

W I N T E R
E X E R C I S E

Handbook

For Force Protection

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY ALASKA
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Safety

Winter Exercise Handbook

Summary. This handbook is designed to provide commanders, leaders and supervisors with guidance for accident prevention while in the arctic environment. Accidents handicap the Army in accomplishing its missions because of personnel and equipment loss. Accident prevention is the responsibility of leaders at every level. Leaders should ensure that our soldiers receive the proper indoctrination and supervision to prevent accidents. This handbook does not replace good common sense.

Applicability. This pamphlet applies to units and activities assigned or attached to the United States Army Alaska (USARAK) at Forts Richardson, Wainwright and Greely.

Impact on the New Manning System. This pamphlet does not contain information that affects the New Manning System.

Suggested improvements. The proponent agency of this circular is the Installation Safety Office. Users are invited to send comments and suggested improvements on Department of the Army (DA) Form 2028 (Recommended Changes to Publications and Blank Forms) directly to APVR-RDZ.

Interim changes. Interim changes to this circular are not official unless they are authenticated by the USARAK Signal Officer. Users will destroy interim changes on their expiration dates unless sooner superseded or rescinded.

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ACCIDENT-FREE HINTS

Cold Weather Injuries

To avoid frostbite and hypothermia.

- a. Keep clothing clean and change socks whenever they are moist, or at least daily.
- b. Keep underwear clean and change it frequently.
- c. Avoid becoming overheated and sweaty and then being inactive.
- d. Wear the uniform properly—ventilate it when body heat builds up; button it up to retain heat when necessary.
- e. Keep clothing dry, brush off snow. Don't let snow melt into outer clothing.
- f. Don't let bare flesh come in contact with cold metal objects.

Explosives

Don't fire blank ammunition at close range (less than 20 meters for M-16; 50 meters for heavier weapons). Don't fire flares or star clusters at personnel, aircraft, vehicles or near ammunition or petroleum, oils and lubricants points. Be extra careful with trip flares. No live ammunition will be carried on training exercises.

Carbon Monoxide

Don't sleep in tightly enclosed areas, near vehicle exhaust, in vehicle cabs or in generator trucks.

Vehicle Operations

Don't move vehicles through bivouac areas during periods of limited visibility or darkness without a ground guide. Don't back up any vehicle without a ground guide. Tracked vehicles and vehicles with restricted visibility require two ground guides. Don't operate any motor vehicle within 50 of rotary wing aircraft (except when servicing). Set up warning devices when vehicles are halted on roadways.

Bivouac Areas

Don't sleep in, on, under or near wheeled or tracked vehicles or other gasoline or diesel equipment. Keep your tent well-ventilated to prevent carbon monoxide build-up. Keep a can or canteen cup of water on the tent stove to increase the humidity and reduce fire hazards. DO NOT place 5-gallon water cans on stoves to heat water. DO NOT heat unopened cans of food or rations directly on stoves. Always have a fireguard posted when operating stoves. Have fire extinguishers available and make sure everyone knows where they are and how to use them.

Petroleum, Oils and Lubricants Storage

Storage of petroleum, oils and lubricants will not be closer than 50 feet from any tent or equipment and locate it to ensure drainage away from inhabited areas, if leakage does occur.

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Convoy Operations

Carry only the driver, plus one, in the cab of a truck. Assign drivers who are skilled and trained in ice and snow driving conditions. Ensure that drivers and assistant drivers are Phase II qualified and licensed. Assign a senior occupant. Provide each senior occupant with a strip map showing locations of telephones, rest stops, refueling points and other essential information. DO NOT transport flammable liquids and explosives in the same vehicle with troops. The only exception is the transportation of the 5-gallon fuel cans that are packed in the ahkio groups. Ensure that all drivers and assistant drivers receive safety and operations briefing before the convoy departures, including speeds, catch-up speeds, road conditions, etc. All vehicle occupants will use the personnel restraining devices when provided. When following a small unit support vehicle (SUSV), maintain the prescribed distance and stay alert, since deceleration of the SUSV is faster than a wheeled-vehicle, and it has no brake light.

Independent Operations

Don't attempt independent operations unless equipped with two-way communications equipment. Don't attempt individual escape or evasion, if captured. Always use the "Buddy System."

Handling of Prisoners of War

Ensure that prisoners of war are adequately clothed to prevent cold weather injury. Never separate a prisoner of war from his/her equipment.

Wild Animal Hazards

Moose, caribou, bear and wolves are in the exercise area. Annoying these animals can lead to serious injury. NO HUNTING will be allowed in the exercise area.

FIRE PREVENTION

Heat Producing Equipment Placement

Tent stoves, field ranges, sterilizers and other heat-producing equipment will be located at least 18 inches from any wall (tent or building). When on other than earth or a concrete floor, the equipment will be placed on a piece of sheet metal or in a sand box extending approximately 8 inches beyond the front of the fire box and 6 inches beyond the sides and back. A ventilated space of at least 4 inches will be provided between the equipment and the floor or other support. Only qualified and licensed personnel will operate Yukon/potbelly stoves, field ranges/cooking stoves, swing fire heaters, immersion heaters, lanterns and other fuel-fired devices. Assemble all fuel-fired equipment per the applicable technical manuals.

Stove Pipes

Stove pipes should have tightly fitted joints and should terminate in standard roof jacks and contain a spark arrester when burning wood, and a draft diverter when burning liquid fuel. No heating equipment will be operated unless all elements of the stove are in good condition and the assembly is complete. Check stove pipes and roof jacks daily. Dismantle and clean stove pipes weekly or more often as needed. Stove pipes must be located and secured so as to clear any fabric and touch only the roof jack insulated section. Ensure that the "flaps" at roof jacks are rolled and tied back and that draft diverter guy ropes are tied to the tent only.

Lighting Placement

Lanterns and electric bulbs will be kept at least 18 inches from any combustibles, including walls and ceilings. When suspended, clearances will be measured from all points passed by the lantern or light swinging 90 degrees in any direction from the point of suspension. Lanterns will not be placed on stands or tables unless both the support and the lantern are secured to prevent overturning.

Fuel

Fuel for lanterns and stoves, other than that in the reservoirs, will be stored in tightly capped containers at least 50 feet from any tent, structure or vehicle parking area. Lanterns and other fuel-fired equipment will not be refueled inside the tent. Fuel becomes supercooled when stored in subzero temperatures and can freeze the skin when contact is made with bare flesh. Never refuel a lantern or stove until the unit has cooled. Never attempt to relight a hot stove or lantern.

Fuel cans will be securely mounted outside the tent and fuel lines will be equipped with drip interceptors. Heating stoves with a fuel supply larger than the 5-gallon can will have a quick shut-off valve.

Tent Clearance

Ten-man sleeping tents will have at least 10 feet of clearance on all sides. At least 35 feet of clearance is required on all sides of larger tents.

FIELD EXERCISE SAFETY CHECKLIST

To assist in your accident prevention efforts, use the checklist shown in figure 1 before deployment, during deployment and during the exercise. This checklist is available from your respective Post Safety Office. Local reproduction of this checklist is encouraged. Some areas are intentionally left blank to allow you to add other unit-specific, safety related items.

