# 10th MOUNTAIN DIVISION (LIGHT INFANTRY) 2024 D-Series Study Guide







01 DECEMBER 2023

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# Section 1 10th Mountain Division (Light Infantry) History

In November 1939, the United States Army's First Army announced the first large-scale winter warfare training and maneuvers would take place at Pine Camp, NY, and Lake Placid, NY from January to March 1940. Around the same time in a Vermont ski lodge, Charles "Minnie" Dole and friends discussed the Finnish success in the Winter War and the importance of the U.S. Army having soldiers trained in winter warfare. Divisional ski patrols facilitated the activation of the first mountain and winter warfare unit, the 87th Infantry Mountain Regiment at Fort Lewis, WA on 15 November 1941.

By February 1942, the 87th began ski training on Mount Rainier and by summer the regiment began mountain training back at Fort Lewis. The Army continued expanding its capabilities with the activation of the Mountain Training Center (MTC) on 17 September 1942 at Camp Carson, CO. Two months later, the MTC moved to Camp Hale, CO where it continued learning the nuances of mountain and winter warfare into 1943.

As the MTC continued to grow in personnel, units, and capability, it was redesignated as the 10th Light Division (Alpine) and activated on 15 July 1943. Training into the winter of 1943-44 the 10th gained confidence through increasingly larger training exercises that culminated in late March 1944 with the D-Series exercise.

The D-Series was the final test of the 10th Light Division (Alpine)'s ability to conduct large scale operations in mountainous terrain and in winter conditions. Setting out with 90-pound rucksacks, on skis or snowshoes, and with their weapons, the soldiers of the Division moved out of the Pando Valley and climbed as high as 13,000 feet. The harsh conditions of the D-Series could not be rivaled by any other training in the Army. Roughly eight feet of snow fell, and temperatures dipped as low as 30 degrees below zero at times. However, when the soldiers returned to their barracks many wondered how hard could combat be, they had just survived the D-Series.

That summer, following the D-Series, the 10th left Camp Hale for Camp Swift, TX. At Camp Swift, the Division was reorganized and redesignated as the 10th Mountain Division on 6 November 1944. Receiving authorization to wear the MOUNTAIN tab. In January 1945, the Division deployed to Italy and faced German forces in Italy's northern Apennine Mountains. On 18 and 19 February, the 10th attacked up Riva Ridge and Mount Belvedere, respectively, breaking the German defenses. Continuing its attack through the Apennine Mountains and into the Po River Valley, the 10th crossed the Po River on 23 April and continued north to Lake Garda. The Division fought to the lake's northern end and into the Italian Alps, where on 2 May 1945 WWII in Italy ended with the surrender of German forces there.

Following combat operations, the 10th moved to the Italian-Yugoslav border to maintain the peace between the two countries. By July, the Division sailed for the United States, and with the end of WWII in August, the 10th Mountain Division was inactivated at Camp Carson, CO on 30 November 1945.

On 11 September 1984, the Army announced its newest light infantry division would be stationed at Fort Drum, NY. Activated on 13 February 1985, the 10th Mountain Division (Light Infantry) was primarily stationed at Fort Drum, however, its 2nd Brigade was activated at Fort Benning, GA, and its Aviation Brigade was headquartered at Griffiss Air Force Base, NY. By 1990 the Division was considered combat ready.

While a small number of 10th soldiers deployed for Operations Desert Shield and Desert Storm, the Division's first deployment followed Hurricane Andrew devastating southern Florida in August 1992.

In December 1992, the 10th deployed to Somalia as part of Operations Restore Hope and Continue Hope. Initially, the Division headquarters deployed with task forces commanded by the 2nd Brigade and Division Artillery (DIVARTY). The mission continued with those units being replaced by task forces commanded by the 1st Brigade in the spring of 1993 and the Aviation Brigade later that summer. By March 1994, the Division redeployed to Fort Drum.

The 10th was once again called upon in September 1994. This time to restore the democratically elected government of Haiti and to create a secure environment for that country's citizens. Air assaulting off a Navy aircraft carrier, the Division secured the nation and by January 1995, redeployed to Fort Drum. As the 1990s progressed, not only did the 10th continue its participation in the Multinational Forces and Observers (MFO) mission in Egypt's Sinai Peninsula, but it also supported Operation Joint Forge in Bosnia-Herzegovina and Operation Joint Guardian in Kosovo. The terrorist attacks on 11 September 2001 initiated the Global War on Terror (GWOT). Almost immediately, units of the 10th responded by deploying first for Operation Noble Eagle and then Operation Enduring Freedom (OEF). The Division Headquarters, 2nd Brigade, and subordinate units deployed first to Uzbekistan, then to Afghanistan. For the next 20 years, first for OEF, then Operation Freedom's Sentinel, the units of the 10th participated in continuous combat operations.

In early 2003, the GWOT expanded with Operation Iraqi Freedom (OIF) as well as various deployments to Africa. Several Division units participated in the initial invasion of Iraq, which began near constant combat deployments throughout OIF and Operation New Dawn until combat forces left Iraq in 2011.

The 10th began its transformation into the Army's new modular force structure by inactivating the DIVARTY and several other subordinate units and activating the 3rd Brigade Combat Team (BCT) in September 2004 at Fort Drum. Next, the 4th BCT was activated in January 2005 at Fort Polk(now Fort Johnson, LA). And finally, the 10th Mountain Division Support Command (DISCOM) was redesignated as the 10th Sustainment Brigade and the Division's Aviation Brigade was redesignated as the Division's Combat Aviation Brigade (CAB).

By 2014 other changes took place and new challenges arose for the 10th. On 14 August, the 3rd BCT was inactivated, and the Division experienced a minor reorganization. In April, Operation Atlantic Resolve commenced to counter Russian aggression in eastern Europe. And in June the Islamic State of Iraq and Syria (ISIS) emerged, necessitating the return of combat forces to Iraq. Today, the Division continues regular deployments to Central Command as part of Operations Inherent Resolve and Spartan Shield.

