

# AIR FORCE QUALIFICATION TRAINING PACKAGE (AFQTP)



FOR  
ENVIRONMENTAL CONTROLS  
(3E4X3)

MODULE 18  
AFS SPECIFIC CONTINGENCY RESPONSIBILITIES

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Career Field Education and Training Plan (CFETP) references from 1 Apr 02 version.

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 Pages: 73/Distribution F

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**AIR FORCE QUALIFICATION TRAINING PACKAGES  
FOR  
ENVIRONMENTAL CONTROLS  
(3E4X3)**

**INTRODUCTION**

**Before starting this AFQTP**, refer to and read the "[AFQTP Trainer/Trainee Guide](#)."

**AFQTPs are mandatory and must be completed** to fulfill task knowledge requirements on core and diamond tasks for upgrade training. ***It is important for the trainer and trainee to understand*** that an AFQTP **does not** replace hands-on training, nor will completion of an AFQTP meet the requirement for core task certification. AFQTPs will be used in conjunction with applicable technical references and hands-on training.

**AFQTPs and Certification and Testing (CerTest) must be used as minimum upgrade requirements for Diamond tasks.**

**MANDATORY minimum upgrade requirements:**

**Core task:**

AFQTP completion  
Hands-on certification

**Diamond task:**

AFQTP completion  
CerTest completion (80% minimum to pass)

**Note:** *Trainees will receive hands-on certification training for Diamond Tasks when equipment becomes available either at home station or at a TDY location.*

**Put this package to use.** Subject matter experts under the direction and guidance of HQ AFCESA/CEOF revised this AFQTP. If you have any recommendations for improving this document, please contact the Career Field Manager at the address below.

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## PREPARE ASSETS

MODULE 18

AFQTP UNIT 1

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SELECT PESTICIDES (18.1.2.)

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**SELECT PESTICIDES**  
***Task Training Guide***

<b>STS Reference Number/Title:</b>	18.1.2., Select Pesticides (Prepare Assets).
<b>Training References:</b>	<ol style="list-style-type: none"> <li>1. <a href="#">AFI 32-1053, <i>Pest Management Program</i></a>.</li> <li>2. <a href="#">AFI 32-7002, <i>Environmental Information Management System</i></a>.</li> <li>3. <a href="#">AFI 32-7006, <i>Environmental Program In Foreign Countries</i></a>.</li> <li>4. <a href="#">AFH 10-222, Volume 4, <i>Environmental Guide for Contingency Operations</i></a>.</li> <li>5. <a href="#">AFPMB Technical Information Memorandum (TIM) 24, <i>Contingency Pest Management Pocket Guide</i></a>.</li> </ol>
<b>Prerequisites:</b>	<ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a, 3E433 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFIs 32-1053, 32-7002, and 32-7006.</li> <li>2.2. AFH 10-222, Volume 4.</li> <li>2.3. AFPMB TIM 24.</li> </ol> </li> </ol>
<b>Equipment/Tools Required:</b>	<ol style="list-style-type: none"> <li>1. Disease Vector Ecology Profiles (DVEPS).</li> <li>2. TIM 24.</li> </ol>
<b>Learning Objective:</b>	<ol style="list-style-type: none"> <li>1. The trainee will learn how to obtain the Disease Vector Ecology Profiles (DVEPS) for a particular area.</li> <li>2. The trainee will be able to select pesticides for a particular deployment or area by using the Disease Vector Ecology Profiles (DVEPS).</li> </ol>
<b>Samples of Behavior:</b>	<ol style="list-style-type: none"> <li>1. Trainee will be able to obtain specific Disease Vector Ecology Profiles (DVEPS) according to the particular deployment.</li> <li>2. Trainee will be able to select pesticides pertinent to the deployment scenario.</li> </ol>
<b>Notes:</b>	
<ol style="list-style-type: none"> <li>1. To successfully complete this element follow the steps outlined in this section exactly--no exceptions.</li> <li>2. To successfully complete this element the trainee must obtain Disease Vector Ecology Profiles (DVEPS) for a particular country and select the correct pesticides for the deployment.</li> </ol>	

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## SELECT PESTICIDES

**1. Background:** The purpose of Contingency Pest Management is to provide pest control service in field situations worldwide, during contingency operations or military exercises. To properly conduct this operation it is imperative to understand the pest problems that will be encountered while deployed. Concise summaries of vector-borne and other militarily significant diseases that occur in specific countries can be found in the Disease Vector Ecology Profiles (DVEP), (Figure 1). These profiles focus on vector-borne diseases (diseases caused by insects) and other militarily significant diseases. They also emphasize disease epidemics, vector locations, behavior, and pesticide resistance. A selected bibliography of pertinent disease and disease vector literature is also included. These Disease Vector Ecology Profiles (DVEP), the Technical Information Memorandum 24 (TIM 24), Figure 2, other publications, available keys, and related environmental or biological data can be obtained by contacting the Defense Pest Management Analysis Information Center (DPMAIC) in Washington DC, DSN 291-5365/5366. Disease Vector Ecology Profiles (DVEP) serves as a summary of relevant insects and arthropod-borne disease information and not as a scientific document. The information obtained from the summaries helps the pest manager select the proper pesticide for that particular deployment.

### **2. The following steps are to be used for selecting pesticides for Foreign and US in contingency deployments.**

#### **Step 1: Identify the Pest.**

- 1.1. Contact Command Entomologist at forward location.
- 1.2. Contact pest management shop NCOIC at forward locations (if possible).
- 1.3. Order DVEP from the Armed Forces Pest Management Board.
  - 1.3.1. Check web page.

#### **Step 2: Determine Control Method.**

- 2.1. Determine mission requirement.
  - 2.1.1. Permanent vs. temporary control.
- 2.2. Determine control level requirements.
  - 2.2.1. Heavy infestation vs. prevention.

#### **Step 3: Determine Pesticide Requirements.**

- 3.1. Identify Pest.
- 3.2. Work with Command Entomologist at the forward location.
- 3.3. Work with the pest management shop NCOIC at forward location (if possible).

#### **Step 4: Order Pesticides.**

- 4.1. Work with Command Entomologist at the forward location
- 4.2. Verify the insect and arthropod disease vectors for that specific area or deployment.
- 4.3. Check the environmental and/or pesticide laws of the deployed country or area. This will help determine what pesticides to procure.
- 4.4. Use Technical Information Memorandum 24 (TIM 24) for selecting pesticides. It lists the pests and the pesticides in an easy reference, Figure 2.
- 4.5. Base your initial requirements for 7 to 10 days.

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**NOTE:**

Make sure the Disease Vector Ecology Profiles (DVEP) is ordered three to five days before the deployment is to leave. It will take that long to receive it. If time is a factor try downloading it from [Armed Forces Pest Management Board](#) or Public Health may have the DVEP available.

**Step 5: Choose the pesticides that will be needed for this deployment.**

- 5.1. Based on the data in the Disease Vector Ecology Profiles (DVEP), if possible take a pesticide that will target more than one pest.
- 5.2. Keep the inventory to a minimum.
- 5.3. Make sure the pesticide fits the target pest.
- 5.4. Make sure the pesticide formulation is one that can be readily carried on the aircraft.
- 5.5. It is more beneficial to take a dust or a granular formulation if possible to avoid liquids spilling or freezing.

**Step 6: Personal Protective Equipment (PPE).**

- 6.1. Match the pesticides used or transported with the PPE required.

**Step 7: Ensure pesticides remain in original container with label intact.**

- 7.1. Keep incompatible pesticides separate.

**NOTE:**

Keep rodenticides away from insecticides and herbicides. This will keep the odor of the other pesticides from infiltrating the rodent bait. Base Supply can help with packing needs.

**Step 8: Material Safety Data Sheet (MSDS).**

- 8.1. Each pesticide shipped is required to have a MSDS.

**SAFETY:**

**DO NOT PACK INCOMPATIBLE MATERIALS TOGETHER.**

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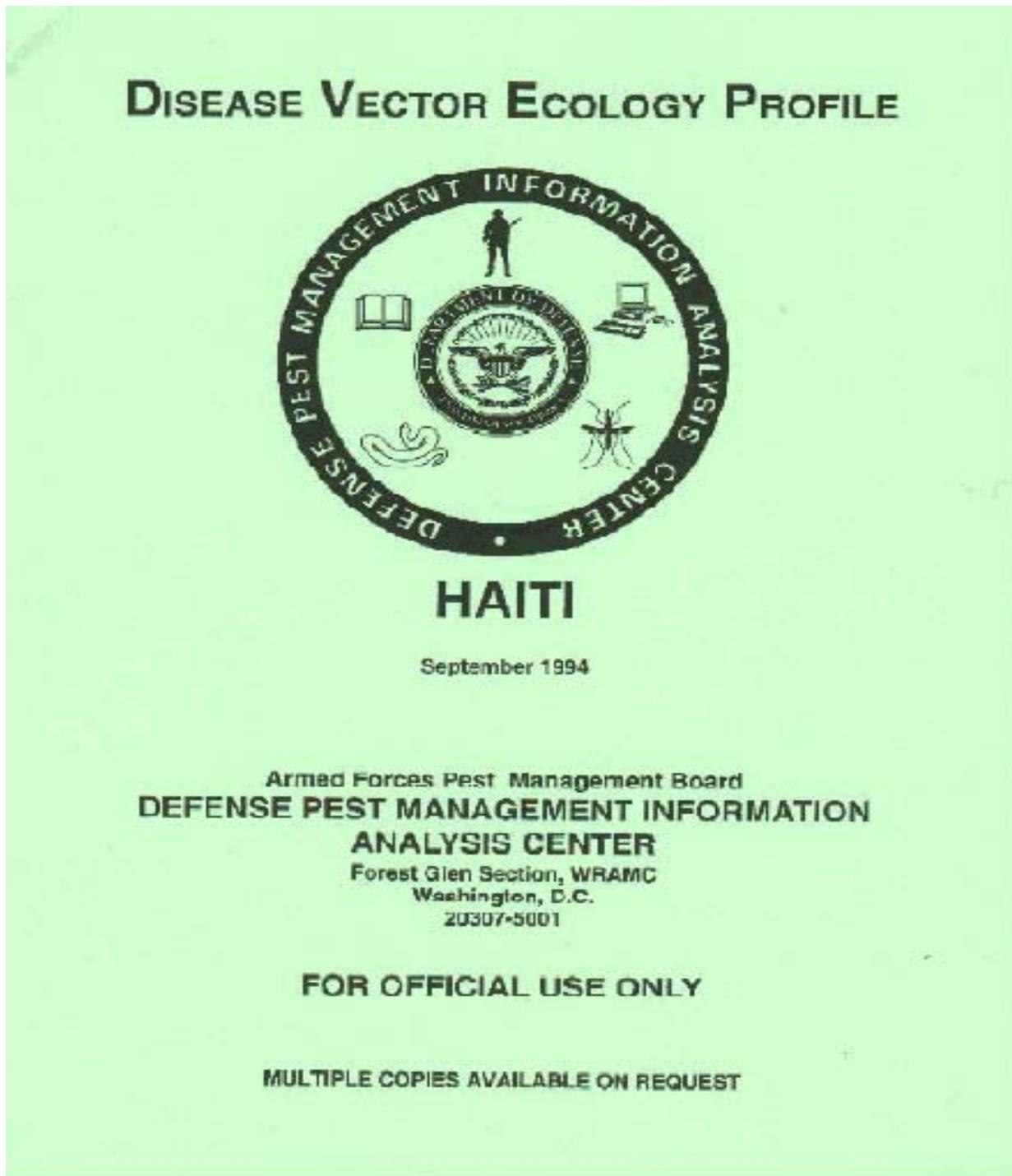


Figure 1, Disease Vector Ecology Profile (DVEP) of Haiti

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Technical Information Memorandum No. 24

# CONTINGENCY PEST MANAGEMENT GUIDE

2000 EDITION

October 17, 2000 Version

Armed Forces Pest Management Board  
6900 Georgia Avenue, NW  
Washington, DC 20307-5001

Figure 2, TIM 24

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**REVIEW QUESTIONS  
FOR  
SELECT PESTICIDES**

