

Official Norwegian Reports NOU 2022: 1 Excerpt

Cruise traffic in Norwegian waters and adjacent sea areas

Maritime safety, emergency preparedness and rescue
– challenges and recommendations



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This publication is a translation of an excerpt from Official Norwegian Report, NOU 2022: 1 *Cruise traffic in Norwegian waters and adjacent sea areas – Maritime safety, emergency preparedness and rescue*. The translated excerpts are Chapter 1 *Summary*, Chapter 7 *The challenge picture* and Chapter 14 *Overall assessment of the recommendations*. NOU 2022: 1 was prepared by a Government-appointed committee (the Cruise Committee), which submitted its report to the Ministry of Justice and Public Security on 23 February 2022.

Preface

The incident with Viking Sky in Hustadvika off the west coast of Norway on 23 March 2019 was a near-miss. The incident ended well, but could have become a disaster if the ship had run aground. This was a major reason for the appointment of the Cruise Committee.

While the probability of a serious incident involving cruise ships in Norway is fortunately not high, the consequences can be enormous if an accident does take place.

It is the committee's conclusion that it is impossible to dimension an emergency preparedness and response system that takes into account a worst-case incident involving a cruise ship. A serious accident with a large cruise ship will result in many injuries and deaths. The overall risk of cruise traffic must therefore be reduced. The committee sheds light on the challenges and recommends a number of measures to reduce this risk.

The committee points out that priorities for the recommendations will largely depend on political assessments, where a holistic approach to the cruise industry will be key. It is therefore the committee's goal that the report shall provide a good basis for political discussions, and further expert assessments and decisions.

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1 Summary

1.1 Background and mandate

«Norway is a unique coastal state. Our archipelagos, fjords, northern lights and an Arctic climate in the north make us an attractive destination for cruise traffic. At the same time, we have a challenging and weather-beaten coast. Climatic conditions, long distances and the dark months of the year present special challenges the farther north we go.

The rescue operation in Hustadvika with «Viking Sky» on 23 March 2019 showed how serious a situation can become when an engine failure occurs on a cruise ship near land, amid strong onshore winds and rough seas. The incident came close to having catastrophic consequences. Combined with the fact that we are facing an increase in cruise traffic in our waters, this means that the industry and society in general must have a conscious relationship to the risk that results from increasing activity.»

Source: Excerpt from the Cruise Committee's mandate

The Cruise Committee was appointed against this background. The committee was charged with shedding light on the maritime safety and emergency preparedness challenges associated with cruise traffic in Norwegian waters and adjacent sea areas, as well as recommending risk-reducing measures, including what the cruise industry itself can contribute. The committee wants this report to provide a good basis for further political discussions, and further expert assessments and decisions.

1.2 The committee's work and structure

The committee has gathered knowledge and input as a basis for its work, and has been in contact with a number of public, private and voluntary actors. The committee has undertaken a systematic review and assessment of the entire timeline from the time a cruise is planned, until the ship sails, until a possible incident occurs, and until the situation has been handled. In this process, the following questions have been reviewed:

- What are the issues?
- What is the status, and how does the committee assess this?
- What measures may be relevant at the various stages to reduce the risk?

Based on this, the committee has made further assessments, and made recommendations for risk-reducing measures within a number of thematic areas.

1.3 Cruise traffic in Norway

In general, cruise traffic can be divided into two types: conventional (overseas) cruises and expedition cruises. Conventional cruises are typically associated with large ships with several thousand people on board. Passengers often embark and disembark in the same port, and the ships often have a large number of facilities and amenities on board. Expedition cruises are characterised by smaller ships, usually with up to five hundred to a thousand people on board. Expedition cruises are usually off-the-beaten-path cruises that have a spotlight on the destination, including wildlife and other nature experiences. On-board experiences, which are common on conventional cruises, are replaced by lectures, disembarkations, walking tours, and sightseeing with small boats, kayaks and the like.

In 2019, approximately 26 per cent of the global cruise fleet had one or more cruise voyages in Norway. From 2010 to 2019, the number of unique cruise ships with a gross tonnage of more than 1,000 that have visited Norwegian ports, increased from 65 in 2010 to

109 in 2019. Due to the pandemic, only 22 such cruise ships were registered with calls at Norwegian ports in 2020.

The majority of conventional cruises in Norway go to Western Norway and Northern Norway. Expedition cruises in Norway take place mainly in Svalbard and have increased over the past four decades.

It is difficult to estimate how the pandemic will affect the cruise industry and the demand for cruise holidays in the longer term. However, some global trends can be identified independently of the pandemic: cruise ships are becoming larger, alternative types of fuel are on the horizon, cruise ships will be upgraded to increase their attractiveness, and more environmentally friendly solutions will be developed on board, both for existing cruise fleets and newbuilt ships.

Climate change is also likely to affect cruise traffic. The edge of the ice will recede farther north, creating an attractive destination for cruises. The northernmost areas are also the areas with the fewest rescue and recovery resources. The combination of the fact that an increased degree of extreme weather is expected and that the cruise operators are extending the season into the winter months, means that cruise operations can become more challenging.

Regulatory changes will affect cruise traffic in Norwegian waters in the future. Some have already been implemented, some have been adopted but have yet to enter into force, and other regulations are still in progress. To a large extent, this concerns international environmental regulations that will also be applied in Norway through international agreements. Furthermore, Norway has adopted certain national requirements related, for example, to reduced emissions in world heritage fjords and environmental regulations in Svalbard. Among other things, a ban on heavy oil in Svalbard came into force on 1 January 2022. Additional Norwegian environmental requirements are in progress.