On 24 February 2015, the 4th BCT was redesignated as the 3rd BCT. In May 2015, the 10th Sustainment Brigade was redesignated the 10th Mountain Division Sustainment Brigade and in October the 10th Mountain DIVARTY was reactivated. That same month, subordinate units of the Division's CAB deployed as part of the Korean Rotational Force. Then in 2016, the Army announced a program to associate active-duty and National Guard (NG) units. The 86th Brigade Combat Team (Vermont and Colorado NG) was associated with the 10th, this brought the 10th Mountain Division patch back to Colorado for the first time since WWII, and the Division's 3rd BCT was associated with the Texas National Guard. These associations ended in 2018 but continue to have an impact on the Division.

Presently, the 10th Mountain Division continues to deploy around the world, it faces the challenges of preparing for large-scale combat operations (LSCO) and a renewed focus on its historical roots as the U.S. Army's alpine division. Climb To Glory!

# Section 2: Shoot

1. Operate and engage targets with the M4 rifle

*i.* TC 3-20.40

- 2. **Assemble** and Functions check standard weapon systems
  - *i. M4 TM* 9-1005-319-10, *Task* 071-COM-0029
    - a. Conduct a function check on the M16/M4.
    - b. Confirm the M16/M4 is clear.
    - c. Place selector lever on SAFE.
    - d. Pull charging handle to rear and release.
    - e. Pull trigger.
    - f. Note: Hammer should not fall.
    - g. Place selector lever on SEMI.
    - h. Pull trigger.
    - i. Note: Hammer should fall.
    - j. Hold trigger to the rear and charge the weapon.
    - k. Release the trigger with a slow, smooth motion, until the trigger is fully forward.
    - I. Note: An audible click should be heard.
    - m. Pull trigger.
    - n. Note: Hammer should fall.
    - o. Place selector lever on BURST (M16A2, M16A4, and M4 only).
    - p. Charge weapon one time.
    - q. Squeeze trigger.
    - r. Note: Hammer should fall.
    - s. Hold trigger to the rear.
    - t. Charge weapon three times.
    - u. Release trigger.
    - v. Squeeze trigger.
    - w. Note: Hammer should fall.
    - x. Place the selector switch on AUTO (M16A3 and M4A1 only).
    - y. Pull the charging handle to the rear, charging the weapon.
    - z. Squeeze the trigger.
    - aa. Note: Hammer should fall.
    - bb. Hold the trigger to the rear.
    - cc. Charge the weapon again.
    - dd. Fully release the trigger then squeeze it again.
    - ee. Note: The hammer should not fall because it should have fallen when the bolt was allowed to move forward during the chambering and locking sequences.

3. M17

# *i.* TM 9-1005-470-10

- a. Ensure the pistol is clear.
- b. Insert empty magazine into the magazine well.
- c. Note: If magazine catch fails to lock magazine in place, notify field maintenance.
- d. Grasp slide and pull completely to rear until slide catch lever locks slide open.
- e. Press magazine catch.
- f. Note: If magazine fails to fall free of pistol under its own weight, notify field maintenance.
- g. Pull back and release slide.
- h. Push up on manual safety lever to engage safety.
- i. Press trigger to the rear.
- j. Note: Striker should not be released. If striker is released, notify field maintenance.
- k. Push down manual safety lever to disengage safety.
- I. Press trigger to the rear and hold to rear.
- m. Note: Striker should be released and an audible click should be heard.
- n. Pull slide completely to the rear and release slide.
- o. Release trigger.
- p. Note: A light audible click should be heard and felt as the striker resets.
- q. Press trigger.
- r. Note: The striker should release and you should hear and feel a loud audible click.
- 4. M240
- i. TM 9-1005-313-10
  - a) Ensure the M240 is clear.
  - b) Place safety lever to the fire ("F") position.
  - c) Lock the bolt to the rear position by pulling the cocking handle to the rear.
  - d) Push the cocking handle to the forward position until it locks in the forward position.
  - e) Place the safety lever to the safe ("S") position.
  - f) Depress the trigger.
  - g) Note: The bolt should not fall.
  - h) If the bolt falls, the machine gun is inoperative; notify your supervisor.
  - i) If the bolt does not fall, continue to the next step.
  - j) Place the safety lever to the "F" position.
  - k) Pull and hold the cocking handle to the rear.
  - I) While holding the cocking handle to the rear, depress the trigger, and ease the bolt to the forward and locked position
  - m) Close the ejection port cover.

- 5. AT4
- *i.* TM 3-23.25(FM 3-23.25)
  - a) Remove the M136 AT4 from its carrying position, and cradle it in your left arm.
  - b) Keeping the munition's muzzle pointed toward the target area, perform the following step:
    - i) In training, face to your right when preparing the round for firing.
    - ii) In combat, keep your eyes on the target area while preparing the round for firing. Ensure that nearby Soldiers are aware of your intent, and that the backblast area is clear before firing.
  - c) With your right hand, pull and release the transport safety pin.
  - d) Unsnap, unfold, and hold the shoulder stop with your right hand. Grip the base of the sling on the front of the launcher with your left hand and the shoulder stop with your right hand.
  - e) Raise the munition out and away from your body.
  - f) While keeping the munition pointed at the target, pivot your body 90 degrees to face the target.
  - g) Place the munition on your right shoulder.
  - h) Reach forward with your right hand, and grasp the front sight cover. Press down, and slide it rearward.
  - i) With your right hand, grasp the rear sight cover. Press down, and slide it forward.
  - j) Ensure the backblast area is clear of personnel.
  - k) Unfold the cocking lever with your right hand. Place your thumb under it and, with the support of your fingers in front of the firing mechanism, push it forward, rotate it downward and to the right, and let it slide backward.
  - I) Adjust the rear sight to the correct range, using the following.
    - i) To adjust the rear sight range setting to more than 200 meters, turn the range knob clockwise (toward the muzzle).
    - ii) To decrease the range, turn the range knob counterclockwise (toward the firer).
  - a) Place the first two fingers of your right hand on the red safety release catch, and extend the thumb. While keeping the thumb extended, press the red safety release catch down, and hold.
  - b) Pull back on the sling with your left hand to seat the shoulder stop firmly against your shoulder.
  - c) Aim the launcher.
  - d) Press the red trigger button with the thumb of your right hand to fire the launcher, and hold until the munition fires.