QUESTION	ANSWER
1. Contingency Pest Management provides _____.	<ul style="list-style-type: none"> <li>a. Concise summaries of vector-borne diseases.</li> <li>b. Pest control services.</li> <li>c. Disease vector profile.</li> <li>d. None of the above.</li> </ul>
2. When should you obtain the Disease Vector Ecology Profiles?	<ul style="list-style-type: none"> <li>a. During the initial beddown.</li> <li>b. Before the “after action” report.</li> <li>c. Before deploying.</li> <li>d. During the sustainment phase.</li> </ul>
3. Who should you contact to find out about pests at the forward location?	<ul style="list-style-type: none"> <li>a. Command Entomologist only.</li> <li>b. Command Entomologist and Pest Shop NCOIC.</li> <li>c. Armed Forces Pest Management Board.</li> <li>d. Base Civil Engineer.</li> </ul>
4. What is the first step to determining your pesticide requirements?	<ul style="list-style-type: none"> <li>a. Contact the Command Entomologist.</li> <li>b. Contact the Pest Shop NCOIC.</li> <li>c. Identify the pest.</li> <li>d. Refer to TIM 24.</li> </ul>
5. What time frame should you base your initial pesticide requirements?	<ul style="list-style-type: none"> <li>a. 1 week.</li> <li>b. 7 – 10 days.</li> <li>c. 2 weeks.</li> <li>d. 1 month.</li> </ul>
6. Which pesticide formulations are safest to transport?	<ul style="list-style-type: none"> <li>a. Powders and granular.</li> <li>b. Powders and emulsions.</li> <li>c. Emulsions and aerosols.</li> <li>d. Liquids and aerosols.</li> </ul>

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**NOTE TO TRAINER:**

In order for the trainee to accomplish this task and the remaining tasks in this unit, you must build an exercise scenario where the unit will be deploying to an overseas location where the trainee must obtain a Disease Vector Ecology Profiles (DVEPS) for the particular country. Then the trainee must identify the prevalent pest for that area, select the correct pesticides, and the right IPM equipment to be use on the deployment.

**SELECT PESTICIDES**

**PERFORMANCE CHECKLIST**

**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

<b>DID THE TRAINEE....?</b>	<b>YES</b>	<b>NO</b>
1. Gather information about the deployment		
2. Order/download the particular DVEP needed for the deployment		
3. Select the pest that is prevalent to that area		
4. Select the pesticides to control the pests selected		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

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## PREPARE ASSETS

SELECT, MAINTAIN, AND OPERATE IPM EQUIPMENT SUCH  
AS:

MODULE 18

AFQTP UNIT 1

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ULTRA LOW VOLUME (ULV) FOG GENERATOR (18.1.3.1.)

BACK PACK MIST DUST BLOWER (18.1.3.2.)

HAND-HELD FAN ULV (18.1.3.3.)

COMPRESSED AIR SPRAYER (18.1.3.4.)

MANUAL DUSTER (18.1.3.5)

TRAPPING DEVICES (18.1.3.6)

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**SELECT, MAINTAIN, AND OPERATE IPM EQUIPMENT SUCH AS:  
ULTRA LOW VOLUME (ULV) FOG GENERATOR (18.1.3.1.)  
BACK PACK MIST DUST BLOWER (18.1.3.2.)  
HAND –HELD FAN ULV (18.1.3.3.)  
COMPRESSED AIR SPRAYER (18.1.3.4.)  
MANUAL DUSTER (18.1.3.5.)  
TRAPPING DEVICES (18.1.3.6.)**

***Task Training Guide***

<b>STS Reference Number/Title:</b>	Select, Maintain, and Operate IPM Equipment Such As: 18.1.3.1., Ultra Low Volume (ULV) Fog Generator. 18.1.3.2., Back Pack Mist Dust Blower. 18.1.3.3., Hand-held Fan ULV. 18.1.3.4., Compressed Air Sprayer. 18.1.3.5., Manual Duster. 18.1.3.6., Trapping Devices.
<b>Training References:</b>	<a href="#"><u>AFI 32-1053, <i>Pest Management Program</i>.</u></a> <a href="#"><u>AFI 32-7002, <i>Environmental Information Management System</i>.</u></a> <a href="#"><u>AFI 32-7006, <i>Environmental Program In Foreign Countries</i>.</u></a> <a href="#"><u>AFH 10-222, Volume 4, <i>Environmental Guide for Contingency Operations</i>.</u></a> <a href="#"><u>AFPMB TIM 24, <i>Contingency Pest Management Pocket Guide</i>.</u></a> <a href="#"><u>Military Pest Management Handbook.</u></a> CD ROM Air Force Qualification Training Package (AFQTP) 3E4X3 Environmental Controls, Version 1.0, Oct 00: <i>Manual and Powered Pest Management Equipment</i> . CD ROM AFQTP 3E4X3, Version 1.0, Nov 99: <i>Operation &amp; Maintenance of Pest Management ULV Equipment</i> .
<b>Prerequisites:</b>	1. <b>Possess as a minimum a 3E433 AFSC.</b> 2. <b>Review the following references:</b> 2.1. AFIs 32-1053, 32-7002, and 32-7006. 2.2. AFH 10-222. 2.3. TIM 24. 3. <b>Complete the following references:</b> 3.1. CD-ROM AFQTP 3E4X3 Environmental Controls, Version 1.0, Oct 00: <i>Manual and Powered Pest Management Equipment</i> . 3.2. CD-ROM AFQTP 3E4X3, Version 1.0, Nov 99: <i>Operation &amp; Maintenance of Pest Management ULV Equipment</i> .
<b>Equipment/Tools Required:</b>	1. Computer to support CD-ROMs. 2. DVEP. 3. ULV Fog Generator. 4. Back Pack Mist Dust Blower. 5. Hand-held Fan ULV. 6. Compressed Air Sprayer. 7. Manual Duster. 8. Trapping Devices.

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### ***Task Training Guide (Continued)***

<b>Learning Objective:</b>	<ol style="list-style-type: none"><li>1. The trainee should know the proper dispersal equipment to properly apply the identified pesticide.</li><li>2. The trainee should know how to select the correct pesticides for the area of deployment.</li></ol>
<b>Samples of Behavior:</b>	<ol style="list-style-type: none"><li>1. Trainee should be able to use the proper dispersal equipment.</li><li>2. Trainee should be able to select the equipment needed for contingency operations.</li></ol>
<b>Notes:</b>	
In order for the trainee to accomplish these tasks, the trainer must build an exercise scenario where the unit will be deploying to an oversea location where the trainee must obtain a Disease Vector Ecology Profile (DVEP) for the particular country, then select the right pesticides and equipment to be use on the deployment.	

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**SELECT, MAINTAIN, AND OPERATE IPM EQUIPMENT SUCH AS:  
ULTRA LOW VOLUME (ULV) FOG GENERATOR (18.1.3.1.)  
BACK PACK MIST DUST BLOWER (18.1.3.2.)  
HAND –HELD FAN ULV (18.1.3.3.)  
COMPRESSED AIR SPRAYER (18.1.3.4.)  
MANUAL DUSTER (18.1.3.5.)  
TRAPPING DEVICES (18.1.3.6.)**

**1. Background:** The need to select the proper equipment is one of the major concerns in any pest management program. There is a variety of equipment to choose from but you must select the equipment best designed to effectively apply those products. The two categories of equipment used in deployment areas are portable and non-portable.

**2. Portable Equipment:**

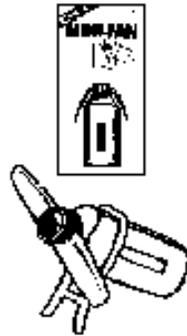
**2.1. Backpack Mist-dust Blower.** The backpack mist-dust blower is very lightweight and one person can carry it, Figure 1. It's used to apply liquids, dusts, or granules. Typical models hold 5.3 gallons of liquid or about 15 pounds of dry pesticide. It's very useful for applying pesticides to small outdoor areas and areas unreachable with a larger mist-dust blower. It is used to apply residuals to trees, shrubs, grasses, and for controlling vegetation pests. Plus, to control common pest, which are likely to be found at a deployment: ants, centipedes, beetles, earwigs, spiders, and scorpions. Plus commonly used to control wide number of disease carry insects including cockroaches, flies, mosquitoes, and ectoparasites such as fleas, mites, ticks, and lice to name a few. Other uses include larviciding programs for mosquitoes. Understand that this is not an exclusive list of all the possibilities in which this equipment can be used and pest stated for its control. See owner's manual for full function possibilities. This equipment may be manual or powered operated.



**Figure 1, Typical Backpack Dust Blowers.**

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**2.2. Hand-carried ULV Battery-operated Fan.** This lightweight hand-held ULV device, Figure 2 is useful for applying adulticides in small outdoor areas and some indoor areas. It enables very quiet operation in small operational areas.



**Figure 2, Hand-Carried ULV Battery-Operated Fan.**

**2.3. Compressed Air Sprayer.** This item is the mainstay of most pest management operations, a must have on any deployment with backup repair kit. It typically has a capacity of half gallon to three gallons, with one gallon being most often used, Figure 3. Use compressed air sprayers to apply residual sprays in and around buildings/tents etc. Spot treating outdoor areas, garbage pits, trash containers, urine soakage pits, and latrines specifically focusing on disease vector/ venomous insect control. It is also useful for applying repellents to troops' clothing in the field and for emergency decontamination of chemical agents. In operation, fill the tank to two-thirds to three-fourths of its' total capacity. Maintain an air pressure of 30-50 pounds per square inch (psi) to ensure a sufficient flow and spray pattern.



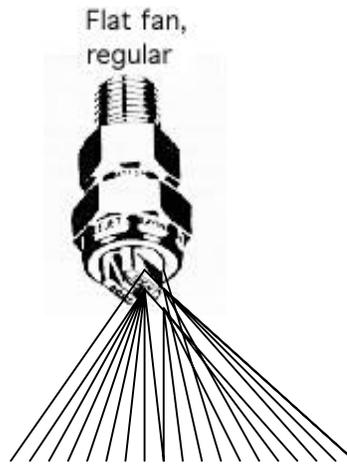
**Figure 3, Compressed Air Sprayer.**

These sprayers have a variety of nozzles that allow for different spray patterns according to the work being done. The four most frequently used multi-tip nozzles are the:

**2.3.1. Solid stream nozzles,** they are designed to apply a fine stream of insecticide in cracks and crevices for cockroach and ant control. They are 2 nozzles per multi-tip head for different gallon per minute outputs.

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**2.3.2. Flat spray nozzles**, these nozzles produce a fan-shaped pattern. Use it to apply residual sprays along floors and walls, 2 nozzles per multi-tip head for different gallon per minute outputs, coarse fan and light fan, Figure 4.



**Figure 4, Flat Spray Nozzle**

**2.4. Manual Duster.** The most common types of manual dusters are the bulb and hand bellows duster, and the plunger dusters. They are all hand held and can hold several ounces of dust. To operate them you either squeeze them, using air inside to force dust from the reservoir or push a plunger handle to force the dust out. These dusters are used to apply fine dusts to small areas; such as electrical panels, inaccessible voids or cracks and crevices. Great for Controlling cockroaches, bedbugs, ants, etc. and for sand fly control within rodent burrows. Excellent for controlling scorpions within their burrows and can be used to lay down rodent patches to monitor activity. As you can see this is another very important small item, which is very versatile to have on a deployment.

**2.5. Trapping Devices.** Several types of traps may be needed. Rodent traps include snap traps for mice and rats. Another useful rodent trap would be the disposable glue board. Live animal traps may also be useful. Havahart live catch traps come in a variety of sizes for many types of animals. It is best to the collapsible kind due to the limited space for shipment, work great for rats and the like but, these will not catch anything much larger than a cat and sometimes they can be too small. These traps are very important to have because stray dogs, cats, raccoons, etc. are attracted to many contingency areas due to the smell of food and garbage. If authorized to use in the area of deployment, the use of snares are very lightweight and take up little space. They come in several types, hold snares and dead snares. Be advised that when handling stray/wild animals to bring along PPE like animal control leather gloves for your safety.

