DEPARTMENT OF THE NAVY
COMMANDANT OF MIDSHIPMEN
UNITED STATES NAVAL ACADEMY
101 BUCHANAN ROAD
ANNAPOLIS, MARYLAND 21402-5100

COMDTMIDNINST 5090.1A

13 APR 2006

COMDTMIDN INSTRUCTION 5090.1A

Subj: MONITORING ENVIRONMENTAL CONDITIONS TO PREVENT INJURY

Ref: (a) BUMEDINST 6220.12(series), Medical Event Reports
(b) COMDTMIDNINST 3040.1 (series), Midshipman Situation Reporting (SITREP) Procedures
(c) NEHC TM OEM 6260.6 Prevention and Treatment of Heat and Cold Stress Injuries

Encl: (1) Heat Injury Prevention Destructive Weather Example Adverse Weather Quick Reference Card
(2) Destructive Weather
(3) Example Adverse Weather Quick Reference Card

1. Purpose. To promulgate policy to unit commanders and camp coordinators regarding personnel protection measures during high-heat index and thunderstorm conditions.
Background

2. Cancellation. COMDTMIDNINST 5090.1.

3. Background

a. Preventing heat injury requires consistent and reliable monitoring of ambient conditions. The Wet Bulb Globe Temperature Index (WBGTI) is a single number derived from three distinct measurements: wet bulb temperature, dry bulb temperature, and the globe temperature. These three measurements reflect all four variables of ambient heat stress: temperature, humidity, radiant heat, and air circulation. Training activities will be conducted as the WBGTI allows per enclosure (1).

b. Lightning can be a significant threat to life. Due to the unpredictability of weather, lighting can and does strike without warning. Weather conditions will be monitored as required and training activities will be conducted as the conditions in enclosure (2) permit.

4. Wet Bulb Globe Temperature Index (WBGTI)

a. To ensure consistent and reliable outdoor heat stress monitoring, Preventive Medicine Office, located at Hospital Point, monitors WBGT Index readings for the Naval Academy Complex throughout the heat stress season. The same core group of monitors must be maintained throughout the season to allow for continuity and to reduce errors in operation of the equipment.

(1) Heat stress measurements will start when the ambient temperature reaches 80 degrees for 3 consecutive days or when the forecasted temperatures are in excess of 80 degrees for the week. Preventive Medicine will be responsible for determining the start date for daily readings. Daily heat stress measurements will start no later than 15 May. Readings will run thru 15 September annually. If the ambient temperatures are forecasted to exceed 80 degrees after 15 September, heat stress measurements will continue until forecasted temperatures are less than 80 degrees for the week.

(2) Heat stress readings will be taken in the field outside the Health Clinic. Readings will **ALWAYS** be taken in the direct sunlight. On overcast days readings will be taken in the normal location. The meter will not be set up within 6 feet of any permanent structure to prevent erroneous readings. At the end of the day, the meter will be returned to the PrevMed office and the flag taken down and returned to the PrevMed office.

(3) Readings will be recorded in the daily log. The 3 readings; dry bulb, wet bulb and globe temperature will be entered along with the WBGT (outdoors) reading. The person taking the readings will initial along side the entries. Notifications to the OOW and NAVSTA will be annotated in the COMMENTS column.

(4) Heat stress readings will be taken from 0730 hours till 1800 hours Monday thru Friday and 0800 hours thru 1200 hours on Saturdays and Holidays. Readings will be taken every 60 minutes until a RED Flag is reached. Once a RED flag is reached, readings will be taken every 30 minutes until BLACK flag conditions exist. At BLACK FLAG conditions, readings will be taken every 60 minutes. Once the flag condition is

downgraded to YELLOW, readings will again be taken every 60 minutes. When GREEN flag conditions exist after 1600 hours, readings will no longer be taken for the day.

(5) Contact calls to OOW and NAVSTA will occur each time a flag condition changes. Calls will be documented on the daily heat stress log sheet. The OOW and NAVSTA will be notified when heat stress readings conclude for the day.

b. Starting the day after I-Day, WBGT readings will be taken on the Endurance ("E") Course at the Naval Station when training occurs. Readings will be taken at the "E" course will be taken in the shaded area of the course. Readings will start at 0700 and continue until scheduled training secures. Readings will be taken every 30 minutes until BLACK FLAG is reached. Once BLACK flag is reached, medical personnel taking the readings will notify the personnel in charge of the training, the OOW, and the Naval Medical Clinic Commanding Officer/Executive Officer. All readings will be documented on the daily logs provided and turned into the Preventive Medicine Department on Fridays.

