

# BoatDIGEST – Tools & products for recreational craft dismantlers

Brussels, 23 September 2015

- **Gap analysis** for the current recreational craft dismantling practices carried out.  
**Surveys, interviews** with the dismantlers and **reviews** were carried out in order to **find the gaps** to address with the training.
- **Training methods** are analysed to find the best method for the training.



- As a final product of all hard work, the **training module for recreational craft dismantlers** is ready.
- **All training materials** has been developed in 5 different languages:
  - English, French, Italian, Spanish, Turkish

## Contents of The Units

- Training module has 4 different unit, which was chosen from the gap analysis.
  - Risk Assessment for Recreational Craft Dismantlers
  - Personal Protective Equipment (PPE)
  - Boat dismantling Administrative and Financial issues
  - Boat dismantling process
- **For each unit,**
  - Lecture notes,
  - Support medias such as pictures and videos
  - Assessment tests are developed.

## Lecture Notes

### Qu'est ce qu'un EPI ?

EPI est un équipement qui permet de protéger l'utilisateur contre les risques sanitaires et garantir la sécurité au travail. Il peut inclure des éléments tels que les casques de sécurité, des gants, des lunettes de protection, des vêtements haute visibilité, chaussures de sécurité, harnais de sécurité ou un équipement de protection respiratoire.



### Qué es PPE?

EPI es el equipo que va a proteger al usuario contra los riesgos de salud o seguridad en el trabajo. Puede incluir artículos tales como cascos de seguridad, guantes, protección para los ojos, ropa de alta visibilidad, calzado de seguridad y arneses de seguridad. También incluye un equipo de protección respiratoria.



### Cosa sono i DPI?

I DPI sono equipaggiamenti in grado di proteggere l'operatore da rischi per la salute e la sicurezza sul lavoro. Possono includere diversi elementi quali caschi di sicurezza, guanti, occhiali protettivi, abbigliamento ad alta visibilità, calzature di sicurezza, cinture di sicurezza o dispositivi di protezione delle vie respiratorie.



### What is PPE?

PPE is equipment that will protect the user against health and safety risks at work. It can include items such as safety helmets, gloves, eye protection, high-visibility clothing, safety footwear, safety harnesses or respiratory protective equipment.



### KKD nedir?

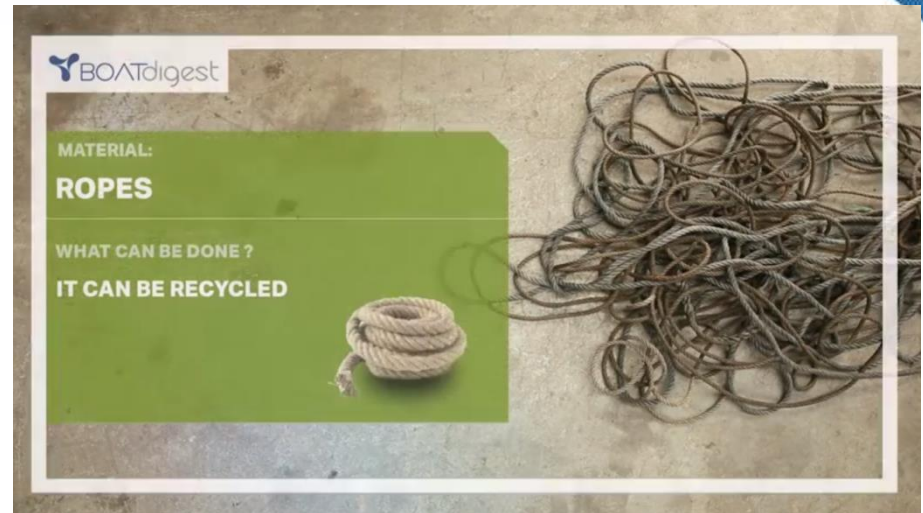
Kullanıcıyı işteki sağlık ve güvenlik risklerine karşı koruyan donanımdır. Güvenlik baretleri, eldivenleri, göz korumasını, reflektörlü kıyafetleri, iş ayakkabısını, tertibatları ve hatta koruyucu solunum cihazını içerir.





