The Title: Small Fishing Vessel Code 2020 **IA No:** **RPC Reference No:** **Lead department or agency:** Maritime and Coastguard Agency **Other departments or agencies:**	**Impact Assessment (IA)** **Date:** 01/01/2018 **Stage:** Development/Options **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact for enquiries:** David Fenner David.Fenner@mcga.gov.uk

Summary: Intervention and Options

RPC Opinion: Green

Cost of Preferred (or more likely) Option 1 (in 2016 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status** Qualifying provision
-£44.2m	-£59.5m	£6.9m	

What is the problem under consideration? Why is government intervention necessary?

The fishing industry (small fishing vessel fleet in particular) faces challenges in reducing risks to tolerable levels. The heterogeneous nature of the fleet coupled with different ownership and operating structures leads to information asymmetries between crew and owners/operators about levels of risk faced whilst at sea. Crew will, generally know, about the maintenance history of a vessel and compliance with industry best practice.The balance between the benefits of ensuring measures are taken to minimise risk of injury or loss of life and what is perceived as a relatively high cost of risk mitigation can be both unclear and misunderstood, discouraging investment and leading to inefficient investment from a safety perspective. These market failures mean that government intervention is required to reduce risks as low as is reasonably practicable and ensure a level playing field within the industry across all operators in terms of cost..

What are the policy objectives and the intended effects?

The fishing industry is one of the most dangerous industries in the UK with around 7 deaths and 53 serious injuries a year (average 2009-2018 taken from MAIB Annnual Reports). The objective of introducing a new fishing vessel code for small vessels is to provide a single place to access information about the required standards expected in the construction, maintenance and operation of small fishing vessels which are less heavily regulated than their larger counterparts. Whilst over 15 metre vessels are covered by the broader legislative requirements for large vessels/workboats, small vessels are not covered by equivalent standards. Furthermore, there are a large number of vessel manufacturers building small fishing boats, highlighting the need for clear guidance. Through the use of codification it is intended that there will be greater harmonisation of standards across all of the small fishing vessel fleet, raising standards as agreed with industry, reflecting best practice. This will lead to reduced loss of life and serious injuries amongst small fishing vessels.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 1 – Mandatory standards implemented through primary legislation
Option 2 – Introduce a voluntary industry agreed code to ensure buy in to best practice already in place across the industry
Option 3 – Do Nothing – This option has been discounted on the basis that it would maintain the status quo which would potentially lead to increased loss of life and serious injury as the fleet grows and existing vessels are modified to undertake additional work.

Will the policy be reviewed? It will/will not be reviewed. **If applicable, set review date:** Month/Year

Does implementation go beyond minimum EU requirements?	Yes / No / N/A			
Is this measure likely to impact on trade and investment?	Yes / No / N/A			
Are any of these organisations in scope?	**Micro** Yes/No	**Small** Yes/No	**Medium** Yes/No	**Large** Yes/No
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)	**Traded:**		**Non-traded:**	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: ______________________ Date: ______________________

Summary: Analysis & Evidence

Policy Option 1

Description: Adopt the new small fishing vessel code 2020

FULL ECONOMIC ASSESSMENT

Price Base	PV Base	Time Period	Net Benefit (Present Value (PV)) (£m)		
2019	**2017**	**10yrs**	**Low:** -83.3	**High:** -18.2	**Best Estimate:** -50.3

COSTS (£m)	**Total Transition** (Constant Price)	Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Cost** (Present Value)
Low	36.7		1.0	**44.8**
High	85.5		1.4	**97.0**
Best Estimate	61.0		1.2	**70.9**

Description and scale of key monetised costs by 'main affected groups'

The key monetised costs covered by the IA arise in the form of:

- Additional build costs – open and decked;
- Additional costs of modifications and retrospective application;
- Additional costs associated with removing larger vessels from the water for some inspections
- Additional survey costs – in and out of water;
- Surveys at harbour if usual mooring is on the beach;
- MCA Inspectors;
- Familiarisation costs;
- Maintenance costs.

Other key non-monetised costs by 'main affected groups'

Key non-monetised costs that could result from the policy option are that some operations may go out of business if the changes are too uneconomical, a potential changing of fishing method and the costs of the new stability test.

BENEFITS (£m)	**Total Transition** (Constant Price)	Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Benefit** (Present Value)
Low	0.0		1.6	**13.7**
High	0.0		3.2	**26.6**
Best Estimate	0.0		2.4	**20.5**

Description and scale of key monetised benefits by 'main affected group

The main benefits associated with the proposed code are the numbers of fatalities and injuries averted. The scale and frequency of future accidents/incidents that will lead to fatalities/injuries is uncertain, as is the impact of the proposed code in the absence of a counterfactual. This Impact Assessment (IA) presents a range of estimated outcomes and potential impacts on accident/incident reduction to arrive at an estimated total benefit to human life over a 10 year apprasisal period of £20.5m.

Other key non-monetised benefits by 'main affected groups'

The key non-monetised benefits will provide a level playing field between owners/operators and manufacturers, a greater level of certainty for fishing crew regarding risk, encouragement for the build of new boats and benefits to both the insurers and with reduced insurance premiums.

Key assumptions/sensitivities/risks	**Discount rate**	3.5%

- Value Per Fatality of £1.6m applied to benefits of lives saved
- number of future accidents
- number of future fatalities
- number of future injuries
- percentage reduction of the above resulting from introducing the code
- turnover of vessels
- 3.5% discount rate for costs
- Knock on benefit to other sectors

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:						Score for Business Impact Target (qualifying provisions only) £m:
Costs:	**8.2**	**Benefits:**	0	**Net:**	8.2	36.2

Summary: Analysis & Evidence Policy Option 2

Description: voluntary adoption of the code

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2017	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low:-0.3	**High:** -0.2	**Best Estimate:-0.2**

COSTS (£m)	**Total Transition** (Constant Price) Years		**Average Annual** (excl. Transition) (Constant Price)	**Total Cost** (Present Value)
Low	0.2		0.0	**0.2**
High	0.3		0.0	**0.3**
Best Estimate	0.2		0.0	**0.2**

Description and scale of key monetised costs by 'main affected groups'

There are unlikely to be any significant additional costs to industry as those vessels that already maintain their vessels in good condition and check stability will not be affected by the guidance and evidence suggests that those whose vessels would not currently meet the standards of a voluntary Code would not take action to improve their vessels. This would effectively maintain the status quo.

Familiarisation costs under option 2 will be equivalent to those under opyion 1 as it is assumed that all operators will familiarise themselves with the code. The best estimate of familiarisation costs is estimated to be in the region of £0.2m in the 1st year, a one off cost.

Other key non-monetised costs by 'main affected groups'

As it is not expected that owners whose vessels do not meet the standards within a voluntary Code would take any action, no non monetised costs are expected.

BENEFITS (£m)	**Total Transition** (Constant Price) Years		**Average Annual** (excl. Transition) (Constant Price)	**Total Benefit** (Present Value)
Low	0		0	**0**
High	0		0	**0**
Best Estimate	0		0	**0**

Description and scale of key monetised benefits by 'main affected group

No benefits are expected. The scale and frequency of future accidents/incidents that lead to fatalities/injuries is expected to continue unchanged as it is assumed that the requirements in the voluntary Code will not be acted upon by owners or skippers who do not wish to do so.

Other key non-monetised benefits by 'main affected groups'

As it is not expected that owners or skippers who do not currently comply, despite the existence of existing guidance and vessel standards, no key non monetised benefits are expected.

Key assumptions/sensitivities/risks	**Discount rate (%)**	3.5%

It is assumed that, based on evidence that previous and existing voluntary guidance has not resulted in improved safety in the industry, that publishing the Code as guidance will not result in any improvements to safety.
The rationale for this approach is that those already complying with the proposals will not benefit from the formalisation of these standards. Those who stand to face the greatest reduction of risk to life are those also facing the greatest cost, impacting upon the incentive to make changes in the case of voluntary guidance. This essentially mirrors the status quo.
Section4.2 explains previous evidence of low compliance/poor outcomes with voluntary arrangements.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:0
Costs: **0**	**Benefits:** 0	**Net:** 0	

Summary: Analysis & Evidence

Policy Option 3

Description: Do Nothing

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	**High:** Optional	**Best Estimate:**

COSTS (£m)	**Total Transition** (Constant Price)	Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Cost** (Present Value)
Low	0		0	**0**
High	0		0	**0**
Best Estimate	0		0	**0**

Description and scale of key monetised costs by 'main affected groups'

The do nothing option is the baseline scenario. There will be no additional costs or benefits associated with maintaining the status quo. There are unlikely to be any additional costs to industry as those vessels that already maintain their vessels in good condition and check stability will not be affected by the guidance and evidence suggests that those whose vessels would not currently meet the standards of a voluntary Code would not take action to improve their vessels.

Other key non-monetised costs by 'main affected groups'

As it is not expected that owners whose vessels do not meet the standards within a voluntary Code would take any action, no non monetised costs are expected.

BENEFITS (£m)	**Total Transition** (Constant Price)	Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Benefit** (Present Value)
Low	Optional		Optional	**Optional**
High	Optional		Optional	**Optional**
Best Estimate				

Description and scale of key monetised benefits by 'main affected group

No benefits are expected. The scale and frequency of future accidents/incidents that lead to fatalities/injuries is expected to continue unchanged as it is assumed that the requirements in the voluntary Code will not be acted upon by owners or skippers who do not wish to do so.

Other key non-monetised benefits by 'main affected groups'

As it is not expected that owners or skippers who do not currently comply, despite the existence of existing guidance and vessel standards, no key non monetised benefits are expected.

Key assumptions/sensitivities/risks | **Discount rate (%)** | 3.5% and 1.5%

As it is not expected that owners or skippers who do not currently comply, despite the existence of existing guidance and vessel standards, no key non monetised benefits are expected.

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:0
Costs: 0	**Benefits:** 0	**Net:** 0	

Evidence Base (for summary sheets)

Problem under consideration

1.1 The fishing industry is a very dangerous industry (see Section 1.2 for more details), with around 7 deaths and 53 serious injuries a year. Investigations into accidents on fishing vessels by the Marine Accident Investigation Branch (MAIB) have identified a number of areas where safety standards on these vessels can be improved (see Rationale for Intervention for more details). In addition, a number of other areas where safety standards on these vessels can be improved have been identified through the Maritime and Coastguard Agency (MCA)'s engagement with industry. The MCA has considered addressing these safety concerns by two different approaches: a regulatory approach and an educational approach. The current rate of incidents and the findings of the MAIB reports suggest that neither approach is suitable on its own and both need to be run concurrently. This IA considers a mixture of approaches which the MCA could adopt to deliver improvements in safety standards and relating to , Construction, Watertight and Weathertight Integrity, Stability, Machinery, Electrical Installations, Crew Protection and Man Overboard recovery.

Many vessels do not carry safety equipment or maintain the vessel to standards beyond what is required by law and MCA surveys and inspections often identify deficiencies in the equipment or the standard of the vessel itself. To quote the MAIB Safety Study "Analysis of UK Fishing Vessel Safety 1992 -2006[1]", "Times of hardship may also unfortunately lead to reduced expenditure on preventative maintenance or on non-mandatory safety equipment". Therefore, the MCA considers that Government intervention is necessary to make the new requirements,

Rationale for intervention;

1.2. Economic Rationale

The fishing industry (small fishing vessel fleet in particular) faces some challenges in reducing risks to a tolerable level for society. The heterogeneous nature of the fleet coupled with different ownership and operating structures leads to information asymmetries between crew and owners/operators about levels of risk faced whilst at sea (especially where vessels have been modified). The balance between the benefits of ensuring measures are taken to minimise risk of injury or loss of life and what is perceived as a relatively high cost of risk mitigation can be both unclear and misunderstood, discouraging appropriate investment and leading to inefficient investment from a safety perspective. Where risk is not appropriately minimised and injury or loss of life occurs, this can be viewed as an externality – where the actions of one-party impacts upon others and society more generally. These market failures mean that government intervention is required to reduce risks as low as is reasonably practicable and ensure a level playing field within the industry.

1.3. Further details on accidents and fatalities in the fishing industry.

Table 1 shows that the rate of accidents has decreased in recent years. It is estimated that the rate of fatalities to crew was around 43 deaths per 100,000 fishermen working on UK registered fishing vessels in 2017/18 and that the average rate of fatalities to crew was around 55 deaths per 100,000 fishermen working on UK registered fishing vessels from 2013 and 2018.

Although this decline is positive, it remains high relative to other industries. To put this in context, the Health and Safety Executive (HSE) report [2]shows the provisional rate of fatal injuries was around 0.45 deaths per 100,000 workers across all industries in Great Britain in 2017 and that the average rate of fatal injuries for the last five years is also 0.45 deaths per 100,000 workers across all industries in Great Britain[2]. Furthermore, when compared to other dangerous industries, the rate of fatalities does not compare favourably. For example, the HSE report that in 2017[5], the provisional rate of fatal injuries was 8.2 deaths per 100,000 workers in Agriculture, 1.64 deaths per 100,000 workers in Construction and 7.22 deaths per 100,000 workers in Waste and Recycling; and that from 2013 to 2017, the average rate

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1 https://www.gov.uk/government/publications/fishing-vessel-safety-study

2 HSE (2014) http://www.hse.gov.uk/statistics/pdf/fatalinjuries.pdf

5 http://www.hse.gov.uk/agriculture/pdf/agriculture-fatal-injuries-1718.pdf

of fatal injuries was 8.44 deaths per 100,000 workers in Agriculture, 1.77 deaths per 100,000 workers in Construction and 10.26 deaths per 100,000 workers in Construction..

Table 1: Comparison between fatal injuries in fishing, agriculture and construction sectors

Rate of fatal injuries per 100,000 workers in Great Britain[3]					
	National Average	Agriculture	Waste	Construction	Fishing
2017/18	0.45	8.2	7.22	1.64	42.77
2013/14 to 2017/18 (Average)	0.45	8.44	10.26.	1.77	55.53

Source: HSE Statistics for fatal Injuries

The rates of fatalities to crew per 100,000 fishermen working on UK registered fishing vessels have been estimated using statistics on the number of fishermen on UK registered fishing vessels from the UK Sea Fisheries Statistics published annually by the Marine Management Organisation (MMO) and statistics [6]on the number of deaths to crew from accidents involving UK registered fishing vessels from the MAIB. For example, in 2017, these statistics show that there were 11,691 fishermen and 5 deaths. The following calculation has been made to arrive at the ratio of fatalities to fishermen: 5÷11,691 X 100,000 = 42.768

It should be noted that these estimates only cover fatalities. When other injuries recorded by MAIB are taken into account[3], it is estimated that, for example, the rate of fatalities and injuries was around 316 deaths and injuries to crew per 100,000 fishermen working on UK registered fishing vessels in 2017.

The fatalities described above are for all fishing vessels regardless of size. However, although vessel construction and equipment is covered by one Statutory Instrument, the Fishing Vessel (Codes of Practice) Regulations 2017 No.943[4], these Regulations require that fishing vessels comply with different Codes of Practice applied to them depending on their size, with the requirements for vessels of less than 15m significantly lower than those for vessels of 15m and over. The current Codes of Practice are:

- MSN 1871 (F) The Code of Practice for the Safety of Fishing Vessels of less than 15m Length Overall (LOA)
- MSN 1872 (F) The Code of Practice for the Construction and Use of Fishing Vessels of 15m LOA to less than 24m Registered Length (L)
- MSN 1873 (F) The Code of Practice for the Construction and Use of Fishing Vessels of 24m (L) and Over

The requirements contained in MSN1872 and MSN1873 require all fishing vessels to comply with standards for:

- Construction, Watertight and Weathertight Integrity:
- Stability
- Machinery and Electrical Installations;
- Fire Protection, Detection and Extinction
- Protection of Personnel
- Life Saving Equipment
- Emergency Procedures
- Crew Accommodation.

MSN1871 sets out requirements for all vessels of less than 15m for Fire Detection and Extinction, Life Saving Appliances Emergency Procedures and Crew Accommodation. It also requires new vessels to be built to Construction Standards which address Construction, Watertight and Weathertight Integrity, Machinery and Electrical Installations and Fire Protection but does not require these vessels to be maintained to these standards once the vessel is Registered as a fishing vessel. Existing vessels on the register do not have to comply with any requirements for Construction Standards which address

[6] https://www.gov.uk/government/statistics/uk-sea-fisheries-annual-statistics-report-2017

[3] https://www.gov.uk/government/collections/maib-annual-reportshttps://www.gov.uk/government/uploads/system/uploads/attachment_data/file/448430/MAIB_AnnualReport2014.pdf

[4] http://www.legislation.gov.uk/uksi/2017/943/made

Construction, Watertight and Weathertight Integrity, Machinery and Electrical Installations and Fire Protection.

MSN 1871 requires new vessels of 12m to less than 15m to comply with Stability requirements. However no other vessels have stability requirements placed on them.

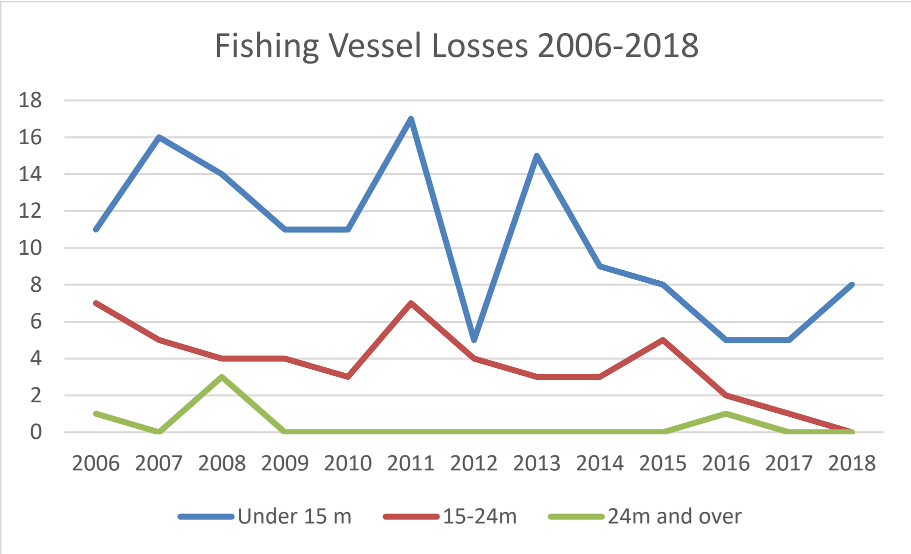
The outcome of this difference in requirements can be seen in the number of vessel losses, fataltіes and their causes.

Table 2: Vessel losses, accidents and fatalities to crew 2006-2018 (UK registered fishing vessels)[3]

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	2016	2017	2018
Fishing Vessel Losses													
Under 15 m	11	16	14	11	11	17	5	15	9	8	5	5	8
15-24m	7	5	4	4	3	7	4	3	3	5	2	1	0
24m and over	1	0	3	0	0	0	0	0	0	0	1	0	0
Deaths to Fishing Vessel Crew													
Under 15 m	6	4	3	5	4	7	4	3	5	4	7	3	4
15-24m	8	3	4	7	0	1	2	1	3	1	2	2	1
24m and over	2	1	1	1	1	0	0	0	0	2	0	0	1
Injuries to Fishing Vessel Crew													
Under 15 m	21	25	19	32	22	20	21	13	22	10	16	12	14
15-24m	30	24	22	30	10	27	22	13	14	17	19	8	18
24m and over	18	15	19	13	13	11	7	7	19	8	5	11	6
Accidents on Fishing Vessels													
Under 15m	243	234	173	165	201	223	182	202	116	69	118	98	96
15-24m	87	68	66	54	55	63	66	37	31	35	37	42	31
24m and over	16	14	18	19	12	13	12	9	6	11	8	6	9

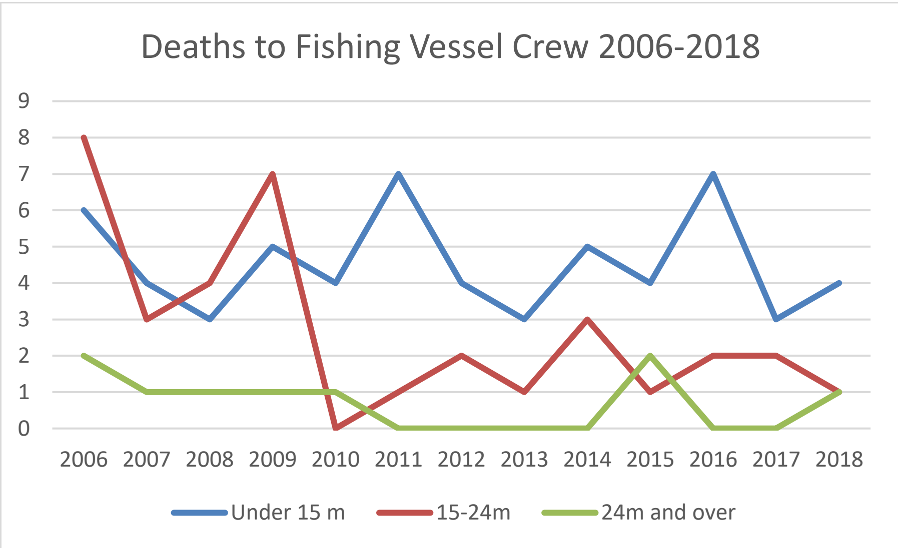
[3] Table 16, Table 18 and Table 21, MAIB (2013) MAIB Annual Report 2012

Chart 1



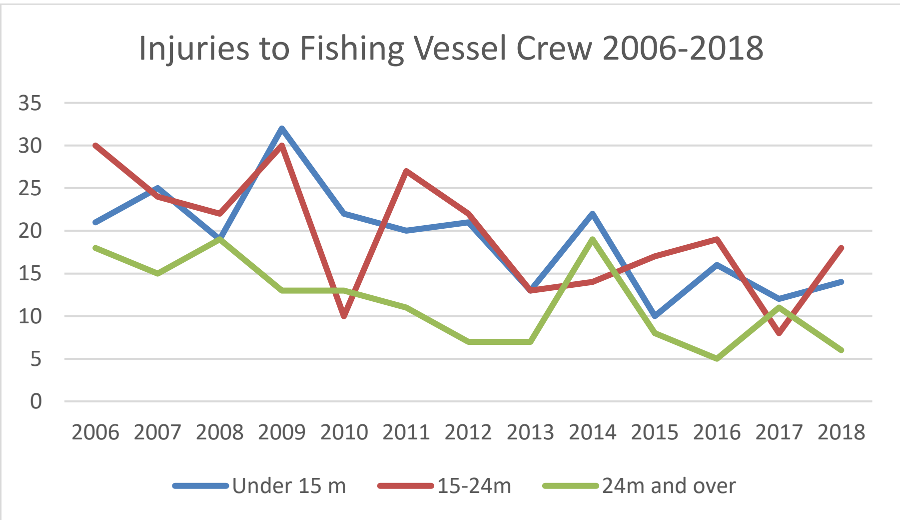
Source: MAIB Annual Report 2017

Chart 2



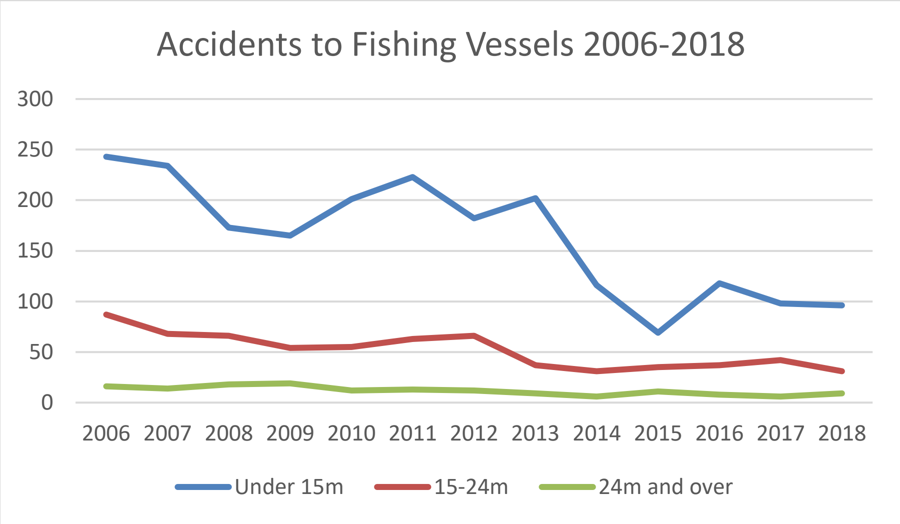
Source: MAIB Annual Report 2017

Chart 3



Source: MAIB Annual Report 2017

Chart 4



Source: MAIB Annual Report 2017

These tables show that the number of fatalities, and vessel losses involving fishing vessels of less than 15m is considerably higher than on larger vessels.

The MAIB, in their Annual report of 2017 [5]reported that after examining personal injury data supplied by one insurance provider, covering the period 2008-2016, the MAIB only received 13.5% of the reportable injuries to fishing vessel crew. This would seem to confirm that many injuries and accidents that result in personal injury to fishermen do not get reported to the authorities due to the current culture and therefore a comparison of injuries across vessel sizes is not meaningful. Furthermore, in 2014, the MCA began to visit vessels involved in accidents to review the incident with the owners and skippers. At the time of the introduction of these visits, the reporting of accidents has declined. It is believed that this decline may be a result of skippers and owners not wishing the MCA to visit their vessel and risk it being detained and prevented from fishing,

However, an analysis of vessel losses and and fatalities can demonstrate that safety is improving on vessels of 15m and over at a faster rate than on vessels of less than 15m.

[5] https://www.gov.uk/government/publications/maib-annual-report-2017

Table 3 – Percentage reduction in Fatalities, Vessel Losses and Accidents 2006-11 and 2012-18 compared

	Average per year 2006-2011	Average per year 2012-2018	Percentage reduction
Fataliies			
Under 15m	4.8	4.2	13%
15m and over	4.8	2.1	56%
Vessel losses			
Under 15m	13.8	7.8	44%
15m and over	5.6	2.7	52%
Vessel Accidents			
Under 15m	206	126	39%
15m and over	81	48	41%

Source: Various MAIB Annual Reports

From Table 3 it can be seen that in all instances, since 2012, vessel losses, vessel accidents and fatalities have declined at a greater rate in vessels of 15m and over than in under 15m vessels.This has been driven in part by the higher standards set for larger vessels in associated codes. Most strikingly, fatalities have more than halved in the 15m and over fleet whilst only declining by 13% on vessels of less than 15m.
We can further analyise which incident causes have higher numbers of fishing vessels involved and the data tells us that these are Capsize, Machinery failure and Flooding.

Chart 5

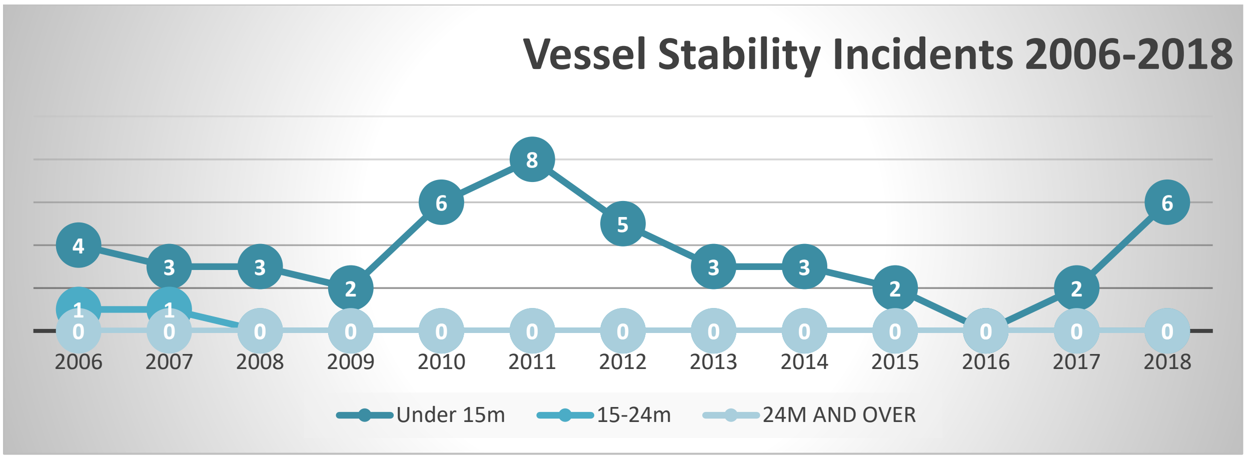


Chart 6

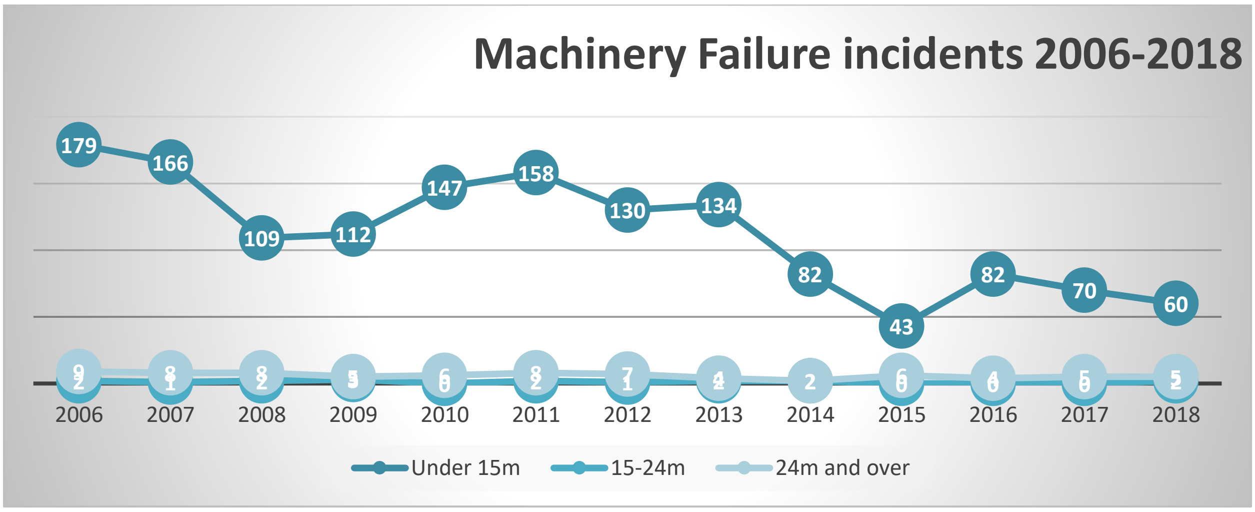
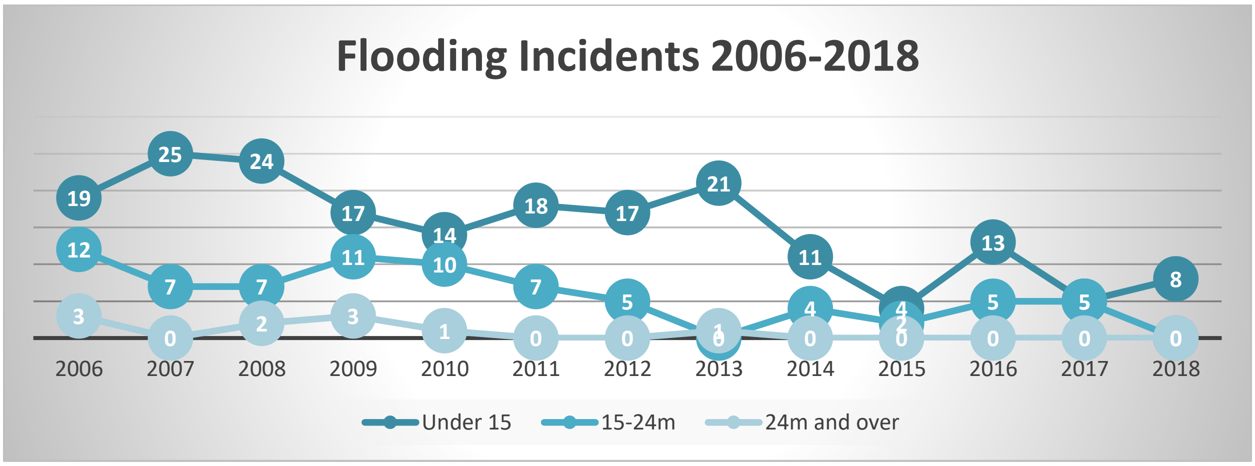


Chart 7



Source: Various MAIB Annual Reports

These incidents correspond with safety standards to which vessels of less than 15m are not currently required to comply with, namely Capsize can be addressed by Stability, Construction, Watertight and Weathertight requirements, Flooding by Construction, Watertight and Weathertight requirements, and Machinery failures by Machinery and Electrical requirements. The tables behind these charts for accident causes can be seen in Annex A.