Field Exercise Safety Checklist					
Unit			Location		
Dates			Safety Officer		
Command			Mission		
Section A - Cold Weather Survival					
Item	Yes	No	Item	Yes	No
All personnel indoctrinated (CWI)			Protection discipline in effect		
All equipment/clothing on hand			CWI symptoms known		
Buddy system used at all times			Proper CWI treatment understood		
Section B - Motor Vehicle Equipment					
Brake condition operational (foot)			Safety straps (side/rear) in place		
Brake condition operational (hand)			Windshield glass and wipers		
Turn signals operative			Vehicle markings and placards		
Steering mechanism operational			First aid kit		
Lights all operational			Fire extinguishers (where required)		
Horn operational			Highway warning kits and their use		
Rear view mirrors properly adjusted			Adequate seating and seat belts		
Tarpaulins/camouflage nets secure			Current DA Form 2404		
Section C - Motor Vehicle Maintenance					
Tire condition (tread/inflation/spares)			Cooling system leaks		
Oil and fuel line leaks			Trailer couplings locked, pinned and safety chains in place		
Exhaust system			Tow bars (as required)		
Oil levels			Tire chains and devices available		
Section D - Motor Vehicle Operations/Convoys					
Drivers fully qualified, trained and licensed			Proper license for vehicle		
Winter orientation completed			Vehicle safety checked before dispatch		
Qualified, trained and licensed assistant drivers and vehicle commanders assigned			Cargo properly secured		
Rest stops scheduled			Convoy discipline/proper spacing		
March route(s) orientation/strip maps			Safe speed briefed		
Route hazards known			Blackout driving SOP available		
Passenger safety briefings presented			Halts or emergency stops		
March units/serials established			Personnel discipline briefed		
Available wreckers/repairs			Safety factor in march table		

Figure 1. Field exercise safety checklist

Section D - Motor Vehicle Operations/Convoys-Continued					
Item	Yes	No	Item	Yes	No
Proper load distribution			Discussion march safety		
Over-width/loads marked			Accident reports available and drivers trained in completion		
Route bridge limits known			Antennas tie-down SOP		
Single vehicle operations SOP			Vehicle ground guide SOP		
Section E - Bivouac					
Reconnaissance of site free of duds			Vehicle control movement SOP		
Wild animals			Vehicle guides SOP		
Appointment of bivouac fire marshal and designated fire guards			Handling/storage/placements/dispensing of POL products		
Operation of fuel fired equipment (trained, qualified and licensed personnel)			Personnel/equipment dispersal (vehicle and tent separation)		
Designated walk areas			Adequate fire prevention equipment		
Firearms/ammunition control SOP			Security/safety motor pool okay		
Emergency procedures for tent fires			Safe vehicle parking areas		
Designated sleeping areas			Safe wire laying		
Vehicle utilization SOP			Shower facilities		
Personal conduct SOP (horseplay/altercations)			Appointment of bivouac safety officer		
Proper grounding of generators and other G.P. equipment					
Section F - Ammunition, Explosives and Pyrotechnics					
Live ammunition security SOP			Flash simulators SOP		
Radioactive materiel accident/incident SOP			Ammunition and explosives accountability		
Blank ammunition SOP			Trip flares/booby traps SOP		
Dud disposal SOP			Simulated hand grenades SOP		
Section G - Army Aviation (Ground Operations)					
Landing zone conditions			Refueling operations/sampling and certification SOP		
Emergency tie down procedures			Dust/snow control		
Proper markings for field landing zones			Ground operations control		
Landing zone lighting (emergency)			Accident investigation plan		
Fire/crash rescue			Personnel control procedures		
Comments and recommendations (attach a sheet of paper if additional space is needed):					

Figure 1. Field exercise safety checklist-Continued

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ACCIDENT INVESTIGATION AND REPORTING

This section is designed to help you to investigate and report an accident in the field. When an accident investigation becomes necessary, fill in the answers to all the questions shown in figure 2 that apply.

Remember, the sole purpose of your accident investigation is to determine the facts surrounding the accident, determine the causes and recommend corrective action to prevent a recurrence.

When an accident occurs on a field training exercise, use the telephone format for accident reporting (fig 2), for investigating and reporting the accident immediately. This does not eliminate the requirement for later submission of the Department of the Army (DA) Form 285 (U.S. Army Accident Report).

When writing a description of an accident, clarity and completeness are the two key factors. In preparing the report, use the questions applicable to investigations as shown in figure 3 to present the pertinent material gathered.

When reporting accidents or injuries other than a major accident or a fatality, the report will be submitted through normal field reporting channels according to the tactical standing operating procedure.

A major accident or fatality will be reported immediately to higher headquarters.

1. Date/time of accident/injury: _____

2. Location of accident: _____
(grid coordinates/place/village/road/area)

3. Personnel involved:

a. Name: _____

b. Grade: _____

c. Unit: _____

4. Accident type and damages/costs:

Type	Damage/Cost
Cold injury: _____	_____
Fire/burns: _____	_____
Weapons/explosives: _____	_____
Carbon monoxide: _____	_____
Air operations: _____	_____
Skiing: _____	_____
Vehicle: _____	_____
Disabling injuries (to whom): _____	
Type of injury (location on body): _____	

5. Reporting unit/individual: _____

6. Narrative description of accident/injury: _____

Report received by: _____

Date/time: _____

Figure 2. Telephone format for accident reporting

1. Who owns the equipment involved?
2. What were the contributing conditions?
3. Were personnel expected to take chances or work in hazardous conditions?
4. What hazardous arrangement or unsafe process contributed to the accident?
5. What actions contributed to the accident?
6. Were safety rules violated?
7. Were individuals following instructions?
8. Had the individual shown a tendency toward improper attitude?
9. Was the work being performed in the customary manner?
10. Was defective equipment a contributing factor?
11. Was proper equipment used?
12. Was equipment adequately safeguarded?
13. How long had the individual been working in this position?
14. Was the individual trained or experienced in the work being performed?
15. Did the individual have any known physical defects?
16. Was adequate protective clothing and equipment provided and worn?
17. Was the task/job properly supervised?
18. Were supervisors and managers aware of the hazards?
19. Did the procedure cause violations of safety rules?
20. Were first aid and transportation facilities available? If yes, what kinds were available?

Figure 3. Questions applicable to investigations

ADVERSE EFFECTS OF COLD

Cause and Symptoms

Chilblains

Cause—Exposure to high humidity at temperatures above 32 Fahrenheit.

Symptoms—Painful swelling and/or sore.

Trench Foot

Cause—Exposure to cold just above freezing and to wet conditions; associated with prolonged wearing of wet socks and boots.

Symptoms—Redness, swelling and numbness in mild cases; blistering, bleeding and great swelling in severe cases.

Immersion Foot

Cause—Restriction of blood circulation by prolonged immersion (12 hours or more) in water just above or below freezing .

Symptoms—Aching and stinging pain, cold feeling, redness or gradual paling, swelling, numbness and a feeling in feet like blocks of wood.

Frostbite

Cause—Exposure to cold below freezing (often caused by foot perspiration followed by freezing).

Symptoms—Aching, tingling, stinging and gradual numbing sensation; early redness and pain; later waxy white, numb and stiff.

Hypothermia

Cause—Exposure to cold and the lowering of the internal body temperature.

First symptoms—pale skin, dizziness, drowsiness, disorientation, slurred speech, stumbling, mind dimming, overtaken by exhaustion.

Final stages—Dropping of internal body temperature from the normal 98.6 Fahrenheit. The body slows down, blood is sluggish. The brain is starved for oxygen and efforts to exercise will only result in tiring more quickly. The blood needs sugar. Finally, a person just wants to lie down and sleep.

First Aid Treatment

General—Get the victim off his/her feet and changed to warm, dry clothing; warm the individual; evacuate through medical channels. DO NOT RUB OR USE SNOW ON THE AFFECTED AREA.

Frostnip (mild blanching of the skin)—Placing the frost-nipped fingers next to the body is usually all that is needed.

