

## APPENDIX G

### COLD WEATHER HINTS

---

#### G-1. General

Success in Northern Operations depends upon forceful leadership and application of proven techniques and maintenance procedures. Ample documents exist to provide these techniques and procedures; however, experience has shown that the same mistakes are continually repeated. To assist personnel in overcoming these recurring errors this list of hints is provided.

#### G-2. Engineer Operations

##### *a. Winter Road and Trail Construction.*

- (1) Make a map, aerial, and ground reconnaissance.
- (2) Roads in forward areas should be provided with vehicle turnouts.
- (3) Remain on high ground following routes of solid foundations and minimum grades where feasible.
- (4) Determine approximate period of use and maximum classification of route.
- (6) Check ice thickness of ice crossings. Make test holes 8 meters (25') apart and at a distance of 8 meters (25') from, and parallel to, the centerline of crossing. The holes should be staggered so that they are at 45° angles to each other.
- (6) Mark route clearly.
- (7) Use trailblazing tractors in pairs, one with winch and angle blade.
- (8) Plan route requiring only equipment organic to constructing unit.

##### *b. Mines and Minefields.*

- (1) Provide sufficient support to detonate mines.

- (2) Cover mines with material to keep out snow.
- (3) Weatherproof fuses with a light coat of automotive water pump grease.
- (4) Allow extra time for placing mines.
- (5) Use both electric and nonelectric firing systems on demolitions in ice to insure detonation.
- (6) Cover AP mines with loose snow.
- (7) Avoid lifting mines by hand after arming in snow.
- (8) Install tripwires above snow surface.

##### *c. Water Supply.*

- (1) Install immersion heaters in water trailers. Extra precautions must be taken when temperature is below -30° F.
- (2) Carry ice auger or axe head welded to steel bar to locate water and check ice depth.
- (3) Locate water point near swift moving water if possible.
- (4) Drain water supply equipment immediately after use when heated Shelter is not utilized.

##### *d. Field Fortifications.*

- (1) Mix sand and gravel with packed snow and frequently sprinkle with water to reinforce positions when time will not permit making of ice-crete.
- (2) Camouflage with fresh loose snow.
- (3) Provide sumps for melting snow.
- (4) Insulate interior of fortification.
- (5) Keep wire above snow.

- (6) Locate fortifications on high ground during periods of possible breakup.

*e. Engineer Equipment Maintenance.*

- (1) Provide adequate stock of spare parts, with special emphasis on high mortality parts such as front power control units (PCU) parts for caterpillars.
- (2) Provide maintenance shelters, where practicable. Improvise shields for driver operator comfort and protection.
- (3) Warm front PCU with external heat before using when snow or moisture is present. Improvise canvas covers to prevent snow from entering. PCU should be left in lockout position when not in use to prevent brake band from freezing on drum.
- (4) Use cutaway snow pads to prevent track breakage. Snow pads are available in stocks or may be cut by maintenance organizations.
- (5) Make every effort to warm gearboxes and engines before starting.
- (6) Maintain extra safety vigilance at all times during subzero operations because of the tendency of steel to become brittle and break at extreme low temperatures. Tools should be used cautiously. Stand clear of taut cables.
- (7) Use air duct heaters, oil burning flares, and electrical heating elements for preheating equipment when required.
- (8) Attend fires constantly if open flame heat is used, especially in windy weather. Fire extinguishers, CO<sub>2</sub> type, should be on hand. Winterize CO<sub>2</sub> bottles by the use of 15 percent nitrogen.
- (9) Keep engines and radiators covered; test thermostats.
- (10) Raise low idle speed to a point where full oil pressure is maintained.
- (11) Use truck mounted cranes only when

footing is solid. They cannot be operated in snow or soft terrain.

