

## Unit 3. Aircrew Intelligence Training

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**T**O be prepared for wartime operations, aircrew members must know how enemy capabilities, doctrine, and tactics can affect their ability to accomplish their unit mission. Also, they must be able to differentiate between enemy and friendly air force, army, and naval equipment they may encounter in combat. Aircrews should also be familiar with intelligence collection and reporting procedures, as well as evasion and recovery concepts. Each MAJCOM has periodic aircrew training requirements for these subject areas, and most intelligence units have established aircrew-training programs that are continuous throughout the calendar year. One of your most important roles during peacetime is to provide aircrews with this intelligence-related training. This unit will cover different aspects of aircrew intelligence training, to include a multitude of briefings presented in formal and informal aircrew training.

### 3-1. Training Development and Administration

You are an important factor in aircrew training, and you can make a difference. Is your aircrew-training program effective, or is it just plainly presented? Today's aircrew members are highly educated and extensively trained in the operation of their aircraft. Intelligence personnel have an important role in the continuation training process of aircrews, and we must make good use of the training times allotted to us. In this section, let's look at some of the intelligence training requirements and how to make good use of this valuable training time.

#### 208. Understand how to develop and administer an aircrew training program

##### Instructional System Development

Since people are the decisive factor in war, it is imperative that they receive the right education and training at the right time. Education and training should include the following:

- Prepare aircrews for combat.
- Be as realistic as possible.
- Be conducted for all forms and levels of war.
- Give special attention to joint and combined operations.

The formal training conducted in the Air Force is developed according to the instructional system development (ISD) process. Since the primary purpose of using the ISD process is to teach efficiently and effectively the procedures, knowledge, and skills aircrews need to do their job, most MAJCOMs direct their units to use the ISD process in developing their aircrew training programs. ISD is the official Air Force process for developing education and training for Air Force personnel. Air Force Manual (AFMAN) 36-2234, *Instructional System Development*, discusses the background of ISD, describes and explains the process, and provides guidance.

ISD is a deliberate and orderly, but flexible process for planning, developing, implementing, and managing instructional systems. It helps instructors ensure that personnel are taught the knowledge, skills, and attitudes that are essential for successful job performance in a cost-efficient way.

By using the ISD process to build your training program, you ensure smooth running of the program.

The training you provide should be presented in an organized, professional manner, and referring to AFMAN 36-2234 will help you immensely.

There are common variables and problems that most intelligence units encounter in administering their aircrew intelligence-training program. Some of these problems and variables are discussed in this lesson.

### **Maintaining effectiveness**

To make sure your training program is effective and running smoothly, you should keep the following key factors in mind:

- Know your aircrews – Be familiar with their needs and their likes or dislikes. Good rapport between intelligence personnel and aircrews is a prime ingredient in an effective training program. You can contribute to the building of this rapport by learning what is important and relevant to the aircrews and by firmly demonstrating a high degree of expertise in the intelligence profession. If the aircrew members are bored with the same old dry E&R training, change the training to motivate them. You may want to try using scenarios and situational problems.
- Know the capabilities and limitations of your assigned weapons systems – A working knowledge of the unit weapons systems includes its mission, capabilities, limitations, employment tactics, and penetration aid systems (radar warning receiver, electronic warfare pods, etc.). Operations personnel can be invited to make presentations during internal training sessions to help intelligence personnel learn what they need to know to enhance their support and rapport with aircrew members. A tour of the aircraft, flight orientation rides, informal talks with aircrews, and simulator rides will foster operations-intelligence interface. You must also key your training programs accordingly. If your unit's aircraft fly missions at high altitudes, it definitely would not be appropriate to expect your aircrews to have any interest in ground equipment identification features.
- Know your subject and established training objectives – Before any training session, make sure you're completely familiar with the subject and ready to answer questions. Information you provide must be relevant to aircrew needs, and training must be developed to address subjects appropriate to the aircrews' training requirements. Familiarity with terms commonly used by aircrews, along with a well-illustrated and practiced delivery, will enhance the acceptance of the information you present.
- Keep key operations personnel informed of training status throughout the training cycle – After each training session, give the scheduling branch a copy of the attendance roster. Plan on aircrews being on temporary duty and hard to schedule for training. If you are nearing the end of the training cycle and foresee problems in training all the aircrews, let the schedulers know so they can work on the problem.
- Give credit for all aircrew intelligence training given during exercises – Record the training credit promptly. It is a good idea to keep a training attendance roster with you to ensure that names are recorded properly.
- Manage the training program – Cover more material in the first half of your training cycle so you can catch up as needed in the last half. Monitor the training progress throughout the cycle.
- Avoid setting the program to exact minutes or hours of training required – Use the minimum amount of time required to satisfy your objectives.

- Avoid trying to cover too many objectives in one presentation – By breaking the materials down into smaller units, you eliminate the likelihood of losing the attention of your audience due to knowledge saturation, or worse, boredom.

### **Operations-intelligence interface**

You must work closely with your unit weapons and tactics personnel to keep intelligence training meshed with operations. The intent of this operations-intelligence interface is to keep the required aircrew training integrated and complementary. For example, aircrews need to know not only the capabilities of a threat, but also how to attack or counter it. They must also be able to correlate visual recognition of a threat with radar warning receiver (RWR) indications. During weapon system capabilities training, many units use a dual-instructor approach, with one instructor from intelligence and the other instructor from tactics. The intelligence instructor presents the threat capabilities and the tactics instructor presents the appropriate countermeasures. This will add credibility to your presentation and keep you informed of the latest weapons and tactics information.

### **Enhancements**

Aircrew intelligence training is most meaningful and beneficial when the instructor shows initiative and is knowledgeable, dynamic, interesting, and motivated. When these ingredients are present, the instructor will attract and hold audience attention. The following suggestions can be used to enhance unit intelligence training programs. Not all can be used in each training session, but they can be used to vary presentation methods, keeping the training dynamic and interesting.

1. Create interest by beginning a training session with a short, relevant, current intelligence item that serves as a lead-in to the main subject.
2. Keep training sessions short and limited to one or two related subjects.
3. Begin by telling what is going to be presented and why. State the objective, present the material, and summarize key points to reinforce what the aircrew should retain from the session.
4. Start the training session with a quiz on the major points of the lesson to orient the group to the subject and demonstrate the need for training. Then, material can be presented with emphasis on those major points covered in the quiz. The session can conclude with a repeat of the quiz to reinforce retention of important information. This technique can be an excellent tool if it's used right.
5. Use questions throughout the session to bring out key points.
6. Tie various intelligence-related training into one training session to reflect the mission environment. The total threat environment of a given mission is more meaningful than focusing on individual enemy weapon systems. A typical training discussion could include the following topics:
  - a) The integrated air defense system (IADS) en route and in the target area, how it works, and the capabilities and limitations of component weapon systems.
  - b) Visual recognition of expected enemy equipment (interceptors, tanks, etc.).
  - c) Examples of collection and reporting situations along the route.
  - d) Evasion situations built on a what-if basis for selected locations along the route.
7. Examine the content of training material by reviewing it in light of its importance to mission accomplishment and aircrew needs.
8. Invite guest speakers when they can contribute special knowledge on a subject. For example, your unit may have a person assigned who was a prisoner of war (POW). This speaker's knowledge would be extremely beneficial during E&R training.

