ROYAL CANADIAN AIR CADETS

PROFICIENCY LEVEL THREE

INSTRUCTIONAL GUIDE

SECTION 5

EO C360.05 – IDENTIFY ASPECTS OF EMERGENCY RESPONSE AND AERODROME SECURITY

Total Time: 30 min

PREPARATION

PRE-LESSON INSTRUCTIONS

Resources needed for the delivery of this lesson are listed in the lesson specification located in A-CR-CCP-803/PG-001, Chapter 4. Specific uses for said resources are identified throughout the instructional guide within the TP for which they are required.

Review the lesson content and become familiar with the material prior to delivering the lesson.

Review the mandate of the Canadian Air Transport Security Authority (CATSA) at website reference C3-098 and update the information presented in the guide if necessary.

Obtain and photocopy an updated list of permitted and prohibited carry-on items from http://www.catsa-acsta.gc.ca for each cadet.

Create a slide of Annex H.

Photocopy the Aerodrome Security Definitions located at Annex I for each cadet.

PRE-LESSON ASSIGNMENT

N/A.

APPROACH

An interactive lecture was chosen for this lesson to clarify, emphasize and summarize aircraft and aerodrome emergencies, security, the role of CATSA, and types of screening at an aerodrome.

INTRODUCTION

REVIEW

N/A.

OBJECTIVES

By the end of this lesson the cadet shall have identified aspects of emergency response and security at aerodromes.

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IMPORTANCE

It is important for cadets to understand the operational requirements of aerodrome emergency response and security. Recognizing the role of CATSA and the types of screening performed will be relevant to cadets who travel through major Canadian aerodromes.

Teaching point 1 **Discuss Aircraft Emergencies**

Time: 5 min Method: Interactive Lecture

AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF)

The primary responsibility of an ARFF service is to provide an escape route for the evacuation of passengers and crew when needed. This service is also known as:

- Crash, Fire and Rescue (CFR), and
- Emergency Response Services (ERS).

ARFF VEHICLES

ARFF must be able to respond within a specific time frame, carry the types and volumes of specified extinguishing agents (water and foam) and be able to dispense the agents.



Show the cadets Figure 16H-1.

ARFF vehicles are similar to standard fire trucks, but have been built specifically for aerodromes. They can handle rough terrain while accelerating quickly to their top speed. The use of turrets to dispense water and foam allows the operator to drive to the edge of the fire and begin dispensing extinguishing agents immediately. Two turrets (nose and roof) are standard equipment and are controlled by the operator inside the cabin. A turret can be combined with a piercing device on the end of a boom. This boom can be extended to the aircraft to create an opening in the aircraft skin and an extinguishing agent can then be delivered directly into the aircraft.

STANDBY REQUESTS

Local Standby. The level of response when an aircraft has or is suspected to have an operational defect that would cause serious difficulty for the aircraft to achieve a safe landing.

Full Emergency Standby. The level of response when an aircraft has or is suspected to have an operational defect that affects normal flight operations to the extent that there is possibility of an accident.

ON-SITE CRASHES

If a crash occurs at an aerodrome, the primary role of the ARFF service is to suppress any fire and provide a safe evacuation route out of the aircraft for the passengers. Many ARFF departments also include paramedics, vehicles and equipment to provide first aid and triage services to the passengers. In the event of a major crash, additional resources from the local area may be required.

OFF-SITE CRASHES

If an aircraft crash occurs near an aerodrome with ARFF, the ARFF services from that aerodrome may be dispatched to the scene. If ARFF services from an aerodrome are not readily available, local fire departments

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and paramedics will respond. Most aircraft crashes occur during takeoff and landing; the ERS for the municipalities surrounding an aerodrome, such as fire, paramedics and police services, will be prepared to respond to an off-site crash. ERS personnel receive special training on aircraft firefighting and passenger rescue techniques.

JOINT RESPONSES

Aerodromes with ARFF services may have an agreement with the surrounding municipalities to assist in off-site aircraft crashes. The agreement may also cover non-aviation related emergencies near the aerodrome. An example of this would be a fuel tanker crash and fire on a nearby highway. The foam extinguishing agent dispensed by ARFF vehicles can control this type of fire.

CONFIRMATION OF TEACHING POINT 1

QUESTIONS

Q1. What does ARFF stand for?

Q2. How do ARFF vehicles dispense water and/or foam?

Q3. When do most aircraft crashes occur?

ANTICIPATED ANSWERS

A1. Aircraft Rescue and Fire Fighting.

A2. Through turrets.

A3. During takeoff and landing.

