Title: The Fishing Vessels (Codes of Practice) Regulations 20XX **IA No:** DfT00278 **Lead department or agency:** Maritime and Coastguard Agency (MCA) **Other departments or agencies:** Department for Transport	**Impact Assessment (IA)** **Date**16/04/2015 **Stage:** Consultation **Source of intervention:** Domestic **Type of measure:** Secondary legislation **Contact for enquiries:** David Fenner **Tel:** 02380 329154 **Email:** David.Fenner@mcga.gov.uk

Summary: Intervention and Options

RPC Opinion: RPC Opinion Status

Cost of Preferred (or more likely) Option				
Total Net Present Value	**Business Net Present Value**	**Net cost to business per year** (EANCB on 2009 prices)	**In scope of One-In, One-Out?**	**Measure qualifies as**
-£9.62m	-£9.10m	£0.81m	Yes	IN

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

The Fishing Industry is a very dangerous industry, with the rate of fatalities being of the order of 100 times higher than that of the general workforce (see Section 1.2). Accident investigations have identified a number of areas where safety can be improved. The problem under consideration is how to improve safety standards on small fishing vessels as well as updating and simplifying all fishing vessel regulations. Government intervention is required to address these areas, failure to do so will mean that death and accident rates remain unacceptably high. A ten year Government Fishing Vessel Strategy was published in 2013 and the development of these Codes of Practice form part of this strategy.

What are the policy objectives and the intended effects?

The objectives of this policy are to enhance the safety standards on all fishing vessels registered on the UK flag and to produce a consolidated set of requirements for fishing vessels of 24 metres and over. It is intended that these proposed Regulations will reduce the number of accidents and potential loss of lives and injuries. This would benefit individual families and communities as the fishing industry includes a significant number of single owner/operators; data from the Marine Management Organisation indicates that over two thirds of fishing vessels registered in the UK are owned by a private individual. This will also meet the commitments made under the Red Tape Challenge.

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

Doing nothing is not considered an appropriate option as it would fail to recognise safety recommendations from investigations into fishing vessel incidents by the Maritime Accident Investigation Branch and renege on the Government commitment to reduce accident rates in this area.

The MCA considers that there is only one viable policy option which is to introduce a single piece of legislation implementing three new Codes of Practice; a new Code of Practice for Fishing Vessels of 24 metres and over and revisions of two Codes of Practice for 15 – 24 metre fishing vessel and small fishing vessels (Option 1). **This is the preferred option.**

Introducing the Codes as a voluntary option with efforts to promote safety through training and education is not considered a viable option. This is because MCA considers that safety conscious fishermen have already adopted the measures and undergone both mandatory and voluntary training.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 01/2019

Does implementation go beyond minimum EU requirements?			N/A		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	**Micro** Yes	**< 20** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** N/A	**Non-traded:** N/A	

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 Minister: ..... Date: .....

Summary: Analysis & Evidence

Policy Option 1

Description: Implement the proposed Regulation to implement three fishing vessels Codes of Practice.

FULL ECONOMIC ASSESSMENT

Price Base Year 2014	PV Base Year 2015	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -£15.37m	**High:** -£5.28m	**Best Estimate:** -£9.62m

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0	NA	£0.6m	**£5.3m**
High	0		£1.7m	**£15.4m**
Best Estimate	0		£1.0m	**£9.6m**

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

1.) The additional costs to the owners and operators of UK registered fishing vessels of meeting the new requirements of the three fishing vessels Codes of Practice, which have been monetised in this IA, are estimated at around £0.5 million to £1.6 million per year on average, with a Best estimate of around £1.0 million per year on average. 2.) The monetised additional costs to the MCA are estimated at around £43, 000 to £79,000 per year on average, with a Best estimate of around £60,000 per year on average.

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

The key non-monetised costs to businesses and workers include some of the costs associated with fitting and maintaining the new equipment required under Option 1; the costs of conducting drills on board vessels; the costs of inspection upon change of ownership; the costs of requiring Safety Certificates for vessels under 15m; the costs of requiring new vessels of 12 – 15m to meet stability requirements; and the costs of requiring vessels of 24m and over to have shut offs for exhaust fans.

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

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

Given the limitations of the available evidence base, it has not been possible to monetise any of the benefits that have been identified in this IA.

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

The key benefits to businesses are as follows: 1.) Improved safety for UK registered fishing vessels: MCA assume that if all the fleet are required to comply with the new requirements, a reduction in the number of deaths can be expected; 2.) Potential simplification benefits from consolidating the requirements for 24m and over fishing vessels into one set of Regulations and Code of Practice; and 3.) Potential reduction in insurance costs for UK registered fishing vessels. There are also potential benefits to the Government.

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

1.) Given the limitations of the available evidence base, it has not been possible to monetise some of the costs and benefits of Option 1. 2.) The estimates of the additional costs of Option 1 presented in this IA are very sensitive to the data sources used in this analysis and the assumptions that have been made in this IA. Therefore, these estimates have been used for purely illustrative purposes and should be interpreted as indicative estimates of the order of magnitude of these costs.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: £0.8m	**Benefits:** 0	**Net:** -£0.8m	Yes	IN

Evidence Base

1. Problem under consideration and Rationale for intervention

1.1. Summary

The fishing industry is a very dangerous industry (see Section 1.2 for more details). 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 Section 1.3 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 (see Section 1.4 for more details). 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.

The problem is that many vessels do not carry safety equipment beyond what is required by law (see Annex 1 which explains the assumptions that have been made about how many vessels carry the proposed equipment in this IA) and MCA surveys and inspections often identify deficiencies in the equipment being carried. 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, set out in the three proposed Codes of Practice, mandatory and bring about an improvement in safety. In addition, new safety courses are in place, currently on a voluntary basis (and which will be subject to a separate proposal to make them mandatory), to ensure that fishermen use the equipment and respond to situations effectively.

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

Table 1 shows that it is estimated that the rate of fatalities to crew was around 33 deaths per 100,000 fishermen working on UK registered fishing vessels in 2013/14 and that the average rate of fatalities to crew was around 59 deaths per 100,000 fishermen working on UK registered fishing vessels from 2007 and 2013.

To put this in context, the Health and Safety Executive (HSE) report that the provisional rate of fatal injuries was around 0.5 deaths per 100,000 workers across all industries in Great Britain in 2013/14 and that the average rate of fatal injuries was around 0.6 deaths per 100,000 workers across all industries in Great Britain from 2007/08 to 2013/14[2]. Furthermore, when compared to other dangerous industries, the rate of fatalities does not compare favourably. For example, the HSE report that in 2013/14, the provisional rate of fatal injuries was around 8.8 deaths per 100,000 workers in Agriculture in Great Britain and around 2.0 deaths per 100,000 workers in Construction in Great Britain; and that from 2007/08 to 2013/14, the average rate of fatal injuries was around 8.1 deaths per 100,000 workers in Agriculture and around 2.2 deaths per 100,000 workers in Construction[2].

Table 1: Comparison between fishing, agriculture and construction sectors

Rate of fatal injuries per 100,000 workers in Great Britain[2]			Estimated rate of fatalities to crew per 100,000 fishermen	
	Agriculture	Construction		UK registered fishing vessels
2013/14	8.77	1.98	2013	32.9
2007/08 to 2013/14 (Average)	8.09	2.19	2007 to 2013 (Average)	58.93

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 on

[1] http://www.maib.gov.uk/cms_resources.cfm?file=/FishingVesselSafetyStudy.pdf
[2] Table 2 and Table 4, HSE (2013) Statistics on fatal injuries in the workplace in Great Britain 2013 http://www.hse.gov.uk/statistics/pdf/fatalinjuries.pdf

the number of deaths to crew from accidents involving UK registered fishing vessels from the Marine Accident Investigation Branch (MAIB)[3]. For example in 2013, these statistics show that there were 12,152 fishermen and 4 deaths. The calculation is as follows: 4÷12,152 X 100,000 = 32.9.

It should be noted that these estimates only cover fatalities. When other injuries recorded by MAIB are taken into account[4], it is estimated that, for example, the rate of fatalities and injuries was around 271 deaths and injuries to crew per 100,000 fishermen working on UK registered fishing vessels in 2013.

Table 2: Vessel losses, accidents and fatalities to crew (UK registered fishing vessels)[5]

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Fishing Vessel Losses											
24 metre registered length (reg) and over	4	-	3	1	-	3	-	-	-	-	0
15 metre length overall (loa) to under 24 metre reg	8	9	11	7	5	4	4	3	7	4	3
Under 15 metre loa	16	16	20	11	16	14	11	11	17	5	15
Total	28	25	34	19	21	21	15	14	24	9	18
Deaths to Fishing Vessel Crew											
24 metre reg and over	1	-	3	2	1	1	1	1	-	-	0
15 metre loa to under 24 metre reg	2	1	3	8	3	4	7	-	1	2	1
Under 15 metre loa	8	9	3	6	4	3	5	4	7	4	3
Total	11	10	9	16	8	8	13	5	8	6	4
Fishing Vessels in Accidents											
Total	360	317	368	349	317	257	238	272	299	260	248

1.3 Further details on MAIB Recommendations to improve safety in the fishing industry

A number of recommendations were made for under 15m fishing vessels as a result of MAIB investigations into incidents on the fishing vessels KATHRYN JANE, EMERALD DAWN and JANN DENISE II[6]; BOUNTY[7]; and ESHCOL[8]; and their Safety Study, "Analysis of UK Fishing Vessel Safety 1992 -2006[1]", also made a further number of recommendations. These required the MCA to:

- Ensure fishing vessels were "fit for purpose";
- Work towards aligning the Under 15m Code with the Code of Practice for the Safety of Small Workboats and Pilot Boats (the Workboat Code);
- Require carriage of radar reflectors; and
- Require carriage of Emergency Position Indicating Radio Beacons (EPIRBS).

The philosophy of the Workboat Code is based on areas of operation and distance from a safe haven and is therefore different to the current fishing vessel Codes of Practice which are based on the length of the fishing vessel. This revision of the Code is intended to address issues identified in recent MAIB reports, such as the carriage of liferafts, bilge alarms, EPIRBS, carbon monoxide (CO) alarms and the inspection process. As the Workboat Code applies to vessels of less than 24m, it has been decided that the both the Small Fishing Vessel Code and the 15-24m Code should be reviewed together with the aim of developing a Code for Fishing Vessels that will also allow these vessels to serve as workboats, thereby potentially increasing their business opportunities. However, because fishing vessels have not been developed with areas of operation and distance from a safe haven as criteria, this review will require extensive consultation with Industry as part of its development and cannot be undertaken as part of this revision.

[3] Table 2.6 and Table 2.7, MMO (2013) UK Sea Fisheries Statistics 2012 http://www.marinemanagement.org.uk/fisheries/statistics/annual.htm

[4] Table 21, MAIB (2013) MAIB Annual Report 2012 http://www.maib.gov.uk/cms_resources.cfm?file=/MAIBAnnualReport_2012.pdf

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

[6] http://www.maib.gov.uk/cms_resources.cfm?file=/MAIB%20Tri-Report.pdf

[7] http://www.maib.gov.uk/cms_resources.cfm?file=/Bounty.pdf

[8] http://www.maib.gov.uk/cms_resources.cfm?file=/EshcolReport.pdf

In addition, industry has advised that larger vessels of 15m and over are increasingly being manned by foreign crew who live on board the vessel, and that crew may also live on board as the vessel may move around the UK to catch fish. In the light of the MAIB investigation into the VISION II[9], in which 3 crew died when the vessel caught fire whilst in port, the 15-24m and 24m and Over Codes require that vessels which have crew living on board must be able to have fire detection and safety systems operable from shore power. Further brief synopses on MAIB investigations referred to in this IA are attached at Annex 2.

1.4 Further details on the other proposed changes to improve safety standards on vessels of 24m and over

In 1977, the IMO developed the Torremolinos International Convention for the Safety of Fishing Vessels. This only applies to vessels of 24m and over. However by the 1990s it had still not been implemented. To encourage implementation, the IMO developed the Torremolinos Protocol of 1993 relating to the Torremolinos International Convention for the Safety of Fishing Vessels, 1977 which was intended to modify the requirements to allow flag states to ratify. However it still has not entered into force.

The EU has required member states to implement the Protocol through Council Directive 97/70/EC setting up a harmonised safety regime for fishing vessels of 24 metres in length and over. The Protocol and Council Directive 97/70 have already been implemented in the UK through SI 1999 No. 2998 Fishing Vessel (EC Directive on Harmonised Safety Regime) Regulations. However, this Directive was implementing requirements developed in the 1970s.

The Fishing Industry Safety Group[10] (FISG), which comprises members of the UKs main fishing Federations and representatives of the Fish Producers Organisations, considered that the Code needed to reflect improvements in fishing safety since the 1970s. As a result, additional requirements regarding lightning protection, emergency lighting to emergency exits, bilge alarms, shut offs for exhaust fans, ladders, heaving lines and lifebuoys, and thermometers are also being proposed.

The Torremolinos Protocol does not address lightning protection and the Group considered that this would help prevent fires on board vessels. It is the view of MCA Consultant Surveyors that all vessels of 24m and over already have this fitted, but making this requirement mandatory would ensure that vessels joining the Register also fit this protection measure. Additionally, although emergency power is required to maintain power to emergency lights, there is no specific requirement to have lighting to emergency exits. The Group considered that it is clear that the intention of the Torremolinos Protocol was that vessels should have lighting to exits and that it is necessary to require this. MCA Consultant Surveyors consider that most vessels will have this fitted as standard but making it compulsory will ensure that crew are able to find their way to the exits in an emergency.

The Torremolinos Protocol also requires a number of bilge alarms. However, it is based on 1970's safety levels. The 24m and Over Code sets out the existing requirements for bilge pumps, however it does not set out any requirements for alerting the skipper and crew to the need for the bilge pumps to be used, or that any auto-start bilge pumps have activated. The Group considered that additional bilge alarms were necessary to address all possible spaces where flooding may occur so the skipper and crew are altered to the danger. The Group also considered that shut offs for exhaust fans are necessary to reduce the risk of fire spreading by cutting off oxygen to a fire. MCA Consultant Surveyors consider that most vessels already comply with this proposed requirement and that making it mandatory ensures that vessels new to the Register also comply.

There may be times when a vessel needs to be boarded whilst at sea, for rescue services to access the vessel or for Fisheries Administrations to board the vessel to check they are complying with the requirements of their fishing licence. As a result, the Fishing Industry Safety Group considered that vessels which had a 9 metre distance between sea level and the access point required a ladder.

[9] http://www.maib.gov.uk/cms_resources.cfm?file=/VisionIIReport.pdf

[10] FISG and its sub-groups consist of members from the main Fishing Federations, Shipbuilders, the Royal National Lifeboat Institution (RNLI), Seafish Industry Authority, the Department for Environment, Food and Rural Affairs (Defra), the devolved administrations and other organisations that have an interest in fishing safety.

There is no requirement at present for heaving lines or lifebuoys. These can be thrown to a person in the water for them to hold on to whilst a vessel approaches them or whilst it turns back to recover them. The Fishing Industry Safety Group considered this an essential requirement to increase the chances of a person in the water being recovered alive.

The Fishing Industry Safety Group considered that thermometers in Fridges were a precaution to ensure that food stored on board the vessel was kept at a temperature that ensured it was safe to eat.

