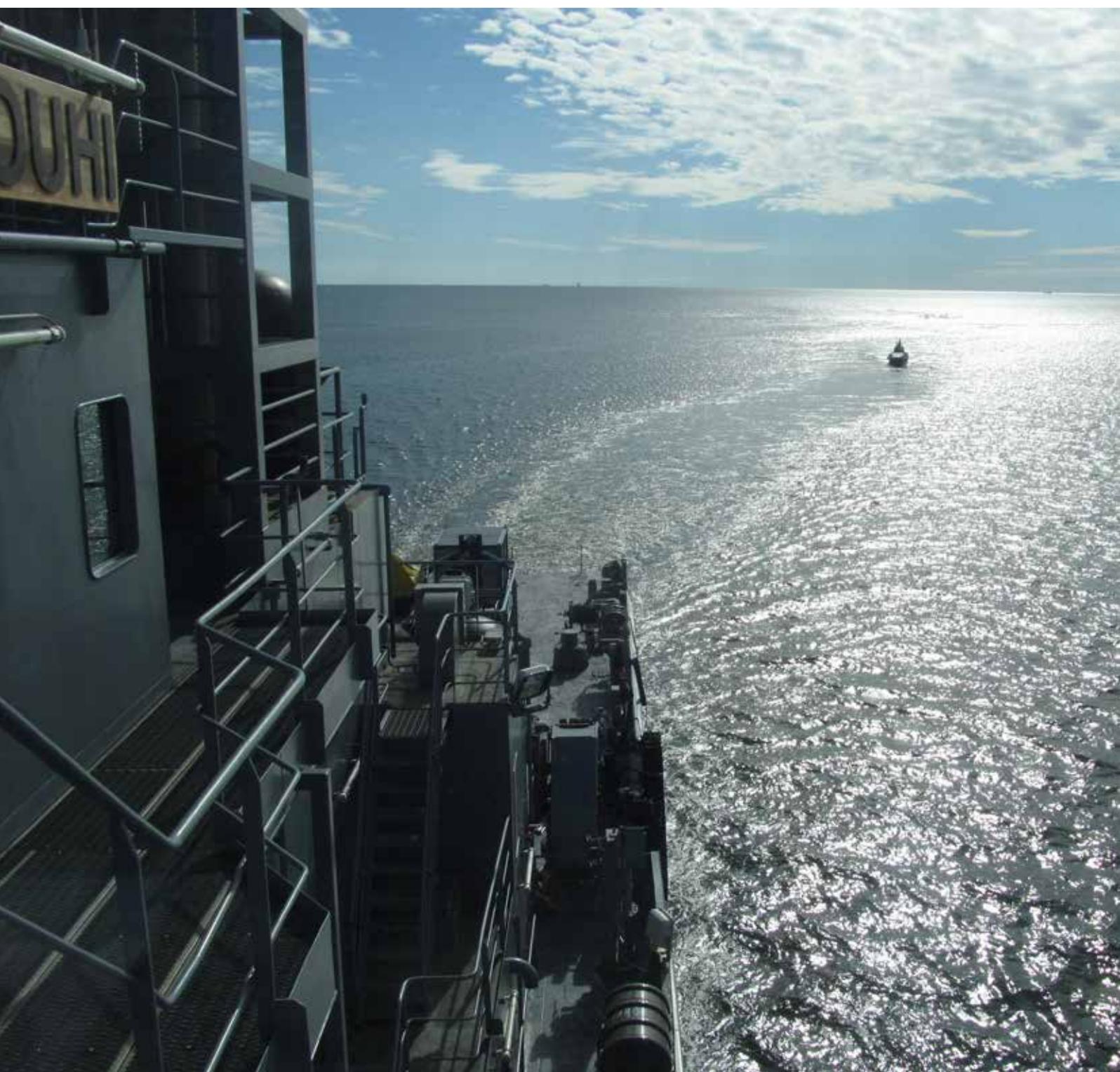


HELCOM BALEX DELTA Exercises 2004 – 2014



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Introduction

1. Introduction

HELCOM (*Baltic Marine Environment Protection Commission – Helsinki Commission*) is the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, the so called *Helsinki Convention*. Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden are, together with the European Union, the Contracting Parties to the convention.

Since 1977, the HELCOM framework has included co-operation on pollution preparedness and response. Currently this is managed by the HELCOM RESPONSE Group, consisting of representatives from the national pollution response authorities of the Contracting Parties. The HELCOM RESPONSE Group has developed the *HELCOM Manual on Co-operation in Response to Marine Pollution within the framework of the Convention on the Protection of the Marine Environment of the Baltic Sea Area*. This document is continuously updated and includes contact information to the Contracting Parties as well as procedures for reporting, operational co-operation, oil sampling, financial management etc.

Furthermore, chapter 10 of the HELCOM RESPONSE Manual (VOL 1) is devoted to exercises at sea. In this chapter the different types of HELCOM BALEX exercises are presented together with procedures and an evaluation process. The BALEX DELTA (BD) exercise is an operational exercise, partly for testing alarm procedures, the response capability, and the response time of the contracting parties, partly for testing and training the staff functions and the co-operation between combating units.

The HELCOM RESPONSE Manual VOL 1 is focused on combating pollution at sea. In VOL 3, the focus is instead the response to pollution on the shore. Sweden has been tasked with the updating of the exercise framework for the exercises regarding combating pollution on the shore. As an input to this update, the Swedish Civil Contingencies Agency has commissioned a survey of the BD exercises from 2004 to 2014 to the Swedish Defence Research Agency (FOI).

1.1 Aim of the survey

The aim of this survey is primarily to identify those conclusions that may be of importance to an exercise framework for the response to pollution on the shore. Furthermore, aspects of potential interest to the future development of the exercise framework for exercises at sea should also be noted.

1.2 Method

The survey is based on available exercise documentation together with interviews with respondents from Finland, Latvia and Sweden who all had extensive experience from the BALEX DELTA exercises. The interviews have been used to deepen the understanding of the exercises as well as to identify perspectives that are not present in the evaluation reports.

