concrete, masonry material, or other noncombustible materials used for intermittent or low-volume spraying? (29 CFR 1910.107(b))
13. Are spray booths designed to sweep air currents toward the exhaust outlet? (29 CFR 1910.107(b))
14. Are interior surfaces of spray booths smooth and continuous without edges, and otherwise designed to prevent pocketing of residues and facilitate cleaning and washing without injury? (29 CFR 1910.107(b)(2))

15. Are floor surfaces of spray booth and operator's working area covered with noncombustible material of such character as to facilitate the safe cleaning and removal of residues? (29 CFR 1910.107(b)(3))

16. Are spray booths so installed that all portions are readily accessible for cleaning and a clear space of not less than 3 feet on all sides kept free from combustible storage or construction? (29 CFR 1910.107(b)(9))

17. When spraying areas are illuminated through glass panels or other transparent materials, are fixed-lighting units used as a source of illumination? (29 CFR 1910.107(b)(10))

18. Do panels effectively isolate the spraying area from the area in which the lighting unit is located, and is it constructed of noncombustible material of such a nature and protected whereby breakage will be unlikely? (29 CFR 1910.107(b)(10))

19. Are panels so arranged that normal accumulation of residue on the exposed surface will not be raised to a dangerous temperature by radiation or conduction from the source of illumination? (29 CFR 1910.107(b)(10))

20. Are open flame or spark-producing equipment prohibited within 20 feet of the spray area, unless separated by a partition? (29 CFR 1910.107(c)(2))

21. Are electrical wiring and equipment located in spraying areas and subject to deposits of combustible residues, of the explosion-proof type approved for Class I, Group D, locations? (29 CFR 1910.107(c)(6))

22. Does electrical wiring, motors, and other equipment outside of, but within 20 feet of any spraying area and not separated therefrom by partitions, have spark-producing protection? (29 CFR 1910.107(c)(6)(General))

BRAKE AND CLUTCH REPAIR

1. Are brake and clutch repair services performed in designated areas, and are they properly posted with asbestos exposure warning signs? (29 CFR 1910.1001)
2. Do asbestos warning signs provide the following information? Asbestos, Dust Hazard, Avoid Breathing Dust, Wear Assigned Personal Protective Clothing and Equipment, Do Not Remain in Area Unless Your Work Requires It, Breathing Asbestos Dust May Be Hazardous to Your Health. (29 CFR 1910.1001)
3. During brake servicing, do workers use an air purifying respirator, either single use or with replaceable particulate filter(s) approved by the Mining Enforcement and Safety Administration or the National Institute for Occupational Safety and Health (NIOSH)? (29 CFR 1910.1001)
4. During all procedures following removal of the wheels and reassembly, and during manual clutch servicing and cleaning of the clutch and pressure plate housing assembly, do workers wear approved respirators that give protection for asbestos exposure? (29 CFR 1910.1001)
5. Is dust first cleaned from brake drums, brake backing plates, brake assemblies, and clutch assemblies using an industrial-type vacuum cleaner equipped with a high-efficiency filter system? (29 CFR 1910.1001)
6. After vacuum cleaning, are any remaining dust particles removed by using a rag soaked in water and wrung until nearly dry? (29 CFR 1910.1001)
7. Is compressed air or dry brushing prohibited for cleaning dust from brake and clutch assemblies containing asbestos? (29 CFR 1910.1001; TM 9-2320-209-20-3-2, pages 14-22 and 14-28; TM 9-2320-242-20-3-2, pages 12-5 and 12-31)
8. When a vacuum cleaner is not available, are the brake drums, brake backing plate, brake assemblies, and clutch assemblies cleaned by wiping with rags soaked with solvent or detergent water, or washed with the detergent water? (29 CFR 1910.1001; TM 9-2320-209-20-3-2, pages 14-22 and 14-28; TM 9-2320-242-20-3-2, pages 12-31)
9. If washed in water/solvent, is a container placed under the assemblies to catch the runoff, and to trap the dust and debris in the solution? (29 CFR 1910.1001)
10. If rags are used in the process indicated in para 9, above, are they rinsed and wrung where drippings are caught in the solution? (29 CFR 1910.1001)
11. During arcing and riveting operations, are approved respirators worn? (29 CFR 1910.1001)
12. Is the building where grinding and drilling machines are used for maintenance of asbestos parts and assemblies provided with local exhaust ventilation where worker exposure is maintained below the asbestos standard listed in 29 CFR 1910.1001?
13. Is all asbestos waste disposed of in accordance with 29 CFR 1910.1001?

BATTERY SHOP OPERATIONS

1. Are all battery shop personnel properly trained in the hazards, procedures and precautions as they relate to the safe handling and maintenance of batteries? (TM 9-6140-200-14, Appendix E)
2. Is the battery shop large enough to service, charge, and repair batteries? (TM 9-6140-200-14, para 4-1)
3. Are battery repairs performed in a room separated from the charging room? (TM 9-6140-200-14, para 4-1)
4. Are battery operations performed in an approved designated shop or area? (29 CFR 1910.178(g)(1))
5. Is smoking prohibited in battery shops and are no smoking signs posted? (TM 9-6140-200-14, para 2-2; 29 CFR 1910.178(g)(10))
6. Is there an approved SOP posted in the battery shop? (TM 9-6140-200-14, para 4-2)
7. Are nickel-cadmium batteries serviced in separate facilities from lead-acid batteries? (TM 9-6140-200-14, para 4-1)
8. Is all electrical equipment explosive- or vapor-proof type? Is all electrical equipment grounded? (TM 9-6140-200-14)
9. Is the battery shop provided with an adequate ventilation system for exhaustion of hydrogen? (29 CFR 1910.178(g)(2))
10. Is the ventilation system on a separate switch or interlocked with the charging system to ensure positive ventilation?
11. Are battery caps in place and battery cap vents open when batteries are being charged? (TM 9-6140-200-14, para 4-5)
12. Are battery post terminal connections checked for proper polarity prior to charging? (TM 9-6140-200-14, para 4-5)
13. Is the battery charger turned off before disturbing battery terminal connections? (TM 9-6140-200-14, para 4-5)
14. Are batteries being charged all of the same voltage? (TM 9-6140-200-14, para 4-5)
15. Are the battery manufacturer's instructions followed? (TM 9-6140-200-14, para 4-5)
16. Are deluge showers and emergency eyewashes furnished in the battery shop? (29 CFR 1910.151(c))
17. Is protective clothing; i.e., face shield/chemical goggles, safety shoes, gloves, and aprons, provided and worn? (TM 9-6140-200-14; 29 CFR 1910.132(a))

18. Is there an approved fire extinguisher located in the battery shop?
(29 CFR 1910.155)
19. Is the facility equipped with adequate provisions for flushing and neutralizing acid spillage? Is soda ash available for neutralization?
(29 CFR 1910.178(g)(2))
20. Are terminal straps or built-in carrying handles used when handling batteries? (TM 9-6140-200-14)
21. Is distilled water ONLY used to fill batteries? (TM 9-6140-200-14, para 3-7)
22. When mixing electrolyte, is the acid always poured into the water?
(29 CFR 1910.178(g)(7))
23. Are tools and other metallic objects kept away from the top of uncovered batteries to prevent short circuits? (TM 9-6140-200-14, Appendix E)
24. Are battery repairs restricted to repairing cracks in the top of the battery case and rebuilding battery posts? (TM 9-6140-200-14, para 4-3)
25. Are battery posts repaired in accordance with approved procedures?
(TM 9-6140-200-14, para 4-3b)
26. Are battery post molds checked for dryness prior to pouring molten lead?
(TM 9-6140-200-14, para 4-3(7))
27. Are battery shop personnel included in a medical monitoring program?
(TM 9-6140-200-14)
28. Are battery shop operations surveyed by an industrial hygiene specialist for lead concentration and other aspects of the operation for good industrial hygiene practices? (TM 9-6140-200-14, Appendix E)
29. Are windows and doors locked when the battery shop is unattended?

TIRE CHANGING

1. When remounting tires, is a lubricant solution used on the tire beads? (TM 9-2610-200-20, para 2-16d)
2. When demounting tires, do personnel check to be absolutely sure that no pressure remains in the tire? (TM 9-2610-200-20, para 2-20)
3. Are rims inspected after demounting the tire to assure that rims are not damaged? (TM 9-2610-200-20, para 2-19)
4. When demounting split-type side ring, is caution taken not to bend side rings? (TM 9-2610-200-20, para 2-19b)
5. When inflating tires, is the side ring turned away from the person when air pressure is applied to the tube to bring the tube between beads and side ring? (TM 9-2610-200-20, para 2-19(5))
6. Is a tire inflation cage used when inflating split-rim tires to correct pressure? (TM 9-2610-200-20, para 2-31)
7. Have personnel received training and instruction in the proper procedure of mounting, demounting, and all related services, activities, and correct safety precautions for the rim type being serviced? (29 CFR 1910.177(c)(1))
8. Do supervisors ensure that personnel who perform tasks of tire repair demonstrate their ability to service multipiece rim wheels safely, including following tasks? (29 CFR 1910.177(2))
 - a. Demounting of tire, including deflation.
 - b. Inspection of wheel components.
 - c. Mounting of tires, including inflation within a tire cage.
 - d. Use of restraining device.
 - e. Handling of wheels.
 - f. Inflation of tires when a wheel is mounted on the vehicle.
 - g. Installation and removal of wheels.
9. Are tire cages bolted or secured to the floor or other permanent part of structure, whereby they will remain stable if the lock ring blows off? (29 CFR 1910.177)
10. Are personnel instructed to always use a tire cage when inflating multipiece rim tires? No other procedures are authorized. (The Preventive Maintenance Monthly, Issue 386, Jan 85, page 20-20)
11. When personnel are inflating tires, does the operator stand at least 10 feet from the safety cage? (TM 9-2610-200-20, para 2-19c(1))

MOVEMENT OF VEHICLES

1. Are all vehicles equipped with a seatbelt decal where seatbelts are installed?
2. Are only properly trained and licensed personnel authorized to operate motor vehicles?
3. Are vehicle loads checked to ensure that all loose items are properly secured? (FM 21-35)
4. Do vehicle operators make sure that vehicles are clear of personnel or obstacles before moving? (AR 385-55)
5. When vehicles are backed or moved in confined areas, are ground guides used? (AR 385-55)
6. Are riders prohibited from riding on the outside of tracks? (FM 21-306, para 21)
7. Is smoking prohibited in or near a tracked vehicle? (FM 21-306, para 21)
8. Are personnel required to wear protective headgear when riding in tracks? (FM 21-306, para 21)
9. Are personnel required to be no higher than name tag defilade when traveling in track vehicle? (FM 21-306)

CRANES, JACK STANDS, AND LIFTING DEVICES

1. Are jacks which are out of order tagged accordingly, and placed out of service until repairs are made? (29 CFR 1910.244(a)(2)(viii))
2. Are lifting devices inspected daily, by the operator, before use? (TB 43-0142, para 4b2(a))
3. Are periodic inspections of lifting devices conducted by organizational maintenance personnel at least annually, and recorded on the Preventive Maintenance Schedule and Record, DD Form 314? (TB 43-0142, para 4b2(b))
4. Prior to initial use, are all new, extensively repaired, or altered lifting devices load tested? (TB 43-0142, para 4a)
5. Is the load rating and date of the next periodic inspection stenciled (1 inch or larger) on the crane booms, hoists, chains, slings, hooks, and jacks? (TB 43-0142, paras 6f(1) thru 6f(4))
6. Do daily inspections of cranes and hoists include: (TB 43-0143, para A-
 - a. Identification of cracks, malfunctioning hooks, and latch attachments
 - b. Checking rope/cables for improper rigging and damage?
 - c. Checking chains for wear, twist, stretch, and distorted links?
 - d. Inspecting electrical apparatus for malfunction, excessive deterioration, and dirt/moisture accumulation?
7. Do daily inspections of slings include: (TB 43-0142, para C-1)
 - a. Inspecting wires for breaks, corrosion, fray, and wear?
 - b. Inspecting wire rope for kinks, cuts, and unstranding?
 - c. Checking natural fiber ropes for abnormal wear, cut fibers, and str variation?
 - d. Inspecting synthetic web for snags, punctures, broken/worn stitches and distortion of fittings?
8. Do daily inspections of jacks include: (TB 43-0142, para E-1)
 - a. Proper marking of load rating?
 - b. Cleanliness and proper lubrication?
 - c. Inspecting for bolts/rivets missing or broken, hydraulic leaks, worn screw threads, and cracked rack teeth?
9. Do personnel use the proper capacity lifting device for the load?

HAND/POWER TOOLS

1. Do supervisors conduct regular safety meetings on the proper use of hand and power tools?
2. Do personnel maintain hand tools in good condition, free of rust, nicks, and breaks? (TM 9-243, page 2-2)
3. Do personnel return tools to their proper storage place when not in use? (TM 9-243, page 2-2)
4. Do personnel follow these hand/power tool safety rules? (TM 9-243, pages 2-1 and 2-2)
 - a. Inspect tools for safe conditions before using.
 - b. Use the right tool for the job.
 - c. Never use damaged tools.
 - d. Never place tools above machinery or electrical apparatus.
5. Do personnel, operating power tools: (TM 9-243, page 2-3)
 - a. Operate only the equipment for which they are trained and authorized to use?
 - b. Ensure there is adequate light in the work area?
 - c. Make sure that the tool switch is in the "OFF" position before connecting power tools to power sources?
 - d. Ensure the power source has the correct voltage and type of current for the tool?
 - e. Check electrical cables/cords for overheating?
 - f. Position cables/cords so they do not become tripping hazards?
 - g. If water is present in the area, disconnect the power tool?
 - h. Ensure power tools are disconnected before cleaning the tool? (TM 9-243)
6. Do personnel wear Personal Protective Clothing and Equipment (PPCE) for the following operations? (TM 9-243, pages 2-3 and 2-4)
 - a. Repair and maintenance, and electrical repair. (Safety shoes.)
 - b. Welding, cutting, soldering, chipping, grinding, using toxic chemicals, etc. (Eye protection.)
 - c. Material handling, electrical repair, etc. (Helmets.)

d. Generators, drills, grinders, etc. (hearing protection.)

e. Gas and electric welding, electrical repair, etc. (Gloves.)

7. Do personnel report unsafe conditions or practices to supervisors?
(TM 9-243, page 2-1)

8. Do personnel immediately report all injuries to supervisors? (TM 9-243,
page 2-1)

DRIVER TRAINING AND LICENSING

1. Do personnel required to drive AMVs, wheeled and tracked, attend the Driver Improvement Course prior to being licensed?
2. Do vehicle operators receive specialized training on the operational peculiarities of each vehicle they will be required to operate? (AR 385-55, para A-4d(2))
3. Are all vehicle operators examined and certified? (AR 600-55, paras 4a thru 4g)
4. Do all military vehicle and equipment operators possess a valid current United States Government Motor Vehicle Operator's Identification Card, Standard Form 46 (SF 46)? (AR 600-55, para 2a)
5. Do drivers of buses, military police vehicles, ambulances, firetrucks, crash-rescue vehicles, or other emergency vehicles complete additional training that includes: (AR 385-55, para A-4c)
 - a. Applicable laws and regulations?
 - b. Safe operating practices under normal and emergency conditions?
 - c. Driver inspection and primary preventive maintenance?
6. Do vehicle operators perform preventive maintenance inspections? (FM 21-305, pages 1-3, 2-1, and 2-2, and appropriate TMs)
7. Are vehicle operators prohibited from driving AMVs when their state or host nation drivers license has been suspended by a court of law? (AR 385-55, para A-7b)
8. Is a 40-hour driver's training course conducted at battalion level? (FC 55-32)
9. Do vehicle operators ensure that all occupants are wearing seatbelts when available? (AR 385-55)
10. Do vehicle operators, convicted of two or more moving traffic violations and/or at-fault traffic accidents, attend the Retraining Drivers Training Course? (FC 55-32)
11. Are drivers of tracked vehicles training in accordance with FM 21-17 and FM 21-306 and appropriate vehicle manuals?
12. Are drivers of wheeled vehicles trained in accordance with FC 55-32 and appropriate vehicle manuals?

HEARING CONSERVATION

1. Do unit commanders and supervisors maintain the Adjutant General (AG), Standard Installation Division Personnel Systems (SIDPERS) birth month rosters provided to units/activities by the Medical Department Activity (MEDDAC), of those individuals exposed to hazardous noise?
2. Do unit commanders ensure that noise hazardous areas within their area of responsibility are properly designated with caution signs?
3. Do unit commanders notify the MEDDAC Commander of noise hazardous areas?
4. Do unit commanders and supervisors ensure that the wearing of earplugs, the earplug carrying case is a mandatory part of the duty uniform for all personnel routinely or periodically exposed to hazardous noise levels?
5. Do unit commanders provide hearing protective devices (earplugs or ear-muffs), as required, and ensure that these devices are properly fitted by trained medical personnel?
6. Do unit commanders and supervisors ensure that all personnel who are routinely exposed to hazardous noise receive at least one medical hearing evaluation per year, and that they attend a hearing conservation briefing annually?
7. Do unit commanders take appropriate personnel replacement action, when notified by the MEDDAC Commander of the result of medical examinations, evaluations, and surveys?
8. Do unit commanders and supervisors enforce the wearing of hearing protectors by unit personnel and visitors during exposure to hazardous noise?
9. Does the unit maintain a written SOP on hearing conservation?
10. Are noise hazardous areas identified, and are noise hazardous signs posted within easy view?
11. Where actual sound level measurements are not available, do personnel assume the existence of a hazardous noise level, if one or more of the following exists?
 - a. There is difficulty in communicating, by speech, within the area?
 - b. Personnel experience ringing in their ears after working in the area?
 - c. Personnel experience a temporary loss of hearing that muffles speech and other sound after exposure to noise?

PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

1. Do commanders provide and educate all personnel as to the proper wearing of FPCE? (AR 385-32, paras 4a thru 4i)
2. Do supply personnel ensure that items of personal issue are inspected regularly and maintained in serviceable and sanitary condition, and before being reissued to another person or returned to storage, are cleaned, disinfected, inspected, and repaired? (AR 385-32, para 4f)
3. Do the following personnel wear safety glasses/goggles and other FPCE?
 - a. Welders.
 - b. Painters.
 - c. Grinders.
 - d. Fuel handlers.
 - e. Maintenance workers.
 - f. Carpenters.
 - g. Metal workers.
 - h. Heavy equipment operators.
 - i. Pest controllers.
 - j. Electricians.
 - k. Mechanics/repairmen.
 - l. Warehousemen.
 - m. Vehicle operators (when operating a vehicle with the windshield down or head outside hatch in tracked vehicles).
 - n. Other personnel as directed.
4. Are workers, requiring corrective lenses, scheduled through the Preventive Medicine Clinic for vision conservation examinations?
5. Do the following personnel wear safety toe footwear? (CTA 5-900)
 - a. Electrical workers.
 - b. Mechanics (tracked, wheeled, aircraft).
 - c. Carpenters.
 - d. Heavy equipment operators.
 - e. Warehouse workers.

EXHAUST CONTROL

1. Are vehicles periodically inspected to ensure that there are no leaks in the exhaust system? (AR 385-55, para 2-14a)
2. Are motor pool shops and other enclosed areas used for vehicle maintenance ventilated to prevent asphyxiation? (AR 385-55, para 2-14b)
3. Are vehicle engines prohibited from being run up inside shops longer than needed to move the vehicle in or out of the building? (AR 385-55, para 2-14b(1))
4. Are shops periodically tested under full working conditions to determine the presence of carbon monoxide? (AR 385-55, para 2-14b(2))
5. Are personnel prohibited from sleeping in parked or unattended vehicles with the engine or heater running? (AR 385-55, para 2-14d)
6. Are shop exhaust (ventilation) systems properly used to remove exhaust gases? (AR 385-55, para 2-14c)
7. Are maintenance pit ventilation systems installed and operational? (29 CFR 1926.57)

MATERIAL HANDLING

1. Are personnel given proper instruction and training concerning potential dangers associated with their daily task? (DOD 4145.19-R-1, Chapter 6, page 6-2, para 6-103)
2. Are formal safety training, fire prevention training or other required instruction performed by supervisors with assistance from installation safety, fire prevention, and health activities? (DOD 4145.19-R-1, Chapter 6, page 6-2, para 6-104)
3. Are personnel given proper protective clothing in accordance with the hazard involved? (DOD 4145.19-R-1, Chapter 6, page 6-3, para 6-105)
4. Is the use of PFCE strictly enforced by supervisory personnel? (DOD 4145.19-R-1, Chapter 6, page 6-3, para 6-105)
5. Have personnel been properly trained for use of the PFCE provided? (DOD 4145.19-R-1, Chapter 6, page 6-3, para 6-105)
6. Are fire extinguishers maintained and in a designated area at all times? (DOD 4145.19-R-1, Chapter 6, page 6-7, para 6-107)
7. Is the work area kept in a clean and orderly condition? (DOD 4145.19-R-1, Chapter 6, page 6-14, para 6-108)
8. Are color code markings used properly? (DOD 4145.19-R-1, Chapter 6, page 6-21, para 6-111)
9. Are personnel trained to use powered materials handling equipment? (DOD 4145.19-R-1, Chapter 6, page 6-25, para 6-112)
10. Are only the licensed operators allowed to operate the equipment? (DOD 4145.19-R-1, Chapter 6, page 6-26, paras 6-112 and 7-d)
11. Are safety rules applicable to forklift operators strictly enforced? (DOD 4145.19-R-1, Chapter 6, page 6-27, para 6-112c)
12. Are lifting devices inspected daily, by the operator, before use? (TB 43-0142, page 2, para 4b)
13. Are periodic inspections of lifting devices conducted by organizational maintenance personnel at least annually, and recorded on the Preventive Maintenance Schedule and Record, Form 314? (TB 43-0142, page 2, para 4)
14. Is the load rating and date of the next periodic inspection stenciled (1 inch or larger) on crane booms, hoists, chains, slings, hooks, and jacks? (TB 43-0142, page 3, para 6f)
15. Are personnel instructed in the proper method of lifting heavy objects? (DA Pam 365-8, page C-3)

16. Are persons with existing hernias or those who have a history of previous back strains, assigned to duties that do not require heavy lifting? (DOD 4145.19-R-1, Chapter 6, page 6-35, para 6-114)

17. Are finger rings prohibited when manually handling materials? (DOD 4145.19-R-1, Chapter 6, page 6-35, para 6-114)

18. When working at high elevations are lifelines and safety belts worn? (DOD 4145.19-R-1, Chapter 6, page 6-35, para 6-114b)

CHAPTER 5
FIELD TRAINING EXERCISE SAFETY CHECKLISTS

ADMINISTRATION

1. Does the commander ensure that the safety annex of the unit administrative/tactical SOP is current and covers all field training operations?
2. Is the commander/safety officer familiar with the safety portion of SOPs?
3. Does the commander ensure that adequate provisions for safe practices, procedures, and physical standards are incorporated into unit Letters of Instructions (LOIs) for field training exercises.
4. Does the exercise commander ensure a safety officer/NCO is appointed on orders for each participating unit and is a copy of these orders provided to the exercise safety officer and the installation safety office?
5. Have the exercise/unit safety officers received the required safety briefing from the installation safety office?
6. Are all participating personnel briefed on field training hazards, standards, and procedures prior to departure to the field?
7. Do the exercise/unit safety officers keep their commanders informed of the unit's safety status by reporting all accidents, injuries, and incidents, and recommending corrective actions?

ACCIDENT REPORTING AND INVESTIGATION

1. Are all field training accidents investigated and reported to the installation safety office or exercise safety officer as soon as possible after an accident? (AR 385-40, para 1-3a)
2. Are recordable accidents reported on a DA Form 285 through command channels to the installation safety office within 15 calendar days? A recordable accident results in 1 day or more lost time and/or \$1,000 in property damage. (AR 385-40, para 1-3b)
3. Do unit commanders/safety officers know what type accidents are Class A recordable accidents, as identified below?
 - a. An on-duty, nonprivately-owned vehicle, nonaviation accident whereby the total cost of property damage, injury, or occupational illness equals \$500,000 or greater.
 - b. A fatality or permanent total disability that occurs as a result of Army operations.
4. Do units know the procedures for reporting a Class A accident? Report the following information to the installation safety office:
 - a. Type accident/vehicle and location.
 - b. Classification of accident (Class A).
 - c. Synopsis of accident.
 - d. Number of personnel involved/any civilian involvement.
 - e. Number of injuries/fatalities.
 - f. Other agencies/units notified.
5. Are corrective actions implemented after investigations to ensure no further recurrence?

VEHICLE MOVEMENTS

1. Are blackout lights and markers turned on while operating tactical vehicles during limited visibility? (FM 21-306, page 56)
2. Are ground guides used when traveling cross country during periods of limited visibility (if the training situation permits)? (FM 21-306, page 55)
3. Are two ground guides (one in front and one in back) used while backing tracked vehicles? (FM 21-306, page 20)
4. Are ground guides used when moving vehicles in bivouac and maintenance areas? (FM 21-306, page 19)
5. Are drivers required to dismount and walk around their vehicles before moving the vehicles to ensure that the area is clear of personnel? (FM 21-306, page 19)
6. Are ground guides and perimeter guards equipped with flashlights with red lenses to signal vehicle operators during period of limited visibility/darkness? (FM 21-306, page 60)
7. Do vehicle operators immediately stop their vehicles when the ground guide's instructions are unclear, or the driver loses sight of the ground guide? (FM 21-306, page 60)
8. Do vehicle drivers maintain 10 meters between the vehicles and ground guides? (FM 21-306, page 19)
9. Are personnel prohibited from sleeping in vehicles while the engine is running? (FM 21-306, page 22y, AR 385-55)
10. Are safe sleeping areas carefully selected; i.e., safe distances from known vehicle travel routes and/or potential avenues of approach? (FM 21-306, page 22)
11. Are vehicle dismount points clearly marked and vehicle guiding procedures strictly enforced at all bivouac areas? (FM 21-306, page 22)
12. Are the following procedures employed by units when crossing paved roads with military vehicles?
 - a. Are road guards and flashing lights posted 100 meters on each side of the crossing to stop highway traffic?
 - b. Are road guards provided and required to wear reflective vests and use baton flashlights (white or amber)?
 - c. All AMV/ACV crossings should be "administrative." Service lights will be on during periods of limited visibility.

d. One ground guide, located at the crossing site, will direct each vehicle across by hand signals, not by physically walking in front of each vehicle.

e. Crossing units will clear paved roads of mud and dirt after the crossing is completed.

f. Traffic accidents at tank crossing sites will remain undisturbed until the arrival of the Military Police unless an imminent hazard exists (refer to Accident Investigation and Reporting, this Chapter).

13. Bridges and Ditches.

a. Do units conduct reconnaissance of all training areas and all proposed march routes? (FM 21-305, page 22-1; FM 21-306, page 38)

b. Do units inform drivers of bridge locations and their hazards; i.e., narrower than the range roads and the potential of vehicles driving off the edges? (FM 21-306, page 63)

c. During night/limited visibility are road guards, with flashlights, posted at critical bridge locations to warn vehicle operators of the bridge, and to guide vehicles over the bridge? (FM 21-306, pages 54 thru 61)

d. Are vehicle operators advised of driving conditions and precautions; i.e., dust distances, speed limits, mud, etc? (FM 21-306, pages 38 thru 61)

CONVOYS

1. Are vehicle basic issue items, pioneer tools, highway warning devices, and fire extinguisher present on every wheeled convoy vehicle? (AR 385-55, para 2-16, AR 55-29, para 6e)
2. Do tactical vehicle drivers have a valid current SF 46? (AR 600-55, para 2a, AR 55-29, para 6d)
3. Do drivers perform before-, during-, and after-operation preventive maintenance? (FM 21-305, page 2-1; FM 21-306, page 6)
4. Are convoy drivers provided 8 hours of rest for each 10 hours of driving a tactical vehicle within a 24-hour time period? (AR 385-55, para 2-7; AR 55-29, para 6c; FM 21-305, page 9-5)
5. Do convoy commanders brief all drivers/assistant drivers/senior occupants prior to the march on hazardous areas or conditions to be encountered; i.e., safe following distances, proper speed, route, rest periods, signals, etc? (AR 55-29, para 4d(2); FM 21-305, page 24-1)
6. Are drivers of bulk fuel transporters instructed on emergency procedures for fuel leaks? (FM 21-306, page 16-4)
7. Are radio whip antennas tied down to not less than 7 feet from the ground with antenna tips covered with protective ball when operated on paved roads?
8. Are service drive lights used at all times on paved public roads (blackout drive prohibited)? (AR 55-29, para 7a)
9. Have drivers been trained to drive in adverse weather (ice, snow, fog, rain) and difficult terrain? (FM 21-305, Section 1; FM 55-30, Appendixes C and D)
10. When transporting personnel, do drivers:
 - a. Walk to rear of the vehicle before starting to secure the tailgate and safety strap, and ensure all passengers are seated? (AR 385-55, para 2-17; FM 21-305, page 21-1; FM 55-30, page 10-8)
 - b. Adjust the tarpaulin to ensure proper ventilation; i.e., in adverse weather, lash down tarpaulin and front curtain; in good weather, roll tarpaulin and secure at bars top? (FM 21-305, page 21-1)
 - c. Secure baggage/loads safely and not in the way of passengers? (FM 21-305, page 21-1)
 - d. Prohibit personnel from riding on outside of wheeled or tracked vehicles? (AR 385-55, para 2-17)
 - e. Ensure all occupants use restraint systems when available? (AR 385-55, para 2-16)

11. Are rotating or flashing amber lights and convoy flags used on the first and last vehicles in the convoy? (AR 385-55, para 2-16; FM 21-305, page 24-5)
12. Are ground guides utilized when backing vehicles 2½ ton and larger? (AR 385-55, para 2-17; FM 55-30, page 9-21)
13. Are vehicles used to transport hazardous materials/dangerous cargo; i.e. ammunition, gasoline, and flammable liquids, etc:
 - a. Appropriately placarded and loaded to meet hazard classification and compatibility requirements? (FM 55-30, Chapter 12)
 - b. Inspected using Motor Vehicle Inspection, DA Form 626? (FM 55-30, page 10-9)
 - c. Equipped with two operational fire extinguishers (15-lb carbon dioxide or two 5-pound purple "K")?
14. Do drivers know the meaning of traffic control signs, signals, devices, and markings used by civilian/military police? (FM 55-30, page 9-17)
15. When loading cargo, do personnel: (FM 55-30, page 10-7)
 - a. Place heavy items on bottom, lighter ones on top?
 - b. Distribute items evenly over the bed?
 - c. Pack cargo so that it will not shift?
 - d. Block and brace with lumber or other material to keep load from shifting?
 - e. Ensure the load does not obscure vision?
16. Are ammunition and POL cargos transported separately? (FM 55-30, page 10-8)
17. Are hazardous cargo drivers issued a copy of Special Instructions for Motor Vehicle Drivers, DD Form 836? (FM 55-30, page 10-11)
18. Do drivers reduce speed during conditions of reduced visibility and adverse weather conditions? (FM 21-305; FM 21-306)
19. Do drivers keep proper distances between vehicles? (FM 21-305; FM 21-306, page 17)
20. Are vehicles marked in accordance with FM 55-312?
21. Is the rear vehicle 2½ tons or larger and not carrying passengers?
22. Do all drivers have strip maps?
23. Are convoy speeds and catchup speeds briefed?

TRACKED VEHICLES

1. Are riders prohibited from riding on the outside of tracks? (FM 21-306, page 21)
2. Is smoking prohibited in or near a tracked vehicle? (FM 21-306, page 21)
3. Do personnel always wear protective headgear when riding in tracks? (FM 21-306, page 21)
4. Do drivers warn the crew when the track is about to cross a ditch, climb an obstacle, or take any action that might cause crewmembers to be caught off balance? (FM 21-306, page 21)
5. Do track personnel test hatch covers by checking them to make sure they are locked in position? (FM 21-306, page 22)
6. Do drivers check the driver's escape hatch to make sure it works, and that it is properly sealed and locked? (FM 21-306, page 23)
7. Do crewmembers comply with the following emergency procedures? (FM 21-306, page 22)
 - a. When tracked vehicles get out of control and overturn, do personnel stay in the vehicle while it is still moving?
 - b. When the vehicle stops moving, do personnel get out as fast as possible, because spilled fuel and oil may catch on fire?
 - c. In such an emergency, do drivers immediately shut off the engine and turn off the master switch to minimize the fire hazard?
 - d. Are fire drills practiced?
8. Is the vehicle's intercommunication system checked periodically to ensure it is working properly? (FM 21-306, page 22)
9. For night driving, do drivers: (FM 21-306, pages 54, 55, 56, 58, and 60)
 - a. Keep on course by using points in the skyline, glow of lights against the sky, the stars, important terrain features, and good judgment?
 - b. Adapt to darkness by waiting 30 minutes in total darkness before driving?
 - c. Keep distance between vehicles by the number of light spots in the tail lights of the track ahead?
 - d. Know how to operate the infrared periscope and not look into infrared headlights?

- e. Know how to operate, maintain, and install night vision devices?
 - f. Are drivers aware of limitations of the night vision devices?
10. Do drivers know that "dust distances" must be sufficient to allow the trailing vehicle driver to see the vehicle ahead and to safely stop, if needed? (FM 21-306, page 61)
11. In the event of an injury, do crewmen know how:
- a. To evacuate wounded from the vehicle?
 - b. To give first aid?
 - c. To call for MEDEVAC/or notify range control and/or higher headquarters to report the accident and request medical aid?
 - d. To preserve the accident site?

VEHICLE SWIMMING/FORDING OPERATIONS

1. Before crossing lakes or wide rivers, do commanders ensure that:

- a. An onsite physical reconnaissance has been conducted to determine safe water entrances, exits, stream bed conditions, depths, and stream currents?
- b. A rescue boat with two qualified lifeguards are in the water, standing by?
- c. Rescue boats are equipped with life ring, rope (3/8 inch or 1/2 inch), and boat hook?
- d. The rescue boat is positioned downstream from the crossing site?
- e. Entrances, lanes, and exits are marked with flags, engineer tape, poles, or luminous markers?
- f. During limited visibility crossings, is emergency lighting (tank spotlight, vehicle headlights) beamed on the water surface?
- g. An assembly area has been selected to check equipment and conduct precrossing checks?
- h. A qualified crossing control officer has been designated?
- i. All personnel are briefed on emergency evacuation procedures?
- j. All drivers and crewmembers wear type 3 or type 5 (vests) Personal Flotation Devices (PFD) during vehicle swimming operations?
- k. No personnel in the vehicle have on load-bearing equipment during the swimming operation?
- l. All vehicles are predipped not more than 72 hours before the crossing exercise? (FM 71-1 and appropriate TM)

2. Before entering the water, do drivers/track commanders (TCs): (FM 21-306)

- a. Check hull drain plugs?
- b. Select a spot that is firm and free of rocks, stumps, and deep drops?
- c. Enter head-on in low range?
- d. Raise the front by accelerating?
- e. Ensure all personnel are wearing Coast Guard approved life jackets (type 3 or type 5 vests)?