2. Policy objectives

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 to make access to the regulations easier for industry by consolidating 15 existing statutory instruments (SIs) into one set of Regulations, as identified under the recent Red Tape Challenge (RTC) Initiative, into one set of regulations which would:

- Introduce a new Code of Practice for the Construction and Safe Operations of Fishing Vessels of 24m Registered Length and over (24m and Over Code);
- Revise and update the safety requirements of the Code of Practice for the Construction and Use of 15 metre Length Overall to less than 24 metre Registered Length Fishing Vessels (Merchant Shipping Notice (MSN) 1770(F)) (15 – 24m Code); and
- Revise and update the safety requirements of the Code of Practice for Fishing Vessels of less than 15 metres length overall (Under 15m Code).

3. Additional background on the new Code of Practice for Fishing Vessels of 24 metres and over and the revised Codes of Practice for 15 – 24 metre fishing vessel and small fishing vessels

3.1 Other measures that MCA is taking forward

Together with partners from industry, the MCA has developed a number of initiatives to improve training and change the safety culture by encouraging a greater understanding of the risks and knowledge of how to take preventative action. These include voluntary training courses in Bridge Watchkeeping, Engine Room Watchkeeping and Stability, and 'tool box talks' to share best practice amongst owners, skippers and crews. This is done during a survey/inspection of a fishing vessel or as a dedicated 'tool box talk' after the survey/inspection work has been completed.

The MCA has also given particular consideration to how to reduce the number of fishermen that die after falling overboard. Based on the MAIB Safety Study "Analysis of UK Fishing Vessel Safety 1992 -2006[1]" and reviewing MAIB investigations since 2006, the MCA has identified 124 fishermen as having died after entering the water between 1992 and 2013. The MCA Casualty Panel, which has been in operation since 2007 and comprises of MCA, Industry and Water Safety experts have reviewed the 38 such deaths between 2007 and 2012 and concluded that 27 may have survived if they had been wearing a Personal Floatation Device (PFD).

After discussion with Industry, it was agreed that MCA will not make the wearing of PFDs mandatory as part of this revision to the codes and will concentrate on education and training to increase the numbers of fishermen wearing PFDs. A Seafish Research Study "Seafish Safety at Sea Report – December 2013" found that only 42% of fishermen claimed to wear a PFD all of the time or most of the time. A variety of reasons for not wearing one are put forward in the report, such as they are too bulky, no one else wears one, they are not in the habit of wearing one or they are worried about it snagging. The MCA considers that it is clear from the responses that purely making the wearing of PFDs mandatory would be unsuccessful if the arguments put forward by fishermen as to why they are not worn are not addressed. Furthermore, MCA is unable to conduct inspections at sea to check if PFDs are being worn.

The MCA is looking to change the culture and attitudes towards wearing PFDs through education and training and has been working with manufacturers to develop PFDs that address the arguments put forward as to why it is not possible to wear PFDs whilst working, in particular those of bulk and snagging.

The efforts to increase the wearing of PFDs by fishermen include the main Federations funding the provision of at least 7000 free PFDs using European Fisheries Funding (EFF) and providing guidance on

their use when distributing them. This would not be possible if the PFDs were mandatory as it would not be eligible for EFF. When the PFDs are issued, fishermen either attend a presentation or receive a presentation pack which addresses the reasons put forward as to why they do not wear one currently.

The MCA considers that this initiative has already been successful as a fisherman in Northern Ireland was provided with a PFD having never worn one before and two weeks later was rescued after his vessel sank. The wearing of PFDs is being monitored by MCA and MCA has informed Industry that the option to make wearing mandatory remains if safety is shown not to have improved.

3.2 Background on the new codes

This is the third stage of updating and simplifying the regulatory system for fishing vessels. The first two stages were the introduction of the Under 15m Code in 2001, followed by the introduction of the 12 – 24m Code in 2002 which introduced new EU requirements and consolidated existing legislation. This third stage will consolidate the existing regulations for fishing vessels over 24 metres and introduce revisions to the other Codes in response to recommendations made by the Marine Accident Investigation Branch (MAIB).

FISG established the 24m and Over Code Group, and the Under 15m Code Group. These sub-groups have developed these Codes into their current form. The changes to the existing 15 – 24m and Under 15m Codes and the draft of the 24m and Over Code have received broad support within the groups.

3.3 Further details on the 24m and Over Code

The 24m and Over Code Sub-group has concentrated on producing a consolidated version of the existing Regulations. The current legislation is contained within 15 Statutory Instruments, and the proposed new Regulation and Code of Practice will revoke the following legislation (some of which implements EU Directive) but retain the necessary effect contained in them:

- SI 1975 No. 330 Fishing Vessels (Safety Provisions) Rules;
- SI 1975 No. 471 Fishing Vessels (Safety Provisions) (Amendment) Rules;
- SI 1976 No. 432 Fishing Vessels (Safety Provisions) (Amendment) Rules;
- SI 1977 No. 313 Fishing Vessels (Safety Provisions) (Amendment) Rules;
- SI 1977 No. 498 Fishing Vessels (Safety Provisions) (Amendment No. 2) Rules;
- SI 1978 No. 1598 Fishing Vessels (Safety Provisions) (Amendment) Rules;
- SI 1978 No. 1873 Fishing Vessels (Safety Provisions) (Amendment No. 2) Rules;
- SI 1981 No. 567 Fishing Vessels (Safety Provisions) (Amendment) Rules;
- SI 1991 No. 1342 Fishing Vessels (Safety Provisions) (Amendment) Rules;
- SI 1996 No. 2419 The Fishing Vessels (Safety Provisions) (Amendment) Rules;
- SI 1998 No. 928 Fishing Vessels (Safety Provisions) (Amendment) Rules;
- SI 1999 No. 2998 Fishing Vessel (EC Directive on Harmonised Safety Regime) Regulations[11];
- SI 2001/9 The Fishing Vessels (Code of Practice for the Safety of Small Fishing Vessels) Regulations 2001;
- SI 2002/2201 The Fishing Vessels (Safety of 15-24 Metre Vessels) Regulations 2002; and
- SI 2003 No. 1112 The Fishing Vessels (EC Directive on Harmonised Safety Regime) (Amendment) Regulations 2003.

In addition, a small number of requirements were added to the 24m and Over Code which the Fishing Industry Safety Group felt would lead to improved safety or were more relevant to present day technology than the Torremolinos Protocol, which SI 1999/2988 implements[12]. The Protocol was written in 1977 and amended in 1993 and is now considered outdated. These additional improvements are:

- Emergency Lighting to all emergency exists;

[11] These enact regulations annexed to the International Maritime Organization's (IMO) Torremolinos International Convention for the Safety of Fishing Vessels, 1977, as modified by the Torremolinos Protocol of 1993.

[12] The Torremolinos Protocol 1993 (the Torremolinos Protocol of 1993, relating to the Torremolinos International Convention for the Safety of Fishing Vessels 1977) was developed by the International Maritime Organisation. The Protocol sets out safety requirements for fishing vessels of 24m Registered length and over. It has yet to enter into force internationally although the EC, through EC Directive 97/70 Setting up a harmonised safety regime for fishing vessels of 24 metres in length and over requires member states to comply with its requirements.

- Lightning Protection;
- Fire Detection and safety systems to run on shore power;
- Low level bilge alarms for propulsion machinery spaces, fish holds and unmanned spaces;
- Auto start bilge pump alarms;
- Bilge suction alarms;
- An independent bilge alarm system and a fail safe warning if its circuit becomes faulty;
- Exhaust fan shut offs;
- Ladders if the distance from sea level to vessel access is 9 metres or more;
- Life buoys and heaving lines; and
- Thermometers for fridges.

3.4 Further details on the 15 – 24m Code

The 15 – 24m Code currently refers to certain requirements contained within SI 1975/300 the Fishing Vessels (Safety Provisions) Rules, as amended, (the 1975 Rules) for existing vessels. The 1975 Rules will be revoked as part of the consolidation therefore a new Annex to the revised 15 – 24m Code will retain the requirements of those Rules.

There is only one new requirement for 15-24m vessels which is the requirement for shore power when crew are living on board whilst in port and must be able to have fire detection and safety systems operable from shore power.

3.5 Further details on the Under 15m Code

The MCA has agreed to address a number of recommendations stemming from MAIB recommendations. These include:

- Safety Certificates;
- Drills on board the vessel;
- Require carriage of radar reflectors;
- Liferafts on vessels of 7-15m ;
- Bilge Alarms on vessels of 7-12m
- Carbon monoxide (CO) alarms for all vessels with a fired cooking or heating appliance;
- Two additional lifejackets on vessels of 12-15m;
- Require carriage of EPIRBS on all vessels; and
- Stability requirements for new vessels of 12-15m.

Further details on some of these requirements are provided below.

3.5.1. Requiring carriage of EPIRBS on all vessels

Until 2002, fishing vessels of 12m to less than 15m were required to carry EPIRBs. This was revoked when MSN 1770 came into force. The MAIB recommend in their Safety Study, "Analysis of UK Fishing Vessel Safety 1992 -2006[1]" that all vessels should carry an EPIRB. In their Report, they stated:

> *"EPIRBs are currently not required on smaller vessels, but would undoubtedly save lives if they were. The argument often given is that it is impractical to fit safety equipment such as this on a small boat, yet similarly sized commercial workboats are required to do so, despite, in many cases, neither operating as far out to sea nor in as arduous weather conditions as their fishing counterparts".*

This was re-iterated in their report on the PURBECK ISLE[13]. As a result, this Code proposes all vessels to carry an EPIRB. EPIRBS will alert the Coastguard to the exact location of a vessel immediately, rather than wait for a report that the vessel has not returned to port or drills will mean that crew are better trained in what to do in an emergency and alert coastguard more accurately.

[13] http://www.maib.gov.uk/cms_resources.cfm?file=/PurbeckIsle_Web_Report.pdf

Question for Consultees

Q1. Do you agree that all vessels should be required to carry EPIRBs? Are there reasons why certain categories or sizes of vessels need not carry an EPRIB or are there other conditions in which vessels need not carry an EPIRB?

3.5.2. Aligning the Under 15m Code with the Workboat Code – Liferafts and Bilge Alarms

Furthermore, the MAIB also recommended that Small Fishing Vessel Code adopt some of the requirements of the Workboat Code. Although as stated earlier, it is not possible to adopt all of these measures in this revision, in light of floodings of small fishing vessels, we have agreed with industry to adopt bilge alarms on vessels of 7-15m (based on the loss of vessels PAMELA S[14] and EMERALD DAWN[6], of which neither had bilge alarms, which may have altered the crew earlier to the flooding and enabled them to take action earlier) and to have liferafts on vessels down to 7m (having agreed with Industry that space is too limited below 7m). This latter requirement is based on the findings of investigations into the EMERALD DAWN[6] and KIRSTEEN ANNE[15].

Currently, only decked vessels of 10 to less than 15m must carry liferafts. The carriage of liferafts by decked vessels between 7m and less than 10m and open vessels of 7m to less than 15m would provide for abandonment of ship together rather than risk dispersal of the crew by having to enter the water. The MAIB found in their Safety Study, "Analysis of UK Fishing Vessel Safety 1992 -2006[1]", that just under 40% (99) of all fatalities between 1992 and 2006 were due to flooding/foundering, capsize/listing or missing vessel accidents and most of the vessels were less than 10m in length, and therefore not required to carry liferafts. Some of the vessels were voluntarily carrying liferafts, which helped to save 6 lives, but in 3 cases, liferafts failed to deploy correctly and possibly contributed to 6 deaths. Advice on their correct installation is already available from the MCA in MGN 267**[16]** and the RNLI in a leaflet on the installation of Hydrostatic Release Units[17]. The MAIB Safety Study concludes that "it is likely that further lives would have been saved with the carriage of these items" (the other item being EPRIBs) and "liferafts are currently not mandatory on smaller vessels, but would undoubtedly save lives if they were". The Study did not recommend liferafts be made mandatory because the MCA had made a commitment, as recorded in the Chapter on Actions Taken in the Study to require liferafts for vessels over 7m.

3.5.3. Requiring Drills to take place

The MAIB has also found in recent times that the MCAs efforts to improve drills and emergency procedures on board vessels, by observing them as part of the survey and inspection regime, has led to improved abandonment of ships. This was particularly evident in the investigation of the DENARIUS[18] in which the MAIB found that the abandonment was carried out successfully as a result of effective training, emergency drills and leadership.

Drills are not currently required for vessels of less than 15m and the MAIB have also found poor drills to be a source of concern. For example, the MAIB recommended to the owners of the BETTY G[19] that procedures are established and drills conducted to train crews in the actions required to deal with foreseeable emergencies on board and to the owner of the ONWARD[20] to conduct periodic emergency drills and the importance of emergency drills to a vessel's safety and on the KINGFISHER II[21], they concluded that despite the crew having never worked together before, no emergency drills had taken place, nor were any planned. Regulations do not require drills to be undertaken.

Consequently, in meetings with Industry, it was agreed to include a requirement for skippers and owners to conduct drills.

[14] http://www.maib.gov.uk/cms_resources.cfm?file=/Pamela%20S.pdf
[15] http://www.maib.gov.uk/cms_resources.cfm?file=/kirsteen-anne.pdf
[16] http://www.dft.gov.uk/mca/mgn267.pdf
[17] https://rnli.org/safetyandeducation/Documents/Liferaft%20Lflet_lc.pdf
[18] http://www.maib.gov.uk/cms_resources.cfm?file=/DenariusReport.pdf
[19] http://www.maib.gov.uk/cms_resources.cfm?file=/BettyG.pdf
[20] http://www.maib.gov.uk/cms_resources/Onward.pdf
[21] http://www.maib.gov.uk/cms_resources.cfm?file=/Kingfisher%20II.pdf

3.5.4. Requiring Safety Certificates for vessels under 15m

Under 15m Fishing Vessels do not currently require a safety certificate which demonstrates compliance the Code at the time of inspection. Vessels of 15m and over currently require a safety certificate to operate. If their safety certificate is suspended or cancelled, they cannot operate as a fishing vessel. This would also lead to their Registration as a fishing vessel being suspended. As a consequence of their registration being suspended, their licence to fish from the Marine Management Organisation or the Devolved Administrations would be suspended. This means that they can also be prosecuted if they go to sea to fish without a valid certificate.

However for vessels under 15m, there is currently no Certificate to suspend or cancel, they can only be detained and as a consequence their Registration is unaffected and their licence to fish is unaffected. Under 15m vessels are only seen once every five years and an MCA inspection inside that timeframe is unlikely. Vessels over 15m are required to be seen at mid points in the Certificates life. Therefore, there is less commercial incentive for under 15m fishing vessels to comply with the safety requirements on an ongoing basis as they are less likely to be inspected. The introduction of Safety Certificates would increase the financial consequences if the MCA does inspect the vessel for any reason in between its mandatory 5 yearly inspection. It also allows MCA to address the MAIB recommendation contained in their report on the JANN DENISE II, KATHRYN JAYNE AND EMERALD DAWN[6] addressed to the Department for Transport to, in consultation with DEFRA, establish a link between the inspection, registration and licensing of <15m fishing vessels.

3.5.5. Radar Reflectors

As a result of an investigation into to collision between the cargo vessel Walzberg and the fishing vessel Corona[22], the MAIB have recommended to the MCA that the Small Fishing Vessel Code should extend the requirement for Radar Reflectors to all vessels to ensure that smaller fishing vessels are identified by the radars of larger vessels and collisions therefore prevented. The Fishing Industry Safety Group agreed with this recommendation.