9. Use handouts that outline the intelligence training program and the responsibilities of intelligence and aircrews. It may be helpful to give such an outline to aircrew members when they are first assigned to the unit.
10. Provide sound-on-slide lessons for aircrew self-study.
11. Build a threat-of-the-day program that is based on a 2- or 3-minute briefing concerning a specific threat option. This briefing can be presented daily by intelligence personnel or by a member during aircrew meetings and premission briefings. A previously prepared threat-of-the-day book or file can be maintained for aircrew members who miss the training.
12. Relate intelligence training items in sessions to the capabilities and characteristics of your unit's weapon system.
13. Give attention to the physical facilities where the training is to be conducted. Consider such things as lighting, comfort, security, ventilation, seating, freedom from outside distractions, parking, distance from normal duty areas, and so forth. Put yourself in the aircrew members' positions and see what it is like from their points of view.

From this list of suggestions, you can see that the training session doesn't have to be a boring routine. You're responsible for making the training session a learning experience for the aircrews, and you can enhance this experience by showing some initiative and imagination in your training sessions.

### Summary

Aircrew training is a key component of any combat unit's ability to effectively perform its mission. Your job is to ensure that the training program is effective, and that it provides the aircrew members with the information they need to do their jobs – whether it's dropping bombs, leaflets, taking reconnaissance photos, or transporting vital equipment and supplies. If it's developed and managed properly, the actual training that you conduct will be highly successful.

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## Self-Test Questions

After you complete these questions, you may check your answers at the end of the unit.

### 208. Understanding how to develop and administer an aircrew-training program

1. What is the formal Air Force training development process?
2. What is a prime ingredient in an effective aircrew-training program?
3. Who must you work with in your unit when developing and administering an aircrew program?
4. When is aircrew intelligence training most meaningful and beneficial?

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## 3-2. Aircrew Training in Recognition, Capabilities, Terrorism, and Reporting

Now let's look more in depth at those subjects you will be required to cover in your aircrew intelligence training programs. The first area to cover is recognition of air, ground, and naval equipment. Accurate identification of military hardware is vital to the success of your aircrews mission and to military operations. In this section, you will cover some of the topics you should include in your aircrew recognition and other aircrew training programs, as well as some successful training methods.

### 209. Preparing and presenting recognition training

The main purpose of recognition training is to develop the ability to identify enemy systems visually in order to distinguish them from friendly or neutral systems. This type of training helps the aircrew recognize patterns of deployment and employment so they can make effective decisions, such as engagement or avoidance. The next goal of this type of training is to develop a source of intelligence information for wartime and peacetime. Recognition training must be structured to develop the aircrew members' ability to identify friendly and enemy weapon systems quickly and accurately. Successful recognition depends on complete familiarity with the appearance of an object. This can only be achieved by continuous study. Training involving capabilities delves into how a specific system operates and its strengths and weaknesses. We'll first look at the requirements for recognition training and applicable objectives.

#### Recognition training objectives

Air Force Instruction (AFI) 14-103, *Threat Recognition Training Program* states the objective of a threat recognition program: "The threat recognition training program establishes a coherent unit training program based on command and unit mission requirements. The program ensures that all aircrews and selected support personnel maintain the proper level of threat recognition proficiency." Our job is to enable the aircrews to make the visual distinction between enemy weapon systems and friendly or neutral weapon systems. It should be noted that it is not only the aircrew member that must be proficient in identifying systems. As the individual charged with administering this type of training, it is incumbent upon you to be proficient as well.

One of your first objectives in recognition training is to instruct the aircrews in identifying any object of military significance on a mission. Your second objective is to help the aircrews become competent observers and reporters. The observations they make on a combat mission often supply EEI that could ensure the success of future missions. Aircrews fly over areas where they can gather data on enemy defenses and possible new targets. These observations are often the only sources of intelligence information in key enemy categories, such as tactics, new aircraft in combat, or missile and AAA firings.

Quality recognition training can enable aircrew members to make quick and accurate decisions/observations under extreme stress and adverse conditions. Although it's usually hard for them to make precise observations in the heat of combat, any observations they make could prove useful, if they report them. In combat, the aircrews must recognize all objects of military significance quickly and accurately if they are to gain the initiative in any engagements with the enemy. A split-second identification could give them the edge in defeating enemy fighters, or in destroying an enemy ground target.

Training is important. Experience has shown that the better-trained aircrew members are able to make quick and accurate observations under extremely adverse conditions. These observations can prevent the needless loss of friendly forces that are mistaken for hostile forces. How you conduct recognition training will vary from unit to unit, but fundamental to any such program are the training aids that are developed to support the training.

### *Training aids*

The training aids produced and used to train personnel in rapid recognition and identification of military equipment items are known as “recognition materials.” AFI 14-103 covers the Air Force recognition materials program, and the 480th Intelligence Group (IG) is the Headquarters USAF-designated office of primary responsibility (OPR) for production and distribution of these training materials. Within the 480 IG, the Recognition Materials Section is responsible for production. If you need help with your training program, contact the 36 IS/DOT, Recognition Materials Branch, at Langley Air Force Base (AFB), Virginia.

### *Guides*

Recognition guides are pictorial reference books designed to help aircrews and intelligence personnel identify various weapon systems. Included are photos, line drawings, and textual information on the key recognition features associated with each weapon system. Guides are organized either by major weapon category (aircraft, naval combatants, etc.) or by specific countries/areas. Theater series guides cover the European, Pacific, Middle East/Africa, and American theaters. For each theater, there is an air, ground, and naval weapon system guide.

### *Flash cards*

A flash card can also be used to test an aircrew’s ability to identify specific types of equipment items. They are usually printed on heavy-weight paper stock, can be black-and-white or in color, and can be as small as a business card, or as large as a sheet of 8 ½ by 11 inch paper. On one side, a photo or line drawing of an equipment item can be depicted; while on the reverse side specific details of the item is listed (i.e., name, uses, armament, capabilities, etc.). Figures 3-1 and 3-2 below illustrate a small format flash card.

