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COMMISSION STAFF WORKING DOCUMENT
Accompanying the document

Report from the Commission to the European Parliament and Council

REFIT
Adjusting course: EU Passenger Ship Safety Legislation Fitness Check

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Table of content

1 EXECUTIVE SUMMARY

1. Passenger ships play an important role in the mobility of EU citizens, given that 23 out of 28 Member States are coastal countries, with 4 being island states. In average, it is estimated more than 390 million people pass every year through EU ports (397 million in 2013).

2. The EU passenger ship safety policy framework was set in place to address: 1) potential safety risks caused by the fact that international rules do not apply to domestic voyages (or that they are insufficient) and by the uncertainty of whether standards are well applied and maximum number of passengers authorised to be carried on board is respected; 2) difficulties in search and rescue operations due to insufficient survivability of ro-ro passenger ships and to insufficient information on the passengers on board being available; and 3) differences in applied safety standards.

3. The EU legislation on passenger ship safety has been put in place over a period of 15 years mainly in response to accidents. This has created a regulatory framework that is fragmented and varies in terms of its coverage. Past evaluations, inspections carried out by the European Maritime Safety Agency and stakeholders' feedback have underlined inconsistencies and to some extent unclear definitions.

4. The purpose of this fitness check was therefore to assess if the current legislative framework for passenger ship safety is fit for purpose and if its objectives are relevant and are being met in an efficient and effective manner. More specifically, as part of the Commission' Regulatory Fitness and Performance Programme (REFIT), this fitness check aimed to assess the potential for simplifying and streamlining the existing framework, i.e. to maintain EU rules where necessary and proportionate; ensure their correct implementation; and eliminate potential overlap of obligations and inconsistencies between different pieces of legislation.

5. Four Directives were chosen for this fitness check – although their scope differs, together they represent a set of key safety standards and requirements for passenger ships sailing in the EU waters. The most extensive EU legislative instrument is Directive 2009/45/EC, which covers passenger ships made of steel or equivalent material and high speed craft. Where applicable and feasible, it is based on internationally agreed standards, namely the International Convention for the Safety of Life At Sea (SOLAS). In addition, Directives 2003/25/EC, 1999/35/EC and 98/41/EC provide for specific EU rules that apply to roll-on roll-off passenger ships, high speed craft and the registration of persons on board.

6. The fitness check has been carried out with the support of the European Maritime Safety Agency, in particular feeding on its technical expertise and implementation follow-up; and an external contractor for data collection and analysis, and cost-benefit analysis. As of 2011, stakeholders have been consulted on a regular basis, both via open public and targeted consultations taking place in different contexts.

7. The results of the fitness check showed that the key objectives of the EU passenger ship safety legislation related to passenger safety and internal market are being overall met and remain highly relevant. The EU passenger ship safety legal

framework resulted in a common safety level for passenger ships within the EU and a level playing field between operators as well as increased transfer of ships between Member States. In addition to harmonised safety standards, the system of inspections and surveys played a key role in maintaining the required high level of safety.

8. The fitness check also revealed that these objectives can be in some instances delivered in a simpler, clearer and more proportionate manner. The potential to simplify, clarify and repeal a number of ambiguous, outdated or overlapping requirements has been identified in number of areas.

9. For example, it revealed a significant simplification potential namely concerning the Directive 1999/35/EC that overlaps with flag State surveys and port State inspections. Member States have implemented these overlapping and inconsistent requirements in a pragmatic way, which means the current legal framework no longer reflects the state of affairs. The complexity of the EU passenger ship safety legislation is aggravated by an outdated format of the safety standards themselves (i.e. the Annex to Directive 2009/45/EC), which has become over time extremely difficult to read and to compare with the existing international requirements.

10. The fitness check also revealed that a number of provisions, definitions and requirements are ambiguous to such extent that in certain cases they may hinder an effective implementation of the legislation. These relate in particular to the scope and application of the harmonised EU standards, such as the type of ships covered, regularity of inspections etc.

11. Furthermore, there has proven to be a mismatch between the existing prescriptive safety standards for small steel ships of below 24 m in length and the identified safety and internal market objectives. Given that such small ships are in the main built from materials other than steel, the vast majority of the fleet in terms of numbers of ships is currently not covered by the harmonised EU safety standards (96%). It has also proven increasingly difficult to adapt the prescriptive, one-size-fits all SOLAS standards for this category of ships, particularly due to their high sensitivity to local operational conditions.

12. Besides the simplification potential, the fitness check also revealed a number of issues that unnecessarily reduce the effectiveness of search and rescue operations. For example, while experience has shown that an effective search and rescue operation requires immediate access to accurate data as regards the number of persons on board, this is not always the case.

13. Finally, a number of other, substantial issues related to the adequacy and proportionality of existing safety standards have been identified, such as damage stability requirements; the differences in safety requirements between the different classes of ships; the application of inspection regimes at national level; and the possibility to develop harmonised standards for ships currently not covered by the EU regulatory framework. These issues will necessitate further assessment and consultations with experts. Importantly, some of them should be first dealt with at the international level, before further action at the EU level can be envisaged.

14. Based on these results, a set of recommendations has been drawn for the consideration of follow-up actions.

2 INTRODUCTION

15. The Commission's 2010 Communication on Smart Regulation introduced "Fitness Checks" as comprehensive policy evaluations assessing whether the regulatory framework for an entire policy sector is fit for purpose. The fitness checks' aim is to identify excessive administrative burdens, overlaps, gaps, inconsistencies and/or obsolete measures which may have appeared over time, and to help to identify the cumulative impact of legislation. Their findings should serve as a basis for drawing policy conclusions on the future of the relevant regulatory framework.

16. In December 2012, the European Commission announced the launch of the Regulatory Fitness and Performance Programme (REFIT). REFIT emphasises the importance of EU regulation effectively and efficiently pursuing only those public policy objectives which are clearly best achieved at the EU level. According to the Communication, the programme will "identify, assess, adopt, and monitor the implementation of, initiatives which will result in significant regulatory cost reduction or simplification". A second communication related to REFIT ("Results and next steps") released in October 2013 identifies a number of policy areas, in which a regulatory fitness check should be conducted. One of these areas is the "Passenger Ship Safety Legislation".

17. The safety of passenger ships is regulated at three levels: through international conventions to which EU Member States (and in rare cases the EU) are party, EU passenger ship safety legislation and national law. For ships engaged in international voyages, including between two EU Member States, the International Convention for the Safety Of Life At Sea (SOLAS) is the most safety-relevant applicable convention. It is administered by the International Maritime Organization (IMO), a UN body, and has been ratified by all EU Member States. At EU level, the most extensive legislative instrument is Directive 2009/45/EC[1] regulating ships made of steel (or equivalent material) and high speed craft (HSC)[2] engaged in domestic voyages. Presently neither international nor EU rules apply to non-steel ships navigating domestically and national administrations have established their own rules, some of them based on the international or European rules.

18. In recent years, the European Union and its Member States have put efforts into improving the maritime safety legislation and promoting high-quality standards. In 2009 the co-legislators adopted the third maritime package that aimed to improve the effectiveness of the existing measures on maritime safety; however, it did not include specific measures on passenger ship safety. The 2011 White Paper for the future of transport – "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system", recognised the need to modernise the current EU passenger ship safety legislative framework.

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1 Directive 2009/45/EC of the European Parliament and of the Council on safety rules and standards for passenger ships (OJ L 163, 25.6.2009, p.1)

2 As defined in SOLAS Chapter X Reg. 1.3

2.1 Why a fitness check on EU passenger ship safety legislation?

19. Passenger ships play an important role in the mobility of EU citizens, given that 23 out of 28 Member States are coastal countries, with 4 being island states. In average, it is estimated more than 390 million people pass every year through EU ports (397 million in 2013).

20. The EU legislation on Passenger Ship Safety has been put in place over a period of 15 years mainly in response to accidents. This has created a regulatory framework that is fragmented and varies in terms of its coverage. Past evaluations, inspections carried out by the European Maritime Safety Agency (EMSA) and stakeholders' feedback have underlined inconsistencies and to some extent unclear definitions.

21. An ex-post evaluation[3] of the EU acquis related to passenger ship safety was carried out in 2011. An open public consultation took place between 13 April and 5 July 2012 and was followed by an impact assessment of identified policy options. However, these exercises failed to gather sufficient evidence to support the legislative review and revealed poor data availability, especially in terms of national passenger ships fleet and safety records. Therefore the Commission has undertaken a more systematic and comprehensive fitness check of the legislative framework in place. While more data became available with time, this fitness check has also been an occasion to collect further data and carry out additional consultations, desk analysis and case studies.

2.2 Purpose of this fitness check

22. The purpose of this fitness check is to assess if the current legislative framework for Passenger Ship Safety is **fit for purpose** and if **its objectives are relevant** and are being met in **an efficient and effective** manner. More specifically, this fitness check aims to assess the potential for simplifying and streamlining the existing framework, i.e. to (i) maintain EU rules where necessary and proportionate; (ii) ensure their correct implementation; and (iii) eliminate potential overlap of obligations and inconsistencies between different pieces of legislation.

2.3 Scope of the fitness check

23. The fitness check covers all EU Member States and EEA countries.

24. Four Directives have been chosen for this fitness check – although their scope differs (see table below), together they represent a set of key safety standards and requirements for surveys of passenger ships sailing in the EU waters. Where applicable and feasible, these requirements build on the internationally agreed standards (namely SOLAS), which in principle do not apply to domestic shipping[4].

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3 Studio Legale Grimaldi e Associati, 2011. Passenger Ship Safety Legislative review – Evaluation report; http://ec.europa.eu/transport/facts-fundings/evaluations/doc/2011_passenger_ship_safety.pdf

4 See chapter 6.1 for more information

25. The first two Directives, i.e. Dir. 2009/45/EC and 2003/25/EC[5], are closely linked as they define the technical safety standards for passenger ships – sailing either on domestic or, as regards the latter, domestic and international voyages. In addition, Directive 1999/35/EC[6] provides for a specific inspection framework for the most frequent passenger transport, i.e. regular service of roll-on roll-off passenger ships (known as ro-ro passenger or ro-pax ships)[7] and HSC. Finally, Directive 98/41/EC[8] complements the general safety standards by ensuring that both the passenger capacity is respected and that search and rescue in the aftermath of any accident can be dealt with effectively. See annex 4 for more details on each of the Directives in the scope of the fitness check and the related ones.

5 Directive 2003/25/EC of the European Parliament and of the Council on specific stability requirements for ro-ro passenger ships (OJ L 123, 17.05.2003, p.22)

6 Council Directive 1999/35/EC on a system of mandatory surveys for the safe operation of regular ro-ro ferry and high-speed passenger craft services (OJ L 138, 1.6.1999, p.1)

7 Roll-on/roll-off vessels are designed to carry wheeled cargo, such as trucks, trailers and cars that are driven on and off the ship on their own wheels or using a platform vehicle. If they carry more than 12 passengers in addition to vehicles they are called ro-pax vessels

8 Council Directive 98/41/EC on the registration of persons sailing on board passenger ships operating to or from ports of the Member States of the Community (OJ L 188, 2.7.1998, p.35)

Table 1: Overview of Directives in scope of the fitness check

	Content	Scope		
		Voyage	**Ships**	**Application**
Directive 2009/45/EC	Safety standards Surveys *(general)*	Domestic	(a) Passenger ships made of steel and equivalent material; (b) HSC	All ships irrespective of size (flexibility for ships below 24 m of length) Classes (A, B, C, D)[9]
Directive 2003/25/EC	Safety standards *(specific: stability requirements for ro-pax)*	Domestic and international	Ro-ro passenger ships	International: Regular service Domestic: Class A, B and C
Directive 1999/35/EC	Surveys *(specific: ro-pax and HSC in regular service)*	Domestic and international	(a) Ro-ro passenger ships; (b) HSC	Regular service only Domestic: Class A
Directive 98/41/EC	Safety standards Surveys *(specific: registration of persons on board)*	Domestic and international	All passenger ships	Length of the voyage *(below 20 nautical miles only counting of persons on board)*

Source: Commission, 2015

26. At the international level, the EU passenger ship safety legislation is related mainly to the following instruments, as amended:

- SOLAS - the 1974 International Convention for the Safety of Life at Sea (the 1974 SOLAS Convention);
- the 1966 International Convention on Load Lines;
- the International Code for Safety of High Speed Craft;
- the International Management Code for the Safe Operation of Ships and for Pollution Prevention;
- the 1979 International Convention on Maritime Search and Rescue.

[9] Passenger ships are classified in four different classes according to the sea areas where they can operate, depending on parameters such as the distance to coast. While Class A ships do not have any limitation with regard to distance to coast in which they can operate, for Class D ships the distance is limited to 3 nautical miles (ca. 5,6 km)

3 BACKGROUND TO THE INITIATIVE

3.1 Objectives of the EU passenger ship safety legislation

27. The main objective of the EU legislation on passenger ships is to improve the level of safety of life on passenger ships sailing in EU waters. In addition, a second objective is to remove potential barriers to the internal market, including the transfer of ships between Member States.

28. The EU passenger ship safety policy framework was set in place to address: 1) potential safety risks caused by the fact that international rules do not apply to domestic voyages (or that they are insufficient[10]) and by the uncertainty of whether standards are well applied and maximum number of passengers respected; 2) difficulties in search and rescue operations due to insufficient survivability of ro-ro passenger ships and to insufficient available information on the passengers on board; and 3) differences in applied safety standards.[11]

29. Safety of passengers can be maintained at high level through constant update of the safety standards and through more efficient search and rescue operations. On the other hand, the internal market of passenger ships may be further developed by assuring the same level of safety regardless the area of operation (proportionality of rules) and by allowing for mutual recognition of certificates and national decisions.

30. The full set of general, specific and operational objectives of the Passenger Ship Safety legislation are provided in the below table:

[10] As in case of damage stability requirements for ro-ro passenger ships

[11] See annex 8 for more details on the intervention logic

Table 2: Overview of policy objectives

General objectives	Specific objectives	Operational objectives
Improve safety level in maritime transport	Improve safety of ships	- Ensure that the number of passengers does not exceed an allowed number - Improve the survivability of ro-pax ships - Extend the applicability of international rules to non-covered areas as far as possible - Ensure the proportionality of rules - Ensure verification and control of rules - Ensure that needs of people with reduced mobility are addressed - Ensure the availability of information in case of accident/search and rescue situations - Provide a framework for cooperation between Member States - Ensure that decisions/certificates are mutually recognized between Member States
	Support search and rescue operations	
Enable the development of the internal market in maritime transport	Ensure the same level of safety regardless of the area of operation	
	Ensure the mutual recognition of certificates and national decisions	

Source: EU passenger ship safety legislation, Commission, 2015

3.2 Expected effects of the EU passenger ship safety legislation

31. The EU passenger ship safety legislation has provided for a legal framework including a range of requirements (or inputs). These requirements can be translated in a range of observable outputs or immediate deliverables of the legislation. This includes amongst others the conformity of ships with safety standards, the issuance and mutual recognition of certificates, the classification of ships, surveys, etc.[12]

32. The outputs of the passenger ship safety legislative framework are meant to contribute to achieving the four expected results: 1) uniform level of safety proportional to risks; 2) safer ships through compliance with improved safety measures and requirements; 3) more efficient handling of aftermath of ship accidents, incl. search and rescue; and 4) mutual recognition of certificates and of national decisions.

33. In the longer run, the results were meant to translate in a common safety level for all passenger ships within the EU (expected impact on safety), a level playing field between EU ports and passenger ships and increased mobility (expected impact on internal market). If these impacts are realised, the general objectives of the passenger ship safety legislation will have been fulfilled.

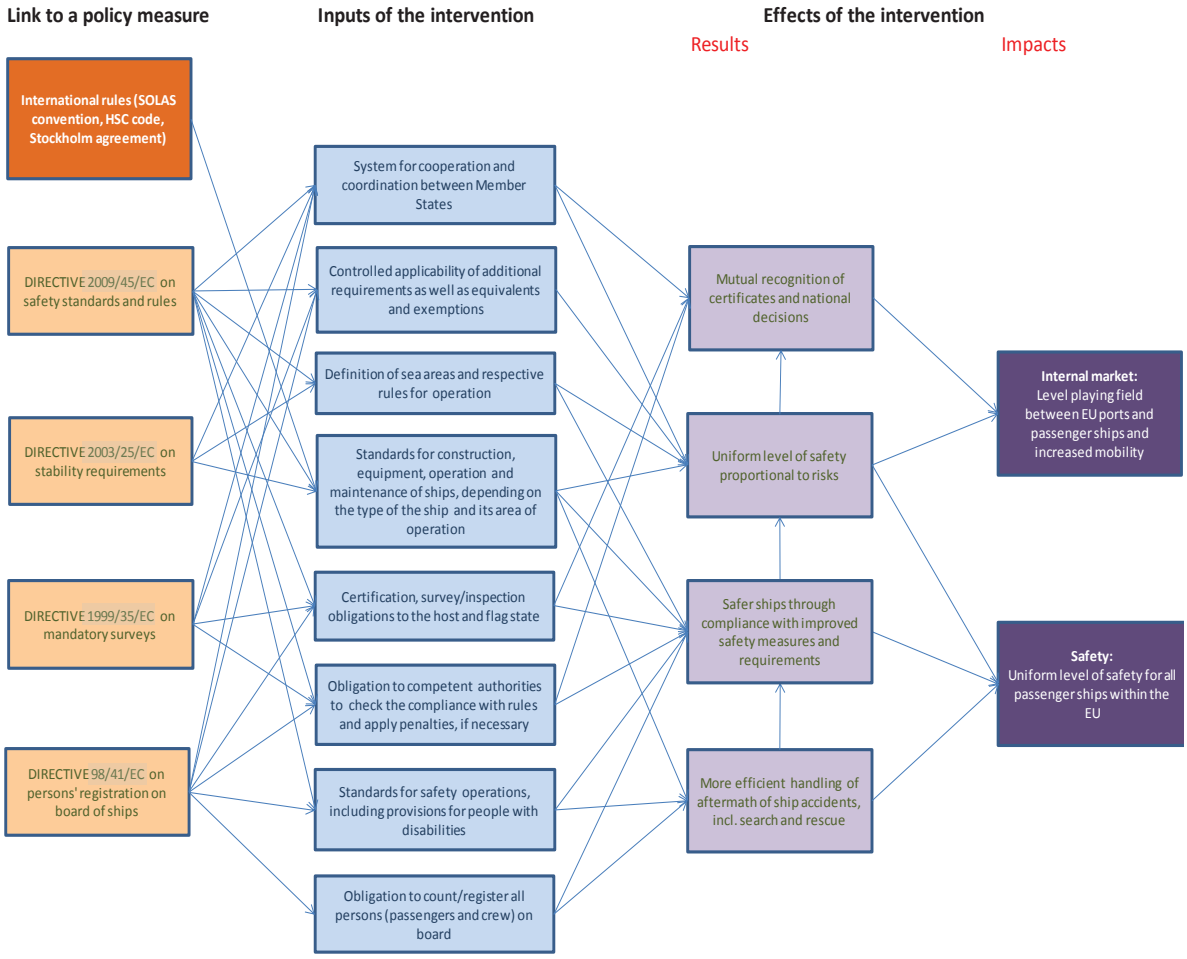
34. It should be noted that high level of safety benefits not only passengers but all those involved in the transport of passengers. Therefore operators will run lower risks with

[12] See annex 8

respect to accidents and the subsequent costs involved (liability costs; repair or replacement costs etc.). Also the high level of safety prevents or limits ships being involved in accidents at sea and as such will have an implicit beneficial effect on the marine environment as well as an explicit effect on the well-being of the crew.

35. The diagram below shows the simplified intervention logic, illustrating how the EU legislation on passenger ship safety covered by the fitness check was expected to interact and to achieve its objectives.

Figure 1: Passenger ship safety legislation intervention logic



Source: EU passenger ship safety legislation, Commission, 2015

4 EVALUATION QUESTIONS

36. The fitness check has addressed the six following evaluation criteria: coordination, relevance, effectiveness, efficiency, EU added value and coherence. The evaluation questions were defined on the basis of the intervention logic presented above. In particular they aim to assess the various identified links between problems and needs, objectives, inputs and effects. The detailed evaluation questions are answered in Chapter 7.

- Coordination

37. As explained above, the EU passenger ship safety legislation has been set up in reactions to various accidents and the different pieces of legislation that form part of the framework were adopted at different times and in a different context. Hence, it is important to assess whether the resulting framework works together as a framework for passenger ship safety.

- **Relevance**

38. The fitness check has looked at whether the current safety framework is adequate to address the safety and internal market issues identified. The analysis under this criterion has in particular focussed on the question of proportionality of rules in terms of standards, navigation areas, and exemptions and equivalencies, and has looked at the how the Directives relate to international rules.

- **Effectiveness**

39. The effectiveness of the passenger ship safety legislation refers to the realisation of the expected effects. The fitness check has therefore looked at whether the Directives have contributed to increased safety and to the internal market. Under this criterion, the contribution of various inputs to these overall objectives has also been assessed (exemptions and equivalencies, certification and surveys). Unintended impacts have also been investigated.

- **Efficiency**

40. Under the efficiency criterion, the analysis has covered the cost components involved for the different stakeholders (national administrations, ship owners and operators, ship builders) to comply with the provisions in the passenger ship safety legislation. This includes charges, compliance costs and administrative burden in relation to safety standards, certification and surveys, and navigation areas.

- **European Added Value**

41. The analysis of EU added value has looked at whether action at EU level is the most appropriate.

- **Coherence**

42. Finally, the fitness check has looked at the coherence of the passenger ship safety framework, both internally (i.e. gaps or overlaps) and externally in terms of coherence with EU challenges and objectives.

5 METHODOLOGY

5.1 Division of tasks

43. The fitness check has been carried out with the support of:

- EMSA, in particular feeding on its technical expertise and implementation follow-up;
- An external contractor for data collection and analysis, and cost-benefit analysis[13].

5.2 Data collection

44. In addition to the ex-post evaluation, public consultation and impact assessment process[14] mentioned above, two additional data collection exercises have been carried out:

- The Commission prepared pre-filled **questionnaires** containing the available data/statistics on national fleet, based on the outcome of previous stakeholders' consultation and available data from EMSA. Member States were requested to verify and to complete the information. Replies were received from 23 Member States (including Croatia)[15], plus Norway. The response rate to the questionnaire was quite high – in terms of respondents as well as in terms of questions answered by the Member States, so the data collected in this step do not present many limitations.[16]
- **Case studies** were carried out by the contractor, with support from the Commission, with 11 Member States (Croatia, Estonia, Portugal, Italy, Greece, Spain, France, United Kingdom, The Netherlands, Denmark and Finland) and bilateral contacts arranged with shipbuilding companies and associations, ship operators and owners aiming to get additional input[17].

45. Secondary data was also in support of the fitness check:

- Available statistics were reviewed and used were appropriate. In particular, use was made of Eurostat data. EMSA also provided **safety statistics** (number of accidents/incidents and causes by Member State and by ship type) as well as data to pre-fill the questionnaires for Member States.
- Feedback on implementation received through EMSA visits (related to the passenger registration Directive 98/41/EC) was also analysed by EMSA and used in the fitness check.

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13 Tractebel, 2015. Support Study for the Fitness Check (FC) – Evaluation of Passenger Ship Safety Legislation

14 COWI, 2012. Impact Assessment Support Study on the Passenger Ship Safety Legislative Review

15 The five remaining Member States are landlocked countries

16 See Tractebel, 2015. To preserve the confidentially of individual responses, the full replies are not reported here. However, the overall responses are indicated throughout the fitness check as appropriate

17 ditto

– Other publications available on the topic have also been reviewed. Desk research was carried out both by EMSA and by the contractor. Key findings from desk research of the contractor are detailed in the contractor's report.

5.3 Stakeholder consultation

46. The Commission services have discussed the implementation of Directives in the scope of the fitness check with stakeholders on an on-going basis, both via open public and targeted consultations taking place in different contexts.

47. Targeted consultations took place within the context of 2011 evaluation, 2012 impact assessment and 2014 fitness check exercises. The detailed results of these consultations are available in the corresponding support studies and are reflected in this fitness check. In addition, stakeholders have been informed about the on-going assessments on numerous occasions, in order to incentivise them to respond to the questionnaires, to express their views and to bring forward any relevant evidence. Such occasions include the regular meetings of the *Committee on Safe Seas and Prevention of Pollution from Ships* and the *Passenger Ship Safety Expert Group*, as well as ad-hoc meetings with national, industry and NGO representatives. A workshop dedicated to the fitness check results took place on 23 March 2015.[18]

48. An on-line public consultation was organised between 13 April and 5 July 2012. 48 contributions were received, mainly from national administrations, from organisations/associations representing shipowners, shipbuilders, equipment manufacturers and passengers as well as from individual companies such as shipbuilders and shipowners.[19] The public consultation phase was concluded with a stakeholder seminar on 4 September 2012. More recently, stakeholders had an opportunity to express their views in a recent open public consultation on the quality of EU shipping, namely as regards the adequacy of existing international and EU legislative framework on ship safety.[20]

5.4 Main conclusions of stakeholder consultations

49. In principle, stakeholders agreed that the passenger ship safety legislative framework is important in improving safety and facilitating a level playing field. However, it also became clear that the applicability of, and the relationship between, the international and EU safety standards for passenger ships is not very clear.

50. When questioning the added value of EU, or even national safety standards, in addition to international rules (primarily SOLAS), stakeholders have not necessarily recognised that: (a) SOLAS does not automatically apply to domestic shipping (voyages between the ports of the same country); (b) its standards may not be fully

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18 A summary of this workshop is included in annex 7

19 Results available at: http://ec.europa.eu/transport/modes/maritime/consultations/2012-07-05-passenger-ship-safety_en.htm

20 Results available at: http://ec.europa.eu/transport/media/consultations/2015-white-paper-2011-midterm-review_en.htm

adapted to or practicable in domestic voyages; and (c) the standards may not be implemented in a common manner.

51. More concretely, stakeholders highlighted a set of problems related to the varied implementation of the passenger ship safety legal framework, pointing to the complexity and the lack of clarity in a number of definitions and requirements, overlaps and outdated reporting requirements. A question has been raised regarding the proportionality and adequacy of safety requirements for small steel ships[21] and unintended consequences concerning ships outside the scope of the current legal framework. This has led to a demand to improve the current regulatory framework, with more proportionate and simpler rules thereby facilitating overall administration, enforcement and eliminating unnecessary costs.

52. Shipbuilders and industry (especially as regards smaller ships) emphasised that any review of EU legislative framework should not create further administration costs on top of costs created by already existing national and international legislation.

5.5 Steering group

53. The work on this fitness check was launched early 2014. A Passenger Ship Safety Inter-Service Steering Group (PSS ISG)[22] was set-up and met 4 times between April 2014 and June 2015. It has been consulted numerous times in between in writing.

5.6 Data analysis and judgment

5.6.1 Overall approach

54. The fitness check results from a combination of technical, legal and economic analysis.

55. The **legal analysis** performed by the Commission services assessed gaps, overlaps, inconsistencies and overall coherence of the legislative framework. This analysis has also fed into the economic analysis. In addition, the contractor carried out a comparison of national rules applicable to small non-steel ships and compliance costs assessments (e.g. costs to build a small steel ship according to current rules).

56. The **technical analysis** was mainly carried out by EMSA and addressed the following topics:

- *effectiveness and proportionality assessment for current technical requirements:*
- *safety issues and risk assessment;*
- *technical standards and safety procedures (e.g. current technical standards for small steel ships);*
- *navigation areas definition;*

[21] It was commented on by the UK, Finland, Sweden and Portugal that the safety requirements are in particular excessive and impractical for small ships (< 24m) and/or that for ships operating close to the shore separate requirements should be developed. See chapter 6.5.1.3

[22] DGs EMPL, GROW, RTD, JRC, JUST, ENV, MARE, LS and the SG were invited to the ISG meetings

- *exemptions/equivalencies/additional requirements;*
- *systems of certifications and inspections/surveys; and*
- *a comparative analysis of current rules with less or more stringent rules (e.g. SOLAS).*

57. The **economic analysis** was completed by the contractor with guidance and support from the Commission services and EMSA on technical issues.

- The contractor carried out an analysis of the responses received to the Member States' questionnaire. This covered the analysis of the following elements:
  - *Number of ships by Member State, type of ship (steel, non-steel, offshore (service) vessel), size of ships (>= 24m and <24m);*
  - *Number of passengers;*
  - *Number of ships by Member State per navigation area (A,B,C, and D);*
  - *Number of ships travelling nationally and internationally;*
  - *Number of ships transferred between Member States, changes of flag.*
- On the basis of the findings from the Member States questionnaire and from additional interviews and desk research, the contractor provided an analysis of the passenger ship market and an assessment of whether an internal market for domestic passenger ships exists.
- The contractor also carried out a cost-benefit analysis. This includes the assessment of regulatory costs under Directive 2009/45/EC, costs and benefits related to inspections and certification, costs and benefits for exemption and equivalency arrangements, costs related to the update procedure with international standards and potential savings from streamlining of the current framework.

5.6.2 Limitations to methodological approach

58. The external study carried out by the contractor has permitted the gathering for the first time of extensive quantitative data. It includes all data that could have been gathered in a reliable and proportionate manner at this point of time. Although the available data did not allow for the carrying out a fully-fledged cost-benefit analysis of every single regulatory requirement and the range of uncertainty is rather high[23], they are considered to provide an informative input to the fitness check analysis and a sufficient basis for the subsequent review and monitoring processes.

59. For example, the associations who participated could not always answer all questions, especially the ones where specific data were requested. Data about the domestic passenger traffic market for instance, is very specific and not available. A share of this analysis hence relied on a qualitative assessment.

[23] Given that many calculations depend on input gathered from the Member States and the range of these answers/cost estimations is often rather large. Furthermore assumptions had to be made on unit labour costs which also differ significantly between the EU Member States

60. In addition, the data collected via the questionnaires as regards the number of ships under various categories reported by Member States needed to be checked for quality and corrected accordingly.[24] Although these corrections were not significant in relative terms, they impacted on the absolute number of ships reported under a given category. For example, the number of small ships, i.e. below 24 m in length, was originally slightly over-reported and therefore corrected downwards. Some other minor corrections have been implemented (concerning, for example, wooden ships wrongly reported under the Directive) or the composite ships under the Directive, all of which being high-speed craft and not standard passenger ships. These corrections have been made by the Commission and EMSA on the basis of information available at the time of finalisation of this fitness check and are therefore not reflected in the support study by Tractebel.

61. Furthermore, the comparison between the ships outside and inside the scope of EU regulations, carried out in the support study, reflected regulatory costs only. Of course the choice of the ships building material affects construction costs and operating costs (aluminium ships might be somewhat more expensive than steel ships to construct but are lighter and therefore have lower fuel costs). These cost differences are not driven by regulations and could not be accounted for in this analysis (they are relevant though in the life-cycle analysis[25]).

62. The distinction between pure regulatory costs and costs due to the choice of building materials was not always clear. For some topics the distinction could be easily made (e.g. life-saving appliances), but for other topics the regulatory costs are part of the construction cost (e.g. fire insulation regulations, construction). Therefore the comparability between the rules set out in Directive 2009/45/EC and those in the national legislation is limited for some topics but higher for other topics.

5.6.3 Baseline

63. As regards the level of safety, it should be noted that the situation before the entry into force of the EU passenger ship safety legislation is not known. Neither the data on the domestic passenger fleet nor the accidents in domestic waters of Member States had been collected or recorded in a systematic manner at EU level. Furthermore, the desk research did not reveal any comparable data in other jurisdictions, such as Japan, South Korea, the U.S. or Canada. Therefore, wherever possible, a reference is made to the international standards and processes – which, although not fully comparable, provide a common denominator for both the EU and national legislative frameworks.

[24] It should be noted that this was the first occasion for the Member States to submit the database of ships that could have been checked against the provisions of Directive 2009/45/EC

[25] See chapter 6.2

6 IMPLEMENTATION STATE OF PLAY

6.1 Passenger ship safety: International, EU and national standards

64. The safety of passenger ships is regulated at three levels: International, EU and national.

65. For ships engaged in international voyages, including between two EU Member States, the SOLAS Convention is applicable. The SOLAS Convention is generally regarded as the most important of all international treaties concerning the safety of ships. Its first version was adopted in 1914, in response to the Titanic disaster. The main objective of SOLAS is to define minimum standards for the construction, equipment and operation of all kinds of ships (e.g. passenger, cargo, tankers etc.).

66. It should however be kept in mind that international standards have been developed with a certain purpose and cannot simply be transposed to passenger ships used for domestic voyages. Indeed, SOLAS 1974 standards have been developed for international voyages and maintain an internationally agreed safety level adapted to circumstances applicable to such voyages. These standards may therefore imply high costs with negative implications for a sustainable and competitive exploitation of passenger ships used only for domestic voyages.

67. For instance, SOLAS requires the application of the International Safety Management Code (ISM - SOLAS Chapter IX) and the International Ship and Port Security System (ISPS - SOLAS Chapter XI). Although these do not deal with construction or equipment but mainly with organisation of operations of ship and owner/operator, they could impose a heavy burden on smaller or medium sized shipowners/operators.[26]

68. SOLAS requirements are currently set out in a form of detailed, prescriptive safety standards. Although there is an on-going debate at IMO level about transforming SOLAS into a set of goal based requirements, it is likely to be a long lasting process that will advance only if it will sufficiently address concerns raised by a number of IMO members (see overview of pros and cons below).

[26] It should be noted that Regulation (EC) No 336/2006 which brings the ISM Code into EU law is not applicable to Class C & D ships

Table 7: Overview of pros and cons of goal based vs prescriptive ship safety standards

	PROs	CONs
Prescriptive safety standards (current approach)	• Requirements are clear and transparent for shipbuilders and -owners as well as for national authorities; • Implementation of requirements is the same which gives assurance on safety levels and contributes to a single market; • In principle, no further legislation or guidance necessary.	• Leaves less freedom to adjust to local circumstances, apart from the possibility for exemptions or equivalents; • Leaves less freedom for shipbuilders, provides certain limitations to radically innovative designs; • Necessitates regulatory updates.
Goal based standards (possible future approach)	• Leaves a degree of freedom to adjust for local circumstances, given that the same safety levels can be achieved in different ways; • Promotes radically innovative designs – as long as national administrations are able to verify that the required safety level is met; • No need for frequent regulatory updates.	• Differences in implementation and interpretation of safety standards, potential hurdles for the internal market; • High technical complexity, enforcement costs and uncertainty about the achieved safety level; • In the absence of closer link between shipowners, operators, passengers and national administrations, may lead to prescriptive rules anyhow.

Source: Commission, 2015

69. The **EU passenger ship safety legislation** has been principally modelled and shaped on the international requirements and in reaction to a number of major accidents (e.g. the accidents with the Herald of Free Enterprise, the Estonia[27]). On the basis of regional cooperation between national maritime administrations[28], the EU also introduced a system of port State control with the aim to eliminate, or at least to reduce the number of, ships sailing in EU waters which do not comply with stipulated EU and IMO convention requirements.

70. Given that ship safety is not a static concept but rather an area in continuous development, relevant regulations must be reviewed and updated in view of lessons learnt from accidents and of scientific and technical progress. Moreover, providing a common level of safety does not necessarily mean that all the safety standards should be identical for all passenger ships, but should be adapted to the level of risk of a navigation area and to the type of ship (i.e. passenger ship, ro-pax vessel, high speed craft) to ensure an equivalent level of safety.

71. Within the EU framework, Directive 2009/45/EC makes direct reference to SOLAS and the HSC Code in their up-to-date versions for Class A ships and the updating procedure for bringing across changes in the IMO texts into EU law is therefore automatic. However, international standards do not apply to ships of Class B, C and

27 See also EMSA's Maritime Accident Reviews and IMO's International Shipping Facts and Figures, 2012

28 The Paris Memorandum of Understanding, adopted in Paris on 26 January 1982

D engaging in domestic voyages only. The main differences between domestic ships and international ships are related to the limitations in navigation that domestic ships have. Full alignment with international standards may therefore not be appropriate.

72. In addition, the enforcement mechanism at the EU level, technical assistance and support provided by EMSA and applicable inspections and surveys play a key role in maintaining the desired high level of safety for passenger ships.

73. In this context, it can be also noted that the IMO, in the aftermath of accidents involving domestic passenger ships (for example the Sewol ferry in Korea in April 2014), has urged its members to develop and maintain technical safety standards for domestic passenger ships (i.e. where such do not exist yet). It pointed to the added value of regional (as compared to national) standards both from the perspective of administrative workload as well as enforcement. The EU passenger ship safety legislative framework may serve as a prime example of such regional legislation already in place.

Box 1: Excerpt from draft IMO guidelines for domestic passenger ships - Regional cooperation and port State control

> 11.1 The development and maintenance of technical safety regulations, applicable to ships that are not subject to the IMO and ILO international regulations, may also be carried out at a regional level. The development and maintenance of such regulations on a regional basis should result in common regulations that ease the workload of Administrations and provide a regional safety standard, acceptable to the participating countries.
>
> 11.2 Where such regional standards are in force, or where national regulations are mutually accepted between countries in the region, whether or not a regional agreement on port State control is in force, the control of non-convention ships would be easier and more effective. In the exercise of his/her functions, the Port State Control Officer could make reference to mutually acceptable requirements.

Source: IMO, 2015

74. Although there is no evidence of safety concerns with respect to passenger ships (or requirements) falling outside the scope of the EU rules, the existence of **different national standards** necessarily leads to differences in measures, approaches and interpretations, making the transfer of ships between EU registers a challenge[29].

75. To illustrate the differences in existing safety standards at national and EU level, a detailed comparison has been carried out for 4 reference countries[30]. While the comparison is relatively straightforward for same safety standards (such as life saving appliances and fire protection), it is more challenging for others (such as ship structure and construction). Bearing this limitation in mind, the national legislation in

29 See chapter 6.3.2 for more details

30 The reference countries were selected to represent the large part of the passenger ships in the EU/EEA and to have national legislation in place (e.g. for composite or aluminium ships where aluminium not considered equivalent to steel). The differences between the national legislation and Directive 2009/45/EC have been investigated. The reference countries are France, Spain, Greece, Italy and the United Kingdom. The analysis for Greece was limited to the main differences outlined by the Member State itself

the reference countries (representing the large part of the passenger ships in Europe) appears to be comparable to or less stringent than the EU safety standards.