- (12) Place one-half pound of sodium bicarbonate near each space heater,

*f. Tractor Extraction.*

- (1) Remember tractors must often be lifted as well as pulled in order to clear an ice shelf or to climb from a soft mud bottom to a frozen earth bank. This lift must be provided with materials at hand. If the stuck tractor is operative a ramp can be built, logs can be fed under the revolving tracks, or logs can be chained to the tracks and revolved under. If gravel or sandbags are available they can also be fed under the revolving tracks. Usually above measures plus at least one winch tractor will be required. If above measures fail, demolitions in the hands of a qualified demolitions specialist may be used to provide a final boost. Demolition should be considered only after exhausting all other resources.
- (2) After extraction, thaw all gearboxes, drain and relubricate the crankcase, drain and refill fuel tanks, and check all adjustments before attempting to operate.

### G-3. Health and First Aid

*a. Preventative Measures.*

- (1) Accomplish regular body waste elimination.
- (2) Wash out insulated boots weekly, if possible.
- (3) Use "buddy system" to maintain constant check for indications of frostbite or exhaustion.
- (4) Check more often for frostbite as the windchill becomes higher.
- (5) Drink sufficient water and take necessary salt even in extreme cold. Dehydration is more frequent than cold injury during fieldwork.
- (6) Refrain from drinking alcoholic beverages and excessive smoking when in extreme cold.

- (7) Do not become overheated from overdressing.
- (8) Practice personal hygiene.
- (9) Prior to sun and wind exposure, apply sunburn preventive cream to exposed skin areas; apply chapstick to lips; and put on sunglasses to protect eyes from the sun.

*b. First Aid Treatment.*

- (1) Thaw minor frostbite by placing frozen part against unfrozen area of body.
- (2) Keep medical installations well forward and displace them frequently.
- (3) Evacuate cases of frostbite, other injuries, and illnesses to medical facility immediately. Remember that frostbite of the feet requires a litter evacuation.
- (4) Frostbitten areas should not be rubbed with snow or ice.
- (5) Place frostbite casualty in a warm area but not too near heat sources.
- (6) Place casualties in protected areas prior to administering first aid, injury permitting.
- (7) Casualties must not be left unattended.

*c. Miscellaneous.*

- (1) If unable to walk or exercise vigorously, keep hands and feet warm by moving fingers and toes. Fingers may be warmed quickly by swinging arms in a wide arch from an extended side position to a front position and hitting hands together until warmth is restored.
- (2) Move lips from side to side and up and down to increase blood circulation throughout the face to help prevent cold injury to facial tissue.

#### G-4. Vehicles

*a. Preparatory Measures and Procedures.*

- (1) Make certain that operators and maintenance personnel are well trained and thoroughly familiar with

the methods of vehicle operation and maintenance in extreme cold (TM 9-207).

- (2) Wear gloves when handling metal because exposed skin will freeze upon contact.
- (3) Exercise care in moving vehicles after they have been cold soaked.
- (4) Reduce loads appropriately under adverse conditions.
- (5) Exercise constant vigilance in operation of vehicles on cross-country trails. Consider radiators when crossing wooded terrain and undercarriages when traveling through downed timber or snags. Movement over frozen water courses and ice must be in accordance with FM 31-71.
- (6) To prevent freezing in, recover vehicles as quickly as possible after they have bogged down in muskeg or broken through ice.
- (7) Have recovery equipment well forward to assist in proper recovery of bogged vehicles.
- (8) Use heavy tracked vehicles to break trails in heavily wooded areas.

*b. Lubricants and Related Items.*

- (1) Lubricate and change oil more often than normal to compensate for abnormal operation, severe conditions or contaminated lubricants.
- (2) Keep oil and gasoline containers sealed tightly to prevent snow and ice moisture from entering.
- (3) Always make a complete change of engine or gear oil instead of mixing various grades.
- (4) Standard and arctic type antifreeze should not be mixed.
- (5) Allow for expansion when filling radiators.