# Section 3: Move

# 1. Pack a Rucksack

- *i.* United States Army Alaska Northern Warfare Training Center Basic Military Mountaineering Course Student Handout 2021
- ii. Snowshoe packing methods from Division Blue Book:



# 2. Snow shoe use

- i. TM 10-8465-237-10 High Angle Mountaineering Kit, page 52
- ii. <u>RL Snowshoe Tutorial Poster.pdf (fws.gov)</u> or other internet sources

#### 3. Ski Use

i. TC 3-97.61 (FM 3-97.61) Military Mountaineering

Table 8-1. Time-distance formulas.

	Unbroken Trail	Broken Trail
On foot (no snow cover)	2 to 3 kph (cross-country)	3 to 4 kph (trail walking)
On foot (less than 1 foot of snow)	1.6 to 3.2 kph	2 to 3.2 kph
On foot (more than 1 foot of snow)	.4 to 1.2 kph	2 to 3.2 kph
Snowshoeing	1.6 to 3.2 kph	3.2 to 4 kph
Skiing	1. to 5.6 kph	4.8 to 5.6 kph
Skijoring	N/A	3 to 24 kph

#### 4. Pack an Akhio Sled

*i.* Northern Warfare Training Center COLD WEATHER OPERATIONS MANUAL OCTOBER 2000, page 149

#### Scow Sled, 200 lb. Capacity, Ahkio

A. The scow sled, 200 lb. capacity, commonly known as the ahkio, is the light infantry squad's primary means of transporting tents and other sustainment equipment in a cold weather environment. It is a 38 pound fiberglass sled with an attached canvas cover, and has a carrying capacity of 200 pounds. In addition to its' primary function of transporting the tent group equipment, the ahkio is excellent for transporting weapons, rations, and ammunition, providing a stable firing platform for crew-served weapons in deep snow, and for casualty evacuation.

#### B. Packing

Proper weight distribution is essential when packing the ahkio. Heavy items should be placed in the bottom and slightly to the rear of center. Loading lighter equipment toward the top will prevent the ahkio from becoming top-heavy. The load should be packed in a manner which results in the lowest possible profile, again, to avoid a top heavy condition. If the center of gravity is too high, the sled will be difficult to pull, and will tend to roll over, especially when moving parallel to a slope. Tools such as shovels, axes, saws, and machetes should be packed on the sides or top for easy access when breaking trail or clearing bivouac sites. Once all equipment has been placed into the ahkio, the canvas cover is folded over the load, and the lashing ropes are secured to each other with the lashing hooks, tightened, and secured.

#### C. Towing

Towing a loaded ahkio is arduous work; teams must be rotated frequently to prevent soldiers from becoming exhausted, and to prevent them from sweating through their clothing, which may expose them

to a cold weather injury. Generally, snowshoes are preferred for soldiers who will have to pull an ahkio over snow-covered terrain, especially if the snow depth exceeds one foot. Ski poles are recommended as an aid to balance. Pulling of ahkios by ski borne troops requires a considerable degree of expertise, and this task should be included in a units' ski training syllabus if it is to be attempted. When pulling an ahkio with skis on, climbing skins can be an invaluable aid.

#### 4. Knot tying and rappelling

- i. Ranger Handbook 9-1 to 9-35
  - 1. Girth Hitch
  - 2. Munter Hitch
  - 3. Auto Block Knot
  - 4. Prusik Knot
  - 5. Flat Overhead Knot
  - 6. Figure 8 Bend
  - 7. Figure 8 Bite

All knots with tails will have at least 4 inch tails

#### 5. Rappel Commands

i. TC 21-24, page 1-14 through 1-18

#### Table 1-1. Rappeller commands.

COMMAND	GIVEN BY	MEANING
LANE NUMBER, ON RAPPEL	Rappeller	I am ready to begin rappelling.
LANE NUMBER, ON BELAY	Belayer	I am on belay and you may
		begin your rappel.
LANE NUMBER, OFF RAPPEL	Rappeller	I have completed the rappel,
		cleared the rappel lane, and am
		off the rope.
LANE NUMBER, OFF BELAY	Belayer	I am off belay.
LANE NUMBER, FALLING	Rappeller	I am falling. Be alert below-
		belay man brake.

- 6. Use of a High Angle Mountaineering Kit harness and belay device
  - a) Loosen all three buckles to maximum length, but do not detach the straps
  - b) Hold harness by waist belt, with attachment point/belay loop facing up and away from the front of the body
  - c) Step through waist belt, into each leg loop
  - d) Pull harness up above hip bones
  - e) Use the buckles to tighten the harness until very snug around waist, above the hip bones.
  - f) Tighten leg loops around uppermost part of thighs. Check tightness so that only the fingers of an open hand fit between leg and harness. Tighten leg loop retention straps until snug.
  - g) Clip locking carabineer and belay device to harness belay loop.
  - h) Follow rappel master commands on preparing the belay device for rappelling operations.



Locking Carabineer

- 8. Tire Chain Installation and Removal
  - i. TM 9-2320-280-10

#### CAUTION

Tire chains are only used when extra traction is required and must be used as an axle set. Any other combination may cause damage to the drivetrain.

#### a. M998 Radial Tire Chain Installation.

(1) Spread out tire chain assembly (1) and line up with tire.

(2) Cautiously move or drive vehicle over tire chain assembly (1) until wheel is positioned at either end of chain assembly (1), allowing tire chain assembly (1) to be draped up and over tire.

(3) Maneuver tire chain assembly (1) until cross-link sections are evenly spaced around tire. Secure one side of tire chain assembly (1) to tire by hooking inside fastener (2) to chain assembly (1). Tighten chain assembly (1) as much as possible.

(4) Repeat steps 1 through 3 above until all tire chain assemblies have been properly installed.

(5) Hook end fastener (3) to chain assembly (1) and secure with locking retainer (4) to tighten chain assembly (1). Ensure as many chain links as possible lay between the sidewall head lugs (5) on both sides of tires.

(6) Move vehicle forward a few feet and retighten chain assembly (1) to remove any slack from where tire was resting on chain assembly (1). Secure loose chain linkage to chain assembly (1) with wire or other field expedient method.



(7) After vehicle is driven one or two miles, stop and retighten tire chains. Ensure as many chain links as possible lie between the sidewall head lugs (5) on both sides of the tires.

