BALTIC SEA MIRG
Project 2014-2016

MIRG SERVICES AND TRAINING IN EUROPE
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Baltic Sea Maritime Incident Response Group Project

Overview

All European countries provide fire and rescue services at sea, but they are organised in somewhat different ways and different authorities are responsible for them. In most countries, fire and rescue services are responsible for the provision of such services in ports and close to shore in their own areas of operations. In addition, many of them also participate in maritime search and rescue (SAR) together with the leading maritime SAR authority. In many of these countries participating in maritime SAR, the use of a Maritime Incident Response Group (MIRG) has been found to be an effective means of providing support for rescue operations on the distress vessel. However, the tasks currently handled by MIRG teams and the kinds of competences they are trained in vary from country to country, in some cases greatly.

This report examines how different European countries have organised their fire and rescue services at sea and how the personnel of fire and rescue services are trained to respond to ship fires and other maritime incidents. Assessing this is part of the Baltic Sea Maritime Incident Response Group (Baltic Sea MIRG) project, which was carried out in international cooperation, seeking to develop joint coordination models and operational guidelines for international MIRG operations. Additional information on the project is available at: www.raja.fi/MIRG.

This report is partly a continuation of the final report on the Baltic Sea Maritime Incident Response Group Survey (BSMIR), which was implemented in 2013-2014, and in which one of the focus areas was the capability to provide fire and rescue services at sea in the Baltic Sea region, Norway and Iceland. The report is available from http://www.raja.fi/facts/bsmir. The Baltic Sea MIRG project and this report expand the examination of these capabilities to other European maritime areas.

This report describes the organisation of fire and rescue services in six countries or regions thereof: Belgium, Finland, the UK, Italy, the Netherlands and France. All these countries provide MIRG services either nationally or regionally, or seek to develop the MIRG capabilities of their country in the near future. These countries provide a perspective on arrangements in the Baltic Sea, English Channel, North Sea and Mediterranean. Read more in Chapter 2, “Country Descriptions”. The same chapter also provides a more detailed overview of the maritime training of fire and rescue services personnel in many of the countries.

The report also analyses the similarity of maritime training for fire and rescue service personnel in different countries, the reasons behind any differences, and whether it would be possible to engage in closer cooperation in training in the future. To analyse this, the Baltic Sea MIRG project has defined key competences that ensure sufficient performance in MIRG operations. These are presented in Chapter 3. Defining MIRG competences makes it possible to mirror them against training programmes in different countries as well as compare these countries to find any similarities. Similarities and differences in training systems are presented in Chapter 4.

For detailed information on the contents of MIRG courses in the MIRG EU training programme and MIRG courses held in Finland, see the appendices to this report.

Key project terms

Baltic Sea MIRG= An international project, led by the Finnish Border Guard, to create a MIRG co-ordination model and operational guidelines for international MIRG operations and to support the harmonisation of MIRG services in Europe.

MIRG EU= An Interreg IVA 2 Seas project with partners from the Netherlands, Belgium, France and England to develop a standard set of operating procedures and a training manual in order to set up a MIRG EU team.

MIRG-EX is an extension of the MIRG-EU project to test maintenance of skills learned through MIRG-EU and to look more closely at cooperation and collaboration of the EU teams at sea for a multidisciplinary incident e.g. fire, technical rescue and hazmat operations.

Abbreviations

DV Distress Vessel
CBRN Chemical, Biological, Radiological and Nuclear
FRMR Fire and Rescue Maritime Response teams in the UK
FRS Fire and Rescue Services
HUET Helicopter Underwater Escape Training
MIRG Maritime Incidence Response Group
MIRG-BE Belgian Maritime Incidence Response Group
MRCC Maritime Rescue Coordination Centre
MRSC Maritime Rescue Sub-Centre
OSC On Scene Coordinator
SAR Search and Rescue
SOLAS International Convention for the Safety of Life at Sea
SOP Standard Operating Procedure
SRR Search and Rescue Region
TETRA Terrestrial Trunked Radio
VHF Very High Frequency
1. Country descriptions

This chapter presents how six European countries, or certain regions thereof, have organised their fire and rescue services at sea and how they train fire and rescue services personnel to respond to ship fires. The presented countries are: Belgium, Finland, France, Italy, the Netherlands and the UK. The country descriptions were drafted by the rescue authorities of each country that participated in the Baltic Sea MIRG project.

Of the Baltic Sea countries, the fire and rescue services arrangements of Denmark, Estonia, Germany, Latvia, Lithuania, Poland and Sweden – as well as those of Norway and Iceland – were described in a somewhat similar manner in the final report of the Baltic Sea Maritime Incident Response Survey published in 2014 (http://www.raja.fi/facts/bsmir).

1.1. Belgium

1.1.1. Emergency fire and rescue services at sea

The participation of the Belgian fire and rescue services in the MIRG-EU project accelerated the establishment of MIRG services in Belgium. The country now has trained harbour MIRG-BE teams on continual standby. They are prepared to launch MIRG operations in their own area of responsibility, which consists of harbours, docks, rivers, creeks and channels within the territorial borders of the four fire and rescue services.

MIRG-BE also participates in maritime SAR by providing expertise for maritime fire and rescue operations in the North Sea, as set out in the preparedness plan for the region.

MIRG operations at the incident site are to be led by the responsible authority, namely the Coast Guard (MRCC). The General Coordinator of the preparedness plan for the North Sea is the Governor of West Flanders, who is appointed by the federal government. The Governor is responsible for the operational costs incurred by the MIRG-BE teams. During joint exercises, each organisation is responsible for its own expenses.

When operating on vessels in distress, the MIRG-BE team acts in accordance with international agreements and the directions issued by the master of the vessel. In maritime SAR operations, the main task of the MIRG-BE team is to provide support to the crew of the vessel in distress, in accordance with the guidelines specified by the master of the vessel. Their mission is to save the ship and to facilitate its safe transport to a port for repairs and further handling of the incident.

Belgium has one MIRG team, made up of firefighters from the four partners of MIRG-BE, which is on continual standby 24/7. The four Belgian fire and rescue services (FRS) providing MIRG services are: FRS Centrum, FRS Zone 1, FRS Waasland, and FRS Antwerp. The team’s basic size is twelve persons, divided into one command team and one strike team of six persons each. The team’s standby time is immediate, which means that the transfer of personnel and equipment to the embarkation point in Ostend begins immediately when the team is alerted. However, it currently takes a couple of hours to reach the designated target. In the future the aim is to reach the embarkation point within two hours.

The members of the MIRG-BE team are all experts in their own field and carry out a variety of rescue tasks in their daily work. Additionally, they are well trained in all of the specialised skills required to deal with maritime incidents.

In addition to the maritime operations carried out in the search and rescue region of Belgium, the MIRG-BE teams also give assistance, at European level, to the partners of the MIRG-EU project: Safety Region Zeeland from the Netherlands, Kent Fire and Rescue Service from the UK and Service Départemental d’Incendie et de Secours du Pas-de-Calais (SDIS 62) from France.

The training system of the MIRG-BE team is set up in line with the basic expertise gained from vocational qualifications in rescue services and in-service training. There is no difference made between the training for crew and officers. The fire and rescue services engaging in MIRG-BE operations are responsible for the planning, implementation and development of training sessions in cooperation with the MRCC of Ostend, the airport of Ostend and VLOOT, a public service specialised in government vessels.
MIRG-BE team members have a set number of mandatory exercises that they have to repeat annually. The following topics are systematically present in the training sessions: helicopter winching, HUET (Helicopter Underwater Escape Training), sea survival and ship-to-ship transfer. Each team member is obligated to complete 24 hours of training each year.

Additionally, the partners from the MIRG-EU project have set up the MIRG-EX project together with partners from the province of West Flanders. The MIRG-EX partners seek to make their MIRG EU team, set up during the MIRG-EU project, available through the EU Civil Protection mechanism.

With regards to MIRG team transportation in Belgium, the MIRG-BE team can be transported to the scene of the incident by either boat or helicopter, depending on the nature of the intervention. When a boat is used, the embarkation point is the port of Ostend, where VLOOT provides a vessel. In the case of helicopter transport, the embarkation point is the airport of Ostend where the marine or NHV (Noordzee Helikopters Vlaanderen) SAR helicopters are based.

All team members are equipped with immersion suits suitable for maritime SAR, automatic life jackets, helmets and personal locator beacons. The team has separate personal bags for carrying personal equipment, as well as special plastic cases for carrying team-specific equipment. Satellite phones, Tetra radio and Maritime VHF are used for communication to maintain contact on board the distress vessel or between the MIRG team and the MRCC of Ostend onshore.

1.1.2. Training fire and rescue services personnel to deal with ship fires

The basic expertise gained from vocational qualifications in rescue services and the broad-ranging expertise of the fire and rescue services provides a good foundation for national MIRG-BE operations. Specialised and supplementary training facilitates the integration of this expertise into operational preparedness in maritime search and rescue.

The training modules are based on 14 competences required for all members within the Maritime Incident Response Group. Achieving these core competences ensures that all MIRG-BE personnel gain knowledge and understanding and develop skills to enable them to be better prepared for safely dealing with incidents at sea.

- Introduction
- Sea survival, HUET and ship-to-ship transfer
- Helicopter familiarisation and continuation
- Ship stability
- Support and safety vessels
- Safety during helicopter transportation
- Transportation protective equipment (TPE)
- Nominal roll
- Incident command system
- Communications
- Ship construction
- Legislation, roles and responsibilities
- Closed-circuit breathing apparatus
- Strategy and tactics

All MIRG-BE team members must meet the minimum training requirements in accordance with the MIRG-EU Training Manual. Each team member is obligated to complete 24 hours of practice a year. Only personnel trained in accordance with the MIRG-EU training competences respond as part of any MIRG deployment at sea. There is no difference made between training for crew and officers.

The fire and rescue services engaging in MIRG-BE operations are responsible for the planning, implementation and development of training sessions in cooperation with the MRCC of Ostend, the airport of Ostend and VLOOT, which is specialised in government vessels.

Picture 1: Flemish and Dutch firefighters at the MIRG EU large scale exercise in 2014. Photo courtesy of Kent Fire and Rescue Service, England, UK.
1.2. Finland

1.2.1. Emergency fire and rescue services at sea

Finland has MIRG teams on continual standby in the event of an incident at sea. In accordance with the Rescue Act, the fire and rescue services are obligated to launch MIRG operations in their own area of responsibility, that is, harbours and areas in close proximity to the shore. According to the Finnish Maritime Search and Rescue Act, the fire and rescue services also participate in maritime SAR. Not all fire and rescue services have MIRG expertise or on-call teams, so MIRG stations will support these stations with specially trained units when required. Fire and rescue services that participate in MIRG operations are responsible for the costs incurred by their MIRG operations. During joint exercises, each organisation is responsible for its own expenses.

On-site responsibility for MIRG operations is held by the maritime SAR agency, which in Finland is the Border Guard (MRCC/MRSC). When operating on distress vessels, MIRG teams act in accordance with international agreements and the directions is-suèd by the master of the vessel. The most important task of the MIRG team, and the core of its operating idea, is to provide support to the crew of the distress vessel in accordance with the guidelines specified by the master of the vessel. The aim is to avoid having to evacuate the vessel by halting the escalation of the accident and thereby limit it and gain additional time for saving people.

Finland currently has two MIRG teams on continual 24/7 standby in the event of an incident at sea. The teams’ standby time is ‘immediate’. The MIRG teams’ bases/stations are in Turku and Helsinki, where Finnish Border Guard’s Maritime SAR helicopters are also located. Both teams are available for deployment throughout Finland’s Search and rescue region (SRR), irrespective of their base’s location. In accordance with contracts, the teams are also available for use in other countries’ SRRs.

The usual size of a MIRG team is 1+1+3 (4 in the future). The composition of the team may vary depending on the nature of the operation and the distance from the accident site, but the team’s basic size is five (six), when a MIRG team is needed is a team both from Turku and Helsinki alerted so that the total strength is 10 persons. MIRG teams are trained in all of the specialised skills required to deal with maritime incidents. All team members are professionals in their own fields and carry out a variety of rescue tasks in their daily work. Fire and rescue services are obligated to handle routine incidents on land in the manner they see most fit irrespective of whether specially trained teams have been alerted to incidents at sea or not.

Finland’s national MIRG training system is based on supplementing the basic expertise gained from vocational qualifications in rescue services with supplementary training courses and in-service training. The fire and rescue services engaging in MIRG operations are responsible for the planning, implementation and development of supplementary MIRG training in cooperation with the Finnish Border Guard. This training takes the form of supplementary MIRG training courses. These basic courses, which are organised separately for crew and officers, are one week in duration.

Team members must practise a variety of maritime SAR topics a few times per year. MIRG fire and rescue services have a couple of mandatory exercises per year. However, MIRG fire and rescue services have jointly agreed that every MIRG employee will receive training in special maritime situations at least two (2) times per year. Larger maritime SAR exercises are also organised annually with a view to evaluating expertise in MIRG operations at the level of both the organisation and individuals. In accordance with the Finnish model, all other in-service maintenance training for rescuers also serves as a basis for MIRG operations.

