

Summary Report for Individual Task
699-000-8012
Protect Yourself and Fellow Soldiers in Extreme Cold Weather
Status: Approved

Distribution Restriction: Approved for public release; distribution is unlimited.

Destruction Notice: None

Foreign Disclosure: FD1 - This training product has been reviewed by the training developers in coordination with the Northern Warfare Training Center FT Wainwright AK foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

Condition: In field in conditions that range from 50 to -60 F. Given the Extended Cold Weather Clothing System (ECWCS), other issued cold weather clothing items, the issued cold weather sleep system with insulating pad, access to a warming shelter and the requirement to protect yourself and your fellow Soldiers against cold injuries. Standard MOPP 4 conditions do not exist for this task. See the MOPP 4 statement for specific conditions.

Standard: Analyze current weather conditions to choose a ECWCS layer combination appropriate to the conditions and work load. Does not sustain a cold weather injury. Does not allow fellow Soldiers to sustain a cold weather injury.

Special Condition: None

Safety Risk: Low

MOPP 4: N/A

Task Statements

Cue: None

DANGER
None

WARNING
None

CAUTION
None

Remarks: None

Notes: None

Performance Steps

1. Wear cold weather uniform properly.

a. You are issued the Extended Cold Weather Clothing System (ECWCS). With moderate movement it should keep you warm and dry down to -60° F. All cold weather clothing systems have three layers that are required for proper function.

(1) Wear a Base Layer (also known as Inner or Wicking layer) – The base layer(s) are those adjacent to your body. They should be comfortably loose. The main purpose of these garments is to wick excess moisture away from your body.

(2) Wear an Insulation Layer – The insulation layer(s) are the intermediate layer(s). They provide volume to enable you to trap warm air between your body and the outer garments. In addition, the insulation layer(s) help wick away excess moisture. These layers should be comfortably loose to trap a sufficient volume of air.

(3) Wear an Outer Shell Layer – The outer shell layer(s) are the external layers that protect you from the elements in your environment. A main function is to keep you dry. In addition, they provide additional volume for trapping warm air. These layers should also be comfortably loose.

b. Follow clothing guidelines for wearing cold weather clothing and equipment.

(1) Keep it CLEAN. Clothing keeps you warm by trapping warm air against your body and in the pores of the clothing itself. If these pores become filled with dirt, sweat or other grime, the clothing will not be able to do its job efficiently. Therefore, your clothes should be kept as clean as possible to keep you as warm as possible. Dry rub and air clothing when washing is not possible.

(2) Avoid OVERHEATING. The key is not to be hot, but comfortably cool; not cold, but cool. If at any time you are sweating, you are too hot. Sweating is a sign that your body wants and needs to cool down. Let the environment cool you down, not sweat. This may be as simple as opening buttons or unzipping zippers, instead of removing a whole layer of clothing. Once you stop work, or feel yourself getting cold, bundle up again just enough to keep cool.

(3) Wear clothing LOOSE and in LAYERS. Clothes should fit loosely for comfort. The more layers used, the more warm air will be trapped. Tight clothing will prevent air from becoming trapped between your body and clothes. It is the warm air that keeps you warm, not the clothes. Several thin layers working together will work better than one thick layer alone.

(4) Keep clothing dry. Once your clothing is wet, the water or sweat evaporates, drawing warmth away from your body. Moisture will enter clothing from two directions:

(a) Inside- perspiration and condensation/frost at cold temperatures from the moist heat put off from the body.

(b) Outside- Precipitation- rain, snow, ice, frost. Moisture reduces insulating properties of clothing. Brush snow and ice off clothing before entering heated shelters. Clothing can be dried by air outside or inside heated shelters away from heat source. Leather items should be dried slowly. Turn GORE-TEX® clothing inside- out to facilitate drying in a heated shelter.

c. Wear Generation III ECWCS.

(1) Wear Level 1: Lightweight Cold Weather Undershirt and Drawers.

(a) Long sleeve top and full-length bottom garments constructed out of silk-weight moisture wicking polyester. The material aids in the movement of moisture from the skin to the outer layers both while the wearer is moving or static.

(b) The top has holes in the sleeves for the thumbs. Place your thumbs through the holes to keep the garment down around your wrist.

(c) Wear next to skin or with the mid-weight cold weather shirt and drawers for added insulation and to aid the transfer of moisture.