After a short introduction to the current HELCOM exercise frameworks (chapter two) this survey compiles and structures the available, basic information on the BALEX DELTA exercises from 2004 until 2014. This includes the aims and scenarios of the exercises, the design of the exercises and the participation in the exercises (chapter three). Furthermore, the survey compiles and structures the comments, conclusions and recommendations in the exercise evaluation reports.

This compilation is divided into operational issues, exercise design and shore operations, including sea – shore synergies (chapter four). The full compilation of the information from the exercise reports can be found in Annex A (basic information), Annex B (comments and conclusions) and Annex C (overview of the participation of the Contracting Parties in the studied exercises).

Using the results from the survey, chapter five offers an analysis of aspects relevant to the development of future exercise frameworks for exercises at sea and on the shore. It consists of four themes: The overall objectives of the exercises, the need for increased complexity, the aims of the BALEX DELTA, and aspects specific relevance to exercises on the shore. The concluding chapter contains conclusions and recommendations (chapter six).



Existing exercise frameworks

2. Existing exercise frameworks

This chapter offers a short introduction to some exercise frameworks for the combating of pollution at sea and on the shore. Section 2.1 focus on the HELCOM frameworks while section 2.2 presents two other exercise frameworks for cross-border co-operation on combating pollution (Bonn and Copenhagen).

2.1 HELCOM

2.1.1 BALEX at sea

The main framework for the BALEX exercises is found in the HELCOM RESPONSE Manual VOL 1, chapter 10. This framework focuses on exercises regarding combating pollution at sea and foresees five different types of exercises:

- BALEX ALPHA, a table-top exercise, to create a basis for discussion on matters relating to organisation, communication, logistics etc.
- BALEX BRAVO, an alarm exercise, to test agreed procedures and lines of communication for reporting, requesting and providing assistance, and to get a picture of the current response readiness of the Contracting Parties.
- BALEX CHARLIE, an equipment exercise, to test the co-operation between the combating units of the Contracting Parties with respect to both communications and equipment.
- BALEX DELTA, an operational exercise, partly aiming at testing the alarm procedures, the response capability, and the response time of the contracting parties, partly to test and train the staff functions and the co-operation between combating units.
- BALEX ECHO, a state-of-the-art exercise, demonstrating state-of-the-art of a specific topic, e.g. a specific type of equipment.

The BALEX DELTA is an annual exercise. According to the HELCOM RESPONSE Manual the organising country as well as the aims of each exercise should be decided by the HELCOM RESPONSE Group. The organising country has the responsibility to plan and execute the exercise. Participation is voluntary, but recommended, especially for those states that are neighbours to the host country. In the framework some general exercise procedures are defined together with an outline for the exercise report. The framework also contains a checklist of administrative and organisational issues for the planning of an exercise.

Finally, a section is specifically devoted to the planning and evaluation of the BALEX DELTA exercises. This includes the announcement of the exercises, the planning of the exercises, and the role and composition of the evaluation team.

The exercise framework is brief and contains little real guidance for those planning and leading a BALEX exercise. In practice much is left to the organising country. Furthermore, the interviews indicate that although it is stated in the framework that the HELCOM RESPONSE Group is to decide the exercise aims, this is, together with the scenario and exercise design, in reality decided by the host country alone (see chapter five).

2.1.2 BALEX exercises on the shore

The HELCOM RESPONSE Manual VOL 3 deals with the response to pollution on the shore. Chapter 6 discusses exercises and presents the motives for exercises regarding shoreline operations, states that these exercises may be table top, simulation or field exercises, and defines that they may be multinational, bilateral, national, sub-national or local. The participation of volunteers is underlined as vital.

The exercise framework for exercises on the shore also defines four focus areas for the exercises: Command structures, communication and coordination of response resources, response operations on the shore, and oiled wildlife response. Based on the BALEX exercise framework for exercises regarding pollution at sea, chapter 6 furthermore discusses exercise planning. It is especially noted that the objectives of the exercise need to be defined before the mandate, budget and resources can be decided. It is also noted that the evaluation results need to function as a basis for the development of both future exercises and the HELCOM RESPONSE Manual.

2.2 Exercise frameworks in other contexts

2.2.1 Bonn

The Bonn Agreement is an agreement between Belgium, Denmark, France, Germany, Ireland, Netherlands, Norway, Sweden, United Kingdom and the European Union regarding cooperation in dealing with pollution by oil or other harmful substances in the North Sea. A manual, including a section on exercises, has been developed.

In section 7 of the manual, three types of exercises are defined: alarm exercises, equipment exercises, and operational exercises. Their aims and objectives are basically the same as the aims of BALEX BRAVO, CHARLIE and DELTA. The manual also offers an outline for the exercise report as well as some lessons from previous alarm exercises.

2.2.2 Copenhagen

The Copenhagen Agreement is an agreement between Denmark, Finland, Iceland, Norway and Sweden regarding cooperation on pollution control of the sea after contamination by oil or other harmful substances. A manual, outlining procedures and noting available national resources for combating pollution, has been developed.

Section 3.6 of the manual concerns exercises and three types of exercises are foreseen: Table-top exercises, alarm exercises and operational exercises (including equipment exercises). It is stated that strike teams should be national. The aims of the exercises are in the first two cases similar to BALEX ALPHA and BRAVO. However, the third type of exercise foreseen in the manual, operational exercises, is a combination of BALEX CHARLIE and DELTA. Furthermore, it is seen as a regional exercise and the development of an exercise planning capability is mentioned as an exercise aim in its own right.

The Copenhagen Agreement also mentions regional exercises (bilateral or trilateral) with the objective to train cooperative procedures and enhance the capability to jointly prevent harm from oil spill or other harmful substances.



Exercises
2004 – 2014

3. Exercises 2004 – 2014

This chapter compiles the basic information on the eleven BALEX DELTA exercises studied (BD04 to BD14). It is based on the exercise evaluation reports together with some additional information from other types of exercise documentation such as presentations to media/observers, host nation evaluations etc. The focus is on the aims, scenarios and design of the exercises as well as on the participation of the Contracting Parties.

