

**BY ORDER OF THE COMMANDER  
19 AIRLIFT WING**

**LITTLE ROCK AIR FORCE BASE  
INSTRUCTION 48-151**



**15 APRIL 2011**

***Aerospace Medicine***

**PREVENTION OF HEAT INJURY**

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OPR: 19 AMDS/SGPB

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Pages: 6

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This instruction provides information with local instructions regarding the implementation of Air Force Pamphlet (AFPAM) 48-151, *Thermal Injury*, at Little Rock AFB. This regulation also provides guidance in how Little Rock AFB, as the host installation for personnel attending training administered by AETC, will implement the applicable portions of AETCI 48-101, *Prevention of Heat Stress Disorders*. This instruction applies to all US military and civilian personnel on, or assigned to, Little Rock AFB, all tenant units located on Little Rock AFB, all guard personnel working at Little Rock AFB, and contractors employed at Little Rock AFB as specified in individual contracts. Personnel assigned to AETC must also maintain and comply with the guidance prescribed by AETCI 48-101. The requirements within this instruction do not apply to off-duty work or dependents, except as guidance. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/gcss-af61a/afrims/afrims/>.

**SUMMARY OF CHANGES**

This document has been substantially revised and must be completely reviewed. Major changes include: 314 AW organizations have been changed to 19 AW organizations, responsibilities have been updated, and the requirements for support of AETC units have been included.

## 1. RESPONSIBILITIES:

1.1. **Group and Squadron Commanders:** Complete an operational risk management (ORM) assessment of proposed activities, using Attachment 5, AFPAM 48-151, *Thermal Injury*, and other heat stress reference information provided in consultation with aerospace physiology.

### 1.2. Supervisors:

1.2.1. Supervisors of personnel exposed to heat stress occupationally shall maintain this regulation, the AFPAM 48-151, and the AETCI 48-101 *Prevention of Heat Stress Disorders* (AETC units only) in their work centers. Maintenance of these publications can be accomplished through the use of a centrally maintained electronic publications website (AF e-publishing), a unit's shared network drive (//X:drive) or an established Community of Practice (CoP) website (314 AW Safety CoP).

1.2.2. Provide information on the meaning of the Wet Bulb Globe Temperature (WBGT) index, heat stress categories, and measures to prevent heat stress disorders to all workers or other individuals under their control.

1.2.3. Complete annual training for workers prior to the start of the hot season (by May 1). Training will include information on how to recognize and understand causes, symptoms, first-aid treatment, and prevention of heat injuries (to include work-rest cycles). Supervisors of flying personnel should also include training on how heat stress affects aircrew performance and appropriate preventive measures. Reference material can be obtained from AFPAM 48-151, the 19 AMDS Aerospace Physiology Flight, or 19 AMDS Bioenvironmental Engineering Flight.

1.2.4. Training will be documented on AF Form 55, **Employee Safety and Health Record**, or equivalent for military members, and AF Form 971, **Supervisors Employee Brief**, or equivalent for civilians.

1.2.5. Plan work and rest cycles for personnel occupationally exposed to hot environments and ensure adequate acclimatization of new personnel according to AFPAM 48-151, Attachment 5.

1.2.6. Use activity level restrictions in AFPAM 48-151, Attachment 5, to plan and conduct outdoor physical conditioning or training for individuals under their control.

### 1.3. Medical group Functional Areas:

#### 1.3.1. Bioenvironmental engineering will:

1.3.1.1. Provide instruction to other functional areas on proper use of the WBGT instruments and report the measurements to the 19 AW Command Post.

1.3.1.2. Take WBGT measurements as described in section 4 of this regulation.

#### 1.3.2. Aerospace physiology will:

1.3.2.1. Provide current resource material to commanders for conducting operational risk management (ORM) in heat stress environments. Assist supervisors and group and squadron commanders with work classification and preventive measures. Advise on preventive measures in the flying environment.