3. While in the water, does the driver: (FM 21-306)
 - a. Shift to low range?
 - b. Use pivot steer levers to steer?
 - c. Head straight across slow streams, head diagonally across swift current streams downstream?
 - d. Avoid obstacles?
 - e. If vehicle stalls and is not sinking, does the crew:
 - (1) Climb out of the vehicle?
 - (2) Stay on the top with life preservers on?
 - (3) Await rescue (and not attempt to swim to shore)?
 - f. If the vehicle starts to sink, does the crew immediately evacuate?
4. When exiting stream, does the driver/TC: (FM 21-306)
 - a. Exit on a clear bank, free of obstacles/mud?
 - b. Hit the bank slow and easy and in low range?
 - c. Use pivot steer until clear?
 - d. Climb the bank in low range?

RANGE SAFETY
(AR 385-62, AR 385-63, and AR 385-64)

1. Has an officer in charge (OIC) been designated for each unit using a range training facility to be responsible for the safe conduct of training?
2. Has a range safety officer been appointed to assist the OIC during live firing?
3. Have the range OIC and safety officer received a range safety briefing and certification from range control?
4. Are range safety officers assigned no additional duties or responsibilities other than supervision of weapons firing?
5. Are the designated safety officers thoroughly knowledgeable of the weapon system being fired and the safety requirements associated with it?
6. Artillery and mortar firing:
 - a. Is an individual designated to perform every action connected with crew/drill firing?
 - b. Does a separate individual in the supervisory chain of command ensure the safety procedures are performed properly?
7. Are artillery safety officers/NCOs certified on the weapons being fired?
8. Before "occupying" any range, does the OIC ensure that:
 - a. A current copy of the technical manual (TM) for the weapon(s) being fired is on hand?
 - b. Radio (FM band) and telephone communications have been established with range control?
 - c. All personnel on the range are briefed on MEDEVAC procedures, cease fire procedures, duds, prohibited downrange areas, adjoining ranges and facilities?
 - d. All vehicle (tracked and wheeled) operators are trained to properly operate radios and call for help in the event of emergencies; i.e., range control, DUSTOFF, exercise headquarters, etc?
 - e. Medical personnel with vehicle and equipment; i.e., aid bag, litter, etc., are present and briefed as to the best route to the nearest hospital?
 - f. A red range flag (day) or red blinking light (night) is attached at the top of the range flagpole, and (night) a red light hung on left and right range limit marker?
 - g. Emergency telephone numbers/MEDEVAC card is in vehicles?

9. While using/firing any range does the OIC ensure that:
- a. The OIC/safety officer is present and has been briefed?
 - b. Permission to fire has been received from range control?
 - c. Radio communications are maintained at all times and checked hourly with range control?
 - d. No personnel are allowed forward of the firing line?
 - e. Required safety measures are observed and effective firing control is maintained?
 - f. Personnel are using proper hearing protection and wearing helmets?
 - g. A cease fire is ordered when:
 - (1) Communication with range control is lost?
 - (2) A weapon/ammunition malfunction occurs?
 - (3) A safety violation, accident, or incident occurs?
 - (4) A fire is started?
 - (5) Rounds land or detonate, or are suspected of landing or detonating, outside impact area/safety limits?
 - (6) When range control directs a cease fire?
 - h. Tanks, Army personnel carriers (APCs), and other vehicles display red flags when mounted weapon systems are being loaded or fired?
 - i. No ammunition is unloaded on wet firing line?
 - j. There is no smoking on the firing line or within 50 feet of ammunition?
 - k. Ammunition is handled, stored, and guarded in accordance with TM 9-1300-206?
10. Armor/Mech checks:
- a. Is all weapon firing contained within the range fan?
 - b. Do all vehicles not on the firing line have weapons elevated and pointed downrange?
 - c. Are all weapons properly cleared by designated safety personnel before leaving the firing line?
11. Field artillery checks:
- a. Do howitzers have safety tape placed properly?

- b. Is the safety fan shown on firing charts?
- c. Does the safety officer have a copy of the safety data?
- 12. Small arms checks:
 - a. Are left-handed firers using brass deflectors on M16s?
 - b. Are weapons cleared properly at the conclusion of firing?
- 13. After using any range facility, does the OIC and safety officer ensure that:
 - a. Weapons are cleared of ammunition?
 - b. Ammunition/explosives are removed from individuals?
 - c. Ammunition, simulators, explosives, and pyrotechnics are not abandoned on the range?
 - d. Inspection and clearance are requested and received from range control before departing the range?
 - e. The inspection checklist for ranges is completed?
- 14. Ammunition care and handling:
 - a. Is smoking prohibited on firing ranges, in firing positions, and within 50 feet of any ammunition or fuel storage area?
 - b. Do ammunition-laden vehicles, other than those carrying small arms, display explosives signs (8-inch-high red letters on white background) on the front, rear, and one on each side?
 - c. When a truck is unloaded, are signs removed?
 - d. When storing ammunition on the ranges, do units:
 - (1) Place ammunition on dunnage pallets 6-inches high?
 - (2) Cover the ammunition with a tarp?
 - (3) Store ammunition within compatible groups?
 - (4) Maintain quantity-distance in accordance with TM 9-1300-206, and store ammunition 1,300 feet from bivouac areas, command posts, and similar troop locations?
 - (5) Post no smoking signs?
 - (6) Guard ammunition?

(7) Maintain lot segregation?

(8) Have two operational fire extinguishers (15-pound carbon dioxide)?

e. In the event of misfires, jammed rounds, and erratic firing is Table 6-1 used to identify local corrective action and reporting requirements?

f. Is defective ammunition:

(1) Properly identified and replaced in the original container with felt pad to protect primer?

(2) Placed in misfire pits?

(3) Turned into the ammunition supply point (ASP) upon completion of firing?

g. Duds and abandoned ammunition:

(1) Are all personnel briefed not to pick up duds or handle projectiles, flares, or ammunition found on the range?

(2) If a dud is found, is the site marked by a stake/post extending 4 feet above ground, and the explosive ordnance detachment (EOD) or range control notified?

h. Are personnel trained in the procedures and safe use of blank ammunition and simulators? (TM 9-1300-206, para 2-1)

15. Does the unit restrict the use of pyrotechnics/tracer ammunition during Category III, IV, and V forest fire danger ratings?

16. Medical evacuation:

a. Are a qualified aidman, litter, first aid kit, and vehicle (wheeled or tracked) present on the range when firing is being conducted? Does the aidman know the nearest helicopter landing zone and the quickest route to the emergency room?

b. If the aid vehicle leaves the range, is a cease fire called until a replacement is provided?

c. Is the aidman prohibited from performing duties other than medical?

d. Do all participating personnel know the following MEDEVAC procedures in the event of an injury and/or other emergency?

(1) Contact range control (FM _____, UHF _____, telephone _____).

(2) If unit is unable to contact range control, contact DUSTOFF, FM _____, via extensions _____. Advise them range control was not notified.

(3) Request for emergency air evacuation will include:

- (a) Requesting organization.
- (b) Location of nearest pickup site.
- (c) Number of casualties, type of injuries, and severity of injuries.
- (d) Weather at pickup site.
- (e) Obstacles to landing at pickup site.
- (f) Pickup area markings.

17. Ensure the requirements of AR 385-63, Chapter 2, are complied with.

LASER RANGEFINDERS, DESIGNATORS, AND ILLUMINATORS

1. Has a laser range safety officer (LRSO) been designated and is he properly indoctrinated? (TB Med 279, para 8B)
2. Does the LRSO ensure that: (TB Med 279, para 10c)
 - a. All participating personnel are instructed in safety precautions as they relate to lasers?
 - b. Laser safety SOPs are established and implemented for each laser device being used?
 - c. Laser buffer zones are established around the designated target area?
 - d. Adequate surveillance of the target area is established to prevent unauthorized personnel from entering that area?
 - e. Any case of suspected eye exposure to laser radiation is reported to the installation surgeon and installation safety office?
3. Does the laser operator: (TB Med 279, para 10d)
 - a. Fire lasers only at designated targets and never fire at specular surfaces, such as glass, mirrors, windows?
 - b. Ensure that lasers are never aimed at other personnel and that personnel are prohibited from looking into the laser beam?
4. Do personnel who must be in the target area wear laser protective eye wear designed for the specific type of laser being fired? (TB Med 279, para 10e)
5. Has the range been cleared of exposed flat glass to prevent hazardous reflections? (TG 083B, part 5)
6. Are optical devices, such as binoculars, that are used to observe the target during laser operations equipped with the appropriate laser safety filters? (TB Med 279, para 10j; TG 083B, para 17)
7. Are radio communications with personnel downrange in the target area maintained during laser operations to ensure that eye protection is being worn? (TB Med 279, para 10k)
8. Are laser operations immediately terminated when communications are broken? (TB Med 279, para 10c)
9. Are the use of laser devices, other than eye-safe lasers, prohibited in force on force tactical exercises, unless all personnel are equipped with appropriate eye protection? (TB Med 279, para 10n(3))
10. Do commanders know how and where to procure laser safety goggles? (TG 083B, Appendix A)
11. Are laser hazard boundaries properly marked with appropriate warning signs? (AR 385-63, paras 19-6 and 19-7)

HEAT CASUALTY PREVENTION

1. To ensure the safety and health of personnel, do commanders:

a. Monitor the current heat alert category during conduct of strenuous physical activity?

b. Ensure that subordinate commanders and leaders are notified of changes in the heat alert category?

c. Train supervisory personnel in the heat casualty prevention procedures as outlined below?

<u>HEAT ALERT CATEGORY</u>	<u>WBGT INDEX</u> (Degrees F)	<u>NON-ACCLIMATIZED PERSONNEL</u>	<u>ACCLIMATIZED PERSONNEL</u>
I	82-84.9	Use discretion in the conduct of intense physical activity. Limit intensity of work and exposure to sun half the scheduled time. Reduce pace. Provide constant supervision. Encourage periodic intake of drinking water.	Normal duties.
II	85-87.9	Strenuous exercise such as PT, close order drill, prolonged marching and parades should be cancelled. Outdoor classes should be moved into the shade or cancelled. A 10 to 20-minute rest period should be alternated every hour.	Same as CAT I NON-ACCLIMATIZED PERSONNEL.
III	88-89.9	All nonessential activities and duty should be cancelled. A 20-minute rest period should be taken every hour.	Same as CAT II for NON-ACCLIMATIZED PERSONNEL.
IV	90 and above	Monitor personnel very closely.	Same as CAT II for ACCLIMATIZED PERSONNEL.

2. Does the commander allow approximately 14 days of progressive physical acclimatization for newly assigned troops?

3. Are personnel instructed in the following precautions to prevent heat-related injuries?

a. Prevention of sunburn:

- (1) Wear loose-fitting clothing.
- (2) Use sun protection 15 on exposed skin; i.e., face, hands, feet.
- (3) Avoid extended periods of unprotected exposure to the sun.

b. Prevention of heat cramp, heat exhaustion, and heat stroke:

- (1) Proper acclimatization (14 days).
- (2) Adequate water intake (1 quart of water per hour during the hot hours of the day).
- (3) Ensure continual surveillance of all personnel to detect early symptoms of heat illness.

4. Do personnel know how to recognize symptoms of heat illness, and how to administer emergency first aid treatment? (TB Med 507, para 18-20)

a. Heat cramps:

- (1) Symptoms. Painful cramps of the muscles of the extremities and abdominal wall.
- (2) Treatment. Move patient to cool, shaded area. Replace salt lost from the body with saline solution (0.1 percent) by mouth, upon recommendation of medical authority.

b. Heat exhaustion:

- (1) Symptoms.
 - (a) Profuse sweating.
 - (b) Headache.
 - (c) Tingling sensations in the extremities.
 - (d) Pallor.
 - (e) Nausea and vomiting.
 - (f) Weakness.
 - (g) Rapid pulse.

(2) Treatment.

- (a) Remove victim to cool place.
- (b) Elevate victim's legs.

c. Heatstroke: (This is a medical emergency and can be fatal if not treated promptly and correctly.)

(1) Symptoms.

- (a) Stoppage of sweating.
- (b) Skin flushed, hot, and dry.
- (c) Headache.
- (d) Fast pulse.
- (e) Nausea.
- (f) Vomiting.
- (g) Dizziness.
- (h) Mental confusion.
- (i) Unconsciousness.

(2) Treatment. Cool casualty continuously by--

- (a) Removing outer garments and/or protective clothing.
- (b) Immersing casualty's trunk in cool water, being careful not to overcool, thus causing temperature to go to other extreme.
- (c) Massaging the patient while immersed in cool water to help skin (capillaries) transport cooling effect.
- (d) Pouring cool water over casualty and fanning him to permit the cooling effect of evaporation. Place under a cool shower, if possible.
- (e) Keeping casualty in shade.
- (f) Using icebags if available at the sides of the neck and underarms during transportation to medical treatment facility to aid and maintain cooling effect.
- (g) Transporting to medical treatment facility as soon as possible.
- (h) Medical personnel can determine whether salt treatment is appropriate in the interim.

COLD WEATHER INJURY PREVENTION

1. To prevent cold weather injuries, does the commander ensure that: (TB Med 81, para 5)

- a. Safety is included in planning?
- b. Suitable cold weather gear is available and serviceable for all troops?
- c. All equipment is ready; i.e., weapons winterized, tent stoves checked?
- d. All supervisors are trained in cold weather responsibilities?
- e. All troops are trained in cold injury prevention procedures, proper cold weather operational procedures, and carbon monoxide hazards?
- f. Monitor current and forecast weather for changes.

2. Are participating personnel trained to recognize the early warning signs of cold weather injuries and how to perform emergency first aid treatment? (TB Med 81, paras 7 and 8)

a. Early warning signs:

- (1) Tingling, stinging, or dull sensation of exposed part followed by numbness.
- (2) Skin may appear red and then pale or waxy white.

b. Common injuries:

- (1) Frostbite - condition results when skin temperature falls below freezing.
- (2) Immersion foot - condition occurs when feet are wet for 12 hours or more in temperatures below 50 degrees Fahrenheit and when feet get little or no exercise.
- (3) Trenchfoot - condition caused by prolonged standing in water or by having wet feet for hours while temperature is just above freezing.
- (4) Hypothermia - condition caused by exposure to cold, and aggravated by wetness, wind, and exhaustion.

c. Treatment:

- (1) Remove the individual from the cold.
- (2) Remove constricting items of clothing (boots, socks, or gloves) from injury site. Protect with nonconstricting clothing/blankets.

- (3) Do not apply medications, salves, or ointments.
- (4) Do not allow patient to smoke or drink alcohol.
- (5) Give hot liquids.
- (6) If lower extremity is involved, treat as litter patient with injured part level or slightly elevated.
- (7) Obtain medical help.

3. Carbon Monoxide Overexposure.

a. Are personnel trained in the hazards of carbon monoxide? (TB Med 269, para 7d)

b. Do personnel know that the most common source of carbon monoxide is the exhaust from internal combustion engines and field heaters in confined spaces without adequate ventilation; i.e., tanks, APCs, communication vans, and other enclosed areas where portable internal combustion engines and heaters are used? (TB Med 269, para 1c)

c. Do commanders ensure that: (AR 385-55, para 2-14)

(1) Personnel do not sleep in, on, or near fuel-powered vehicles while the engine (or heater) is running?

(2) Adequate ventilation is provided when engines, generators, battery chargers, and space heaters are operated?

d. Are personnel trained to recognize the warning signs and symptoms of carbon monoxide overexposure and how to perform emergency first aid treatment? (TB Med 81, paras 4 and 6)

(1) Signs and symptoms. Throbbing temporal headache, generalized weakness, dizziness, dimness of vision, nausea, vomiting, muscular incoordination and collapse, increased pulse/respiration, unconsciousness.

(2) Treatment.

(a) Remove individual from contaminated environment to fresh air.

(b) If respirations are weak/absent, administer artificial respiration and seek medical help.

4. Field Heaters: (TM 10-4500-200-13)

a. Are portable radiant-type space/tent heaters (pot belly and yukon) operated in accordance with the following?

(1) Each operator is thoroughly trained for the specific heater.

(2) Stovepipe opening flaps of the tent must be securely tied back so that flaps do not come in contact with the hot stovepipe.

(3) A sufficient number of stovepipe sections are used so that the top section is above the highest point of the tent. Six pipe sections are usually adequate.

(4) When using solid fuel (such as wood or coal) with the heater, a spark arrester must be installed on the top stovepipe section.

(5) When using liquid fuels, a draft diverter must be installed on the top section and secured with guy ropes. (Guy ropes are not used with solid fuel.)

(6) Stovepipe sections must be straight up and not allowed to come into contact with any part of the tent. Tents must be inspected to ensure that they are not sagging, and that canvas parts are not coming into contact with the stovepipe stacks.

(7) The area surrounding the heater inside the tent must be cleared of combustibles (including dry grass/pine needles/etc.) for a distance of 4 feet.