3.1 Exercise aims

The exercise aims are important for at least two reasons: First of all, *they reflect the ambitions* of an exercise. What should be achieved? Secondly, *they represent potential benchmarks*. How do we measure the impact and/or success of the exercise?

The BALEX DELTA exercise aims are formulated at two different levels: At an overall level in the HELCOM RESPONSE Manual and at a more specific level for each exercise. In the HELCOM RESPONSE Manual it is stated that the overarching aims of the BALEX DELTA are:

Partly to test the alarm procedure, the response capability, and the response time of the contracting parties, partly to test and train the staff functions and the co-operation between combating units (incl. combating equipment) of the contracting parties.

These aims are however so general that they could be seen as a statement on the purpose of BALEX DELTA, answering the question “Why should we have the BALEX DELTA?”. The focus is on general areas to exercise, not on what to achieve or what levels of capability to reach. While aims such as testing the alarm procedures may intuitively have some meaning, even without any set targets¹, this is not the case for aims such as “train the staff functions”. The latter basically implies that the aim is fulfilled as long as the participant train something.

The two basic strands of the overall HELCOM BALEX DELTA aims – the alarm and response capability on the one hand and the cooperation in operations on the other – are both reflected in the specific aims of the majority of the studied exercises.²

- In BALEX 2005, 2007 and 2013 the aims were to test the response capability of the contracting parties, test the combating procedures incl. combating equipment, train the co-operation between combating units and train the communication on scene and staff functions.
- In BALEX 2006 the aims were to test the HELCOM Response system, the HELCOM command and communication system and the co-operation between response units (including the response equipment) of the Contracting Parties.
- In BALEX 2009 and 2010 the aims were to train procedures of combating marine pollutions by oil according to the HELCOM manual, incl. command and communication system, pollution response operation procedures, use of oil recover equipment in practice in real sea conditions and to practice mutual co-operation between participating units.
- In BALEX 2011 the aims were exactly the same as the general aims in the HELCOM RESPONSE Manual.

1. There are no set targets for the response time in the HELCOM RESPONSE Manual.

2. In two cases (BD04, BD12) it was not possible to extract any explicit aims from the documentation.

These aims are all similar to the overall aims in the HELCOM RESPONSE Manual and offer little or no additional specification of what abilities or capabilities to test or train. Neither do they include any set targets. Furthermore, nowhere in the exercise evaluation reports are the aims translated into tangible and evaluable objectives. This makes them poor guides when planning and designing an exercise but also very difficult to evaluate.

However, two BALEX DELTA exercises have had somewhat different types of aims. In BD14, the aims were to some degree more detailed than in the other exercises:

- To test PolRep alert procedures with all maritime emergency communication points of the Baltic Sea countries, as well as the European Commission, assistance request, as well as national alert procedures.
- To verify co-operation ability, response capability and efficiency of the Baltic Sea Response fleet in a unified combating operation.
- To test and train staff operations of the Baltic response fleet combating units and combating equipment on board the vessels.
- To exercise national shoreline response capability, test national wildlife response alert procedures and procedures of granting place of refuge.

Although these exercise aims are more specific, and provides more guidance for the exercise design, to decide exactly what functions/operations to test and train, and what capabilities to reach, would demand additional analysis.

In BD08, the aims were not deduced from the HELCOM RESPONSE Manual, but rather described the exercise content:

- Response and removal of a technogenic emergency consequence at the fixed marine offshore platform and oil spill at the regional level.

This aim, although not having any set targets, do specify what type of operations that are to be exercised. Combined with the operational procedures laid down in the HELCOM RESPONSE Manual it would probably be possible to identify a number specific exercise objectives and evaluation criteria. This would however still demand additional analysis.

3.2 Scenarios

The scenario is the linchpin as well as the background painting of an exercise. It drives the chain of events and sets the context. Nine out of the eleven studied BALEX DELTA exercises³ used one of the following two scenarios: Two ships that collide, resulting in oil spill (six cases) or one ship that runs aground, resulting in oil spill (three cases). Only one exercise, BD08, had a scenario that deviated from these two basic types as it introduced a fire emergency at a marine offshore platform, resulting in injured personnel falling overboard and in an oil spill.

BD11 was planned to include firefighting and emergency towing of the leaking ship, but this was not possible due to lack of a suitable vessel. In BD13, emergency towing was introduced, allowing for vessels to change task during the exercise. In BD11, BD12 and BD14, closer co-operation with the operations on the shore was introduced.

3. The BALEX DELTA 2004 documentation did not include any information on the scenario.



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The scenarios have met some criticism. One criticism is that the scenario lacks realism, for instance that running aground will not penetrate the cargo tanks (BD10). Another criticism is that the scenario is basically always the same, with little or no progression towards more complex exercises (BD12; interviews).

3.3 Exercise design

Most of the studied exercises have had the same basic design: Day one consists of an alarm exercise (BALEX BRAVO) and sees the arrival of vessels. Day two consists of the operational exercise. An important part of the exercises is the social events, and a rowing competition is arranged every year, usually on day three. In at least three cases, the third day has also been used for after action reviews and/or seminars (BD06; BD11; BD12). In one case (BD08) the alarm exercise was conducted at the same day as the operational exercise. In BD12, a national exercise was added on as an extra day *between* the alarm exercise and the operational exercise.

In several cases national exercises have been conducted in parallel with the BD multinational exercise. In some cases these national exercises were sea exercises (live or table top) and precursors to the BD exercise (BD04; BD06; BD09, BD11; BD12). In other cases they were shoreline exercises (BD09; BD10; BD11; BD12; BD14), often in parallel with the exercises at sea. In BD11, BD12 and BD14 there were interactions between the operations at sea and on the shore, although the shoreline exercises were still national.⁴

4. In BD11 the strike teams sent in RIB's to support the national shoreline operations, in BD12 liaison officers were exchanged between the operations at sea and on the shore and in BD14 response units at sea and on the shore practiced procedures of communication and cooperation, oil localisation, collection and primary storage.