c. Enclosure (1) details training restrictions based on ambient conditions. With each training condition, certain activity and/or clothing restrictions apply. Each training program/activity will develop protective measures taken for each condition based on their unique mission requirements. All personnel will be thoroughly familiar with these conditions and required actions. While personnel who have been at the Naval Academy for a year or more may be acclimated to the changing seasons, others may have difficulty in performing routine tasks in the heat of the summer. Since it takes up to 21 days for people to become acclimated to the local climate, protective measures must be implemented to ensure personnel safety during the summer season.

d. Per reference (a), heat injuries, including but not limited to Heat Exhaustion and Heat Stroke, are required to be reported by Brigade Medical as an Occupational/Environmental condition injury using the Report of Heat/Cold Injury for Navy/Marine Corps Ashore NEHC-TM92-6 format. All completed copies of this form must be routed to the Environmental Health Officer in the Preventive Medicine Department Office and to the

Sports Medicine Physician for analysis and follow-up, as required. The WBGTI and dry bulb temperatures will be documented by the Preventive Medicine Department.

5. Lightning Conditions

a. The Officer of the Watch is responsible for monitoring the weather around the Naval Academy Complex. Timely local weather data can be found at:

http://www.srh.noaa.gov/data/forecasts/MDZQ14.php?warnzone=mdzO14&warncounty=mdc003

b. Bancroft Hall Main Office will periodically monitor expected weather conditions and take appropriate actions per the Thunderstorm Condition Matrix found in enclosure (2).

6. Notifications and Communications

a. Preventive Medicine will take WBGT readings and notify the following people when flag conditions change:

(1) Bancroft Hall Main Office/OOW: (410)293-2701/02 or (410)293-5001/02

(2) NAVSTA Watch desk 3-9011

(3) Command sweep for Naval Health Clinic

(a) Upon receipt of every heat stress condition call, Main Office will make the following notifications:

1. Make IMC announcement: "Bancroft Hall..., set/maintain flag condition red/black, the following training restrictions are in effect...____. I say again ..." OR "Bancroft Hall ... set/maintain flag condition green/yellow, no training modifications required."

2. Post the appropriate heat stress flag on Tecumseh Court starboard yardarm. Additionally, if condition is red or black, send a messenger to hoist the proper flag on the foremast of the MAINE on the Farragut seawall.

3. NAAA Athletic Camps (if in session): via PE Duty Officer: (410)320-9271.

4. 4/C Regimental Duty Officer (Plebe Summer).

5. Naval Academy Summer Programs.

6. Naval Academy Summer Seminar

(b) Adverse/Heavy weather IMC announcements and notifications will be made in the same manner (there are no flag requirements for heavy weather).

b. Each subsequent organization is responsible for notifying and tracking their respective activities. All activity leaders will contact their respective Duty Officer at the start and completion of each event to receive the most recent flag condition. If a flag condition worsens, then the respective Duty Officers are responsible for notifying the appropriate activity coordinators.

c. Training evolutions that take place at the Naval Station (Endurance Course, Tarzan Assault Course, Obstacle Course, and Weapons Firing Range) must stay in contact with their duty offices (OOW during the academic year/RDO during Plebe Summer) to ensure immediate notification of changing conditions while in the field. Portable radios can be checked out of the Brigade Operations Office in order to satisfy this requirement. Unit supervisors will be held responsible for conditions of the radios. Personal cell phones are an appropriate substitute method of communications.

d. The PE Department and NAAA will ensure camp coaches and personnel are educated and informed of flag conditions that may affect their schedules and events.

e. All activities are responsible to coordinate any medical support which may be required to support their training activities.

f. All USNA Midshipmen, faculty and staff are reminded to carefully consider taking part in physical activity while under severe heat or thunderstorm conditions. Training restrictions and safety/health concerns should be identified and addressed by appropriate authority.

g. All unit commanders and supervisors will carry the Adverse Weather Quick Reference Card, enclosure (3) refers, during the heat stress season.

Bruce E Grooms

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Distribution:
C-1 (Electronic)
Main Office
Brigade Medical
Preventive Medicine Department
Physical Education Department
Heat Injury Prevention

Heat Injury Prevention Destructive Weather Example Adverse Weather Quick Reference Card

1. Heat Injury Prevention. Heat injuries are largely preventable through awareness and simple measures. The following measures will be used to minimize the risk of heat-related injuries during training.

a. Watchstander diligence in monitoring ambient conditions is crucial. Preventive Medicine and Main Office will closely monitor actual and expected heat stress conditions and will follow up with effective and timely notifications and warnings to subordinate stations.

b. When the WBGTI is greater than 85 degrees (Green Flag Condition), the following training restrictions will be set in place:

