



**MARINE INSTITUTE**

*School of Maritime Studies*

*Offshore Safety and Survival Centre*

*Offshore Survival Introduction (OSI)*

*The Fisheries and Marine Institute  
of  
Memorial University of Newfoundland*

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*Memorial University of Newfoundland*

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# OFFSHORE SURVIVAL INTRODUCTION (OSI)

<b>TYPE AND PURPOSE:</b>	<p>This course is targeted towards visitors to an offshore petroleum installation who have not completed a course in Basic Survival Training (BST), and who are not expected to spend more than six days offshore during a 12 month period.</p> <p>This course will provide participants with an awareness of the hazards associated with the marine environment, an understanding of their responsibilities during an offshore emergency and the ability to care for themselves in a survival situation.</p>
<b>CALENDAR ENTRY:</b>	Offshore Hazards and Emergencies; Emergency Preparedness and Response; Personal Buoyancy Apparatus; Installation Evacuation and Abandoning; Survival; Signalling Devices; Search and Rescue; Helicopter Safety and Emergency Procedures
<b>CERTIFICATE AWARDED:</b>	Certificate of Achievement
<b>PREREQUISITES:</b>	Marine Institute approved Medical Clearance
<b>RENEWAL:</b>	Valid for three (3) years
<b>SCHEDULE:</b>	Duration: 10 hours Theory: 5 hours Practical: 5 hours
<b>COURSE AIMS:</b>	<p>To provide participants with knowledge and skills respecting:</p> <ol style="list-style-type: none"><li>1) the hazards associated with the marine environment, offshore petroleum installations and helicopters;</li><li>2) personal responsibilities during an offshore emergency; and</li><li>3) caring for self in a survival situation.</li></ol>
<b>EVALUATION:</b>	<p>To achieve Pass status participants must:</p> <ul style="list-style-type: none"><li>– Have 100% attendance.</li><li>– Demonstrate competency to complete exercises as identified in the practical evaluation checklists.</li></ul>
<b>MAJOR TOPICS:</b>	<ol style="list-style-type: none"><li>1.0 Offshore Hazards and Emergencies</li><li>2.0 Emergency Preparedness and Response</li><li>3.0 Personal Buoyancy Apparatus</li><li>4.0 Installation Evacuation and Abandoning</li><li>5.0 Survival</li><li>6.0 Signalling Devices</li><li>7.0 Search and Rescue</li><li>8.0 Helicopter Safety and Emergency Procedures</li></ol>

**COURSE OUTLINE:****1.0 Offshore Hazards and Emergencies**

- 1.1 Hazards
- 1.2 Emergencies

**2.0 Emergency Preparedness and Response**

- 2.1 Preparedness
- 2.2 Response

**3.0 Personal Buoyancy Apparatus**

- 3.1 Types and Application
- 3.2 Procedures

**4.0 Installation Evacuation and Abandoning**

- 4.1 Methods
- 4.2 Procedures

**5.0 Survival**

- 5.1 Enemies of Survival
- 5.2 Survival

**6.0 Signalling Devices**

- 6.1 Types and Application
- 6.2 Procedures

**7.0 Search and Rescue**

- 7.1 Resources
- 7.2 Procedures

**8.0 Helicopter Safety and Emergency Procedures**

- 8.1 Personal Conduct
- 8.2 Protective Clothing and Equipment
- 8.3 Compressed Air Helicopter Underwater Emergency Breathing Apparatus (HUEBA)
- 8.4 Emergencies and Emergency Response

## **LEARNING OBJECTIVES:**

### **THE EXPECTED LEARNING OUTCOME IS THAT THE STUDENTS WILL BE ABLE TO:**

#### **1.0 Offshore Hazards and Emergencies**

- 1.1 Hazards
  - Identify hazards to property, environment and personnel.
- 1.2 Emergencies
  - Identify potential emergencies involving property, environment and personnel.