BD12 was the first, and so far the only, BALEX DELTA exercise with the participation of an EU Civil Protection Team (CPT). Although some efforts were made to adapt the exercise design to include this addition, the conclusion was that the role and potential use of the CPT in a BD exercise can be further developed.

The participating vessels have normally arrived before the start of the operational phase of the exercise. In most cases the strike teams have been decided in beforehand, but in one case, BD09, it is explicitly stated in the exercise report that the strike teams were decided by the SOSC on the scene, for added realism.

3.4 Participation

Participation in the exercises is voluntary, although it is recommended in the HELCOM RESPONSE Manual to participate at least in the exercises arranged by neighbouring countries. However, the HELCOM RESPONSE Manual does not say with what resources a Contracting Party should contribute. What they actually contribute with could therefore be seen as an indication of how the different Contracting Parties perceive the exercises.

Out of the ten Contracting Parties, two have participated in all of the eleven exercises studied. In the other end of the spectrum, two signatories have participated in three or four exercises. The others range between seven and ten exercises.

It is furthermore interesting to look at what resources the Contracting Parties have committed to the exercises (see Annex C). Some countries have a very high spread of participating vessels, changing vessels almost entirely from year to year. Others return with the same vessel(s). This becomes even more evident if the vessels used when arranging the exercise are discarded in the analysis. Two Contracting Parties have participated with 12 different vessels in the studied exercises, while five Contracting Parties have participated with three or less vessels. Although in some cases correlated with Contracting Parties that have participated in few exercises, this is not always the case.

The differences in resources committed by the Contracting Parties may have several explanations. The most obvious one is that certain Contracting Parties only have a limited number of vessels at their disposal. In some cases several available vessels may furthermore be privately owned, making them difficult to send to exercises. Finally, while some countries may view BALEX DELTA as an opportunity to train crews and vessels in multinational oil combating, others may see it as a test. Those in the first group may want to train as many of their crews as possible, while those in the second group may want use crews that they believe will pass the test.





**Lessons
identified**

4. Lessons identified

The exercise reports contain a number of conclusions and lessons, which in this chapter will be structured into three major areas: operational issues, scenario and exercise design, and shore operations. However, the value of these lessons vary. First of all, it is a mix of big and small – overarching and generic lessons mixed with detailed and very narrow ones. Secondly, although some lessons are well-described, others are just notations that something functioned well (or not), without explaining why or in what way. Without such explanations, and sometimes even without any context, it is very difficult to assess the validity of the lesson and its applicability in other exercises and/or contexts.

4.1 Lessons identified – operational issues

4.1.1 General

The aims of the exercises, such as the response capability and the response readiness, are generally said to have been tested with good results (*BD05; BD06; BD07; BD08; BD09; BD12*). Regarding oil combating in particular, the mechanical status of the booms, the functionality of the booms in high seas, and the ability to use the booms in operations was questioned in one case (*BD04*). The conclusion was that equipment better adapted to high seas was needed together with more national training. In other cases the reports just confirm that co-operation and the oil combating went well (*BD05; BD06; BD07; BD08; BD12; BD13; BD14*) without specifying in what way. In two cases the aerial reconnaissance was noted as well-functioning and as delivering valuable observations (*BD06; BD13*).

The so called *HELCOM GRID*, a tool for deciding and communicating the strike teams' areas of operation and to oversee operations, was extensively used and tested during many of the BALEX DELTA exercises studied. However, in later exercises (*BD12; BD13; BD14*) the grid was either not mentioned in the evaluation reports or explicitly said not to have been used. This is probably a reflection of the digitisation, offering more efficient ways to describe and communicate areas of operation.

It can also be noted that the BALEX DELTA exercises have contributed to identifying some specific challenges. For instance, the discharge of oil/water from the vessels to shoreline facilities was identified as a bottleneck in *BD12*. Vessel to vessel discharge was also tested in several exercises (*BD11; BD12; BD13; BD14/interview*). The exercise results have also been used to improve the communications procedures of the HELCOM RESPONSE Manual.

4.1.2 Command

Generally the command functions are said to have functioned well (*BD04; BD08; BD11; BD12; BD14*). In one case (*BD13*) the SOSC was said to give clear instructions but the question was raised if the fleet of 23 vessels (18 vessels in the SOSC's group, five led by NOSC) was too big for one person to lead. In another exercise (*BD12*) the SOSC was said to have no problem leading 18 ships, but in this case the fleet was divided into four strike teams.⁵ In two cases some criticism was raised regarding the command of the operation (*BD12; BD13*)⁶.

5. It is unclear if the SOSC also lead the Finnish strike team, consisting of 11 vessels.

6. *BD12: The SOSC delivering co-ordinates directly to strike teams instead than via the NOSC; BD13: Strike team lead vessels decided themselves in what areas they would work which could create some confusion.*

In four exercises weaknesses in the flows of information were said to have had affected operations negatively (BD05; BD11; BD13; BD14)⁷. In one case the co-operation with the land effort was the responsibility the SOSC who delegated it to a specific vessel with good results (BD11⁸). In two other cases, to further improve the command and control functions, different support tools and support functions were tested with positive results (BD09; BD12)⁹.

4.1.3 Communication

Communications is generally reported as functioning well (BD04; BD05; BD06; BD07; BD11; BD12). However, different improvements, for instance regarding channels used, have gradually been added to the HELCOM RESPONSE Manual as a result of the outcomes from the exercises. Lack of telecommunications capacity was reported to have hampered the exchange of situation awareness information in one case (BD12). In another case only one radio channel was available in the exercise, which resulted in several lead vessels asking for separate working channels (BD13).

Language seems generally not to have been an issue in the BALEX DELTA exercise reports. In one case the national shoreline exercise was mainly conducted in the local language creating some frictions in the communication with the multinational fleet at sea. These frictions were solved through the use of a supporting vessel as an interface (BD11). Within national or regional strike teams, other languages than English were sometimes used, but this does not seem to have been a problem (BD07; BD12).

