

*GTA 05-08-012 INDIVIDUAL SAFETY CARD

PREVENTIVE ACTIONS IN ADVERSE WEATHER

Lightning Storm	Tornado
<ul style="list-style-type: none">• Take cover inside grounded buildings if available.• Seek low-lying areas (valleys, ditches, foxholes, covers).• Avoid bare ridges on hilltops.• Avoid standing under a single, tall tree or in water.• Stack weapons and disperse personnel.• Avoid tents and vehicles with cloth tops.• Avoid items of good conductivity (wire, water, weapons, antennas, equipment, shovels, and radios).	<ul style="list-style-type: none">• If a tornado is sighted while on a range or in a training area, move away from its path at a right angle.• If there is not enough time to escape, lie flat in the nearest depression.• If you are in a building, go to the basement or the lowest-level, internal hallway. Avoid windows.

BASIC HEAT INJURY PREVENTION

- Consider water a tactical weapon against threat of heat illness. Drink frequently (see page 3).
- Eat meals. Add salt to taste.
- Be aware that dark yellow, infrequent urination is a sign of dehydration. Increase water intake.
- Perform heavy work in the cooler hours of the day, such as early morning or late evening, if possible.
- Minimize heat stress by decreasing the work pace and/or increasing rest periods (see page 3).
- Be aware that full heat acclimatization takes 1 to 2 weeks.
- Consider that Soldiers undergoing treatment for acute or chronic medical conditions are at greater risk for heat injury.

NOTE: Leaders should encourage Soldiers to come forward when heat symptoms appear.

BASIC COLD INJURY PREVENTION

- Wear sufficient clothing and equipment to keep your body warm. Dress in layers.
- Avoid prolonged exposure of unprotected skin to extreme cold and/or windy conditions (see page 3).
- Keep clothing and equipment as dry as possible. Change socks at least daily or more often if they are damp.
- Keep clothing loose so that circulation is not decreased.
- Remove clothing layers, as appropriate, to limit sweating during activity.
- Eat hot meals and drink hot liquids. Maintain food and fluid intake.
- Be aware that the risk of cold injury increases in wet weather or when wearing wet clothing, particularly if the wind chill is 40°F or below.

February 2021 Headquarters, Department of the Army

Purpose: This graphic training aid (GTA) explains preventive measures in adverse weather or conditions. See ADP 5-0, ATP 3-11.32, and ATP 5-19 for more information.

DISTRIBUTION: Installation Training Support Centers (TSCs).

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

*This publication supersedes GTA 05-08-012, September 2019.

HEAT CRAMPS AND HEAT EXHAUSTION

Symptoms	First Aid
<ul style="list-style-type: none">• Dizziness• Headache• Loss of appetite• Nausea (with or without vomiting/diarrhea)• Weakness• Clumsy/unsteady walk• Profuse sweating and pale (or gray), moist cool skin• Normal to slightly elevated body temperature• Muscle cramps• Heat cramps	<ul style="list-style-type: none">• Rest casualty in shade.• Loosen uniform and remove head gear.¹• Have casualty drink 2 quarts of water over 1 hour.• Seek medical aid.• Evacuate if no improvement in 30 minutes or if a casualty's condition worsens.

HEAT STROKE

DANGER: Heat stroke is a medical emergency. Evacuate the casualty to a medical facility immediately and reduce body temperature.

Symptoms	First Aid
<ul style="list-style-type: none">• Hot, dry skin (initially the skin may be moist or wet)• Headache• Convulsions and chills• Dizziness• Nausea• Weakness• Pulse and respirations are weak and rapid• Vomiting• Confusion, mumbling (do mental check questions)• Combative• Passing out (Unconscious)	<ul style="list-style-type: none">• Cool the casualty with any means available, even before removing clothes.• Strip (if possible, ensure a same gender helper is present).¹• Rapidly cool by immersing the casualty in cold water.• Rapidly cool with ice sheets as follows:<ul style="list-style-type: none">- Cover all but face with ice sheets.- Ensure the ice sheet is soaked prior to applying to the casualty.• Place ice packs, if available, in groin, axillae (armpits), and around the neck.• Fan the entire body.• Stop cooling if casualty starts shivering.• Seek medical aid.• Evacuate immediately and continue cooling during transport. Give nothing by mouth. <p>NOTE: The same person should observe the casualty during cooling and evacuation in order to spot symptom changes.</p>

¹ When in a chemical environment, **do not** loosen/remove clothing.