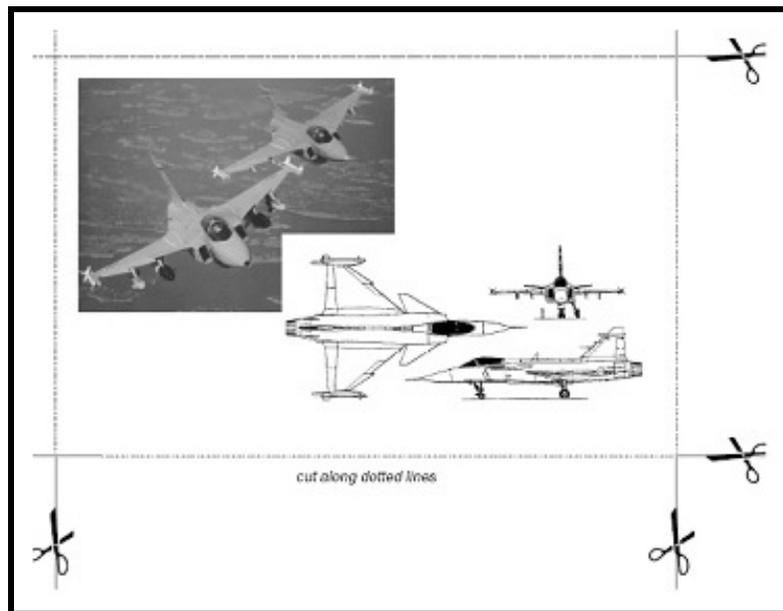


Figure 3-1. Flash card front.

Mirage 2000	
Mission	Multirole Fighter
Combat Radius	800 nm
Primary Weapon	2 x 20 mm cannons / various AA & AG weapons
Sensors	FLIR / Laser Range Finder/Designator
Threat Range	
Analyst Comments	Mica, 550 Magic IR/Magic 2 AAMs ARMAT ARM AM-39 Exocet ASM LGBs, nuclear capable platform  Currently offered in the export market  Current Users: TC, EG, FR, GR, IN, PE, QA, TW

Figure 3-2. Flash card back.

### Posters

These are wall posters containing photos, line drawings, and textual data on key recognition features of military equipment. The types of recognition posters available are aircraft, ground equipment, naval ship, and aircraft look-alikes.

### Videos

Video briefings in several different formats provide capabilities information and various perspective views of weapon systems in operations. Series types include weapon-systems-specific threat studies, country-specific threat studies, visual-recognition-only studies and tests, and spotlights on items of current intelligence interest.

### Scale models

Another excellent recognition training material is a scale model. Scale models are a practical way to provide three-dimensional views of aircraft, ships, and fighting vehicles for training sessions, as well as for private study. The other training aids don't show the many angles of a system.

### Computer-based training

One of the best methods of providing threat recognition training involves the use of computer systems and digital graphics. For example, you could compile graphics of various types of threat systems (air, ground, and naval) and present them during a training session. A series of systems would be shown, and the aircrew asked to identify each system as they are flashed onto the display/screen.

### Summary

Regardless of the method used, visual recognition training should provide the aircrew a means to quickly, and accurately, identify items of equipment. Friendly fire incidents have definitely been attributed to a lack of adequate training in this area, and it will be your job to ensure your crewmembers know the difference between equipment that poses a threat and that which does not. Take this task very seriously – lives depend on it!

## 210. Preparing and presenting enemy defense systems and capabilities training

What is the maximum effective range of a particular surface-to-air missile? What type of guidance system does it employ? What is the best method of defeating the missile? How quickly can the missile crew prepare and launch another missile? What types of air-to-air missiles does a potential adversary's aircraft carry? How are they employed? What kind of guidance system do they have? Can chaff or flares defeat them? These and many other questions require answers, and it goes without saying that an aircrew member must be able to answer these questions without hesitation. In the heat

of combat, the aircrew must be capable of making split-second decisions in order to defeat such threats, because any hesitation could mean the difference between mission failure, and, ultimately, life and death. As such, it is critical that this type of training be conducted at the unit, and that it covers all threat systems that could be encountered in the area of operations.

Most units provide capabilities training in five basic areas: Integrated Air Defense Systems (IADS), air-to-air, surface-to-air, naval-air defense, and radar systems. The specific type of enemy defense capabilities training you prepare and conduct depends mainly on your unit's mission. The training for a unit that performs deep interdiction strikes will be much more detailed and intense than training for a unit that performs airlift operations. Therefore, you must refer to your MAJCOM directives to determine exactly what to present to your aircrews. We'll begin by examining integrated air defense systems.

### **Integrated air defense systems (IADs)**

One of the most valuable sources of intelligence on IADs and air-to-air missile (AAM) capabilities is Air Force Tactics, Techniques, and Procedures (AFTTP) 3-1, Volume 2, *Threat Reference Guide and Countertactics*

The purpose of an IAD system is to detect, identify, and engage airborne targets through the use of diverse sensors and weapons. It is composed of a group of sensors, weapons, and command and control systems, with the overall mission of protecting a defined area/target from airborne attack. For an IADs to be effective, there has to be effective interaction of the system's sensors, weapons, and command, control, and communications (C3) equipment to engage and destroy hostile aircraft at the earliest possible time. Physical methods used in the air defense system to aid integration include fighters, SAMs, AAA engagement zones, and safe corridors for ingress/egress of friendly aircraft. Understanding an adversary's IADs increases the chances of successfully penetrating their air defense system. The components of an IADs include the following:

- Early warning and surveillance sensors.
- Interceptor aircraft and weapons.
- Surface-to-air weapons.
- Command and control.
- Electronic warfare.
- Intelligence collection and fusion.

Depending on their roles and the type of target they protect, air defense systems can be separated into two categories: (1) territorial air defense systems designed to protect fixed airspace and (2) tactical air defense systems designed to protect ground force maneuver formations. The regional or zonal IADS approach combines both territorial and tactical air defense capabilities into a single coordinated air defense system.

The best technique for training IAD systems is to place the aircrews in a scenario situation. For example, the scenario may be that your aircrews are tasked to fly a sortie 100 nautical miles (NM) deep into enemy territory to knock out a bridge. You should take them step-by-step along this scenario sortie, and explain how the enemy IADs will react to it. You should also point out any weaknesses in the system that the aircrews may be able to exploit. For instance, there may be gaps in radar coverage at low levels. Discuss anything that might give the aircrews an edge in successfully penetrating into enemy territory.

### **Air-to-air (AAM) missile capabilities**

AAMs pose a definite threat. Every aspect you can help the aircrews learn about enemy interceptors increases their chances of survival in an air-to-air engagement. In training on AAMs, you should brief the following:

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- Strengths and weaknesses of the missile; for instance, the hemispheres it covers and its maneuverability.
  - Type of guidance it has, or how it's used.
  - Different variants.