(8) After final tightening, secure loose chain linkage to chain assembly (1) with wire or other field expedient method.

(9) Occasionally check tire chains (1) during operations to ensure tire chains (1) have not slipped.

#### b. Radial Tire Chain Removal.

#### CAUTION

Remove tire chains from tires as soon as possible after leaving area requiring their use. Prolonged use of tire chains may damage drivetrain.

(1) Detach locking retainer (4) from end fastener (3) and unhook end fastener (3) from chain assembly (1).

(2) Unhook inside fastener (2) from chain assembly (1) and remove chain assembly (1) from tire.

- (3) Drive vehicle off chain assembly (1).
- (4) Repeat operations listed in steps 1 through 3 above until all tire chain
- (5) Stow tire chain assemblies (1) under driver's seat.





c. M998 Bias Ply Tire Chain Installation.

#### CAUTION

Tire chains are only used when extra traction is required and must be used as an axle set. Any other combination may cause damage to the drivetrain.

(1) Install quick link (1) through cross-link connector (4) located on each side of tire chain assembly (5) between the third and fourth cross chains (3). Tighten nut (2).

(2) Spread out tire chain assembly (5) and line up with tire.

(3) Cautiously move or drive vehicle over tire chain assembly (5) until wheel is positioned at either end of chain assembly (5), allowing tire chain assembly (5) to be draped up and over tire.

(4) Maneuver tire chain assembly (5) until cross-link sections are evenly spaced around tire. Secure one side of tire chain assembly (5) to tire by hooking inside fastener (6) to chain assembly (5). Tighten chain assembly (5) as much as possible.

(5) Repeat steps 2 through 4 above until all tire chain assemblies have been properly installed.

(6) Hook end fastener (7) to chain assembly (5) and secure with locking retainer (8) to tighten chain assembly (5). Ensure as many chain links as possible lay between the sidewall head lugs (9) on both sides of tires.

(7) Move vehicle forward a few feet and retighten chain assembly (5) to remove any slack from where tire was resting on chain assembly (5). Secure loose chain linkage to chain assembly (5) with wire or other field-expedient method.

(8) After vehicle is driven one or two miles, stop and retighten tire chains. Ensure as many chain links as possible lay between the sidewall head lugs (9) on both sides of the tires.

(9) After final tightening, secure loose chain linkage to chain assembly (5) with wire or other field-expedient method.

(10) Occasionally check tire chains (5) during operations to ensure tire chains (5) have not slipped.



d. Bias Ply Tire Chain Removal.

#### CAUTION

Remove tire chains from tires as soon as possible after leaving area requiring their use. Prolonged use of tire chains may damage drivetrain.

(1) Detach locking retainer (8) from end fastener (7) and unhook end fastener (7) from chain assembly (5).

(2) Unhook inside fastener (6) from chain assembly (5) and remove chain assembly (5) from tire.

(3) Drive vehicle off chain assembly (5).

(4) Repeat steps 1 through 3 until all tire chain assemblies (5) have been removed from tires.

(5) Stow tire chain assemblies (5) under driver's seat.





# Section 4: Communicate

# 1. Communicate

a. Assemble and put ASIP radio into operation *i. TM 11-5820-890-10-3* 

INSTALLATION OF PRIMARY BATTERY AND BATTERY BOX. To assemble a manpack radio, you must first check and install the battery.

#### WARNING

THE LITHIUM BATTERY USED WITH YOUR MANPACK RADIO IS HAZARDOUS IF MISUSED OR TAMPERED WITH BEFORE, DURING, OR AFTER DISCHARGE. STRICTLY OBSERVE THE FOLLOWING PRECAUTIONS TO PREVENT INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- DO NOT heat, incinerate, crush, puncture, disassemble, or otherwise mutilate battery.
- DO NOT short circuit, recharge, or bypass any internal fuse.
- DO NOT store battery in equipment during periods of non-use.
- TURN OFF equipment immediately if you feel battery case becoming very hot, hear battery venting (hissing, or burping), or smell irritating gas (sulphur dioxide). Remove battery only after it cools to the touch: then return it to supply for disposal.



#### Installation of Primary Battery and Battery Box to RT

- a. Visually inspect battery box for dirt and damage. If battery has been previously used, note battery life condition number.
- b. Stand RT on front panel guards; place battery box on RT. Secure using latches.
- c. Check battery life condition (written on battery if battery is not new).
- d. Write down number (for later entry into radio).
- e. Place battery in battery box and mate connectors.
- f. Close battery box cover, and secure using latches.
- g. Return radio to upright position.
- h. If used battery was installed, enter the battery life condition into the radio by performing the following:
  - (1) Set FCTN to LD.
    - (2) Press BATT; then CLR.
    - (3) Enter number recorded on side of battery.
    - (4) Press Sto/ENT.
    - (5) Set FCTN to SQ ON.

#### MANPACK RADIO ASSEMBLY Continued

ANTENNA.

#### CAUTION

#### DO NOT USE ANTENNA AS A HANDLE. EQUIPMENT DAMAGE MAY RESULT.

- a. Screw whip into antenna base.
- b. Hand tighten.
- c. Carefully mate antenna base with RT ANT connector.
- d. Hand tighten. (Important not to over-tighten.)
- e. Position antenna as needed by bending goose neck.

#### NOTE

Keep antenna straight up if possible. If the antenna is bent to a horizontal position, it may be necessary to turn the radio in order to receive and transmit messages.



Installation of Manpack Antenna and Handset

#### HANDSET

Refer to the illustration on page 2-18; then connect and secure handset connector to AUD/DATA connector. Make sure that keys line up on handset connector and AUD/ DATA connector; then push handset connector onto AUD/DATA connector and twist right (clockwise) to lock in place. Push handset connector in and twist left (counter- clockwise) to remove handset.

## FIELD PACK

- a. Place RT and KY-57 in field pack with antenna on the left as shown.
- b. Fold top flap of field pack over RT and secure flap to field pack using straps and buckles.
- c. Put on field pack.