A number of recommendations have also been made for under 15m fishing vessels as a result of MAIB investigations into major incidents on the fishing vessels including: STELLA MARIS, JMT, PURBECK ISLE, SARAH JAYNE and HEATHER ANNE[6]..Their Safety Study, "Analysis of UK Fishing Vessel Safety 1992 -2006", also made a further number of recommendations. These required the MCA to apply standards that improved safety and aligned standards with those applicable to similar sized vessels by:

- aligning the Under 15m Code with the Code of Practice for the Safety of Small Workboats and Pilot Boats (the Workboat Code);
- Align its hull survey requirements for fishing vessels of <15m (L) overall with those applied to workboats under the Harmonised Small Commercial Vessels Code.
- As part of its intended development of new standards for small fishing vessels, review and include additional design and operational requirements as necessary to ensure that a vessel engaged in bulk fishing remains seaworthy throughout its intended loading procedure. Specific hazards that should be addressed include:

  - The increased risk of capsize from swamping if freeing ports are closed.

  - The risk of downflooding if flush deck scuttles and fish hold hatch covers are opened at sea.

- Introduce intact stability criteria for all new and significantly modified decked fishing vessels of under 15m in length.
- Include in its intended new legislation introducing stability criteria for all new and significantly modified decked fishing vessels of under 15m in length a requirement for the stability of new open decked vessels, and all existing vessels of under 15m to be marked using the Wolfson Method or assessed by use of another acceptable method.

2. Policy objective

2.1 The objectives of this proposed policy are twofold:

- to reduce the number of lives lost and the number/severity of accidents occurring by improving safety standards on all UK fishing vessels and by improving the safety; and
- raising the standards of vessels under 15m. This will be achieved through closer alignment of the standards of fishing vessels with those of small commercial vessels and workboats,

[6] MAIB Investigation Reports: https://www.gov.uk/maib-reports

providing them with the opportunity to operate as small commercial vessels and workboats if they also meet the standards of the applicable Codes of Practice.

Particular attention has been paid to the stability of fishing vessels which has been an ongoing cause for concern.

3. Background to the new proposed Codes

3.1 The MAIB Safety Study noted that:

> *"Given the significant disparity between the codes of practice governing small fishing vessels and small workboats, it would appear logical to work towards progressively aligning the requirements for fishing vessels with those for comparably sized workboats. Not only would this offer a solution to the fishing vessel stability issue but would also introduce the concept of categorised operational areas, that could require the carriage of safety equipment appropriate to the vessels' activities, as is the case in France. MAIB is well aware that previous attempts to introduce such a robust code of practice faced strong opposition from some. However, it is noted that Ireland has recently introduced a similar code for <15m vessels, and it would seem that the UK fishing industry is again lagging behind and needs to progress."*

Additionally, the Safety Study also states:

> *"Some of the requirements in the code of practice for small commercial workboats are in excess of those in the equivalent code for small fishing vessels, despite the latter often operating in more extreme conditions. There would appear to be a compelling need for the requirements of these Codes to be more aligned to ensure the highest safety standards are applicable for all vessels."*

The MAIB conducted a comparison of some of the requirements in the Workboat Code against the requirements for Small Fishing Vessels.

Table 4: MAIB comparison of Workboat Code and Small Fishing Vessel Code (as at 1 April 2001) requirements.

Workboat code Requirement	Small Fishing Vessel Code requirements for existing vessels before 01 April 2001	Small Fishing Vessel Code requirements for new vessels since 01 April 2001
Minimum freeboard of 400mm	No minimum freeboard requirements	No minimum freeboard requirements
Intact and damaged Stability required	No requirement	No requirement below 12m; recommended only for 12m to 15m vessels
Periodic out-of water inspection by Certifying Authority	Third party inspection not required.	Third party inspection not required.
Annual examination by Certifying Authority	Third party inspection not required. Annual self certification by owner.	Third party inspection not required. Annual self certification by owner.
All hatch covers and coamings to be properly secured and weathertight	No requirement	All hatch covers and coamings to be properly secured and weathertight (Seafish construction standard)
Safety critical bulkheads to be watertight	No requirement for bulkheads.	Requirement for watertight bulkheads (Seafish construction standard)

Source: MAIB Analysis of Fishing Vessel Safety 1992 to 2006 Annex I

It should be noted that since this comparison, both the Small Fishing Vessel Code and Workboat Code have been reviewed and updated and this table only addresses areas selected by MAIB for comparison that have not yet been addressed in the revised Small Fishing Vessel Code.

The MCA, with a view to creating updated and aligned standards, have conducted a comparison with the Workboat Code and with the Irish Small Fishing Vessel Code of Practice. A draft has been developed is based on what a responsible operator would already be doing to ensure their vessel is seaworthy and will enhance the safety of all small fishing vessels, whilst addressing the need to align the standards of fishing vessels with workboats and introduce stability requirements. The proposed new requirements and the rationale for their inclusion are explained below.

3.2 Survey and Inspection requirements.

Currently, Small Fishing Vessels are only required to be Surveyed at the time of construction or joining the UK flag.Thereafter, they are only inspected once every five years. There is no requirement for the vessel to be seen out of the water and therefore the hull condition may not be inspected at all.

In light of the MAIB recommendations, it will be a requirement that the vessel is to be seen out of the water once every five years at the renewal inspection prior to issue of its Small Fishing Vessel Certificate. An Out of the Water inspection is necessary to ensure the vessels meets requirement relating to Contruction, Watertight and Weathertight Integrity. This may necessitate two visits to the vessel, to inspect the vessel in the water, if requirements, such as vessel stability or freeboard need to be checked.

There is perceived to be no additional opportunity costs associated with out of water inspections as this is intended to be carried out whilst the vessel is out of the water for other routine maintenance during out of season periods. Therefore, there is no associated cost of lost fishing time.

3.3 New requirements for Construction, Watertight and Weathertight Integrity.

Currently new vessels must meet the Seafish Construction and Outfit Standards on Construction, Watertight and Weathertight Integrity. Once the vessel has been registered, there is no requirement for any vessel to continue to meet these standards.

The new Code will require that any vessel that Registers as a new fishing vessel must be maintained to those standards through the life of the vessel. Additionally, any vessel that carries out a modification, must make those changes in accordance with the Construction and Outfit Standards.

New vessels will also be required to comply with a number of additional requirements in excess of the Seafish Construction Standard, which vary depending on whether the vessel is decked or open.

New decked vessels must minimise the use of flexible hoses. New open vessels with a sole and fitted with a timber hole should replace the hole with a drain fitting whilst all new open vessels must have manual bilge pumping.

Question to Consultees:
Question 1
Question. Do consultees consider that the assessment of the application of additional requirements in the Code to new vessels is correct.

There are no construction, watertight and weathertight integrity standards for vessels already registered as fishing vessels. Although the current arrangements for existing vessels will continue to be accepted, based on a review of the Workboat Code and the Irish Small Fishing Vessel Code, a number of requirements for existing vessels are proposed. These cover the following elements of construction:

1. The structural strength and construction and disposition of bulkheads;
2. Vessel hull, decks, bulkheads doors, coamings, skylights and hatches;
3. Closing arrangements;
4. Ventilators;
5. Air pipes and Exhaust systems;
6. Sea inlets and discharges;
7. Water freeing arrangements.

The actual requirements placed on existing vessels will also vary depending on their size and whether they are open or decked vessels. For example, open vessels may not require items 3 to 6 above. Larger decked vessels may require all items but as they get smaller will also require fewer of the items listed. The MCA has conducted an exercise to establish the extent to which these requirements would apply to decked and open vessels according to their sizes and these have been reflected in the costs applied (See section 5.3).

The Chapter is primarily intended to ensure that water cannot get into the vessel and spread between different areas of the vessel, causing eventual flooding and foundering and ensure that water that gets on to vessels can escape, therefore avoiding a capsize. Since 2013, 54 vessels have had flooding incident of which 25 were lost, leading to 5 fatalities, the Louisa with the loss of 3 lives, and Achieve and Speedwell with the loss of one life each, in addition the Purbeck Isle was lost in 2012 with the loss of a further three lives.

As stated, currently there are no requirements for Construction Watertight and Weathertight Integrity once the vessel is registered. Once these requirements are in place, owners will be required to ensure they comply at all times. For instance, in the case of Achieve, the vessel had several openings between the machinery space and fish hold which led to water ingress, Speedwell had unsealed and unsecured hatches which allowed water to enter the vessel and the Purbeck Isle had plankings prone to excessive movement and the deck was not watertight.

The following table sets out the number of incidents on vessels under 15m that were reported to the Coastguard in 2017 and 2018 relating to the vessel taking on water and pipework issues.

Table 5: Reported Incidents to Coastguard 2017/18 – Incidents with relation to Vessel Construction and Watertight/Weathertight Integrity

	2017	2018	Total
Construction/Taking on water	17	12	29
Pipework	3	4	7
Total	20	16	36

Source: Vision Browser for Operational System Status (Coastguard database of incidents)

Although further analysis of these incidents is not available, vessels are likely only to take on water if the vessels construction, watertight or weathertight integrity is compromised. The purpose of this chapter is to address these issues and reduce the vessel incidents and consequently injuries and fatalities are reduced.

3.4 New Requirements for Stability

MSN1871 re-introduced requirements for new vessels of 12m Registered Length to less than 15m Length However, the MAIB have also made a number of recommendations regarding the introduction of stability requirements for new fishing vessels under 12m Registered Length and Existing vessels under 15m Length Overall. These are:

- HEATHER ANNE - Expedite its development and promulgation of alternative small fishing vessel stability standards, which will ensure that all new fishing vessels under 15m (L) are subject to appropriate stability assessments, and which will eventually be included in the standards based on the Small Commercial Vessel's and Pilot Boat Code;

- STELLA MARIS - Introduce intact stability criteria for all new and significantly modified decked fishing vessels of under 15m in length;

- JMT - Include in its intended new legislation introducing stability criteria for all new and significantly modified decked fishing vessels of under 15m in length a requirement for the stability of new open decked vessels, and all existing vessels of under 15m to be marked using the Wolfson Method or assessed by use of another acceptable method.

A further two incidents, involving the loss of the SOLSTICE and the SARAH JAYNE with the loss of one life in each case, did not result in recommendations due to the MCA's acceptance of the recommendations stated above.

The MCA have worked with the Fishing Industry Safety Group (FISG) to identify proportionate and practical requirements for new vessels under 12m and existing vessels under 15m, recognising that vessels operating different fishing methods and these methods present different risks to the vessel.

The MCA is therefore proposing three Categories of vessels dependent on the fishing method they wish to employ. Category C vessels are new vessels which carry out Gill and Trammell Netting, Rod Fishing or Line Fishing can either comply with the requirements of:

.1 the requirements for vessels of 12m (L) to less than 15m (LOA) built or joining the Register on or after 23 October 2017: or

.2 An Offload Test; or

.3 if less than 6m, be constructed in compliance with ISO 12217-1; or

.4 If 6m to less than 12m, be constructed in accordance with ISO 12217-3.

Category B vessels are new Vessels which carry out Scotch Poles; Bulk Fishing; Potting; Side Trawling; Stern Trawling and Seine Netting must comply with 1 or 2 above and Category A vessels are those new vessels which conduct a fishing method not listed must comply with .1 above.

Existing vessels conducting any method of fishing must either conduct a Roll Test or Heel Test[7]. The initial test will be used as a benchmark for the vessel in the future to determine any reduction in its stability. This test must be repeated every five years under the same conditions.

All vessels, both new and existing must have a Wolfson Stability Notice posted on board the vessel, which gives information on the loading of the vessel and its effect on stability.

Vessels will have their fishing method recorded on their certificate and any vessel that changes to a method in a different category which they have never undertaken before, regardless of whether they are new or existing, must comply with the requirements of that category as if they were a new vessel.

New vessels will also be required to have a minimum freeboard on joining the Register, which they must maintain.

3.5 New Requirements for Machinery and Electrical Installations

The following table sets out the number of incidents for vessels under 15m that were reported to the Coastguard in 2017 and 2018 that relate to incident failure and the new measures set out in the chapter on Machinery.

[7] These are specific stability measurement methods, more information can be found at https://www.gov.uk/government/publications/mgn-503-heel-and-roll-test-for-fishing-vessel-stability

Table 6: Reported Incidents to Coastguard 2017/18 – Incidents with relation to Machinery and Electrics

	2017	2018	Total
Machinery failure not specified	152	108	260
Gearbox failure	7	12	19
Battery	8	6	14
Fuel supply	4	10	14
Steering	10	6	16
Throttle	1	0	1
Electrics	4	6	10
Rudder	4	2	6
Prop Shaft	1	2	3
Water pump	0	3	3
Oil pressure	0	1	1
Fanbelt	0	1	1
Starter Motor	0	1	1
Total	191	158	349

Source: Vision Browser for Operational System Status (Coastguard database of incidents)

From MAIB data since 2013, 4 under 15m vessels have had fires, with one vessel lost. 411 vessels under 15m have had incidents involving loss of control, in which one was lost.

Although no deaths have been recorded since 2013 due to these causes, machinery incidents have led to serious injuries and have the potential to result in fatal outcomes. Since 2013, the MAIB have recorded the following serious injuries Whilst available data does not indicate which of these incidents occurred on vessels under 15m, the MAIB data for overall injuries does indicate that between 2013 and 2017, 40% of injuries occurred on vessels under 15m. It is estimated by MAIB, following consultation with insurance companies that only 13% of injuries are reported therefore the real figure is much higher.For the purposes of this Impact Assessment, the reported data ,presented below, has been used as a basis to estimate the full population of injuries, allowing the quantification of benefits associated with the proposed changes.

Table 7: Reported incidents to the MAIB 2013-2018– Incidents broken down by cause

Cause	Injuries caused	Number of injuries
Fishing Equipment – Poor operation/lack of guards, emergency stops	Severed arms and feet, fingers and thumbs amputated, fractured skull, arms, ribs and vertebrae	15
Machinery, cooling inlets, engines, steering and propulsion	Burns to face, severe nerve damage in neck, leg amputation, head trauma	4
Unsecured gear	head trauma, fractured cheekbone	2
Slips	Head trauma, fractured leg	2
Open hatches	Chest and leg bruising	1

Source: MAIB Recorded Injury data 2013-2017

The new measures set out in the Chapter on Machinery are intended to address and reduce these incidents by requiring new vessels are maintained to the Seafish Construction Standard and existing vessels meet a minimum standard.

New vessels will also be required to comply with a number of additional requirements in excess of the Seafish Construction Standards, which vary depending on whether the vessel is decked or open. The costs of applying all standards would be impractical, therefore, some standards will only initially apply to new build vessels and other standards will be phased in.

On new decked vessels engines fitted below deck must have an adjacent means for shutting off the engine and meet refrigeration plant standards, cables should not be run below deck unless necessary and pumps or alarms should be connected before cut offs.

New open vessels must not run cables below deck unless necessary and pumps or alarms should be connected before cut offs. However, it is estimated that these requirements will not apply to 80% of open vessels due to their size and/or construction.

For all existing vessels, the following areas will have standards applied to them:

- Machinery must be of a construction adequate for the service for which they are intended and be efficiently installed and protected.
- Layout and installation;
- Navigational visibility
- Steering gear
- Starting arrangements
- Ventilation
- Ladders
- Floor plates
- Electrical arrangements
- Emergency power
- Engines, stern gear propeller shafts, fuel oil and cooling water

These measures will address slips and falls, risks of injury from moving machinery or the escape of harmful liquids or gases and reduce the risks of engine breakdown whilst the electrical arrangements will minimise the risk of fire and electric shock and ensure the proper functioning of all equipment necessary to maintain the vessel in normal operational and living conditions without recourse to an emergency power supply.

The actual requirements placed on vessels will vary depending on their size and whether they are open or decked vessels and whether they have an inboard or outboard engine. For example, open vessels may not require as much, or any, electrical equipment, piping or water-cooling systems. Larger decked vessels may require many of the items but as they get smaller will also require fewer of the items listed. The MCA has conducted an exercise to establish the extent to which these requirements would apply to decked and open vessels according to their sizes and these have been reflected in the costs applied (See Section 5.3).

3.6 New Requirements for Fire Protection

As stated above, since 2013 MAIB data reports that 4 under 15m vessels have had fires, with one vessel lost. A review of incidents reported to the Coastguard shows that in 2017 and 2018, 7 fires on board under 15m fishing vessels were reported.

Although fire is less likely than flooding, the consequences can be as catastrophic if not contained. Fire on a small vessel can spread quickly and lead to the loss of the vessel. All fishermen are required to have undertaken Basic Fire Fighting Training, however, there is no requirement to refresh this training. The measures proposed are intended to prevent fires on small fishing vessels from occurring. The existing Code already places requirements on vessels for fire detection and extinguishing.

New vessels will also be required to comply with a number of additional requirements in excess of the Seafish Construction Standards, which vary depending on whether the vessel is decked or open.

New decked vessels must keep cooking appliances away from engines and fuel tanks, have them strongly secured and keep textiles or curtains away from cookers and heaters. It is not considered there are any additional requirements in the Code for new Open vessels.
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The requirements for existing vessels contained with the Code address the following areas:

- Portlight and deadlight arrangements,

- Storage of cylinders containing flammable, toxic or other dangerous gases, and expended cylinders shall be clearly marked as to their contents and properly stowed and secured All valves, pressure regulators and pipes leading from such cylinders shall be protected against damage

- Exhaust pipes and ducts insulation

- Cooking and heating appliances

The actual requirements placed on vessels will vary depending on their size and whether they are open or decked vessels. For example, open vessels are unlikely to have deadlights or portlights and few will carry cylinders valves or pressure regulators or exhausts. Larger decked vessels may require many of the items but as they get smaller will also require fewer of the items listed. The MCA has conducted an exercise to establish the extent to which these requirements would apply to decked and open vessels according to their sizes and these have been reflected in the costs applied (See Section 5.3).

3.7 New Requirements for Protection of Personnel

The Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997, require that owners and skippers must carry out risk assessments of work activities to minimise or reduce the risks of injury. However, it is the case that these accidents still occur and through measures to regulate activities to reduce the risks, persons on board fishing vessels will be working in a safer environment.

New vessels, must ensure the surface of their decks are non-slip.

For existing vessels, the additional requirements apply to:

- Handrails, grab rails and handholds
- Non-Slip working decks have to be non-slip.
- Winches, hauling hoisting gear
- Secure heavy items

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The requirements for winches, hauling and hoisting gear already exist for vessels of 15m and over. By extending this to vessels of less than 15m it will improve the safety of those working with machinery, allow for safe operation, reduce the risk of injury through contact with machinery, ropes or warps, of being carried overboard by wire or gears and allow for the machinery to be stopped quickly in an emergency.
Requirements for rails and handholds and non-slip decks help reduce the risk of falling overboard.

Heavy items of equipment shall be securely fastened in place to prevent movement due to severe motions of the vessel and Stowage lockers containing heavy items shall have lids or doors with secure fastening. By ensuring weights cannot shift suddenly on a vessel, this reduces the risk of weight movements increasing the risk of vessel capsize.

3.8 Establishing the extent to which the requirements of the new Codes apply to new Vessels.

New fishing vessels are built to approved Construction and Outfit Standards. To identify any additional requirements in the proposed Code for new vessels, over and above the current Construction and Outfit Standards the two were compared. The new requirements are set out in the relevant Policy Objective sections above and also in Annexes D.1 and D.2 below.

3.9 Establishing the Current Situation regarding vessel compliance with the proposed Code

Fishing is a varied industry and vessels are often bespoke constructions or have been modified as owners seek to fish different methods, fish more effectively and efficiently or to improve vessel safety.

This means that within the fleet of vessels of less than 15m, no two vessels are likely to be the same. In addition, the level of maintenance and care of vessels will vary between owners.

Furthermore, the requirements of the Code only need to be met when the vessel has that piece of equipment or structure on board or fitted. As vessels vary considerably, this means that the requirements placed on a vessel will also vary considerably.

Therefore, the variety of vessels, applicable requirements and current compliance means that establishing costs for existing vessels is difficult to estimate.

However, to address this, MCA has attempted to establish the most common vessel sizes and the average level of compliance for these common vessels to use as a basis for estimating compliance costs to the existing fleet. To identify the most common vessel sizes, MCA used data collated for the Seafish Economic Survey 2017[8] to identity fleet segments and using background data, to identify the number of vessels in each segment and their size. This has allowed MCA to identify the most common vessel sizes, which are:

- Open 5m
- Open 7m
- Deck 8m
- Deck 10m
- Deck 12m

Previous to development of this proposed Code, MCA has not recorded details of under 15m vessels beyond compliance with the current Code of Practice. Therefore, to establish the current level of compliance of vessels in each of the most common sizes and what an average vessel may look like in terms of compliance, the MCA developed a checklist of new requirements and requested that for a period of one month, its surveyors, when inspecting vessels due for the Inspection against the existing Code, also assessed its level of compliance with the proposed Code. The surveyors were given the option of recording that the vessel either complied or did not comply with requirements applicable to the vessel, that the requirement was not applicable to the vessel or that due to the circumstances of the inspection, (for instance it would require destructive testing or the vessel was seen in water and the hull could not be checked) that compliance could not be determined.

The results of this research has been collated into tables attached at Annexes B.1 to B.5. The proposed Stability requirements were not included in the work requested on the surveyors. It has been assumed that every vessel would need to conduct tests to comply with the new stability requirements.

Based on the collated evidence, we have identified where these 5 “average” vessels would not comply with the proposed Code and these are set out in Annexes C.1 to C.5 below

The work therefore necessary to bring these average vessels into compliance and the cost to do so has been extrapolated across the fleet.

[8] https://www.seafish.org/media/1812992/economics_of_the_uk_fishing_fleet_2017.pdf

4. Description of options considered

4.1. Option 1, New Code of Practice implemented through legislation.

This is the preferred option for the MCA which will improve safety levels across industry. This option has been appraised fully within the remainder of the Impact Assessment.

4.2. Option 2: Issue Codes as voluntary Marine Guidance Note[9] and increase emphasis on training and education.

The MCA could issue the proposed Code as an MGN which would allow Industry to choose to comply with the higher safety standards. This option would be coupled with updating the existing safety training courses and efforts to promote safety through the standard media and other methods such as toolbox talks and social media.

However, the MCA considers that efforts to improve safety through safety training will be limited as many fishermen have already taken the mandatory courses in Basic Sea Survival, Fire Fighting and Prevention, Basic First Aid and Basic Health and Safety which are required by Statutory Instrument 1989 No.126 The Fishing Vessels (Safety Training) Regulations. There are EMFF funds available to undertake non mandatory refresher training which covers the same areas as the mandatory training but this is limited and it is expected that only those most committed to safety will attend these courses.

Under this option, there would be no requirement to comply with the Codes. Therefore, MCA consider that it is likely that only the most safety conscious would comply. The MCA considers that these vessels are already likely to be owned and operated by the most safety conscious fishermen, and that a non-mandatory Code is therefore unlikely to cause other fishermen to adopt the proposed measures.The exercise conducted by surveyors to establish the current compliance of vessels also indicates that whilst there are vessels that comply with large elements of the Code, there are many that do not to varying degrees. The ability and knowledge is already available, for instance through Construction Standards, to provide guidance on standards for a safe vessel in terms of Construction, Watertight and Weathertight Integrity, Machinery, Electrics, Stability and Fire Protection, the evidence from surveyor checklists indicates this is not being used to improve the safety of vessels by many owners or skippers and it is necessary to introduce a mandatory requirement to address vessel safety in these areas.

In February 2014, the MCA issued MGN502, a Voluntary Code of Practice for Small Fishing Vessels. This was superceded by MSN1871 in October 2017 a Mandatory Code of Practice for Small Fishing Vessels. In the period of time the voluntary Code was available, there were 19 fatalities whereas in the corresponding period before the voluntary Code was introduced, there were 18 fatalities. For these reasons, it is not considered that a voluntary Code will have an effect in reducing fatalties in the Industry.

MCA has also issued MGN427 Stability Guidance for Fishing Vessels in 2010, which has been subsequently replaced by MGN 503 – Procedure for Carrying out a Roll or Heel Test to Assess Stability for Fishing Vessel Owners and Skippers in 2014 and and MGN 526 – Stability Guidance for Fishing Vessels – Using the Wolfson Method in 2018. Between 2006 and 2010, prior to the guidance, there were an average of 3.6 stability incidents a year and 0.8 fatalities a year since 2011 the incident rate has remained at 3.6 a year with a fatality rate of 1 a year, indicating the guidance published has not had an effect on the number of incidents or fatalities.

Cost benefit analysis of this option has been treated proportionately. As this is a voluntary/non regulatory option the previous experience of voluntary arrangements suggests that benefits and costs will be low due to lack of uptake of guidance amongst vessel operators that pose the post risk and therefore face the greatest costs of implemtation of voluntary standards. Familiarisation costs are assumed to be equal under options 1 and 2, with owner/operators at least reading MCA guidance as a matter of course.

[9] Marine Guidance Notes give significant advice and guidance relating to the improvement of the safety of shipping and of life at sea, and to prevent or minimise pollution from shipping.

For the reasons stated above, the MCA does not consider that Voluntary Codes are a viable option for the proposed standards. We encourage consultees to provide any further evidence about the likely uptake of a voluntary code.

4.3. Option 3: Do Nothing Scenario

Doing nothing is not considered a viable option given the Ministerial commitment to improve the safety on fishing vessels. The recommendations of various MAIB investigations have been accepted by the MCA,fishing industry and the opportunity to realise a simplified and consolidated set of requirements for both the MCA and industry would not be achieved.

As explained in 4.1 above, guidance is already available on vessel safety through construction standards and Marine Guidance Notes and the surveyor checklist exercise indicates this is not being used to improve the safety of vessels.

Therefore failure to implement this proposed Code, implementing a package of measures, would result in recognised safety concerns not being addressed, a continued unacceptable level of deaths in the Industry.

Under the do nothing scenario there would be zero additional costs or benefits as this would maintain the status quo, using existing voluntary arrangements for the industry through the provision of guidance.

5. Option Appriasal: Monetised and non-monetised costs and benefits of each option (including administrative burden);

5.1 Under options 1 and 2 the costs to industry are potentially equivalent to each other, however the benefits under option 2 will be significantly lower given that the level of compliance will be lower and therefore accidents will remain relatively unchanged compared to the do nothing scenario. This is because those facing the greatest relative costs of compliance are those most likely to be involved in an accident.

Costs

To estimate the costs under options 1 and 2 the MCA has sought information from industry. This has been received in the form written quotatons for work to bring vessels up to the proposed standard and pricing for modification work previously completed (MMO). Where prices have been able to be disclosed, these can be found in Annex C and D. Not all costing can be shared publically due to the commercially sensitive nature of quotations. Despite this information being provided, quotations and examples of billed work was not available for all requirements across vessels of all sizes. This means that the MCA has had to apply a range of assumptions to estimate overall costs, especially for those applying to existing vessels. Further information is provided below.

5.2 Assumptions regarding the proportion of existing UK registered fishing vessels that already comply with the new requirements that would be introduced by the proposed Code of Practice (Option 1)

MCA Consultant Fishing Vessel Surveyors were asked, over a period of one month to review the existing levels of compliance with proposed new requirements, excluding Stability, of vessels that they inspected.

Based on the evidence provided by MCA Consultant Fishing Vessel Surveyors, the MCA has developed indicative assumptions of the proportion of existing UK registered vessels that already comply with each of the new requirements that would be introduced by the proposed Code of Practice. For further details see the estimation of one off costs for existing vessels below. Compliance rates have been assumed on the basis of analysis of a survey of MCA sureveyors, covering around 50 vessels.

For new vessels, according to Seafish the majority of requirements are already factored into design and build costs currently. Any additional costs identified have been estimated below.

Consultees are asked for their views on the assumptions used.

Questions for Consultees

Q2. Consultees are invited to submit any additional evidence or other relevant information on the costs and benefits of the proposed code (Option 1) that are identified in this IA.

Q3. Consultees are invited to provide details of any additional costs and benefits of the proposed Code (Option 1) that have not been identified in this IA,and provide any additional evidence or other relevant information that is available on these costs and benefits.

Q4. Consultees are invited to comment on any of the assumptions that have been made in this IA and are invited to propose alternative assumptions and provide supporting evidence or other relevant information.

5.3 One-off equipment costs applying to existing vessels

Due to the complexity of estimating costs given the number of requirements, various sizes of vessels, unknown costs and varying numbers of quoted costs within this, we have presented below the various stages of the analysis to be as transparent as possible about the applied methodology.

Based on the MCA's work to identify 5 average vessels, in terms if current compliance with the proposed Code, this section presents estimates of the additional one-off monetised costs to bring the average existing UK registered fishing vessels up to the new standards required within the Code, as set out above that would be introduced by the proposed Code (Option 1).

The MCA sought the advice of builders of fishing vessels of less than 15m, requesting estimates of the potential costs of bring the average vessels identified by the MCA's current compliance exercise. Unfortunately, these requests only led to one response which did not address all areas. However, the Marine Management Organsiation seeks the advice of MCA on applications by owners for European Marine Fisheries Funding. These applications provide estimates for funding of modifications for vessels. Using these estimates, the MCA has been able to establish potential costs for work on vessels of different sizes to address many of the new requirements contained in the Code.

It should be noted that a key reason for the differences between the size categories is that the new requirements that would be introduced by the proposed Code vary between the size of the vessel. It should also be noted that these estimates are sensitive to both the assumptions regarding the proportion of existing UK registered fishing vessels that already comply with the new requirements that would be introduced by the proposed Code and the assumptions regarding the one-off costs per vessel of complying with the new requirements that would be introduced by the proposed Code of Practice (Option 1).

As information was not available on the costs applicable to each vessel size grouping for each required change, and due to the low sample size for each cost provided, the MCA has had to estimate the costs to obtain full coverage of impacts. This has allowed an initial estimate of overall impacts which we are looking to refine further through stakeholder consultation.

Costings we received across the vessel sizes specified by the new Small Fishing Vessel Code. These cover the following categories:

- Under 6m
- 6-7m
- 8-9m
- 10-12m
- 12-15m

The approach to estimating the costs of each change has been to take each of these categories and calculate the average per meter cost per vessel. The basis for basic calculations was data provided by the MMO.