You also need to talk about the avionics features of the aircraft such as the following:

- Air intercept (AI) radar search ranges.
- Detection devices, such as the infrared search and track (IRST) system.
- The aircraft's combat speed, rate of climb, combat ranges, formations, and tactics.
- Electronic countermeasures.
- Electronic counter-countermeasures (ECCM).
- Strengths and weaknesses of each individual aircraft so that your aircrews will be fully prepared to avoid the aircraft's strengths and exploit its weaknesses.

As you can see, training on AAMs doesn't just involve knowing about the missiles; it's also having knowledge about the associated aircraft and their guns. There are five objectives you should strive to help the aircrew members achieve and they are as follows:

1. Know which threat fighters can intercept and fire AAMs from all aspects.
2. Know which threat fighters have look-down/shoot-down capability.
3. Know which threat fighters are equipped with guns.
4. Know the ECM capabilities of threat fighters.
5. Know if the threat aircraft has aft-fire gun capability.

Other items to consider when discussing AAMs are a basic description of an AAM, its employment methods, AAM guidance techniques, the missile's minimum and maximum ranges, and strengths and weaknesses. When discussing aircraft guns, the primary consideration is range. You would also discuss the gun's caliber and its rate of fire. Figure 3-3 illustrates different AAM guidance systems.

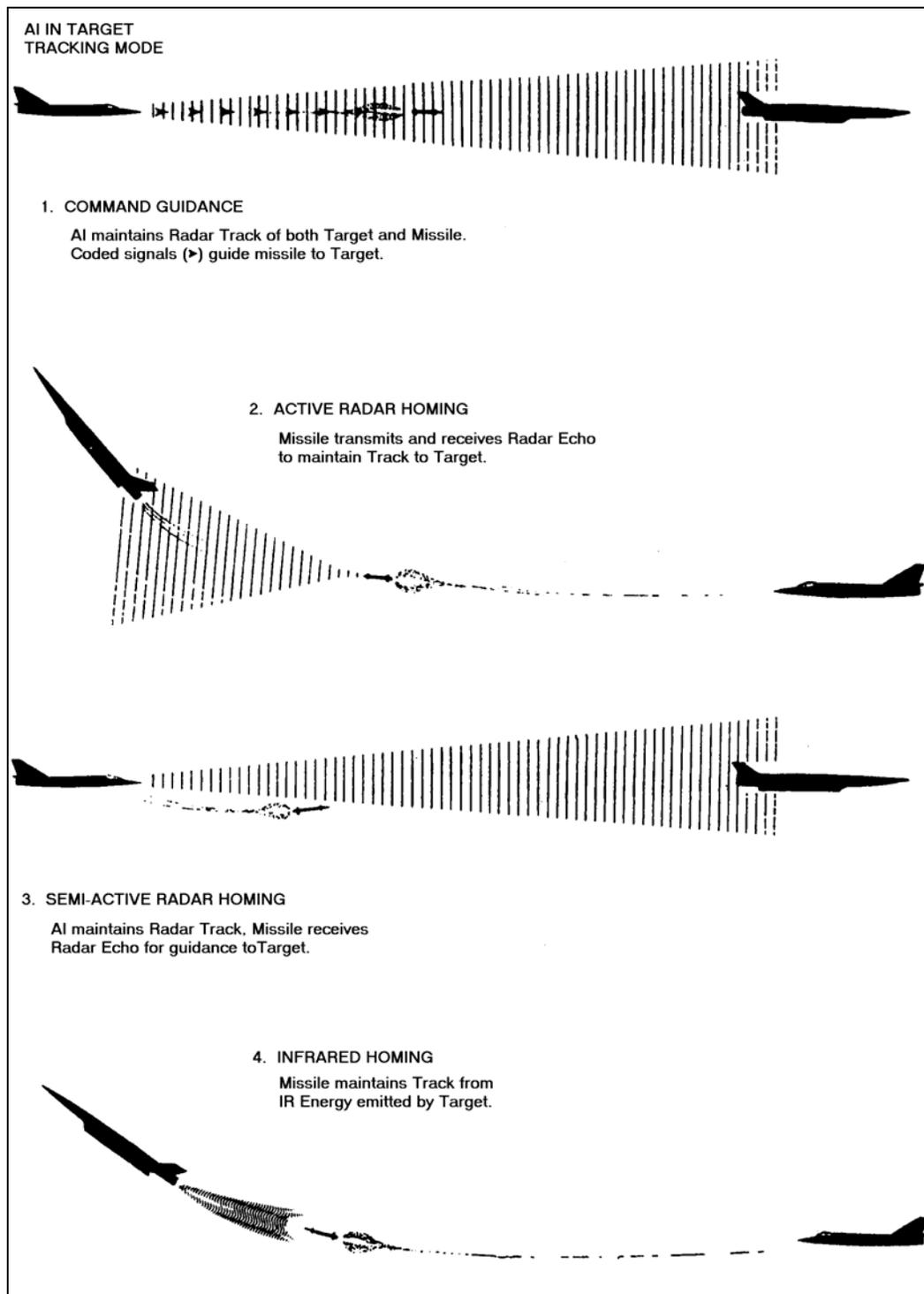


Figure 3-3. AAM Guidance.

### Surface-to-air threats

Another important area for training on enemy defense systems/equipment is the surface-to-air threats aircrews could encounter. Surface-to-air threats include SAMs, AAAs, and radar systems. Again, you can refer to AFTTP 3-1, Volume 2 for more information.

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Intelligence is a major source the aircrews rely on to help keep them abreast of any new developments in weapon systems. Included in this lesson is basic information you need to be aware of when training aircrews on enemy defense capabilities. Once you know what to look for, your task will be to apply this information specifically to your unit's weapon systems. Studying and keeping up-to-date will make you a valuable source of information for your aircrew. You can make the difference. The better you train the aircrews, the better their chances are for survival in an adversarial encounter.

### *Surface-to-air missiles (SAM)*

SAMs are predominately low- to medium-range weapons for use against attacking aircraft, but we also have the long-range SAMs. SAMs are normally found in the target area, along predicted intruder approach routes, and with accompanying armies and field units. Your training should cover both tactical and strategic SAMs, but the specific SAM systems you train on depends on your mission and AOR. The SAM systems intelligence training you provide aircrews could include:

- Deployment and combat use of the system.
- Minimum and maximum effective altitudes.
- Minimum and maximum engagement ranges.
- Type of warhead.
- Multiple launch capability.
- Acquisition, target tracking, and guidance systems.
- Missiles per launcher.
- Multitarget capability.
- Reload times.
- Strengths and weaknesses of system.

### *Radar versus non-radar*

Based on their primary target-tracking sensor, you can classify SAMs as either "radar" or "non-radar." It's easy to reference SAMs that are classified this way, because SAMs in each classification have similar weather capabilities, missions, countermeasures resistance, tactics, and countertactics.

