

COMPOSITE RISK MANAGEMENT (COLD WEATHER INJURY PREVENTION)

A comprehensive cold weather injury prevention and management program will follow the principles of composite risk management by identifying hazards, assessing the hazards in terms of severity and probability, and implementing appropriate controls to abate the hazards. Spot-checking and supervision by first-line leaders must be employed to ensure control measures are being implemented. Cold casualty prevention is a command responsibility. Cold weather injuries are PREVENTABLE.

Leaders must develop a daily personal leader habit of inculcating composite risk management in everything they do. Apply the principles of seeing themselves and seeing the environment with respect to the task at hand. Know who is on their first deer hunt and ask what you have done to make them successful.” Commander Eighth United States Army, LTG Valcourt, June 2005

Possible Outcomes of inadequate climatic cold management:

Chilblain

(due to bare skin exposed to cold, humid air)

Immersion Foot (Trench Foot)

(due to wet feet)

Frostbite (freezing of tissue and body parts)

Hypothermia

(whole body temperature dangerously low)

Dehydration

Snow Blindness

Carbon Monoxide Poisoning

Composite Risk Management is the Process of Identifying and Controlling Hazards to Protect the Force

Risk Management Steps

1. Identify Hazards - How cold is it?
2. Assess Hazards – Analyze mission requirements, Determine Uniform and Equipment, Identify High- Soldiers
3. Develop Control and Control Hazards - Implement Cold Mitigation
4. Implement Controls – Adopt and Implement Controls into Plans
5. Supervise Evaluate and Correct Controls

See Army Field Manual 5 -19 for more information.

1 Identifying Hazards

🌀 Cold (temperature 40 °F and below)

🌀 Wetness (rain, snow, ice, humidity) or wet clothes at temperatures below 60 °F

🌀 Wind (wind speed 5 mph and higher)

🌀 Lack of adequate shelter/clothes

🌀 Lack of provisions/Water

🌀 Other Risk Factors

○ Previous cold injuries or other significant injuries

○ Use of tobacco/nicotine or alcohol

○ Skipping meals/poor nutrition

○ Low activity

○ Fatigue/sleep deprivation

○ Little experience/training in cold weather operations

○ Cold casualties in the previous 2-3 days

If any of the above conditions exist, the risk of a cold weather injury may be increased; follow the Composite Risk Management steps.

2 Assessing Hazards

The potential for cold casualties can be assessed by determining –

- a. The magnitude of cold exposure. Reliable measurement equipment must be used to determine.
 - (1) Air temperature (thermometer).
 - (2) Wind speed (anemometer).
 - (3) Wetness.
 - (4) Weather forecast (local weather station or another source as the worldwide web).

 - b. The readiness of troops. Soldiers must have-
 - (1) Proper gear (appropriate clothing in good condition (clean and without stains, holes or blemishes that could decrease the insulation)).
 - (2) Adequate shelter.
 - (3) Proper fitness.
 - (4) Proper food and hydration. (Have meals been consumed?)

 - c. Mission-related concerns, to include-
 - (1) Degree of mobility, which impacts on Soldier heat generation.
 - (2) Contact with ground or other surfaces that may increase conductive cooling. (Bare metal, fuels/POL)
 - (3) Exposure to wet conditions (for example, stream crossings).
- Are there other circumstances?
- ☞ Are feet dry and warm?
 - ☞ Is the Soldier with a buddy who can assist/watch over to prevent cold injuries?

3 Developing controls

Cold casualties can be controlled through:

a. Education

- (1) Troop education, to include -
 - (a) Assessing cold stress.
 - (b) Recognizing and preventing cold injuries.
 - (c) Limiting the effects of cold through clothing, shelter, and nutrition.
 - (d) Learning how to work effectively in cold environments.

- (2) Leadership education, to include-
 - (a) Supervising troops who often have only superficial understanding of cold.
 - (b) Evaluating the impact of cold on the mission (for example, everything takes longer; troops will be more fatigued, more likely to make mistakes).

- (3) Experiential learning, to include -
 - (a) Remembering that true effectiveness in cold environments only comes with experience.
 - (b) Practicing the clothing principles of layering and staying dry. These principles must be tailored to the individual, and must be practiced so that Soldiers will learn when to dress down (before sweating begins) and when to add layers (before shivering begins).
 - (c) Using equipment in the cold. Everything takes longer, so practice is needed; Soldiers also need to be able to identify where special tools or clothing (for example, contact gloves) may be necessary.
 - (d) Planning for longer missions (weather may change quickly and higher operations, and troop fatigue impacts even routine operations).

- (4) The posting of cold-casualty prevention information as an ongoing reminder.

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Developing controls continued

(5) Establishing standing operating procedures for most routines.

b. Training

(1) Clothes are to be appropriate and worn properly.