Where multiple costings were available for a specified change, an average has been taken to provide a single value. We have then taken the upper bound of each of the vessel size categories to calculate the per meter costs. Once per meter costs were established for each measure across all vessel sizes up to 12m an average was taken due to varying values for vessel improvements resulting from the heterogeneous nature of fishing vessels covered in the underlying data. This provided an overall average per meter cost for each individual change resulting from the proposed code and presented a linear costing model by vessel size. For 12-15m vessels little data was available. Where it was, these costs were applied.

To address missing values, and account for the fact that vessels over 12m tend to have much greater costs associated with their construction (partly due to size and complexity, partly due to the greater proportion of decked vessels), an uplift value was esblished. An average of the available per meter costing was established and compared to the available costings data for 10-12m vessels. This was 3.2x, however it was heavily skewed by wiring costs (5.4x more for 12-15m vessels). To address this issue and the reliability of the data stemming from small sample sizes, it was assumed that all costs where no data was available were double the average per meter cost of 10-12m vessels. With a per meter cost established for each individual change this was then multiplied by the upper bound of each vessel category to arrive at a per vessel cost. Independent manufacturer costings were then used to verify the per vessel (MMO based) estimates. Where no data was provided by the MMO for specific changes but ranges were provided by manufacturer estimates, the upper and lower values of these ranges were applied to 10-12m and <6m vessel categories respectively and equally spread estimates established for 7m and 9m vessels. Per vessel cost estimates were calculated for 12-15m vessels in the same way as previously described by applying the 2x multiplier to establish the uplift in costs for the largest vessel category.

There are 47 cost categories to which the above calculations apply to. Given the complexity in spelling out the arithmetic for each change, we have not presented this in the IA. The overarching costings per prescribed change can be found in annex E and we invite opinions from stakeholders on the validity of these estimates, in particular where it was not possible to obtain any base information on which to base the estimation of costs.

Table 7: Initial Estimated Cost Per Existing Vessel

	<6m	**<6-7m**	**<8-9m**	**<10-12m**	**<12-15m**
Total cost per vessel	38,700	45,500	58,400	77,400	147,800

Source: MCA estimates based upon MMO and manufacturer sourced data

The estimates presented in table 7 above were then multiplied by the number of vessels. Due to the varying nature of recorded data the above vessel categories were not an exact match for available data on vessel size taken from the ship register.

The total cost per vessel presented in table 7 above was averaged across categories to arrive at a new breakdown of vessel size consistent with data on vessel numbers:

- Under 6m and 6-7m categories became 0-7m;
- 8-9m and 10-12m categories became 7-12m; and
- 12-15m category remained as it was.

Table 8: Cost Per Existing Vessel for revised categories.

	0-<7m	<7-12m	<12-15m
Number of vessels[2]:	2,492	2,360	128
Average cost	42,100	67,900	147,800

Source: MCA estimates based upon MMO and manufacturer sourced data

This average cost per vessel was then multiplied by the number of vessels to arrive at the initial estimate total cost to existing vessels.

This initial estimate did not account for vessel turnover, existing rates of compliance or the numbers of undecked vessels which will face lower costs or already meet standards due to fewer requirements.

Vessel Turnover

Table 9 below shows the number of small fishing vessels leaving the fleet each year for the lst 5 years. An average was taken for the number of vessels leaving the register, this was 172. Using this as a assumed number for each year over the 10yr appraisal period. This approach was chosen due to the variation in the number of vessels leaving the fleet over the period 2008-2018. A larger decline in vessel turnover was experienced was experienced in the first half of the 10 year period for which data is available. To better reflect the trend in more recent years a 5 year average has been adopted covering the period 2014-2018, preventing the underestimation of costs and better reflecting the potential for an upturn in vessels leaving the register following the introduction of changes for existing vessels.

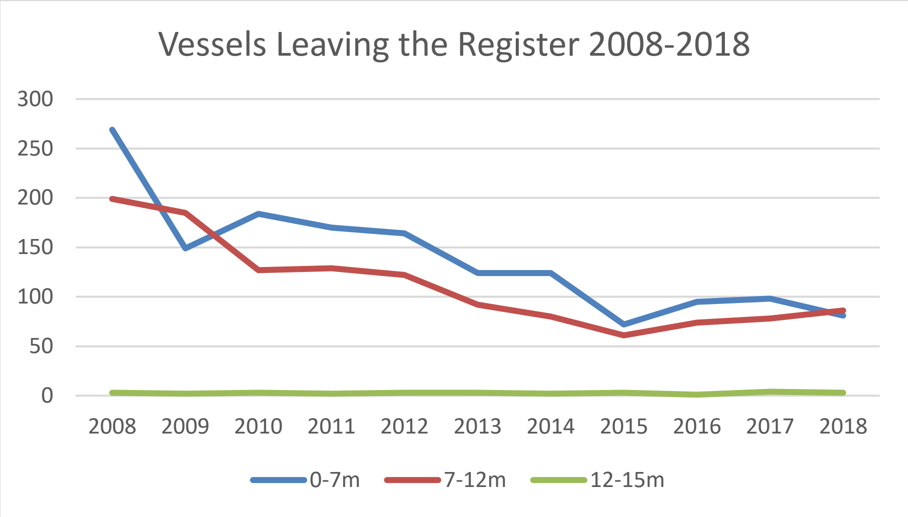
Table 9: Vessels leaving the ship register 2008-2018

Category	0-<7m	<7-12m	<12-15m	Total
2008	269	199	3	471
2009	149	185	2	336
2010	184	127	3	314
2011	170	129	2	301
2012	164	122	3	289
2013	124	92	3	219
2014	124	80	2	206
2015	72	61	3	136
2016	95	74	1	170
2017	98	78	4	180
2018	81	86	3	170
5yr average	**94**	**76**	**3**	**172**

Source: Registry of Shipping and Seamen Fleet Management System

2 Correct as of July 2019. The total number of vessels in the fleet 4,980.

Chart 8: Vessels leaving the ship register 2008-2018



Source: Registry of Shipping and Seamen Fleet Management System

Taking away the vessels that are estimated to leave the leave the register of the next 5 years (the period by which requirements may be phased in) provides the population to which costs for existing vessels will apply.

Table 10 Number of Existing Vessels accounting for turnover.

	0-<7m	<7-12m	<12-15m	Total
5yr average	94	76	3	172
Total over 5 yrs	470	379	13	862
Total number minus vessel turnover	**2022**	**1981**	**115**	**4310**

Source: MCA calculations

Decked and Open Vessels

MCA does not hold data on the number of decked and open vessels on the Register. However, based on evidence taken from vessels undergoing the Registration Surveys to become fishing vessels, it is estimated that 33% of vessels under 15m are Open. Within that, it is estimated that 60% of vessel under 7m are open vessels and 45% of vessels from 7m to 12m are also open. It is considered that almost all vessels of 12m and over are decked.

Due to uncertainty around the percentages of open vessels and the complecity of changes required onboard, a broad range of cost reduction has been applied to reflect the potential range of impact. To be prudent in the estimation of overall impacts the best estimate has been set at 75% of the costs that would apply if all vessels were decked. This is perceived to be an overestimate. The lower bound of costs has been set at 50% and the upper bound has been left at 100%, again these are likely to be overestimates.

Applying this range presents the following costings when multiplied by the average cost per vessel and number of vessels as presented above:

Table 11: Costs of required changes by vessel size category (£m)

	0-<7m	7-<12m	12-<15m	Total
100%	85.1	134.6	17.0	236.7
50%	42.6	67.3	8.5	118.4
75%	63.9	100.9	12.8	177.5

Source: MCA calculations

Compliance Rates

The Totals presented above do not account for the rate of compliance that already exists within the industry. As some aspects of the proposed code will already be met in part or fully by existing vessels this significantly overestimates the potential cost impacts placed upon industry.

To account for compliance the MCA has applied a range of compliance rates. As this is again an uncertain value, a range has been applied that both reflects available data on the level of compliance and accounts for information that could skew compliance assumptions.

Using the survey conducted by MCA surveyors , which covered 50 less than 15m fishing vessels surveyed over the course of a month, it was possible to establish which of the individual 47 categories of requirements was either met, not met, unapplicable, or could not be determined. By adding the values for met and not applicable, it was possible to determine the compliance rate compared to the number of vessels surveyed by vessel size for decked and undecked vessels independently. The compliance rates for each individual measure by size were then compared to the equivalent costings provided by the MMO and manufacturers (discussed above). Those items that were most costly were identified as changes to:

- Hull and Gunnel Capping
- Safety Rails
- Generators
- Fuel Tanks
- Hatches
- Fuel System
- Engine Box
- Windows

In particular Safety Rails, Fuel Tanks and Fuel Systems were key drivers of costs.

An average compliance rate was calculated across all requirements and where it was considered that compliance rates were skewed by the makeup of vessels surveyed, in particular for these more costly items above, the compliance rate was reduced to reflect this. Levels of compliance differed greatly for vessels 7m and over compared to those below 7m, therefore separate compliance rate assumptions were applied for these groupings of vessels. The difference in levels of existing compliance is driven by the greater proportion of open vessels amongst the 0-<7m category. This exercise resulted in the assumed range of compliance rates of 75-95% for 0-<7m vessels and rates of 60-80% for vessels 7m and over.

0- less than 7m vessel compliance rates:

In the high cost scenario the lowest rate of current compliance is assumed (75%). For the low cost scenario, the highest assumed compliance rate (95%) was chosen. For the best estimate a compliance rate of 85% was adopted.

7m and overvessel compliance rates:

In the high cost scenario the lowest rate of current compliance is assumed (60%). For the low cost scenario, the highest assumed compliance rate (80%) was chosen. For the best estimate a compliance rate of 70% was adopted.

Table 12: Assumed compliance rates

Cost	Compliance rate <7m	Compliance rate 7m and over
High	75%	60%
Low	95%	80%
Best	85%	70%

Source: MCA Assumptions based upon surveyor data

Applying these compliance rates resulted in the following overarching estimates for existing vessels meeting the standards set in the new code.

Table 13: Costs of required changes by vessel category (£m undiscounted)

	0-<7m	7-<12m	12-<15m	Total
High	21.3	53.8	6.8	81.9
Low	4.3	26.9	3.4	34.6
Best	**12.8**	**40.4**	**5.1**	**58.2**

Source: MCA calculations

Table 14 below presents the average cost per vessel accounting for compliance, turnover and assumptions around the impacts of undecked vessels upon overall cost estimates.

Table 14: Costs of required changes by vessel size category (undiscounted)

	0-<7m	7-<12m	12-<15m
High	10,500	27,200	59,100
Low	2,100	13,600	29,600
Best	6,300	20,400	44,300

Source: MCA calculations

Costs of fitting equipment have been included within the esimates received from the MMO and industry.

Familiarisation costs

It is assumed that the following costs will apply under both options 1 and 2 as the standards will be equivalent but simply fall under mandatory or voluntary arrangements.

In addition to the equipment costs above, additional one off transition costs will be incurred for existing vessels. These costs will be in the form of familiarisation costs. The majority of fishing vessels under 15m will have a single owner/operator, therefore it is assumed that one person per vessel will need to familiarise themselves with the new requirements in the code. This is assumed to take between 4 and 6 hours. Applying an hourly wage rate taken from the Annual Survey of Household Earnings[3] (ASHE) we arrive at £9.40 per hour, which represents the mean wage rate for fishing and other elementary occupations.

This hourly wage rate has then been multiplied by the assumed number of hours for familiarisation and the number of vessels (4,980 registered under 15m fishing vessels) to arrive at the total for familiarisation costs.

In the best estimate scenario this is calculated in the following way:

£9.40 x 5 hours = £47 per vessel
£47 x 4,980 vessels = £234,060

Table 15: Familiarisation costs

	Hrs	Hourly cost	Total cost
High	6	56.4	**280,872**
Low	4	37.6	**187,248**
Best estimate	5	47	**234,060**

Source: MCA calculations based upon ASHE and MCA data

Familiarisation costs are all expected to occur in year 1.

[3] ASHE 2017 available at:ONS.gov.uk

5.4. One-off costs applying to new UK registered fishing vessels

5.4.1. Assumptions regarding the number of new UK registered fishing vessels that would be required to comply with the proposed Code of Practice (Option 1)

In this IA, a new UK registered fishing vessel is defined as a vessel one which is newly registered under the UK Flag as opposed to a newly built fishing vessel. For the purposes of this IA, the number of new UK registered fishing vessels which would join the UK flag in each year is assumed to be the same under the "Do Nothing" scenario and Options 1 and 2.

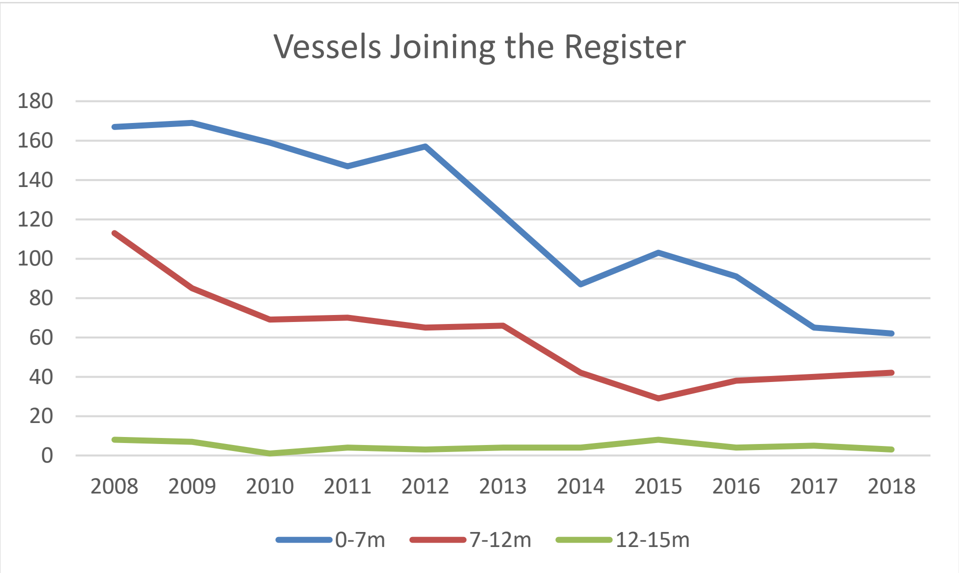
Data available from the Registry of Shipping and Seamen Fleet Management System over the past 10 years shows that the number of vessels joining and leaving the register between 2008 and 2018 has been in decline overall, largely driven by decline in under 7m vessels. Therefore, in estimating the number of new vessels joining the register an average has been taken over the past 5 years of data covering the period 2014-2018. This average has then been assumed to be the annual average of new vessels affected by the new fishing vessel code. By assuming this constant value and not accounting further decline in new vessels joining the fleet this allows for a potential upturn in new registrations following the impacts of the code on existing vessels and alleviates for the potential underestimation of costs.

Table 16: Number of New Vessels 2008-2018

Category	0-<7m	7-<12m	12-<15m	Total
2008	167	113	8	288
2009	169	85	7	261
2010	159	69	1	229
2011	147	70	4	221
2012	157	65	3	225
2013	122	66	4	192
2014	87	42	4	133
2015	103	29	8	140
2016	91	38	4	133
2017	65	40	5	110
2018	62	42	3	107
5yr average	**82**	**38**	**5**	**125**

Source: Registry of Shipping and Seamen Fleet Management System

Chart 9: Number of New Vessels Joining the Register 2008-2018



Source: Registry of Shipping and Seamen Fleet Management System

Question for Consultees

Q5. Consultees are invited to propose alternative assumptions regarding the number of fishing vessels which would join or leave the UK flag each year of the appraisal period and provide supporting evidence or other relevant information.

One-off Additional Build/equipment Costs applicable to new vessels

The MCA sought the advice of builders of fishing vessels of less than 15m, requesting estimates of the potential costs of bring the average vessels identified by the MCA's current compliance exercise. Unfortunately, these requests only led to one response which did not address all areas. However, Seafish, who oversee the Construction of New fishing vessels to their Standards, have reviewed the new requirements and provided estimates of the potential costs of the additional requirements for new vessels.

For items that were not likely to already be in compliance on new vessels, a number were deemed to be absorbed withing regular design and manufacturing costs and have no material impact up overall costs. For items considered to be new and that have an impact upon manfacturers in the form of additional new build costs, an upper and lower bound was provided. Most of these costs were fairly minimal on a per vessel basis with means of recovery of unconscious persons the most expensive change. This was estimated to be £350+ with the MCA using this as the assumed lower bound. We doubled this figure to represent an assumed high cost scenario.

The total costs were estimated to be £535 per vessel in the low cost scenario and £1035 in the high cost scenario. These figures were then multiplied by the estimated annual average number of new vessels (125, as shown above). This produced the following range of estimates for annual total equipment costs for all new vessels

Table 17: Additional Build Costs for New Vessels

Annual Total Equipment Cost	(£)
High	128,961
Low	66,661
Best	97,811

Source: Seafish estimates and MCA assumptions

This resulted in an undiscounted total best estimate of costs for new vessels equipment of £978,000 over the 10 year appraisal period.

5.4.2. Estimates of the additional one-off costs per year to new UK registered fishing vessels of complying with the new requirements that would be introduced by the proposed Code of Practice (Option 1)

This section presents estimates of the additional one-off monetised costs per year to new UK registered fishing vessels of complying with the new requirements that would be introduced by the proposed Code, as described above.

New vessels and existing vessels changing fishing method will require stability tests. For category A vesels these are estimated to be 18 new vessels per year and 19 existing vessels per year moving to category A, 37 tests in total.

The costs of stability tests are estimated to be between £4,000 and £8,000.

For new build category B vessels and category C vessels moving to become category B it is estimated the Offset load tests will cost £600 each and apply to 53 and 12 vessels per year respectively.

Category C vessels will be required to meet ISO standards and the costs are assumed to be absorbed within design and build costs so no additional cost will apply.

By multiplying the costs of the above tests by the number of vessels registering under each category we arrive the annual costs of initial tests. This gives us a low cost estimate of £186,700 and a high cost estimate of £334,700. Taking the mid point withing this range provides a best estimate of £260,700.

Table 18: Annual total cost of Stability Test on an existing vessel of moving category

	Cost
High	**334,700**
Low	**186,700**
Best estimate	**260,700**

Source: MCA estimates

5.4.3 Costs of requiring Stability Cateogry A Vessels to meet stability requirements

Under Option 1, any vessel of less 15m wishing to join the UK Register as a Category A vessel that fails its Stability Test would not receive an approved Stability Book and would be rejected. To join the Register, it would have to undertake any changes that are deemed necessary for it meet the necessary standards of stability. The changes required could vary in nature but the costs may be substantial, for example, changes to its construction. It is not possible to predict the nature of any necessary changes, due to the bespoke nature of fishing vessels and a lack of data collected on modifications to existing vessels.The MCA has been unable to identify any evidence on the likely level of these costs. Given this, it has not been possible to monetise the additional costs to business in this IA at this stage. However, the costs of undergoing the stability test and obtaining a completed Stability Book have been monetised. Any costs associated with failing an initial stability test would be disproportionate to evidence, as this would require all vessels to be surveyed/stability tests conducted and manufacturers/engineers to estimate the costs of required improvements or at the extreme vessel replacement. To conduct a survey/stability test of every vessel would either produce a disproportionate cost to the MCA (internalising industry costs), or would effectively impose the costs bourne by industry to be incurred with immediate effect, which could put businesses at risk. Ongoing costs associated with stability tests would be the costs of compliance associated with maintaining the standards adhered to in meeting the initial stability test. If subsequent stability tests are failed it is likely to be the result of non-compliance with the standards set out in the code, a deliberate choice of the owner/operator to modify a vessel outwith the standards in the code and not a direct cost of the code itself.

Stability Books are approved by the MCA. MCA Consultant Surveyors estimate that the average cost for Stability test ranges between £1000 and £5000 and the approval of a Stability book is £3000. These costs are assumed for the purposes of this IA.

Data on the fishing method employed by newly built fishing vessels when they join the Register is not recorded. However, as part of the Registration Survey process for vessels built before 2007 joining the Register, the fishing method is recorded and10% of vessels which become fishing vessels, would fall into Category A. Therefore, based on an average of 175 fishing vessels joining the Register each year, it is estimated 18 vessels a year will require stability books and approval. The costs would range from £72,000 to £144,000 a year.

Existing vessels that employ a fishing method that is not Category A but wish to change their method to one in Category A, must also undergo the same stability tests as a new vessel. Based on data from the Marine Management Organisation data, dating back 54 months, 84 existing vessels have sought to move from either Category C or B into Category A fishing methods. At an average of 19 vessels per year, the estimated cost for this would be £76,000 to £152,000 a year.

Although vessels, when they move from Category A to either Category B or C, may choose to employ the Stability method of that Category, they may choose to continue with the Stability assessment method of Category A, enabling them to maintain the flexibility to alternate between fishing methods at different times of year to maximise income through diversity of fishing effort. Therefore, it is not considered that savings will accrue from vessels moving from Category A fishing methods.

Questions for Consultees:
Question 6.
Consultees are invited to submit any additional evidence or other relevant information on the additional costs of requiring new vessels and those that change their method of fishing to Category A to undergo a stability test and have a completed Stability Book.

5.4.4. Costs of requiring Stability Cateogry B Vessels to meet stability requirements

Under Option 1, any vessel of less 15m wishing to join the UK Register as a Category B vessel that fails its Offset Load Test would be rejected. To join the Register, it would have to undertake any changes that are deemed necessary for it meet the necessary standards of stability. The changes required could vary in nature but the costs may be substantial, for example, changes to its construction. It is not possible to predict the nature of any necessary changes and the MCA has been unable to identify any evidence on the likely level of these costs. Given this, it has not been possible to monetise the additional costs to business in this IA at this stage. However, the costs of undergoing the stability test and obtaining a completed Stability Book have been monetised. Any costs associated with failing an initial test would be disproportionate to evidence, as this would require all vessels to be surveyed/tested conducted and manufacturers/engineers to estimate the costs of required improvements or at the extreme vessel replacement. To conduct a survey/tests of every vessel would either produce a disproportionate cost to the MCA (internalising industry costs), or would effectively impose the costs bourne by industry to be incurred with immediate effect, which could put businesses at risk. Ongoing costs associated with stability tests would be the costs of compliance associated with maintaining the standards adhered to in meeting the initial stability test. If subsequent stability tests are failed it is likely to be the result of non-compliance with the standards set out in the code, a deliberate choice of the owner/operator to modify a vessel outwith the standards in the code and not a direct cost of the code itself.

Offset Load Tests are provided by Consultants. Based on estimates provided by Stability Unit of MCA an Offset Load test will take two hours. It is estimated that the average hourly fee would be £100, therefore an Offset Load test will cost £200. However, the costs charged will also include travel time. The length of journeys will vary considerably. However, in looking at journey times in remote locations, based on the location of known Consultants, the likely furthest journey is an 8 hour round trip. Taking into account journeys in other populated areas of the United Kingdom will be minimal, an average journey time of 4 hours has been assumed.

The average cost for an Offset Load test is therefore assumed to be £600.

Data on the fishing method employed by fishing vessels when they join the Register is not recorded. However, as part of the Registration Survey process for vessels built before 2007 joining the Register, the method of fishing is recorded and 60% of vessels which become fishing vessels, would fall into Category B. Therefore, based on an average of 175 number of fishing vessels joining the Register each year, 105 vessels a year would be affected by this requirement. Therefore, the costs of an Offset Load Test for vessels will be approximately £63,000 a year.

Existing vessels that employ Category C but wish to change their method to one in Category B, must also undergo the same stability tests as a new vessel. Based on data from the Marine Management Organisation data, dating back 54 months, 54 existing vessels have sought to move from Category C into Category B fishing methods. Although vessels may choose to undergo full Stability tests when they move to Category B, it is assumed that all will opt for the cheaper Offset Load tests. At an average of 12 vessels per year, the estimated cost for this would be £7,200 a year.

Although vessels, when they move from Category A to either Category B or C or from Category B to C, may choose to employ the Stability method of that Category, they may choose to continue with the Stability assessment method of the previous Category, enabling them to maintain the flexibility to alternate between fishing methods at different times of year to maximise income through diversity of fishing effort. Therefore, it is not considered that savings will accrue from vessels moving from Category A fishing methods to Category B or from Category B to Category C.

Question for Consultees:
Question 7
Consultees are invited to submit any additional evidence or other relevant information on the additional costs of requiring new vessels and existing vessels changing their method of fishing to Category B to undergo a roll or heel tests

5.5 Ongoing monetised costs to UK registered fishing vessels

5.5.1. Overview of the ongoing monetised costs to UK registered fishing vessels identified in this IA

Ongoing Costs are considered to be the costs incurred by all vessels to maintain compliance with the new requirements contained in the Code, whether new build or existing, after they have met the Code requirements for the first time.

5.5.2 Ongoing costs for reinclining of new vessels every five years to the MCA

Every vessel that has to undergo the Approved Stability Method must be inclined every five years to ensure the Stability book remains valid. MCA does not currently charge for work conducted as part of an inspection of Small Fishing Vessels. Any costs relating to inclining vessels every five years would therefore be a cost to MCA.

The MCA Stability Unit estimate a Consultant Surveyor would spend 3 to 4 hours on site and two hours to prepare the Report. MCA Stability Unit have previously estimated a Consultants time at £100 per hour.

Assuming 18 new vessels a year and 19 vessels changing fishing method and having to undergo Full Stability, this means that over a 10 year period, 185 vessels will need re-inclining.

Assuming an average of 4 hours travel, this means that the cost of a re-inclining for work by the Consultant will be **between £900 and £1000 per vessel** or category A vessels and £600 for Category B.

For category A vessels 37 per annum will require a test and will also require a report approval, which will cost 2hrs to approve the inclining report will take two hours. At £147 per hour. For Category B vessels 65 are assumed to require a test. For Category C vessels there is no requirement for a physical assessment of the vessel.

For Category A vessels annual costs of retests will range between £44,200 [(900+(147x2))x37] and £47,900 [(1000+(147x2))x37].

For category B vessels annual costs of retests is estimated to be £38,700 (600x65).

Table 19: Total annual costs of retests of new vessels (including existing vessels changing category):

	Cost (£)
High	**86,600**
Low	**82,900**
Best estimate	**84,700**

Source: MCA estimates

The best estimate takes the midpoint between the low and high cost scenarios. These costs will occur annually from year 5 and are the sum of costs for category A and B vessels.

If the vessel's lightship is shown to be within acceptable tolerances of the approved figures, no further action is required.

Costs could increase substantially following a lightship check if the results identified unapproved modifications or weight growth outside limits. This could range from a requirement for the vessel to be re-inclined and new loading conditions produced and approved, to modifications to the vessel being required which then supersede the data in the approved stability information booklet. As these vessels are yet to join the Register and the potential requirements following a failed lightship test vary widely, it is not possible to estimate the potential costs of a failed lightship test.

5.5.3 Ongoing costs of Roll, Heel or Offset Load Test, for new and existing vessels

All vessels must repeat the exact same Roll, Heel or Offset Load Test applied to it at each subsequent renewal. Although every new vessel which employs Category B fishing is likely to conduct an Offset Load Test, as opposed the Full Stability Method, it cannot be estimated how many of the existing vessels will opt for a Roll or Heel Test. Therefore, the maximum cost is based on all 4980 vessels choosing a Roll test.

Heel or Roll test will be required for all existing vessels and will need to undertaken every 5 years. For the purposes of estimating these costs and given uncertainty around future changes in the size of the fleet it has been assumed that the total number of vessesl to which this applies with remain constant across the appraisal period at 4,980. Heel or roll tests conducted by a Consultant are estimated to cost between £600 and £700 every 5 years. These tests will therefore take place twice during the appraisal period, assumed to be starting in year 2.

The undiscounted costs of heel or roll tests are expected over 10yrs to be:

The low estimate of the this cost is therefore £600 x 4,980 vessels = £2,988,000 x2 = £6m
The high estimate of the this cost is £700 x 4,980 vessels = £3,486,000 x2= £7m
The best estimate is the mid point between these estimates, £3,237,000 x2= **£6.5m**

Costs could increase substantially following a failed test if the results identified unapproved modifications or weight growth the nescessitate remedial work to remain within the requirements of the code. This could range from a requirement for the vessel to be subject to further tests to modifications to the vessel being required. As vessels have not been assessed previously, it is not possible to determine the number of vessels that may be affected or the potential additional requirements that might need to be satisfied and it is therefore not possible to estimate costs in the event of a failed test. Such costs have not been monetised as these would be the result of breach of requirements and not due to changing the standards required. If a vessel is maintained in accordance with the code following the initial test then such additional costs would not be incurred. Therefore the non compliant modifications following previously passing the required tests are considered to not be a direct cost of the new code.

5.5.4 Initial Cost of requiring existing vessels to comply with Roll or HeelTest requirements.

All existing vessels, regardless of their method of fishing must produce a Wolfson Notice for their vessel and either undertake a Roll or Heel Test for their vessel.

Wolfson Notices can be produced free of charge using the MCA Marine Guidance Notice MGN526.

As stated in the section above, Heel Tests are estimated at £600 per vessel. Roll Tests, as estimated by the MCA Stability Unit would take 3 hours at a cost of £100 per hour. With the additional travel time, this equates to £700 per vessel. There are currently 4980 existing vessels. Based on current data, the costs to comply with this requirement will range between £2,988,000 and £3,486,000.

If the vessel's passes either the Heel Test of Roll Test no further action is required.

Costs could increase substantially following a failed test if the results identified unapproved modifications or weight growth. This could range from a requirement for the vessel to be subject ot further tests to modifications to the vessel being required. As vessels have not been assessed previously, it is not possible to determine the number of vessels that may be affected or the potential additional requirements that might need to be satisfied and it is therefore not possible to estimate costs in the event of a failed test.

5.5.5 Additional Costs for Inspection of Vessels

Currently vessels are required to be inspected once, with no requirement as to whether this is in or out of the water. The new Code requires that vessels must be seen both in and out of the water. These inspections will remain free, however for some vessels, there will be a cost to taking the vessel out of the water for an inspection.

The MCA does not currently record whether a vessel has been inspected in or out of the water. However, MCA Surveyors indicate that vessels of less than 7m are expected to be removed bvy the owner themselves using trailers, or they will be on beaches, tidal areas where the vessel hull will naturally become exposed or be on slipways. Therefore, for vessels of less than 7m, no additional cost is expected to present a vessel for the additional inspection. For many very small vessels, it is likely that in and out of water inspections can be carried out without a second visit.

Vessels of 8m and over are likely to require to be lifted out of the water. Although many owners are expected to take vessels out of the water for painting , checking anodes and the hull annually, and may be able to co-ordinate an MCA inspection at the same time, and some vessels of over 7m will also be on beaches or tidal areas, the numbers affected are not known. Therefore, for the purposes of this Impact Assessment, it is assumed that removing the vessel for an inspection is an additional cost to all vessels of 7m and over. Estimates from MCA surveyors and boatyards indicate that the cost to remove a vessel from the water range from £500 to £1000. Therefore, based on there being 2,488 vessels of 7m and over, the additional costs for an out of water survey will range from £1,244,000 to £2,488,000. The best estimate of lifting some vessels out of the water for inspection is 1,866,000 over 5yrs, 373,000 annually.

There is perceived to be no additional opportunity costs associated with out of water inspections as this is intended to be carried out whilst the vessel is out of the water for other routine maintenance during out of season periods. Therefore, there is no associated cost of lost fishing time.