(8) Fuel cans, lines, and carburetors must be checked daily for leaks, particularly after changing fuel cans. No heater will be operated when fuel leaks are present.

(9) When heaters are operating, a Carbon Dioxide (CO²) fire extinguisher must be immediately available in the tent.

(10) Tent heaters must never be operated at full capacity even in the extreme cold. Overheating of the stovepipes may ignite tentage.

(11) Tents with wooden or canvas floors must have sandboxes on which the heaters are to be placed - at least 3½ inches of sand/dirt must be used for this purpose.

(12) Adequate ventilation must be provided where space heaters are operating.

(13) The fuel supply can for the heater must be located outside the tent and as far from the tent as the fuel hose allows.

(14) While some tent heaters are designed to use several types of liquid fuel. Gasoline will never be used as a heating fuel.

b. Are immersion heaters operated in accordance with TM 5-4540-202-12&P, and TM 10-4500-200-13, and only by properly trained personnel?

c. When operating Herman Nelson heaters and/or similar heaters:

- (1) Is the heater placed as far from structures as the length of the heating ducts will allow?
- (2) Is a 20-foot-long steel chain or cable attached to the heater to facilitate removal in case of fire?
- (3) Is a 5-foot-high sandbag buffer maintained on the front and two sides of the heater?
- (4) Are fire guards posted when Herman Nelson heaters and/or radiant-type tent heaters are operated?

COMMUNICATIONS

1. Antenna. (TB Sig 291, paras 1b and 3b)

a. Are antenna structures located a distance from overhead electrical power lines equal to twice the height of the structures?

b. Before erecting any type of antenna (structure, vehicular, or shelter), is a thorough inspection made of the immediate overhead area to prevent accidental contact with power lines?

c. Do all structures have adequate lightning arrester protection?

d. Do personnel know the following basic rescue rules if an individual comes in contact with an electrified structure?

(1) Never attempt to grasp the individual and pull him free.

(2) Try to free individual by using wooden pole, rope, or some other insulated object.

(3) Apply artificial respiration immediately.

(4) Notify MEDEVAC.

e. Are vehicular antennas properly tied down when operating around or near power lines and/or aircraft?

2. Lightning Protection.

a. Are fixed and tactical communication equipment grounded in accordance with grounding instructions contained in applicable TMs?

b. Are the operation of tactical radios during an electrical storm held to the absolute minimum?

3. Field Communication Wire, Cables, and Items of a Similar Nature. (TB Sig 291, para 1b)

a. Are communication wires, other lightweight wires, cables, or materials of a similar nature prohibited in designated helicopter landing areas unless it is buried?

b. Are communication wires, other lightweight wires, cable, or materials of a similar nature installed by units recovered upon completion of training and prior to leaving the field training areas/ranges?

c. Do personnel ensure that communication wires, etc., are NOT installed over high-tension lines?

4. Ground. (TC 11-6)

a. Are signal shelters grounded with a 5-foot ground rod? Ground rods must be all the way in the ground and bolted with tight fitting clamps and strap cable.

b. Are signal shelters separated with enough distance so that a person cannot touch both shelters at the same time? If operations call for two or more shelters to be located close together, proper grounding/bonding must be present.

c. Are trailer-mounted generators grounded with a 5-foot ground rod and generator properly bonded to the ground rod?

PETROLEUM, OIL, AND LUBRICANT OPERATIONS

1. Do personnel know that a flammable liquid has a flash point below 100 - degrees Fahrenheit, and a combustible liquid has a flash point at or above 100 degrees Fahrenheit? (FM 10-69, page 10-1)
2. Do personnel know, if vapors from petroleum products are mixed with the proper amounts of air, vapors form explosive mixtures and ignite at once when in contact with a spark or flame? (FM 10-69, page 10-1)
3. Do personnel know there is an explosion if the explosive mixture ignites in a closed space? (FM 10-69, page 10-1)
4. Do personnel know that all fires connected with flammable products result from ignition of vapors? (FM 10-69, page 10-2)
5. Do personnel know there is little danger in a closed container that holds a flammable product, unless it is exposed to heat? The hazard arises from the ignition of vapors produced in transfers, use, spills, or leaks. (FM 10-69, page 10-2)
6. To prevent petroleum fires, do personnel:
 - a. Control ignition sources by: (FM 10-69, page 111, Table 1)
 - (1) Not smoking and having no matches or cigarette lighters within 50 feet of refueling vehicle points?
 - (2) Grounding and bonding vehicles?
 - (3) Prohibiting the use of open flames, heating stoves, and electrical tools in refueling/storage areas?
 - (4) Placing flame and spark arresters on all equipment?
 - (5) Never wearing nylon clothing?
 - b. Control vapor formation by: (FM 10-69, page 10-8, Table 10-2)
 - (1) Avoiding spills and cleaning up spills?
 - (2) Using drip pans and catch basins?
 - (3) Inspecting, frequently, for leaks and cracks in fuel, oil, and exhaust lines?
 - (4) Inspecting hoses, hose reels, and nozzles for bulges, tears, cuts, etc?
 - (5) Keeping containers of flammable liquids closed?
 - (6) Prohibiting the use of gasoline for cleaning? (Use only authorized solvents.)

7. Do personnel know the greatest common causes of fires are smoking and matches? (FM 10-69, page 10-2)

8. Are no smoking within 50 feet signs posted at all petroleum handling, storing, and displaying areas? (FM 10-69, page 10-2)

9. Do personnel carefully control sources of friction sparks, such as tools and grinding wheels, to prevent igniting combustibles (rubbish, paper, oily rags)? (FM 10-69, page 10-3)

10. Are personnel instructed that portable lights, power tools, and extension cords become a fire hazard in two ways when overloaded? (FM 10-69, page 10-3)

a. The heat it generates.

b. The short circuits which result from worn insulation.

11. Are personnel instructed in the following causes of static electricity? (FM 10-69, page 10-3)

a. Friction.

b. Flow of flammable liquids.

c. Flow of steam, air, or gas through pipe, hose, or tank opening.

d. Movement of vehicles with nonconductive tires over nonconductive road surfaces.

12. Do personnel bond and ground tank vehicles, loading or unloading, to permit the safe transfer of any static charge that builds up within the tank? (FM 10-69, page 10-4)

13. Are storage tanks/pods grounded? (AR 385-55, para 2-13)

14. Are AMVs prohibited from operation unless entirely free of fuel leaks? (AR 385-55, para 2-13a)

15. When refueling: (AR 385-55, para 2-13)

a. Does one crewman man a portable fire extinguisher having a 10B:C rating or greater?

b. Is the engine shut off and master switch in off position?

c. Is smoking prohibited and are signs posted?

d. Are vehicles grounded and bonded?

e. Is correct fuel placed in vehicles?

f. When refueling, do personnel wear safety goggles or eye protection?

16. Before welding and cutting, are storage tanks, tank cars, tank vehicles, drums, and vehicle fuel tanks thoroughly clean and free of vapor, and certified by the Fire Department?
17. Are lock/latch open devices on automatic petroleum dispensing nozzles prohibited? (FM 10-69, page 10-4)
18. Are portable CO² fire extinguishers placed at refueling/storage points? (FM 10-69, page 10-11)
19. Is aircraft refueling accomplished in accordance with FM 10-68?
20. Are personnel familiar with the health hazards inherent in petroleum products as listed below? (FM 10-69, pages 10-4 thru 10-7)
 - a. Dusts: Solid particles resulting from grinding, scraping, buffing, riveting, rivet cutting, drilling, sanding, or sandblasting and/or from evaporating/burning of liquids and residues that contain finely divided substances that injure organs/tissues when inhaled in lungs, or ingested in digestive system.
 - b. Gases and vapors: A gas exists as a gas at ordinary temperature and pressure. A vapor is a gas-like form of a substance that is ordinarily a solid or liquid. Poisons, asphyxiants, anesthetics, and irritant gases and vapors may injure or destroy the visual organs, the blood-forming system, tissues, or bones; keep the lungs from getting oxygen, have a narcotic effect, and/or inflame the lungs and respiratory track.
 - c. Flammable liquids: Flammable liquid products are dangerous inside your mouth, eyes, and body. They also cause skin contamination. Example: gasoline, jet fuel, solvents, paints, lacquers, varnishes.
 - d. Fumes and mists: A solid substance that can turn directly into a vapor without first becoming a liquid and can later return to the same solid state.
 - e. Oxygen deficiency: The air lacks the normal amount of oxygen due to flammable vapors.
21. Is loading and unloading of tank cars/trucks accomplished in accordance with appropriate regulations?
22. Do personnel know first aid procedures for petroleum-related injuries? (FM 10-69, page 10-6)
23. Are petroleum samples taken by an approved sampler only - not by a hose and mouth suction? (FM 10-69, page 11-14)
24. Do refueling operators wear gloves, safety goggles, and other PPCE to prevent skin contamination?
25. Are showers and eyewash facilities available to personnel?
26. Are personnel informed to remove POL-soaked clothes only under showers to prevent ignition by static electricity

RAIL LOADING/UNLOADING

1. Does the ramp OIC ensure all vehicles are inspected; i.e., brakes, lights, turn signals, and fire extinguishers, before loading? (FM 55-30, pages 10-9 thru 10-12)

2. Are windows and windshields covered with cardboard to prevent damage from rocks, etc., during deployment/redeployment? (Public Law 91-596)

3. Have loading teams been instructed in rail loading/unloading procedures?

a. Before loading the rail car: (TM 55-2220-058-14, para 2-3)

(1) Remove rocks, leaves, or other trash from the rail car channels so the chain anchors will slide freely.

(2) Pull all chains needed for tiedown out of the channels and slide the chain anchors along the bottom of the channel to required locations.

(3) Turn the turnbuckle body until the threaded ends are fully extended.

(4) Lubricate the turnbuckle threads and eyebolts with "Rust Veto" corrosion preventive compound or equivalent.

(5) Lay all turnbuckles to point inboard toward the center of the car and pile for each turnbuckle between the channels.

b. Loading/unloading vehicles: (TM 55-2220-058-14, para 3-2)

(1) Vehicles must be driven by qualified drivers only.

(2) Vehicles must not be mounted or dismounted while in motion.

(3) Personnel must not ride on vehicles while vehicles are being loaded/unloaded.

(4) A ground guide must be used during all loading and unloading operations.

(5) The ground guide will maintain one rail car length from the vehicle being ground guided, and will NEVER walk backwards while ground guiding.

(6) Tank turret guns must be in the aft travel position, and lowered into the saddle block. Turret rotation and gun-elevating controls must be wire tied to prevent movement.

(7) Ensure all vehicle antennas are removed or tied down, as appropriate.

c. Tiedowns: (TM 55-2220-058-14, paras 2-4 and 3-1)

(1) Inspect each chain assembly for apparent breaks, cracks, gouges, open welds, or deformed components. Remove from use any that have defects.

(2) Inspect the connector link that attaches the chain to the anchor fitting. If defects are found, replace the chain and/or fittings.

(3) Compare an eight-link segment next to the turnbuckle end of the chain with an eight-link segment near the hook fitting at the load attachment end of the chain assembly. If the eight-link near hook fitting is $\frac{1}{4}$ inch or longer than the eight-link near the turnbuckle end, the chain has STRETCHED beyond normal limits and should be REPLACED.

(4) If the chain assembly and components are free of apparent damage, attach shackles or rings, as required.

(5) Pull chains as tight as possible by hand before hooking the grab hook. (Chains must not be kinked or twisted.)

(6) Hand tighten turnbuckles, then continue to tighten them with a $1\frac{1}{2}$ -inch open-end wrench or a 15-inch crescent wrench. Tighten front and rear tiedowns at the same time so equal tension on all tiedowns will be maintained.

(7) Tighten turnbuckles until $1/8$ inch of the rubber pads in the compression unit shows between the metal rings.

(8) After tiedowns have been tensioned, lubricate exposed turnbuckle threads and jamnuts.

(9) Secure the load attachment hook end of the chain assembly so it cannot swing free.

(10) Unused chains, shackles, and rings must be secured to the flatcar so they will not become free.

d. Loading teams/rail guards:

(1) Chain binders and rail guards should wear safety shoes.

(2) Personnel will not lie on, under, or between rail cars.

e. Unloading: (TM 55-2220-058-14, para 2-3)

(1) Use lubricant to help loosen jamnuts.

(2) Place chain assemblies in the center of the rail car.

(3) Leave tiedowns, shackles, and rings securely stowed on rail car.

PORT OPERATIONS

Although the Commander, Military Traffic Management Command (MTMC) has overall responsibility for the operations at the port, all personnel should be briefed with regards to their safety while at the port. Does the briefing include the following?

- a. Identification of authorized and unauthorized areas such as:
 - (1) Smoking areas and no smoking rules?
 - (2) Hard hat areas?
- b. Personnel must avoid walking beneath suspended cargo loads.
- c. Complying with MTMC safety rules and policies.
- d. Remaining alert at all times while in the operation areas; i.e., be aware of vehicle or traffic, avoid horseplay or any activity which is distracting or hazardous.

HELICOPTER SLING LOAD OPERATIONS

1. Is sling loading of helicopters accomplished in accordance with FM 55-450-1? (FM 55-450-1, pages 2-2 thru 2-6)
2. Are prior planning and coordination of sling load operations always accomplished between the ground crews and aviation crews involved? (FM 55-450-1, pages 2-2 thru 2-6)
3. Are only properly trained and equipped ground crews used to hook up sling loads? (FM 55-450-1, pages 2-2 thru 2-6)
4. Is a static discharge probe always used by the ground crew before and until the sling load is hooked onto the helicopter? (FM 55-450-1, pages 2-2 thru 2-6)
5. Do helicopter pilots key FM radios (to help discharge static buildup) before sling load operations begin? (FM 55-450-1, pages 2-2 thru 2-6)
6. Are helicopter pilots guided by a ground crew signal person? (FM 55-450-1, pages 2-2 thru 2-6)
7. Do helicopter pilots maintain radio silence during hook up operations? (FM 55-450-1, pages 2-2 thru 2-6)

NATURAL HAZARDS

1. Do all personnel know how to avoid snake bites? (FM 21-11)
 - a. Walk carefully, watch your step, and where you sit.
 - b. Be careful where you place your hands when climbing or when lifting objects from the ground.
 - c. Never tease or pick up a snake. Even bites of nonpoisonous snakes may cause infection requiring medical treatment.
 - d. Avoid sudden motion when placing your hands or feet near an area which may conceal a snake. Beware of shady areas.
2. Are personnel familiar with snake bite treatment? (FM 21-11, para 6-4)
 - a. Try to kill the snake without destroying the head and take it with the patient to the medical treatment facility for identification.
 - b. Place a constricting band snugly above the bite; if swollen, move up.
3. Do all personnel know how to prevent spider bites or scorpion stings?
 - a. Check bedding before using.
 - b. Check clothing, socks, and shoes before wearing. Many a soldier has been stung on the toe as he puts his shoes on in the morning.
 - c. Avoid sleeping or leaving clothes near damp places - dampness appears to attract these creatures.
 - d. If you feel an insect or spider crawling on you, remain still. Sudden movement may cause it to bite or sting.
 - e. Never step in the shade of a bush without visually checking that spot.
 - f. Food crumbs attract insects which in turn attract scorpions, spiders, and centipedes which feed on these insects.
4. Are personnel familiar with how to treat spider bites and scorpion stings?
 - a. Keep patient quiet and send for medical aid.
 - b. The puncture should be cleansed with an application of mild antibacterial agent.
 - c. Cool the area for 10 to 12 inches around the puncture point with ice, if available.