Suspected frostbite—Immobilize and remove constrictive clothing. Do not rub in or use snow or ointments/salves. Elevate the limb slightly to control swelling and evacuate to nearest medical treatment facility immediately. Do not allow the patient to drink alcohol or smoke cigarettes.

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Prevention

Be alert—Do not let weather surprise you.

Maintain healthy habits—Exercise good foot and sock care, avoid immobilization, smoking and alcohol, maintain an adequate diet, etc.

Have proper clothing—remember the word C-O-L-D:

- C = *Cleanliness and Care*—Feet, socks and clothing are warmer when clean. Constant care of the feet is imperative.
- O = *Overheating*—Overheating by wearing too much clothing causes perspiration and dampness. This results in dehydration and creates coldness.
- L = *Layers and Looseness*—Clothing in layers ensures air spaces (which hold body heat). Adjust the number of layers to the temperature and activity. Loose-fitting clothing ensures circulation and insulation.
- D = *Dampness*—Any wet garment is a cold garment, just as any tight garment is a cold-producing garment. Wear the parka as a windbreaker and for its water-repellency.

Use common sense—There is no substitute for it. See the wind chill chart in figure 4. General body cooling and many other factor affect the risk of freezing injury.

Avoid Freeze - Thaw - Refreeze—Use the ambient air temperature guidelines shown in table 1.

Table 1 Ambient air temperature guidelines	
32° to 20° Fahrenheit	Little risk with normal winter issue, if clothing is dry.
19° to 16° Fahrenheit	Risk as above except physically inactive personnel need shortened exposures or warming tents/fires.
15° Fahrenheit or colder	High risk with normal winter issue. Continuous close supervision us required. Extreme conditions may warrant curtailment of training without arctic gear.

Wind Chill Factor

The wind chill factor chart shown in figure 4 serves as a guide to the cooling effects of the wind on bare flesh when a person if first exposed.

COOLING POWER OF WIND ON EXPOSED FLESH EXPRESSED AS AN EQUIVALENT TEMPERATURE (UNDER CALM CONDITIONS)												
Estimated Wind Speed (in MPH)	ACTUAL THERMOMETER READING (Degrees Fahrenheit)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	EQUIVALENT CHILL TEMPERATURE (Degrees Fahrenheit)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-21	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
Wind speeds grater than 40mph have little additional effect	LITTLE DANGER Under 5 hours with dry skin. Maximum danger of false sense of security				INCREASING DANGER Flesh may freeze within one minute				GREAT DANGER Flesh may freeze within 30 seconds			
	Danger from freezing of exposed flesh											
	Immersion foot (trenchfoot) may occur at any point on this chart											

1. Instructions: Measure or estimate the local temperature and wind speed. Enter table at closest 5 degree interval along the top, with the appropriate wind speed along the left side. Intersection gives approximate equivalent chill temperature. That is, the temperature that would cause the same rate of cooling under calm conditions. Note that regardless of the cooling rate, you do not cool below the actual air temperature unless wet.

2. You can go on working and living a safe, full life in cold weather if you know and heed the basics of winter survival. Training, discipline and experience help to conquer harsh weather conditions. Overcoming hard conditions builds confidence and esprit.

PREVENTION OF COLD WEATHER INJURY IS A COMMAND RESPONSIBILITY!

Figure 4. Wind chill factor chart

CONVOY OPERATIONS

Good drivers are the most important factor in a driver safety program. Practice good driving habits and courtesies whenever you are behind the wheel. Drive as if your life depends on it. It does.

Before Leaving the Motor Pool

Before leaving the motor pool, drivers will—

- a. Ensure that all systems in their vehicle are working properly (i.e., exhaust system, brake system, steering system, etc.).
- b. Ensure they have all authorized basic issue items.
- c. Check the tires. Vehicles with smooth tires require a longer stopping distance on snow and ice. Snow tires or studded tires are recommended during the winter months.
- d. Be certain all turn signals and other lights are operating properly before moving a vehicle. Check the trailer lights, also! Headlights will be turned on during poor visibility (darkness, ice fog, snow). Always use low beams in snow or fog conditions.
- e. Remove snow and ice from the windshield, both front door windows, rear windows, hood and the roof. A frost shield will be affixed to the inside front door windows and the rear window. Check windshield wipers for condition and proper operation.
- f. Be dressed and equipped appropriately during the winter before leaving the motor pool. Heater system failure could result in frostbite or death if sufficient clothing is not worn.

Traveling in a Convoy

During convoy, in addition to obeying all traffic rules, drivers will—

- a. Operate their vehicles at a speed that is reasonable and prudent considering the weather, roads and traffic conditions. Since posted speed limits relate to ideal conditions, driving at the posted speed limit under less than ideal conditions is too fast. Restrictions imposed by weather, such as snow and ice fog, must be considered.
- b. Not follow another vehicle at a distance that does not allow sufficient time to stop and avoid a rear-end collision. Allow extra distance when the roads become icy, as stopping distance is increased 5 to 11 times. For SUSVs, double the normal distance between vehicles.
- c. Move to the right of the road if your vehicle develops a mechanical problem. Turn on flashing hazard lights and post hazard signs. Use caution when exiting on the left side of the vehicle. The maintenance vehicle, which is usually at the end of the convoy, should stop to assist.

In a Tent Compound or Bivouac Area

When in the tent compound or bivouac area, the following safety rules will be observed:

- a. Speed limit is a maximum of 5 miles per hour.
- b. During the hours of reduced visibility, all vehicles will be preceded by a person on foot when in an area that are occupied by troops.
- c. When backing, all vehicles will be guided by a person on foot. SUSVs will have two ground guides.

- d. Personnel will not sleep in a roadway, nor under, inside or within 10 feet of any vehicle.
- e. Drivers of radio-equipped vehicles will be cautioned concerning dangers when near high tension wires. Measures will be taken to ensure that the antenna does not come within 10 feet of such wires.
- f. Personnel will not sleep in any vehicle, especially while the engine is running.
- g. All personnel should observe appropriate operating procedures for vehicle heaters to guard against the dangers of carbon monoxide poisoning.
- h. Vehicles will not be parked within 10 feet of any tent or storage area.
- i. Except for loading or unloading, vehicles will not be stopped or parked in areas established as fire lanes. When stopped in fire lanes, vehicles must be constantly attended.
- j. Vehicles will not be refueled while the engine is running or within 50 feet of flame-producing equipment.

Safety Tip: Get plenty of rest before convoy departure. Don't drink alcoholic beverages the night before a movement. The effects of a hangover are almost as bad as being under the influence because people tend to underestimate the prolonged effect to alcohol.

FIELD SAFETY

Laying Out Bivouac Site

1. Select a site for the tent(s).
2. Select water point(s) and rope or mark them off.
3. Designate and mark petroleum, oils and lubricants, trash and latrine areas. Keep them well away from the water point.
4. The latrine area is also urine area (in place of the area below the gas can tripod) when the temperature is above 30° Fahrenheit.

Erecting 10-Man-Tent

1. Prepare a suitable site.
 - a. Dig into the snow.
 - b. Pack the snow to build a firm base.
2. Spread the tent flat on the ground to round the shape.
3. Ensure that both doors are zipped closed.
4. Ensure the front door is at a 45° angle downwind of prevailing winds.
5. Anchor the six corner eaves ropes (yellow) to stakes approximately 2 meters from the skirt of the tent. Eaves ropes should have at least a 15- to 18-inch adjustment loop at the end.