Table 20 Cost of lifting a Vessel out of the Water

		5yr	Annual cost
Low	500	**1,244,000**	**248,800**
High	1000	**2,488,000**	**497,600**
Best Estiamte	750	**1,866,000**	**373,200**

5.5.6 Costs for MCA of Inspecting vessels in and out of the Water

MCA surveyors currently only visit vessels of less than 15m once to inspect against the Code of Practice. The new Code will require an in water and out of water survey, requiring in many instances a second visit. (Very small vessels may be able to be inspected in and out of the water in one visit).

MCA Consultant Surveyors have indicated that to inspect vessels against the new Code requirements will add an additional 2-6 hours at a cost of £147 per hour to MCA including travel time.

Table 21 Cost of additional inspections to MCA

	No of hrs	Cost	Total Cosr
Low	2	£294	**£1,464,120**
High	6	£882	**£4,392,360**
Best Estiamte	4	£588	**£2,928,240**

In addition, MCA expect that a number of vessels, due to their small size may be seen both in and out of the water in one visit, while larger vessels will require additional visits so that vessels can be lifted from the water. MCA fees are based on cost recovery and travel time is charged at 4 hours maximum. Therefore, it is assumed that the average travel time to vessels is 4 hours, given the geographical spread of vessels.

6. Benefits

The main benefits resulting from the proposed code are the potential fatalities and injuries that would be avoided as a result of improved vessels standards. Here we estimate the scale of benefits arising from these changes. There is some uncertainty around the number of fatalities and injuries that will occur in the future, there are many factors which contribute to serious accidents. We have therefore taken available data from the Marine Accident Investigation Branch, split by causes, and used this as a basis for assumptions about future serious accidents avoided.

For the purposes of valuing human costs of fatalities and injuries we have adopted HSEs published values for work related fatalities and injuries.

The HSE have published "Costs to Britain of workplace fatalities and self-reportedinjuries and ill health, 2016/17"[13]

Table 22 Costs to Britain of workplace fatalities and self-reportedinjuries and ill health, 2016/17

	Human cost (rounded)	**Financial cost (rounded)**	**Total cost (rounded)**
Fatal injuries	£ 1,203,000	£ 414,200	£ 1,617,000
Non-fatal injuries	£ 5,300	£ 3,100	£ 8,400
7 or more days absence	£ 19,700	£ 10,400	£ 30,100
Up to 6 days absence	£ 330	£ 550	£ 880

6.1 Fatalities

Since 2008 there have been 8 fataltıes due to flooding and foundering, 11 due to capsize and 12 due to an accident. This is an average of 2.1 a year.

Although it is not possible to put a definitive figure on how many vessels would not have been lost and the subsequent fatalities, if the vessels had been assessed for their stability and had hull and machinery which met the proposed requirements, it is likely the many of the incidents would not have occurred.

Due to this uncertainty we have assumed a range 1 fatality avoided per year in the low benefit scenario, 2 fatalities avoided per year in the high benefits scenario and for the best estimate we have taken the mid point of 1.5 fatalities a year avoided on average.

[13] http://www.hse.gov.uk/statistics/pdf/cost-to-britain.pdf

If only 50% of the incidents were avoided, then assuming a similar rate would continue if the new Code is not introduced, then the estimated benefit is £1.617 million each year.

Table 23 Benefits of Reduction in Fatalities

	Capsize/ Flooding/Fire											
		1	2	3	4	5	6	7	8	9	10	Total£m
High	2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3,2	32.3
Low	1	1,6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	16.2
Best Estimate	1.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	24.3

6.2 Injuries

MAIB data since 2012 has been reviewed and indicates that the following accidents have occurred on fishing vessels which would have been addressed by the requirements within the Code.

It is also estimated by MAIB, following consultation with insurance companies that only 13% of injuries are reported therefore the real figure is much higher.For the purposes of this Impact Assessment, the reported data ,presented below, has been used as a basis to estimate the full population of injuries, allowing the quantification of benefits associated with the proposed changes.

Table 24: Injury Types and Causes recorded by MAIB 2012 to 2017

Cause	Injuries caused	Number of injuries
Fishing Equipment – Poor operation/lack of guards, emergency stops	Severed arms and feet, fingers and thumbs amputated, fractured skull, arms, ribs and vertebrae	15
Machinery, cooling inlets, engines, steering and propulsion	Burns to face, severe nerve damage in neck, leg amputation, head trauma	4
Unsecured gear	head trauma, fractured cheekbone	2
Slips	Head trauma, fractured leg	2
Open hatches	Chest and leg bruising	1

Source: MAIB Recorded Injury Data 2012-2017

Based on the accident narrative of each of the above incidents, it is estimated that 11 incidents resulted in 7 days or more absence and 12 resulted in an absence of up to 6 days. There was 1 fatality, which is dealt with in section 5 above.

Based on the costs set out in table 20 above, using the HSE estimate of the average cost of an injury to be £8,400, with 24 reported injuries between 2012 and 2017 we calculate the annual average number of fatalities. If we then take into account that only 13% [4]of injuries are reported, then we estimate the true number of injuries to be 37 per year. 37 x £8,400 = £0.3m per year and £3.1 over 10 years (undiscounted). As there are a number of factors which contribute to accidents and there is is currently uncertainty around the impacts of the proposed changes, it is assumed that avoiding these accidents, (which the code is intended to address) is taken as the high estimate. We have assumed that half of

[4] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/720443/MAIB_Annual_Report_2017.pdf

injuries are prevented for the low benefits scenario and 25% of injuries will be avoided in the best case scenario.

Table 25 Benefit of Reduced Injuries (£m)

	Injuries £M											
		1	2	3	4	5	6	7	8	9	10	Total £m
High	37	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.1
Low	18.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6
Best Estimate	27.75	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.3

Adding together benefits of fatalities and injuries averted provides us with an overall value for benefits associated with the New Small Fishing Vessel Code 2020.

Table 26 – Human Benefits (£M)

	Human Benefits£M											
		1	2	3	4	5	6	7	8	9	10	Total £m
High		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	35.4
Low		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	17.7
Best Estimate		2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	26.6

The best estimate of benefits is £26.6m undiscounted over 10 years.

Potential Benefits to the Government (Non-monetised)

6.4 By improving safety, MCA considers that it is likely that Option 1 would have an effect in reducing incidents and it is assumed that there may be reduction in the number of hours spent by the coastguard on fishing vessel incidents. In addition, MCA consider that the safety improvements in the new Codes could lead to a reduction in the SAR helicopter costs to the UK. However, given the limitations of the available evidence base (e.g. the MCA does not record the hours spent on fishing vessel incidents) and the significant uncertainties regarding the magnitude of these impacts, this potential benefit has not been monetised in this IA.

Question for Consultees:
Question 8

Consultees are invited to submit any additional evidence or relevant information on potential benefits of the proposed Code (Option 1) to Government

6.5 Potential Reduction in Insurance Costs for UK registered fishing vessels (Non-monetised)

Under Option 1, there could potentially be a reduced insurance costs as a result of fewer injuries and accidents to and losses of vessels. It has not been possible to quantify these benefits and the costs of doing so would be disproportionate. Anticipation of changes of future insurance premiums would require complex predictive analysis of multiple factors affecting the costs of recovery, replacement, repair, third party costs, human and legal cost. Such costs would be impacted by the degree of insurance take up and payouts in an industry where insurance is not mandatory. It is not feasible to conduct such analysis which would effectively replicate the activity of the insurance market in the future. We are therefore asking consultees, including maritime insurance companies, to provide any insights into how insurance premiums may change.

Question for Consultees:

Question 9

Consultees are invited to submit any additional evidence or relevant information on the impact of the proposed Code (Option 1) on insurance costs.

7. Rationale and evidence that justify the level of analysis used in the IA (proportionality approach)

Given the extensive consultation with industry that has taken place in developing these codes and the need to improve safety in the fishing industry (see Section 1), it is considered that the level of analysis in this IA is proportionate. Where it has been possible to obtain evidence to facilitate the monetisation of costs and benefits for each option the MCA has done so. Where there has been a lack of available evidence the MCA has sought to supplement the evidence base through pre consultation industry engagement, surveying of MCA surveyors and the use of methods to complete evidence gaps by estimating per meter costs for vessels. Whilst this has taken significant resource, some evidence gaps remain which have been identified in this IA and are expected to be addressed through public consultatuion. Consultation questions can be found throughout the IA.

8. Risks

8.1 Risks of implementing all the proposed changes

The MCA considers that there is a risk that owners may be unable to afford the proposed additional safety requirements. However, the MCA considers that proposed requirements remain significantly below those required of similar sized vessels undertaking other commercial work. For example, Workboats of less than 24m are required to comply with the Code of Practice for Small Workboats and Pilot Boats which contains safety requirements in excess of those for small fishing vessels. The MAIB Safety Study “Analysis of UK Fishing Vessel Safety 1992-2006[Error! Bookmark not defined.]” reports:

> *This study has considered a direct comparison between The Fishing Vessels (Code of Practice for the Safety of Small Fishing Vessels) Regulations 2001 and the Code of Practice for the Safety of Small Workboats and Pilot Boats (the Workboat Code). The latter Code is applicable to small commercial workboats carrying cargo, which are, in many ways, not dissimilar to fishing boats. There are significant differences between these two codes; some of the extra safety requirements of the Workboat Code, over and above those contained in the code for small fishing vessels are shown at Annex I [of the MAIB Safety Study].*

8.2 Risks of doing nothing

The MCA considers that safety issues identified would remain unaddressed ensuring that the likelihood of a serious accident occurring remains high.

9. Wider impacts

9.1 Small and Micro Business Assessment

There are are currently around 5,100 UK registered fishing vessels. For comparison, the MMO estimate that there were 11,692 fishermen working on UK registered fishing vessels in 2017. [14]This indicates that a significant number of small and micro businesses are likely to be impacted by this policy.

As smaller vessels are likely to be smaller businesses and are physically unable to carry large numbers of crew, it is assumed that the smaller a vessel, the smaller the business. Between 2008 and 2018, 70% of deaths to fishing vessel crew between 2008 and 2018. Additionally, Table 2 indicates that around 71% of fishing vessel losses between 2008 and 2017 were under 15m vessels. As the majority of deaths and losses and vessel losses occur to vessels that are more likely to be small and micro businesses, we do not seek to provide exemptions for these vessels within the the Codes of Practice."

To ensure that we have mitigated the effect on these businesses, the Codes of Practices have been developed in sub groups of the Fishing Industry Safety Group using the advice of representatives from the relevant sectors of Industry to ensure that vessels are not required to have comply with requirements that are inappropriate or impractical for its size. For example, existing vessels with Coamings of under 300mm under 7m will not be required to replace these coamings if this is not practical and the vessel is in an overall safe condition. Wooden vessels will not be required to ensure their bulkheads are watertight, this is not possible on some vessels.

Vessels are also provided with a significant phase in period, which will allow them time to adjust to the new requirements and also to apply for funding to enable them to carry out work on the vessel to meet requirements. Competition impacts are discussed in the following section (9.2), however it is anticipated that there wont be any disproportionate impacts on small businesses as the proposed changes are covering the small fishing vessel fleet.

Question for Consultees:
Question 10
Consultees are invited to submit any additional evidence or relevant information on the impact of the proposed Code (Option 1) on small and micro businesses. In particular whether there are expected to be any disproportionate impacts for any particular group of vessels.

Question 11
Consultees are invited to consider the Phase in Periods proposed in the Code of Practice at Sections 1.2.5 to 1.2.7, or to propose alternative options for a phase in period and submit any evidence on the impact of the phase in on the ability to meet the requirements by the end of the phase in period.

9.2 Competition Assessment

Evidence on the average fishing income per vessel for different sizes of vessel is available from Seafish[15]. In general, this evidence indicates that the additional costs per vessel due to the proposed Code of Practice (Option 1) would represent a small proportion of fishing income for most categories of vessel. However, this evidence indicates the additional costs per vessel would account for a significant proportion of fishing income for vessels with a "low level" of activity. This suggests that there could potentially be an impact on competition depending on how the owners of these vessels would respond to the proposed Code of Practice (Option 1).

[15] http://www.seafish.org/media/publications/2011_Economic_Survey_of_the_UK_Fishing_Fleet.pdf

Question for Consultees:

Question 12

Consultees are invited to submit any additional evidence or relevant information on the impact of the proposed Code (Option 1) on competition..

9.3 Equalities

The MCA considers that the proposed Regulations (Option 1) would have no effect, positive or negative, on outcomes for persons in relation to their age, gender reassignment, pregnancy and maternity, race, religion or belief, sex or sexual orientation. However, the MCA considers that the very nature of fishing and the practical arrangements of fishing vessels mean that the needs of a disabled person may not be readily met and may present physical barriers which would prevent them from working on board.

9.4 Family Test

The MCA also considers that the proposed Code of Practice (Option 1) would have no effect, positive or negative, on outcomes for families. It is not uncommon for vessels to be family owned and for the crew on some vessels to be related. However, the Code does not address ownership or operation of the vessels and therefore places no barriers to either the ownership or the operation of vessels upon any person. As a result the Family Test does not apply.

9.5. Enforcement

The proposed Codes are mandatory through a Statutory Instrument and enforced by the MCA in the same way as the existing regulatory regime. The Code of Practice provide sanctions for non-compliance.

9.6. Penalties

There are no new penalties.

The penalties for failing to report an accident or incident are contained within the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 (SI 2012/1743).

9.7. Detention

A vessel will be detained if a surveyor is satisfied that the owner or skipper does not comply, in relation to any UK fishing vessel, with the mandatory requirements of the proposed Code of Practice.

9.8 Summary and preferred option with description of implementation plan

Option 1, the preferred option, implements technical safety standards in key safety areas which gives an acceptable safety standard for new and existing vessels. Allowances have been made, where possible, for alternative arrangements which ensure the safety concern is addressed, without being prohibitively expensive. Where there have been uncertainties arising from poor data availability or difficulting in monestising cost and benefits we have sought additional information through the posted consultation questions. We encourage consultees to provide as much information as possible, quantitative or otherwise to better inform the final stage impact assessment.

Although the NPV of the preferred option under the best estimate is negative, we consider the safety of those onboard fishing vessels to be of the upmost importance in an industry which is amongst the most dangerous of workplaces. Amongst safety regulators it is not uncommon to see interventions which are a net cost to business, especially where the benefits are predominantly in the form of lives saved.

Commercial fishing remains a risky occupation and the costs of the preferred option are not considered to be grossly disproportionate to the benefits. Costs exceed benefits by roughly 3.5:1 which is considered to be acceptable in the pursuit of achieving a tolerable level of risk for those at sea. The HSE provides more detailed discussion of the concept of gross disproportionality and its basis. This can be found at: https://www.hse.gov.uk/risk/theory/alarpcba.htm

Option 1 is preferable to the alternative, non regulatory/voluntary arrangements as it is not considered that voluntary arrangements would achieve any improvement in safety standards. The MCA and industry safety and representative bodies have been pursing improvements in safety outcomes, using non regulatory means and this has had limited effect. It has become apparent that mandatory changes are required through a regulatory approach to deliver the changes required amongst the small commercial fishing fleet. Those who do not currently follow best practice are likely to face the highest costs of compliance are the least likely to make changes under further voluntary approaches. This places risk upon crew who may not be fully aware of the risks posed given many of the requirements are covering construction and maintenance of vessels.

9.9 Post implementation review

Monitoring and Evaluation plans have been set out below.

1. **Review status:** Please classify with an 'x' and provide any explanations below.

	Sunset clause	X	Other review clause		Political commitment		Other reason		No plan to review

2. **Expected review date** (month and year, xx/xx):

1	1	/	2	4

3. **Rationale for PIR approach:**

Circle the level of evidence and resourcing that will be adopted for this PIR (see Guidance for Conducting PIRs): **medium**

The MCA will conduct a proportionate assessment of impacts post implementation. Fishing vessel safety is an important issue for the MCA and the fishing industry and will remain an ongoing concern under MCA scrutiny. The MCA will continue to work with industry to develop the evidence base around fishing safety. This includes the continued monitoring of fishing industry injuries and fatalites, causes and characteristics of vessels. A post implantation review will be conducted after 5 years.

Existing baseline evidence is of limited quality and availability. The MCA will attempt to improve the collection and analysis of data throughout the policy implementation period, working closely with the Fishing Industry Safety Group and its members, and the RNLI.

The limitations of existing evidence sources is the restriction preventing the level of evidence being considered high. However, appropriate resources will be spent to improve the evidence base for a key are of MCA policy.

Key Objectives, Research Questions and Evidence collection plans
Describe the main objectives of the Code of Practice under review as well as the key questions that will need to be researched to measure whether objectives have been successful. Next, consider any existing data/evidence sources that may help you answer this question as well as any new evidence that you may wish to collect, where proportionate.

Key objectives of the Code	**Key research questions to measure success of objective**	**Existing evidence/data** Please consider: a) The data/evidence *sources* b) The *timeframes* they reference	**Any plans to collect primary data to answer questions?** Please consider: a) *If and how* stakeholder views will be collected b) *Timeframes* for evidence collection c) Why collecting new data is

			(or is not) necessary/proportionate
Improvements to vessel stability	Have there been emergency incidents in which stability of vessels has been compromised.	MAIB/ MCA survey data.	Continued collection of incident data from appropriate authorities. Data collection will be improved and matched to other sources. ongoing
Reduced loss of life and injuries	Have there been incidents where loss of life or serious injury has occured	MAIB/ MCA and other blue light services data	Continued collection of incident data from appropriate authorities. ongoing
Better alignment of safety standards between all small fishing vessels	Is there a large disparity between the numbers of incidents involving new and old vessels	MAIB/ MCA survey data	Collection of incident data from appropriate authorities. ongoing
Proportionate costs of implementation	Have costs remained proprtionate	Compliance rates and industry estimates	Continued collection of survey data - ongoing

We welcome any suggestions from consultees regarding information that is currently available that could be used for assessing policy impacts

Annex A – Comparison of vessel accidents causes by size and year

Capsize and Listing	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Under 15m	4	3	3	2	6	8	5	3	3	2	0	2	6
15-24m	1	1	0	0	0	0	0	0	0	0	0	0	0
24M and over	0	0	0	0	0	0	0	0	0	0	0	0	0

Collision/Contact	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Under 15m	12	13	13	8	11	8	8	10	9	7	10	13	3
15-24m	3	8	4	5	6	5	9	4	6	4	3	2	0
24m and over	0	1	2	3	2	2	3	1	2	4	1	1	2

Fire	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Under 15m	7	5	4	4	8	6	6	3	0	0	0	2	3
15-24m	8	4	5	1	2	8	5	2	1	1	1	1	3
24m and Over	0	0	2	3	1	1	1	1	0	2	1	0	0

Flooding	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Under 15	19	25	24	17	14	18	17	21	11	4	13	5	8
15-24m	12	7	7	11	10	7	5	0	4	2	5	5	0
24m and over	3	0	2	3	1	0	0	1	0	0	0	0	0

Machinery failure	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Under 15m	179	166	109	112	147	158	130	134	82	43	82	70	60
15-24m	2	1	2	3	0	2	1	2	2	0	0	0	2
24m and over	9	8	8	5	6	8	7	4	2	6	4	5	5

ANNEX B.1 – RETURNS FROM SURVEYOR INSPECTIONS OF EXISTING VESSELS TO ASSESS POTENTIAL COMPLIANCE OF EXISTING VESSELS WITH PROPOSED CODE – OPEN 5M VESSELS

Requirement	Yes	No	Not applicable	Not able to determine
CONSTRUCTION				
The structural strength and construction of every fishing vessel and the disposition of bulkheads shall be adequate for all foreseeable operating conditions in service. The scantlings, arrangements and construction for the hull, bulkheads, superstructures, deckhouses, machinery casings, companionways and other structures shall be sufficient to withstand all operational loads arising during the vessel's service. Particular attention should be paid to the intended fishing method	10	1		
The vessel should be *designed, constructed* and maintained in such a manner as to be watertight and in accordance with the Construction Standard applicable at the time of construction.. The number of openings in the weathertight structure of the vessel must be as few as practicable and be provided with the closing and securing arrangements described below.	10		1	
Decks				
Full length and partial weather decks, including shelter decks, must be of sound and watertight construction, and be of sufficient strength to withstand the sea and weather conditions likely to be encountered.	2		9	
Recesses in weather decks must be fitted with drainage arrangements so that the deck drains under all normal conditions of trim, and it is recommended that they operate efficiently at a heel of 10°.		1	10	
Bulkheads				
Bulkheads, if fitted, are required to be watertight.	1	1	9	
Accesses through bulkheads				
Accesses through watertight bulkheads, if fitted, shall be of watertight construction, have equivalent structural strength as the adjacent bulkhead and be kept closed at sea.,		1	10	
Doorways above Weather Deck				
Doorways giving access to space below the deck should be fitted with a permanent coaming of 300 mm minimum height above the deck. Alternatively a portable coaming may be provided, fixed in guide channels to give a minimum coaming height of 300 mm.		1	10	
Doors must be of sound construction and be weathertight.		1	10	
Hatches and Coamings				
Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming may be omitted, provided that the hatch can be secured weathertight. Hatches must only be kept open when necessary for fishing operations and otherwise be kept closed at sea to prevent the risk of downflooding and capsize and signage provided stating "To be kept closed at sea". Flush deck hatches are not recommended unless necessary and any hatches that are required to be open at sea must have coamings			11	
Hatchways should be as small as possible subject to the requirements of Access and Escape Arrangements.	1		10	
Weather Deck Hatches				

Hatchway covers fitted in the weather deck must be provided with efficient means of securing weathertight closure.			11	
Flush Hatches and Scuttles				
Ice scuttles, where fitted, must be of metal construction, with screw or bayonet type clamp fastening and with the loose cover permanently attached to the structure with hinges, wire or chain and be capable of being closed watertight			11	
Skylights				
Skylights must be of efficient construction and be capable of being closed watertight from both sides. Skylights used as emergency escapes shall be kept clear of obstructions Where the glazing material and its method of fixing is not equivalent in strength to the surrounding structure, portable blanking pieces or plates that can be secured over the glazing must be provided. Portable blanking pieces or plates must be stored in a readily accessible position.			11	
Side Scuttles and Portlights				
Side scuttles or portlights fitted below the weathertight deck and not fitted with an attached deadlight must be provided with a portable blanking plate, which can be efficiently secured, if the glazing breaks. Portable blanking plates must be stored in a readily accessible position.			11	
Glazing material in existing sidelights must be sound and efficiently secured. When the glazing material is damaged it must be blanked off.			11	
Windows				
Windows fitted to spaces above the weather deck, such as a deckhouse or superstructure protecting an opening leading to below the weather deck, must be weathertight.	1		10	
Where windows are fitted below the weather deck on existing vessels, they must be of sound construction, provide watertight integrity, and be of strength compatible with their size. In case the glazing breaks, portable blanking plates must be provided, which can be efficiently secured to the window frame, and which are sufficient to cover a total of 50% of the number of windows. Portable blanking plates must be stored in a readily accessible position.			11	
Glazing material in existing windows must be sound and efficiently secured, and glass should be toughened or laminated. When the glazing material is damaged it must be blanked off.	1		10	
Ventilators				
An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board.			11	
There shall be sufficient fresh air in enclosed workplaces, having regard to the work methods used and the physical demands that are placed on the crew.			11	
If a mechanical ventilation system is used, it shall be maintained in good condition			11	
Ventilators serving spaces below the weathertight deck must be provided with an effective means of weathertight closure			11	
Exhaust Systems				
Engine exhaust systems of the dry or water-injected type, which discharge through the hull below the weathertight deck at the side or stern, should be provided with permanently attached means of preventing back flooding into the hull or engine through the exhaust system. This may be by system design or valve or non-return device.	3		8	
Exhaust systems which go up by the funnel hall be insultated to prevent the risk fire and ventilated away from crew.	1		11	
Air Pipes				

Air pipe arrangements must be of sound construction, operate efficiently and be provided with an efficient means of watertight closure, with provision made to prevent overpressure or vacuum occurring when tanks are filled or emptied.			11	
Exposed air pipes, in excess of 25 mm diameter, serving fuel oil, hydraulic oil, and lubricating oil tanks must be fitted with anti-flash gauze diaphragms. Where the pipe in 25mm or less in diameter alternative arrangements may be considered			11	
Sea Inlets and Discharges				
Sea inlets and discharges should be fitted with an efficient means of closure. Inlets should be marked with open/closed and the system they serve	3		8	
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	3		8	
Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible in an emergency, they should be fitted with a remote means of operation, i.e. by extended spindle or wire pull device operable above floor plate level	3		8	
Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains, etc., should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted.	1		10	
Materials for Valves and Associated Piping - Sea Water Systems				
Valves, pipes and fittings serving as sea inlets and discharges attached directly to the hull of the vessel below the load waterline should be of steel, bronze, or other equivalent and compatible material.	2	1	8	
Where the sea inlet valve or fitting is connected to the hull by means of a tube or distance piece, the tube or distance piece should be of a material that is compatible with the hull and valve.	2		9	
Valves, piping and flexible hoses must be of sound and efficient construction and installation. All piping systems must be well supported with pipe clips or mounts and protected against vibration and chafing	3		8	
Water freeing arrangements - Open Vessels				
Open type vessels are to be fitted with bilge pumps as required by section 9.3 of these Standards.	8	2	1	
In open vessels where water coming on board normally drains to the bilge, the following provisions should apply:-				
1. The height of any door sill above the fixed sole level in open type vessels should be as high as practical, but in new vessels no less than 200mm. If hinged, the door should open outwards. Doors should be operable from both sides		1	10	
2. Air pipes and ventilators leading from below the level of the sole should have the open end as high as practical and be protected against mechanical damage.			11	
Sole drainage on open vessels is to be given careful consideration. The level of the floor should not be positioned at such a height that it would have an adverse effect on the stability of the vessel, the following guidance is given:-	2		9	
1. There should be effective drain openings fitted on each side of the sole to enable any water to drain directly to the bottom of the vessel. In the case of a vessel with a sealed sole, an aft sump is to be fitted, extending from the keel to deck.	4	1	6	
2. It is recommended that the drainage area be at least 2% of the total bulwark area above the sole.	1		10	
3. Open vessels are not to be fitted with freeing ports.			11	
4. Any barrier or coaming which may be fitted to the sole to prevent the entry of rain water to the bottom of the vessel should not be at a height any greater than 25mm above the level of the sole.	3		8	
5. The bilge pumping intake should be at a readily accessible position.	7		4	

6. Sole support structures that form buoyancy spaces are to sealed and surfaces that may come into contact with water are to be sealed with gel coat or similar.	2		9	
Open boats with a sole and no significant freeing ports, and which are fitted with a small limber hole shall have the limber hole replaced with a proprietary drain fitting with a screw in plug which is permanently attached. The drain shall be plugged in operation but may be opened when out of service to protect the vessel.	2	3	6	
These vessels shall carry suitable manual bilge pumping to remove significant quantities of water off the deck. In any situation the capacity of the bilge pump will exceed the potential rate of flooding by several orders of magnitude.	8	2	1	
The hole should be 25mm diameter at the most	4	2	5	
On decked vessels, where the fixed bulwarks, ends or sides of superstructures etc., form enclosed wells, means to clear entrapped water are to be provided and may comprise any, or any combination, of the following:-				
(i) Freeing ports with an attached means of closing (provided that the freeing port is closed only during fishing operations and that the closing device is easily operable and accessible, subject to the approval of the Surveyor).			11	
(ii) Permanent openings in the bulwarks such as slots.			11	
(iii) Apertures in and under bulwark or stern ramp doors.			11	
(iv) Deck scuppers where the discharge is above the load waterline.			11	
Openings in the vessel to the height of the rail or used for the purposes of deploying gear are not to be used in the calculation of freeing port area.			11	
Lift-up closing appliances should not be fitted to freeing ports, or locking devices fitted to freeing port flaps, if they reduce the total freeing port area along either side of the vessel below the freeing port requirement. They will only be considered acceptable where the remaining open freeing port area meets the requirement when the appliances are closed			11	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions. At the discretion of the attending surveyor, up to one third of the freeing port area required at each side may be located in the transom bulwark, with the vessel centreline dividing the port and starboard side allocation. Where the freeing port area in the transom bulwark is greater than the maximum one third allowance per side, the excess area shall not be included in the total freeing port area provided.			11	
Where deck erections within a well limit the volume of water that may be retained onboard, then the freeing port area may be reduced proportionally provided that such erections do not in themselves contribute to water retention.			11	
The means of clearing water must not provide easy access for water to enter the enclosed deck space.			11	
Any freeing port or slot in the bulwark is to have the bottom edge as close to the deck as possible. Freeing ports greater than 230mm in depth and wider than 350mm are to be fitted with bars.			11	
Where freeing ports are fitted with hinged flaps or shutters, sufficient clearance to prevent jamming is to be provided and hinges are to be fitted with pins of non-corrodible material. Greasing points or nipples are to be provided where practicable.			11	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions of trim.			11	
Care is to be taken that deck pounds, machinery and net or gear stowage will not impede the free flow of trapped water to the freeing ports or slots.			11	
Lift-up closing appliances fitted to freeing ports are to be so arranged that they are secure in the open position. Lift-up closing appliances should be fitted to no more than 50% of ports.			11	
Where vessels are fitted with full or partial shelters which are left open at the stern, and where the passage of water forward is not restricted by watertight bulkheads, the freeing port area is to be increased by 1% over the requirement stated in section 2.19.2. (2.19.2 states: The minimum area for freeing ports on each side of the well or deck is to be not less than 3% of the total bulwark area each side)			11	

MACHINERY				
General				
Machinery and pressure vessels shall be of a design and construction adequate for the service for which they are intended (fit for purpose) and be efficiently installed (taking into account the manufacturer's guidance) and protected, including the use of effective guards protecting moving parts so as to minimise any danger to persons on board. Access for persons must be arranged having due regard shall be given to moving parts, hot surfaces and other hazards. Hot surfaces must be sufficiently insulated. .	9		2	
Pressure vessels shall be fitted with safety valves			11	
Ancillary equipment and piping must be in accordance with the appropriate part of the Code.	3		8	
Layout and installation of machinery spaces and propulsion machinery should be designed for safe and efficient operation	6		5	
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	2		9	
Ventilation should be provided either by mechanical fans or natural vents to meet the air requirements of the propulsion machinery and to prevent build-up of fumes or excessive heat	1		10	
Access ladders should be of metal such as steel where practicable and securely fixed to the vessel's permanent structure			11	
Floor plates, where fitted, should be non-slip and securely fastened with accessible fasteners	2		9	
Propulsion Machinery and Stern Gear				
Propulsion engines and associated stern gear must be of a design, type and rating to suit the design and size of the vessel taking account of the vessel"s history, operating conditions and area of operation. Inboard-mounted engines should be diesel powered for use with fuel oil having a flash point greater than 60ºC.	9		2	
Flexible sections of piping must be fitted when the engine or systems are repaired or replaced, provided that the existing installation is sound and efficient and is safe in use. Flexible shaft couplings must be in a sound condition and suitable for the power being transmitted.	2		9	
A vessel fitted with an inboard engine must have adequate means and power for going astern in order to maintain control of the vessel in all foreseeable circumstances.	2		9	
The propeller shaft and any intermediate shaft, together with the stern tube, bearings and bushes, must be in a sound condition and operate efficiently. Shaft materials and diameter should be suitable for the power being transmitted. Inboard-mounted stern glands must be accessible for adjustment.			9	2
Engine Starting				
All propulsion engines shall be provided with a secondary means of starting, where practicable	2	5	4	
Controls and Instruments				
The controls and instrumentation systems as fitted will generally be accepted, provided that the systems are in a good state of repair and operate satisfactorily.	8	2	1	
Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.		1	10	
High water temperature and low lubricating oil pressure alarms shall be fitted, where practicable	2	1	8	
Steering System				
The steering system must operate efficiently and be well maintained. The steering gear, including bearings and rudder stock, must be of sound and efficient construction, and suitable for the size and power of the vessel.	7	2	2	
Vessels fitted with motorised or hand hydraulic, chain, cable, or mechanical steering must be provided with an alternative means of steering which will operate if the main system fails.	5	3	3	