CHAPTER 6
SPORTS AND RECREATION

SPORTS AND RECREATION

1. Does the commander assure proper planning for safety in the unit sports and recreational programs? (DA Pam 385-5)
2. Does the commander insist that all supervisors of sports and recreational activities under their jurisdiction coordinate their procedures with other activities and units? (DA Pam 385-5)
3. Have coaching officials been selected and trained in sports safety? (DA Pam 385-5)
4. Do officials ensure that the playing facilities meet all mandatory requirements? (DA Pam 385-5)
5. Do officials ensure that spectators do not pose a danger to players or themselves as a result of conduct of the play? (DA Pam 385-5)
6. Are officials enforcing safety-related rules without exception and removing individuals involved in unsportsmanlike conduct? (DA Pam 385-5)
7. Do officials take action as necessary to control accident potential during the game? (DA Pam 385-5)
8. Is there an installation safety director to assist the commander by advising on safety matters? (DA Pam 385-5)
9. Is there a morale support officer (MSO) to provide guidelines for the overall program? (DA Pam 385-5)
10. Are the authorized swimming areas supervised during hours of operation? (AR 385-15)
11. Are periodic health examinations given to those participants taking part in more strenuous sports and physical training? (DA Pam 385-5)
12. Do participants go through some type of training program to ensure they are ready for a particular sport? (DA Pam 385-5)
13. Are teams or opponents matched as to their capabilities? (DA Pam 385-5)
14. Do all participants know the rules of the game and have knowledge of the physical skills essential for the safe conduct of the sport? (DA Pam 385-5)
15. Are participants encouraged to develop a personal responsibility for safety and given the opportunity to plan, execute, and evaluate their own conduct? (DA Pam 385-5)
16. Is there a unit safety officer to ensure the success of the program? (DA Pam 385-5)
17. Are participants cautioned on swimming while exhausted, overheated, or immediately after eating? (DA Pam 385-6)

18. Do swimming pools meet the standards of safety and sanitation established by local authorities and any regulations. (DA Pam 385-15)
19. Are the areas selected for sports suitable for their intended use? (DA Pam 385-5)
20. Are periodic inspections conducted of areas selected for recreational use? (DA Pam 385-5)
21. Are facilities and equipment inspected prior to use? (DA Pam 385-5)
22. Are athletic fields flat and smooth, free of rocks, sticks, standing water, broken glass, and other debris? (DA Pam 385-5)
23. Are gymnasium floors free of obstructions? (DA Pam 385-5)
24. Is proper protective equipment worn by those who have a need for it? (DA Pam 385-5)
25. Do participants always use the proper practice equipment to ward off unnecessary cuts, bruises, sprains, and broken bones? (DA Pam 385-5)

CHAPTER 7
PRIVATELY OWNED VEHICLE SAFETY

PRIVATELY OWNED VEHICLES (POV)

1. Does the commander ensure all drivers know the main causes of POV accidents and are trained in prevention measures? (AR 190-5)
2. Does the unit have a POV Accident Prevention Program? (AR 385-55)
3. Does the commander require that, as a condition for continued on-post driving privileges, personnel involved in traffic offenses attend Driver's Improvement Courses? (AR 190-5, AR 385-55)
4. Does the commander ensure the use of seatbelts by Army personnel driving or riding in POVs on and off installation? (AR 190-5, AR 385-55)
5. Does the commander have a procedure for identifying Army personnel who are repeat traffic offenders? (AR 190-5, AR 385-55)
6. Are repeat traffic offenders required to attend remedial training courses? (AR 190-5, AR 385-55)
7. Are driving privileges denied to repeat offenders? (AR 190-5, AR 385-55)
8. Is use of protective equipment while riding motorcycles enforced? (AR 190-5)

CHAPTER 8
FAMILY SAFETY

APPENDIX A

REFERENCES

REFERENCES

1. Public Law 91-596, 91st Congress, S. 2193, 29 Dec 70 (Occupational Safety and Health Act of 1970).
2. Code of Federal Regulations, Number 29, Part 1910, Occupational Safety and Health Standards.
3. AR 55-29 (Military Convoy Operations in CONUS)
4. AR 190-5 (Motor Vehicle Traffic Supervision)
5. AR 385-10 (The Army Safety Program) with all supplements.
6. AR 385-15 (Water Safety)
7. AR 385-30 (Safety Color Code Markings and Signs)
8. AR 385-32 (Protective Clothing and Equipment) with all supplements.
9. AR 385-40 (Accident Reporting and Records) with all supplements.
10. AR 385-55 (Prevention of Motor Vehicle Accidents) with all supplements.
11. AR 385-63 (Range Safety)
12. AR 600-55 (Motor Vehicle Driver - Selection, Testing and Licensing) with all supplements.
13. AR 700-68 (Storage and Handling of Compressed Gases and Gas Cylinders).
14. DA Pam 385-5 (Fundamentals of Army Safety in Army Morale Support Activities)
15. DA Pam 385-6 (Playing it Safe in the Water)
16. DA Pam 733-750 (Maintenance Management Update)
17. FC 42-2 (Maintenance)
18. FC 55-32 (Driver Selection, Training and Supervision in Unit Tactical Fleet Vehicle Operations)
19. FM 10-69 (Petroleum Supply Point Equipment and Operations).
20. FM 21-305 (Manual for the Wheeled Vehicle Driver).
21. FM 21-306 (Manual for the Tracked Combat Vehicle Driver).
22. FM 25-4 (How to Conduct Training Exercises).

23. FM 29-2 (Organizational Maintenance Operations).
24. FM 54-11 (Container Movement and Handling in the Theater of Operations).
25. FM 55-30 (Army Motor Transport Units and Operations).
26. FM 44-450-1 (Army Helicopter External Load Operations).
27. FM 71-1 (Tank and Mech Inf Company Team)
28. TB 43-0142 (Safety Inspection and Testing of Lifting Devices).
29. TB Med 81 (Cold Injury).
30. TB Med 269 (Carbon Monoxide: Symptoms, Etiology, Treatment and Prevention of Overexposure).
31. TB Med 279 (Control of Hazards to Health from Laser Radiation).
32. TB Med 501 (Hearing Conservation).
33. TB Med 502 (Occupational and Environmental Health Respiratory Protection System).
34. TB Med 507 (Prevention, Treatment and Control of Heat Injury).
35. TB Sig 291 (Safety Measures to be Observed when Installing and Using Whip Antennas, Field Type Masts, Towers, Antennas, and Metal Poles that are used with Communication, Radar, and Direction Finder Equipment).
36. TB 385-4 (Safety Maintenance and Electrical Repair)
37. TC 11-6 (Grounding Techniques).
38. TM 5-4540-202-12&P (Operator's and Organizational Maintenance Manual: Heater, Immersion, Liquid Fuel Fired 35,000 BTU Output for Corrugated Cans (Military Model M67) NSN 4540-00-469-6593).
39. TM 9-243 (Use and Care of Hand Tools and Measuring Tools).
40. TM 9-1300-206 (Ammunition and Explosives Standards).
41. TM 9-2320-209-20-3-2 (Maintenance Organizational Level, 2½ Ton).
42. TM 9-2320-242-20-3-2 (Maintenance Organizational Level Truck, Cargo, 1½ Ton).
43. TM 9-2610-200-20 (Organizational Care, Maintenance and Repair of Pneumatic Tires Inner Tubes and Radial Tires).

44. TM 9-6140-200-14 (Operator's Organizational, Direct Support and General Support Maintenance Manual for Lead-Acid Storage Batteries).
45. TM 10-4500-200-13 (Operator, Organizational and Direct Support Maintenance Manual: Heaters, Space and Immersion).
46. TM 55-2220-058-14 (Transportability Guidance Transport of Cargo on the Railway Car, Flat 140-Ton Capacity (NSN 2220-01-058-6377)).
47. TM 55-3810-229-14/N (Crane, Truck-Mounted, Hydraulic, 25-Ton Harnischfeger Model MT-250 (NSN 3810-00-018-2021); Crane, Truck-Mounted, Hydraulic, 35-Ton Harnischfeger Model MT-300 (NSN NA)).
48. Standard First Aid and Personal Safety, American Red Cross, Second Edition 1979.
49. The Preventive Maintenance Monthly, Issue 386, Jan 85, page 20-20.
50. TG 083B, Laser Rangefinder Hazards, 1979, United States Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD 21010.

APPENDIX B

NATIONAL TRAINING CENTER SAFETY GUIDANCE FOR ROTATIONAL UNITS

B-0

NATIONAL TRAINING CENTER SAFETY GUIDANCE FOR ROTATIONAL UNITS

This publication provides safety guidance and administrative safety requirements for units training at the National Training Center (NTC). Although some information relates to specific hazards encountered during desert operations, most of the requirements of this publication are applicable to all field training operations.

Due to the limited formal training time available to units upon arrival at the NTC, it is recommended that soldiers be provided this safety information well before they arrive.

Recommendations for topics to be added, expanded upon, or deleted from this guide should be directed to Commander, National Training Center & Fort Irwin, ATTN: AFZJ-PAP-S, Fort Irwin, CA 92310-5000. The NTC Safety Office may be contacted at AV 470-5074/5053.

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1. References.

- a. AR 385-10, The Army Safety Program, and TRADOC/FORSCOM Suppl 1.
- b. AR 385-40, Accident Reporting and Records, with TRADOC/FORSCOM and NTC Supplements.
- c. AR 385-55, Prevention of Motor Vehicle Accidents, and TRADOC/FORSCOM Supplements.
- d. NTC Reg 350-3, Range Regulations.
- e. TB Med 501, Prevention, Treatment and Control of Heat Injury.
- f. FORSCOM Circular 35-84-10, Rotational Training at the NTC.

2. Definitions.

- a. Organizational Safety Representative: A safety representative from the highest command level of the rotational unit participating in training at the NTC. A safety professional (GS-018) is preferred.
- b. Unit Safety Officer/NCO: A person assigned safety duties at battalion or company level through the organizational safety representative.
- c. Supporting Safety Office: The full time civilian staffed safety office at the home installation of a rotational unit.
- d. NTC Safety Representative: The NTC safety manager, or other person appointed by the NTC Commanding General to serve as his representative on safety matters.

3. Responsibilities.

- a. Commanders: Safety is a command responsibility and commanders must ensure that safety procedures are incorporated into all aspects of training in accordance with DA Pam 385-1.
- b. Senior Rotational Unit Commander: The senior rotational unit commander must appoint a safety representative for the exercise in accordance with DA Pam 385-1.
- c. Organizational Safety Representative will:
 - (1) Contact the supporting safety office to obtain accident reporting procedure guidance and safety topics to be used in assigned unit safety officer/NCO briefings.
 - (2) Brief each unit safety officer/NCO on functions and responsibilities, prior to deployment to the NTC.
 - (3) Contact the NTC safety representative upon arrival at the NTC and prior to departure.

(4) Serve as the single point of contact between the NTC safety representative and the rotational unit.

(5) Notify the NTC safety representative of all Class A accidents as soon as possible. During duty and non-duty hours call extension 5076. In the event the NTC safety representative cannot be reached, the NTC Staff Duty Officer may be contacted at extension 3530. Notification of HQ, FORSCOM and the U.S. Army Safety Center (USASC) will be made by the NTC safety representative, if requested.

(6) Upon completion of training, provide a completed NTC Form 1-16 (Appendix B-1) to the NTC safety representative, in accordance with NTC Suppl 1 to AR 385-40.

(7) Ensure that the unit conducts collateral duty investigations required by para 1-7c(2), AR 385-40.

(8) Ensure that the contents of this publication reach troops at the operational level, prior to deployment.

(9) Forward accident reports to the supporting safety office.

d. Unit Safety Officer/NCO: The unit safety officer/NCO will carry out functions assigned by the organizational safety representative.

e. Supporting Safety Office will:

(1) Assist the organizational safety representative with pre-exercise training.

(2) Forward, by letter through command channels, any special safety support required from the NTC safety representative.

f. The National Training Center Safety Representative will:

(1) Support rotational unit commander's safety requirements to the maximum extent, within limits of available resources.

(2) Conduct DA Form 285-1 investigations for rotational unit Class A accidents, and forward findings to supporting safety office for processing. When a safety professional (GS-018 series) accompanies the rotational unit, this function will be carried out by that person.

4. Emergency Notification.

a. Personnel in need of emergency assistance (fire, serious injury/fatality) will contact range control (FM 38-90) and provide the following:

(1) Location/grid coordinates.

(2) Type of emergency (fire, injury).

(3) How pickup zone will be marked.

(4) Terrain features (mountainous, rocky).

b. When radio is inoperative or nonexistent, the use of red smoke/red star cluster is appropriate to notify personnel in the area of a serious incident.

5. Vehicle Safety. Convoy commanders will brief all drivers, assistant drivers, and highest ranking occupants prior to each march. Hazardous areas/conditions, safe following distances, proper speed, route, rest periods, and signals will be discussed. The highest ranking occupant of each vehicle will:

a. Be responsible for the safe operation of the vehicle.

b. Report, through the chain of command, drivers who appear fatigued or physically, mentally, or emotionally impaired. Such impaired personnel will not operate vehicles except under extraordinary circumstances or emergencies.

c. Ensure that all occupants use available restraint systems.

d. Assist the driver in recognizing unsafe conditions/situations and ensure correction before resumption of operation.

e. Ensure that personnel wear hearing protection as required by the type of vehicle.

f. Post personnel along roadways to warn approaching traffic when the vehicle is halted, or disabled in a location that might obstruct traffic.

g. Ensure speed limits on Fort Irwin are observed. Tactical vehicles are restricted to 35 MPH on paved roads and 20 MPH on tank trails, unless otherwise indicated. Rotational units may establish reduced speed limits and other safety precautions for deployment and redeployment periods.

h. Ensure that only properly licensed personnel operate the vehicle.

i. Inspect the vehicle prior to dispatch. Special emphasis will be placed on proper functioning of such safety-related items as horns, mirrors, lights, reflectors, brakes, fire extinguishers, steering mechanisms, safety chains/straps, windshield wipers, exhaust systems, tires, signal lights, and trailer hitches.

j. Ensure that vehicle basic issue items are present on every vehicle.

k. Ensure that no personnel ride on the outside of any vehicle unless it is a command-directed portion of a tactical operation.

l. Be responsible for radio whip antennas being tied down when not in use, and when in garrison areas. Antenna tips will be covered with a protective ball.

m. Prohibit smoking within 50 feet of any vehicle carrying fuel, explosive/ammunition, or other hazardous cargo.

n. Post ground guides when backing vehicles. Some vehicles may require multiple ground guides, depending on the vehicle type and size. NTC ground guide procedures are provided at paragraph 6.

o. Ensure that personnel do not sleep on or in vehicles while the engine is running.

p. Ensure that no personnel sleep under or near vehicles. Drivers will verify that personnel are not sleeping under or near vehicles prior to movement.

q. Use ground guides in bivouac and maintenance areas during hours of darkness and diminished visibility.

r. Ensure adequate seating arrangements are provided for all vehicle occupants. Personnel will be wholly contained within the body/side boards of any vehicle. Personnel will not be transported in vehicle trailers or vehicle shelters.

s. Ensure that exercise participants are briefed on the use of signals for night movement in assembly and maneuver areas. A flashlight moving back and forth in a horizontal plane will be the signal for all vehicles to halt in place. See Appendix A, Visual Signals.

6. Ground Guide Procedures.

a. Definitions:

(1) Assembly area: An area in which a unit is assembled to rest and prepare for operations.

(2) Ground guide: Personnel on foot whose purpose is to assist a vehicle driver.

(3) Signals: Method of communication between ground guide and vehicle driver; i.e., hands, flags, lights.

b. Responsibility:

(1) All FORSCOM unit commanders and leaders at all levels must ensure that:

(a) Ground guides are used when operating vehicles near other parked vehicles or near bivouacked personnel as outlined in FM 21-306.

(b) Procedures outlined in this document are incorporated in unit SOPs.

(c) Special emphasis is placed on the selection of safe sleeping areas during field exercises. Unit perimeter security personnel should be thoroughly briefed on their duties and responsibilities. They also must be provided equipment (lights) for signaling during hours of darkness.

(d) Their soldiers are adequately briefed on proper driving/sleeping procedures during hours of darkness; then they must get involved to ensure compliance by every member of their command.

(e) All personnel within the unit must be properly trained to act as ground guides.

c. Procedures:

(1) In an assembly area: Before a tracked vehicle is started a member of the crew must walk completely around the vehicle to ensure no one is in danger from the vehicle's movement.

(2) During movement within or through an assembly area: Tracked vehicles will require ground guides front and rear. Guides must be able to see each other and one must be visible to the driver.

(3) Backing up: Wheeled vehicles will normally require one ground guide; however, two guides will be used when backing a wheeled vehicle with restricted vision; i.e., cargo, darkness. M880 and larger vehicles require two ground guides at all times when backing.

(4) Signals: The basic method for ground guiding is the use of hand signals. Voice signals between a ground guide and driver are not only inefficient but are also dangerous, because they can easily be misunderstood. Other signals such as flags and lights are also used. See Appendix A-1.

(5) Ground guide basic rules:

(a) Give signals to only one person. Be sure that everyone involved in a move; the driver, the TC, or other ground guides, understand who will give the signal and who will receive it.

(b) Remain out of the vehicle's path of travel.

(c) If you must be in the path of travel, maintain a distance of at least 10 yards.

(d) If you are guiding a vehicle into a close position and cannot maintain a 10-yard forward distance:

1 Keep to the side and front (or rear) of the vehicle.

2 Get on top of the object you are trying to approach, like another tank, or a dock.

3 Keep in line of sight of the driver. Use of a second ground guide is required if the moving vehicle is a track.

(e) Do not turn your back on the moving vehicle: When moving the vehicle long distances your best position is forward and to the left of the vehicle so that side vision is maintained with the driver. When walking backwards, use caution so as not to trip over obstacles or get in the path of other vehicles.

(f) Ground guides are required when entering bivouac areas. The best method to guide a vehicle at night into a bivouac area is to stop the vehicle, move forward to be sure the ground is clear, then signal the vehicle to move forward. As the vehicle approaches you stop it, advance forward, and repeat the process. Attempting to guide a vehicle at night in a single movement endangers the guide who can easily fall, or troops who may be on the ground. After the vehicle is stopped the ground guide should move forward in a Z pattern at least twice the width of the vehicle to be guided.

(6) Driver's basic rules:

- (a) Receive hand, light, or flag signals from only one person. Do not accept voice signals.
- (b) If contact is lost with your ground guide, STOP the vehicle.
- (c) If the signal is not clear, or is not understood, STOP the vehicle.
- (d) If your ground guide enters a danger zone, STOP the vehicle.
- (e) Remain in your proper position. In particular, wheeled vehicle operators should not get outside the cab for rear movements. This is a common driver error.

(7) Supervisor's basic rules:

- (a) Know ground guide procedures.
- (b) Ensure that all unit personnel know the rules, and practice them before they are required to perform them.
- (c) Observe operations, if unsafe practices are observed have the ground guide stop the vehicle, assist by instructing.

d. Special Cases:

- (1) Blocked vision: Vehicles equipped with VISMOS (tracked and wheeled vehicles) will cause some reduced visibility for the driver. In most cases reduced visibility with ground guides occurs only during close in forward movements or during backing operations. On wheeled vehicles a secondary guide should be used to relay signals.
- (2) Mirror vision: Drivers receiving vision from a ground guide through a mirror will have problems. Mirror distance is deceptive, a mirror's image is backwards and the signal can easily be misunderstood. In most cases the ground guide can direct rear movement while standing to the side of the vehicle in line of sight of the driver.
- (3) Tractor/trailer movements: Most tractor/trailer ground guide accidents occur when the vehicle is being backed into position. One ground guide should be to the rear, and the other ground guide is always to the driver's side in direct sight of the driver and the rear ground guide.