## Media

- Case studies, photos, videos are used in the training material to keep learning interesting



## 5. Dismantling Works (Step 4)

### 5.2- Removing heavy equipment

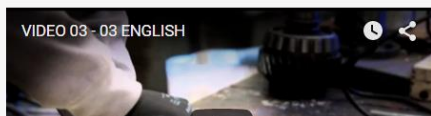
*Once you reach the machine room, it is carefully opened to expose the equipment without damaging it.*

*After complete removal of potential toxic liquids remaining in this room, the area will be reviewed for the removal of auxiliary and main engines and all kinds of machinery within the room.*

*Remember to disconnect terminals, pipes, wiring and mechanical connections and always pay special attention to the anchoring and fixing of equipment prior to removing it.*



#### Video Contents



Face protection

Hand protection

Electric shock risk

# Assessment Materials

- After completing the lecture notes, participants' knowledge will be tested with the assessment materials.
- Multiple Choice Questions are designed to test the knowledge of the participants for each unit.

## 2. Which of the following is wrong for PPE?

- ☐ a. PPE is equipment that will protect the user against health or safety risks at work
- ☐ b. It can include items such as safety helmets, gloves, eye protection
- ☐ c. It can include items such as high-visibility clothing, safety footwear and safety harnesses
- ☐ d. It does not include respiratory protective equipment

## 3. What is the purpose of personal protective equipment?

- ☐ a. It is to reduce employee exposure to hazards
- ☐ b. It is to increase employee exposure to hazards
- ☐ c. It is to increase employer exposure to hazards
- ☐ d. It is to make employee exposure to hazards

## 4. What is not accepted as PPE according to definition of PPE?

- ☐ a. Sunglasses
- ☐ b. High visibility clothing
- ☐ c. Normal uniform
- ☐ d. Safety gloves



## Unit 3 Risk Assessment for Recreational Craft Dismantlers

### Q1. Hazard is a source, situation or act with a potential for damage, harm or adverse effect in terms of human injury or health problems.

- ☐ a. True
- ☐ b. False

### Q2. According to Law, on a typical task, if the noise is exceeding 50 decibels (dB), measures must be taken.

- ☐ a. True
- ☐ b. False

### Q3. Risk is the likelihood of an occurrence, chance or probability of a hazardous event, exposure or that a person will be harmed combined with consequences.

- ☐ a. True
- ☐ b. False

### Q4. Risk assessment is the process that enables to identify hazards, evaluate the risk related to hazard and eventually eliminate or control the hazard

- ☐ a. True
- ☐ b. False



## Units

- Risk Assessment for Recreational Craft Dismantlers
- Personal Protective Equipment (PPE)
- Boat Dismantling Administrative and Financial Issues
- Boat Dismantling Process

# Risk Assessment for Recreational Craft Dismantlers

## Aim of Unit - Management

By the end of this unit candidates will:

- Identify the hazards in the boat dismantling tasks
- Learn why it is essential to conduct a risk assessment
- Learn how to conduct a risk assessment.

## Aim of Unit- Workers

By the end of this unit candidates will:

- Identify the hazards in the boat dismantling tasks
- Learn why it is essential to conduct a risk assessment

# Risk Assessment for Recreational Craft Dismantlers

## Types of Hazards

- **Physical hazards** (Noise, vibration, hit by an object, slip, trip, fall)
- **Ergonomic Hazards** (Wrong body posture)
- **Environmental hazards** (Hot, Cold, and Odour etc.)
- **Psycho-Social hazards** (Stress, fatigue, mobbing)
- **Chemical Hazards** (Oil, gasses, spills)
- **Biological Hazards** (Bacteria, viruses, blood or other body fluids)

## Ergonomic Hazards

**Ergonomic hazards** are the hazards that caused because of **discomfort of the job**. Incorrectly designed/used desks, chairs or workstations, wrong body postures or lack of training during manual handling procedures can be given as an example. Consequences are not fatal and they are not seen in a short-term but in a long term ergonomic hazards can cause serious damage.