76. More concretely, for those topics that could be compared quantitatively (i.e. life saving appliances, part of the fire safety measures), the national legislation proved to be somewhat less stringent (e.g. reduced life raft capacity, no automatic sprinkler required). For those topics that could be compared only qualitatively (i.e. construction and part of the fire safety measures), the national legislation was found to be often less detailed or leaving more room for exemptions.[31] These differences may not necessarily lead to different safety levels – as long as it is possible to 'compensate' them by additional measures tailored to local and geophysical conditions, such as navigation restrictions.

Box 2: Example of differences in national standards concerning fire safety measures

France: The requirements with regard to the insulation of bulkheads: Where A-level insulation is required, A-30 is sufficient (Directive 2009/45/EC prescribes A-60 insulation on many divisions in the ship). No sprinklers are required for larger ships; extra firefighter outfit is required also for small ships.

Italy and Spain: Insulation of bulkheads: Legislation refers to an outdated version of SOLAS (1988 and 1974 version respectively).

UK: The requirements with regard to the insulation of bulkheads: the UK legislation only mentions that A-level divisions are required between some rooms. The requirement for and automatic fire detection alarms is not mentioned neither so for sprinklers.

Source: Tractebel, 2015

77. It also needs to be recognised that developing and updating national standards requires a sufficient amount of resources and technical expertise available at national level. Otherwise there is a risk that standards would not keep track of new developments in the shipping industry and thus become outdated. This starts being apparent in some Member States where the safety standards are relatively old (see box above). National administrations may entrust the safety assessments and preparatory work to classification societies (as is currently the case for surveys and discussions at international level, to which classification societies extensively contribute).

78. It should be noted that since 1998, when the first EU safety standards for passenger ships sailing in domestic waters were introduced[32], several amendments have taken place in order to keep track with the improvement of technical requirements concerning safety rules and standards for passenger ships[33]. These amendments reflected the update of IMO Conventions, including for example the introduction of ISPS[34], ECDIS[35], Search and Rescue locating devices, life-boat release mechanisms

31 See chapter 6.2, for more details also annex 6 and Tractebel, 2015

32 Directive 98/18/EC of 17 March 1998

33 Amendments in 2003, 2009 and 2010, implying an update every 4 to 5 years on average

34 International Ship and Port Facility Security Code

35 Electronic Chart Display & Information System

etc. In practice, not all IMO amendments that have an impact on domestic passenger ships will have an impact on all Member States as each Member State has its own geographical characteristics or a different fleet composition.

79. The following table illustrates the differences in costs where the update of national legislation is done by every Member State individually. It is assumed that half of the amendments are applicable to each of the 28 Member States. Such update of national legislation entails a cost of ca. EUR 162.000 in total, which means that this procedure is more costly than a common update of standards at EU level.[36]

Table 8: Estimation of total cost for the update of EU vis-à-vis national standards

Receptor	Update of EU standards	Update of national standards
Preparatory work at IMO level	+/- 22.500 €	+/- 22.500 €
Assessment costs National administrations (28 Member States)	+/- 14.400 €	+/- 162.000 €
Assessment costs Commission	+/- 24.300 €	n.a.
Transposition costs	Idem	Idem
Other costs		• Increased risks of accidents and incidents • No uniform implementation (market inefficiency)
Total cost per update	**61.000 € + transposition costs per Member State**	**185.000 € + transposition costs per Member State + "Other costs"**

Source: Tractebel, 2015

6.2 Ship life cycle costs

80. Regulatory costs are only a part of the total construction and operational cost of a ship. In order to evaluate whether differences in regulatory costs for steel and non-steel ships are relevant for investors when making a choice between ordering a steel or a non-steel ship, it is necessary to place the regulatory costs in perspective with the life cycle cost of these ships.

81. The **cost structure** for a generic maritime cycle can be broken down as follows:

- Ship Acquisition Cost (CAPEX) such as Hull, Equipment, Machinery, Profit Margin, Labour, Extras.

[36] See annex 6 and Tractebel, 2015

- Ship Operation Costs (OPEX) such as Direct Operation (including Crew, Insurance, Supplies, Admin, Docking), Periodic Maintenance, Voyage (including Fuel, Tolls, Docking), Capital, Handling of Cargo, Ship Scrap Value.

82. Each of these high level costs entries can be further broken down in more detailed elements which mostly depend on the business model that the companies select for their business. In general terms the selection of the various possible options of basic ship dimensions, structure, type of equipment, number of crew, type of the service (including speed, turnaround time etc.) are the subject of a complex process which leads to a multi-criteria analysis aiming to maximize (or minimize) certain functions modelling the business. As a result, the capital and operational costs for all types of ships can range from EUR several millions to tens of millions (and in some cases up to hundreds).

83. It is also worth noting that the major entry in the operational costs is constituted by the costs for fuel, which out-weighs all the others, followed by crew and docking.

84. As regards the influence of **regulatory costs** related to the safety standards, a comparative analysis has been carried out for navigation, construction and stability, fire safety measures and life-saving appliances (LSA) requirements. Corresponding standards under the Directive 2009/45/EC and national legislation have been compared, to find out whether regulatory costs affect the choice between the construction and operation of a steel ship and a non-steel ship (i.e. aluminium and composite material such as glass-reinforced plastic).

85. The comparison that has been carried out for the reference countries[37] provides a good insight into the differences between EU requirements for steel and assimilated ships and national requirements for non-steel ships. However, it should be kept in mind that only some of these could have been quantified and monetised in a reliable and proportionate manner.

86. For the one-off compliance costs for fire safety measures and LSA, the national legislation tend to be less stringent so there is a cost reduction for non-steel ships that do not fall under the Directive compared with steel ships. For the one-off compliance cost with regard to ship construction the differences are more limited (national legislation is as stringent as or is only slightly less stringent than Directive 2009/45/EC).[38]

[37] I.e. ES, FR, IT and UK. Given that the reported information from Greece has not been validated, it is not reported here

[38] For more details, see annex 6 and Tractebel, 2015

Table 9: Example of comparison of costs for life-saving appliances

Compliance costs for life-saving appliances	Small ship: class B	Small ship: class C or D	Large ship: class B	Large ship: class C or D
Directive 2009/45/EC	80.000€	80.000€	139.000€	139.000€
National legislation for equivalent classes (average*)	44.000€	22.000€	93.000€	70.000€
Difference	36.000€	58.000€	46.000€	69.000€

Source: Tractebel, 2015

** Average for national legislation of France, Spain, Italy and the United Kingdom (Greece not included)*

87. When compared to the life-cycle cost of a domestic passenger ship[39], the difference in costs between building a ship according to a national legislation rather than to the standards of the EU Directive is negligible. Therefore it can be concluded that the impact of Directive 2009/45/EC on the life cycle cost, compared with national legislation is very limited. The choice between ordering, building and operating a ship in steel or other material is not significantly affected by the legislation in place and is primarily driven by the business model of the companies involved[40].

6.3 Market of domestic passenger ships

6.3.1 The EU domestic passenger fleet

88. According to the latest available data from Eurostat, about 120 million passengers were transported by domestic passenger ships at EU waters in 2012. The peak was achieved in 2008 with 140 million passengers and since then the tendency has decreased.

89. The passenger ship safety market can be segmented in different ways:

- Ships falling inside/outside the scope of EU passenger ship safety legislation;
- The type of ship (i.e. passenger ship, ro-ro passenger ship, high speed craft) and activity (i.e. regular or seasonal);
- The building material (steel, aluminium, composite or wood);
- The size of ship (>= or < 24m in length[41]); and
- The class of ship (according to sea areas A, B, C or D).

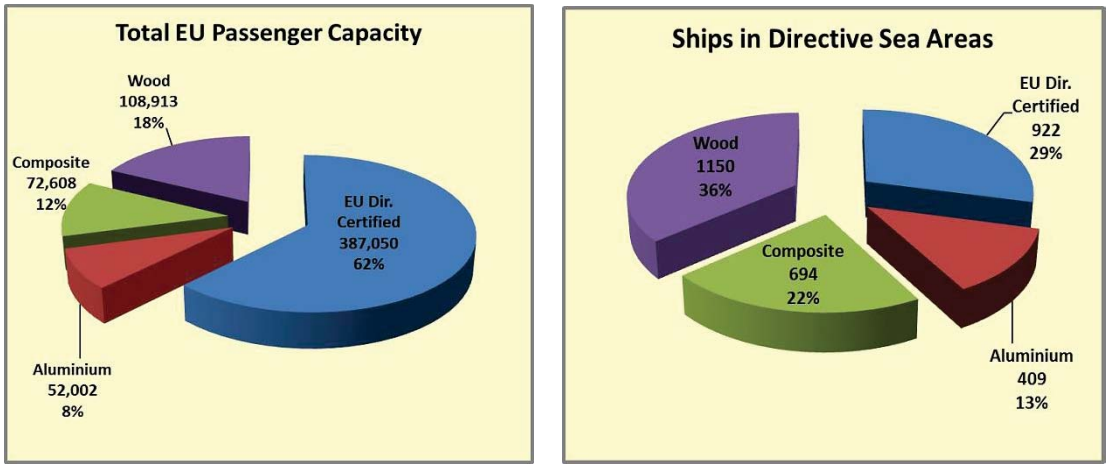
39 I.e. EUR several millions to tens (and in some cases up to hundreds) millions

40 Including, for example, the lower recurring fuel and maintenance costs (a.o. due to lighter material)

41 It should be noted that where the text refers to ships above 24 m in length, it should be read as above or equal 24 m in length

90. The EU domestic passenger fleet includes ships both within the scope of EU Directive 2009/45/EC and ships out of the scope. The so called "Directive" ships account for around 29% (922 passenger ships) in terms of number of ships, but above 60% of the total EU passenger capacity (around 380.000 passengers), meaning that the largest ships carrying the most passengers are certified according to the Directive:

Table 3: EU passenger capacity and ship material



Source: EU Member States, EMSA, 2014

91. In the second group, we find ships **outside the scope** of EU Directive 2009/45/EC due to the following main reasons:

- Existing ships of less than 24m: These ships (built before July 1998) account for around 105 ships[42].
- Area of operation: The ships operating exclusively in port areas as defined by Member States are out of the scope of the Directive. Around 900 ships are in this situation.
- Construction material: The Directive applies to ships built of steel or equivalent material. Therefore, out of the ships navigating in the sea areas included in the scope of the Directive, a large proportion (71%) is not certified according to it due to the construction material (aluminium, composite and wood).

92. In terms of **type of activity**, there is a clear seasonality in the traffic where practically 70% of the passengers are transported during the summer period (i.e. second and third quarter of the year) and 30% in the winter period. This means that the main concentration of the activity is in the period where good weather conditions are more frequent and where the proportion of daylight and good visibility conditions is higher.

[42] See annex 9 for more details

93. About 50% of the domestic passenger ships under Directive 2009/45/EC are **ro-ro passenger ships,** representing about 70% of the passenger capacity. These ro-ro passenger ships generally provide regular services[43]. The distribution of ro-ro passenger ships per Classes (i.e. sea areas) is described in the following table.

Table 4: Ro-ro passenger ships under Directive 2009/45/EC

	No. Ships	Passenger Capacity	% of Class Category	% of Passenger Capacity
Class A	66	88,738	96%	96%
Class B	96	62,727	57%	78%
Class C	107	46,004	41%	56%
Class D	144	48,428	53%	66%
HSC	39	22,830	26%	39%
TOTAL	**452**	**268,727**	**49%**	**69%**

Source: EU Member States, EMSA, 2014

94. In terms of **geographical distribution**, 80% of the traffic and 75% of the fleet is concentrated in the Mediterranean basin (only 45% certified under the Directive). The Channel and North Sea area and the Baltic Sea share the rest of the passenger traffic with 10% each approximately. Whereas the traffic in the Mediterranean area presents a high seasonality with high peaks in the summer period, the traffic in the Northern European area presents a more regular pattern throughout the year.

95. Two Member States, Italy and Greece, possess 55% of the EU domestic passenger traffic. In Northern Europe the UK, Denmark and Germany are the States with the highest traffic.

96. In terms of **turnover**, it is more difficult to provide an accurate figure as the aggregated figures for domestic fleet only are not readily available. Only an approximation was made by extrapolating data available from 2 shipowners providing a result of an annual turnover of EUR 6.000 million[44]. Another estimate is available from the recent EMSA 3 study[45], indicating a turnover of EUR 50.000 (about EUR 45.000) per passenger/year for ships with more than 80m and 1.000GT. Taking this value and extrapolating to small ships with proportionate lower values, the turnover would be around EUR 20.000 million. Therefore, with the data available, the best approximation that can be made to the market value of the domestic passenger ships in the EU would be between EUR 6 and EUR 20 billion of annual turnover.

97. Some 361 **ship owners** have ships under Directive 2009/45/EC. It is worth noting that most of these ship owners (72%) only own one domestic passenger ship. Greece (with about 100 ship owners) is the Member State that has by far the largest number

[43] I.e. services according to a published timetable or with crossings so regular or frequent that they constitute a recognisable systematic series. See Article 2, Directive 1999/35/EC

[44] See annex 9

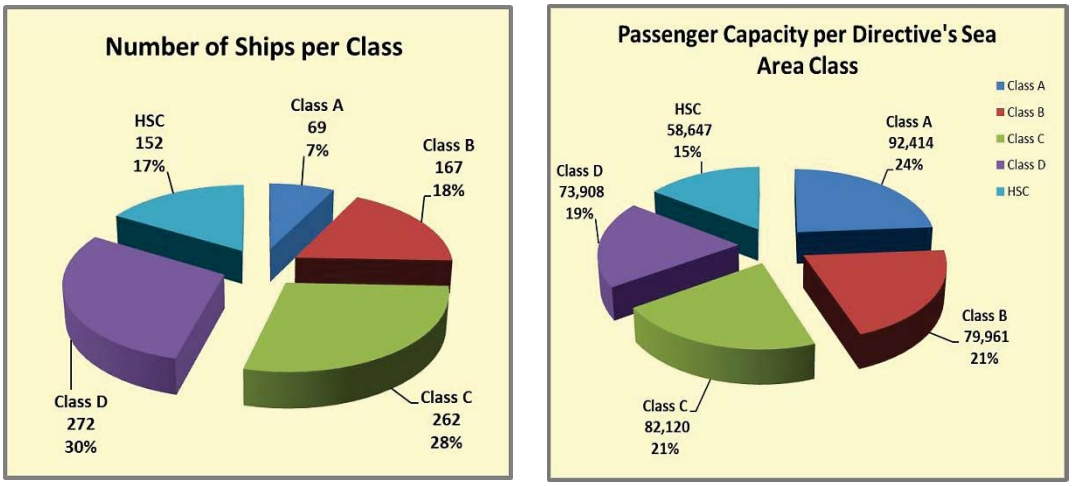
[45] See annex 3 for more details on the EMSA 3 study

of ship owners. The employment created by these ship owners was estimated in 24.014 FTEs[46].

98. With regard to the **size of the ships**, as already indicated above, the largest ships are certified according to the Directive: 92% of the 922 passenger ships covered at present by Directive are ships of >= 24m length. On the other hand, the proportion of passenger ships out of the scope of the Directive due to the construction material of > 24m length is approximately 16%.

99. Figure below shows the distribution of the ships that fall in the scope of the Directive 2009/45/EC per **Sea Area** both in terms of passenger capacity and number of ships. As expected, Class A ships that account only for 7% of the total in number of ships carry 24% of the passenger capacity. Class C&D ships that account for 58% of the ships have a combined capacity of 40% of the total.

Table 5: Number of Directive ships and passenger capacity per sea areas



Source: EU Member States, EMSA, 2014

6.3.2 EU internal market

100. The main cross-border transactions identified include the changes of flag, passenger ships operating in Member States other than the state of registry and the passenger ships built in one Member State and operated in another.[47]

101. The "**changes of flag**" indicator reflects the (lack of) internal barriers in changing the state of registry where a domestic passenger ship operates. A ship certified according to the Directive should be accepted in another EU State without requests for modification. So far, only three Member States (Croatia, Ireland and the UK) have refused to recognise Directive 2009/45/EC certificates issued by another Member States. However, this has not been a systematic refusal but rather on a case-by-case

46 See annex 9

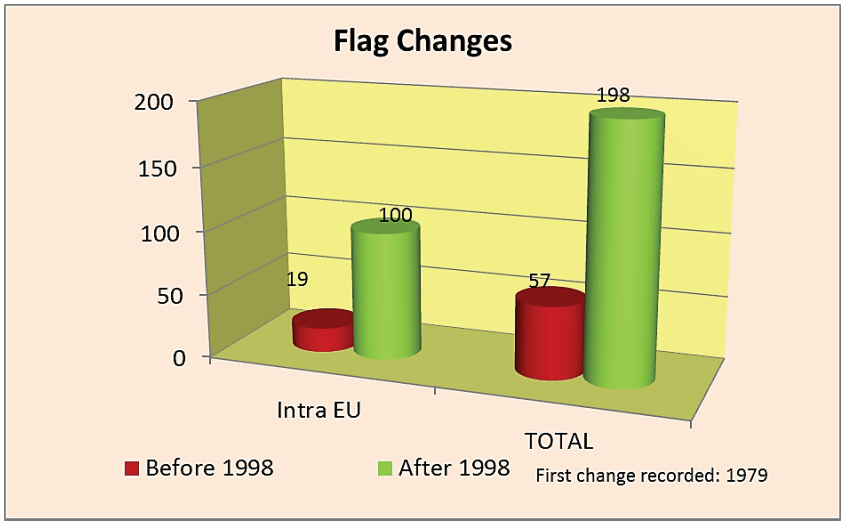
47 See annex 2 for more details

basis relating to specific circumstances of individual ships and the exemptions that could apply thereto.

102. In case the ship is not certified according to the Directive, mutual recognition should, in principle, apply.[48] In practice, however, every ship is close to being a prototype, i.e. built for a specific purpose according to technical specifications determined by its future owner. In the absence of harmonised safety standards, the ship needs to be therefore carefully checked against relevant national standards and in case of differences in safety requirements, the ship would need to be modified and re-certified – with the associated additional costs that this would imply. In addition, the shipowner is likely to lose profit due to the unavoidable delays that such a check and modification would take.

103. Accordingly, it can be assumed that the common standards of Directive 2009/45/EC facilitate the cross-border movement of ships. Data available demonstrates that after the entry into force of the Directive, change of flag (intra EU Member States), increased by 400% (19 changes of flag in the period 1979-1998, and 100 in the period 1998-2014). While acknowledging that there could be other reasons for this increase[49], the entry into force of the predecessor of Directive 2009/45/EC in 1998[50] certainly contributed in a positive way to this indicator:

Figure 2: Flag changes of Directive passenger ships before and after 1998



Source: EMSA based on MARINFO, 2015

48 See Regulation 789/2004 on the transfer of cargo and passenger ships between registers within the Community

49 Flag changes in domestic markets relate to the country of operation, so typically when a ship built to operate on a domestic route changes country of operation it changes flag as well. Change of flag in this way means that the vessel is exempt from port State control. Commercial reasons can also play a role, the ship owner is usually a local company, a flag transfer may improve the competitiveness of the ship owner on the market; this can be open up the possibilities of a more favourable fiscal regime (e.g. tonnage tax); the acquisition of a more favourable social security system for the crew; leading to a cheaper crew, better conditions in ports; lower registration costs; etc.

50 I.e. Directive 98/18/EC of which Directive 2009/45/EC is a recast

104. It must also be considered that a ship is a multi-million investment which takes years to pay off and the value of a ship is still relevant also for an ageing fleet (average age of the domestic passenger fleet is 27 years) taking into account that in shipping discount rates are calculated on life cycle of 25 years). Therefore, 100 ships flag changes (slightly more than 10% of the EU fleet) in 16 years of the Directive's existence represent a significant value.

105. It is very important to note that practically no flag change has been registered for ships of less than 24m in length under the Directive (only 1 so far). Despite that there is nothing to stop such ships from changing the flag, there appears to be no appetite to do so for this kind of ships: they are operated in the same Member State until the end of their operational life.

106. The information on flag changes of ships falling outside the scope of the Directive is not available. These ships are in general small (<24m in length) and commercial databases do not in general cover ships of this size.

107. With regard to the second indicator, number of ships operating domestically in a State different from their flag (i.e. **cabotage**), there are only 11 ships in this situation in the EU. Although there is no restriction in the Member State of the flag that a ship must fly, it may be more attractive for an operator to choose the same flag as the State in which it operates[51].

108. And finally, as a third indicator, **ship-building**. The number of shipyards that have built domestic passenger ships under Directive 2009/45/EC is highest in Norway - followed by Germany, Italy and Greece. Between 1999-2006, there has been a slight increase of new orders of domestic passenger ships compared to the previous period, with new orders increase of 28%. After that period, the economic crisis had an impact on the ship building market: 75 less ships were built in the 7 year period between 2007 and 2014 compared to the preceding 7 years.

109. Ship operators can choose to buy ships in any of the Member States or third countries with ship-building industry, in function of their own criteria, e.g. where the expertise and price are best for the type of ships they want to buy. As regards the ship building market for ships falling within the scope of Directive 2009/45/EC, about 20% of the passenger ships have been built in another Member State than that where it operates and 13% are imported from outside Europe.

110. As regards ships outside the scope of the Directive, statistics is not available due to the previously mentioned reasons (i.e. small size ships not included in commercial databases). However, on the basis of interviews with shipyards, it is not clear whether harmonised standard rules have any (significant) impact on the construction costs. As the analysis has shown, regulatory costs represent a very limited fraction compared to the total construction, operation and maintenance costs.

111. On the other hand, for example shipyards in Portugal and Denmark consider that a comprehensive (common) legislative framework with the same set of (clear and

[51] See footnote 49 for other factors involved

sufficiently detailed) rules/standards at European level for non-Directive ships would be positive for an internal market[52].

6.4 Safety issues and accidents

112. The European Marine Casualty Information Platform (EMCIP), the EU database on maritime accidents established by Directive 2009/18/EC and operated on behalf of the Commission by EMSA, categorises accidents in four categories according to the severity classification occurrence established by the IMO: very serious, serious, less serious and marine incidents. It is however important to note that EMCIP database was established only recently; the number of years for which data is available in EMCIP is therefore still rather limited and in order to have a more solid comparison more years of EMCIP statistics would be needed. Furthermore, given the novelty of the system, accidents and incidents (in particular less serious accidents and incidents) may have been under-reported in the first years of its operation, namely 2011 and 2012.

113. 408 accidents in total have been registered for the domestic passenger ships falling under Directive 2009/45/EC during the last 4 years[53]. 223 vessels were concerned: this represents 24% of the domestic passenger ships falling under Directive 2009/45/EC. It should be also noted that only 1 out of the 74 ships with a length <24m certified under the Directive had an accident in the same period.

114. With regard to fatalities, 3 out of 408 accidents resulted in fatalities: in total 4 fatalities (one passenger and three crew-members) have been recorded in the past 4 years. In total 179 injured persons are recorded (of which 48 are passengers) in 154 accidents over the same period.[54]

115. Loss of control (propulsion, or electrical, or directional), grounding/stranding, contact, collision, or a combination of these factors are the main types of causes of the occurring accidents. About 80% of the accidents involve ro-ro passenger ships, with Class B ro-ro passenger ships the ones with the highest accident frequency: 36% of the total number of accidents happened on these ships (whereas they represent 10% of the fleet).

116. About 30% of the accidents are located in the Mediterranean Sea, around 50% in the Atlantic Coast and Channel and 20% in the Baltic Sea. Despite the fact that passenger traffic is considerably higher in the Mediterranean, the number of accidents is lower. This could be attributed to the less severe weather conditions in the south of Europe.

117. With regard to small domestic passenger ships outside the scope of the Directive (i.e. below 24 m in length), 252 accidents are recorded in EMCIP. For this group of ships,

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52 For more details, see Tractebel, 2015

53 Out of which 55 very serious accidents and serious accidents; 52 vessels were concerned, representing 6% of the domestic passenger ships falling under Directive 2009/45/EC. Definition of type of accident according to Directive 2009/18/EC Art 3(1), 3(2) and 3(3)

54 These statistics do not include the Costa Concordia and the Norman Atlantic casualties as these relate to ships engaged in international voyages (and therefore not falling under safety requirements harmonised by Directive 2009/45/EC)

139 injured people (93 passengers) and 5 fatalities (all of them in occupational accidents) have been recorded. This means approximately 2 fatalities (all occupational) every 100 accidents and 1 person injured every 2 accidents. Comparing with the fleet certified according to the Directive, the frequency of accidents is lower, the average number of injured people per accident is similar and the number of fatalities per accident is higher, although all of them are related to occupational accidents and refer to a relatively small period of time.[55]

118. With regard to ships above 24m outside the scope of the Directive, the following records are available:

- For aluminium ships, 5 accidents are recorded involving 4 ships (3% of the aluminium fleet >24m) with 5 injured people (all of them in occupational accidents).
- For composite ships, 12 accidents are recorded involving 8 ships (7% of the composite fleet >24m) with 3 injured people (1 of them in occupational accidents).
- For wooden ships, 13 accidents are recorded involving 10 ships (7% of the wood fleet >24m) with 2 injured people (both in occupational accidents).

All this is summarised in the table below:

Table 6: Accidents of EU domestic passenger ships

	N. Accid.	N. Ships w/ Accid.	Injured	Fatalities	N. Accid. >24m	N. Accid.<24 m	%Fatal. Occupati onal	% Injured Occupati onal
Directive ships	408	223	179	4	407	1	25%	67%
Non-Directive ships total	282	231	149 (139<24m)	5 (all <24m)	30	252	100%	69%
Sub-total Wood non-Directive	53	44	7	1	13	40	100%	100%
Sub-Total Composite non-Directive	40	27	9	1	12	28	100%	56%
Sub-Total Aluminium non-Directive	17	15	25	0	5	12	100%	100%
Sub-Total Areas out of Directive (e.g. Port)	172	145	108	3	Unknown	172	100%	19%

Source: EMSA on the basis of EMCIP data, 2015

55 However, it must be noted that the number of fatalities is so low that the increase of one fatality in one of the two fleets compared would completely alter the analysis

119. As can be seen, while the number and percentage of ships with accidents is much lower for ships outside the scope of the Directive, the number of injured and fatalities is similar, meaning that the consequences of the accidents are worse. However, it is worth mentioning that the maximum length of the ships above 24m for the ships certified outside the scope of the Directive is around 38m whereas for the ships certified under the Directive the maximum length is above 200m and the average around 75m. Therefore, the ships outside of the Directive are considerably smaller. These ships are usually outside the scope of the ISM code[56] and therefore it is very likely that only the accidents with severe consequences are reported and recorded leaving the less severe ones unreported.

120. It is also remarkable that ships operating in the port areas are the ones affecting negatively in a significant way the statistics for the non-Directive ships. The fatalities in these ships are mainly related to disembarkment of people from a ship to a port launch, not directly related to the safety standards of the Directive. Furthermore, as shown in annex 3, the percentage of serious/very serious accidents in the domestic passenger fleet is lower than the percentage for the whole passenger fleet (domestic + international) recorded at EMCIP. This seems to imply that the accidents for domestic ships are in general less severe than for international passenger ships.

121. Available data for other states, such as Japan, Canada, Australia and the USA do not differentiate in terms of domestic passenger ships. Only Japan has comparable data from 1989 to 2004. The statistics show the number of marine accidents involving domestic passenger ships vs number of passengers per kilometre. However, as the data is only accessible in a graphic format and without a proper scale, the real data of passenger per kilometre cannot be extracted. The number of fatalities is aggregated for domestic cargo, passenger and tankers, and therefore it is not possible to attribute the exact number of fatalities to domestic passenger ships. This source also simply attributes 86% of the accidents to human factor and the remaining 16% to "unavoidable circumstances, etc."

122. Considering that the number of passengers transported in the same period is about 420 million, and taking into account the average number of hours that a passenger is on board a ship[57], the individual **risk per passenger hour** is approximately between 6.75E-9 and 10.8E-9, which is similar or lower when compared to other transport modes (per passenger hour): 32E-9 in passenger car, 6E-9 for bus/coach, 10E-9 for rail, 45E-9 for air and between 16E-9 and 46E-9 for international passenger ships. With regard to risk per km, the air mode is however considerably 'safer' due to the higher speed/distances travelled achieved.

123. Other risk measurements are related to the accident frequency and potential loss of lives (PLL). Comparisons with the international passenger fleet[58] show that although the frequency of accidents for the EU domestic fleet is higher than the international

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56 I.e. International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management or ISM Code). It is part of the SOLAS Convention and has as its objective the establishment of a management system in shipping companies to ensure the safe operation of ships and the prevention of pollution

57 According to the EMSA 3 study for comparable ships. See annex 3 for more details

58 See annex 3 for detailed results

fleet, the consequences of accidents are less intense in terms of PLL (even with the conservative approach on injured people). This is consistent with the results of the direct comparison on severity of accidents using EMCIP data. The accident frequency can be higher considering that the ships of the domestic fleet are trading in general closer to shore than the international fleet. In the coastal areas the traffic is more intense and there are more shallow waters where grounding can occur.

6.5 Implementation of the EU passenger ship safety legislation: Issues

124. For practical reasons, and reasons of clarity, the key implementation issues analysed in this section are presented Directive by Directive. Other, less substantial issues are described in annex 4. Having said that, the links and relations between the Directives are explored where relevant. This should ease the understanding of requirements and their evaluation against the specific objectives set in each of the Directives under the fitness check mandate. The overall conclusions and recommendations follow in chapters 8 and 9.

6.5.1 Directive 2009/45/EC

Objectives and their relevance

The main objectives of this Directive are:

1. to introduce a uniform level of safety of life and property on new and existing passenger ships and high-speed passenger craft, when both categories of ships and craft are engaged on domestic voyages, and
2. to lay down procedures for negotiation at international level with a view to a harmonisation of the rules for passenger ships engaged on international voyages.

125. Both objectives remain highly relevant. Persons travelling on passenger ships and high speed passenger craft on domestic voyages throughout the EU have the right to expect and to rely on an appropriate level of safety on board. At the same time, harmonised safety standards allow to remove barriers to trade in the intra-EU transport of passengers.

126. The Directive has been largely implemented and has brought about a common high safety level across the EU (namely vis-à-vis international passenger transport) and important internal market benefits[59]. On the other hand, it has also given rise to a number of questions as regards the clarity and adequacy of some of its definitions, scope and procedures. With the exception of stakeholders arguing against the need for common safety standards in the EU[60], the key principles and added value of the Directive have not been questioned.

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59 See chapter 6.3.2

60 The notable exception is France. In its reply to the questionnaire, it indicated that there is a compelling need to revoke this Directive. In addition, some of the interviewed shipowners/shipyards (in DK, ES IT) plead for an application of international or national standards only. See Tractebel, 2015

127. More details on the procedures, i.e. update of the technical Annex and the exemption/equivalencies, as well as unclear definitions related to various types of ships (ranging from high speed craft to offshore service vessels and traditional vessels) can be found in annex 4.

128. Similarly for the second objective, it remains of key importance to strive for an adequate safety level on international voyages and, thereby, minimise to the extent possible a need for additional EU safety standards. The principles and procedures for negotiation at international level, as regards the positions to be taken on behalf of the EU bodies set up by international agreements, have been more generally defined in the Treaty on the Functioning of the European Union. Their application to IMO coordination specifically is currently being reviewed by the Commission together with Member States. This review also includes the so-called informal coordination process based on technical coordination concerning issues still in the preparatory phase at the IMO and those that will not have an effect on EU legislation.

129. As explained in chapter 6.3, the European passenger ship fleet accounts for vessels trading in sea areas A, B, C and D[61]. Such vessels are built in four different materials: (1) steel, (2) aluminium, (3) composite and (4) wood.[62] It is also important to note that HSC operating domestically are included in the scope of the Directive independently of the construction material.

130. **Domestic passenger steel built ships** fall under the scope of the Directive 2009/45/EC. Steel built ships are all included in the fleet of 922 ships which carry a Directive (or HSC) certificate. Pure steel ships accounts for 742 of this fleet (including one built in iron).

Table 10: Domestic passenger steel built ships

	< 24 m	>= 24 m	Total
N. of ships	60	682	742
% N. of ships	8%	92%	100%
Passenger capacity	6,893	320,555	327,448
% Passenger capacity	2%	98%	100%

Source: EU Member States, EMSA, 2014

6.5.1.1 Uneven implementation: Aluminium built ships

131. **Aluminium built ships** in principle fall under the scope of the Directive 2009/45/EC. Aluminium, although it is a metal, is less resistant to fire than steel (i.e. it loses structural integrity at lower temperatures than steel) and needs to be therefore additionally insulated in order to become fire resistant. This obviously necessitates

61 As defined by Directive 2009/45/EC

62 See annex 9 for more details

additional investment in comparison to steel – but brings another, over the life time of a ship more substantial, benefit in operating a lighter, more fuel efficient and corrosion resistant ship[63].

132. Aluminium is the only material that is explicitly mentioned in the Directive as being equivalent to steel (i.e. not by itself but due to insulation provided):

"Where the words 'steel or other equivalent material' occur, 'equivalent material' means any non-combustible material which, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of the applicable exposure to the standard fire test (e.g. aluminium alloy with appropriate insulation)."

133. Correspondingly, the Directive (as well as SOLAS) defines the applicable fire insulation standards.[64] It should be noted that these standards are designed for aluminium and cannot be applied to other, non-metallic materials (such as composite).

134. The large majority of Member States (16) consider ships made of aluminium equivalent to steel and consequently within the scope of Directive (and certified accordingly). However, there are Member States (notably France) that do not apply the Directive in the same manner and do not consider aluminium equivalent to steel. In its reply to the targeted consultation, France indicated that it does not consider the Directive´s (and SOLAS) aluminium fire insulation standards realistic[65]. Such difference in interpretation, at least for the ships above 24 m in length, seems to be primarily related to the definition of spaces which should be additionally fire insulated.

135. Total passenger capacity for the aluminium built ships fleet is overall greater than 100.000 passengers, with about 80% of capacity concentrated in vessels above 24 m. In terms of number of ship (559 in total), 50% are above 24m and 50% below 24 m.

136. EU passenger ships, made of aluminium and not covered by the Directive, represent 9% of the overall EU domestic fleet and 70% are small ships (<24m). France has by far the largest share in terms of number of ships (60%) and about 30% of the passenger capacity, which is distributed both in European continental waters and in overseas territories. The table below presents the aluminium built ships for which the Member States have not issued a Directive 2009/45/EC certificate (409 vessels in total).

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63 It is therefore unlikely that the decision regarding the material from which the ship is built is driven by the differences in applicable safety standards. See also chapter 6.2 and annex 6

64 In such cases, the 'applicable fire exposure' shall be followed accordingly to the integrity and insulation standards given in the tables of Annex I, Chapter II-2/B/4 and 5. To be noted that there is a small inconsistency in the Directive that requires crowns and casings to be built in steel (which, in fact, does not need to be the case)

65 The French national rules include fire-insulation requirements in similar areas as the Directive, such as the bulkheads of the engine room, but with less stringent requirements (e.g. A-30 vs A-60 in the Directive). The numbers 30 and 60 indicate the time in minutes that the relevant bulkhead must keep its structural integrity before it collapses in case of fire in order to provide time for ship evacuation

Table 11: Domestic passenger aluminium built ships outside the Directive carrying national certificate (i.e. excluding HSC[66])

	< 24 m	>= 24 m	Totals
N. of ships	280	129	409
% N. of ships	18	82	100
Passenger capacity	20,665	31,337	52,002
% Passenger capacity	40	60	100

Source: EU Member States, EMSA, 2014

137. In comparison, aluminium built ships for which the Member States have issued a Directive 2009/45/EC certificate account for 150 vessels out of which nearly 80% holds a HSC certificates (i.e. different safety standards apply). Italy has the largest share of these vessels, followed by Spain and Greece. It is worth noting that all vessels are above 24 m in length[67].

138. This leads to an uneven situation where one part of the fleet is certified under the Directive while another part of the same fleet is not (albeit a bigger one). Around 30 aluminium built non-HSC passenger ships above 24 m in length have been certified according to the Directive, while another 129 have not. This illustrates the scope for enhancing the effectiveness of the Directive in ensuring a common safety level and a level playing field.

6.5.1.2 Outside scope: Composite and wood built ships

139. **Composite built ships** are a relevant category in the fleet.[68] They are reported by the Member States with several material denominations, such as composite, GRP, glass/epoxy or plastic which, however, all fall under the composite material classification. Composite material (similarly to aluminium) is being increasingly used as an alternative, lighter and more fuel efficient option to steel, albeit primarily for smaller ships and high-speed craft.

140. All the composite built vessels (15) certified under the Directive 2009/45/EC are HSC, 12 of them are Norwegian with a combined passenger capacity of 3500. Therefore the table analysis is carried out only with regard to composite built ships which do not fall under the Directive 2009/45/EC.

66 The only HSC build in aluminium and out of the Directive operate outside of European waters, in French overseas territories such as West Africa, New Caledonia etc.

67 See annex 9 for more details

68 These ships carry about 12% of the total passenger capacity

Table 12: Domestic passenger composite built ships outside the Directive

	< 24 m	>= 24 m	Totals
N. of ships	589	105	694
% N. of ships	85	15	100
Passenger capacity	52,837	19,831	72,668
% Passenger capacity	73	27	100

Source: EU Member States, EMSA, 2014

141. All Member States consider composite materials as not equivalent to steel[69]. Some Member States, notably DK and SE, highlighted a possible benefit of developing harmonised standards for these ships at EU level.

142. However, it should be noted that non-metallic materials are combustible and besides different structural characteristics[70], they have considerably different fire resistance behaviour from both steel and aluminium. Consequently, such materials would necessitate a different set of safety standards regarding the structural fire protection, the adaptation thereto of the ventilation systems and the penetrations through bulkheads. This is one of the reasons why, at international level, the standards for composite ships are being developed very slowly. Currently, it is not possible to build an international passenger ship entirely in composite material unless it is a HSC.

143. At EU level, there are already 694 composite built passenger ships in operation (15% of them >=24m in length). These ships were built according to existing national standards. Earlier findings concluded that national legislation in some Member States is less stringent as regards fire safety than the current Directive – fire insulation requirements being the key difference in safety provisions concerning combustible materials such as composite.[71]

144. Further consultation with national administrations and technical assessment would be therefore needed to understand the reasons behind the lower level of fire-insulation required for these ships[72], as well as the need for and the feasibility of developing common standards at EU level.