The MAIB Safety Study, "Analysis of UK Fishing Vessel Safety 1992 -2006[1]" also highlighted that all workboats of all sizes were required to have radar reflectors and this requirement helps to further align small fishing vessels with workboats.

3.5.6. Two additional lifejackets for vessels of 12-15m

The Fishing Industry Safety Group considered that as this size of vessels had more room on board and more crew than smaller vessels, they should carry two additional lifejackets in case of failure of any others, to increase the chances of all crew remaining safe in the event of an emergency.

3.5.7. Stability Requirements for vessel of 12-15m

Prior to 22 November 2002, vessels of 12m and over were required to comply with stability requirements contained in the Fishing Vessels (Safety Provisions) Rules 1975. However, with the introduction of the Fishing Vessels (Safety of 15-24 Metre Vessels) Regulations 2002, these vessels became subject to the Small Fishing Vessel Code of Practice, which contain no requirements for stability.

In response to the MAIB investigations into the Kirsteen Anne[15] and Kathryn Jane, Emerald Dawn and Jann Denise II[6], the Fishing Industry Safety Group and MCA agreed that the requirement for Stability standards and Stability book approvals, which was contained in the Fishing Vessel (Safety Provisions) Rules 1975, should be reinstated in the new Code for vessels of 12m to 15m joining the UK Register after the Code is implemented, regardless of whether they are a new vessel being built or a vessel that has already been built and which wishes to join the UK Register as a fishing vessel.

However, it has been decided by MCA that it is not practicable to extend this requirement to vessels of 12-15m already on the Register, as this may require extensive modification of vessels to meet the

[22] http://www.maib.gov.uk/publications/completed_preliminary_examinations/completed_preliminary_examinations_2006/walzberg_corona.cfm

requirements. The MCA has developed guidance for vessels currently on the flag which will enable owners and skippers to assess their stability.

3.5.8. Carbon monoxide (CO) alarms on all vessels with a fired Cooking or Heating Appliance

As a result of an MAIB investigation into the death of two fishermen whilst sleeping on board the under 15m Fishing Vessel Eshcol[8], the MCA was recommended to make it mandatory that all accommodation should have a CO alarm fitted. In addition the Coroners Regulation 28 Report following the inquest into the deaths said that consideration should be given to requiring all commercial boats to have CO alarms.

The MCA proposes that CO alarms should be fitted where there is a fired cooking or heating appliance that could emit CO. This is because vessels may not only have gas fired appliances but also diesel or paraffin heaters. However, not all vessels will be required to have CO alarms. The guidance will state that CO Alarms should have an in built Lithium battery to reduce the risk of the battery running out.

Where the vessel does not have any such appliances, then there is no need for an alarm. In addition, some vessels may have these appliances but in an open space that cannot be closed off, therefore allowing CO to disperse in the open air. These vessels will also not require a CO alarm. However, an open vessel may have a space such as a wheelhouse which can be closed and if it had a fired appliance in it, then it would be required to have a CO alarm.

CO alarms are already required on board vessels of 15m and over.

3.6 Better Regulations Principles

It is believed that with the requirements in a single set of Regulations and three Codes of Practice, understanding of the requirements and compliance with them will be made easier than is currently the case. This is also consistent with the Better Regulation Initiatives and the RTC.

4. Description of options considered

4.1. 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 and in addition, the opportunity to simplify the standards for fishing vessels of 24m and over has been a policy for a number of years. It has also been agreed through the RTC to consolidate the number of fishing vessel Statutory Instruments.

Therefore failure to implement this proposed regulation, implementing a package of measures, would result in recognised safety concerns not being addressed, a continued unacceptable level of deaths in the fishing industry and the opportunity to realise a simplified and consolidated set of requirements for both the MCA and industry would not be achieved.

4.2. Option 1: introduce a single piece of legislation implementing three Codes of Practice; a new Code of Practice for Fishing Vessels of 24 metres and over and revisions of two Codes of Practice for 15 – 24 metre fishing vessel and small fishing vessels. This is the preferred option.

The Codes will be introduced in the form of three Codes of Practice, which will be given legal effect by a single Statutory Instrument. The Codes of Practice contain the technical standards and cover construction aspects, safety equipment to be carried on board, inspection and maintenance regimes and also survey and inspection requirements.

Vessels will continue to be either inspected or surveyed (dependent on the size of the vessel and regime applicable) against the requirements of the Codes of Practice. When the MCA is content that the vessel is compliant with the standards in the Code of Practice, it will be issued with a Safety Certificate. Mid-term surveys and inspections will then continue to take place to ensure vessel standards are maintained with an obligation on the skipper to ensure that the vessels are maintained to the standards for the

vessel's certificate to remain valid. The Statutory Instrument will stipulate that vessels may only proceed on a voyage with a valid certificate.

This is achieved by the Regulations being made under section 85(5) of the Merchant Shipping Act 1995 which allows the Secretary of State to sub delegate requirements into supporting documentation which can be amended from time to time. This gives the advantage of having the prescriptive details of the existing Regulations incorporated into a Code of Practice, issued under an MSN, so that when changes are required only the MSN will need amending and no new or amending regulations will be required.

4.2. Discounted Option: Issue Codes as voluntary Marine Guidance Note[23] and increase emphasis on training and education.

The MCA could issue the proposed Codes as MGNs 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 EFF 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. Consultant Surveyors have witnessed the proposed equipment already on some vessels and have provided estimates of how many already comply (see Annex 1 for details of the assumptions that have been made in this IA). 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. For this reason, the MCA does not consider that Voluntary Codes are a viable option.

An advantage of making certain safety measures non mandatory is that fishermen can apply for EFF funding to purchase them. However, although these items could be obtained through EFF funding, the Consultant Surveyors' estimates of the number of ships that already have proposed equipment indicate that the availability of funding as not led to widespread use through the fleet, although it is recognised this may in part be due to the application process. As a result, the MCA would not expect their eligibility for EFF funding to lead to an increase in the use of the proposed items if they remained voluntary.

One exception to this is the provision of PFDs. According to the MAIB Safety Study, "Analysis of UK Fishing Vessel Safety 1992 -2006[1]" and MCA review of MAIB investigations since then, around a third (121) of the 304 fishermen who have died between 1992 and 2012 did so after going into the water. MCA cannot effectively police their wearing at sea, unlike the other proposals in the Code. MCA has agreed with Industry that the wearing of PFDs therefore requires a significant culture change and the acceptance by fishermen that new designs are suitable to wear and consequently industry are funding the provision of PFDs through EFF and providing education in their wearing as the way forward.

The MCA considers that the voluntary scheme for PFDs however is the exception; and that the other requirements are widely available, are considered reliable and do not require a change in culture towards them. Additionally they are not worn but instead placed on board the vessel in an operational state and can be checked at a survey or inspection. PFDs however are meant to be worn and this requires the individual to make a choice to wear it. The MCA considers that it is not possible to check if they are being worn whilst the vessel is out fishing and therefore education and training are more appropriate for PFDs.

[23] 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.

Question for Consultees

Q2. For vessels which do not currently have the equipment on board that the Codes propose to make mandatory, is there any evidence that a voluntary approach would lead to an increase in its use?

5. Costs and benefits of introducing the proposed Regulations to implement three Codes of Practice; a new Code of Practice for Fishing Vessels of 24 metres and over and revisions of two Codes of Practice for 15 – 24 metre fishing vessel and small fishing vessels (Option 1)

5.1. Introduction

This IA assesses the additional costs and benefits of the proposed Regulations (Option 1) compared to the "Do Nothing" scenario; the "Do Nothing" scenario represents what would happen if the Government does not take any action. In line with the Better Regulation Framework Manual, a 10 year appraisal period has been used in this IA. For the purposes of this IA, the appraisal period is assumed to begin on 01 January 2015. The likely date that the proposed Regulations will come into force in practice is subject to uncertainty but is expected to be after this date. The 10 years in the appraisal period are referred to as Year 1 to Year 10 below.

For the purposes of this IA, the additional costs and benefits of the proposed Regulations (Option 1) during the appraisal period have been monetised to the extent that is possible. Given the limitations of the available evidence base, it has not been possible to monetise some of the costs and benefits of the proposed Regulations (Option 1) that have been identified. Where it has not been possible to monetise a cost or benefit, a full qualitative description of the cost or benefit has been provided.

The additional costs and benefits of the proposed Regulations (Option 1) that have been identified in this IA are split as follows:

- One-off monetised costs to existing UK registered fishing vessels (see Section 5.2);
- One-off monetised costs to new UK registered fishing vessels (see Section 5.3);
- Ongoing monetised costs to UK registered fishing vessels (see Section 5.4);
- Potential non-monetised costs to UK registered fishing vessels and workers (see Section 5.5);
- Costs to the MCA (see Section 5.6); and
- Benefits (see Section 5.7).

A summary of the monetised costs is provided in Section 5.8. For the purpose of this IA, the estimates of the monetised costs to UK registered fishing vessels shown below are assumed to be an appropriate proxy for the additional costs to UK businesses and are therefore also shown on the 'Summary: Intervention and Options' and 'Summary: Analysis and Evidence' sheets above.

The estimates of the additional costs of the proposed Regulations (Option 1) that are presented in this IA are very sensitive to the data sources used in this analysis and the assumptions that have been made in this IA. Consequently, there are large uncertainties around these estimates. For example, there are considerable uncertainties surrounding how the number of UK registered fishing vessels will change each year going forward. Therefore, these estimates have been used for purely illustrative purposes and should be interpreted as indicative estimates of the order of magnitude of these costs.

Following the consultation, we will consider whether further analysis could be undertaken to improve the extent to which the additional costs and benefits of the proposed Regulations (Option 1) are monetised and whether any other improvements can be made to this analysis. To assist with this, we have included a number of specific questions for consultees below. All responses to the consultation will be taken into account when the IA is finalised after the consultation.

Questions for Consultees

Q3. Consultees are invited to submit any additional evidence or other relevant information on the costs and benefits of the proposed Regulations (Option 1) that are identified in this IA.

Q4. Consultees are invited to provide details of any additional costs and benefits of the proposed Regulations (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.

Q5. 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.

5.2. One-off monetised costs to existing UK registered fishing vessels

5.2.1. Assumptions regarding the number of existing UK registered fishing vessels that would be required to comply with the proposed Regulations (Option 1)

Table 3 presents data on the number of UK registered fishing vessels from the MCA's Ship's Register, Part II. This data shows that there were a total of 5,746 UK registered fishing vessels when this data was obtained in March 2014.

Table 3: Number of UK Registered Fishing Vessels (March 2014)	
a) 0 - less than 15m Length Overall (LOA) ("0 – 15m")	**5,068**
• 0 – less than 7m Registered Length (L) ("0 - 7m")	2,468
• 7m L – less than 12m L ("7 - 12m")	2,484
○ 7m L – less than 10m L ("7 - 10m")	2,086
○ 10m L – less than 12m L ("10 - 12m")	398
• 12m l – less than 15m LOA ("12 - 15m")	116
b) 15m LOA – less than 24m L ("15 - 24m")	**496**
c) 24m L and over ("24m +"):	**153**
• 24m L to less than 45m L ("24 - 45m")	123
• 45m L to less than 60m L ("45 - 60m")	15
• 60m to less than 75m L	14
• 75m and over L	1
Total (a + b + c)	**5,717**

For the purposes of this IA, it is assumed that the number of existing UK registered fishing vessels that would be required to comply with the proposed Regulations (Option 1) is as shown in Table 3.

5.2.2. Overview of the one-off monetised costs to existing UK registered fishing vessels identified in this IA

Given the available evidence, it has been possible to monetise the following one-off costs to existing UK registered fishing vessels of purchasing equipment in order to comply with the new requirements that would be introduced by the proposed Regulations (Option 1).

For 0 – 15m vessels, it has been possible to monetise the costs of purchasing the following equipment:

- Liferafts (see Annex A1.2.1)
- Bilge Alarms for open vessels of 7-15m (see Annex A1.2.2)
- Additional lifejackets (see Annex A1.2.3)
- EPIRBs (see Annex A1.2.4)
- Radar reflector (see Annex A1.2.5)
- Stability Booklet (see Annex A1.2.6)
- Carbon Monoxide (CO) Alarms (see Annex A1.2.7)

For 15 - 24m vessels, it has been possible to monetise the costs of purchasing the following equipment:

- Shore power connections for fire detection and safety systems (see Annex A1.3.1)

For 24m + vessels, it has been possible to monetise the costs of purchasing the following equipment:

- Emergency lighting for all emergency exits (see Annex A1.1.1)
- Shore power connections for fire detection and safety systems (see Annex A1.1.3)
- Low level bilge alarms for propulsion machinery spaces and fish holds (see Annex A.1.4)
- Additional low level bilge alarms for unmanned spaces (see Annex A1.1.5)
- Auto start bilge pump alarms for clean compartments (see Annex A1.1.6)
- Bilge suction alarms for dry compartments (see Annex A1.1.7)
- Additional bilge alarms (see Annex A1.1.8)
- Lifebuoy and heaving line (see Annex A1.1.11)
- Thermometers for fridges (see Annex A1.1.12)

In addition, for 24m + vessels, it is assumed that there would no additional costs associated with purchasing the following equipment:

- Lightning protection (see Annex A1.1.2)
- Ladders (see Annex A1.1.10)

Where appropriate evidence has been identified, the costs to business of fitting this equipment (including the costs of any small extra items that would be needed to do so, such as fixtures and fittings) have also been monetised (see Annex A1 for more details). In addition, the other costs to business of the time spent by workers to meet the new requirements have also been monetised where possible (see Annexes A1.4 to A1.6). This includes the familiarisation costs to business.

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

MCA Consultant Fishing Vessel Surveyors and Industry representatives on the Fishing Industry Safety Group (FISG) were asked to estimate the percentages of existing UK registered fishing vessels that already comply with the new requirements that would be introduced by the proposed Regulations (Option 1). Only indicative estimates from MCA Consultant Fishing Vessel Surveyors have been received. Based on the estimates 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 Regulations (Option 1). Given the significant uncertainty around these percentages, three scenarios have been developed to attempt to illustrate this uncertainty.

1. High level of compliance – these assumptions represent a high scenario of the proportion of vessels that already comply and are used for the Low estimates of the additional costs of Option 1;
2. Best Estimate– these assumptions represent the MCA's best estimate of the proportion of vessels that already comply and are used for the Best Estimates of the additional costs of Option 1; and
3. Low level of compliance - these assumptions represent a low scenario of the proportion of vessels that already comply and are used for the High estimates of the additional costs of Option 1.

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 Regulations (Option 1) are explained in full in Annex 1 of this IA.

5.2.4. Assumptions regarding the one-off costs per vessel of complying with the new requirements that would be introduced by the proposed Regulations (Option 1)

Where possible, the MCA has obtained information on the costs of purchasing the equipment that would be required to comply with the new requirements that would be introduced by the proposed Regulations (Option 1) from a number of different marine equipment suppliers. In addition, the MCA has obtained some information from industry contacts on the costs of fitting this equipment and the other costs to business of the time spent by workers to meet the new requirements.