### **3. Non-portable Equipment:**

**3.1. Ultra Low Volume (ULV) Fog Generator.** This is a relatively large generator due to the size of its 11-horsepower engine. It is usually mounted on a small vehicle such as a 1/2-ton pickup truck. The insecticide tank holds 13 gallons of technical-grade or ULV-formulated pesticide. In some areas, car spotting or damage to automobile finishes may occur because of the corrosive properties of some of the insecticides. This generally results only when large droplets (greater than 100 microns, the diameter of a human hair) are present in the spray. Therefore, pest managers must ensure that the unit is always properly calibrated.

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**4. Complete the CD-ROMs, Manual and Powered Pest Management and Operation, Version 1.0, Oct 99 and Maintenance of Pest Management ULV Equipment, Version 1.0, Nov 99 for detailed instruction on maintaining and operating IPM equipment. Upon completion of the above-mentioned CD-ROMs, properly operate the following equipment: Ultra Low Volume (ULV) Fog Generator, Back Pack Mist Dust Blower, Hand-Held Fan ULV, Manual Duster, and Trapping Devices.**

**NOTE:**

The review questions for the equipment are contained in the above-mentioned CD-ROMs.

**5. Steps in Selecting, Maintaining, and Operating IPM Equipment.**

**5.1. To perform this task, follow these steps:**

**Step 1: Identify the Pest.**

- 1.1. Contact Command Entomologist at forward location.
- 1.2. Contact pest management shop NCOIC at forward locations (if possible).
- 1.3. Order DVEP from the [Armed Forces Pest Management Board](#).

**Step 2: Determine Control Method.**

- 2.1. Determine mission requirement.
  - 2.1.1. Permanent vs. temporary control.
- 2.2. Determine control level requirements.
  - 2.1.1. Heavy infestation vs. prevention.

**Step 3: Determine Pesticide Requirements.**

- 3.1. Identify Pest on label and follow required label rates and all directions thereof.
- 3.2. Work with Command Entomologist at the forward location.
- 3.3. Work with the pest management shop NCOIC at forward location (if possible).
- 3.4. Control method will drive the choices of pesticide requirements.

**Step 4: After pesticides are chosen.**

- 4.1. The proper dispersal equipment is determined to apply the pesticide correctly.
- 4.2. The following should be considered to determine the proper dispersal equipment:
  - 4.2.1. Deploy equipment according to pest cited in the DVEPS and pesticides utilized.
  - 4.2.2. Size of area can determine the size of equipment to deploy, i.e. if the encampment covers several acres or miles a compressed air sprayer will not be adequate alone.
  - 4.2.3. If the aircraft has limited cargo space, then several smaller pieces of equipment can be utilized instead of the larger equipment.
  - 4.2.4. Deploy equipment, which can accomplish several tasks using a single piece of equipment in place of one task equipment.
  - 4.2.5. Ensure that essential replacement parts are packed and deployed with equipment, i.e. spray nozzles, O-rings, screens, gaskets etc.)

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**SAFETY:**

**BEFORE SHIPPING EQUIPMENT, PURGE EQUIPMENT OF ALL PESTICIDES. CHECK EQUIPMENT ENSURING IT IS IN GOOD OPERATING CONDITION. REMOVE ALL FUELS (GASOLINE OR DIESEL) FROM EQUIPMENT.**

**REVIEW QUESTIONS  
FOR  
SELECT, MAINTAIN, AND OPERATE IPM EQUIPMENT SUCH AS:  
ULTRA LOW VOLUME (ULV) FOG GENERATOR (18.1.3.1.)  
BACK PACK MIST DUST BLOWER (18.1.3.2.)  
HAND-HELD FAN ULV (18.1.3.3.)  
COMPRESSED AIR SPRAYER (18.1.3.4.)  
MANUAL DUSTER (18.1.3.5.)  
TRAPPING DEVICES (18.1.3.6.)**

QUESTION	ANSWER
1. Which of the following is <b>not</b> a piece of portable equipment?	a. Hand-carried ULV battered-operated fan. b. ULV fog generator. c. Backpack mist-dust blower. d. Compressed air sprayer.
2. Which spray nozzle applies a fine stream for crack and crevice treatments?	a. Flat spray. b. Solid stream. c. Hollow-cone. d. Solid-cone.
3. Which sprayer is the mainstay of most pest control operations?	a. Hand-carried ULV battered-operated fan. b. ULV fog generator. c. Compressed air sprayer. d. Backpack mist-dust blower.
4. Which equipment is very lightweight and is used to apply liquids, dusts, or granules to outdoor areas?	a. Hand-carried duster. b. ULV fog generator. c. Compressed air sprayer. d. Backpack mist-dust blower.
5. What determines your control method?	a. Mission and level of control. b. Pesticide on hand. c. Availability of equipment. d. All of the above.
6. What determines the choice of pesticides?	a. Pesticides on hand. b. Control method. c. Availability of equipment. d. DVEP.
7. Which of the following are used for placement of pesticidal dusts?	a. Compressed air sprayer. b. Hydraulic sprayer. c. ULV. d. Hand bellows.
8. Trapping devices are <b>not</b> normally required for contingency operations.	a. False. b. True.

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**NOTE TO TRAINER:**

Continuing with the exercise scenario from the previous task, ensure the trainee selects pesticide applications that will utilize the IPM equipment listed below.

**SELECT, MAINTAIN, AND OPERATE IPM EQUIPMENT SUCH AS:**

1. ULTRA LOW VOLUME (ULV) FOG GENERATOR (18.1.3.1.)
2. BACK PACK MIST DUST BLOWER (18.1.3.2.)
3. HAND –HELD FAN ULV (18.1.3.3.)
4. COMPRESSED AIR SPRAYER (18.1.3.4.)
5. MANUAL DUSTER (18.1.3.5.)
6. TRAPPING DEVICES (18.1.3.6.)

**PERFORMANCE CHECKLIST**

**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee’s performance using this checklist.

<b>DID THE TRAINEE....?</b>	<b>YES</b>	<b>NO</b>
1. Research DVEP’s for pest identification		
2. Choose the correct pesticide for pest identified		
3. Determine the proper dispersal equipment for the pesticide		
4. Operate and maintain the ultra low volume (ULV) fog generator correctly		
5. Operate and maintain the back pack mist dust blower correctly		
6. Operate and maintain the hand-held fan ULV correctly		
7. Operate and maintain the compressed air sprayer correctly		
8. Operate and maintain the manual duster correctly		
9. Operate and maintain trapping devices correctly		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.



## PREPARE ASSETS

MODULE 18

AFQTP UNIT 1

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**SELECT PERSONAL PROTECTIVE EQUIPMENT (18.1.4.)**

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**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**SELECT PERSONAL PROTECTIVE EQUIPMENT**  
***Task Training Guide***

<b>STS Reference Number/Title:</b>	18.1.4., Select Personal Protective Equipment.
<b>Training References:</b>	<ol style="list-style-type: none"> <li>1. <a href="#">AFI 32-1053, <i>Pest Management Program</i>.</a></li> <li>2. <a href="#">AFI 32-7002, <i>Environmental Information Management System</i>.</a></li> <li>3. <a href="#">AFI 32-7006, <i>Environmental Program In Foreign Countries</i>.</a></li> <li>4. <a href="#">AFH 10-222, Volume 4, <i>Environmental Guide for Contingency Operation</i>.</a></li> <li>5. <a href="#">AFPMB TIM 24, <i>Contingency Pest Management Pocket Guide</i>.</a></li> <li>6. <a href="#">AFPMB TIM 14, <i>Personal Protective Equipment for Pest Management Personnel</i>.</a></li> <li>7. <a href="#">Military Pest Management Handbook.</a></li> </ol>
<b>Prerequisites:</b>	<ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E433 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFIs 32-1053, 32-7002, and 32-7006.</li> <li>2.2. AFH 10-222, Volume 4.</li> <li>2.3. AFPMB TIM 14 &amp; 24.</li> <li>2.4. Military Pest Management Handbook.</li> </ol> </li> </ol>
<b>Equipment/Tools Required:</b>	<ol style="list-style-type: none"> <li>1. Coveralls/Protective Suits.</li> <li>2. Footwear.</li> <li>3. Gloves.</li> <li>4. Aprons.</li> <li>5. Full/Half Respirators.</li> <li>6. Headgear.</li> </ol>
<b>Learning Objective:</b>	Trainee should know what items of Personal Protective Equipment (PPE) are required for pest control.
<b>Samples of Behavior:</b>	Trainee should be able to select what items of PPE are required for pest control.
<b>Notes:</b>	

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

## SELECT PERSONAL PROTECTIVE EQUIPMENT

**1. Background:** The Environmental Protection Agency (EPA) defines pesticide application personal protective equipment (PPE) as clothing and devices that are worn to protect the human body from contact with pesticides or pesticide residues. Personal protective equipment includes such items as coveralls or protective suits, footwear, gloves, aprons, full-face respirators and headgear. It does not include ordinary shirts, pants, shoes and other regular work clothing. This definition only applies to pesticide applicators for many other crafts have their own applicable PPE definition.

1.1. PPE requirements are on the pesticide label under the “Hazards to Humans and Domestic Animals” statement. Additional requirements for early-entry workers are under the “Directions For Use” section following the “restricted entry” statement. By federal law, you must adhere to all PPE instructions on the pesticide label. Because Bioenvironmental Engineering personnel must fit test respirators for each person, you should have your own and refrain from borrowing someone else’s.

**2. The following are the steps in selecting personal protective equipment.**

**NOTE:**

Refer to the manufacturer’s instructions for proper inspection, wear, cleaning and storage.

### 2.1. SELECTING GLOVES.

**Step 1: Select gloves based on the pesticide label instructions.**

1.1. One type of glove will not work for all applications (i.e., water proof vs. chemical resistant).

**Step 2: Select the size to fit your hands.**

2.1. Gloves that are too small may cut off circulation.

2.2. Gloves that are too large may become a safety hazard.

### 2.2. SELECTING FACE SHIELD or GOGGLES.

**Step 1: Check pesticide container to see if application requires eye protection.**

1.1. When mixing pesticides always wear a face shield.

**Step 2: Ensure the band on the face shield or goggles will not absorb pesticides.**

### 2.3. SELECTING APRONS.

**Step1: Select an apron to fit your height and size.**

**Step 2: When mixing pesticides you must wear a rubber apron.**

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#### **2.4. SELECTING RESPIRATORS.**

**Step 1: Select breathing protection devices based on pesticide label instructions (full or half-face).**

**Step 2: Select the proper respirator size based on the fit test by medical personnel.**

**Step 3: Respirators must have National Institute of Occupational Safety and Health (NIOSH) certification.**

#### **2.5. SELECTING BOOTS.**

**Step 1: Wear based on pesticide label requirements.**

**Step 2: When mixing pesticides, it's advised you wear rubber boots if label dictates.**

#### **2.6. SELECTING HEARING PROTECTION.**

**Step 1: Wear based on pesticide label or equipment manufacturer requirements (whichever is stricter).**

**Step 2: Inspect for serviceability before and after use.**

**Step 3: Clean after use.**

**REVIEW QUESTIONS  
FOR  
SELECT PERSONAL PROTECTIVE EQUIPMENT**

QUESTION	ANSWER
1. What makes up personal protection equipment (PPE) according to the Environmental Protection Agency (EPA)?	<ul style="list-style-type: none"> <li>a. Headgear, footwear, gloves, aprons, and respirators.</li> <li>b. Hardhats, regular work clothing, and respirators.</li> <li>c. Gloves, aprons, and regular work clothing.</li> <li>d. Gloves, hardhats, apron, respirators, and regular work clothing.</li> </ul>
2. Where must pesticide manufactures list PPE requirements?	<ul style="list-style-type: none"> <li>a. "Direction for Use" and "Hazard to Humans and Domestic Animals" label statements.</li> <li>b. Application equipment instructions and pesticide container label.</li> <li>c. 40 Code of Federal Regulation (CFR) Part 156.212, <i>Personal protective equipment statements</i>.</li> <li>d. 29 Code of Federal Regulation (CFR) Part 1910.132, <i>General requirements</i>.</li> </ul>
3. Who conducts the respirator fit test?	<ul style="list-style-type: none"> <li>a. Bioenvironmental Engineering.</li> <li>b. Base Fire Department.</li> <li>c. Military Public Health.</li> <li>d. Pesticide Shop supervisor.</li> </ul>

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## SELECT PERSONAL PROTECTIVE EQUIPMENT

### PERFORMANCE CHECKLIST

#### INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....?	YES	NO
1. Acquire his/her personal protective equipment		
2. Select PPE according to label directions or application equipment manufacture's requirements		
3. Don the PPE to check for the right size correctly		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

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## SET UP EXPEDIENT FIELD FACILITY

### CONTROL ASSETS

MODULE 18

AFQTP UNIT 2

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### INVENTORIES (18.2.3.1.)