145. **Wood built ships** account for around 36% of the total fleet in terms of number of vessels, however in terms of passenger capacity the percentage falls to 18% of the total share. Table below characterises the wood built fleet:

69 It has been clarified that those Member States replying to this question positively in the fitness check questionnaire had in mind HSC rather than standard passenger ships

70 Currently standardised by classification societies, see Art 6(a) of Directive 2009/45/EC

71 See annex 6 and Tractebel, 2015

72 In comparison, for example, to fire standards of Directive 2009/45/EC

Table 13: Domestic passenger wood built ships outside the Directive

	< 24 m	>= 24 m	Totals
N. of Ships	1014	136	1150
% N. of Ships	88	12	100
Pax Capacity	77,004	31,909	108,913
% Pax Capacity	71	29	100

Source: EU Member States, EMSA, 2014

146. All Member States consider wood as not equivalent to steel. Unlike for the composite products, none of the Member States has so far raised a need for harmonising the corresponding EU safety standards. However, in its reply to the questionnaire, Italy (with the largest wood built fleet) considered necessary to close the gap between ships covered by Directive 2009/45/EC and ships built from other materials.[73] Potential internal market benefits could be also argued. In addition, similarly to composite built ships, further consultation with national administrations and technical assessment as regards the adequacy of existing fire insulation standards would be needed.

6.5.1.3 Inadequate scope: Ships of less than 24m in length

147. The limit between small and large ships is set at 24 m in length. It is based on the IMO International Convention on Load Lines (ICLL) that remains considered the most appropriate in defining commonly applicable technical safety standards for passenger ships[74]. The ICLL establishes, amongst other things, the minimum freeboard (buoyancy reserve) that a ship must have, which is a key safety issue. The reserve of buoyancy and the other ICLL-related parameters for these ships are determined by flag administrations taking into account different considerations, including the prevailing conditions in the area where the ship will operate.

148. Currently, small ships are only partially covered by the Directive – several key safety aspects have not been harmonised. This reflects the fact that these ships are more sensitive to local operational conditions especially in view of the limited freeboard. Member States are therefore in a better position to assess the limitations of navigation for these ships in terms of distance to coast or port and weather conditions. The main regulations that do not apply to new ships of less than 24m are: (a) intact stability – a key safety element; (b) watertight doors; and (c) means of escape.

149. The Directive also gives Member States the flexibility to apply national rules when they find the harmonised standards for small ships impracticable and/or unreasonable. This is the case for requirements related to double bottom, bilge pumps, communication means with bridge, engineer's alarm, and all the

73 Tractebel, 2015

74 With the exception of France that suggested replacing the limit of length with the limit applicable to cargo vessels, i.e. gross tonnage (namely 500 UMS)

requirements related to unattended machinery spaces. The assessment of the practicability and/or reasonability is left to the discretion of the administration.

150. For example, while one Member State may conclude that a double bottom is necessary, another one may conclude the contrary. This will depend on the type of service that the ship is going to provide, in which area and in which time of the year.

151. In any case, Member States must develop and maintain a number of regulations related to ships of less than 24m. This situation does not only create a double layer of legislation for these ships, it also puts into question the need for, and value added of, keeping the ships below 24 m in length within the scope of the Directive. Moreover, given that small ships are built mainly from materials other than steel, the vast majority (96%) of the fleet is currently not covered by the harmonised EU safety standards. This implies that most of vessels below 24 m are already certified under national legislation.

152. Some Member States (e.g. Denmark, Portugal, Sweden, Croatia) highlighted that for vessels below 24m in length it could be considered to develop a Guideline or Code for small vessels containing only high level requirements as part of a Goal Based Standard framework. It should be noted that in the past, the Commission made an attempt to develop a Small Craft Code in cooperation with Member States. For the duration of the fitness check, this process has been put on hold.

153. More generally, it became obvious that the absolute majority of Member States consider that all ships below 24 m should be treated in the same manner - irrespectively of the material from which they are built. It became also clear that the wide range of services that these vessels are built for (daily or overnight passages, touristic daily cruising, calling to ports with specific constrains such as draft and length or with specific infrastructures, etc.) produces a very broad range of designs and technical solutions which make identifying a common set of detailed rules fitting such a variety of services for smaller vessels extremely challenging.

154. In terms of accidents, EMCIP shows that only 1 out of the 72 ships with a length of less than 24m certified under the Directive had an accident in the last 4 years. On the other hand, it also shows 252 accidents for the ships <24m certified according to national rules (in total ca. 1880) with 5 fatalities (all of them in occupational accidents) and 139 injured (being 93 passengers).

155. Although these numbers appear to be worse for the ships certified according to national rules, it must be noted that they are comparable with the levels seen on ships certified according to the Directive of more than 24m. Rather than concluding that the number of accidents is too high for national ships of less than 24m, it would seem that the accidents has so far been exceptionally low for ships of less than 24m certified in the Directive (risk is practically 0 with a pure theoretical calculation).

156. From an internal market perspective, the added value of the Directive has been very limited. Unlike for the bigger ships, only 1 out of 72 small ships certified under the Directive changed flag and only 4 ships have been built in a Member State different from the one where they operate. It can be also highlighted that small non-steel ships, like small steel ships, are primarily operated by SMEs and microenterprises.

6.5.1.4 Complex definition of sea areas for non-HSC

157. The Directive classifies the passenger ships in four different classes according to certain parameters of the sea areas where they can operate, mainly:

(1) significant wave height AND
(2) distance to coast where shipwrecked persons can land AND
(3) distance to a place of refuge.

158. The concept behind this classification is that the limitation in one or more of these parameters modifies the risk level to which the ship is subject to and, therefore, the associated rules for each ship class should be adapted in order to be proportionate to the risk level of the sea area.

159. In this respect, Class A ships, which do not have any limitation with regard to the sea area where they can operate, have different safety requirements to Class B ships, with sea area of operation limited in terms of distance to coast (20 miles). In the same way, the sea area where Class C ships can operate has, in addition to a distance to coast limit (5 miles), a limit of the significant wave height (2.5m) and a limit in the distance to a place of refuge (15 miles). Similarly for Class D ships where the sea area is limited by distance to coast (3 miles), significant wave height (1.5m) and distance to a place of refuge (6 miles).

160. All these parameters mean that the definition of the sea areas is rather complex, especially for Classes C and D. Member States have to calculate the significant wave height for each sea area, then cross check with the maximum allowed distance to coast where shipwrecked persons can land and finally cross-check again with the distance to a place of refuge. In addition, it is possible to have different significant wave height in winter and summer, adding even more complexity to the definition.

161. Based on the replies in the questionnaire, the large majority of Member States implement and define the sea areas on the basis of 2 parameters only: distance to coast and significant wave height. At this moment, it is not possible to fully verify the underlying parameters, given that the published sea areas on national websites (as required by the Directive) are not presented in the same format (e.g. maps, coordinates) and do not have the corresponding significant wave height attached. Furthermore, the links to the corresponding national website are not easily retrievable.

162. It should be noted that the Greek authorities indicated that due to the geographical morphology of their coastline, including the archipelagic island system, establishing points that encompass sea areas is inappropriate and impossible. Instead, Greece identified and published more than 3000 sea routes, based on the point of departure and arrival corresponding to the specific route. Spain indicated that the decision on the sea areas C and D is left to the harbour master. Further consultation with national experts would be needed to discuss these reasons in more depth.

163. In the consultation[75], Member States indicated that although there is room for simplification and clarification in the definition of sea areas, the practical point of view must also be considered. The sea areas are already defined and implemented

[75] Namely in the workshop on 23 March 2015, see annex 7

and a change in the definitions may create a double regime because the old definitions of sea areas would have to be maintained for ships already in operation whereas there would be a need to define from scratch new sea areas for new-built ships. This may imply negative consequences such as a co-existence of two different sea areas definition for a long period (probably more than 20 years considering the life-cycle of a ship), unnecessary administrative burden and confusion for operators.

164. Accordingly, the identified potential for simplification is limited to the elements that would not influence the drawing of new sea areas for Member States but would eliminate only redundant or overlapping criteria. Some of the parameters can be found in more detail in annex 4.

6.5.1.5 Difference in safety standards between Class C and D ships

165. The current differences in standards with regard to Class C and D are limited to the functioning of machinery, bow height, access to spaces below from the ro-ro deck to spaces below the bulkhead deck, emergency generators, distress hand flares, qualification personnel for distress and safety radio communication purposes.

166. The evaluation and consultation process has brought about important findings regarding the differences between the safety standards between Class C and D ships. Experts have identified that a number of these differences are not necessary justified from the safety perspective given that the underlying risks are very similar, if not the same. In fact the differences in standards between these two classes in the Directive are not significant except the one related to the minimum bow height.

167. However, no agreement has been reached as to which standards should apply: Whereas some Member States advocate relaxing Class C to make it equivalent to Class D, others are in favour of the opposite. Further assessment of the adequacy of differences in safety requirements between Class C and D ships is therefore needed.

6.5.2 Directive 2003/25/EC

Objectives and their relevance

168. The main objectives of this Directive, that applies to all ro-ro passenger ships operating to or from a port of a Member State on a regular service, regardless of their flag, is:

- To improve the survivability of this type of vessels in case of collision damage, and to provide thereby a high level of safety for the passengers and the crew.

169. This objective is achieved mainly by laying down a uniform level of specific stability requirements for ro-ro passenger ships. It remains relevant as long as the corresponding safety level determined at international level is not proved to be equivalent or superior.

Inconsistency in regulatory approach and safety gap

170. General stability requirements for ro-ro passenger ships in damaged condition were established at international level by the 1990 update of the International Convention on the Safety of Life at Sea (SOLAS 90). In the aftermath of the Estonia accident in September 1994, eight northern European countries, including seven EU Member States, agreed in Stockholm on 28 February 1996 to introduce a higher stability standard for ro-ro passenger ships (Stockholm Agreement). On this basis, Directive 2003/25/EC was laid down and entered into force.

171. The implementation of Directive 2003/25/EC resulted in common safety standards for the calculation of the effect of water on deck on damage stability for ro-ro passenger ships. According to Member States replies to the questionnaire, 20 ships are not yet in compliance with Art. 6, 8 and 9 of this Directive (the transition period expires on 1 October 2015). The total number of ships flying a third country flag calling in an EU port, certified according to the Directive, can be estimated at around 220 per year.

172. Since the Directive 2003/25/EC came into force, the SOLAS Convention has gone through several substantial amendments in the area of damage stability. Through these amendments a **probabilistic damage stability framework** has been developed and SOLAS Convention amended accordingly (SOLAS 2009, applicable as of 1 January 2009). These amendments were designed to achieve the same, but not higher, safety level as the original SOLAS 90 (deterministic framework).

173. The coexistence of Directives 2003/25/EC and SOLAS 2009 makes the passenger ship safety legislation complex and (partly) based on different regulatory approaches; industry has to assess the ship designs against both the probabilistic SOLAS 2009 requirements and the deterministic SOLAS 90 + Stockholm Agreement. However, it has not yet been demonstrated that the SOLAS 2009 approach has the same level of safety as SOLAS 90 + Stockholm Agreement (Directive 2003/25).

174. Several EU funded studies have addressed this issue; in particular the EMSA 2 project delivered several recommendations to improve the SOLAS Regulations concerning damage stability with respect to the water on deck. Some of these recommendations were brought to the attention of the IMO (but not yet adopted). The EMSA 3 project[76], although not directly addressing the issue of water on deck, is about to deliver further SOLAS amendments proposals that could further increase the damage stability requirements. Decisions at IMO level are expected in 2016. Results of the two studies and the corresponding SOLAS amendments should be then considered in combination and compared against the safety level determined by the Directive 2003/25/EC.

175. During consultation, a large majority of Member States agreed that the safety requirements of this Directive are superior to the amended SOLAS 2009 and deliver an increased safety level for ro-ro passenger ships with respect to the water on deck occurrence in a damage situation. However, others such as Germany, considers that the SOLAS 2009 as amended delivers already an equivalent safety level as the

[76] See annex 3 for more details

combined application of the SOLAS 90 plus the Directive 2003/25/EC requirements.[77]

6.5.3 Directive 1999/35/EC

Objectives and their relevance

176. The first objective of this Directive is to lay down a specific system of mandatory surveys which will provide a greater assurance of safe operation or regular ro-ro ferries and high speed passenger craft services to or from ports of the Member States of the Union.

177. This objective, related to providing a greater assurance of safe operation, remains relevant given the specificities and higher vulnerability of ro-ro ferries and high speed passenger craft on regular service compared to passenger ships without ro-ro capacity (i.e. conventional passenger ships). More concretely, ro-ro ferries and HSC have particular design characteristics; these include an undivided vehicle deck – giving rise to stability and fire vulnerabilities, very intense activity (with tight schedules), the risks of cargo shift, water-tightness issues with external ramps, hoistable ramps and wear & tear. Therefore, for this type of ships, it is essential that all the safety elements on the ship intended to decrease the above-mentioned risks are in adequate continuous operating conditions.

178. Moreover, in relation to the domestic fleet, while vessels with ro-ro capacity (ferries and HSC) represent 49% of the fleet, they account for 80% of accidents. During the consultation, national experts confirmed that a special inspection regime for these vessels remains necessary.[78]

179. The results of the Directive 1999/35/EC surveys[79] are reported in the EU database (as part of THETIS), managed by EMSA. The inspection reports on individual ships can be accessed at: https://portal.emsa.europa.eu/web/thetis/inspections.

180. Notwithstanding the specificities of Directive 1999/35/EC, the vast majority of Member States (15) combine or replace some of the inspections required under the Directive with either Flag State surveys or port State control inspections. This practice however renders the implementation and enforcement of this Directive somewhat complex, given the different scope of these inspections and regulatory overlaps, namely with the Directive 2009/16/EC on port State control (PSC). In addition, the Directive includes some outdated concepts and definitions as well as unclear requirements (for more details, see annex 4).

181. The second objective provides for the right of Members States to conduct, participate in or cooperate in any investigation of maritime casualties or incidents on these services. The second objective of the Directive is no longer relevant since the entry into force of Directive 2009/18/EC on accident investigation[80].

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77 See annex 7 and Tractebel, 2015

78 ditto

79 Also referred to as "99/35 inspections" or "ro-pax surveys"

80 Which deletes Article 12 of Directive 1999/35/EC on accident investigation

Overlaps in the inspection regime

182. Directive 1999/35/EC provides for a number of types of inspections; these include an initial verification of documentation one month before the ship starts operation, an initial inspection before the ship starts operation, specific annual survey in a port, an annual in service inspection and other surveys such as those to check that deficiencies have been addressed.

183. The overlaps will be analysed in view of three different group of ships (determined by the type of their voyage origin and destination and whether domestic or international, and their flag[81]) as follows:

Group 1

184. This group is subject to flag State, PSC and Directive 1999/35/EC inspection regimes. Initially only the flag State regime existed. The PSC inspection layer was added on-top of it in order to enhance maritime safety and avoid sub-standard shipping.

185. Later, Directive 1999/35/EC added a third layer of inspections for ro-pax and HSC in regular service. It is worth mentioning that when Directive 1999/35/EC was drafted, the EU had 15 Member States and there were a significant number of these ships trading regularly between EU and non-EU Member States. In addition, since that time, the PSC regime has been strengthened, especially after Directive 2009/16/EC came into force, establishing the risk-based new inspection regime (NIR) and including a minimum number of inspections on high risk ships that Member States must carry out.

186. In order to prevent unnecessary burden and to avoid overlaps, Directive 1999/35/EC provides that ro-pax vessels and HSC inspected under this regime should be exempted from expanded PSC inspections[82]. Although this provision implies that a Directive 1999/35/EC inspection is equivalent to a PSC expanded inspection, this is not the case as there is no legal basis in Directive 1999/35/EC to inspect a ship for compliance with all international Conventions. This leads to a paradox where **the overlap of the two existing inspection regimes in fact creates a regulatory gap.**

187. Although the Directive 2009/16/EC includes a similar provision, in fact it negates the Directive 1999/35/EC provision described above. It stipulates that an inspection carried out within the Directive 1999/35/EC regime can be counted as a PSC inspection only if it covers the items of Annex VII of Directive 2009/16/EC, which includes pollution prevention (MARPOL) and working and living conditions (MLC). In addition, although Regulation 428/2010[83] specifies the concrete points to be considered in an expanded port State inspection per ship type, it includes only certain elements of Directive 1999/35/EC (see comparison below).

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81 See annex 4 for more details

82 Regulation 428/201082 specifies the concrete points to be considered in an expanded inspection per ship type

83 COMMISSION REGULATION (EU) No 428/2010 of 20 May 2010 implementing Article 14 of Directive 2009/16/EC of the European Parliament and of the Council as regards expanded inspections of ships

188. In addition, neither of the envisaged exemption provisions described above take sufficiently into account the fact that the specific in service survey under Directive 1999/35/EC necessitates at least a part of the inspection (such as checking on the availability of seats, the blocking of passageways, safety announcements during voyage, ventilation of the vehicle decks etc.) being carried out while the ship is sailing.[84] Even though the expanded port State control of a ro-pax could be carried out while the ship is on passage from one port to another as long as the master or the operator so authorises[85], this wording is weaker than the one included in Directive 1999/35/EC (which envisages an unscheduled survey during a regular crossing[86]).

Table 14: Comparison of inspections and surveys

Inspection/survey		**Directive 1999/35/EC requirements**			**All applicable International and EU legislation** (includes MARPOL)
		Annex I (companies)	**Annex III** (statutory requirements, planned maintenance etc.)	**Annex IV** (guidelines on unscheduled survey during a regular crossing)	
99/35 specific surveys	**Initial**	X	X		
	In port		X		
	In service	X*	X*	X*	
PSC expanded		(..)	(X)	(..)	X
FS annual		(..)	(X)	(..)	X

Source: Commission, 2015
** "enough" items to be covered*
(X) *Within the scope but not all elements explicitly mentioned*
(..) *Within the scope and most elements explicitly mentioned*

189. This inconsistency has resulted in different practices across Member States with regard to the implementation of the different inspection regimes for these types of ship. According to feedback received, some Member States carry out ro-pax and PSC inspections at the same time (i.e. combine them – DE, EL, FI, IE, IT, LV), others (DK, MT, PL, UK) replace PSC with ro-pax surveys[87]), while others (SI) carry them

84 For reference, see Annex IV of Directive 1999/35/EC
85 As envisaged in Regulation 428/2010
86 Albeit the word "unscheduled" is not defined in the Directive
87 In that case, however, the ro-pax surveys have to also cover the international conventions, such as MARPOL and MLC, currently not covered in the Directive 1999/35/EC legal base

out separately (which generates unnecessary regulatory costs as some of the items checked are identical, although these costs will differ for each ship[88]).

190. For ships in Group 1 flagged in one of the host States, the ro-pax inspections could be also combined with a flag State inspection (i.e. similarly as described for groups 2 and 3 below). This is however not the case for non-EU flagged ships, where the flag state survey is carried out by a different administration than the one carrying out the ro-pax survey.

Groups 2 and 3

191. These 2 groups, which include ships trading domestically in the flag State (Class A) and ships trading between the flag State and a State outside the EU, are covered by the flag State and Directive 1999/35/EC. These two groups are out of the scope of the PSC Directive which covers inspections of ships when the flag State of the ship is different from the port State in which the inspection takes place.

192. The flag authorities must inspect each of these ships at least once per year according to the regime established by IMO (for ships in international voyages) or by the EU (for ships in domestic voyages). These inspections are, in many occasions, carried out by a Recognised Organisations (Classification Societies) on behalf of the flag State. These inspections must ensure that the ship fulfils the relevant requirements according to the statutory certificates issued by the flag.

193. Similarly to the Group 1 ships, also for Group 2 and 3 ships the specific surveys under Directive 1999/35/EC are in many cases either combined with the annual flag State inspections (DE, FI, IT, SE, NO), replaced by them (FR, LT – however only for the regular specific survey in port) or carried out completely separately (PL).

194. More details on the combination of the above mentioned surveys can be found in annex 4.

6.5.4 Directive 98/41/EC

Objectives and their relevance

195. The main objectives of this Directive, which applies to **all passenger ships departing from a port located in a Member State**, are the following:

- to enhance the safety and possibilities of rescue of passengers and crew on board passenger ships operating to or from ports in Member States of the Community; and
- to ensure that search and rescue and the aftermath of any accident which may occur can be dealt with more effectively.

[88] This will depend on the frequency of the port State control corresponding to its risk profile. While the frequency under Directive 1999/35/EC is twice per year, the minimum frequency of port State control depends on the risk profile of the ship according to certain parameters (age, type, recognised organisation, flag, etc.) included in Directive 2009/16/EC. However, a ship can receive as many PSC inspections as considered relevant for the port State authority

These objectives are achieved namely by requiring companies to:

- count the number of persons;
- register key information about persons on board, i.e. the name, sex, category of age and special care needs; [89] and
- store and transmit this information to the search and rescue services in case of need (i.e. in the aftermath of an accident).

196. The Directive therefore covers both the pre-accident phase (by ensuring that the number for which the ship and its safety equipment have been certified is not exceeded) and in the post-accident phase (by facilitating search and rescue operations after an accident).

197. Since the Directive entered into force, these objectives have not lost relevance and stay current and valid. However, the means of delivery objectives have become outdated, overlapping or inadequate. This has become obvious during the EMSA visits to Member States to verify compliance with the Directive, highlighting a number of implementation difficulties as well as lack of consistency interpreting some of the Directive's requirements. In this context, no clear conclusions can be drawn from the fact that the possibilities for exemptions envisaged in the Directive have thus far been little used.[90]

198. In addition, the implementation experience has revealed some unclear definitions and disproportionate requirements, making some of the provisions difficult to monitor and enforce.[91]

6.5.4.1 Outdated and overlapping requirements on counting, registration and reporting of persons on board

199. Directive 98/41/EC was the first EU legislation dealing with information on persons on board. Since 1998, however, other pieces of EU law and international conventions dealing with related issues have entered into force and new technological systems and solutions have been developed. This has resulted in increasingly complex and overlapping set of legal provisions dealing with the counting, registration and reporting of persons on board.

200. Directive 2002/59/EC established a Community vessel traffic monitoring and information system (including SafeSeaNet[92]) and required all ships above 300 Gross Tonnes (GT), sailing to a port of a Member State to report, among other information, the total number of persons on board. This requirement includes all passenger ships regardless of whether they are domestic or not. Although there are possibilities for

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89 Only in cases where it is possible and proportionate to register such information: As stipulated in the Directive, this should apply to every ship that departs from a port located in a Member State to undertake a voyage of more than twenty nautical miles (approximately 37 km) from the point of departure. Information on special care needs only when volunteered by a passenger

90 So far, several exemption requests have been formally submitted to the Commission, notably from France, Sweden and Italy

91 For more details, see annex 4

92 SafeSeaNet stands for the EU system developed to exchange the pre-defined maritime information between Member States

exemptions, in any case the information must be kept by the company and be available to State authorities.

201. This has resulted in a clear overlap with Directive 98/41/EC which requires the same information to be recorded and kept by the company for all passenger ships without size limitation sailing. Therefore, in principle, any passenger ship above 300 GT, which sails from a port of a Member State to a port in another Member State has to report the number of persons on board both to the port authority as well as to the company register on-shore (on the other hand, Directive 2002/59/EC does not set any limit in terms of the size of a vessel as regards the information on hazardous materials carried on board[93]).

Table 15: Overlap in transmitting number of persons on board

Transmission of number of persons on board	**Ship**	**Voyage**	**Outside scope**
98/41 (transmission to company system)	all	outgoing	All incoming
2002/59 (transmission to competent authority)	above 300 GT	incoming	Less than 300 GT incoming, all outgoing

Source: Commission, 2015

202. Furthermore, according to Regulation 562/2006[94] (Schengen Borders Code), all ships irrespective of size[95] operating on routes within the Schengen area must register detailed information on passengers and crew and transfer it to border guards on pre-arrival and pre-departure. [96] Therefore, any passenger ship engaged on such an international voyage has to report the information on persons on board to the competent border authority as well as to the company register on shore. Similar obligation exists under Regulation 725/2004 (Security Notification).

93 So-called HAZMAT

94 Regulation (EC) No 562/2006 of the European Parliament and of the Council establishing a Community Code on the rules governing the movement of persons across borders (Schengen Borders Code)

95 Except regular internal ferry connections

96 The so called FAL forms 5 and 6 are to be used

Table 16: Overlap in transmitting lists of persons on board

Transmission of lists of persons on board	**Ship**	**Voyage**	**Outside scope**	
98/41 (transmission to company system)	all	outgoing	Less than 20 nm outgoing, all incoming	
Schengen (transmission to competent authority)	all	Incoming and outgoing	Regular ferry connections between Members of Schengen	Domestic in EU Member States: All Classes
Security (transmission to competent authority)	all	Incoming and outgoing	ditto	Domestic in EU Member States: Class B, C and D

Source: Commission, 2015

203. In addition, as a technical mean for the transmission of all the required ship-related data, Directive 2010/65/EU (the so called Reporting Formalities Directive) established a single electronic reporting channel. This so called National Single Window (NSW) has been implemented as of 1 June 2015. The information would be reported only once by the operators and it would be made available, as relevant, to the appropriate competent authorities and the Member States.

204. The developments reflected in Directive 2002/59/EC may also play a central role in the development of a Common Information and Sharing Environment (CISE) for the maritime domain, which is a voluntary collaborative process in the European Union seeking to further enhance and promote relevant information sharing between authorities involved in maritime surveillance.[97]

205. The double reporting requirements mentioned above provide an irritant to the economic operators – and, although no data is available as to how significant this is, it is clearly an unnecessary one. The coexistence of similar reporting requirements spread across several pieces of legislation with different scope and coverage also reduces legal clarity and hinders an effective implementation and enforcement.

206. This has been pointed out by Member States who called for streamlining the requirements for passenger registration and counting with Directives 2002/59/EC and 2010/65/EC. More specifically, 10 Member States out of 24 (i.e. Croatia, Cyprus, Estonia, Ireland, Latvia, Malta, Norway, Romania, Slovenia, and Spain) in practice already make use of the Directive 2002/59/EC reporting requirements to fulfil their Directive 98/41/EC obligations.

[97] COM(2014) 451 final

6.5.4.2 Inadequate transmission of data

207. The experience has shown that an effective search and rescue (SAR) operation requires adequate data to be available. This means immediate access to accurate data as regards to at least the number of persons on board. As a second element, key information (name, age, etc.) about persons on board is also important. For example, a successful search and rescue operation starts with sending the appropriate equipment and assets to rescue the people. It may also require different equipment, approach and expertise in approaching adults vs children, persons with special care needs, persons not speaking the language of the coastal state etc.

208. Furthermore, identification is not only important to reduce the anxiety of families or relatives but also to take into account the potential existence of stowaways. Recent experience[98] has shown that sometimes the number of rescued people is not identical to the number of reported people on board due to the presence of stowaways. The availability of registration details facilitates the explanation of the difference between these differing numbers.

209. According to the requirements of Directive 98/41/EC, information on persons on board has to be transmitted to and stored in the company's system and be – at all times – readily available for transmission to the competent authority responsible for search and rescue (albeit as described above, operators that already transmit such data to SafeSeaNet or the National Single Window are exposed to a double reporting regime).

210. The experience with reporting of hazardous material on board (the so called HAZMAT) may be a good reference in evaluating the current situation in this Directive. HAZMAT reports include information on the hazardous substances that are carried on board a ship. Initially, EU legislation only required that the ships of more than 300 GT and arriving at an EU port would have to report that hazardous materials were carried on board without specifying which types and in which quantities. This information was kept by the company and available to national authorities only at request.

211. However, this system did not prove to be very practical, as accidents could happen also to smaller ships, in the vicinity of the port of departure and the availability of the person of contact from the company was not always immediate. Therefore, the situation evolved progressively to a legislative text in which HAZMAT has to be reported by all ships, to the port of departure and arrival and available directly to the authorities without having to request it from the company.

212. Taking advantage of the lessons learnt from the HAZMAT, similar feedback received for this Directive[99] and the technological progress since 1998 (namely as regarding information and communication technologies), there does not seem to be evidence that would justify not making use of the modern technologies and systems. These have proven to facilitate the reporting obligations of operators and to reduce the corresponding administrative cost to an absolute minimum.

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98 The MV Norman Atlantic foire on 28 December 2014

99 For example, one of the national authorities noted that companies are closed during weekend and information on the persons on board is not easily available

213. The only exception to this might be those operators that still keep paper-based record of the information on persons on board (primarily in cases of very short domestic voyages where the information on the number of persons on board needs to be kept for a limited period of time only[100]).

214. Indeed, 14 out of 21 Member States consider it relevant and useful to record information related to persons on board (counting and registration as specified by Directive 98/41/EC) in an existing electronic system (namely the National Single Window) and – where relevant – share the information between Member States through SafeSeaNet.

6.5.4.3 Gap in the requirements: Passengers' nationality

215. The consultation process has shown that it is of outmost importance to have available from the very early stage of a post-accident phase not only the number and the list of persons on board but also the passengers' nationality. Passenger information like name, date of birth, etc. is currently recorded on a basis of self-declaration of passengers, which thus far has proven to work well.

216. Recording the nationality of persons on board facilitates the proper management of an accident in case of fatalities (namely as regards the timely information of the respective embassies), allows the respective authorities to organize proper assistance to their citizens and reduces the anxiety on the part of relatives and other persons concerned.

217. It is also worth noting that such information is already part of the requirement laid down in Directive 2010/65/EC through the FAL forms 5 and 6, to the extent which this Directive applies.

[100] Albeit the Directive does not specifically indicate the duration for which such information should be kept

7 ANSWERS TO THE EVALUATION QUESTIONS

7.1 Coordination

Question 1: To what extent are the four directives working together as a framework for passenger ship safety?

218. The four Directives selected for this fitness check represent a set of key safety standards and requirements for surveys of passenger ships sailing in EU waters.[101] Having said that, these four directives do not necessary work together as a whole in a coherent framework. Although they serve the same broad purpose, i.e. to ensure a common, high level of passenger ship safety, each of them has a different scope, applies to different types of ships, voyages etc., hindering thus the coordination of implementation, monitoring and enforcement efforts.

219. Moreover, since 1998 and 1999 (i.e. the year of adoption of the 3 of the 4 Directives[102]), other, related pieces of legislation have brought about a new coordination potential that has been somewhat realised in practice but not reflected in the legal requirements.

220. In essence, Directive 1999/35/EC overlaps with flag state and port state inspections, i.e. Directives 2009/45/EC and 2009/16 respectively; Directive 98/41/EC pre-dates (and therefore does not exploit) the digital information systems created by Directives 2002/59 and 2010/65/EC, i.e. SafeSeaNet and the National Single Window; and Directive 2003/25/EC would become obsolete if the on-going discussion on the improvement of SOLAS damage stability requirements turns out to be successful[103]. Finally, Directive 2009/45/EC presents the safety standards in an outdated and somewhat ambiguous manner.

7.2 Relevance

Question 2: Given that EU legislation mainly refers to relevant international (IMO) legislation, is the alignment of EU legislation with the international IMO legislation the most appropriate to address the problems? Is the update process adequate?

221. SOLAS and other relevant IMO Conventions (e.g. MARPOL or the International Convention on Load Lines), have been recognised by all Member States and the EU, as the benchmark to which the EU should refer. They provide for a world-wide level playing field, a necessity in a global sector such as maritime transport. In this context, the EU and its Member States provide key technical input and expertise in developing and promoting high quality international standards.

222. On the other hand, deviating from international standards as regards Class A ships operating in EU domestic voyages (without any navigation limitations) can be

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101 Where applicable and feasible, these requirements build on the internationally agreed standards (namely SOLAS), albeit these in principle do not apply to domestic shipping

102 Given that Directive 2009/45/EC is a recast rather than a comprehensive amendment of Directive 98/18/EC

103 I.e. that will provide an equivalent level of safety to that of the current framework

justified only in case the international standards do not provide for a sufficient guarantee concerning specific EU public interest or an adequate level of safety[104]. This is the case, for example, concerning the specific accessibility requirements for people with reduced mobility[105] or damage stability criteria for ro-ro passenger ships[106].

223. However, in sea areas B, C and D, where the risks can be lower or different (i.e. up to 20 nautical miles from the coast), automatic alignment with international standards may not be appropriate. Standards established in SOLAS therefore have been analysed and adapted for the different requirements in the Directive (such as construction, fire safety, etc.), using the input from national experts.

224. Although the current update procedure has proven to be more effective and efficient in comparison to the situation without EU legislation[107], the question has arisen as to whether and how it could be simplified. Given that the cost at EU and national level related to the expert assessments and coordination cannot be entirely dispensed with, it should be explored whether the current update procedure can be speeded up and the subsequent transposition costs for Member States reduced.

Question 3: Are the different sets of standards established by the legislation (i.e. for construction, equipment, operation, maintenance and safety operations) proportional vis-à-vis the relevant risks, considering differences depending on the type of ships and their navigation area? Is the current prescriptive (as opposed to goal based) approach to safety requirements appropriate?

225. Concerning the type of ships, there has proven to be a mismatch between the existing prescriptive safety standards for **small steel ships below 24 m in length** and the identified safety and internal market objectives. Given that small ships are built mainly from materials other than steel, the vast majority (96%) of the fleet is currently not covered by the harmonised EU safety standards. Even for the ships covered by EU standards, an internal market for these smaller ships does not exist in practice and the accidents recorded for small ships outside the scope of EU standards do not demonstrate any specific safety concern. It has also proven increasingly difficult to adapt the prescriptive, one-size-fits all SOLAS standards to this category of ships, particularly due to their high sensitivity to local operational conditions.

226. Given that the absolute majority of Member States consider that all ships below 24 m should be treated in the same manner (i.e. irrespectively of the material from which they are built) and taking into account the broad range of designs and technical solutions that makes it impractical to identify a common set of prescriptive standards, it should be considered to develop a Guideline or Code for small vessels containing only high level requirements as part of a goal based standard framework.

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104 Except with respect to the requirement concerning lifeboats allowing for domestic ships the use of sufficient life rafts

105 Dir. 2009/45/EC in Annex III includes provisions concerning access to the ship, to signs provided on the ship, to means to communicate messages, to the alarm system and to several additional requirements in order to ensure mobility inside the ship (handrails, doorways, elevators…).

106 See chapter 6.5.2 for more details

107 See chapter 6.1, annex 6 and Tractebel, 2015

227. The higher EU stability standard for **ro-ro passenger ships** in damaged condition (i.e. taking into account the effect of water accumulation on the vehicle deck) provided by EU legislation is considered to address the higher vulnerability of these vessels in a proportionate and necessary manner[108]. Once the relevant SOLAS 2009 amendments are adopted at the IMO (foreseen for 2016), a re-assessment of their safety level should be carried out to assess the possibility of aligning the EU standards with international rules and thereby further simplifying the current passenger ship safety legal framework.

228. Concerning the **navigation areas**, there was no specific safety concern or requirement that could be commonly identified as disproportionate by national experts: Class A ships, which do not have any navigation limitation, must fulfil SOLAS requirements and, therefore, can be considered to have standards proportional to the risks (i.e. with the exception of damage stability described above).

229. As regards Class B ships, 6 Member States suggested simplifying or adding very specific safety standards. The only shared proposal concerned a comment made by EE and ES indicating that for Class B ships the probabilistic damage stability calculations (SOLAS 2009) should be mandatory, whilst all the other experts agree to keep these optional.

230. With regard to differences between classes B & C, similarly to the previous point, experts suggested some adjustments and relaxation on minor issues. No particular disproportionality has been pointed out, with the exception of the helicopter pick-up needed for C & D areas[109], indicated by Norway.

231. For C & D areas, most Member States indicated that the risk difference[110] between the two areas is so limited that the differences in the corresponding safety standards are at least questionable. In fact the differences in standards between these two classes in the Directive are not significant except for the one related to the minimum bow height. However, no conclusive results have been reached on this point. Whereas some Member States advocate relaxing Class C to make it equivalent to Class D, others favour the opposite approach[111]. Therefore, as was the case with the previous two cases, no major disproportionality is identified by a majority of experts. Further assessment of the adequacy of differences in safety requirements between Class C and D ships is nevertheless needed.

232. The discussion on translating the current **prescriptive SOLAS safety standards** into goal based ones has been on-going already for some time at the international level. The EU Member States actively contribute to this debate and once this process is accomplished, the EU safety standards would be aligned accordingly. However, there are still fundamental concerns of national administrations that remain to be addressed

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108 See chapter 6.5.2 and annex 4 for more details

109 For this particular standard exemptions have been granted to Italy and UK. Finland also highlighted this issue but with respect to Class D ships

110 Due to the differences in significant wave height and distance to coast. For example, NO and NL make reference to the bow height as a significant difference

111 The UK for example indicated that sea area D, although defined in the UK, is not considered relevant as the operating limits on Class D vessels are so tight that it makes more sense to build a full Class C vessel

(primarily related to a discretion and ability to set and enforce an agreed safety level).[112] On the other hand, in the area where mandatory standards at international level do not exist and there is therefore no risk of creating double regulatory requirements, a potential of goal based standards may be tapped into (e.g. in case of small ships, see above).

Question 4: Is the definition of navigation areas, as currently established, a relevant tool to ensure proportional applicability of rules? If not, how could it be adjusted?

233. The classification of navigation areas remain a key determinant of the risk level to which the ship is subject to.[113] They ensure the proportionality of the associated rules for each ship class, as long as the criteria for defining the sea areas are appropriate. With the exception of Greece (that did not define sea areas), Member States did not call for a different classification of associated risk levels.[114]

234. The definition of the sea areas is currently very complex, especially for Classes C and D. Taking into account the fact that the sea areas have been defined and implemented relatively recently and to preserve the principle of legal certainty and stability, the identified potential for simplification concerns elements that would not influence the drawing up of new sea areas for Member States. The redundant criteria as regards the definition of sea areas concern the notion of 'where the shipwrecked persons can land' and the 'place of refuge'. Furthermore, there has proven to be little clarity as to how, and on what basis, Member States define the 'port areas', which is a key element in determining whether the ships fall inside or outside the scope of the EU legislation.[115]

235. The identified simplification potential in this fitness check therefore lies in removing the redundant criteria and ambiguities and thereby facilitating the implementation and enforcement of sea areas.

Question 5: Is the current system of exemptions, equivalences and additional national requirements relevant and necessary? If not, what are the points of concern?

236. The functional areas in Directive 2009/45/EC for which exemptions/equivalences have been requested concern Communication/Navigation and Life Saving Appliances for nearly 50% of requests while 64% of requests relate to Class C and D ships. The reason being that for these ships, the level of safety may be maintained under certain operating conditions (such as voyages only during daylight time, restricted trip duration, proximity of rescue services etc.). The operating conditions and the possibility to limit them depend on the local conditions, type of the voyage etc. and the possibility of exemptions therefore remains a key element in maintaining the proportionality of the harmonised safety standards.