(2) Wear Level 2: Mid-Weight Cold Weather Shirt and Drawers.

(a) Long sleeve top and full-length bottom garments constructed out of polyester "grid" fleece. Provides light insulation for use in mild climates as well as acting as a layer for colder climates. Provides an increase of surface area for the transportation of moisture away from the wearer during movement.

(b) The top has a zipper that can be used to form a mock turtle neck or allow you to ventilate as workload increases. The top has holes in the sleeves for the thumbs. Place your thumbs through the holes to keep the garment down around your wrist.

(c) Wear over lightweight cold weather undershirt and drawers or next to skin.

(3) Wear Level 3: Fleece Jacket.

(a) Acts as the primary insulation layer for use in moderate to cold climate. "Thermal Pro", animal fur mimicking insulation provides an increase in the warmth to weight ratio along with a reduction in volume when packed.

(b) There are two inner mesh pockets. The zipper will form a mock turtle neck or can be used to ventilate the garment as required.

(c) Wear underneath shell layers. It is approved for use as an outer layer by the U.S. Army. However, it offers little protection from the wind and no protection from moisture.

(4) Wear Level 4: Wind Cold Weather Jacket.

(a) Made of a lightweight, windproof and water repellent material. Acts as a minimum outer shell layer, improving the performance of moisture wicking of the insulation layers when combined with Body Armor and/or Army Combat Uniform.

(b) It has two sleeve pockets, and a mock turtle neck. Two chest level pockets are designed with mesh pocket linings to aid in ventilation while wearing body armor.

(c) Wear as wind protection during windy cool days.

(5) Wear Level 5: Soft Shell Cold Weather Jacket and Trousers Outer Shell Layer.

(a) Made of a highly water resistant, wind proof material that increases moisture vapor transfer over current hard shell garments. Provides a reduction in weight, bulk and noise signature during movement. Increase of breath ability improves performance of insulation layers by decreasing saturation due to moisture accumulation.

(b) It has a storable hood that works with the ballistic helmet. It has two hand warming pockets on the chest with mesh lining to aid in ventilation. It has pit zips and two sleeve pockets. Draw cords on the bottom prevent snow and wind from entering the system.

(c) Wear when the average temperature is below 19° F. You will determine the base and insulation layers necessary dependent upon temperature, wind and activity level.

(6) Wear Level 6: Extreme Cold/Wet Weather Jacket and Trousers Outer Shell Layer.

(a) A waterproof layer for use in prolonged and/or hard rain and cold wet conditions.

(b) It has two pass through chest pockets for ventilation. It has a storable hood that works with the ballistic helmet.

(c) Wear when the average temperature is above 19° F and alternating between freezing and thawing. You will determine the base and insulation layers necessary dependent upon temperature, wind and activity level.

(7) Wear Level 7: Extreme Cold Weather Parka and Trousers.

(a) Provides superior warmth with high compact ability, low weight, and low volume. Highly water resistant and windproof to provide wind and moisture protection.

(b) Sized to fit over the Body Armor during static activities requiring maximum insulation. Trousers design incorporates full side zips for donning and doffing over boots and other layers.

(c) Wear in extreme cold weather and climates over any other layers being worn; it is the last layer of protection. It is meant for static positions.

d. Wear the wool balaclava, and/or OR Windstopper Balaclava.

(1) As a hat. Fold the bottom of the balaclava to the inside to form a hat. Place the hat onto your head with the face opening to the rear. As you breathe, condensation from your breath will form on your forehead. If you need to change configurations later, this will prevent you from placing wet material onto your face.

(2) Balaclava down, face exposed. Pull the balaclava over your head. Pull the lower portion of the face opening under your chin. Note that doing this repeatedly will stretch the fabric and reduce its ability to stay over your nose when you need it.

(3) Balaclava down, face covered. Pull the lower portion of the face opening up over your mouth and nose. Use goggles to cover eyes and remaining exposed skin if required.

(4) Never change the configuration of the balaclava during PT. Anticipate the configuration that will work best for the activity. This will come with experience. If you start with it down, leave it down; changing the configuration exposes wet skin to the cold air and is the cause of many of the frostbite cases in USARAK.

e. Wear gloves and mittens.

(1) At a minimum, always wear a contact glove when working in the cold.

(2) • Avoid using the wool/nylon liners without the shell. Snow sticks to them very easily and their thinner construction makes them susceptible to tearing. The liners provide no protection from the wind.