*c. Winterization Equipment.*

- (1) Use powerplant and personnel heaters when required by ambient temperatures.
- (2) Service fuel filter more frequently

than for normal operations in temperate climates. The frequency may need to be increased to as often as every 4 hours. When the liquid freezes in the filter, it will be necessary to disassemble the unit and remove the ice and other residue,

- (3) Cold Aid Starting Kit on wheeled vehicles should not be used as a substitute for powerplant heaters.
- (4) Maximum use should be made of the Cold Aid Starting Kit when vehicles not equipped with powerplant heaters are to be started after being shut down for periods long enough to lose their residual heat.

*d. Tires.*

- (1) Check prior to operation during extreme cold.
- (2) Increase tire pressure approximately 10 percent in extremely cold weather.
- (3) Tighten valve cores securely in extreme cold.
- (4) Tires should not be bled during or immediately after operation.

*e. Engine Starting and Warmup.*

- (1) Pre-warm vehicle engine with auxiliary type heaters when temperatures are below  $-25^{\circ}\text{F}$ .
- (2) Utilize winter fronts and shutters to obtain and maintain normal engine operating temperatures.
- (3) Insure that an alert licensed operator is present in vehicle when engine is operating. Operator must observe oil pressure gauges, warning lights, and temperature indicator to prevent damage to engine.
- (4) Warm engines to operating temperatures before accelerating.

*f. Power Train and Suspension Units.*

- (1) Operate vehicles at reduced speeds long enough to thoroughly warm up chassis components after prolonged shutdown.
- (2) Clean snow, slush, and other material out of tracks and suspension *immedi-*

*ately* after stopping vehicle to prevent freezing in place.

- (3) Park on brush, logs, dry ground, or other surfaces not liable to thaw from heat of tires and tracks and re-freeze.
- (4) Avoid using sharp instruments to free frozen tires. Use pioneer equipment to break tracks free before attempting to move tracked vehicles.
- (5) Gasoline or other inflammables should not be used to build fires for freeing tracks.
- (6) Do not attempt to free vehicles frozen to a parking area by jerking or rocking under its own power. Use another vehicle to tow the frozen vehicle if one is available.
- (7) Overloading vehicles causes excessive parts breakage.

## **G-5. Ammunition**

*a.* Protect variable time fuses from temperatures below  $-20^{\circ}\text{F}$ . Fuses are designed for use between limits of  $0^{\circ}$  and  $120^{\circ}\text{F}$ , and for storage between limits of  $-20^{\circ}$  and  $130^{\circ}\text{F}$ . If fuses are fired outside temperature ranges, performance may be severely reduced; firing safety will not be affected.

*b.* Place ammunition on dunnage during storage.

*c.* Clean snow and ice from ammunition prior to repacking.

*d.* Leave containers or components closed during temperature conditioning to prevent condensation.

*e.* Fire rockets only above safe firing temperatures indicated on containers.

*f.* Unpack only that ammunition required for the mission.

## **G-6. Weapons**

*a.* Use lubricating oil weapons (LOW) for all small arms at temperatures below  $0^{\circ}\text{F}$ .

*b.* Keep all sighting equipment at outside temperatures to prevent fogging.

c. Wrap optics in heavy blankets prior to entering warm shelters to allow gradual warm-up. Keep wrapped *at least* 4 hours to prevent moisture damage.

## **G-7. Individual and Small Unit Equipment**

### *a. Pneumatic Mattress.*

- (1) Avoid placing mattress on sharp objects.
- (2) Inflate mattress, allow it to cool, and inflate again.
- (3) Wipe dry and deflate completely prior to packing.

### *b. Sleeping Bag.*

- (1) Wear only enough clothing to keep warm in sleeping bag.
- (2) Do not use the sleeping bag in direct contact with the ground or snow; insulate by using on top of air mattress, shelter half, poncho, or coniferous boughs.

### *e. Rucksack.*

- (1) Load heavy objects near frame in bottom of rucksack.
- (2) Place sharp and hard objects inside where they will not rub against side or wearer's back.
- (3) Use outside pockets for articles which are frequently used.