Finland’s rescue teams primarily use dedicated Finnish Border Guard’s maritime SAR helicopters to transfer to the target. Surface vessels can also be used if required, but there must be special grounds for doing so. Helicopters are always the first choice for reasons of safety and their response time. The maritime SAR helicopters are currently based in the same cities as the MIRG groups, which means that helicopter use is fast and easy. There is also a maritime SAR helicopter in Northern Finland (Rovaniemi), but there are no MIRG teams in its immediate vicinity, as a risk analysis of the said area concluded that it would not be worthwhile placing a MIRG team on standby there.

All team members are equipped with immersion suits suitable for maritime SAR, automatic life jackets (SOLAS), helmets, and personal locator beacons (PLB). The team’s equipment is stored in premises that have signed contracts with the fire and rescue services. MIRG teams have separate personal bags for carrying personal equipment, as well as special plastic peli cases for carrying team-specific equipment. Different equipment is packed in the cases depending on the nature of the task.

Contact between MIRG teams and the MRCC/MRSC is handled in accordance with the situation, but Tetra radio is usually used for communications. If the distress vessel’s Maritime VHF is available, this can be used when necessary. When aboard a distress vessel, team members communicate with each other using Tetra radio. The team can also use mobile phones and Maritime VHF; in the future, it is possible that satellite phones will also be used.

![Picture 1: MIRG team from Turku heading to the SAR helicopter. Photo courtesy of Jussi Leivo/ South-West Finland Emergency Services.](image-url)
1.2.2. Training fire and rescue services personnel to deal with ship fires

The broad-ranging expertise of the Finnish fire and rescue services provides a good foundation for national MIRG operations. Specialised and supplementary training facilitates the integration of this expertise into Finland’s operational preparedness in maritime search and rescue.

Finland’s national MIRG training system is based on supplementing the basic expertise gained from vocational qualifications in rescue services with supplementary training courses and in-service training.

The fire and rescue services engaging in MIRG operations and the Finnish Border Guard participate in organising MIRG training. The training cooperation of the Finnish fire and rescue services and the Finnish Border Guard is coordinated by the national MIRG steering group.

From the perspective of expertise management, the MIRG training system is based on utilising the degree programme system to the fullest extent possible. The operating models are based on applying, in shipboard conditions, the operating models used in day-to-day tasks. For this reason, the training system for MIRG qualifications focuses on the maritime SAR system, the special characteristics of maritime conditions and developing expertise on how to operate on vessels.

Rescue services degree programme system

Full-time fire and rescue services personnel in Finland are required to have a vocational degree in rescue services approved by the Ministry of the Interior. Training leading to a degree is provided by the Emergency Services College, which is run by the State, and the Helsinki Rescue School, which is part of the Helsinki City Rescue Department. There are three levels of degree programmes for rescue services in Finland:

- Crew training
- Sub-officer training
- Officer training

The starting point has been that the degrees are taken progressively, with each lower degree providing the necessary qualifications for the next. However, in recent years, it has been possible to start these studies at the officer level. In such cases, the degree also covers the basics of operational activities.

Degree programme for crew

The degree programme for crew – degree in rescue services – consists of 90 study credits (1.5 years). The degree is a post-secondary programme; that is, students must have completed either a vocational or upper secondary degree. The studies do not include basic training in fire extinguishing and rescue techniques.

Vocational studies account for 76 study credits in the degree programme, 36.5 for rescue operations and 28.5 for emergency medical care. Other studies in the programme focus on accident prevention efforts and general preparedness for working life, and the expertise gained from these courses is not directly connected to MIRG operations.

Degree programme for sub-officers

Persons who have completed the sub-officer degree programme serve as the foremen of rescue units (fire sub-officer). A completed degree in rescue services is a requirement for admission into the sub-officer programme. In MIRG tasks, fire sub-officers lead the teams while participating in the hands-on performance of tasks.

The degree programme for sub-officers consists of 60 study credits (1 year) and is equivalent to a specialist vocational degree. As in the case of the degree in rescue services, a substantial share of the studies in this programme concern vocational areas other than rescue operations. This degree programme includes substantial modules on accident prevention and personnel leadership.

Degree programme for officers

The degree programme for officers consists of 240 study credits (about four years without prior studies in rescue services) and is equivalent to a lower university degree. This degree programme can be completed in two ways. If the student has previously completed the degree programme for sub-officers, he or she can complete the officer programme as a so-called adult degree, with part of his or her earlier studies credited towards the completion of the degree. If the student has not completed a sub-officer degree, he or she must complete the programme in full, in which case the studies include basic training in fire extinguishing and rescue techniques.

The degree title is fire engineer (BSc). Due to the structure of the Finnish education system, the degree includes extensive theoretical studies in subjects such as lan-guages and mathematics at a lower university degree level.

In the future, the degree will be developed into a standalone programme and the “engineer” title will be discontinued.

Basic MIRG courses

Basic MIRG courses are a core component of the national MIRG training system. The purpose of the courses is to provide standardised expertise to meet the needs of national operations. The courses are designed in line with the expertise required to fulfil MIRG tasks.

The course content is defined such that the expertise gained from the degree programmes in rescue services, as described above, is sufficiently enhanced to suit the requirements of MIRG operations. The goal is that those who have completed the courses understand the international and national special characteristics of maritime SAR and know how to apply their basic expertise in shipboard conditions under the leadership of the Search and Rescue Mission Coordinator.

The Finnish Border Guard is responsible for organising basic MIRG courses in cooperation with the fire and rescue services engaging in MIRG operations. The fire and rescue services enrol students in the courses in accordance with their personnel strategies. In the case of the officer degree programme, study places are reserved not only for fire and rescue services personnel, but also for persons working as Search and Rescue Mission Coordinators at the Finnish Border Guard and persons being trained for that task.

The Finnish Border Guard and the fire and rescue services participating in MIRG operations contribute equal resources for the organisation of the basic MIRG courses. The teachers are experts from the Finnish Border Guard and fire and rescue services. The sending organisations are responsible for the direct costs of the students.

In the future, the goal is that the in-service training independently organised by the fire and rescue services will be supplemented not only with basic courses, but also with
additional MIRG courses intended to update the content of the basic courses at specific intervals. These latter courses are currently being planned.

It was decided to exclude the sub-officer programme from the planning of the basic MIRG courses. From the perspective of core competences, the additional expertise requirements for sub-officers are so close to the requirements of the crew that it was not considered necessary to arrange a separate course. During practical exercises in the crew course, sub-officers have naturally performed tasks commensurate with their degree, that is, as the foremen of rescue units. For this reason, efforts have been made to emphasise the participation of sub-officers in crew courses.

**Basic MIRG course for crew**

The basic MIRG course for crew lasts five days. The course is intended to enable crew to apply the expertise in rescue services they have gained from their degree pro-gra-mme and work experience to performing MIRG tasks in a shipboard environment and ensure their occupational safety.

The basic structure of the course consists of two theory days, a rescue exercise, a practical training day and a recap day that mainly consists of case exercises. The course structure seeks to enable maximum efficiency in the learning process in the shortest time possible under the principle of “knowledge-application-reflection.”

As part of the basic course for crew, winch training is carried out in cooperation with the Finnish Border Guard as separate in-service training.

Completion of this course is a precondition for serving in MIRG tasks.

**Basic MIRG course for officers**

This course also lasts for five days. It consists of four days of face-to-face teaching, winch training, HUET training and a day during which the students are familiarised with maritime rescue command centre operations.

The course provides fire and rescue officers with the basics of the national maritime SAR system and could also be considered a general course on national maritime SAR. Persons working or intending to work as Search and Rescue Mission Coordinators are also selected as students for this course.

The face-to-face component is arranged in the form of courses. Winch training and familiarisation with the operations of the maritime rescue command centre in the students’ own operating area are arranged as in-service training. Like the crew course, HUET training is held at the Meriturva Maritime Safety Training Centre, and the fire and rescue services participating in MIRG operations assign students to training days commissioned by the Border and Coast Guard Academy.

The students know the principles and organisation of vessel cargo transport as well as which information sources to consult in the event of an accident.

A clear focus of the officer course is to utilise fire and rescue services units as part of maritime SAR as a whole. The course emphasises that MIRG and related operations are carried out under the leadership of the Search and Rescue Mission Coordinator with the aim of saving and assisting people in distress or impending danger at sea. The course emphasises the division of responsibilities between different safety authorities, as laid out in national legislation, and changes in leadership responsibilities during operational tasks.

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**In-service training**

In-service training is divided into:

- Training required under national legislation on the rescue sector and occupational safety
- Obligatory training to maintain different qualifications as defined in the internal instructions of the fire and rescue services
- Training on basic skills to maintain expertise in MIRG tasks
- Deepening knowledge of ships
- More extensive exercises carried out by means of cooperation between authorities on a broader scale.

The primary purpose of in-service training with respect to MIRG operations is to maintain basic expertise and to deepen it with adapted exercises.

There is significant variance in how in-service training is carried out in practice at Finnish fire and rescue services due to differences in their personnel structures and operating environments. Although different models are used in methods of implementation, the basic content of training is the same.

In-service training of crew particularly emphasises knowledge of ships and how to work safely in the maritime environment. In the case of officers, in-service training emphasises leadership-related issues in MIRG operations, such as cooperation with the Search and Rescue Mission Coordinator and the officers of the distress vessel. In-service training for both personnel groups also includes regular and practical joint operations with the surface and air units of the Finnish Border Guard.
1.3. France

1.3.1. Emergency fire and rescue services at sea

In France, the fire and rescue services are responsible for providing quick response to maritime accidents and incidents close to shore. Related to this, the fire and rescue services must deploy training and equipment in accordance with the national policy. In terms of offshore maritime SAR, the responsibilities of the fire and rescue services vary depending on the sea area in question. At the moment, three fire services in the north of France and one in the south of France are organised to deal with ship fires and other maritime accidents at sea.

Emergency response at sea is managed by Maritime Prefects (“Préfet maritime”), who are the maritime authority and government’s representatives at the local level. For sea-based operations, three Maritime Prefects have been appointed for the continental country. Their areas of responsibility are: the North Sea and Channel, the Atlantic and the Mediterranean.

The Maritime Prefects hold responsibility for maritime SAR operations as well as all other operations at sea in their own area of responsibility. There are several MRCCs, which are called “CROSS” in France, operating under the Maritime Prefect and responsible for the coordination of maritime SAR operations. A Maritime Prefect can request emergency response from the emergency rescue services or any other administration involved at sea, including the army.

In 2012, the chairman of SDIS62 (the fire and rescue service of the department of the Pas de Calais) involved his fire and rescue service in the MIRG EU project. Since then, maritime issues have become a key focus for several ministries; the Ministry of the Interior, for example, has recognised that the personnel of the fire and rescue services can be trained to deal with incidents at sea. Participation in maritime operations is supported by the high skill level of the firefighters and the variety of tasks they handle: emergency medical care, CBRNe, chemicals operations, technical operations, etc.

At the moment, 40 firefighters are trained to respond to maritime emergencies in the English Channel and North Sea area according to the EU MIRG standard operating procedures (SOP). It is also expected that another 40 firefighters will be trained in the near future.

The Ministry of Interior and the Ministry of Defense and the fire and rescue services are currently working together to build national policy to be able to provide emergency response offshore, under the Maritime Prefects. The national policy will be ready at the end of 2016 and it will be close to the MIRG EU’s policy on the MIRG EU’s SOPs. After the national policy is validated, the fire and rescue services will offer the following types of response at sea: evaluation, firefighting on board, damage control related to leakage, emergency medical care (for massive operations related to terrorism, for example) and chemical clean-ups. Each fire service will have the opportunity to sign the all of these responses or parts of them, but it won’t be mandatory.

Responding to terrorism and mass killing is a very important issue in France actually; the national working group is trying to deal with this new dramatic issue and to give opportunity to the Maritime authority to have options after the special forces operations. Fire and rescue services could give option for a massive paramedic response.

MIRG training in SDIS62 is based on the MIRG EU SOPs and training manual (more about the manual on the Appendix 1). There are annual rehearsals and 10 shorter training sessions focused on specific areas of operation are also provided each year. In terms of maritime SAR, the CROSS (MRCC) plans annual training and large-scale exercises that involve fire services and other national partners.

The maritime authorities are responsible for dealing with transportation of the rescue teams in offshore and/or large-scale maritime SAR operations. Teams are transported to the target by navy helicopters, civil protection helicopters or vessels from different administrations. Fire and rescue services also have light boats for quick response close to shore.

The content of the equipment package to be used by the French MIRG teams in the future will be consistent with the MIRG EU policy. Fire and rescue services will start using the bag as soon as the national policy is validated. For maritime SAR, the fire and rescue services also use equipment like light scuba diving gear. MIRG teams use Tetra radio for communications near the coast or in harbours. At sea, they use VHF or satellite phones.

![Picture 3: French civil protection helicopter in a SAR mission. Photo courtesy of SDIS62, France.](image-url)
1.4. Italy

1.4.1. Emergency fire and rescue services at sea

In Italy, emergency fire and rescue services at sea are provided by the Port Firefighting Service, established in 1940 under law 690. As set out in this law, the service is the responsibility of the Port Commander and performed by the provincial fire services in ports and within their jurisdiction, on land and on board ships. The service also includes general technical assistance. For this purpose, port detachments were created and equipped with appropriate firefighting vessels in the 20 harbour cities with the greatest maritime traffic.