(4) Night movements: Drivers and ground guides should receive training at night before they go to the field. Preplanning will help prevent night ground guide accidents.

(a) Conduct OJT before night operations.

(b) Inspect bivouac areas before darkness to assure that troops do not needlessly place themselves in a potentially dangerous zone.

(c) Block sleeping areas if possible.

7. Night Tactical Operations.

a. Personnel operating vehicles at night should be thoroughly trained to operate vehicles under night tactical conditions. At a minimum, training should include:

(1) Dark adaptation and night vision techniques.

(2) Ground guiding under night tactical conditions.

(3) Sensory illusions at night.

(4) If operating at night with night vision goggles, drivers should be thoroughly trained and tested on the use of night vision goggles.

b. Recommended night operation speed limits:

(1) Service drive.

(a) Paved roads - 35 MPH.

(b) Unpaved roads - 20 MPH.

(2) BO drive, BO marker, no light.

(a) Paved roads - 20 MPH.

(b) Improved dirt roads - 15 MPH.

(c) Other dirt roads - 10 MPH.

(d) Off road - 5 MPH.

NOTE: Never travel blind if the road ahead is not visible. Have a dismounted ground guide walk ahead of the vehicle.

c. Sleeping Areas: Commanders must provide direction on the location of sleeping areas. Soldiers must not be permitted to sleep in areas where the potential for being run over by other moving vehicles is present. Also prevention of carbon monoxide poisoning must be stressed. If the situation permits, a designated sleeping area may be established and marked with engineer tape or chemical illumination lights.

8. Wheeled Vehicle Operations. Wheeled vehicles will be operated in compliance with the basic rules in paragraph 5, and the following:

- a. Highway warning devices will be utilized when vehicles are stopped or disabled on public highways.
- b. Vehicles will not travel under blackout conditions until passing the established light line. Vehicles will not travel in service drive past the light line unless emergency conditions exist. Operations past the established light line will be in accordance with current tactical doctrine. Drivers must be adequately trained to operate vehicles in blackout/no-light drive or operate with night vision goggles. See paragraph 7.
- c. Parking brakes on cargo vehicles are often inadequate or inoperative. Vehicles will not be parked on any incline without adequate chocks.
- d. Personnel will not be transported on top of cargo/loads unless the loads are adequately secured, and personnel have sufficient room within the body of the vehicle.
- e. Personnel will not be transported in bucket loaders or similar equipment.
- f. Safety straps must be secured and tailgates up when transporting troops.
- g. When transporting personnel in dump trucks, positive locking devices will be utilized to prevent inadvertent actuation of the hoist control.
- h. Personnel will not be transported in the cargo area of the last vehicle in a convoy. Last vehicle should be a large wheeled (2½ ton or larger) or tracked vehicle marked tactically or with chemical lights.
- i. Vehicles equipped with floor-mounted shift/transmission mechanisms will carry only the driver and one passenger in the cab. For other vehicles use the following guide to determine number of allowable passengers in the cab:

<u>TOTAL SEAT WIDTH</u>	<u>NUMBER OF PASSENGERS</u>
35 inches or less	0
36 to 51 inches	1
51 inches or more	2

9. Tracked Vehicle Operations. Tracked vehicles will be operated in compliance with the basic rules in paragraph 5, and the following:

- a. Two road guards (one controlling each direction of traffic) will be used when vehicles cross highways. During hours of darkness and/or reduced visibility, road guards will be equipped with traffic signaling flashlights.
- b. Vehicles will cross paved roads at designated tank crossings only.
- c. Vehicles will not be operated (without the use of a ground guide) when the intercommunications systems is inoperative.

d. During live-fire training, the rear of tracked vehicles should be marked to prevent mistaken engagement by other live-fire participants.

e. Ground guides will be used when moving through occupied areas. See paragraph 6.

f. Test open hatch covers by shaking to make sure they are locked in position.

10. Installation of Field Communication Wire and Cables.

a. Helicopter Landing Areas: Communication wires, other lightweight wires, cables, or materials of a similar nature will not be placed in a designated helicopter landing area unless buried.

b. Communication wires, other lightweight wires, cables, or materials of a similar nature installed by units will be recovered upon completion of training and prior to leaving field training areas/ranges.

c. Communication wires, cables, etc., will not be strung in the air across valleys, passes, or other areas that helicopters may transit nap-of-the-earth. If wires have to cross these areas they shall be left on the ground or buried.

11. Animal and Insect Hazards.

a. The training mission may be impaired if soldiers are not made aware of local hazards. These include poisonous snakes, spiders, scorpions, insects, large wild animals, and rabid animals.

b. Desert wildlife is abundant and varied, with most activity taking place at night. Bobcats and coyotes may be encountered. Most of these animals are shy and will attack only if cornered. Soldiers must leave the wildlife alone and not feed them. Feeding wild animals causes them to lose their natural fear of man and may cause them to become aggressive.

c. Smaller animals such as rabbits, foxes, raccoons, and skunks are numerous. Personnel coming in contact with these animals run a high risk of contracting rabies if scratched or bitten. Anyone bitten by such an animal should carefully cleanse the wound, seek medical help immediately, and if possible obtain the animal for examination by qualified medical personnel.

d. The desert abound with a wide variety of nuisance insects, but only scorpions, spiders, and ants present a significant hazard.

e. Prevention of scorpion, spider, and ant bites:

(1) Check bedding before use.

(2) Check clothing, socks, and shoes before wearing. Soldiers have been stung while putting on inhabited boots.

(3) Avoid sleeping or leaving clothes near damp places. Dampness appears to attract these animals.

(4) If you feel an insect or spider crawling on you, remain still. Sudden movement may cause a bite or sting.

(5) Never step in the shade of a bush without visually checking that spot.

(6) Food crumbs attract insects, which in turn attract spiders and scorpions.

(7) Red ant nests are identified by cleared areas with a small mound at the tunnel entrance. Nests are easy to see in daylight. Before bedding down at night, ground areas should be inspected for the presence of nests.

f. Treatment of scorpion and spider bites:

(1) Keep patient quiet and send for medical aid.

(2) The puncture points should be cleansed with an application of a mild antibacterial agent.

(3) Cool the area 10 to 12 inches around the puncture point with ice, if available.

g. Fort Irwin has four species of poisonous snakes: Western Diamondback, Speckled Rattlesnake, Sidewinder (sometimes called Horned Rattlesnake), and Mojave Green Rattlesnake.

h. Prevention of snake bite:

(1) Walk carefully, watch your step, and where you sit.

(2) Be careful where you place your hands when climbing or when lifting objects from the ground.

(3) Never tease or pick up a snake. Even bites of nonpoisonous snakes may cause serious infection requiring medical treatment.

(4) Avoid sudden motion when placing your hand or foot near an area which may conceal a snake. Beware of shady areas.

(5) Capture the biting snake, if possible, for proper treatment of bite victim.

i. Treatment of snake bites:

(1) Get prompt medical attention.

(2) Keep the victim quiet and still.

(3) Immobilize the bitten extremity.

(4) Treat for shock but DO NOT elevate the bitten extremity.

(5) DO NOT use "cut and suck" method.

12. Heaters.

a. Portable radiant-type space heaters must be operated in accordance with the following:

- (1) Tent stovepipe opening flaps must be securely tied back with all available tie tapes. General purpose tents have four tie tapes for each stovepipe opening flap.**
- (2) A sufficient number of stovepipe sections (usually six) must be erected so that the top section is well above the highest point of the tent. Stovepipe sections must be straight up and not allowed to come into contact with any part of the tent.**
- (3) The area surrounding the heater inside the tent must be cleared of combustibles (including dry grass/weeds/etc.) for a distance of 4 feet.**
- (4) Heaters must be placed in a sandbox containing 4 inches of sand or dirt in tents with wooden or canvas floors.**
- (5) Adequate ventilation must be provided when space heaters are operated.**
- (6) While some tent heaters are designed to use several types of liquid fuel, only diesel will be used. When diesel fuel is not available, solid fuel may be used.**
- (7) When liquid fuel is used, a draft diverter must be installed on the top stove section and guy ropes attached and secured.**
- (8) The fuel can for the heaters must be located outside the tent and as far from the tent as the fuel hose allows. Ensure that the fuel line has a drip loop and that it is used.**
- (9) When using solid fuel (such as wood or brush) with the heater, a spark arrester must be installed on the top stovepipe section.**
- (10) Fuel cans, lines, and carburetors must be checked daily for leaks, particularly after changing fuel cans. No heater will be operated when leaks are present in the fuel system. When heaters are operated, adequate means to extinguish a fire must be on hand in the tent (fire extinguisher or sand).**
- (11) Tent heaters must never be operated at full capacity, even in extreme cold. Overheating of the stovepipe sections may ignite tentage.**
- (12) Procedures for portable radiant-type space heaters can be found in TM 10-4500-200-13.**
- (13) When tent heaters are operated, fire guards must be posted.**

b. Immersion heaters will be operated in accordance with TM 5-4540-202-12:

- (1) Personnel lighting immersion heaters must be properly trained and use care not to expose their face to the burner chamber while lighting.**

(2) Ensure the vent cap is closed when filling the fuel tank.

(3) Fuel tanks should not be installed on the heater until after the heater is attached to the corrugated (trash) can.

(4) If immersion heaters are used inside buildings or tents, exhaust fumes must be piped outside.

c. M-2 burners:

(1) Operators must be properly trained and qualified to operate the M-2.

(2) M-2 burners must be lighted outside the tent. If wind conditions hamper lighting outside, a wind break should be constructed.

(3) Two persons are required to carry the M-2 inside the tent after lighting.

13. Antennas.

a. Antenna structure will be located away from overhead electrical power lines at a distance of at least twice the height of the antenna. Before erecting any type of antenna (structure, vehicular, or shelter), a thorough inspection will be made of the immediate overhead area to prevent accidental contact with power lines.

b. All tactical vehicle antennas will be clipped under, using the positive control portion of the tiedown, when vehicles are within the cantonment area.

14. Personal Protective Equipment. Commanders must provide all required personal protective equipment, and educate personnel in the proper use of this equipment.

15. Hearing Conservation.

a. Army regulations require the use of hearing protection devices when noise levels exceed 85dB(A).

b. Equipment which exceeds this criterion include:

- (1) Aircraft.
- (2) Electric tools.
- (3) Tracked vehicles.
- (4) Multifuel vehicles.
- (5) Rough terrain forklifts.
- (6) M561 (gamma goat).

- (7) Small arms/machineguns.
- (8) Vulcan guns.
- (9) Mortars.
- (10) Guns (tank, howitzer).
- (11) Simulators.

16. Carbon Monoxide. Carbon monoxide is an odorless and tasteless gas produced by burning a gas, liquid, or solid fuel. The most common source of this gas is the exhaust from gasoline-powered engines. Symptoms include headache, dizziness, sleepiness, and tightness across the forehead. When sufficient quantities are inhaled, death results from asphyxiation.

- a. Personnel will not sleep in vehicles while the engine is running.
- b. Adequate ventilation must be provided in tents, command posts, and other enclosures where combustion takes place (i.e., heaters, lamps).

17. Grounding.

- a. Portable electric power tools must be properly grounded.
- b. Signal shelters (vehicle and ground) must be grounded with a ground rod. Ground rod must be all the way in the ground and bolted to a shelter with tight-fitting clamps and strip/cable. (Because of dry conditions, a good ground may not be possible without adding water to the area around the ground stake.) All communications equipment inside shelters must be properly bonded to the shelter.
- c. Signal shelters should not be located so close together that a person can touch both shelters at the same time. If operations call for two or more shelters to be located close together, proper grounding procedures must be used. (Bond vehicles together by use of a cable or strap.)
- d. Generators must be grounded as stated in paragraph b, above.
- e. All radio/electronic equipment must be properly grounded.
- f. Fuel trucks must be properly grounded.

18. Electrical Safety.

- a. Only proper amperage fuses will be used.
- b. Electrical outlets or extension cords will not be overloaded by gang plugging.

19. Handling of Petroleum, Oil, and Lubricants.

- a. One fireguard will man a portable fire extinguisher during all fueling operations.
- b. Smoking within 50 feet of vehicles being fueled is prohibited.
- c. Engines will be shut off, and the master switch will be in the off position during fueling.
- d. When refueling from a fuel truck, all vehicles will be properly bonded to each other and grounded.
- e. Desert heat causes rapid vaporization, blowing dust can cause static charges. Use extreme caution under these conditions.
- f. Operators and fuel handlers will ensure that correct fuel is placed in vehicles.
- g. Fuel handlers will wear proper personal protective equipment.

20. Helicopter Safety. Personnel will observe the following precautions:

- a. Follow the instructions of aircraft crewmembers.
- b. Ensure that the pilots are aware of all action around the aircraft.
- c. Ensure that all weapons are unloaded prior to boarding the aircraft.
- d. Use safety belts at all times.
- e. Do not jump from helicopters.
- f. Keep low when approaching a helicopter, single-rotor helicopter should be approached from the front of quartering front; tandem-rotor helicopters should be approached and loaded from the rear of quartering rear. Low forward blades on tandem rotors and tail rotors on single-rotor helicopters are difficult to see and can quickly kill if walked into.
- g. Strap down long antennas prior to approaching a helicopter.
- h. Use no CS, flares, or star clusters in the vicinity of the aircraft. No flares, star clusters, or smoke grenades will be intentionally fired or thrown at helicopters.

21. Use of Red Smoke/Red Star Cluster. Red smoke/red star cluster denotes an actual emergency. Upon recognizing this or any emergency signal, local action will be stopped until resolution of the emergency.

22. Water Safety. Desert areas are subject to flash floods. Bivouac/maintenance/assembly sites will not be located in low areas unless mandated by the tactical situation. When bivouac sites are located in potential flash flood areas, plans will be developed to minimize the loss of life and property in the event of flash flooding.

23. Fire Prevention and Protection.

a. Troop Orientation: Commanders will conduct fire prevention briefings prior to deployment. Emphasis will be placed on immediate actions to be taken at the first signs of fire: NOTIFICATION, EVACUATION OF PERSONNEL AND EQUIPMENT, AND FIRE SUPPRESSION.

b. Fire Prevention: Unit commanders, down to company level, will appoint a fire marshal to be responsible for fire safety briefings and directing immediate fire suppression efforts.

(1) All fire extinguishers will be inspected prior to departure from home station to ensure usability, and will be inspected prior to posting during the actual training exercise.

(2) Vehicles should be equipped with shovels, and individuals should possess an entrenching tool.

c. Alarm Procedures: Any person who discovers a fire, no matter how trivial, will immediately give the alarm.

(1) Alert personnel in the immediate area by voice or percussion-type instrument. Alarms for fire must be different than that for a chemical attack.

(2) Notify the Fire Department by telephone (extension 911), or radio (FM 38.90), or by any other means available. Give grid coordinates and nearest landmark or building number.

d. Firefighting Operations: Firefighting operations will take precedence over all other activities, including tactical operations when a chance of damage to personnel or property exists.

(1) All units will be prepared to assist in controlling brush/grass fires.

(2) Firefighting equipment (firetrucks, dozers, water tankers, etc.) have the right-of-way at all times.

(3) All means will be used to extinguish a fire; however, untrained personnel will not be risked solely to protect property.

e. Specific Safety Precautions:

(1) Open fires are prohibited.

(2) Flammable liquids, such as gasoline, will not be used for cleaning.

(3) Rapid refueling operations equipment will be installed and operated IAW FM 10-66, Aircraft Refueling.

(4) Smoking is prohibited:

(a) By personnel in bad.

(b) Within 50 feet of flammable materials, compressed gases, ammunition and explosives, or any type of refueling operation.

(c) In shops, motor pools, warehouses, and supply rooms.

(5) Smoking material will not be disposed of into trash cans. Separate "butt cans" will be used.

(6) Pyrotechnics will be used only by trained personnel who have been briefed on existing fire conditions. Pyrotechnics will be used only in clear areas.

24. Climate. Extreme variations in seasonal temperature (subfreezing temperatures in winter and summer temperatures in excess of 120° F), sun, dust, and strong winds are an important factor to consider in NTC training. See Appendix C.

a. Acclimatization: During periods of very hot or cold weather an acclimatization period of at least 4 days should be established. During this period, troops should be trained on a limited basis only, avoiding prolonged exposure. Gradual increases in exposure and activity can then proceed.

(1) Physical condition: Overweight persons, or persons in poor physical condition are more likely to be affected by exposure to high temperatures. Special care must be used with such persons.

(2) Work schedule: The amount of heat produced by the body increases directly with increasing work. Therefore, reduction of workload markedly decreases total heat stress. Heavy work should be scheduled for the cooler hours of the day, such as early morning or evening.

b. Heat Injuries: Bright sunlight and high temperatures can cause eye strain, sunburn, heat exhaustion, heat cramps, and heat stroke. Use of proper clothing discipline and increased consumption of water must be emphasized to prevent heat injuries. Due to the high salt content of all field rations, additional salt consumption is both unnecessary and detrimental.