112 See chapter 6.1
113 See chapter 6.5.1
114 Tractebel, 2015
115 See annex 4 for more details

237. The total cost of the exemption/equivalency procedure according to the EU legislation is ca. EUR 3.900 per request. The current system of assessment of Member States' applications by a neutral third party (i.e. Commission, supported by EMSA) results in an independent judgement whether exemptions/equivalencies are justified. This ensures a consistent approach in the interpretation of the safety standards and therefore enhances the overall level of safety. Given that the number of exemption/equivalency procedures handled each year has been limited so far (on average less than 4) [116], the yearly 'extra cost' due to EU legislation is negligible.

238. Having said that, the procedure for notifying the exemptions is rather lengthy (Commission has 6 months to raise objections) and not necessarily always followed in practice.[117] For example, although Member States are expected to notify draft measures, exemptions are often notified after they had been granted. In addition, there is a lack of transparency in the procedure, e.g. no database where such measures (either in their draft or adopted form) can be transparently recorded and retained for future reference.

239. Based on experience in a related field (i.e. the Directive 98/34/EC notification procedure), such a database and higher transparency would be beneficial not only for shipowners and industry but would also provide greater transparency on the reasons for the derogations and the alternative safety requirements applied. This would also allow national administrations to judge which exemptions/equivalencies requests are likely to be considered as justified and which not.

7.3 Effectiveness

Question 6: Has the EU legislative framework on passenger ship safety resulted in common safety level and internal market? What are the main drivers and hindrances to its effectiveness?

240. The harmonised EU safety standards currently apply to 29% of domestic passenger ships (922) in terms of number of ships, but above 60% (around 380.000 passengers) of the total EU passenger capacity. This means that the largest ships, with the greatest passenger capacity, have well been targeted. In addition, it is worth mentioning that the Directive 2009/45/EC covers the large ships which usually operate the whole year whereas the small ones sometimes are restricted to the summer season.

241. Only very few of the 408 accidents registered for the domestic passenger ships during the last 4 years resulted in fatalities. In total, 4 fatalities have been recorded (only one of which was a passenger).

242. The majority of passengers in domestic traffic are therefore transported on ships with common safety standards which ensure a common safety level. Having said that, about one third of passengers (i.e. 30-35%) is transported through ships certified according to national standards, these are in the main, smaller, tailor made ships made of composite material or wood (ca. 12% and 18% respectively).

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116 For Directive 2009/45/EC

117 For more details on the procedure, see annex 4 and Tractebel, 2015

243. Necessarily, there are differences in terms of national standards.[118] For some topics the national legislation proved to be somewhat less demanding (e.g. reduced life raft capacity, no automatic sprinkler required). For others, it was found to be often less detailed or left more room for exemptions. These differences may not however necessarily lead to different safety levels – as long as they can be counter-balanced by additional measures tailored to local and geophysical conditions, such as navigation restrictions[119].

244. As regards the internal market performance, the evidence demonstrated that the change of flag (i.e. between EU Member States), increased by 400% since the EU legislation is in place (67 changes of flag in the period 1979-1998, and 230 in the period 1998-2014). While acknowledging that there could be additional reasons for this increase (such as increased demand for and availability of vessels on the second hand market or a more favourable social security system for the crew), the entry into force of the Directive in 1998 certainly contributed to this trend.

245. Given that ship safety standards are not static concept but subject to continuous improvement, the main driver of the EU passenger ship safety legislation is its review and update in view of lessons learnt from accidents and of scientific progress. Moreover, safety standards need to remain proportional, i.e. adapted to the level of risk of a navigation area or to the type of ship. Although this process is necessarily intensive as regards both the resources and technical expertise, it is a pre-requisite for maintaining a high level of passenger safety.

246. What may be considered as a hindrance to the effectiveness of the passenger ship safety legislation is its complexity and ambiguity of some of the existing requirements, primarily related to the scope of application (e.g. material and type of ship covered, definition of sea areas) and presentation of harmonised EU safety standards.[120] This makes its monitoring, implementation and enforcement unnecessarily difficult and burdensome. Other contributing factors are also the relatively low speed, difficulty and limited transparency of the update and exemption procedures.

247. Finally, given that 80% of the accidents registered for domestic passenger ships happen on ro-ro passenger ships, particularly Class B ro-ro passenger ships, it should be further assessed whether the limited scope[121] of the corresponding surveys does not represent a barrier to the effectiveness of this inspection regime.

<u>Question 7:</u> Are the measures in place to facilitate rescue in case of accidents sufficient to ensure an optimal system of rescue and search operations? If not, in which terms? To what extent could an existing information system, e.g. SafeSeaNet, be used to enhance information sharing and rescue capabilities? If yes, how?

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118 See chapters 6.1 and 6.2, annex 6 and Tractebel, 2015

119 The definition of which is a decision of national competent authorities

120 For example, most but not all Member States consider aluminium built ships regulated by Directive 2009/45/EC. See chapter 6.5.1

121 I.e. Directive 1999/35/EC applies to international ships but only to Class A for domestic voyages

248. An effective search and rescue operation requires an immediate access to accurate data as regards the number of persons on board, which is currently not always the case[122]. According to the current requirements, dating back 17 years, this information has to be transmitted to and stored in the company's system and be readily available for transmission to the competent authority responsible for search and rescue. This means that in case of an accident, search and rescue authorities have to request the information on the persons on board from the company – which may be closed, contact person may not be available, etc., losing thus precious time in search and rescue operations.

249. In the meantime, the means of communicating and storing data have been automated and the related costs reduced to a minimum. The collection, transmission and sharing of ship-related data has been enabled, simplified and harmonised by the SafeSeaNet (Directive 2002/59/EC) and the National Single Window (Directive 2010/65/EC[123]). This legislative and technical evolution should enable the update of the requirements under Directive 98/41/EC and to make them more efficient and less burdensome (namely for those operators that currently face a double reporting obligation[124]).

250. The reporting requirements on the passenger information should be therefore updated and brought in line with the current electronic means of reporting and data accessibility via the National Single Window. Given the adaptability of the National Single Window technical interface, the domestic passenger ships engaged in "short" voyages (i.e. reporting only the number of persons on board) could in principle transmit the data using electronic information devices such as AIS[125], text messages or any other system. This would allow the local search and rescue centre to easily retrieve the number of persons on board from a single point of storage, in the event of an emergency or accident, regardless of the availability of a contact person.

251. Finally, the communicated data for long voyages (beyond 20 nautical miles) does not always include information on nationality of persons on board (i.e. besides name, age and sex), unnecessarily increasing the anxiety of relatives and possibly delaying the assistance of consular and other services. A similar procedure to register nationality as that used to collect all the other required information could be used and should see no (or marginal) increase in costs.

Question 8: Regarding the requirements on inspections/surveys, and random checks to what extent do current arrangements ensure that ships comply with rules and thus contribute to higher safety and facilitated search and rescue?

252. Maintaining a high standard of safety of life for passenger ships does not depend solely on issuing technical standards. An important factor is the monitoring and

122 As pointed out by some national administrations and on the basis of latest experience related to, for example, the accident of Norman Atlantic

123 Article 5 of which requires electronic format to be used as from 1 June 2015

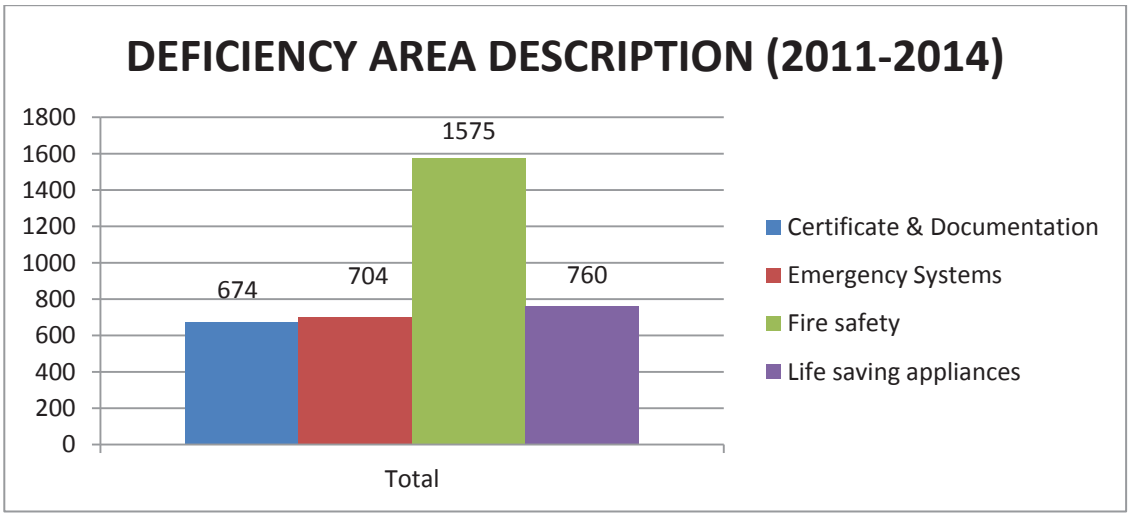
124 See tables 15 and 16 for the overview of the double reporting obligations

125 An Automatic Identification System is used for identifying a vessel. It sends and receives vessel identification information such as vessel name, radio call sign, navigational status etc.

enforcement of the standards prescribed that in the area of ship safety takes primarily place via inspections or surveys. The only publicly accessible results of inspections are related to the specific inspections of ro-ro passenger ships, stored and shared via the THETIS database.

253. The **ro-pax inspection** results show that deficiencies – more or less serious – are found during the large majority of these (biannual) inspections, demonstrating an added value in preserving the safety level. The following figure shows the deficiencies detected in the inspections required by Directive 1999/35/EC from 2011-2014.

Figure 3: Overview of deficiencies found out during ro-pax inspections



Source: THETIS, 2011-2014

254. The deficiencies found imply a correction and therefore an improvement of the safety condition of the ship with respect to the situation before the inspection.[126] The highest percentage of deficiencies has been recorded in the deficiency area "Fire Safety" (24.6%), followed by the "Life-saving appliances" area (11.9%), Emergency system (11%) and "Certificate and Documentation" (10.5%).

255. However, it is not known whether the ro-pax inspections have been unscheduled or unannounced, as the Directive provides for. The intention is to give national administrations the opportunity to inspect the ship in a state as close as possible to its usual operation (related to, for example, operability of communication equipment, maintenance of safety equipment etc.). In their replies to the questionnaire, none of the Member States indicated that the surveys were unannounced, i.e. without prior information of the ship operator. More information would be therefore needed as to

126 Depending on the nature and seriousness of the deficiency, the inspector indicates the action to be taken by the master of the ship and establishes a timeframe within which the deficiency shall be rectified (e.g. before departure, within 14 days, at next port etc.). The deficiency is recorded in the THETIS information system and followed-up either by means of an additional inspection or by providing appropriate documentary proof of compliance (certificates/receipts)

whether national administrations find the possibility to carry out unscheduled surveys useful/practicable or not.

256. The conclusions on the findings and corresponding corrections are more difficult to reach as regards another type of surveys, i.e. the **flag State surveys**[127] for domestic passenger ships (i.e. according to Dir. 2009/45/EC). Similarly to international provisions for flag State surveys, Member States are not obliged to make the results of the annual surveys publicly available. These inspections must ensure that the ship fulfils the relevant requirements according to the certificates issued by the flag State.

257. The only evidence available that could demonstrate whether the safety requirements correspond to the certificate issued relates to anecdotal examples of transfer of ship refusals.[128] There are however only a handful of such cases, not indicating any systematic pattern at this point of time. Having said that, this is certainly an area to be further assessed and closely monitored in the future.

258. Finally, little can be said about the frequency and effectiveness of **random checks** of passenger registration systems under the Directive 98/41/EC. Their purpose is to allow Member States to carry out such checks when they consider appropriate – i.e. on their own initiative, triggered by a complaint[129], findings of other inspections etc. Therefore, the Directive neither defines the frequency or scope, nor whether such checks should be unannounced or not (which is left to the decision of national competent administrations). There is currently no reporting obligation attached to these random checks – which would in any case seem to be disproportionate given their objectives.

Question 9: Do the monitoring and reporting arrangements in place allow for adequate checking and follow-up of the legislation? If not how could it be improved?

259. The absence of monitoring arrangements and limitations in the availability of data, both with respect to the fleet of domestic passenger ships and safety accidents, as well as the implementation of existing regulatory framework, has significantly hindered earlier evaluation exercises, monitoring and enforcement of the legislation[130]. It was only in the framework of this fitness check when sufficient evidence could be gathered with respect to all key evaluation questions and criteria, requiring extensive effort from the Commission, EMSA and the Member States.

260. For the future, adequate monitoring and reporting arrangements should be put in place, while avoiding undesirable new reporting obligations and administrative

127 The flag authorities must inspect each ship in their fleet at least once per year according to the regime established by IMO (for ships in international voyages) or by the EU (for ships in domestic voyages). These inspections are, in many occasions, carried out by a Recognised Organisations (Classification Societies) on behalf of the flag State

128 For example, IE refused a vessel certified according to Directive 2009/45/EC because the Passenger Ship Certificate was showing "zero" freeboard (i.e. against the principles of the ICLL).

129 E.g. on overcrowding in busy periods of the year

130 It should be noted that most infringements so far related to late transposition. There have been 71 infringement cases of which 35 for Directive 2009/45/EC, 12 for Directive 98/41/EC, 13 for Directive 1999/35/EC, and 11 for Directive 2003/25/EC

burdens. The key information on fleet, accidents and compliance are needed for the assessment of the effectiveness of the legislation.

261. As regards data on accidents, it is expected that the situation will get only better in the years to come. The longer that the European Marine Casualty Information Platform (EMCIP) database[131] operates and collects Member State data, the bigger the relevant dataset and better information on trends can be gathered. As it is gradually filling up, this database should over time become a source for better accident statistics (also per passenger ships and per market segment, following further analysis by EMSA).[132]

262. The situation is more complex concerning the data on the size and composition of the fleet. The 2014 data gathering exercise was the first of its kind and required several rounds of consultations, corrections and effort both on the part of national administrations and EMSA/Commission. A database has been created and would need to be updated to allow for monitoring of the EU domestic passenger fleet composition and the accident trend. As a minimum, it will need to be updated in time for the next review of the regulatory framework. However, even in between, it can provide useful information for the policy makers (primarily as regards the attained safety level and the applicable safety standards).[133]

263. In any case, the update does not necessitate any additional reporting requirements as an appropriate framework providing for the assistance of national experts is already in place. It concerns primarily regular discussions with national experts in the framework of the expert group[134], facilitating the shared understanding and evaluation of the existing regulatory framework. In addition, existing reporting at international level should be also taken into account (such as Country Maritime Profiles of the IMO).

264. The fitness check has also demonstrated a scope for further enhancing the exchange with national administrations on the implementation and compliance with the existing provisions. In this context, the EMSA visits to Member States have proven particularly valuable in monitoring the implementation of Directive 98/41/EC but also helping with exchange of best practices and technical expertise. Such visits form part of the EMSA's mandate and present core tasks planned in its annual work programmes. The visits carried out so far have not however provided any insight into the implementation of requirements of other EU passenger ship safety legislation than Directive 98/41/EC.

Question 10: Has the legislation had any unintended impacts or collateral effects (e.g. the increase of non-steel ship building)?

131 The EU database on maritime accidents established by Directive 2009/18/EC is operated on behalf of the Commission by EMSA. It started operating in mid-2011

132 The database does not however include an information whether a passenger ship is domestic and whether it is certified according to the EU Directive, which makes the analysis difficult

133 Assuming that it is updated regularly, which in this context means at least once per year

134 I.e. Passenger Ship Safety Expert Working Group, a sub-group of Maritime Safety Group

265. Although some national administrations alluded to the fact that the EU legislation may lead to increase of non-steel ship building (i.e. UK, FR), no evidence has demonstrated that this is the case[135]. On the contrary, some stakeholders called for developing harmonised EU safety standards for ships currently outside the scope of EU legislation to facilitate the internal market (namely composite ships and ships smaller than 24 m in length)[136]. Hence no significant unintended impacts have been demonstrated.

266. On the other hand, the awareness of passengers about the EU passenger ship safety legislation and its benefits for passengers remains lower than expected. While this may be linked to the relatively low level of organisation of passengers in maritime transport, it is indisputably also linked to the fact that the flag State and the owner often remain hidden to passengers. These two elements are inherent in the sector and therefore difficult to influence, one of the non-governmental organisations (SOS Catastrophes) that took part in the stakeholder survey suggested that a "black list" of companies, similar to the air transport, could be also envisaged[137].

7.4 Efficiency

Question 11: Are there substantial costs involved for compliance with safety standards (for construction, equipment, operation, maintenance and safety operations)? To what extent have these costs been reasonable and proportionate in relation to the risks, considering the different rules for different types of ships?

267. The regulatory cost related to EU safety standards are not substantial – at least in comparison to national standards that would have been in place otherwise. The estimated differences in regulatory costs represent merely a minor fraction compared to the total construction, operation and maintenance costs. For the non-recurrent regulatory costs the sum of quantified fire insulation, firefighting, life-saving appliances and initial surveys costs is as low as EUR 100,000 for a Class B type ship (a similar figure applies to Class C and D as well)[138].

268. Considering the minimum investment for new built ship (e.g. for a Class B ship investment can be around EUR 40 million), the EU regulatory costs represent an irrelevant percentage. The recurrent costs of surveys estimated at several thousands of EUR per year when compared to recurring fuel and maintenance costs (cca EUR 3 million) clearly also do not represent an important dis-incentive for building ships according to the harmonised EU standards. In relative terms the same is true for

135 The choice of building a ship in steel or other material is primarily driven by the price and characteristics of the chosen material. See also reply to evaluation question 11

136 For example, IT considered it necessary to close the gap between ships covered by Directive 2009/45/EC and ships built from other materials. Shipyards in PT called for a comprehensive legal framework with the same set of clear and detailed enough standards for small passenger ships in other materials than steel. Tractebel, 2015

137 Such a list already exists in the framework of port State control, where persistently underperforming shipping companies are listed, albeit its purpose is somewhat different and it covers companies rather than individual passenger ships (link: https://portal.emsa.europa.eu/web/thetis/company-performance)

138 For more details see annex 6

Class C and D (investment cost and operational cost are, in general for such ships lower than for a Class B, but in any case of orders of magnitude higher than the recurrent costs).

269. In principle, the safety standards can be considered proportionate to the risks (see reply to evaluation question 3 above). As expected, the corresponding compliance costs for large ships are in absolute terms higher than for small ships under both the EU and national legislation. The differences arise for individual classes of ships. For example in case of the pumps and fire-fighter outfits, measures, national legislation differentiates on average less between ships of different classes than the EU legislation[139].

Question 12: Are there any excessive administrative costs linked to the definition and application of navigation areas?

270. As highlighted in reply to evaluation question 4, the definition of sea areas is rather complex. The one-off costs related to their definition have already been invested in by the large majority of Member States.[140] There is a scope for simplifying the definition of sea areas[141] and for making their coordinates more accessible. It is however considered premature to conclude on whether more radical simplification leading to simpler framework (such as merging C and D areas) would be justified[142].

271. As regards the costs of sea area updates, they are not directly identifiable. The update is left to the discretion of a Member State and there are heterogeneous practices in use in the Member State in terms of periodicity of the update and bodies in charge of this operation (in some Member State this update is taken up by branches of the administration itself while in some other administrations this work is outsourced). In principle, the update is determined by the significant wave height. The significant wave height is, with the exception of seasonal differences, unlikely to significantly change from one year to another but it may be prone to changes over longer periods.

272. Given that the update is not carried out on an annual basis and that it was not considered to be an issue by Member States, it can be concluded that the administrative burden is not excessive.

Question 13: What are the costs for the various stakeholders linked to certifications and inspections/surveys and do any of these represent excessive burdens? Are there overlaps or inconsistencies?

273. The surveys costs reported by the Member States are generally charged to the ship owners, which means that they can be accounted for as charges. In some countries however the survey costs are fully or partly borne by the administration of the Member State (e.g. Slovenia, Germany). In that case these costs are enforcement

139 For more details see annex 6 and Tractebel, 2015

140 One notable exception is Greece that reported it to be impossible due to the geographical morphology of its coastline

141 I.e. by removing the redundant criteria, see reply to evaluation question 4

142 See reply to evaluation question 3 on the difference between safety standards for Class C and D vessels

costs. Apart from the survey cost for the inspectors there is also an extra cost for the ship owner for the employee who prepares and follows up the inspection.[143] The figures in the table below represent the corresponding costs:

Table 17: Overview of average yearly cost of inspections/surveys in the EU (EUR million)

Country	Directive 1999/35/EC	Directive 98/41/EC	Directive 2009/45/EC	Total
Charges	1,13		2,19	3,31
Administrative costs	0,13		0,12	0,25
Enforcement costs		0,73		0,73
Total	**1,26**	**0,73**	**2,30**	**4,29**

Source: Tractebel, 2015

274. In their replies to the questionnaires, 13 Member States (DE, DK, EL, FI, FR, IE, IT, LT, MT, PL, SE, LV, UK) and Norway declared that they combine or replace the surveys under Directive 1999/35/EC with any other survey under a different regime where possible[144]. Considering that flag State and PSC inspections cannot be carried out at the same time, synergies can be found for the ro-pax surveys combined either with port State control or flag State survey.

275. Besides combining the surveys, the legal framework also allows for a **Directive 1999/35/EC** survey to be counted as an expanded PSC inspection (i.e. a PSC inspection to be replaced by a Directive 1999/35/EC survey). This possibility is widely used by Member States when possible, i.e., when the ship is due for PSC inspection. However, given that the scope of 99/35 survey does not include all elements covered by the port State control, this overlap in fact creates a regulatory gap. The gap also exists for the flag state surveys in case they completely replace a Directive 1999/35/EC inspection, the scope and content of which partly differs.[145]

276. Removing the overlaps and inconsistencies between these inspection regimes would not only close the identified regulatory gap but it would also further rationalise the inspection effort of national administration and maximise the time in which the ship

143 It is assumed that this takes 4 to 8 man-hours at an average rate of EUR 23 per hour (average hourly cost for a technician in Europe, source: Eurostat). Therefore an extra cost for the ship owner is assumed of EUR 140 per inspection. It has been also assumed that there is no loss of income as the inspections take place when the ship is at port between services. Tractebel, 2015

144 8 Member States indicated that they did not combine the surveys and 1 Member States did not answer the question. Slovenia indicated that a combined survey (PSC + ro-pax) has been carried out only once, otherwise they are performed separately

145 See table 14

is commercially exploited.[146] Even if we assume that all the maximum combination potential has been reached in practice (i.e. reduction of 770 self-standing ro-pax inspections per year, estimated at EUR 1 million)[147], which is clearly not the case, there would be still certain number of inspections that could be spared.

277. For example, in 2014, there were about 100 ro-pax inspections which, although they involved vessels flying a flag other than that of the inspecting state, did not qualify as port State controls. However, if these inspections could have been counted as port State controls, this would have reduced the overall inspection burden on Member States. [148] On average, the annual number of inspections saved would range between 75 and 220 inspections.

278. Besides these monetary estimates, it should be however noted that there is a significant burden for all the stakeholders related to the complexity of the regime, overlapping requirements spread across different pieces of legislation, expressed in different terms etc. This makes the implementation, monitoring and enforcement unnecessarily burdensome for all the parties involved.

279. Evaluation of the annual (flag State) survey required under **Directive 2009/45/EC** has been generally positive. In fact, given that it defines the flag State survey requirements for domestic passenger ships, in its absence it would have to be replaced by surveys under national legislation. Only Ireland and the UK were of the opinion that an annual survey per individual ship is not sufficient to ensure that ships comply with the regulations.

280. As regards **Directive 98/41/EC**, the most burdensome aspect has proven to be the approval of registration systems, generating significant workload for some national administrations (e.g. 4250 working hours in Greece compared to 100 working hours in Italy). Such workload, and the corresponding costs, have been evaluated as clearly excessive, namely vis-à-vis its narrow scope and in comparison with the broader Directive 2009/45/EC and Directive 1999/35/EC inspections.

7.5 European added value

Question 14: To what extent would a different level of regulation could have been more effective and/or efficient than the current legislative framework? What is the added value of setting safety standards through the EU legislation compared to national legislation?

281. As regards **domestic passenger ships**, it is unlikely that a different level of regulation could have been more effective or efficient. International standards do not

146 I.e. while maintaining all key elements of 99/35 surveys, including the unscheduled survey during a regular crossing

147 I.e. not all ro-pax inspections could be disposed of (total cost of which estimated at EUR 1,3 millions). See annex 4 for more details and the underlying assumptions

148 This relates to the obligations on Member States to carry out a fixed number of inspections (the so called inspection commitment) under Directive 2009/16/EC. If all 99/35 inspections involving foreign-flagged vessels automatically qualified as PSC, this would lead to a reduction in the overal number of inspections carried out by Member States

apply and at national level, Member States would either have to develop their own safety standards or to adopt international standards.

282. National standards would have to be adapted and regularly updated; otherwise the eventual outdated standards may not keep track of new developments in the shipping industry. Even when based on international standards, regular update and adaptation would be needed. This would in principle mean that the entire EU assessment[149] would have to be done by each Member State individually (i.e. where relevant). This could easily increase the assessment costs from national administrations more than ten times, i.e. from current ca. EUR 14000 per update to EUR 160000 in the absence of EU legislation[150]. The cost of the update procedure is therefore also considered to be proportionate vis-à-vis the objective of maintaining a common, high level of safety[151].

283. As regards **international passenger ships,** i.e. where international rules apply, the most effective and efficient solution would certainly be to have harmonised standards providing for a high level of safety at international level. For the damage stability requirements, notably Directive 2003/25/EC, this is however currently not the case – therefore, although having more stringent requirements at regional, i.e. EU level is considered the only one to deliver the safety level agreed at EU level at this point of time. Having said that, the need for, and added value of Directive 2003/25/EC should be re-evaluated once the results of on-going discussions at IMO are known.

284. In the absence of an enforcement mechanism at international level, the existing EU inspection regimes applicable to both domestic and international passenger ships are considered as a pre-requisite to maintaining a high standard of safety of life for passenger ships and eliminating substandard shipping.

Question 15: From the viewpoint of the Treaty provisions from the internal market, transport safety and consumer protection, what could be the consequences of abolishing EU uniform safety standards for the ships sailing in national water only?

285. The abolition of harmonised EU standards for domestic passenger ships would have a freezing effect. It is unlikely to lead to the abolition of the transposed rules and the current common standards would therefore remain applicable. Updating them will then solely depend on the Member States as described above. At best such abolition would lead to a diversified picture of national standards and rules which would not however guarantee efficiency and transparency as is achieved on the basis of common standards.

286. Prima facie the abolishing of Directive 2009/45/EC could also have adverse effects with respect to safety requirements for persons with reduced mobility since national standards do not include such specific requirements.

149 Currently, the update of the Directive 2009/45/EC is carried out at European level, with the assistance of the Committee on Safe Seas and the Prevention of Pollution from Ships (COSS)

150 See annex 6 for the detailed calculations

151 See also reply to evaluation question 6

287. Finally, since the provisions with respect to inspections and surveys in Directive 2009/45/EC and in national legislation are similar, the abolition of this Directive would not lead to a reduction in this matter. The surveys under Directives 1999/35/EC and 98/41/EC would not be replaced automatically without EU legislation as there are at the moment no national rules in place that would foresee such inspections (except of Member States that already voluntarily made Directive 1999/35/EC more widely applicable).

7.6 Coherence

Question 16: While looking at the legislative framework at all three levels (international, EU, national), are there gaps, overlaps or inconsistencies in terms of the coverage of rules? Is there evidence that these gaps constitute a higher safety risk? In case of coverage under national law, is there evidence of major discrepancies in safety level?

288. The identified safety gap in international standards concerns damage stability issues for ro-ro passenger vessels. This gap is currently closed at the EU level by Directive 2003/25/EC, which however leads to overlapping regulatory regimes[152]. The fitness check also identified several regulatory gaps that are driven by unclear definitions and requirements and that could possibly constitute a higher safety risk. This is in particular the case regarding the scope, regularity and application of ro-pax inspections in Directive 1999/35/EC. In addition, several issues related to safety have been singled out for further assessment, related namely to safety requirements of Class C and D ships under Directive 2009/45/EC.

289. As regards the ships outside the scope of common EU standards (and international ones, for that matter), the applicable legislation at national level is comparable to or less stringent than at EU level (at least for the reference countries for which the comparison has been carried out[153]). According to the accident statistics collected so far, there is no evidence of 'major' discrepancies in safety level, albeit in view of technological progress on safety, this could be argued in principle for some individual requirements (related to, for example, fire insulation). However, these differences may not necessarily lead to different safety levels overall – as long as they can be compensated by additional measures tailored to local and geophysical conditions, such as navigation restrictions.

Question 17: Are the objectives of the legislation coherent with the challenge of competitive and sustainable EU passenger ship operation and wider economic, social or environmental challenges of EU policies?

290. With respect to safety challenges of competitive and sustainable passenger ship operation, the overall concern of the EU policies is the maintenance of a uniform high level of safety of life in combination with an efficient functioning of the internal market principles. As such, sustainable passenger ship operation contributes to the

152 See chapter 6.5.2 and annex 4

153 See chapter 6.1 and 6.2

economic growth of shipping without adversely affecting social and environmental development. According to the latest available data from Eurostat, about 120 million passengers were transported by domestic passenger ships at EU waters in 2012 (as compared to approximately 400 million passengers who pass through European ports every year).

291. By focusing on a uniform high safety level for passenger ships, crew and passengers can expect to fully participate and make use of an essential service enhancing mobility within the EU and within the Member States alike. In this context, the EU passenger ship safety legislation is coherent with the existing EU principles on the minimum safety and health requirements for improved medical treatment on board vessels.[154] Ensuring high safety standards will also reduce the inherent risks in the operation of ships, not only for those persons directly or indirectly involved but also for the safeguarding of the marine environment by protecting it from accidental vessel-source pollution.

292. In order to keep the shipping industry on a competitive basis, one of the main challenges is to eliminate the operation of sub-standard ships through a harmonized system of inspections and controls, ensuring that ships meet the applicable safety, security and environmental standards, and that crew members have adequate training as well as living and working conditions.[155] At the same time, the EU passenger ship safety legislation is evaluated as broadly proportionate, although there is a scope for improvement.[156]

293. In conclusion, the objectives of the EU passenger ship safety legislation are fully coherent with the 2011 White paper on transport[157] as well as the Commission better regulation agenda[158].

Question 18: Is there a scope for streamlining the regulatory framework on passenger ship safety?

294. There is an ample scope for streamlining and simplifying the existing regulatory framework, primarily by removing the identified numerous overlaps, inconsistencies and ambiguities and by bringing it up to date with regulatory and technological developments. The following chapters provide concrete recommendations in this respect.

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154 I.e. Council Directive 92/29/EEC of 31 March 1992 (OJ L 113, 30.4.1992, p. 19–36)

155 The basic principle is that the prime responsibility for compliance with the requirements laid down in the international maritime conventions lies with the ship owner/operator. Responsibility for ensuring such compliance remains with the flag State

156 See reply to evaluation question 3

157 I.e. Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, COM(2011) 144 final

158 COM(2015) 215 final

8 CONCLUSIONS

295. This fitness check showed that the key objectives of the EU passenger ship safety legislation related to passenger safety and internal market are being overall met and remain highly relevant. The EU passenger ship safety legal framework resulted in a common safety level for passenger ships within the EU and a level playing field between operators as well as increased transfer of ships between Member States. In addition to harmonised safety standards, the system of inspections and surveys played a key role in maintaining the required high level of safety.

296. The fitness check also revealed that these objectives can be in some instances delivered in a simpler, clearer and more proportionate manner. The potential to simplify, clarify and repeal a number of ambiguous, outdated or overlapping requirements has been identified in number of areas:

Complexity and administrative burden

297. The legal, technical and economic analysis carried out by the Commission, EMSA and an external contractor revealed a significant simplification potential namely concerning the Directive 1999/35/EC that overlaps with flag State surveys and port State inspections. Member States have implemented these overlapping and inconsistent requirements in a pragmatic way, which means the current legal framework no longer reflects the state of affairs.

298. The complexity of the EU passenger ship safety legislation is aggravated by an outdated format of the safety standards themselves (i.e. the Annex to Directive 2009/45/EC), which became over time extremely difficult to read and to compare against the existing international requirements.

Ambiguity and lack of transparency

299. The fitness check also revealed that a number of provisions, definitions and requirements are ambiguous to such extent that in certain cases they may hinder an effective implementation of the legislation. These relate in particular to the scope and application of the harmonised EU standards, such as the type of ships covered, regularity of inspections etc. In addition, more transparency and further examination is needed concerning certain specific implementation elements.

Disproportionate requirements

300. There has proven to be a mismatch between the existing prescriptive safety standards for small steel ships of below 24 m in length and the identified safety and internal market objectives. Given that such small ships are in the main built from materials other than steel, the vast majority of the fleet is currently not covered by the harmonised EU safety standards (96%). This implies that most of vessels below 24 m are already certified under national legislation. Even for the ships covered by EU

standards, the internal market for such ships does not exist in practice (practically no flag changes recorded for steel ships below 24m in past decades).

301. It has also proven increasingly difficult to adapt the prescriptive, one-size-fits all SOLAS standards for this category of ships, particularly due to their high sensitivity to local operational conditions. Due to the particularities of the conditions in which these ships navigate, Member States should be in a better position to assess the concrete limitations in terms of distance to coast and weather conditions.

302. Taking into account the request of some stakeholders as well as a broad range of designs and technical solutions that makes it extremely challenging to identify a common set of prescriptive standards, an option could be to develop a Guideline or Code for small vessels containing only high level requirements as part of a goal based standard framework.

Supporting search and rescue operations

303. Besides the simplification potential, the fitness check also revealed a number of issues that unnecessarily reduce the effectiveness of search and rescue operations. For example, while experience has shown that an effective search and rescue operation requires immediate access to accurate data as regards the number of persons on board, this is not always the case.

304. According to the current requirements, this information has to be transmitted to and stored in the company's system and be – at all times – immediately available for transmission to the competent authority. This requirement, dating to 1998, ignores the development of systems such as SafeSeaNet (Directive 2002/59/EC) and the National Single Windows (Directive 2010/65/EC) and necessitates that the national competent authority contacts the shipping company in the event of an emergency. Furthermore, the communicated data does not include information on nationality (besides name, age and sex), making the assistance provided to victims and their relatives unnecessarily burdensome.

Safety-related issues necessitating further assessment

305. Finally, the fitness check identified a number of other, substantial issues related to the adequacy and proportionality of existing safety standards, such as damage stability requirements; the differences in safety requirements between the different classes of ships; the application of inspection regimes at national level and the possibility to develop harmonised standards for ships currently not covered by the EU regulatory framework.

306. These issues will necessitate further assessment and consultations with experts. Importantly, some of these issues should be first dealt with at the international level, before further action at the EU level can be envisaged.

9 RECOMMENDATIONS

From the analysis carried out a set of recommendations can be drawn along the following major axes across the Directives subject of this fitness check:

- **Simplification and elimination of overlaps;**
- **Clarifications, transparency and monitoring;**
- **Elimination of disproportionate requirements;**
- **Supporting search and rescue operations;**
- **Further assessment of safety-related issues.**

Simplification and elimination of overlaps:

Recommendation N.1: Avoid overlaps between the specific surveys under Directive 1999/35/EC and the expanded inspections provided for under Article 14 of Directive 2009/16/EC and Commission Regulation (EU) No 428/2010.

Recommendation N.2: Avoid overlaps between the specific surveys under Directive 1999/35/EC and the annual flag State surveys provided for in the Directive 2009/21 (international) and Directive 2009/45 (domestic).

Recommendation N.3: Simplify the Annex of Directive 2009/45/EC and increase its readability. Consider reducing the transposition costs for Member States.

Recommendation N.4: Streamline the reporting mechanism of exemptions/equivalencies under Directives 2009/45/EC and Directive 98/41/EC.

Recommendation N.5: Eliminate the redundant concept of the host state provided for under Directive 1999/35/EC (while retaining the possibility for joint inspections) and replace the term "survey" by "inspection".

Clarifications, transparency and monitoring:

Recommendation N.6:

- Clarify that for the purposes of Directive 2009/45/EC aluminium is a material equivalent to steel and clarify the corresponding fire insulation requirements (e.g. definitions of spaces which should be additionally fire insulated).
- Clarify that offshore service vessel for wind-farms fall outside the scope of Directive 2009/45/EC.
- Clarify that traditional ships fall outside the scope of Directive 2009/45/EC and clarify their definition.

Recommendation N.7: Clarify and simplify the sea areas definition in Directive 2009/45/EC while:

- Removing the reference to "where the shipwreck persons can land",
- Removing the notion of "place of refuge".

Recommendation N.8: Clarify that the regularity of the two annual inspections of ro-pax vessels in Directive 1999/35/EC is meant to take place at regular, six monthly intervals.

Recommendation N.9: Clarify the definitions of passenger registration requirements in directive 98/41/EC, such as length of the voyage.

Recommendation N.10: Design a model scheme for EMSA visits to Member States on passenger ship safety.

Recommendation N.11: Provide a framework for a discussion and exchange of best practices as regards the implementation, monitoring and enforcement of passenger ship safety legislation on a regular basis.

Elimination of disproportionate requirements:

Recommendation N.12: Exclude passenger ships below 24 m in length from the scope of the Directive 2009/45/EC.

Recommendation N.13: Eliminate from Directive 98/41/EC the requirement for the approval of the passenger registration systems.

Supporting search and rescue operations:

Recommendation N.14: Eliminate double reporting of passengers requirements and align the existing reporting requirements for all operators by providing for:

- Recording the information on the number of persons on board in an existing electronic system that in the event of an emergency or accident allows for an immediate transmission of data to the competent authority instead of in the company system, before departing and before arriving to any EU port of call.
- Recording – for every voyage beyond 20 nautical miles – of the required information on crew and passengers in the same system as above and instead of in the company system, before departing and before arriving to any EU port of call.

Recommendation N.15: Avoid overlaps and require – for every voyage beyond 20 nautical miles – the nationality of passengers to be registered and transmitted to the competent authority, using the same means and criteria as the ones in place for recording and transmitting the already required data on name, age, etc.

Further assessment of safety-related issues:

Recommendation N.16: Further assess the adequacy of differences in safety requirements between Class C and D ships under Directive 2009/45/EC.