**RT in Manpack** 

# b. Conduct MEDEVAC Request i. GTA 08-01-004

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LINE	ITEM	EVACUATION REQUEST MESSAGE
-	Location of Pickup Site.	
2	Radio Frequ., Call Sign, & Suffix.	
3	No. of Patients by Precedence.	
4	Special Equipment Required.	
5	Number of Patients by Type.	
6	Security of Pickup Site (Wartime).	
g	Number and Type of Wound, Injury, or Illness (Peacetime).	
7	Method of Marking Pickup Site.	
8	Patient Nationality and Status.	
6	NBC Contamination (Wartime).	
<b>б</b>	Terrain Description (Peacetime).	
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LINE ITEM	EXPLANATION
1. Location of Pickup Site.	Encrypt grid coordinates. When using <i>DRYAD Numeral Cipher, the same SET line</i> will be used to encrypt <u>grid</u> zone letters and coordinates. To predude misunderstanding, a statement is made that grid zone letters are included in the message (unless unit SOP specifies its use at all times).
2. Radio Frequency, Call Sign, Suffix.	Encrypt the frequency of the radio at the pickup site, <i>not</i> a relay frequency. The call sign (and suffix if used) of person to be contacted at the pickup site may be transmitted in the clear.
3. No. of Patients by Precedence.	Report only applicable info & encrypt brevity codes. A = Urgent, B = Urgent-Surg, C = Priority, D = Routine, E = Convenience. (If 2 or more categories reported in same request, insert the word "break" btwn. each category.)
4. Spec Equipment.	Encrypt applicable brevity codes. A = None, B = Hoist, C = Extraction equipment, D = Ventilator.
5. No. of Patients by Type.	Report only applicable information and encrypt brevity code. If requesting MEDEVAC for both types, insert the word <i>"break "</i> between the litter entry and ambulatory entry: L + # of Pnt -Litter; A + # of Pnt - Ambul (sitting).
6. Security Pickup Site (Wartime).	N = No enemy troops in area, P = Possibly enemy troops in area (approach with caution), E = Enemy troops in area (approach with caution), X = Enemy troops in area (armed escort required).
<ol> <li>Number and type of Wound, Injury, Illness (Peacetime).</li> </ol>	Specific information regarding patient wounds by type (gunshot or shrapnel). Report serious bleeding, along with patient blood type, if known.
7. Method of Marking Pickup Site.	Encrypt the brevity codes. $A =$ Panels, $B =$ Pyrotechnic signal, $C =$ Smoke Signal, $D =$ None, $E =$ Other.
8. Patient Nation- ality and Status.	Number of patients in each category need not be transmitted. Encrypt only applicable brevity codes. A = US military, B = US civilian, C = Non-US mil, D = Non-US civilian, E = EPW.
9. NBC Contami- nation, (Wartime).	Include this line only when applicable. Encrypt the applicable brevity codes. N = nuclear, B = biological, C = chemical.
9. Terrain Descrip- tion (Peacetime).	Include details of terrain features in and around proposed landing site. If possible, describe the relationship of site to a prominent terrain feature ( lake, mountain, tower).

Reference: FM 8-10-6, Medical Evacuation in a Theater of Operations, pages 7-7 through 7-9.

# Section 5: Medicate

# 1. CASEVAC with AKHIO Sled

- *i.* United States Army Alaska Northern Warfare Training Center Basic Military Mountaineering Course Student Handout 2021, page 366
- 2. Cold Weather injury identification and prevention
  - *i.* Northern Warfare Training Center COLD WEATHER OPERATIONS MANUAL OCTOBER 2000, page 38

Soldiers operating in cold weather environments can be exposed to a variety of illnesses and injuries. The majority of these can be easily prevented with only a basic understanding of each affliction and by following a few simple preventive measures.

# I. Dehydration

Dehydration is the loss of body fluids to the point that it prevents or slows normal body functions. Dehydration precedes most cold weather injuries and is a significant factor in high altitude illnesses. It contributes to poor performance in physical activities, even more so than lack of food. Requirements for water in a cold environment are no different than in the desert and can be even higher as a result of the extra effort required to move in heavy clothing. During periods of extreme cold, and at high altitudes, the air is very dry and as much as two quarts of fluid can be lost per day due to respiration alone.

A. Contributing Factors

The thirst mechanism does not function properly in cold conditions; water is inconvenient to obtain and purify; there is a lack of moisture in the air in cold climates and at high altitudes. Cold causes more frequent urination.

B. Signs and Symptoms

Darkening of urine Decreased amounts of urine output Dry mouth Fatigue Mental sluggishness Lack of appetite Rapid heartbeat Dizziness Unconsciousness

C. Prevention and Treatment

The easiest and best way to prevent dehydration is by consuming from 3.5 to 5 quarts of fluids per day. Avoid caffeine and alcohol, which may contribute to dehydration; they are diuretics. In advanced cases, administer fluids both by mouth, if the individual is conscious, and intravenously. If the condition has not improved within an hour or the patient is unconscious, evacuate to a medical facility.

# II. Hypothermia

Hypothermia is the lowering of the body core temperature at rate faster than the body can produce heat. Hypothermia can arise slowly through general exposure to the elements or rapidly by immersion into cold water or being exposed to rapid cooling caused by inadequate, wet, clothing combined with wind and cold.

A. Contributing Factors

Dehydration, poor nutrition, decreased physical activity, accidental immersion in water, high winds, inadequate amounts or types of clothing, and excessive sweating causing clothes to become wet can all result in hypothermia.

B. Signs and Symptoms

1. Begins when the body core temperature, (rectally measured), falls to approximately 96°F.

2. Shivering may be uncontrollable and may interfere with the individual's ability to care for his or her self.

3. Core temperature of 95° to 90°F. results in sluggish thinking; irrational thought and a false sense of warmth may occur, (frequently, victims are found naked and dead within reach of adequate clothing, food, and shelter). Once the victim experiences a false sense of warmth, shivering will stop.

4. Core temperature from 90°F to 86°F results in muscle rigidity, unconsciousness, and barely detectable signs of life.

C. Prevention and Treatment

Prevent by using the buddy system to observe each other for signs. Consume adequate amounts of liquid daily and eat well. If you come upon someone exhibiting signs of hypothermia and they are conscious, prevent further heat loss by adding dry clothing, shelter or heat. You can provide heat by placing a second person into a sleeping bag with the victim. Re-hydrate with liquids not warmer than tepid, and refuel with food if possible.