Different, parallel systems for alarming/POLREP (SafeSeaNet and CECIS), and in some cases insufficient experience in using them, has made the procedures for alarming a reoccurring theme in the evaluation reports (BD06; BD11; BD12¹⁰; BD14). In only one case (BD10) it was explicitly concluded in the exercise report that the POLREP emission and the subsequent responses had functioned well.

4.2 Lessons identified – scenario and exercise design

4.2.1 Scenario complexity

Although the scenario and design of the exercises in several cases were said to be realistic (BD04; BD05; BD13), the length of the operational phase was in some reports seen as too short (BD04; BD12). One report concluded that the exercise was not complex enough (BD12¹¹) and several reports remarked that the use of more demanding scenarios was positive (BD04; BD08; BD10; BD12; BD13; BD14). As a contrast, one report (BD06) instead underlined the need for simple exercises due to the short operational phase.

BD08 is an example of an exercise where a different type of scenario – fire on a platform and retrieving personnel that had fallen into the sea – was introduced, increasing the complexity. Other types of additions have been co-operation with operations on the shore, emergency towing, granting places of refuge etc. (BD11; BD12; BD14). Night time oil combating operations have been suggested as another possibility for increasing the complexity (BD12).

7. BD05: Need for more updates on the status of the other strike teams; BD11: Weather reports not sent the participants; BD13: SOSC did not ask the strike team leaders for the amount of oil collected – would have been more realistic; BD14: Weak feedback from the SOSC to the NOSC on the results from the aerial reconnaissance.

8. BD11: In the national shoreline exercise most communication was in Danish, a supporting ship helped in the co-operation between sea and shore.

9. BD09: Additional tools for decision-making, communication and information; BD12: Situational awareness tool BORIS 2; BD12: The SOSC had a situational awareness officer and a communications officer at his side.

10. BD12: All-inclusive and efficient alert structures (POLREP/CECIS) still to be discussed.

11. BD12: Much in the exercises has become routine, and there is a need to introduce more of "extra components"; BD12: Recovery operations took place in the same area both days, in reality it would have been larger and shifting.

It is also noted in some reports that the exercise format itself may prevent realism. For instance, the length and scope of the exercises made it difficult to involve EU Civil Protection Teams in a realistic manner (BD12). Furthermore, since the vessels all arrive before the exercise, it has been said to be difficult to illustrate the complexities of vessels arriving one and one over a period of time (BD12).

4.2.2 Oil spill simulation

A reoccurring question in the exercise reports is how to simulate the oil spill in the operational exercise. Four different types of material have been used, often with problematic results, especially in hard weather: Foam (BD04¹²), popcorn (BD05; BD07; BD09; BD10; BD13; BD14)¹³, perlite (BD06; BD08)¹⁴ and peat (BD12¹⁵).¹⁶ One report (BD05) concluded furthermore that the simulation material should be spread out in advance to start the operation/exercise in a more realistic way and to save time.

Another aspect raised (BD10) was that the amount of simulation material should be quite large to simulate an oil spill in a realistic manner (an oil spill of 10 000 t is said to correspond to 1 000–10 000 m³ of popcorn/perlite). Most exercises just used 10–30 m³ although BD13 used 80 m³.

4.2.3 Strike teams

There have been different philosophies regarding the division into strike teams: either striving for mixed teams (BD06; BD09¹⁷; BD10; BD12¹⁸; BD13; BD14) or striving for predominately national teams (BD05; BD07; BD08). The development seems to have been towards mixed strike teams, although the comments show that there is no real consensus on what is best practice. The choice will probably depend on among other things the ability of the participating crews to work in mixed teams, the overall objective of the exercise¹⁹, and the most likely choice in a real operation.

4.2.4 Exercise logistics

The importance of exercise logistics is raised in several evaluation reports. In the BD06 evaluation report the logistical challenge when a large HELCOM fleet visits the host port was underlined. In the BD07 evaluation report, the time necessary for logistical planning is highlighted and this element was seen as more time-consuming than the operational planning. In BD12, finally, the logistical support, especially concerning ICT, was said to need more attention.

12. BD04: [Foam is] easy to see but goes with the wind and flies over the booms.

13. BD07: [Popcorn is] not good in hard weather as it mixes with the waves and becomes invisible; BD13: In low wind conditions [popcorn is] a good material, stayed a long time in the area and was visible; BD14: Perfect and efficient.

14. BD06: [Use] limited to 6-8 m/s, but good visibility but consider a coloured type of perlite; BD08: [Perlite is] not stable in the exercise weather conditions.

15. However, no information has been found on the experiences from using peat for simulating the oil spill.

16. There was no information on what material that was used to simulate the oil spill in BD11.

17. BD09: Mixed teams gave better results for training and co-operation.

18. BD12: Communication was easier with the strike teams being made up by ships from same region, however less training in international co-operation;

BD12: Multinational strike teams was a possibility to test new equipment and gain new experiences.

19. If the objective is to train the ability to work in multinational strike teams, mixed teams would be the obvious choice. However, if the objective is to train staff operations or SOSC command and control, it may be better not introduce the extra complexity of mixed teams.



4.2.5 The impact of weather

Hard weather was noted in several reports (*BD07*; *BD08*; *BD10*; *BD11*) and in some cases affected the exercises negatively. In the *BD07* report the recommendation was to schedule operational exercises in those times of the year with better chances of fair weather. However, in the *BD10* report the recommendation is instead to have alternative dates for the exercise, while also stressing the need to have alternative equipment for operations in bad weather (e.g. lines instead of booms). In the *BD10* report it was also noted that the weather conditions were realistic and the question is asked how operations should be conducted in such conditions. The *BD11* report concluded that the exercise was good, in spite of the hard weather, and that an alternative exercise area made it possible to go through with the exercise.