The trend for cruise traffic in Norwegian waters will largely depend on the extent to which the proposed regulations are introduced. DNV has assumed that a scenario in which certain emission requirements (nitrogen) will apply in Norwegian waters out to the baseline is most likely. A decrease in cruise traffic would then be

expected compared with the current level. The share of cruise ships that meet the requirements will increase as new cruise ships are delivered, and a gradual increase in cruise traffic in Norway is expected going forward to 2040.

1.4 The committee's assessments and recommendations

The overall goal of the committee's work has been to identify challenges, and to propose measures to reduce the risk of serious incidents with cruise ships that could lead to many injuries and deaths.

It is not possible to dimension an emergency preparedness and response system for an accident involving a cruise ship with several thousand passengers on board. This applies to mass evacuation from the ship and further handling of a high number of seriously injured people. The committee therefore emphasises probability-reducing measures to reduce the risks associated with cruise traffic. The consequence-reducing recommendations do not entail a significant increase in emergency preparedness, but are aimed at quality improvements of existing emergency preparedness and handling where practical.

The recommendations balance the consideration for maritime safety and emergency preparedness against the cruise industry's need for a predictable and viable framework.

The Cruise Committee has not ranked its recommendations by priority, but emphasises that probability-reducing measures will be the most effective in reducing risk. Priorities will to a large extent also depend on political assessments, where a holistic approach to the cruise industry will be key.

The committee's general assessments and recommendations are thematically listed below. A list of all the recommendations can be found in Chapter 14¹.

¹ Chapter 3 in this excerpt

Holistic approach to the cruise industry

No overall plan exists for the cruise industry, in which the authorities clearly state desired objectives and priorities. In the current tourism report², maritime safety and emergency preparedness challenges are not mentioned to any appreciable degree. The Norwegian authorities must therefore prepare a holistic national plan for cruise traffic in which safety, emergency preparedness and rescue play a key role. The plan should be part of the Government's forthcoming national tourism plan.

Furthermore, organisational adjustments on the authorities' side should be considered in order to deal with the cruise industry holistically and in a coordinated manner. As a shipping nation, Norway should also play a leading role in strengthening international regulation of cruise traffic with respect to maritime safety, emergency preparedness and rescue.

Cooperation between authorities and industry

Cooperation with the cruise industry is crucial for dealing with the challenges of cruise traffic and the choice of policy instruments. The cooperation between the authorities and the cruise industry has so far been characterised by a more random approach, and should take on more structured and predictable forms. In particular, there is potential for involving the cruise industry to a greater extent in exercises and their evaluation.

Traffic regulations

The committee believes that there may be a risk that the shipping company's and master's risk assessments do not include the additional risks present in Norwegian waters to a large enough extent, especially during winter cruises. A different understanding of risk

² Meld. St. 19 (2016–2017) *Experiencing Norway – a unique adventure*, Norwegian white paper on tourism.

among shipowners, vessels and various authorities about what should be the triggering criteria for when a voyage should be completed or not, has been pointed out as a challenge.

The Norwegian emergency preparedness apparatus is not dimensioned to handle the most serious incidents when a major mass evacuation will be necessary. This is especially true in conditions where the ship's own evacuation equipment will be difficult or impossible to use. There are limitations on how many people can be evacuated by helicopter within a given time window, even with optimal access to helicopter capacity.

The committee has also been made aware of the limited capacity that segments of the health service have to receive and handle a large number of injured people.

In the committee's opinion, there is consequently a need for clearer regulation of cruise traffic. Ships over 150 metres should be subject to regulatory traffic restrictions based on weather criteria such as wind speed or wave height, as well as during certain periods of the year outside the summer season. In Svalbard, there are large distances and very limited rescue and health resources, and weather and ice conditions can change quickly and unpredictably. A majority of the committee members therefore believe that a limit of 500–750 people on board cruise ships should be introduced in the territorial waters of Svalbard.

Given the concerns about an increasing trend of cruises towards the North Pole, Norway should take the initiative for international regulation of this traffic.

Access to data and information

Easy access to quality-assured and up-to-date information contributes to greater predictability, and is therefore important when it comes to reducing the likelihood of serious accidents and their consequences. It is not acceptable that it will take 35–40 years before the entire coast and Svalbard will have maps of a quality that must be expected today. This affects the safety of all sea-going activities, both the cruise industry and other professional seafaring operators as well as the leisure fleet.

The Norwegian Mapping Authority's capacity for work on nautical mapping must therefore be strengthened, and the Norwegian Meteorological Institute must prepare ice maps for every day of the week.

Relevant information is currently spread among many different government actors. It should be ensured that official information from the Norwegian authorities to the cruise industry is on a single website or download service.

Communication systems

Reliable, good and well-known intercommunication systems are important for safe navigation, search and rescue and emergency communication. Extensive development of satellite-based broadband solutions is underway in the High North. The Norwegian authorities should actively take advantage of the opportunities this provides to deliver new practical services within maritime safety, emergency preparedness and rescue.

Training and competence on board

Good competence among on-board personnel is crucial for maritime safety and can both reduce the likelihood of incidents and their consequences. Norway has a challenging and unsheltered coast with changing weather conditions. This is especially true in winter with increased frequency of high wind speeds, lower temperatures and longer periods of darkness.

Dealing with these additional challenges means that crew must have relevant knowledge and experience that is not necessarily covered by their basic education and training. There are also special challenges associated with voyages in polar waters, which are also reflected in special international requirements. The committee has proposals for various qualification requirements that the Norwegian authorities should set, and also believes that Norway must be a driving force for higher international qualification requirements.

Research and development

The report addresses issues that require increased knowledge through more systematic efforts in research and development. It has been challenging to obtain an overall overview of funds allocated to research and development in all areas covered by this report. Nevertheless, the committee is of the opinion that the funding of research, development and innovation in the prevention of, preparedness for and handling of undesirable incidents with cruise ships must be bolstered. Furthermore, the cruise industry should increase its involvement, and contribute more to research, development and innovation projects that can improve maritime safety.