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**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**INVENTORIES**  
**Task Training Guide**

<b>STS Reference Number/Title:</b>	18.2.3.1., Inventories.
<b>Training References:</b>	<ol style="list-style-type: none"> <li>1. <a href="#">AFI 32-1053, Pest Management Program.</a></li> <li>2. <a href="#">AFI 32-7002, Environmental Information Management System.</a></li> <li>3. <a href="#">AFI 32-7006, Environmental Program In Foreign Countries.</a></li> <li>4. <a href="#">AFH 10-222, Volume 4, Environmental Guide for Contingency Operations.</a></li> <li>5. <a href="#">AFPMB TIM 24, Contingency Pest Management Pocket Guide.</a></li> <li>6. <a href="#">Military Pest Management Handbook.</a></li> </ol>
<b>Prerequisites:</b>	<ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E433 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFIs 32-1053, 32-7002, and 32-7006.</li> <li>2.2. AFH 10-222, Volume 4.</li> <li>2.3. AFPMB TIM 24.</li> <li>2.4. Military Pest Management Handbook.</li> </ol> </li> </ol>
<b>Equipment/Tools Required:</b>	<ol style="list-style-type: none"> <li>1. DD Form 1532-1, "Pest Management Maintenance Record".</li> <li>2. Lap top computer if available.</li> </ol>
<b>Learning Objective:</b>	The trainee will learn the basic steps required for keeping and maintaining inventory records.
<b>Samples of Behavior:</b>	Trainee will be able to establish and maintain inventory records.
<b>Notes:</b>	<ol style="list-style-type: none"> <li>1. To successfully complete this element, follow the steps outlined in this procedure--no exceptions.</li> <li>2. Trainer needs to design a scenario to enhance the trainee's knowledge of establishing inventory records on deployments.</li> </ol>

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

## INVENTORIES

**1. Background:** As a pest controller, it is essential to control the assets that are used in the field. These assets include pesticides, equipment, and PPE. The best method of accomplishing this task is to maintain strict inventories and accountability of all assets while in the field. In this section, inventory of assets will be discussed including the steps to follow to achieve this goal.

**2. To perform this task, follow these steps:**

**Step 1: Accomplishing Assets Inventory.**

1.1. It is imperative to have a complete inventory of all assets **before** leaving.

**Step 2: The following steps are used to accomplish an inventory of assets during a deployment:**

2.1. Upon arrival be sure to re-inventory the assets. This accounts for any items lost in shipping.

2.2. A complete inventory of all pesticides and equipment should be accomplished at least monthly or as needed.

2.3. Before leaving the deployment area, inventory all pesticides and equipment to ensure all unused assets are reshipped to the original site.

**Step 3: Upon arrival at original site, perform a final inventory to account for any assets lost in shipment.**

**NOTE:**

Create an inventory sheet including product name and quantity. A good method for completing the monthly inventory is to use the DD Form 1532-1, Pest Management Maintenance Report (see Module 13). A copy of the inventory should be given to the Bio-Environmental Engineer and the Fire Department quarterly. If in an area where more than one person is continually using chemicals and equipment, inventories will be more frequent.

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**REVIEW QUESTIONS  
FOR  
INVENTORIES**

<b>QUESTION</b>	<b>ANSWER</b>
1. The best method of accomplishing control of assets in the field is by?	a. Strict inventories and accountability. b. Inventories. c. Accountability. d. None of the above.
2. What two things are included in an inventory sheet?	a. Ingredients. b. Product name. c. Quantity. d. Both b and c.
3. In the field, monthly reports are maintained by using what form?	a. DD Form 1348-1. b. DD Form 1532-1. c. AF Form 2005. d. DD Form 1348-6.
4. How often should a copy of the inventory be given to the Bio-Environmental Engineers and the Fire Department?	a. Weekly. b. Monthly. c. Quarterly. d. Yearly.

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**NOTE TO TRAINER:**

In order for the trainee to complete the inventory and security tasks, you need to continue with the exercise scenario from Unit 1. After the trainee has selected the pesticides for the deployment have him/her conduct the required inventories and security requirements for the pesticides. Another way to complete these tasks is to have the trainee perform these tasks during the annual Prime BEEF bivouac.

**INVENTORIES**

**PERFORMANCE CHECKLIST**

**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

<b>DID THE TRAINEE....?</b>	<b>YES</b>	<b>NO</b>
1. Conduct an inventory of the assets before leaving		
2. Conduct an inventory of the assets upon arrival		
3. Accomplish an inventory at least monthly		
4. Perform an inventory before departure		
5. Re-inventory assets upon arrival at home station		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.



## SET UP EXPEDIENT FIELD FACILITY

### CONTROL ASSETS

MODULE 18

AFQTP UNIT 2

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SECURITY (18.2.3.2.)

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**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**SECURITY**  
***Task Training Guide***

<b>STS Reference Number/Title:</b>	18.2.3.2., Security.
<b>Training References:</b>	<ol style="list-style-type: none"> <li>1. <a href="#">AFI 32-1053, <i>Pest Management Program</i></a>.</li> <li>2. <a href="#">AFI 32-7002, <i>Environmental Information Management System</i></a>.</li> <li>3. <a href="#">AFI 32-7006, <i>Environmental Program In Foreign Countries</i></a>.</li> <li>4. <a href="#">AFH 10-222, Volume 4, <i>Environmental Guide for Contingency Operations</i></a>.</li> <li>5. <a href="#">AFPMB TIM 24, <i>Contingency Pest Management Pocket Guide</i></a>.</li> <li>6. <a href="#">Military Pest Management Handbook</a>.</li> <li>7. <a href="#">AFPMB TIM 21, <i>Pesticide Disposal Guide for Pest Control Shops</i></a>.</li> </ol>
<b>Prerequisites:</b>	<ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E433.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFIs 32-1053, 32-7002, and 32-7006.</li> <li>2.2. AFH 10-222, Volume 4.</li> <li>2.3. AFPMB TIM 21 and 24.</li> </ol> </li> </ol>
<b>Equipment/Tools Required:</b>	TIM-21, Pesticide Disposal Procedures for Pest Control Shops.
<b>Learning Objective:</b>	Trainee should know how to secure and be accountable for deployed pest control assets.
<b>Samples of Behavior:</b>	Trainee will be able to secure pest control assets.
<b>Notes:</b>	
<ol style="list-style-type: none"> <li>1. To successfully complete this element, follow the steps outlined in this procedure--no exceptions.</li> <li>2. Trainer needs to design a scenario to enhance the trainee's knowledge of establishing security for pesticides on deployments.</li> </ol>	

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

## SECURITY

**1. Background:** In deployed areas, the need to secure your assets will be one of your primary concerns. If possible, a portable containment building should be deployed with you or use expedient methods to construct a temporary building to house your assets. The area should be isolated, above the flood plain and provisions made to prevent unauthorized entry. The building and surrounding area should be monitored to prevent unnecessary contamination or loss of vital pest control assets. Remember the pest control assets deployed with you are your responsibility.

**2. To perform this task, follow these steps:**

**Step 1: Obtain a storage area for pesticides.**

- 1.1. The ideal storage container would be a lockable building with good ventilation. Examples of other storage areas could be storage lockers, temper tents, conex boxes, and pick-up trucks with shells.
- 1.2. The building should be marked with applicable warning signs and padlocked.
- 1.3. If possible, make sure building has adequate ventilation, especially in a hot climate.
- 1.4. Building and storage shelves should be made of metal or impervious material if possible.
- 1.5. Once container has been utilized for chemical storage, the container should always be used for chemical storage.

**Step 2: Secure facility.**

- 2.1. Keep building locked at all times and control the keys to ensure that only certified individuals handle the pesticides.

**HINT:**

The environmental control technician is responsible for all chemicals shipped to the deployment area. Any misuse or mishap concerning pesticides is the responsibility of the environmental control personnel.

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**REVIEW QUESTIONS  
FOR  
SECURITY**

<b>QUESTION</b>	<b>ANSWER</b>
1. Which of the following is <b>not</b> a prerequisite for a pest building site?	a. Isolated area. b. Above flood plain. c. Beside dining facility. d. Prevent unauthorized entry.
2. The chemical storage facility does not need to be ventilated.	a. True. b. False.
3. Which of the following is <b>not</b> a possible chemical storage facility?	a. Conex box. b. Storage locker. c. Refrigerated food locker. d. Temper tent.
4. Chemical storage shelves should be made of wood.	a. True. b. False.

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**NOTE TO TRAINER:**

In order for the trainee to complete the inventory and security tasks, you need to continue with the exercise scenario from Unit 1. After the trainee has selected the pesticides for the deployment have him/her conduct the required inventories and security requirements for the pesticides. Another way to complete these tasks is to have the trainee perform these tasks during the annual Prime BEEF bivouac.

**SECURITY**

**PERFORMANCE CHECKLIST**

**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

<b>DID THE TRAINEE....?</b>	<b>YES</b>	<b>NO</b>
1. Acquire the proper storage container		
2. Implement a security and monitoring plan		
3. Locate shop in an adequate location		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.



## CONDUCT OPERATIONS

### IMPLEMENT IPM

MODULE 18

AFQTP UNIT 3

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### DISEASE VECTORS (18.3.2.1.)

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**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**DISEASE VECTORS**  
***Task Training Guide***

<b>STS Reference Number/Title:</b>	18.3.2.1., Disease Vectors.
<b>Training References:</b>	<ol style="list-style-type: none"> <li>1. <a href="#">AFI 32-1053, <i>Pest Management Program</i></a>.</li> <li>2. <a href="#">AFI 32-7002, <i>Environmental Information Management System</i></a>.</li> <li>3. <a href="#">AFI 32-7006, <i>Environmental Program In Foreign Countries</i></a>.</li> <li>4. <a href="#">AFH 10-222, Volume 4, <i>Environmental Guide for Contingency Operations</i></a>.</li> <li>5. <a href="#">AFPMB TIM 26, <i>Tick-Borne Diseases: Vector Surveillance and Control</i></a>.</li> <li>6. <a href="#">AFPMB TIM 24, <i>Contingency Pest Management Pocket Guide</i></a>.</li> <li>7. <a href="#">Military Pest Management Handbook, Chapter 7, <i>Medically Important Arthropods</i></a>.</li> </ol>
<b>Prerequisites:</b>	<ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E433 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFIs 32-1053, 32-7002, and 32-7006.</li> <li>2.2. AFH 10-222, Volume 4.</li> <li>2.3. AFPMB TIMs 24 and 26.</li> <li>2.4. Military Pest Management Handbook, Chapter 7.</li> </ol> </li> </ol>
<b>Equipment/Tools Required:</b>	<ol style="list-style-type: none"> <li>1. Personal Protective Equipment (PPE).</li> <li>2. Topographical maps.</li> <li>3. Disease Vector Ecology Profiles (DVEPS).</li> <li>4. Survey equipment.</li> <li>5. Identification keys, and control equipment.</li> </ol>
<b>Learning Objective:</b>	The trainee should know the basic steps required in performing field disease vector surveys and implementing control procedures.
<b>Samples of Behavior:</b>	<ol style="list-style-type: none"> <li>1. Trainee should be more competent and self-assured in performing field surveys</li> <li>2. Trainee should be capable of identifying disease vectors.</li> </ol>
<b>Notes:</b>	
<ol style="list-style-type: none"> <li>1. To successfully complete this element, follow the steps outlined in this lesson and the Military Pest Management Handbook Chapter 7.</li> <li>2. Trainer should provide trainee with inspection equipment outlined in this lesson.</li> <li>3. Trainer should construct scenarios for varies types of disease vectors for local and deployed areas.</li> </ol>	

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## DISEASE VECTORS

**1. Background:** Since the organization of the first US military forces, disease vectors have hindered or devastated our military operations. The most advantageous means of fighting these pests is through knowledge, preparation, and implementation of surveys and proper control techniques.