Recommendation N.17: Assess the possibility to align the EU regulatory approach on specific stability requirements for ro-ro passenger ships with international legislation, providing that the current safety level determined by Directive 2003/25/EC is at least maintained.

Recommendation N.18: Promote the application of specific surveys under Directive 99/35/EC to Classes B, C and D of ro-pax vessels engaged in regular services.

Recommendation N.19: Consider developing guidelines or standards for small vessels and vessels built in non-steel or equivalent materials, based on functional requirements as part of a goal based standard framework.

10 ANNEX 1: GLOSSARY – ABBREVIATIONS AND DEFINITIONS[159]

Abbreviation/term	Description
Cabotage	The transport of passengers between two ports in the same country on a vessel flagged in another country
Classification Societies	Classification societies are independent organisations which develop, apply and maintain technical and procedural requirements for the design, construction and survey of ships; the objective of classification is to verify the structural strength and integrity of the ship's hull, and the reliability and function of the propulsion and steering systems, power generation and other features required to maintain essential services on board; class societies may also be authorised by flag States to perform on their behalf inspections and surveys for the statutory certification of their ships; in this capacity they are called 'recognised organisations'
COSS	The Committee On Safe Seas and Prevention of Pollution from Ships (COSS) was established under Regulation (EC) No 2099/2002, it includes representatives of all MS and is tasked to assist and advise the Commission on matters of maritime safety and prevention or reduction of pollution of the environment by shipping activities
Cruise ship	Passenger ship used for pleasure voyages where the voyage itself and the ship's amenities are a part of the product being sold
Domestic voyage	A voyage in sea areas from a port of a Member State to the same or another port within that Member State
ECDIS	Electronic Chart Display & Information System
EMCIP	The EU database on maritime accidents
EMSA	European Maritime Safety Agency
EQUASIS	A public database containing safety-related information on the world's merchant fleet

[159] This glossary is provided for information purposes only and does not have any legal standing

EU	European Union
FAL	The Facilitation of International Maritime Traffic (FAL) Convention regulates and harmonizes the documents (FAL forms) ships need to submit to enter into ports
Flag change	Flag change is related to the country of registration, i.e. when a ships changes country of registration it "changes flag" as well
Flag State	State whose flag a ship is entitled to fly; State of registration; indicates the nationality of the ship
GRP/FRP	Glass Reinforced Plastics/Fibre Reinforced Plastics
GT	Gross Tonnage
HAZMAT	Hazardous material and items. Often referred to as a notification system of dangerous or polluting goods on board ships
High Speed Craft (HSC)	Passenger ships sailing at high speed, as defined in SOLAS Chapter X Reg. 1.3
Host State	State to or from whose ports a passenger ship is engaged on a regular service, as defined in Directive 1999/35/EC
ICLL	International Convention on Load Lines
IMO	International Maritime Organization
International voyage	A voyage by sea to or from a port of a Member State to a port outside that Member State
ISM	International Safety Management Code
ISPS	International Ship Port Facility Security Code
LSA	Life Saving Appliances
MARPOL	International Convention for the Prevention of Pollution from Ships
MLC	Maritime Labour Convention
MOU	Memorandum Of Understanding
NSW	National Single Window

Passenger ship	A ship which carries more than 12 passengers
Place of refuge	Any naturally or artificially sheltered area at sea as indicated by the coastal State
Pleasure yachts engaged in commercial trade	Large yachts exploited on a commercial basis
PLL	Potential loss of life
Port area	Port area is an area other than a sea area, as defined by the Member States, extending to the outermost permanent harbour works forming an integral part of the harbour system, or to the limits defined by natural geographical features protecting an estuary or similar sheltered area
PSC	Port State Control (PSC) is the inspection of foreign ships in other national ports by PSC officers (inspectors) for the purpose of verifying that the competency of the master and officers on board, and the condition of the ship and its equipment comply with the requirements of international conventions
PSS ISG	The EU passenger ship safety inter-service steering group
Ro-ro ships (ro-pax)	Roll-on/roll-off (ro-ro) ships are vessels designed to carry wheeled cargo, such as automobiles, trucks, semi-trailer trucks, trailers, and railroad cars that are driven on and off the ship on their own wheels or using a platform vehicle, such as a self-propelled modular transporter. If they carry more than 12 passengers in addition to vehicles, they are called ro-pax vessels
SafeSeaNet	The EU platform for maritime data exchange of maritime information between Member States
SAR	Search and Rescue
Sightseeing boats/ tourist boats	Small passenger ships used for sightseeing tours along the coast
SOLAS	International Convention for the Safety Of Life At Sea
SOLAS 2009	Current version of the SOLAS Convention in which the damage stability provisions are based on probabilistic criteria
SOLAS 90	Older version of the SOLAS Convention in which the damage stability provisions are based on deterministic provisions

SPS	Special Purpose Ship
Stockholm Agreement	An international agreement that introduced higher stability standard for ro-ro passenger ships in the Baltic region, extended to the whole EU by Directive 2003/25/EC
SWH	Significant Wave Height
Tenders	Boats used to ferry passengers from cruise ships to shore and back
Territorial waters	Territorial waters or a territorial sea, as defined by the 1982 United Nations Convention on the Law of the Sea, is a belt of coastal waters extending at most 12 nautical miles
THETIS	The database supporting the EU Port State Control inspection regime laid down in the Directive 2009/16/EC as well as inspections carried out under Directive 1999/35/EC
Traditional (sailing) ships	Passenger ships with sails as means of propulsion sailing
UN	United Nations
WoD	Water on Deck

11 ANNEX 2: EU INTERNAL MARKET

1. Changes of flag

The next table provides an overview of the flag changes of the fleet certified under Directive 2009/45/EC. The first flag change record available is from 1979:

Table 18: Flag changes of EU certified ships

	Number	Before Directive entered into force	After Directive entered into force
Number of changes of Flag INTRA EU	119	19	100
Number of changes of Flag Out EU to EU	82	20	62
Number of changes of Flag EU to out EU	28	10	18

Source: MS 2014/09 FC Questionnaire + MARINFO (EMSA)

Italy, Norway and Germany are the Member States where most flag changes have their origin (exporters). Italy, Greece, Spain and Norway are the Member States which receive more ships from other flags (importers). Therefore, both Italy and Norway are the most active countries in terms of flag changes. Only one ship of less than 24m in length has been reported to have changed flag.

2. Ships operating in a Member State different from the flag

Some countries report that ships under their flag operate in other countries (see table below). Only 10 passenger ships were reported to be operating abroad, this is 1 % of the total amount of passenger ships reported (although the United Kingdom and the Netherlands did not reply to this question). Cyprus has only ships operating in other countries.

Table 19: Domestic passenger ships (Directive 2009/45) operating in other countries

Flag	Number of ships	Operating in following countries:
Belgium	2	Spain
Cyprus	5	Spain, Greece, Germany
Italy	3	Spain
TOTAL	10	

Source: MS 2014/09 FC Questionnaire

This low number of domestic passenger ships operating in another Member State can be explained by the high number of flag changes, as ship owners prefer to navigate under the same flag as the Member State where they operate (for practical reasons and to avoid PSC inspections).

3. Ships built in other Member States

At least 34%[160] of the domestic passenger ships falling under Directive 2009/45/EC have been built in a country different from the flag:

Table 20: Domestic passenger ships (Directive 2009/45) built in a country different from the flag

Flag	No. Ships built in a different country than the flag	% of the fleet
Belgium	0	0%
Cyprus	5	100%
Denmark	18	25%
Estonia	9	17%
Finland	16	33%
France	5	18%
Germany	4	7%
Greece	84	52%
Ireland	3	60%
Italy	64	36%
Malta	3	75%
Netherlands	No info	No info
Norway	38	31%
Poland	1	9%
Portugal	3	50%

[160] For 17% of domestic passenger ships falling under Directive 2009/45/EC, the country where they were built is unknown, therefore in reality this share could be higher

Flag	No. Ships built in a different country than the flag	% of the fleet
Romania	1	50%
Slovenia	1	100%
Spain	32	61%
Sweden	13	62%
United Kingdom	12	17%
TOTAL	**312**	**34%**

Source: MS 2014/09 FC Questionnaire + MARINFO (EMSA)

When looking at Member States that have more than 100 reported passenger ships, Greece has 52% of its ships built in another country.

Norway, Italy, together with Germany and the UK have a lower percentage. This can be explained by the number of shipyards on each of these Member States.

Large passenger ships are built in few Member States. Conversely, small ships are in most of the cases built close to the place where they operate.

The next table provides an overview of Member States where ships have been built (origin, column left) and where they operate today (destination, row above).

Norway, Germany and Poland have built a considerable number of large passenger ships. Australia (HSC mainly) and Japan (ro-ro passenger ships) are the countries outside the EU with the highest production.

In terms of number of ships, Greece, Italy, Norway and Spain import most ships. Greece has a significant share coming from Japan. The origin of the imported Italian ships is spread over different countries (Germany, Norway, Singapore, etc.). A quarter of Norwegian imported ships are built in Poland. Half of imported Spanish ships come from Australia (HSC ships).

38% of these domestic passenger ships, built in a country different of where it operates, are built outside the EU (see table below):

Table 21: Origin Destination matrix of domestic passenger ships built in one MS (or Rest Of the World = Outside Europe) and operating in another MS *(Source: Tractebel, 2015)*

Origin/Destination	Belgium	Cyprus	Denmark	Estonia	Finland	France	Germany	Greece	Ireland	Italy	Malta	Poland	Portuga	Romania	Slovenia	Spain	Sweden	UK	Norway	TOTAL
Belgium								1												1
Denmark								2		2		1								5
Estonia																				0
Finland																1	1	1	1	4
France								1	1							2	1			5
Germany			3	1				3		11	1					1	1	1	5	27
Greece			1							4								1		6
Italy		1						4			1					3	1	1	1	12
Latvia			4																1	5
Lithuania				3	1														2	6
Malta										2										2
Netherlands		1					1	3		6			1	1	1					14
Poland			1		1	1	1										1	6	9	20
Portugal																				0
Romania																			5	5
Spain						1		1					2						1	5
Sweden			2		4		1	4		4									2	17
UK								4		1	1									6
Norway		1	2	3	6	2		8		12						7	8			49
TOTAL Europe	0	3	13	7	12	4	3	31	1	42	3	1	3	1	1	14	13	10	27	189
Australia		1	3					7	2	6						16			3	38
Bangladesh			1																	1
Georgia								1												1
Japan		1						21		1						1				24
Korea, South								3		2										5
Malaysia																		1		1
Iceland					1															1
Philippines																		1		1
Russia																			2	2
Singapore										11						1				12
Turkey							1	3		1									3	8
U.S.S.R.				2	2			12												16
Ukraine								6												6
USA					1															1
Yugoslavia										1										1
TOTAL outside Europe	0	2	4	2	4	0	1	53	2	22	0	0	0	0	0	18	0	2	8	118

12 ANNEX 3: ACCIDENT ANALYSIS AND SAFETY LEVEL COMPARISON

1 ACCIDENT ANALYSIS

Two databases have been used to collect information on accidents regarding domestic passenger ships:

1. MARINFO: It is a database which englobes a series of commercial databases covering several datasets of ships. One of data fields is the number of accidents reported for each ship under analysis. However, the details of the accident are very limited and are not classified through consistent categories, like type of accident, fatalities, etc. Therefore, only limited amount of information can be extracted.
2. EMCIP: this database, dedicated exclusively to accidents, is populated by EU Member States based on the criteria set-up in Directive 2009/18/EC on Accident Investigation. The database has a consistent classification of maritime accidents which allows for an appropriate analysis. However, it has only been populated since June 2011.

It is worth mentioning that MARINFO does not include any data on 140 domestic ships certified under the EU Directive. However, of these 140 ships, only 2 have been reported as having an accident in EMCIP in the last 4 years. Therefore, both databases include essentially the same domestic passenger ships and can be compared.

MARINFO shows about 544 accidents for the ships certified under the Directive in the last 5 years whereas EMCIP show 408 accidents in the last 4 years approximately, i.e. both show around 100 accidents per year for a fleet of 922 ships:

Table 1: Number of accidents on domestic passenger ships under the Directive

	Number Accidents	Individual Ships having accidents	No. ships>1 accident	No. Ships> 2 accidents	No. Ships > 3 accidents	No. Ships > 5 accidents
EMCIP (last 4 years)	408	223	94	43	27	9
MARINFO (last 5 years)	544	256	113	66	42	17

Source: MS 2014/09 FC Questionnaire + MARINFO (EMSA) + EMCIP

When a more detailed analysis is needed with regard to accidents, EMCIP is a more powerful tool as it allows for the extraction of more details with regard to the type of accident, consequences, etc. Therefore, from this point on in this annex EMCIP will be the only source used to produce the relevant tables with accident details. It is worth mentioning that the

EMCIP data used in this annex was extracted in January 2015 for accidents recorded from mid-2010 until 31st December 2014.

In order to obtain the details on the accidents only for the relevant ships, the database of domestic passenger ships was cross referenced with an extraction from EMCIP.

The following table includes the number of accidents per Class of ship:

Table 2: Number of accidents on domestic passenger ships under the Directive per Class

	Class A	Class B	Class C	Class D	HSC	TOTAL
Number of Accidents	40 (10%)	172 (42%)	78 (19%)	77 (19%)	41 (10%)	408
Individual Ships	20	71	54	52	26	223
Percentage of fleet represented by Class	7%	18%	28%	30%	16%	

Source: MS 2014/09 FC Questionnaire + EMCIP

It is worth noting that 223 ships had accidents which represent about 25% of the ships certified under the Directive. It is also remarkable that Class B ships represent 42% of the accidents recorded whereas they represent 18% of the fleet.

It is also possible to check how many of the accidents happened to ro-ro passenger ships in total and per Class:

Table 3: Number of accidents on domestic ro-ro passenger ships under the Directive per Class

	Class A	Class B	Class C	Class D	HSC	TOTAL
Total number of Accidents	40	172	78	77	41	408
Number of Accidents ro-ro passenger	40	147	53	64	21	325

Source: MS 2014/09 FC Questionnaire + EMCIP

It can be noted that while 80% of the accidents (325 out of 408) happened to ro-ro passenger ships, they represent about 50% of the fleet.

The data can also be displayed showing the age of the ship at the time of the accident:

Table 4: Number of accidents on domestic passenger ships under the Directive per age

	<5 years	>20 years	>25 years	>30 years
Number of Accidents	47 (12%)	184 (45%)	153 (38%)	116 (28%)
Percentage of ships in the age range	8%	51%	41%	33%

Source: MS 2014/09 FC Questionnaire + MARINFO (EMSA) + EMCIP

As it can be noticed, the percentage of the number of accidents per age category corresponds approximately with the percentage of the fleet they represent.

It is also possible to analyse the accident with regard to the categorisation that the IMO developed to indicate the seriousness of the accidents:

- Very serious casualties are marine casualties involving the total loss of the ship or a death or severe damage to the environment.
- Serious casualties are marine casualties to ships which do not qualify as very serious casualties and which involve for example a fire, collision, grounding, heavy weather damage, suspected hull defect, etc., which result in the ship being unfit to proceed or pollution.
- Less serious casualties are marine casualties that do not qualify as very serious or serious casualties.
- Marine incidents can be understood as any event, or sequence of events, other than a marine casualty, which has occurred directly in connection with the operations of a ship that endangered, or, if not corrected, would endanger the safety of the ship, its occupants or any other person or the environment.

The categories have been aggregated as marine incident/less serious and serious/very serious in the following table for domestic ships under the Directive. In addition, for comparison purposes, the last column shows the percentage of accidents corresponding to each category for the whole passenger fleet (domestic and international):

Table 5: Classification of accidents according to severity

	Class A	Class B	Class C	Class D	HSC	Total Domestic	Total Passenger Ships (domestic + international)[161]
Less serious/ Incident	32 (80%)	152 (88%)	73 (94%)	64 (83%)	32 (78%)	353 (87%)	78-81%
Serious/ Very Serious	8 (20%)	20 (12%)	5 (6%)	13 (17%)	9 (22%)	55 (13%)	19-22%

Source: MS 2014/09 FC Questionnaire + EMCIP

As it can be noted, the percentage of serious/very serious accidents in the domestic passenger fleet is lower than for the whole fleet recorded at EMCIP (domestic + international). This means that the accidents for domestic ships are in general less severe than for international passenger ships.

This can be confirmed in the table below where the number of fatalities and injured people is shown:

Table 6: Number of injured and fatalities per Class

	Class A	Class B	Class C	Class D	HSC	Total Domestic	Total Passenger Ships (domestic + international)
Injured	32 (14 passengers)	93 (19 passengers)	27 (4 passengers)	14 (3 passengers)	13 (8 passengers)	179 (48 passengers) -2 every 5 accidents	1 every 2 accidents
Fatalities	0	4 (1 passenger)	0	0	0	4 (1 every 100 acc.)	1 every 27 accidents (1 every 68 without Costa Concordia)

Source: MS 2014/09 FC Questionnaire + EMCIP

161 The range in the percentages represents the extreme values of this parameter in the last years according to the EMCIP database. As it can be noted, the values oscillate within a reduced range showing stability for the period

It is also possible to analyse whether the accident is occupational or related to a casualty with a ship[162]:

Table 7: Classification of accidents – occupational and casualty with a ship

	Class A	Class B	Class C	Class D	HSC	Total Domestic	Total Passenger Ships (domestic + international)
Occupational	17 (42%)	82 (48%)	24 (31%)	12 (16%)	11 (27%)	146 (36%)	≈35%
Casualty with a ship	23 (58%)	90 (52%)	54 (69%)	65 (84%)	30 (73%)	262 (64%)	≈65%

Source: MS 2014/09 FC Questionnaire + EMCIP

As it can be seen, the percentages for the two fleets under consideration are similar with 35% of the accidents being occupational.

It is possible to combine the two previous tables to assess the severity of the "occupational" accidents versus "casualty with a ship" accidents:

Table 8: Severity of occupational and casualty with a ship accidents

		Injured	Fatalities
Total Domestic under Directive	**Occupational (35% of accidents)**	141	1
	Casualty with a ship (65% of accidents)	38	3

Source: MS 2014/09 FC Questionnaire + EMCIP

At first sight it seems that the consequences of occupational accidents are more severe, as the number of accidents is lower whereas the consequences in terms of injured people are considerably higher than those of the "casualty with a ship" category. In terms of fatalities it is more difficult to draw conclusions because the number is so low. An increase of only one fatality in one of the categories would completely alter the analysis. It is suggested that more years of data are needed to have a more complete analysis.

162 Marine casualties are separated into two different categories: on one hand, there is a "**casualty with a ship**", when a ship is affected by an accident and, on the other hand, there is an "**occupational accident**", where the accident affects only a person

In terms of size, for the ships within the scope of the Directive, the data show that only 1 of the accidents is related to a ship of less than 24m:

Table 9: Number of accidents for ships under Directive per size

	<24m	>24m
Number of Accidents	1	407

Source: MS 2014/09 FC Questionnaire + EMCIP

It is worth noting that the ships of less than 24m in length represent only 8% of the fleet under the Directive. The following table classifies the accidents related to "casualty with a ship" in terms of type of occurrence. Grounding and loss of control are the most frequent occurrences.

Table 10: Number of accidents for ro-ro and non ro-ro ships under Directive

Type of occurrence	Ro-ro Passenger Ship	Passenger ship other than ro-ro	Total
Capsizing/Listing	1	0	1
Collision	13	11	24
Contact	67	13	80
Damage to ship/equipment	27	5	32
Fire/Explosion	21	4	25
Flooding/Foundering	0	1	1
Grounding/Stranding	30	23	53
Hull Failure	0	1	1
Loss of Control	36	9	45
TOTAL	195	67	262

Source: MS 2014/09 FC Questionnaire + MARINFO (EMSA) + EMCIP

2 LEVEL OF SAFETY COMPARISON

The safety standards of the Directive have been mirrored from the ones of SOLAS, considered the benchmark in terms of safety level, but adapted to the sea areas defined in the Directive due to the navigation limits imposed. Therefore, in principle, safety levels should be comparable.

The comparison of levels of safety is very difficult and implies a degree of subjectivity. However, an estimation has been made using risk metrics to compare the level of safety of the domestic passenger fleet under the Directive with the international passenger fleet (SOLAS standards). Two main comparative sources have been used. The "EMSA 3"[163] study carried out by a consortium led by DNV-GL[164] on damage stability for passenger ships and the *"Statistical analysis of ship accidents that occurred in the period 1990-2012 and assessment of safety level of ships"* written by A. Papanikolaou, K. Bitha, E. Eliopoulou and N.P. Ventikos from the National Technical University of Athens (NTUA).

The comparison has however to be taken with caution as the time-frame for which data on domestic passenger ships is available is still very limited compared with the one of international passenger ships.

In the above-mentioned EMSA 3 study there are significant considerations with regard to maritime risk level. In this regard, some paragraphs have been copied in this annex:

"Risks can be reduced, however, it is impossible to eliminate them totally. The safety is not a static concept but dynamic. The decision-maker must decide when the ship or the shipping operation is "safe enough", i.e., when the risks are so low that further safety measures are not necessary. Risk criteria are intended to guide this decision-making process in a systematic way. Risk criteria are also useful where risks are to be compared or ranked. Such comparisons are sometimes complicated by the multi-dimensional nature of risk, e.g., rare high-consequence accidents may be exchanged for more likely low-consequence ones.

However, risk assessment is often a qualitative process based on expert judgement. In this case, risk criteria may be qualitative standards that help decide whether further action is needed.

The risks of accidents on a ship are not the only consideration when making decisions about safety standards. Operational, economic, social, political and environmental factors may be important too. As a result, decisions about safety levels on ships are complex judgements which cannot be reduced to simple rules or criteria. Nevertheless, it is possible to provide guidance on some of the most critical risk issues.

Risk metrics

The most important metrics used in passenger ships are:

- *Individual risk of fatality: probability of death experienced by individuals on the ship (such as passenger or crew members) from specified hazards.(...) Experience shows that most*

[163] EMSA 3 refers to the "Study assessing the acceptable and practicable risk level of passenger ships related to damage stability", available at the following link: http://emsa.europa.eu/damage-stability-study.html

[164] DNV-GL stands for Det Norske Veritas – Germanischer Lloyd, a Classification Society which is also a Recognised Organisation in the EU for the purposes of Directive 2009/15/EC and Regulation 392/2009

ships would comply with standard individual risk criteria. However, individual risk criteria are still important to demonstrate to the public who may distrust cost-benefit calculations, that acceptable safety levels have been achieved.

- *Societal risk of fatalities: the probability of death experienced by the whole group of people affected by the activity (including all passengers and crew as well as any other people on other ships who may be involved)."*

Normalisation of factors

Noting that the two above-mentioned sources used for comparison cover different periods and different fleet size the parameter ship-year was used in order to have comparable figures. This parameter is calculated using the number of active ships for each of the years considered. For example, if we consider a 3 year period in which during year 1 there were 1,000 ships, in year 2 2,000 ships and in year 3 3,000 ships, the number of ships-year would be 1,000 + 2,000 + 3,000 = 6,000 ships-year. The use of this parameter makes it possible to compare the data provided by the different sources.

Individual risk

With regard to individual risk, the parameter used was the risk per passenger-hour, i.e., the risk of fatality of a passenger considering the hours spent on board. Included in the fatalities are the injured people using a weighting factor. The current maritime approach (IMO 2013) used in EMSA 3 uses relative values of 0.01 for minor and 0.1 for serious injuries, and combines them with occupational accident data on ships. As the database does not include the seriousness of the injuries, all injured people have been taken as serious which leads to a more conservative risk analysis.

Taking into account that the number of passengers transported in the period for which data from EMCIP has been taken is about 420 million, and taking into account the average number of hours that a passenger is on board a ship according to the EMSA 3 study for comparable ships, the individual risk per passenger hour is approximately between 6.75E-9 and 10.8E-9, which is similar or lower to other transport modes (per passenger hour) according to the data included in EMSA 3: 32E-9 in passenger car, 6E-9 for bus/coach, 10E-9 for rail, 45E-9 for air and between 16E-9 and 46E-9 for international passenger ships. With regard to risk per km, the air mode is however considerably 'safer' due to the higher speed/distances travelled achieved.

Societal risk

With regard to societal risk, the Potential loss of lives (PLL) parameter was used. This parameter measures the fatalities reported per ship-year. In addition the accident frequency, i.e., the number of accidents reported over a given period by the number of registered ships during the same period for different type of occurrences was also considered. These two parameters were estimated for the domestic passenger fleet and compared with EMSA 3 and the above-mentioned paper from the National Technical University of Athens.

With regard to EMSA 3, the accident data related to passenger ships was discriminated between ro-ro and conventional (not ro-ro), for the last 20 years but only for ships with more than 80m in length, more than 1000GTs and non-HSC. The data source used was Fairplay and the time span was from 1994 to 2012.

In order to make a direct comparison, the domestic passenger fleet was filtered using the same parameters as in EMSA 3. The source for the data on accidents was EMCIP which covers all the domestic fleet but for a very limited period of time (about 4 years).

The comparison with EMSA 3 is shown in the table below:

Table 11: Comparison of frequency and PLL for accidents of domestic ships under the Directive and EMSA 3

Type of occurrence	EMSA 3 Ro-Pax 1994-2012	Domestic Ro-Pax 2011-2014	EMSA 3 no ro-ro 1994-2012	Domestic no ro-ro 2011-2014
Collision frequency	9.38E-03	1.14E-02	6.36E-03	0.00E+00
Contact frequency	1.61E-02	3.84E-02	8.23E-03	5.56E-02
Fire/Explosion frequency	4.50E-03	2.27E-02	7.86E-03	2.78E-02
Grounding/Stranding frequency	5.07E-03	1.28E-02	7.48E-03	1.11E-01
PLL (Potential Loss of Lives)	1.09 E-01 to 7.12 E-01	7.1E-03	5.98E-02 to 4.2E-01	0

Source: MS 2014/09 FC Questionnaire + EMCIP + EMSA 3

As can be seen in the table above, the frequency of accidents is higher for domestic passenger ships however, the risk factor (potential loss of lives), is considerably lower. This is in line with the initial analysis based only on EMCIP data included in point 1 of this analysis.

There are two aspects that are important to note, before making any conclusion:

- The EMCIP database was established only recently; the number of years for which data is available in EMCIP is therefore still very limited and in order to have a more solid comparison more years of EMCIP statistics are needed. Furthermore, data in years 2011 and 2012 could have been under-reported; however this could also be the case for the initial years of the Fairplay database.
- The conventional passenger domestic fleet (i.e. no ro-ro) meeting the requirements >80m and >1000GTs and non HSC is limited to 9 ships only. However, for ro-ro ships, almost 200 ships pass the filter.

The comparison will be now made with regard to the technical paper from the NTUA. This paper considers only the serious accidents but for all passenger ships regardless of size. It also distinguishes three categories of passenger ships: ro-ro passenger, passenger (without ro-ro capacity) and cruise ship. The cruise ships will not be considered in the comparison because there is no ship of this type in the EU domestic fleet. The comparison table is shown below:

Table 12: Comparison of frequency and PLL for accidents of domestic ships under the Directive and NTUA paper

Type of occurrence	NTUA Paper Ro-Pax 90-12	Domestic Ro-Pax 2011/14	NTUA Paper no ro-ro 90-12	Domestic no ro-ro 2011/14
Collision frequency	4.29E-03	1.67E-03	1.22E-03	5.50E-03
Contact frequency	7.11E-03	2.22E-03	1.48E-03	6.50E-03
Damage to ship/equipment frequency	1.36E-02	5.56E-04	4.37E-03	2.50E-03
Fire/Explosion frequency	3.49E-03	3.33E-03	5.56E-04	2.00E-03
Flooding/Foundering frequency	4.88E-04	0.00E+00	3.18E-04	5.00E-04
Grounding/Stranding frequency	4.22E-03	2.78E-03	2.31E-03	1.15E-02
PLL (Potential Loss of Lives)	1.24E-01	7.1E-03	1.61E-01	5.01E-04

Source: MS 2014/09 FC Questionnaire + EMCIP + NTUA paper

As it can be seen in the table above, the frequency of accidents is slightly lower for domestic passenger ships however, the risk factor, potential loss of lives, is considerably lower.

In summary, and in view of both comparisons, it can be indicated that with the data records available until now, it appears that although the frequency of accidents is comparable/higher than the international fleet, the consequences of accidents are less intense in terms of PLL. The accident frequency can be higher considering that the ships of the domestic fleet are trading in general closer to shore than the international fleet. In the coastal areas the traffic is more intense and there are more shallow waters where grounding can occur. In fact, most of the accidents occur near to the coast.

13 ANNEX 4: DIRECTIVES IN THE SCOPE OF THE FITNESS CHECK: ADDITIONAL ISSUES

DESCRIPTION OF THE DIRECTIVES IN MORE DETAIL

- **Directive 2009/45/EC[165] on safety rules and standards for passenger ships** establishes a legal framework laying down harmonised safety rules and standards for passenger ships made of steel and equivalent material, and to HSC. This Directive incorporates the provisions of the SOLAS convention establishing detailed technical requirements for vessel construction, stability, fire protection and life-saving equipment. In addition, it includes specific access and public information requirements for persons with reduced mobility or disabilities. The Directive distinguishes between four different classes of passenger ships depending upon their navigation areas, defined by wave heights, distance to a place of refuge and distance to coasts.
- **Directive 2003/25/EC on specific stability requirements for ro-ro passenger ships** lays down a uniform specific stability requirements for ro-ro passenger ships. The so-called "Stockholm Agreement Directive" was adopted after the Estonia ferry sunk in 1994. It establishes a uniform safety level for ro-ro passenger ships and addresses the destabilising impact of an accumulation of water on the vehicle deck to improve the survivability of passenger vessels in the case of collision damage.
- **Directive 1999/35/EC on a system of mandatory surveys** for the safe operation of regular ro-ro ferry and high speed passenger craft services foresees rules for safe operation of ro-ro ferries and HSC services to or from of EU ports. It provides the Member States with a right to conduct, participate in or cooperate with any investigation of maritime casualties or incidents involving these vessels.
- **Directive 98/41/EC on the registration of persons sailing on board passenger ships**, aims to ensure that the safety of passengers is not compromised by exceeding the maximum authorised number of persons on board and that search and rescue and the aftermath of any accident which may occur can be dealt with effectively. The Directive gives provisions on counting and registration of passengers and crew on board of passenger ships operating to and from the EU ports.

The following legislative acts are not directly included in the fitness check, but are related to the legislation mentioned above:

- **Directive 2009/16/EC on port State control**, which aims to reduce substandard shipping in the waters under the jurisdiction of Member States by increasing compliance with international and relevant EU legislation on maritime safety, maritime security, protection of the marine environment, on-board living and working conditions of ships of all flags.
- **Directive 2009/18/EC** establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and providing a base for collecting and monitoring of accident data at EU level.

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165 Directive 2009/45/EC consolidates and codifies amendments to the original Directive 98/18/EC. It has since been updated by Commission Directive 2010/36/EC

- **Regulation (EC) 392/2009** on the liability of carriers of passengers by sea in the event of accidents; this regulation refers to the navigation areas defined in the Directive 2009/45/EC.
- **Directive 2002/59/EC** establishing a Community vessel traffic monitoring system to enhance the safety and efficiency of maritime traffic, to improve the response of authorities to incidents, accidents or potentially dangerous situations at sea, including search and rescue operations, and contributing to a better prevention and detection of pollution by ships.
- **Directive 2010/65/EU** simplifying and harmonising the administrative procedures applied to maritime transport by making the electronic transmission of information standard and by rationalising reporting formalities. The Directive apply to the reporting formalities applicable to maritime transport for ships arriving in and ships departing from ports situated in Member States.
- **Directive 2009/21/EC** on compliance with flag State requirements, ensuring that Member States effectively and consistently discharge their obligations as flag States; enhancing safety and preventing pollution from ships flying the flag of a Member State.
- **Regulation (EC) 789/2004** on the transfer of cargo and passenger ships between registers within the Community. This regulation aims to eliminate technical barriers to the transfer of cargo and passenger ships flying the flag of a Member State between the registers of the Member States while, at the same time, ensuring a high level of ship safety and environmental protection, in accordance with international conventions.

1 DIRECTIVE 2009/45/EC

Directive 2009/45/EC was put in place to attain a high level of safety, and to remove barriers to trade, by setting harmonised safety standards at an appropriate level for passenger ships and craft operating domestic services. However, standards for vessels operating international voyages are being developed within the International Maritime Organization (IMO): Directive 2009/45/EC transposes the requirements set out at international level in to EU legislation, with some additional provisions and with several provisions specialised to fit the characteristics of the domestic ships.

Such specialization takes place through the definition of the sea areas in Article 4, on the basis of which the safety standards for ships allowed to sail in each sea areas, are set.

Article 6 (Safety Requirements) sets out the underlying structure of the safety provisions by establishing that new Class A ship has to comply entirely with the requirement of the 1974 SOLAS Convention as amended while Class B, C and D with the requirements of the Directive as set out in the Annex.

The additional safety requirements for persons with reduced mobility respect to SOLAS Convention are set out in Article 8 and apply to all ships.

Specialised requirements for Class B, C and D are provided in the Annex for which a comparative analysis can be made.

1.1. Outdated format of the Annex and its update

Annex I of the Directive contains the currently applicable technical requirements. Its format dates back to pre-SOLAS 2009. With the adoption of SOLAS 2009, the numbering and the format of the corresponding Regulations have significantly changed. As a result, the Annex is extremely difficult to read and to compare against the current SOLAS requirements. This view was confirmed by 69% of respondents in the 2012 public consultation exercise and by Member States during the targeted consultations. The Annex contains in one document an accretion of rules concerning specific classes of ship, applicable for certain sizes and from certain dates.

The need to periodically update the Annex stems from the continuous updates which the SOLAS convention undergoes (i.e. the 4 years amendment cycle established at the IMO for adoption of SOLAS amendments[166]). The amendments to SOLAS apply directly in respect of ships on international voyages and with no further action needed for Class A ships, however for Class B, C and D the amendments to the Convention need to be assessed and incorporated into the Annex of Directive 2009/45/EC. The adaptation of SOLAS requirements to different ship classes in domestic EU passenger ship transport necessitates close co-operation and discussions with national technical experts, taking into account all the relevant aspects and implications.

Although an update of the technical requirements in the Annex is on-going (to reflect SOLAS amendments which have been adopted in the period 2009-2015), this update will not alter the current format.

[166] MSC.1/Circ.1481

Both Member State administrations and industry stakeholders mention that the regular technical updates of the Directive take too much time. The IMO normally leaves a reasonable time between the adoption of safety requirements and their entry into force, ranging in most cases between twelve and twenty-four months. Ideally, the EU update system should be capable of bringing the new requirements into national legislation within that time window.

However, in practice, this is not the case. Experience has shown that the time lag between the update of international standards by IMO and their transposition into national law may easily reach 30 months per update (including the transposition by national authorities).

By way of contrast and as a reference point, positive experience in facilitating the updates and increasing readability of technical annexes has been made in the Marine Equipment Directive[167]: a tabular format referring to SOLAS Regulations that (i) ensures a more readable document, (ii) is easier to be updated when SOLAS amendments are adopted by the IMO, and (iii) makes the changes with respect to the SOLAS provisions clearly and easily assessable.

In addition, Member States agreed that the use of Commission Regulations, instead of Directives, for the regular updates of the technical Annex improve matters. The purpose was to simplify the update procedure, to shorten the time needed for the implementation of IMO requirements within the European legal framework and to reduce the burden for national administrations to a minimum.

1.2. Reporting of exemptions and equivalencies

Article 11 of Directive 2009/45/EC establishes that the Commission shall be assisted by the Committee on Safe Seas and the Prevention of Pollution from Ships (COSS). In this regard, Member States may, subject to examination by COSS[168], adopt measures allowing equivalencies/exemptions, provided that they are at least as effective as the safety provisions of the Directive and that there is no reduction in the level of safety.

An exemption can be provided in case a ship is trading in certain operational conditions (e.g. good weather conditions) and an equivalency is a replacement of a requirement by a different one but maintaining the level of safety. The borderline between an exemption and an equivalency can be blurred when a requirement is replaced by an equivalent one provided certain operational conditions exist. In this document, the word 'exemption' therefore includes also the concept of equivalency.

From the entry into force of the Directive 2009/45/EC in 1998, some 50 exemptions have been addressed to the Commission by Member States.

As far as exemptions to Directive requirements are concerned, the distribution across ship classes is proportional to the number of ships in the classes. The situation is as illustrated in the following:

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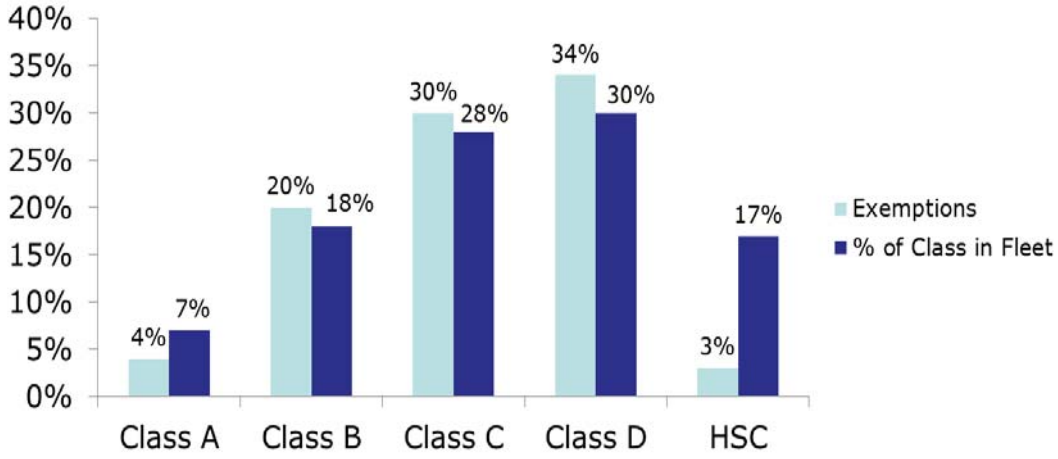
167 Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 on marine equipment (OJ L 257, 28.8.2014, p. 146–185)

168 The so called examination procedure

Figure 1: Exemptions requested per ship's Class



Source: Commission, 2015

The functional areas for which the exemptions have been requested are shown in the table below:

Table 1: Exemptions Functional Areas

LSA	Radio	Design	Fire	Navigation	Alarms	Sea area	Helicopter	Wave Height	Electrical
12	10	9	7	4	3	3	3	2	2

Source: Commission, 2015

Given the complexity of passenger ships, the number of exemptions requested over a period of last 15 years is not excessive, at least in absolute terms. However, it has to be also noted that for each exemption request it is not known to how many sister ships the exemption will apply. Therefore, although the total number of exemption is not particularly high, the number of ships affected is certainly higher than 50.