If the individual is unconscious or appears dead without any signs of obvious injury, prevent further heat loss, and handle extremely gently. If a medical facility is only a short distance away, treat the casualty as you would a cervical/spine injury, and transport immediately. If a medical facility is more than an hour away, the individual should be re-warmed carefully.

If not breathing, or if there is no detectable heartbeat, CPR should be started along with rewarming. Keep in mind that all bodily systems in hypothermic patients are fragile, and the casualty should be treated as gently as possible. As these attempts are being made, evacuation should be attempted simultaneously, as severe complications may arise as the body temperature rises, POSSIBLY RESULTING IN CARDIAC ARREST, even though the casualty appears to be doing well. Remember, when it comes to hypothermia, the patient isn't dead until warm and dead! Re-warming methods include hot water bottles insulated inside socks or mittens and placed underneath armpits and groin, or body to body contact inside a sleeping bag or other dry insulator.

# III. Immersion Foot (Trench Foot)

Trench foot is damage to the circulation and nervous systems of the feet incurred by prolonged exposure to cold and wet at above freezing temperatures. This can occur inside vapor barrier boots, and a soldier may not feel any discomfort until after the damage is done.

A. Contributing Factors

Stepping into water over the boot tops, wearing wet socks, and inattention or lack of planning.

B. Signs and Symptoms

A "pins and needles" sensation, or tingling and numbness, followed by pain. The skin will initially appear wet, soggy, white and shriveled. As it progresses and the damage appears, the skin will take on a red and then a bluish or black discoloration. The skin may crack, leaving the feet open to infection. In severe cases, gangrene may ensue.

C. Prevention and Treatment

Prevent by keeping feet dry and clean; do this by changing socks frequently, drying the insides of the boots, and using foot powder. If affected, usually allowing the feet to dry for 24 hours will heal mild cases. If severe or unable to dry the feet, evacuate as a litter patient. Do not allow the patient to walk if at all avoidable.

#### IV. Frostbite

Frostbite is a freezing injury to living tissues, which damages all of the cell structures

involved. Upon hospitalization, frostbite is categorized in the same manner as burns. Under field conditions soldiers should only attempt to establish which of two categories a frostbite injury falls

into:

- 1. Superficial- involves only the skin surface and occasionally the next layer.
- 2. Deep- extends beyond the initial layers and may include the bone.
- A. Contributing Factors

Dehydration, below freezing temperatures, skin contact with supercooled materials/liquids, consumption of alcohol or caffeinated liquids, tobacco use, or just plain neglect all contribute to frostbite.

B. Signs and Symptoms

These vary with the severity of the injury and may include a biting cold feeling, pain, burning, numbness, or in the final stages a false sense of warmth. The skin first turns red and then pale. It may become bluish or purple in color and then may appear waxy white. The skin may feel stiff or wooden to the touch and may not be movable over the joints or bony prominences frozen solid. Although superficial frostbite is often easily identifiable, identification of various degrees of deep frostbite is only done two to seven days after re-warming in a medical facility and by qualified medical personnel.

- 1. Superficial frostbite signs
  - a. Redness in affected area

b. A frosty white or waxy patch of skin. In soldiers with dark complexions, the skin may appear grayish.

c. Stiffness of the skin in the affected area. The underlying tissue will still be soft, but a dent may remain in the affected area if it is pressed upon 2. Deep frostbite signs

- a. Skin and underlying tissue may be wooden to the touch
  - b. Joints may be stiff or immovable
- c. Skin may turn blue or purple due to blood "sludging" in the affected
- area d. A distinctly visible line may appear marking the boundary between the affected area and surrounding tissue
- C. Prevention and Treatment

Early signs of frostbite may be treated by re-warming with skin to skin contact between buddies, or by sheltering the part underneath insulating layers of clothing next to your own skin. This must be done immediately to be of any help. If the tissue is frozen, or if there is any doubt as to whether the injury is superficial or deep, evacuate without allowing the part to thaw. If the feet are involved, evacuate as litter patient. Do not rub the affected area, and never rub it with snow.

Once thawed, protect from refreezing.

If there is any possibility that a patient with frostbitten feet will have to walk during the evacuation process, do not the patient's feet to thaw until the evacuation is complete. If frostbite isn't recognized before it thaws, it must not be allowed to refreeze as this causes three to four times as much damage and may convert a relatively minor injury into one that may result in major tissue loss or amputation.

NOTE: The most frequently affected body parts are the fingers, hands, ears, toes, and feet.

# V. Constipation

Constipation is the infrequent or difficult passage of stool caused by a lack of fluids, improper nutrition, or not heeding nature's call.

A. Contributing Factors

Unavailability of water, dehydration, no protected sites from the elements for defecation, or not eating

properly are all contributing factors.

B. Signs and Symptoms

Loss of appetite, headache, abdominal cramping, painful defecation/inability to defecate or hard stool.

C. Prevention and Treatment

Consume adequate amounts and varieties of food, drink 3.5 to 5 quarts of fluid a day, heed nature's call. If allowed to exceed beyond self-care stages, seek medical care.

# VI. Carbon Monoxide Poisoning

A. Contributing Factors

Burning fossil fuels without proper ventilation such as stoves, heaters, gasoline engines B. Signs and Symptoms

Signs appear slowly and often go unnoticed as carbon monoxide is a colorless, odorless, tasteless gas. Many of the signs are similar to other common illnesses- headache, tiredness, excessive yawning, and confusion, followed by unconsciousness and death. The one characteristically visible sign is a cherry-red coloring of the tissues of the lips, mouth, and inside eyelids. This symptom is indicative of the extreme stages of CO poisoning; by the time a victim looks like this, it is often too late to help.

C. Prevention and Treatment

Remove the casualty from the source of contamination, administer CPR if necessary, administer oxygen if available, and evacuate to a medical facility as severe complications may develop even in casualties who may have appeared to recover perfectly.

Following two simple rules can prevent most deaths of this type: don't sleep in a running vehicle and don't cook with an open flame inside an unventilated tent. (Meals can be prepared inside the Ten Man Arctic Tent or the vestibule of a smaller tent with adequate ventilation.)

# VII. Snowblindness

Snowblindness is the burning of the cornea of the eye as a result of overexposure to ultraviolet radiation.