HYPONATREMIA (WATER INTOXICATION)

DANGER: Hyponatremia is a medical emergency that can be mistaken for heat stroke, though treatment is very different. This condition most often occurs during initial entry training; however, it may occur anytime over-hydration is encountered.

Symptoms	First Aid
<ul style="list-style-type: none">• Mental status changes• Vomiting• History of consumption of large volume of water• Poor food intake• Abdomen distended/bloated• Large amounts of clear urine	<ul style="list-style-type: none">• Do not give more water or intravenous fluids.• If awake, allow casualty to consume salty foods or snacks.• Seek medical aid.• Evacuate immediately.

WORK, REST, AND WATER CONSUMPTION

Heat Category	WBGT ¹	Easy Work		Moderate Work		Hard Work	
		Work/Rest (min)	Water Intake (qt/hr)	Work/Rest (min)	Water Intake (qt/hr)	Work/Rest (min)	Water Intake (qt/hr)
1	78 to 81.9°F	NL	1/2	NL	3/4	40/20	3/4
2 (Green)	82 to 84.9°F	NL	1/2	50/10	3/4	30/30	1
3 (Yellow)	85 to 87.9°F	NL	3/4	40/20	3/4	30/30	1
4 (Red)	88 to 89.9°F	NL	3/4	30/30	3/4	20/40	1
5 (Black)	>90°F	50/10	1	20/40	1	10/50	1

CAUTION: Hourly fluid intake should not exceed 1 1/2 quarts. Daily fluid intake should not exceed 12 quarts.

¹ If wearing body armor, add 5°F to the WBGT; if wearing the MOPP over-garment, add 10°F.

NOTES: Rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specific heat category. Individual water needs will vary ±1/4 quart per hour. Rest means minimal physical activity (sitting or standing) and should be accomplished in the shade if possible.

Legend: WBGT = wet bulb globe temperature; min = minute; qt = quart; hr = hour; NL = No limit to work per hour.

EXAMPLES

Easy Work	Moderate Work	Hard Work
<ul style="list-style-type: none"> • Weapon maintenance • Walking on a hard surface, 2.5 mph, ≥30-lb load • Manual of arms • Drill and ceremony 	<ul style="list-style-type: none"> • Walking in loose sand, 2.5 mph, no load • Walking on a hard surface, 3.5 mph, <40-lb load • Calisthenics • Marksmanship training • Patrolling 	<ul style="list-style-type: none"> • Walking in loose sand, 2.5 mph, any load • Walking on a hard surface, 3.5 mph, ≥40lb load • Individual movement techniques (low/high crawl) • Defense position construction • Field assaults • Rifle bayonet training • Road march, >4 mph

Sources: Technical Bulletin (TB) MED 507, Table 3-1; Training Circular (TC) 4-02.1

WINDCHILL TEMPERATURE INDEX

Measure the temperature and wind speed if possible; if not, estimate them. Enter the table at the closest 5°F interval along the top, and follow it down to the appropriate wind speed along the left side. The intersection gives the approximate equivalent chill temperature—that is, the temperature that would cause the same rate of cooling under calm conditions. Wind velocity can be caused by equipment and individual movement. Covering bare skin reduces the risk of cold injury.

Wind (mph)	Temperature (°F)																	
	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Note: Frostbite times are for exposed cheek skin.