4.2.6 Safety issues

In the report from *BD06*, the large number of vessels in a rather small area was noted, and the need for securing the exercise area in advance was underlined. The use of an exercise monitoring system, mapping all the vessels, was seen as helpful. Also in the reports from *BD08* and *BD12*, monitoring systems were mentioned. In another report (*BD12*) the rhetorical question was asked whether the five cables safety zone was respected.

4.3 Lessons identified – shore operations

In recent years, shoreline oil combating exercises have been conducted in parallel with the BALEX DELTA exercise in five cases (BD09; BD10; BD11; BD12; BD14). The BALEX DELTA exercise evaluation reports offers some conclusions of value to the design of future shoreline oil combating exercises.

Two reports explicitly underlined the advantages with a shoreline exercise in parallel with the BALEX DELTA at sea (BD09; BD14)²⁰. In the documentation from BD12, the SEA ALARM Foundation furthermore noted that a wildlife exercise could be used to test the national plans, and that at least a table-top exercise on the wildlife issues should be included in each BD.

However, there are also challenges specific to shoreline exercises, regarding both their design and their implementation: A multitude of different organisations, stressing the need for co-ordination but also a fractioned/regionalised command structure hampering information sharing (BD12²¹), difficulties in maintaining an overview and in presenting the exercise to observers (BD14²²), and the role of external experts, such as the EU CPT, in an exercise with a short operational phase (BD12²³). Furthermore, the use of volunteers offers its own set of challenges – operational, organisational, financial etc.²⁴ In the BD12 exercise the WWF supervised the volunteers, with logistical support from among others the Finish Coast Guard.²⁵

Another challenge for operations on the shore is the language. The shoreline operations have been national or predominately national, meaning that the language used has been that of the host country. This has in some cases made communication with the sea operation more difficult (BD11). In a *multinational* shoreline exercise or operation this challenge would in many case exist *between the actors on the shore* as well.

Furthermore, the sea operations have a specified and well-developed vocabulary, largely unknown to the organisations active on the shore (BD12) which further complicates the co-operation between operations at sea and on the shore. The lack of a common vocabulary will probably present challenges inside shoreline exercises and operations as well, even purely national ones.

From an exercise design perspective, it can be noted from the exercise evaluation reports that the multitude of different organisations also means that there is a multitude of different exercise aims that need to be harmonised (BD11; BD12).

20. BD09: Linked response activities at sea and on the coastline and was good for the planning and training of the oil response preparedness of the host country; BD14: shoreline and wildlife response was useful and provided added value to BD.

21. BD12: Altogether four regional rescue centers had the responsibility for coastal protection and onshore activities. Close to 500 men and 50 small crafts with 10 km booms were in operations in the area. A set of different operations were performed with the support of 20 special offices of the Helsinki City. All operations were led by the on-site established command centers. Some confusion was caused by the insufficient communication share between the main command centre in Helsinki City and offshore command centres: offshore units did not always know (as well the Main Command Centre) what was going on, and information share between the responsibility areas of rescue centers was delayed and not systematic. On-site established Command centres, however, coordinated all actions smoothly and all operations were performed by success.

22. BD14: Shoreline operations were not enough transparent due to an extensive operation and a wide range of activities taking place simultaneously.

23. BD12: The potential and useful assistance of CPT was demonstrated, able to support national on shore activities especially in the fields of wildlife welfare and long term environmental monitoring. But need to develop requests for expertise.

24. BD12: (Comment from the WWF) Regarding volunteers: A lot of big and small things need to be worked out. Technical/operational (resources lacking), organisational (co-operation, responsibilities and communication) and planning (defining response tiers, updating Finish contingency plans).

25. However, this arrangement will probably not be possible to use in all Contracting Parties, due to differences in legal and administrative frameworks.

Analysis

5. Analysis

The exercise documentation as well as the interviews confirm that the HELCOM BALEX DELTA exercises at sea are still seen as relevant and important for the development of the oil combating capabilities in the Baltic Sea region. However, the exercise evaluation reports are generally brief. They offer few clearly stated suggestions for improvement and they include few examples of detailed lessons learned/best practices. Hence, any development efforts will find little guidance in these past reports.²⁶ This is also true for the development of the BD on the shore. Although five out of the six latest BD have had a parallel exercise on the shore, only BD12 offers a comprehensive description of the shoreline activities.

In this chapter, some of the aspects identified in the previous chapters will be discussed and further developed.

5.1 What are the objectives of BALEX DELTA?

The aim of the BALEX DELTA exercises, as described in the HELCOM RESPONSE Manual, is both to test and to train. The exercises should furthermore deal with *response capabilities, staff functions and operational co-operation*. From the reports and the interviews it is clear that there also exist other, sometimes implicit, objectives: First of all to get to know each other. This is done through exchanging liaison officers and observers, through training together and through social events such as the rowing competition. To know someone personally as well as to know the *modus operandi* and culture of their organisation is a way to facilitate future interactions. Secondly to learn from each other, for instance about new types of equipment or new methods. This is done through operating together and through observers. Thirdly, to check the procedures of the HELCOM RESPONSE Manual and to test new procedures before including them into the HELCOM RESPONSE Manual. This is done through exercising specific elements of the HELCOM RESPONSE Manual. In addition to these explicit and implicit objectives, it has been noted in the interviews that the exercises have a role in verifying the host nation's capability to lead an oil combating operation. Hence, to take on the role as host nation in a BALEX DELTA exercise is not only an opportunity to train in this role, it is also an opportunity for a Contracting Party to show that it is ready for this task.

Multiple objectives are not necessarily a problem and an exercise can include several different aspects. For instance, one single exercise may train a specific capability, test a staff function *and* offer a platform for social interaction. However, the complexity of the exercise design will generally increase considerably if the exercise is to accommodate several different objectives and functions. To test the staff functions in a realistic manner will often mean that the operational staff will perceive the exercise as slow. On the other hand, if the exercise focus on the training of operational capabilities, it may be difficult to allow the staff processes to affect the development of the exercise. In many cases it may be wiser to separate the functions in different exercises.