**2. Mosquitoes:** There are several medically important disease vectors such as mosquitoes, flies, fleas, ticks, lice, and mites. The most important disease vector pest is the mosquito that transmits yellow fever, malaria, dengue, and encephalitis. These diseases reduce our operability by causing death and illness. Preparing our deployable forces and implementing preventative measures reduces our exposure to these diseases. The key to force protection is proper sanitation and correctly using government issued repellents. This lesson will help expand your understanding about surveying and controlling disease vectors.

### **2.1. To perform this task, follow these steps:**

#### **Step 1: Collect Information for deployment.**

- 1.1. Disease Vector Ecology Profiles (DVEP's), Figure 1.
- 1.2. Topographical maps (if available), Figure 2.

#### **NOTE:**

Topographical maps depict low lying areas such as swamps, marshes, lakes, small ponds and creeks.

#### **Step 2: Collect survey equipment.**

- 2.1. Light traps.
- 2.2. Dippers.
- 2.3. Black boxes.

#### **Step 3: Setup survey equipment in suspected locations.**

- 3.1. Setup light traps in dark areas close to breeding areas-never close to light sources.
- 3.2. Carbon dioxide (dry ice) enhances mosquito collection.
- 3.3. When dipping for mosquito larvae:
  - 3.3.1. Skim the water for Anopheles mosquitoes.
  - 3.3.2. Dip the water for Culex and other species of mosquitoes.
- 3.4. Aedes Aegypti and Aedes albopictus are not attracted to light traps.

#### **Step 4: Collect specimens.**

- 4.1. Identify mosquitoes with the help of mosquito keys.

#### **NOTE:**

Although you may be tasked with mosquito identification, this duty primarily lies with medical Military Public Health field. Contact them for specific specimen collection instructions.

#### **Step 5: After identification, select proper Integrated Pest Management (IPM) controls.**

- 5.1. IPM techniques include draining or back filling water pools.
- 5.2. Reducing vegetation used as resting and breeding grounds for larvae.
- 5.3. Cleaning drainage ditches to allow expedient water flow.

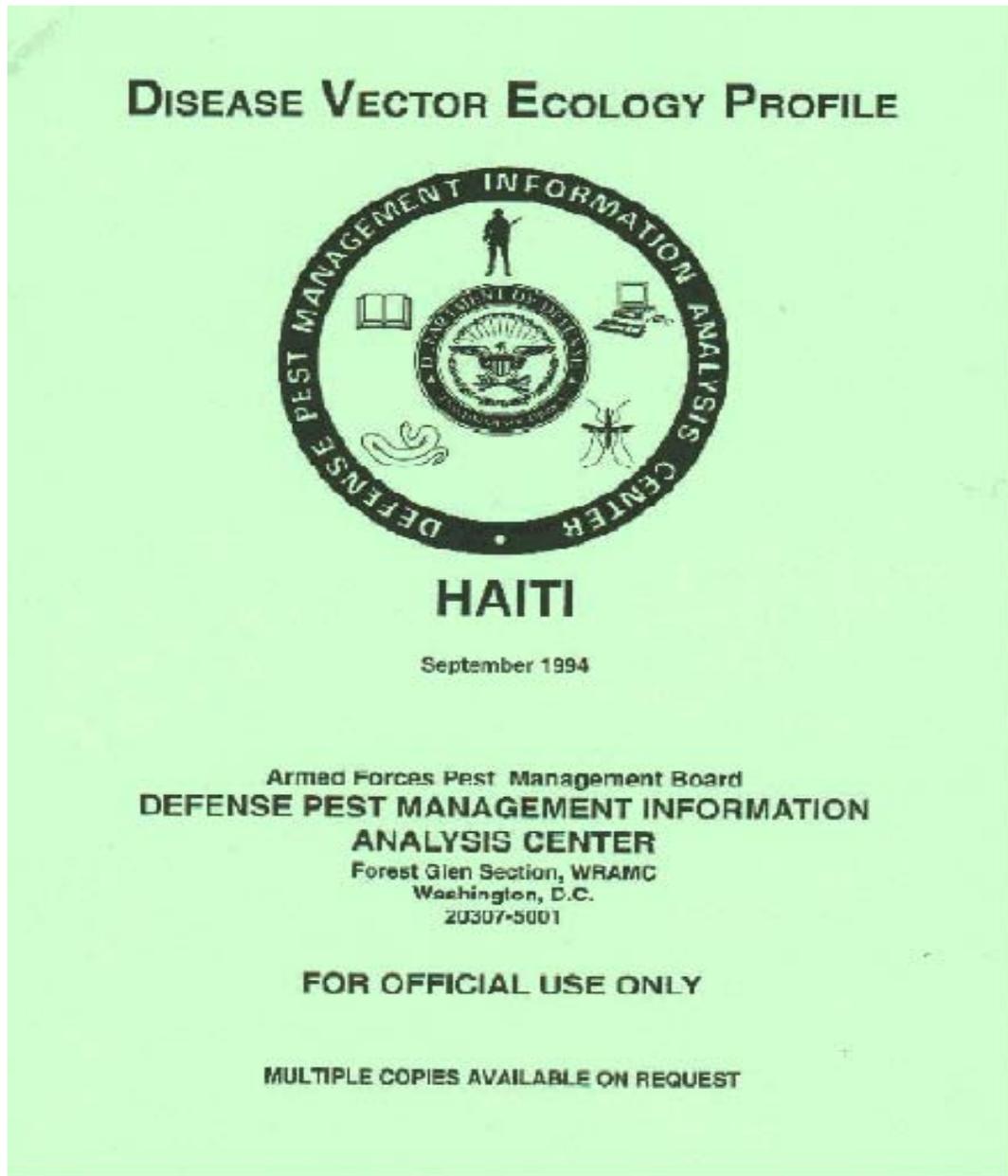
**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**Step 6: Apply IPM control measures to encompass fogging and larviciding to reduce disease vectors.**

**Step 7: Continue surveys to ascertain the benefit of the control measures utilized.**

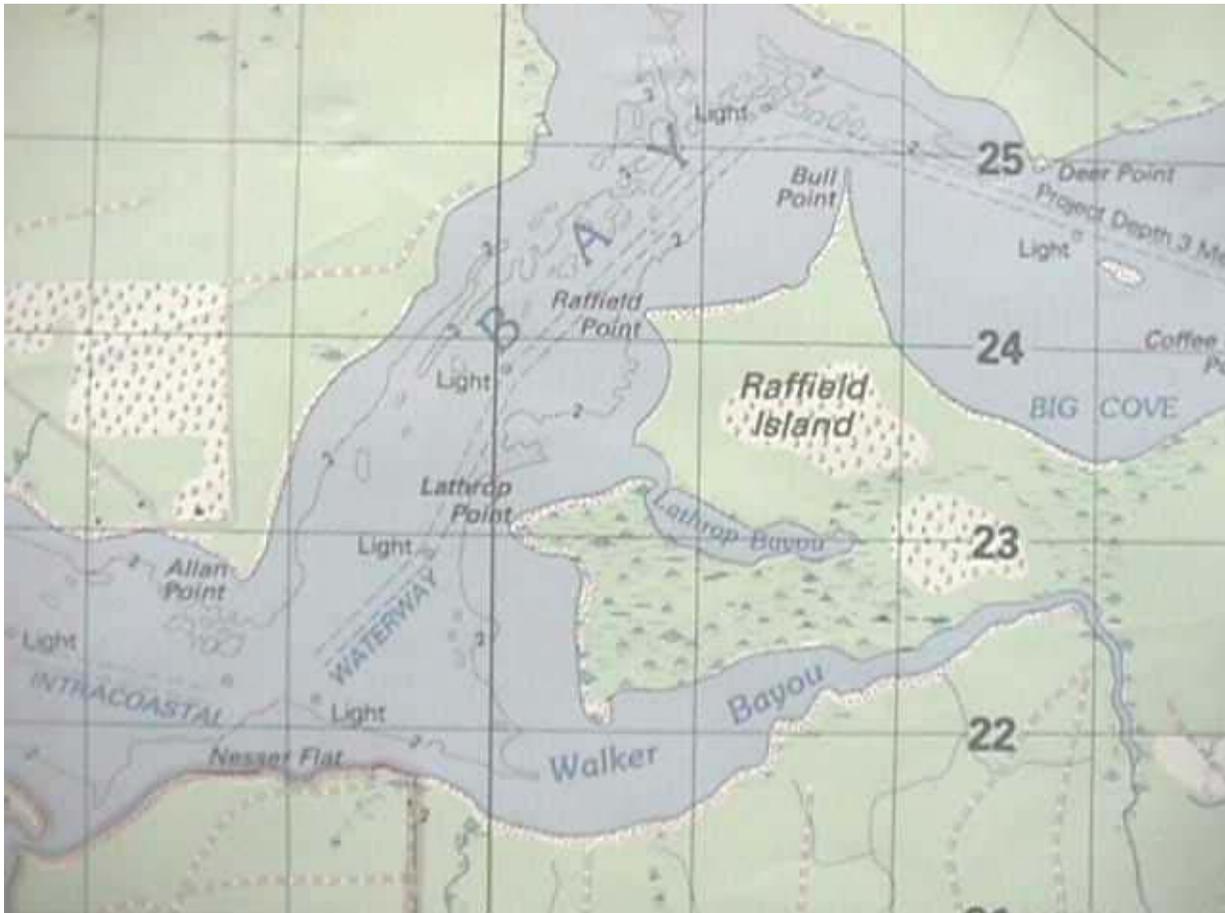
**NOTE:**

Some areas have dense growth and are inaccessible and hold mosquito populations far above acceptable levels. You have the option to request aerial spraying through your MAJCOM Pest Management Consultant if this situation arises at your location.



**Figure 1, Disease Vector Ecology Profiles (DVEP's) for Haiti.**

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.



**Figure 2, Typical Topographical Map.**

**3. Flies:** Flies are important to us because they spread diseases, destroy agricultural crop, and annoy personnel. Flies are both indoor and outdoor pests and breed mainly in animal excrement and garbage. They spread typhoid fever, diarrhea, dysentery, and cholera. Of the many flies, the housefly is the most common, as well as the most dangerous, insect closely associated with humans. The following steps will explain how to perform field surveys and controls for flies. Note however, the best control for all fly species is proper sanitation.

**3.1. To perform this task, follow these steps:**

**Step 1: Collect DVEP.**

**Step 2: Collect survey equipment.**

2.1. Fly traps.

2.2. Fly grills.

**Step 3: Setup survey equipment in suspected locations.**

**Step 4: Collect specimens and identify flies with the fly pictorial keys.**

**Step 5: After identification select proper Integrated Pest Management (IPM) controls.**

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**Step 6: Apply IPM control measures.**

- 6.1. Sanitation is the major priority in fly control.
  - 6.1.1. All garbage should be buried or removed from deployment area.
  - 6.1.2. All human excretions should be buried or burned.
- 6.1. Use screening to reduce indoor fly populations.
- 6.2. Fly baits.
- 6.3. Aerosols.
- 6.4. Light traps.
- 6.5. Sticky strips (note: these are messy and careful consideration should be used before employing in dining facilities, however; they are effective).

**NOTE:**

In recent deployments, it was found that light traps were the best source of control for flies. The traps work by attracting flies to the light and trapping them to a glue-board at the bottom of the trap. Glue boards should be checked at least daily, more often in heavily infested areas.

**Step 7: Continue surveys to ensure the control measures are working.**

**SAFETY:**

**WHEN USING THE HAND-HELD ULV SPRAYER, USE A FULL FACE RESPIRATOR, COVERALLS, GLOVES, AND HARD HAT.**

**4. Fleas:** There are five types of common fleas, the oriental rat flea, dog flea, cat flea, human flea, and the northern rat flea. The oriental rat flea is most important because it carries Bubonic Plague and Marine Typhus. Fleas differ by host preferences, vector ability, and degree of association with people. One must know the species in order to judge the possible disease significance and to plan suitable control methods. In this lesson, you will learn to perform surveys and control techniques for field deployments. The following are steps involved in surveying and controlling oriental rat fleas.