### *d. Skis.*

- (1) Defer waxing skis until snow conditions and type of wax are determined.
- (2) Clean and inspect skis and bindings daily after use.
- (3) Make sure bindings are properly adjusted to boots.
- (4) Skis should not be left on ground or snow.
- (5) Store skis and ski poles away from excessive heat.
- (6) Carry extra skis, ski poles, bindings, ski wax, pine tar, and facilities for repairing skis and snowshoes in each unit supply section.

### *e. Snowshoes*

- (1) Place upright in snow or hang on trees or racks.
- (2) Repair all breaks as soon as possible.
- (3) Snowshoes should be dried by indirect heat in a moderately warm room or tent.
- (4) Avoid small trees, stumps, branches, or other rough or sharp objects.

### *f. Tents.*

- (1) Brush snow and ice from tent before packing.
- (2) Keep can or cup of water on tent stove when fire is burning in order to increase humidity and reduce fire hazard.
- (3) Keep one-half pound box of sodium bicarbonate with each tent group to combat fuel fires.

### *g. Protective Mink.*

- (1) Warm mask to room temperatures every 24 hours.
- (2) Carry mask under outer clothing.
- (3) Place mask inside sleeping bag at end of day.
- (4) Inspect outlet and intake valves for icing and cracks after use.
- (5) Adjust head harness to obtain gas tight seal with minimum tension on harness straps to avoid restriction of blood circulation in the face.

### *h. Chemical Agent Detector Kit.*

- (1) Carry kit under outer clothing.
- (2) Mix reagents only as use is anticipated or required.

*i. Five-Gallon Water Cans.* Fill cans only three-fourths full and use insulated covers.

### *j. Small Equipment Item.*

- (1) Use chapstick to prevent wind and cold from chapping lips and as protection against serious windburn and sunburn caused by reflection of sun on snow and ice. Use sunburn preventive cream on exposed skin areas.
- (2) Carry sunglasses on the person at all times. If broken or lost, substitute

may be improvised by cutting thin 2.50 cm (1") long slits in pieces of wood or cardboard.

- (3) Carry waterproof matches in a waterproof box at all times.
- (4) Use mountain cookset to melt snow for drinking and cooking water, as well as for the preparation of food. Stir snow constantly until at least 2.50 cm (1") of water is formed on the bottom of the pan to avoid burning the pan. Select only uncontaminated snow. Iodine water purification tablets should be used to disinfect drinking water prepared by melting snow.
- (5) Allow space in canteens for expansion of ice.

*k. Rations.*

- (1) Issue a hot ration to troops prior to start of day's operations if possible.
- (2) Improve methods for providing hot liquids and soups to troops engaged in winter operations.
- (3) Eat cold rations only as a matter of necessity.
- (4) Eat all of the ration components as the complete balanced ration is designed to meet body requirements.

*l. Cold Weather Clothing.*

- (1) Keep it clean.
- (2) Avoid overheating. Loosen closures before starting to perspire. Remove layer of clothing if closure loosening is not sufficient.
- (3) Wear it in loose layers. Weight does not mean warmth, but layers do.
- (4) Keep it dry, outside and inside. Brush, rather than rub snow from clothing.
- (5) Dry socks by hanging them on the lines inside the tents.
- (6) Dry socks by placing inside clothing during daytime and in sleeping bag at night when other methods are not available.

*m. Petroleum.*

- (1) Clean around opening before removing plug or cap from petroleum container.
- (2) Use spark proof tools when working in storage areas.
- (3) Carry proper POL dispensing equipment to avoid spilling. Avoid spilling gasoline on clothing; frostbite may result.

G-8. Communications

*a. Maintenance and Care of Equipment.*

- (1) Keep equipment in best possible operating condition by organizing a thorough and comprehensive preventive maintenance program.
- (2) Take precautions to prevent damage to equipment due to moisture condensation. Cold equipment should be wrapped in a blanket or parka before being brought into a heated shelter and allowed to warm gradually.