Frostbite Times ►

30 minutes

10 minutes

5 minutes

COLD WEATHER CATEGORIES

Temperature Category	Precautions
Wet Cold +39° F to +20° F	<ul style="list-style-type: none"> • Can be more dangerous to troops and equipment than the colder, dry cold environments because the ground becomes slushy and muddy and clothing and equipment become wet and damp. • Water conducts heat 25 times faster than air and core body temperatures can quickly drop if troops become wet and the wind is blowing. Wet cold can quickly lead to hypothermia, frostbite, and immersion (trench) foot.
Dry Cold +19° F to -4° F	<ul style="list-style-type: none"> • Wind chill is a complicating factor in this type of cold. • The dry cold environment is the easiest of the four cold weather categories in which to survive because of low humidity and constant frozen ground.
Intense Cold -5° F to -25° F	<ul style="list-style-type: none"> • Can affect the mind as much as the body. • Has a rapid numbing effect. • Simple tasks take longer and require more effort than in warmer temperatures. • The quality of work degrades as attention to detail diminishes. • Clothing becomes more bulky to compensate for the cold, so troops lose dexterity.
Extreme Cold -26° F to -40° F	<ul style="list-style-type: none"> • The challenge of survival becomes paramount. • It is easy for individuals to prioritize physical comfort above all else; personnel may withdraw into themselves and adopt a cocoon-like existence. • Leaders must expect and plan for weapons, vehicles, and munitions to fail in this environment. • Most military equipment is tested and required to perform only at temperatures above -25° F.
Hazardous Cold below -40° F	<ul style="list-style-type: none"> • Units must be extensively trained before undertaking an operation in these temperature extremes. • The defense is normally recommended in hazardous temperatures. • Significant problems with weapons, equipment, clothing, and personnel will likely occur.

COLD WEATHER UNIFORM AND EQUIPMENT POSTURE

Temperature Zone	Extreme Cold Weather Clothing System – Generation III
Zone 1 55° F to 33° F	<ul style="list-style-type: none"> • Lightweight cold weather under shirt and drawers • Mid-weight cold weather shirt/drawers • Green fleece jacket • Wind cold weather jacket (wind shirt) • Extreme cold/wet weather jacket • Extreme cold/wet weather trousers • Issued GORE-TEX® gloves with liners • Issued wool socks with synthetic liner sock • Temperate boots • Suspenders • Knife • Arctic necklace • Balaclava and neck gaiter
Zone 2 32° F to 14° F	<ul style="list-style-type: none"> • Same as Temperature Zone 1 plus: • Extreme cold weather parka • Trigger finger mittens with extra trigger finger liners • Suspenders • Contact gloves • Ski goggles
Zone 3 14° F to -19° F	<ul style="list-style-type: none"> • Same as Temperature Zones 1 and 2 plus: • White vapor barrier boots • Arctic mittens
Zone 4 -20° F to -40° F	<ul style="list-style-type: none"> • Same as Temperature Zones 1, 2, and 3
Zone 5 Below -40° F	<ul style="list-style-type: none"> • Same as Temperature Zones 1, 2, and 3

CLOTHING RECOMMENDATIONS FOR PHYSICAL READINESS TRAINING

Endurance and Mobility

Uniform Items	Temperature (°F)			
	60 or +	50-59	40-49	39 and below
S/S Shirt	X			
Shorts	X	X	X	X
L/S Shirt		X	X	X
Outer-garment Shirt			X	X
Outer-garment Pants				X
Gloves w/ Inserts				X
Watch Cap				X

Strength and Mobility

Uniform Items	Temperature (°F)			
	60 or +	50-59	40-49	39 and below
S/S Shirt	X			
Shorts	X	X	X	X
L/S Shirt		X	X	X
Outer-garment Shirt			X	X
Outer-garment Pants			X	X
Gloves w/ Inserts				X
Watch Cap				X

COLD INJURY SYMPTOMS

COLD INJURY FIRST AID

Hypothermia

DANGER: This is a medical emergency.

- | | |
|--|---|
| <ul style="list-style-type: none"> • Vigorous shivering • Apathy or lethargy • Confusion • Sleepiness • Slurred speech • Nearly undetectable breathing and pulse | <ul style="list-style-type: none"> • Remove the casualty from the cold environment. • Replace wet clothing with dry clothing. • Rewarm by covering with blankets or sleeping bags. • If casualty is conscious, slowly give high caloric sweet warm fluids. • Evacuate for medical treatment. |
|--|---|

Frostbite

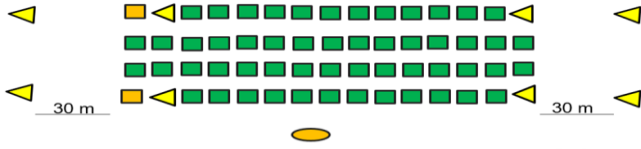
- | | |
|---|---|
| <ul style="list-style-type: none"> • Numbness in affected area • Tingling, blistered, swollen, or tender areas • Pale, yellowish, waxy-looking skin (grayish in dark-skinned Soldiers) • Frozen tissue that feels wooden to the touch • Significant pain after rewarming | <ul style="list-style-type: none"> • Rewarm at room temperature or use body heat. • Loosen or remove constricting clothing and remove jewelry. • Prevent further cold exposure. • If there is the possibility of tissue refreezing, it is better not to thaw it in order to avoid damaging tissue further. • Avoid exposure to excessive heat (open flame, stove tops, steam, heat packs) or rubbing affected tissue. • Suspect hypothermia and treat appropriately. It is more important to prevent hypothermia than to rewarm frostbite rapidly. • Evacuate for medical treatment. |
|---|---|