### *Weather capabilities and missions*

Radar is the only practical spectrum that sees through weather. Hence SAMs that use radars as their primary target-tracking sensor have all-weather, day/night capability that can be used at medium to long range and medium to high altitude.

Non-radar SAMs use infrared (IR), visual, and/or ultraviolet (UV) spectra either singularly or in combination for target tracking and engagement; they can't see through weather. These SAMs are committed to low altitude and short range because of their spectrum limitation; however, many have nighttime capability. You'll also find yourself discussing with the aircrews which types of SAMs are found primarily around particular targets, which types of SAMs are mobile, and which types of SAMs are at fixed sites.

### *Antiaircraft artillery*

Although AAA is not effective against high-altitude aircraft, radar-controlled AAA does pose a significant threat to low- and medium-altitude aircraft. AAA accounted for more than 44 percent of the hits taken in the airdrop over Rio Hato, Panama, during Operation Just Cause. In Desert Storm, AAA proved to be a lethal threat to low-flying aircraft. AAA is more widely deployed and heavily used than any other type of air defense system. Third World countries find it easier to afford these systems; and as a result, more new systems have come on line.

### *Characteristics*

AAA pieces are used differently, and the unit's mission, the objective, the tactical situation, or the capability of the piece itself determines their use. AAA has four basic characteristics: range, rate of fire, firing doctrine, and type of fire.

#### Range:

- *Tactical range* is the slant range at which, under normal conditions, a combat aircraft can expect to receive fire from a particular gun. It is also called "open-fire" or "effective" range. The tactical AAA range varies, depending on the type of fire control equipment available, weapon caliber, and country. Tactical range can be both an altitude and a horizontal range.
- *Maximum effective range* is a very general and subjective term that deals with hit probability. Many factors (fire control, aircrew training, type of target, etc.) determine this range. The maximum vertical range is the maximum elevation an AAA round can reach. Use of tactical range is preferred.
- *Self-destruct range* is the maximum range at which the fuse automatically functions. A self-destruct mechanism is used with all AAA weapons firing airburst rounds. This keeps rounds from landing on friendly troops if they miss the target.
- *Open-fire range* is the range from the gun to the target at the time of firing, which enables the round to impact at the tactical range.
- *Maximum vertical range* is measured from the horizontal plane, extending from the horizontal plane through the gun to the peak of the ballistic trajectory of the round. It assumes that the gun is fired at maximum elevation and that no time fuse or self-destruct mechanism functions during the round's upward flight.
- *Maximum horizontal range* is the greatest range a round can travel to a ground target when the gun is fired at the optimum elevation for horizontal distance, assuming no self-destruct.

#### Rates of fire:

- *Cyclic rate* is the maximum theoretical rate of fire of the weapon.
- *Practical rate* is the weapon firing rate, taking into account external factors such as tracking limitations, ammunition restrictions, weapon heating problems, and firing doctrine.

#### Firing doctrine:

- FSU firing doctrine stresses that "burst fire" is most effective against aerial targets. The duration of the burst is based on the method of firing, nature of the target, and distance of the target. Western AAA firing doctrine uses more sophisticated fire control to allow shorter burst length with a higher chance to kill the target. Firing doctrines are usually categorized as short bursts, long bursts, continuous fire, or single round. The heavy caliber weapons use single rounds. Burst duration is range and system dependent.
- *Short bursts of fire* for AAA guns normally vary from 2 to 10 rounds per barrel per burst.
- *Long bursts of fire* vary from 10 to 20 rounds per barrel per burst. Long bursts are used at medium and short ranges if the gun crew is well trained and the gunners have high confidence in their firing doctrine.
- *Continuous fire* occurs at short ranges when the burst size exceeds 15 to 20 rounds per barrel. This type of fire is used mostly against diving and ground-attack aircraft at short ranges, typically 2,200 feet.

- All caliber weapons up to 57 mm may use short or long bursts and continuous fire. Calibers above 57 mm generally use single rounds.

Types of fire:

- *Aimed fire* is the most controlled type of fire in which AAA weapons are aimed specifically at the aircraft. It is the preferred method of fire when the target can be acquired and tracked by the AAA system.
- *Barrage (sector) fire* lays a screen of projectiles at various altitudes across the probable path of the enemy. Barrage fire is the least controlled type of AAA fire when the target can't be acquired by on- or off-carriage fire control. The intent is to put a cloud of AAA fire over the target.
- *Curtain fire* is directed at a fixed point in space until the target passes through the cone of fire. The gunner aims at a fixed point in front of the target along the target's course. A new fixed point is then selected, and fire is continued. Successive fixed points are selected until the aircraft is destroyed or flies out of range. Curtain fire is considered most effectively employed by small arms/automatic weapons (SA/AW).

#### *Antiaircraft artillery categories*

- Small arms/automatic weapons (SA/AW) – SA/AW include small arms and light and heavy machine guns below 20 mm that are used in an antiaircraft role.
- Light antiaircraft artillery guns – The ranges for light AAA are 20mm through 60mm. These weapons are characterized by automatic fire and tactical ranges up to 21,300 feet (57-mm weapons).
- Medium antiaircraft artillery guns – In this category, the guns are larger than 60 mm and go through 100 mm. These weapon systems are characterized by single-shot, normally battery-controlled fire, and use timed fuses in the projectiles.
- Heavy antiaircraft artillery guns - The weapon systems in this category are over 100 mm.

You must point out to your aircrews the normal employment patterns for each weapon system. If the system is radar controlled, explain what type of radar is used and its capabilities. Also include a discussion on the mobility of the system (whether it's self-propelled or towed and whether it has any ECCM capabilities). As with the other defensive systems, teach aircrews the strengths and weaknesses of each AAA system in detail.

#### **Naval air defense**

Another aspect of air defense you might have to train on is naval air defense. Again, this would depend on your mission and AOR. Naval air defense systems are similar to their ground-based counterparts, thus providing a similar threat to penetrating aircraft. Naval defense systems are very mobile and not always easily detected. Many countries have integrated their land-based IADS with naval air defense systems to extend their defenses through sensors, weapons, and C3 equipment. The subjects you cover in this training are similar to what is covered in land-based IADS training, such as radars, SAMs, and C3.

#### **Radars**

This subject itself is quite extensive. Our basic purpose in training on threat radars is to brief the aircrews on the radar's capabilities and how to apply measures to avoid detection. Radar training is normally briefed along with its associated systems, such as the fire control radar for the Fulcrum or the Flashdance. But, there are also the radars associated with the air defense system; for instance, early warning radars. During radar capabilities training, you could discuss the following topics:

- Employment methods/types of radar.
- Operating frequency band.

- Types of scans.
- Electronic countermeasures.
- Electronic counter-countermeasures.
- Strengths and weaknesses.