Another set of standards, culminating in the National SAR (Port Firefighting Service) Plan in 1996, extended the tasks undertaken by fire brigades to participate in maritime SAR activities, coordinated by the Maritime Authority. In addition, a presidential decree in 2012 extended the institutional work of fire brigades (which involves protecting the safety of persons and safeguarding goods) to include service at sea.

In Italy, the Coast Guard (MRCC/MRSC) is responsible for rescue operations while the fire brigades provide technical guidance on using available resources during firefighting operations, working on board ships and maintaining contact with the Coast Guard and master of the ship. Rescue and life-saving operations, fire control and preservation of goods are prioritised.

There are currently 24 port detachments and they normally operate as a 24/7 service. As the emergency response team is required to participate, and others involved must await its arrival, the response speed varies from one organisation to another. The speed of the nautical vessels (which varies from 12 to 28/30 knots) has an impact on the speed of the response. Currently, there are also international agreements to operate in Slovenian waters.

Depending on the nautical detachments, the emergency response team has four or five operators (0+1+4). All fire brigades participating in emergency naval response teams are made up of professional firefighters that have taken or will take a special course in one of the available naval simulators.

Under the terms of the Standard Operational Procedures of Trieste, CBRN personnel may be dispatched with nautical detachments to monitor these parameters. Service officials may also be sent. A team may therefore be composed of 1+1+4+2 (CBRN).

The plan also covers alerts and sending a subsequent second team (0+1+4) as soon as possible.

All fire service personnel belonging to a naval detachment headquarters must undertake a one-week fire at sea course on one of the available simulators. There is no obligatory training for all the personnel, but exercises or visits on board ships may be organised occasionally.

Related to this, all fire brigades of port cities will soon participate in special firefighting course on ship simulator in order to support response at sea. These courses will involve more than 200 people in Trieste alone and thousands throughout Italy; the participants will be especially trained to work on ships, 24/7.

Italian fire brigades almost always use naval vessels to reach ships in danger, helicopters are used rarely and only in very specific cases. Under the agreements that have been made, the Coast Guard provides its own units or, if needed, third party units to transport fire service operators.

There is no special equipment for emergency response teams. They use standard fire service equipment. Personnel wear SOLAS lifebelts while on board the nautical vessels of the fire service. All personnel that board vessels are expected to use these. Almost all of the equipment is located on board the nautical vessels.

The various people involved in operations communicate via marine VHF radio. On board ships, fire services may use P3/95 fire service radio, although marine VHF radio is also preferred in this context for reasons of convenience.

![Picture 4: Italian emergency response team boarding to a vessel. Photo courtesy of VVF Trieste, Italy.](image)

1.4.2. Training fire and rescue services personnel to deal with ship fires

In Italy, ordinary fire service response teams must undergo a one-week course in order to provide firefighting services on board ships. This course is taken at a national fire service training centre and it is based on national firefighting guidelines drafted by national nautical experts. The training involves performing manoeuvres on a Kiddie naval simulator and visiting a ship/ships to familiarise the students with the naval environment.

Not all personnel have been trained at present.

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2 No. 64, of 2012, “Regulations for the National Fire Corps Service pursuant to Article 140 of Legislative Decree no. 217, of 2005”
Rescue services degree programme system

Full-time rescue services personnel in Italy are required to complete one-year course at the Central Firefighting Schools in Rome. To apply for the course, the applicant must have a middle school leaver’s certificate and sufficient experience as an occasional firefighter. To be an occasional firefighter one must have served in the military as an auxiliary firefighter or passed a training course lasting at least 120 hours and including a final exam.

In Italy, rescue services training is provided progressively, with earlier job tasks and related training serving as the foundation for taking on more demanding tasks. As a rule, a firefighter can participate in the national round of applications for higher-level positions after working in a lower-level position for a certain period of time. If the applicant is successful, a round of training for the new position follows.

Degree programme for crew

To take part in the most recent round of applications to become a permanent firefighter, one must have already gained experience as an occasional firefighter.

If the application is successful, the candidate must pass a one-year theoretical/practical course on themes relating to firefighting activities at the Central Firefighting Schools in Rome.

One week out of this year is spent on first aid techniques, but fire at sea is not specifically dealt with.

Degree programme for sub-officers

After five years of service as a permanent firefighter, theoretically (depending on the posts available within the organisation) one may make a national application for Crew Manager. If the application is successful, the candidate must pass a course that varies in terms of duration.

The Station Manager is normally responsible for managing shifts and, in the event of operations requiring the intervention of several teams, may take on direction of the operations.

After five years of service as Crew Manager, theoretically (depending on the posts available within the organisation) one may make a national application for Station Manager. If the application is successful, the candidate must pass a course lasting at least three months.

Degree programme for officers

Depending on the vacancies within the organisation, national calls for applications are regularly announced for the position of Firefighting Inspector. Some posts are re-served for internal personnel (Crew Manager and Station Manager) with secondary school leaver’s certificates and adequate service experience. Subsequently, firefighters must undertake a six-month course and pass a final exam to start working in the role.

Firefighting Inspectors may cover more varied roles, generally relating to the coordination of operations.

Entry to directorship roles is obtained through an external course. In order to take this external course, a degree in engineering or architecture is required. After passing this course, the candidate must then take a course lasting at least two years at the National Fire Academy in Rome. Twenty per cent of posts opened for application are re-served for technical/operational personnel (Firefighting Inspectors).

Entry to executive roles (first executive, senior executive and general executive) is obtained only after directorship experience, through comparative examination of the candidate’s merits and by passing a three-month training course with a final exam.

Basic MIRG courses

The fire at sea course lasts five days and it is organised at one of the national fire service training centres. The purpose of this course is to provide a general overview of the maritime environment and the firefighting techniques to be used on board ships, with the aim of guaranteeing greater efficiency when responding to fires and a higher level of safety for operators.

The course involves three days divided between theory and practice performing manoeuvres on a Kidde naval simulator. One day of the course is used to visit a ship, where the students familiarise themselves with the naval environment. Through this visit, they gain both practical and theoretical training designed by national nautical instructors as set out in the naval firefighting guidelines drafted by national nautical experts. One day of the training is dedicated to studying real-life cases and undertaking a final exam.

The courses are organised by national nautical instructors from various naval detachment headquarters and are undertaken by personnel operating at these headquarters. The cost of these courses is borne by the Central Division for National Fire Corps Training.

The current course does not involve different teaching levels.

In-service training

Firefighting manoeuvres on board ships are occasionally organised in association with the Coast Guard. That said, personnel that have passed the fire at sea course are not required to undertake any special training.
1.5. Netherlands

1.5.1. Emergency fire and rescue services at sea

The Netherlands is divided into 25 safety regions that have a legal basis in the law on Safety Regions. In accordance with the Law on the Safety Regions, the fire and rescue services are obligated to react to maritime incidents in their own area of responsibility, which consists of harbours, docks, inland waterways (such as rivers, creeks and channels) and areas in close proximity to the shore within the territorial borders of the Safety Region. The General Coordinator of the preparedness plan for the North Sea is the federal government. According to the law on maritime incidents, the fire and rescue services can be called upon to participate in maritime SAR. Not all fire and rescue services have MIRG expertise or on-call teams. The Netherlands has two MIRG teams on continual standby (24/7), one located in Rotterdam and one in Zeeland. Rotterdam and Zeeland are the two regions in the Netherlands that have a MIRG team standby because of the large volume of shipping activities in the region and the traffic to and from the port of Rotterdam.

There are some notable differences between the two MIRG teams in the area of liability, funding and transportation. Rotterdam has made arrangements with the Dutch government for liability coverage, damage and expenses for the deployment of her team. Zeeland carries its own responsibility in the region and pays for the cost of their operations. In accordance with contracts and conventions, the teams are also available for use in other countries.

The Dutch Coastguard is responsible for the SAR implementation and operational preparations in the Netherlands. Therefore the on-site responsibility for MIRG operations on the North Sea is held by the maritime SAR agency, which is the Coastguard, headquartered in Den Helder (MRCC). The Coastguard decides which team is deployed to the distress vessel. When operating on distress vessels, MIRG teams act in accordance with international agreements and the directions issued by the master of the vessel. The most important task of the MIRG team, and the core of its operating idea, is to provide support to the crew of the distress vessel in accordance with the guidelines specified by the master of the vessel. The aim is to avoid having to evacuate the vessel by halting the escalation of the accident and thereby limit it and gain additional time for saving people.

The MIRG teams bases/stations are in Rotterdam and in Vlissingen. Both teams are available for deployment throughout Dutch waters. The team of Zeeland deploys within half an hour when transferred by ship to the distress vessel. Zeeland conducts maritime ship to ship transfer and can be deployed with helicopters but Zeeland has no agreements at this time for securing air transport resources. The team of Rotterdam deploys within in maximum of one our because the Rotterdam primarily use dedicated maritime SAR helicopters to transfer to the target. The Rotterdam has agreements with the harbour authorities to deploy with their helicopter. The helicopter of the harbour authorities is also a SAR helicopter. Surface vessels can also be used if required, but there must be special grounds for doing so. Helicopters are for Rotterdam always the first choice because for reasons of safety.

The usual size of a complete MIRG team Zeeland is 6+6 and the MIRG team Rotterdam is 9+6. The composition of the team may vary depending on the nature of the operation and the distance from the accident site, but the team’s basic size is 12 for Zeeland and 15 for Rotterdam. Both MIRG teams are trained in all of the specialised skills required to deal with maritime incidents. All team members are professionals in their own fields and carry out a variety of rescue tasks in their daily work. Fire and rescue services are obligated to handle routine incidents in the manner they see most fit, irrespective of whether specially trained teams have been alerted to incidents at sea or not.

The Netherlands has no national MIRG training system, but the two teams are building on a similar approach. The fire and rescue services engaging in MIRG operations are responsible for the planning, implementation and development of supplementary MIRG training in cooperation with regional and national authorities.

Team members must practise a variety of maritime SAR topics several times per year. Sea survival training is mandatory every two years.

All team members are equipped with immersion suits suitable for maritime SAR, automatic life jackets (SOLAS), helmets, and personal locator beacons (PLB). The teams’ equipment is stored in premises that have signed contracts with the fire and rescue services. MIRG teams have separate personal bags for carrying personal equipment, as well as special plastic peli-cases for carrying team-specific equipment. Different equipment is packed in the cases depending on the nature of the task.

Contact between MIRG teams and the Coastguard is handled in accordance with the situation, but a satellite phone is usually used for communications. When aboard a distress vessel, team members communicate with each other using tetra radio.

Despite the differences between Rotterdam and Zeeland the focus for the coming years is to work towards a more integrated and uniform MIRG capability for the Netherlands.

![Picture 5: A MIRG man being winched from the Dutch SAR helicopter.](Image)

Photo courtesy of Kent Fire and Rescue Service, England, UK.
1.5.2. Training fire and rescue services personnel to deal with ship fires

The broad-ranging expertise of the Dutch fire and rescue services provides a good foundation for national MIRG operations. For example, basic ship firefighting and complex building techniques provide a good standard for further developing the MIRG knowledge of MIRG team members. Specialised and supplementary training facilitates the integration of this expertise into operational preparedness in maritime search and rescue. Furthermore, some team members have extensive knowledge of shipbuilding, regulations, SAR or other issues based on their day-to-day jobs.

The Dutch regional MIRG training system is based on supplementing the basic expertise gained from vocational qualifications in rescue services with supplementary training courses and in-service training.

The fire and rescue services engaging in MIRG operations and the Dutch Coastguard participate in organising MIRG training. At the moment, only Rotterdam engages in integrated training with the coast guard. The idea is that the Zeeland MIRG team will become involved in the second half of 2016.

Rescue services degree programme system

Full-time and voluntary fire and rescue services personnel in the Netherlands are required to have a vocational degree in rescue services approved by the Ministry of Safety and Justice. Full-time and volunteer firefighters both complete the same education and are considered equal. Training leading to a degree is provided by the Institute of Physical Safety, which is run by the State.

There are four levels of degree programmes for rescue services in the Netherlands:

- Crew training
- Sub-officer training
- Officer training
- Specialisations

The starting point has been that the degrees are taken progressively, with each lower degree providing the necessary qualifications for the next. However, in recent years, it has been possible to start these studies at the officer level. In such cases, the degree also covers the basics of operational activities.

Degree programme for crew

The degree programme for crew – degree in rescue services – consists of 360 study hours. Depending on the trainee’s full-time or voluntary background, the duration of the programme varies from several weeks to one and a half years. The degree is a post-secondary programme; that is, students must have completed either a vocational or upper secondary degree. The studies do not include general education. The course includes four main themes: firefighting, technical rescue, hazmat and water and maritime incidents (with a greater focus on issues such as support for rescue diving).

Degree programme for sub-officers

Persons who have completed the sub-officer degree programme serve as the foremen of rescue units (fire sub-officer). A completed degree in rescue services is a requirement for admission into the sub-officer programme. In MIRG tasks, fire sub-officers lead the teams while participating in the hands-on performance of tasks.

The degree programme for sub-officers consists of 418 hours. This degree programme includes limited knowledge modules on accident prevention and personnel leadership.

Degree programme for officers

The degree programme for officers consists of one and a half years of full-time study at the academy in Arnhem. Parts of the programme can be completed through a modular approach over a period of several years.

