**UNITED STATES MARINE CORPS**
MARINE CORPS AIR STATION NEW RIVER
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IN REPLY REFER TO:
3500
SD
9 JAN 2017

COMMANDING OFFICER'S POLICY LETTER 01-17

From: Commanding Officer, Marine Corps Air Station New River
To: Distribution List

Subj: HEAT AND COLD STRESS INJURY PREVENTION

Ref: (a) MARADMIN 111/15
(b) MCO 5100.29B Marine Corps Safety Program
(c) MCO 3500.27C Risk Management
(d) NAVMED P-5010-3 Manual of naval Preventive Medicine Heat and Cold Stress Injuries
(e) NEHC-TM-OEM 6260.6A Prevention and Treatment of Heat and Cold Stress Injuries

Encl: (1) Flag Conditions, based on Wet Globe Bulb Temperature (WGBT)
(2) Heat Index Guide (HIP Pocket Guide) (Foldable)
(3) Wind Chill Chart

1. Purpose. To establish the installation's heat and cold stress injury prevention policy.

2. Information. Per reference (a), this policy provides commanders, leaders, and supervisors interim guidance until it is incorporated into the next revision of reference (b). References (c) through (e) provide valuable information on the prevention of heat and cold stress injuries.

3. Action

a. All Marine Corps Air Station (MCAS) New River subordinate commands, departments, and work centers, will ensure familiarity with this policy letter, the references, and ensure appropriate procedures are in place to prevent heat or cold stress injuries.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

b. All MCAS New River tenant commands or detachments will ensure this interim policy is utilized to prevent heat or cold stress injuries.

4. Point of contact is the MCAS New River Safety Department (910) 449-5440 or DSN 752-5440.

R. C. BURTON

DISTRIBUTION: B

# FLAG CONDITIONS (Based on WBGT)

For the purpose of flag conditions, essential activities are those basic to the completion of the assigned mission of the Naval Station and tenant commands, they cannot be suspended or delayed without a serious effect on mission accomplishment. Leadership must ensure proper acclimatization and implementation of Risk Management to ensure mission accomplishment.

**Green Flag (80°-84.9° WBGT)** - Utilize discretion in planning heavy exercise for unacclimatized personnel because the environment is at a marginal heat stress limit for all personnel.

Heavy exercise for unacclimatized personnel should be conducted with caution and under responsible supervision. Buddy system is recommended.

Heavy exercise for acclimated personnel is unrestricted.

Drink 1 quart of cool water per hour. Use 75% work and 25% rest for outdoor work (example: 45 minutes work and 15minutes rest). Heat cramps and heat exhaustion possible with continued exposure.

**Yellow Flag (85°-87.9° WBGT)** - Strenuous exercise and activity must be curtailed or markedly reduced for new and unacclimatized personnel during the first 2 weeks of heat exposure. Heat stress can occur.

Strenuous exercise is limited to those acclimated 14 days or longer.

Drink 1-2 quarts of cool water per hour. Use a "buddy system" and have teams monitor each other's condition. Use 50% work and 50% rest* (example: 30 minutes work and 30 minutes rest). Heat cramps likely. Heat stroke and heat exhaustion possible with continued exposure.

**Red Flag (88°-89.9° WBGT)** - Strenuous exercise must be curtailed for all personnel with less than 12 weeks training in hot weather. Heat stress is likely to occur.

All physical training should be halted for those who have not become thoroughly acclimated by at least 30 days of physical activity at this temperature. Those who are acclimated may carry on limited activity.

Drink 2 quarts of cool water per hour. Use a "buddy system" and have teams monitor each other's condition. Use 25% work and 75% rest (example: 15 minutes work with 45 minutes rest). Heat stroke

**Black Flag (>90° WBGT)** - Non-Mission essential physical training and strenuous exercise must be suspended for all personnel. Heat stress will occur in most cases.

Outdoor work should be limited to critical missions only (requires commander approval). Use 25% work and 75% rest (example: 15 minutes work with 45 minutes rest). Use a "buddy system" and have teams monitor each other's condition. Drink 2 quarts of cool water per hour. Heat stroke likely with continued exposure

## Heat Injury Controls:

**Decision to accept risk is made at the appropriate level**
- Made in accordance with appropriate MACOM regulation

**Identified controls are in place**
- Update WBGT hourly when ambient temperature is ≥ 75°F.
- Adhere to work/rest cycle in high heat categories. Rest in shade.
- For tasks requiring continuous effort, adhere to guideline and allow several hours of rest afterwards.
- Training event incorporates good prior planning.