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6. Emplace the telescopic pole.
 - a. Use a base plate for the pole, if needed.
 - b. The proper pole height is 6-1/2 to 8 feet.
7. Secure the intermediate eaves ropes and the top corner ropes.
8. Place the door poles at each door, approximately 3 feet from the tent, using a clove hitch.
9. Place the snow flap outside of the tent.
10. Build a snow wall or other protection for the tent on the windward side, if needed.
11. If possible, insulate the bottom of the tent with spruce boughs or other ground material.

Striking 10-Man Arctic Tent

1. Remove all equipment from inside the tent.
2. Roll all white ropes and secure with a half hitch. If the tent was secured with eaves ropes and intermediate eaves ropes to same anchor, this step can be done after removing tent pole.
3. Ensure that both doors are zipped.
4. Collapse the tent pole and remove it from the tent. Drag the tent to remove ice and snow, etc.
5. Holding tent apex in place and using the yellow ropes, bring each corner together until all the yellow ropes are in one hand. Place them in center of tent. Skirt sections should be straightened and brushed clean as each corner is brought together.
6. Fold the tent properly.

Placing M1950 Yukon Stove into Operation (and Packing)

1. Level the ground inside the opening on the right side (fig 5.)
2. Place the stove board on level ground.
3. Remove the stovepipe, draft diverter, burner assembly, fuel hose and can adapter from stove. Figure 6 shows a diagram listing the parts of the Yukon stove.
4. Remove stovepipe section number 1.
5. Attach stovepipe section number 1 to the thimble end of the stove.
6. Swing the stove legs down and place the stove on the stove board.
7. Ensure that the stove door is pointed towards the tent opening, as depicted in tent floor plan shown in figure 5.
8. Attach the draft diverter to stovepipe section number 5 and build the stove pipe.

9. Attach the stovepipe to stovepipe section number 1. Put the pipes seam to seam. Do not bend or force the pipes, if possible.
10. Anchor the draft diverter lines to the tent or tent ropes (round turn and slip knot).
11. Attach the burner assembly to the stove.
12. Ensure that the drip valve is closed and the fuel hose is not touching the stove.
13. Assemble the vent tube and screw it in to the can adapter.
14. Hold the adapter's cam handle in free position and insert the adapter in to the fuel can, making sure that the vent tube extends diagonally to opposite corner of can. Figure 7 shows fuel can adapter installation.
15. Tighten the adapter on to fuel can.
16. Press the cam to seal the joint.
17. During times of extreme cold (-20° Fahrenheit or colder), try to warm the fuel hose and adapter before working with them. Use care, as parts will be brittle and can break easily when completing steps 11 through 16.
18. Fix the tripod with three poles, about 6 to 8 feet long.
19. Ensure that there is a drip intercepted loop in the hose. Invert the fuel can on to the tripod. Vent the tube end at highest point.
20. The fuel can should be at least 3 feet higher than top of stove and 8 feet from the tent.
21. Expect a drip until the breather tube is empty. The snow will make an expedient seal. Open the tent flaps and stand at the side of the stove (not in front).
22. Open the drip valve.
23. Open the door and light the burner plate.
24. Close the door and slide the draft vents shut.
25. Adjust the drip valve to regulate the fuel flow.
26. If the stove goes out, let the burner plate cool (to touch) before relighting.
27. When the stove is burning, ensure there is a stove guard.
28. When burning solid fuels, ensure that the legs of the grate are turned down. Use the draft vents to regulate heat and attach a spark arrester at least 2 pipe sections above stove.
29. A fire extinguisher will be placed next to the center pole to be used in case of fire.
30. Pack the stove so as not to damage parts or allow parts to be lost.
31. The recommended packing method is to pack with stovepipe sections on one side and draft diverter on other side. The hose and adapter assembly should be placed carefully over draft diverter.

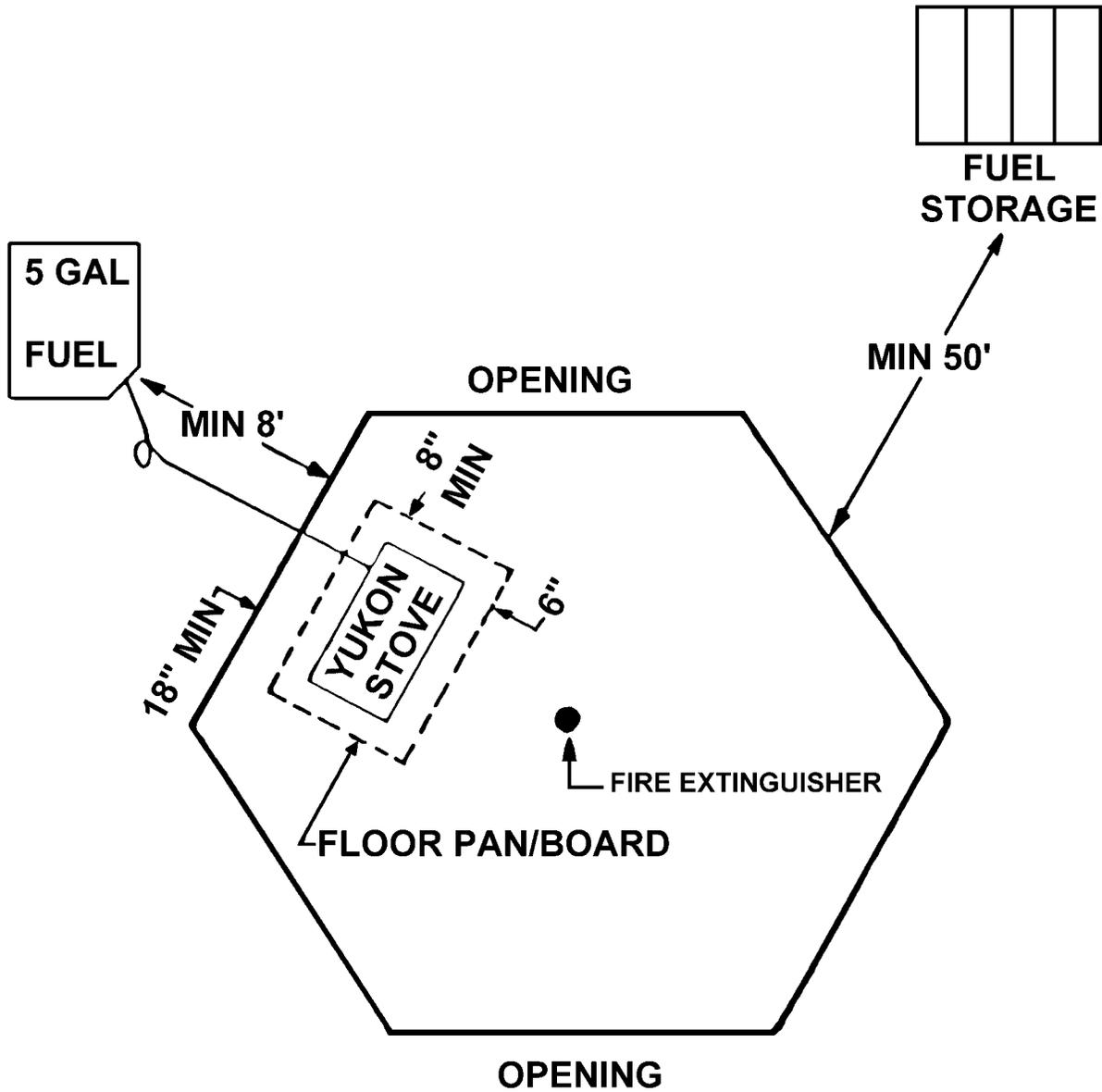
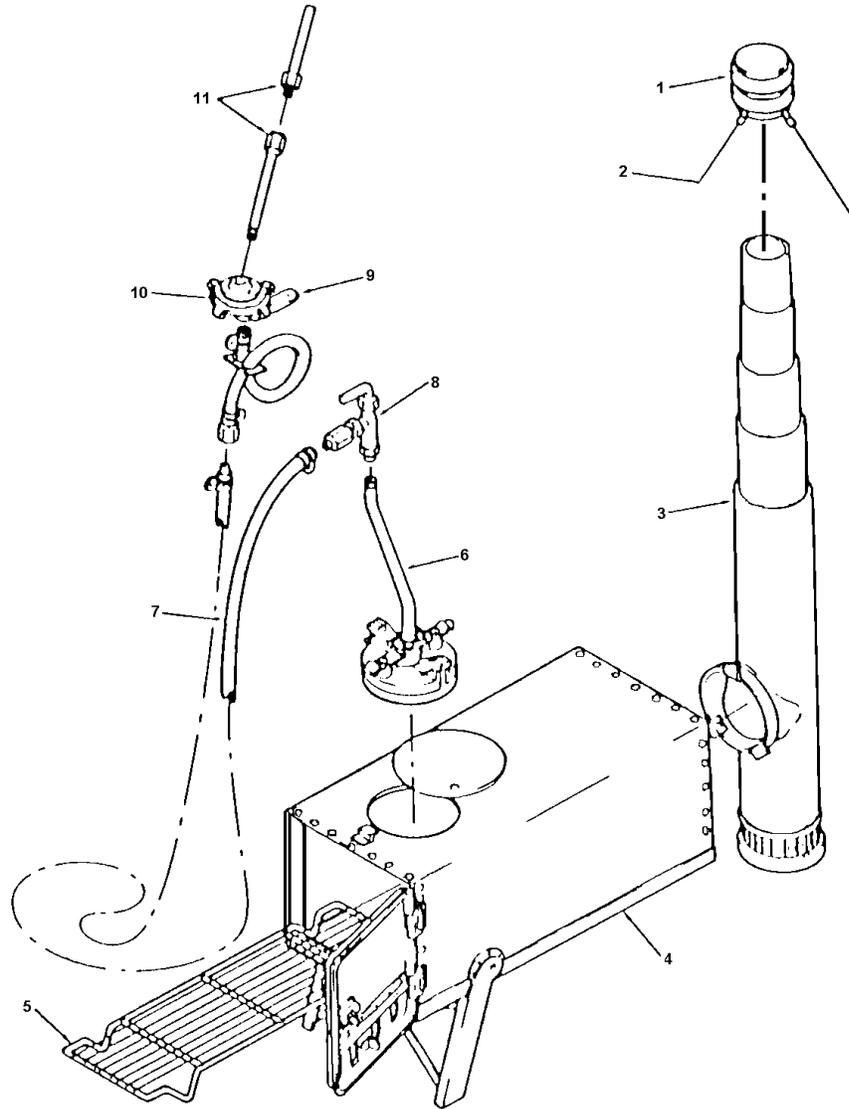