Risk assessment

A thorough risk assessment must take into account the local external risk factors such as weather conditions, waterway challenges, darkness, and distance to emergency preparedness resources. In addition to the external risk factors, there are individual risk factors associated with each cruise ship. Good risk assessments, with associated preventive measures, contribute to increased awareness and reduced risk.

There is no comprehensive list of additional risks that should be considered before cruising in Norwegian waters and adjacent sea areas. The Norwegian authorities should therefore develop a guide on risk assessment for the cruise industry.

Voyage planning

Good planning is necessary for a safe voyage. The quality of route planning will therefore be important for the level of risk associated with the voyage. Requirements for voyage planning are set through Norwegian and international regulations. However, the committee believes that these regulations could be clearer in some areas.

Norway should therefore work to ensure that the International Maritime Organization's (IMO) guidelines for voyage planning are updated. The Norwegian Coastal Administration has prepared and

published reference routes for the Norwegian coast, but these routes are not adapted for the largest cruise ships. The Norwegian Coastal Administration should therefore create more reference routes for cruise ships along the coast.

Search and rescue (SAR) cooperation plans³

Requirements for SAR cooperation plans have been established through the International Maritime Organization (IMO). The purpose of a SAR cooperation plan is to increase mutual understanding, so that passenger ships on international voyages, shipping companies and rescue centres can work together efficiently in emergency situations. The committee has considered various issues related to SAR cooperation plans, including which passenger ships are covered by the international requirement for such a plan.

The committee recommends that the Norwegian authorities consider making SAR cooperation plans a requirement for more passenger ships than those currently covered. The Norwegian authorities have not systematically supervised how the cruise industry meets the requirements for SAR cooperation plans. Such supervision should therefore be intensified by the Norwegian authorities.

The ship's technical safety and certificates

The requirements for technical safety on cruise ships have been developed over time, and structural engineering requirements are generally not introduced with retroactive effect. This means that the ships sailing in Norwegian waters have somewhat varying technical and safety standards. Many of the cruise ships do not have propulsion machinery with real redundancy, so that when an engine shuts down, there is a risk of losing propulsion completely.

³ SOLAS Chapter V/7.3 "... a plan for cooperation with appropriate search and rescue services ..." and Maritime Safety Committee, MSC.1/Circ. 1079 "Plans for Cooperation between Search and Rescue Services and Passenger Ships"

Norway should therefore work through the IMO to introduce a requirement for an operational assessment in connection with the certification of all passenger ships, as well as introduce requirements for redundant propulsion machinery for larger passenger ships.

Towing equipment

Many cruise ships sail close to the coast, and often have a large wind surface that causes them to drift relatively fast upon loss of propulsion. This means that there is often little time to establish a tow and avert grounding. It is often considered less risky for passengers and crew to stay on board the ship rather than evacuate. Good solutions for towing equipment, and the right fastening devices for this on board, are therefore important for establishing a tow as soon as possible.

Norway should work through the IMO to introduce international requirements for towing equipment on board all cruise ships. Experience has shown that it takes many years to implement new international requirements for ships when the requirement entails design changes. Different solutions for emergency towing, which can be introduced in a transitional phase, should therefore be explored in more detail. Furthermore, the carrying out of emergency towing must be practiced more often.

Rescue equipment

Although the cruise ship will often be the safest place to stay during a serious incident, it is sometimes necessary to evacuate the ship. Proper rescue equipment on board a cruise ship can be crucial in reducing the risk of loss of life. Today's requirements for rescue equipment are not sufficiently adapted to the conditions that may arise during cruise voyages.

The committee has therefore given recommendations on clearer requirements for rescue equipment. The Norwegian authorities should also stimulate research and innovation with respect to rescue equipment, including lifeboats. The cruise industry should ensure

that new and safer technology for lifeboats and rescue equipment is used.

Traffic monitoring and reporting

Good monitoring of cruise ship traffic is important in many contexts. Automatic position reporting systems, such as AIS⁴ and LRIT⁵, are key tools in this monitoring along with data in ship registers and ship reporting systems such as SafeSeaNet.

However, despite good access to reporting data, it does not always contain information on resources on board that may be relevant in connection with a rescue operation. Moreover, today's automatic reporting does not detect deficiencies and defects on equipment on board.

Smaller expedition cruise ships do not always have a requirement for an automatic identification system on board. This is a requirement the committee believes the Norwegian authorities should introduce for all ships carrying passengers. Furthermore, the authorities should require cruise ships to immediately report any changes that may affect the ship's automatic position reporting or operational capability. Efforts to prioritise the automation of several such reporting processes should be intensified, and the Norwegian Vessel Traffic Service should be strengthened through expansions of service areas and the establishment of new ones.

Resource allocation

A correct overview of available resources needed to handle a serious incident with cruise ships is important for the actors who will take action in connection with the incident. In the committee's opinion, the BarentsWatch «Shared Resources Register» is a suitable service that can be further developed to provide as complete an overview as

⁴ Automatic Identification System

⁵ Long-Range Identification and Tracking

possible of available resources. The BarentsWatch «Tracking and Interaction service» should also be developed to provide access to more actors who can contribute during an incident.

With new technology and new types of fuel in cruise ships, the need also arises for an updated fire preparedness system that can meet new challenges. In light of this and other factors, the geographical coverage and the operational application of Rescue Efforts at Sea (RITS) should therefore be assessed more closely.

Communication during an incident

A joint situation picture, communication and air coordination are important for any coordinated handling of serious incidents. In the event of a serious incident involving a cruise ship, this can be decisive for the outcome of the response to the incident at sea, in the air and on shore and in the transition phase between them. It can be a challenge to establish a joint understanding of the situation during major actions, and one of the reasons for this is different communication platforms.