Radars that are used to detect, track, and, to a lesser degree, identify aircraft typically are divided into three functional categories: early warning (EW), acquisition (ACQ), and intercept control ground control intercept (GCI) or air control intercept (ACI). Several newer multirole radars can perform one or more of these functions, depending on how they are used and/or integrated.

- EW radars are optimized for long-range detection of medium to high altitude.
- ACQ radars are designed to provide accurate cueing data for narrow-field-of-view (FOV) SAM/AAA target-tracking radars. Associated with SAMs/AAA.
- Interceptor control radars are used for early warning detection.

### Summary

The importance of capabilities training and the vital part that you play should be obvious. An effective training program in this area can, and will, make a major difference in our nation's ability to conduct warfare. Waiting until a conflict occurs is certainly not the time to take this task seriously – a large part of your unit's peacetime training must include in-depth training, for both you and your aircrews. We'll discuss the areas that must be covered in recognition training for each specific system (air, ground, and naval) in a later unit of this volume.

### 211. Preparing and presenting international terrorism briefs

International terrorism has drawn a lot of attention over the last few years – the events of September 11, 2001 really hammer home the threats we face. The term “terrorism” means “premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents, usually intended to influence an audience.” In intelligence, we no longer treat terrorism only as a current intelligence topic that might be of interest. It is included in the predeployment briefing as a potential threat.

Terrorism has become a global problem. It is encountered both here in the United States and abroad. US ideology of capitalism, US presence in foreign countries, and the fact that the United States is a super power in the world make us targets of terrorism. The United States is also vulnerable to terrorist attacks—in September 2001, the World Trade Center in New York City and the Pentagon were attacked. Terrorism is a menace to civil society. The United States' policy on terrorism follows three general rules as follows:

1. We do not make deals with terrorists or submit to blackmail.
2. Terrorists are treated as criminals, and we apply the rule of the law.
3. We ensure that maximum pressure falls on states that sponsor and support terrorists by imposing economic, diplomatic, and political sanctions and urging other states to do the same.

Being in the military, we are visible targets for terrorism. Symbolic value is added to the military as a target because of what we represent-US power and US presence in a foreign country. The US government is also viewed as having the ability to dictate to other governments. So, again we find ourselves targets because terrorists may feel we can pressure a government to give in to their demands.

Terrorists want to draw attention. Modern terrorism has been made possible because of mass media. One of the terrorists' major goals is to obtain the maximum amount of publicity possible. They want to attract attention to their group or cause, and they want to demonstrate their power, take revenge, or

embarrass a government. Senator John Glenn asserted, “International publicity is the mother’s milk of terrorism.”

### **Terrorist group objectives**

The objectives of any given terrorist attack fall into one or more categories: attract attention to the group or its cause, demonstrate the group’s power, exact revenge, or embarrass a government. For example, an important element in the Middle East is the religious factor. Some groups believe the sanction of God permits acts of great destruction and self-destruction. Many of the attacks from this type of group tend to occur on religious holidays or anniversaries of historical events that are significant to the group. People who represent a religious or ethnic group that is different from that of the terrorists can easily become the victims of the terrorists’ internal psychology and propaganda, as they encourage their own members who are religious zealots to cross the threshold into mass murder. Just as a terrorist incident may have several objectives, the tactics may also be combined. Figure 3-4 identifies some of the tactics that are most commonly used.

<b>Tactic</b>	<b>Description</b>
Assassination	This is another word for murder and is generally applied to killing of prominent people or symbolic enemies, such as US military personnel.
Arson or bombing	This seems to be the terrorists’ tactic of choice; it is used most frequently because of the relatively low risk of capture. It also has attention-getting capacity and provides terrorists the ability to control casualties by adjusting the time of explosion.
Hostage-taking	This is usually an overt seizure of one or more people, with the intent of gaining publicity or other concession in return for the release of the hostages. While dramatic, this seldom occurs in areas that are unfriendly to the terrorists since the risk is too high. News media attention may lose its intensity if it extends over a period of time. Release of photos or videotapes showing the hostages standing trial or being executed is used by the terrorists to keep the story on the front-page news and pressure a government to take action.
Raids	Armed attacks on facilities are usually undertaken for one of three purposes: (1) to take possession of a radio or television station so terrorists can broadcast a statement, (2) to demonstrate a government’s inability to protect a critical facility, or (3) to take money or weapons.
Sabotage	The objective in most sabotage incidents is to demonstrate how vulnerable society is to terrorist actions. Industrialized societies are more vulnerable to sabotage than less developed societies. Utilities, communications, and transportation systems are marks of a modern government. To disrupt any one of these facilities would gain immediate public attention. These attacks are usually carried out on either lightly defended or unprotected targets.
Hijacking	Hijacking is sometimes employed as a means of escape; however, hijacking is normally carried out to produce a spectacular hostage situation. Although trains, buses, and ships have been hijacked, aircraft (US flag carriers more than any other) are the preferred targets because of their greater mobility and vulnerability. In addition, September 11, 2001 demonstrated another use for hijacked aircraft – suicide attacks on structures of national importance.
Hoaxes	Any terrorist group that has established credibility can employ hoax tactics with considerable success at no cost to the terrorist. A threat against a person’s life causes that person and those associated with the person to devote time and effort to security measures. A bomb threat can close airbase gates, create an evacuation situation, or delay an aircraft’s takeoff.

**Figure 3-4. Terrorist tactics.**

### Training resources and procedures

Your unit may already have a mission in support of an OPLAN or OPORD that requires a deployment commitment. It is a good idea to keep a file on relevant message traffic for terrorist threats pertaining to those areas or countries where your unit may deploy. When a briefing is required, you simply check for new or updated information on terrorist activity in the most recent message traffic and incorporate that with what you have already collected.

You should look not only at the location of the deployment, but also at the area of operations and any enroute stop locations. Television news, newspapers, and periodicals are good open-source materials that may have news or background material on terrorist groups in the deployment country. Your higher headquarters also may have country study packages or canned briefings available for just such deployments. A complete check of your own resources should always be made first, but your local Office of Special Investigations (OSI) can assist you in locating specific information on known terrorist activity.

Once an active terrorist threat has been identified in your deployment area, you should check your source document. You want to identify how the group operates, what its goals are, and what types of targets they usually attack. Finally, you should advise all personnel who are going on the deployment of the following precautions that may help them avoid becoming victims of terrorism:

- While at the deployed location, vary times and routes of travel. The greatest aid to a terrorist is a predictable target with an established routine and pattern of behavior.
- Be alert for suspicious-looking vehicles.
- Check for suspicious activity or objects around the car before getting into or out of it.
- Travel in groups. There is safety in numbers.
- Travel on busy routes and avoid isolated areas and alleys.
- Park vehicles off the streets in secure areas, and lock them.
- If you think you're being followed, move as quickly as possible to a safe place, such as a police station.
- Keep your room key on your person at all times.
- Be observant for suspicious persons loitering in lobbies or bars.
- Know how to contact hotel security guards.
- Know where fire extinguishers and emergency exits are located.
- Assume a low profile. When overseas, avoid wearing cowboy hats or boots, or jackets or hats with military emblems. Avoid clothing that sharply contrasts with that of the country.
- *Don't* pick up hitchhikers.
- *Don't* announce your room number in public.
- *Don't* admit strangers to your room.
- *Don't* be a stereotypical American. Talking loudly, making jokes about the locals, and flashing money around will surely attract attention.