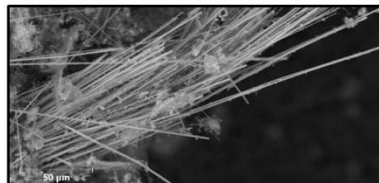


## Hazardous Materials

### Asbestos

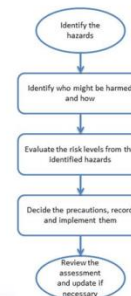
**Asbestos** is very **dangerous** fibrous material. It was used in all kinds of industry due to its properties. But now usage and extraction of asbestos is banned by EU. Asbestos can commonly be found in

- Pipe insulation
- Insulation
- Floor tiles
- Glues
- Hull coating
- Sealing (pipe, door and etc.)
- Fire blankets
- Interior fire doors
- Thermal pipe insulation
- HVAC flexible duct connectors
- Glass wool
- Ropes
- Wallboards
- Panels



## Risk Assessment

### Steps on risk assessment



# Personal Protective Equipment (PPE)

## Aims

By the end of this unit candidate will:

- Describe why it is important to use Personal Protective Equipment (PPE) on Boat Recycling tasks and what is the legal requirement to wear it.
- Identify which PPEs can be needed to wear in everyday roles and in special situations of Boat Dismantling
- Learn how to wear PPE correctly

# Personal Protective Equipment (PPE)

## What is PPE?

- The purpose of personal protective equipment is to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective to reduce these risks to acceptable levels.
- Any item of PPE imposes a barrier between the wearer/user and the working environment.



## Eye and Face Protection



### ALWAYS

- » Make sure the eye/face protection fits the user and does not fall off easily
- » Use eye and face protection on a personal basis
- » Consider misting/fogging. Make anti-mist and ventilated eye protection is available
- » Store eye protection in a protective package
- » Follow the manufacturer's instructions on cleaning, not forgetting headbands and frames



# Boat Dismantling Administrative and Financial issues

## Aims

By the end of this session candidates will be able to:

- Explain legal requirements for recreational craft dismantling.
- Explain the administrative procedures for recreational craft dismantling.
- Explain how to develop economic analysis for each end of life recreational craft in order to assess the feasibility and cost.

# Boat Dismantling Administrative and Financial issues

## 1. Legal requirements for Recreational craft Dismantling Facilities.

➤ **European Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions - IED (integrated pollution prevention and control).**

*Document attached in this Unit under the name "Directive\_2010\_2010\_75\_EU"*

Member States have to **establish a system and plan for environmental inspections** (mandatory requirements for these inspections are included in the Directive). These inspections will take place every 1-3 years, using risk-based criteria.

This **Industrial Emissions Directive (IED)** also comprises **waste transfer installations** which usually include the following: bulking, sorting, transferring, pending, prior to submission to a disposal/recovery operation, and occasionally blending and

The **permits** will thus be issued by the competent authorities (licensing authorities) assigned by every Member State. The permit necessary measures to comply with the operator's basic obligations and environmental quality standards, comprising at least:

- "emission limit values for polluting substances,
- rules guaranteeing protection of soil, water and air,
- waste monitoring and management measures,
- requirements concerning emission measurement methodology, frequency and evaluation procedure,
- an obligation to inform the competent authority of the results of monitoring, at least annually,
- requirements concerning the maintenance and surveillance of soil and groundwater,
- measures related to exceptional circumstances (leaks, malfunctions, momentary or definitive stoppages, etc.),
- provisions on the minimisation of long-distance or trans boundary pollution,
- conditions for assessing compliance with the emission limit values (EU 2010)."

In this sense, both new and existing waste management/treatment facilities should **apply to the National/regional authority implementation** (licensing authority), for a **recreational craft dismantling permit**.