Figure 5. 10-man tent floor plan



- | | | | |
|-------------------------------|----------------|----------------------|---------------|
| 1. Flue cap | 4. Heater body | 7. Hose | 10. Gasket |
| 2. Guy lines | 5. Grate | 8. Drip valve | 11. Vent tube |
| 3. Air condition-heating pipe | 6. Burner | 9. Adapter, fuel can | |

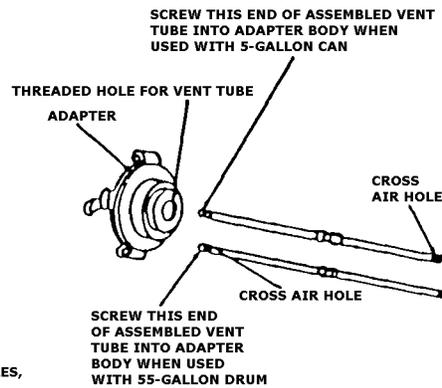
Figure 6. Yukon stove erection

INSTRUCTIONS

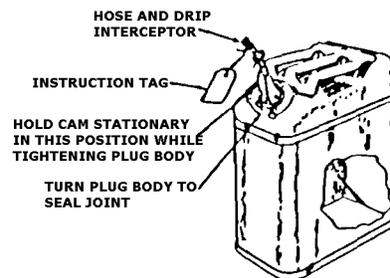
1. ASSEMBLE THE TWO PIECES OF VENT TUBE AND TIGHTEN.
2. FOR 5-GALLON CAN, SCREW THE PLAIN END OF ASSEMBLED VENT TUBE INTO ADAPTER, WITH AIR HOLE AT END FURTHEST FROM ADAPTER BODY.
3. FOR 55-GALLON DRUM, SCREW THE AIR HOLE OF VENT TUBE INTO ADAPTER BODY WITH PLAIN END OUT.
4. ASSEMBLE HOSE, GASOLINE, SCREW-TYPE, TO ADAPTER KIT, GRAVITY FEED, AND TIGHTEN.
5. RELEASE CAM AND HOLD CAM FREE IN VERTICAL POSITION.
6. WITH CAM IN FREE POSITION, TOWARD CAN HANDLES, INSERT ADAPTER INTO CAN.
7. HOLD CAM IN FREE POSITION WITH ONE HAND TO PREVENT ROTATION.
8. PRESS CAM DOWN TOWARD CAN HANDLES TO SEAL JOINTS.

CAUTION

RELEASE CAM BEFORE REMOVING ADAPTER FROM CAN. DO NOT PERMIT ADAPTER BODY TO TURN WHILE TURNING PLUG BODY.



**GRAPHIC A.
VENT TUBED INSTALLATION**



**GRAPHIC B.
FUEL CAN WITH ADAPTER INSTALLED**

Figure 7. Fuel can adapter installation

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Placing M1941 Type II Potbelly Stove into Operation

Location

Place heater base on the ground or the floor of the tent. In tents with wooden floors, the base should sit in a sandbox or on asbestos sheeting to protect the floor from heat. In an emergency, a pile of stones or brickbats may be used. The sandboxes will meet the following standards:

- a. Sandboxes will be constructed so that they are no smaller than 40 inches long by 28 inches wide and 4 inches high. Use 2- by 4-inch lumber for the framework.
- b. Sandboxes will have sheet metal bottoms to act as insulating shields.
- c. Stoves will be placed in the center of the boxes with a minimum of 3 1/2 inches of sand between the bottom of the stove and the metal insulation shield.
- d. Areas surrounding stoves will be free of combustibles at any point closer than 4 feet on a horizontal plane from the floor to the ceiling of the tent or building.

Setting Up

Refer to figure 8 and assemble the potbelly stove as follows:

- a. Place the adapter ring on the heater base.
- b. Set the oil pot burner in the adapter ring so that the fuel inlet pipe faces the ash door opening.
- c. Turn the adapter ring to the right until it engages the locking slips on the burner. The fuel inlet pipe should be at the right side of the door opening.
- d. Install the flame spreader in the center of the burner.
- e. Attach the float valve nipple to the smaller end of the pipe reducer located on the burner pot. Make sure the connection is tight enough to hold the valve in a level position and to prevent leaks.
- f. Place the top of the stove on the adapter ring.
- g. Assemble the pipe.
- h. Install the draft diverter on top of the stack and anchor it with guy ropes.

Caution: Install the guy line radially to eliminate contact with the smoke pipe. Lines should be erected and anchored so that the movement of the tent does not adversely effect the stability of the smoke pipe.

- i. Assemble the fuel can adapter and insert it in the fuel can as follows:

Caution: When changing fuel cans, release the cam before removing the adapter from the empty can. The washer on the adapter may squeeze out of place when the adapter is screwed into place on the fuel can. Wipe excess fuel from the washer, washer seat and the fuel can lid.