(a) Clothing must be kept dry, and wet, damp clothes changed as soon as possible.

(b) Clothing is to be worn loose and in layers, and hands, fingers, and the head are to be covered and protected.

(c) All clothing must be clean and in good repair (no broken zippers or holes).

(d) Proper boots must be worn, ones that are not tight and are dry.

(e) Socks must be clean and dry, an extra pair of socks must be carried, wet or damp socks must be changed as soon as possible, and foot powder will be used on feet and boots.

(f) Feet are to be washed daily if possible.

(g) Gaiters are to be worn to keep boots dry when necessary.

(h) Gloves or mittens are to be worn.

(i) Hands must be warmed under clothes before hands become numb.

(j) Skin contact with snow, fuel, or bare metal is to avoided, and proper gloves are to be worn when handling fuel or bare metal.

(k) Gloves are to be waterproofed by treating them with waterproofing compounds.

(l) Face and ears are to be covered with a scarf, and an insulated cap with flaps over the ears or a balaclava is to be worn

(m) Face and ears are to be warmed by covering them with warm hands, and the face and ears must not be rubbed.

(n) Face camouflage will not be used when the air temperature is below 32 °F

(o) Sunscreen are to be worn.

(p) Sunglasses are to be worn to prevent snow blindness.

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Developing controls continued

- (2) The body will be kept warm
 - (a) Soldiers are to keep moving.
 - (b) Big muscles (arms, shoulders, trunk, and legs) are to be exercised to keep warm.

- (3) Health and nutrition must be sustained.
 - (a) Alcohol use is to be avoided (alcohol impairs the body's ability to shiver).
 - (b) Tobacco products are to be avoided (tobacco products decrease blood flow to the skin).
 - (c) All meals are to be eaten to maintain energy.
 - (d) Water or warm nonalcoholic fluids are to be drunk to prevent dehydration.
 - (e) Carbon Monoxide poisoning must be prevented by using only Army-approved heaters in sleeping areas, by not sleeping near exhaust of vehicle while the vehicle is running, and by not sleeping in an enclosed area where an open fire is burning.

- (4) Soldiers will protect each other.
 - (a) Soldiers are to watch for signs of frostbite and other cold weather injuries in their buddies.
 - (b) Soldiers are to ask about and assist with rewarming of feet, hands, ears or the face.

- (5) Leadership initiatives will be practiced.
 - (a) Activities or exercise will be limited or possibly discontinued during very cold weather.
 - (b) Covered vehicles are to be used for troop transport.
 - (c) Warming tents will be available.
 - (d) Warm food and drink will be on hand.
 - (e) All equipment is to be checked and working properly.

4 Implementing Controls

Cold casualties controls can be implemented through:

a. Identified controls already in place (buddy checks, sock changes, available shelter, and warm meals)

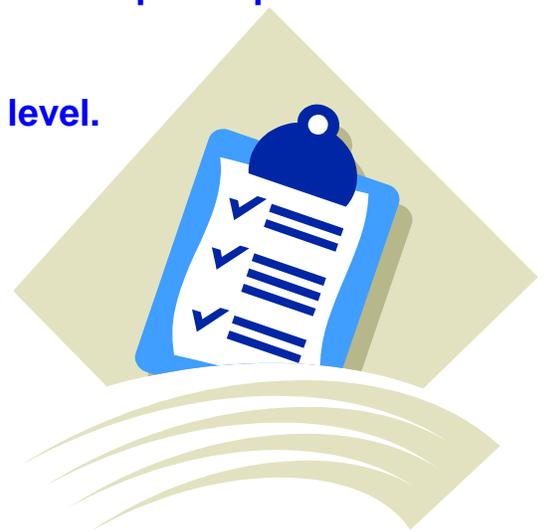
b. Controls that are integrated into standing operating procedures.

(1) Soldiers (including newly arrived Soldiers) will be educated about hazards and controls.

(2) The buddy system will be implemented to check clothes/personal protection.

(3) Soldiers will be encouraged and allowed to speak up about any problem (self-checks).

c. A decision to accept risk at the appropriate level.



5 Supervising and Evaluating

The final step in the risk-management process is the supervision and evaluation of the controls taken to prevent cold casualties.

Examples are:

- a. Ensure all soldiers and leaders are educated and experienced in the prevention, recognition and treatment of cold weather injuries as well as effective measures for working in cold environments
- b. Delegating responsibilities (inspections, buddy checks) to ensure control measures have been implemented.
- c. Monitoring the adequacy/progress of implementation of control measures
- d. Performing spot checks shelters, rewarming facilities, and food and drink supplies.

CRM Steps for preventing Cold Casualties were adapted from TB MED 508