**Monitor and enforce hydration standard**
- Encourage frequent drinking, but not to exceed 1 ½ quarts per hour or 12 quarts per day. Make water more palatable, if possible, by cooling.
- Do not allow soldier or trainee to empty canteens to lighten load (consider imposing a penalty in time events).
- Ensure soldiers are well hydrated before training. Ask about urine; urine is clear if well hydrated.
- Check Riley (water) Card or Ogden Card frequently.

**Monitor and enforce eating of meals**
- Ensure all meals are eaten during the meal break.
- Ensure adequate time to eat and drink meals.
- Table salt may be added to food when the heat category is high. Salt tablets are not recommended.

**Execute random checks**
- Spot checks by Cadre, Senior NCO's, and Drill Instructors.
- Enforce battle buddy checks — need to be aware of each other's eating, drinking and frequency of urination.
- Plan placement of leaders to observe and react to heat injuries in dispersed training.

**Follow clothing recommendations**
- Heat category 1-2: No restrictions.
- Heat category 3: Unblouse trouser legs, unbuckle web belt.
- Heat category 4-5:
  - Unblouse trouser legs, unbuckle web belt.
  - Remove t-shirt from under BDU top or remove BDU top down to t-shirt (depends whether biting insects are present).
  - Remove helmets unless there are specific safety reasons to keep them on (ex: range).
- MOPP 4: Add 10°F to WBGT index for easy work, and 20°F to WBGT index for moderate and hard work.

# HIP Pocket Guide
## (Heat Injury Prevention Guide)

- Hazards
- Individual Risk Factors
- Fluid Replacement and Work/Rest Guide
- Heat Injury Controls
- Warning Signs and Symptoms of Heat Stress and Illness

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### Hazards:

- **H**igh heat category - measure WBGT over 75ºF.
- **E**xertional level of training, especially on several sequential days.
- **A**cclimatization (and other individual risk factors - See reverse side).
- **T**ime (length of heat exposure, especially sequential days, and recovery time allowed).

## Fluid Replacement and Work/Rest Guide

| Heat Category | WBGT Index, °F | Easy Work | | Moderate Work | | Hard Work | |
|---|---|---|---|---|---|---|---|
| | | Work/ Rest | Water Intake (Qt/H) | Work/ Rest | Water Intake (Qt/H) | Work/ Rest | Water Intake (Qt/H) |
| 1 | 78° - 81.9° | NL | ½ | NL | ¾ | 40/20 min | ¾ |
| 2 (GREEN) | 82° - 84.9° | NL | ½ | 50/10 min | ¾ | 30/30 min | 1 |
| 3 (YELLOW) | 85° - 87.9° | NL | ¾ | 40/20 min | ¾ | 30/30 min | 1 |
| 4 (RED) | 88° - 89.9° | NL | ¾ | 30/30 min | ¾ | 20/40 min | 1 |
| 5 (BLACK) | > 90° | 50/10 min | 1 | 20/40 min | 1 | 10/50 min | 1 |

**Easy Work** = Walking hard surface 2.5 mph <30# load, Weapon maintenance, Marksmanship training

**Moderate Work** = Patrolling, Walking sand 2.5 mph no load, Calisthenics

**Hard Work** = Walking sand 2.5 mph w/load, Field assaults

- The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specified heat category. Fluid needs can vary based on individual differences (± ¼ qt/h) and exposure to full sun or full shade (± ¼ qt/h).
- **NL** = no limit to work time per hour.
- **Rest** means minimal physical activity (sitting or standing), accomplished in shade if possible.
- ***CAUTION: Hourly fluid intake should not exceed 1½ quarts.***
- ***Daily fluid intake should not exceed 12 quarts.***
- If wearing body armor add **5°F** to WBGT in humid climates.
- If wearing NBC clothing (MOPP 4) add **10°F** to WBGT index for easy work, and **20°F** to WBGT index for moderate and hard work.