Basic MIRG courses

The Netherlands currently has no agreed MIRG or supplemental course at a national level besides the basic course. Rotterdam and Vlissingen do want to engage in obtaining a national training programme including the SAR authorities at a national level. At the moment the MIRG courses are run regionally.

The basic MIRG course for crew and officers is about 70 hours. The course is intended to enable crew and officers to apply the expertise in rescue services they have gained from their degree programme and work experience to performing MIRG tasks in a shipboard environment and ensure their occupational safety.

The basic structure of the course consists of two theory days, two training days on a simulator, a rescue exercise, and a practical training day.

Sea survival, HUET, winching and ship-to-ship transfer is compulsory.

Completion of this course is a precondition for serving in MIRG tasks.
1.6. The United Kingdom

1.6.1. Emergency fire and rescue services at sea

In accordance with the Fire Services Act 2004, the fire and rescue services are obliged to launch operations in their own area of statutory responsibility, that is, harbours and inland waterways. As an additional response the UK has a small number of declared coastal Fire and Rescue Maritime Response (FRMR) teams on continual standby, which are available to deploy to an incident at sea. This capability sits outside of each service’s statutory responsibility. Fire and rescue services that participate in FRMR operations are responsible for the costs incurred by their own operations. During joint exercises, each organisation is responsible for its own expenses.

Her Majesty’s Coastguard, part of the Maritime Coastguard Agency (MCA), is responsible for coordinating the response to an incident at sea. When a request for fire-fighting assistance is made by a ship to a UK Coastguard Operations Centre (CGOC) which provides a Rescue Coordination Centre function, the Coastguard Operations Centre will set up a conference call between them, the Ships Master and the FRMR National Coordinator (FNC) to decide if a FRMR response is necessary and appropriate.

If the FRMR is agreed to be sent to the situation, the FRMR National Coordinator will then risk assess deployment options and contact the relevant declared capability and discuss this with the Lead FRMR officer and/or Senior duty manager to “stand up” (prepare to mobilise) the FRMR teams to be deployed. The most important task of the FRMR team, and the core of its operating idea, is to provide support to the crew of the distress vessel in accordance with the guidelines specified by the master of the vessel and to prevent a mass evacuation at sea. To enable prompt support the FRMR National Coordinator can also provide remote tactical advice to the ships master whilst the FRMR teams are being deployed. When on board the UK FRMR teams adopt a “contain and maintain” strategy in order to get the vessel into the nearest place of refuge.

The UK currently has eight declared teams around the UK coastline available 24/7 for an at sea response. The range of capabilities is from a two-person assessment team to a six-person command team with a six-person support team. The UK also has haz-mat teams, Technical Rescue teams, special diving teams and is developing a multi-riding terrorist firearms attack (MTFA) capability.

All declared FRMR teams are trained to an agreed standard as per each training element within the FRMR Training Manual. There are 10 elements in total to achieve in order to become a FRMR team member.

SAR helicopters available through the Maritime Coastguard Agency may be used to transport FRMR personnel to a casualty vessel. FRMR teams are also able to develop memorandums of understanding with local tug providers or pilot boats in order for a seaborne response option as required.

All team members are equipped with immersion suits suitable for maritime SAR, life jackets (SOLAS and CAA), Emergency Breathing Systems (EBS) or PSTASS, side impact helmets, and personal locator beacons (PLB). The teams’ equipment is stored in various premises or “holding areas” within each fire and rescue service that have a declared capability. FRMR teams have separate personal bags for carrying personal equipment, as well as special helicopter load bags (HLBs) with prearranged loading and weight plans for carrying team- and incident-specific equipment. Different equipment is packed in the cases depending on the nature of the task.

Contact between FRMR teams and the Coastguard Operations Centre is handled in accordance with the situation via marine band radio and a FRMR Liaison Officer who goes to the Coastguard Operations Centre to support the coordination of the response to the incident. This may also be supplemented by mobile phone, satellite phone and airwave radio dependant on signal, range and connections. When aboard a distressed vessel, FRMR team members communicate with each other using specialised high-frequency handheld radios and/or the ship’s on-board, portable radios. The FRMR team also maintain direct communication with the Coastguard Operations Centre via Marine Band radio.

1.6.2. Training fire and rescue services personnel to deal with ship fires

Within each declared FRMR team the expert training comes from the Fire and Rescue Maritime Response Training Manual and the elements contained within. This is up to each Fire and Rescue Maritime Response team Lead Officer to ensure competence is maintained.

The FRMR Lead Officer in each Fire and Rescue Service will also hold regular exercises and training events with both the Coastguard Operations Centre and include (where applicable) the UK National Maritime Operations Centre (NMOC). They will also need to engage with external shipping companies and agents to allow training on board to simulate a realistic environment wherever possible.

From the perspective of expertise management, the FRMR training system is based on utilising the nationally recognised Incident Command System (ICS) and the JESIP
model of incident management to the fullest extent possible. The operating models are based on applying, in shipboard conditions, the procedures used in day-to-day tasks. For this reason, the training system for FRMR qualifications focuses on the special characteristics of maritime conditions and developing expertise on how to operate on board vessels.

**Land/Shore based training**

For the shore/land based operational firefighters Kent Fire and Rescue Service (KFRS) has a specific one-day Marine Firefighter (MFF) course aimed at all whole-time firefighters and Junior Officers. Kent Fire and Rescue Service is also developing an extended programme of incident level 2, 3 and 4 training to implement operational, tactical and strategic command based on the UK JESIP model of incident management.

This is also supported through National Operational Guidance (NOG) and further info can be found here: www.ukfrs.com.

**Rescue services degree programme system**

Fire and Rescue Service Firefighters are required to complete a development programme that lasts between two and four years; the accreditation of this varies depending on the individual fire service, but all programmes largely follow the National Vocational Qualification Level 3 certificate ‘Emergency Fire Service Operations in the Community’. For firefighters progressing to higher roles, many development programmes exist, making use of the National Vocational Qualifications (from level 2, initial, to level 7, strategic), the qualifications offered by the Institution of Fire Engineers (IFE) or academic routes, such as Diploma in Management Studies, Bachelor of Arts Degrees or Masters Programmes.

**Development programme for Crew Managers**

The promotional programme for Crew Managers is work-related and involves leadership and management courses together with IFE Level 3 Diploma; incident command training can include ship fire scenarios if the individual comes from a MIRG station. The promotional development plan is aligned to the Fire Service Rolemap for Crew Managers, defining the duties belonging to Crew Managers (WM1, WM 7, etc.). The development programme lasts between 18 and 24 months.

**Development programme for Watch Managers**

The promotional development plan for Watch Managers is very similar to that of Crew Managers, with leadership and management courses, workplace assessors, and health and safety training (licensed training approved by the Institution of Occupational Safety and Health). If the Watch Manager is a FRMR crew member, then they will have undergone the required refresher practical training elements as well.

**Development programme for Officers**

Most Station Managers and above development programmes follow some academic programme, starting with a Diploma in Management Studies, up through Bachelor’s Degrees to Master degree programmes – these all focus on leadership, management and coaching, with the Level 7 Strategic Incident Command qualification as the highest command level. All officers undergo a half-day ship fire training element every few years, with the FRMR officers undergoing the required practical training and exercises. Officers are encouraged to progress through the IFE qualifications, with the Marine paper at Members level available.

**Basic FRMR courses**

Kent Fire and Rescue Service holds at least one offshore and one desktop event per year. The key objective is to maintain Continual Profession Development (CPD) and produce a robust and credible training regime.

The FRMR Lead Officer in each Service with a declared capability is responsible for organising the FRMR training and courses. Each fire and rescue service enrols students in the courses in accordance with their personnel strategies and capability requirements. The FRMR Lead Officer also engages with other stakeholders and interested parties such as the Maritime Coastguard Agency, Bristows providing SAR helicopters and passenger and cargo ferry operators to arrange credible training events.

This is funded by the respective service and absorbed within the annual training budget of the authority.

The MIRG EU Training Manual (TM) and the SOPs contained within the MIRG EU Operations Policy Manual (OPM) are the foundation document on which Kent Fire and Rescue Service bases its training and procedures. The purpose of the courses is to provide standardised expertise to meet the needs of national operations.

The goal is that those who have completed the courses understand the national (and for Kent Fire and Rescue Service international) special characteristics of maritime operations in a range of capabilities, and know how to apply their basic expertise in shipboard conditions under the leadership of the Operational, Tactical or Strategic Fire Commander.

The elements and minimal durational requirements for each training element are described within the Training Manual.
2. MIRG competencies

This section presents the key competences that ensure sufficient MIRG performance. MIRG competence requirements can be roughly divided into two subareas. The first competence subarea concerns background information on the maritime SAR system, transfer to the distress vessel and the distress vessel as an operating environment that the MIRG team should have to ensure occupational safety and efficiency in MIRG operations.

The second competence subarea concerns the range of tasks that MIRG teams may handle on board a distress vessel: ship fire operations, technical rescue missions, emergency medical care and vessel chemical spills. With the exception of ship fire operations, the other tasks mentioned are not included in the tasks of all MIRG or equivalent teams. However, competence requirements for said tasks have nevertheless been defined here, as preliminary information indicates that they belong to the tasks of the MIRG teams of fire and rescue services in at least one of the European countries/regions.

The tasks currently handled by fire and rescue personnel and the kinds of competences they are trained in vary from country to country, in some cases greatly. Defining key MIRG competences makes it possible to mirror them against training programmes in different countries as well as compare these countries to find any similarities and enable closer cooperation.

The MIRG competence areas presented herein were defined in international cooperation as part of the Baltic Sea MIRG project between November 2015 and January 2016. The definition process proceeded as follows: a Finnish expert group first drafted the key MIRG competences, and then submitted them to the other project partners to be supplemented before being finalised.

The key competence requirements for both crew and officers are presented below. The training systems of different countries are analysed in terms of these competences in Chapter 3.

2.1. Firefighters

Crew competence requirements focus on having sufficient background information on the maritime operating environment and competences that ensure safe operations at the target.

Table 1: MIRG competence requirements of crew

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<th>MARITIME SEARCH AND RESCUE SYSTEM</th>
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<td>Maritime emergency responders in neighbouring SAR areas, cooperation practices, operating principles in similar operations</td>
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<td>Command system</td>
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<tr>
<td>Helicopter transport</td>
<td>Taking into account vessel structures and their heating in firefighting tactics</td>
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<tr>
<td>KNOWLEDGE OF TARGET</td>
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<tr>
<td>Safety plan</td>
<td>The most common vessel evacuation systems and their operating principles</td>
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<tr>
<td>Extraction from above or below</td>
<td>Using the MIRG team and the vessel’s equipment, using the vessel structures Patient safety and emergency medical care in a rescue situation</td>
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2.2. Officers

In comparison with the competence requirements of crew, the requirements set for officers emphasise a deeper understanding of the maritime operating environment and its actors, coordination and the roles of different actors.

<table>
<thead>
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<th>Table 2: MIRG competence requirements of officers</th>
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<tr>
<td>Cleaning operations</td>
</tr>
</tbody>
</table>
3. Training MIRG competences in different countries

This chapter examines in which stages fire and rescue personnel receive training in the key MIRG competences in the following countries or regions thereof: Finland, Italy, the Netherlands and the UK.

Training in these countries is examined on the basis of the key MIRG competence requirements defined in the previous chapter: maritime SAR, transfer to site, knowledge of target, ship fire operations, technical rescue tasks, emergency medical care and vessel chemical spills.

Information on training in these competences was collected with a survey during the Baltic Sea MIRG project. Representatives of the examined countries were asked whether the training provided for each competence in their country was included in basic rescue personnel training, in-service training, supplementary rescue training, basic MIRG training, supplementary MIRG training or other training, or whether no related training is provided.

3.1. Presentation and analysis of training in MIRG competences

There are major differences in how MIRG or equivalent teams operate and their training programmes in the examined countries (see Tables 3-9). There are several reasons for this.

The ways in which fire and rescue services are organised vary from one country to another. The authority responsible for organising these services may be a city (municipality), region, regional consortium or national organisation. Likewise, the grounds for cooperation between fire and rescue services and maritime SAR may be determined by law, on a contractual basis or established practices. It follows that the arrangements and focuses of MIRG or equivalent operations partly vary in line with the interests of the fire and rescue service providers.

There are also national differences in the range of tasks handled by fire and rescue services. At their broadest, the tasks of the fire and rescue services include not only firefighting and rescue, but also vessel chemical spills, prevention of environmental damage (including oil spill containment/clean-up at sea) and emergency medical care. Differences in the range of tasks from country to country are in turn reflected in the scope of the vocational training programmes of fire and rescue personnel. At its broadest, crew-level basic training that leads to qualifications for basic MIRG training can be 3.5 years in duration. In this case, the training covers all the subareas of the broadest range of tasks handled by fire and rescue services, as described above. If the training system has a greater focus on in-service learning instead of basic training, and the range of tasks assigned to fire and rescue services is not as broad, one year may be sufficient to complete crew-level vocational basic training. The same differences are reflected in training programmes for suboficers and officers.

Against this background, the competences required for MIRG tasks can be partly examined in the light of general MIRG competences and the competences required for national speciatl/additional tasks. This division is, naturally enough, also reflected in national training programmes.

The next subsections analyse the training provided in the examined countries through the key MIRG competence requirements defined in the previous chapter.

Training on maritime SAR competences

Table 3 below describes maritime SAR competence training in the examined countries as part of the training of fire and rescue personnel, both crew and officers.