Based on this information, the MCA has developed indicative assumptions of these costs. Given the uncertainty around these costs, three scenarios have been developed to attempt to illustrate this uncertainty.

1. High scenario – these assumptions represent the highest costs of purchasing the necessary equipment and complying with the new requirements obtained by the MCA and are used for the High estimates of the additional costs of Option 1;
2. Best Estimate – these assumptions represent our best estimate of the average costs of purchasing the necessary equipment and complying with the new requirements based on the information obtained by the MCA and are used for the Best Estimates of the additional costs of Option 1; and
3. Low scenario - these assumptions represent the lowest costs of purchasing the necessary equipment and complying with the new requirements obtained by the MCA and are used for the Low estimates of the additional costs of Option 1.

The assumptions regarding the one-off costs per vessel of complying with the new requirements that would be introduced by the proposed Regulations (Option 1) are explained in full in Annex 1 of this IA.

5.2.5. Estimates of the additional one-off costs to existing UK registered fishing vessels of complying with the new requirements that would be introduced by the proposed Regulations (Option 1)

This section presents estimates of the additional one-off monetised costs to existing UK registered fishing vessels of complying with the new requirements that would be introduced by the proposed Regulations (Option 1). Tables 4a to 4c presents estimates of the average total one-off monetised costs per vessel across all existing UK registered fishing vessels within each of the size categories (e.g. 0 - 7m). The estimates presented in Tables 4a to 4c have been rounded to the nearest £10.

It should be noted that a key reason for the differences between the size categories in Table 4a is that the new requirements that would be introduced by the proposed Regulations (Option 1) vary between the size categories. 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 Regulations (Option 1) (see Section 5.2.3) and the assumptions regarding the one-off costs per vessel of complying with the new requirements that would be introduced by the proposed Regulations (Option 1) (see Section 5.2.4).

Table 4a: Estimated average total additional one-off monetised costs to business of purchasing equipment to meet the new requirements per existing vessel

Size category	Low Estimates	Best Estimates	High Estimates
0 - 7m	£290	£450	£640
7 - 12m	£700	£1,160	£1,820
12 - 15m	£220	£440	£740
15 - 24m	£10	£20	£50
24 - 45m	£100	£250	£520
45 - 60m	£80	£220	£500
60 - 75m	£100	£300	£680
75m +	£0	£0	£1,820

Table 4b: Estimated average total one-off monetised costs to business of fitting this equipment and the other time spent by workers to meet the new requirements (e.g. familiarisation costs) per existing vessel[24]

Size category	Low Estimates	Best Estimates	High Estimates
0 - 7m	£10	£80	£150
7 - 12m	£20	£110	£220
12 - 15m	£10	£70	£130
15 - 24m	£0	£30	£60
24 - 45m	£1,240	£1,970	£2,910

[24] Where possible, the costs to business of fitting this equipment also include the costs of any small extra items that would be needed to do so, such as fixtures and fittings. As well as the familiarisation costs to business, the other costs to business of the time spent by workers to meet the new requirements include the costs of understanding the new requirements, establishing which new equipment is needed and purchasing equipment.

45 - 60m	£860	£1,670	£2,620
60 - 75m	£970	£1,860	£2,890
75m +	£0	£30	£7,090

Table 4c: Estimated average total additional one-off monetised costs to business to meet the new requirements per existing vessel [i.e. Table 4a + Table 4b]			
Size category	Low Estimates	Best Estimates	High Estimates
0 - 7m	£300	£520	£780
7 - 12m	£720	£1,270	£2,030
12 - 15m	£230	£500	£870
15 - 24m	£10	£50	£110
24 - 45m	£1,350	£2,220	£3,430
45 - 60m	£940	£1,890	£3,120
60 - 75m	£1,070	£2,150	£3,560
75m +	£0	£30	£8,910

Table 5 presents estimates of the total additional one-off monetised costs for all existing UK registered fishing vessels within each of the size categories. It shows that the total additional costs for all existing UK registered fishing vessels are estimated at between around £2.8 million to £7.7 million, with a Best estimate of around £4.9 million. For the purposes of this IA, it assumed that these costs would all be incurred in Year 1. These estimates have been calculated by multiplying the estimates shown in Table 4c by the data on the number of vessels within a size category shown in Table 3. The estimates presented in Table 5 have been rounded to the nearest £1000.

Table 5: Estimated total additional one-off monetised costs to business to meet the new requirements for all existing UK registered fishing vessels [i.e. Table 4c x Table 3]			
Size category	Low Estimates	Best Estimates	High Estimates
0 - 7m	£751,000	£1,286,000	£1,933,000
7 - 12m	£1,798,000	£3,160,000	£5,047,000
12 - 15m	£27,000	£59,000	£101,000
15 - 24m	£3,000	£26,000	£54,000
24 - 45m	£166,000	£273,000	£422,000
45 - 60m	£14,000	£28,000	£47,000
60 - 75m	£15,000	£30,000	£50,000
75m +	£0	£0	£9,000
Total	**£2,774,000**	**£4,862,000**	**£7,663,000**

For an existing UK registered fishing vessel, it should be noted that the total additional one-off monetised costs per vessel would vary from the average estimates shown in Tables 4a to 4c depending on the extent that the vessel already complies with the new requirements that would be introduced by the proposed Regulations (Option 1). To illustrate this, compare Table 4a with Table 6 which presents estimates of the total additional one-off monetised costs to business of purchasing equipment to meet the new requirements per vessel for a hypothetical existing UK registered fishing vessel in each size category that does not comply with any of the new requirements that would be introduced by the proposed Regulations (Option 1). The estimates presented in Table 6 have been rounded to the nearest £10.

Table 6: Estimated maximum total additional one-off monetised costs to business of purchasing equipment to meet the new requirements per existing fishing vessel			
Size category	Low Estimates	Best Estimates	High Estimates
0 - 7m	£390	£580	£760
7 - 12m	£1,080	£1,630	£2,340
12 - 15m	£1,220	£1,860	£2,650
15 - 24m	£40	£60	£90
24 - 45m	£810	£1,210	£1,760
45 - 60m	£870	£1,300	£1,870
60 - 75m	£1,040	£1,570	£2,290
75m +	£1,110	£1,690	£2,490

5.3. One-off monetised costs to new UK registered fishing vessels

5.3.1. Overview of the one-off monetised costs to existing UK registered fishing vessels identified in this IA

Given the available evidence, it has been possible to monetise the same one-off costs for new UK registered fishing vessels as for existing UK registered fishing vessels (see Section 5.2.2 for more details).

5.3.2. Assumptions regarding the number of new UK registered fishing vessels that would be required to comply with the proposed Regulations (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 Option 1. Based on data from the Registry of Shipping and Seaman on the number of fishing vessels that joined the UK flag in the 10 year period between 2005 and 2014 (the latest year when a full year's data was available when this data was obtained), Table 7 presents the assumptions that have been made regarding the number of new fishing vessels which would join the UK flag in each year of the appraisal period. There is considerable uncertainty around these assumptions. Therefore, three scenarios have been developed to attempt to illustrate this uncertainty.

Table 7: Assumptions regarding the number of fishing vessels which would join the UK flag in each year of the appraisal period[25]

Size category	Low Estimates (Average per year in five lowest years between 2005 and 2014)	Best Estimates (Average per year between 2005 and 2014)	High Estimates (Average per year in five highest years between 2005 and 2014)
0 - 7m	142	166	190
7 - 12m	68	91	114
12 - 15m	3	5	7
15 - 24m	10	12	14
24m +[26]	4	6	8

Question for Consultees

Q6. Consultees are invited to propose alternative assumptions regarding the number of fishing vessels which would join the UK flag each year of the appraisal period, and provide supporting evidence or other relevant information.

5.3.3. Assumptions regarding the proportion of new UK registered fishing vessels that would already comply with the new requirements that would be introduced by the proposed Regulations (Option 1) under the "Do Nothing" scenario

The proportions of new UK registered fishing vessels that would already comply with the new requirements under the "Do Nothing" scenario are assumed to be the same as the proportions of existing UK registered fishing vessels that are assumed to already comply with the new requirements (see Section 5.2.3 for more details).

5.3.4. Assumptions regarding the one-off costs per vessel of complying with the new requirements that would be introduced by the proposed Regulations (Option 1)

The one-off costs of complying with the new requirements per vessel for new UK registered fishing vessels are assumed to the same as the one-off costs per vessel assumed for existing UK registered fishing vessels (see Section 5.2.4 for more details) except for the additional requirement for new vessels of 12-15m regarding a stability test and production of a stability booklet (see Section A1.2.6).

[25] The assumptions used in the analysis have been rounded to the nearest whole number in these tables.
[26] Given the small number of 24m + vessels, it is not considered proportionate to undertake this analysis at a more disaggregated level.

5.3.5. 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 Regulations (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 Regulations (Option 1).

On the basis of the assumptions in Section 5.3.2, Section 5.3.3 and Section 5.3.4, the estimated average total one-off monetised costs per new UK registered fishing vessel for each of the size categories is as shown in Table 8. The estimates presented in Table 8 have been rounded to the nearest £10.

Table 8: Estimated average total additional one-off monetised costs per new fishing vessel			
Size category	Low Estimates	Best Estimates	High Estimates
0 - 7m	£300	£520	£780
7 - 12m	£720	£1,270	£2,030
12 - 15m	£7,230	£7,500	£7,870
15 - 24m	£10	£50	£110
24m +[27]	£1,270	£2,160	£3,460

Table 9 presents estimates of the total additional one-off monetised costs per year for all new UK registered fishing vessels within each of the size categories. It shows that the total additional one-off monetised costs per year for new UK registered fishing vessels are estimated at between around £122,000 to £465,000 per year, with a Best estimate of around £122,000 per year. For the purposes of this IA, it assumed that these monetised costs would be the same in each year of the appraisal period. These estimates have been calculated by multiplying the estimates in Table 8 by the assumptions regarding the number of fishing vessels which would join the UK flag each year for each of the size categories in Table 7. The estimates presented in Table 9 have been rounded to the nearest £1000.

Table 9: Estimated total additional one-off monetised costs per year for all new UK registered fishing vessels			
Size category	Low Estimates	Best Estimates	High Estimates
0 - 7m	£43,000	£87,000	£149,000
7 - 12m	£49,000	£115,000	£231,000
12 - 15m	£25,000	£40,000	£57,000
15 - 24m	£0	£1,000	£1,000
24m +	£5,000	£13,000	£27,000
Total	**£122,000**	**£255,000**	**£465,000**

5.4 Ongoing monetised costs to UK registered fishing vessels

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

Given the available evidence, it has been possible to monetise the following ongoing costs to UK registered fishing vessels of servicing equipment in order to comply with the new requirements that would be introduced by the proposed Regulations (Option 1).

- Servicing EPIRBs every 5 years for 0 – 7m, 7 – 12m and 12 – 15m vessels (see Annex A1.2.8);
- Servicing liferafts every three years for 7 – 12m and 12 – 15m vessels (see Annex A1.2.9); and
- Servicing the two additional lifejackets each year for 12 – 15m vessels (see Annex A1.2.10).

[27] To produce an estimate for 24m + vessels, the estimates for 24 - 45m, 45 - 60m, 60 - 75m and 75m + vessels in Table 4c have been averaged on the basis of the number of existing UK registered fishing vessels in each category as shown in Table 3.

5.4.2. Assumptions regarding the total number of UK registered fishing vessels in relevant size categories that would be required to comply with the proposed Regulations (Option 1) each year

The total number of UK registered fishing vessels in each of the relevant size categories (i.e. 0 – 7m, 7 – 12m and 12 – 15m vessels) that would be required to comply with the proposed Regulations (Option 1) each year would depend on the number of fishing vessels joining and leaving the UK flag each year.

The assumptions that have been made regarding the number of fishing vessels in each relevant size category which would join the UK flag in each year of the appraisal period are shown in Table 7. Based on consistent data on the number of fishing vessels that left the UK flag in the 10 year period between 2005 and 2014, Table 10 presents the assumptions that have been made regarding the number of fishing vessels in each relevant size category which would leave the UK flag in each year of the appraisal period. As for the assumptions shown in Table 7, it should be noted that there is considerable uncertainty around the assumptions shown in Table 10. Hence, three scenarios have again been developed to attempt to illustrate this uncertainty.

Table 10: Assumptions regarding the number of fishing vessels which would leave the UK flag in each year of the appraisal period[25]

Size category	Low Estimates (Average per year in five lowest years between 2005 and 2014)	Best Estimates (Average per year between 2005 and 2014)	High Estimates (Average per year in five highest years between 2005 and 2014)
0 - 7m	148	193	237
7 - 12m	113	154	196
12 - 15m	2	3	4
15m-24m	17	25	33
24m +	9	14	

Question for Consultees

Q7. Consultees are invited to propose alternative assumptions regarding the number of fishing vessels which would leave the UK flag each year of the appraisal period, and provide supporting evidence or other relevant information.

For each size category, the ships that leave the UK flag in each year of the appraisal period are assumed to be distributed between existing ships and each age group of new ships (e.g. new ships that joined the UK flag in Year 1, new ships that joined the UK flag in Year 2, etc) in line their respective shares of the total number of ships that were registered on the UK flag at the start of the year.

On the basis of the above assumptions, Table 11 presents the Best estimates of how the number of UK registered fishing vessels in each of the relevant size categories would change over the 10 year appraisal period.

Table 11: Assumptions regarding the number of UK registered fishing vessels at the end of each year (Best estimates) [0 – 7m vessels / 7 – 12m vessels / 12 – 15m vessels][25]

Year	Existing Ships	New Ships that joined in Year 1	New Ships that joined in Year 2	New Ships that joined in Year 3	New Ships that joined in Year 4	New Ships that joined in Year 5	New Ships that joined in Year 6	New Ships that joined in Year 7	New Ships that joined in Year 8	New Ships that joined in Year 9	New Ships that joined in Year 10	Total registered on the UK flag at end of the year
1	2291 / 2339 / 109	166 / 91 / 5										2457 / 2429 / 114
2	2112 / 2190 / 106	153 / 85 / 5	166 / 91 / 5									2431 / 2366 / 116
3	1944 / 2047 / 103	141 / 79 / 5	153 / 85 / 5	166 / 91 / 5								2404 / 2302 / 119
4	1788 / 1910 / 100	130 / 74 / 5	141 / 79 / 5	153 / 85 / 5	166 / 91 / 5							2378 / 2238 / 121
5	1643 / 1778 / 98	119 / 69 / 5	129 / 74 / 5	140 / 79 / 5	153 / 84 / 5	166 / 91 / 5						2351 / 2175 / 123
6	1509 / 1652 / 95	109 / 64 / 5	119 / 68 / 5	129 / 73 / 5	140 / 78 / 5	152 / 84 / 5	166 / 91 / 5					2324 / 2111 / 125
7	1384 / 1531 / 93	100 / 59 / 5	109 / 63 / 5	118 / 68 / 5	129 / 73 / 5	140 / 78 / 5	152 / 84 / 5	166 / 91 / 5				2298 / 2047 / 127
8	1268 / 1415 / 91	92 / 55 / 4	100 / 59 / 5	108 / 63 / 5	118 / 67 / 5	128 / 72 / 5	140 / 78 / 5	152 / 84 / 5	166 / 91 / 5			2271 / 1983 / 130
9	1160 / 1305 / 89	84 / 51 / 4	91 / 54 / 4	99 / 58 / 5	108 / 62 / 5	117 / 67 / 5	128 / 72 / 5	139 / 77 / 5	152 / 84 / 5	166 / 91 / 5		2245 / 1920 / 132
10	1060 / 1200 / 87	77 / 47 / 4	83 / 50 / 4	91 / 53 / 4	98 / 57 / 5	107 / 61 / 5	117 / 66 / 5	127 / 71 / 5	139 / 77 / 5	152 / 83 / 5	166 / 91 / 5	2218 / 1856 / 134

The assumptions for the Low Scenario and High Scenario are presented in Annex 2. The Low Scenario is based on the Low estimates from Table 7 and the High estimates from Table 10; where the High Scenario is based on the High estimates from Table 7 and the Low estimates from Table 10.