(1) Attach the male end of one fuel hose to the drip loop hose of the adapter and attach the opposite female end hose to the male fuel inlet fitting of the float valve.

(2) Attach the other length of hose to the overflow fitting (under the center of the float valve) to carry off any possible overflow. This hose must drain downward and discharge into a safe outside location.

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Caution: Be sure that the fuel hose from the fuel can connect to the male fitting INLET on the valve.

- (3) Make sure that the inlet shut off knob on the float valve is in the off position.
- (4) Invert the fuel can on a support no less than 1 foot nor more than 8 feet above the float valve.

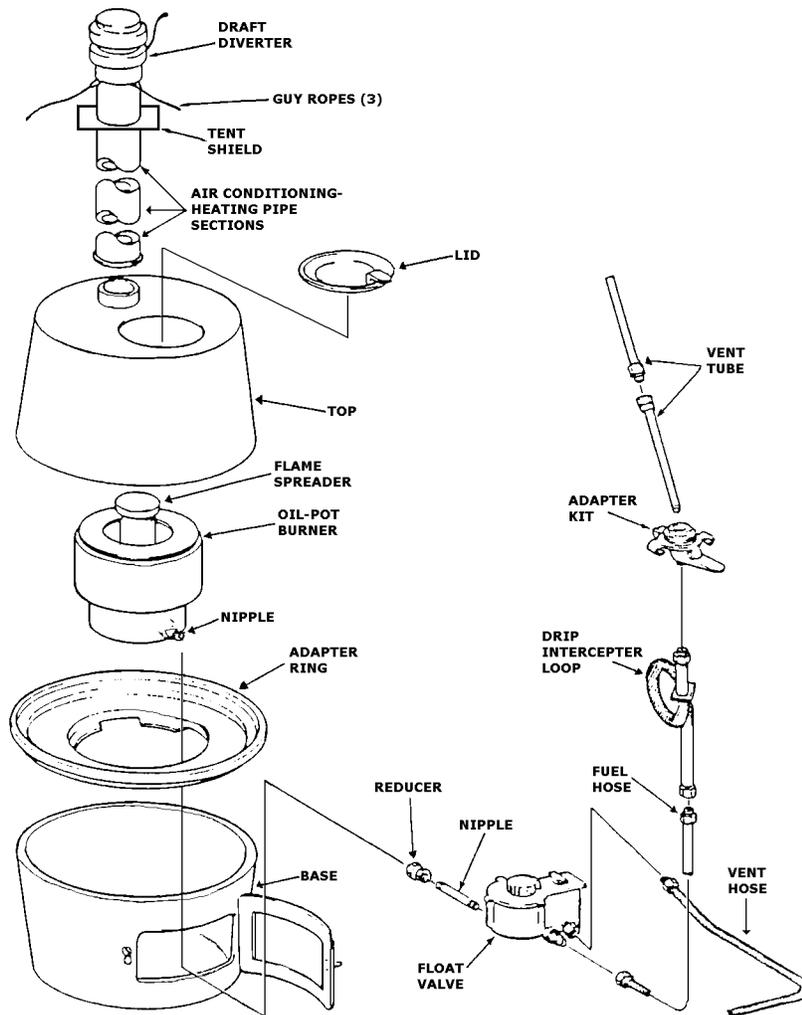


Figure 8. Potbelly stove erection

Lantern Operation

Replacing the Mantle

The mantle is replaced by the following method:

- a. Clean the old mantle off completely.
- b. Tie the new mantle firmly around the mantle holder.
- c. Tighten the drawstring and tie it off with two knots.
- d. Make sure that the fuel valve is closed.
- e. Burn the mantle completely.

Lighting the Lantern

Light the lantern using the following method:

- a. Ensure that the fuel valve is closed.
- b. Fill the lantern 3/4 full of fuel. Never attempt to refuel a hot lantern.
- c. Tighten the filler cap finger-tight.
- d. Open the air check valve and pressurize the tank. Normally, 15 to 25 pumps are adequate. Check for leaks.
- e. Open fuel valve 1/4 turn and listen until a sputtering sound comes from generator. Turn the valve off.
- f. Prepare the flame. Turn the valve on. Light the lantern mantle.
- g. Turn the fuel valve wide open once mantle begins to glow.
- h. Pump again to pressurize the tank; 15 to 25 times are normally adequate.
- i. Never refuel or light lanterns inside.

Lighting a Squad Stove

Light a squad stove using the following method:

- a. Remove the stove from its container. Fold out the stove legs on the bottom and fold out the pot holders on the top.
- b. Ensure that the fuel valve is closed.
- c. Fill the fuel tank 3/4 full, seal it and then wipe off any spillage.
- d. Pump the stove until it is pressurized and check for leaks.
- e. Open the fuel valve and soak fuel reservoir (settling bowl).

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- f. Shut off the fuel valve.
- g. Light the fuel reservoir (settling bowl).
- h. Open the fuel valve when hissing starts, turning it all the way open, once a steady blue flame is present, and pump again.
- i. Never refuel or light stoves inside.
- j. Never attempt to refuel a hot stove.

A CONCEPT FOR BALANCING RISKS WITH MISSION NEEDS

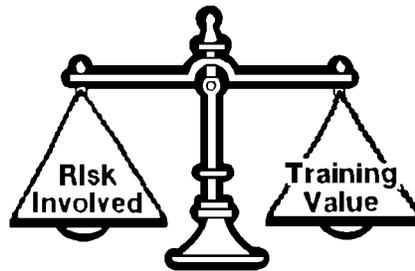
Leader's Risk Management Guide

The following three basic rules underline the application of risk management, regardless of level of command:

a. *No unnecessary risk should ever be accepted.* The leader who has the authority to accept risk has the responsibility to protect his/her soldiers from unnecessary risk. An unnecessary risk is one that could be reduced or eliminated and the mission still be accomplished.

b. *Risk decisions must be made at the appropriate level of command.* The decision to accept or reject a risk must be made at the level of command consistent with the implications of the risk. The leader who will be held directly accountable for the decision should make the decision. Commanders of small units and first line leaders will make risk decisions in combat. They should, as much as possible, also make them in training. Conversely, the greater the risk, the higher the decision level should be.

c. *Risk is acceptable if risk benefits outweigh risk costs.* Leaders at all level must understand the risk assessment/ management concept and be prepared to take some risks to accomplish their missions. At the same time, they must clearly understand the difference between a risk and a gamble.



Risk Management Process

The leader's responsibility can be summed up in following six specific tasks:

a. *Identify hazards and associated risks.* Examine each training phase or operation to determine the hazards associated with operations. A good understanding of the facts is the foundation of good risk decisions.

b. *Assess the risks.* Assess the hazards to determine the risk implications. Ask what is the likelihood of a mishap occurring and what degree of injury or equipment damage is possible? A low likelihood of mishap occurring and a high probability of minor injury equals a low risk. A low likelihood of a mishap occurring with a high probability of a fatal injury equals a high risk.

c. *Develop risk control alternatives and make risk decisions.* Eliminate unnecessary risk. Control the any remaining risk without sacrificing essential mission requirements. Revise task standards, operational procedures and parameters, training requirements, maintenance standards, etc. Decide whether controls are adequate to make the risk acceptable considering mission benefits.

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d. *Implement the risk control measures.* Integrate the procedures for controlling risk into plans, orders, standing operating procedures and preliminary training to ensure the procedures will be effectively used during actual operation. Involve the entire chain of leadership as a team to ensure that the full range of approved operational risk controls are in place and ready to go.

e. *Supervise the operations.* Monitor risk controls as you monitor overall operations (e.g., on-the-scene, spot-checks, performance indicators).

f. *Evaluate results.* Assess all operational results, including the effectiveness of risk management controls.