The Norwegian authorities should therefore explore common digital communication platforms that also take into account the special challenges posed by incidents at sea.

In the event of an incident with a larger cruise ship, it will often be necessary to use more helicopters. Good air coordination is then particularly important. Work on the concept of air coordination should therefore be intensified.

Handling on board

From the moment a master has sent a distress alert, quite a bit of time can elapse before rescue resources are in place. How the master and other crew on board utilise the relevant time window can have a major impact on the consequences of the incident. If a serious incident occurs, early provision of good medical assistance can be crucial for the further response. It is also important that there is competence on board that can assist the rescue services in prioritising who is to be evacuated from the ships. The Norwegian authorities should there-

fore consider setting stricter requirements for medical competence on board cruise ships.

Incidents and exercises have shown that having an overview of the passengers is challenging, and that there is not a good enough system for keeping track when the passengers have to be evacuated from the ship. Sharing such information with the emergency preparedness authorities also creates challenges. The Norwegian authorities should, in cooperation with the cruise industry, explore technological solutions for passenger lists and lists of evacuees.

Mass rescue operations

When a serious incident occurs with a cruise ship with many people on board, and it is not safe to stay on board the ship, a mass rescue operation will be initiated. This entails evacuating a large number of people with relatively limited access to search and rescue resources. Helicopters, together with the ship's own evacuation equipment, are relevant resources in connection with mass evacuation from cruise ships.

Mass evacuation from a large cruise ship is a complex, extensive and time-consuming operation, and in a worst-case incident it can be an impossible task to save everyone. In areas where there is a long distance between emergency preparedness resources, there will often be other cruise ships that arrive first at an accident site, and which may have the capacity to take casualties on board. The Norwegian authorities should therefore encourage the cruise industry to partner with other vessels on sailing in close enough proximity in order to be able to come to each other's aid when sailing in such areas.

The Joint Rescue Coordination Centre has the overall responsibility for leading mass rescue operations and coordinating available rescue resources. The need for information from internal and external sources in a mass rescue operation with cruise ships will be almost inexhaustible. The Joint Rescue Coordination Centre's lack of capacity to meet this need was, for example, made visible during the incident with Viking Sky.

Serious incidents occur so rarely that experiences from these alone are not sufficient to maintain good competence among all actors. It is therefore absolutely crucial that mass rescue operations with cruise ships are exercised regularly along the entire Norwegian coast, not just in the Arctic.

With few resources and long distances, Svalbard's emergency preparedness situation is highly vulnerable, and it is therefore particularly important to have a satisfactory emergency preparedness stockpile situation in Longyearbyen. Here it is also relevant to facilitate airdrops of necessary equipment.

Reception on shore

In the event of a serious incident with a larger cruise ship, there will quickly be a need to establish one or more reception points on shore. Serious incidents with cruise ships can occur anywhere along the coast. It can be a very large burden for any municipality that may be affected, not just the municipalities that normally have cruise ship calls.

Coastal municipalities should therefore plan and make arrangements so that they can be best prepared to handle such situations. This includes working with neighbouring municipalities where this is practical. Central authorities should prepare a good plan for handling cruise incidents on shore, which can be a support for the municipalities and other actors locally and regionally.

In the event of a serious accident involving a larger cruise ship, there is reason to expect a large number of injured people who will need follow-up health care both in an emergency phase and in the somewhat longer term. Especially in the emergency phase, there is reason to believe that the health care system in many parts of the country is not dimensioned to handle up to thousands of injured people. This is most evident in Svalbard and in northern Norway, although there may also be a long distance to health resources elsewhere along the mainland coast.

Especially in Svalbard, it may be necessary to establish an emergency camp on shore or ice while waiting for rescue resources.

Emergency camps are also particularly challenging in Svalbard, where low temperatures, challenging weather conditions, large distances and the risk of polar bear attacks must be taken into account. Here, the cruise operators have a responsibility according to the Polar Code to ensure that they are adequately equipped to take care of passengers and crew until help arrives, and the industry must use equipment that ensures real survival. Furthermore, health preparedness in Svalbard is very limited, and here one will be dependent on establishing efficient transport of injured people to the mainland quickly.

Collaborative exercises

Exercises are an essential tool for strengthening crisis management skills and cooperation between actors. Exercises contribute to building competence and insight into the roles and responsibilities of actors, and provide a basis for improving planning work and implementing preventive measures. Exercises are therefore a topic in several places in this report.

The Joint Rescue Coordination Centre bears special responsibility as a driving force for maintaining and further developing collaboration within the rescue service. This can be ensured by initiating relevant exercises, for which they currently have limited capacity. The committee therefore believes that the Joint Rescue Coordination Centre should be enabled to hold regular rescue exercises with cruise ships, in cooperation with other relevant actors.

Evaluation of exercises and incidents

Search and rescue operations at sea are challenging. Learning after exercises and incidents is therefore very important to improve the ability to handle future incidents, including cruise ship incidents. It is known that we often have not done our best to systematically follow up and learn from previous incidents and exercises. When it comes to cruise ships, there are often very many people involved, and the consequences of not following up on experiences from exercises and incidents can be particularly serious.

As the entity responsible for coordinating rescue operations and with its responsibility as a driving force as mentioned above⁶, the Joint Rescue Coordination Centre is closest to ensuring a good evaluation and follow-up of exercises and incidents. However, the capacity here has been limited. The committee therefore believes that the Joint Rescue Coordination Centre should be provided with resources in order to have the capacity to analyse experiences from sea rescue operations and exercises.