• Wear the Intermediate Cold/Wet glove (old style black leather) with the issued brown liners. The new style green nylon do not come with these liners. Either glove is suitable for cold/wet conditions as an outer layer.

(3) • The trigger finger mittens are made of canvas with deer skin palms (maintains flexibility in cold). Wear the trigger finger mittens with the wool trigger finger inserts. You are issued two pairs of inserts. Inserts are ambidextrous.

• Avoid wearing the liners without the shell. The liners are made of wool and snow sticks to them very easily and provide no protection from the wind.

• Pull the liner out to facilitate faster drying.

(4) • Arctic mittens are made of canvas with deer skin palm and a polyester fiber backing that serves as a face warmer. They have a removable liner made from the same material as the poncho liner. Pull the liners out and inspect for holes, especially near any seams. Remove the liner from the shell to facilitate faster drying. Avoid wearing the liners alone as they provide no protection from the wind. Use in conjunction with trigger finger liners, wool/nylon liners or black OR liners. When used in this manner the mittens should fit your hand comfortably. • Both the trigger finger mittens and arctic mittens have lanyards that allow you to remove the mittens without losing them. Wear the lanyard over your head. If you are not wearing the mittens, tuck them inside your outer shell to keep snow out of them and to keep them warm for later use. DO NOT wear mittens attached behind your back. The mittens will fill with snow and/or will be cold when you place your hands in them.

• Fuels do not freeze and will be the same temperature as the air. ALWAYS wear POL handler gloves when working with fuels to prevent frostbite.

• Keep routine tasks routine by rehearsing with mittens.

f. Wear issued cold weather boots.

(1) Intermediate Cold-Wet Boots (ICWB) with removable liners (tan) NSN 8430-01-527-8274, are rated from 68° F to +14° F. You should receive two pairs of liners with this boot. When donning this boot with the liners, place the liners on your feet first and secure the Velcro. Then insert your foot into the boot. Ensure there is no bunching as this will cause blisters. When fitting this boot ensure you are wearing the sock type you will use in the field and that the boot fits like your street shoes.

(2) Army Combat Boots (Hot Weather), NSN 8430-01-514-4935, are not acceptable for cold weather environments.

(3) Army Combat Boots (Temperate Weather) NSN 8430-01-516-1506 are acceptable until the temperature drops below 32° F.

(4) Extreme Cold Weather Boots (ECWB) NSN 8430-00-655-5535. (Picture 15) They are also known as White Vapor Barrier boots, VB boots, or bunny boots. They are rated 14° F to -60° F and are for use in cold dry environments. Some VB boots have a pressure relief valve. The valve is used for equalizing air pressure; when you change altitude rapidly, open the valve briefly to equalize pressure and then close the valve. Wipe VB boots out at least once daily and change socks at the same time.

(5) When fitting the boot wear the same sock type you will use in the field. The boot should fit like your street shoe.

(6) There is a fine line in between the point at which soldiers should switch from the ICW to the VB boot. The ATTP 3-97.11 gives guidelines based on temperature zone. Temperature zone II Dry Cold 19° F to -4° F is the recommended time to switch to VB boots. It must be stressed that this is dependent on workload and that leaders should ensure that both pairs of boots are available to Soldiers in the event of a temperature swing or change of mission. This will give maximum flexibility.

g. Use the issued sleep system.

(1) The Modular Sleep System (MSS) is designed for a temperature range of +50° F to -50° F. At the low end of this range, you will only be comfortable for about four hours of sleep because as you sleep, you compress the sleeping bag material. This system will replace all other sleep systems issued in the US Army. ALWAYS give the bag a vigorous shaking before you get in it. This restores the loft of the insulation.

(a) Use the patrol bag (Green/Foliage Green) when temperatures are above 30° F. If you do not have a shelter, use it with the bivouac cover. In extreme temperatures you may notice frost on the inside of the bivy cover. This is normal from your body heat during the use of the sleep system. Brush the frost out before stowing your bag.

(b) Use the Intermediate cold weather bag (Gray-Green) from 30° F to -10° F. If you do not have a shelter, use it with the bivouac cover.

(c) In temperatures below -10° F, insert the Intermediate Cold Weather bag into the patrol bag and snap them together. Use this inside the bivouac cover for a temperature rating of -30° F.