Human Error

Human error accounts for over 90 percent of the command's accidents, injuries and property damages. The four major reasons for human error are:

- a. *Command failure* is where an accident occurs and standards were not clear or did not exist.
- b. *Training failure* is when standards exist but the soldier does not know them or how to achieve them.
- c. *Leader failure* is when standards exist and are known, but not enforced.
- d. *Individual failure* is when standards are known and enforced, but not followed.

RISK MANAGEMENT

Training to Standard...Safely

Leaders must make safety an integral part of tactical operations from inception to conclusion. The best way to do this is to integrate safety into tactical operation development. Before safety can be integrated into the operational process, the process itself must be clearly defined.

Table 2 depicts a basic operational process. The first column outlines major mission phases. The middle column depicts typical operational activities associated with each mission phase. The right column lists a variety of safety-related activities that can be used in various combinations to improve safety. Although these activities are shown separately, it must be emphasized that they take place as part of the operational activities shown in the middle column.

Table 2 Basic Operational Process		
Mission Phase	Operational Activity	Safety Activity
Commander's mission	<ul style="list-style-type: none"> • Initial estimate • Evaluate mission options • Develop operational alternatives • Decision-making 	<ul style="list-style-type: none"> • Mission analysis • Hazard assessment • Risk assessment • Risk matrices • Risk reduction options
Preparation of operation plans and orders	<ul style="list-style-type: none"> • Mission briefing • Battery level plans/orders 	<ul style="list-style-type: none"> • Safety input to briefings, orders and standing operating procedures • Special safety briefings and training
Preparation for operations	<ul style="list-style-type: none"> • Prepare equipment • Prepare troops • Make necessary changes 	<ul style="list-style-type: none"> • Safety checks • Special training • Higher level support
Conduct operations	<ul style="list-style-type: none"> • Lead tactical and logistical operations • Change plans as required 	<ul style="list-style-type: none"> • Enforce compliance with safety guidance • Review changes for risk implications
After action	<ul style="list-style-type: none"> • Assess performance strengths and weaknesses 	<ul style="list-style-type: none"> • Assess risk management effectiveness

Mission Analysis

When your area is assigned to create a mission, as part of your initial estimate, you immediately begin to break it down into its component parts: movement to operations site, night convoy, movement to contact, assault on an objective, etc. To build safety into an operation, you must first "see" the operation in these same component parts. Operations also have a time factor, a beginning-to-end series of events in which the timing of events is often as significant as the events themselves when evaluating risk. The objective is to reflect the total life cycle of the operation from the first preparatory actions until the soldiers are back in the barracks or the next phase of operations is under way.

Mission analysis is nothing new. A good commander and tactician analyzes the mission in this manner regardless of safety needs. This same analysis makes it possible to systematically and objectively inject safety into the operational process.

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Risk Assessment

There are no hard and fast rules for assessing risks. The bottom line is that commanders have some flexibility in planning and execution and can reduce the probability or severity of an accident.

Risks may be assessed by first measuring the various risks, combining their values, then making a value judgment of what safety precautions are appropriate. By adding the values together, commanders can determine if a proposed mission falls within acceptable risk parameters. He/she then has the option to take action to reduce the risk as time and flexibility permit. As a minimum, he/she will become aware that he/she is functioning in a variable risk environment.

For the most part, risk measurement is a subjective assessment of hazards. What is needed is a quick test to measure the risks involved in a wide spectrum of operational missions. The act of consciously evaluating a mission results in the commander's thinking through the factors that affect mission safety.

Different missions will involve different elements that can affect mission safety. However, seven elements: 1) planning, 2) mission control, 3) soldier endurance, 4) soldier selection, 5) weather, 6) terrain and 7) sustainability—are central to the safe completion of any operation. Using matrices that assign a numerical value to each of the elements is one way of quickly gaining an appreciation of overall risks. Matrices 1 through 7 offer examples of risk assessments for each of the seven elements common to all missions. Keep in mind, however, that these are arbitrary weighted factors; modify them to accommodate particular missions and units.

Matrix 1 Planning risk value			
Guidance	Preparatory Time		
	Optimum	Adequate	Minimal
FRAGO	3	4	5
OPORD	2	3	4
OPLAN/LOI	1	2	3
This element is measured by comparing guidance to preparatory time. Specific guidance from established OPLANs and optimum preparation times are usually safer operations. For example, an OPOrd received in 3 days in advance would be assessed a risk value of 2. A FRAGO received only minutes in advance would be assessed 5.			
Legend: FRAGO—fragmentary order; OPOrd—operation order; OPLAN—operation plan; LOI—letter of instruction			

Matrix 2 Mission control risk value			
	Training Event		
	Support		
Task Organization	Nontactical/Garrison	Day Tactical	Night Tactical
OPCON	3	4	5
Attached	2	3	4
Organic	1	2	3
<p>The level of control is measured by comparing training event to task organization. Garrison, day tactical and night tactical are seen as increasingly difficult mission parameters. Support includes routine nontactical missions conducted by the unit in the local area. Command and control range from organic control to the unit being placed under the OPCON of external organizations. For example: an OPCON garrison support mission would receive a risk value of 3.</p>			
<p>Legend: OPCON—operation control</p>			

Matrix 3 Soldier endurance risk value			
Environmental Preparation	Soldier Preparation		
	Optimum	Adequate	Minimal
Nonacclimated	3	4	5
Partially acclimated	2	3	4
Acclimated	1	2	3
<p>This element is measured by comparing the length and quality of the mental and physical preparation of the soldiers before the event with adjustment (acclimation) to the area of operation. Highly trained, physically fit soldiers who have adjusted to the climate are less likely to get hurt than fatigued soldiers who are concentrating on the effects of the environment.</p>			

Matrix 4 Soldier selection risk value			
	Soldier Experience		
	Highly Qualified	MOS Qualified	Untrained
Task			
Complex	3	4	5
Routine	2	3	4
Simple	1	2	3
<p>Measurement is done by comparing the task to soldier experience. Experience is a subjective command call based on level of training.</p>			
<p>Legend: MOS—military occupational specialty</p>			

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Matrix 5 Weather risk value			
Fahrenheit Temperature	Visibility/Moisture		
	Clear/Dry	Fog/Humid/Drizzle	Rain/Snow/Ice/Dust
<31° to >80°	3	4	5
32° to 59°	2	3	5
60° to 79°	1	2	5

The weather element is measured by comparing the temperature with visibility and moisture.

Matrix 6 Terrain risk value			
Type Terrain	Trafficability		
	Improved	Secondary	Trail/Cross Country
Mountain/Desert/Jungle	3	4	5
Hills	2	3	4
Flat/Rolling	1	2	3

The measurement for terrain is done by comparing the physical features of the land with the road networks that exist in that area. For example: mountainous trails are much more dangerous than the howitzer trails at Fort Sill.

Matrix 7 Sustainability risk value			
Percentage Personnel Fill	Type System		
	Wheel	Track	Crew Served
0% to 65%	4	5	5
66% to 79%	2	4	4
80% to 100%	1	2	2

The sustainability element is measured by comparing the type of equipment used with the percentage of personnel strength. Undermanned crews will attempt to achieve the same standard as fully manned crews, creating dangerous shortcuts.

After all risks have been assessed, the value would be totaled and applied to a quick-reference gauge as shown below.