⁶ See Collaborative exercises

2 The challenge picture⁷

Risk analyses show that measures are needed to reduce risk in cruise traffic. Cruise traffic has been increasing and will probably continue to do so, both in terms of the number of ships and passenger capacity. At the same time, the sailing season is being gradually extended into the winter season. Climate change in the form of more extreme weather such as wind and precipitation is an additional factor of uncertainty. At the same time, there are wide variations in emergency preparedness capacity related to rescue within the Norwegian rescue responsibility area, also when it comes to the capacity to handle large numbers of injuries. It will not be possible to dimension an emergency preparedness and response system for rescue and other handling that can take into account a worst-case incident with a large cruise ship. In sum, this triggers a need for measures to reduce the overall risk associated with cruise traffic.

2.1 What is the problem?

Risk of serious incident with cruise ships

The committee has based its assessments on the ALARP principle («As Low as Practically Possible»). The ALARP principle aims to reduce risk as much as practically possible, and means that risk-reducing measures shall be implemented unless the measures have disproportionately high costs or disadvantages.

Several studies have looked at the risk of incidents with cruise ships, and the conclusion in these studies is that the risk is in the

⁷ Originally Chapter 7 of NOU 2022: 1 *Cruise traffic in Norwegian waters and adjacent sea areas – Maritime safety, emergency preparedness and rescue*

ALARP area, which emphasises that there is a need to consider risk-reducing measures.

Cruise activities in Norway

Cruise activities in Norway have been trending upward in recent years, both in terms of the number of ships and their size. However, cruise traffic has been hit hard by the COVID-19 pandemic, and in 2020 and 2021 there was little activity globally as well as in Norwegian waters. The committee assumes that cruise traffic will pick up again after the COVID-19 pandemic has subsided, but it is uncertain to what extent and pace this will happen.

The report from DNV⁸ states that it is expected that older cruise ships with a capacity of 1,500–3,000 people on board will be replaced by larger ships, so that the average size of cruise ships to Norway will increase. With regard to expedition cruise ships, DNV expects in its report that this segment will double its capacity over the next six to seven years. Here, too, we are seeing a trend with increasing ship sizes accompanied by increasing average passenger capacity. DNV also points to an increasing trend towards the building of new luxury cruise ships, where the average size is also increasing in this segment. In its report, AECO⁹ also points to trends that expedition cruise ships in the Arctic will increase, both in number of ships and passenger capacity, over the next 1–3 years.¹⁰

In recent years, the sailing seasons have, according to DNV¹¹, also been extended. This is especially true in early spring and late autumn (the «shoulder seasons»), but pure winter operations have also

⁸ DNV (2021). *Trender og utvikling i cruisetrafikken i norske farvann mot 2040* (Trends and development in cruise traffic in Norwegian waters towards 2040). Report.

⁹ Association of Arctic Expedition Cruise Operators

¹⁰ AECO (2021). *Cruise tourism in Svalbard. Special focus on expedition cruise tourism*. Report.

¹¹ DNV (2020). *Analyse av tilleggstrisiko forbundet med cruisetrafikk langs norskekysten utenfor sommersesongen* (Analysis of additional risk associated with cruise traffic along the Norwegian coast outside the summer season). Report.

increased. The report shows that this trend has been evident both along the mainland coast and in Svalbard. The winter season is defined in this context as the period from 1 October to 30 April.

Cruise traffic is also characterised by a coastal sailing pattern. According to the report from DNV, coastal sailing increases the probability of unwanted incidents. At the same time, people are often closer to rescue resources from shore than if they are far out at sea. Furthermore, cruise ships often call at several ports, and disembarkations from cruise ships outside ports are also occasionally made.

The DNV report shows that cruise ships are becoming more and more advanced, with complex systems for controlling machinery and propulsion. This increases safety in many ways, but at the same time increases the likelihood of blackouts, in addition to making recovery following errors more complicated. The committee notes that this disadvantage must be seen in the context of the safety benefits of increasingly technically advanced ships.

The largest cruise ships sometimes have significant amounts of heavy oil on board, while many of the smaller ships run on marine diesel or similar. Cruise ships also often enter vulnerable natural environments such as fjords and Arctic or coastal waters, which intensifies the negative consequences of acute oil spills. Shipwrecks in themselves, and their salvage, also represent a possible threat to the natural environment.

Climate change

In recent decades climate change has led to a reduction in ice distribution in northern sea areas (especially multi-year ice and ice thickness) along with a simultaneous increase in ice drift and the length of the melting season. This trend is expected to continue.¹² This opens up the possibility of sailing in northern areas over longer periods, at the same time as increased ice drift can lead to a greater risk of serious incidents.

¹² Norwegian Environment Agency Report 2/2015 *Climate in Norway 2100*, pp. 84–88

Norway has challenging and unsheltered waters. Climatic conditions and long distances to emergency preparedness resources are challenging, especially in the north. Reports from the United Nations Intergovernmental Panel on Climate Change (IPCC) describe a development with an increased incidence of extreme weather, such as wind and precipitation. This will constitute an uncertainty factor that must be taken into account in the planning and implementation of cruises, and also in the assessment of the measures that must be implemented. The committee has not had a basis for going into more detail on the consequences that climate change could have for cruise traffic.

Dimensioning of Norwegian emergency preparedness

Preparedness against accidents, and other serious incidents with (cruise) ships, varies along the Norwegian coast and in our northern sea areas. This applies not only to emergency preparedness related to towing and evacuation, but also the reception apparatus on shore and handling of injured people. Emergency towing and staying on board usually constitute the main strategy on the larger cruise ships, and evacuation is the last resort when towing is not feasible. Emergency preparedness is not dimensioned to be able to handle any serious incident involving a cruise ship. In general, it can also be said that the farther north a serious incident occurs, the greater the challenges can be due to climatic and weather conditions, long distances and fewer available resources. Farther north, capacities are more limited, including when it comes to rescue, reception on shore, the health service's capacities and repatriation of foreign passengers or crew. Northern and Arctic waters are also particularly vulnerable to environmental impacts.