The main control or helm position must be located such that the person operating the steering gear has a clear view for the safe navigation of the vessel. (See MGN 313)	11			
All parts of mechanical linkages of rod and chain should be accessible with adequate lubrication arrangements provided.	2	1	8	
Refrigerating Plant				
Refrigerating plants shall be of a design and construction adequate for the service for which			11	
they are intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board. Refrigerant detection sensors, compatible with the refrigerant being used, are recommended to be fitted (where practicable).			11	
Ammonia, methyl chloride or chlorofluorocarbons (CFCs, with ozone depleting potential higher than 5% of CFC-11) shall not be used as refrigerants.			11	
Where refrigerating plants are installed they shall be maintained in an efficient working condition and examined at regular intervals.			11	
Tanks, machinery or other metallic objects that do not have good electrical continuity with the water surrounding the vessel shall have special earthing arrangements to reduce potential risk	1		10	
Particular attention must be given to protection against water ingress and the effects of vibration	2		9	
Main and emergency switchboards shall be suitably guarded and arranged to provide easy access without danger to any person. Adequate non-conducting mats or gratings shall be provided. Exposed parts that may have a voltage between conductors or to earth exceeding 55 volts shall not be installed on the face of any switchboard or control panel.	2		9	
Switchboards shall be clearly marked; fuse boxes and fuse holders shall be checked at regular intervals to ensure that the correct rating of fuse is being used. Differing voltages should not be included in any one distribution board		2	9	
All circuits except the main supply from the battery to the starter motor and electrically driven steering motors, shall be provided with electrical protection against overload and short circuit, (i.e. circuit breakers shall be installed). Short circuit protection shall be for not less than twice the total rated current load in the circuit protected	1		10	
Steering motors should have an overload alarm in lieu of overload protection. Short circuit protection should before not less than twice the total rated current of the steering motors in the circuit protected			11	
Cables which are not provided with electrical protection should be kept as short as possible and be “short circuit proofed”, e.g. single core with an additional insulating sleeve over the insulation of each core. Normal marine cable (e.g. in compliance with BS 6883) which is single core will meet this recommendation without an additional sleeve, since it has both conductor insulation and a sheath In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.	3		8	
The electrical generating system must have sufficient capacity in normal running conditions to ensure the correct operation of all safety and navigation equipment including navigation and fishing lights.			11	
With regard to existing cable installations and to any additional cables fitted:				
i) Cables should not be run below floor plate level except where this is necessary for connections to underwater equipment, etc., in which case the cable should be run in conduit.	2	1	8	
ii) Cables running through machinery spaces should not be secured with plastic clips.		1	10	
iii) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks.			11	
iv) Cables should be of the correct current carrying capacity for their application.	3		8	
When selecting cables, particular attention should be given to environmental factors such as temperature and contact with substances, e.g. polystyrene, which degrades P.V.C. insulation	3		8	

Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over.		2	9	
D.C. Systems Up To 24 volts				
Systems should be two wire.	3		7	1
Existing earthing systems, where these are required,will be accepted provided that the system is sound and efficient and that no danger to the system or vessel may occur. Hull earth plates, if fitted, must be efficiently connected and not painted over.		2	8	1
Batteries should be in good condition, secured, protected from short circuiting and overloading, and should be sited clear of heat sources *and the battery installation and ventilation should be in accordance with IEE Regulations.*	3	1	7	
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	2	2	7	
A.C. Systems				
Cables for A.C. systems must be kept separate from D.C. systems and run in separate trays and conduits.			11	
Switchgear for A.C. systems must be fitted in switchboards and panels which are separate from those containing D.C. systems. Systems and equipment must be clearly marked.			11	
Switchgear and sockets must be so arranged as to prevent the fitting of low voltage equipment and lamps into high voltage systems			11	
Fuel Oil Installations				
Tanks will generally be accepted provided that they are of sound and efficient construction and safe in operation. Glass contents gauges, where fitted, must have selfclosing valves at the base. Metal rods or slotted covers must protect sight gauges. If glass contents gauges are not fitted, other means of establishing the contents of the tanks must be available.	4		7	
Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections should be of an appropriate armoured fire resistant metallic hose with screwed fittings, and kept as short as practicable	3		8	
FIRE DETECTION PREVENTION AND EXTINCTION				
Fire Prevention				
Glass portlight and deadlight arrangements, if fitted in the boundaries of machinery spaces, will be accepted if they are in a sound condition, but if damaged they must be blanked off			11	
Cylinders containing flammable, toxic or other dangerous gases, and expended cylinders shall be clearly marked as to their contents and properly stowed and secured on open decks. All valves, pressure regulators and pipes leading from such cylinders shall be protected against damage. Such cylinders may be stowed in compartments that meet the requirements set out in the section below	1		10	
Cylinders and bottles containing flammable, toxic liquids, toxic gases and liquefied gases, other than liquefied petroleum gas shall be stored in compartments having direct access from open decks but must not be stowed in machinery spaces. Such compartments shall have boundary bulkheads constructed from non-combustible materials. Pressure adjusting devices and relief valves, if any, shall exhaust within the compartment. Where boundary bulkheads of such compartments adjoin other enclosed spaces they shall be gas-tight and be provided with ventilation arrangements that are separate from other ventilation systems. Ventilation shall be arranged at high and low levels and the inlets and outlets of ventilators shall be positioned in safe areas and fitted with spark arresters	1		10	
Exhaust pipes and ducts must be adequately insulated to avoid igniting combustible materials and must be protected from damage	1		10	
Cleanliness of machinery spaces				

Machinery spaces shall be kept clean, free of rubbish and combustible waste. Bilge levels shall be checked regularly and oily waste and sludge shall be collected and properly disposed of ashore	3	1	7	
Cooking and heating appliances				
Appliances must not be positioned close to engines and fuel tanks.			11	
All types of stoves and heating appliances must be strongly secured to the surrounding structure			11	
Curtains or any other suspended textile materials must not be fitted within 600 mm of any heating or other appliance			11	
Materials that are in the vicinity of any cooking appliance shall be non-combustible, except that combustible materials may be employed when these are faced with stainless steel or a similar non-combustible material.			11	
Wherever possible, electrically powered cooking equipment shall be provided in preference to open flame types			11	
Curtains, towel rails, hooks and similar arrangements shall be kept well clear of the cooking area.			11	
Electric stoves and other cooking appliances shall be fitted with an isolation switch outside the galley space.			11	
Open Vessels less than 7m				
• 1 Multi-purpose Fire Extinguisher (fire rating 5A/34B) – if vessel has in-board engine **or auxiliary engine** (extinguisher should be capable of dealing with all fire types, including hydrocarbons)	11			
Fire buckets shall be heavy duty with a Lanyard long enough to reach water. Buckets need not be made of steel	11			
PROTECTION OF PERSONNEL				
Handrails, hand holds and grab rails				
On existing vessels				
• The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced.	5	5	1	
• Sections of rails or wires may be portable where necessary for the vessel"s fishing operations.	3	5	3	
• Access stairways, ladder ways and passageways must be provided with handrails and grab rails for the safety of the crew.	1		10	
On all vessels, barriers must be fitted to separate the crew from equipment when deploying fishing gear.	1	3	7	
Surface of Working Decks				
Decks to which the crew are expected to have access must be provided with an adequate non-slip surface or efficient non-slip covering.	8		3	
Particular attention must be paid to the provision of a non-slip surface to any hatch cover fitted on a working deck.	2	3	6	
The exposed bottom boards of open boats must have a non-slip surface	8		3	
Winches, tackles and hoisting gear				
Every vessel that is provided with winches, tackles and hoisting gear shall have such gear properly installed having regard to the intended service of the vessel.	4		7	
All hoisting gear, hauling gear and related equipment shall satisfy the requirements of The Merchant Shipping and Fishing Vessels (Provisions and Use of Work Equipment) Regulations 2006 No. 2183 and the Merchant Shipping and Fishing Vessels (Lifting Operations and Lifting Equipment) Regulations 2006 No. 2184 as applicable.	3		8	

All equipment used in hoisting/hauling should be used only by a competent person and must be inspected and examined at regular intervals and a written record shall be made of all such tests and examinations.	2	1	8	
All parts of hauling gear, hoisting gear and related equipment must be maintained in good repair and working order.	5	1	5	
The controls for the hauling and hoisting gear shall be installed in an area sufficiently large enough to enable operators to work unhindered.	7		4	
The hauling and hoisting gear shall also have appropriate safety devices for emergencies, including emergency stop facilities within reach of the equipment operator. A duplicate set of emergency stop facilities is to be provided in the wheelhouse.	2	2	7	
The gear operator must have a clear view of the gear and any crew member working near it.	5		6	
If hauling gear is controlled from the wheelhouse, the operator must also have a clear view of the crew working near the gear, either directly or via any other suitable medium. All operators, in the wheelhouse or on deck shall give exclusive attention to that task and must not carry out other tasks while operating the equipment.			11	
A reliable communications system must be used between the wheelhouse and the working deck and the crew shall be trained in the use of hand signals.		1	10	
A sharp look out must always be maintained and the crew warned of the imminent danger of heavy oncoming seas during fishing operations or when other work is being undertaken on deck.	4		7	
Contact with bare ropes and warps and with moving parts of the equipment shall be minimized by installing protective devices.	4	1	6	
The following control measures shall be installed for restricting moving masses (on vessels with trawl doors or codends):				
(i) devices to immobilise the trawl doors;			11	
(ii) devices to control the swinging motion of the codend.	1		10	
The crew must be trained in the use of fishing gear and hauling and hoisting equipment	3		8	
Securing of heavy equipment				
Heavy items of equipment such as spare fishing gear, batteries, cooking appliances etc., shall be securely fastened in place to prevent movement due to severe motions of the vessel.	4	1	6	
Stowage lockers containing heavy items shall have lids or doors with secure fastening.	5		6	
Means of Recovering a Helpless Person from the water				
All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	1	9	1	
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.	5	6		

ANNEX B.2 – RETURNS FROM SURVEYOR INSPECTIONS OF EXISTING VESSELS TO ASSESS POTENTIAL COMPLIANCE OF EXISTING VESSELS WITH PROPOSED CODE – OPEN 7M VESSELS

Requirement	Yes	No	Not applicable	Not able to determine
CONSTRUCTION				
The structural strength and construction of every fishing vessel and the disposition of bulkheads shall be adequate for all foreseeable operating conditions in service. The scantlings, arrangements and construction for the hull, bulkheads, superstructures, deckhouses, machinery casings, companionways and other structures shall be sufficient to withstand all operational loads arising during the vessel's service. Particular attention should be paid to the intended fishing method	5		1	1
The vessel should be *designed, constructed* and maintained in such a manner as to be watertight and in accordance with the Construction Standard applicable at the time of construction.. The number of openings in the weathertight structure of the vessel must be as few as practicable and be provided with the closing and securing arrangements described below.	5		2	
Decks				
Full length and partial weather decks, including shelter decks, must be of sound and watertight construction, and be of sufficient strength to withstand the sea and weather conditions likely to be encountered.	1	1	5	
Recesses in weather decks must be fitted with drainage arrangements so that the deck drains under all normal conditions of trim, and it is recommended that they operate efficiently at a heel of 10°.			7	
Bulkheads				
Bulkheads, if fitted, are required to be watertight.			7	
Accesses through bulkheads				
Accesses through watertight bulkheads, if fitted, shall be of watertight construction, have equivalent structural strength as the adjacent bulkhead and be kept closed at sea.,			7	
Doorways above Weather Deck				
Doorways giving access to space below the deck should be fitted with a permanent coaming of 300 mm minimum height above the deck. Alternatively a portable coaming may be provided, fixed in guide channels to give a minimum coaming height of 300 mm.		1	6	
Doors must be of sound construction and be weathertight.		2	5	
Hatches and Coamings				
Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming may be omitted, provided that the hatch can be secured weathertight. Hatches must only be kept open when necessary for fishing operations and otherwise be kept closed at sea to prevent the risk of downflooding and capsize and signage provided stating "To be kept closed at sea". Flush deck hatches are not recommended unless necessary and any hatches that are required to be open at sea must have coamings		1	6	
Hatchways should be as small as possible subject to the requirements of Access and Escape Arrangements.		1	6	
Weather Deck Hatches				

Hatchway covers fitted in the weather deck must be provided with efficient means of securing weathertight closure.	3	1	3	
Flush Hatches and Scuttles				
Ice scuttles, where fitted, must be of metal construction, with screw or bayonet type clamp fastening and with the loose cover permanently attached to the structure with hinges, wire or chain and be capable of being closed watertight			7	
Skylights				
Skylights must be of efficient construction and be capable of being closed watertight from both sides. Skylights used as emergency escapes shall be kept clear of obstructions Where the glazing material and its method of fixing is not equivalent in strength to the surrounding structure, portable blanking pieces or plates that can be secured over the glazing must be provided. Portable blanking pieces or plates must be stored in a readily accessible position.			7	
Side Scuttles and Portlights				
Side scuttles or portlights fitted below the weathertight deck and not fitted with an attached deadlight must be provided with a portable blanking plate, which can be efficiently secured, if the glazing breaks. Portable blanking plates must be stored in a readily accessible position.			7	
Glazing material in existing sidelights must be sound and efficiently secured. When the glazing material is damaged it must be blanked off.			7	
Windows				
Windows fitted to spaces above the weather deck, such as a deckhouse or superstructure protecting an opening leading to below the weather deck, must be weathertight.	2		5	
Where windows are fitted below the weather deck on existing vessels, they must be of sound construction, provide watertight integrity, and be of strength compatible with their size. In case the glazing breaks, portable blanking plates must be provided, which can be efficiently secured to the window frame, and which are sufficient to cover a total of 50% of the number of windows. Portable blanking plates must be stored in a readily accessible position.			7	
Glazing material in existing windows must be sound and efficiently secured, and glass should be toughened or laminated. When the glazing material is damaged it must be blanked off.	3		3	1
Ventilators				
An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board.			7	
There shall be sufficient fresh air in enclosed workplaces, having regard to the work methods used and the physical demands that are placed on the crew.			7	
If a mechanical ventilation system is used, it shall be maintained in good condition			7	
Ventilators serving spaces below the weathertight deck must be provided with an effective means of weathertight closure			7	
Exhaust Systems				
Engine exhaust systems of the dry or water-injected type, which discharge through the hull below the weathertight deck at the side or stern, should be provided with permanently attached means of preventing back flooding into the hull or engine through the exhaust system. This may be by system design or valve or non-return device.	4		3	
Exhaust systems which go up by the funnel hall be insultated to prevent the risk fire and ventilated away from crew.		1	6	
Air Pipes				

Air pipe arrangements must be of sound construction, operate efficiently and be provided with an efficient means of watertight closure, with provision made to prevent overpressure or vacuum occurring when tanks are filled or emptied.			7	
Exposed air pipes, in excess of 25 mm diameter, serving fuel oil, hydraulic oil, and lubricating oil tanks must be fitted with anti-flash gauze diaphragms. Where the pipe in 25mm or less in diameter alternative arrangements may be considered		1	6	
Sea Inlets and Discharges				
Sea inlets and discharges should be fitted with an efficient means of closure. Inlets should be marked with open/closed and the system they serve	4		3	
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	3	2	2	
Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible in an emergency, they should be fitted with a remote means of operation, i.e. by extended spindle or wire pull device operable above floor plate level	4	1	2	
Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains, etc., should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted.	3	2	2	
Materials for Valves and Associated Piping - Sea Water Systems				
Valves, pipes and fittings serving as sea inlets and discharges attached directly to the hull of the vessel below the load waterline should be of steel, bronze, or other equivalent and compatible material.	2	1	4	
Where the sea inlet valve or fitting is connected to the hull by means of a tube or distance piece, the tube or distance piece should be of a material that is compatible with the hull and valve.	4		3	
Valves, piping and flexible hoses must be of sound and efficient construction and installation. All piping systems must be well supported with pipe clips or mounts and protected against vibration and chafing	4	1	2	
Water freeing arrangements - Open Vessels				
Open type vessels are to be fitted with bilge pumps as required by section 9.3 of these Standards.	7			
In open vessels where water coming on board normally drains to the bilge, the following provisions should apply:-				
1. The height of any door sill above the fixed sole level in open type vessels should be as high as practical, but in new vessels no less than 200mm. If hinged, the door should open outwards. Doors should be operable from both sides	3	1	3	
2. Air pipes and ventilators leading from below the level of the sole should have the open end as high as practical and be protected against mechanical damage.	1		6	
Sole drainage on open vessels is to be given careful consideration. The level of the floor should not be positioned at such a height that it would have an adverse effect on the stability of the vessel, the following guidance is given:-	3		4	
1. There should be effective drain openings fitted on each side of the sole to enable any water to drain directly to the bottom of the vessel. In the case of a vessel with a sealed sole, an aft sump is to be fitted, extending from the keel to deck.	2	2	3	
2. It is recommended that the drainage area be at least 2% of the total bulwark area above the sole.		1	6	
3. Open vessels are not to be fitted with freeing ports.		1	6	
4. Any barrier or coaming which may be fitted to the sole to prevent the entry of rain water to the bottom of the vessel should not be at a height any greater than 25mm above the level of the sole.			6	1
5. The bilge pumping intake should be at a readily accessible position.	7			

6. Sole support structures that form buoyancy spaces are to sealed and surfaces that may come into contact with water are to be sealed with gel coat or similar.	3		3	1
Open boats with a sole and no significant freeing ports, and which are fitted with a small limber hole shall have the limber hole replaced with a proprietary drain fitting with a screw in plug which is permanently attached. The drain shall be plugged in operation but may be opened when out of service to protect the vessel.	2	2	3	
These vessels shall carry suitable manual bilge pumping to remove significant quantities of water off the deck. In any situation the capacity of the bilge pump will exceed the potential rate of flooding by several orders of magnitude.	4	1	1	1
The hole should be 25mm diameter at the most	3		4	
On decked vessels, where the fixed bulwarks, ends or sides of superstructures etc., form enclosed wells, means to clear entrapped water are to be provided and may comprise any, or any combination, of the following:-				
(i) Freeing ports with an attached means of closing (provided that the freeing port is closed only during fishing operations and that the closing device is easily operable and accessible, subject to the approval of the Surveyor).			7	
(ii) Permanent openings in the bulwarks such as slots.			7	
(iii) Apertures in and under bulwark or stern ramp doors.			7	
(iv) Deck scuppers where the discharge is above the load waterline.			7	
Openings in the vessel to the height of the rail or used for the purposes of deploying gear are not to be used in the calculation of freeing port area.			7	
Lift-up closing appliances should not be fitted to freeing ports, or locking devices fitted to freeing port flaps, if they reduce the total freeing port area along either side of the vessel below the freeing port requirement. They will only be considered acceptable where the remaining open freeing port area meets the requirement when the appliances are closed			7	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions. At the discretion of the attending surveyor, up to one third of the freeing port area required at each side may be located in the transom bulwark, with the vessel centreline dividing the port and starboard side allocation. Where the freeing port area in the transom bulwark is greater than the maximum one third allowance per side, the excess area shall not be included in the total freeing port area provided.			7	
Where deck erections within a well limit the volume of water that may be retained onboard, then the freeing port area may be reduced proportionally provided that such erections do not in themselves contribute to water retention.			7	
The means of clearing water must not provide easy access for water to enter the enclosed deck space.			7	
Any freeing port or slot in the bulwark is to have the bottom edge as close to the deck as possible. Freeing ports greater than 230mm in depth and wider than 350mm are to be fitted with bars.			7	
Where freeing ports are fitted with hinged flaps or shutters, sufficient clearance to prevent jamming is to be provided and hinges are to be fitted with pins of non-corrodible material. Greasing points or nipples are to be provided where practicable.			7	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions of trim.			7	
Care is to be taken that deck pounds, machinery and net or gear stowage will not impede the free flow of trapped water to the freeing ports or slots.			7	
Lift-up closing appliances fitted to freeing ports are to be so arranged that they are secure in the open position. Lift-up closing appliances should be fitted to no more than 50% of ports.			7	
Where vessels are fitted with full or partial shelters which are left open at the stern, and where the passage of water forward is not restricted by watertight bulkheads, the freeing port area is to be increased by 1% over the requirement stated in section 2.19.2. (2.19.2 states: The minimum area for freeing ports on each side of the well or deck is to be not less than 3% of the total bulwark area each side)			7	

MACHINERY				
General				
Machinery and pressure vessels shall be of a design and construction adequate for the service for which they are intended (fit for purpose) and be efficiently installed (taking into account the manufacturer's guidance) and protected, including the use of effective guards protecting moving parts so as to minimise any danger to persons on board. Access for persons must be arranged having due regard shall be given to moving parts, hot surfaces and other hazards. Hot surfaces must be sufficiently insulated. .	4	1	2	
Pressure vessels shall be fitted with safety valves			7	
Ancillary equipment and piping must be in accordance with the appropriate part of the Code.	1		4	2
Layout and installation of machinery spaces and propulsion machinery should be designed for safe and efficient operation	4		3	
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	1	1	5	
Ventilation should be provided either by mechanical fans or natural vents to meet the air requirements of the propulsion machinery and to prevent build-up of fumes or excessive heat	1		6	
Access ladders should be of metal such as steel where practicable and securely fixed to the vessel's permanent structure			7	
Floor plates, where fitted, should be non-slip and securely fastened with accessible fasteners			7	
Propulsion Machinery and Stern Gear				
Propulsion engines and associated stern gear must be of a design, type and rating to suit the design and size of the vessel taking account of the vessel"s history, operating conditions and area of operation. Inboard-mounted engines should be diesel powered for use with fuel oil having a flash point greater than 60ºC.	5		2	
Flexible sections of piping must be fitted when the engine or systems are repaired or replaced, provided that the existing installation is sound and efficient and is safe in use. Flexible shaft couplings must be in a sound condition and suitable for the power being transmitted.	2		4	1
A vessel fitted with an inboard engine must have adequate means and power for going astern in order to maintain control of the vessel in all foreseeable circumstances.	4		3	
The propeller shaft and any intermediate shaft, together with the stern tube, bearings and bushes, must be in a sound condition and operate efficiently. Shaft materials and diameter should be suitable for the power being transmitted. Inboard-mounted stern glands must be accessible for adjustment.	3		3	1
Engine Starting				
All propulsion engines shall be provided with a secondary means of starting, where practicable	1	4	1	1
Controls and Instruments				
The controls and instrumentation systems as fitted will generally be accepted, provided that the systems are in a good state of repair and operate satisfactorily.	6		1	
Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.	1		6	
High water temperature and low lubricating oil pressure alarms shall be fitted, where practicable		5	2	
Steering System				
The steering system must operate efficiently and be well maintained. The steering gear, including bearings and rudder stock, must be of sound and efficient construction, and suitable for the size and power of the vessel.	4		2	1
Vessels fitted with motorised or hand hydraulic, chain, cable, or mechanical steering must be provided with an alternative means of steering which will operate if the main system fails.	3	2	2	

The main control or helm position must be located such that the person operating the steering gear has a clear view for the safe navigation of the vessel. (See MGN 313)	7			
All parts of mechanical linkages of rod and chain should be accessible with adequate lubrication arrangements provided.	4		3	
Refrigerating Plant				
Refrigerating plants shall be of a design and construction adequate for the service for which			7	
they are intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board. Refrigerant detection sensors, compatible with the refrigerant being used, are recommended to be fitted (where practicable).			7	
Ammonia, methyl chloride or chlorofluorocarbons (CFCs, with ozone depleting potential higher than 5% of CFC-11) shall not be used as refrigerants.			7	
Where refrigerating plants are installed they shall be maintained in an efficient working condition and examined at regular intervals.			7	
Tanks, machinery or other metallic objects that do not have good electrical continuity with the water surrounding the vessel shall have special earthing arrangements to reduce potential risk			7	
Particular attention must be given to protection against water ingress and the effects of vibration	2		5	
Main and emergency switchboards shall be suitably guarded and arranged to provide easy access without danger to any person. Adequate non-conducting mats or gratings shall be provided. Exposed parts that may have a voltage between conductors or to earth exceeding 55 volts shall not be installed on the face of any switchboard or control panel.	1		6	
Switchboards shall be clearly marked; fuse boxes and fuse holders shall be checked at regular intervals to ensure that the correct rating of fuse is being used. Differing voltages should not be included in any one distribution board	1		6	
All circuits except the main supply from the battery to the starter motor and electrically driven steering motors, shall be provided with electrical protection against overload and short circuit, (i.e. circuit breakers shall be installed). Short circuit protection shall be for not less than twice the total rated current load in the circuit protected	2		2	3
Steering motors should have an overload alarm in lieu of overload protection. Short circuit protection should before not less than twice the total rated current of the steering motors in the circuit protected		1	6	
Cables which are not provided with electrical protection should be kept as short as possible and be "short circuit proofed", e.g. single core with an additional insulating sleeve over the insulation of each core. Normal marine cable (e.g. in compliance with BS 6883) which is single core will meet this recommendation without an additional sleeve, since it has both conductor insulation and a sheath In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.		1	4	2
The electrical generating system must have sufficient capacity in normal running conditions to ensure the correct operation of all safety and navigation equipment including navigation and fishing lights.		1	5	1
With regard to existing cable installations and to any additional cables fitted:				
i) Cables should not be run below floor plate level except where this is necessary for connections to underwater equipment, etc., in which case the cable should be run in conduit.	1	1	3	2
ii) Cables running through machinery spaces should not be secured with plastic clips.		3	3	1
iii) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks.		1	5	1
iv) Cables should be of the correct current carrying capacity for their application.				7
When selecting cables, particular attention should be given to environmental factors such as temperature and contact with substances, e.g. polystyrene, which degrades P.V.C. insulation			6	1

Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over.		2	2	3
D.C. Systems Up To 24 volts				
Systems should be two wire.	3		4	
Existing earthing systems, where these are required,will be accepted provided that the system is sound and efficient and that no danger to the system or vessel may occur. Hull earth plates, if fitted, must be efficiently connected and not painted over.	1		4	2
Batteries should be in good condition, secured, protected from short circuiting and overloading, and should be sited clear of heat sources *and the battery installation and ventilation should be in accordance with IEE Regulations.*	2	2	2	1
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	3	2	2	
A.C. Systems				
Cables for A.C. systems must be kept separate from D.C. systems and run in separate trays and conduits.			7	
Switchgear for A.C. systems must be fitted in switchboards and panels which are separate from those containing D.C. systems. Systems and equipment must be clearly marked.			7	
Switchgear and sockets must be so arranged as to prevent the fitting of low voltage equipment and lamps into high voltage systems			7	
Fuel Oil Installations				
Tanks will generally be accepted provided that they are of sound and efficient construction and safe in operation. Glass contents gauges, where fitted, must have selfclosing valves at the base. Metal rods or slotted covers must protect sight gauges. If glass contents gauges are not fitted, other means of establishing the contents of the tanks must be available.	5		2	
Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections should be of an appropriate armoured fire resistant metallic hose with screwed fittings, and kept as short as practicable	3	1	2	1
FIRE DETECTION PREVENTION AND EXTINCTION				
Fire Prevention				
Glass portlight and deadlight arrangements, if fitted in the boundaries of machinery spaces, will be accepted if they are in a sound condition, but if damaged they must be blanked off			7	
Cylinders containing flammable, toxic or other dangerous gases, and expended cylinders shall be clearly marked as to their contents and properly stowed and secured on open decks. All valves, pressure regulators and pipes leading from such cylinders shall be protected against damage. Such cylinders may be stowed in compartments that meet the requirements set out in the section below	1	1	5	
Cylinders and bottles containing flammable, toxic liquids, toxic gases and liquefied gases, other than liquefied petroleum gas shall be stored in compartments having direct access from open decks but must not be stowed in machinery spaces. Such compartments shall have boundary bulkheads constructed from non-combustible materials. Pressure adjusting devices and relief valves, if any, shall exhaust within the compartment. Where boundary bulkheads of such compartments adjoin other enclosed spaces they shall be gas-tight and be provided with ventilation arrangements that are separate from other ventilation systems. Ventilation shall be arranged at high and low levels and the inlets and outlets of ventilators shall be positioned in safe areas and fitted with spark arresters	2		5	
Exhaust pipes and ducts must be adequately insulated to avoid igniting combustible materials and must be protected from damage	1		6	
Cleanliness of machinery spaces				

Machinery spaces shall be kept clean, free of rubbish and combustible waste. Bilge levels shall be checked regularly and oily waste and sludge shall be collected and properly disposed of ashore	4		3	
Cooking and heating appliances				
Appliances must not be positioned close to engines and fuel tanks.			7	
All types of stoves and heating appliances must be strongly secured to the surrounding structure			7	
Curtains or any other suspended textile materials must not be fitted within 600 mm of any heating or other appliance			7	
Materials that are in the vicinity of any cooking appliance shall be non-combustible, except that combustible materials may be employed when these are faced with stainless steel or a similar non-combustible material.			7	
Wherever possible, electrically powered cooking equipment shall be provided in preference to open flame types			7	
Curtains, towel rails, hooks and similar arrangements shall be kept well clear of the cooking area.			7	
Electric stoves and other cooking appliances shall be fitted with an isolation switch outside the galley space.			7	
Open Vessels less than 7m				
• 1 Multi-purpose Fire Extinguisher (fire rating 5A/34B) – if vessel has in-board engine **or auxiliary engine** (extinguisher should be capable of dealing with all fire types, including hydrocarbons)	7			
Fire buckets shall be heavy duty with a Lanyard long enough to reach water. Buckets need not be made of steel	7			
PROTECTION OF PERSONNEL				
Handrails, hand holds and grab rails				
On existing vessels				
• The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced.	3	4		
• Sections of rails or wires may be portable where necessary for the vessel"s fishing operations.	3	3	1	
• Access stairways, ladder ways and passageways must be provided with handrails and grab rails for the safety of the crew.			7	
On all vessels, barriers must be fitted to separate the crew from equipment when deploying fishing gear.		4	3	
Surface of Working Decks				
Decks to which the crew are expected to have access must be provided with an adequate non-slip surface or efficient non-slip covering.	6		1	
Particular attention must be paid to the provision of a non-slip surface to any hatch cover fitted on a working deck.	1	1	5	
The exposed bottom boards of open boats must have a non-slip surface		4	3	
Winches, tackles and hoisting gear				
Every vessel that is provided with winches, tackles and hoisting gear shall have such gear properly installed having regard to the intended service of the vessel.	6		1	
All hoisting gear, hauling gear and related equipment shall satisfy the requirements of The Merchant Shipping and Fishing Vessels (Provisions and Use of Work Equipment) Regulations 2006 No. 2183 and the Merchant Shipping and Fishing Vessels (Lifting Operations and Lifting Equipment) Regulations 2006 No. 2184 as applicable.	1	1	5	