1.3.2.2. Prepare educational material for aircrews and the general population (i.e., base paper articles).

1.3.2.3. Present briefings as requested by any user group on base, detailing heat stress, causes, precautions, and treatment.

1.3.2.4. Brief LRAFB Camp Warlord instructor cadre and participants on risk management for heat stress.

1.3.3. Clinical providers will:

1.3.3.1. Notify public health when a heat-stress disorder occurs that is associated with work or training activities per Chapter 5, AFPAM 48-151.

1.3.3.2. Complete annual training that includes education on this regulation, focusing on establishing recommendations or restrictions for patients (workers or trainees) who have been ill.

1.3.3.3. Educate patients, to include reminders of the dangers of heat in this area and measures to avoid heat illness, particularly if a previous illness or medications make them more susceptible to heat.

1.3.3.4. Write patient histories to identify a history or predisposition to heat illness. If an illness or medication predisposes an individual to heat illness, issue a temporary profile limiting activities in the heat and provide it to their supervisor.

1.3.4. Health And wellness center (HAWC) will:

1.3.4.1. Educate physical training leaders on the effects of heat stress disorders with physical conditioning.

1.3.4.2. Refer individuals with risk factors for heat illness to a medical provider for evaluation.

**1.4. Weather Support Flight (WSF):** Provide predicted and current index of thermal stress (ITS), plus national weather service heat indexes and heat advisories to support operational mission.

**1.5. Trainees and Workers Subject to Hot Environments:** Inform your physical training leader or supervisor of conditions that may reduce your tolerance to heat.

**2. Assessing Environments for Heat Stress:** The WBGT index has been shown to be a better indicator of human response to heat than the “heat index” provided by the weather service for the general public.

**3. Preventing Heat Stress Disorders During Physical Conditioning (PC) Activities.**

**3.1. Fitness Activities**

3.1.1. The fitness assessment cell (FAC) staff administers written questionnaire to fitness-testing participants to ascertain any pre-existing conditions that may affect their ability to exercise in the heat. Based on their responses, they may be referred to the exercise physiologist or a medical provider for further evaluation.

3.1.2. HAWC staff provide physical training leaders and FAC staff with education and training on how to recognize and prevent heat stress disorders.

3.1.3. Physical training leaders, in turn, provide heat stress awareness to every participant under their supervision. The physical condition and heat illness susceptibility of individuals participating in the physical fitness mandatory conditioning program varies widely. Therefore, instructors must be aware of those members most susceptible to heat stress and tailor physical conditioning accordingly. Institute a buddy system and emphasize mutual observation at all times throughout each physical training (PT) activity.

3.1.4. Per AFI 36-2905, *Fitness Program*, physical conditioning conducted in PT uniform (shorts and t-shirt) may be performed continuously up to 1 hour in all but heat category five. It is recommended that fitness activities are limited to indoor activities in heat category five.

3.1.5. Fitness assessments will not be conducted outdoors when the WBGT is greater than 85 degrees or heat index is greater than 99 degrees if WBGT is not available. FAC will consult with base bioenvironmental engineering flight or base weather to determine environmental conditions.

### 3.2. Commander Runs.

3.2.1. All participants should be aware of the early symptoms of heat so they can tailor their effort to avoid overexertion and risk of heat injury.

3.2.2. Temperatures above 90 degrees and WBGT index values of 85 degrees or higher are routinely present during summer afternoons. Accordingly, any command run will be scheduled in the mornings from early April to mid October.

3.2.3. Water will be provided at the starting and ending point (base fitness center), and an additional water station may be positioned at the turnaround point.

3.2.4. Medics equipped with radio communication to the medical control center will patrol the route.

### 3.3. Deployment Exercises.

3.3.1. Aerospace physiology staff brief cadre instructors and participants on aspects of heat stress in the field. The training includes the body's reaction to heat, how to prevent heat illness, and recognize and treat heat symptoms in yourself and others.

3.3.2. Wear time of mission-oriented protective posture (MOPP) gear is limited to early morning hours during the late spring and summer.