From a socio-economic perspective, it is a question of whether it will be justified to dimension the emergency preparedness and response system based on a serious incident involving a cruise ship. It will also not be practically possible to have an emergency preparedness and response system that can handle any incident involving a cruise ship. As an example, the current rescue ambition that served as the basis for the acquisition of Norway's new SAR Queen rescue helicopters, is that the helicopters should be able to start rescuing up

to 20 people in distress at any point 150 nm straight out from the baseline within two hours. In addition, it must be possible to rescue two people in distress towards the very outer edge of Norway's rescue responsibility area.

Organisation of the Norwegian authorities

In Norway, the responsibility for maritime safety and emergency preparedness is shared between several ministries.

With shared responsibility, it is particularly important to ensure good interaction between the agencies. The Maritime Safety Report¹³ did not identify a need for changes in the division of responsibilities between the ministries or changes in the collaboration model. Nevertheless, there may be reasons to look at organisation and interaction in the light of what is particularly characteristic of the cruise industry. This should be done to deal with the cruise industry in a more comprehensive way, both with a view to setting the necessary requirements and frameworks, but also to facilitate even more constructive cooperation.

Regulations as a tool – opportunities and limitations

Maritime activities are regulated through extensive international and national regulations. New technological systems, and increased management and control, have meant that the barriers against accidents at sea have been strengthened. However, safety still depends on the ship's technical condition and the crew's competence and capacity. Despite detailed requirements for competence, rescue equipment and new technology, much will still depend on operational assessments by humans. The safest possible operations in Norwegian sea and coastal areas require competence in the special conditions that are or may arise there, combined with experience. The Polar Code sets some requirements for competence, but the question is whether it is suffi-

¹³ Meld. St. 30 (2018–2019) *Samhandling for bedre sjøtryggleik*, Norwegian white paper on interaction to improve safety at sea.

cient, and in any case these requirements do not apply along the Norwegian coast with the exception of Svalbard.

Norway works continuously on a national and international level to ensure that vessels and equipment are suitable for operation in various waters, and that masters and others who work on board are trained to handle the challenges they may face. Given the rapid speed of developments in technology and markets, current regulations will not always keep pace with continuous developments.

It is the committee's impression that few large cruise vessels operate with safety levels that are higher than the minimum requirement for the ship in question.

Norway has experienced incidents with passenger ships in recent years. Some have ended well without the loss of human life, such as Viking Sky, while others, such as the Scandinavian Star, have had catastrophic consequences. From an emergency preparedness perspective, it is not a question of whether incidents will occur, but when and where they will occur, the contingency resources that are then available, and how the incident is handled.

Assessments must be made of when there is a need for regulatory action, and when other less intrusive measures are more appropriate. A balance must also be struck between the comprehensiveness of special national rules that Norway should and can introduce compared with the need for predictable international regulations.

2.2 What do we want to achieve?

An accident involving a cruise ship will result in many injuries and deaths. In addition, it will lead to a high risk of damage to the natural environment. In many cases, an accident involving a cruise ship will exceed the capacity of available emergency resources. More demanding weather conditions will both have the potential to increase the probability of an accident occurring, and make rescue work more difficult once an accident has occurred.

The overall goal of the recommendations in this report is to reduce the risk of serious incidents with cruise ships that could lead to the consequent risk of the loss of many lives.

The committee is primarily concerned with finding measures that reduce the overall risk of a serious incident with cruise ships from occurring. It is not possible to dimension an emergency preparedness and response system for an accident involving a cruise ship with several thousand passengers on board. This applies not only to evacuation and rescue of people from the ship, but also the further handling of a high number of seriously injured people. The committee therefore primarily emphasises probability-reducing measures to reduce the risk of cruise traffic. However, consequence-reducing measures are to be considered where necessary. In this context, the committee emphasises quality improvements of existing emergency preparedness rather than a significant expansion of it.

The committee wants the proposed measures to balance considerations of maritime safety and emergency preparedness against the cruise industry's need for a predictable framework.

3 Overall assessment of the recommendations¹⁴

In this report, the committee has primarily been concerned with finding measures that reduce the overall risk of a serious incident with cruise ships. It is not possible to dimension an emergency preparedness and response system that takes into account an accident involving a cruise ship with several thousand passengers on board. This applies not only to the evacuation of people from the ship, but also the further handling of a high number of seriously injured people. The committee has therefore emphasised probability-reducing measures to reduce the risk of cruise traffic. The consequence-reducing recommendations do not entail a significant increase in emergency preparedness, but are aimed at quality improvements of existing emergency preparedness and handling where practical.

The recommendations balance the consideration for maritime safety and emergency preparedness against the cruise industry's need for a predictable and viable framework.

On behalf of the committee, DNV and Menon Economics have carried out a socio-economic analysis of some of the committee's recommendations. Priority was given to analysing measures that are assumed to be most intrusive or to have high investment costs, including the committee's recommendation on traffic restrictions. The result of the socio-economic analysis can to a certain extent be used to prioritise risk-reducing measures. In addition to the fact that the analysis has only been carried out for some of the committee's recommendations, it also has its limitations.

The socio-economic analysis shows that the introduction of a number of measures has low benefits, but also low costs. In such cases with low costs and low overall benefit, there may still be good

¹⁴ Originally Chapter 14 of NOU 2022: 1 *Cruise traffic in Norwegian waters and adjacent sea areas – Maritime safety, emergency preparedness and rescue*

arguments for implementing measures based on the precautionary principle. This is also in line with the ALARP principle of implementing risk-reducing measures when the costs of these are not disproportionately high.