5.4.3. Assumptions regarding the proportion of UK registered fishing vessels that would already incur these costs under the "Do Nothing" scenario

The proportions of UK registered fishing vessels that would already incur these costs under the "Do Nothing" scenario are assumed to be the same as the proportions of UK registered fishing vessels that are assumed to comply with the relevant requirements under the "Do Nothing" scenario (see Section 5.2.3 and Section 5.3.3 for more details).

5.4.4. Assumptions regarding the ongoing costs per UK registered fishing vessel

Where possible, the MCA has obtained information on the costs of servicing the equipment that would be required to comply with the new requirements that would be introduced by the proposed Regulations (Option 1) from relevant businesses. However, it should be noted that these costs do not include the costs of replacement parts.

Based on this information, the MCA has developed indicative assumptions of these ongoing costs. Given the uncertainty around these costs, three scenarios have been developed to attempt to illustrate this uncertainty.

1. High scenario – these assumptions represent the highest cost of servicing this equipment obtained by the MCA and are used for the High estimates of the additional costs of Option 1;

2. Best Estimate – these assumptions represent the average cost of servicing this equipment based on the information obtained by the MCA and are used for the Best Estimates of the additional costs of Option 1; and

3. Low scenario - these assumptions represent the lowest cost of servicing this equipment obtained by the MCA and are used for the Low estimates of the additional costs of Option 1.

The assumptions regarding these ongoing costs are explained in full in Annex 1 of this IA.

5.4.5. Estimates of the additional ongoing costs per year to all UK registered fishing vessels of complying with the new requirements that would be introduced by the proposed Regulations (Option 1)

This section presents estimates of the additional ongoing monetised costs per year to all UK registered fishing vessels of complying with the new requirements that would be introduced by the proposed Regulations (Option 1).

Table 12 presents estimates of the average additional ongoing monetised costs per vessel per year for each of the relevant size categories. As a simplifying assumption, it is assumed that these additional costs would be incurred by the number of UK registered fishing vessels at the end of year in each year of the appraisal period. The estimates presented in Table 12 have been rounded to the nearest £10.

It should be noted that these estimates are sensitive to both the assumptions regarding the proportion of vessels that would incur these costs under the "Do Nothing" scenario (see Section 5.4.3) and the assumptions regarding the ongoing costs per vessel (see Section 5.4.4).

Table 12: Estimated average additional ongoing monetised costs per vessel per year			
Size category	Low Estimates	Best Estimates	High Estimates
0 - 7m	£20	£30	£40
7 – 12m	£40	£70	£90
12 - 15m	£40	£70	£100

Table 13 presents estimates of the total additional ongoing monetised costs per year for all UK registered fishing vessels within each of the relevant size categories. The estimates presented in Table 13 have been rounded to the nearest £1000.

These estimates have been calculated by multiplying the estimates shown in Table 12 by the assumptions regarding the number of UK registered fishing vessels at the end of each year shown in Table 11, Table A2.1 and Table A2.2.

Table 13 shows that the average total additional ongoing monetised costs per year for all UK registered fishing vessels are estimated at between around £123,000 to £353,000 per year, with a Best estimate of around £236,000 per year.

Table 13: Estimated total additional ongoing monetised costs per year for all UK registered fishing vessels			
Size category	Low Estimates	Best Estimates	High Estimates
Year 1	£158,000	£259,000	£342,000
Year 2	£150,000	£254,000	£344,000
Year 3	£142,000	£248,000	£346,000
Year 4	£135,000	£243,000	£349,000
Year 5	£127,000	£238,000	£351,000
Year 6	£119,000	£233,000	£354,000
Year 7	£112,000	£228,000	£356,000
Year 8	£104,000	£223,000	£359,000
Year 9	£97,000	£218,000	£361,000
Year 10	£89,000	£213,000	£364,000
Average per year	£123,000	£236,000	£353,000

5.5. Potential non-monetised costs to UK registered fishing vessels and workers

5.5.1. Overview of the potential non-monetised costs to UK registered fishing vessels and workers identified in this IA

Given the limitations of the available evidence, it has not been possible to monetise the following potential costs of complying with the new requirements that would be introduced by the proposed Regulations (Option 1):

- Some of the costs of fitting and maintaining the new equipment that would be required by the proposed Regulations (Option 1) (see Section 5.5.2);
- Costs of conducting drills on board vessels (see Section 5.5.3);
- Costs to owners of vessels under 15m of requiring them to inform MCA of significant modifications to UK registered fishing vessels and have modifications of a substantial nature approved by the MCA (see Section 5.5.4);
- Costs of requiring Safety Certificates for vessels under 15m (see Section 5.5.5);
- Costs of inspection upon change of ownership (see Section 5.5.6);
- Costs of requiring new 12 – 15m vessels to meet stability requirements (see Section 5.5.7); and
- Costs of requiring vessels of 24m and over to have shut offs for exhaust fans (see Section 5.5.8).

5.5.2. Some costs of fitting and maintaining the new equipment that would be required by the proposed Regulations (Option 1)

Where vessels would be required to fit additional equipment compared to the "Do Nothing" scenario, it is recognised that there would be additional costs associated with fitting, maintaining and replacing this equipment. Given the limitations of the available evidence base, it has only been possible to monetise some of these costs (see Section 5.2 to Section 5.4) as the MCA do not currently have access to any other evidence on these costs.

For example, the MCA only has partial evidence on the costs of fitting and maintaining this equipment. The non-monetised costs are likely to vary depending on whether the owner or fishermen could fit and / or maintain the equipment themselves or whether the owner would need to pay another business to do this. Furthermore, where the owner or fishermen can fit and maintain the equipment themselves, it should be noted that this is not necessarily a cost to business; this issue is discussed in more detail in the box below.

Approach to monetising the costs to business of the time spent by workers on fitting and maintaining the new equipment that would be required by the proposed Regulations

For the purposes of this IA, it is assumed that whether the time spent by workers on activities to comply with the proposed Regulations would result in a cost to business would be influenced by whether that time spent would be sufficient to impact on the productivity of the fishing vessel (i.e. the total catch that is landed).

This assumption has been made because the Sea Fish Industry Authority (Seafish) reports that the majority of workers on over 10m UK registered fishing vessels are paid a share of the operational fishing profit, which is determined based on the value of the total catch landed and the fishing costs for each trip. As such workers are not paid on an hourly basis, and activities undertaken by these workers to comply with the requirements of legislation do not necessarily result in a cost to business. In particular, where these activities do not impact on the productivity of the fishing vessel, it is assumed that the time spent by such workers on these activities would not result in a significant cost to business but would instead result in a cost to the workers themselves. For example, this could either involve such workers undertaking these tasks within current levels of non-productive working time or potentially working additional hours, but their pay would still be determined by the total catch that is landed.

The Department previously considered the extent that the time spent by workers on activities to comply with legislation would impact on the productivity of fishing vessels when developing the IA for 'The Merchant Shipping (Accident Investigation and Reporting) Regulations 2012' (the 'Accident Investigation and Reporting IA') . As part of the process for developing the 'Accident Investigation and Reporting IA', Seafish economists were consulted, and advised that time impacts of less than several hours at a time on fishing vessels would not be significant enough to affect a fishing vessel's productivity and would therefore not have a significant impact on the fishing industry.

In light of the above advice from Seafish, the MCA has sought views from industry on the extent that the time spent by workers on fitting and maintaining the new equipment that would be required by the proposed Regulations would represent a cost to business. An industry contact has advised the MCA that the majority of the time spent by workers on familiarisation and fitting equipment to comply with the new requirements in the Code of Practice for Fishing Vessels of less than 15 metres would not fall within

productive fishing time, and that consequently this work would not result in a significant cost to business given how workers are paid; and this has been reflected in the assumptions made for the purposes of this IA.

It should be noted that, where it is assumed that the time spent by workers on activities to comply with the proposed Regulations represents a cost to the workers themselves rather than a cost to business, such costs would not affect the Net cost to business per year of this policy for the purposes of One-In, Two-Out (OITO).

Question for Consultees

Q8. Consultees are invited to submit any additional evidence or other relevant information on the additional costs of fitting and maintaining the new equipment that would be required by the proposed Regulations (Option 1).

5.5.3. Costs of conducting drills on board vessels less than 15m

Drills are not currently required for vessels of less than 15m. Under Option 1, skippers would be required to conduct drills on board vessels when they are inspected against the Code of Practice. This may be either for the purposes of issuing the Safety Certificate or when an inspection is required for other reasons, for example, after an incident at sea. This can be undertaken prior to, or during fishing trips; and will require sufficient crew to be present to conduct an effective drill. Drills that may be required are set out in MGN 430(F)[28].

These drills would be done as part of the vessels inspection and crew are already required to attend inspections to produce evidence that they have undertaken their mandatory training. Furthermore, MCA assume that the requirement to conduct drills would add around 45 minutes to 1.5 hours to an inspection (see Section 5.6.2), with the Best estimate of the time taken to conduct a drill below an hour for the vast majority of affected vessels.

Given the uncertainty regarding how many crew might be needed, the cost to workers has not been monetised in this IA. The MCA considers that it would depend on the vessel size and crew numbers, and that it is very much a surveyor decision as to how many crew would make a drill effective.

Question for Consultees

Q9. Consultees are invited to submit any additional evidence or other relevant information on the additional costs of requiring skippers to conduct drills on board vessels when they are inspected against the Code of Practice. In particular, consultees are invited to advise whether there would be any additional costs to business from this requirement, including whether the requirement to conduct drills would impact on the productivity of affected fishing vessels and whether it would result in any additional employment costs for affected businesses.

5.5.4. Costs to owners of vessels under 15m of requiring them to inform MCA of significant modifications to UK registered fishing vessels and have modifications of a substantial nature approved by the MCA

Currently, owners of vessels of 15m LOA and over are required to have modifications of a substantial nature approved by the MCA, but owners of vessels of less than 15m LOA are not. Under Option 1, all owners would be required to inform MCA of significant modifications to the vessel and have modifications of a substantial nature approved by the MCA. These would include structural changes to the vessel, new engines, which must be informed to MCA for registration purposes already through the Merchant Shipping (Registration of Ships) Regulations 1993 No.3138, and the placing of new conveyors on the working decks of vessels.

[28] MGN 430(F) Checks on Crew Certification and Drills. http://www.dft.gov.uk/mca/mgn430.pdf

MCA expects that the requirement to inform MCA of significant modifications to UK registered fishing would be met by a simple email or phone call. There would be no form for owners to fill in. Given the likely time required to inform MCA of significant modifications and the discussion in Section 5.5.2, it is assumed that the time taken to inform the MCA of such modifications would not impact on the productivity of fishing vessels and would not therefore generally result in a cost to business given how workers are paid.

However, there could potentially be additional costs to business should an owner seek to make a modification that MCA considers unsafe and requires amendment before it is considered acceptable. The number of such modifications that is likely is uncertain at this stage as there is currently insufficient information available to estimate this. In particular, although when owners apply for grants to modify their vessel, the Marine Management Organisation and Fisheries Sections of the Devolved Administrations consult the MCA on safety related issues, the MCA is aware that many vessels undertake modifications without grant aid. It is therefore unable to estimate how many vessels conduct modifications and what form these modifications take. Furthermore, as MCA is unable to identify the types of modifications that will take place, it is not possible to estimate the likely costs should an owner seek to make a modification that MCA considers unsafe and requires amendment before it is considered acceptable. Therefore, it has not been possible to monetise these potential costs in this IA at this stage.

Question for Consultees

Q10. Consultees are invited to submit any additional evidence or other relevant information on the additional costs to owners of informing MCA of significant modifications to UK registered fishing vessels, particularly on whether there would be any additional costs to business from this requirement.

5.5.5. Costs of requiring Safety Certificates for vessels under 15m

Fishing vessels of less than 15m would be required to have a Safety Certificate before they can proceed to sea to fish commercially. The MCA already issues these certificate but they have no legal force. The MCA therefore expects that this requirement would not result in any additional costs to compliant businesses.

However, if a vessel does not have a safety certificate, then it may be detained by the MCA until such time as it complies with the Code of Practice. As a result, it would be unable to fish and would lose commercial income. Compared to the Do Nothing scenario, the MCA consider that there is slightly more scope for an under 15m vessel to be detained under Option 1 as the requirements are greater. No quantitative evidence is available on how many additional UK registered fishing vessels would be detained under Option 1, but the MCA do not expect that a significant number of vessels would be affected as, for example, MCA records show that only 11 under 15m UK registered fishing vessels have been detained in the previous 12 months to 25 June 2014.

Where a vessel is detained, the MCA are unable to estimate how long vessels may take to comply with the Code if they are detained as, for example, the requirements needed to comply will vary from vessel to vessel. It may also depend on the availability of safety equipment or the owner's finances. In addition, the value of fish will vary and the vessel may be detained at a time when it would not have fished commercially. As a consequence, the MCA is unable to place a value on potential costs for a non-compliant business at this stage.

Therefore, given the limitations of the available evidence, it has not been possible to monetise the potential costs to non-compliant businesses, although it should be noted that any costs to non-compliant businesses are not in scope of the OITO rule and hence would not affect the Net cost to business per year of this policy for the purposes of OITO.

Question for Consultees

Q11. Consultees are invited to submit any additional evidence or other relevant information on the additional costs of requiring Safety Certificates for vessels under 15m.

5.5.6. Costs of inspection upon change of ownership of Vessels of less than 15m LOA

Under Option 1, when a vessel of less than 15m LOA changes of ownership, the existing Safety Certificate would cease to be valid, and the new owner would therefore need to present his vessel to the MCA for a safety inspection against the Code in order that he can register the vessel with the Registry of Shipping and Seamen. Where a vessel has more than one owner, it should be noted that whether the existing Safety Certificate would cease to be valid would depend on whether all the owners change, and if not, whether the main owner changes or whether an owner with a lesser share changes. The MCA is proposing to introduce this requirement because these vessels are only inspected every 5 years, which is significantly less than 15-24m and 24m and over vessels.

Costs to business can potentially arise from inspections as, whilst the MCA does not charge fees for these inspections, crew would need to be present during the inspection. An MCA surveyor has advised that on average an inspection currently takes around 1.5 hours for a vessel of less than 15m LOA although drills would also now be required increasing this time. MCA assume that the requirement to conduct drills could add up to around 1.5 hours to an inspection (see Section 5.5.3. above).