(1) Water discipline: High temperatures and increased activity require the body to use more water to maintain normal cooling. Dehydration will occur when water lost through breathing, perspiration, and other activities is not replaced. Insufficient water intake is the largest single cause of heat injuries, and commanders must ensure that personnel increase their water in hot weather. In accordance with TB Med 501, when Wet Bulb Ground Temperature (WBGT) is 80° F. or less, at least 9 quarts of water should be consumed by each soldier performing heavy duties (i.e., driving tracked vehicles, trenching) per day. When WBGT is above 80° F., water consumption must be increased to 13 quarts per day per soldier.

(2) Clothing discipline: Wearing special clothing and equipment (i.e., winter uniforms and MOPP gear) impairs the ability of the body to cool itself. Special precautions prescribed in TB Med 501 must be taken to avoid mission interference during hot weather due to heat casualties.

c. **Cold Injuries:** Cold weather injuries can occur in the desert. High winds increase the effect, and are common during the winter months. Units conducting desert operations, especially during winter, must expect some cold weather conditions.

d. **Wind, Sand, and Dust Injuries:** Strong winds, dust, and sand particles can cause numerous casualties, particularly eye injuries and respiratory infection due to inhalation of dust particles. The wind also adds to chapping and sunburn injuries.

25. Survival Training.

c. **General:** A soldier lost in the desert during summer (temperature of 110° F.) can survive only 3 days. This figure assumes a full canteen of water, and that he or she remains immobile in a shaded position. With activity, survival time is reduced to 2 days. Due to the short estimated survival time, it is essential that search and rescue operations be organized as soon as personnel are reported missing.

b. **The Buddy System:** Most training accidents in which an individual was lost could have been prevented by the use of the "Buddy System." Two individuals will be counted as missing sooner than one, and two are less likely to become lost. Use of the "Buddy System," particularly in dismounted operations, is essential to training safety.

c. **Equipment:** Commanders should encourage their soldiers undergoing field training to carry the following:

- (1) A pocket knife.
- (2) A watch.
- (3) Matches or lighter.
- (4) A yard of strong string or cord.
- (5) Chapstick.

d. **Survival Procedures:** The key to desert survival is finding lost personnel as soon as possible, and training personnel to assist in their own rescue. Personnel must be taught the following procedures prior to NTC rotational training:

(1) **Stop where you are:** As soon as a person realizes he is lost, he must stop where he is. If in difficult terrain and there is open terrain nearby, the soldier may cautiously move to the open terrain.

(2) **Stay with the vehicle:** If in a vehicle, remain with that vehicle. Vehicles are much easier for rescue personnel to see and the vehicle mirror may be used for signaling.

(3) **Attract attention:** Lost personnel must be ready to get the attention of rescue party. The following methods are effective.

(a) Fire will attract attention during day and night rescue operations. No fires will be started by any person during rescue operations, except by lost personnel.

(b) A mirror can be used to attract the attention of search aircraft. Search aircraft can also use a radio signal to home in on lost personnel.

(c) Noisemakers, such as a canteen cup or oil can and rock, must be ready when searchers approach. Noisemakers can ordinarily be heard further than a voice.

(4) Fix a shelter: A sun shelter can be made by interweaving brush from a creosote bush (distinguished by their height, aromatic odor, and small glossy leaves). By using one large creosote bush in this manner, it is possible to get adequate shade from the direct sunlight. Temperature below the surface of the sand is considerably less, so digging a shallow hole in cooler hours will help keep you cool in the hot hours.

(5) Expect and watch for searchers: A search will be initiated immediately after an individual is reported missing. Effective attention attracting apparatus (noisemaker, bonfire, etc.) must be ready for use. It is impossible to attract the attention of searchers several miles away by shouting and violent motions.

(6) Save perspiration and energy: By keeping inactive during the heat of the day and wearing the complete uniform, perspiration is used to a maximum for cooling the body. Loss of moisture can be minimized by:

(a) Avoiding food, particularly candy, unless of very high moisture content.

(b) Not smoking.

(c) Use of chapstick or grease around lips and nostrils.

26. NTC Ammunition Management and Accountability.

a. Ammunition is defined as all munitions (explosive or otherwise), pyrotechnics, chemical agents, powder, and firing devices other than weapons; e.g., Hoffman and ATWS charges.

b. Ammunition will not be allowed in the Fort Irwin cantonment area. The specific cantonment area designated to be ammunition free is outlined on site map at Appendix D.

c. The ammunition supply point (ASP) is the only authorized ammunition storage site on the installation. Temporary storage of ammunition in CONEX containers or any other containers is prohibited, unless approved by DIO. Immediately following completion of any training exercise, all ammunition, components, and residue will be returned to the ASP for proper disposition. The placement of ammunition in trash containers, chemical toilets, or buried underground is strictly prohibited. Ammunition residue will be certified as free of explosives and recoverables by the unit turning in, and verified by DIO quality

assurance personnel for ammunition surveillance (QASAS), prior to placement in the designated landfill. Unit range police vehicles will be thoroughly sorted and free of ammunition prior to arrival at the sanitary landfill.

d. Strict ammunition accountability will be maintained at all times. Ammunition will be issued from the ASP on DD Form 581 and all ammunition will be returned to the ASP with the unit accountable officer's certification that it was either expended during training or returned to the ASP for disposition. Ammunition that requires special security measures will be closely controlled by the chain of command.

e. To maintain proper accountability, commanders will develop written, comprehensive, internal ammunition accountability operating procedures that are consistent with all applicable Army regulations for storage and handling of ammunition. All personnel who handle ammunition will be thoroughly trained on the proper, safe handling, and accountability procedures of ammunition. Personnel will be briefed prior to each training mission.

f. Ammunition found in unauthorized areas and traced to specific units or organizations will trigger appropriate disciplinary action.

g. Dug or unexpended ammunition is NOT TO BE DISTURBED.

(1) Mark the area distinctly.

(2) Determine accurate eight digit grid coordinates.

(3) Notify range control at extension 3875 on land lines or by radio (FM 38.90).

27. Accident Reporting and Statistical Data.

a. Definitions:

(1) Class A accident: An Army accident in which the resulting total cost of property damage and personnel injuries/occupational illness is \$500,000 or greater; an Army aircraft is destroyed, missing, abandoned, or uneconomically repairable; or an injury or occupational illness results in a fatality or permanent total disability.

(2) Class B accident: An Army accident in which the resulting total cost of property damage and personnel injuries/occupational illness is \$100,000 or more, but less than \$500,000; or an injury or occupational illness results in permanent partial disability or hospitalization of five or more personnel.

(3) Class C accident: An Army accident in which the resulting total cost of property damage is \$1,000 or more (\$10,000 or more for an aircraft accident), but less than \$100,000; or an injury or occupational illness results in a lost workday case as defined in para 2-10f.

(4) Class D accident: An Army accident in which the resulting total cost of property damage is \$1.00 or more (less than \$10,000 for aircraft accident); or an injury or occupational illness results in restricted workdays, or medical treatment.

b. **Recordable Accidents:** Class A through C accidents are recordable and require completion of DA Form 285.

c. **Reportable Accidents:** Class D accidents are reportable to the home station supporting safety office, in accordance with internal reporting procedures.

d. **Accident Reporting Procedures:**

(1) Rotational units will report recordable accidents through their command channels in accordance with AR 385-40.

(2) The OSR will notify the NTC safety representative of all Class A accidents as soon as possible. During duty and nonduty hours, call extension 5076. In the event the NTC safety representative cannot be reached, the NTC Staff Duty Officer may be contacted at extension 3530. The NTC Staff Duty Officer will then contact the NTC safety representative. Notification as required by HQ, FORSCOM and the USASC will be made by the NTC safety representative if requested.

(3) Prior to departure, the organizational safety representative will provide a completed NTC Form 1-18 IAW NTC Supplement 1 to AR 385-40 to the NTC safety representative. Unless otherwise notified, the average number of hours worked per person during training is set at 14 hours for purpose of NTC computations. Aircraft exposure data is required for all aviation assets supporting rotational units. See Appendix B.

28. **Investigation of Class A Ground Accidents.**

a. Class A ground accidents experienced by rotational units will be investigated by the USASC. The USASC will be on site within 24 hours whenever possible. Official notification will be accomplished through the NTC safety office.

b. Accident site and involved equipment will be secured immediately following completion of lifesaving measures. Rotational unit commanders are responsible for site security until relieved by USASC personnel.

c. Equipment records and personnel records will be provided to the NTC safety office in preparation for USASC investigation.

d. Specific procedures to be followed for Class A ground accidents are defined at Appendix E.

29. **Army Hazard Reporting System.**

a. Each individual participating in training at the NTC will identify orally to their supervisor any unsafe or unhealthful working condition which is observed. The immediate supervisor will investigate such reports promptly. The installation safety manager will provide technical assistance when required.

b. If the individual is dissatisfied with the action taken by his or her immediate supervisor to correct the alleged unsafe or unhealthful working

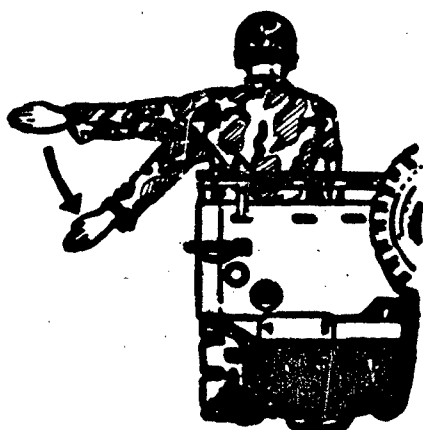
condition, he or she may submit a written report directly through the Army Hazard Reporting System to the installation safety manager. DA Form 4755, Employee Report of Alleged Unsafe or Unhealthful Working Conditions, will be used for this purpose. The installation safety manager or his representative will then conduct an onsite inspection of the alleged hazard as soon as possible. Normally, complaints will be signed; however, anonymous reports will be investigated in the same manner as signed reports. The identity of persons requesting anonymity will not be revealed and appropriate action will be taken against those violating this prohibition.

c. Any individual identifying an imminent danger situation will notify his or her immediate supervisor without delay. If the supervisor assesses the hazard severity as likely to occur immediately and cause death, severe injury, severe occupational illness, or major property damage, he will correct the condition or ensure it is immediately eliminated. The supervisor will then notify the installation safety manager. If the safety manager finds that corrective action is inadequate, he will secure approval of the commander or his authorized representative for measures to be taken to prevent employee exposure to the hazard.

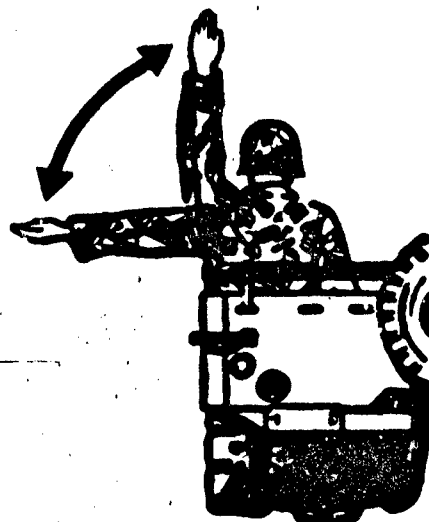
d. Reports that do not appear to involve imminent danger will be investigated by safety personnel, who will notify the originator in writing within 10 working days following receipt of the hazard report as to the results of the investigation. If it is determined that a hazard exists, the reply will include a summary of actions to be taken and anticipated date for corrective action. If it is determined that a hazardous condition does not exist, the reply will include the basis for that determination.

**VISUAL
SIGNALS**

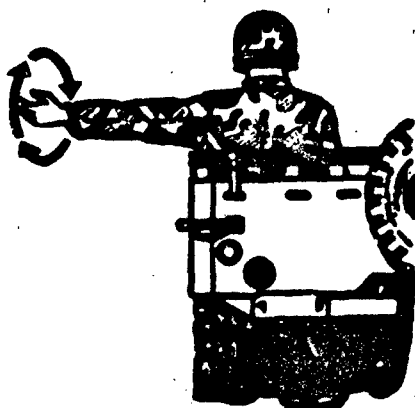
APPENDIX A



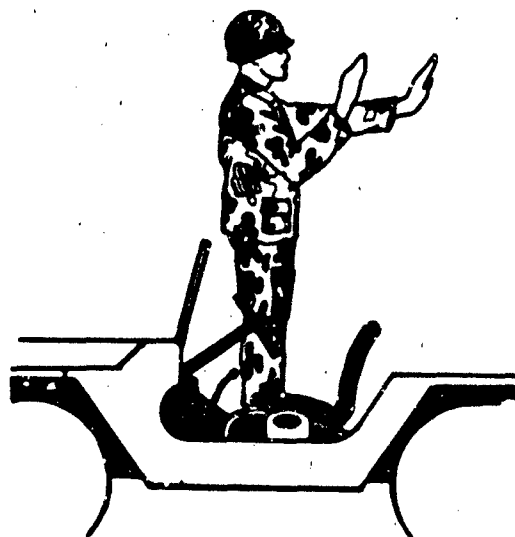
1. OPEN UP (EXTEND DISTANCE BETWEEN VEHICLES). Extend left arm horizontally to the side, palm to the front, then move arm downward to an angle 45° below horizontal. Repeat several times.



2. CLOSE UP. Extend the left arm sideward to the horizontal, palm up, and raise it to the vertical. Repeat several times.



3. PASS AND KEEP GOING. Extend left arm horizontally to the side, palm to the front, and describe large circles to the front by rotating arm clockwise from the elbow.



4. MOVE IN REVERSE. Face the unit being signaled and raise hand to shoulder level in front of the body, palm to the front; extend arm forward to the full extent in a pushing motion, keeping the palm to the front.

CONVOY SIGNALS GIVEN FROM A VEHICLE

CONVOY CONTROL AND AIRCRAFT-LOADING SIGNALS

DAY

NIGHT

Signal No 1 - Come Ahead



Flashlights on only when motioning in desired vehicle direction. When using conventional flashlights, direct lights forward.

Signal No 2 - Slow Down



Signal No 3 - Stop or Halt



Light in right hand pointed upward, blinking. When using conventional flashlights, direct light in right hand forward, blinking.

Signal No 4 - Move in Reverse



Lights on only when moticning in desired vehicle direction. When using conventional flashlights, direct lights forward.

Signal No 5 - Turn Left



When using conventional flashlights, direct light in right hand forward.

Signal No 6 - Turn Right



When using conventional flashlights, direct light in left hand forward.

DAY

Signal No 7 - Turn Off Engine



Signal No 8 - Increase Speed



Signal No 9 - Start Engines



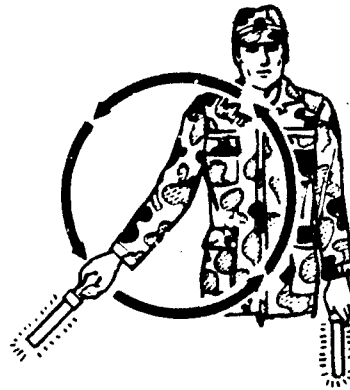
NIGHT



When using conventional flashlights, direct light in right hand forward.



When using conventional flashlights, direct light in right hand forward.



When using conventional flashlights, direct light in right hand forward.

DAY

Signal No 10 - As You Were



NIGHT



When using conventional flashlights, direct lights forward.

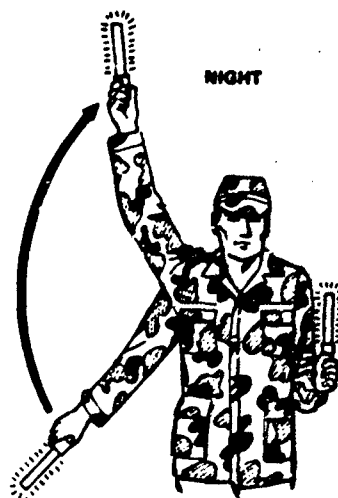
Signal No 11 - Assemble



Signal No 12 - Dismount



When using conventional flashlights, direct light in right hand forward.



When using conventional flashlights, direct light in right hand forward.



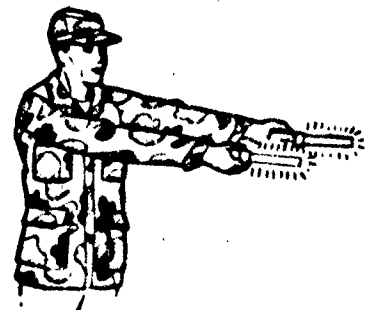
When using conventional flashlights, direct light in right hand forward.