Regardless of how much information you provide your aircrews, the greatest deterrents to terrorist attacks are alert, aware, and observant airmen who have taken steps to reduce their vulnerability.

In addition, the Air Force's Force Protection program, governed by Air Force Doctrine Document (AFDD) 2-4.1, *Force Protection*, establishes doctrinal guidance for organizing and employing force protection capabilities at the operational level across the full range of military operations. It is a critical element of the US Air Force's operational-level doctrine and as such forms the basis from which commander's plan and executes their force protection mission

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## Summary

International terrorism is, unfortunately, a fact of life. There will always be someone, or some group, that opposes the United States for one reason or another, and are perfectly willing to carry out attacks against our interests or us. It is vital that you familiarize yourself with the activities, actual or suspected, of such individuals or groups for your unit's AOR, and ensure that this information is disseminated.

### 212. Understanding reports originated by aircrews

The best method you can use to ensure that all aircrew members report relevant information is to provide quality training in all areas of aircrew ground training: Training in visual recognition and military capabilities, in combination with the ECCM and tactics, can help aircrew members provide excellent information that relates to the EEIs you want reported. However, a training program for aircrews should also include some training on the collection and reporting of intelligence. Be creative. Use your imagination to catch the aircrew members' interest.

#### Training focus

Your training program should focus on what you want the aircrews to report and the procedures they are to use. Each MAJCOM has established procedures to pass this information as quickly and accurately as possible to those who need it the most. Some of these procedures may involve a very elaborate coded or formatted voice report, while others may require a simple INFLTREP that's followed up by a debriefing session when the aircrew is back at the unit.

In addition to the intelligence-generated MISREP and INTREP, reports originated by the aircrew, such as the INFLTREP and communications instructions for reporting vital intelligence sightings (CIRVIS) should be the meat of your collection and reporting training. The training you provide on collection and reporting requirements should also include the unit's EEIs, procedures, methods, and message formats that are used in your MAJCOM.

#### Training emphasis

The main emphasis of collection and reporting is not only to fill a requirement levied by the MAJCOM, but also to aid aircrews that are on subsequent missions to the same target area. News of a new weapon system, a new electronic countermeasure, or a change in defensive tactics is examples of intelligence that should be passed to aircrews flying in the same area. This fact alone should provide motivation for your crews to participate in the collection and reporting effort.

#### Training method

Lessons learned from past conflicts and operations are always useful in showing the historical significance of successful collection and reporting of intelligence. A good training session for collection and reporting could include the use of head-up display (HUD) videotapes or audio recordings that were made during actual or simulated combat missions. The HUD videotapes provide a medium the aircrew members can truly relate to for equipment sightings. A recorded narration can enhance training by providing a realistic approach to show when and where events can occur. During premission briefings on training missions, you could provide checklists of the EEIs and quick reminders to reinforce your unit's collection and reporting requirements.

## Summary

There should be no doubt how important it is for aircrew to report their observations during a combat mission. The location of a new enemy surface-to-air missile threat in an area where operations are ongoing must be reported quickly so that later missions can take the steps necessary to avoid, or neutralize, this threat. To this end, the training you provide will ensure that this perishable information is quickly made available to all that need it.

### **213. Understanding and presenting Code of Conduct training**

Why do you train on the Code of Conduct (CoC)? Because aircrew members may find themselves in a situation where these articles come into play. Understanding the seriousness of the ideas and principles behind the six articles is part of the training you provide. AFI 36-2209, *Survival and Code of Conduct Training*, gives the criteria for CoC training, and provides information on the articles in the Code of Conduct.

Department of Defense Directive 1300.7, *Training and Education To Support the Code of Conduct (CoC)*, requires that all “DoD personnel who plan, schedule, commit, or control the use of the Armed Forces shall understand fully the CoC and ensure that personnel are trained and educated to support it.”

#### **Responsibilities**

DODD 1300.7 designates the Commander, United States Joint Forces Command, as the DOD executive agent (EA) for CoC training in the military services. USJFCOM has designated the Joint Personnel Recovery Agency (JPRA) as its office of primary responsibility for DoD-wide CoC training and education measures.

Headquarters USAF, Deputy Chief of Staff for Plans and Operations (HQ USAF/XOO) oversees and guides formal survival and CoC courses conducted by Air Education and Training Command (AETC), Headquarters of the Joint Services SERE (survival evasion, resistance, and escape) Agency (HQ JSSA), US Air Force Academy, and US Air Force School of Aerospace Medicine. HQ USAF/XOO also determines, with the assistance of the MAJCOMs, which Air Force personnel have a moderate or high risk of capture during combat, peacetime detention by an unfriendly government, and abduction by terrorists. Additionally, HQ USAF/XOO ensures that all personnel are trained to meet the requirements in AFI 36-2209.

Headquarters JSSA has numerous taskings. The following are just a few:

- Develop policies, procedures, publications, techniques, operational tactics, and equipment for the DOD and for joint CoC training.
- Develop CoC training multimedia training materials and monitor and evaluate DOD CoC training programs.
- Help the military services and the unified and specified commands with mission planning, exercises, and training as required to ensure implementation of CoC training policies, principles, procedures, techniques, and operational tactics.
- Produce finished CoC training analysis and SERE aids to escape and evasion to include SERE contingency guides, evasion charts, and newsletters.
- Manage the DOD Code of Conduct library and PW archives.
- Manage, conduct, and monitor formal CoC training courses listed in AFI 36-2209.

Combat wings and groups appoint OPRs for Code of Conduct continuation training (CoCCT). These OPRs ensure that (1) the CoCCT program meets the needs of the wing or group and (2) it is a coordinated effort with intelligence, life support, and SERE instructors. OPRs are also tasked with ensuring that training materials satisfy DODD 1300.7 and AFI 36-2209. The training you provide will be in concert with wing or group requirements, life support, and the SERE instructor.

#### **Code of Conduct training**

CoC training provides essential military heritage and background for personnel in the armed forces. It also establishes an orderly transition from the civilian sector to the armed forces. This training reinforces three aspects for military members:

1. The inherent responsibilities of rank, leadership, military bearing, order, discipline, teamwork, and devotion to fellow service members.

2. The idea that capture or detention does not lessen the duty to resist the enemy.
3. Attitudes and interests that are compatible with a career in the Air Force.