MCA records show that there were 709 changes to the owner(s) of UK registered fishing vessels in total between April 2013 and March 2014, and 260 changes to the owner(s) of UK registered fishing vessels in total between April 2014 and March 2015[29]. Table 3 shows that around 89% of UK registered fishing vessels are less than 15m. Although some changes of owner will not lead to an existing Safety Certificate ceasing to be valid as outlined above, the MCA consider that the total number of changes to the owner(s) of UK registered fishing vessels each year indicates that there are likely to be a significant number of changes to the owner(s) of vessels of less than 15m each year where a safety inspection against the Code will be required in order for the new owner to register the vessel with the Registry of Shipping and Seamen.

There is currently no requirement for vessels of less than 15m LOA to be inspected upon change of ownership. Therefore, by bringing forward the timing of the next inspection, this change could potentially increase the present value of the associated costs to business and could also potentially increase the number of inspections that some vessels require during the 10 year appraisal period compared to the "Do Nothing" scenario. However, given the discussion in Section 5.5.2, it should be noted that where the time spent by workers in relation to these inspections would not be sufficient to impact on the productivity of the fishing vessel, it is assumed that this would not generally result in a cost to business given how workers are paid. Furthermore, the extent of any additional costs are subject to significant uncertainty. In particular, these costs would depend upon the timing of the next inspection of any vessels affected, which is uncertain. Therefore, given these uncertainties, it has not been possible to monetise the additional costs to business in this IA at this stage.

Question for Consultees

Q12. Consultees are invited to submit any additional evidence or other relevant information on the additional costs of requiring an inspection upon change of ownership, particularly on whether there would be any additional costs to business from this requirement.

5.5.7. Costs of requiring new vessels of 12 – 15m to meet stability requirements

Under Option 1, any vessel of 12 – 15m wishing to join the UK Register 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 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

[29] The database used by MCA to identify changes of ownership does not allow for reports to be run which indicate the individual vessel or details regarding the vessel, for example tonnage, port number, name, re-build etc or whether it is a change in ownership or shares. Vessel ownership is divided into 64 shares and any change in the number of shares held is what constitutes a change of ownership regardless of whether the change relates to one or all 64 shares. It has therefore not been possible to identify how many vessels of Under 15m have changed ownership.

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 (see Section A1.2.6).

Question for Consultees

Q13. Consultees are invited to submit any additional evidence or other relevant information on the additional costs of requiring new vessels of 12 – 15m to undergo a stability test and have a completed Stability Book.

5.5.8. Costs of requiring vessels of 24m and over to have shut offs for exhaust fans

Under Option 1, each exhaust duct would be required to be fitted with arrangements operable from outside and inside the galley for shutting off the exhaust fan. Given the limitations of the available evidence that MCA has access to on the costs per vessel of meeting this requirement, it has not been possible to monetise the additional costs to business in this IA at this stage. However, it should be noted it is assumed that only a small proportion of these vessels do not already comply with this requirement (see Annex A1.1.9).

Question for Consultees

Q14. Consultees are invited to submit any additional evidence or other relevant information on the additional costs of requiring vessels of 24m and over to have shut offs for exhaust fans, particularly on the costs per vessel of meeting this requirement.

5.6 Costs to the MCA

5.6.1 Costs to the MCA of assessing significant modifications to UK registered fishing vessels (Non-monetised)

Under Option 1, owners would be required to inform MCA of significant modifications to their vessels (see Section 5.5.4 for more details). Given that the MCA is unable to estimate how many vessels conduct modifications and what form these modifications take (see Section 5.5.4), the additional costs to the MCA have not been monetised in this IA.

5.6.2 Costs to MCA of undertaking drills on vessels of less than 15m (Monetised)

Drills are not currently required for vessels of less than 15m. Under Option 1, skippers of these vessels would be required to conduct drills on board vessels when they are inspected against the Code of Practice. The requirement for drills would add additional time to the MCA inspection.

The MCA considers that larger vessels are more likely to have additional crew and a greater complexity of layout, and therefore require greater time to practice the drills. Based on estimates provided by Consultant Fishing Vessel Surveyors, it assumed the time that it would take to conduct drills is 45 minutes to 1 hour for a vessel of less than 12m and 1 hour to 1.5 hours for a vessel of 12-15m.

As these inspections are provided free to industry, this would represent an additional cost to the MCA. It is assumed that the surveyors undertaking such inspections would be of the MS1 Marine Surveyor grade and that their hourly rate of pay for this grade is between around £25 and £28 per hour, with a Best estimate of around £26 per hour[30]. These values have been uplifted by 30% to account for overheads in line with the Standard Cost Model[31]. Therefore, the opportunity cost of the additional survey time is assumed to be between around £32 and £37 per hour, with a Best estimate of around £34 per hour.

It is assumed that the number of UK registered fishing vessels at the end of each year is as shown in Table 11, Table A2.1 and Table A2.2. In addition, as these vessels would be inspected every 5 years, it is assumed that 20% of UK registered fishing vessels at the end of the year would be inspected each year as a simplifying assumption.

[30] This takes account of entitlement to annual leave, privilege holiday and bank holidays.
[31] Better Regulation Executive, Measuring Administrative Costs: UK Standard Cost Model Manual http://www.berr.gov.uk/files/file44503.pdf

On the basis of these assumptions, it is estimated that the cost to the MCA would be around £19,000 to £40,000 per year on average, with a Best estimate of around £28,000 per year on average.

5.6.3 Cost of Issuing Safety Certificates to vessels of less than 15m (Monetised)

Under Option 1, fishing vessels of less than 15m would be required to have a Safety Certificate before they can proceed to sea to fish commercially. The MCA intends to phase in the issue of Safety Certificates when vessels currently on the Register have gone 5 years from their last inspection.

Based on an estimate provided by MCA Consultant Fishing Vessel Surveyors, it is assumed that a Certificate takes an hour to prepare and issue.

The opportunity cost of the additional survey time is assumed to be the same as in Section 5.6.2. In addition, as in Section 5.6.2, it is assumed that the number of UK registered fishing vessels at the start of each year is as shown in Table 11, Table A2.1 and Table A2.2; and that 20% of UK registered fishing vessels at the end of the year would be inspected each year as a simplifying assumption.

On the basis of these assumptions, it is estimated that the cost to the MCA would be around £25,000 to £39,000 per year on average, with a Best estimate of around £32,000 per year on average.

5.6.4 Costs of inspection upon change of ownership of Vessels of less than 15m LOA (Non-monetised)

Under Option 1, when a vessel of less than 15m LOA changes ownership, the new owner would need to present his vessel to the MCA for a safety inspection against the Code in order that he can register the vessel with the Registry of Shipping and Seamen. There would be costs to the MCA associated with the surveyor time required to undertake such inspections. However, given the uncertainties described in Section 5.5.6, it has not been possible to monetise the costs in this IA at this stage.

5.7 Benefits

5.7.1 Improved Safety for UK registered fishing vessels (Non-monetised)

Under Option 1, UK registered fishing vessels would be required to be fitted with additional safety equipment, such as EPIRBs and liferafts and Bilge alarms, which MAIB investigations have identified as having the capability to save lives. Therefore, MCA assume that if all the fleet are required to comply with the new requirements, a reduction in the number of deaths can be expected. However, due to the limitations of the available evidence base and the significant uncertainty regarding the magnitude of impacts of the proposed requirements on safety, this benefit has not been monetised in this IA.

Question for Consultees

Q15. Consultees are invited to submit any additional evidence or relevant information on the impacts of the proposed Regulations (Option 1) on safety.

5.7.2 Potential Benefits to the Government (Non-monetised)

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

Q16. Consultees are invited to submit any additional evidence or relevant information on potential benefits of the proposed Regulations (Option 1) to Government.

5.7.3 Potential Simplification benefits to Business (Non-monetised)

One key objective of the introduction of the 24m and Over Code is to simplify and streamline the existing Statutory Instruments and make them more accessible to industry. There are currently 15 sets of Rules and Regulations that apply to construction, outfit and lifesaving appliances for 24m and over fishing vessels, together with the Torremolinos Protocol. The proposed Regulations (Option 1) consolidate all these requirements into one Statutory Instrument, thereby making them more accessible to all concerned.

MCA considers that with all the requirements for 24m and over fishing vessels consolidated into one set of Regulations and Code of Practice, it would be simpler and easier for owners of fishing vessels to ensure that their vessel is prepared for survey, and that it is likely that the survey would take less time. These fishing vessels are seen every four years for their renewal survey with an intermediate survey being undertaken at the two year point.

Furthermore, under the previous set of Rules and Regulations, which had been developed over a period of 27 years, different penalties were applied to what were the same offences, depending on the size of the vessel. These new Codes and the single SI remove those differences to ensure that the potential penalty reflects the seriousness of the offence, rather than the size of the vessel involved.

Given the limitations of the available evidence base and the significant uncertainties (e.g. the time a survey can take is dependent on the size of the vessel and its condition), this potential benefit has not been monetised in this IA.

Question for Consultees

Q17. Consultees are invited to submit any additional evidence or relevant information on simplification benefits of the proposed Regulations (Option 1) to business.

5.7.4 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.

However, as it has not proved possible to obtain any evidence from industry on this potential benefit due to issues of commercial confidence, this potential benefit has not been monetised in this IA.

Question for Consultees

Q18. Consultees are invited to submit any additional evidence or relevant information on the impact of the proposed Regulations (Option 1) on insurance costs.

5.8 Summary of monetised costs

The additional costs to the owners and operators of new and existing UK registered fishing vessels, which it has been possible to monetise in this Impact Assessment (IA), are estimated at around £0.5 million to £1.6 million per year on average, with a Best estimate of around £1.0 million per year on average. The monetised additional costs to the MCA are estimated at around £43,000 to £79,000 per year on average, with a Best estimate of around £60,000 per year on average. The present value of the total costs over the 10 year appraisal is estimated at around £5.3 million to £15.4 million, with a Best estimate of around £9.6 million (2014 prices, 2015 present value base year).

6. 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.

In particular, the 24m and Over Code has been developed in 5 meetings between Industry held between 2003 and 2010. Three consultations have already been conducted during the development of the 24m and Over Code. These included a formal consultation undertaken in 2004, an informal one in 2006 and a further informal consultation from October to December 2012 as a consequence of further amendments to the Codes. The results of these have been incorporated into the Code. The MCA has developed these Codes with the assistance of industry representatives and their ideas have been incorporated.

Furthermore, the revisions to the Small Fishing Vessel Code were developed with Industry at a meeting held on 16/17 March 2010. Between October 2012 and December 2012, the MCA also consulted on the revisions to this Code and the results incorporated into the Code.

7. Risks

7.1 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[1]" 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].*

7.2 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.

8. One-In, Two-Out (OITO) Assessment

All of the new requirements are domestic in origin. Therefore, this measure is in scope of the OITO rule. The Best estimate of the Net Benefit to business (Present Value) over the 10 year appraisal period is around -£8.98m (2014 Price Base Year, 2015 Present Value Base Year). On the basis of the OITO methodology, the Best estimate of the Equivalent Annual Net Cost to Business per year (EANCB) is therefore estimated at around £0.82 million per year (2009 Price Base Year, 2010 Present Value Base Year).

Question for Consultees

Q19. Consultees are invited to advise whether any of the non-monetised costs to business would significantly impact on the OITO assessment above.

9. Wider impacts

9.1 Small and Micro Business Assessment

Table 3 indicates that there are currently around 5,746 UK registered fishing vessels. For comparison, the MMO estimate that there were 12,152 fishermen working on UK registered fishing vessels in 2013[32]. 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. Table 2 indicates that around 55% of deaths to fishing vessel crew between 2004 and 2013 were on vessels under 15m and an additional 34% of deaths were on vessels of 15m to less than 24m. Additionally, Table 2 indicates that around 68% of fishing vessel losses between 2004 and 2013 were under 15m vessels and around an additional 29% of vessel losses were 15-24m 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 exempt these vessels from 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 equipment that is inappropriate or impractical for its size. For example, vessels under 7m will not be required to carry liferafts because they would take up too much space on board a small vessel. In addition, smaller vessels tend to fish closer to shore so the distress flares they already carry are more likely to be spotted if used and it is more likely there will be other vessels in the vicinity or in port nearby which can assist in a rescue.

Furthermore, the MCA has ensured that, particularly for under 15m fishing vessels, rather than requiring safety equipment to be compliant with the more onerous standards of the EU Marine Equipment Directive (MED)[33], the equipment should be fit for purpose and therefore potentially available at a lower cost. For example, the cost of purchasing a 'fit for purpose' radar reflector is assumed to be around £26 to £136 (see Section A1.2.5), whereas the information that the MCA has obtained from equipment suppliers indicates the cost of purchasing an MED radar reflector is around £128 to £248.

Question for Consultees

Q20. Consultees are invited to submit any additional evidence or relevant information on the impact of the proposed Regulations (Option 1) on small and micro businesses.

9.2 Competition Assessment

Evidence on the average fishing income per vessel for different sizes of vessel is available from Seafish[34]. In general, this evidence indicates that the additional costs per vessel due to the proposed Regulations (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 Regulations (Option 1).

[32] Table 2.6, MMO (2013) UK Sea Fisheries Statistics 2013 http://www.marinemanagement.org.uk/fisheries/statistics/annual.htm

[33] The Marine Equipment Directive (MED) (96/98/EC as amended) ensures that life-saving appliances, marine pollution prevention equipment, fire protection equipment, navigation equipment and radio communication equipment covers meet the requirements of international conventions (e.g., SOLAS, MARPOL, etc.) agreed at IMO (the International Maritime Organisation), additionally meets a common standard of safety and performance. It also ensures that certificates issued by European Union member states, or on their behalf by notified bodies, are acceptable to each member state through the harmonisation of their approval requirements.

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

Question for Consultees

Q21. Consultees are invited to submit any additional evidence or relevant information on the impact of the proposed Regulations (Option 1) on competition.

9.3 Statutory Equality Impact Assessment

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.

10. Summary and preferred option with description of implementation plan

The MCA commenced a 10 year strategy in 2013 with the aim to work with industry through FISG to improve the safety of fishermen and small fishing vessels. This involves training and education of the fishermen to improve seamanship; a cultural change through face to face visits to improve safety through understanding of the risks and encouraging preventative action and reinforcing training messages; and the regulation and enforcement to improve the physical and lifesaving aspects when required.

Introducing the proposed Regulations (Option 1) is the preferred option because this will introduce a single piece of legislation implementing three Codes of Practice; a new Code of Practice for Fishing Vessels of 24 metres and over and revisions of two Codes of Practice for 15 – 24 metre fishing vessel and small fishing vessels. This meets the policy objectives outlined in Section 2.

10.1 Enforcement, sanctions and monitoring

The proposed Codes will be made mandatory by a Statutory Instrument and enforced by the MCA in the same way as the existing regulatory regime. The proposed Regulations provide sanctions for non-compliance. The previous Regulations had various penalties for different offences. The new Statutory Instrument aims to harmonise the penalties to ensure consistency.

10.2 Penalties

The proposed penalties for skipper and/or owner are as follows:

- The vessel proceeds on a voyage without a valid certificate – a fine up to the statutory maximum and/or maximum two years imprisonment;
- They fail to surrender a cancelled certificate - a fine up to the level 2 on the standard scale; and
- They fail to produce a certificate on demand by an authorised official - a fine up to the level 2 on the standard scale.

Additionally the owner can be subject to a fine up to level 5 on the standard scale if they own an under 15m fishing vessel and fail to report for an inspection on a time and date specified by the MCA.