#### **2.0 Emergency Preparedness and Response**

- 2.1 Preparedness
  - Recall that for occasional visitors a buddy is assigned to give direction and assistance for emergency response.
  - Discuss the purpose, contents and location of an Emergency Kit.
  - Discuss the purpose, contents and location of a Station Bill.
  - Identify the audible and visual signals used to indicate emergencies.
  - Discuss the purpose and location of Temporary Refuge areas.
  - Discuss the purpose and location of Muster Stations.
  - Discuss the purpose and location of Alternate Muster Stations.
  - Discuss the purpose, location and content of a Muster Card.
  - Describe how emergency escape routes are indicated.
- 2.2 Response
  - Recognize that effective emergency response is facilitated by training and drills.
  - Recognize that participation in drills is mandatory.
  - Describe personal actions to be taken upon hearing an alarm.
  - Describe how to raise an alarm.
  - Restate the procedures to follow at the Muster Station.
  - Restate the procedures to follow at an Evacuation Station.

#### **3.0 Personal Buoyancy Apparatus**

- 3.1 Types and Application
  - Identify the personal buoyancy apparatus found on Offshore Petroleum Installations.
  - Describe the purpose and function of personal buoyancy apparatus.
- 3.2 Procedures
  - Demonstrate procedures for using personal buoyancy apparatus including: pre-use checks; donning and doffing procedures; and water entry, manoeuvring, and egress techniques.

#### **4.0 Installation Evacuation and Abandoning**

- 4.1 Methods
  - Distinguish between the terms evacuate and abandon as applied to an Offshore Petroleum Installation.
  - Describe the methods and equipment that may be used to evacuate an Offshore Petroleum Installation.
  - Describe the methods and equipment that may be used to abandon an Offshore Petroleum Installation.

#### 4.2 Procedures

- Restate the procedures that visitors should follow in relation in using evacuation and abandoning equipment.

### 5.0 Survival

#### 5.1 Enemies of Survival

- Discuss the enemies of survival in a marine environment.

#### 5.2 Survival

- Restate the components of a survival plan.
- Discuss ways of mitigating enemies of survival.
- Demonstrate during practical exercises and simulations ways of dealing with enemies of survival.

### 6.0 Signalling Devices

#### 6.1 Types and Application

- Identify signalling devices found in marine survival craft.
- Recall appropriate applications of signalling devices.

#### 6.2 Procedures

- Identify where to find instructions and precautions for using signalling devices.

### 7.0 Search and Rescue

#### 7.1 Resources

- Identify resources available for offshore rescue operations.
- Identify items of rescue equipment available on helicopters, installations and standby vessels.

#### 7.2 Procedures

- Explain that during rescue operations the instructions of the group leader or rescuer should be followed.
- Recognize that Personal Buoyancy Apparatus should be secured during rescue operations.
- Demonstrate during practical exercises self rescue by any means.

### 8.0 Helicopter Safety and Emergency Procedures

#### 8.1 Personal Conduct

- Discuss the requirements and limitations respecting type, weight, and number of items of baggage for offshore helicopter flights.
- Recall categories of items that may be restricted/prohibited for carriage in personal luggage.
- Recall documents needed for traveling offshore by helicopter.
- Explain why company check in procedures must be followed.
- Restate procedures to follow when approaching and leaving a helicopter.
- Restate procedures to follow upon entering the helicopter.
- Discuss the need to be mentally and physically prepared for a helicopter emergency.

#### 8.2 Protective Clothing and Equipment

- Recall personal protective equipment provided for helicopter transport.
- Demonstrate the correct use of personal emergency equipment including: flight suit donning; flight suit securing during emergency situations; and manoeuvring in water
- Discuss pre-flight inspection procedures for HUEBA.