APPENDIX B

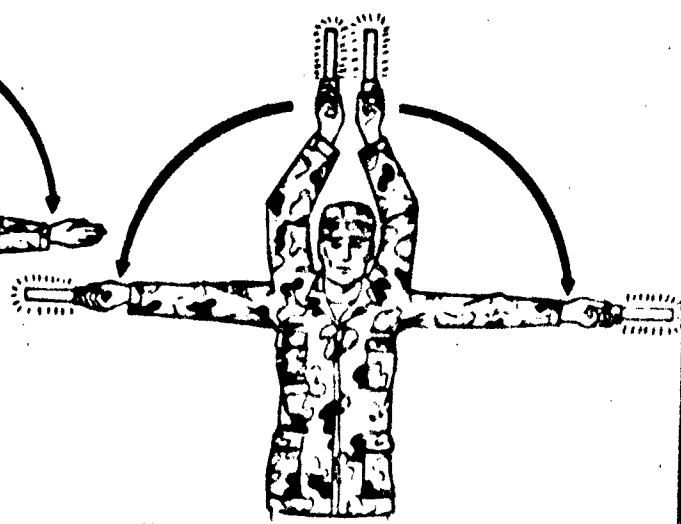
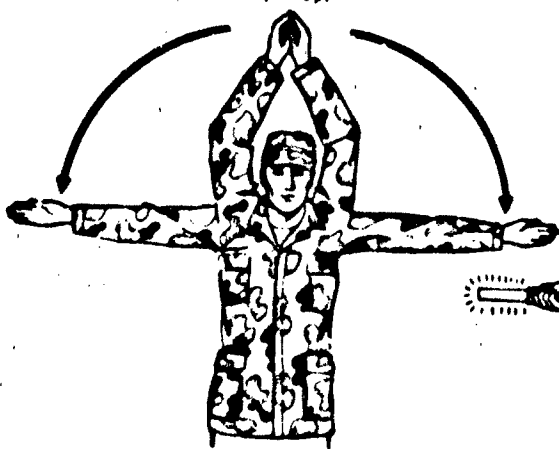
DAY

NIGHT

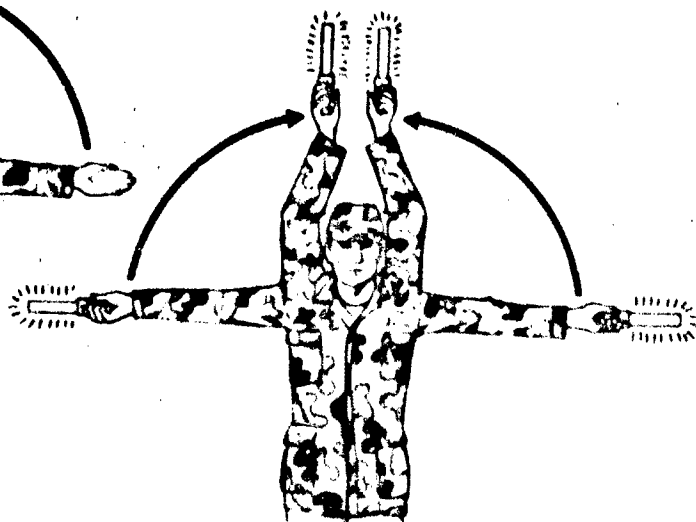
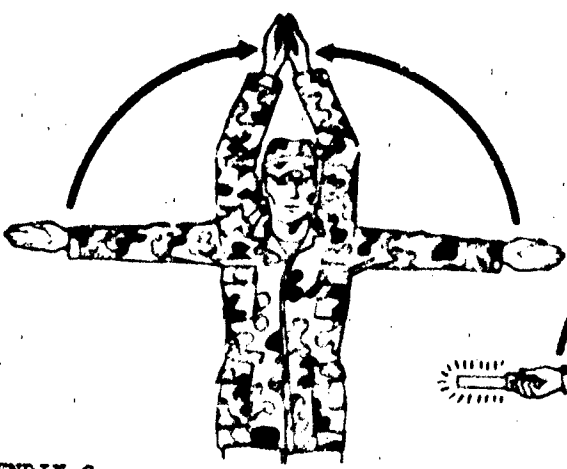
Signal No 16 - Ready



Signal No 18 - Extend (Open Up)



Signal No 17 - Close Up



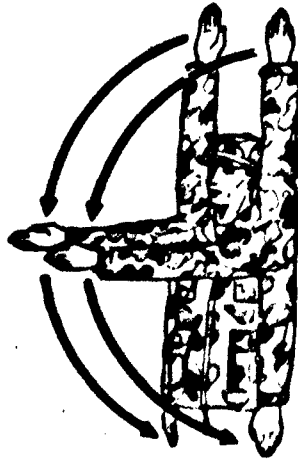
Lights on only during downward movement
When using conventional flashlights, direct
lights forward.

Lights on only during upward movement
When using conventional flashlights, direct
lights forward.

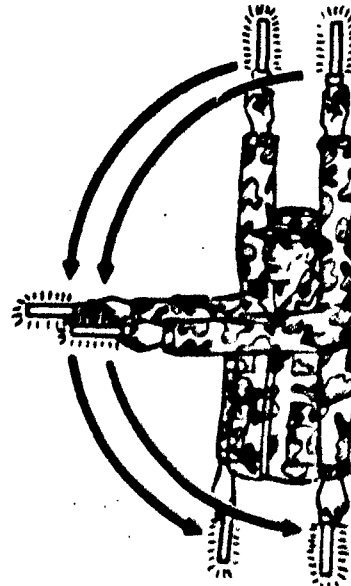
APPENDIX C

DAY

Signal No 18 - Close Up and Stop

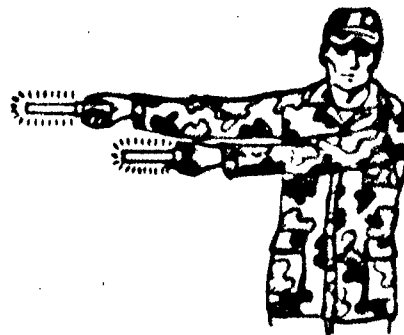


NIGHT



When using conventional flashlights, direct light forward.

Signal No 19 - By the Plank



APPENDIX D

**CHAPTER EIGHT
CENTRALIZED ACCIDENT INVESTIGATION
OF GROUND ACCIDENTS**

8-1. GENERAL:

a. All accidents involving military fatalities, on-duty civilian fatalities, accidents resulting in 5 or more persons hospitalized for treatment and accidents involving property damage in excess of \$100,000 will be investigated by the installation safety office.

b. The Occupational Safety and Health Act and the CAI concept requires that the Commander, USASC, be telephonically notified immediately of all CONUS Class A and Class B ground accidents. Commander, USASC, will determine which selected Class A and B accidents will be investigated by CAIG investigation boards within CONUS and certain overseas areas. Normally, off-duty marine (water), chemical, explosives, nuclear, fire, and POV accidents are not investigated by the CAIG investigation boards; however, any accident meeting Class A or B criteria is still required to be phoned into the USASC.

8-2. IMPLEMENTING INSTRUCTIONS:

a. The Fort Irwin Safety Office will be notified of any accident that may possibly meet the criteria in para 8-1a and b, above, as soon as possible after the occurrence of the accident.

b. The installation safety office, upon notification, will dispatch a qualified safety specialist, assisted by the safety officer from the unit experiencing the accident. They will be responsible for coordinating with the unit involved, all aspects of the accident investigation to include:

- (1) Witness interviews.
- (2) Weather reports.
- (3) Accident site photographs.
- (4) Site diagrams.
- (5) Blood/urine specimens of personnel involved in accidents.
- (6) Fuel/oil samples.
- (7) Briefing USASC personnel, medical and maintenance officers upon arrival.
- (8) Coordination of information releases with PAO.

APPENDIX E

(9) Secure training records.

(10) Secure medical records.

8-3. RESPONSIBILITIES:

a. Individuals observing an accident will take the following actions:

(1) Provide medical assistance within capabilities.

(2) Dial 911 or call 38.90 FM and request the following assistance as appropriate.

(a) If fire, flammables or a possibility of fire exists, contact the Fire Department.

(b) If injuries are involved, contact the hospital for medical aid and transportation.

(c) Contact Military Police for all accidents.

(d) Contact the unit commander of the unit experiencing the accident.

b. Commanders will ensure initiation of the following actions upon learning of an on-duty fatality or property damage accidents in excess of \$500,000, or an accident that could possibly meet the criteria as a result of Army operations occurring within the unit jurisdiction or command control.

(1) Initiate coordination for lifesaving actions and evacuation of injured personnel if not completed.

(2) Provide accident site security. Ensure the site is undisturbed to the maximum extent possible.

(3) Notify the installation safety office (telephone 5093/5074/5053) as soon as possible after an accident that may possibly meet the criteria outlined occurs. During nonduty hours notify (telephone 5076) using the checklist at Appendix B.

(4) Identify and segregate witnesses.

(5) Secure operation, maintenance, and historical records of equipment involved.

(6) Secure medical, training, and personnel records of Army personnel involved in an accident.

(7) Transport Army equipment operators and other personnel who had a direct involvement in the accident to MEDDAC (20-40ML blood; 50-100ML urine), for blood and urine samples.

WTC Reg 385-1 (DRAFT)

(8) Establish a point of contact for coordination with installation safety personnel.

c. Command Safety Director Fort Irwin will:

(1) Provide a trained accident investigator from the safety staff on 24-hour call, capable of responding within 2 hours of notification.

(2) Provide office supplies and equipment organic to the office for the investigation.

(3) Provide office space at Fort Irwin for the USASC, Fort Rucker Investigation Team.

(4) Publish an accident fact sheet outlining facts surrounding the accident.

d. DPTSEC will:

(1) Task for one maintenance officer knowledgeable, if possible, with the equipment involved. The maintenance officer will be responsible for assisting with all mechanical failure related accidents. Also, will be responsible for locating a senior operator experienced with the piece of equipment involved. (Must be available within 12 hours.)

(2) Task for one senior operator experienced in the equipment involved in the accident to provide information on equipment operation and applicable safety procedures. (Must be available within 12 hours.)

(3) Task for other resources as requested by USASC investigators.

(4) Notify AMCCOM LAO personnel on all suspected equipment failure incidents.

(5) Task for photographic support. (Must be available within 4 hours.)

e. Director of Health Services will: Provide one medical officer to assist with medical aspects of the investigation to include:

(1) Toxicology.

(2) Autopsy information.

(3) Coordination with Armed Forces Institute of Pathology.

(4) Physiological/Psychological factors of the investigation.

(5) Obtain blood/urine specimens of personnel involved in accidents.

f. Staff Duty Officer/WCO of the Day will:

- (1) Upon notification of an accident obtain necessary information about the accident.
- (2) Determine if the criteria could possibly meet the criteria for USASC investigation.
- (3) Contact on-call safety accident investigator and provide necessary information about the accident, telephone, during duty hours 5093/5074/5053, after duty hours and weekends/holidays 5076.
- (4) If accident occurs on weekend, contact DPTSEC representative for tasking of medical officer, maintenance officer, and senior equipment operator.

g. BSI Range Control will:

- (1) Provide communications relay support as necessary in the event an accident occurs while a unit is operating in field locations.
- (2) Notify ambulance and Fire Department as necessary.
- (3) As net control station, ensure emergency traffic takes priority over routine traffic and that sensitive information is not transmitted.
- (4) Monitor requests from accident site for assistance.

h. Post Fire Department will:

- (1) Respond with appropriate equipment to the emergency.
- (2) Conduct rescue and assume direct command of the accident site until the danger of fire or explosion no longer exists.
- (3) Ensure fire personnel are properly trained in rescue techniques and handling of classified information.
- (4) Request assistance when dangerous or hazardous material warrants assistance by specialist (ordnance officer, chemical officer, etc.) if so determined at the accident scene.

i. Provost Marshal will:

- (1) Ensure Military Police investigators and Safety investigators coordinate all investigative efforts within the limitations of both Military Police and Safety regulations.
- (2) Ensure Military Police personnel are trained on specific duties at accident sites to include release of information, restraint of spectators, handling of wreckage, security of classified material and safeguarding government property.

HTC Reg 385-1 (DRAFT)

j. Public Affairs Office will:

- (1) Upon request, dispatch PAO personnel to the accident site to handle official news releases.
- (2) Maintain liaison with local news services to help minimize adverse public relations which may evolve from an accident.
- (3) When appropriate, assist investigators by identifying witnesses and by soliciting the return of pilfered wreckage through available media.

k. DEH will:

- (1) If available, detail surveyors or provide guidance on surveying and diagraming the accident location upon request.
- (2) Provide, upon request, personnel and apparatus necessary to clear land, move earth or other engineering functions relating to accident investigations.

1. The Adjutant General will: Prepare and transmit casualty reports to HQDA in accordance with AR 600-10.

8-4. ACTIONS TO BE TAKEN IN THE EVENT OF AN ACCIDENT.

a. Commanders will:

- (1) Ensure that rescue and firefighting has been completed.
- (2) Secure accident site.
- (3) Notify Military Police.
- (4) Notify DPCA Safety Division (duty hours, 5093/5074/5053, nonduty hours 5076).
- (5) Notify SDO/SDNCO (nonduty hours).
- (6) Ensure that witnesses have been identified and segregated.
- (7) Ensure blood and urine specimens have been taken 40ML blood, 100ML urine, and refrigerate.

b. Safety Office will:

- (1) Determine if accident meets investigation criteria.
- (2) Notify DPTSEC that accident has occurred and request tasking for maintenance officer and senior equipment operator if necessary.
- (3) Notify MEDDAC that accident has occurred and tasking for a medical officer if necessary.

(4) Notify DPCA, FORSCOM, and USASC.

(5) Proceed to accident site and begin preliminary investigation.

c. AMCCOM/LAO, when Army equipment is involved, will: Determine if malfunction of equipment was instrumental in causing the accident.

d. SDO/SDNCO will:

(1) If accident occurs after duty hours, on a weekend or holiday, notify on-call accident investigator, 5076; or call NTC Operator and ask to page all NTC Safety assigned pagers.

(2) If accident occurs on weekend, contact DPTSEC representative for tasking of maintenance and medical officers and photographers.

(3) Notify FORSCOM EOC and ensure USASC is notified.

8-5. ACCIDENT NOTIFICATION FREQUENCIES/PHONE NUMBERS/PAGER NUMBERS.

a. Range Control:

Primary Frequency	38.9	126.2 VHF
Alternate Frequency	32.1	241.0 VHF
Call Sign	32.7	Range Control

Phone Number	4320
Alternate Phone Number	3878

b. Fire Department:

Phone Number	911
Alternate Phone Number	3495
Alternate Phone Number	3497

c. Ambulance:

Phone Number	911
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d. Military Police:

Phone Number	911
Alternate Phone Number	4444
Alternate Phone Number	3470

e. Fort Irwin Staff Officer: of the Day

3530

f. Fort Irwin Safety Office:

Phone Number	5074
Alternate Phone Number	5053
24-Hour Emergency Number	5076
Pager Numbers	203/293

8-6. SAFEGUARDING ACCIDENT INFORMATION. An Accident Investigation Report is an official Army document to be used solely for accident prevention purposes. The accident report is a privileged document and, therefore, must have FOR OFFICIAL USE ONLY, protective markings IAW AR 340-17. The accident folder and all its contents will be marked in accordance with AR 340-17. For photographs, the protective markings will be placed only on the papers to which the photographs are attached, not on the photographs themselves. Accident reports cannot be used as evidence or to obtain evidence in determining the misconduct or line-of-duty status of any personnel; as evidence before evaluation boards; or as evidence to determine pecuniary liability. These reports and their attachments, or copies and extracts, will not be appended to or included in any document or report unless the sole purpose of these reports or documents is accident prevention. Legal questions pertaining to the release of safeguarded information will be resolved according to the provisions of AR 340-17. This does not preclude use of data compiled for analytical purpose to improve safety. Statistical data may also be used for program evaluation, awards consideration, or establishment of objectives.

APPENDIX C

REFORGER

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REFORGER

1. Predeployment.

- a. Has the battalion safety officer assured that adequate safety briefings were presented?
- b. Has a safety annex been included in the exercise directive? (AR 385-10)
- c. Have personnel been provided necessary information on particular problems such as desert, cold, climate, and scenario?
- d. Has the exercise safety officer been involved in overall exercise planning to assure safety is considered? (AR 385-10)

2. Deployment and Exercise.

- a. Is there a mechanical check made on tires, lights, wipers, horn, turn signals, brakes, mirrors, fuel lines, and exhaust systems? (AR 385-55)
- b. Does the senior occupant have a copy of the USAREUR Reg 385.15 (Responsibilities of Senior Occupant)?
- c. Before dispatching vehicles does the dispatcher check to ensure drivers are qualified and not fatigued? (AR 385-55)
- d. During convoy operation, do the required vehicles use amber rotating lights? (USAREUR Reg)
- e. Does the lead vehicle have a blue flag and the tail vehicle have a green one? (USAREUR Reg)
- f. Is sufficient distance maintained between vehicles to permit passing by POV? (FM 55-30)
- g. Is the rear vehicle at least a nonpassenger carrying 2½-ton truck equipped with two amber rotating beacons? (USAREUR Reg)
- h. Do ground guides proceed vehicles in troop areas? (AR 385-55)
- i. Are tracked vehicles equipped with the new 5-foot antennas and are antennas tied down when in vicinity of railroad and streetcar power lines? (TB SIG 291)
- j. Are vehicles equipped with warning triangle, fire extinguishers, flashlight, and first aid kits? (AR 385-15)
- k. Is there a rule of no smoking while refueling vehicle? (Appropriate Vehicle Operator Manual)
- l. Before a water crossing exercise are personnel given a briefing on the proper driving techniques? (FM 71-1)
- m. Are all personnel equipped with life preservers? (AR 385-15)

- n. Are personnel briefed on how to rapidly evacuate APC? (FM 71-1)
- o. Are personnel aware of the proper procedures to use when entry and exit points are suitable? (FM 71-1)
- p. Are preflotation checks made for swimming? (FM 71-1)
- q. Are evacuation drills practiced on dry land from wheeled and tracked vehicles?

3. Redeployment.

- a. Have all safety reporting requirements and accident reporting requirements been met? (Exercise Safety Annex)
- b. Has the after-action report which concerns safety been completed?
- c. Is there a program established to reduce the off-duty accidents which usually occur immediately after redeployment?
- d. Was equipment returned in safe operating condition?