A. Contributing Factors

Reflections of sunlight from all directions off of snow, ice, or water. Cloudy days lull people into believing that the sun isn't getting through although the ultraviolet radiation is. B. Signs and Symptoms

Painful, red, watery eyes, a gritty feeling, blurred vision, and there may be a pink cast to the vision.

C. Prevention and Treatment

Snowblindness may be prevented by using quality sunglasses, even on cloudy days, on snow covered terrain. Improvise by making a pair of "slit" glasses from cardboard or birch bark. Treat by removing from sunlight, patching affected eyes, for 24 hours and administering aspirin or Tylenol, two every six hours, or as required for pain. If still painful after this treatment, keep patched and evacuate as a litter patient.

# VIII. Sunburn

Sunburn is the burning of exposed skin surface by ultraviolet radiation.

A. Contributing Factors

Exposure of unprotected skin to solar radiation. Personnel with fair skin/light colored hair are more susceptible, although sunburn can happen to people with any shade of skin.

B. Signs and Symptoms

Pain, burning sensation, redness or blistering of affected area

#### C. Prevention and Treatment

Wear clothing that provides maximum skin coverage, avoid wearing sunglasses with mirror lenses, utilize sunblock/sunscreen. Treat as you would any other burn.

#### IX. High Altitude Illnesses

High altitude illnesses occur primarily at elevations above 8000 feet, due to the reduced partial pre ssure of oxygen found at higher elevations. The effects are due primarily to unavailability of oxygen at normal concentrations. Even when fully acclimatized man is still only able to perform at a decreased percentage of his maximum sea level capacity. Additionally, all personnel are affected in their ability to reason and comprehend at times. Dehydration is a major contributor to altitude illnesses

## A. Acute Mountain Sickness (AMS)

AMS is a condition experienced by unacclimated persons after arrival at altitudes above 8000 feet, and characterized by an uncaring attitude, headache, insomnia, upset stomach, and depression. This can last up to 2 to 3 days and progressively gets better with a subsequent total resolution of symptoms. Maintaining good hydration along with good nutrition, recognizing your physical limitations and progressing slowly usually prevents a severe course.

# B. High Altitude Pulmonary Edema (HAPE)

HAPE consists of a filling of the lungs with fluid at high altitudes. This results in limiting the availability of oxygen for the body.

## 1. Signs and Symptoms

Progressive shortness of breath, rapid heartbeat, coughing and as condition worsens, a productive cough. When compared to others a HAPE victim may appear to not be "keeping up with the group"; may experience a rapid respiration and heart rate which aren't reduced by rest; as fluid develops in the lung tissue rales are heard during breathing. Rales are a crackling cellophane type noise normally heard only with a stethoscope.

2. Prevention and Treatment

Prevent by practicing good hydration and nutrition and slow ascents to altitude. A typical climb could be 1000 feet per day and a rest day for every 3000 feet of elevation gained. Immediate recognition is vital and immediate descent is mandatory. A descent of 1000 feet could make the difference between a cure and the need rapid for evacuation. Never delay manual descent while waiting for air evacuation.

C. High Altitude Cerebral Edema (HACE)

HACE is the accumulation of fluid in and swelling of the brain resulting in decreasing brain function that may result in death.

1. Signs and Symptoms

Mild personality changes, inability to concentrate, increasing headache, vomiting, decreased urine output and a lack coordination similar to that of drunkenness. These may be combined with symptoms of HAPE. Hallucinations may be present, frequently a patient is left alone thinking he is just having a bad day or personality problems. The conditions of this illness can progress rapidly to death and none should ever be ignored.

# 2. Prevention and Treatment

Prevent by practicing good hydration and nutrition and slow ascents into elevations. A typical climb could be 1000 feet per day and a rest day for every 3000 feet. Immediate recognition is vital and immediate descent is mandatory. A descent of 1000 feet could make the difference between curative and the need for evacuation. Never delay manual descent while waiting for air evacuation.

# X. Foot Care

A. Toenails should be trimmed straight across leaving a ninety-degree angle on the sides. This provides an arch so the corners can't dig into the skin below.

B. Blisters are prevented by proper fitting of footwear. When a "hot spot" first develops, place a generous amount of tape over the hot area and extend well beyond any area the tape might irritate. Benzoin Tincture may help the tape adhere to the skin and will also toughen the skin. Once a blister has formed, a doughnut shape should be cut from moleskin large enough to encircle the blister and placed around the blister and taped for added insurance. Never pop and drain blisters unless surrounded by redness or draining purulent material indicating infection. If this is the case, the blister should be cut off after cleansing with soap and water and covered with a clean dry dressing.

# XI. Water Purification

A. All water found in nature should be purified to make it fit for consumption. This may be done by boiling the water for three to five minutes, which will kill all bacterial or viral contaminants normally found.

B. Chemical purification may be accomplished with iodine tablets or Calcium Hypochlorite; in

extremely cold water, contact may need to be increased to approximately 15 minutes and dosages doubled even though water may appear to be clean.

C. A commercially available mechanical purifier may be used also. These work by manually

pumping the water directly from the source with the purifier. A series of filtering systems are inside the pump housing. The manufacturer's literature will specify pumping times and life-span of the filter(s).

D. Giardiasis

1. Better known as giardia, is caused by a waterborne protozoan in cyst form. It originates from an infected animal host's feces. Giardia has a long incubation period, from one to

three weeks after the organism is ingested. Prevention is by proper purification of drinking water.

2. Symptoms: Symptoms include watery explosive diarrhea, cramps, flatus, and vomiting.

3. Treatment: There are medications for giardia but laboratory diagnosis is necessary.

# XII. Personal Hygiene

Personal Hygiene is difficult at best and water made from snow or ice is precious. It should be consumed, not bathed in. Snow may be used as toilet paper and in fact is much cleaner once the initial discomfort is overcome.

Shaving, if required, should be done at night in the shelter so that oils stripped in shaving will be replenished overnight and be available during the day when the skin is again exposed to the elements.

Teeth should be brushed daily as a minimum. If a toothbrush is not available, a twig chewed up on the end or salt on a fingertip may be used.

Underwear should be changed twice weekly at a minimum and socks changed at least once a day or as often as needed to keep the feet dry.