### High Risk for Heat Illness:

- **Not acclimatized** to heat (need 10-14 days to get trainees adequately acclimated).
- Exposure to cumulative days (2-3 days) of any of the following:
  - Increased heat exposure
  - Increased exertional level
  - Lack of quality sleep
- Poor fitness (Run 2 miles > 16 minutes).
- Overweight.
- Minor illness (cold symptoms, sore throat, low grade fever, nausea, vomiting).
- Taking medications (either prescribed or over counter)/supplements/dietary aids.
  Example: Allergy or cold remedies
  Ephedra supplement
- Use of Alcohol in the last 24 hours.
- Prior history or heat illness (any heat stroke, or >2 episodes of heat exhaustion).
- Skin disorders such as heat rash and sunburn which prevent effective sweating.
- Age >40 years.

ENCLOSURE (2)

# Warning Signs and Symptoms of Heat Stress and Illness

*With **any** of the below symptoms or signs, immediately call for medical evaluation by a 91W (Medic). If 91W is not immediately available, call for Medevac or ambulance.*

## Indications of Possible Heat Casualty

| MORE COMMON SIGNS/SYMPTOMS | IMMEDIATE ACTIONS |
|---|---|
| • Dizziness<br>• Headache<br>• Nausea<br>• Unsteady walk<br>• Weakness or fatigue<br>• Muscle cramps | • Remove from training<br>• Allow casualty to rest in shade<br>• Loosen clothing<br>• Take sips of water<br>• While doing the above, call for Medic evaluation of the soldier (Medic will monitor temperature and check for mental confusion)<br>If no Medic is available call for ambulance or Medevac |
| **SERIOUS SIGNS/SYMPTOMS** | **Immediately call Medevac or ambulance for emergent transport while doing the following:** |
| • Hot body, high temperature<br>• Confusion, agitation (Mental Status Assessment)<br>• Vomiting<br>• Involuntary bowel movement<br>• Convulsions<br>• Weak or rapid pulse<br>• Unresponsiveness, coma | • Lay person down in shade with feet elevated until Medevac or ambulance arrives<br>• Undress as much as possible<br>• Aggressively apply ice packs or ice sheets<br>• Pour cold water over person and fan<br>• Give sips of water while awaiting ambulance (if conscious)<br>• Monitor airway and breathing until ambulance or Medevac arrive |

## Mental Status Assessment

An important sign that the soldier is in a serious life-threatening condition is the presence of mental confusion (with or without increased temperature).
Anyone can do a mental status assessment asking some simple questions.

**Call for emergency Medevac or ambulance if *any* of the following exist:**

- **What is your name?** (Does not know their name.)
- **What month is it? What year is it?** (Does not know the month or year.)
- **Where are we/you?**(Does not know where they are.)
- **What were you doing before you became ill?** (Does not know the events that led to the present situation.)

## Indications of Possible Water Intoxication (Over Hydration)

Signs and Symptoms: Confusion, Weakness, and Vomiting

**What to do:**

**Ask these questions to the soldier or battle buddy:**

- Has soldier been eating? Check rucksack for # of MRE's left.
- Has soldier been drinking a lot? (suspect water intoxication if soldier has been drinking constantly)
- How often has soldier urinated? (frequent urination seen with water intoxication; infrequent urination with heat illness)
- What color is urine (clear urine may indicate over hydration)

**If soldier has been eating, drinking and urinating a lot, yet has these symptoms, immediately call Medevac or ambulance for emergency transport.**

For additional copies contact: U.S. Army Center for Health Promotion and Preventive Medicine (800) 222-9698.
Also see http://chppm-www.apgea.army.mil/heat for electronic versions of this document and other heat injury prevention resources.

ENCLOSURE (2)

TA-010-0203

2003

# Wind Chill Chart

| Wind (mph) \ Temperature (°F) | 40 | 35 | 30 | 25 | 20 | 15 | 10 | 5 | 0 | -5 | -10 | -15 | -20 | -25 | -30 | -35 | -40 | -45 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calm | | | | | | | | | | | | | | | | | | |
| 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 |

Frostbite Times — 30 minutes — 10 minutes — 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

*Effective 11/01/01*

ENCLOSURE (3)