<table>
<thead>
<tr>
<th>MARITIME SEARCH AND RESCUE SYSTEM</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Supplemen- tary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplemen- tary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE FIGHTERS</td>
<td>National vocational qualification required for working in the rescue services</td>
<td>Theory lecture or exercise of a short duration in connection with job duties</td>
<td>National or international course-based training for the rescue services</td>
<td>Specific training package qualifying for MIRG operations</td>
<td>Further training for MIRG firefighters</td>
<td>Training not specifically aimed at the rescue services</td>
<td></td>
</tr>
<tr>
<td>General knowledge of maritime search and rescue system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational objectives and principles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National system</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maritime emergency responders’ areas of responsibility, performance, organisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International cooperation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maritime emergency responders in neighbouring SAR areas, cooperation practices, operating principles in similar operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command system</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principles of the command system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telecommunications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telecommunications systems in MIRG operations</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
With respect to knowledge of the maritime SAR system, the most significant MIRG competences shared by the examined countries are how fire and rescue services are linked to the national maritime SAR system, alert and communications systems and command protocol for operations. On the other hand, when weighting knowledge of international maritime SAR as a MIRG competence, some differences are apparent. Rectifying this issue may be considered one of the subobjectives of the Baltic Sea MIRG project.

The basic training in fire and rescue services provided in the examined countries does not provide much information, if any, on the basics of maritime SAR and international operations. For this reason, firefighters participating in MIRG operations are taught the basics of maritime SAR later during special or supplementary training. Training should aim to provide fire and rescue representatives with a good understanding of the International Convention on Maritime Search and Rescue and other international SAR norms and agreements. Both crew and officers should be taught the basics of maritime SAR to enable them to see the big picture, but officer training should emphasise cooperation between maritime SAR and fire and rescue services as well as coordination and command responsibilities in different situations.

As all the coastal nations of Europe have ratified the International Convention on Maritime Search and Rescue (SAR Convention, Hamburg Convention), and the international norms guiding maritime SAR are consistent, the basics of maritime SAR and the coordination and command structure could be taught in international courses. As representatives of fire and rescue services participating in MIRG operations only need limited knowledge in all these maritime SAR-related subjects, one to two days of teaching would suffice. This in turn means that it would be difficult to get students from distant countries to attend such short international courses. However, as classroom teaching is not indispensable for this subject, international online and self-study materials of some kind could alternatively be used for this purpose. These materials could be supplemented with country-specific “extra components”. These extra components would focus mainly on national maritime SAR norms, communications and the available units (and the principles for their use).
Training on transfer to site

Table 4 below describes competence training concerning transfer to site in the examined countries as part of the training of fire and rescue personnel, both crew and officers.

<table>
<thead>
<tr>
<th>TRANSFER TO SITE</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Supplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE FIGHTERS</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evacuation training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal equipment, operations in water, hoisting, evacuation equipment</td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td></td>
</tr>
<tr>
<td>Helicopter transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restrictions, equipment and its handling, operations in flight, hoisting, practice and HUET</td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td></td>
</tr>
<tr>
<td>Surface vessel transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment and its handling, operations on board, transfer from vessel to the DV</td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td></td>
</tr>
<tr>
<td>FIRE OFFICERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evacuation training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal equipment, operations in water, hoisting, evacuation equipment</td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td></td>
</tr>
<tr>
<td>Helicopter transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restrictions, equipment and its handling, operations in flight, hoisting, practice and HUET</td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td></td>
</tr>
<tr>
<td>Surface vessel transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment and its handling, operations on board, transfer from vessel to the DV</td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td><strong>£</strong></td>
<td></td>
</tr>
</tbody>
</table>

* UK here refers to the Kent Fire and Rescue service

In the examined countries, competence concerning transfer to site depends on the fleet used in the country in question. There are three solutions: helicopters, surface vessels or a combination thereof. As can be seen from the table, training in many of the examined countries accounts for issues concerning helicopter and surface vessel transport. On the basis of the material available, it was not possible to assess how extensively training on these subjects accounts for occupational safety perspectives.

That said, it can be stated that there are no significant differences in how transfer to site is taught to MIRG crew and officers. This part of training could even be fully standardised. However, when examining possibilities for organising international courses, it can be noted that the bulk of training concerning transfer to site should be organised nationally, as it focuses largely on national “tactics” and the available units. In particular, helicopter safety and transportation regulations vary in different countries, which means that providing international training would be challenging.

That said, international training could be provided for HUET and transferring from a surface vessel to the distress vessel. HUET training in particular is provided largely at educational institutions specialising in maritime safety, which have dedicated HUET simulators. On the other hand, hardly any commercial training on how to transfer to a distress vessel is available.
Training of knowledge of target
Table 5 below describes competence training concerning knowledge of target in the examined countries as part of the training of fire and rescue personnel, both crew and officers.

Table 5: Training on knowledge of target

<table>
<thead>
<tr>
<th>KNOWLEDGE OF TARGET</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Supplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE FIGHTERS</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vessel structures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Various types of vessel, basic structures and how they affect operation completion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using the safety plan for on board navigation and general operation planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vessel systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic information on on-board systems and how they affect occupational safety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperation with the crew</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation on the distress vessel, cooperation with the crew of the vessel during the operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact of circumstances on operation completion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How factors such as heavy seas, listing, ice, etc., affect the use of evacuation equipment and the performance of the team</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vessel evacuation systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The most common vessel evacuation systems and their operating principles Assistance in an evacuation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIRE OFFICERS</th>
<th>Vessel structures</th>
<th>Impact of vessel structures and their damage on tactical operational planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety plan</td>
<td>Using the safety plan in operational risk assessment, tactics and plotting of advancement paths</td>
<td></td>
</tr>
<tr>
<td>Vessel systems</td>
<td>Using the vessel systems in performing and safeguarding the navigation</td>
<td></td>
</tr>
<tr>
<td>Cooperation with the crew</td>
<td>Structure and function of the vessel’s organisation, cooperation with the vessel’s officers in planning own operations</td>
<td></td>
</tr>
<tr>
<td>Impact of circumstances on operation completion</td>
<td>Risks and restrictions imposed by circumstances, occupational safety aspects</td>
<td></td>
</tr>
<tr>
<td>Vessel evacuation systems</td>
<td>The most common vessel evacuation systems and their operating principles Assistance in an evacuation</td>
<td></td>
</tr>
</tbody>
</table>

* UK here refers to the Kent Fire and Rescue service
Knowledge of target is a key part of MIRG training. The shared competences of the examined countries with respect to knowledge of target include accounting for the impacts of the target and prevailing conditions on the performance of the mission as well as knowledge of the operating methods of the vessel crew.

As seafaring is very international and the vast majority of the largest cargo and passenger ships sail through many search and rescue regions, and even many maritime areas, it should be possible to organise joint international courses on knowledge of target. These courses could also include self-study or online training, but teaching should not be organised entirely using those methods.

One means of targeting training more effectively is to divide it into separate courses for crew and officers, such that crew would focus on ships as operating environments and the equipment on board, while officer training would emphasise rescue tactics, risk management and cooperation with ship crew. In the case of both groups, an integral part of training should involve visiting different kinds of vessels and familiarisation with vessel operations and equipment.

In addition to shared knowledge of target, some of the fire and rescue services participating in MIRG operations may also have a need to organise their own training to supplement the joint training, with a focus on the special characteristics of their own area (e.g. traffic in a large harbour and special vessels/cargoes).

### Table 6: Training on ship fire operation

<table>
<thead>
<tr>
<th>FIRE FIGHTERS</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Suplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prolonged smoke diving</td>
<td>Competence in the special features of prolonged smoke diving, use of appropriate equipment</td>
<td>Theory lecture or exercise of a short duration in connection with job duties</td>
<td>National course-based training for the rescue services</td>
<td>Specific training package qualifying for MIRG operations</td>
<td>Further training for MIRG firefighters</td>
<td>Training not specifically aimed at the rescue services</td>
<td>No training</td>
</tr>
<tr>
<td>Firefighting tactics in various spaces on board</td>
<td>Taking into account vessel structures and their heating in firefighting tactics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoke ventilation on a vessel</td>
<td>Providing smoke ventilation on board, using the equipment and structures of the vessel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vessel structures</td>
<td>Using the structures of the vessel in firefighting tactics; how the properties of structures change in a fire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIRE OFFICERS</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Suplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prolonged smoke diving</td>
<td>Occupational safety aspects, performance restrictions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firefighting tactics in various spaces on board</td>
<td>Firefighting tactics in various spaces, planning a firefighting attack and coordinating the actions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoke ventilation on a vessel</td>
<td>Providing smoke ventilation on board, using the equipment and structures of the vessel, in cooperation with the vessel's officers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* UK here refers to the Kent Fire and Rescue service.
In the case of operational task competences, the only field of competence clearly shared by all the examined countries is expertise in ship firefighting. Although all these countries provide training on ship firefighting, there are slight variations in the competence requirements due to differences in how these types of tasks are carried out in accordance with national tactics.

The ship fire-related joint operations of crew and officers (command) could be trained during a variety of international joint courses. However, it must be kept in mind that firefighting at sea is based, in the case of each MIRG team, to a great extent on the operating procedures and regulations that the MIRG team members employ when fighting fires on land, such as in buildings. On the other hand, the joint coordination and command of firefighting teams from different countries should be trained sufficiently, so that during a demanding firefighting task MIRG teams from different countries can work together effectively and under a unified coordination and command structure, thereby enhancing the efficiency of firefighting and rescue operations on board the distress vessel.

There are slight differences in the ship fire-related training needs of crew and officers; whereas courses for crew should focus on firefighting technique and the ship as an operating environment, officer training should focus on rescue tactics and cooperation with ship crew.

---

Training on technical rescue tasks

Table 7 below describes competence training concerning technical rescue tasks in the examined countries as part of the training of fire and rescue personnel, both crew and officers.

Table 7: Training on technical rescue tasks

<table>
<thead>
<tr>
<th>TECHNICAL RESCUE TASKS</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Suplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
</table>

**FIRE FIGHTERS**

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Suplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Releasing pinned individuals. Using MIRG team rescue tools, taking the vessel structures into account. Patient safety and emergency medical care in a rescue situation.</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
</tr>
<tr>
<td>Extraction from above or below. Using the MIRG team and the vessel’s equipment, using the vessel structures. Patient safety and emergency medical care in a rescue situation.</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳🇱 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳�� 🇬🇧 🇫🇮</td>
<td>🇫🇮 🇳�� 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳�� 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳�� 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳�� 🇬苧 🇫🇮</td>
</tr>
</tbody>
</table>

**FIRE OFFICERS**

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Suplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Releasing pinned individuals. Overall operational command in cooperation with the vessel’s crew.</td>
<td>🇫🇮 🇳�� 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
</tr>
<tr>
<td>Extraction from above or below. Overall operational command in cooperation with the vessel’s crew.</td>
<td>🇫🇮 🇳�� 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳�� 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
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<td>🇫🇮 🇳뱅 🇬苧 🇫🇮</td>
</tr>
</tbody>
</table>

* UK here refers to the Kent Fire and Rescue service.
Instead of MIRG teams, many countries use other teams for technical rescue tasks. This is due to the aforementioned differences in how fire and rescue services are organised with respect to both their range of tasks and the training system.

The contents of technical rescue training courses for crew and officers vary in the examined countries. In some countries, technical rescue is handled by special teams, while in some other countries it is part of the day-to-day tasks of the fire and rescue services and every firefighter is trained in it. For this reason, it can be assumed that with respect to technical rescue the equipment and operating methods of MIRG teams will differ quite significantly. Therefore, it would be rather challenging to implement joint international training in technical rescue tasks. On the other hand, training events on the use of special equipment would be relatively easy to organise for a multinational audience.

### Training on emergency medical care

Table 8 below describes competence training concerning emergency medical care in the examined countries as part of the training of fire and rescue personnel, both crew and officers.

#### Table 8: Training on emergency medical care

<table>
<thead>
<tr>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Supplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training (Training not specifically aimed at the rescue services)</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>National vocational qualification required for working in the rescue services</td>
<td>Theory lecture or exercise of a short duration in connection with job duties</td>
<td>National or international course-based training for the rescue services</td>
<td>Specific training package qualifying for MIRG operations</td>
<td>Further training for MIRG firefighters</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EMERGENCY MEDICAL CARE**

<table>
<thead>
<tr>
<th>FIRE FIGHTERS</th>
<th>Emergency first aid emergency first aid skills</th>
<th>Triage</th>
<th>Securing vital functions</th>
<th>Drug treatment</th>
<th>Other training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Classifying patients by urgency, evacuation arrangements on board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Examining the patient, securing vital functions, preparing the patient for evacuation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drug treatment in addition to securing vital functions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIRE OFFICERS</th>
<th>Emergency first aid emergency first aid skills</th>
<th>Triage</th>
<th>Overall operational command in cooperation with the vessel’s crew</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* UK here refers to the Kent Fire and Rescue service.
MIRG teams are used as emergency medical care units in very few countries. Only in those countries where fire and rescue services also participate actively in emergency medical care on land can a MIRG team be used in such tasks. More commonly, emergency medical care in maritime areas is provided by specialised teams. The variation in arrangements from one to country to another is thus due to differences in how they organise fire and rescue services in terms of both their range of tasks and the training system.