The current regulations all make it a punishable offence to proceed on a voyage without either having a certificate or complying with the Code. In the case of vessels of 24m and over, the proposed penalty would be the same as that proposed. However for vessels under 24m, the penalty is currently a fine up to level 5 on the standard scale.

The penalty for failing to surrender a certificate is the same as it currently for vessels of 24m and over but would be a new penalty for vessels under 24m. This is to prevent vessels from fishing illegally.

The penalty for failing to produce a certificate to an authorised official would be new for all sizes of vessels and is intended to ensure that when a vessel is at sea or in port, it is possible to check if it complies with the Code and should be going to sea.

It is currently an offence not to comply with the 1993 Torremolinos Protocol and the amendments made to it by Council Directive 97/70/EC setting up a harmonised safety regime for fishing vessels of 24 metres in length and over. The offence was punishable by a fine up to level 5 on the standard scale. This would no longer be an offence. Vessels which do not comply with the Protocol and amendments, which are now set out in the Code, may be detained instead.

It is currently an offence for owners or skippers of 15-24m vessels to make a false declaration in relation to a requirement of MSN 1770 and is punishable by a fine up to level 5 on the standard scale. It is also an offence for owners or skippers of vessels of 24m and over to also make a false declaration. In addition owners or skippers of 24m and over vessels to make a false certificate or to alter the certificate. This would no longer an offence in the Code. Vessels would now be subject to detention.

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).

10.3 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 Regulations or Codes of Practice.

10.4 Post implementation

The regular meetings of FISG will continue to assess the implementation of the Codes, the costs involved and the number of accidents, deaths and injuries occurring in the fishing industry. Data is collected by the MAIB and the Marine Management Organisation to make joint informed decisions for safety requirements and policy making.

The proposed Regulations (Option 1) include a review clause as the consolidated Statutory Instrument implements both EU and domestic legislation. The review would begin at the year three point unless any issues are raised through FISG prior to this date.

Annex 1: Further details of the assumptions made in this IA

A1.1: Assumptions regarding the additional costs of the new equipment requirements in the Code of Practice for Fishing Vessels of 24 metres and Over

Note: The assumptions presented in Section A1.1 regarding the proportion of vessels that already comply with the proposed requirements do not apply to vessels of 75m and over. This is because according to the UK Registry of Shipping and Seamen, the UK currently only has one vessel over 75m. Therefore, except where all vessels are assumed to comply (e.g. ladders), the assumptions for vessels of 75m and over are as follows:

High level of compliance	100%
Best Estimate	100%
Low level of compliance	0%

A1.1.1 Emergency lighting to all emergency exits

Under Option 1, all vessels would be required to have emergency lighting fitted to all exits to allow emergency exit in the event of main lighting failure.

Based on the advice of MCA Consultant Surveyors, the average number of emergency exits that would need to be fitted with emergency lighting per vessel are assumed to be as follows for the following sizes of vessels:

24m to less than 45m	4 exits
45m to less than 60m	5 exits
60m to less than 75m	6 exits
75m and over	7 exits

Based on estimates provided by MCA Consultant Surveyors, the proportion of vessels that already comply with this requirement is assumed to be as follows:

High level of compliance	100%
Best Estimate	95%
Low level of compliance	90%

Based on the information that the MCA has obtained from equipment suppliers, the cost of emergency lighting per unit is assumed to be as follows:

High scenario	£55
Best Estimate	£36
Low scenario	£20

A1.1.2 Lightning protection

Under Option 1, all vessels, built as follows, would be required to have a lightning protection system:

- Ships with a wooden hull or of composite construction with wooden masts;
- Ships with a wooden hull or of composite construction with steel masts; and
- Ships with a steel hull with wooden masts.

Based on the information that the MCA has obtained from industry members of FISG, the cost of a lightning protection system per vessel is assumed to be as follows:

High scenario	£500
Best Estimate	£400
Low scenario	£300

Industry members of the Fishing Industry Safety Group has confirmed that all such vessels are already fitted with a lightning protection system as standard equipment, so it is assumed that there would be no additional cost to business from this requirement for the purposes of this IA.

A1.1.3 Fire detection and safety systems to run on shore power

Under Option 1, all fishing vessels of 24m and over, which are allowed to have crew living on board, would be required ensure that the fire detection and safety systems are operable whilst the vessel is connected to shore power. This new requirement would apply to every vessel regardless of whether they allow crew to live on board, as the potential to have live aboard crew is present.

Based on estimates provided by MCA Consultant Surveyors, the proportion of vessels that already comply with this requirement is assumed to be as follows:

High level of compliance	80%
Best Estimate	60%
Low level of compliance	50%

Based on the information that the MCA has obtained from equipment suppliers, the cost per vessel is assumed to be as follows:

High scenario	£95
Best Estimate	£55
Low scenario	£35

A1.1.4 Low level bilge alarms (propulsion machinery spaces and fish holds)

Under Option 1, all fishing vessels would be required, in the propulsion machinery spaces and fish holds, to be fitted with at least two bilge level sensors (one high and one low level) capable of indicating water ingress in those spaces at the control station by means of visual and audible alarm. Previously, only a high level alarm was required.

On the advice of surveyors, it is assumed that the following numbers of spaces and holds would exist on the following sizes of vessels:

24m to less than 60m	2 spaces/holds
60m and over	3 spaces/holds

Based on estimates provided by MCA Consultant Surveyors, the proportion of vessels that already comply with this requirement is assumed to be as follows:

High level of compliance	90%
Best Estimate	80%
Low level of compliance	70%

Based on the information that the MCA has obtained from equipment suppliers, the cost of a bilge alarm sensor is assumed to be as follows:

High scenario	£71
Best Estimate	£40
Low scenario	£24

A1.1.5 Additional low level bilge alarms (unmanned spaces)

Under Option 1, any unmanned spaces in all vessels, where ingress of water would seriously affect stability or essential equipment e.g. sonar rooms, would require no less than one alarm.

On the advice of surveyors, it is assumed that the following numbers of unmanned spaces would exist on the following sizes of vessels:

24m to less than 60m	4 spaces
60m to less than 75m	6 spaces
75m and over	8 spaces

Surveys and Inspections of vessels by MCA surveyors indicate that unlike the requirements discussed in Sections A1.1.1 to A1.1.4 above, the proportion of vessels that already comply with this requirement varies significantly depending on the size of vessel. Based on estimates provided by MCA Consultant Surveyors, the proportion of vessels that already comply with this requirement is assumed to be as follows for the following sizes of vessels:

Level of Compliance	24-45m	45-60m	60-75m
High	30%	60%	60%
Best Estimate	20%	40%	40%
Low	10%	25%	25%

Based on the information that the MCA has obtained from equipment suppliers, the cost of bilge alarms per unit is assumed to be as shown in Section A1.1.4 above.

A1.1.6 Auto-start bilge pump alarms

Under Option 1, in all vessels, any auto-start bilge pump serving a clean compartment would be required to be fitted with an audible and visual alarm at the control position(s) so that the reason for pumping may be investigated.

On the advice of MCA Consultant Surveyors, it is assumed that the following numbers of clean compartments would exist on the following sizes of vessels:

24m to less than 60m	2 compartments
60m and over	3 compartments

On the advice of MCA Consultant Surveyors, it is assumed that the following numbers of control positions compartments would exist on the following sizes of vessels:

24m to less than 45m	1 control position
45m and over	2 control positions

Based on estimates provided by MCA Consultant Surveyors, the proportion of vessels that have auto-start bilge pumps serving clean compartments is assumed to be as follows:

High proportion	40%
Best Estimate	30%
Low proportion	20%

Based on estimates provided by MCA Consultant Surveyors, the proportion of vessels with auto-start bilge pumps serving a clean compartments that already have audio and visual alarms at the control position(s) is assumed to be as follows for the following sizes of vessels:

High level of compliance	80%
Best Estimate	60%
Low Level of compliance	40%

Based on the information that the MCA has obtained from equipment suppliers, the cost of an audio visual alarm per unit is assumed to be as follows:

High scenario	£26
Best Estimate	£23
Low scenario	£20

A1.1.7 Bilge suction alarm

Under Option 1, all vessels would require each dry compartment provided with a bilge suction capability (built-in or portable) to be fitted with a bilge level alarm if the level of the bilge water cannot be readily checked visually without entering the compartment. Alternatively, spring loaded drain valves may be fitted outside the compartment as a means of checking the bilge level.

On the advice of MCA Consultant Surveyors, it is assumed that the following numbers of spaces and holds would exist on the following sizes of vessels:

24m to less than 60m	2 compartments
60m and over	3 compartments

Based on estimates provided by MCA Consultant Surveyors, the proportion of vessels that already have bilge level alarms fitted is assumed to be as follows:

High level of compliance	90%
Best Estimate	80%
Low Level of compliance	70%

The MCA is not aware of any spring loaded drain valves being fitted. Therefore, it is assumed that all vessels would comply with this requirement by fitting bilge level alarms.

Based on the information that the MCA has obtained from equipment suppliers, the cost of a bilge level alarm per unit is assumed to be as follows:

High scenario	£109
Best Estimate	£71
Low scenario	£40

A1.1.8 Additional bilge alarms

Under Option 1, in all vessels, each engine room bilge alarm system must be provided with:

- An additional, independent bilge alarm system; or
- A “fail safe” warning should the bilge alarm circuit become faulty.

On the advice of MCA Consultant Surveyors, it is assumed that all vessels have only one engine room as auxiliary engines are not counted, and it is assumed that all vessels would comply with this requirement by fitting an additional, independent bilge alarm system.

Based on estimates provided by MCA Consultant Surveyors, the proportion of vessels that already comply with this requirement is assumed to be as follows:

High level of compliance	60%
Best Estimate	40%
Low Level of compliance	20%

Based on the information that the MCA has obtained from equipment suppliers, the cost of a bilge alarm is assumed to be as shown in Section A1.1.4 above.

A1.1.9 Shutting off exhaust fans

Under Option 1, in all vessels, each exhaust duct would be required to be fitted with arrangements operable from outside and inside the galley for shutting off the exhaust fan.

MCA Consultant Surveyors advise that vessels will have only one exhaust duct for the galley.

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of vessels already comply with this requirement:

High level of compliance	100%
Best Estimate	90%
Low level of compliance	80%

A1.1.10 Ladders

Under Option 1, in all vessels where the distance from sea level to the point of access to, or egress from, the vessel exceeds 9 metres and which it is intended to embark or disembark pilots by means of the accommodation ladder, or other equally safe and convenient means in conjunction with a pilot ladder, the vessel would be required carry such equipment on each side.

The UK currently has no vessels with such distances from sea level to point of access. Given this, it is also assumed that it is unlikely that there will be such a vessel built for the UK Register in the next 10 years. Therefore, it is assumed that there would be no additional costs to business from this requirement.

Based on the information that the MCA has obtained from equipment suppliers, the cost of a ladder is assumed to be as follows:

High scenario	£75
Best Estimate	£56
Low scenario	£44

A1.1.11 Lifebuoy and heaving line

Under Option 1, all vessels would be required to have:

- A lifebuoy equipped with a self-igniting light; and
- A heaving line

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of vessels already comply with this requirement:

High level of compliance	100%
Best Estimate	95%
Low level of compliance	90%

Based on the information that the MCA has obtained from equipment suppliers, the cost of a lifebuoy and heaving line is assumed to be as follows:

High scenario	£94
Best Estimate	£80
Low scenario	£58

A1.1.12 Thermometers for fridges

Under Option 1, all refrigerators would be required to contain thermometers. For the purposes of this IA, it is assumed that all vessels have one fridge and therefore would require one thermometer.

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of vessels already comply with this requirement:

High level of compliance	10%
Best Estimate	5%
Low level of compliance	0%

Based on the information that the MCA has obtained from equipment suppliers, the cost of a thermometer is assumed to be as follows:

High scenario	£13
Best Estimate	£10
Low scenario	£8

A1.2: Assumptions regarding the additional costs of the new equipment requirements in the Code of Practice for Fishing Vessels of less than 15 metres

A1.2.1 Liferafts

Under Option 1, all vessels of 7-15m would be required to carry a liferaft on board. Currently, only decked vessels of 10m and over are required to carry a liferaft. Therefore, decked vessels of 7 – 10m and Open vessels of 7-15m would additionally be required to carry a liferaft under Option 1.

MCA Consultant Surveyors estimate that 20% of UK registered fishing vessels are open vessels; for the purposes of this IA, it is assumed that 20% of vessels within each size category are open vessels.

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of decked vessels of 7 – 10m and open vessels of 7-15m already comply with this requirement:

High level of compliance	30%
Best Estimate	20%
Low level of compliance	10%

Based on the information that the MCA has obtained from equipment suppliers, the cost of a liferaft is assumed to be as follows:

High scenario	£1,509
Best Estimate	£1,016
Low scenario	£663

Based on the information that the MCA has obtained from an industry contact, it is assumed that fitting takes 3 hours and that the frame and fixing cost £10 to £40 with a Best estimate of £25 (the mid-point of this range).

A1.2.2 Bilge Alarms

Under Option 1, open vessels of 7 – 15 metres would be required to have a bilge alarm. MCA Consultant Surveyors estimate that 20% of UK registered fishing vessels are open vessels; for the purposes of this IA, it is assumed that 20% of vessels within each size category are open vessels.

On the advice of MCA Consultant Surveyors, it is assumed that the following numbers of spaces and holds would exist on the following sizes of open vessels in which a bilge alarm would need to be fitted:

Less than 12m	1 space
12m to less than 15m	2 spaces/holds

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of open vessels of 7 – 15 metres already comply with this requirement:

Level of Compliance	7-12m	12-15m
High level of compliance	80%	80%
Best Estimate	60%	65%
Low level of compliance	40%	50%

Based on the information that the MCA has obtained from equipment suppliers, the cost of bilge alarms per unit is assumed to be as shown in Section A1.1.4 above.

Based on the information that the MCA has obtained from an industry contact, it is assumed that bilge alarms are fitted by an electrician at cost of £100.

A1.2.3 Additional lifejackets

Under Option 1, vessels of 12 – 15 metres would be required to carry an additional two lifejackets in excess of the current requirement for one lifejacket per person.

Based on the information that the MCA has obtained from equipment suppliers, the cost of an additional two lifejackets is assumed to be as follows:

High scenario	£240
Best Estimate	£181
Low scenario	£117

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of vessels already comply with this requirement:

High level of compliance	40%
Best Estimate	30%
Low level of compliance	20%

A1.2.4 EPIRBs

Under Option 1, all vessels of less than 15 metres would be required to carry EPIRBs.

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of vessels already comply with this requirement:

Level of Compliance	0-12m	12-15m
High level of compliance	20%	90%
Best Estimate	15%	80%
Low level of compliance	10%	70%

Based on the information that the MCA has obtained from equipment suppliers, the cost of an EPIRB is assumed to be as follows:

High scenario	£578
Best Estimate	£448
Low scenario	£336

Based on the information that the MCA has obtained from an industry contact, it is assumed that fitting takes 3 hours and that fixtures and fittings cost £10 to £20 with a Best estimate of £15 (the mid-point of this range).

A1.2.5 Radar reflector

Under Option 1, all vessels of less than 15 metres would be required to fit a radar reflector. Previously only open vessels of 7 – 12m were required to carry such equipment. MCA Consultant Surveyors estimate that 20% of UK registered fishing vessels are open vessels; for the purposes of this IA, it is assumed that 20% of vessels within each size category are open vessels.