*b. Dry Cell Battery.*

- (1) Use low-temperature winter type batteries. These batteries are distinguished by 2000-series type numbers, such as Battery BA-2279 for Radio Set AN/PRC-10 or BA-2386 for Radio Set, AN/PRC-25 (para 11-6). Store 2000-series batteries at 0° F.
- (2) In low ambient temperatures, batteries should be carried inside clothing to keep them warm.
- (3) Reactivate cold soaked batteries (other than 2000-series) by warming thoroughly at temperatures not to exceed 100° F. Batteries (other than 2000-series) give the best performance when operated at 70° F.
- (4) Carry spare set of batteries for field phones on person and change with batteries in phone at frequent intervals.

*c. Rubber and Rubber Type Compounds.*

- (1) Flex cordage slowly and carefully in order to minimize breakage after

cordage has been exposed to cold weather.

- (2) Warm cables before they are laid in the open.

*d. Radio Receivers and Transmitters.*

- (1) Stress the vital importance of communications during northern operations.
- (2) Place sets in sheltered locations whenever possible. Erect lean-tos, snowcaves, windbreaks, or any other appropriate type of shelter which will protect the equipment from direct exposure to extreme climatic conditions.
- (3) Require installation of complete antenna system, such as long wire antenna, elevated ground plane antenna, single wire inverted L-antenna, doublet antenna, which are more efficient than fractional wavelength whip antennas.
- (4) Cut doublet antennas to operating frequency. The length of this antenna is determined by the following formula:  $L = 468 / F$ ; where  $L$  is length in feet and  $F$  is operating frequency in megacycles (468 is a constant factor derived from the basic formula). This formula does not apply to antennas longer than half-wave.
- (5) Keep in mind that the radiation pattern of a doublet antenna is maximum at right angles to the plane of the antenna.
- (6) Elevate radio frequency cables above the surface to insure that they will not freeze to the ground.
- (7) Construct a counterpoise system in locations where frozen ground prevents installation of a ground rod or where a good earth ground is not available.
- (8) Use radio retransmission stations to extend communications beyond distance normally covered by one radio set.
- (9) Use arctic lubricants on Radar and Beam antennas.

- (10) Warm up radio sets for at least one-half hour before applying plate voltage to transmitter tubes. *The sets may be turned on but do not transmit for at least one-half hour.*

- (11) Frequently check antenna system on mobile units and remove snow, ice, or slush formations.

*e. Microphones.*

- (1) Place frost shield covers over microphone and earphone elements of handsets. If not available, such covers may be fabricated out of the plastic bag material in which dry batteries are packed.
- (2) Carry a spare microphone, if available, under outer garments.

*f. Gasoline Driven Generators and Reel Units.*

- (1) Keep battery fully charged.
- (2) Set carburetor for richer mixture than required for higher ambient temperatures.
- (3) Maintain engine temperature within the range 140° F. to 190° F. Cover units when required to obtain quick warmup.

*g. Wire Communication Equipment.*

- (1) Install teletypewriters and switchboards in heated shelters.
- (2) Remove all snow, ice, water, and dirt from cable stubs before connecting.
- (3) Avoid tight loops.
- (4) Prevent excessive lubrication.
- (5) Insulate teletype and crypto equipment during tactical movement to reduce warmup period required when reestablishing communications. (Salvaged sleeping bags or blankets are excellent for this purpose.)
- (6) Keep snow or moisture from the inside of telephones and switchboards.
- (7) Place wire lines well off frequently traveled cross-country trails.

*k. Miscellaneous Equipment.*

- (1) Carry flashlight in inner pocket, exposing to cold only during use.
- (2) Remove batteries from lanterns not in use. Store in warm place.