0 to 12 Low Risk	13 to 23 Caution	24 to 35 High Risk
-----------------------------------	-----------------------------------	-------------------------------------

Operations with a value of 0 to 12 would be judged as **low risk**. A value of 13 to 23 is seen as a **caution** area; complete unit command involvement is warranted. A "caution" rating should be given special consideration, since only one or two elements have significantly raised the overall risk level. For example, a long flight through changing time zones immediately before a 48-hour tactical mission would be cause for serious concern even though the operation's overall risk assessment might well be within the "caution" range. **High risk** operations, assigned a value of 24 to 35, require prior coordination with the next higher level of command external to the organization making the assessment. When two or more areas are

assigned a risk factor of 5, the overall rating is considered high risk. This coordination is necessary so that additional resources can be allocated to control or reduce risk factors.

Demonstration Scenario

To demonstrate the assessment technique, let's look at a scenario—

Field Artillery Night Move. Your field artillery battery has been tactical for 6 days undergoing an Army Training and Evaluation Program (ARTEP). You have just received a warning order to conduct a night move in 2 hours, from the northern part of Grafenwoehr to the southwestern tank trail. Radio communication has been poor due to atmospheric conditions. The weather is deteriorating rapidly, and fog and light snow flurries are forecasted. Low temperatures of 34° to 38° Fahrenheit are expected. Four of your section chiefs are new, and you have received twenty new MOS-trained artillery men from Fort Sill in the last 3 months to bring your crew strength to 95 percent fill. This is your first experience at Grafenwoehr.

Element	Assessment Elements	Risk Value
Planning	Guidance is oral preparation is adequate	4
Mission control	Mission is categorized as organic night tactical	3
Soldier endurance	Soldiers are acclimated and prior training has been adequate	2
Soldier selection	Operation is complex and personnel are judged MOS qualified	4
Weather	Fog and light snow flurries create additional risks	4
Terrain	Tank trails traverse hilly terrain in the western portion of Grafenwoehr	3
Sustainability	Crew-served weapons are adequately manned	2
Total risk value		22

What are Your Risk Reduction Options?

The use of risk matrices and hazard analyses will define the kinds and significance of hazards faced in an operation. Now the task is to reduce the risk **without** causing significant adverse impact on operational objectives.

Figure 9 shows the countermeasure option checklist that has direct application to the development of risk-reduction options. It can be used to develop a full array of possibilities and to weed out those that are clearly impractical. The product of the risk-reduction phase should be a list of options that are practical, although not necessary desirable, for the particular operation.

Countermeasure Options Checklist

- Eliminate the hazard.* Eliminate the hazard totally, if possible, or substitute a less hazardous alternative.
- Control the hazard.* Reduce the magnitude of the hazard or provide containment or barriers.
- Change operational procedures.* Modify operational procedures to minimize risk exposure consistent with mission needs.
- Educate.* Train personnel to recognize and properly react to hazards.

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- *Motivate.* Motivate personnel to use effective hazard avoidance actions.

Figure 9. Countermeasure options checklist

A key factor in detecting significant risk maintaining a strong organizational mission perspective. Adapt these basic assessment elements to fit your organizational needs. To assist in accident prevention efforts, see figures 10 and 11 for worksheet guides (these guides are available from your local safety office—local production is encouraged). You can develop additional matrix charts that blend in special considerations. One caution—keep it simple. The idea is to develop a quick measure for risk and then determine an array of options for eliminating or controlling that risk.

Completing Integration of Safety into the Operational Process

At this point, you should have a thorough insight into the risks you will face in the operation and the risk-reduction options available to you. All this is achieved **before** final operational decisions are made or a single operation order is issued. From this point, the safety processes becomes a totally integrated aspect of the operational process. There must be no distinction **whatsoever**. The operational process continues with the final selection of specific tactical procedures and the issuing or briefing of orders. These final tactical procedures are influenced by, but not dominated by, risk considerations. Ultimately, you must balance training needs against potential risk costs.

Risk-reduction measures are an important factor in the details of tactical procedures and will be a meaningful part of written and verbal orders. Similarly, safety checks, special training and briefings, revisions to standing operating procedures, etc., are all accomplished as an integral part of the operational process.

In summary, the effective commander defines his/her objectives and standards of performance for each operation he/she conducts. These objectives and standards include risk management factors as the full equal of the tactical, logistical and leadership components.

What's the Payoff?

The risk management approach gives commanders a tool to improve efficiency, effectiveness and safety in all operations. The payoff is in increased readiness as a result of safer, smarter, more beneficial training.

Risk management permits the execution of realistic training scenarios not possible without risk management procedures due to their high potential cost in accidents. It also minimizes personnel and material losses in day-to-day training activities. Finally, leaders who routinely use risk-management techniques to make risk decisions in training are prepared to make better risk decisions in wartime, resulting in better tactical decisions and thus greater mission potential.

RISK ASSESSMENT WORKSHEET OPERATION

Side A

Planning			
Circle one	Risk Value		Score _____
Guidance	Preparatory Time		
	Optimum	Adequate	Minimal
FRAGO	3	4	5
OPORD	2	3	4
OPLAN/LOI	1	2	3

Mission Control			
Circle one	Risk Value		Score _____
Task Organization	Training Event		
	Support Nontactical/Garrison	Day Tactical	Night Tactical
OPCON	3	4	5
Attached	2	3	4
Organic	1	2	3

Soldier Endurance			
Circle one	Risk Value		Score _____
Environmental Preparation	Soldier Preparation		
	Optimum	Adequate	Minimal
Nonacclimated	3	4	5
Partially acclimated	2	3	4
Acclimated	1	2	3

Soldier Selection			
Circle one	Risk Value		Score _____
Task	Soldier Experience		
	Highly Qualified	MOS Qualified	Untrained
Complex	3	4	5
Routine	2	3	4
Simple	1	2	3

Side A Subtotal _____

Figure 9. Risk Assessment Worksheet Operation-Side A

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Side B

Weather			
Circle one	Risk Value		Score _____
Fahrenheit Temperature	Visibility/Moisture		
	Clear/Dry	Fog/Humid/Drizzle	Rain/Snow/Ice/Dust
<31° to >80°	3	4	5
32° to 59°	2	3	5
60° to 79°	1	2	5

Terrain			
Circle one	Risk Value		Score _____
Type Terrain	Trafficability		
	Improved	Secondary	Trail/Cross Country
Mountain/Desert/Jungle	3	4	5
Hills	2	3	4
Flat/Rolling	1	2	3

Sustainability			
Circle one	Risk Value		Score _____
Percentage Personnel Fill	Type System		
	Wheel	Track	Crew Served
0% to 5%	3	5	5
66% to 79%	2	4	4
80% to 100%	1	2	2

Subtotal Side B _____ Subtotal Side A _____ Total _____

0 to 12	13 to 23	24 to 35
Low Risk	Caution	High Risk

*High risk operations assigned a value of 24-35 require coordination, before executing the mission, with the next higher level of command external to the organization making the assessment. When two or more areas are assigned a risk factor of 5, the overall rating is high risk

Figure 10. Risk Assessment Worksheet Operation-Side B

FOR THE COMMANDER:

OFFICIAL

WALLACE E. MATTESON
COL, GS
Chief of Staff

//Original Signed//
JEROME E. GRIFFITH
LTC, SC
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Glossary

ARTEP.....Army Training and Evaluation Program

DA.....Department of the Army

fig.....figure

FRAGO.....fragmentary order

LOI.....letter of instruction

MOS.....military occupational speciality

OPCON.....operation control

OPLAN.....operation plan

OPORD.....operation order

SUSV.....small unit support vehicle

U.S.....United States

USARAK.....United States Army Alaska