

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE INSTRUCTION 48-102



19 AUGUST 2014
Certified Current on 19 JANUARY 2016
Aerospace Medicine

MEDICAL ENTOMOLOGY PROGRAM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available for downloading or ordering on the e-Publishing website at www.e-publishing.af.mil.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: AFMSA/SG3P

Certified by: AF/SG3
(Brig Gen Charles E. Potter)

Supersedes: AFI48-102, 11 September 2013

Pages: 10

This instruction implements Air Force Policy Directive (AFPD) 48-1, *Aerospace Medicine Enterprise*, and interfaces with Air Force Instruction (AFI) 48-105, *Surveillance, Prevention, and Control of Diseases and Conditions of Public Health or Military Significance*, and assigns responsibilities for the prevention of vector-borne diseases and management of medically important pests through the application of integrated pest management (IPM) practices. In accordance with (IAW) DoD Instruction 4150.07, *DoD Pest Management Program*, this AFI applies to all Regular Air Force (RegAF) and Selected Reserve members of the Air Force (AF), including participating inactive ready reserve, and to all Air National Guard (ANG) units on property supported with Federally appropriated funds under a cooperative agreement and who are performing training subject to Federal approval under chapter 1 of Title 32 United States Code Section 113. Outside the continental United States (OCONUS), this instruction applies where consistent with applicable international agreements, status of forces agreements, final governing standards (FGS) issued for the host nations, or, where no such FGS have been issued, the criteria in the Overseas Environmental Baseline Guidance document. This publication requires the collection and or maintenance of information protected by the Privacy Act of 1974. The authorities to collect and or maintain the records prescribed in this publication are Title 37 USC § 301a and Executive Order 9397 (*SSN*), as amended by Executive order 13478, Amendments to Executive Order 9397 Relating to Federal Agency Use of Social Security Numbers, November 18, 2008. Forms affected by the Privacy Act must have an appropriate Privacy Act statement. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). Refer recommended changes and questions about this publication to the Office of Primary

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SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include updates on pest management and further emphasize use of integrated pest management (IPM) programs to prevent or manage pest and disease vectors of medical importance. This revision includes instructions for identifying Tier waiver authorities as approved by the Inspector General Advisory Board (IGAB). Administrative changes have also been incorporated.

Chapter 1

PROGRAM OVERVIEW AND OBJECTIVES

1.1. Overview. AF medical entomology programs are essential to prevent pest and disease vectors of medical importance from adversely affecting military operations in peacetime and during contingency operations. This publication establishes guidance and procedures for the identification and elimination of the threat and transmission of diseases from pests, and specifies the responsibilities of Public Health and other organizations under this program, and the basic knowledge needed to execute the program responsibilities. This instruction augments AFI 32-1053, *Integrated Pest Management Program*.

1.2. Objectives. The objectives of the AF medical entomology program are to prevent pest and disease vectors of medical importance from adversely affecting military operations and the health and well-being of military personnel, and promote and support the following:

- 1.2.1. Military readiness.
- 1.2.2. Installation program planning.
- 1.2.3. IPM.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. Air Force Surgeon General (AF/SG).

2.1.1. Provides policy and resource guidance on the surveillance, prevention, and reporting of vector-borne diseases of medical importance.

2.1.2. Maintains a medical entomology program that includes consultation, training, and surveillance, to support IPM for the prevention and management of vectors and pests of medical importance.

2.1.3. Provides two field grade military entomologists to the Armed Forces Pest Management Board (AFPMB) staff IAW DoDI 4150.07.

2.1.4. Appoints voting members to represent the AF/SG on the AFPMB Council IAW DoDI 4150.07.

2.2. Air Force Civil Engineer Center (AFCEC). Coordinates with Air Force Medical Support Agency (AFMSA) Public Health Branch (SG3PM) and Bioenvironmental Engineering Branch (SG3PB) on aspects of the pest management program that present potential occupational and environmental health hazards. **Note:** ANG/A7AN provides comparable services for ANG installations.

2.3. Air Force Medical Support Agency, Aerospace Medicine Policy and Operations Division (AFMSA/SG3P).

2.3.1. Establishes Air Force Medical Service (AFMS) policies and guidance for the surveillance, prevention, and reporting of vector-borne diseases of medical importance.