Awareness of the main objectives may however help in the exercise design. If the main objective is to meet and learn about each other, less effort and resources need to be invested in the operational part of the exercise. If the main objective is instead to train the staff functions, a table top exercise may be more appropriate.

26. In some cases, however, the results and conclusions from one exercise seem to have been taken into consideration in other exercises and in the development of the HELCOM RESPONSE Manual, for instance within the area of communications.

If training/testing the host nation role is the most important aspect, both the scenario/exercise design and the evaluation focus need to be arranged accordingly.

The focus areas introduced in the HELCOM RESPONSE Manual VOL 3 could be helpful for those defining and/or planning an exercise as the main features and challenges of the focus areas are also described in the framework. The objectives are however not necessarily static, rather they will need to change as goals are achieved and/or requirements change. This could be thought of as a Maslow stair. The first steps include basic things such as getting to know each other, test and train basic operational procedures and basic staff procedures. This could often be done in *dry runs* such as table-top exercises or operational exercises repeating specific procedures several times. The next steps in the Maslow stair would introduce more complexity. This could for instance be the coordination of actors or functions, several exercise stages merged into one continuous scenario or the training of more advanced capabilities, such as night time operations. The top steps of the Maslow stair would include tests of the overall response system where most or all functions and actors, including senior decision-making levels, participate in their real roles. It may be necessary to train at different steps simultaneously, and some basic steps may have to be repeated regularly.

5.2 A need for increased complexity?

Both the exercise reports and the interviews indicate a growing sentiment among the Contracting Parties that the BALEX DELTA at sea exercises are at risk of becoming too much routine, offering less and less challenges to the participants. It is also noted from the interviews that the design of the exercises are in practice decided by the host countries alone, with an opportunity for the Exercise Evaluation Team (EET) to comment. The HELCOM RESPONSE Group is not involved. Looking at the exercises from 2004 until 2014, they are all quite similar in their basic structure. However, some complexities have been added such as the interaction with operations on the shore and emergency towing.

Two important questions need to be raised: Who needs the increased complexity? And why? As it seems, the criticism is mainly concerned with the operational phase. This phase is normally the crescendo of the exercise but it is also quite short (5–6 hours). It has been said that nowadays the crews basically know what to do and how to do it and that the HELCOM procedures are quite well-known. Although it can be argued that once the vessels have deployed their equipment and started to retrieve oil, the rest is more or less routine, it would however still be possible to add extra elements to increase the complexity also during this part of the operational phase. Suggestions raised in the interviews include already tested elements such as emergency towing and lifesaving as well as new elements such as changing the formations and tasks of the strike teams during operations, training night time operations, training endurance in long operations, adding other types of pollution chemicals, diving for lost barrels etc. These elements would certainly widen and deepen the joint oil combating capabilities of the HELCOM fleet and would from the standpoint of exercise design not be that difficult to include.

On the other hand, if the operational capabilities, including multinational operational co-operation, are generally seen as “good enough”, it may be more important to focus on other aspects than to increase the complexity for the operational functions in the exercise. It could for instance be beneficial to train more complex multinational staff procedures or to train the overall political/operational leadership of an operation, including the coordination with national operations. It could also be beneficial to train the post-operational handling of insurance and



A 90

Dales Diving 1964
Warrenanda/Germany
Bowing Triple Water
Sweden

reimbursement issues. These elements could be equally or even more important for the development of the overall capability for multinational operations for combating pollutions than to increase the complexity for the operational units.

5.3 Vague aims

As was noted above, the exercise aims and scenarios of the BD exercises have in practice been decided by the host country alone. The aims are generally vague, and the links to any overall strategy for the development of the HELCOM operational capability are weak at best. Although most of the exercises have had the same basic design, this does not seem to have been a result of any plan for the development of the pollution combating capabilities of the HELCOM fleet.

Few and/or vague aims mean that there is little or nothing to evaluate. This is also reflected in many of the studied evaluation reports. They normally consist of a description of the exercise together with some comments and observations, often based on the discussion at the after action seminar. There is little or no analysis and no predefined measurement criteria.²⁷ It can also be noted that the comments and observations in the reports seldom include any context, nor any consequences or suggestions for remedies.

The vagueness of the aims could be linked to the absence of clearly defined overall aims for the exercises. As the host country starts planning the exercise, neither the evaluation reports from previous exercises, nor the decisions in the HELCOM RESPONSE Group offer much guidance. There is furthermore little guidance to be found in the HELCOM RESPONSE Manual on what and how to exercise.

5.4 Different worlds – exercises at sea and on the shore

Exercises at sea and on the shore have different preconditions. First of all, the number of actors participating is much higher on the shore: Local rescue services, the police, the coast guard, the armed forces, environmental protection authorities, volunteer organisations etc. Not only is this a multitude of organisations, they are furthermore very different from each other already within a specific country. This will offer a number of challenges regarding the command and co-ordination even in national exercises and operations.

Since most of these actors have their own, often national, procedures, regulations and chain-of-commands any multinational cooperation will introduce even bigger challenges. The lack of common procedures for operations on the shore has been raised as an issue in the interviews. Furthermore, when including operations at sea and on the shore in the same exercise it also becomes evident that while oil combating at sea is a capability on the national level, oil combating on the shore is in most cases a local one. This will affect the preconditions for the co-ordination of efforts.

Secondly, and related to the above, is the issue of language. While the operators at sea may have to struggle with the use of English from time to time, they do have a common language and a common vocabulary linked to common procedures. This understanding does not exist among the actors on the shore.

Thirdly, there are also a number of practical issues. Crews for operations/exercises at sea stay at their vessels, conduct operations at sea and in assigned ports. Issues regarding access, transports, logistics and customs are relatively straightforward.

27. However, in some reports there is a measurement of the response time which can be seen as an evaluation.

For exercises or operations on the shore, these issues are considerably more complex. Another practical and important issue for exercises/operations on the shore is that of reimbursement and insurances, especially for volunteers. Furthermore, the use of volunteers will raise the issue of who is responsible for their safety and effectiveness. In most cases this will be the role of the OSC on the shore, but exactly who this is and what this responsibility includes will probably differ from country to country.