Immersion Foot (Trench Foot)

- | | |
|--|---|
| <ul style="list-style-type: none"> • Cold, numb feet that may progress to hot with shooting pains • Slight sensory change for 2 to 3 days • Swelling, redness, and bleeding may become pale and blue • Accompanied by aches, increased pain sensitivity, and infection | <ul style="list-style-type: none"> • Remove wet and constrictive clothing. • Wash and dry the foot gently. • Elevate the foot and cover it with layers of loose, warm clothing; and allow it to rewarm. • Do not pop blisters, apply lotions or creams, massage the foot, or expose it to extreme heat. • Do not walk on the foot. |
|--|---|

Sources: TB MED 508, Figure 3-4; ATP 3-90.97, Table B-1 and paragraphs B-2 thru B-6, Tables C-1 - C-5; FM 7-22, Figure D-2; TC 4-02.1

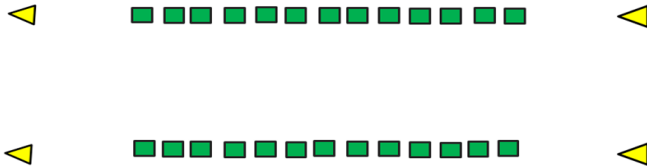
PPE FOR FOUR PERSON FRONT (PLT)



Requires minimal 10 Road Guard Vests and 10 White Cone Flashlights. Reflective material (band and or vest) for Cadre.

-  Cadre
-  Safety Personnel
-  Road Guard

PPE FOR COLUMNS



Requires minimal 4 Road Guard Vest and 4 White Cone Flashlights. Reflective material (band and or vest) for Cadre.

PRINCIPLES OF RISK MANAGEMENT

1. Integrate risk management into all phases of missions and operations. Risk management must be integrated throughout the planning, preparation, execution, and assessment activities.
2. Make risk decisions at the appropriate level. The approval authority should have the resources to implement the controls and the authority to make the risk decision.
3. Accept no unnecessary risk. An unnecessary risk is any risk that, if taken, will not contribute meaningfully to mission accomplishment or will needlessly endanger lives or resources. Accept only a level of risk in which the potential benefit outweighs the potential loss.
4. Apply risk management cyclically and continuously. Risk management is applied across all operations (including training), individual and collective day-to-day activities and events, and based on operations functions.

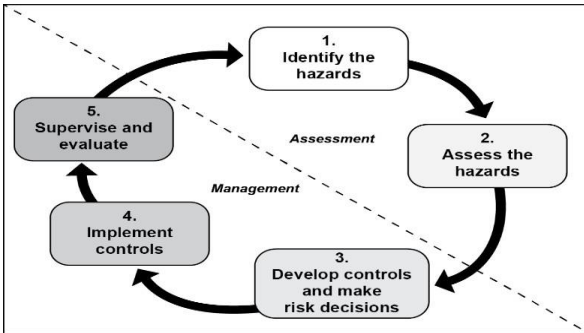
Risk Assessment Matrix	Probability (expected frequency)				
	Frequent: Continuous, regular, or inevitable occurrences	Likely: Several or numerous occurrences	Occasional: Sporadic or intermittent occurrences	Seldom: Infrequent occurrences	Unlikely: Possible occurrences but improbable
<i>Severity (expected consequence)</i>	A	B	C	D	E
<i>Catastrophic: Mission failure, unit readiness eliminated; death, unacceptable loss or damage</i>	I	EH	EH	H	M
<i>Critical: Significantly degraded unit readiness or mission capability; severe injury, illness, loss or damage</i>	II	EH	H	H	M
<i>Moderate: Somewhat degraded unit readiness or mission capability; minor injury, illness, loss, or damage</i>	III	H	M	M	L
<i>Negligible: Little or no impact to unit readiness or mission capability; minimal injury, loss, or damage</i>	IV	M	L	L	L
Legend: EH - Extremely High Risk H - High Risk M - Medium Risk L - Low Risk					