Your CoC training will include much of the following information:

- How military members can prepare for legal obligations to their families (wills, allotments, powers of attorney), personal physical readiness (physical conditioning, dental, medical, immunizations), and self-study (operational environment's climate, terrain, life forms, people).
- How to use survival principles and techniques to provide personal protection and sustenance, prevent and treat injuries and illnesses, and cope with psychological problems.
- How to use evasion principles and techniques to accomplish evasion movement, camouflage, concealment, evasion living, authentication, and appropriate interaction during assisted evasion.
- How to use resistance principles and techniques to combat enemy exploitation and communicate and organize while in captivity.
- How to use recovery principles and techniques to signal and communicate with recovery forces, select a recovery site, and use pickup devices.
- How to use escape principles and techniques to plan and execute escapes during any stage of captivity, and what role the senior military member present plays in escape.

#### **Code of Conduct training attendance**

Aircrew members who will soon be assigned to a combat zone or who will participate in peacetime aerial reconnaissance and special operations missions have first priority for attending CoC training courses. All medical aircrew members who have a high risk of capture must attend course S-V80-A, Basic Survival, Evasion, Resistance, & Escape training. Additionally, all life support and intelligence personnel whose duties include serving as supervisors or instructors in unit aircrew CoCCT must attend course S-V80-A.

#### **Summary**

The importance of Code of Conduct training cannot be overemphasized. In most every major conflict that involved US forces, testimony from former American POWs emphasized how vital their training was. The training you provide in this area could, ultimately, save the lives of our fellow airmen, and facilitate their safe return to the unit.

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### **Self-Test Questions**

**After you complete these questions, you may check your answers at the end of the unit.**

#### **209. Preparing and presenting recognition training**

1. What is the main purpose of recognition training?
2. What are two objectives of recognition training?
3. What organization is responsible for the production and distribution of Air Force recognition training materials?

4. What are some things you can do to ensure that aircrews receive all of their required training during each training cycle?
5. How many subjects should you try to cover in one training session?

**210. Preparing and presenting enemy defense systems and capabilities training**

1. What is one of the most valuable information sources for training on IADs and AAM capabilities?
2. What is the purpose of an IADS?
3. What interactive components do you need to have an effective IADS?
4. What type of air defense system protects fixed airspace?
5. What is the best technique for teaching IADS to aircrews?
6. When you are presenting AAM training, in addition to discussing the missiles themselves, what two other topics must you address?
7. Which SAMs are predominately for use against attacking aircraft?
8. Where are SAMs normally found?
9. Based on their primary target-tracking sensor, what are the two classifications of SAMs?
10. What types of SAMs are committed to low altitude and short range?
11. AAA is effective against aircraft at what altitudes?

12. Which air defense system is more widely deployed and heavily used than any other?
13. What does the term “self-destruct range” mean?
14. What rate of fire takes into account external factors?
15. How are firing doctrines usually characterized?
16. What type of fire lays a screen of projectiles across the probable path of an enemy aircraft?
17. What caliber AAA guns have ranges that are 60 mm through 100 mm?
18. What have most countries integrated with their naval air defense systems?
19. What is the basic purpose for intelligence aircrew training on radars?
20. What are the three functional categories of radar?

### **211. Preparing and presenting international terrorism threats**

1. How large is the terrorism problem?
2. What type of value is added to US military personnel as targets of terrorism because of what we represent?
3. What has made modern terrorism possible?
4. What is one of the major goals of terrorists?

5. On what dates do Middle East terrorist attacks tend to occur?
6. What seems to be the terrorists' tactic of choice?
7. What is the objective of most sabotage incidents?

### **212. Understanding reports originated by aircrews**

1. What reports are generated as a result of aircrew members' gathering information during exercises or combat?
2. How does aircrew collection and reporting of information help other aircrews?
3. What are some resources you can use for training aircrews on intelligence collection and reporting requirements?

### **213. Understanding and presenting Code of Conduct (CoC) training**

1. What publication states the *criteria* for CoC training?
2. What document requires that Air Force members receive continuing instruction on how to apply the Code of Conduct?
3. Who is the DOD executive agent for CoC training in the military services?
4. Who develops policies, procedures, publications, techniques, operational tactics, and equipment for the DOD and for joint CoC training?
5. What types of legal documents are discussed in CoC training to help aircrew members with personal obligations?
6. What CoC training is required for intelligence and life support personnel?

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## Answers to Self-Test Questions

### 208

1. ISD.
2. Good rapport between intelligence personnel and aircrews.
3. Operations personnel.
4. When the instructor shows initiative and is knowledgeable, dynamic, interesting, and motivated.

### 209

1. To develop the ability to identify enemy systems visually, distinguishing them from friendly or neutral material.
2. On a mission, aircrews must be able to identify any object of military significance, and they must become competent observers and reporters.
3. 480th Intelligence Group.
4. Monitor training progress, ensure the scheduling branch gets attendance rosters, and record all training promptly.
5. One to two.

### 210

1. AFTTP 3-1, Volume 2, *Threat Reference Guide and Countertactics*.
2. To detect, identify, and engage airborne targets through the use of diverse sensors and weapons.
3. Sensors, weapons, and C3 equipment.
4. Territorial air defense.
5. Place them in a scenario situation.
6. Aircraft and guns.
7. Low- to medium-range.
8. In the target area, along predicted intruder approach routes, and with accompanying armies and field units.
9. Radar and non-radar.
10. Non-radar (IR, visual, and/or UV spectrums).
11. Low to medium.
12. AAA.
13. Maximum range at which the fuse automatically functions.
14. Practical rate.
15. Short bursts, long bursts, continuous fire, and single round.
16. Barrage (sector) fire.
17. Medium.
18. Land-based IADs.
19. To brief the aircrews on the radar's capabilities and how to apply measures to avoid detection.
20. Early warning (EW), acquisition (ACQ), and intercept control (GCI or ACI).

### 211

1. Global.
2. Symbolic.
3. Mass media.
4. To obtain the maximum amount of publicity possible.
5. On religious holidays or anniversaries of historical events that are significant to the group.
6. Arson or bombing.
7. To demonstrate how vulnerable society is to terrorist actions.

**212**

1. MISREP, INTREP, INFLTREP, and CIRVIS.
2. Provides information for follow-on flights going to the same target areas.
3. Lessons learned from past conflicts and operations, HUD videotapes, audio recordings, and EEI checklists.

**213**

1. AFI 36-2209, *Survival and Code of Conduct Training*.
2. DODD 1300.7.
3. Commander, US Joint Forces Command (USJFCOM).
4. Headquarters JSSA.
5. Wills, allotments, and powers of attorney.
6. Course S-V80-A, Basic Survival, Evasion, Resistance, and Escape training.