3.3.3. Plentiful quantities of cool water are provided for deployment exercise participants.

3.3.4. Radio and telephone contact is maintained in the event medical support is needed.

## 4. MEASUREMENT, DOCUMENTATION, AND NOTIFICATION OF WET BULB GLOBE TEMPERATURE (WBGT) INDEX:

4.1. **Location.** The normal location for routine WBGT measurements will be the concrete sidewalk by the bioenvironmental engineering flight (currently building 756). Alternate locations, e.g. area adjacent to building 120, may be designated, if representative of the outdoor work environment.

4.1.1. Remote location monitoring. When an organization conducts operations at an off-base location, they have the following options for WBGT monitoring:

4.1.1.1. Use heat index information available from local weather stations as general guidance on heat conditions and take appropriate precautions.

4.1.1.2. Use WBGT monitoring for a nearby location that represents their location.

4.1.1.3. Purchase or borrow a field WBGT kit to use during the operation (contact bioenvironmental engineering flight at 987-7398 for information). Bioenvironmental engineering flight personnel will instruct personnel on the instrument's proper use.

4.1.2. During the normal duty week, when the actual or forecast outside temperature reaches 85 degrees, bioenvironmental engineering flight or designee will perform WBGT measurements at 2-hour intervals beginning at 0800 (0800, 1000, 1200, 1400, and 1600). When the WBGT index reaches 85 degrees (heat category 3), increase the WBGT measurement frequency to hourly.

4.1.3. Procedures for non-duty hours. The WBGT normally has reached its highest daily value by 1600 and at sundown the WBGT reading normally returns to heat category 1. Supervisors will continue to ensure workers take prudent precautions for the last WBGT reported. During non-duty hours and weekends, organizations may use publicly available heat index guidance, arrange with bioenvironmental engineering flight to borrow or purchase a WBGT (see 4.1.1) or arrange for setup of a WBGT at a site that has 24-hour coverage (such as the 19 AW Command Post).

4.2. **Documentation of WBGT.** Bioenvironmental engineering flight will document the ambient outdoor WBGT readings. These readings will be maintained in the bioenvironmental engineering flight binder for 1 year.

4.3. **Notification.** When the WBGT reaches heat category one (or higher), bioenvironmental engineering flight (or designated monitor after hours) reports the WBGT index and heat stress category to the command post.

4.3.1. When the WBGT index reaches 85 degrees (Yellow, heat category 3), 19 AW Command Post initiates notification checklist and activates the "giant voice" notification system and the computer installation warning system.

4.4. **Prevention.** Once notified, commanders and supervisors should implement the work and rest cycles or training activity level restrictions and other prevention techniques.

4.5. **Procedures to Evaluate Trends in Health-related Illness:**

4.5.1. Supervisors are responsible for completing AETC Form 435, **Mishap Data Worksheet**, on any individual who seeks medical attention for a heat-related illness. Copies of the AETC Form 435 will be forwarded to base safety (19 AW/SEG).

4.5.2. Whenever a military member receives treatment for a heat related-illness at work, the primary care manager (PCM) will immediately refer the individual to public health where an occupational-illness investigation will be initiated.

4.5.3. Public health will periodically review the Composite Health Care System (CHCS) Ad Hoc report to identify heat-related diagnosis trends. Workplaces with identified trends will be notified for additional evaluation and training.

**5. Flightline Operations:** To the maximum extent possible, air conditioning carts should be at the aircraft 30 minutes prior to partial crew show when the Heat Stress Index reaches category 4 (WBGT of 88 degrees Celsius) or higher. If no air conditioning carts are available and the aircraft is equipped with an operable auxiliary power unit (APU) crews should start and run the APU to cool aircraft and limit heat exposure during preflight operations in accordance with aircraft regulatory and/or technical order guidance.

**6. Prescribed And Adopted Forms:**

6.1. Prescribed forms: None

6.2. Adopted forms: AF 847, *Recommendation for Change of Publication*

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Commander