## G-9. Transportation

### a. Sled Operation.

- (1) Operate sleds consistent with supply requirements, the capability of drivers, and tactical situation.
- (2) Establish supply and maintenance points along route.
- (3) Insure sled cargo is thoroughly lashed.
- (4) Load trailbreaking sleds lightly.
- (5) Load sleds so that center of gravity is slightly to the rear of the sled center.
- (6) Inspect cargo sleds thoroughly at each halt.
- (7) Mark dangerous portions of trails.
- (8) Execute turns in wide circles.
- (9) Load sleds with packages which can be easily handled by two or three men.
- (10) Avoid hills and boulder strewn terrain when selecting routes.
- (11) Sleds should not be backed.
- (12) Leave 10 to 15 cm (4" to 6") of snow on sled trails.

### b. Truck and Convoy Operation.

- (1) Carry no more than sixteen personnel and equipment in personnel carrier, 2 1/2-ton.
- (2) Provide propositioned bivouac area for mess, latrine, maintenance, and sleeping facilities.
- (3) Provide each vehicle with the following equipment:
  - (a) Driver's personal gear and field equipment.
  - (b) Vehicle maintenance tools.
  - (c) One case of operational rations for emergency use.
  - (d) Extra engine oil.

- (e) Extra antifreeze.
- (f) Extra gasoline.
- (g) Tow and tire chains.
- (h) Pioneer tools.
- (i) Strip map showing locations of telephones, bivouac areas, fueling points, etc.
- (j) Highway warning device.
- (k) Fire starter.

## G-10. Intelligence

### a. Enemy.

- (1) The enemy's ability to inflict maximum casualties on U.S. Forces will depend on the enemy's ability to move. Immediate relay of information pertaining to the enemy's capabilities and modes of cross-country travel, and airmobility is essential.
- (2) The ability of enemy soldiers to live and fight during extended periods of extreme cold will affect the commander's decisions, and ultimately the outcome of the battle. Intelligence collection agencies should in compiling information regarding the enemy and his environment include the following:
  - (a) Level of cold weather training or experience of units in contact.
  - (b) Types of weapons and ammunition.
  - (c) Types of vehicles and aircraft.
  - (d) Types of cold weather clothing and equipment.
  - (e) Communications equipment. Types and methods of employment.
  - (f) Types of navigational aids suitable for northern operation.
  - (g) Types of rations and method of distribution.
  - (h) Types of wildlife, fuel, and vegetation in the area that could be used in emergency.
  - (i) Types of arctic shelters for personnel and equipment.

### b. Weather.

- (1) Because weather is a paramount consideration in northern latitudes, im-



mediate dissemination of weather forecasts to lowest echelon is essential.

- (2) Arctic weather is characterized by drastic temperature changes in short periods of time.

*c. Winter Terrain Studies.*

- (1) Prepare detailed studies. Revise as necessary to insure accuracy and reflect changing trafficability conditions.
- (2) Locate and indicate condition of existing road net.
- (3) Locate and plot other local roads that are used as winter roads but not shown on maps.
- (4) Show forest density, tree size, water routes, ice condition and thickness, snow condition, including average depth, and general terrain features applicable to cross-country movement, routes of march, and avenues of approach. Frozen rivers and lakes increase possibilities of movement and operations. Conduct exacting ice reconnaissance before considering them as axis of advance for vehicles.

*d. Reconnaissance.*

- (1) Include time required to complete patrol under conditions encountered in the northern latitudes. This may be from 1 1/2 to 2 times longer.
- (2) Route reconnaissance parties must include personnel technically qualified to report trafficability conditions of ice and snow.
- (3) Make extensive use of Army aircraft for reconnaissance, radio relay (retransmission), aerial observation posts, terrain study, and spot photography.

*e. Counterintelligence.*

- (1) Insure that personnel receive camouflage and deception instruction peculiar to northern operations.
- (2) Because of long periods of winter darkness and the ability of sound un-

der certain arctic conditions to travel long distances, light, sound and fire discipline must be strictly enforced.

