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EUROPEAN UNION

Danube Transnational Programme

Danube SKILLS

Increased institutional capacity in Danube navigation by boosting joint transnational competences and skills in education and public development services

SAFETY PRACTICES IN EMERGENCY SITUATIONS DURING SHIP OPERATION

MODULE III – PERSONAL SURVIVAL TECHNIQUES

Dragos FILIMON/CER

Doina MUNTEANU/CER

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1. GENERAL DEFINITION

The following terms are defined in the course compendium:

anti-exposure suit, competent authority, competent person, crew, detection, immersion suit, inflatable appliances, officer, personal protective equipment, responsible persons, vessel and vessel owner.



2. INTRODUCTION

These course notes were designed both for trainers who will be involved in training of such training module and the trainees as learning aids in order to facilitate the learning process.

The main objective of this course compendium is to provide practical guidance on safety and on board the vessels for crew members which have to meet the minimum standard of competence in personal survival techniques.



3. LEARNING OUTCOMES

By the end of this course, trainees will be able to:

- identify and use a lifejacket;
- identify and use an immersion suit;
- safely jump from a height into the water;
- right an inverted liferaft while wearing a lifejacket;
- keep afloat without a lifejacket;
- operate location devices, including radio equipment;
- operate survival craft equipment.



4. PERSONAL PROTECTIVE EQUIPMENT AND SHIP BOARD LIFE SAVING EQUIPMENT

4.1 Personal life-saving appliances

4.1.1 Lifebuoys

Lifebuoy specification

Lifebuoy self-igniting lights



4. PERSONAL PROTECTIVE EQUIPMENT AND SHIP BOARD LIFE SAVING EQUIPMENT

4.1 Personal life-saving appliances

4.1.2 Lifejackets

General requirements for lifejackets

Lifejackets sizing criteria

Lifejacket lights



4. PERSONAL PROTECTIVE EQUIPMENT AND SHIP BOARD LIFE SAVING EQUIPMENT

4.1 Personal life-saving appliances

4.1.3 Immersion suits

General requirements



4. PERSONAL PROTECTIVE EQUIPMENT AND SHIP BOARD LIFE SAVING EQUIPMENT

4.2 Shipboard life-saving appliances

4.2.1 Liferafts

General requirements

Inflatable liferafts:

- construction;
- access into inflatable liferafts;
- containers for inflatable liferafts;
- marking on inflatable liferafts; and
- equipment .



4. PERSONAL PROTECTIVE EQUIPMENT AND SHIP BOARD LIFE SAVING EQUIPMENT

4.2 Shipboard life-saving appliances

4.2.1 Liferafts

Rigid liferafts:

- construction;
- access into rigid liferafts; and
- marking on inflatable liferafts



4. PERSONAL PROTECTIVE EQUIPMENT AND SHIP BOARD LIFE SAVING EQUIPMENT

4.2 Shipboard life-saving appliances

4.2.2 Lifeboats

Lifeboat:

- construction;
- buoyancy;
- propulsion;
- fittings: and
- markings.



4. PERSONAL PROTECTIVE EQUIPMENT AND SHIP BOARD LIFE SAVING EQUIPMENT

4.3 Requirements for endowment of inland waterway vessels with life-saving appliances

4.3.1 Vessels intended for the carriage of goods

- On board vessel there shall be at least three lifebuoys;
- A personalized, automatically inflatable life jacket shall be provided within reach of every person who is regularly on board of the vessel;

4.3.2 Passenger vessels

In addition to the lifebuoy specified for cargo vessels, all parts of the deck intended to passengers and not enclosed shall be equipped with suitable lifebuoys, which shall be positioned on both sides of the vessel not more than 20 m apart.



4. PERSONAL PROTECTIVE EQUIPMENT AND SHIP BOARD LIFE SAVING EQUIPMENT

4.3 Requirements for endowment of inland waterway vessels with life-saving appliances

4.3.2 Passenger vessels

In addition to the lifebuoy specified for cargo vessels, all parts of the deck intended to passengers and not enclosed shall be equipped with suitable lifebuoys, which shall be positioned on both sides of the vessel not more than 20 m apart.

Half of the prescribed lifebuoys shall be fitted with a buoyant cord at least 30 m long with a diameter of 8 to 11 m. The other half of the prescribed lifebuoys shall be fitted with a self-igniting, battery-powered light which will not be extinguished in water.

Life-saving equipment shall be available for 100% of the maximum permitted number of passengers.

Non-inflatable or semi-automatically inflatable lifejackets are also allowed.

“Collective life-saving appliances” covers ship’s boats and life rafts.



5. ASSISTANCE IN RESCUE OPERATIONS

5.1 Search and rescue operation

5.1.1 Search on Inland Waterways

The search on inland waterways should be adapted to the configuration of inland waterways and temporary safety conditions on the waterway.

Safety conditions on the inland waterway include:

- waterway confinement;
- influence of water currents;
- water level;
- weather conditions;
- other factors.

River Information Services contribute to safe and more efficient transport processes and enable the full usage of watercourse capacities, faster integration of water traffic with other means of traffic.



5. ASSISTANCE IN RESCUE OPERATIONS

5.1 Search and rescue operation

5.1.2 The engagement of search and rescue units

Search and rescue on inland waters missions for the engaged units involves planned and organized activities on locating and rescuing people or crafts as well as eliminating the consequences of the accidents on and near the inland waterways.