The committee emphasises that the socio-economic costs of the recommendations are relatively small compared with the enormous costs that can arise if an accident should occur with a cruise ship. The costs of a major accident involving cruise ships are estimated at between 14 and 85 billion Norwegian kroner, and not all the costs associated with the rescue operation are included.

The Cruise Committee has not ranked its recommendations by priority, but emphasises that probability-reducing measures will be the most effective in reducing risk. Priorities will to a large extent also depend on political assessments, where a holistic approach to the cruise industry will be key. An overall overview of all the committee's recommendations is listed in the table below.

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
<i>Holistic approach to the cruise industry</i>		
1.	The Norwegian authorities must prepare a comprehensive national plan for cruise traffic in which safety, emergency preparedness and rescue play a central role. The plan should be part of the Governments' national tourism plan.	8.1
2.	The Government should consider establishing an inter-ministerial committee for tourism that integrates safety, emergency preparedness and rescue related to cruise traffic.	8.1

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
3.	The Government should consider whether the Norwegian authorities are appropriately organised to deal with the cruise industry in a comprehensive and coordinated manner.	8.1
4.	As a shipping nation, Norway should play a leading role in strengthening international regulation of cruise traffic with respect to maritime safety, emergency preparedness and rescue.	8.1
	<i>Cooperation between authorities and the cruise industry</i>	
5.	The Ministry of Trade, Industry and Fisheries should establish a formalised cooperation between the relevant authorities and the cruise industry.	8.2
6.	The Ministry of Justice and Public Security should establish an exercise group consisting of relevant authorities and the cruise industry, which will be mandated to assess and propose measures for the overall exercise activities for cruise traffic.	8.2
	<i>Traffic regulations</i>	
7.	On ships over 150 metres, the Norwegian authorities should impose traffic restrictions under given weather conditions, in given time periods, within more defined areas, or a combination of these.	8.3
8.	The Norwegian authorities should introduce a limit of 500–750 people on board cruise ships sailing in the territorial waters of Svalbard (majority proposal).	8.3

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
9.	Norway must take the initiative for international regulation of cruise traffic towards the North Pole. <i>Access to data and information</i>	8.3
10.	The Norwegian Mapping Authority's capacity for work on nautical mapping and nautical chart production must be strengthened.	8.4
11.	The Norwegian authorities must ensure the rapid implementation of new regulations on the recording and use of information concerning certain specified seabed conditions.	8.4
12.	The Meteorological Institute must prepare ice maps every day of the week.	8.4
13.	The Norwegian authorities should ensure that official information to the cruise industry is on a single website or download service. <i>Communication systems</i>	8.4
14.	The Norwegian authorities should actively take advantage of the opportunities provided by the satellite-based broadband development in the High North to provide new practical services within maritime safety, emergency preparedness and rescue.	8.5
15.	The Norwegian Coastal Administration should consider whether it is possible to use the AIS base stations under establishment in Svalbard as a platform for a VHF emergency message service for the archipelago.	8.5

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
16.	The Government should provide the necessary aeronautical communications coverage for the entire country. <i>Training and competence on board</i>	8.5
17.	The Norwegian authorities should require that all deck and engineer officers on passenger ships operating in Svalbard shall have basic qualifications and adapted courses based on the Polar Code.	8.6
18.	In cooperation with the cruise industry, the Norwegian authorities should develop requirements that ensure that masters and duty officers on passenger ships with more than 100 passengers that sail during the winter season along the mainland coast, shall have basic qualifications and adapted courses based on the Polar Code.	8.6
19.	In cooperation with the cruise industry, the Norwegian authorities should establish requirements that the safety crew and other employees on board who play a key role in connection with evacuation from passenger ships operating in Svalbard, shall have a supplementary course in passenger and crisis management with a focus on the challenges in polar waters.	8.6
20.	Norway must be a driving force in raising the qualification requirements in the regulations of the International Maritime Organization (IMO).	8.6

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
21.	The Norwegian authorities should facilitate that shipping companies operating in areas with limited rescue capacity are offered courses and training in leading rescue operations at sea, so-called on-scene coordinator courses.	8.6
	<i>Research and development</i>	
22.	The funding of research, development and innovation in the prevention, emergency preparedness and response of undesirable incidents with cruise ships must be bolstered.	8.7
23.	The cruise industry should increase its commitment and contribute more to research, development and innovation projects that can improve maritime safety.	8.7
	<i>Risk assessment</i>	
24.	The Norwegian authorities should develop a guide for risk assessment for the industry, where challenges with winter cruises are discussed separately.	9.1
	<i>Voyage planning</i>	
25.	Norway should work to update the International Maritime Organization's (IMO) guidelines for voyage planning.	9.2
26.	The Norwegian Coastal Administration should establish more reference routes for cruise ships along the coast.	9.2

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
<i>Search and rescue (SAR) cooperation plans</i>		
27.	The Norwegian authorities should consider making the requirement in the International Convention for the Safety of Life at Sea (SOLAS) for SAR cooperation plans applicable to passenger ships that are not certified for international travel, and which operate in Norwegian territorial waters.	9.3
28.	Norway should work through the International Maritime Organization (IMO) to achieve a more appropriate requirement for exercises so that SAR cooperation plans are also practiced frequently enough in the Norwegian rescue responsibility area.	9.3
29.	Norway should work to ensure that the international register for SAR cooperation plans is up-to-date and downloadable for rescue centres.	9.3
30.	The Norwegian Maritime Authority should increase its focus on SAR cooperation plans in connection with port state controls, in order to map their status and enforce the requirement for this.	9.3
<i>The ship's technical safety and certificates</i>		
31.	Norway should work through the International Maritime Organization (IMO) to introduce a requirement for an operational assessment in connection with the certification of all passenger ships, similar to those for ships certified according to the Polar Code.	9.4