**National/regional authorities responsible for IED implementation** (licensing authorities) are usually **national and regional authorities** (environmental Ministries and Agencies, waste management agencies/institutions).

## 2. Administrative procedures for recreational craft register and decommissioning certificate.

### ➤ Boat registration / "de-registration"

According to the European Boating Industry, the **average lifespan** for recreational craft is 30 years but in certain occasions it can go up until 40 years. On the other hand, inflatable and semi-rigid boats lifespan is considered to be between 10 to 15 years.

DIGEST suggests that boat dismantling facilities should issue a **certificate** in order to **confirm that the boat has been dismantled and the materials and wastes have been processed and removed in an environmentally friendly way**.

Nevertheless, as mentioned above, recreational boat registration systems exists only for some countries and **de-registration rarely occurs**.

End-of-life recreational craft are still not included as a category in the European Waste Catalogue. However, the European Waste Catalogue classifies **end-of-life vehicles (ELV)** from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicle 1601:

other liquids nor other hazardous components.  
other liquids nor other hazardous components.

States should issue a **certificate** similar to the certificate that, according to the **ELV Directive**, has to be issued to the ELV Directive a certificate of destruction has to be issued when de-registering vehicles. In the de-registration system for ELV including a Certificate of Destruction (CoD) for ELV that has to be issued when the ELV is transferred to a treatment facility. This certificate of destruction only applies to vehicles

*mentioned in this Unit under the name "ELV Directive".*  
requirements for Certificates of Destruction, see *Document attached in this Unit under the name "ELV Directive"*.

## 3. Economic analysis for end-of-life recreational craft dismantling

### ➤ Transport and dismantling process – economic assessment

A part from the already mentioned criteria, administrative issues as well as technical and human resources associated costs should be assessed for each of the steps comprised within the boat dismantling process itself (decontamination, outstanding materials removal, shredding, etc.).

Several references are available related to boat dismantling costs. The following reference\* for dismantling costs/profit has taken into account the type of boat, the construction materials and the economic return (this estimation does not consider overheads, transportation costs and equipment depreciation). Note that human resources rate was estimated at 12€/h.

Table 1. Boat dismantling cost estimation (BOATCYCLE project, 2012)

Types	Length	Sub-products	Cost	Difference (return)
Sailboat	6 m	494 EUR	183 EUR	311 EUR
Sailboat	9 m	1.885 EUR	184 EUR	1.701 EUR
Sailboat	12 m	4.691 EUR	185 EUR	4.506 EUR
Motor boat	6 m	148 EUR	202 EUR	54 EUR
Motor boat	9 m	513 EUR	225 EUR	288 EUR
Motor boat	12 m	926 EUR	225 EUR	701 EUR

# Boat dismantling process

## Aims

Candidates who achieve this unit should have the ability to:

- Identify and describe stages of boat dismantling procedures and apply the procedures
- Prepare a basic boat dismantling plan for safe and environmental friendly recycling
- Appropriate handling and safe operation of various tools and equipment used in Boat Dismantling Practices
- Define / detect hazardous materials and their possible locations in a boat
- Decide a proper way to dispose or recycle boat originated waste

# Boat dismantling process

## Hazardous Materials



### Hazardous Materials

A hazardous material is any item or agent (biological, chemical, physical) which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors (Institute of Hazardous Materials Management, 2014).



### Properties of Hazardous Materials

Explosive  
Mutagenic  
Infectious  
Carcinogenic  
Irritant  
Toxic  
Harmful  
Flammable  
Oxidizing  
Ecotoxic  
Corrosive  
Teratogenic

## 3. Preparatory Works (Step 2)

*This step will cover from the arrival of the boat and lifting onto the dismantling area to the moment operations are ready to start.*