All equipment used in hoisting/hauling should be used only by a competent person and must be inspected and examined at regular intervals and a written record shall be made of all such tests and examinations.	4		3	
All parts of hauling gear, hoisting gear and related equipment must be maintained in good repair and working order.	2		4	1
The controls for the hauling and hoisting gear shall be installed in an area sufficiently large enough to enable operators to work unhindered.	4		2	1
The hauling and hoisting gear shall also have appropriate safety devices for emergencies, including emergency stop facilities within reach of the equipment operator. A duplicate set of emergency stop facilities is to be provided in the wheelhouse.	3	2	2	
The gear operator must have a clear view of the gear and any crew member working near it.	6		1	
If hauling gear is controlled from the wheelhouse, the operator must also have a clear view of the crew working near the gear, either directly or via any other suitable medium. All operators, in the wheelhouse or on deck shall give exclusive attention to that task and must not carry out other tasks while operating the equipment.			7	
A reliable communications system must be used between the wheelhouse and the working deck and the crew shall be trained in the use of hand signals.			7	
A sharp look out must always be maintained and the crew warned of the imminent danger of heavy oncoming seas during fishing operations or when other work is being undertaken on deck.	5		2	
Contact with bare ropes and warps and with moving parts of the equipment shall be minimized by installing protective devices.	2	1	4	
The following control measures shall be installed for restricting moving masses (on vessels with trawl doors or codends):				
(i) devices to immobilise the trawl doors;			7	
(ii) devices to control the swinging motion of the codend.	1		6	
The crew must be trained in the use of fishing gear and hauling and hoisting equipment	4		3	
Securing of heavy equipment				
Heavy items of equipment such as spare fishing gear, batteries, cooking appliances etc., shall be securely fastened in place to prevent movement due to severe motions of the vessel.	5		2	
Stowage lockers containing heavy items shall have lids or doors with secure fastening.	4		3	
Means of Recovering a Helpless Person from the water				
All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	4	3		
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.	4	3		

ANNEX B.3 – RETURNS FROM SURVEYOR INSPECTIONS OF EXISTING VESSELS TO ASSESS POTENTIAL COMPLIANCE OF EXISTING VESSELS WITH PROPOSED CODE – DECK 8M VESSELS

Requirement	Yes	No	Not applicable	Not able to determine
CONSTRUCTION				
The structural strength and construction of every fishing vessel and the disposition of bulkheads shall be adequate for all foreseeable operating conditions in service. The scantlings, arrangements and construction for the hull, bulkheads, superstructures, deckhouses, machinery casings, companionways and other structures shall be sufficient to withstand all operational loads arising during the vessel's service. Particular attention should be paid to the intended fishing method	11			6
The vessel should be *designed, constructed* and maintained in such a manner as to be watertight and in accordance with the Construction Standard applicable at the time of construction.. The number of openings in the weathertight structure of the vessel must be as few as practicable and be provided with the closing and securing arrangements described below.	13			4
Decks				
Full length and partial weather decks, including shelter decks, must be of sound and watertight construction, and be of sufficient strength to withstand the sea and weather conditions likely to be encountered.	10	3	3	1
Recesses in weather decks must be fitted with drainage arrangements so that the deck drains under all normal conditions of trim, and it is recommended that they operate efficiently at a heel of 10°.	3		14	
Bulkheads				
Bulkheads, if fitted, are required to be watertight.	7	6	4	
Accesses through bulkheads				
Accesses through watertight bulkheads, if fitted, shall be of watertight construction, have equivalent structural strength as the adjacent bulkhead and be kept closed at sea.,	1	6	10	
Doorways above Weather Deck				
Doorways giving access to space below the deck should be fitted with a permanent coaming of 300 mm minimum height above the deck. Alternatively a portable coaming may be provided, fixed in guide channels to give a minimum coaming height of 300 mm.	6	7	4	
Doors must be of sound construction and be weathertight.	11	2	4	
Hatches and Coamings				
Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming may be omitted, provided that the hatch can be secured weathertight. Hatches must only be kept open when necessary for fishing operations and otherwise be kept closed at sea to prevent the risk of downflooding and capsize and signage provided stating "To be kept closed at sea". Flush deck hatches are not recommended unless necessary and any hatches that are required to be open at sea must have coamings	7	6	4	

Hatchways should be as small as possible subject to the requirements of Access and Escape Arrangements.	14		3	
Weather Deck Hatches				
Hatchway covers fitted in the weather deck must be provided with efficient means of securing weathertight closure.	11	4	2	
Flush Hatches and Scuttles				
Ice scuttles, where fitted, must be of metal construction, with screw or bayonet type clamp fastening and with the loose cover permanently attached to the structure with hinges, wire or chain and be capable of being closed watertight	3	1	14	
Skylights				
Skylights must be of efficient construction and be capable of being closed watertight from both sides. Skylights used as emergency escapes shall be kept clear of obstructions Where the glazing material and its method of fixing is not equivalent in strength to the surrounding structure, portable blanking pieces or plates that can be secured over the glazing must be provided. Portable blanking pieces or plates must be stored in a readily accessible position.			17	
Side Scuttles and Portlights				
Side scuttles or portlights fitted below the weathertight deck and not fitted with an attached deadlight must be provided with a portable blanking plate, which can be efficiently secured, if the glazing breaks. Portable blanking plates must be stored in a readily accessible position.			17	
Glazing material in existing sidelights must be sound and efficiently secured. When the glazing material is damaged it must be blanked off.			17	
Windows				
Windows fitted to spaces above the weather deck, such as a deckhouse or superstructure protecting an opening leading to below the weather deck, must be weathertight.	9		6	1
Where windows are fitted below the weather deck on existing vessels, they must be of sound construction, provide watertight integrity, and be of strength compatible with their size. In case the glazing breaks, portable blanking plates must be provided, which can be efficiently secured to the window frame, and which are sufficient to cover a total of 50% of the number of windows. Portable blanking plates must be stored in a readily accessible position.			17	
Glazing material in existing windows must be sound and efficiently secured, and glass should be toughened or laminated. When the glazing material is damaged it must be blanked off.	5		6	6
Ventilators				
An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board.	4	5	7	1
There shall be sufficient fresh air in enclosed workplaces, having regard to the work methods used and the physical demands that are placed on the crew.	9	1	7	
If a mechanical ventilation system is used, it shall be maintained in good condition	3	5	9	
Ventilators serving spaces below the weathertight deck must be provided with an effective means of weathertight closure	5	6	6	
Exhaust Systems				
Engine exhaust systems of the dry or water-injected type, which discharge through the hull below the weathertight deck at the side or stern, should be provided with permanently attached means of preventing back flooding into the hull or engine through the exhaust system. This may be by system design or valve or non-return device.	14		3	

Exhaust systems which go up by the funnel hall be insultated to prevent the risk fire and ventilated away from crew.	2		15	
Air Pipes				
Air pipe arrangements must be of sound construction, operate efficiently and be provided with an efficient means of watertight closure, with provision made to prevent overpressure or vacuum occurring when tanks are filled or emptied.	4	3	9	1
Exposed air pipes, in excess of 25 mm diameter, serving fuel oil, hydraulic oil, and lubricating oil tanks must be fitted with anti-flash gauze diaphragms. Where the pipe in 25mm or less in diameter alternative arrangements may be considered	4	2	10	1
Sea Inlets and Discharges				
Sea inlets and discharges should be fitted with an efficient means of closure. Inlets should be marked with open/closed and the system they serve	15	2		
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	9	8		
Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible in an emergency, they should be fitted with a remote means of operation, i.e. by extended spindle or wire pull device operable above floor plate level	11	6		
Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains, etc., should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted.	11	4		2
Materials for Valves and Associated Piping - Sea Water Systems				
Valves, pipes and fittings serving as sea inlets and discharges attached directly to the hull of the vessel below the load waterline should be of steel, bronze, or other equivalent and compatible material.	17			
Where the sea inlet valve or fitting is connected to the hull by means of a tube or distance piece, the tube or distance piece should be of a material that is compatible with the hull and valve.	5		12	
Valves, piping and flexible hoses must be of sound and efficient construction and installation. All piping systems must be well supported with pipe clips or mounts and protected against vibration and chafing	8	6	3	
Water freeing arrangements - Open Vessels				
Open type vessels are to be fitted with bilge pumps as required by section 9.3 of these Standards.			17	
In open vessels where water coming on board normally drains to the bilge, the following provisions should apply:-				
1. The height of any door sill above the fixed sole level in open type vessels should be as high as practical, but in new vessels no less than 200mm. If hinged, the door should open outwards. Doors should be operable from both sides			17	
2. Air pipes and ventilators leading from below the level of the sole should have the open end as high as practical and be protected against mechanical damage.			17	
Sole drainage on open vessels is to be given careful consideration. The level of the floor should not be positioned at such a height that it would have an adverse effect on the stability of the vessel, the following guidance is given:-			17	
1. There should be effective drain openings fitted on each side of the sole to enable any water to drain directly to the bottom of the vessel. In the case of a vessel with a sealed sole, an aft sump is to be fitted, extending from the keel to deck.			17	
2. It is recommended that the drainage area be at least 2% of the total bulwark area above the sole.			17	
3. Open vessels are not to be fitted with freeing ports.			17	

4. Any barrier or coaming which may be fitted to the sole to prevent the entry of rain water to the bottom of the vessel should not be at a height any greater than 25mm above the level of the sole.			17	
5. The bilge pumping intake should be at a readily accessible position.			17	
6. Sole support structures that form buoyancy spaces are to sealed and surfaces that may come into contact with water are to be sealed with gel coat or similar.			17	
Open boats with a sole and no significant freeing ports, and which are fitted with a small limber hole shall have the limber hole replaced with a proprietary drain fitting with a screw in plug which is permanently attached. The drain shall be plugged in operation but may be opened when out of service to protect the vessel.			17	
These vessels shall carry suitable manual bilge pumping to remove significant quantities of water off the deck. In any situation the capacity of the bilge pump will exceed the potential rate of flooding by several orders of magnitude.			17	
The hole should be 25mm diameter at the most			17	
On decked vessels, where the fixed bulwarks, ends or sides of superstructures etc., form enclosed wells, means to clear entrapped water are to be provided and may comprise any, or any combination, of the following:-				
(i) Freeing ports with an attached means of closing (provided that the freeing port is closed only during fishing operations and that the closing device is easily operable and accessible, subject to the approval of the Surveyor).	2		15	
(ii) Permanent openings in the bulwarks such as slots.	15		2	
(iii) Apertures in and under bulwark or stern ramp doors.	1		16	
(iv) Deck scuppers where the discharge is above the load waterline.	1		16	
Openings in the vessel to the height of the rail or used for the purposes of deploying gear are not to be used in the calculation of freeing port area.	4		13	
Lift-up closing appliances should not be fitted to freeing ports, or locking devices fitted to freeing port flaps, if they reduce the total freeing port area along either side of the vessel below the freeing port requirement. They will only be considered acceptable where the remaining open freeing port area meets the requirement when the appliances are closed	3		14	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions. At the discretion of the attending surveyor, up to one third of the freeing port area required at each side may be located in the transom bulwark, with the vessel centreline dividing the port and starboard side allocation. Where the freeing port area in the transom bulwark is greater than the maximum one third allowance per side, the excess area shall not be included in the total freeing port area provided.	8	5	4	
Where deck erections within a well limit the volume of water that may be retained onboard, then the freeing port area may be reduced proportionally provided that such erections do not in themselves contribute to water retention.	5	3	9	
The means of clearing water must not provide easy access for water to enter the enclosed deck space.	12	2	3	
Any freeing port or slot in the bulwark is to have the bottom edge as close to the deck as possible. Freeing ports greater than 230mm in depth and wider than 350mm are to be fitted with bars.	10	3	4	
Where freeing ports are fitted with hinged flaps or shutters, sufficient clearance to prevent jamming is to be provided and hinges are to be fitted with pins of non-corrodible material. Greasing points or nipples are to be provided where practicable.	1	2	14	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions of trim.	12	2	3	
Care is to be taken that deck pounds, machinery and net or gear stowage will not impede the free flow of trapped water to the freeing ports or slots.	6		11	

Lift-up closing appliances fitted to freeing ports are to be so arranged that they are secure in the open position. Lift-up closing appliances should be fitted to no more than 50% of ports.			17	
Where vessels are fitted with full or partial shelters which are left open at the stern, and where the passage of water forward is not restricted by watertight bulkheads, the freeing port area is to be increased by 1% over the requirement stated in section 2.19.2. (2.19.2 states: The minimum area for freeing ports on each side of the well or deck is to be not less than 3% of the total bulwark area each side)		3	14	
MACHINERY				
General				
Machinery and pressure vessels shall be of a design and construction adequate for the service for which they are intended (fit for purpose) and be efficiently installed (taking into account the manufacturer's guidance) and protected, including the use of effective guards protecting moving parts so as to minimise any danger to persons on board. Access for persons must be arranged having due regard shall be given to moving parts, hot surfaces and other hazards. Hot surfaces must be sufficiently insulated. .	11	1	6	
Pressure vessels shall be fitted with safety valves	3		14	
Ancillary equipment and piping must be in accordance with the appropriate part of the Code.	7	4	3	3
Layout and installation of machinery spaces and propulsion machinery should be designed for safe and efficient operation	12	4	1	
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	7	5	5	
Ventilation should be provided either by mechanical fans or natural vents to meet the air requirements of the propulsion machinery and to prevent build-up of fumes or excessive heat	7	3	7	
Access ladders should be of metal such as steel where practicable and securely fixed to the vessel's permanent structure	3	3	11	
Floor plates, where fitted, should be non-slip and securely fastened with accessible fasteners		3	14	
Propulsion Machinery and Stern Gear				
Propulsion engines and associated stern gear must be of a design, type and rating to suit the design and size of the vessel taking account of the vessel"s history, operating conditions and area of operation. Inboard-mounted engines should be diesel powered for use with fuel oil having a flash point greater than 60ºC.	14			3
Flexible sections of piping must be fitted when the engine or systems are repaired or replaced, provided that the existing installation is sound and efficient and is safe in use. Flexible shaft couplings must be in a sound condition and suitable for the power being transmitted.	9		5	3
A vessel fitted with an inboard engine must have adequate means and power for going astern in order to maintain control of the vessel in all foreseeable circumstances.	12		2	3
The propeller shaft and any intermediate shaft, together with the stern tube, bearings and bushes, must be in a sound condition and operate efficiently. Shaft materials and diameter should be suitable for the power being transmitted. Inboard-mounted stern glands must be accessible for adjustment.	8		1	8
Engine Starting				
All propulsion engines shall be provided with a secondary means of starting, where practicable	8	9		
Controls and Instruments				
The controls and instrumentation systems as fitted will generally be accepted, provided that the systems are in a good state of repair and operate satisfactorily.	16	1		
Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.	10	6	1	
High water temperature and low lubricating oil pressure alarms shall be fitted, where practicable	6	10	1	

Steering System				
The steering system must operate efficiently and be well maintained. The steering gear, including bearings and rudder stock, must be of sound and efficient construction, and suitable for the size and power of the vessel.	14		1	2
Vessels fitted with motorised or hand hydraulic, chain, cable, or mechanical steering must be provided with an alternative means of steering which will operate if the main system fails.	9	3	5	
The main control or helm position must be located such that the person operating the steering gear has a clear view for the safe navigation of the vessel. (See MGN 313)	17			
All parts of mechanical linkages of rod and chain should be accessible with adequate lubrication arrangements provided.	11		6	
Refrigerating Plant				
Refrigerating plants shall be of a design and construction adequate for the service for which			17	
they are intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board. Refrigerant detection sensors, compatible with the refrigerant being used, are recommended to be fitted (where practicable).			17	
Ammonia, methyl chloride or chlorofluorocarbons (CFCs, with ozone depleting potential higher than 5% of CFC-11) shall not be used as refrigerants.			17	
Where refrigerating plants are installed they shall be maintained in an efficient working condition and examined at regular intervals.			17	
Tanks, machinery or other metallic objects that do not have good electrical continuity with the water surrounding the vessel shall have special earthing arrangements to reduce potential risk			11	6
Particular attention must be given to protection against water ingress and the effects of vibration	3		6	8
Main and emergency switchboards shall be suitably guarded and arranged to provide easy access without danger to any person. Adequate non-conducting mats or gratings shall be provided. Exposed parts that may have a voltage between conductors or to earth exceeding 55 volts shall not be installed on the face of any switchboard or control panel.	2	1	14	
Switchboards shall be clearly marked; fuse boxes and fuse holders shall be checked at regular intervals to ensure that the correct rating of fuse is being used. Differing voltages should not be included in any one distribution board	2	1	14	
All circuits except the main supply from the battery to the starter motor and electrically driven steering motors, shall be provided with electrical protection against overload and short circuit, (i.e. circuit breakers shall be installed). Short circuit protection shall be for not less than twice the total rated current load in the circuit protected	4	2	5	6
Steering motors should have an overload alarm in lieu of overload protection. Short circuit protection should before not less than twice the total rated current of the steering motors in the circuit protected		4	13	
Cables which are not provided with electrical protection should be kept as short as possible and be "short circuit proofed", e.g. single core with an additional insulating sleeve over the insulation of each core. Normal marine cable (e.g. in compliance with BS 6883) which is single core will meet this recommendation without an additional sleeve, since it has both conductor insulation and a sheath	3	2	8	4
In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.		7	8	2
The electrical generating system must have sufficient capacity in normal running conditions to ensure the correct operation of all safety and navigation equipment including navigation and fishing lights.	9	2	6	
With regard to existing cable installations and to any additional cables fitted:				
i) Cables should not be run below floor plate level except where this is necessary for connections to underwater equipment, etc., in which case the cable should be run in conduit.	3	7	7	
ii) Cables running through machinery spaces should not be secured with plastic clips.		11	6	

iii) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks.		6	10	1
iv) Cables should be of the correct current carrying capacity for their application.		2	6	11
When selecting cables, particular attention should be given to environmental factors such as temperature and contact with substances, e.g. polystyrene, which degrades P.V.C. insulation	2		8	7
Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over.	2		5	10
D.C. Systems Up To 24 volts				
Systems should be two wire.	11	2	3	1
Existing earthing systems, where these are required,will be accepted provided that the system is sound and efficient and that no danger to the system or vessel may occur. Hull earth plates, if fitted, must be efficiently connected and not painted over.	3	1	5	8
Batteries should be in good condition, secured, protected from short circuiting and overloading, and should be sited clear of heat sources *and the battery installation and ventilation should be in accordance with IEE Regulations.*	5	7	3	2
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	7	3	3	1
A.C. Systems				
Cables for A.C. systems must be kept separate from D.C. systems and run in separate trays and conduits.	2	1	14	
Switchgear for A.C. systems must be fitted in switchboards and panels which are separate from those containing D.C. systems. Systems and equipment must be clearly marked.	2	1	14	
Switchgear and sockets must be so arranged as to prevent the fitting of low voltage equipment and lamps into high voltage systems	3	1	13	
Fuel Oil Installations				
Tanks will generally be accepted provided that they are of sound and efficient construction and safe in operation. Glass contents gauges, where fitted, must have selfclosing valves at the base. Metal rods or slotted covers must protect sight gauges. If glass contents gauges are not fitted, other means of establishing the contents of the tanks must be available.	8	8	1	
Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections should be of an appropriate armoured fire resistant metallic hose with screwed fittings, and kept as short as practicable	5	8	1	3
FIRE DETECTION PREVENTION AND EXTINCTION				
Fire Prevention				
Glass portlight and deadlight arrangements, if fitted in the boundaries of machinery spaces, will be accepted if they are in a sound condition, but if damaged they must be blanked off			17	
Cylinders containing flammable, toxic or other dangerous gases, and expended cylinders shall be clearly marked as to their contents and properly stowed and secured on open decks. All valves, pressure regulators and pipes leading from such cylinders shall be protected against damage. Such cylinders may be stowed in compartments that meet the requirements set out in the section below		2	15	

Cylinders and bottles containing flammable, toxic liquids, toxic gases and liquefied gases, other than liquefied petroleum gas shall be stored in compartments having direct access from open decks but must not be stowed in machinery spaces. Such compartments shall have boundary bulkheads constructed from non-combustible materials. Pressure adjusting devices and relief valves, if any, shall exhaust within the compartment. Where boundary bulkheads of such compartments adjoin other enclosed spaces they shall be gas-tight and be provided with ventilation arrangements that are separate from other ventilation systems. Ventilation shall be arranged at high and low levels and the inlets and outlets of ventilators shall be positioned in safe areas and fitted with spark arresters		1	16	
Exhaust pipes and ducts must be adequately insulated to avoid igniting combustible materials and must be protected from damage	10		4	3
Cleanliness of machinery spaces				
Machinery spaces shall be kept clean, free of rubbish and combustible waste. Bilge levels shall be checked regularly and oily waste and sludge shall be collected and properly disposed of ashore	15	1	1	
Cooking and heating appliances				
Appliances must not be positioned close to engines and fuel tanks.	1		16	
All types of stoves and heating appliances must be strongly secured to the surrounding structure	1		16	
Curtains or any other suspended textile materials must not be fitted within 600 mm of any heating or other appliance	1		16	
Materials that are in the vicinity of any cooking appliance shall be non-combustible, except that combustible materials may be employed when these are faced with stainless steel or a similar non-combustible material.	1		15	1
Wherever possible, electrically powered cooking equipment shall be provided in preference to open flame types			17	
Curtains, towel rails, hooks and similar arrangements shall be kept well clear of the cooking area.			17	
Electric stoves and other cooking appliances shall be fitted with an isolation switch outside the galley space.			17	
Open Vessels less than 7m				
• 1 Multi-purpose Fire Extinguisher (fire rating 5A/34B) – if vessel has in-board engine **or auxiliary engine** (extinguisher should be capable of dealing with all fire types, including hydrocarbons)			17	
Fire buckets shall be heavy duty with a Lanyard long enough to reach water. Buckets need not be made of steel			17	
PROTECTION OF PERSONNEL				
Handrails, hand holds and grab rails				
On existing vessels				
• The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced.	9	8		
• Sections of rails or wires may be portable where necessary for the vessel"s fishing operations.	5	8	4	
• Access stairways, ladder ways and passageways must be provided with handrails and grab rails for the safety of the crew.	3		14	
On all vessels, barriers must be fitted to separate the crew from equipment when deploying fishing gear.	2	12	3	
Surface of Working Decks				
Decks to which the crew are expected to have access must be provided with an adequate non-slip surface or efficient non-slip covering.	13	2	2	

Particular attention must be paid to the provision of a non-slip surface to any hatch cover fitted on a working deck.	10	1	6	
The exposed bottom boards of open boats must have a non-slip surface			17	
Winches, tackles and hoisting gear				
Every vessel that is provided with winches, tackles and hoisting gear shall have such gear properly installed having regard to the intended service of the vessel.	10		6	1
All hoisting gear, hauling gear and related equipment shall satisfy the requirements of The Merchant Shipping and Fishing Vessels (Provisions and Use of Work Equipment) Regulations 2006 No. 2183 and the Merchant Shipping and Fishing Vessels (Lifting Operations and Lifting Equipment) Regulations 2006 No. 2184 as applicable.	6		7	4
All equipment used in hoisting/hauling should be used only by a competent person and must be inspected and examined at regular intervals and a written record shall be made of all such tests and examinations.	8		6	3
All parts of hauling gear, hoisting gear and related equipment must be maintained in good repair and working order.	11		6	1
The controls for the hauling and hoisting gear shall be installed in an area sufficiently large enough to enable operators to work unhindered.	14		3	
The hauling and hoisting gear shall also have appropriate safety devices for emergencies, including emergency stop facilities within reach of the equipment operator. A duplicate set of emergency stop facilities is to be provided in the wheelhouse.	4	4	9	
The gear operator must have a clear view of the gear and any crew member working near it.	12		3	2
If hauling gear is controlled from the wheelhouse, the operator must also have a clear view of the crew working near the gear, either directly or via any other suitable medium. All operators, in the wheelhouse or on deck shall give exclusive attention to that task and must not carry out other tasks while operating the equipment.	2		12	3
A reliable communications system must be used between the wheelhouse and the working deck and the crew shall be trained in the use of hand signals.	1	3	10	3
A sharp look out must always be maintained and the crew warned of the imminent danger of heavy oncoming seas during fishing operations or when other work is being undertaken on deck.	7	2	5	3
Contact with bare ropes and warps and with moving parts of the equipment shall be minimized by installing protective devices.	4	2	8	3
The following control measures shall be installed for restricting moving masses (on vessels with trawl doors or codends):				
(i) devices to immobilise the trawl doors;			15	2
(ii) devices to control the swinging motion of the codend.	1		16	
The crew must be trained in the use of fishing gear and hauling and hoisting equipment	6		11	
Securing of heavy equipment				
Heavy items of equipment such as spare fishing gear, batteries, cooking appliances etc., shall be securely fastened in place to prevent movement due to severe motions of the vessel.	7		10	
Stowage lockers containing heavy items shall have lids or doors with secure fastening.	6		11	
Means of Recovering a Helpless Person from the water				
All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	8	9		
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.	7	10		

ANNEX B.4 – RETURNS FROM SURVEYOR INSPECTIONS OF EXISTING VESSELS TO ASSESS POTENTIAL COMPLIANCE OF EXISTING VESSELS WITH PROPOSED CODE – DECK 10M VESSELS

Requirement	Yes	No	Not applicable	Not able to determine
CONSTRUCTION				
The structural strength and construction of every fishing vessel and the disposition of bulkheads shall be adequate for all foreseeable operating conditions in service. The scantlings, arrangements and construction for the hull, bulkheads, superstructures, deckhouses, machinery casings, companionways and other structures shall be sufficient to withstand all operational loads arising during the vessel's service. Particular attention should be paid to the intended fishing method	5			3
The vessel should be *designed, constructed* and maintained in such a manner as to be watertight and in accordance with the Construction Standard applicable at the time of construction.. The number of openings in the weathertight structure of the vessel must be as few as practicable and be provided with the closing and securing arrangements described below.	6		1	1
Decks				
Full length and partial weather decks, including shelter decks, must be of sound and watertight construction, and be of sufficient strength to withstand the sea and weather conditions likely to be encountered.	6	1		1
Recesses in weather decks must be fitted with drainage arrangements so that the deck drains under all normal conditions of trim, and it is recommended that they operate efficiently at a heel of 10°.	2	1	6	
Bulkheads				
Bulkheads, if fitted, are required to be watertight.	5	3		
Accesses through bulkheads				
Accesses through watertight bulkheads, if fitted, shall be of watertight construction, have equivalent structural strength as the adjacent bulkhead and be kept closed at sea.,		4	4	
Doorways above Weather Deck				
Doorways giving access to space below the deck should be fitted with a permanent coaming of 300 mm minimum height above the deck. Alternatively a portable coaming may be provided, fixed in guide channels to give a minimum coaming height of 300 mm.	4	2	2	
Doors must be of sound construction and be weathertight.	5	2	1	
Hatches and Coamings				
Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming may be omitted, provided that the hatch can be secured weathertight. Hatches must only be kept open when necessary for fishing operations and otherwise be kept closed at sea to prevent the risk of downflooding and capsize and signage provided stating "To be kept closed at sea". Flush deck hatches are not recommended unless necessary and any hatches that are required to be open at sea must have coamings	3	3	2	

Hatchways should be as small as possible subject to the requirements of Access and Escape Arrangements.	6		2	
Weather Deck Hatches				
Hatchway covers fitted in the weather deck must be provided with efficient means of securing weathertight closure.	6		2	
Flush Hatches and Scuttles				
Ice scuttles, where fitted, must be of metal construction, with screw or bayonet type clamp fastening and with the loose cover permanently attached to the structure with hinges, wire or chain and be capable of being closed watertight	2		6	
Skylights				
Skylights must be of efficient construction and be capable of being closed watertight from both sides. Skylights used as emergency escapes shall be kept clear of obstructions Where the glazing material and its method of fixing is not equivalent in strength to the surrounding structure, portable blanking pieces or plates that can be secured over the glazing must be provided. Portable blanking pieces or plates must be stored in a readily accessible position.			8	
Side Scuttles and Portlights				
Side scuttles or portlights fitted below the weathertight deck and not fitted with an attached deadlight must be provided with a portable blanking plate, which can be efficiently secured, if the glazing breaks. Portable blanking plates must be stored in a readily accessible position.			8	
Glazing material in existing sidelights must be sound and efficiently secured. When the glazing material is damaged it must be blanked off.			8	
Windows				
Windows fitted to spaces above the weather deck, such as a deckhouse or superstructure protecting an opening leading to below the weather deck, must be weathertight.	5		1	2
Where windows are fitted below the weather deck on existing vessels, they must be of sound construction, provide watertight integrity, and be of strength compatible with their size. In case the glazing breaks, portable blanking plates must be provided, which can be efficiently secured to the window frame, and which are sufficient to cover a total of 50% of the number of windows. Portable blanking plates must be stored in a readily accessible position.			8	
Glazing material in existing windows must be sound and efficiently secured, and glass should be toughened or laminated. When the glazing material is damaged it must be blanked off.	5			3
Ventilators				
An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board.	4	3		1
There shall be sufficient fresh air in enclosed workplaces, having regard to the work methods used and the physical demands that are placed on the crew.	5		1	2
If a mechanical ventilation system is used, it shall be maintained in good condition	3	1	4	
Ventilators serving spaces below the weathertight deck must be provided with an effective means of weathertight closure	4	1	3	
Exhaust Systems				
Engine exhaust systems of the dry or water-injected type, which discharge through the hull below the weathertight deck at the side or stern, should be provided with permanently attached means of preventing back flooding into the hull or engine through the exhaust system. This may be by system design or valve or non-return device.	5		3	

Exhaust systems which go up by the funnel hall be insultated to prevent the risk fire and ventilated away from crew.	3		5	
Air Pipes				
Air pipe arrangements must be of sound construction, operate efficiently and be provided with an efficient means of watertight closure, with provision made to prevent overpressure or vacuum occurring when tanks are filled or emptied.	4		4	
Exposed air pipes, in excess of 25 mm diameter, serving fuel oil, hydraulic oil, and lubricating oil tanks must be fitted with anti-flash gauze diaphragms. Where the pipe in 25mm or less in diameter alternative arrangements may be considered	1	1	6	
Sea Inlets and Discharges				
Sea inlets and discharges should be fitted with an efficient means of closure. Inlets should be marked with open/closed and the system they serve	6	1	1	
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	4	3	1	
Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible in an emergency, they should be fitted with a remote means of operation, i.e. by extended spindle or wire pull device operable above floor plate level	3	4	1	
Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains, etc., should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted.	3	2	2	1
Materials for Valves and Associated Piping - Sea Water Systems				
Valves, pipes and fittings serving as sea inlets and discharges attached directly to the hull of the vessel below the load waterline should be of steel, bronze, or other equivalent and compatible material.	6		1	1
Where the sea inlet valve or fitting is connected to the hull by means of a tube or distance piece, the tube or distance piece should be of a material that is compatible with the hull and valve.	5		3	
Valves, piping and flexible hoses must be of sound and efficient construction and installation. All piping systems must be well supported with pipe clips or mounts and protected against vibration and chafing	5	2	1	
Water freeing arrangements - Open Vessels				
Open type vessels are to be fitted with bilge pumps as required by section 9.3 of these Standards.			8	
In open vessels where water coming on board normally drains to the bilge, the following provisions should apply:-				
1. The height of any door sill above the fixed sole level in open type vessels should be as high as practical, but in new vessels no less than 200mm. If hinged, the door should open outwards. Doors should be operable from both sides			8	
2. Air pipes and ventilators leading from below the level of the sole should have the open end as high as practical and be protected against mechanical damage.			8	
Sole drainage on open vessels is to be given careful consideration. The level of the floor should not be positioned at such a height that it would have an adverse effect on the stability of the vessel, the following guidance is given:-			8	
1. There should be effective drain openings fitted on each side of the sole to enable any water to drain directly to the bottom of the vessel. In the case of a vessel with a sealed sole, an aft sump is to be fitted, extending from the keel to deck.			8	
2. It is recommended that the drainage area be at least 2% of the total bulwark area above the sole.			8	
3. Open vessels are not to be fitted with freeing ports.			8	