The current exemption procedure is summarised in the table below comparing it with the same procedure used at international level (IMO):

Table 2: Comparison of exemption procedure in the EU and IMO

	Directives 2009/45 and 1998/41	SOLAS
MSs	Assessment of exemption/equivalency questions	Assessment of exemption/equivalency questions[113]
	Notification of measures to adopt + motivation	
	If approved, adoption of the proposed measures and specification of the adopted measures in the national legislation + communication to the EC + issuing of an exemption certificate. (An example can be find at https://www.gov.uk/government/publications/msn-1855m-domestic-passenger-ships-directive-equivalent-standards and https://www.gov.uk/government/publications/msn-1869-m-safety-management-code-for-domestic-passenger-ships)	Issuing of an exemption certificate
EC/IMO	Assessment of exemption/equivalency questions by the commission with the support of EMSA	
	Opinion of COSS (only if negative)	
	Response to the MS (Commission's decision if negative)	

Source: Tractebel, 2015

Although the EU procedure is more complex, the current assessments of exemptions requests using EMSA technical expertise and their validation by other Member States preserves a common understanding, implementation and level playing field for economic operators throughout the EU. The cost of the exemptions/equivalency arrangements under EU legislation is higher than at the IMO – particularly as in the IMO context there is no (third-party) assessment whether the measures are actually justified. The IMO merely takes the exemptions into account and communicates them to other IMO members.

On the other hand, the Directive defines a sui generis notification procedure that is rather lengthy (Commission has 6 months to raise objections) and not necessarily always followed in practice. For example, although Member States are expected to notify draft measures, exemptions are often notified after they had been granted. In addition, there is no database where such measures (either in their draft or adopted form) are recorded and made available to all Member States and operators for their consideration[169].

During the consultation process, the question has been raised as regards the possibility to align the specific notification procedure under Directive 2009/45/EC (and, for that matter, also Directive 98/41/EC) with the Directive 98/34/EC notification procedure of technical regulations related to products and information society services (at a draft stage). This could

169 See annex 5 for the list of exemptions

be indeed explored as there is a clear possibility of streamlining the procedure using existing systems.

Box 1: Example of justified exemption

One Member State is exempted from the requirement on damage stability and double bottom requirements for new and existing vessels with shallow draught which operate exclusively in the national mudflat areas. This request has been granted as it has no significant safety implications since these ships operate in areas with a soft bed and shallow depth.

Source: Commission, 2015

1.3. Unclear definitions: High Speed Craft (HSC)

To ensure an adequate level of safety, the Directive requires for HSC the application of the HSC Code in its entirety. These standards are considered appropriate by Member States for such vessels of both below and above 24m and constructed of any type of material. Data also show that there is an internal market for vessels of this type; in terms of change of flag, out of 152 HSC, 50 changed flag (33%) since the Directive entered into force 1998.

During the consultation, Member States raised the inconsistency between the EU and international legislation (SOLAS), namely concerning the applicable speed limit. It was mentioned that according to the Directive, any ship with more than 20 knots must be certified as HSC. However, the Directive defines a HSC as:

'high-speed passenger craft' means a high-speed craft as defined in Regulation X/1 of the 1974 SOLAS Convention, as amended, which carries more than 12 passengers, with the exception of passenger ships engaged on domestic voyages in sea areas of Class B, C or D when:

(i) their displacement corresponding to the design waterline is less than 500 m^3 ; and

(ii) their maximum speed, as defined in paragraph 1.4.30 of the High-Speed Craft Code, is less than 20 knots;

Accordingly, a ship with a speed of more than 20 knots will only qualify as a HSC if it meets the criteria indicated in the SOLAS definition and therefore it is not an automatic classification.

1.4. Unclear definition: Offshore service vessels for wind-farms

In the Directive, the definition of "passenger" adheres to the SOLAS definition and does not take into account so-called "industrial personnel"[170] such as specialised personnel on board offshore service vessels. Specialised personnel have to undergo certain mandatory safety training and fulfil certain medical fitness requirements. Some Member States (such as the UK) consider those offshore workers as passengers and apply the rules for passenger ships,

[170] The definition of which is under development at the IMO

while others define the offshore workers as crew and apply the less demanding IMO Code for Special Purpose Ships (SPS Code).

The Directive standards are derived from the SOLAS requirements, which are developed for persons without training or mandatory medical fitness requirements and may be too restrictive for ships carrying industrial personnel. Therefore, this type of ships should not be certified under the Directive; this should be clearly specified in the Directive's scope. Such vessels are indeed built not to carry passengers or rolling cargo but to service industrial plants at sea, such as wind farms. The special type of services imply building features such as cranes, specific decks arrangements, dynamic positioning etc., which impact on the final general design of these vessels, making them considerably different from a traditional passenger ship.

It is worth mentioning that the IMO is currently developing appropriate international standards for this type of ships. During the consultation, most Member States indeed preferred to have a specific code developed at international level for this type of vessels.

1.5. Unclear definition: Traditional ships

According to the Memorandum of Understanding on the mutual recognition of certificates for the safe operation of traditional ships in European waters, *"around 5,000 sea-going ships of historical interest and regional character have survived until now in Europe. An overwhelming majority of them have proved to be safe and seaworthy when properly maintained, equipped and operated by experienced crews."*

However, the term "traditional ships" should be understood in the context of this fitness check as rig-sailing passenger ships. This issue was raised in previous assessments of this Directive as being controversial due to the fact that a number of rig-sailing passenger ships had been certified according to the Directive without meeting the appropriate requirements (most of the ships in this category are flagged in the Netherlands). For example, the Directive lacks any requirements or criteria related to the stability of these ships when using wind and sails as the main propulsion power.

Directive 2002/59/EC[171] includes the definition of 'traditional ships' as all kinds of historical ships and their replicas including those designed to encourage and promote traditional skills and seamanship, that together serve as living cultural monuments, operated according to traditional principles of seamanship and technique. However, this definition does not help to clarify the propulsion element and, consequently, the situation of the rig-sailing passenger ships mentioned above.

Accordingly there is a need to clarify in the Directive that the ships that are primarily propelled by sails are excluded from the scope of the Directive. Currently, the text in the Directive indicates that ships not propelled by mechanical means are excluded from the scope; however, these rig-sailing ships usually have an auxiliary diesel engine capable of propelling the ship if needed. Therefore, it could be argued that these ships are propelled by mechanical means. This issue also arises in the international arena, because these ships are in many occasions certified internationally as Special Purpose Ships (SPS).

[171] Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system (OJ L 208 , 05.08.2002, p.10 – 27)

The IMO has tried to solve the legal gap in the SPS code by adding the following sentence:

Some sail training ships may be classified by the Administration as "not propelled by mechanical means" if fitted with mechanical propulsion for auxiliary and emergency purposes.

1.6. Other issues raised by stakeholders: Tenders

Cruise ship tenders are used to ferry passengers from cruise ships to shore and back. As cruise ships have increased in size, so the capacity of the tenders has also increased in some cases to over 300 passengers. These are mainly made from materials other than steel or equivalent to minimise the weight to be carried on board the cruise ship. However, it is a moot point whether such vessels can be considered passenger ships in their own right or simply equipment on board a cruise ship.

Tender operation is regulated nationally[172], unless the tenders are deemed to operate outside the port area and are made of steel (a rare occurrence) in which case the Directive applies. The IMO has developed and adopted non-mandatory guidelines for the construction, outfitting and use of tenders to provide a common standard for their use[173].

Ireland in particular raised concerns about the safety levels of tenders, given that a variety of national safety rules predominate. However, since cruise ships operate in an international market, their tenders operate in many different national waters. Therefore the most effective option for this segment would be to set a clear, common set of standards that are internationally recognised.

It should be also noted that where local passenger ships are used to ferry passengers from cruise ships to shore and back and also provide also other passenger services, they have to comply with the applicable Directive requirements.

1.7. Definition of sea areas: Specific issues

<u>Distance to a place of refuge and to coast where shipwrecked persons can land</u>

A place of refuge can be a key element when, during the navigation of the ship, weather conditions start to get worse than expected before starting the navigation or when an accident occurs.

The Directive defines a place of refuge as any naturally or artificially sheltered area which may be used as a shelter by a ship or craft under conditions likely to endanger its safety. This definition is ship-dependant and weather-dependant. It is ship-dependant because a specific area can be appropriate for a ship with a certain size, design or draft but maybe not for a another one even being certified for the same class as the first one. It can also be weather-dependant because a place can be of refuge only under certain wind, wave or tide direction or conditions. Therefore, it is a dynamic concept. A place can be considered of refuge under

[172] I.e. by the flag state of the cruise vessel or by the state in which they operate

[173] MSC.1/Circ.1417 on Guidelines for passenger ship tenders

certain circumstances for a specific ship. This fact makes it difficult for Member States, especially those with an Atlantic coastline, to establish static sea areas taking into account such a dynamic parameter.

This fact was confirmed in the case-study questionnaire where 4 Member States indicated that this parameter is not used to define sea areas, 7 Member States are using it but do not find it relevant and 6 Member States are using it and find it relevant. However, out of this group of 6, one of them defines the places of refuge when a case arises while another is not defining them at national level and another one considers its full coastline as a place of refuge.

It should be noted that the concept of place of refuge as a criterion to define sea areas was embedded in the original Directive 98/18/EC, before being established more widely in the framework of Directive 2002/59/EC (i.e. for the purpose of any ship in a need of assistance). The latter defines the place of refuge as a port, the part of a port or another protective berth or anchorage or any other sheltered area identified by a Member State for accommodating ships in distress. It includes a requirement for Member States to draw-up plans for the accommodation of ships to respond to threats presented by ships in need of assistance, threats to human life or environment.[174] This second approach is more appropriate as it is ship-dependant and weather-dependant.

Member States already have procedures in place to assess the appropriateness of a particular coastline as a place of refuge on a case by case basis. In such framework, the notion of place of refuge as a defining parameter of sea areas is outdated and inadequate for its purpose.

It is also worth noting that there is an overlap between the concept of a place of refuge and the distance to a coast where shipwrecked persons can land. Both concepts are referred to the physical conditions of a specific coastline which can facilitate the accommodation/beaching of a ship in distress and/or disembarkation of the persons on-board and/or rescue of evacuated persons.

However, the Directive does not include any criteria that would indicate which type of coast is appropriate for shipwrecked person to land or even whether a shipwrecked person is referred to a person in the water, on a survival craft or on a ship in distress. Indeed, according to the majority of Member States, this expression has no added value and should be deleted (DK, EE, FR, EL, IT, PT, ES, UK, NO), whereas 6 Member States (HR, FI, NL, CY, IE, LT) indicate that it should stay without any defined criteria. However, no reasons for retaining this undefined criterion have been provided.[175]

Significant Wave Height

The significant wave height (SWH) is a statistical parameter which provides, according to the definition in the Directive, the average height of the highest third of wave heights observed

[174] See Article 20(a): These plans must include, amongst other things, *"information on the coastline of Member States and all elements facilitating a prior assessment and rapid decision regarding the place of refuge for a ship, including a description of environmental, economic and social factors and natural conditions and the assessment procedures for acceptance or refusal of a ship in need of assistance in a place of refuge"*

[175] Only 2 Member States (LV, PL) consider that criteria should be included to indicate which type of coast is appropriate for shipwrecked people to land and maps with the areas re-defined

over a given period. It is intended to help reflecting sea state limitations in the design and operation of the Class C & D ships.

The SWH gives a good indication of the range of heights that can be expected in an area.[176] The range of wave heights to be expected in a Class C area is between 1.6m and 4.2m (1.6m being much more likely than 4.2m) and for Class D between 0.95m and 2.5m.

There are however also other parameters as important as the height to define how the sea state can affect the safety of the ship: length, period and steepness of waves. Steepness is related to height and period and can be a critical issue for stability of ships, especially small ones. Accordingly, a high wave with very long periods can be less critical than a short wave with short periods.

For the large majority of Classification Societies which issue certificates for domestic passenger ships (BV, LR, DNV-GL AS, RINA, RMRS[177], PR), the SWH was indicated to have no impact in terms of structural requirements. Only for RINA classified ships is SWH reported to have an influence on ships built in GRP or aluminium (not for steel or wood).

The Intact Stability requirements are identical for all sea areas. On the other hand, 11 Member States consider that SWH affects damage stability standards for conventional passenger ships, namely as regards the moments due to wind pressure and final condition after damage. Whereas Class A & B ships must fulfil SOLAS requirements, Class C & D ships have more relaxed criteria for these two parameters. However there is not always a trivial direct link between the wave height and the intact and damage stability requirements.

Based on the evidence and given the diversity of views, it is considered premature to conclude on the adequacy of the significant wave height parameter in defining the sea areas.

Port/sheltered area

An additional level of complexity in defining the sea areas is brought about by an unclear definition of a port or sheltered area. In principle, a port or a sheltered area is an area that forms an integral part of the harbour system or is protected by natural geographical features[178] and that does not qualify as a sea area D.

At the moment, many ships operate in such 'sheltered areas' - Sweden introduced its own sea area E[179] which extends beyond a normal port area, within which 90% of its domestic ships operate. The Netherlands has excluded the entire sea zone behind its Frisian island chain from designation as a sea area, while Germany, which nevertheless obtained an equivalency arrangement for the sea zone between the coast and its Frisian islands. By contrast the Danish

176 The average wave height with more probabilities to be found in the area is about 64% of the value of the SWH and the average of the 1% highest waves is about 167% of that value

177 RMRS also considers wave height, although not SWH as defined in the Directive

178 Port area is defined as an area other than a sea area, as defined by the Member States, extending to the outermost permanent harbour works forming an integral part of the harbour system or to the limits defined by natural geographical features protecting an estuary or similar sheltered area

179 Apart from inland waterways, it includes ports; sheltered waters and fjords, where the significant wave height does not exceed 0.5m more than 10% in one year; passages open to the sea up to one mile from the sheltered waters of archipelagos during the summer season (1 June – 31 August), again where the significant wave height does not exceed 0.5m more than 10% in one year

fjords are not categorised as sheltered or port areas so virtually all Danish domestic ships are subject to the Directive. In the EEA, the correct application of the term 'open sea effect' in relation to sheltered areas as regards ferry routes traversing fjords has led to frequent, ongoing discussions between the EFTA Surveillance Authority and Norway.

Despite the fact that the Directive leaves the definition of the port area to the Member States (and rightly so), the divergent interpretations of this definition have caused difficulties in practice potentially undermining the safety objectives of the Directive. The lack of transparency and discussion about the criteria applied by Member States does not permit a correct evaluation of whether the definition of the terms 'port' and 'sea area' have been determined by objective criteria rather than national preferences.

2 DIRECTIVE 2003/25/EC

General stability requirements for ro-ro passenger ships in damaged condition were established at international level by the 1990 amendments to the International Convention on the Safety of Life at Sea (SOLAS 90); the standard introduced implicitly includes the effect of water entering the ro-ro deck in a sea state of the order of 1,5 m significant wave height. However, IMO Resolution 14 of the 1995 SOLAS Conference allowed IMO members to conclude regional agreements if they consider that prevailing sea conditions and other local conditions require specific stability requirements in a designated area.

Eight northern European countries, including seven Member States, agreed in Stockholm on 28 February 1996 (Stockholm Agreement) to introduce a higher stability standard for ro-ro passenger ships in damaged condition, in order to take into account the effect of water accumulation on the ro-ro deck and to enable the ship to survive in more severe states than the SOLAS 90 standard, up to 4 m significant wave heights.

On this basis Directive 2003/25/EC was laid down and entered into force.

In 2009, a revised SOLAS convention was agreed at the IMO, reviewing some basic concepts in relation to damage stability requirements for passenger ships, introducing a probabilistic design framework under the assumption that such new approach should deliver the same (or increased) safety level as the ones guaranteed in the SOLAS 90.

The European Commission, assisted by EMSA, started a series of studies with a view to identify the possible problems introduced by the SOLAS 2009 damage stability requirements in relation to ro-ro passenger ships and more specifically addressing, *inter-alia*, the formulation used in SOLAS 2009 for “si” in the frame of damage stability regulations (water on deck - WoD).

In July 2009, the final report of the first EMSA study (EMSA 1) identified difference in the survivability between the mainly closed vehicle decks of ro-ro ships and open decks in conventional ships, from which water can easier escape.[180]

[180] Ref. SLF53/INF.53 – "Review of damage stability regulations for ro-ro passenger ships damage stability parameters of ro-ro passenger ships according to SOLAS 2009 amendments, including water on deck"

This study was carried out by the Hamburgische Schiffbau-Versuchsanstalt GmbH (HSVA) and concluded inter alia that *"in the framework of the new probabilistic damage stability rules (SOLAS 2009), it is possible to create ship designs with significant deficits in safety"; "it is possible to design internal watertight subdivisions that may have a non-negligible risk of a catastrophic failure in case of side damage to the ship"* and that *"the ship stability required by the SOLAS 2009 rules is not likely to be sufficient in all cases"*.

In December 2011, the final report of the second study, commissioned by EMSA (EMSA 2), on ro-ro passenger ships was published. The objective of the second study was to propose possible amendments of the SOLAS 2009 damage stability requirements such that the WoD problem of ro-ro passenger ships is taken into account and to identify potential damage stability issues.[181]

The study compared the requirements of SOLAS 2009 on the five selected ships with those of SOLAS 90 plus the Stockholm Agreement. The designs were used to examine the sensitivity of ship survivability – including the effects of the accumulation of water on the vehicle deck – to both regulatory frameworks (SOLAS 2009 and the Stockholm Agreement) and to propose design solutions for three of the initial designs. The survivability was assessed through a series of analytical studies, numerical simulations, and model experiments.

The first part of the study evaluated the regulations and found that:

1. SOLAS 2009 ro-ro passenger ships have, on average, a lower ability to survive damage than those designed to SOLAS 90 plus the Stockholm Agreement;
2. SOLAS 90 plus the Stockholm Agreement also appeared to have limitations and may lead to ship designs that have some vulnerability when compared to SOLAS 2009 designs; and
3. The number of damage cases with no residual damage stability, meaning negative or zero GZ values, varied between 10 and 14 per cent of all possible damage cases for the five ship designs. These damage cases were expected to lead to an unstable damage condition and capsize even in calm waters.

The second part of the study proposed changes to the SOLAS 2009 calculations that would ensure that the effect of water-on-deck is taken into account when it occurs on ro-ro passenger ships and also proposed raising the safety level further. In order to achieve this, specific changes to SOLAS 2009, regarding si, w, k and R parameters have been proposed. Some of these amendments have been agreed at the IMO and should be adopted in 2016.

In detail, it was proposed to:

1. Modify the formulation by setting GZmax to 0.25m and Range to 25deg to account for longer survival times of 10 hours and inherent uncertainties of quantifying survivability, including effects of water accumulation on the car deck.

   - The IMO agreed on GZmax to 0.20m and Range to 20deg (Regulation II-1/7-2.3)

[181] Ref. SLF 55/7/1 – "Revision of the damage stability regulations for ro-ro passenger ships changes to the "s_i" formulation" and SLF 55/INF.6

2. Remove from the regulation the w-factor, as the loading conditions should not be regarded as a random variable, but rather as a well-defined range for which an adequate level of stability should be maintained at all times.

- Regulations II-1/6.1 and 7.1 do not contain anymore such w-factor.

3. Remove from the current regulation the K-factor to encourage building in of stability at higher angles of heel, and instead require relevant ship systems to operate in higher angles of heel of up to 25deg.

- This factor is left untouched in Regulations II-1/7-2.3 and 8-1.2.

It is worth to note that because of these draft amendments, several Member States such as Germany already consider the safety level provided by SOLAS 2009 (as potentially amended) as sufficient and equivalent to the SOLAS 90 + Stockholm Agreement.

Since 2011, other studies have been carried out to further improve and tighten the SOLAS 2009 requirements in several aspects, including WoD.

In particular, in January 2013 the results of the EU funded research project GOALDS, addressing, *inter-alia*, the revision of the Required Subdivision Index R in relation with the survivability level after damage, also became available. Proposals for amendments to SOLAS were submitted and positively assessed by the Formal Safety Assessment experts.[182]

Further in May 2014, MSC 93 instructed the SDC Sub-Committee to continue the technical consideration for an increase in the required subdivision index R as part of the comprehensive package of revisions to SOLAS chapter II-1 subdivision and damage stability regulations, taking into account the outcomes of the third study commissioned by EMSA in the area of risk level of passenger ships related to damage stability as these become available (EMSA 3).[183] EMSA 3 delivered its results in 2015 including, *inter alia*, a proposal on the required subdivision index (R index) which measures the safety level in damage conditions.

It is therefore generally agreed that the present version of the SOLAS 2009 does not yet properly address the WoD issue and that Directive 2003/25/EC in combination with the requirements laid down into SOLAS 90 should be still maintained. This was further reconfirmed during this fitness check. Nonetheless, a large majority of Member States consider that one mandatory safety standard would be preferable to the existing double design regime.

In view of the considerations above, the combinations of the measures on damage stability arising from the studies (in particular EMSA 2 and EMSA 3) will need to be assessed as a package against the requirements of Directive 2003/25/EC, with a view to provide concrete

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182 Ref. to SLF 55/INF.6 - Review of the damage stability regulations for ro-ro passenger ships damage stability parameters of ro-ro passenger ships according to SOLAS 2009 amendments, including water-on-deck calculations, complemented also by submissions to IMO (ref. SLF55/INF.7, SLF55/INF.8 and SLF55/INF.9 by Denmark and United Kingdom reporting on the results of the GOALDS project and MSC 92/6/6 – "Passenger ship safety Survivability of passenger ships")

183 Ref. to MSC 93/6/3 - Passenger ship safety comments on documents SDC 1/6 and SDC 1/INF.7, SDC 2/3/6 - Revision of SOLAS chapter II-1 subdivision and damage stability regulations proposals to improve passenger ship survivability after damage, SDC 2/INF.4 and finally the submissions to MSC 95

evidence that the potential safety gaps of the SOLAS 2009 have been addressed (in SOLAS 2009 as amended).

Only after such an assessment Directive 2003/25/EC can be either repealed (i.e. maintained for existing ships) or, alternatively, it may be necessary to introduce the recommendations as provided by the studies into Directive 2003/25/EC, if the international regulations are not been updated accordingly.

3 DIRECTIVE 1999/35/EC

This inspection regime covers the ro-pax and HSC in regular service between ports of two or more countries and domestic ro-pax of Class A. According to this Directive, each ro-pax under the scope must be inspected by the authorities of all the port States in which the ship operates (so-called host States[184]) twice per year at least. In general, the States form teams of inspectors to avoid unnecessary burdens for the operator or in some cases one host State relies on the inspections carried out by other host States.

The main design characteristic that differentiate a ro-pax from a conventional passenger ship is the undivided long deck for vehicles. This design characteristic implies that there is a higher risk of capsizing in case this space is flooded compared to a conventional passenger ship where the compartments have a more limited length. A similar reasoning can be applied with regard to spread of a fire in the ro-ro deck compared to a conventional ship.

Therefore, in this type of ships, it is essential that all the safety elements on the ship intended to decrease the above-mentioned risks are in adequate continuous operating conditions.

Another important aspect to mention is related to the potential shift of vehicles, including large trucks, in bad weather conditions. The shift of vehicles can negatively influence the intact stability of the ship as well as increase the risk of fire considering that, depending on the size of the ship, the vehicles in this deck can have all together some tons of fuel in their deposit. Therefore, it is essential to ensure that all the cargo securing devices are in adequate operational condition.

A key safety element of these ships is related to the water-tightness of the openings (ramps) for the embarking of vehicles. The water-tightness and proper closing of these openings must be ensured while at sea to avoid a rapid flooding of the vehicle deck.

In some of these ships there are internal hoistable ramps which must be on the one hand watertight and on the other in adequate operating condition to avoid mechanical failures which could make the ramp fall loose.

All the above-mentioned elements are somehow intensified due to the tight schedule and intense activity. Cars and passengers must be disembarked and new ones embarked in a quick manner, in some cases, several times per day. The wear and tear of equipment with substantial influence in the overall safety of the ship, such as the embarkation ramps, internal hoistable ramps, vehicle securing devices, etc. is significant.

[184] It is possible, and is often the case, that one of the host States is also the flag State

In view of all the above, a tighter inspection regime for this type of ships is necessary to confirm that the key safety elements are in an appropriate condition to minimise or neutralise the fatal consequences of accidents.

As regards HSC, similarly to ro-pax vessels, the regularity of the service makes that the wear and tear of these ships especially intense.

3.1. Inspections regime of ro-ro ships

Directive 1999/35/EC provides for a number of types of inspection; these include an initial verification of documentation one month before the ship starts operation, an initial inspection before the ship starts operation, specific annual survey in a port, an annual in service inspection and other surveys such as those to check that deficiencies have been addressed.

The overlaps will be analysed in view of three different groups of ships (determined by the type of their voyage, i.e. origin and destination, and their flag) as follows:

Group 1: Ships calling regularly in ports in EU Member State(s) different from the flag State. These ships are subject to port State control (PSC) in accordance with Directive 2009/16/EC, flag State control and Directive 1999/35/EC inspection regimes. In 2014 there were approximately 220 ships in the EU in this group.

Group 2: Ships in domestic regular voyages within an EU Member State which is also the flag State. These ships are subject to the flag State and Directive 1999/35/EC regimes (in respect of Class A) or only flag State (Classes B, C, D and HSC). However, several Member States (Italy, Estonia and Spain) have opted to extend the scope of Directive 1999/35/EC to classes other than A. In 2014 there were, approximately, 110 ships in this group.

Group 3: Ships operating regularly between their EU flag State and a State outside of the EU. These ships are subject to the flag State and Directive 1999/35/EC regimes. In 2014, there were approximately 35 ships in this group. Three EU Member States (Italy, France, and Spain) have currently ships in this situation.

Table 3: Possible combinations of inspections and surveys

Ships	No of inspections per year	Applicable annual surveys/inspections				Combinations in practice
		99/35 in port	99/35 in service	Expanded PSC**	FS	
Group 1	2*-4	A	B	C	D	A+C, B+C, A+D*, B+D*
Group 2	2-3	A	B		D	A+D, B+D
Group 3	2-3	A	B		D	A+D, B+D

Source: Commission, 2015

** Combination with the flag State survey possible only for ships flagged in one of the host States.*[185]

***Frequency of expanded PSC is not necessarily annual as it depends on the risk profile of the ship. This case illustrates a year in which a given ship becomes eligible for 1 expanded PSC.*

The observed combination of the above mentioned surveys has in practice proved to be beneficial both for the ship operator and for the national administration. From the operator perspective, the combination of inspections reduces the non-productive time for the ship (whereby the ship does not have to stop prepare and undergo 2 different inspections)[186]. For the national administration, the combination allows for a more efficient use of resources (i.e. an inspector needs to be sent to the same ship only once instead of twice[187] or for a shorter period of time).

More specifically, with regard to the PSC and Directive 1999/35/EC, and despite the overlaps between these two instruments, the current legal framework leads to situations where the combination of inspections is not always possible. This is mainly because the risk parameters in the current PSC system can imply that the ship is not eligible for an expanded PSC inspection at the time when the Directive 1999/35/EC inspection is scheduled.

With regard to the combination of flag State and Directive 1999/35/EC surveys, similar synergies have been achieved. While the Directive 1999/35/EC surveys have to be carried by the administrations themselves, flag State surveys may be delegated to a private entity (i.e. a Recognised Organisation). For example, as Finland noted: "*We try to combine these surveys together with the flag State / Recognised Organisation surveys. We do not wish to cause too excessive workload to the ship's crew due to inspections. Within the PMoU / EU PSC regime we try to combine the PSC inspection as the annual specific survey.*"

185 For example, for a Maltese flagged ship sailing between Sweden and Denmark, the flag State (FS) inspection cannot be combined with 99/35 survey. However, for a Swedish flagged ship sailing between Sweden and Denmark, it is possible to combine FS and 99/35 inspections

186 Unless the inspection is carried out while the ship is sailing. Even then, however, certain assistance needs to be provided by the ship operator

187 In case the port State inspector is the same person as the 99/35 inspector

Table 4: Example of inspections – year 2014

Ships	No of ships	2014 surveys			Max (none combined)	Min (all possible combined)	Difference
		99/35	Expanded PSC*	FS			
Group 1	220	720	521	220	1461	840**	621
Group 2 and 3	150	215	n.a.	150	365	215	150
Total	370	935	521	370	1826	1055	**771**

Source: EMS on the basis of the THETIS database, Commission, 2015

**Although not identified as such, most of these inspections are likely to be expanded ones because it is in the interest of both national administrations and ship-owners.*

*** For the sake of calculation, we assume that for 100 of these inspections, flag State is one of the host States, i.e. combination with a Directive 1999/35/EC survey is possible. In reality, this share can range between 10-50 percent and change from year to year due to flag changes. The minimum number of inspections is therefore calculated as all Directive 1999/35/EC surveys plus those that cannot be combined (i.e. 120).*

The illustrative estimates based on example of data from 2014 show that the difference between the minimum and maximum number of inspections was around 770. Taking into account the average unit cost of a ro-pax survey estimated at EUR 1340[188], this amounts to a total of approximately EUR 1 000 000 in monetary terms. This illustrates the maximum synergies that could be, at least theoretically, possible to reach – which was however not the case given that the combination was in practice not always possible[189] and given that the combination of two surveys is unlikely to completely eliminate the cost of one of them (this will depend on a case by case, i.e. how exactly the surveys are combined, who carries them out etc.).

3.2. Gaps in the inspection regime

Over the time that Directive 1999/35/EC has been in place, a key issue has emerged to undermine its effectiveness in ensuring a common safety level: Different interpretation of the time window between the bi-annual inspections.

Directive 1999/35/EC requires two annual inspections per ship. The intention when the Directive was drafted is that these two inspections would be carried out with a certain time span between them, 5-6 months. However, the text in the Directive does not specify the

[188] Not differentiating between in port and in service surveys as the difference in cost is limited. See Annex 6 and Tractebel, 2015

[189] For example because the ship was not due for PSC inspection or because not all Member States decided to combine (or replace) the surveys

regularity of the inspections; it only indicates that two inspections per year must be carried out. Therefore, the practice in Member States varies considerably. While in some Member States these two inspections are carried out with a time interval from 4 to 6 months, in others the two annual inspections are carried out on consecutive days (BE, BG, MT, PT and NO; EL "within a short period of time"). This latter practice means that, in reality, the ship is only inspected once per year.

Most Member States (18) indicated that they would not have problems carrying out the two surveys provided for in the Directive (a specific survey and a survey during the regular service) with an interval of 5-6 months.

Another issue which has arisen concerns the scope of Directive 1999/35/EC. Currently it covers ships on international voyages and domestic passenger ships of Class A (and HSC), and Member States can decide to extend the scope to other Classes of domestic ro-pax ships (i.e. Classes B, C and D). So far, 4 Member States has done so: IT and EE for all classes, ES and HR for class B. Although the direct link between the inspections and the accidents cannot be demonstrated, the decision of these Member States to extend the Directive's application appears to have has proven to have positively contributed to the safety record of these ships.

For example, if we would consider the accidents of Class B ro-ro passenger ships, we would see that Italy with a fleet of 12 ships in this category has recorded only 4 accidents in the last 13 years (which would provide an accident frequency of approximately 1.16E-02). By way of comparison with another nearby Member State with a fleet of more than 10 Class B ro-ro passenger ships, Greece presents an accident frequency 30 times higher.

On the other hand, the experience of the 4 above mentioned Member States with extending the Directive's scope has not yet been more broadly disseminated and the operational implications are not known.

3.3. Outdated concept and terminology

The concept of the 'host State'[190] was introduced by this Directive to facilitate the cooperation with non-EU Member States prior to the 2004 EU enlargement. It allowed for the surveys to be carried out by multinational teams of the involved host States (i.e. EU as well as non-EU members)[191]. Although there is a clear value in carrying out joint in-service inspections, these have proven to be logistically difficult to coordinate and most Member States (17) confirm that a specific survey by a host State can be accepted by other involved host States without the necessity of creating multi-national teams.

The Directive also refers to "surveys" rather than "inspections". The word survey is used in international conventions to indicate the obligation of flag States to monitor the compliance of ships with the international standards and issue or renew, where relevant, certificates. However, the special inspection regime for ro-pax ferries and HSC on regular service cannot be considered a survey in that respect and the relevant inspection forms are not and cannot be considered as seaworthiness certificates.

[190] Member State to or from whose port(s) a ro-ro ferry or a high-speed passenger craft is engaged on a regular service

[191] An involved host State may also agree to carry out the survey at the request of another involved host State

4.1. Disproportionate requirement: Approval of registration system

Following visits carried out by EMSA to eight Member States, it emerged that Member States are encountering difficulties in implementing the provisions of Article 10 which require Member States to approve the registration systems.

The approval implies that a registration system must be approved by all Member States from whose ports a service operates, and this applies to all passenger ships including those on non-scheduled services, e.g. cruise ships, even though they may only visit a port infrequently and may call at multiple EU Member State ports. In addition, there is no certificate required in the Directive and the approval is therefore difficult to verify.

It is worth noting that the ISM Code manual of the ship must include, for passenger ships, the procedure for counting and registering information on passengers. This manual, and amendments to it, have to be approved by flag States. Nevertheless, Regulation (EC) No 336/2006, which brings the ISM Code into EU law, is not applicable to Class C & D ships.

4.2. Unclear definitions

In addition, the implementation experience has revealed a number of unclear definitions, making some of the provisions difficult to monitor and enforce. Among these unclear definitions are the definition of (i) voyage of more than twenty miles from the point of departure (e.g. whether the distance restarts at each intermediate stop, it is measured as a sailed distance etc.), and (ii) duration for which the data should be kept by the company (i.e. for the duration of the voyage or, if longer, how much longer).