Teaching point 2 **Discuss Aerodrome Emergencies**

Time: 5 min Method: Interactive Lecture

AERODROME EMERGENCIES

In addition to aircraft emergencies, the aerodrome's emergency plan should include other non-aviation emergencies. Where possible, the ARFF unit is the responding agency. In other cases, local ERS such as fire, paramedics and police would respond. In all cases, simulated emergency exercises are held to test the emergency plan and provide training opportunities for all personnel.

Building Fires

A fire in a terminal building at a large aerodrome would be handled much the same way as a fire in any large building with lots of people (such as a shopping mall). In addition to fire extinguishers throughout the building (designed to put out and control small fires) there are usually water pipes, hoses and standpipe connections. As with any emergency in a location with large numbers of people, preparations to deal with injuries and casualties are necessary.

Bomb Threats

The emergency plan includes a section on bomb threats, both in the terminal and on-board an aircraft. In the terminal, suspicious or unattended baggage is treated seriously. Large international airports usually have personnel and equipment on site to respond. Many state-of-the-art baggage screening systems have isolation chambers that suspicious baggage can be routed to. This chamber is designed to contain an explosion and prevent injuries and damage.

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In Canada, making a false declaration that could jeopardize the safety or security of an aircraft or aerodrome can result in a fine up to $5 000.

Medical Crises

Heart attacks, panic attacks and allergic reactions are common in areas where large numbers of people congregate. Large aerodromes have paramedics on site to deal with medical crises. Small aerodromes must ensure that aerodrome personnel have the appropriate first aid qualifications and training to deal with common crises until paramedics can arrive. Advances in technology have resulted in the development of Automated External Defibrillators (AEDs). These machines make it possible for non-medical personnel to restore heart rhythms to help save lives.

CONFIRMATION OF TEACHING POINT 2

QUESTIONS

Q1. Who can help aerodrome ARFF units respond to emergencies?

Q2. How much could you be fined for making a false declaration that jeopardizes safety or security?

Q3. What machine can help increase the survival rate of heart attack victims?

ANTICIPATED ANSWERS

A1. Local ERS.

A2. $5 000.

A3. AED.

Teaching point 3 **Explain Components of Aerodrome Site Security**

Time: 5 min Method: Interactive Lecture

AERODROME SECURITY DEFINITIONS



Hand out a copy of Annex I to each cadet.

Restricted Area. A portion of an aerodrome where access is only granted to authorized persons.

Restricted Area Access Point. A location in a security barrier at which a control system is in place that controls access to a restricted area from a non-restricted area.

Screening. The checking, identification, observation, inspection or authorized search of persons, goods and other things in the possession or control of persons.

Security Barrier. A physical structure or natural feature used to prevent or deter access by unauthorized persons to a restricted area.

Sterile Area. A restricted area, including any passenger loading bridges attached to it. It is used to

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separate passengers who have been screened, or are exempt from screening, and other authorized persons from unauthorized persons at the aerodrome.

RESTRICTED AREAS

All aircraft movement areas (runways, taxiways and aprons) are restricted areas and only those who are authorized have access to these areas. Restricted areas also exist inside the terminal building. The area used by passengers between the time they are screened and the time they board the aircraft is a restricted area (specifically a sterile area). Other areas inside the terminal building that will be a restricted area include:

- aerodrome and airline operations,
- baggage-handling areas,
- ATC, and
- emergency response.

FENCES

The fences most commonly used as security measures at an aerodrome are chain-link fences erected around the perimeter of the aircraft movement areas. Access through the fence is provided by gates for vehicles and people or through buildings adjacent to the movement areas.

GATES

The gates found in aerodrome fencing can be categorized in several ways: routine, emergency, or occasional access points and vehicle or personnel access points. Additionally, they can be operated manually or mechanically. Gates designed to be operated mechanically should also be able to be opened manually in case of electrical failure. In all cases, a gate that remains open can become a major security problem.

CONFIRMATION OF TEACHING POINT 3

QUESTIONS

Q1. What is a restricted area?

Q2. In addition to identity, what must be confirmed prior to allowing access to a restricted area?

Q3. How can gates be operated?

ANTICIPATED ANSWERS

A1. A portion of an aerodrome where access is only granted to authorized persons.

A2. Authorization.

A3. Manually or mechanically.

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Teaching point 4 **Explain Security Requirements at Different Types of Aerodromes**

Time: 5 min Method: Interactive Lecture

INTERNATIONAL AND REGIONAL AERODROMES

The security requirements at international and regional aerodromes are governed by Part Three–Aerodrome Security of the Canadian Aviation Security Regulations (CASR). It details identity verification systems and restricted area pass control. CASR Part Three requires that:

- access to restricted areas be controlled by an identity verification system;
- restricted area passes are only issued to those that require them on an ongoing basis, and deactivated when they are no longer required; and
- restricted areas can only be accessed through a restricted area access point.