# XIII. Heat Injuries

All too often heat injuries are forgotten in a cold weather or mountain environment, but they are as likely to strike as cold injuries due to the natural tendency of soldiers to overdress in the cold. Indeed, heat injuries may be more likely in a cold environment due the difficulties encountered in maintaining proper hydration. Leaders should allow extra time for clothing adjustments and proper hydration. Soldiers should never enter a cold weather environment without the ability to

produce water by melting snow or ice, thereby maintaining proper hydration levels. Leaders should remember that reliance on logistic assets for water resupply vastly increases the requirements placed upon these assets, while simultaneously decreasing their ability to carry other classes of supplies.

## XIV. Tips for Leaders

Use the buddy system. Leaders should assign cold weather buddies to check each other occasionally during the period spent in the cold environment. No soldier should be without a cold weather buddy.

Fingers, hands, and feet can be checked by touch and facial features and the ears can be looked at closely as well as rewarmed by the cold weather buddy.

Mark "prior cold weather injury" personnel. Personnel with prior cold weather injuries are more susceptible to additional injury to the affected area/limb. Use a colored tape marking system for outer garments and head gear.

## 1. 10 Man Arctic Tent Operation *i.* TM 10-8340-222-10

#### 2-1. Site Selection

Consider the following points when selecting a tent site:

*a.* The ground should be level and free from projecting roots and rocks. When such a spot is not available, a place can often be leveled and cleared. In woods, moss and rocks can be used to level the ground.

*b.* The ground should be high enough for good drainage.

#### NOTE

#### Drainage can be improved by trenching around the tent and digging an outlet ditch to divert water in the desired direction. Refer to paragraph 2-15 for trenching details.

c. The site should be protected from wind and storm.

*d.* An area with a ground cover of tough turf grass is desirable.

*e.* During hot weather, when possible, select a site that will provide ample shade.

f. The tent should be placed far enough from

rivers and lakes so that it will be above the highwater mark.

*g.* In woods, the location should be away from dead trees with large dead branches.

*h.* In mountainous country, the tent should not be placed in a canyon or next to a dry creek bed. Such places can fill up with rushing torrents in a short time. The tent should not be placed at the base of a cliff or steep mountainside, where there may be danger from avalanches and falling rocks.

*i.* Discretion should be exercised when installing tent pins in winter climatic conditions where the temperature falls below freezing. In areas where winter conditions prevail the use of the 12 inch steel tent pins (NSN 8340-00-823-7451) is required rather than the 9 inch aluminum pins furnished with erection kits. Attempts to install the aluminum pins under winter conditions will only result in bending and breaking the pins.

#### 2-2. Erecting (Pitching) Arctic Tent (10-Men)

#### NOTE The arctic tent can be pitched by six men in approximately 27 minutes.

*a. Ground Plan.* Before pitching the tent, study the ground plan carefully (fig. 2-1).



ME 8340-222-10/2-1

Figure 2-1. Ground plan, arctic 10-man tent.

b. Preliminary Procedures (1, fig. 2-2).

(1) Spread tent on ground. Check to see if liner is in place; usually it is not in place in a new tent. If liner is not in place, spread it out beneath the tent.

(2) Secure D-rings to snaps inside front and rear doors.

(3) Close slide fasteners in front and rear doors.

(4) Secure D-rings to snaps outside front and rear doors.

(5) Drive six corner pins and four door pins, and attach footstops to pins.



Figure 2-2. Steps in pitching tent, arctic, 10-man.

c. Attaching Corner Eave Lines and Inserting Tentpole (2, fig. 2-2).

(1) Drive six pins about seven feet from corners of tent, and attach corner eave lines. Pins on opposite sides of tent should be in a straight line.

(2) Open front door and push pole, extended to 8 feet 6 inches, under tent.

(3) Insert spindle of pole through hole in peak of liner and through supporting ring in peak of the tent.

d. Raising Tent (3, fig. 2-2).

(1) With one man inside the tent, close inside and outside D-rings and snaps on doors; close slide fasteners.

(2) Fasten loops to wood toggles on doors.

(3) Lift tentpole, and line up door openings, stovepipe, and four vent openings of liner with openings in tent.

(4) Insert D-rings of liner into snaps attached to tent.

(5) Raise tentpole, placing butt of tentpole in center of tent area.

e. Attaching Door Eave Lines, Intermediate Eave Lines and Corner Lines (4, fig. 2-2).

(1) Stake the two door eave lines far enough to hold doors vertical.

(2) Attach the four intermediate eave lines to pins.

(3) Attach the six corner lines to pins 18 inches out from corner eave-line pins.

(4) Adjust and tighten all lines.

*f. Propping Up Door Eave Lines*. Each of the two door eave lines can be propped up by placing the line over an improvised pole (tree branch or other

object higher than the door entrance) at a distance of about 5 feet in front of the door and then staking the line out to a pin. This keep the doors from sagging, makes the slide fastener work better, makes the tent easier to get into and out of, and gives the tent greater stability.

g. Fastening Liner.

(1) Insert metal toggles through grommets of liner.

(2) Tie tapes around stovepipe opening in liner to corresponding tapes around stovepipe opening in tent to keep stovepipe opening in place.

(3) Tie one end of the 18-foot 9-inch sock line to toggle in each corner of door, threading line through eye of toggles at eave line and tying to carrier toggles of the opposite door. Use same procedure for the 18-foot 9-inch sock line on opposite side of tent.

(4) Thread the 40-foot 6-inch sock line through the next line of toggles, encircling the tent, and tie.

(5) Secure the 38-foot 6-inch sock line in like manner in the next row of toggles.

*h. Joining Two Tents Together.* When two tents are to be joined together, erect the first tent described above. Fasten lugs (4, fig. 2-2) at front or rear of tents together by inserting grommet lug of one tent between grommet lug and becket lug of other tent, and chain-lace beckets (4, fig. 2-2) on lug of one tent through grommets on each lug of both tents (fig. 2-3). Begin chain-lacing at bottom (near the ground) of lugs and continue until bottom (near the ground) at the other end of the same lugs is reached, securing last becket with a knot. Then erect second tent in the same manner as first tent.

## 2. Use of ECWCS System

i. 10th Mountain Blue Book