## **G-11. Operations**

*a. Land Navigation.*

- (1) Know compass deviation and magnetic declination.
- (2) Become familiar with landmarks, ridge lines, direction of riverflow, and direction of prevailing wind before going unto unknown areas.
- (3) Estimate distance traveled by using methods stated in paragraph 6-9.
- (4) Keep parka fur hood with wire loop away from compass when taking reading.

*b. Bivouac.*

- (1) Select bivouac areas on high ground when tactically possible. Cold lies in low areas. Erect tent in snow for additional protection.
- (2) Insulate tent floor with evergreen boughs for extra protection and warmth.
- (3) Use "dead man" to anchor tent ropes in area where strong winds prevail.
- (4) Burn wood whenever possible.
- (5) Build a lean-to for storage and protection of gear if time permits. This will provide more space in tent.
- (6) Have fire guard on duty when stove is burning.
- (7) Bivouac in wooded area if available.
- (8) Fill stoves and lanterns and store gasoline outside of tents.

*c. Cross-Country Movement and Field Operations.*

- (1) Load transportation units with the quantity and type of equipment and supplies that will enable crew and passengers to live independent of outside help for 2 or 3 days.
- (2) Reduce man-towing of equipment in 200 pound sleds to an absolute minimum.

- (3) Do not travel alone in the northern latitudes.

*d. Tactics, Methods, and Techniques Peculiar to Winter Operations.*

- (1) Place increased importance on value of reconnaissance, particularly route reconnaissance, because of widely separated units, heavily wooded areas, sparsely populated areas, and few maps.
- (2) Use ground reconnaissance to make final selection of routes.
- (3) Take advantage of ski and snowshoe mobility when snow conditions are favorable.
- (4) Use good skiers for long-range patrols.
- (5) Consider endurance and physical condition of troops at all times during winter operations.
- (6) Attack front, flanks, and rear of enemy defensive position simultaneously, when possible, in order to isolate and inclose him. Minimize execution of assault in deep snow against commanding terrain.
- (7) Use skijoring when feasible.
- (8) Insure tactical requirements are fulfilled in conditions of extreme cold.
- (9) Leave skis and snowshoes at assembly area or attack position only if enemy may be reached more quickly and easily without them.
- (10) Consider frozen lakes, rivers, and streams as avenues of approach for enemy and as route of advance for friendly forces.
- (11) Assault on foot instead of skis when it can be done effectively and rapidly. Skis are recovered and brought forward by detail from each squad.
- (12) Do not use same tracks or route for vehicles when moving over terrain with low load bearing capability.
- (13) Do not use wheeled trailers behind tracked vehicles in cross-country movements if other means are available.

*e. Airborne Operations (FM 31-71).*

- (1) Inspect personnel to insure correct fit of parachutes over arctic clothing and proper attachment of equipment.
- (2) Parachutists should jump with skis or snowshoes if snow is present on the DZ (TM 57-220).
- (3) Keep cargo compartment of aircraft from becoming overheated during flight to prevent cold weather injuries to personnel due to chilling after the jump.
- (4) Employ standard methods of aerial delivery as methods and techniques do not vary with cold weather conditions.
- (5) Start recovery immediately after air-drop completion.
- (6) Provide goggles for jumpmaster to preclude watering eyes when observing from open door, for IP's and DZ's.

## **G-12. Logistics**

*a. General.*

- (1) Provide troops with hot meals and drinks at least twice daily, or provide them with the time and means to do so themselves.
- (2) Use rotary and fixed wing aircraft capable of making airdrops or landing in higher elevations, whenever possible.

*b. Supply Areas.*

- (1) Locate supply areas near terrain suitable for airstrip or drop zone.
- (2) Provide continuous all around security of supply areas.
- (3) Employ fixed and rotary wing aircraft to deliver critical supplies from supply areas to combat troops.
- (4) Provide heated storage for certain perishable foods and freezable medical supplies.
- (5) Provide heated shelter for medical evacuees, POW's and IPW team.
- (6) Establish rigid control of POL to avoid waste.