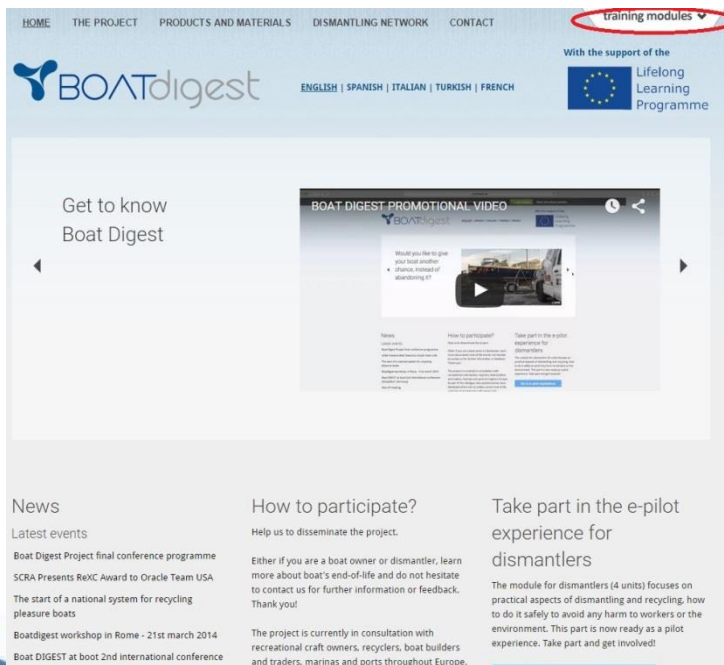
*Boat preparation is a part of the process mostly related to medium to large craft as these boats have many risk issues to address. Meanwhile small craft are so simple that makes it unnecessary to develop an inventory and prepare a dismantling plan.*





# How to Access the Training? “E-Learning Platform”

Training materials are publicly available through e-learning platform which is accessible via  
**‘[www.boatdigest.eu](http://www.boatdigest.eu)’**



- All you need to do is to register in order to access the training materials.
  - Lecture notes
  - Photos and videos
  - Supporting documents
  - Assessment Tests
- Registration is very simple and free!



# How to Access the Training? “E-Learning Platform”

Training materials are publicly available through e-learning platform which is accessible via  
**‘[www.boatdigest.eu](http://www.boatdigest.eu)’**



Welcome to our training and awareness modules

This section provides a **training module for recreational craft dismantling and recycling activities**, targeted to people and companies currently carrying out such activities and those who wish to do so in the future. This section also provides an **awareness module for end-of-life recreational craft**, targeted to boat owners (individual people and public and private organisations who own recreational craft).

[Access to training and awareness modules](#)

HOME THE PROJECT PRODUCTS AND MATERIALS DISMANTLING NETWORK CONTACT **training modules ▼**

With the support of the

 [ENGLISH](#) | [SPANISH](#) | [ITALIAN](#) | [TURKISH](#) | [FRENCH](#) 

Get to know Boat Digest

BOAT DIGEST PROMOTIONAL VIDEO

Would you like to give your boat another chance, instead of abandoning it?

News  
How to participate?  
Take part in the e pilot experience for dismantling

Select training module

**UNIT 1**  
Boat dismantling Administrative and Financial Issues



**UNIT 2**  
Boat dismantling process

**UNIT 3**  
Risk Assessment for Recreational Craft Dismantlers

**UNIT 4**  
Personal Protective Equipment (PPE) and Handling Hazardous materials (Hazmat)

HOME THE PROJECT PRODUCTS AND MATERIALS DISMANTLING NETWORK CONTACT **training modules ▼**

With the support of the

 [ENGLISH](#) | [SPANISH](#) | [ITALIAN](#) | [TURKISH](#) | [FRENCH](#) 