**4.1. To perform this task, follow these steps:**

**Step 1: Obtain the DVEP.**

**Step 2: Collect the survey equipment.**

- 2.1. Rodent cages.
- 2.2. Snap traps.
- 2.3. Swabbing tools. The swabbing tool can be made from a stick and piece of flannel. Cut a piece of flannel and tie it to the stick.
- 2.4. Collection pan.
- 2.5. If the DVEP's indicate heavy rodent activity in the area, a microscope should be packed.

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**NOTE:**

The only time fleas are really important in a contingency operation is if there is a plague epidemic in the area. *A microscope will be needed for this process.*

**Step 3: Survey area for rodents and rodent burrows.**

**3.1.** To swab a rodent burrow, just push the stick into it and move the flannel around. The fleas will stick to the flannel. The flannel can be combed or brushed into a pan for identification.

**3.2.** For area treatment place a white cloth on the surface and drag your feet/brush your hands around the outside of the cloth look for flea activity on the cloth. Since fleas are dark in color they will stand out against the background or walk through the area in a pair of oversized socks.

**Step 4: Trap rodents and swab rodent burrows.**

**4.1.** It is recommended to use live traps to capture rodents and animals for flea surveys; fleas leave cold dead bodies.

**4.2.** Snap traps can be used, but specimen must be collected quickly before the body temperature drops, usually within a 6 to 8 hours.

**Step 5: Collect fleas from survey procedures and identify them with the assistance of a flea key.**

**5.1.** Live animals can be anesthetized and combed with a fine-toothed comb over a large white enameled pan to collect fleas, which are also anesthetized.

**NOTE:**

Although you may be tasked with flea identification, this duty primarily lies with medical Military Public Health field.

**Step 6: If oriental rat fleas are found, control measures must be taken.**

**6.1.** Dust the rodent burrows to control the fleas and control rodents by trapping or poisoning.

**NOTE:**

The fleas must be controlled first. If the rodents are controlled first, then the fleas may leave the burrows and attack humans.

**Step 7: Continue surveying to assess the benefit of controls performed.**

**5. Ticks:** Ticks are annoying pests and vector many diseases including Lyme disease, tick-borne typhus (spotted fever), tularemia, relapsing fever, tick-borne encephalitis, and hemorrhagic fever. Tick bites are irritating and if removed forcibly cause sores, infections, and blood poisoning. The contingency survey and control techniques are listed below.

**5.1. To perform this task, follow these steps:**

**Step 1: Obtain a DVEP for the deployed area.**

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**Step 2: Select an area suspected of tick infestation.**

**Step 3: Perform a tick drag survey.** To perform this survey the following items are needed:

- 3.1. Two sticks about four feet long.
- 3.2. A piece of white cloth approximately 4 feet square.
- 3.3. A piece of rope approximately 6-7 feet long.
- 3.4. Attach the cloth to the sticks one at the top and one at the bottom.
- 3.5. Tie the rope to each end of one of the sticks and proceed to drag the material through the suspected area.

**Step 4: If ticks are present. Perform control measures:**

- 4.1. Cut or mow the vegetation.
- 4.2. Spray the area with a residual spray.

**Step 5: Continue to survey and assess control results.**

**6. Mites:** Mites are very small arachnids with an unsegmented body and are distributed worldwide. Their habitats range from plant galls, rubbish and soil, to fresh and sea water. Mites are rarely seen by the naked eye. They are important in contingency operations because they carry mange, scabies, and scrub typhus. Surveys conducted for mites vary with habitat. The contingency surveys and management procedures for mites are listed below.

**6.1. To perform this task, follow these steps:**

**Step 1: Obtain DVEP for deployed area.**

**Step 2: Select an area suspected of mite infestation.**

**Step 3: Place 12 inch squares of white paper, paper plates, or black glass plates on the ground for one to five minutes in a vertical position, if present they will climb to the outer edges and congregate their.**

- 3.1. Use a fine pointed brush for picking up mites and brush them into a vial of alcohol for identification.
- 3.2. This procedure is mainly used for chiggers and is not the most practical method for all mites since as we stated earlier that mites come from a varied ecological climate.

**NOTE:**

Always apply a repellent to yourself before starting the task.

**Step 4: Once mites are detected, start your management controls.**

- 4.1. Cut or mow vegetation.
- 4.2. Residual spraying.
- 4.3. Building modification to eliminate rodents and birds from nesting and attracting mites into the facilities.
- 4.4. Apply self-protection.
- 4.5. Medical personnel should check infected personnel; we do not perform troop inspection.

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**NOTE:**

Ensure deployed forces use their individual protective measures, especially repellents.

**Step 5:** Survey periodically and apply control measures when needed.

- 5.1.** Place chemical around windows sills and door weather stripping.
- 5.2.** At the tops of foundations, on baseboards, and edges of floors.
- 5.3.** Sulfur has long been used as a chigger repellent.

**7. Lice:** Lice are most common in times of stress, such as war, famine or other disasters when people can't or don't bathe or wash clothing regularly. The sucking lice are the most important medically. Severe infestations may lead to scratching, secondary infections and scarred pigmented skin conditions known as pediculosis. Lice transmit pathogens causing human disease. There are three types of lice normally found on humans: body, head, and crab lice. The body louse is associated with epidemic louseborne typhus and relapsing and trench fever. The contingency surveys and management procedures for lice are listed below.

**7.1. To perform this task, follow these steps:**

**Step 1: Obtain DVEP for deployed area.**

**Step 2: Surveys are performed when lice are detected; only medical personnel conduct troop inspections.**

**2.1.** As pest managers, we will conduct inspections in areas of contamination, (restrooms, public areas, and infected persons rooms).

**Step 3: Once detected, the infected individual's clothing and bedding is inspected.**

**Step 4: Apply delousing and disinfecting control measures.**

**NOTE:**

Qualified medical personnel conduct these surveys. Inspect all individuals who share quarters with the infected individual. Special attention should be made to the seams of clothing. Laundering clothing is a disinfecting control. Applying an insecticidal powder is a delousing control.

**Step 5: Repeat lice surveys and controls when directed.**

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**REVIEW QUESTIONS  
FOR  
DISEASE VECTORS**

QUESTION	ANSWER
1. What is key to force protection from disease vectors?	a. Availability of medical personnel. b. Effective pesticides. c. Proper sanitation and use of repellents. d. Knowledge of disease vectors.
2. What is the most important disease vector?	a. Fly. b. Mosquito. c. Flea. d. Mite.
3. Always place light traps for mosquitoes next to street lights.	a. True. b. False.
4. What disease vector do we employ aerial spraying against?	a. Lice. b. Tick. c. Fly. d. Mosquito.
5. Flies are both indoor and outdoor pests.	a. True. b. False.
6. The major priority in fly control is _____.	a. Screening. b. Fly traps. c. Fly baits. d. Sanitation.
7. The most important flea for contingency operations is the _____.	a. Oriental rat flea. b. Dog flea. c. Cat flea. d. Human flea.
8. Who is primarily responsible for identifying disease vectors during deployment?	a. Pest managers. b. Bioenvironmental Engineering. c. Military Public Health. d. Command Entomologist.

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**REVIEW QUESTIONS  
FOR  
DISEASE VECTORS (CONTINUED)**

QUESTION	ANSWER
9. Why are mites difficult to identify?	<ul style="list-style-type: none"> <li>a. They closely resemble lice.</li> <li>b. They are very small.</li> <li>c. They have very soft bodies.</li> <li>d. There are too many species to catalog.</li> </ul>
10. Which disease vector do you use a white paper or plates to survey for?	<ul style="list-style-type: none"> <li>a. Ticks.</li> <li>b. Fleas.</li> <li>c. Mites.</li> <li>d. Flies.</li> </ul>
11. Which of the following is <b>not</b> a natural habitat for mites?	<ul style="list-style-type: none"> <li>a. Fresh and sea water.</li> <li>b. Rubbish and soil.</li> <li>c. Body hair.</li> <li>d. Plant galls.</li> </ul>
12. Mowing vegetation and residual spraying are controls for mites.	<ul style="list-style-type: none"> <li>a. True.</li> <li>b. False.</li> </ul>
13. Surveys for lice are conducted by _____?	<ul style="list-style-type: none"> <li>a. Environmental personnel.</li> <li>b. Military Public health.</li> <li>c. Qualified medical personnel.</li> <li>d. Any one.</li> </ul>
14. Which is a delousing control?	<ul style="list-style-type: none"> <li>a. Applying insecticidal powder.</li> <li>b. Laundering clothes.</li> <li>c. Applying antibacterial ointment.</li> <li>d. All the above.</li> </ul>

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## DISEASE VECTORS

### PERFORMANCE CHECKLIST

#### INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....?	YES	NO
<b>Mosquito</b>		
1. Obtain a DVEP		
2. Collect proper survey equipment		
3. Setup equipment correctly		
4. Perform a survey		
5. Identify pests		
6. Select proper IPM control techniques		
7. Select proper PPE to perform control techniques		
<b>Flies</b>		
1. Obtain a DVEP		
2. Collect proper survey equipment		
3. Setup equipment correctly		
4. Perform a survey		
5. Identify pests		
6. Select proper IPM control techniques		
7. Select proper PPE to perform control techniques		
<b>Fleas</b>		
1. Obtain a DVEP		
2. Collect proper survey equipment		
3. Setup equipment correctly		
4. Perform a survey		
5. Identify pests		
6. Select proper IPM control techniques		
7. Select proper PPE to perform control techniques		
<b>Ticks</b>		
1. Obtain a DVEP		
2. Collect proper survey equipment		
3. Setup equipment correctly		
4. Perform a survey		
5. Identify pests		
6. Select proper IPM control techniques		
7. Select proper PPE to perform control techniques		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

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## CONDUCT OPERATIONS

### IMPLEMENT IPM

MODULE 18

AFQTP UNIT 3

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### VERTEBRATE PESTS (18.3.2.2.)

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**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**VERTEBRATE PESTS**  
***Task Training Guide***

<b>STS Reference Number/Title:</b>	18.3.2.2., Vertebrate Pests.
<b>Training References:</b>	<ol style="list-style-type: none"> <li>1. <a href="#">AFI 32-1053, <i>Pest Management Program</i></a>.</li> <li>2. <a href="#">AFI 32-7002, <i>Environmental Information Management System</i></a>.</li> <li>3. <a href="#">AFI 32-7006, <i>Environmental Program In Foreign Countries</i></a>.</li> <li>4. <a href="#">AFH 10-222, Volume 4, <i>Environmental Guide for Contingency Operations</i></a>.</li> <li>5. <a href="#">AFPMB TIM 24, <i>Contingency Pest Management Pocket Guide</i></a>.</li> <li>6. <a href="#">Military Pest Management Handbook, Chapter 10, <i>Rodents, Birds, Bats, and Other Nonarthropod Pest</i></a>.</li> </ol>
<b>Prerequisites:</b>	<ol style="list-style-type: none"> <li>1. <b>Possess as a minimum, a 3E433 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFIs 32-1053, 32-7002, and 32-7006.</li> <li>2.2. AFH 10-222, Volume 4.</li> <li>2.3. AFPMB TIM 24.</li> <li>2.4. Military Pest Management Handbook, Chapter 10.</li> </ol> </li> </ol>
<b>Equipment/Tools Required:</b>	Equipment for surveying rodents and snakes.
<b>Learning Objective:</b>	Trainee should be competent in rodent and snake surveys and controls.
<b>Samples of Behavior:</b>	Trainee will be able to assess and solve disease vector problems associated with rodents.
<b>Notes:</b>	
<ol style="list-style-type: none"> <li>1. To successfully complete this element follow the steps outlined in this section exactly—no exceptions.</li> <li>2. Trainer should aid trainee with scenarios to enhance training.</li> </ol>	

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

## VERTEBRATE PESTS

**1. Background:** In contingency operations, vertebrate pests can be as much of a problem as insects and disease vectors. Vertebrate pests include domestic rodents, field rodents, birds, mammals, and snakes. Rodents are important medically because they carry a number of diseases. These diseases are plague, murine typhus, leptospirosis, rickettsialpox, and rat-bite fever. Rodents not only carry diseases, but also destroy much needed food and equipment. Snakes are also vertebrate pests that will be discussed in this section. Although snakes do not carry any known diseases, the poisonous snakes are medically important because of their bite. Non-poisonous snakes are very beneficial because of the amount of rodents they consume. In this lesson, survey and control techniques for rodents and snakes will be outlined.