Even though emergency medical care is included in the range of tasks of the fire and rescue services, it is generally strictly regulated at the national level, and the related procedures vary in different countries. For this reason, there is no need to organise joint international training. Emergency medical care training and exercises can most efficiently be arranged on land in the country in question, e.g. in ambulances and hospitals. In spite of this, each MIRG team should have the ability to carry out secondary triage if necessary to determine the urgency of patient evacuation on the distress vessel.

Training on vessel chemical spills
Table 9 below describes competence training concerning vessel chemical spills in the examined countries as part of the training of fire and rescue personnel, both crew and officers.

<table>
<thead>
<tr>
<th>VESSEL CHEMICAL SPILL</th>
<th>Degree in rescue services</th>
<th>In-service training</th>
<th>Supplementary training in rescue services</th>
<th>MIRG basic training</th>
<th>MIRG supplementary training</th>
<th>Other training</th>
<th>No training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical diving</td>
<td>Theory or exercise</td>
<td>National</td>
<td>National or international course-based training for the rescue services</td>
<td>MIRG basic training</td>
<td>MIRG supplementary training</td>
<td>Other training</td>
<td>No training</td>
</tr>
<tr>
<td>Safe performance of chemical diving operation</td>
<td>lecture or exercise of a short duration in connection with job duties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement</td>
<td>Detecting hazardous materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of measuring equipment and how to perform measurements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td>Identifying hazardous substances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using the analyser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spill containment</td>
<td>Competence in various spill containment techniques</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning operations</td>
<td>Cleaning personnel and equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Table 9: Training on vessel chemical spills
3.2. Summary of the analysis of MIRG competence training

On the basis of the above, it can be stated that joint training offerings could be created to develop the preconditions for international MIRG operations. The clearest development need is to develop the competence of officer representatives of fire and rescue services with respect to maritime SAR systems in neighbouring countries in the context of international MIRG operations as well as related coordination and communication systems. The training offering should also incorporate practical exercises on the coordination of international operations in order to deepen competence.

Knowledge of target is another joint competence that is clearly highlighted. In general, vessel-related training materials for fire and rescue services are in short supply and the personnel of these services do not necessarily have enough competence to analyse the subject in depth. For this reason, creating training offerings on this topic would enable the development of national competences as well as broaden perspectives when developing operating procedures.

As in emergency medical care and technical rescue, some of the countries use specially trained teams to respond to vessel chemical spills. The reasons for this are the same, that is, differences in how fire and rescue services are organised with respect to both their range of tasks and the training system.

Although operations related to vessel oil and chemical spills are not part of MIRG team tasks in all countries, MIRG teams can nevertheless be utilised in chemical spill-related prevention efforts. Many coastal fire and rescue services have also been trained in maritime oil spill containment/clean-up. Nowadays, training in this sector is provided in different parts of Europe. However, the courses on offer could be developed to better serve MIRG operations as well. Teaching should include both theory and practical exercises. In this subarea, too, personnel training should focus on technical task performance, whereas officer training should emphasise tactics and risk management.

The greatest shortcoming noted is the lack of joint Europe-wide coordination models and standard operating procedures for maritime chemical incidents. To address this, the Finnish Border Guard and the University of Turku (Finland) started the separate ChemSAR project in summer 2016 with EU Interreg funding to develop coordination models and SOPs for dealing with vessel chemical spills in maritime incidents. The project also includes the development of a databank and online study materials. Once the project is completed in late 2018, these models and SOPs will be available to all parties. After this, it is intended that international training based on them will be organised.

* UK here refers to the Kent Fire and Rescue service
4. Recommendations

This report has examined how different European countries have organised their fire and rescue services at sea and how the personnel of fire and rescue services are trained to respond to ship fires and other maritime incidents. The report has also analysed the similarity of maritime training for fire and rescue service personnel in different countries, the reasons behind any differences, and whether it would be possible to engage in closer cooperation in training in the future.

The following key observations can be made on the basis of the analysis:

1) On the basis of this report, there are no good grounds to establish a fully standardised MIRG training system in Europe.

The basic training and tasks of firefighters vary so greatly in different countries that there is no broad and consistent competence base; rather, operational knowhow can vary significantly from one country and task to another. In addition, there are no good reasons to create a fully standardised MIRG training system in Europe because MIRG tasks differ in different countries; some focus only on firefighting and rescue, while some also handle technical rescue, emergency medical care and even chemical and oil spill prevention.

2) In certain subareas, it is possible to create joint international training modules, materials and offerings.

In spite of the differences in training systems and ranges of tasks, it would be possible to create training modules, materials and offerings for shared international use in certain subareas in order to develop the preconditions for international MIRG operations.

The clearest development need at this stage is to develop the competence of officers in fire and rescue services with respect to the maritime SAR systems of neighbouring countries as well as coordination and communications systems related to international tasks. MIRG-related coordination models and operational guidelines for international MIRG operations have been developed by the Baltic Sea MIRG project. The results are presented in the report: Operational Guidelines for International MIRG Operations. These new coordination models and operational guidelines should lay a foundation for potential international training.

Knowledge of target is another clear shared training need in vessel operations. The shared competences of the examined countries with respect to knowledge of target include accounting for the impacts of the target and prevailing conditions on the performance of the mission as well as knowledge of the operating methods of the vessel crew. Both officers and crew require training in this area. Vessel-related training materials for fire and rescue services are currently in short supply and the personnel of these services do not necessarily have enough competence to analyse the subject in depth. For this reason, creating training offerings on this topic would enable the development of national competences as well as broaden perspectives when developing operating procedures. It is believed that this material would also support other maritime SAR operations, as it must be kept in mind that not all those who participate in SAR have been trained as professional sailors.

3) MIRG competence should be deepened to include the coordination of international operations and harmonisation of operations with practical exercises.

The international training offering should also include practical exercises of different levels on coordinating international operations and harmonising operations in order to deepen competence. In addition to those responsible for coordinating maritime SAR and actors participating in MIRG operations, the personnel of shipping companies should also participate in these exercises. These joint exercises could be held both in simulators and on ships. If a decision is taken to hold a joint exercise, planning should begin in good time to enable different actors to schedule it in their calendars, thereby making it possible to reserve suitable resources for the exercise.

4) Maritime SAR and fire and rescue services representatives should set up international joint working groups to develop MIRG operations in different maritime areas.

When developing international training on MIRG operations, coordinating the development work is a challenge. At present, there are no regional joint working groups in which responsible maritime SAR and fire and rescue services representatives from different countries would be comprehensively represented. There is a clear need to deepen such cooperation. For this reason, the creation of regional joint working forums, the start-up of their operations and their development should be proactively supported.
Appendix 1: MIRG EU Training Manual

MIRG EU training is divided into two key sections that incorporate a total of ten modules. These modules constitute the minimum training requirement for MIRG EU team members.

Section 1 consists of six training modules arranged by each individual MIRG EU Partner and as required undertaken by internal training teams or external organisations.

1. Introduction
2. Ship Construction
3. Ship to Ship Transfer
4. Helicopter Operations
5. Helicopter Underwater Escape Training
6. Sea Survival

Section 2 consists of four training modules, three of which are undertaken at Calais. These are delivered by trained personnel from Partner MIRG EU teams and supported by UK instructors. The Command and Control module is delivered by UK instructors at an appropriate venue within each MIRG EU Partner organisation.

7. Transportation Protective Equipment
8. Nominal Roll
9. Practical Techniques
10. Command and Control

The completion of the modules may take many months, even up to one year. The idea is that modules are to be completed in the listed order. An exception may be the modules that are provided by an outside contractor, such as the HUET and Sea Survival modules.¹

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¹ MIRG EU Training Manual

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MIRG EU Training Index¹

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<thead>
<tr>
<th>Modules 1-10</th>
<th>Element</th>
<th>T / P</th>
<th>Target groups</th>
<th>Duration</th>
<th>Trainer</th>
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<td>1. Introduction</td>
<td>-</td>
<td>T</td>
<td>All members</td>
<td>Determined by individual Partners</td>
<td>Local trainer</td>
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<td>2. Ship Construction</td>
<td>Ship construction and terminology</td>
<td>T</td>
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<td>4 hours</td>
<td>Specialist training provided by internal or external specialist and arranged by each individual partner.</td>
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<td>T</td>
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<tr>
<td></td>
<td>Fire protection</td>
<td>T</td>
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<td>Stability</td>
<td>T</td>
<td></td>
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<td>3. Ship to Ship Transfer</td>
<td>Ship to Ship Transfer</td>
<td>T, P</td>
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<td>Determined by external specialist training providers</td>
<td>Specialist training provided by external organisations and arranged by each individual partner.</td>
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<td></td>
<td>Recovery methods of personnel and post recovery treatment</td>
<td>T, P</td>
<td></td>
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<tr>
<td>4. Helicopter Operations</td>
<td>Helicopter safety procedures</td>
<td>T, P</td>
<td>All members</td>
<td>Determined by external specialist training providers</td>
<td>Specialist training provided by external organisations and arranged by each individual partner.</td>
</tr>
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<td>Aircraft crew and MIRG EU team roles</td>
<td>P</td>
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<tr>
<td></td>
<td>Helicopter practical winching</td>
<td>P</td>
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<tr>
<td></td>
<td>Loading/transfer of HLB’s</td>
<td>P</td>
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</table>

¹ MIRG EU Training Manual, June 2013.
<table>
<thead>
<tr>
<th>Helicopter Underwater Escape Training</th>
<th>T</th>
<th>P</th>
<th>All members</th>
<th>Determined by external specialist training providers</th>
<th>Specialist training provided by external organisations and arranged by each individual partner.</th>
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<td>EBS</td>
<td>T</td>
<td>P</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Transportation Protective Equipment</td>
<td>T</td>
<td>P</td>
<td></td>
<td></td>
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</table>

<table>
<thead>
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<th>T</th>
<th>P</th>
<th>All members</th>
<th>Determined by external specialist training providers</th>
<th>Specialist training provided by external organisations and arranged by each individual partner.</th>
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<td>P</td>
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<tr>
<td>Abandon ship procedures</td>
<td>T</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deployment of life rafts</td>
<td>T</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance of life rafts once deployed</td>
<td>T</td>
<td>P</td>
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<table>
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<tr>
<th>Transportation Protective Equipment</th>
<th>T</th>
<th>P</th>
<th>All members</th>
<th>2 hours</th>
<th>Initial course delivered by Kent Fire and Rescue Service instructors at Calais</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TPE layered approach</td>
<td>T</td>
<td>P</td>
<td></td>
<td></td>
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<td>------</td>
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<td>Design and functions of Layers One, Two, Three and Four</td>
<td>T</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td>------</td>
</tr>
<tr>
<td>Correct method of dressing in TPE</td>
<td>T</td>
<td>P</td>
<td></td>
<td></td>
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<tr>
<td>Lifejacket combined with Personal Locator Beacon (PLB) Emergency Breathing Supply (EBS)</td>
<td>T</td>
<td>P</td>
<td></td>
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<table>
<thead>
<tr>
<th>Nominal Roll</th>
<th>Embarkation</th>
<th>T</th>
<th>P</th>
<th>All members</th>
<th>2 hours</th>
<th>Initial course delivered by Kent Fire and Rescue Service instructors at Calais</th>
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</thead>
<tbody>
<tr>
<td>Boarding</td>
<td>T</td>
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<table>
<thead>
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<th>Practical techniques</th>
<th>All members</th>
<th>24 hours</th>
<th>Initial course delivered by Kent Fire and Rescue Service instructors at Calais</th>
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<td>Ship Fire Fighting Techniques</td>
<td>T</td>
<td>P</td>
<td></td>
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</tr>
<tr>
<td>Strategy and Tactics Exercises</td>
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<td>P</td>
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</table>

<table>
<thead>
<tr>
<th>Command and Control</th>
<th>Roles and responsibilities of key personnel</th>
<th>T</th>
<th>P</th>
<th>MIRG EU personnel undertaking the roles of IC, OC, SC and FLO</th>
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<tbody>
<tr>
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<td>P</td>
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<tr>
<td>MIRG EU Strategy/Tactics</td>
<td>T</td>
<td>P</td>
<td></td>
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</tr>
<tr>
<td>Communications</td>
<td>T</td>
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<tr>
<td>Stability</td>
<td>T</td>
<td>P</td>
<td></td>
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</tr>
<tr>
<td>MIRG EU Handover</td>
<td>T</td>
<td>P</td>
<td></td>
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<tr>
<td>Table Top Exercise</td>
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</tr>
</tbody>
</table>
Appendix 2: Lesson descriptions of the Finnish MIRG courses

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## MIRG CREW COURSE - IMPLEMENTATION PLAN