FACTORS TO CONSIDER WHEN IDENTIFYING HAZARDS

- Time for mission preparation and execution.
- Terrain (rough, hills, swamps). Critical problem areas for accidents.
- Transportation to and from the operational site.
- Long hours (inadequate sleep) and probability of fatigue (length of operations).
- Intensity of operation (probability of taking shortcuts).
- Competition for time (some activities may be considered unimportant such as instruction and safety briefings).
- Physical fitness of personnel (potential heat, cold-weather, or lifting injuries).
- Personal attitudes (macho, poor/bad motivation, and so forth).
- Skill level of personnel (training, experience, degradation overtime, proficiency).
- Range operational hazards.
- Maintenance operational hazards. Logistical support. Equipment condition (age, maintenance status)
- Water operational hazards (weak swimmers, water temperature, and so forth).
- Building conditions (fire hazards, structural integrity, and so forth).
- Road conditions (narrow, congested, curvy, hilly, and slippery). Speed limits.
- Convoy route (sufficient room for rest/halt areas). Cargo (type, quantity, security).
- Civilian considerations.
- Communication/coordination requirements (within units, between units, with joint services, counter-fratricide measures).
- Weather (existing and forecast).
- Animal, plant, insect, and reptile hazards.
- Day versus night operations.
- Hazardous material (fuel points, ammunition supply, and so forth).

RISK MANAGEMENT PROCESS

Risk management is the process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk cost with mission benefits (JP 3-0). The Army uses risk management (RM) to help maintain combat power while ensuring mission accomplishment in current and future operations. RM applies to operations and to nonoperational activities.



Step 1. Identify hazards. A hazard is a condition with the potential to cause injury, illness, or death of personnel; damage to or loss of equipment or property; or mission degradation (JP 3-33). Hazards create the potential for harmful events that can cause degradation of capabilities or mission failure. Hazards lead to risk whenever people interact with equipment or their environment. Hazards exist in all types of environments and activities— including combat, stability, base support, training, garrison activities, and off-duty activities. An approach to identifying a hazard is to consider how the condition can lead to a sequence of specific events or an accident-loss scenario.

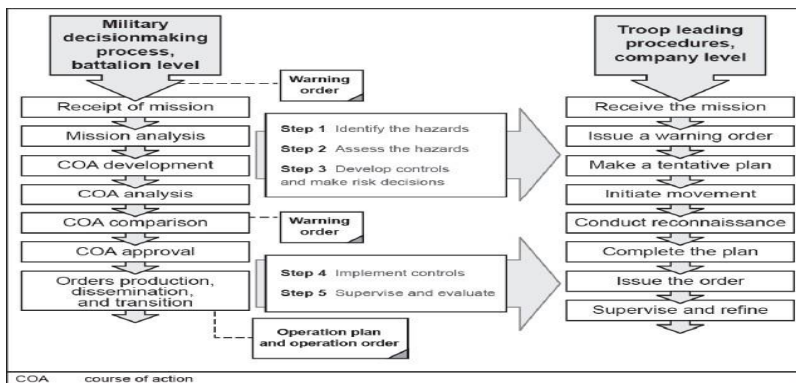
Step 2. Assess hazards. Once the hazards have been identified, determine to what extent they can lead to harmful events and how those events would affect operations. When hazards are assessed and risk levels assigned (Risk Assessment Matrix), the resulting analysis is a measurement of risk – probability and severity of loss linked to hazards.

Step 3. Develop controls and make decisions. After assessing each hazard, one or more controls are developed that either eliminate the hazard or reduce the risk (probability and severity of loss) from a harmful occurrence. Based on the residual risk level, the responsible commander or leader makes risk decisions – to accept or not accept the risk.

Step 4. Implement controls. Controls measures are implemented during the preparation activities of the operations process. Leaders establish how the controls will be implemented and who will manage them. It is imperative that subordinates fully understand and implement the controls.

Step 5. Supervise and evaluate. Supervision is a primary means of regulating forces. Leaders ensure that complacency, deviation from standards, or violations of policies and controls are not allowed to threaten success. Evaluation is conducted in a variety of formats during all phases and activities of operations.

RISK MANAGEMENT INTEGRATION INTO DECISION MAKING



NOTES