**2. The following steps outline the procedures for surveying and controlling domestic rodents.**

### **2.1. Domestic Rodents.**

**2.1.1. The following steps outline the procedures for surveying and controlling field rodents.**

**Step 1: Secure DVEP.**

**Step 2: Survey the suspected rodent infested area.**

- 2.1. Droppings.
- 2.2. Runways.
- 2.3. Gnawing.
- 2.4. Burrows.
- 2.5. Nests.

#### **NOTE:**

The most frequent sign of rodent activity is droppings. Rat droppings are 1/4 to 3/4 inches long by 1/16 inch in diameter. Mouse droppings are 1/8 inch long thus much smaller than rat droppings. It is easy to confuse mouse droppings and American Roach droppings. Both droppings are relatively the same size. The mouse droppings are pointed on each end where the roach droppings are blunt.

**Step 3: Once rodent activity has been discovered, implement IPM control measures.**

- 3.1. Sanitation is most important. Keep cluttered areas neat and dispose of garbage promptly and properly. Keep in closed containers. Do not store excess materials next to any structure or tent (this will bring rodents close and provide hiding places).
- 3.2. Seal all avenues of entry to limit infiltration. Screening or any type of filler material can be used.
- 3.3. Store food items in closed containers as much as possible and keep off ground.
- 3.4. **Baits.** When using rodent baits, attempt to remove all food products from area to enhance bait capabilities.
  - 3.4.1. The use of liquid baits can accelerate your baiting program, especially for rats.
  - 3.4.2. Remove and replace any bait that has been defecated on or is wet, spoiled, or rancid.

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3.4.3. Baits should be started on the perimeter to intercept rodents upon entry.

3.5. **Glueboards.** To enhance the effects of glueboards, use peanut butter or cooked bacon on them. This attracts the rodent quicker.

3.6. **Traps.** Snap traps are quite effective and sometimes its best to pre-bait leaving trap unset for a day with bait attached.

3.6.1. Allowing rats to get familiarized with the traps and excepting them within their environment.

3.6.2. Plus, once setting the traps your success rate will be much higher.

3.7. Rodent proofing (where possible) can be applied.

**Step 4: Continue to survey and apply control techniques as needed.**

## 2.2. **Field Rodents.**

2.1.2. The following steps outline the procedures for surveying and controlling field rodents.

**Step 1: Survey suspected areas.**

- 1.1. Look for burrows.
- 1.2. Look for runways.
- 1.3. Look for tracks.

**Step 2: Initiate control measures to eliminate the rodent problems.**

- 2.1. Food for bait will differ from domesticated rodents slightly, use fruits and nuts.
- 2.2. If food is adequate for those tricky ones try a small piece of cotton (nesting material) or a shiny piece of aluminum foil (curious ones).

### **NOTE:**

Field mice can be controlled the same way house mice and domestic rodents are controlled with baits, traps, etc. In a Contingency operation, the main problem with field rodents, excluding field mice, are the ectoparasites they bring into the camp. If the problem is not major, live trapping and relocating may be sufficient.

**Step 3: Continue to survey and apply control measures as needed.**

- 3.1. Use tracking patching to confirm activity within the area.
- 3.2. Flour even works if no talc is available sprinkle around hole openings and check periodically for disturbance.
- 3.3. Look for obvious clues like holes next to buildings, runways, droppings etc.

## 2.3. **Snakes.**

2.3.1. The following steps outline the procedures for surveying and controlling snakes.

**Step 1: Survey the area and attempt to identify the snake that's causing the problem by using DVEPs or area snake key.**

- 1.1. Encourage if going on a deployment to have a good reliable snake identification key that correlates to the area of the deployment.

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**NOTE:**

Snakes can hide very well and sometimes are hard to find inside buildings. A procedure that will sometimes help in locating a snake is to place a damp cloth on the floor and a dry one on top of the wet cloth. When the snake finds the moisture, it will crawl under it.

**Step 2: Remove the snake from the encampment by whatever means necessary.**

**2.1.** Recommend bringing along a snake tong in the contingency kit.

**NOTE:**

If the snake is not poisonous, it is beneficial to keep it around to assist in rodent control. Poisonous snakes can be relocated several miles from camp if your security measures will allow it. If in an area where poisonous snakes are abundant, the following are some ideas to reduce the snake population in the encampment. Reduce rodent populations to cut-off food supply. Remove harborages such as rock piles, woodpiles, tall grass, and brush piles. Snake proof tents and buildings as much as possible by closing openings. Mothballs or Naphthalene acts as a repellent to snakes, thus placing them in and around buildings help keep snakes out.

**REVIEW QUESTIONS  
FOR  
VERTEBRATE PESTS**

QUESTION	ANSWER
1. Which of the following is <b>not</b> a sign of rodent activity?	a. Runways. b. Nests. c. Gnawings. d. Skins.
2. What is the most frequent sign of rodent activity?	a. Droppings. b. Runways. c. Burrows. d. Gnawings.
3. There is no need to remove food sources when baiting rodents.	a. True. b. False.
4. What is the main problem of field rodents on a contingency?	a. Borrows. b. Ectoparasites. c. Runways. d. Food consumption.
5. Which of the following is <b>not</b> a harborage for snakes?	a. Brush piles. b. Sand piles. c. Wood piles. d. Rock piles.
6. What's the most important IPM measure for snake control?	a. Snake identification. b. Moth balls. c. Sanitation. d. Residual sprays.

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**VERTEBRATE PESTS**

**PERFORMANCE CHECKLIST**

**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

<b>DID THE TRAINEE....?</b>	<b>YES</b>	<b>NO</b>
<b>Domestic Rodents</b>		
1. Identify signs of rodent infestation		
2. Identify correct IPM measures for rodent control		
<b>Field Rodents</b>		
1. Identify the signs of field rodent activity		
2. Identify correct control measures for field rodents		
<b>Snakes</b>		
1. Complete survey for snakes		
2. Identify correct control techniques for snakes		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

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## CONDUCT OPERATIONS

### IMPLEMENT IPM

MODULE 18

AFQTP UNIT 3

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### VEGETATION (18.3.2.3.)

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**VEGETATION**  
**Task Training Guide**

<b>STS Reference Number/Title:</b>	18.3.2.3., Vegetation.
<b>Training References:</b>	<ol style="list-style-type: none"> <li>1. <a href="#">AFI 32-1053, Pest Management Program.</a></li> <li>2. <a href="#">AFI 32-7002, Environmental Information Management System.</a></li> <li>3. <a href="#">AFI 32-7006, Environmental Program In Foreign Countries.</a></li> <li>4. <a href="#">AFH 10-222, Volume 4, Environmental Guide for Contingency Operations.</a></li> <li>5. <a href="#">AFPMB TIM 24, Contingency Pest Management Pocket Guide.</a></li> </ol>
<b>Prerequisites:</b>	<ol style="list-style-type: none"> <li>1. <b>Possess as a minimum, a 3E433.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFIs 32-1053, 32-7002, and 32-7006.</li> <li>2.2. AFH 10-222, Volume 4.</li> <li>2.3. AFPMB TIM 24.</li> </ol> </li> </ol>
<b>Equipment/Tools Required:</b>	<ol style="list-style-type: none"> <li>1. Lawn mower.</li> <li>2. Weed eater.</li> <li>3. Axe.</li> <li>4. Hatchet or machete.</li> <li>5. Backpack dust/mist blower.</li> <li>6. Compressed air sprayer.</li> <li>7. Tool box and extra spare parts.</li> </ol>
<b>Learning Objective:</b>	Trainee should know how to control vegetation and operate equipment.
<b>Samples of Behavior:</b>	Trainee will be able to select and operate vegetation control equipment.
<b>Notes:</b>	
<ol style="list-style-type: none"> <li>1. To successfully complete this element, follow the steps outlined in this procedure--no exceptions.</li> <li>2. Trainer will design scenarios to enhance the trainee's knowledge for vegetation control.</li> </ol>	

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

## VEGETATION

**1. Background:** Vegetation control in deployment areas may be a major problem. Although mechanical vegetation control is normally a grounds shop function, in a contingency situation you may be asked to accomplish this task. Remember you always have heavy equipment operators to support you. Most vegetation can be controlled with this equipment on a large scale. Thick vegetation is a good breeding area for disease vector pests. Keeping the vegetation around the contingency area controlled could be of primary concern, depending on contingency location. The location of deployed forces will also dictate equipment and herbicide requirements. If herbicides are taken, ensure that the chemicals can be applied at the forward location. Contact your Pest Management Consultant for approval to use herbicides. **Do not apply any herbicides on foreign soil without the proper approval.**

**2. To perform this task, follow these steps:**

**Step 1: Obtain DVEP for deployment area.**

**Step 2: Select equipment needed for deployment.**

- 2.1. Chain saw.
- 2.2. Ax.
- 2.3. Hatchet or machete.
- 2.4. Weed eater.
- 2.5. Lawn mower.
- 2.6. Compressed air sprayer for herbicide application.
- 2.7. Backpack mist/dust blower.

**NOTE:**

Remember to include owner's manual and spare parts. Always wear your PPE when operating equipment or herbicide application.

**Step 3: Make sure equipment is operable.**

**Step 4: Learn to operate equipment before deploying.**

**Step 5: Re-inspect equipment at the deployment area.**

**Step 6: Perform another equipment operations test.**

**Step 7: Execute vegetation controls for area.**

**Step 8: Repeat vegetation controls when needed.**

**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**REVIEW QUESTIONS  
FOR  
VEGETATION**

<b>QUESTION</b>	<b>ANSWER</b>
1. Thick vegetation is a good breeding ground for disease vectors.	a. True. b. False.
2. What literature should be included for deployed equipment?	a. Shop manuals. b. Owner's manual. c. TIM 24. d. AFI 32-1075.
3. No PPE is needed of vegetation control.	a. True. b. False.
4. What must you ensure first before shipping herbicides to a forward location?	a. Plant resistance. b. Host nation requirements. c. Non-target pests. d. Herbicide formulation.

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## VEGETATION

### PERFORMANCE CHECKLIST

#### INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....?	YES	NO
1. Acquire the DVEP		
2. Select the proper equipment		
3. Perform an equipment operations test		
4. Operate equipment		
5. Perform equipment inspection		
6. Perform a second equipment operations test		
7. Implement controls		

**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

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## CONDUCT OPERATIONS

### DEVELOP

MODULE 18

AFQTP UNIT 3

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PESTICIDE USAGE REPORT (18.3.3.1.)

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**PREPARE PESTICIDE USAGE REPORT**  
***Task Training Guide***

<b>STS Reference Number/Title:</b>	18.3.3.1., Pesticide Usage Report (Prepare).
<b>Training References:</b>	<ol style="list-style-type: none"> <li>1. <a href="#">AFI 32-1053, <i>Pest Management Program</i></a>.</li> <li>2. <a href="#">AFI 32-7002, <i>Environmental Information Management System</i></a>.</li> <li>3. <a href="#">AFI 32-7006, <i>Environmental Program In Foreign Countries</i></a>.</li> <li>4. <a href="#">AFH 10-222, Volume 4, <i>Environmental Guide for Contingency Operations</i></a>.</li> <li>5. <a href="#">AFPMB TIM 24, <i>Contingency Pest Management Pocket Guide</i></a>.</li> <li>6. <a href="#">Military Pest Management Handbook</a>.</li> </ol>
<b>Prerequisites:</b>	<ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E433 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFIs 32-1053, 32-7002, and 32-7006.</li> <li>2.2. AFH 10-222, Volume 4.</li> <li>2.3. AFPMB TIM 24.</li> </ol> </li> </ol>
<b>Equipment/Tools Required:</b>	<ol style="list-style-type: none"> <li>1. Pesticide labels.</li> <li>2. DD Form 1532-1.</li> <li>3. DD Form 1532.</li> </ol>
<b>Learning Objective:</b>	Trainee should learn how to keep records of the pesticides used while on contingency operations.
	Trainee will be able to keep records of the pesticides used while on contingency operations.
<b>Notes:</b>	
<ol style="list-style-type: none"> <li>1. To successfully complete this element, follow the steps outlined in the lesson--no exception.</li> <li>2. Trainer should develop scenarios for the trainee to practice with.</li> </ol>	

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## PREPARE PESTICIDE USAGE REPORT

**1. Background:** Just as records of pesticide usage are kept at the home station, the same holds true in the field. These records of pesticide usage are normally on the computer at the home station. In the field, the IWIMS computer system is rarely found. Records and reports are hand written. It is important to keep records and reports for the Environmental Protection Agency (EPA), Major Command, and local governments if applicable. This lesson will explain how to keep pesticide usage records in the field, in detail.