The most important factors which are taken into consideration and analysed when assessing the possibility of engaging units in carrying out

search and rescue on inland waters tasks are the type, scale and characteristics of the accidents, the conditions of planning,

organising and completing the search and rescue tasks, and the feasibility of fulfilling search and rescue tasks.



5. ASSISTANCE IN RESCUE OPERATIONS

5.1 Search and rescue operation

5.1.2 The engagement of search and rescue units

The units engaged in search and rescue operations shall perform the following tasks:

- searching for, locating and salvaging crafts and other objects;
- rescuing the crew of the sunken and damaged crafts and other objects;
- searching for, locating and rescuing the distressed ones in the accidents;
- hauling the stranded and less damaged crafts, providing aid, mending minor damages on a craft, making the craft fit for sail to the maintenance companies and aid providing stations;
- keeping the sinking craft fit for sail, especially if its crew cannot do that relying on their own resources;
- providing assistance to the crafts caught on fire;
- eliminating environmentally hazardous consequences of an accidents; and
- diving and other underwater tasks with the aim of ensuring the craft's ability to sail and navigate safely.



5. ASSISTANCE IN RESCUE OPERATIONS

5.2 Rescue and transport a casualty

Man overboard recovery

The first problem is that of locating the casualty and the second that of recovering him. If the casualty is seen to fall overboard or is subsequently located, it is vital that as many persons as is practically possible are detailed to continuously visually observe his position. Once the casualty has been found or if seen to fall overboard the location can be marked with a lifebuoy.

Practice has shown that different man overboard manoeuvres may be required depending upon the situation prevailing and the type of vessel involved.

Actually recovering a person from the water is usually achieved by use of a lifeboat.



5. ASSISTANCE IN RESCUE OPERATIONS

5.3 Swimming for rescue operations

Rescue Swimming refers to skills that enable an individual to attempt a rescue when a swimmer is in difficulty. These include a combination of communication skills, specific "rescue" swimming strokes, and release and evade techniques for self-preservation should the rescue go wrong.

From the outset once a swimmer in difficulty is spotted, eye contact must be maintained at all times.



6. EMERGENCY ESCAPE ROUTES

6.1 Safety organization

A safety rota shall be provided on board passenger vessels. The safety rota describes the duties of the crew and the shipboard personnel in the following eventualities:

- breakdown;
- fire on board;
- evacuation of passengers;
- person overboard.

Specific safety measures for persons with reduced mobility shall be taken into consideration.



6. EMERGENCY ESCAPE ROUTES

6.1 Safety organization

The safety rota includes a safety plan, in which at least the following are clearly and precisely designated:

areas intended for use by persons with reduced mobility; escape routes, emergency exits and muster and evacuation areas; life-saving equipment and ship's boat; fire extinguishers and fire extinguishing and pressurised sprinkler systems; other safety equipment; the alarm system; the bulkhead doors and the position of their controls, as well as the other openings; doors; fire dampers; fire alarm system; emergency power plant; ventilation system control units; shore connections; fuel line shut-offs; liquefied gas installations; public address systems; radiotelephone equipment; first-aid kits.

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6. **EMERGENCY ESCAPE ROUTES**

6.2 Safe escape routes

Safe escape routes should be provided on board of passenger vessels, which must meet the following requirements:

- escape routes should be maintained in a safe condition, clear of obstacles;
- additional aids for escape should be provided as necessary to ensure accessibility, clear marking, and adequate design for emergency situations;
- stairways, ladders and corridors serving crew spaces and other spaces to which the crew normally have access should be arranged so as to provide ready means of escape to a deck from which embarkation into survival craft may be effected.



7. INTERNAL EMERGENCY COMMUNICATION AND ALARM SYSTEM

7.1 Emergency communication system

7.1.1 Internal communication facilities on board

There shall be internal communication facilities on board vessels with a wheelhouse designed for radar navigation by one person. It shall be possible to establish communication links from the steering position:

- with the bow of the vessel or convoy;
- with the stern of the vessel or convoy if no direct communication is possible from the steering position;
- with the crew accommodation;
- with the boatmaster's cabin.



7. INTERNAL EMERGENCY COMMUNICATION AND ALARM SYSTEM

7.1 Emergency communication system

7.1.2 Special provisions applicable to passenger vessels

For the following rooms and locations, adequate lighting and emergency lighting shall be provided:

location where life-saving equipment is stored and where such equipment is normally prepared for use; escape routes, access for passengers, including gangways, entrances and exits, connecting corridors, lifts and accommodation area companionways, cabin areas and accommodation areas; markings on the escape routes and emergency exits; in other areas intended for use by persons with reduced mobility; operation rooms, engine rooms, steering equipment rooms and their exits; wheelhouse; emergency electrical power source room; points at which extinguishers and fire extinguishing equipment controls are located; areas in which passengers, shipboard personnel and crew, muster in the event of danger.



7. INTERNAL EMERGENCY COMMUNICATION AND ALARM SYSTEM

7.2 Alarm system

There shall be an independent alarm system enabling the accommodation, engine rooms and, where appropriate, the separate pump rooms to be reached.





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Thank you for your attention!



■ Danube Transnational Programme area

Dragoș FILIMON

Project partner: CER

Country:RO

Email:dragosfilimon@ceronav.ro

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