MUNICIPAL AND PRIVATE AERODROMES

The measures that are implemented depend on the resources available, the types of security risks expected by the aerodrome operator and the level of risk that the aerodrome operator is willing to accept. Most aerodromes of this type will implement measures such as fences, gates, signs and locked doors to prevent unauthorized persons from inadvertently accessing restricted areas. Aerodromes with more resources and those that anticipate a higher degree of security related risks and incidents will implement more formal and stringent procedures.

CONFIRMATION OF TEACHING POINT 4

QUESTIONS

Q1. What part of the CASR pertains only to international and regional airports?

Q2. How can access to restricted areas be controlled?

Q3. Where can a restricted area be accessed?

ANTICIPATED ANSWERS

A1. CASR Part Three – Aerodrome Security.

A2. By an identity verification system.

A3. At a restricted area access point.

Teaching point 5 **Explain the Role of the Canadian Air Transport Security Authority (CATSA)**

Time: 5 min Method: Interactive Lecture

CANADIAN AIR TRANSPORT SECURITY AUTHORITY (CATSA)

CATSA's mandate is to protect the public by securing critical elements of the air transportation system as assigned by the government. CATSA was established in April 2002 as part of a comprehensive aviation security initiative. It is a crown corporation that reports to Parliament through the Minister of Transportation. CATSA's

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many responsibilities include pre-board screening of passengers and their belongings (PBS), hold baggage screening (HBS) and non-passenger screening (NPS).



Updated information on the role and mandate of CATSA can be found at http://www.catsa-acsta.gc.ca.

Pre-Board Screening (PBS)



Distribute the list of permitted and prohibited carry-on items. The list of prohibited items and dangerous goods changes from time to time. An updated list can be obtained from http://www.catsa-acsta.gc.ca/english/travel_voyage/list.shtml.

Passengers and carry-on baggage must pass through screening devices before entering the sterile area. These devices provide a way for screening officers to identify passengers and baggage that should be subjected to a more thorough search. Objects that are not permissible can also be identified with these devices. Passengers and baggage may also be selected at random for a more in-depth search.

Hold Baggage Screening (HBS)

HBS is the screening of checked baggage using explosives detection systems at aerodromes. In 2006 CATSA announced full deployment of HBS at 89 airports across Canada. This state-of-the-art baggage system is multi-level and involves the screening of all checked baggage. HBS is in effect for all domestic and international flights.

Non-Passenger Screening (NPS)

CATSA screens individuals, goods and possessions requiring access to the restricted areas at aerodromes where it is responsible for screening services. Flight crews and airport workers such as caterers, maintenance workers and baggage handlers are randomly selected for screening at Canada's 29 largest airports. Over 1 000 screenings of non-passengers and any goods or possessions occur nationally, at random, on a daily basis.

CONFIRMATION OF TEACHING POINT 5

QUESTIONS

Q1. What does PBS stand for?

Q2. What does HBS stand for?

Q3. What does NPS stand for?

ANTICIPATED ANSWERS

A1. Pre-board Screening.

A2. Hold Baggage Screening.

A3. Non-passenger Screening.

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END OF LESSON CONFIRMATION

QUESTIONS

Q1. What are two common types of extinguishing agents carried by ARFF vehicles?

Q2. What is a restricted area?

Q3. What are three types of medical crises that are common where large numbers of people congregate?

ANTICIPATED ANSWERS

A1. Water and foam.

A2. A portion of an aerodrome where access is only granted to authorized persons.

A3. Heart attacks, panic attacks and allergic reactions.

CONCLUSION

HOMEWORK/READING/PRACTICE

N/A.

METHOD OF EVALUATION

N/A.

CLOSING STATEMENT

Emergency response and aerodrome security are both necessary to ensure the safety of the travelling public. Both of these areas are complex, with challenges and solutions constantly evolving.

INSTRUCTOR NOTES/REMARKS

N/A.

REFERENCES

C2-044 Transport Canada. (2007). *Aeronautical Information Manual*. Retrieved October 2, 2007, from http://www.tc.gc.ca/publications/EN/TP14371/PDF/HR/TP14371E.PDF.

C3-098 Canadian Air Transport Security Authority. (2007). *Mandate*. Retrieved October 10, 2007, from http://www.catsa-acsta.gc.ca/English/about_propos/mandat.shtml.

C3-148 (ISBN 0-9739866-0-3) Syme, E. R., & Wells, A. T. (2005). *Airport Development, Management and Operations in Canada: Second Edition*. Barrie, ON: Aviation Education Services.

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