In addition, there are multinational actors, such as the European Union, that can offer for instance expert support to operations on the shore. To include these functions, such as the EU Civil Protection Team, into an exercise on the shore in a realistic manner is difficult, not least due to the time limitations of the exercises.

The capabilities for combating pollution at sea and on the shore have furthermore reached different stages of maturity. While the exercises at sea to a large extent have passed the first, basic steps of the Maslow stairs, the case is completely different for exercises on the shore. In the latter case, it is still to a large extent a matter of training and testing, or even developing, elementary capabilities, procedures and routines. Given these differences in maturity, it is not self-evident that operations at sea and on the shore will gain from co-existing in the same exercise. The need for including elements of sea-shore coordination in the at sea and the on the shore exercises have to be further analysed.

Way ahead

6. Way ahead

In this chapter some tentative recommendations regarding the development of exercise framework of BALEX DELTA will be offered. The starting point is the discussions in chapter five.

Define the overall objectives of BALEX DELTA

There is a need for clearly defining and communicating the overall objectives of the BALEX DELTA exercises, possibly as a part of an overall strategy for the development of the capabilities for combating pollution. These objectives, which should be regularly revised, would form the basis for the aims, focus and design of the individual exercises.

Derive the aims for specific exercises from the overall objectives of the BALEX DELTA together with the evaluation results from previous BD exercises

With clearly defined overall objectives for the BALEX DELTA it will be easier to formulate aims for the specific exercises, using the HELCOM RESPONSE Manual as a basis. However, it is suggested that the aims should not be decided by the host country alone, but instead discussed and decided by the HELCOM RESPONSE Group to ensure that they are consistent with the overall strategy, possibly by using a strategic, regularly updated, multiannual exercise plan. A predefined list of aims for the host country to choose from, decided by the HELCOM RESPONSE Group and revised on a yearly basis, could be part of this exercise plan. Another important basis for the exercise discussions would be the evaluation reports from previous exercises. The complexity of the exercise could also be adjusted through the choice of exercise aims, for instance by introducing aims such as night-time oil combating or combating other types of pollutions than oil.

The evaluation team should analyse the exercise aims in advance to define what to measure. To be able to support the development of the capabilities, the HELCOM RESPONSE Manual and the HELCOM exercises, it is suggested that the exercise evaluation reports should be strengthened. This includes a stronger emphasis on the evaluation of capabilities achieved. The exercise aims, together with the procedures and preconditions described in the HELCOM RESPONSE Manual, could form the basis when formulating measurement points and defining measurement criteria. In this way the evaluation reports and their conclusions could become tools in the development of both the exercises and the operational capabilities.

The type of exercise should be chosen to fit the defined objectives and aims

There are several alternatives to full-scale operational exercises: Table-top exercises, simulation exercises, operational exercises with a limited scope etc. For exercises training basic capabilities, in areas where little or no previous experience exist, table-top exercises could be an efficient and straightforward way both to explore and to do basic training. Table-top exercises would probably in many cases be the best way to test and train staff functions. Operational exercises – full-scale or with a limited scope and participation – could be used when the procedures are known but not yet trained/tested. Depending on the overall aims, the operational exercises could be built on a continuous scenario or on short short stages repeated until the result is satisfying. In the first alternative the overall response system or operational system would be tested, in the second alternative a limited function or capability would be trained.

Learn to crawl before you try to run

Basic procedures and routines must be mastered before more complex exercise aims can be attempted. It is not worth while investing resources into the training of advanced capabilities if the units cannot do basic oil combating manoeuvres. However, more advanced coordination tasks can be trained in table-top exercise while the basic capabilities are developed and trained in operational exercises. Some types of issues, such as processes for insurance and reimbursement claims, are probably often best to train in table-top exercises.

For exercises on the shore this means that initial focus will need to be on table-top exercises and simple operational exercises, developing the HELCOM RESPONSE Manual VOL 3 and basic skills.²⁸ In parallel, some table-top staff exercises could be carried out, training staff procedures for issues such as requests for assistance and the reception of assistance.

An important aspect in the initial on the shore exercises would be to help develop the knowledge of available resources as well as of the demand for resources. It is proposed to consider to complement the HELCOM RESPONSE Manual is supplemented with a list of the resources offered by the Contracting Parties.²⁹ At each exercise – table-top or operational – this list would form the basis for the requests from the host country. The list, and its use in the exercises, could also help increasing the awareness of the needs of specific countries and what resources that may be requested in a real situation.

Fully integrated sea-shore BALEX DELTA exercises are not meaningful at this stage, but will need to be developed

The differences in maturity between the combating of pollution at sea and on the shore mean that trying to merge them into the same BD would in many cases be counterproductive. While the at sea exercises could and should focus on more complex aspects, the on the shore exercises instead need to focus on taking the first steps in the development of the capability for coordinated multinational operations on the shore. Certain wisely chosen elements of sea-shore interaction could however be introduced, possibly simulated by the exercise directing staff. For instance, communication between the at sea and on the shore operations could be included, allowing for testing and training sharing of information.

Even when the on the shore units have reached a higher degree of operational maturity, it may in some cases still be preferred to have separate exercises. One reason for this is that it would, from an exercise management perspective, reduce the exercise complexity considerably, often without losing any vital content. Another reason is that at sea and on the shore exercises will have different time scales, making it difficult to merge them in a meaningful way.

This does not exclude the need for large scale exercises testing the overall response system, at sea as well as on the shore resources together with the necessary staff and decision-making functions. However, such exercises will probably remain rare, and the design of will mainly focus on coordination and decision-making, rather than on the operational aspects.

28. There have been several land-sea exercises already, but the need to develop and train the basic operational skills remains.

29. As has been requested in the recommendation 33/2 in the HELCOM RESPONSE Manual vol 1.