Evolution	Flag Condition		
	Black	Red	Yellow
WBGTI	^90 deg	88-89.9 deg	85-87.9 deg
Water Consumption (per hour)	1-l.Sqts	I qt	Iqt
Uniform Modifications (1)	YES	NO	NO
Outdoor Class	NO	YES	YES
Pistol/Rifle	YES	YES	YES
Boating/Sailing /Water Sports	YES	YES	YES
Drill/TAC/SCC	NO	YES (>TD21)	YES
MPT/DPT	NO	NO	YES (>TD21)
PRT/IST/PEP	NO	NO	YES (>TD21)
Damage Control Training	YES (except firefighting)		YES (>TD21)
0-Course/E -Course	NO	NO	YES (OTD21)
Outdoor Sports/Intramurals (2)	NO	NO	YES
Indoor Sports/Intramurals (2)	YES	YES	YES

Notes: (1) Modified uniforms consist solely of Whiteworks Echo with blue rim T-shirt, carrying the blouse; No other uniforms will be modified. Uniforms will not be modified for watches, outdoor formations, or Chapel services.

(2) Sports/Intramural cancellation is at the discretion of the head coach/Head of Intramural Sports.

(3) Faculty and Staff will use their judgment to further restrict activities based on circumstances or localized conditions.

c. Other measures as directed by cognizant authority.

2. Emergency Response

a. In the event of a heat related casualty, **contact emergency personnel** at ext. 3-3333 or 911. These numbers are for police, ambulance and fire rescue.

b. After the situation has been stabilized, contact the pertinent chain of command to include the Officer of the Watch at (410)293-2701/2. **Initiate SITREP**, if warranted, per reference (b).

c. All heat related incidents must be properly documented. Brigade Medical Unit will forward a report of all heat related injuries to the USNA Safety Office and Preventive Medicine.

Destructive Weather

Thunderstorms and other hazardous weather, including expected high winds, shall be handled by setting the appropriate Thunderstorm Condition. Timely weather information can be obtained from: http;//www.srh.noaa.gov/data/forecasts/MDZ014.php?warnzone=mdz014&warncounty=mdc003. The following actions apply to the Main Office watch team and will be carried out at the direction of the OOW/ MOOW.

1. Thunderstorm Condition III (TC-III)
   - Set when destructive weather is within 30 mile radius
   - Training will continue as the effects of wind/rain are minimized
   - Monitor weather website every 10 minutes

2. Thunderstorm Condition II (TC-II)
   - Set when destructive weather is within 15 mile radius
   - Alternate training plans will be developed
   - Closest shelter must be identified
   - Precautions taken to ensure preparedness in case thunderstorm condition is upgraded including watchstander briefs
   - Training will continue as common sense and sound judgment prevails
   - Continuous monitoring of weather website

3. Thunderstorm Condition I (TC-I)
   - Set when lightning is observed within five miles
   - All outdoor activity suspended until conditions improve
   - Training evolutions and/or personnel will move to the nearest available indoor facilities
   - Movements between buildings are authorized at the discretion of the OOW/Event Coordinator. Weapons/Swords/Guidons will not be carried
   - Avoid moving across large open areas or standing water
   - Avoid tall individual structures such as lone trees and light poles
   - Other steps at the discretion of the OOW based on expected conditions

Thunderstorm Condition Matrix

Thunderstorm Condition	Definition	Action Required
None	Thunderstorm activity > 30 miles	Monitor website every 3 hours (every 6 hours if >150 miles)
TC-III	Thunderstorm activity <30 miles	Monitor website every 10 min Review required actions w/ watchteam
TC-II	Thunderstorm activity <15 miles	Warning notifications/alt training plans Continuously monitor website
TC-I	Thunderstorm activity <5 miles	Immediately halt outdoor training Seek shelter

4. Bancroft Hall Main Office will make appropriate notifications for expected weather.

Example Adverse Weather Quick Reference Card

Front:

WBGTI FLAG CONDITIONS

GREEN * NO RESTRICTIONS
<85 deg

YELLOW * PEP and PT allowed
85 •- 87.9 deg after TD-21
* Drink 1 quart/hr

RED * No outdoor PEP/PT/Intramural Sports
88 • 89.9 deg * Drink 1 quart/hr

BLACK * No outdoor PEP/PT/Intramural Sports
^ 90 deg * No outdoor physical activities
* Water and indoor sports OK
* Modified Whiteworks [only] authorized
* Drink 1-1.5 quarts/hr

Back:

LIGHTNING CONDITIONS

TC-I * No outdoor activity
(< 5 MI) * No weapons/swords/guidons
* Move to nearest indoor facility
* Avoid standing water, open areas, flagpoles, etc.
* Inter-building transit authorized as sound judgment permits

TC-II * Training continues as common sense and sound judgment (
<15 MI) permits
* Consider alternate training plans in case of adverse weather

TC-III * Training continues as the effects of wind (<30 mph) and
(<30 MI) rain are minimized