(d) Additional layers, Level III Fleece, Level 5 Softshell can be used when temperatures exceed -30. Be careful not to overdress as sweating can accumulate in the bag/clothing.

(e) Additional insulation layers (Level 3 Fleece) can be put in the foot box of the sleeping bag to warm the feet and keep the insulation layer warm for use at the end of the rest cycle.

(2) You are also issued a 24" x 72" x 3/8" thick polyethylene foam pad that is designed to put insulation between you and the ground. This insulating layer is essential to the sleep system as it prevents conductive heat loss to the ground. Use pine boughs, cardboard etc. as an insulating layer if the sleeping pad is lost or destroyed.

(3) You may be issued an air mattress. Open the valve to allow the mattress to self-inflate. This feature can fail in the field and you may need to blow the air mattress up. This introduces moisture into the air mattress and may cause problems with the valve freezing in the open or closed position.

h. Care for the ECWCS.

(1) Before laundering make sure all zippers are zipped and all snaps and hooks are fastened. Tie draw cords together.

(2) For MSS use front load washing machine.

(3) Machine launder using delicate/gentle fabric cycle or by hand.

(4) Use lukewarm water (90° F) and cold water laundry detergent.

(5) Rinse in clean cold water.

(6) Dry in tumble dryer. Do not exceed temperatures of 130° F as degradation of component materials will occur. For Level VI, set on permanent press.

(7) Avoid over drying.

(8) To drip dry, place on a rust proof hanger.

(9) Do not press; Do not starch; Do not use fabric softeners; Do not bleach.

2. Take steps to prevent cold weather injuries during movement.

a. Start movements slightly cool to prevent profuse sweating during the movement.

b. Make adjustments to clothing and movement rate to prevent profuse sweating. Take a brief halt, 10-15 minutes after movement begins, to adjust clothing.

c. Keep clothing upgrade items like mittens and additional layers easily accessible for quick adjustments on the move. Layer 7 parka should be directly under the flap of the rucksack. You can get a hold of it quickly and stow it quickly.

d. Carry a minimum of 2 quarts of water.

e. Drink sufficient fluids (potable water, juices and warm, non-alcoholic beverages).

f. Eat food on the move.

g. Avoid lengthy halts. Take brief halts every hour. Halts of more than 5-10 minutes open you up to cold weather injuries because you are dressed for movement.

h. For vehicle movements, when exposed you must:

(1) Wear eye protection.

(2) Cover all exposed skin.

3. Fix cold challenges immediately to prevent a simple problem from becoming a cold weather injury.

a. Remove wet clothing (if applicable) and replace with dry clothing.

- b. Upgrade clothing as required.
- c. Exercise. Perform exercises that involve the entire body.
- d. Eat and hydrate.
- e. If possible, get into a heated shelter.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: You will be tested on your knowledge of cold weather clothing during a quiz (see training schedule for date and time. You need to score a 70% on this quiz in order to receive a GO. There are also questions related to this lesson on the final written examination (BMM&CWLC only; see training schedule for date/time of exam). You must score a 70% on the written exam in order to receive a GO. If you fail the written exam, you will be given a second exam after re-training has been conducted. If you fail this second examination, you will be dismissed from the course. In addition, you are expected to practice countermeasures that will prevent you from sustaining a cold weather injury. If you sustain a cold weather injury you will be dismissed from the course (at the discretion of the Commandant).

Evaluation Preparation: Students will make determinations throughout courses about what combination of clothing they will wear. Instructors will help guide this process. For the written examination, the test control SOP will be adhered to.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Wore cold weather uniform properly.			
2. Took steps to prevent cold weather injuries during movement.			
3. Fixed cold challenges immediately to prevent a simple problem from becoming a cold weather injury.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	ATTP 3-97.11	Cold Region Operations	Yes	Yes
	NWTC 01	Northern Warfare Training Center Risk Management Guide for Mountain Operations	Yes	No
	NWTC 02	Northern Warfare Training Center Cold Weather Operations Manual	Yes	No
	USARAK PAMPHLET 385-4	RISK MANAGEMENT FOR COLD WEATHER OPERATIONS	Yes	No

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. IAW local policies.

Safety: In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination.

Prerequisite Individual Tasks : None

Supporting Individual Tasks : None

Supported Individual Tasks : None

Supported Collective Tasks : None

ICTL Data :

ICTL Title	Personnel Type	MOS Data
Cold Regions	Any	