14 ANNEX 5: OVERVIEW OF ADDITIONAL SAFETY REQUIREMENTS, EQUIVALENTS, EXEMPTIONS AND SAFEGUARD MEASURES WHICH HAVE BEEN ACCEPTED OR REJECTED UNDER DIRECTIVE 2009/45/EC

Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
Italy	Requirement to have a: • Fast rescue boat • Helicopter landing/ pick-up area • VDR For ships built in the period 1998-2000	The ships: • are engaged on Short voyages close to shore; • Have adequate safety provided by existing equipment Furthermore it was argued that it was impracticable to install (rescue boat; helicopter landing area)	The Commission agreed and the exemptions were accepted by tacit approval
	Article 6 (3) f concerning safety requirements for existing Class A ships until 2010	It was argued that more time was necessary for older ships to comply with the requirements for existing ships.	The Commission agreed and the exemptions were accepted by tacit approval
	The installation of ECDIS (Electronic Chart Display and Information System) for HSC of Class C and D	It was argued that the voyage was undertaken under favourable navigation conditions	The Commission **did not agree** because ECDIS is considered to be important safety equipment, in particular for HSC and has brought the matter for the COSS who agreed with the viewpoint of the Commission
Belgium	12 vessels that are used for leisure fishing with groups of paying passengers to be exempted from the Directive.	The vessels: • comply with specific rules guaranteeing a higher safety level than that provided by the	The Commission agreed and the exemptions were accepted by tacit approval

[192] Note that the exemption concerns certain requirements related to the subject, which are not stated in this table

Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
		Directive • have been operational for many years with restrictions on sailing areas, meteorological conditions and visibility • operate in an area with a maximum significant wave height of 2.5 metres	
Germany	Damage stability and double bottom requirements for new and existing vessels with wide, shallow draught which operate exclusively in the German mudflat areas	• The exemptions have no significant safety implications since they operate in areas with a soft bed and shallow depth (flat bottom ships therefore may rest on the seabed in case of an emergency. • Because of the shallow draft double bottoms are impracticable. • These ships are in Germany covered by the Directive while similar ships in the Netherlands are not (classified as inland navigation).	The Commission agreed and the exemptions/additional requirements were accepted by tacit approval
	Additional stability safety requirement (subdivision factor F≤0,5) for passenger ships engaged in voyages to and from the island of Helgoland.	• High risk of collision danger in the sea area around the island caused by very busy sea traffic. • The passenger ships coming from all directions reach the	The Commission agreed and the exemptions were accepted by tacit approval

Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
		anchorage area of the island daily at the same time, often under strong winds as well as fog-bound poor visibility.	
Netherlands	Damage stability and fire safety requirements for 24 Class B vessels that are used for leisure fishing with groups of paying passengers.	• The vessels operate under national supervision and only during daylight and in suitable weather conditions in an area with significant wave heights up to 2 m. • The Crew is familiar with the area. • Rapid access to search and rescue facilities and vessels fitted with GMDSS.	The Commission agreed and the exemptions were accepted by tacit approval
Denmark	Damage stability for new Class C and D vessels	Denmark states that granting individual exemptions stays within the discretion of the State and that this does not contract with the provisions of the Directive which covers general exemptions	The Commission agreed and the exemptions were accepted by tacit approval
	Lifesaving appliances: for new and existing Class C and D vessels		
	Radio/electronics for new and existing Class D vessels		
Poland	A total of 3 exemptions from machinery and electrical installation requirements for 10 Class C and 2 Class B ships	The required measures are difficult to implement due to the construction and the size of the vessel	The Commission agreed and the exemptions were accepted by tacit approval

Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
Finland	Class D ships operating in the Finish zone I[193] to be exempted from the Directive	The vessels: • operate in an archipelagic area sheltered from open sea effects; • operate mostly in summer • operate in an area with a significant wave height less than 0,5 m • comply with Finnish national requirements providing an adequate safety standard	The Commission agreed and the exemptions were accepted by tacit approval
Greece	Intact stability for new and existing Class C and D, open car and passenger ferries of shallow draft where cars have access via a forward ramp	Such vessels: • Have operated successfully in Greece for many years. • Must adhere to ISM Code. • Are only allowed to operate in suitable weather conditions. • Have to comply with the stability requirements of the International High Speed Craft Code.	The Commission agreed and the exemptions were accepted by tacit approval
	Lifesaving appliances: new and existing vessels of all classes	The vessels operate: • In sheltered areas under favourable weather conditions on short voyages. • Close to rescue facilities	

193 Similar definition of "Class E" for Sweden – a sort of port/sheltered area

Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
	Requirements for life rafts for Ro-Ro's.	The vessels: • Comply with the life rafts requirements of the SOLAS Convention. • Operate in sheltered areas under favourable weather conditions on short voyages. • Operate close to rescue facilities	
	New and existing small Class A and B passenger vessels which are used for sightseeing	The vessels: • Only during summer months. • Carry less than 50 passengers. • comply with already existing Greek national requirements.	
United Kingdom[194]	New vessels of Class B, operating in Scilly and Scottish Islands, of under 24m in length, carrying not more than 250 passengers, operating in daylight and summer only and which are not ro-ro passenger vessels shall comply with the standards of a Class C vessel specified in Annex I.	Provided it is engaged only on voyages in favourable weather and with a significant wave height less than 2.5 metres in the course of which it is at no time more than 15 miles from a place of refuge nor more than 5 miles from land, where ship-wrecked persons can land, corresponding to the medium tide height. The measure basically means a Class C ship sailing in waters which fulfil the	The Commission agreed and the exemptions were accepted by tacit approval

194 It is worth mentioning that there was one general exemption provided to the UK in 2002, where Commission indicated that the national UK regulations were equivalent to those of the Directive. However, in 2013/2014 the UK presented a series of exemptions in order to eliminate a double layer of legislation and apply the Directive instead

Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
		operating conditions of Class C.	
	Vessels of Class C and D operating in UK waters	Replacement of the Radar Transponders for Search and Rescue by an EPIRB with a homing device.	The Commission agreed and the exemptions were accepted by tacit approval
	For category B, C and D: use of the Japanese Coastal I standard for SWRC as described in IMO paper SLF51/4/1 Inter-Sessional Correspondence Group on Intact Stability.	The scope of the amended measure was restricted to specific routes where it can be demonstrated that the wind speeds will be lower than the Japanese Coastal I (max wind speed below 37knots).	The Commission agreed and the exemptions were accepted by tacit approval
	Vessels with surface-piercing bulbous bows, whose keels were laid on or before 31 December 2008 of classes B, C and D with stability calculated according to SOLAS 90, the position of the bulkhead and extension, relative to the stem, may be located according to the provisions of SOLAS 2009.	With the current definition of length in the Directive, a vessel designed to have a bulbous bow not fully submerged at the deepest sub-division load line, would have an inappropriate position for the collision bulkhead.	The Commission agreed and the exemptions were accepted by tacit approval
	All SOLAS 90 vessels provided with long un-subdivided spaces below the bulkhead deck, such as ro-ro passenger ships fitted with Long Lower Holds; or vessels with long un-subdivided machinery spaces or passenger accommodation.	Equivalent damage calculations in lieu of the floodable length calculations required by SOLAS 90, ref IMO Circular Letter SLS.14/Circ.321 dated 3 October 2008. It considers damage up to the centre line of the ship and therefore considers the potential flooding of the Long Lower	The Commission agreed and the exemptions were accepted by tacit approval

Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
		Hold.	
	Vessels less than 24m in length, where the engine room is not big enough to accommodate or effectively use the fog lance are exempted from this requirement.	The scope of the legal text indicates that this rule is applicable to new class b, c and d and existing class b of 24 metres in length and over.	The Commission agreed and the exemptions were accepted by tacit approval
	For vessels of under 24m in length carrying up to 50 passengers the provision of a Public address system may be fulfilled with a conventional portable loud hailer.	The scope of application is limited to ships where the enclosed passenger accommodation extends over only one deck and is above the bulkhead deck.	The Commission agreed and the exemptions were accepted by tacit approval
	All vessels Class C and D ro-ro passenger ships may be exempted from carrying a Means Of Rescue (MOR) subject to demonstrating alternative means of recovering persons from the water, which may include use of rescue boat, a liferaft or directly to the ship itself if it is sufficiently manoeuvrable, appropriately arranged and the recovery position can be observed from the navigating bridge.	In order to grant this exemption, the UK will ask for a practical and extensive demonstration of capabilities to recover a person from the sea, which is the main objective of this equipment.	The Commission agreed and the exemptions were accepted by tacit approval
	Vessels Class C and D ro-ro passenger ships exempted from providing a Helicopter landing or pickup area.	In Class C and D waters (on which there will be no doctor or medical facilities), it will be quicker to take survivors directly to shore than to wait for a helicopter.	The Commission agreed and the exemptions were accepted by tacit approval
	Sprinkler pump and tank installed in the machinery	Installation of an independent electrical pump	The Commission agreed and the exemptions were

Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
	space.	in the shaft tunnel (outside the machinery space) connected to a sea chest which is also outside the machinery space.	accepted by tacit approval
	Vessels of Classes C and D, of under 24m which are engaged only on voyages in favourable weather, in daylight and in summer, and carrying not more than 130 persons may be exempted from Sufficient number of survival craft has to be carried in order to ensure that in the event of any one survival craft being lost or rendered unserviceable, the remaining survival craft can accommodate the total number of persons the ship is certified to carry.	Only if they carry life rafts for 100%, and buoyant apparatus for 20%, of persons on board.	The Commission **did not agree** and the exemption request was rejected by COSS
Estonia	Relates to two ro-ro passenger ship building projects under Directive 2009/45/EC	Minimum stairway widths from the wheelhouse; in particular, Regulation II-2/B/6.5a "Means of escape" of Annex I of Directive 2009/45/EC, as amended	The Commission agreed and the exemptions were accepted by tacit approval
Sweden	Class D ships operating in the Swedish zone E (port/sheltered area) to be exempted from the Directive	Vessels operate in an archipelagic area sheltered from open sea effects, operate mostly in summer and in an area with a significant wave height less than 0,5 m	The Commission agreed and the exemptions /additional requirements were accepted by tacit approval
	Article 6(b): radio	Additional measures were	

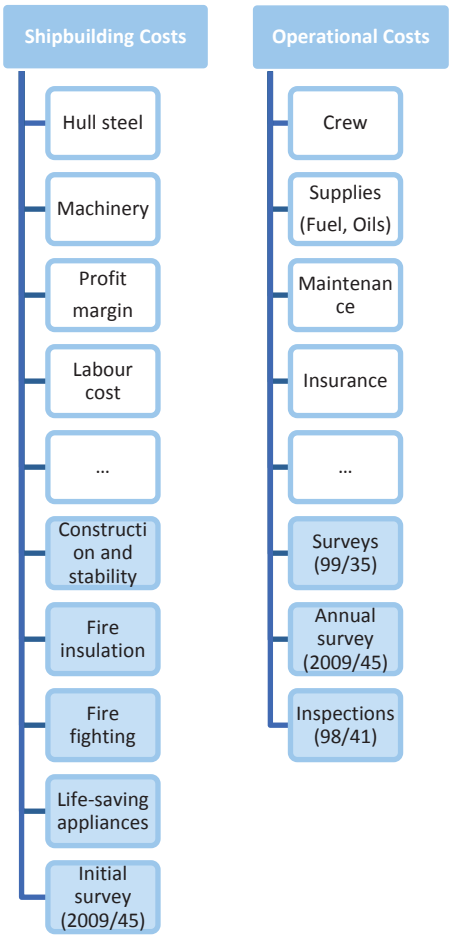
Country	Subject for which an exemption is asked for[192]	Justification	Commission reply
	communications equivalent/additional apparatus required (instead of the GMDSS equipment)	provided ensuring the same safety level	

15 ANNEX 6: QUANTIFICATION

In the support study the contractor, Tractebel has carried out a cost benefit analysis of the legislation by using the standard Commission approach. For a full detailed reference, refer to the study report. In the following the main results are summarized.

One of the objectives of the CBA carried out in this context was to assess the difference in costs for ships built under the Directive provisions and for ships built under national legislations because built in a material different from steel (normally aluminium and composite). In particular, legislation of Member States with considerable domestic passenger ships has been evaluated, namely: EL, ES, FR, IT and UK.

The scheme below shows the main elements which this analysis has looked into. The entries highlighted in blue are different for Directive ships and non-Directive ships and the related costs have been quantified to evaluate if such costs constitute a barrier for the implementation of the Directive. These costs have been therefore compared with general and approximated ship building and operational cost.



1 FIRE SAFETY MEASURES

As regards fire safety, *fire insulation* and *firefighting measures* have been analysed in details. The following tables contain figures of costs in these two areas and include a qualitative assessment based on the comparisons of the requirements between the Directive and national legislation. More specifically:

France:

- The requirements with regard to the insulation of bulkheads are far less stringent than the requirements in the Directive. Where A-level insulation is required, A-30 is sufficient whereas the Directive prescribes A-60 insulation on many divisions in the ship. In general national legislation is clearly less detailed and stringent than the Directive.
- The requirements for firefighting measures are on average also less stringent in the French legislation. The fact that no sprinklers are required for larger ships and that the rules with regard to escape routes are less stringent compared to those of the Directive compensates largely for the extra firefighter outfit that is required also for small ships according to the French legislation.

Spain:

- The requirements with regard to the insulation of bulkheads are a little less stringent than the requirements in the Directive. Although these requirements in SOLAS are very detailed and to a large extend identical to the requirements under Directive 2009/45/EC, on some divisions the standards are lower (e.g. class A instead of class A-60). This is due to the fact that the Spanish legislation refers to an outdated version of the SOLAS legislation (1974 version) that has been amended in the last decades.
- There are only small differences with the Directive (more firefighting outfits required but no sprinklers). In general it is assumed that the cost of the firefighting measures according to SOLAS and according to Directive 2009/45/EC are comparable.

Italy:

- The Italian legislation refers to SOLAS with regard to the insulation of bulkheads. As is the case for Spain, the Italian legislation does not refer to the latest version of the SOLAS legislation but to an outdated version (1988 version). This explains why the Italian legislation is less stringent than the Directive on this matter.
- The Italian legislation refers also to SOLAS with regard to firefighting measures but mentions the possibility for exemptions (e.g. for the escape routes). Therefore the Italian legislation appears to be less stringent than SOLAS and thus also than Directive 2009/45/EC.

The United Kingdom:

- The requirements with regard to the insulation of bulkheads are far less stringent than the requirements in the Directive. Whereas the Directive is very detailed on this matter, the UK legislation only mentions that A-level divisions are required between some rooms.

- The requirements for firefighting measures are on average also less stringent in the UK legislation. The requirement for and automatic fire detection alarms is not mentioned neither so for sprinklers.

Greece:

The Greek administration does not mention fire safety measures to be among the main differences between the national legislation and the Directive. Due to lack of more detailed information, the analysis for Greece is not elaborated on the same level as the comparison for the other reference countries.

Table 1: Comparison of regulations with regard to fire insulation of bulkheads and decks *(Source: Tractebel, 2015)*

	Directive 2009/45/EC		Spain (SOLAS)		France	Italy	The UK
Passenger capacity	> 36	< 36	> 36	< 36			
Main vertical bulkheads	A-60	A	A	A		Cf. Solas or Technical body	
Bulkheads not bounding either main vertical zones or horizontal zones	Table 4.1	Table 5.1	Table 2: to a large extend comparable with Directive but less stringent with regard to. bulkheads bounding evacuation stations and external routes (in SOLAS referred to as 'Lifeboat and liferaft handling and embarking stations')	Regulations 39 to 43: to a large extend comparable with Directive but less detailed and more possibilities for exemptions			
Decks not forming steps in main vertical zones nor bounding horizontal zones	Table 4.2	Table 5.2	Table 4: to a large extend comparable with Directive but less stringent with regard to. decks under evacuation stations and external routes (in SOLAS referred to as 'Lifeboat and liferaft handling and embarking stations')	Regulations 39 to 43: to a large extend comparable with Directive but less detailed and more possibilities for exemptions			
Bulkheads bounding machinery spaces and main galleys	Table 4.1	Table 5.1	Table 2: cf. supra	Regulations 39 to 43: cf. supra	A-30 or F (for combustible material)		A-class divisions
Stairways and evacuation stations and escape routes	Table 4.1	Table 5.1	Table 2: cf. supra	Regulations 39 to 43: cf. supra	Steel/aluminium or F		
Overall qualitative comparison with Directive 2009/45/EC			-	-	--	-	--

Table 2: Comparison of national legislation with Directive 2009/45/EC with regard to firefighting measures (part 1) *(Source: Tractebel, 2015)*

			Directive 2009/45/EC						France						Spain[195]	
			B		C		D		B equivalent		C equivalent		D equivalent			
Category	Unit	Unit cost (€)	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m
Fire pumps	No	1.400 (300 – 2700)	2	2	1	2	1	2	1,75[196]	2	1,75	2	1,75	2	2	2
Firefighter outfit incl. breathing apparatus	No	500 (300 – 700)	0	4	0	2	0	2	1	2	1	2	1	2	2	4
Total cost (€)			2.800	4.800	1.400	3.800	1.400	3.800	2.950	3.800	2.950	3.800	2.950	3.800	3.800	4.800
Difference with Directive									-150	1.000	-1.550	0	-1.550	0	-1.933	-667
Automatic fire detection alarm			1	1	1	1	1	1	1	1	1	1	1	1	1	1
Automatic sprinkler			0	1	0	1	0	1	0	0	0	0	0	0	0	0
Escape routes			2 per main vertical zone, 2 per machinery space						less stringent standards[197]						cf. Directive	
Overall qualitative comparison with Directive 2009/45/EC									-	-	-	-	-	-	0	0

195 As SOLAS makes no distinction between ship classes (or sea areas), the differences with Directive 2009/45/EC are calculated as the difference of the cost according to SOLAS with the average cost according to the Directive for the ship classes B, C and D

196 Ships that are larger than 12 meter must have 2 fixed pumps on board, ships smaller than 12 meter one fixed pump and a hand pump. It is assumed that the cost of the hand pump is 50% of the cost of a fixed pump. On average a small ship therefore carries 1,75 fixed pumps or equivalent (assuming that the ships smaller than 12 meter represent ca. 50% of the ships smaller than 24 meter)

197 The regulations with regard to escape routes in the Directive 2009/45/EC are very detailed (e.g. requirements concerning the minimal width and height of the escape routes). In the French legislation the main requirements on this field (two escape routes per room) are comparable to those of the Directive but there are fewer specific requirements (like for example minimal width/height)

Table 2: Comparison of national legislation with Directive 2009/45/EC with regard to firefighting measures (part 2) *(Source: Tractebel, 2015)*

			United Kingdom				Italy					
			B equivalent		C equivalent		B equivalent		C equivalent		D equivalent	
Category	Unit	Unit cost (€)	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m
Fire pumps	No	1.400 (300 – 2700)	0,5[198]	1,5[199]	0,5	1,5	2	2	1	2	1	2
Firefighter outfit incl. breathing apparatus	No	500 (300 – 700)	0	1	0	0	0	1	0	1	0	1
Total cost (€)			700	2.700	700	2.100	2.800	3.050	1.400	3.050	1.400	3.050
Difference with Directive (€)			2.074	1.956	2.100	2.100	700	1.700	0	1.750	0	750
Automatic fire detection alarm	No		0	0	0	0	1	1	1	1	1	1
Automatic sprinkler	No		0	0	0	0	0	0	0	0	0	0
Escape routes			Cf. Directive				Cf. Solas, however less stringent standards because exemptions possible to the national legislation					
Overall qualitative comparison with Directive 2009/45			-	-	-	-	-	-	-	-	-	-

198 Only a power or hand pump is required. It is assumed that this item is half the price of a fixed pump

199 A fixed pump and a hand pump are required. It is assumed that the cost for the hand pump is half the price of the cost for a fixed pump

2 LIFE-SAVING APPLIANCES

As regards **life-saving appliances** (LSA), Directive 2009/45/EC contains detailed requirements for each sea area; national legislations contains similar provisions and a comparisons has been worked out on the basis of these provisions.

For most items, a unit price can be found so that the differences between legislation can be quantified and evaluated. The main differences between national legislation and Directive 2009/45/EC are presented below.

General remarks:

The average small ship has a maximum capacity of 85 passengers, which is the average capacity of aluminium and composite ships of less than 24m in the EU (analysis based on datasheet with all domestic passenger ships in the EU);

The average large ship has a maximum capacity of 220 passengers, which is the average capacity of aluminium and composite ships larger than 24m in the EU (analysis based on datasheet with all domestic passenger ships in the EU);

The required life raft capacity, number of buoyant apparatus and lifejackets are calculated based on the average maximum capacity for small and large ships;

When legislation has different regulations for new and existing ships, only the regulations for new ships are considered;

When a regulation mentions the possibility of exemptions for a certain requirement under conditions that are 'not hard to reach' or that are quite common, it is assumed that these exemptions are granted for the average ship (e.g. replacement of part of the survival ship capacity by buoyant apparatus in France and Italy).

Main findings:

Rescue, lifeboats and the life raft capacity are the life-saving items that have the most relevant impact. When these items are a carriage requirement, they make up 50% to 90% of the total expenditures on LSA. Less costly but, due to their large number also relevant, are life jackets; however as the requirements for this item are similar in the legislations under analysis the differences not relevant.

France: The French legislation permits a considerable cost reduction on LSA compared with the Directive. This is mainly due to the possibility to replace half the required life raft capacity by the less costly buoyant apparatus and to the fact that no rescue boat is required for small ships (<35 meters) and no extra lifeboat is required for large ships (unlike as required by the Directive). The cost reduction compared with the Directive is larger for small ships than for larger ships.

Spain: The SOLAS legislation requires two lifeboats instead of 1 rescue boat (+ 1 lifeboat for large ships) in the Directive. The capacity of these lifeboats is part of the total life raft capacity, so the need for extra life rafts is limited compared to a boat under Directive 2009/45. For small ships there is a limited reduction of the LSA cost under SOLAS compared with the Directive, for larger ships the cost reduction is more significant.

The United Kingdom: There is a clear distinction with regard to LSA costs between class B ships (UK: class III) and class C ships (UK: class VI). The LSA costs for class B ships under UK legislation are to a large extent in line with the LSA costs for class B ships under the

Directive. For class C ships however, the LSA cost under UK legislation is significantly less than the cost under the Directive. This is due to the fact that no rescue boat is required and that life raft capacity is reduced for these ships.

Italy: The LSA cost under the Italian legislation is limited compared to the same cost under the Directive. This applies to all ship classes and sizes. The cost reduction is due to the less stringent requirements on lifeboats and life raft capacity.

Greece: The Greek administration identified two main differences on the subject of LSA between the national legislation and the Directive.

The national legislation prescribes that at least two lifeboats are required on ships above 56m. Whether these lifeboats are also required under the Directive 2009/45/EC depends on the capacity of the ship and the life-rafts (given the requirement of one motorized vessel for every nine life rafts, a ship with a large capacity (>200 persons) requires one or two lifeboats in addition to the mandatory rescue boat). As ships longer than 56m typically have a large capacity one might say that this requirement does not differ substantially from the requirements in Directive 2009/45/EC.

The performance standards of safety equipment under national legislation are based on national requirements instead of on the LSA Code or SOLAS (under Directive 2009/45/EC). Without knowledge of the national requirements it is impossible to assess whether they are more stringent than the Directive or not. However one can assume that an international standard equipment is cheaper than a national standard equipment due to the potential economies of scale (larger market available)

Table 3: Comparison of requirements of national legislation with Directive 2009/45/EC with regard to life-saving appliances (part 1)

			Number of appliances required by legislation											
			Directive 2009/45/EC						France					
			B		C		D		B equivalent		C equivalent		D equivalent	
Category	Unit	Unit cost (€)	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m
Rescue boat	No	55.000 (40.000 – 70.000)	1	1	1	1	1	1	0	1[200]	0	1	0	1
Lifeboat	No	25.000 (10.000 – 40.000)	0	1[201]	0	1	0	1	0	0	0	0	0	0
Life raft	Capacity	170[202] (120-220)	113	263	113	263	113	263	45	115	23	58	0	0
Buoyant apparatus	Capacity	75[203] (70-80)	0	0	0	0	0	0	45	115	68	173	90	230
Lifebuoys	No	35 (30-40)	8	8	4	8	4	8	3	9	3	9	3	9
Life jackets	No	50 (40-60)	95	242	95	242	95	242	90	230	90	230	0	0

200 Only required for ships larger than 35 meters

201 A lifeboat is not required according to the Directive (as long as there is enough survival craft capacity on life rafts). However, for every nine life rafts there needs to be one motorized rescue craft (rescue boat or lifeboat). Given that an average large ship has a capacity of 220 persons which exceeds the capacity of nine average life rafts (9*20 persons) one can assume that large ships carry also a lifeboat together with the mandatory rescue boat

202 Unit cost per person calculated as follows: price of life raft divided by capacity (average capacity of a life raft = 20 persons)

203 Unit cost per person calculated as follows: price of buoyant apparatus divided by capacity (average capacity of a buoyant apparatus: 14 to 20 persons)

Life jackets pleasure type	No	20 (15-25)	0	0	0	0	0	0	0	0	0	0	90	230
Child life jackets	No	50 (40-60)	9	22	9	22	9	22	4	11	4	11	4	11
Infant life jackets	No	50 (40-60)	2	6	2	6	2	6	0	0	0	0	0	0
Distress flares	No	25 (6-50)	12	12	12	12	6	6	2	2	2	2	2	2
Parachute signals	No	40 (30-50)	0	0	0	0	0	0	6	6	3	3	0	0
Line-throwing appliances	No	80 (60-100)	1	1	1	1	0	0	0	0	0	0	0	0
Radar transponders	No	60 (50-70)	1	1	1	1	1	1	1	1	1	1	1	1
Two-way radiotelephone		50 (30-70)	3	3	3	3	3	2	0	0	0	0	0	0
Satellite EPIRB		500 (300-700)	0	0	0	0	0	0	0	0	0	0	0	0
Total cost (€)			80.000	139.000	80.000	139.000	80.000	139.000	16.000	96.000	14.000	90.000	9.000	78.000
Difference with Directive (€)									64.000	43.000	66.000	49.000	71.000	61.000

Source: Tractebel, 2015

Table 3: Comparison of national legislation with Directive 2009/45 with regard to life-saving appliances (part 2)

			Number of appliances required by legislation											
			Spain		United Kingdom				Italy					
					B equivalent		C equivalent		B equivalent		C equivalent		D equivalent	
Category	Unit	Unit cost (€)	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m	<24 m	>24 m
Rescue boat	No	55.000 (40.000 – 70.000)	0	0	1	1	0	0	0	0	0	0	0	0
Lifeboat	No	25.000 (10.000 – 40.000)	2	2	0	0	0	0	0[204]	1	0	1	0	1
Life raft	Capacity	170[205] (120-220)	45	185	99	253	54	138	45	115	0	0	0	0
Buoyant apparatus	Capacity	75[206] (70-80)	5	12	0	0	36	92	45	115	90	230	90	230
Lifebuoys	No	35 (30-40)	8	8	8	8	4	4	2	5[207]	2	5	2	5
Life jackets	No	50 (40-60)	95	242	81	207	81	207	90	230	90	230	90	230

204 The legislation requires two lifeboats but one can easily be exempted from this requirement. The same goes for the larger ships but for these ships at least 1 boat 'deemed fit in case of an emergency' should be provided

205 Unit cost per person calculated as follows: price of life raft divided by capacity

206 Unit cost per person calculated as follows: price of buoyant apparatus divided by capacity

207 < 40 m: 4 lifebuoys; > 40 m: 6 lifebuoys

Life jackets plaisure type	No	20 (15-25)	0	0	0	0	0	0	0	0	0	0	0	0
Child life jackets	No	50 (40-60)	4	11	43	110	43	110	9	22	9	22	9	22
Infant life jackets	No	50 (40-60)	0	0	0	0	0	0	0	0	0	0	0	0
Distress flares	No	25 (6-50)	0	0	0	0	0	0	6	12	6	12	6	12
Parachute signals	No	40 (30-50)	12	12	12	12	12	12	6	6	6	6	0	0
Line-throwing appliances	No	80 (60-100)	1	1	1	1	0	0	0[208]	1	0	1	0	0
Radar transponders	No	60 (50-70)	0	0	0	0	0	0	0	0	0	0	0	0
Two-way radiotelephone		50 (30-70)	1	1	3	3	3	3	1	1	1	1	1	1
Sattelite EPIRB		500 (300-700)	0	0	1	1	0	0	0	0	0	0	0	0
Total cost (€)			64.000	96.000	79.000	115.000	19.000	47.000	16.000	67.000	12.000	56.000	12.000	55.000
Difference with Directive (€)			16.000	43.000	1.000	24.000	61.000	92.000	64.000	72.000	68.000	83.000	68.000	84.000

Source: Tractebel, 2015

[208] Only necessary for ships with GT > 200 tons; ships smaller than 24 metres typically have a GT < 200 tons

3 Surveys

Part of the operational costs are the **surveys**, arising from Directive 2009/45/EC, Directive 98/41/EC and Directive 1999/35/EC. Tables below presents the estimated survey cost:[209]

Table 4: Overview average cost for surveys under Directive 2009/45/EC per case study country

Country	Certification of new buildings (working hours)	Annual survey (working hours)	Unit survey cost (€/h)	Unit cost certification of new building (€)	Unit cost annual survey (€)
Belgium	150	50	121	18.200	6.100
Bulgaria	1.488	280	4,33	6.400	1.200
Croatia	780	85	45	35.100	3.800
Cyprus	NA	NA	NA	18.200	2.250
Denmark	400	25	107	42.800	2.700
Estonia	NA	NA	NA	18.200	2.250
Finland	100	12	300	30.000	3.600
France	550	5	198	108.700	1.000
Germany	3,7	11,6	114	400	1.300
Greece	20	8,6	121	2.400	1.000
Ireland	Total cost	Total cost	Total cost	3.100	1.500
Italy	50	48	121	6.000	5.800
Latvia	NA	NA	NA	18.200	2.250
Lithuania	NA	NA	NA	18.200	2.250
Malta	NA	NA	NA	18.200	2.250
Norway	503	55	139	69.900	7.600
Poland	NA	30	60	18.200	1.800
Portugal	Total cost	Total cost	Total cost	800	600
Romania	NA	NA	NA	18.200	2.25
Slovenia	NA	NA	NA	18.200	2.250

[209] Based on costs reported by the Member States during the case studies. For more details on the underlying data, please refer to Tractebel, 2015

Spain	NA	NA	NA	18.200	2.250
Sweden	300	12	150	45.000	1.800
The Netherlands	200	40	142	28.400	5.700
UK	70	38	120	8.400	4.600
Median	**200**	**34**	**120**	**18.200**	**2.250**

Source: Tractebel, 2015

Table 6: Overview enforcement cost per country with regard to Directive 98/41/EC

Country	Approval of registration systems (working hours)	Random checks (working hours)	Other activities (working hours)	Unit cost working hour (€/h)	Total enforcement cost (€)[4]	Nr of passenger ships	Cost per ship
Finland	5	4	0	300	2.700	265	10
France	760	57	/	198	161.511	734	220
Greece	4.250	180	100	121	545.865	651	839
Italy	100	260	100	121	55.430	1.296	43
Latvia	48	6	/	121	6.507	/	/
Poland	92	20	4	60	6.960	17	409
Sweden	80	120	30	150	34.500	140	246
UK	No information on total yearly cost, unit cost for approval of registration systems is 2 hours per vessel (only applicable to new vessels), unit cost for random check is 1 hour per vessel.			120		263	126

Source: Tractebel, 2015

Table 5: Overview of the yearly cost of surveys under Directive 1999/35/EC (€)

Country	Initial survey	Annual survey	In-service survey	Other survey	Total
Belgium	0	4.000	3.000	0	**7.000**
Croatia	900	11.400	8.100	0	**20.400**
Denmark	500	27.700	29.300	2.700	**60.300**
Estonia	1.300	12.700	13.400	2.700	**30.100**
Finland	9.000	80.900	91.200	11.600	**192.700**
France	6.400	56.200	45.200	4.400	**112.200**
Germany	4.700	49.900	52.200	1.300	**108.100**
Greece	2.400	12.600	10.900	3.400	**29.200**
Ireland	1.300	18.100	19.400	3.000	**41.900**
Italy	34.800	100.800	109.500	44.900	**289.900**
Latvia	300	2.000	3.700	0	**6.000**
Lithuania	400	1.300	2.000	700	**4.400**
Malta	1.700	2.700	4.000	1.300	**9.700**
Norway	700	4.000	5.000	0	**9.700**
Poland	1.000	15.400	17.100	1.300	**34.800**
Portugal	3.000	0	700	0	**3.700**
Romania	300	0	0	0	**300**
Slovenia	200	500	600	0	**1.300**
Spain	10.700	49.600	39.500	8.400	**108.100**
Sweden	9.700	111.300	118.900	8.300	**248.100**
The Netherlands	5.800	49.500	56.700	1.500	**113.500**
UK	9.000	73.300	70.600	9.000	**162.000**
Total on average	**91.700**	**538.700**	**535.400**	**93.400**	**1.259.300**
Total on average for domestic passenger ships	17.000	100.000	99.400	17.300	**233.700**

Source: Tractebel, 2015

It should be noted that the "total on average" in the table above stands for total number of surveys multiplied by average unit cost (EUR 1340 per survey), i.e. not the sum of the total survey costs per country.

Summing up the cost of surveys and inspections under the three Directives examined (Directives 1999/35/EC, 98/41/EC and 2009/45/EC) the overall results at EU level are presented in the table below:

Table 7: Overview of the yearly cost of inspections/surveys for the whole passenger fleet in Europe due to the Directives 1999/35, 1998/41 and 2009/45 (million €)

Country	Directive 1999/35/EC	Directive 98/41/EC	Directive 2009/45/EC	Total
Charges	1,13		2,19	3,31
Administrative costs	0,13		0,12	0,25
Enforcement costs	([210])	0,73	([211])	0,73
Total	**1,26**	**0,73**	**2,30**	**4,29**

Source: Tractebel, 2015

The total yearly cost of Directives 1999/35/EC, 98/41/EC and 2009/45/EC with regard to inspections and surveys is ca. EUR 4,3 million for the European passenger fleet.

- In absence of these Directives, the surveys under Directive 2009/45/EC would be replaced by surveys under national legislation which means that their costs are not due to EU legislation. The surveys under Directives 1999/35/EC and 98/41/EC would not be replaced automatically without EU legislation as there are at the moment no national rules in place that would enforce the flag States to carry out inspections alike to those foreseen under Directive 98/41/EC and 1999/35/EC. Whether or not such regulations will emerge in the future is unclear.
- Without Directives 98/41/EC and 1999/35/EC (or analogous national regulations), the inspections under these Directives would not be carried out, unless they are combined with PSC surveys (which is the case for a significant number of 99/35 inspections). These surveys would remain as PSC surveys if Directive 1999/35/EC was not in place. The number of combined Directive 1999/35/EC and PSC surveys a year for passenger ships amounts to ca. 520. The cost of these combined surveys is estimated at 700.000€ a year. Therefore the survey cost reduction if Directive 1999/35/EC was not in place (nor any analogous national regulation) is limited to 0,56 million € per year. Together with the cost reduction of Directive 98/41/EC surveys (0,73) the total survey costs that

[210] If the costs for surveys under Directive 1999/35/EC and Directive 2009/45/EC are not fully charged to the ship owner or operator, some of the survey costs are enforcement costs rather than charges

[211] ditto

can be avoided if no EU legislation would be in place (cost of surveys and inspections under Directives 1999/35/EC and 98/41/EC) amounts to 1,3 million €.

4 EXEMPTION/EQUIVALENCY PROCEDURE

To complete the cost overview, the cost of exemption and update procedures have been assessed.

The cost of the exemption/equivalency procedure under EU legislation is compared with the cost of a decentralised procedure where the flag State is able to evaluate/grant/reject the exemption/equivalency for itself. The result of this cost comparison is presented in the next table. The IMO procedures are also taken into consideration in the cost evaluation.

Table 8: Cost per procedure for the current procedure (under Directives 98/41/EC and 2009/45/EC) and a different exemption/equivalency procedure (cf. SOLAS legislation)

Receptor	EU procedure	Procedure cf. Solas	Difference (cost reduction)
National administrations	2.100	650	1.450
Commission	1.800	-	1.800
Total cost	**3.900**	**650**	**3.250**

Source: Tractebel, 2015

The cost of the exemption/equivalency procedure is lower in a legislative framework with only national legislation in place than under the EU legislation. The difference per procedure is approximately 3.250 €, almost equally divided between a cost reduction for the national administration and a cost reduction for the Commission. The EU procedure however, provides for a second assessment by a neutral third party, which should lead to better judgement whether exemptions/equivalencies are justified or not and should therefore enhance the overall level of safety. Given that the number of exemption/equivalency procedures under Directive 2009/45/EC handled a year is limited (on average less than 4), the yearly 'extra cost' due to the EU legislation compared to a procedure cf. SOLAS is very limited, and even not relevant in view of the potential safety gains.

5 UPDATE PROCEDURE

Costs difference related to the update procedure of new international rules agreed at IMO under the current EU legislation and in the absence of this legislation have been evaluated and compared. The following table presents the results for the current update procedure and an alternative procedure without EU involvement, incurred every 4-5 years.

Table 9: Estimation of total cost of the current update procedure of Directive 2009/45/EC and an alternative procedure without EU involvement

Receptor	Current procedure	Procedure without EU legislation
Preparatory work at IMO level	+/- 22.500 €	+/- 22.500 €
Assessment costs National administrations (28 Member States)	+/- 14.400 € (European Comitology)	+/- 162.000 €
Assessment costs Commission	+/- 24.300 €	
Transposition costs	Idem	Idem
Other costs		• Increased risks of accidents and incidents • No uniform implementation (market inefficiency)
Total cost per update	**61.000 € + transposition costs per MS**	**185.000 € + transposition costs per MS + "Other costs"**

Source: Tractebel, 2015

6 SHIP LIFE CYCLE COSTS

The analysis above gives details on the main cost entries and differences between a situation in which EU legislation is present and one in which only national legislation is in place. These absolute values need to be compared with the shipbuilding and shipping costs; the following section is sketching such situation.

The cost structure in maritime as in many other industries can be broken down in CAPEX and OPEX as follow:

Ship Acquisition Cost such as Hull, Equipment, Machinery, Profit Margin, Labour, Extras.

Ship Operation Costs such as Direct Operation (including Crew, Insurance, Supplies, Admin, Docking), Periodic Maintenance, Voyage (including Fuel, Tolls, Docking), Capital, Handling of Cargo, Ship Scrap Value.

Each of this high level costs entries can be further broken down in more detailed elements, which are mostly depending on the business model that the companies select for their business. This type of analysis goes beyond the scope of the present report; in general terms the selection of the various possible options in terms of basic ship dimensioning, structure, type of equipment, number of crew, type of the service (including speed, turnaround time etc.)

are the subject of a complex process which normally based on a multi-criteria analysis aiming to maximizing (or minimizing) certain functions modelling the business.

It is also worth noting at this stage that the major entry in the operational costs is fuel cost that is out-weighting all the others, followed by crew and docking.

In this context, it is of some relevance trying to assess what is the range of CAPEX and OPEX costs for operating in a domestic passenger business; the relevance relies on the possibility of then weighting the costs identified as specifically arising from the application of the Directives.

Comparing costs for new built vessels poses some challenges given the heterogeneous population under examination; however some considerations are set out below:

In general terms, from analysis of fleets it can be affirmed that **Class B** ships are vessels comparable for characteristics and performances to SOLAS ships (i.e. also to Directive 2009/45/EC Class A ships); therefore, in relative terms, large passenger/ro-ro vessels.

Analysing various information sources such as Lloyds' Fairplay, Clarkson, and specialized press for what publicly available the cost of a Class B ship is in the range of **0.8-1.2 M€/m**.

As an example, in 2005 a vessel for 1.200 passengers was estimated as costing around 30 M€, while recent new building contracts have been placed for two new (Dover) ferries at around 190M€ (for 2000 passengers and 213m long vessels); or a new ferry for domestic service in Canada (but European built) has been placed for around 60M€ for a 80m long vessel.

Class B ship lengths range between 50 and 140 m and therefore the cost of such vessels is in the range between **40** and **200 M€**.

Class C and D vessels are, in general terms, smaller in size given the coastal navigation they are engaged in; however the business model and the variety of services, calls for various technical solutions; from the same above mentioned sources can be estimated that the cost for such vessels ranges in the interval **0.05 – 0.3 M€/m** (therefore a more ample range with respect to Class B vessels in relative terms). Such vessels range between 20 and 100 m with a cost ranging between **1** and **30 M€**.

As previously stated, the reason for such large cost intervals is in relation with the large differences in the services that these vessels are engaged in, ranging from regular services for rolling cargo and passengers to touristic summer sightseeing, or servicing communities in small remote islands.

However, an order of magnitude of the yearly capital costs can still be estimated for these figures. Considering a discount rate of between 3 and 5 % over a life cycle period of 25 years, the impact of the investment can be estimated in:

for a **Class B** ship between **4 M€/year** and **20 M€/year**, while;

for a **Class C** and **D** ship **0.1 M€/year** and **3 M€/year**.

As mentioned, in terms of operations, the main element to evaluate is the fuel cost. To this end some further research has been carried out to estimate this cost. The IPCC Mobile Transportation fuel consumption factors have been used. These factors date back to studies

carried out in late 90s' and early 2009 and they have been also reconfirmed by comparisons with data publicly available from EU funded research (such as FAROS project).

Table 10: Overview of fuel consumption per type of ship

	Average Consumption (tonne/day)	Consumption at full power (tonne/day)
Passenger/ro-ro	32,3	12,834 + 0,00156*GRT
Passenger	70,2	16,904 + 0,00198*GRT
High Speed Ferry	14,4	39,483 + 0,00972*GRT
Tugs	5,5	5,6511 + 0,01048*GRT
Fishing	5,5	1,9387 + 0,00448*GRT
Other Ships	26,4	9,7126 + 0,00091*GRT

Source: IPCC Mobile Transportation, 2009

By analysing the fleet characteristics, and by using the Passenger/ro-ro consumption model for Class B, C and D and HSC for Class HSC, the results are:

Table 11: Overview of fuel consumption per Class of ship

	GT Min	GT Max	Ton/Day *Min*	Ton/Day *Max*	Average
CLASS A	5000	40000	20.634	75.234	47.934
CLASS B	200	8000	13.146	25.314	19.23
CLASS C	150	4000	13.068	19.074	16.071
CLASS D	150	4000	13.068	19.074	16.071
CLASS HSC	200	1000	41.427	41.043	41.235

Source: Commission, 2015

The fuel price (at the time of writing) is estimated by averaging the current bunker prices for HFO and MGO at a value of around 450 - 500€/ton. The yearly fuel cost can be then estimated by assuming 340 days of operations:

- **7 M€/year for a Class A;**

- **2.8 M€/year for a Class B;**
- **2.3 M€/year for a Class C and D; and**
- **6 M€/year for a HSC.**

From the above, it can be seen how the OPEX costs out-weigh the CAPEX and how all together are considerably higher with respect to the differential costs that can be estimated when comparing a "Directive ship" with one built under a generic national legislation.