2.3.2. Represents AF/SG on issues of surveillance, prevention, and reporting of vector-borne diseases and conditions of public health or military significance, or delegates representation for AF/SG involvement, including collaborative research, with other DoD or Federal agencies and organizations.

2.3.3. Coordinates with major commands (MAJCOM), Department of Defense (DoD), and other Federal, state, and international organizations on requirements for developing vector, medical pest and vector-borne disease surveillance and suppression programs. **Note:** This includes the aerial application of pesticides IAW AFI 32-1074, *Aerial Application of Pesticides*.

2.3.4. Provides consultation to the AFCEC and other civil engineer staffs to implement IPM for management of vectors, medically important pests and vector-borne diseases.

2.3.5. Reviews periodic reports of vector-borne disease surveillance, prevention, and control programs and makes recommendations to AF/SG for improvement.

2.4. Air Force Medical Operations Agency (AFMOA). Provides guidance on the execution of policies and guidance for the surveillance, prevention, and reporting of vector-borne diseases of medical importance.

2.5. Major Command/Direct Reporting Unit (MAJCOM/DRU) Public Health.

2.5.1. Coordinates with a medical entomology consultant to determine medical entomology requirements necessary to support contingency operations or unique wing/base level medical entomology concerns. **Note:** If necessary, the MAJCOM Public Health Officer (PHO) can request deployment of a Medical Entomologist to provide professional expertise on the biology, surveillance, identification, and management of vectors and medically important pests.

2.5.2. Coordinates with the MAJCOM Pest Management Consultant (PMC) on the management of vectors, medically important pests and vector-borne diseases of medical importance in the application of IPM techniques.

2.6. MAJCOM Pest Management Consultant.

2.6.1. Coordinates with the MAJCOM PHO on requirements to support contingency operations IAW AFI 32-1053.

2.6.2. Provides consultation to base/wing level staff in medical entomology and pest management.

2.6.3. Reviews and approves installation pest management plans, pesticide requests, contract performance work statements, aerial spray projects, and facility design and/or upgrades IAW AFI 32-1053.

2.7. United States Air Force School of Aerospace Medicine (USAFSAM).

2.7.1. Serves as the AF point of contact for DoD medical entomology research, development, testing, and evaluation.

2.7.2. Provides consultation, training and base/wing level staff assistance in medical entomology and pest management for both fixed and deployed AF installations. **Note:** United States Air Forces in Europe Civil Engineer Directorate Environmental Division (USAFE/A7CV) provides additional medical entomology and pest management consultation for all USAFE installations.

2.7.2.1. Public Health (PH) and Preventive Medicine Department (USAFSAM/PH) provides global support to all AF installations outside of the Western Pacific.

2.7.2.2. USAFSAM Detachment 3 provides support to all AF installations, missions, and operations within the Western Pacific.

2.7.3. Evaluates new techniques for surveillance, identification, pathogen screening, insecticide resistance, and managing vectors, medically important pests and vector-borne diseases.

2.7.4. Develops and conducts training for AF training and education programs to include medical and civil engineer personnel on the biology, identification, surveillance, and management of vectors and pests of medical importance. **Note:** This may also include medical entomology support for medical readiness training.

2.7.5. Identifies and assists in resolving pest management and pesticide problems involving environmental or occupational health concerns.

2.7.6. Provides representation to the AFPMB if directed by AF/SG.

2.8. Installation Responsibilities.

2.8.1. Installation Commander.

2.8.1.1. Ensures installation personnel are protected from vector-borne diseases and pests of medical importance by enforcing adherence to non-prescription public health countermeasures (e.g. insect repellent and other personal protective equipment) when appropriate to minimize the risk of vector-borne disease. (T-0).

2.8.1.2. Ensures Foreign Clearance Program, Defense Travel Regulations, and US Department of Agriculture (USDA) Customs and Border Clearance Program requirements are followed when applicable to prevent the transmission or introduction of foreign agricultural pests and/or disease vectors (e.g. safeguarding or disposal of in-flight meals, disposal of aircraft garbage, and aircraft or cargo disinsection, if necessary). (T-0).