4. Any barrier or coaming which may be fitted to the sole to prevent the entry of rain water to the bottom of the vessel should not be at a height any greater than 25mm above the level of the sole.			8	
5. The bilge pumping intake should be at a readily accessible position.			8	
6. Sole support structures that form buoyancy spaces are to sealed and surfaces that may come into contact with water are to be sealed with gel coat or similar.			8	
Open boats with a sole and no significant freeing ports, and which are fitted with a small limber hole shall have the limber hole replaced with a proprietary drain fitting with a screw in plug which is permanently attached. The drain shall be plugged in operation but may be opened when out of service to protect the vessel.			8	
These vessels shall carry suitable manual bilge pumping to remove significant quantities of water off the deck. In any situation the capacity of the bilge pump will exceed the potential rate of flooding by several orders of magnitude.			8	
The hole should be 25mm diameter at the most			8	
On decked vessels, where the fixed bulwarks, ends or sides of superstructures etc., form enclosed wells, means to clear entrapped water are to be provided and may comprise any, or any combination, of the following:-				
(i) Freeing ports with an attached means of closing (provided that the freeing port is closed only during fishing operations and that the closing device is easily operable and accessible, subject to the approval of the Surveyor).	2	1	5	
(ii) Permanent openings in the bulwarks such as slots.	6		2	
(iii) Apertures in and under bulwark or stern ramp doors.			8	
(iv) Deck scuppers where the discharge is above the load waterline.	3		5	
Openings in the vessel to the height of the rail or used for the purposes of deploying gear are not to be used in the calculation of freeing port area.	1		5	2
Lift-up closing appliances should not be fitted to freeing ports, or locking devices fitted to freeing port flaps, if they reduce the total freeing port area along either side of the vessel below the freeing port requirement. They will only be considered acceptable where the remaining open freeing port area meets the requirement when the appliances are closed	1	1	6	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions. At the discretion of the attending surveyor, up to one third of the freeing port area required at each side may be located in the transom bulwark, with the vessel centreline dividing the port and starboard side allocation. Where the freeing port area in the transom bulwark is greater than the maximum one third allowance per side, the excess area shall not be included in the total freeing port area provided.	2	1	4	1
Where deck erections within a well limit the volume of water that may be retained onboard, then the freeing port area may be reduced proportionally provided that such erections do not in themselves contribute to water retention.	2	1	5	
The means of clearing water must not provide easy access for water to enter the enclosed deck space.	5	2	1	
Any freeing port or slot in the bulwark is to have the bottom edge as close to the deck as possible. Freeing ports greater than 230mm in depth and wider than 350mm are to be fitted with bars.	7		1	
Where freeing ports are fitted with hinged flaps or shutters, sufficient clearance to prevent jamming is to be provided and hinges are to be fitted with pins of non-corrodible material. Greasing points or nipples are to be provided where practicable.			8	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions of trim.	8			
Care is to be taken that deck pounds, machinery and net or gear stowage will not impede the free flow of trapped water to the freeing ports or slots.	3		5	
Lift-up closing appliances fitted to freeing ports are to be so arranged that they are secure in the open position. Lift-up closing appliances should be fitted to no more than 50% of ports.	1	2	5	

Where vessels are fitted with full or partial shelters which are left open at the stern, and where the passage of water forward is not restricted by watertight bulkheads, the freeing port area is to be increased by 1% over the requirement stated in section 2.19.2. (2.19.2 states: The minimum area for freeing ports on each side of the well or deck is to be not less than 3% of the total bulwark area each side)	1	2	4	1
MACHINERY				
General				
Machinery and pressure vessels shall be of a design and construction adequate for the service for which they are intended (fit for purpose) and be efficiently installed (taking into account the manufacturer's guidance) and protected, including the use of effective guards protecting moving parts so as to minimise any danger to persons on board. Access for persons must be arranged having due regard shall be given to moving parts, hot surfaces and other hazards. Hot surfaces must be sufficiently insulated. .	7		1	
Pressure vessels shall be fitted with safety valves	1		7	
Ancillary equipment and piping must be in accordance with the appropriate part of the Code.	2	1	1	4
Layout and installation of machinery spaces and propulsion machinery should be designed for safe and efficient operation	7	1		
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	6	1	1	
Ventilation should be provided either by mechanical fans or natural vents to meet the air requirements of the propulsion machinery and to prevent build-up of fumes or excessive heat	5	2	1	
Access ladders should be of metal such as steel where practicable and securely fixed to the vessel's permanent structure	6		2	
Floor plates, where fitted, should be non-slip and securely fastened with accessible fasteners		3	5	
Propulsion Machinery and Stern Gear				
Propulsion engines and associated stern gear must be of a design, type and rating to suit the design and size of the vessel taking account of the vessel"s history, operating conditions and area of operation. Inboard-mounted engines should be diesel powered for use with fuel oil having a flash point greater than 60ºC.	6			2
Flexible sections of piping must be fitted when the engine or systems are repaired or replaced, provided that the existing installation is sound and efficient and is safe in use. Flexible shaft couplings must be in a sound condition and suitable for the power being transmitted.	2	1	3	2
A vessel fitted with an inboard engine must have adequate means and power for going astern in order to maintain control of the vessel in all foreseeable circumstances.	4		2	2
The propeller shaft and any intermediate shaft, together with the stern tube, bearings and bushes, must be in a sound condition and operate efficiently. Shaft materials and diameter should be suitable for the power being transmitted. Inboard-mounted stern glands must be accessible for adjustment.	2		1	5
Engine Starting				
All propulsion engines shall be provided with a secondary means of starting, where practicable	3	4		1
Controls and Instruments				
The controls and instrumentation systems as fitted will generally be accepted, provided that the systems are in a good state of repair and operate satisfactorily.	8			
Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.	5		2	1
High water temperature and low lubricating oil pressure alarms shall be fitted, where practicable	5		1	2
Steering System				

The steering system must operate efficiently and be well maintained. The steering gear, including bearings and rudder stock, must be of sound and efficient construction, and suitable for the size and power of the vessel.	6			2
Vessels fitted with motorised or hand hydraulic, chain, cable, or mechanical steering must be provided with an alternative means of steering which will operate if the main system fails.	1	5	1	1
The main control or helm position must be located such that the person operating the steering gear has a clear view for the safe navigation of the vessel. (See MGN 313)	8			
All parts of mechanical linkages of rod and chain should be accessible with adequate lubrication arrangements provided.	6		2	
Refrigerating Plant				
Refrigerating plants shall be of a design and construction adequate for the service for which			8	
they are intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board. Refrigerant detection sensors, compatible with the refrigerant being used, are recommended to be fitted (where practicable).			8	
Ammonia, methyl chloride or chlorofluorocarbons (CFCs, with ozone depleting potential higher than 5% of CFC-11) shall not be used as refrigerants.			8	
Where refrigerating plants are installed they shall be maintained in an efficient working condition and examined at regular intervals.			8	
Tanks, machinery or other metallic objects that do not have good electrical continuity with the water surrounding the vessel shall have special earthing arrangements to reduce potential risk	1		6	1
Particular attention must be given to protection against water ingress and the effects of vibration	1	1	5	1
Main and emergency switchboards shall be suitably guarded and arranged to provide easy access without danger to any person. Adequate non-conducting mats or gratings shall be provided. Exposed parts that may have a voltage between conductors or to earth exceeding 55 volts shall not be installed on the face of any switchboard or control panel.	1		6	1
Switchboards shall be clearly marked; fuse boxes and fuse holders shall be checked at regular intervals to ensure that the correct rating of fuse is being used. Differing voltages should not be included in any one distribution board	3		5	
All circuits except the main supply from the battery to the starter motor and electrically driven steering motors, shall be provided with electrical protection against overload and short circuit, (i.e. circuit breakers shall be installed). Short circuit protection shall be for not less than twice the total rated current load in the circuit protected	2	1	3	2
Steering motors should have an overload alarm in lieu of overload protection. Short circuit protection should before not less than twice the total rated current of the steering motors in the circuit protected	1	2	5	
Cables which are not provided with electrical protection should be kept as short as possible and be “short circuit proofed”, e.g. single core with an additional insulating sleeve over the insulation of each core. Normal marine cable (e.g. in compliance with BS 6883) which is single core will meet this recommendation without an additional sleeve, since it has both conductor insulation and a sheath In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.	2		4	2
The electrical generating system must have sufficient capacity in normal running conditions to ensure the correct operation of all safety and navigation equipment including navigation and fishing lights.	5		3	
With regard to existing cable installations and to any additional cables fitted:				
i) Cables should not be run below floor plate level except where this is necessary for connections to underwater equipment, etc., in which case the cable should be run in conduit.		4	4	
ii) Cables running through machinery spaces should not be secured with plastic clips.	3		4	

iii) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks.	1	3	4	
iv) Cables should be of the correct current carrying capacity for their application.	2		2	4
When selecting cables, particular attention should be given to environmental factors such as temperature and contact with substances, e.g. polystyrene, which degrades P.V.C. insulation	2		3	3
Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over.	1		3	4
D.C. Systems Up To 24 volts				
Systems should be two wire.	7			1
Existing earthing systems, where these are required,will be accepted provided that the system is sound and efficient and that no danger to the system or vessel may occur. Hull earth plates, if fitted, must be efficiently connected and not painted over.	5		1	2
Batteries should be in good condition, secured, protected from short circuiting and overloading, and should be sited clear of heat sources *and the battery installation and ventilation should be in accordance with IEE Regulations.*	4	3		1
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	4	2		2
A.C. Systems				
Cables for A.C. systems must be kept separate from D.C. systems and run in separate trays and conduits.	1		6	1
Switchgear for A.C. systems must be fitted in switchboards and panels which are separate from those containing D.C. systems. Systems and equipment must be clearly marked.	1	1	5	1
Switchgear and sockets must be so arranged as to prevent the fitting of low voltage equipment and lamps into high voltage systems	1	1	5	1
Fuel Oil Installations				
Tanks will generally be accepted provided that they are of sound and efficient construction and safe in operation. Glass contents gauges, where fitted, must have selfclosing valves at the base. Metal rods or slotted covers must protect sight gauges. If glass contents gauges are not fitted, other means of establishing the contents of the tanks must be available.	3	4		1
Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections should be of an appropriate armoured fire resistant metallic hose with screwed fittings, and kept as short as practicable	2	4		2
FIRE DETECTION PREVENTION AND EXTINCTION				
Fire Prevention				
Glass portlight and deadlight arrangements, if fitted in the boundaries of machinery spaces, will be accepted if they are in a sound condition, but if damaged they must be blanked off			8	
Cylinders containing flammable, toxic or other dangerous gases, and expended cylinders shall be clearly marked as to their contents and properly stowed and secured on open decks. All valves, pressure regulators and pipes leading from such cylinders shall be protected against damage. Such cylinders may be stowed in compartments that meet the requirements set out in the section below	1	1	6	

Cylinders and bottles containing flammable, toxic liquids, toxic gases and liquefied gases, other than liquefied petroleum gas shall be stored in compartments having direct access from open decks but must not be stowed in machinery spaces. Such compartments shall have boundary bulkheads constructed from non-combustible materials. Pressure adjusting devices and relief valves, if any, shall exhaust within the compartment. Where boundary bulkheads of such compartments adjoin other enclosed spaces they shall be gas-tight and be provided with ventilation arrangements that are separate from other ventilation systems. Ventilation shall be arranged at high and low levels and the inlets and outlets of ventilators shall be positioned in safe areas and fitted with spark arresters		1	7	
Exhaust pipes and ducts must be adequately insulated to avoid igniting combustible materials and must be protected from damage	6		1	1
Cleanliness of machinery spaces				
Machinery spaces shall be kept clean, free of rubbish and combustible waste. Bilge levels shall be checked regularly and oily waste and sludge shall be collected and properly disposed of ashore	8			
Cooking and heating appliances				
Appliances must not be positioned close to engines and fuel tanks.	4		4	
All types of stoves and heating appliances must be strongly secured to the surrounding structure	5		3	
Curtains or any other suspended textile materials must not be fitted within 600 mm of any heating or other appliance	3		5	
Materials that are in the vicinity of any cooking appliance shall be non-combustible, except that combustible materials may be employed when these are faced with stainless steel or a similar non-combustible material.		1	5	2
Wherever possible, electrically powered cooking equipment shall be provided in preference to open flame types	1	3	4	
Curtains, towel rails, hooks and similar arrangements shall be kept well clear of the cooking area.	1		7	
Electric stoves and other cooking appliances shall be fitted with an isolation switch outside the galley space.	1	1	6	
Open Vessels less than 7m				
• 1 Multi-purpose Fire Extinguisher (fire rating 5A/34B) – if vessel has in-board engine **or auxiliary engine** (extinguisher should be capable of dealing with all fire types, including hydrocarbons)			8	
Fire buckets shall be heavy duty with a Lanyard long enough to reach water. Buckets need not be made of steel			8	
PROTECTION OF PERSONNEL				
Handrails, hand holds and grab rails				
On existing vessels				
• The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced.	7	1		
• Sections of rails or wires may be portable where necessary for the vessel"s fishing operations.	3	3	2	
• Access stairways, ladder ways and passageways must be provided with handrails and grab rails for the safety of the crew.	3		5	
On all vessels, barriers must be fitted to separate the crew from equipment when deploying fishing gear.	4	3	1	
Surface of Working Decks				
Decks to which the crew are expected to have access must be provided with an adequate non-slip surface or efficient non-slip covering.	7		1	

Particular attention must be paid to the provision of a non-slip surface to any hatch cover fitted on a working deck.	4		4	
The exposed bottom boards of open boats must have a non-slip surface			8	
Winches, tackles and hoisting gear				
Every vessel that is provided with winches, tackles and hoisting gear shall have such gear properly installed having regard to the intended service of the vessel.	4		2	2
All hoisting gear, hauling gear and related equipment shall satisfy the requirements of The Merchant Shipping and Fishing Vessels (Provisions and Use of Work Equipment) Regulations 2006 No. 2183 and the Merchant Shipping and Fishing Vessels (Lifting Operations and Lifting Equipment) Regulations 2006 No. 2184 as applicable.	5	1	1	1
All equipment used in hoisting/hauling should be used only by a competent person and must be inspected and examined at regular intervals and a written record shall be made of all such tests and examinations.	5	1	1	1
All parts of hauling gear, hoisting gear and related equipment must be maintained in good repair and working order.	7		1	
The controls for the hauling and hoisting gear shall be installed in an area sufficiently large enough to enable operators to work unhindered.	8			
The hauling and hoisting gear shall also have appropriate safety devices for emergencies, including emergency stop facilities within reach of the equipment operator. A duplicate set of emergency stop facilities is to be provided in the wheelhouse.	1	3	4	
The gear operator must have a clear view of the gear and any crew member working near it.	7			1
If hauling gear is controlled from the wheelhouse, the operator must also have a clear view of the crew working near the gear, either directly or via any other suitable medium. All operators, in the wheelhouse or on deck shall give exclusive attention to that task and must not carry out other tasks while operating the equipment.	1	2	4	1
A reliable communications system must be used between the wheelhouse and the working deck and the crew shall be trained in the use of hand signals.	2		5	1
A sharp look out must always be maintained and the crew warned of the imminent danger of heavy oncoming seas during fishing operations or when other work is being undertaken on deck.	2		5	1
Contact with bare ropes and warps and with moving parts of the equipment shall be minimized by installing protective devices.	5		2	1
The following control measures shall be installed for restricting moving masses (on vessels with trawl doors or codends):				
(i) devices to immobilise the trawl doors;	1	1	5	1
(ii) devices to control the swinging motion of the codend.	3		4	1
The crew must be trained in the use of fishing gear and hauling and hoisting equipment	4		1	3
Securing of heavy equipment				
Heavy items of equipment such as spare fishing gear, batteries, cooking appliances etc., shall be securely fastened in place to prevent movement due to severe motions of the vessel.	7		1	
Stowage lockers containing heavy items shall have lids or doors with secure fastening.	2		6	
Means of Recovering a Helpless Person from the water				
All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	4	4		
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.2	2	5	1	

ANNEX B.5 – RETURNS FROM SURVEYOR INSPECTIONS OF EXISTING VESSELS TO ASSESS POTENTIAL COMPLIANCE OF EXISTING VESSELS WITH PROPOSED CODE – DECK 12M VESSELS

Requirement	Yes	No	Not applicable	Not able to determine
CONSTRUCTION				
The structural strength and construction of every fishing vessel and the disposition of bulkheads shall be adequate for all foreseeable operating conditions in service. The scantlings, arrangements and construction for the hull, bulkheads, superstructures, deckhouses, machinery casings, companionways and other structures shall be sufficient to withstand all operational loads arising during the vessel's service. Particular attention should be paid to the intended fishing method	6			
The vessel should be *designed, constructed* and maintained in such a manner as to be watertight and in accordance with the Construction Standard applicable at the time of construction.. The number of openings in the weathertight structure of the vessel must be as few as practicable and be provided with the closing and securing arrangements described below.	6			
Decks				
Full length and partial weather decks, including shelter decks, must be of sound and watertight construction, and be of sufficient strength to withstand the sea and weather conditions likely to be encountered.	6			
Recesses in weather decks must be fitted with drainage arrangements so that the deck drains under all normal conditions of trim, and it is recommended that they operate efficiently at a heel of 10°.	3	3		
Bulkheads				
Bulkheads, if fitted, are required to be watertight.	6			
Accesses through bulkheads				
Accesses through watertight bulkheads, if fitted, shall be of watertight construction, have equivalent structural strength as the adjacent bulkhead and be kept closed at sea.,	2		4	
Doorways above Weather Deck				
Doorways giving access to space below the deck should be fitted with a permanent coaming of 300 mm minimum height above the deck. Alternatively a portable coaming may be provided, fixed in guide channels to give a minimum coaming height of 300 mm.	6			
Doors must be of sound construction and be weathertight.	6			
Hatches and Coamings				
Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming may be omitted, provided that the hatch can be secured weathertight. Hatches must only be kept open when necessary for fishing operations and otherwise be kept closed at sea to prevent the risk of downflooding and capsize and signage provided stating "To be kept closed at sea". Flush deck hatches are not recommended unless necessary and any hatches that are required to be open at sea must have coamings	4	2		
Hatchways should be as small as possible subject to the requirements of Access and Escape Arrangements.	6			

Weather Deck Hatches				
Hatchway covers fitted in the weather deck must be provided with efficient means of securing weathertight closure.	6			
Flush Hatches and Scuttles				
Ice scuttles, where fitted, must be of metal construction, with screw or bayonet type clamp fastening and with the loose cover permanently attached to the structure with hinges, wire or chain and be capable of being closed watertight			6	
Skylights				
Skylights must be of efficient construction and be capable of being closed watertight from both sides. Skylights used as emergency escapes shall be kept clear of obstructions Where the glazing material and its method of fixing is not equivalent in strength to the surrounding structure, portable blanking pieces or plates that can be secured over the glazing must be provided. Portable blanking pieces or plates must be stored in a readily accessible position.			6	
Side Scuttles and Portlights				
Side scuttles or portlights fitted below the weathertight deck and not fitted with an attached deadlight must be provided with a portable blanking plate, which can be efficiently secured, if the glazing breaks. Portable blanking plates must be stored in a readily accessible position.			6	
Glazing material in existing sidelights must be sound and efficiently secured. When the glazing material is damaged it must be blanked off.			6	
Windows				
Windows fitted to spaces above the weather deck, such as a deckhouse or superstructure protecting an opening leading to below the weather deck, must be weathertight.	6			
Where windows are fitted below the weather deck on existing vessels, they must be of sound construction, provide watertight integrity, and be of strength compatible with their size. In case the glazing breaks, portable blanking plates must be provided, which can be efficiently secured to the window frame, and which are sufficient to cover a total of 50% of the number of windows. Portable blanking plates must be stored in a readily accessible position.			6	
Glazing material in existing windows must be sound and efficiently secured, and glass should be toughened or laminated. When the glazing material is damaged it must be blanked off.	2		1	3
Ventilators				
An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board.	2	3	1	
There shall be sufficient fresh air in enclosed workplaces, having regard to the work methods used and the physical demands that are placed on the crew.	5		1	
If a mechanical ventilation system is used, it shall be maintained in good condition	2	2	2	
Ventilators serving spaces below the weathertight deck must be provided with an effective means of weathertight closure	3	2	1	
Exhaust Systems				
Engine exhaust systems of the dry or water-injected type, which discharge through the hull below the weathertight deck at the side or stern, should be provided with permanently attached means of preventing back flooding into the hull or engine through the exhaust system. This may be by system design or valve or non-return device.	5		1	
Exhaust systems which go up by the funnel hall be insultated to prevent the risk fire and ventilated away from crew.	1		5	

Air Pipes				
Air pipe arrangements must be of sound construction, operate efficiently and be provided with an efficient means of watertight closure, with provision made to prevent overpressure or vacuum occurring when tanks are filled or emptied.	2		4	
Exposed air pipes, in excess of 25 mm diameter, serving fuel oil, hydraulic oil, and lubricating oil tanks must be fitted with anti-flash gauze diaphragms. Where the pipe in 25mm or less in diameter alternative arrangements may be considered	2		4	
Sea Inlets and Discharges				
Sea inlets and discharges should be fitted with an efficient means of closure. Inlets should be marked with open/closed and the system they serve	6			
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	3	3		
Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible in an emergency, they should be fitted with a remote means of operation, i.e. by extended spindle or wire pull device operable above floor plate level	3	3		
Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains, etc., should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted.	6			
Materials for Valves and Associated Piping - Sea Water Systems				
Valves, pipes and fittings serving as sea inlets and discharges attached directly to the hull of the vessel below the load waterline should be of steel, bronze, or other equivalent and compatible material.	6			
Where the sea inlet valve or fitting is connected to the hull by means of a tube or distance piece, the tube or distance piece should be of a material that is compatible with the hull and valve.	1		5	
Valves, piping and flexible hoses must be of sound and efficient construction and installation. All piping systems must be well supported with pipe clips or mounts and protected against vibration and chafing	3	3		
Water freeing arrangements - Open Vessels				
Open type vessels are to be fitted with bilge pumps as required by section 9.3 of these Standards.			6	
In open vessels where water coming on board normally drains to the bilge, the following provisions should apply:-				
1. The height of any door sill above the fixed sole level in open type vessels should be as high as practical, but in new vessels no less than 200mm. If hinged, the door should open outwards. Doors should be operable from both sides			6	
2. Air pipes and ventilators leading from below the level of the sole should have the open end as high as practical and be protected against mechanical damage.			6	
Sole drainage on open vessels is to be given careful consideration. The level of the floor should not be positioned at such a height that it would have an adverse effect on the stability of the vessel, the following guidance is given:-			6	
1. There should be effective drain openings fitted on each side of the sole to enable any water to drain directly to the bottom of the vessel. In the case of a vessel with a sealed sole, an aft sump is to be fitted, extending from the keel to deck.			6	
2. It is recommended that the drainage area be at least 2% of the total bulwark area above the sole.			6	
3. Open vessels are not to be fitted with freeing ports.			6	
4. Any barrier or coaming which may be fitted to the sole to prevent the entry of rain water to the bottom of the vessel should not be at a height any greater than 25mm above the level of the sole.			6	

5. The bilge pumping intake should be at a readily accessible position.			6	
6. Sole support structures that form buoyancy spaces are to sealed and surfaces that may come into contact with water are to be sealed with gel coat or similar.			6	
Open boats with a sole and no significant freeing ports, and which are fitted with a small limber hole shall have the limber hole replaced with a proprietary drain fitting with a screw in plug which is permanently attached. The drain shall be plugged in operation but may be opened when out of service to protect the vessel.			6	
These vessels shall carry suitable manual bilge pumping to remove significant quantities of water off the deck. In any situation the capacity of the bilge pump will exceed the potential rate of flooding by several orders of magnitude.			6	
The hole should be 25mm diameter at the most			6	
On decked vessels, where the fixed bulwarks, ends or sides of superstructures etc., form enclosed wells, means to clear entrapped water are to be provided and may comprise any, or any combination, of the following:-				
(i) Freeing ports with an attached means of closing (provided that the freeing port is closed only during fishing operations and that the closing device is easily operable and accessible, subject to the approval of the Surveyor).	3		3	
(ii) Permanent openings in the bulwarks such as slots.	5		1	
(iii) Apertures in and under bulwark or stern ramp doors.	3		3	
(iv) Deck scuppers where the discharge is above the load waterline.	1	1	4	
Openings in the vessel to the height of the rail or used for the purposes of deploying gear are not to be used in the calculation of freeing port area.			6	
Lift-up closing appliances should not be fitted to freeing ports, or locking devices fitted to freeing port flaps, if they reduce the total freeing port area along either side of the vessel below the freeing port requirement. They will only be considered acceptable where the remaining open freeing port area meets the requirement when the appliances are closed	1	1	4	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions. At the discretion of the attending surveyor, up to one third of the freeing port area required at each side may be located in the transom bulwark, with the vessel centreline dividing the port and starboard side allocation. Where the freeing port area in the transom bulwark is greater than the maximum one third allowance per side, the excess area shall not be included in the total freeing port area provided.	3	3		
Where deck erections within a well limit the volume of water that may be retained onboard, then the freeing port area may be reduced proportionally provided that such erections do not in themselves contribute to water retention.	2	2	2	
The means of clearing water must not provide easy access for water to enter the enclosed deck space.	4		2	
Any freeing port or slot in the bulwark is to have the bottom edge as close to the deck as possible. Freeing ports greater than 230mm in depth and wider than 350mm are to be fitted with bars.	4		1	1
Where freeing ports are fitted with hinged flaps or shutters, sufficient clearance to prevent jamming is to be provided and hinges are to be fitted with pins of non-corrodible material. Greasing points or nipples are to be provided where practicable.		1	5	
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions of trim.	6			
Care is to be taken that deck pounds, machinery and net or gear stowage will not impede the free flow of trapped water to the freeing ports or slots.	2		4	
Lift-up closing appliances fitted to freeing ports are to be so arranged that they are secure in the open position. Lift-up closing appliances should be fitted to no more than 50% of ports.	1		5	
Where vessels are fitted with full or partial shelters which are left open at the stern, and where the passage of water forward is not restricted by watertight bulkheads, the freeing port area is to be increased by 1% over the		3	3	

requirement stated in section 2.19.2. (2.19.2 states: The minimum area for freeing ports on each side of the well or deck is to be not less than 3% of the total bulwark area each side)				
MACHINERY				
General				
Machinery and pressure vessels shall be of a design and construction adequate for the service for which they are intended (fit for purpose) and be efficiently installed (taking into account the manufacturer's guidance) and protected, including the use of effective guards protecting moving parts so as to minimise any danger to persons on board. Access for persons must be arranged having due regard shall be given to moving parts, hot surfaces and other hazards. Hot surfaces must be sufficiently insulated. .	3		3	
Pressure vessels shall be fitted with safety valves			6	
Ancillary equipment and piping must be in accordance with the appropriate part of the Code.	3	2	1	
Layout and installation of machinery spaces and propulsion machinery should be designed for safe and efficient operation	4	2		
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	4	2		
Ventilation should be provided either by mechanical fans or natural vents to meet the air requirements of the propulsion machinery and to prevent build-up of fumes or excessive heat	4	2		
Access ladders should be of metal such as steel where practicable and securely fixed to the vessel's permanent structure	4	2		
Floor plates, where fitted, should be non-slip and securely fastened with accessible fasteners	4	2		
Propulsion Machinery and Stern Gear				
Propulsion engines and associated stern gear must be of a design, type and rating to suit the design and size of the vessel taking account of the vessel"s history, operating conditions and area of operation. Inboard-mounted engines should be diesel powered for use with fuel oil having a flash point greater than 60ºC.	6			
Flexible sections of piping must be fitted when the engine or systems are repaired or replaced, provided that the existing installation is sound and efficient and is safe in use. Flexible shaft couplings must be in a sound condition and suitable for the power being transmitted.	3	3		
A vessel fitted with an inboard engine must have adequate means and power for going astern in order to maintain control of the vessel in all foreseeable circumstances.	6			
The propeller shaft and any intermediate shaft, together with the stern tube, bearings and bushes, must be in a sound condition and operate efficiently. Shaft materials and diameter should be suitable for the power being transmitted. Inboard-mounted stern glands must be accessible for adjustment.	6			
Engine Starting				
All propulsion engines shall be provided with a secondary means of starting, where practicable	4	1	1	
Controls and Instruments				
The controls and instrumentation systems as fitted will generally be accepted, provided that the systems are in a good state of repair and operate satisfactorily.	6			
Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.	5	1		
High water temperature and low lubricating oil pressure alarms shall be fitted, where practicable	4	2		
Steering System				

The steering system must operate efficiently and be well maintained. The steering gear, including bearings and rudder stock, must be of sound and efficient construction, and suitable for the size and power of the vessel.	6			
Vessels fitted with motorised or hand hydraulic, chain, cable, or mechanical steering must be provided with an alternative means of steering which will operate if the main system fails.	2	1	3	
The main control or helm position must be located such that the person operating the steering gear has a clear view for the safe navigation of the vessel. (See MGN 313)	5		1	
All parts of mechanical linkages of rod and chain should be accessible with adequate lubrication arrangements provided.	4		1	1
Refrigerating Plant				
Refrigerating plants shall be of a design and construction adequate for the service for which			6	
they are intended and shall be so installed and protected as to reduce to a minimum any danger to persons on board. Refrigerant detection sensors, compatible with the refrigerant being used, are recommended to be fitted (where practicable).			6	
Ammonia, methyl chloride or chlorofluorocarbons (CFCs, with ozone depleting potential higher than 5% of CFC-11) shall not be used as refrigerants.			6	
Where refrigerating plants are installed they shall be maintained in an efficient working condition and examined at regular intervals.			6	
Tanks, machinery or other metallic objects that do not have good electrical continuity with the water surrounding the vessel shall have special earthing arrangements to reduce potential risk	1		1	4
Particular attention must be given to protection against water ingress and the effects of vibration	1			5
Main and emergency switchboards shall be suitably guarded and arranged to provide easy access without danger to any person. Adequate non-conducting mats or gratings shall be provided. Exposed parts that may have a voltage between conductors or to earth exceeding 55 volts shall not be installed on the face of any switchboard or control panel.	1		5	
Switchboards shall be clearly marked; fuse boxes and fuse holders shall be checked at regular intervals to ensure that the correct rating of fuse is being used. Differing voltages should not be included in any one distribution board	2		4	
All circuits except the main supply from the battery to the starter motor and electrically driven steering motors, shall be provided with electrical protection against overload and short circuit, (i.e. circuit breakers shall be installed). Short circuit protection shall be for not less than twice the total rated current load in the circuit protected	2		1	3
Steering motors should have an overload alarm in lieu of overload protection. Short circuit protection should before not less than twice the total rated current of the steering motors in the circuit protected			5	1
Cables which are not provided with electrical protection should be kept as short as possible and be “short circuit proofed”, e.g. single core with an additional insulating sleeve over the insulation of each core. Normal marine cable (e.g. in compliance with BS 6883) which is single core will meet this recommendation without an additional sleeve, since it has both conductor insulation and a sheath In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.	1		1	4
The electrical generating system must have sufficient capacity in normal running conditions to ensure the correct operation of all safety and navigation equipment including navigation and fishing lights.	6			
With regard to existing cable installations and to any additional cables fitted:				
i) Cables should not be run below floor plate level except where this is necessary for connections to underwater equipment, etc., in which case the cable should be run in conduit.		3	2	1
ii) Cables running through machinery spaces should not be secured with plastic clips.	2	3	1	

iii) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks.	2	3	1	
iv) Cables should be of the correct current carrying capacity for their application.	2	1		3
When selecting cables, particular attention should be given to environmental factors such as temperature and contact with substances, e.g. polystyrene, which degrades P.V.C. insulation	2	1		3
Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over.	1			5
D.C. Systems Up To 24 volts				
Systems should be two wire.	5			1
Existing earthing systems, where these are required,will be accepted provided that the system is sound and efficient and that no danger to the system or vessel may occur. Hull earth plates, if fitted, must be efficiently connected and not painted over.	1			5
Batteries should be in good condition, secured, protected from short circuiting and overloading, and should be sited clear of heat sources *and the battery installation and ventilation should be in accordance with IEE Regulations.*	4	2		
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	6			
A.C. Systems				
Cables for A.C. systems must be kept separate from D.C. systems and run in separate trays and conduits.			5	1
Switchgear for A.C. systems must be fitted in switchboards and panels which are separate from those containing D.C. systems. Systems and equipment must be clearly marked.	2		3	1
Switchgear and sockets must be so arranged as to prevent the fitting of low voltage equipment and lamps into high voltage systems			5	1
Fuel Oil Installations				
Tanks will generally be accepted provided that they are of sound and efficient construction and safe in operation. Glass contents gauges, where fitted, must have selfclosing valves at the base. Metal rods or slotted covers must protect sight gauges. If glass contents gauges are not fitted, other means of establishing the contents of the tanks must be available.	5	1		
Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections should be of an appropriate armoured fire resistant metallic hose with screwed fittings, and kept as short as practicable	3	3		
FIRE DETECTION PREVENTION AND EXTINCTION				
Fire Prevention				
Glass portlight and deadlight arrangements, if fitted in the boundaries of machinery spaces, will be accepted if they are in a sound condition, but if damaged they must be blanked off			6	
Cylinders containing flammable, toxic or other dangerous gases, and expended cylinders shall be clearly marked as to their contents and properly stowed and secured on open decks. All valves, pressure regulators and pipes leading from such cylinders shall be protected against damage. Such cylinders may be stowed in compartments that meet the requirements set out in the section below	1		5	