Get to know Boat Digest

BOAT DIGEST PROMOTIONAL VIDEO

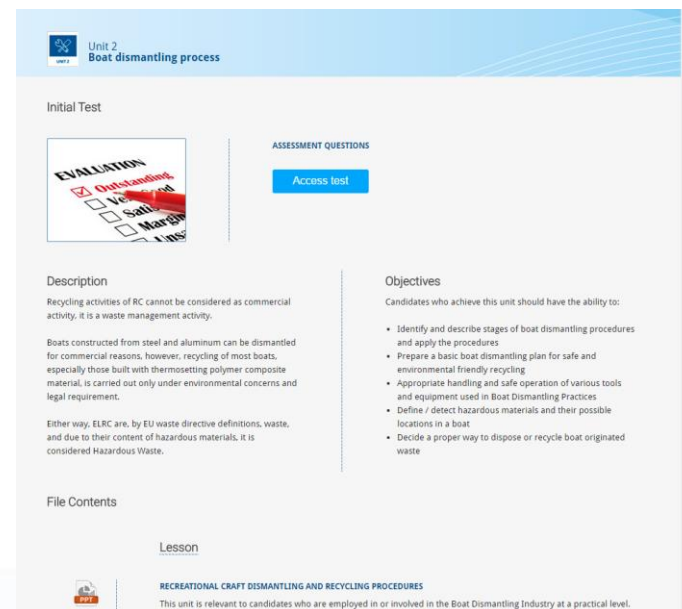
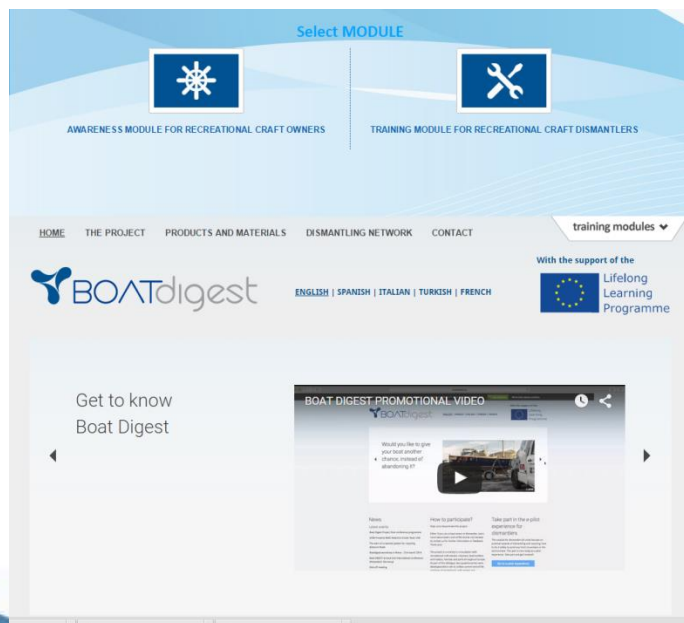
Would you like to give your boat another chance, instead of abandoning it?

News  
How to participate?  
Take part in the e pilot experience for dismantling

# How to Access the Training? “E-Learning Platform”

E-Learning Platform is available on both computers and mobile platforms.

**‘[www.boatdigest.eu](http://www.boatdigest.eu)’**



# Certification

- Quality of the Boat DIGEST training materials has been assessed by an external awarding body, Highfield Awarding Body for Compliance (HABC).
- This endorsement allows Boat Digest Consortium to certificate the 'candidates' who completes the training successfully.

**Q1. What is Boat Recycling:**

- ☐ a. An commercial activity where boats are broken for the valuable metals and materials onboard
- ☐ b. A non-commercial activity of waste management carried out under environmental concerns and legal requirements
- ☐ c. Neither of the above

**Q2. What authorisations are needed to legally recycle boats?**

- ☐ a. Waste management authorisation
- ☐ b. Waste producer authorisation
- ☐ c. Harbour authorisation
- ☐ d. A and B
- ☐ e. None of the above

**Q3. What is/are the main problem/s when recycling a boat?**

- ☐ a. The hazardous materials on board
- ☐ b. The transportation of the boat to the recycling yard
- ☐ c. The waste generated during the process of dismantling
- ☐ d. All of the above
- ☐ e. None of the above

- After each unit, candidates are asked to take the test.
- If the candidate manages 70% success on assessment tests, he/she will be awarded with Boat Dismantler Certificate.

# Thank You