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
32.	Norway should work through the International Maritime Organization (IMO) to introduce requirements for redundant propulsion machinery for larger passenger ships, as well as requirements for a safe operating mode when the ships operate in coastal waters.	9.4
33.	The Norwegian authorities should consider incentives that reward shipping companies that operate ships with documentable redundancy in the propulsion machinery.	9.4
	<i>Towing equipment</i>	
34.	The cruise industry and the relevant authorities must carry out several emergency towing exercises with cruise vessels.	9.5
35.	Norway should work through the International Maritime Organization (IMO) to introduce international requirements for towing equipment on board all cruise ships.	9.5
36.	Various solutions for emergency towing should be explored in more detail, including shore-based depots and national requirements.	9.5
	<i>Rescue equipment</i>	
37.	Norway should actively participate in the work of establishing an objective- and function-based rescue chapter in the International Convention for the Safety of Life at Sea (SOLAS).	9.6

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
38.	Norway should work to make the preliminary guidelines for the Polar Code on life-saving appliances and arrangements mandatory, as well as to establish an international standard for calculating the maximum expected rescue time.	9.6
39.	The Norwegian authorities should stimulate research and innovation with regard to life-saving appliances, and in particular the extent to which lifeboats for passenger ships can be used under different conditions.	9.6
40.	The cruise industry should ensure that new and safer technology for lifeboats and other life-saving appliances is used.	9.6
<i>Traffic monitoring and reporting</i>		
41.	The Norwegian authorities should require cruise ships to immediately report any changes that may affect the ship's automatic position reporting or operational capability.	10.1
42.	The Norwegian authorities should prioritise the work of automating several of the processes related to monitoring and reporting of cruise traffic.	10.1
43.	The Norwegian authorities should strengthen the Norwegian Vessel Traffic Service through expansions of service areas and the establishment of new ones.	10.1
44.	The Norwegian authorities should mandate that all vessels carrying passengers must have an automatic identification system (AIS) in operation on board.	10.1

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
<i>Resource allocation</i>		
45.	The Norwegian Coastal Administration should further develop the Shared Resources Register so that emergency preparedness capacities for cruise ships are more evident than today.	11.1
46.	The Norwegian Coastal Administration should ensure that towing resources are registered in the Shared Resources Register.	11.1
47.	The Norwegian Coastal Administration should develop the functionality of the Tracking and Interaction service so that more actors taking part in an emergency response or search and rescue incident can be given access.	11.1
48.	The Ministry of Justice and Public Security should discuss whether the geographical coverage and the operational application of Rescue Efforts at Sea (RITS) is good enough.	11.1
49.	The Ministry of Justice and Public Security should ensure that the Norwegian Civil Defence is given the opportunity and resources to provide assistance in Svalbard in the event of serious civilian incidents in the archipelago.	11.1
<i>Communication during incidents</i>		
50.	The Norwegian authorities should explore common digital communication platforms including in the event of incidents at sea.	11.2

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
51.	The Joint Rescue Coordination Centre's and Avinor's ¹ work on the concept for air coordination should be intensified.	11.2
	<i>Handling on board</i>	
52.	The Norwegian authorities should, in cooperation with the cruise industry, explore a technological solution for passenger lists and lists of evacuees.	11.3
53.	The Norwegian authorities should consider stricter requirements for medical treatment capacity on board large cruise ships.	11.3
	<i>Mass rescue operations</i>	
54.	The Norwegian authorities should encourage the cruise industry to partner with other vessels on sailing in close enough proximity in order to come to each other's aid in areas with a long response time for rescue resources.	11.4
55.	The Norwegian authorities should ensure that mass rescue exercises are regularly held along the mainland coast, in which cruise ships also participate as a resource.	11.4
56.	The Norwegian authorities must ensure efficient fuel supply to aircraft in the event of mass rescue operations connected with cruise ship incidents.	11.4

Tabell 3.1 List of the committee's recommendations

No.	Recommendations	Discussed in chapter
57.	The Joint Rescue Coordination Centre and local rescue centres should utilise the potential of the rescue managements in planning the handling of communication and information during mass rescue operations.	11.4
58.	The Joint Rescue Coordination Centre should be given increased resources to handle the massive communication and information sharing required for mass rescue operations.	11.4
59.	The Norwegian authorities must prioritise the work of putting in place practical solutions for the emergency preparedness stockpile situation in Longyearbyen.	11.4
60.	Airdrops of emergency aid packages should be further developed by strengthening the existing solution in Svalbard.	11.4
<i>Reception on shore</i>		
61.	Coastal municipalities should incorporate undesirable incidents with cruise ships into their risk and vulnerability analyses.	11.5
62.	Coastal municipalities should put in place inter-municipal agreements on mutual aid during an incident with cruise ships.	11.5
63.	The Ministry of Justice and Public Security should prepare plans for handling cruise incidents on shore, and ensure coordination and exercising of the plans among various emergency preparedness actors.	11.5

Tabell 3.1 List of the committee’s recommendations

No.	Recommendations	Discussed in chapter
64.	The Ministry of Trade, Industry and Fisheries should discuss whether the Shared Resources Register can be expanded to cover the need for a digital action support system.	11.5
	<i>Collaborative exercises</i>	
65.	The Joint Rescue Coordination Centre should be enabled to exercise its responsibility as a driving force for collaboration and hold regular rescue exercises with cruise ships at the national, regional and local level.	12.1
	<i>Evaluation of exercises and incidents</i>	
66.	The Joint Rescue Coordination Centre should be provided with resources to analyse experiences from sea rescue operations and exercises.	12.2

¹ Avinor is a wholly-owned state limited company under the Norwegian Ministry of Transport and Communications and is responsible for state-owned airports.

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