2.8.2. Civil Engineering.

2.8.2.1. Plans and executes vector and medical pest management using IPM techniques IAW DoDI 4150.07 and AFI 32-1053. (T-0).

2.8.2.2. Coordinates Installation Pest Management Plan with Bioenvironmental Engineering and PH at least every five years and before it is sent to MAJCOM/CE for approval. (T-2).

2.8.2.3. Coordinates with PH prior to applying pesticides in food preparation and consumption facilities, medical facilities, and child development centers to ensure pest management operations are based on appropriate surveillance data. (T-2).

2.8.2.4. Provides (CONUS only) bulk trash disposal according to US Department of Agriculture guidelines, for aircraft arriving from outside CONUS to prevent the introduction of foreign agricultural pests and/or disease vectors. (T-0).

2.8.3. Public Health.

2.8.3.1. Establishes a risk-based program to evaluate community and location-specific medically important pests and vector-borne diseases, incorporating local, civilian health department data to supplement installation data, as necessary. (T-2).

2.8.3.2. Assists in contingency site selection to minimize vector-borne disease potential in order to promote the management and control of vector-borne disease. (T-2).

2.8.3.3. Educates deploying personnel on the endemic threat of vector-borne disease emphasizing the importance of prevention in the application of personal protective measures (e.g. chemoprophylaxis, insect repellent, bed nets and other non-prescription personal protective equipment). (T-0).

2.8.3.4. Develops a vector surveillance plan, if indicated by installation and local health department data, to periodically evaluate health threat and efficacy of controls. (T-1).

2.8.3.4.1. This plan will be submitted to the Aerospace Medicine Council (AMC) for approval and serves the dual role of maintaining baseline data on vectors and medically important pests while maintaining war readiness core competency skills. Vector surveillance plan must be approved every two (2) years or at a frequency determined by the AMC. (T-2).

- 2.8.3.4.2. When surveillance data is missing or incomplete, coordinates with a medical entomology consultant to determine the need for/scope of vector surveillance plan. (T-2).
- 2.8.3.5. Collaborates with installation Pest Management regarding need for control measures and monitors the effectiveness of those measures when vectors or medically important pests pose a public health threat, interfere with duty performance, or affect unit morale. (T-2).
- 2.8.3.6. Consults with Federal, state, local health authorities and USAFSAM on common vectors and pests of medical importance. AF involvement should be proportionate to the military interest. Integrate installation surveillance data with civilian programs, whenever possible. **Note:** In overseas areas, provide and obtain comparable assistance when requested by the appropriate host nation/foreign medical authority. (T-2).
- 2.8.3.7. Assists base agencies to meet customs inspection program requirements when requested. (T-2). **Note:** The USDA is the office of primary responsibility for the Customs and Border Clearance Program. Public Health acts as consultant to the USDA and base organizations such as the Security Forces, Civil Engineering, Base Operations and the Installation Commander Guidance can be found in Defense Transportation Regulation (DTR) 4500.9-R, Part V, Department of Defense Customs and Border Clearance Policies and Procedures, AFI 16-606, *Foreign Clearance Program* and the DoD Foreign Clearance Guide. (T-0).
- 2.8.3.8. Provides information to installation health care providers on prevention and control of vector-borne diseases in the local area. Information shall include an overview of location-specific disease threats at the time of provider in-processing, as well as time sensitive disease specific alerts (T-3).
- 2.8.3.9. Participates in planning for emergency vector or medical pest management using aerial application of pesticides IAW AFI 32-1074. Ensures that pre- and post-treatment surveys are accomplished to evaluate mission effectiveness. (T-2).

2.8.4. **Bioenvironmental Engineering.**

- 2.8.4.1. Provides technical information to Civil Engineering on the safe storage and use of pesticides. (T-2).
- 2.8.4.2. Monitors the potential occupational health and environmental impact of pesticide application, including aerial spraying. (T-0).

2.9. Deployed Commanders. Ensure personnel are protected from vector-borne diseases and pests of medical importance by enforcing adherence to non-prescription public health countermeasures (e.g. insect repellent, permethrin-treated bed nets, and other personal protective equipment) when appropriate to minimize the risk of vector-borne disease. (T-0).