### STUDY MODULE

<table>
<thead>
<tr>
<th>Time</th>
<th>Lesson 1</th>
<th>Lesson 2</th>
<th>Lesson 3</th>
<th>Lunch</th>
<th>Lesson 4</th>
<th>Lesson 5</th>
<th>Lesson 6</th>
<th>Lesson 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st day</td>
<td>Course begins</td>
<td>SAR 1</td>
<td>Basics of SAR</td>
<td></td>
<td>SAR 2</td>
<td>SAR arrangements in neighbouring regions</td>
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<tr>
<td>2nd day</td>
<td>SAR 3</td>
<td>Operational activities 1 (with SOP)</td>
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<td>Lunch</td>
<td>SAR 4</td>
<td>DV knowledge 1</td>
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<tr>
<td>3rd day</td>
<td>SAR 5</td>
<td>Operational activities 2 (with SOP)</td>
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<td>Lunch</td>
<td>SAR 6</td>
<td>Operational activities 3</td>
<td></td>
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<tr>
<td>4th day</td>
<td>SAR 7</td>
<td>Operational activities 4</td>
<td></td>
<td>Lunch</td>
<td>SAR 8</td>
<td>Operational activities 5</td>
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### LESSON DESCRIPTION

#### MIRG CREW COURSE

<table>
<thead>
<tr>
<th>SVM 4</th>
<th>SW 4</th>
<th>OCC 4</th>
<th>Applied studies 4</th>
<th>SW 5</th>
<th>OCC 5</th>
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<tbody>
<tr>
<td>Ship fire exercise at the Air Patrol Squadron base</td>
<td>Assessment of the risks of the mission</td>
<td>Case exercise</td>
<td></td>
<td>Exercise: accident involving hazardous substances</td>
<td></td>
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</tr>
</tbody>
</table>

### LESSON SUBJECT

Basics of SAR

### DURATION

2 hours

### OBJECTIVES

- Students know the norms regulating SAR and the principles of legislation
- Students understand the role of MIRG operations as part of the SAR system
- Students know the roles of different organisations in SAR
- Students know how the national SAR system operates
- Students know the key resources used in national SAR
- Students know the SAR command hierarchy

### CONTENT

- Principles of norms and legislation guiding SAR
  - National legislation guiding SAR
  - Obligations of the Rescue Act
  - Agreements between the Finnish Border Guard and emergency services
  - SOLAS
  - Hamburg Convention
  - Role of IMO
- Organisation of the Finnish Border Guard (with respect to SAR)
  - Administrative position of the Finnish Border Guard
  - Coast Guard districts
  - RCCs
  - Aeronautical operations
  - Bases
- SAR command hierarchy
  - Authority of the master of the vessel
  - Authority of the SMC
- Participation of emergency services in SAR
  - Principles of RCC operations in SAR
    - RCC staff (incl. ACO)
    - Technical equipment
    - Cooperation with the DV and shipping company
    - Cooperation of emergency services with the RCC
    - Cooperation with other authorities (large-scale accident)
  - General presentation of surface vessels and aircraft of the Border Guard, operational readiness and usage restrictions
    - NB! Main focus is on surface units (SAR 4, overview of helicopters)
    - Usability of equipment in different types of incidents
    - Personnel expertise
    - Response times
  - Presentation of other SAR actors
    - Defence forces
    - Police
    - Finnish Lifeboat Institution

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
SAR 2

LESSON SUBJECT
SAR arrangements in neighbouring regions

DURATION
1 hour

OBJECTIVES
- Students know the fundamentals of international MIRG missions
- Students are familiar with SAR arrangements in the Baltic Sea region
- Students are familiar with MIRG performance capabilities and arrangements in the Baltic Sea region

CONTENT
- Command hierarchy in international SAR
  - Alert chain
  - Decision-making on participation in the mission
  - Official status of the MIRG team when participating in an emergency mission outside Finland
  - Operational leadership in an international mission
- Communications systems used in international SAR
  - Usability of normal communications equipment
  - Replacement equipment
- National descriptions of MIRG systems in the Baltic Sea region
  - MIRG or comparable operations in neighbouring regions
  - Team composition and equipment
  - Readiness in different mission types
- Training systems of other countries
  - European MIRG teams and general description of their training systems
  - Differences compared with the national training system that have an impact on cooperation
LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
DV knowledge 1

LESSON SUBJECT
Basic vessel structures

DURATION
1 hour

OBJECTIVES
- The student knows the basic structures of vessels and their effect on the performance of firefighting and rescue tasks
- The student understands the significance of structural differences between vessels and land-based sites on working methods and work-related risks
- The student knows the principles of the critical systems of vessels and their impact on safety on board
- The student knows the most common vessel types and their special characteristics with respect to rescue operations

CONTENT
- Basic hull structures
- Propulsion system
- Electricity generation
- Fire technology solutions

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
DV knowledge 2

LESSON SUBJECT
The vessel as an operating environment and factors influencing it

DURATION
2 hours

OBJECTIVES
- The student understands the special characteristics of rescue operations in shipboard conditions
- The student knows the factors that impact on operations
- The objective of this lesson is to lay the groundwork for the operational activities lesson and the DV knowledge lessons 3, 4 and 5 (practical exercises on a vessel)

CONTENT
- Impact of external factors on vessel stability
- Impact of firefighting water on vessel stability
- Usability of vessel equipment and systems during listing
- Usability of rescue equipment on a vessel that has listed
- Principles of smoke extraction in shipboard conditions
- Use of a safety plan when proceeding on board the vessel
- Automatic doors: risks and use
- Implementation of firefighting water maintenance
- Smoke extraction
- Tasks of vessel crew in an accident
- Communications systems of the vessel crew
LESSON DESCRIPTION
MIRG CREW COURSE
STUDY MODULE
SAR 3
LESSON SUBJECT
Ports as an operating environment
DURATION
1 hour
OBJECTIVES
- Students know the principles of operating in port areas
- Students understand the responsibilities of emergency services and SAR
- Students know the operating methods and guard arrangements at ports
CONTENT
- Port safety systems
  - ISPS
- Operations and movement in port areas, Case Vuosaari
  - Entry routes
  - Guidance
  - Proceeding to the DV
  - Evacuating persons on board
- Cooperation with port personnel, Case Vuosaari
  - Different actors in port areas
  - Contact persons for emergency services
  - Authority with respect to the port area and vessels
- Occupational safety risks in the port area and a vessel in port, Case Vuosaari
  - Work machines and loading equipment
  - Other vehicle traffic
  - Container storage
  - Chemicals

LESSON DESCRIPTION
MIRG CREW COURSE
STUDY MODULE
Operational activities 1
LESSON SUBJECT
MIRG SOP
DURATION
2 + 2 hours
OBJECTIVES
- Students know the key content of the national MIRG SOPs and are capable of using this knowledge in carrying out MIRG missions
- Students know the basics of their personal tasks
- Students know the basics of the MIRG SOP update system and their opportunities to influence the development of operations
CONTENT
- National MIRG SOPs are reviewed
- This overview is structured chronologically, so that students gain an understanding of the roles of different actors
- The main focus of crew courses is on the actions of MIRG teams
LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance
STUDY MODULE

Occupational safety 2
At Meriturva Maritime Safety Training Centre

LESSON SUBJECT

Vessel rescue systems

DURATION

2 hours

OBJECTIVES

- The student is familiar with vessel rescue systems and their usage principles
- The student is able to assist vessel crew during evacuation

CONTENT

- Life rafts, their equipment and use
- Evacuation sock system
- Evacuation slide system
- Lifeboats
- Life vests and their use
- Heat regulation techniques while in the water

STUDY MODULE

Occupational safety 3
At Meriturva Maritime Safety Training Centre

LESSON SUBJECT

HUET exercise (helicopter underwater escape training)

DURATION

4 hours

OBJECTIVES

- The student is able to exit from a helicopter that has emergency landed and capsized in water

CONTENT

- Use of a drysuit in the exercise
- Safety during the exercise
  - Use of a regulator
  - Shallow water escape training
- Personal and helicopter equipment
- Actions during an emergency landing
- Exit from a capsized helicopter
LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
DV knowledge 3

LESSON SUBJECT
Ship fire exercise
Exercise held on a vessel

DURATION
2 hours

OBJECTIVES
- Students review the protocol for a demanding smoke diving mission
- Students know how to use a safety plan to perform the mission
- Students know how to use the firefighting water system of the vessel when performing the mission
- Students are familiar with the limitations of the use of communications equipment in shipboard conditions
- Students understand the fundamentals of smoke ventilation in shipboard conditions and the impact of the spread of smoke on operations and vessel safety

CONTENT
- Students carry out the exercise in groups of 1 + 4
- Students who have received fire subofficer training or served as deputy supervisors are appointed as supervisors
- The mission begins on the weather deck of the vessel
- The briefing outlines the initial situation and presents the location on the safety plan
- Students plan how they will complete the mission
- Planning and mission performance are guided actively
- After completing the mission, it is reviewed using the safety plan, and the students tour the location under normal visibility conditions

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
DV knowledge 4

LESSON SUBJECT
Rescue mission exercise
Exercise held on a vessel

DURATION
2 hours

OBJECTIVES
- Students review the use of rope equipment
- Students review the use of the MIRG team’s rescue equipment
- Students know how to carry out a demanding rescue mission, taking occupational safety perspectives into consideration

CONTENT
- Students carry out the exercise in groups of 1 + 4
- Students who have received fire subofficer training or served as deputy supervisors are appointed as supervisors
- Before the exercise begins, the technical fundamentals are reviewed, along with safety issues
- Working as a MIRG team, the students carry out a rescue mission including:
  o The rescuers make their way to the patient with their equipment
  o They free the trapped patient using the MIRG team’s rescue equipment
  o They prepare the patient for moving
  o They move the patient to the weather deck of the vessel using the MIRG team’s rope equipment
- The location of the exercise is a vertical shaft
LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
DV knowledge 5

LESSON SUBJECT
Exercise: accident involving hazardous substances
Exercise held on a vessel

DURATION
2 hours

OBJECTIVES
- Students review the basic protocol for hazardous substances
- Students are familiar with occupational safety regulations
- Students review the use of measurement and detection equipment
- Students know the limitations of operations in shipboard conditions

CONTENT
- Students carry out the exercise in groups of 1 + 4
- Students who have received fire subofficer training or served as deputy supervisors are appointed as supervisors
- The chemical diving protocol is reviewed before the exercise begins
- The exercise is carried out as follows. In the first phase, the students are given three different basic situations. The task of the group is to determine:
  o if the mission can be carried out safely
  o what additional resources would be required to carry out the mission safely
- In the second phase, the group performs a simple reconnaissance mission using measurement and detection equipment

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
SAR 4

LESSON SUBJECT
Use of aircraft in SAR
At the Air Patrol Squadron base

DURATION
2 hours

OBJECTIVES
- Students know the fundamentals of the use of the available aircraft
- Students know the practical measures involved in loading a helicopter
- Students know the operating models employed during winching and flight

CONTENT
- Available aircraft
  o General presentation
- Readiness of fleet in different situations
- Familiarisation with equipment
  o Loading a helicopter
  o Placement of MIRG team during flight
  o Communications during flight
  o Actions during winching (in both directions)
- Cooperation with crew
  o Tasks of helicopter crew
  o Communications with crew
LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE

LESSON SUBJECT
Occupational safety 4

DURATION
1 hour

OBJECTIVES
- Students are aware of the occupational safety risks and potential for deviations in different phases of the MIRG mission and are able to minimise them in their own operations

CONTENT
- Risk assessment is carried out in groups of 1+4, as defined in the on-ship exercises (DV knowledge 3-5)
- Each group assesses different types of tasks
- Risk assessments are carried out by subdividing the mission:
  - Actions prior to transfer
  - Transfer to the DV
  - Performance of the task
  - Return

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE

LESSON SUBJECT
Assessment of the risks of the rescue mission

DURATION
1 hour

OBJECTIVES
- Students are aware of the occupational safety risks and potential for deviations in different phases of the MIRG mission and are able to minimise them in their own operations

CONTENT
- Risk assessment is carried out in groups of 1+4, as defined in the on-ship exercises (DV knowledge 3-5)
- Each group assesses different types of tasks
- Risk assessments are carried out by subdividing the mission:
  - Actions prior to transfer
  - Transfer to the DV
  - Performance of the task
  - Return

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE

LESSON SUBJECT
Case exercise: Impact of prevailing conditions on the performance of the mission

DURATION
2 hours

OBJECTIVES
- Students understand the significance of the prevailing conditions and the DV location to the performance of the operation

CONTENT
- Exercise is carried out in groups of 1+4, as defined in the on-ship exercises (DV knowledge 3-5)
- The exercise focuses on the completion of the same rescue task (lifting a patient from a vertical shaft) in different conditions:
  - DV stable, transfer by helicopter
  - DV listing strongly, transfer by surface vessel
- The exercise is subdivided into:
  - Actions prior to transfer
  - Transfer to the DV
  - Performance of the task
  - Return
### LESSON DESCRIPTION

**MIRG OFFICER COURSE**

**STUDY MODULE**

**SAR 1**

**LESSON SUBJECT**

Basics of SAR

**DURATION**

2 hours

**OBJECTIVES**

- Students know the international norms that regulate SAR
- Students understand the role of MIRG operations in the SAR system
- Students know the key legislation that guides operations
- Students know the roles of different organisations in SAR

**CONTENT**

- Principles of norms and legislation guiding SAR
  - National legislation guiding SAR
  - Obligations of the Rescue Act
  - Agreements between the Finnish Border Guard and emergency services
  - MoMeVa – Finnish National Maritime MRO Plan
  - SOLAS
  - Hamburg Convention
  - IAMSAR
  - Role of IMO
  - SAR agreements between Finland and its neighbouring countries
- Organisation of the Finnish Border Guard (with respect to SAR)
  - Administrative position of the Finnish Border Guard
  - Coast Guard districts
  - RCCs
  - Aeronautical operations
  - Bases
- Responsibility area of Finnish SAR
- MIRG-related national agreements
  - Operational obligations of emergency services
  - Obligations to maintain expertise
- Presentation of SAR actors and cooperation arrangements
  - Healthcare
  - Emergency centre
  - Defence forces
  - Police
  - Finnish Lifeboat Institution
  - other actors