Cylinders and bottles containing flammable, toxic liquids, toxic gases and liquefied gases, other than liquefied petroleum gas shall be stored in compartments having direct access from open decks but must not be stowed in machinery spaces. Such compartments shall have boundary bulkheads constructed from non-combustible materials. Pressure adjusting devices and relief valves, if any, shall exhaust within the compartment. Where boundary bulkheads of such compartments adjoin other enclosed spaces they shall be gas-tight and be provided with ventilation arrangements that are separate from other ventilation systems. Ventilation shall be arranged at high and low levels and the inlets and outlets of ventilators shall be positioned in safe areas and fitted with spark arresters	2		4	
Exhaust pipes and ducts must be adequately insulated to avoid igniting combustible materials and must be protected from damage	4		2	
Cleanliness of machinery spaces				
Machinery spaces shall be kept clean, free of rubbish and combustible waste. Bilge levels shall be checked regularly and oily waste and sludge shall be collected and properly disposed of ashore	6			
Cooking and heating appliances				
Appliances must not be positioned close to engines and fuel tanks.	1		5	
All types of stoves and heating appliances must be strongly secured to the surrounding structure	3		3	
Curtains or any other suspended textile materials must not be fitted within 600 mm of any heating or other appliance	3		3	
Materials that are in the vicinity of any cooking appliance shall be non-combustible, except that combustible materials may be employed when these are faced with stainless steel or a similar non-combustible material.	3		3	
Wherever possible, electrically powered cooking equipment shall be provided in preference to open flame types	1	1	4	
Curtains, towel rails, hooks and similar arrangements shall be kept well clear of the cooking area.	2		4	
Electric stoves and other cooking appliances shall be fitted with an isolation switch outside the galley space.	1		5	
Open Vessels less than 7m				
• 1 Multi-purpose Fire Extinguisher (fire rating 5A/34B) – if vessel has in-board engine **or auxiliary engine** (extinguisher should be capable of dealing with all fire types, including hydrocarbons)			6	
Fire buckets shall be heavy duty with a Lanyard long enough to reach water. Buckets need not be made of steel			6	
PROTECTION OF PERSONNEL				
Handrails, hand holds and grab rails				
On existing vessels				
• The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced.	3	3		
• Sections of rails or wires may be portable where necessary for the vessel"s fishing operations.	2	3	1	
• Access stairways, ladder ways and passageways must be provided with handrails and grab rails for the safety of the crew.	5		1	
On all vessels, barriers must be fitted to separate the crew from equipment when deploying fishing gear.	2	4		
Surface of Working Decks				
Decks to which the crew are expected to have access must be provided with an adequate non-slip surface or efficient non-slip covering.	6			

Particular attention must be paid to the provision of a non-slip surface to any hatch cover fitted on a working deck.	3		3	
The exposed bottom boards of open boats must have a non-slip surface			6	
Winches, tackles and hoisting gear				
Every vessel that is provided with winches, tackles and hoisting gear shall have such gear properly installed having regard to the intended service of the vessel.	4		2	
All hoisting gear, hauling gear and related equipment shall satisfy the requirements of The Merchant Shipping and Fishing Vessels (Provisions and Use of Work Equipment) Regulations 2006 No. 2183 and the Merchant Shipping and Fishing Vessels (Lifting Operations and Lifting Equipment) Regulations 2006 No. 2184 as applicable.	3		3	
All equipment used in hoisting/hauling should be used only by a competent person and must be inspected and examined at regular intervals and a written record shall be made of all such tests and examinations.	4		2	
All parts of hauling gear, hoisting gear and related equipment must be maintained in good repair and working order.	4			2
The controls for the hauling and hoisting gear shall be installed in an area sufficiently large enough to enable operators to work unhindered.	4		2	
The hauling and hoisting gear shall also have appropriate safety devices for emergencies, including emergency stop facilities within reach of the equipment operator. A duplicate set of emergency stop facilities is to be provided in the wheelhouse.	2	1	3	
The gear operator must have a clear view of the gear and any crew member working near it.	4		2	
If hauling gear is controlled from the wheelhouse, the operator must also have a clear view of the crew working near the gear, either directly or via any other suitable medium. All operators, in the wheelhouse or on deck shall give exclusive attention to that task and must not carry out other tasks while operating the equipment.	4	2		
A reliable communications system must be used between the wheelhouse and the working deck and the crew shall be trained in the use of hand signals.	3	1	2	
A sharp look out must always be maintained and the crew warned of the imminent danger of heavy oncoming seas during fishing operations or when other work is being undertaken on deck.	4		2	
Contact with bare ropes and warps and with moving parts of the equipment shall be minimized by installing protective devices.	3		3	
The following control measures shall be installed for restricting moving masses (on vessels with trawl doors or codends):				
(i) devices to immobilise the trawl doors;	1		5	
(ii) devices to control the swinging motion of the codend.	1		5	
The crew must be trained in the use of fishing gear and hauling and hoisting equipment	4		2	
Securing of heavy equipment				
Heavy items of equipment such as spare fishing gear, batteries, cooking appliances etc., shall be securely fastened in place to prevent movement due to severe motions of the vessel.	5		1	
Stowage lockers containing heavy items shall have lids or doors with secure fastening.	4		2	
Means of Recovering a Helpless Person from the water				
All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	4			2
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.		3	3	

ANNEX C.1 – AVERAGE COMPLIANCE FOR 5 MOST COMMON VESSELS BASED ON SURVEYOR CHECKLISTS AND COSTINGS BASED ON MMO EMFF APPLICATIONS – OPEN 5M VESSELS **New Requirement**	**Cost**
Engine Starting All propulsion engines shall be provided with a secondary means of starting, where practicable	**£200**
PROTECTION OF PERSONNEL	
Handrails, hand holds and grab rails On existing vessels • The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced. • Sections of rails or wires may be portable where necessary for the vessels operation	**£1000 – £1400**
The hauling and hoisting gear shall also have appropriate safety devices for emergencies, including emergency stop facilities within reach of the equipment operator. A duplicate set of emergency stop facilities is to be provided in the wheelhouse.	£50
Means of Recovering a Helpless Person from the water All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	**£350**
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.	£300

ANNEX C.2 – AVERAGE COMPLIANCE FOR 5 MOST COMMON VESSELS BASED ON SURVEYOR CHECKLISTS AND COSTINGS BASED ON MMO EMFF APPLICATIONS – OPEN 7M VESSELS	Cost
New Requirement	
CONSTRUCTION	
Doors must be of sound construction and be weathertight.	£400
Sea inlets and discharges Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible	**£400-£1400**
Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains, etc., should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted	
Water freeing arrangements Sole drainage on open vessels is to be given careful consideration. The level of the floor should not be positioned at such a height that it would have an adverse effect on the stability of the vessel, the following guidance is given:-	**£600**
1. There should be effective drain openings fitted on each side of the sole to enable any water to drain directly to the bottom of the vessel. In the case of a vessel with a sealed sole, an aft sump is to be fitted, extending from the keel to deck.	
Engine Starting All propulsion engines shall be provided with a secondary means of starting, where practicable	**£400**
Steering system Vessels fitted with motorised or hand hydraulic, chain, cable, or mechanical steering must be provided with an alternative means of steering which will operate if the main system fails.	**£230**
Electrical Systems	
Cables which are not provided with electrical protection should be kept as short as possible and be "short circuit proofed", e.g. single core with an additional insulating sleeve over the insulation of each core. Normal marine cable (e.g. in compliance with BS 6883) which is single core will meet this recommendation without an additional sleeve, since it has both conductor insulation and a sheath	£800-£2350
In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.	
The electrical generating system must have sufficient capacity in normal running conditions to ensure the correct operation of all safety and navigation equipment including navigation and fishing lights.	
With regard to existing cable installations and to any additional cables fitted:	
i) Cables running through machinery spaces should not be secured with plastic clips.	
Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks	
Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over.	£200

Batteries should be in good condition, secured, protected from short circuiting and overloading, and should be sited clear of heat sources	
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	£75
Surface of working decks The exposed bottom boards of open boats must have a non-slip surface	£600-£900
Handrails, Hand holds and grab rails The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced	**£1000 - £1700**
Sections of rails or wires may be portable where necessary for the vessel"s fishing operations.	
Winches, tackle and hoisting gear The hauling and hoisting gear shall also have appropriate safety devices for emergencies, including emergency stop facilities within reach of the equipment operator. A duplicate set of emergency stop facilities is to be provided in the wheelhouse.	**£50**
Means of Recovering a Helpless Person from the water All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	**£350**
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.	£300

ANNEX C.3 – AVERAGE COMPLIANCE FOR 5 MOST COMMON VESSELS BASED ON SURVEYOR CHECKLISTS AND COSTINGS BASED ON MMO EMFF APPLICATIONS – DECK 7M VESSELS	**Cost**
New Requirement	
CONSTRUCTION	
Bulkheads Bulkheads, if fitted, are required to be watertight.	**No information on Costs**
Accesses through watertight bulkheads, if fitted, shall be of watertight construction, have equivalent structural strength as the adjacent bulkhead and be kept closed at sea	**£740**
Doorways giving access to space below the deck should be fitted with a permanent coaming of 300 mm minimum height above the deck. Alternatively a portable coaming may be provided, fixed in guide channels to give a minimum coaming height of 300 mm	**£740**
Hatches and coamings Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming may be omitted, provided that the hatch can be secured weathertight. Hatches must only be kept open when necessary for fishing operations and otherwise be kept closed at sea to prevent the risk of downflooding and capsize and signage provided stating "To be kept closed at sea". Flush deck hatches are not recommended unless necessary and any hatches that are required to be open at sea must have coamings	£700-£1500
Ventilators An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board.	£600
If a mechanical ventilation system is used, it shall be maintained in good condition	
Ventilators serving spaces below the weathertight deck must be provided with an effective means of weathertight closure	
Sea Inlets and Discharges	

Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	£400-£1400
Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible in an emergency, they should be fitted with a remote means of operation, i.e. by extended spindle or wire pull device operable above floor plate level	
Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains, etc., should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted	
Materials for Valves and Associated Piping - Sea Water Systems	
Valves, piping and flexible hoses must be of sound and efficient construction and installation. All piping systems must be well supported with pipe clips or mounts and protected against vibration and chafing	
MACHINERY	
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	£100
Engine Starting All propulsion engines shall be provided with a secondary means of starting, where practicable	**£400**
Controls and Instruments	
Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.	£50
Electrical Systems Tanks, machinery or other metallic objects that do not have good electrical continuity with the water surrounding the vessel shall have special earthing arrangements	**£400 to £800**
In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.	£200
With regard to existing cable installations and to any additional cables fitted:	£2800 - £4700
ii) Cables should not be run below floor plate level except where this is necessary for connections to underwater equipment, etc., in which case the cable should be run in conduit.	
iii) Cables running through machinery spaces should not be secured with plastic clips.	
iv) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks.	
v) Cables should be of the correct current carrying capacity for their application.	
Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over.	£200

Fuel Oil Installations Tanks will generally be accepted provided that they are of sound and efficient construction and safe in operation. Glass contents gauges, where fitted, must have selfclosing valves at the base. Metal rods or slotted covers must protect sight gauges. If glass contents gauges are not fitted, other means of establishing the contents of the tanks must be available.	**£50**
Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections should be of an appropriate armoured fire resistant metallic hose with screwed fittings, and kept as short as practicable	£400 - £1200
PROTECTION OF PERSONNEL	
Handrails, hand holds and grab rails On existing vessels	
• The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced.	£1000 - £1700
• Sections of rails or wires may be portable where necessary for the vessels operation	
• On all vessels, barriers must be fitted to separate the crew from equipment when deploying fishing gear.	
Means of Recovering a Helpless Person from the water	
Means of getting back on board a vessel operated single handedly	£350
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.	£300

ANNEX C.4 – AVERAGE COMPLIANCE FOR 5 MOST COMMON VESSELS BASED ON SURVEYOR CHECKLISTS AND COSTINGS BASED ON MMO EMFF APPLICATIONS – DECK 10M VESSELS **New Requirement** **CONSTRUCTION**	**Estimated Cost**
Bulkheads Bulkheads, if fitted, are required to be watertight.	**No information – but is only required where practicable**
Access through bulkheads **Access through watertight bulkheads, if fitted, shall be of watertight construction, have equivalent structural strength as the watertight bulkhead and be kept closed at all sea**	£740
Hatches and Coamings **Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming may be omitted, provided that the hatch can be secured weathertight. Hatches must only be kept open when necessary for fishing operations and otherwise be kept closed at sea to prevent the risk of downflooding and capsize and signage provided stating "To be kept closed at sea". Flush deck hatches are not recommended unless necessary and any hatches that are required to be open at sea must have coamings**	£1700 (assuming two hatches)
Ventilators An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board.	£600
Sea Inlets and Discharges	
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	£400-£1400
Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible in an emergency, they should be fitted with a remote means of operation, i.e. by extended spindle or wire pull device operable above floor plate level	

Openings serving as discharges from engine cooling water, bilge and general service pumps, galley and toilet drains, etc., should be also fitted with an automatic non-return valve adjacent to the closing valve. Alternatively, a screw down non-return type valve may be fitted.	
MACHINERY	
Floor plates, where fitted, should be non-slip and securely fastened with accessible fasteners	£600
Engine Starting All propulsion engines shall be provided with a secondary means of starting, where practicable	**£500**
Steering System Vessels fitted with motorised or hand hydraulic, chain, cable, or mechanical steering must be provided with an alternative means of steering which will operate if the main system fails	**£230**
Electrical Systems	
All circuits except the main supply from the battery to the starter motor and electrically driven steering motors, shall be provided with electrical protection against overload and short circuit, (i.e. circuit breakers shall be installed). Short circuit protection shall be for not less than twice the total rated current load in the circuit protected	£2,400 - £4700
With regard to existing cable installations and to any additional cables fitted:	
vi) Cables should not be run below floor plate level except where this is necessary for connections to underwater equipment, etc., in which case the cable should be run in conduit.	
vii) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks.	
.DC systems Batteries should be in good condition, secured, protected from short circuiting and overloading, and should be sited clear of heat sources	**£200**
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	£75
PROTECTION OF PERSONNEL	
Handrails, hand holds and grab rails On existing vessels	
• Sections of rails may be portable where necessary for the vessels operation	£1000 - £4000
Winches, tackles and hoisting gear	
The hauling and hoisting gear shall also have appropriate safety devices for emergencies, including emergency stop facilities within reach of the equipment operator. A duplicate set of emergency stop facilities is to be provided in the wheelhouse.	£50
If hauling gear is controlled from the wheelhouse, the operator must also have a clear view of the crew working near the gear, either directly or via any other suitable medium. All operators, in the wheelhouse or on deck shall give exclusive attention to that task and must not carry out other tasks while operating the equipment	May require modifications. Cost cannot be determined as would be individual to vessel arrangements
Means of Recovering a Helpless Person from the water	

Means of getting back on board a vessel operated single handedly	£350
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.	£300

ANNEX C.5 – AVERAGE COMPLIANCE FOR 5 MOST COMMON VESSELS BASED ON SURVEYOR CHECKLISTS AND COSTINGS BASED ON MMO EMFF APPLICATIONS – DECK 12M VESSELS	**Costs**
New Requirement	
CONSTRUCTION	
Decks Recesses in weather decks must be fitted with drainage arrangements so that the deck drains under all normal conditions of trim, and it is recommended that they operate efficiently at a heel of 10°.	**£600**
Hatches and Coamings Where access or loading/unloading hatchways are fitted in the weather deck raised coamings, of substantial construction and with a minimum height of 300 mm, should be provided. If this is not practicable, owing to the operation of fishing gear or working space obstructions, the coaming may be omitted, provided that the hatch can be secured weathertight. Hatches must only be kept open when necessary for fishing operations and otherwise be kept closed at sea to prevent the risk of downflooding and capsize and signage provided stating “To be kept closed at sea”. Flush deck hatches are not recommended unless necessary and any hatches that are required to be open at sea must have coamings	**£900 - £2500**
Ventilators An effective means of ventilation is to be provided to all enclosed accommodation spaces, and service spaces which under normal operating conditions may be entered by persons on board.	800 - £1500
If mechanical ventilation is used it shall be maintained in a good condition	
Ventilators serving spaces below the weathertight deck must be provided with an effective means of weathertight closure	
Sea Inlets and Discharges	
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	£400 - £1400
Inlet or discharge openings should be fitted with a valve or seacock at the hull connection, which is readily accessible for operation in an emergency. If such valves are inaccessible	

in an emergency, they should be fitted with a remote means of operation, i.e. by extended spindle or wire pull device operable above floor plate level	
Materials for Valves and Associated Piping - Sea Water Systems	
Valves, piping and flexible hoses must be of sound and efficient construction and installation. All piping systems must be well supported with pipe clips or mounts and protected against vibration and chafing	
Water freeing arrangements Where deck erections within a well limit the volume of water that may be retained onboard, then the freeing port area may be reduced proportionally provided that such erections do not in themselves contribute to water retention	**Optional choice**
Freeing ports are to be arranged throughout the length of the bulwark or well to provide maximum drainage under all normal conditions. At the discretion of the attending surveyor, up to one third of the freeing port area required at each side may be located in the transom bulwark, with the vessel centreline dividing the port and starboard side allocation. Where the freeing port area in the transom bulwark is greater than the maximum one third allowance per side, the excess area shall not be included in the total freeing port area provided.	Optional choice
Where vessels are fitted with full or partial shelters which are left open at the stern, and where the passage of water forward is not restricted by watertight bulkheads, the freeing port area is to be increased by 1% over the requirement stated in section 2.19.2. (2.19.2 states: The minimum area for freeing ports on each side of the well or deck is to be not less than 3% of the total bulwark area each side)	No Costs provided

MACHINERY	
Layout and installation of machinery spaces and propulsion machinery should be designed for safe and efficient operation	Bespoke to vessel – Costs not possible
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	£100
Ventilation should be provided either by mechanical fans or natural vents to meet the air requirements of the propulsion machinery and to prevent build-up of fumes or excessive heat	£800 - £1500
Access ladders should be of metal such as steel where practicable and securely fixed to the vessel's permanent structure	No cost provided
Floor plates, where fitted, should be non-slip and securely fastened with accessible fasteners	£600
Propulsion Machinery and Stern Gear Flexible sections of piping must be fitted when the engine or systems are repaired or replaced, provided that the existing installation is sound and efficient and is safe in use. Flexible shaft couplings must be in a sound condition and suitable for the power being transmitted	**£250**
Engine Starting All propulsion engines shall be provided with a secondary means of starting, where practicable	**£500**
Electrical Systems Tanks, machinery or other metallic objects that do not have good electrical continuity with the water surrounding the vessel shall have special earthing arrangements	**£400 - £800**
Cables which are not provided with electrical protection should be kept as short as possible and be "short circuit proofed", e.g. single core with an additional insulating sleeve over the insulation of each core. Normal marine cable (e.g. in compliance with BS 6883) which is single core will meet this recommendation without an additional sleeve, since it has both conductor insulation and a sheath	£24,000 to £30,000
In the event of failure of engine and charging systems, the battery capacity must be able to supply the emergency lights for at least one hour.	
With regard to existing cable installations and to any additional cables fitted:	
viii) Cables should not be run below floor plate level except where this is necessary for connections to underwater equipment, etc., in which case the cable should be run in conduit.	
ix) Cables running through machinery spaces should not be secured with plastic clips	
x) Cables running through fish holds should be fitted in conduit and cables should not be secured directly to fuel or oil storage tanks	
xi) . Cables should be of the correct current carrying capacity for their application	
When selecting cables, particular attention should be given to environmental factors such as temperature and contact with substances, e.g. polystyrene, which degrades P.V.C. insulation	

Vessels should be fitted with an adequate cathodic protection system. Anodes should be efficiently connected to the system and the hull, and not painted over	£50
DC Systems Batteries should be in good condition, secured, protected from short circuiting and overloading, and should be sited clear of heat sources	**See above on Cables**
Switchgear and sockets must be so arranged as to prevent the fitting of low voltage equipment and lamps into high voltage systems	
Fuel Oil Installations Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections should be of an appropriate armoured fire resistant metallic hose with screwed fittings, and kept as short as practicable	
PROTECTION OF PERSONNEL	
Handrails, hand holds and grab rails On existing vessels The perimeter of an exposed deck should be fitted with bulwarks, guard rails or guard wires of sufficient strength and height for the safety of persons on deck; the height of tubular railings and guard wires being not less than 1000 mm above the deck (9l5 mm where already fitted), the lower course of rails or wires having a clearance of not more than 230 mm and the remaining courses being evenly spaced. Where there would be unreasonable interference with the efficient operation of the vessel the height may be reduced	**£11000**
• Sections of rails may be portable where necessary for the vessels operation	
• On all vessels, barriers must be fitted to separate the crew from equipment when deploying fishing gear.	
Winches, tackles and hoisting gear	
If hauling gear is controlled from the wheelhouse, the operator must also have a clear view of the crew working near the gear, either directly or via any other suitable medium. All operators, in the wheelhouse or on deck shall give exclusive attention to that task and must not carry out other tasks while operating the equipment	Bespoke to vessel and cannot be costed
Means of Recovering a Helpless Person from the water	
Means of getting back on board a vessel operated single handedly	£350
Vessels operated single handed must have a mean of enabling the skipper to get back on board the vessel. The means must be deployable by a person in the water.	£300

Annex D.1 Additional costs for New build Decked Vessel		
New requirements	Cost	Estimated % of Open vessels that would need equipment (based on Checklist inspection returns)
CONSTRUCTION		
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	**No really extra cost** for a few more clamps to be used	75%
Open boats with a sole and no significant freeing ports, and which are fitted with a small limber hole shall have the limber hole replaced with a proprietary drain fitting with a screw in plug which is permanently attached. The drain shall be plugged in operation but may be opened when out of service to protect the vessel. The hole should be 25mm diameter at the most.	Costs range from approx. **£20 - £30** for a brass 25mm drain plug	Not applicable
These vessels shall carry suitable manual bilge pumping to remove significant quantities of water off the deck. In any situation the capacity of the bilge pump will exceed the potential rate of flooding by several orders of magnitude	approx. cost 70 litre/min hand pumps range from **£75 - £200**	Not applicable
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	We don't state about them being unaffected by vibration, but found to be fitted with rubber mounts	Vessels tend to be fitted with these already But 75% would have them
Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.	Currently No, however looking to place in revised standards. Engine shut-off switch cost approx. **£30**	75%
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	We permit single pole switches for batterty isolators, this enables the builder to utilise 4 point change over switches in the system (second means of starting) **These cost approx. £75 each. Double pole isolators cost approx. £60 each, just single pole switches are approx. £40 each.**	75%%
Appliances must not be positioned close to engines and fuel tanks.	We don't state, nor have ever seen them placed as stated. **No costs**, as this would be addressd at design stage if LPG systems continue to be permitted.	25%
Curtains or any other suspended textile materials must not be fitted within 600 mm of any heating or other appliance	No dimensions stated, but **again considered no cost due to being addressed at design stage** if LPG systems continue to be permitted.	25%

Curtains, towel rails, hooks and similar arrangements shall be kept well clear of the cooking area.	**No costs**, as this would be addressd at design stage if LPG systems continue to be permitted.	25%
(i) devices to immobilise the trawl doors;	Extremely difficult to advise on cost due to the many variations of arrangements. Builders would be better placed to advise	No costs advised
(ii) devices to control the swinging motion of the codend.	Extremely difficult to advise on cost due to the many variations of arrangements. Builders would be better placed to advise	No costs advised
All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	We do not cover getting a helpless or unconcious person from the water only an MOB ladder. Costs can vary for craddles, some seen are starting from approx. £350+	£350

Annex D.2 Additional Costs for new Build Open Vessels		
New requirements	Cost	Estimated % of Open vessels that would need equipment (based on Checklist inspection returns)
CONSTRUCTION		
Use of flexible hoses must be minimised and consideration given to installing permanent piping wherever possible. Where sea inlet piping systems comprise flexible hose, the connection of the hose to the sea inlet must be of sound and efficient construction and double clipping used, where possible.	**No really extra cost** for a few more clamps to be used	25%
Open boats with a sole and no significant freeing ports, and which are fitted with a small limber hole shall have the limber hole replaced with a proprietary drain fitting with a screw in plug which is permanently attached. The drain shall be plugged in operation but may be opened when out of service to protect the vessel. The hole should be 25mm diameter at the most.	Costs range from approx. **£20 - £30** for a brass 25mm drain plug	25%
These vessels shall carry suitable manual bilge pumping to remove significant quantities of water off the deck. In any situation the capacity of the bilge pump will exceed the potential rate of flooding by several orders of magnitude	approx. cost 70 litre/min hand pumps range from **£75 - £200**	25%
Lighting should be designed to facilitate easy inspection and be unaffected by vibration	We don't state about them being unaffected by vibration, but found to be fitted with rubber mounts	Vessels tend to be fitted with these already 0%
Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position must be provided, on or adjacent to the engine, with arrangements or mechanism for stopping the engine.	Currently No, however looking to place in revised standards. Engine shut-off switch cost approx. **£30**	Not applicable to Open vessels
A battery cut-off switch double pole type should be fitted at each battery or bank. Systems such as automatic bilge pumps or alarms for when the vessel is unattended should be connected before the cut-off switch	We permit single pole switches for batterty isolators, this enables the builder to utilise 4 point change over switches in the system (second means of starting) **These cost approx. £75 each. Double pole isolators cost approx. £60 each, just single pole switches are approx. £40 each.**	25%
Appliances must not be positioned close to engines and fuel tanks.	We don't state, nor have ever seen them placed as stated. **No costs**, as this would be addressd at design stage if LPG systems continue to be permitted.	Not applicable
Curtains or any other suspended textile materials must not be fitted within 600 mm of any heating or other appliance	No dimensions stated, but **again considered no cost due to being addressed at design stage** if LPG systems continue to be permitted.	Not applicable
Curtains, towel rails, hooks and similar arrangements shall be kept well clear of the cooking area.	**No costs**, as this would be addressd at design stage if LPG systems continue to be permitted.	Not applicable

(i) devices to immobilise the trawl doors;	Extremely difficult to advise on cost due to the many variations of arrangements. Builders would be better placed to advise	No costs advised
(ii) devices to control the swinging motion of the codend.	Extremely difficult to advise on cost due to the many variations of arrangements. Builders would be better placed to advise	No costs advised
All Vessels must have an effective means of recovering a helpless/unconscious person from the water.	We do not cover getting a helpless or unconcious person from the water only an MOB ladder. Costs can vary for craddles, some seen are starting from approx. £350+	£350

Annex E
Estimated total cost by vessel size

Includes Labour except where specified	6	7	9	12	15
New exhaust, including waterblocks	1,036	1,209	1,555	2,073	4,145
fuel tanks	2,127	2,481	3,190	4,254	8,508
Oil tanks	423	494	635	847	1,693
Tank pipework	385	449	577	769	1,538
Engine room lighting	50	58	75	100	200
Generator	5,333	6,222	8,000	10,667	21,333
Dual controls gear and throtle	1,144	1,334	1,716	2,288	4,575
safety rails	1,325	1,546	1,987	2,650	11,436
Fish room floor board and labour	133	156	200	267	533
Fuel fillers	167	194	250	333	667
Non slip rubber deck cover deck	874	1,019	1,311	1,748	3,495
New scuppers	100	117	150	200	400
Replace deck or parts of and make non slip	2,178	2,541	3,267	4,355	1,133
rewiring	1,874	2,186	2,811	3,748	1,756

Hatch cover and hatch	1,345	1,569	2,017	2,689	5,378
watertight door and frame	418	488	627	836	1,672
fuel gauge	33	39	50	67	133
fuel system	3,785	4,416	5,678	7,571	15,141
new engine box	1,450	1,692	2,175	2,900	5,800
connect equipment to electrics	650	758	975	1,300	2,600
repair hull	1,181	1,378	1,772	2,362	4,724
Dual controls gear and throtle	0	0	0	0	0
windows	1,318	1,537	1,976	2,635	5,270
reinforce gunwhales	1,450	1,692	2,175	2,900	5,800
cathodic protection	133	156	200	267	533
Vents to rooms	350	408	525	700	1,500
Bilge pump	200	233	300	400	800
hull and gunnel capping	3,817	4,453	5,725	7,633	15,267
Battery system	320	373	480	640	1,280
Valves and hoses	633	739	950	1,267	2,533
Engine room walkway and guards	560	653	840	1,120	2,240
Steering gear	153	179	230	307	613

sea water pipe and supports with strainer	240	280	360	480	960
Pounds for crew safety	0	0	0	0	0
Costs researched from Internet - not dependent on vessel size - no labour costs	0	0	0	0	0
Earthing tanks	400	533	667	800	1,600
Engine room vents (taken from Marine Websites)	300	350	450	600	1,200
Battery excluding labour	168	196	252	336	672
Secondary means of starting (juimp start battery - no labour needed)	100	117	150	200	400
Circuit breakers/short circuit protection	680	793	1,020	1,360	2,720
Oil pressure warning	0	0	0	0	0
High water temperature	0	0	0	0	0
Machinery emergency stops	40	47	60	80	160

MOB Recovery ladder	50	58	75	100	200
MOB unconcious recovery	300	350	450	600	1,200
Recesses in weather decks	600	600	600	600	1,200
Sea inlet and discharge piping	400	733	1,067	1,400	2,800
Switchgear for AC Systems	500	667	833	1,000	2,000
total cost per vessel	**38,723**	**45,494**	**58,401**	**77,446**	**147,811**