**2.** The following steps outline the procedures for pesticide usage record keeping during a contingency.

**Step 1: Obtain DD Form 1532-1.**

**1.1.** This form should be part of the supplies brought on the deployment.

**Step 2: Each pesticide application should be annotated on the DD Form 1532-1.**

**2.1.** A DD Form 1532-1 should be maintained for each building and area in the encampment.

**2.2.** These forms should be kept in some order, preferably by building number.

**2.3.** This makes the forms easier to locate whenever needed.

**Step 3: If deployment is more than 90 days.**

**3.1.** Quarterly reports are accomplished using DD Form 1532.

**3.2.** When reporting on the DD Form 1532 the quantities must be reported in pounds of active ingredient.

**3.3.** Thus, all quantities from the 1532-1 must be changed from gallons of finished spray to pounds of active ingredients.

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**REVIEW QUESTIONS  
FOR  
PREPARE PESTICIDE USAGE REPORT**

QUESTION	ANSWER
1. Records of pesticide use are <b>not</b> kept in the field.	a. True. b. False.
2. Records are kept for what agencies?	a. Environmental Protection Agency. b. Major Command. c. Local governments. d. All of the above.
3. On what form are daily pesticide applications kept?	a. AF Form 1532-1. b. AF Form 1532. c. DD Form 1532-1. d. DD Form 1532.
4. Quantities reported on DD Form 1532 are reported in pounds of active ingredient.	a. True. b. False.
5. If deployed more than 90 days what type of reports must be kept?	a. Monthly. b. Quarterly. c. Weekly. d. None of the above.
6. The preferred way of record keeping for the DD Form 1532-1 is by building or tent number.	a. True. b. False.

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## PREPARE PESTICIDE USAGE REPORT

### PERFORMANCE CHECKLIST

#### INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE.....?	YES	NO
1. Obtain DD Form 1532-1		
2. Correctly fill out DD Form 1532-1		
3. Know the purpose of the DD Form 1532-1		

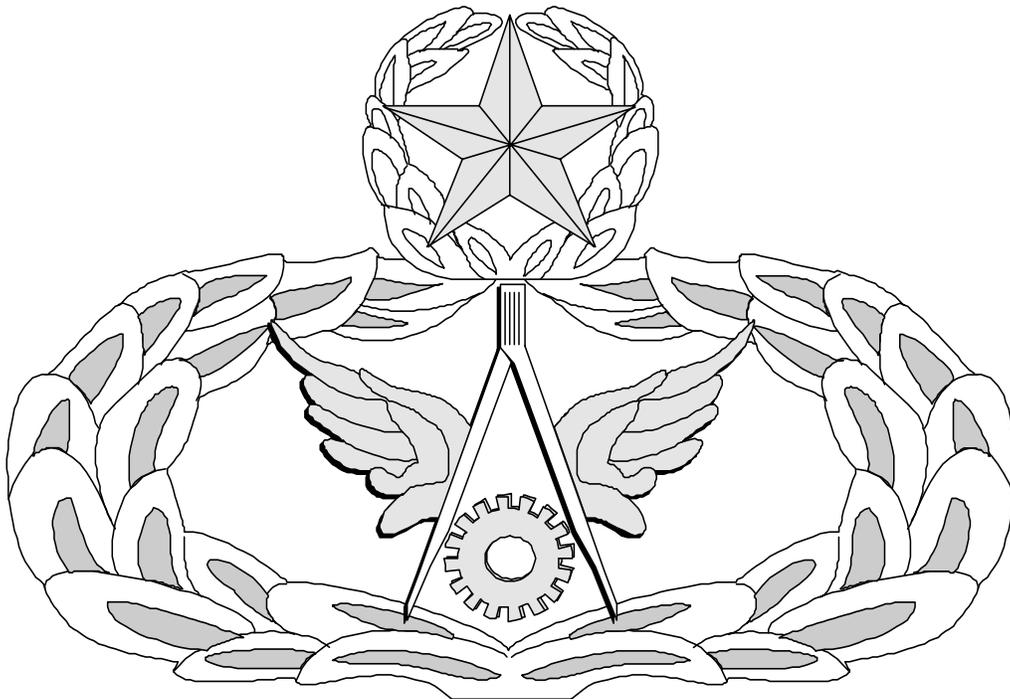
**FEEDBACK:** Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

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# Air Force Civil Engineer

## QUALIFICATION TRAINING PACKAGE (QTP)

### REVIEW ANSWER KEY



FOR  
ENVIRONMENTAL CONTROLS

(3E4X3)

MODULE 18

**AFS SPECIFIC CONTINGENCY RESPONSIBILITIES**

**Notice.** This AFQTP is NOT intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**Key-1**

**SELECT PESTICIDES  
(3E4X3-18.1.2.)**

QUESTION	ANSWER
1. Contingency Pest Management provides _____.	b. Pest control services.
2. When should you obtain the Disease Vector Ecology Profiles?	c. Before deploying.
3. Who should you contact to find out about pests at the forward location?	b. Command Entomologist and Pest Shop NCOIC.
4. What is the first step to determining your pesticide requirements?	c. Identify the pest.
5. What time frame should you base your initial pesticide requirements?	b. 7 – 10 days.
6. Which pesticide formulations are safest to transport?	a. Powder and granular.

**SELECT, MAINTAIN, AND OPERATE IPM EQUIPMENT SUCH AS:  
ULTRA LOW VOLUME (ULV) FOG GENERATOR (18.1.3.1.)  
BACK PACK MIST DUST BLOWER (18.1.3.2.)  
HAND –HELD FAN ULV (18.1.3.3.)  
COMPRESSED AIR SPRAYER (18.1.3.4.)  
MANUAL DUSTER (18.1.3.5.)  
TRAPPING DEVICES (18.1.3.6.)**

QUESTION	ANSWER
1. Which of the following is <b>not</b> a piece of portable equipment?	b. ULV fog generator.
2. Which spray nozzle applies a fine stream for crack and crevice treatments?	b. Solid stream.
3. Which sprayer is the mainstay of most pest control operations?	c. Compressed air sprayer.
4. Which equipment is very lightweight and is used to apply liquids, dust, or granular to outdoor areas?	d. Backpack mist dust blower.
5. What determines your control method?	a. Mission and level of control.
6. What determines the choice of pesticides?	b. Control method.
7. Which of the following are used for placement of pesticidal dusts?	d. Hand bellows.
8. Trapping devices are <b>not</b> normally required for contingency operations.	a. False.

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**SELECT PERSONAL PROTECTIVE EQUIPMENT  
(3E4X3-18.1.4.)**

QUESTION	ANSWER
1. What makes up personal protection equipment (PPE) according to the Environmental Protection Agency (EPA)?	a. Headgear, footwear, gloves, aprons, respirators.
2. Where must pesticide manufactures list PPE requirements?	a. "Direction for Use" and "Hazard to Humans and Domestic Animals" label statements.
3. Who conducts the respirator fit test?	a. Bioenvironmental Engineering.

**INVENTORIES  
(3E4X3-18.2.3.1.)**

QUESTION	ANSWER
1. The best method of accomplishing control of assets in the field is by?	a. Strict inventories and accountability.
2. What two things are included in an inventory sheet?	d. Both b and c.
3. In the field, monthly reports are maintained by using what form?	b. DD Form 1532-1.
4. How often should a copy of the inventory be given to the Bio-Environmental Engineers and the Fire Department?	c. Quarterly.

**SECURITY  
(3E4X3-18.2.3.2.)**

QUESTION	ANSWER
1. Which of the following is <b>not</b> a prerequisite for a pest building site?	c. Beside dining facility.
2. The chemical storage facility does not need to be ventilated.	b. False.
3. Which of the following is <b>not</b> a possible chemical storage facility?	c. Refrigerated food locker.
4. Chemical storage shelves should be made of wood.	b. False.

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**DISEASE VECTORS**  
**(3E4X3-18.3.2.1.)**

QUESTION	ANSWER
1. What is key to force protection from disease vectors?	c. Proper sanitation and use of repellents.
2. Probably the most important disease vector pest is the _____?	b. Mosquito.
3. Always place light traps for mosquitoes next to street lights.	b. False.
4. What disease vector do we employ aerial spraying against?	d. Mosquito.
5. Flies are both indoor and outdoor pests.	a. True.
6. The major priority in fly control is _____?	d. Sanitation.
7. The most important flea for contingency operations is the _____?	a. Oriental rat flea.
8. Fleas can affect a contingency operation when _____?	c. Military Public Health.
9. Why are mites difficult to identify?	b. They are very small.
10. Which disease vector do you use a white paper or plate glass to survey for?	c. Mites.
11. Which of the following is <b>not</b> a natural habitat for mites?	c. Body hair.
12. Mowing vegetation and residual spraying are controls for mites.	a. True.
13. Surveys for lice are conducted by _____?	b. Military Public Health.
14. Which is a delousing control?	a. Applying insecticidal powder.

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**VERTEBRATE PESTS**  
(3E4X3-18.3.2.2.)

QUESTION	ANSWER
1. Which of the following is <u>not</u> a sign of rodent activity?	d. Skins.
2. What is the most frequent sign of rodent activity?	a. Droppings.
3. There is no need to remove food sources when baiting rodents.	b. False.
4. What is the main problem of field rodents on a contingency?	d. Food consumption.
5. Which of the following is <u>not</u> a harborage for snakes?	b. Sand piles.
6. What's the most important IPM measure for snake control?	c. Sanitation.

**VEGETATION**  
(3E4X3-18.3.2.3.)

QUESTION	ANSWER
1. Thick vegetation is a good breeding ground for disease vectors.	a. True.
2. What literature should be included for deployed equipment?	b. Owner's manual.
3. No PPE is needed of vegetation control?	b. False.
4. What must you ensure first before shipping herbicides to a forward location?	b. Host nation requirements.

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**PREPARE PESTICIDE USAGE REPORT  
(3E4X3-18.3.3.1.)**

<b>QUESTION</b>	<b>ANSWER</b>
1. Records of pesticide use are <u>not</u> kept in the field.	b. False.
2. Records are kept for what agencies?	d. All of the above.
3. On what form are daily pesticide applications kept?	a. DD Form 1532-1.
4. Quantities reported on DD Form 1532 are reported in pounds of active ingredient.	a. True.
5. If deployed more than 90 days what type of reports must be kept?	b. Quarterly.
6. The preferred way of record keeping for the DD Form 1532-1 is by building or tent number.	a. True.

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MEMORANDUM FOR HQ AFCESA/CEOF  
139 Barnes Drive Suite 1  
Tyndall AFB, FL 32403-5319

FROM:

SUBJECT: Qualification Training Package Improvement

1. Identify module.

Module # and title \_\_\_\_\_

2. Identify improvement/correction section(s):

_____ STS Task Reference	_____ Performance Checklist
_____ Training Reference	_____ Feedback
_____ Evaluation Instructions	_____ Format
_____ Performance Resources	_____ Other
_____ Steps in Task Performance	

3. Recommended changes--use a continuation sheet if necessary.

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4. You may choose to call in your recommendations to DSN 523-6380 or FAX DSN/Commercial 523-6488 or (850) 283-6488 or email [ceof.helpdesk@tyndall.af.mil](mailto:ceof.helpdesk@tyndall.af.mil).
5. Thank you for your time and interest.

YOUR NAME, RANK, USAF  
Title/Position