- Demonstrate pre-flight checks on HUEBA.
  - Demonstrate donning a transit type survival suit with HUEBA equipment.
- 8.3 Compressed Air Helicopter Underwater Emergency Breathing System (HUEBA)
- Discuss the need for HUEBA.
  - Identify time required to egress a capsized helicopter.
  - Examine factors affecting individual breath-hold time.
  - Discuss egress time versus breath-hold time.
  - Examine Boyles Law and the relationship between pressure and volume.
  - Discuss the direct effects of pressure on the human body.
  - Describe the mechanism of lung over-pressurization.
  - Identify the cause, treatment and prevention of; arterial gas embolism, mediastinal emphysema, subcutaneous emphysema, pneumothorax.
  - Describe the purpose of HUEBA.
  - Identify the two major types of HUEBA.
  - Identify the main components of HUEBA.
  - Describe the function of the main components of HUEBA.
  - Identify the limitations of HUEBA.
  - Describe the operating principles of HUEBA.
  - Describe procedure for deploying HUEBA.
  - Describe HUEBA clearing procedures.
  - Identify importance of breathing normally and never holding your breath.
  - Identify HUEBA malfunctions including; free flow and flooded.
  - Describe actions to take in the event of a malfunction.
  - Practice carrying out breathing actions using HUEBA equipment at atmospheric pressure in dry conditions.
  - Demonstrate deployment and operation of HUEBA equipment in a shallow water environment (less than 1 meter).
  - Demonstrate breathing actions in a shallow water environment (less than 1 meter) including; breathe underwater using HUEBA, deploy and clear HUEBA while underwater, breathe while inverted underwater using HUEBA, deploy and clear HUEBA while inverted underwater.
- 8.4 Emergencies and Emergency Response
- Identify helicopter's emergency equipment.
  - Demonstrate actions to be performed by helicopter passengers when made aware of a flight emergency.
  - Demonstrate passenger emergency egress procedure from a helicopter that has landed on the water and remained upright.
  - Demonstrate passenger emergency egress procedure from a helicopter that has landed on the water and capsized.
  - Demonstrate, under the direction of the person in charge, the use of a helicopter life raft and its equipment after abandoning a helicopter.

## **SUMMARY OF PRACTICAL LEARNING OBJECTIVES:**

### **3.0 Personal Buoyancy Apparatus**

- 3.1 Demonstrate procedures for using personal buoyancy apparatus including: pre-use checks; donning and doffing procedures; and water entry, manoeuvring, and egress techniques.

### **5.0 Survival**

- 5.1 Demonstrate during practical exercises and simulations ways of dealing with enemies of survival.

### **7.0 Search and Rescue**

- 7.1 Demonstrate during practical exercises self rescue by any means.

### **8.0 Helicopter Safety and Emergency Procedures**

- 8.1 Demonstrate the correct use of personal emergency equipment including: flight suit donning; flight suit securing during emergency situations; and manoeuvring in water
- 8.2 Demonstrate pre-flight checks on HUEBA.
- 8.3 Demonstrate donning a transit type survival suit with HUEBA equipment.
- 8.4 Practice carrying out breathing actions using HUEBA equipment at atmospheric pressure in dry conditions.
- 8.5 Demonstrate deployment and operation of HUEBA equipment in a shallow water environment (less than 1 meter).
- 8.6 Demonstrate breathing actions in a shallow water environment (less than 1 meter) including; breathe underwater using HUEBA, deploy and clear HUEBA while underwater, breathe while inverted underwater using HUEBA, deploy and clear HUEBA while inverted underwater.
- 8.7 Demonstrate actions to be performed by helicopter passengers when made aware of a flight emergency.
- 8.8 Demonstrate passenger emergency egress procedure from a helicopter that has landed on the water and remained upright.
- 8.9 Demonstrate passenger emergency egress procedure from a helicopter that has landed on the water and capsized.
- 8.10 Demonstrate, under the direction of the person in charge, the use of a helicopter life raft and its equipment after abandoning a helicopter.