THOMAS W. TRAVIS
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Surgeon General

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

DODI 4150.07, *DOD Pest Management Program*, 29 May 2008

DTR 4500.9-R, Part V, *Department of Defense Customs and Border Clearance Policies and Procedures*, 14 March 2014

DoD Foreign Clearance Guide: <https://www.fcg.pentagon.mil>

AFI 16-606, *Foreign Clearance Program*, 21 January 2011

AFI 33-322, *Records Management Program*, 4 June 2012

AFPD 48-1, *Aerospace Medicine Enterprise*, 23 August 2011

AFI 32-1074, *Aerial Application of Pesticides*, 27 August 2009

AFI 32-1053 *Integrated Pest Management Program*, 23 June 2009

AFI 48-105, *Surveillance, Prevention, and Control of Diseases and Conditions of Public Health or Military Significance*, 1 March 2005

Armed Forces Pest Management Board publications: <http://www.afpmb.org/publications.htm>

Adopted Forms

AF Form 847, Recommendation for Change of Publication

Abbreviations and Acronyms

AFCEC—Air Force Civil Engineer Center

AFHSC—Armed Forces Health Surveillance Center

AFI—Air Force Instruction

AFMOA—Air Force Medical Operations Agency

AFMS—Air Force Medical Service

AFMSA—Air Force Medical Support Agency

AFPD—Air Force Policy Directive

AFPMB—Armed Forces Pest Management Board

AFR—Air Force Reserve

AFRIMS—Air Force Records Information Management System

AMC—Aerospace Medicine Council

ANG—Air National Guard

ARC—Air Reserve Component

BE—Bioenvironmental Engineering

BEE—Bioenvironmental Engineer

CE—Civil Engineering

DOD—Department of Defense

DODD—Department of Defense Directive

DODI—Department of Defense Instruction

FGS—Final Governing Standards

HIPAA—Health Insurance Portability and Accountability Act

IAW—In Accordance With

IGAB—Inspector General Advisory Board

IPM—Integrated Pest Management

MAJCOM—major command

MTF—Medical Treatment Facility

NCMI—National Center for Medical Intelligence

OCONUS—Outside the continental United States

PH—Public Health

PHO—Public Health Officer

RDS—Records Disposition Schedule

SG—Surgeon General

USAFSAM—United States Air Force School of Aerospace Medicine

USAFSAM/PH—United States Air Force School of Aerospace Medicine/Public Health and Preventive Medicine Department

USDA—United States Department of Agriculture

WHO—World Health Organization

Terms

DoD Repellent System—Use of DEET-based repellent on exposed skin, permethrin treatment of uniforms and proper wearing of uniform to minimize exposure to vectors and medically important pests. The system is described in Technical Guide 36, *Personal Protective Measures against Insects and Arthropods of Military Significance*, published by the AFPMB.

Economic Pests—Animals or plants that do not pose a human medical threat, but do pose a threat to agriculture, marine, or terrestrial environments.

Integrated Pest Management—A pest management strategy that focuses on long-term prevention or suppression of pest problems through a combination of techniques such as monitoring for pest presence, establishing treatment threshold levels, using non-chemical practices to make the habitat less conducive to pest development, improving sanitation, and employing mechanical and physical controls. Pesticides that pose the least possible hazard and

are effective in a manner that minimizes risks to people, property, and the environment, are used only after careful monitoring indicates they are needed according to pre-established guidelines and treatment thresholds.

Medical Entomology—The study of vectors and medically important pests emphasizing prevention and management.

Medical Entomology Consultant—Individual with training in the ecology and control of vectors and medically important pests and DoD certification in medical entomology.

Medically Important Pests—Animals or plants that do not directly transmit a disease pathogen but are medically important because of biting, stinging, or other annoyance including secondary skin infection.

Pesticides—Chemicals used to kill pests, including disease vectors, intermediate hosts, and reservoirs. These include insecticides, acaricides, molluscicides, rodenticides, herbicides, fungicides, and other toxicants.

Vectors—Animals such as mosquitoes, biting flies, filth flies, flesh flies, lice, kissing bugs, fleas, mites, ticks, snails, rodents, bats, etc. capable of inoculating or transferring disease pathogens to humans or domestic animals.