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<th>Time</th>
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<th>3rd day</th>
<th>4th day On-ship</th>
<th>5th day Classroom teaching</th>
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<td>Operational activities 2</td>
<td>MIRG SCP</td>
<td>SAR arrangements in neighbouring regions</td>
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### Appendix 2.2. MIRG OFFICER COURSE

**MIRG OFFICER COURSE - IMPLEMENTATION PLAN**

<table>
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</tbody>
</table>
LESSON DESCRIPTION
MIRG OFFICER COURSE

STUDY MODULE

SAR 2

LESSON SUBJECT
SAR arrangements in neighbouring regions

DURATION
1 hour

OBJECTIVES
- Students know the fundamentals of international MIRG operations
- Students are familiar with SAR arrangements in the Baltic Sea region
- Students are familiar with MIRG performance capabilities and arrangements in the Baltic Sea region

CONTENT
- Command hierarchy in international SAR
  o Alert chain
  o Decision-making on participation in the mission
  o Official status of the MIRG team when participating in an emergency mission outside Finland
  o Operational leadership in an international mission
- Communications systems used in international SAR missions
  o Usability of normal communications equipment
  o Replacement equipment
- National descriptions of MIRG systems in the Baltic Sea region
  o MIRG or comparable operations in neighbouring regions
  o European MIRG teams and general description of their training systems
  o Differences compared with the national training system that have an impact on cooperation

LENSSON DESCRIPTION
MIRG OFFICER COURSE

STUDY MODULE

SAR 3

LESSON SUBJECT
Situational assessment and Vessel Triage

DURATION
1 hour

OBJECTIVES
- Students know the fundamentals of performing a SAR mission
- Students understand the decision-making mechanisms of the SMC
- Students are capable

CONTENT
- Situational assessment (incl. Vessel Triage principles and usage)
- Operating model during an alert
  o Alert chain
  ▪ Role of the Emergency Response Centre
  o SMC response assessment
    ▪ Vessel Triage
- Use of Vessel Triage in MIRG officer (P 40) operations
LESSON DESCRIPTION
MIRG OFFICER COURSE

STUDY MODULE
SAR 4

LESSON SUBJECT
Use of aircraft in SAR

DURATION
2 hours

OBJECTIVES
- Students know the fundamentals of the use of the available aircraft
- Students are familiar with the performance capabilities and limitations of the fleet
- Students master cooperation with the Border Guard's helicopter fleet
- Students know how to plan a joint exercise

CONTENT
- Available fleet of aircraft and the tasks suitable for them
- Readiness of fleet in different situations
- Performance capabilities of the fleet in MIRG operations
- Principles of the prioritisation of fleet usage
- Performance capabilities of the fleet in SAR operations
- General principles and objectives of ACO operations
- Key limitations of air operations
  - conditions
  - payload
  - operational radius and time
- Principles of organising exercises
  - Work shift training

LESSON DESCRIPTION
MIRG OFFICER COURSE

STUDY MODULE
SAR 5

LESSON SUBJECT
Ports as an operating environment

DURATION
1 hour

OBJECTIVES
- Students know the principles of operating in port areas
- Students are familiar with the legislation and agreements guiding port operations
- Students understand the interfaces between emergency services and SAR
- Students know how to cooperate in the interfaces

CONTENT
- Cooperation between SAR and emergency services
  - Division of responsibility
  - Transferring command responsibility
  - Port of refuge
  - Emergency towing
- Safety systems of ports and vessels
  - ISPS at port
  - ISPS on the vessel
- Operations and movement in port areas, Case Vuosaari
  - Entry routes
  - Guidance
  - Proceeding to the DV
  - Evacuating persons on board
- Cooperation with port personnel, Case Vuosaari
  - Different actors in port areas
  - Contact persons for emergency services
  - Authority with respect to the port area and vessels
- Occupational safety risks in the port area and a vessel in port, Case Vuosaari
  - Work machines and loading equipment
  - Other vehicle traffic
  - Container storage
  - Chemicals
LESSON DESCRIPTION
MIRG OFFICER COURSE

STUDY MODULE
Operational activities 1

LESSON SUBJECT
MIRG SOP

DURATION
2 + 2 hours

OBJECTIVES
- Students know the key content of the national MIRG SOP and are capable of using this knowledge in leading MIRG missions on the DV and in their capacity as liaison officers
- Students know the basics of their personal tasks
- Students know the basics of the MIRG SOP update system and their opportunities to influence the development of operations

CONTENT
- National MIRG SOPs are reviewed
- This overview is structured chronologically, so that students gain an understanding of the roles of different actors
- The focus is on the maintenance of situational awareness in line with the Vessel Triage approach during the entire mission
- Maintenance of MIRG SOP
- Development of national MIRG operations

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
Operational activities 2

LESSON SUBJECT
MIRG team equipment and performance

DURATION
2 hours

OBJECTIVES
- The student knows the equipment used by Finnish MIRG teams
- The student understands the impact of the limited amount of available equipment on operational planning
- The student is able to use the personal protective gear and devices of MIRG teams

CONTENT
- The personal equipment of MIRG team members and their use
- Mission-specific equipment used by MIRG teams
- Preparing equipment for transport and post-use maintenance
MIRG OFFICER COURSE

STUDY MODULE

LESSON DESCRIPTION

DV knowledge 1

LESSON SUBJECT

Maritime traffic in neighbouring regions

DURATION

1 hour

OBJECTIVES

- The student is aware of the significance of maritime traffic
- The student knows the key figures for maritime traffic in neighbouring regions
- The student is familiar with the focuses of maritime traffic
- The student knows the operating principles of the maritime traffic control system
- The student is aware of the most common risks of maritime traffic
- The student knows the future outlook for maritime traffic

CONTENT

- Significance of maritime traffic for foreign trade
  - Flow of goods to and from Finland, oil transport
  - Impacts of changes in the economy on maritime traffic
- Maritime traffic volumes
  - Maritime traffic in Europe
  - Maritime traffic in the Baltic Sea
  - Significance of seasons to maritime traffic volumes
- VTS operations
  - General presentation of the traffic control system
  - Cooperation between VTS and SAR
  - Pilotage system
- Maritime accidents based on the statistics
  - Most common accident types
  - Risk areas
  - At-risk vessels
    - NB: sources include the Baltic Sea MIRG project’s report entitled “European Maritime Traffic Risk Assessment On Ship Fires”

MIRG OFFICER COURSE

STUDY MODULE

LESSON DESCRIPTION

DV knowledge 2

LESSON SUBJECT

Basic vessel structures

DURATION

2 hours

OBJECTIVES

- The student knows the basic structures of vessels
- The student is familiar with the principles of the critical systems of vessels and their impact on vessel safety
- The student knows the most common vessel types and their special characteristics with respect to rescue operations

CONTENT

- Vessel hull
- Propulsion systems
- Electricity generation
- Automation systems
- Fire technology solutions
- Different types of marine fuels
- Most common vessel types operating in the Baltic Sea region and their structural differences
- Particular risks of vessel types
  - cargo
  - number of passengers
  - operations of ship crew
LESSON DESCRIPTION
MIRG OFFICER COURSE

STUDY MODULE
DV knowledge 3

LESSON SUBJECT
The vessel as an operating environment and factors influencing it

DURATION
2 hours

OBJECTIVES
- The student understands the special characteristics of rescue operations in shipboard conditions
- The student knows how to dimension the performance capabilities of the MIRG team in line with the prevailing conditions
- When planning rescue operations, the student knows how to assess the impact of the actions on the vessel

CONTENT
- Principles of vessel stability
- Impact of external factors on vessel stability
- Impact of firefighting water on vessel stability
- Usability of vessel equipment and systems during listing
- Usability of rescue equipment on a vessel that has listed
- Principles of smoke extraction in shipboard conditions

SAR 6

LESSON SUBJECT
SAR leadership environment

DURATION
2 hours

OBJECTIVES
- The student knows the fundamentals of the technical systems used by the RCC
- The student knows how to serve as a liaison officer at the RCC

CONTENT
- SAR command hierarchy
  - Authority of the master of the vessel
  - Authority of the SMC
  - Participation of emergency services in SAR
  - Authority of the Vessel Traffic Service Centre (incl. control of ship traffic + port of refuge decision)
  - Authority of a marine surveyor
  - Authority of the leader of environmental damage prevention actions
- Principles of RCC operations in SAR
  - RCC staff (incl. ACO)
  - Technical equipment
  - Cooperation with the DV and shipping company
  - Cooperation with other authorities (large-scale accident)
- Operations of the liaison officer at the RCC
- General principles and representatives of the command team of a SAR division
LESSON DESCRIPTION
MIRG OFFICER COURSE

STUDY MODULE
DV knowledge 4
On ship (Viking Line, en route Turku-Maarianhamina-Turku)

LESSON SUBJECT
Vessel structures and systems, and taking them into consideration during operations.

DURATION
2 hours

OBJECTIVES
- The student is familiar with basic vessel structures.
- The student understands the significance of cooperation with the vessel crew.
- The student knows the principles of the use of simple basic systems.

CONTENT
- The lesson builds on DV knowledge lessons 2 and 3
- SAR Co-plan for SOLAS passenger ships
- Use of a safety plan when moving on board the vessel
- Automatic doors: risks and use
- Implementation of firefighting water maintenance
- Vessel bilge systems
- Smoke extraction
- Case exercise: smoke extraction from technical premises using the available equipment
- Using another ship to pressurise the firefighting water system

LESSON DESCRIPTION
MIRG CREW COURSE

STUDY MODULE
DV knowledge 5

LESSON SUBJECT
Exercise: accident involving hazardous substances
Exercise held on a vessel

DURATION
2 hours

OBJECTIVES
- Students review the basic protocol for hazardous substances
- Students are familiar with occupational safety regulations
- Students review the use of measurement and detection equipment
- Students know the limitations of operations in shipboard conditions

CONTENT
- Students carry out the exercise in groups of 1 + 4
- Students who have received fire subofficer training or served as deputy supervisors are appointed as supervisors
- The chemical diving protocol is reviewed before the exercise begins
- The exercise is carried out as follows. In the first phase, the students are given three different basic situations. The task of the group is to determine:
  o If the mission can be carried out safely
  o What additional resources would be required to carry out the mission safely
- In the second phase, the group performs a simple reconnaissance mission using measurement and detection equipment
STUDY MODULE

DV knowledge 6
On ship (Viking Line, en route Turku-Maarianhamina-Turku)

LESSON SUBJECT
Leading rescue operations on board

DURATION
2 hours

OBJECTIVES
- The student knows how to set up an effective leadership environment in shipboard conditions
- The student knows the limitations imposed by the conditions
- The student knows how to adjust operations to delays caused by the prevailing conditions
- The student knows how to take occupational safety perspectives into consideration

CONTENT
- The lesson is carried out as an exercise immediately after DV knowledge lesson 5. The students draft operating plans for two scenarios.
- Communications arrangements within the MIRG team and with shore
- Special communications arrangements required due to shipboard structures
- Planning of the performance of the rescue mission
- Resource planning if the mission lengthens

STUDY MODULE

DV knowledge 7
On ship (Viking Line, en route Turku-Maarianhamina-Turku)

LESSON SUBJECT
Use of vessel crew and equipment in rescue operations

DURATION
2 hours

OBJECTIVES
- The student knows the performance capabilities of the vessel crew
- The student is familiar with the vessel equipment and how it can be used

CONTENT
- Vessel crew training system
  - STCW
- Maintaining the expertise of vessel crews
  - Training
- Fire and rescue equipment of the vessel
  - Familiarisation with equipment
- Availability of firefighting water
  - The vessel's firefighting water system
  - Providing the vessel with firefighting water
- Compatibility of the MIRG teams’ equipment with the vessel systems as well as firefighting and rescue equipment
  - Usability of the vessel firefighting and rescue equipment
- Special LNG-related aspects of ship fires
LESSON DESCRIPTION

MIRG OFFICER COURSE

STUDY MODULE

Occupational safety 1

Lesson Subject

Taking occupational safety into consideration during MIRG missions

Duration

2 hours

Objectives

- The student knows how to evaluate the occupational safety risks of the MIRG mission during its different phases.
- The student can clearly identify situations in which it is no longer safe to continue the mission.
- The student is able to evaluate the risks caused by aborting the mission.

Content

- Assessment of occupational safety risks on the basis of the "risk evaluation" method used by the emergency services. Assessment is performed by breaking down the MIRG mission into its SOP components; each component is assessed separately.

LESSON DESCRIPTION

MIRG OFFICER COURSE

STUDY MODULE

Applied studies 1

Lesson Subject

Case exercise, XVR simulation

Duration

2 hours

Objectives

- The student knows how to carry out a simulated MIRG mission in the role of an officer.

Content

- Leading a MIRG mission, from alert to return. The exercise is split into two parts. In the first part, the location of the ship is moved 30 miles to the southwest, and winter conditions are imposed. The Vessel Triage method is used in the exercise.