For the non-recurrent costs occasioned by EU legislation, the sum of fire insulation, firefighting, life-saving appliances and initial surveys costs is as low as 100.000 € for a Class B type. Considering the minimum cost level for new built of a Class B ship (40M€), such costs represents an irrelevant percentage.

16 ANNEX 7: SUMMARY OF THE WORKSHOP WITH NATIONAL EXPERTS ON THE FITNESS CHECK ON PASSENGER SHIP SAFETY LEGISLATION, BRUSSELS, 23 MARCH 2015

A general overview of the Fitness Check was followed by a detailed discussion on the Directives involved. Each of the following four sections is dedicated to one Directive forming part of the Fitness Check.

Directive 2009/45/EC on safety standards and on safety rules and standards for passenger ships

The results of the data collection were presented, based on questionnaires, cases studies and discussions with national experts, authorities and stakeholders. The gathered data provide for an overview of the domestic fleet, i.e. the number of ships, their passenger capacity, size, class and sea area. Statistics on accidents involving domestic passenger ships have been presented by EMSA on the basis of two datasets: EMCIP[212] and MARINFO.[213]

The analysis shows that:

- As far as the **size of the ships** is concerned, the large majority of ships below 24 m in length are currently not covered by the Directive (around 90%). The accident records do not demonstrate any specific safety concern. However, further research into the number of accidents and their causes still needs to be done.
- The discussion focused on the adequacy of keeping the ships below 24 m in length in the scope of the Directive, namely from the proportionality and subsidiarity perspective, given: a) the difficulty to have "one-size-fits-all" rules in view of the sensitivity of these ships to the specific local conditions, b) the limited fleet covered by the Directive (around 8%), and c) the non-existent internal market at the moment (practically no flag changes recorded for steel ships below 24m in past decades). Furthermore, there is no evidence that from the safety perspective, the small steel ships should be at the EU level treated differently from the small ships made from other materials.
- Several experts noted that the % of accidents of ships of less than 24m is higher for ships not covered under the Directive and wondered whether, on the basis of current knowledge, it can be excluded that the number of accidents would increase in case the small (steel) ships are excluded from the scope of the Directive. EMSA replied that while this cannot be excluded, it is not likely as not all accidents can be linked to the Directive's safety standards. Furthermore, it is difficult to make any robust comparison between these figures considering the discrepancy between the number of ships of less than 24m within the Directive (74) and outside of the Directive (1746).

212 EMCIP is an official EU database and is more detailed in the description of the accidents, although it should be noted that it dates back only 4 years.

213 MARINFO, based on commercial databases, has existed for a longer period; however it lacks the detail of EMCIP. Both databases are consistent in terms of number of accidents of domestic passenger ships in comparable time periods. This provides a good degree of certainty with respect to the data robustness.

- With regard to **materials,** the evidence demonstrates an important difference in the application as regards the interpretation of materials 'equivalent to steel', namely concerning aluminium and, in a lesser degree, composite. A large majority of Member States considers aluminium built ships as equivalent to steel and issues certificates under the Directive for such vessels. However, a significant number of aluminium ships, primarily French flagged, are currently not certified under the Directive (around 10% of the total EU passenger capacity). The different interpretation is linked to the additional fire insulation requirements needed for aluminium built vessels - and for which spaces on board of a ship such requirements should be applied. As a consequence, further clarification as regards both the materials equivalent to steel and the corresponding conditions is needed.
- Concerning other materials, there is a common interpretation that ships made of wood (16% EU PAX capacity) and composite (12% of EU PAX capacity) are outside the scope of the existing Directive. No safety concerns have been raised, although some of the experts mentioned that the shipbuilding industry might benefit from developing harmonised EU standards for small passenger composite ships (i.e. below 24 m).
- With respect to **Offshore Service Vessels** (e.g. for Wind-Farms), it was recognised that the Directive's safety requirements derived from SOLAS are not suitable for ships carrying industrial personnel and that there is no uniform application of the Directive in this respect. Furthermore, the Code regulating such vessels is under development at the IMO and among other definitions and requirements, a new definition of industrial personnel has been proposed for adoption at the next MSC95 with a view to insertion into relevant IMO Code(s). Such definition is regarded as important because it defines the type of personnel on board these vessels as different from a normal passenger; as a consequence these vessels cannot be considered passenger ships.
- With respect **High Speed Craft**, the inconsistency between the EU and international legislation (SOLAS) was discussed, namely concerning the applicable speed limit. Overall, the experts agreed that the application of the provisions contained in the HSC Code in its entirety in its most updated version is appropriate for such type of vessels. The speed of 20 knots that qualify the vessels as a high speed craft could be revised and/or clarified.
- The domestic fleet currently consists of 92 **Traditional Ships** built before the SOLAS 60 came into force. Some of these ships were upgraded to meet the Directive standards. The main problem relates to the recognition of certificates for rigged sailing ships. Even though the Directive has no suitable standards for these ships which are located primarily in the Netherlands (47), most of them are certified according to the Directive. The experts agreed that there is a need to clarify much more precisely the definition of a Traditional Ship and of a ship not propelled by mechanical means. Furthermore there was agreement that it would not be proportionate to cover those ships under the Directive.
- Finally on the **sea areas**, the experts agreed that their definition is very complex and resource-demanding. This leads to a heterogeneous national implementation (not all criteria used, some sea areas are updated, others not, some are applicable for summer periods only etc.). However, there does not seem to be any evidence that this non-uniform implementation leads to major safety concerns.

- While it was acknowledged that there is a potential for simplification, the discussion on which elements of the current regime could be simplified was not conclusive. For example, as regards a possible merger of sea areas C and D: Considering that the standards for both Classes (allowed to trade within the respective sea areas) are practically identical, the experts noted that after a significant effort invested in implementing the Directive, a change of such magnitude may be rather disruptive. In this context, some experts highlighted the issue of existing ships and the double regime that such a merger could create.
- Furthermore, some experts regarded the wave height as an important parameter while others argued it was less important (similarly concerning the place of refuge and length of the voyages). On the basis of the material collected and on the discussion, a possible way forward could be to clarify the existing definitions and to make the definition of sea areas subject to examination by the Committee on Safe Seas (COSS).

Directive 2003/25/EC on specific stability requirements for ro-ro passenger ships

Although the coexistence of Directives 2003/25/EC and SOLAS 2009 makes the passenger ship safety legislation complex and based on different regulatory approaches, it results from the fact that it has not yet been demonstrated that the SOLAS 2009 approach has the same level of safety as SOLAS 90+Directive 2003/25.

A large majority of Member States consider that the safety requirements of this Directive are superior to the amended SOLAS 2009 and deliver an increased safety level for Ro-Ro passenger ships with respect to the water on deck (WOD) occurrence in a damage situation (the so-called Stockholm Agreement). A few Member States, however consider that the SOLAS 2009 as amended delivers already an equivalent safety level as the combined application of the SOLAS 90 plus the Directive 2003/25/EC requirements.

Several EC funded studies have addressed this issue; in particular the EMSA2 project delivered several recommendations to improve SOLAS Regulations concerning damage stability with respect to the WOD. Some of these recommendations were brought to the attention of the IMO. The EMSA3 project, although not directly addressing WOD issues, is about to deliver further SOLAS amendments proposals to possibly further raising the damage stability requirements. Decisions are expected in 2016 at the IMO (and would enter into force for passenger ships on international voyage as of 2020).

Once the combination of amendments proposals are adopted at the IMO, steps can be taken to re-assess the safety level of SOLAS2009 as amended with respect to the safety level of the SOLAS 90 + Stockholm Agreement as required by the Directive 2003/25/EC with a view to align the international and European rules as much as possible.

Directive 1999/35/EC on a system of mandatory surveys for the safe operation of regular ro-ro ferry and high-speed passenger craft

It had to be recognised that ro-ro ferries and HSC have particular safety characteristics; these include an undivided vehicle deck – giving rise to stability and fire vulnerabilities, very intense activity (with tight schedules), the risks of cargo shift, water-tightness issues, hoistable ramps and wear & tear. It was pointed out that, in relation to the domestic fleet,

while vessels with Ro-Ro capacity (ferries and HSC) represent 49% of the fleet, they account for 76% of accidents. During the case studies interviews, Member States' experts had confirmed that a special inspection regime for these vessels is still necessary.

Directive 1999/35/EC provides for a number of types of inspection; these include an initial verification of documentation one month before the ship starts operation, an initial inspection before the ship starts operation, specific annual survey in a port, an annual in service inspection and other surveys such as those to check that deficiencies have been addressed.

The concept of the 'host' state introduced by this Directive may no longer be relevant in practice. There was broad consensus that the Directive 1999/35/EC no longer takes account of the realities and while some Member States stressed the value of joint in-service inspections carried out with the other host state it was also pointed out that these were often difficult logistically to coordinate.

While the Directive requires two annual surveys, there is some divergence with regard to the regularity of the two annual inspections. Some Member States space the inspections every 6 months while others do them together (which goes against the spirit of the Directive which is to ensure regular periodic inspections).

Notwithstanding the specificities of Directive 1999/35/EC, the vast majority of Member States carry out the inspections required under the Directive with either Flag State surveys or Port State control inspections. This practice however renders the implementation, monitoring and enforcement of this Directive very difficult, given the different scope of inspections.

Furthermore, those issues relating to the rights of Members States to conduct; participate in or cooperate with investigation of maritime casualties or incidents have been in the meantime incorporated in Directive 2009/18/EC.

The objective of the Directive (i.e. to ensure the desired level of safety for these categories of passenger ships), would seem to be also delivered by merging its requirements with the Directive 2009/16/EC as regards foreign flagged ships[214]; and either Directive 2009/21/EC or 2009/45/EC for domestic ships operating in the flag State and for ships operating between the flag State and a State outside the EU.

Directive 1998/41/EC on the registration of persons sailing on board passenger ships

Overall there was general consensus that the objectives of the Directive remain relevant in addressing the passenger registration by means of passenger list and/or counting for safety of navigation. However, since 1998 other pieces of legislation have been adopted (Directives 2002/59/EC and 2010/65/EC), addressing other areas of the maritime transport but using *inter alia* the tool of registration and passenger list. This created a number of overlaps with the Directive 1998/41/EC.

It has been reconfirmed that this Directive is implemented by some Member States using the tools developed for implementation of the other two abovementioned Directive (*SafeSeaNet* in particular) – this allows for the availability of up to date lists/numbers of persons on board in case of an accident; whereas currently, this information is only available upon request. It was therefore highlighted that there is a need to bring the Directive up to date, to streamline

[214] And therefore eligible for port State control

its implementing tools and to eliminate the overlaps while maintaining the scope of its application.

In doing so, definitions such as length of the voyage and the meaning of regular service should be clarified. In addition, the experts again reconfirmed that the current requirement of approval of the registration system of the company is very difficult for vessels flying the flag of another country.

Finally, it emerged that having the nationality as additional information in the records can ease the management of an accident in case of fatalities to timely inform the respective embassies. In order not to place any additional burden on the operators, the record of nationality could be made at the same time and with the same procedure as already happens for other currently required data (like the name, sex or the age of the passenger), i.e. by declaration from the prospective passenger and not by verification of a piece of identity.

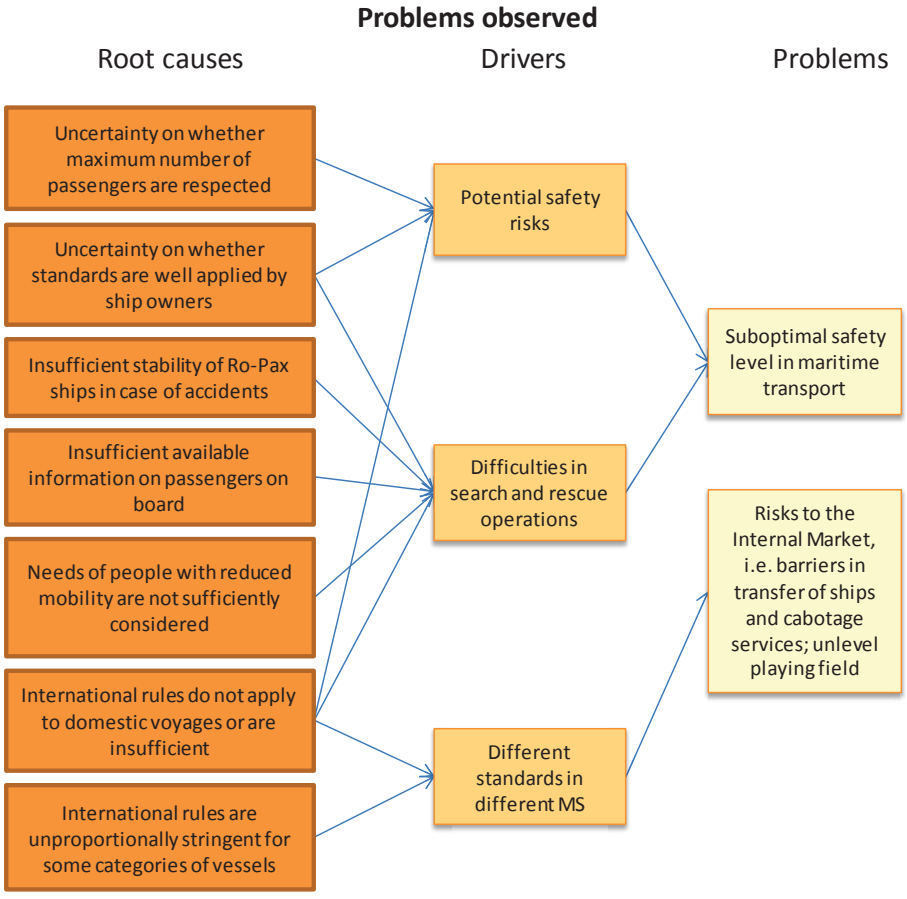
17 ANNEX 8: EVALUATION FRAME

1 RECONSTRUCTING THE INTERVENTION LOGIC

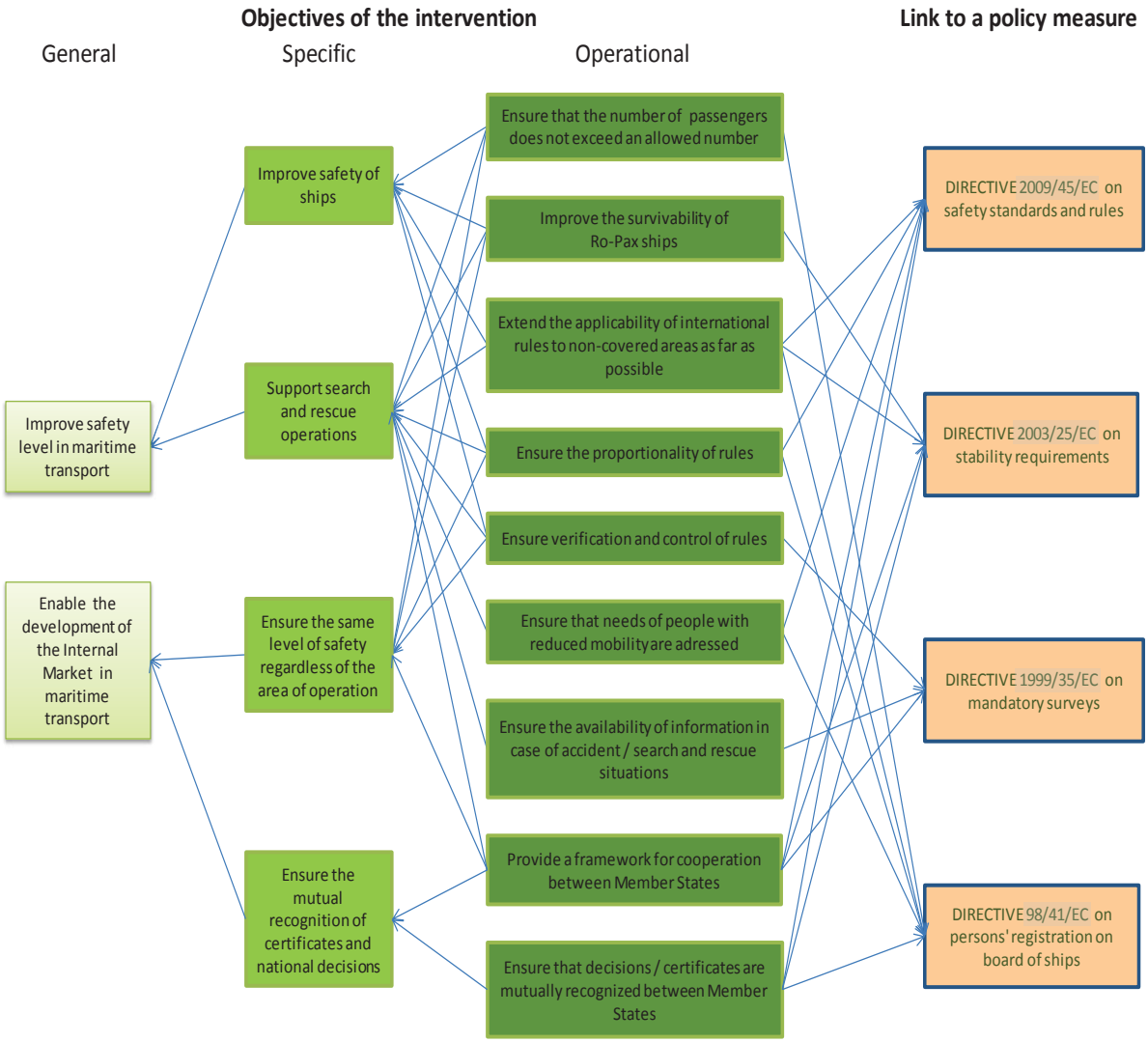
The EU legislation on passenger ship safety, as defined under the present fitness check exercise, has been put in place over a period of 15 years. In those times, it was not yet a common procedure to perform an impact assessment, and hence, there is no readily available ex-ante analysis of objectives and expected impacts as viewed at the time of set-up. Therefore, a first step in the fitness check exercise has been to reconstruct the intervention logic. This is an illustration of how the four Directives covered by the fitness check were expected to interact and achieve the objectives.

The intervention logic, as presented and used as basis for the fitness check analysis, has been reconstructed on the basis of available information, including legal texts under analysis, reports and feedback from Commission officials and stakeholders. This reconstruction has not been a one-time exercise, but has been a process which has allowed the intervention logic to evolve along the evaluation findings. The final intervention logic presented here is the matured result of this process.

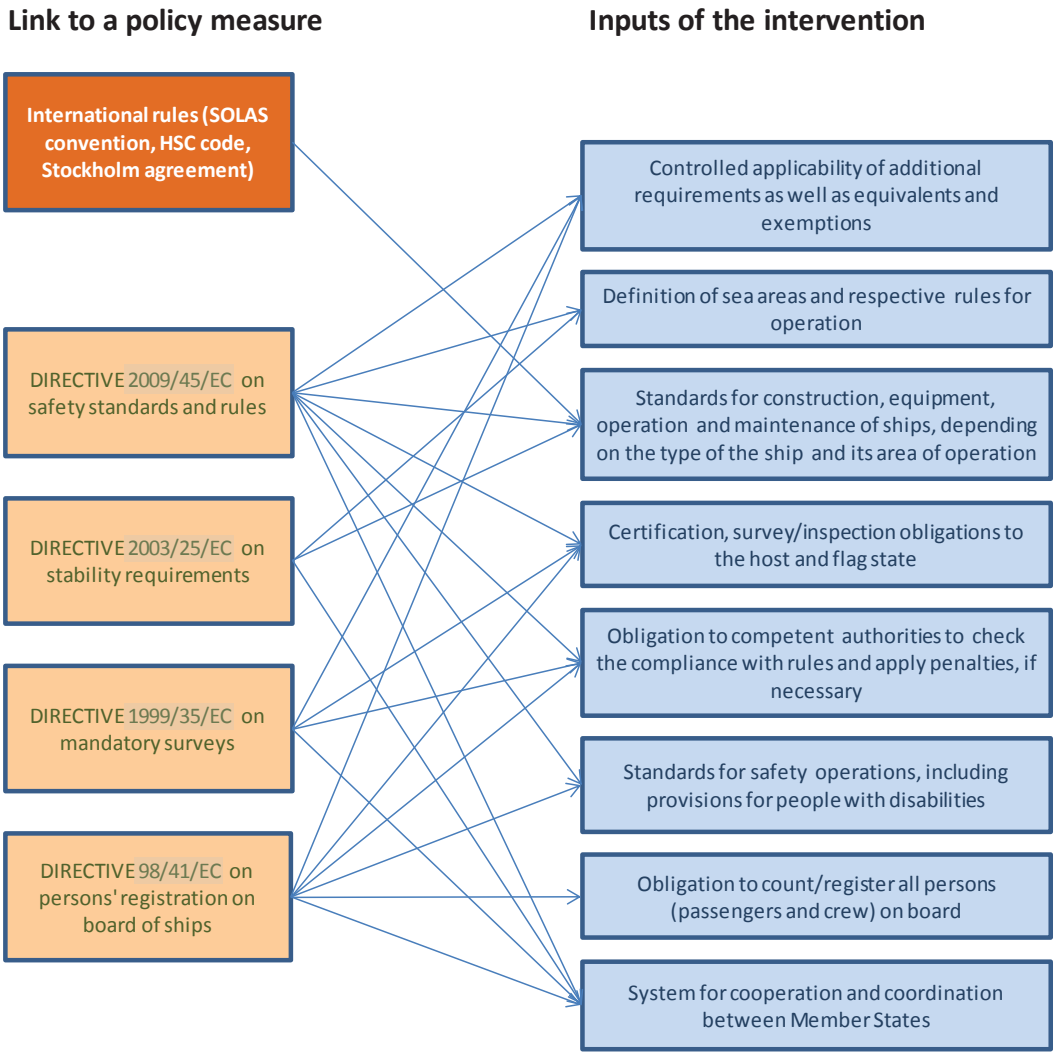
In a first step, the problems and needs which were at the source of setting up the four Directives have been scrutinized. The two main identified problems include 1) the suboptimal safety level, and 2) the risks to the internal market. The figure below shows how a number of drivers and root causes are contributing to the problems.



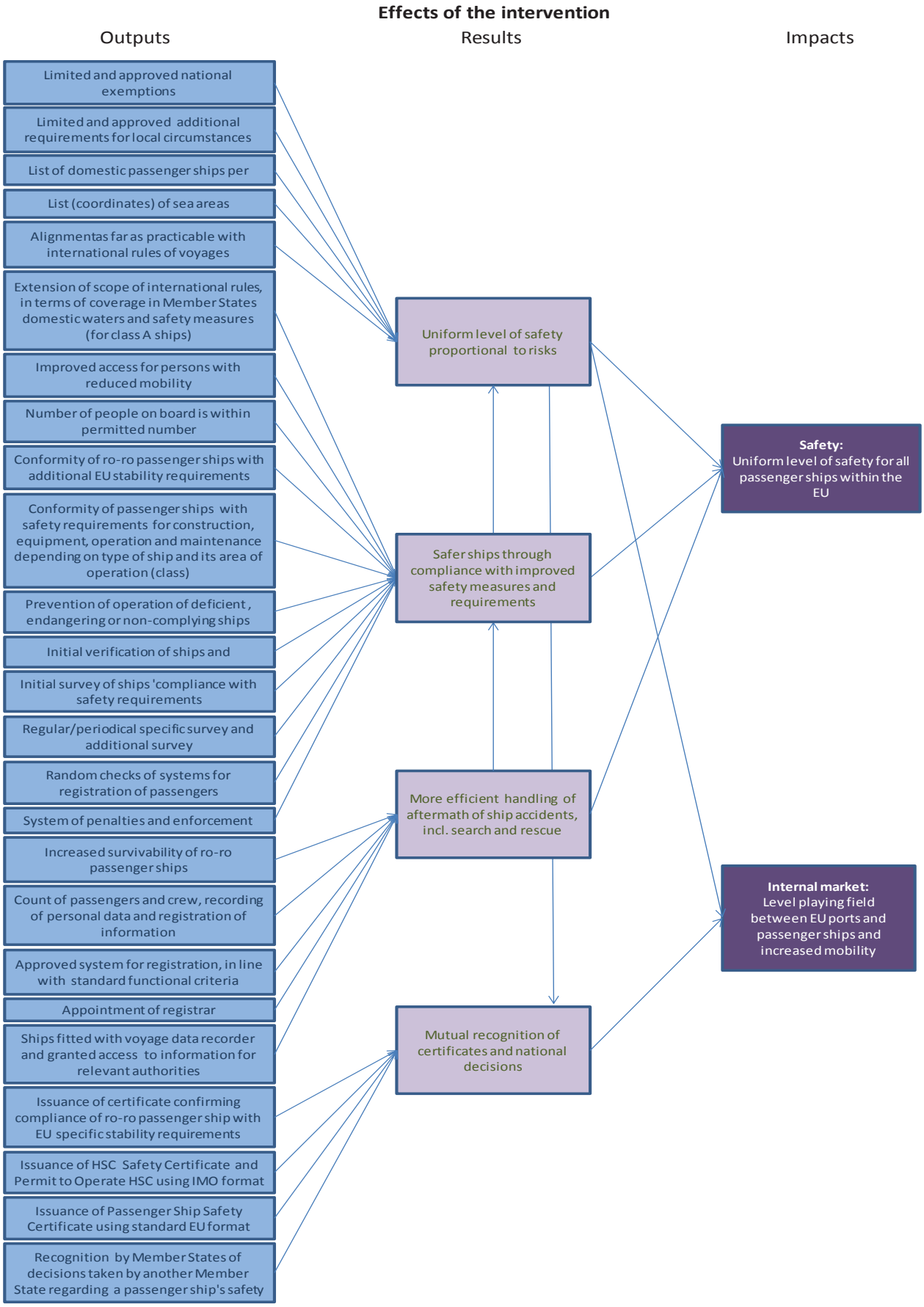
The legal texts themselves, in particular the considerations, have permitted to identify the three levels of objectives (general, specific and operational) which would address the problems identified. As can be observed in the figure below, the four Directives have many operational objectives in common, which supports the analysis that the pieces of legislation are meant to complement each other.



Based on the analysis of the content of the EU passenger ship safety legislation, the broad range of requirements, or inputs, were mapped against the four Directives and international rules, as shown in the figure below.



Finally, these requirements can be translated in a range of observable outputs or immediate deliverables of the EU passenger ship safety legislation. These outputs are meant to contribute to achieving the four expected results, which in the long run are expected to translate in a common safety level for all passenger ships within the EU (expected impact on safety) and a level playing field between EU ports and passenger ships and increased mobility (expected impact on internal market).


Effects of the intervention
Outputs
Results
Impacts
Limited and approved national exemptions
Limited and approved additional requirements for local circumstances
List of domestic passenger ships per
List (coordinates) of sea areas
Alignmentas far as practicable with international rules of voyages
Extension of scope of international rules, in terms of coverage in Member States domestic waters and safety measures (for class A ships)
Improved access for persons with reduced mobility
Number of people on board is within permitted number
Conformity of ro-ro passenger ships with additional EU stability requirements
Conformity of passenger ships with safety requirements for construction, equipment, operation and maintenance depending on type of ship and its area of operation (class)
Prevention of operation of deficient , endangering or non-complying ships
Initial verification of ships and
Initial survey of ships 'compliance with safety requirements
Regular/periodical specific survey and additional survey
Random checks of systems for registration of passengers
System of penalties and enforcement
Increased survivability of ro-ro passenger ships
Count of passengers and crew, recording of personal data and registration of information
Approved system for registration, in line with standard functional criteria
Appointment of registrar
Ships fitted with voyage data recorder and granted access to information for relevant authorities
Issuance of certificate confirming compliance of ro-ro passenger ship with EU specific stability requirements
Issuance of HSC Safety Certificate and Permit to Operate HSC using IMO format
Issuance of Passenger Ship Safety Certificate using standard EU format
Recognition by Member States of decisions taken by another Member State regarding a passenger ship's safety
Uniform level of safety proportional to risks
Safer ships through compliance with improved safety measures and requirements
More efficient handling of aftermath of ship accidents, incl. search and rescue
Mutual recognition of certificates and national decisions
Safety: Uniform level of safety for all passenger ships within the EU
Internal market: Level playing field between EU ports and passenger ships and increased mobility

2 FROM THE INTERVENTION LOGIC TO THE EVALUATION QUESTIONS

The evaluation questions were defined on the basis of the intervention logic presented above. In particular they aim to assess the various identified links between problems and needs, objectives, inputs and effects.

Coordination

The EU passenger ship safety legislation has been set up in reactions to various accidents and the different pieces of legislation that form part of the framework were adopted at different times and in a different context. Hence, it is important to assess whether the resulting framework works together as a framework for passenger ship safety.

The coordination question relates to the inputs of the intervention and their linkage to the four Directives. One coordination question was identified.

Question 1: To what extent are the four directives working together as a framework for passenger ship safety?

Relevance

Relevance looks at the relationship between the needs / problems and the objectives of the intervention. Hence, the relevance questions covered in the fitness check are drawn from the comparison in the intervention logic of the problems observed (problems, drivers and root causes) and the objectives (general, specific and operational). The fitness check therefore has looked at whether the current safety framework is adequate to address the safety and internal market issues identified.

The first relevance question identified looks at the how the Directives relate to international rules.

Question 2: Given that EU legislation mainly refers to relevant international (IMO) legislation, is the alignment of EU legislation with the international IMO legislation the most appropriate to address the problems? Is the update process adequate?

Three further questions were designed with a particular focus on the question of proportionality of rules in terms of standards, navigation areas, and exemptions and equivalencies.

Question 3: Are the different sets of standards established by the legislation (i.e. for construction, equipment, operation, maintenance and safety operations) proportional vis-à-vis the relevant risks, considering differences depending on the type of ships and their navigation area? Is the current prescriptive (as opposed to goal based) approach to safety requirements appropriate?

Question 4: Is the definition of navigation areas, as currently established, a relevant tool to ensure proportional applicability of rules? If not, how could it be adjusted?

Question 5: Is the current system of exemptions, equivalences and additional national requirements relevant and necessary? If not, what are the points of concern?

Effectiveness

The effectiveness of the passenger ship safety legislation refers to the realisation (or not) of the expected effects. In terms of relation to the intervention logic, effectiveness compares the expected effects (outputs, results and impacts) to the realised effects. The fitness check has therefore looked at whether the Directives have contributed to increased safety and to the internal market.

Question 6: Has the EU legislative framework on passenger ship safety resulted in common safety level and internal market? What are the main drivers and hindrances to its effectiveness?

In addition, the contribution of various inputs to these overall objectives has also been assessed (exemptions and equivalencies, certification and surveys). Three questions were identified on the basis of the inputs in the intervention logic.

Question 7: Are the measures in place to facilitate rescue in case of accidents sufficient to ensure an optimal system of rescue and search operations? If not, in which terms? To what extent could an existing information system, e.g. SafeSeaNet, be used to enhance information sharing and rescue capabilities? If yes, how?

Question 8: Regarding the requirements on inspections/surveys and random checks, to what extent do current arrangements ensure that ships comply with rules and thus contribute to higher safety and facilitated search and rescue?

Question 9: Do the monitoring and reporting arrangements in place allow for adequate checking and follow-up of the legislation? If not how could it be improved?

Finally, unintended impacts have also been investigated.

Question 10: Has the legislation had any unintended impacts or collateral effects (e.g. the increase of non-steel ship building)?

Efficiency

Efficiency analyses the cost components involved for the different stakeholders (national administrations, ship owners and operators, ship builders) to comply with the provisions in the EU Passenger Ship Safety legislation. The evaluation questions were designed on the basis of the intervention inputs, given that costs relate to the requirements of the Directives.

Three questions look at charges, compliance costs and administrative burden in relation to safety standards, certification and surveys, and navigation areas.

Question 11: Are there substantial costs involved for compliance with safety standards (for construction, equipment, operation, maintenance and safety operations)? To what extent have these costs been reasonable and proportionate in relation to the risks, considering the different rules for different types of ships?

Question 12: Are there any excessive administrative burdens linked to the definition and application of navigation areas?

Question 13: What are the costs for the various stakeholders linked to certifications and inspections/surveys and do any of these represent excessive burdens? Are there overlaps or inconsistencies?

European added value

The analysis of EU added value looks at whether action at EU level is the most appropriate. Given the complexity of the three legislative levels applying to European passenger ships, the question of whether a different level of intervention could have brought the same results is crucial. This requires focusing on the benefits which can be brought at EU level only. In parallel, the question of whether EU rules should be maintained or whether the two other legislative levels are sufficient is also addressed. Two questions were identified.

Question 14: To what extent would a different level of regulation could have been more effective and/or efficient than the current legislative framework? What is the added value of setting safety standards through the EU legislation compared to national legislation?

Question 15: From the viewpoint of the Treaty provisions from the internal market, transport safety and consumer protection, what could be the consequences of abolishing EU uniform safety standards for the ships sailing in national water only?

Coherence

Finally, the fitness check has looked at the coherence of the passenger ship safety framework. The complexity of the EU Passenger Ship Safety legislation and the linkages to international and national legislation required to cover both internal coherence (i.e. gaps or overlaps) between the four Directives and external coherence with legislation at other levels. In addition, external coherence of the Directives' objectives with key EU challenges was also looked into.

Question 16: While looking at the legislative framework at all three levels (international, EU, national), are there gaps, overlaps or inconsistencies in terms of the coverage of rules? Is there evidence that these gaps constitute a higher safety risk? In case of coverage under national law, is there evidence of major discrepancies in safety level?

Question 17: Are the objectives of the legislation coherent with the challenge of competitive and sustainable EU passenger ship operation and wider economic, social or environmental challenges of EU policies?

Question 18: Is there a scope for streamlining the regulatory framework on passenger ship safety?

3 ADDRESSING THE EVALUATION QUESTIONS

As explained in the methodological chapter of the fitness check report, a variety of evaluation tools were used.

Data collection methods included public consultation, pre-filled questionnaires, case studies and bilateral contacts or interviews (primary data), as well the research of statistics, use of previously collected data and other publications (secondary data).

The data analysis and judgment combined a legal, technical and economic analysis.

The following evaluation matrix links each evaluation question to the data sources and analysis tool.

Evaluation question	Data	Analysis tool
Question 1: To what extent are the four directives working together as a framework for passenger ship safety?	N.A.	Conclusive analysis on the basis of all other evaluation criteria
Question 2: Given that EU legislation mainly refers to relevant international (IMO) legislation, is the alignment of EU legislation with the international IMO legislation the most appropriate to address the problems? Is the update process adequate?	Member States questionnaire Case studies Stakeholder interviews	Cost assessment and comparison of costs Legal analysis
Question 3: Are the different sets of standards established by the legislation (i.e. for construction, equipment, operation, maintenance and safety operations) proportional vis-à-vis the relevant risks, considering differences depending on the type of ships and their navigation area? Is the current prescriptive (as opposed to goal based) approach to safety requirements appropriate?	Member States questionnaire	Analysis of data Legal analysis Analysis of differential risks
Question 4: Is the definition of navigation areas, as currently established, a relevant tool to ensure proportional applicability of rules? If not, how could it be adjusted?	Member States questionnaire	Legal analysis Analysis of differential risks
Question 5: Is the current system of exemptions, equivalences and additional national requirements relevant and necessary? If not, what are the points of concern?	Member States questionnaire Case studies Stakeholder interviews	Cost assessment Legal analysis
Question 6: Has the EU legislative framework on passenger ship safety resulted in common safety level and internal market? What are the main drivers and hindrances to its effectiveness?	Member States questionnaire Case studies Stakeholder interviews Eurostat data EMSA databases	Analysis of data
Question 7: Are the measures in place	Reports of past Member	Analysis of data

to facilitate rescue in case of accidents sufficient to ensure an optimal system of rescue and search operations? If not, in which terms? To what extent could an existing information system, e.g. SafeSeaNet, be used to enhance information sharing and rescue capabilities? If yes, how?	States visits Case studies	
Question 8: Regarding the requirements on certifications, inspections/surveys, and random checks to what extent do current arrangements ensure that ships comply with rules and thus contribute to higher safety and facilitated search and rescue?	Member States questionnaire	Analysis of data
Question 9: Do the monitoring and reporting arrangements in place allow for adequate checking and follow-up of the legislation? If not how could it be improved?	N.A.	Cost assessment
Question 10: Has the legislation had any unintended impacts or collateral effects (e.g. the increase of non-steel ship building)?	Member States questionnaire Case studies Stakeholder interviews	Cost assessment Analysis of data Legal analysis
Question 11: Are there substantial costs involved for compliance with safety standards (for construction, equipment, operation, maintenance and safety operations)? To what extent have these costs been reasonable and proportionate in relation to the risks, considering the different rules for different types of ships?	Member States questionnaire Case studies Stakeholder interviews	Cost assessment Analysis of data
Question 12: Are there any excessive administrative burdens linked to the definition and application of navigation areas?	Member States questionnaire Case studies	Analysis of data
Question 13: What are the costs for the various stakeholders linked to	Member States	Cost assessment

certifications and inspections/surveys and do any of these represent excessive burdens? Are there overlaps or inconsistencies?	questionnaire Case studies	Analysis of data Legal analysis
<u>Question 14:</u> To what extent would a different level of regulation could have been more effective and/or efficient than the current legislative framework? What is the added value of setting safety standards through the EU legislation compared to national legislation?	Member States questionnaire Case studies Stakeholder interviews	Cost assessment Legal analysis
<u>Question 15:</u> From the viewpoint of the Treaty provisions from the internal market, transport safety and consumer protection, what could be the consequences of abolishing EU uniform safety standards for the ships sailing in national water only?	N.A.	Legal analysis
<u>Question 16:</u> While looking at the legislative framework at all three levels (international, EU, national), are there gaps, overlaps or inconsistencies in terms of the coverage of rules? Is there evidence that these gaps constitute a higher safety risk? In case of coverage under national law, is there evidence of major discrepancies in safety level?	Member States questionnaire Case studies	Analysis of data Legal analysis
<u>Question 17:</u> Are the objectives of the legislation coherent with the challenge of competitive and sustainable EU passenger ship operation and wider economic, social or environmental challenges of EU policies?	N.A.	Legal analysis
<u>Question 18:</u> Is there a scope for streamlining the regulatory framework on passenger ship safety?	Member States questionnaire Case studies Stakeholder interviews	Analysis of data Cost assessment Legal analysis

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[See part II of the Commission Staff Working Document]