

Task XIII.C: Emergency Equipment and Survival Gear

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Lesson Overview

Objective

The student should develop knowledge of the elements related to emergency equipment and survival gear, understanding that certain equipment should be taken on certain flights to aid in survival and rescue operations. The student will have knowledge in accordance with the ACS/PTS.

Reference

- Aircraft Flight Manual / Pilot's Operating Handbook
- Airplane Flying Handbook (FAA-H-8083-3B)

Key Elements

1. Equipment for the Situation
2. Equipment Care
3. Equipment Storage

Elements

1. Appropriate Equipment and Gear
2. Equipment Use and Care

Equipment

1. White board and markers
2. References
3. iPad

Instructor Actions

1. Discuss lesson objectives

2. Present Lecture
3. Ask and Answer Questions
4. Assign homework

Student Actions

1. Participate in discussion
2. Take notes
3. Ask and respond to questions

Schedule

1. Discuss Objectives
2. Review material
3. Development
4. Conclusion

Completion Standards

The student understands that flights over different terrains and during different seasons require different emergency equipment and survival gear. The student also knows that the gear must be properly cared for and stored to ensure it functions correctly upon use.

Instructor Notes

Introduction

Attention

Would you want to crash land in the desert with a life raft, life preserver, warm clothes and an average water supply as your survival equipment? Or, wouldn't you rather have survival gear tailored to the flight you are taking? We want to be properly prepared for an emergency landing.

Overview

- Review Objectives and Elements/Key ideas

What

Emergency equipment and survival gear refers to the equipment that should be carried onboard an airplane based on the flight being taken to aid in survival and rescue operations.

Why

By carrying and understanding the use of survival equipment tailored to your flight you will greatly increase chances of rescue and survival.

Lesson Details

Stuff happens. Sometimes the stuff that happens requires the aircraft to be landed off-airport and potentially in situations hostile to survival. When venturing into situations where this is a

possibility it is wise to have appropriate survival equipment and supplies available.

Appropriate Equipment and Gear

A survival kit should provide sustenance, shelter, medical care, and a means to summon help. In picking the items to include consider the terrain, the climate/season, and the type of emergency communication equipment needed. It is obvious that mountain terrain in Winter requires different survival gear than ocean flying in Summer. While there is no Part 91 FAR that mandates survival gear over water, it only makes sense to have life preservers and a raft to accommodate everyone on the aircraft.

General items to consider including are

- First Aid Kit and Field Medical Guide
- Flashlight
- Water
- Knife
- Matches
- Shelter
- Signaling Device

There are survival manuals published commercially as well as by the government. These guides will also include suggestions for items to include in the survival kit as well.

Equipment Use and Care

ELT

One of the most important signaling devices in the aircraft is the Emergency Locator Transmitter (ELT). The purpose of this device is to automatically trigger in the event of an accident. The old devices would transmit on 121.5Mhz and 243.0Mhz, though those frequencies are no longer automatically monitored. Newer ELTs transmit on 406Mhz and are monitored by satellites.

It generally takes about a 5G impact to trigger the ELT, and there may also be a cockpit switch which can be used to manually trigger the device. If making an emergency landing activate the ELT manually since the landing might not set it off. These devices must be checked every 12 calendar months and the battery must be replaced after 1-hour cumulative use or 1/2 of the battery's useful life (91.207).

Fire Extinguisher

This is (obviously) used for cabin and engine fires. Instructions for the extinguisher should be on the device and those instructions should be followed (though it is probably as simple as pull the pin, point, and spray). These should be serviced and stored as per the manufacturer's instructions.

Survival Gear

This equipment is used to help in signaling help and support for short-term survival. The equipment selected should have instructions from the manufacturer for use, and those instructions should be followed. This equipment should be serviced and stored as per the manufacturer's instructions.

Conclusion

Emergency equipment should be tailored to the type of flight that will be taken. Gear should be stored and serviced properly to ensure it functions properly during an emergency. Survival manuals can be obtained to help in planning.

ACS Requirements

CFI PTS Standards

To determine that the applicant exhibits instructional knowledge of the elements related to emergency equipment and survival gear appropriate to the airplane used for the practical test by describing

1. Equipment and gear appropriate for operation in various climates, over various types of terrain, and over water.
2. Purpose, method of operation or use, servicing and storage of appropriate equipment.