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of all vessels within each size category that already comply with this requirement:

Level of Compliance	0-7m	7-12m	12-15m
High level of compliance	70%	60%	80%
Best Estimate	50%	50%	60%
Low level of compliance	30%	40%	50%

Based on the information that the MCA has obtained from equipment suppliers, the cost of a radar reflector is assumed to be as follows:

High scenario	£136
Best Estimate	£95
Low scenario	£26

Based on the information that the MCA has obtained from an industry contact, it is assumed that fitting takes 1 hour and that brackets and rigging cost £10 to £30 with a Best estimate of £20 (the mid-point of this range).

A1.2.6 Stability test and production of a Stability Booklet

Under Option 1, new vessels of 12 – 15m would be required to undergo a stability test and have a completed Stability Book in accordance with Marine Guidance Note (MGN) 281, Fishing Vessel Freeboard and Stability Information Booklet, as required for vessels of 15m and over. This reinstates the requirement previously contained in the Fishing Vessels (Safety Provisions) Rules 1975, but which was revoked by the SI 2002/2201 The Fishing Vessels (Safety of 15-24 Metre Vessels) Regulations 2002. Since 2002, new vessels of 12m to less than 15m that have been constructed to the Seafish Construction Standards which require that they comply with the standards previously contained in the Fishing Vessel (Safety Provisions) Rules 1975, but have not been required to have a stability test or maintain a stability book.

Due to the varied construction of fishing vessels under 12m, no uniform standards currently exist that can be applied to these vessels and MCA and Industry are currently developing guidance for these vessels that will help fishermen assess their stability.

Stability Books are provided by the MCA. MCA Consultant Surveyors estimate that the average cost for Stability test is £5000 and the production of a Stability book is £2000. These costs are assumed for the purposes of this IA.

A1.2.7 Carbon monoxide (CO) alarms on vessels with Fired Cooking and Heating Appliances

Under Option 1, all vessels with fired cooking and heating appliances will be required to have CO alarms with an in built Lithium Battery in the spaces where these appliances are fitted. Vessels with fired cooking and heating appliances in spaces where the space is open to the air and cannot be closed off do not require CO alarms.

On the advice of MCA Consultant Surveyors, it is assumed that 50% of under 15m vessels will require CO alarms and 10% of that 50% will require two CO alarms.

Based on the information provided by MCA Consultant Surveyors, it is assumed that the following proportion of vessels already comply with this requirement:

High level of compliance	10%
Best Estimate	5%
Low level of compliance	1%

For the purposes of this IA, it is assumed that CO alarms with a 10 year operating life will be fitted and that these alarms would not need to be replaced during the appraisal period.

Based on the information that the MCA has obtained from equipment suppliers, the cost of a CO alarm is assumed to be as follows:

High Scenario	£39
Best Estimate	£32
Low Scenario	£29

Based on the information that the MCA has obtained from surveyors and because CO alarms are also domestic products, it is assumed that fitting takes 10 minutes per CO alarm and that screws or double sided tape would be used and that either would cost £5 per CO alarm.

A1.2.8 Ongoing annual costs – EPRIBS

Under Option 1, based on information from manufacturers, it is assumed that EPRIBS would need to be serviced every 5 years.

Based on the information that the MCA has obtained from manufacturers, the cost of an EPRIB service is assumed to be as follows:

High scenario	£250
Best Estimate	£205
Low scenario	£125

Vessels that already have an EPIRB are assumed to already meet the requirements for servicing.

A1.2.9 Ongoing annual costs – liferafts

Under Option 1, based on information from manufacturers, it is assumed that liferafts would need to be serviced every 3 years. Vessels that already have a liferaft are assumed to already meet the requirements for servicing.

Based on the estimates from manufacturers, the cost of a service is assumed to be as follows:

High scenario	£159
Best Estimate	£142
Low scenario	£120

A1.2.10 Ongoing annual costs – lifejackets

Under Option 1, based on information from manufacturers, it is assumed that two extra lifejackets now required for 12 – 15m vessels would be need to be serviced every year.

Based on the estimates from manufacturers, the cost of a service for both lifejackets is assumed to be as follows:

High scenario	£96
Best Estimate	£76
Low scenario	£56

For the purposes of the IA, it is assumed that owners and skippers who already possess this equipment ensure it is serviced correctly.

A1.2.11 Ongoing annual costs – Radar Reflectors and Bilge Alarms

Based on the information that the MCA has obtained from an industry contact, it is assumed that the maintenance of these items of equipment is undertaken by crew members.

A1.3: Assumptions regarding the additional costs of the new equipment requirements in the Code of Practice for Fishing Vessels of 15-24 metres

A1.3.1 Fire detection and safety systems to run on shore power

Under Option 1 1, all fishing vessels of 15-24 metres which are allowed to have crew living on board would be required to ensure that the fire detection and safety systems are operable whilst the vessel is connected to shore power. This new requirement would apply to every vessel regardless of whether they allow crew to live on board, as the potential to have live aboard crew is present.

Based on estimates provided by MCA Consultant Surveyors, it has been assumed that the following proportion of vessels already comply with this requirement:

High level of compliance	80%
Best Estimate	60%
Low Level of compliance	50%

Based on the information that the MCA has obtained from equipment suppliers, the cost per vessel is assumed to be as shown in Section A1.1.3 above.

A1.4: Other assumptions regarding the time spent by workers to meet the new requirements in the Code of Practice for Fishing Vessels of less than 15 metres

Based on the information that the MCA has obtained from an industry contact, it is assumed that the following time is also spent by workers to meet the new equipment requirements in the Code of Practice for Fishing Vessels of less than 15 metres is as follows:

- Familiarising with new requirements: 1 Hour
- Understanding the new requirements: 1 Hour
- Establishing which new equipment is needed: 1 Hour
- Purchasing equipment: 2 Hours.

In the absence of any other evidence, it is assumed that these estimates also apply for Fishing Vessels of 15-24 metres and Fishing Vessels of 24 metres and Over.

It should be noted that these assumptions do not significantly impact on the order of magnitude of the total costs and benefits of this measure. For example, if it was assumed that these times were doubled, the Best estimate of the Equivalent Annual Net Cost to Business per year (EANCB) is estimated at around £0.83 million per year (2009 Price Base Year, 2010 Present Value Base Year).

A1.5: Assumptions regarding the costs to business of the time spent by workers to meet the new requirements in the Code of Practice for Fishing Vessels of less than 15 metres

Where the time spent by workers to meet the new requirements does not impact on the productivity of the fishing vessel, it is assumed that this would generally represent a cost to the workers themselves rather than a cost to business given how workers are paid (see Section 5.5.2 above for more details).

As noted in Section 5.5.2 above, an industry contact has advised the MCA that the majority of the time spent by workers on familiarisation and fitting equipment to comply with the new requirements would not fall within productive fishing time.

However, no quantitative evidence is available on the exact proportion of these activities that would result in a cost to business.

For the purposes of this IA, a wide range has therefore been adopted, and it has been assumed that between 0% and 100% of the time spent by workers to meet the new requirements would result in a cost to business, with a Best estimate of 50% (the mid-point of this range).

It is estimated that the mean gross hourly pay in the marine fishing sector was around £9.33 per hour in 2013[35]. This has been uplifted by 30% to account for overheads in line with the Standard Cost Model[31] and uplifted to 2014 prices using HM Treasury's Gross Domestic Product (GDP) Deflators published on 30 June 2014[36]. Therefore, for the purposes of this IA, the opportunity cost to business of this time is assumed to be around £12.41 per hour in 2014 prices.

In the absence of any other evidence, these assumptions have also been made for Fishing Vessels of 15-24 metres and Fishing Vessels of 24 metres and over in order to estimate the costs to business in relation to the activities described in Section A1.4 above.

It should be noted that these assumptions do not significantly impact on the order of magnitude of the total costs and benefits of this measure. For example, if it was assumed that 100% of the time spent by workers to meet the new requirements would result in a cost to business, the Best estimate of the Equivalent Annual Net Cost to Business per year (EANCB) is estimated at around £0.84 million per year (2009 Price Base Year, 2010 Present Value Base Year).

A1.6: Assumptions regarding the one-off costs of fitting equipment to meet the new equipment requirements in the Code of Practice for Fishing Vessels of 24 metres and Over

Based on the information that the MCA has obtained from an industry contact, it is assumed that the one-off costs to business of fitting the new equipment would be £9,600 per vessel for a vessel of 24 metres and over that does not meet any of the new requirements. This is based on estimates for a vessel in over 45 metres in length that this would take 4 men a week at 8 hours per day and cost £60 per hour. These estimates are used in the absence of better evidence. However, it is recognised that this is likely to represent an overestimate of the average cost for a vessel of 24 metres and over that does not meet any of the new requirements.

Given that a significant proportion of these vessels comply with the new requirements already (see Section A1.1), it is assumed that the average one-off costs to business of fitting the new equipment requirements per vessel would be equal to a) the assumed one-off costs to business of fitting the new equipment for a vessel of 24 metres and over that does not meet any of the new requirements above, multiplied by b) the ratio of the 'Estimated average total additional one-off monetised costs to business of purchasing equipment to meet the new requirements per existing vessel' (Table 4a) to the 'Estimated maximum total additional one-off monetised costs to business of purchasing equipment to meet the new requirements per existing fishing vessel' (Table 6) for each size category.

It should be noted that these assumptions do not significantly impact on the order of magnitude of the total costs and benefits of this measure. For example, if it was assumed that the average one-off costs to business of fitting the new equipment requirements was £9,600 per vessel for Fishing Vessels of 24 metres and Over, the Best estimate of the Equivalent Annual Net Cost to Business per year (EANCB) is estimated at around £0.95 million per year (2009 Price Base Year, 2010 Present Value Base Year).

[35] Office of National Statistics, Annual Survey of Hours and Earnings, 2013 Provisional Results
http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2013-provisional-results/2013-provisional-table-16.zip
[36] GDP deflators at market prices, and money GDP: June 2014 (Quarterly National Accounts)
https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-june-2014-quarterly-national-accounts

Annex 2: Further details of the analysis of the ongoing monetised costs to UK registered fishing vessels

Table A2.1: Assumptions regarding the number of UK registered fishing vessels at the end of each year (High estimates) [0 – 7m vessels / 7 – 12m vessels / 12 – 15m vessels][25]

Year	Existing Ships	New Ships that joined in Year 1	New Ships that joined in Year 2	New Ships that joined in Year 3	New Ships that joined in Year 4	New Ships that joined in Year 5	New Ships that joined in Year 6	New Ships that joined in Year 7	New Ships that joined in Year 8	New Ships that joined in Year 9	New Ships that joined in Year 10	Total registered on the UK flag at end of the year
1	2336 / 2380 / 110	190 / 114 / 7										2526 / 2494 / 117
2	2199 / 2273 / 107	179 / 108 / 7	190 / 114 / 7									2568 / 2495 / 122
3	2072 / 2170 / 105	169 / 104 / 7	179 / 108 / 7	190 / 114 / 7								2609 / 2496 / 126
4	1954 / 2072 / 103	159 / 99 / 7	169 / 104 / 7	179 / 108 / 7	190 / 114 / 7							2651 / 2497 / 131
5	1845 / 1979 / 101	150 / 94 / 7	159 / 99 / 7	169 / 104 / 7	179 / 108 / 7	190 / 114 / 7						2693 / 2498 / 136
6	1743 / 1890 / 100	142 / 90 / 7	151 / 94 / 7	160 / 99 / 7	170 / 104 / 7	180 / 108 / 7	190 / 114 / 7					2735 / 2499 / 141
7	1649 / 1805 / 98	134 / 86 / 6	142 / 90 / 7	151 / 94 / 7	160 / 99 / 7	170 / 104 / 7	180 / 108 / 7	190 / 114 / 7				2777 / 2500 / 146
8	1561 / 1723 / 96	127 / 82 / 6	135 / 86 / 6	143 / 90 / 7	152 / 94 / 7	161 / 99 / 7	170 / 104 / 7	180 / 108 / 7	190 / 114 / 7			2818 / 2501 / 150
9	1479 / 1646 / 95	120 / 79 / 6	128 / 82 / 6	136 / 86 / 6	144 / 90 / 7	152 / 94 / 7	161 / 99 / 7	170 / 104 / 7	180 / 108 / 7	190 / 114 / 7		2860 / 2502 / 155
10	1402 / 1572 / 93	114 / 75 / 6	121 / 79 / 6	129 / 82 / 6	136 / 86 / 7	144 / 90 / 7	153 / 94 / 7	162 / 99 / 7	171 / 104 / 7	180 / 108 / 7	190 / 114 / 7	2902 / 2503 / 160

Table A2.2: Assumptions regarding the number of UK registered fishing vessels at the end of each year (Low estimates) [0 – 7m vessels / 7 – 12m vessels / 12 – 15m vessels][25]

Year	Existing Ships	New Ships that joined in Year 1	New Ships that joined in Year 2	New Ships that joined in Year 3	New Ships that joined in Year 4	New Ships that joined in Year 5	New Ships that joined in Year 6	New Ships that joined in Year 7	New Ships that joined in Year 8	New Ships that joined in Year 9	New Ships that joined in Year 10	Total registered on the UK flag at end of the year
1	2247 / 2297 / 108	142 / 68 / 3										2389 / 2365 / 112
2	2024 / 2106 / 105	128 / 62 / 3	142 / 68 / 3									2294 / 2236 / 111
3	1814 / 1921 / 101	115 / 57 / 3	127 / 62 / 3	142 / 68 / 3								2199 / 2108 / 111
4	1619 / 1743 / 97	102 / 51 / 3	114 / 56 / 3	127 / 61 / 3	142 / 68 / 3							2104 / 1979 / 110
5	1436 / 1570 / 94	91 / 46 / 3	101 / 51 / 3	113 / 55 / 3	126 / 61 / 3	142 / 68 / 3						2009 / 1851 / 110
6	1267 / 1403 / 91	80 / 41 / 3	89 / 45 / 3	99 / 50 / 3	111 / 55 / 3	125 / 61 / 3	142 / 68 / 3					1914 / 1723 / 110
7	1110 / 1244 / 88	70 / 37 / 3	78 / 40 / 3	87 / 44 / 3	97 / 48 / 3	110 / 54 / 3	125 / 60 / 3	142 / 68 / 3				1819 / 1594 / 109
8	965 / 1091 / 85	61 / 32 / 3	68 / 35 / 3	76 / 38 / 3	85 / 42 / 3	96 / 47 / 3	108 / 53 / 3	124 / 59 / 3	142 / 68 / 3			1724 / 1466 / 109
9	832 / 945 / 82	53 / 28 / 3	58 / 30 / 3	65 / 33 / 3	73 / 37 / 3	82 / 41 / 3	93 / 46 / 3	107 / 51 / 3	123 / 59 / 3	142 / 68 / 3		1629 / 1337 / 108
10	711 / 806 / 79	45 / 24 / 2	50 / 26 / 3	56 / 28 / 3	62 / 31 / 3	70 / 35 / 3	80 / 39 / 3	91 / 44 / 3	105 / 50 / 3	121 / 58 / 3	142 / 68 / 3	1534 / 1209 / 108

Annex 3: MAIB Investigations

MAIB Safety Study Analysis of the UK Fishing Vessel Safety 1992 – 2006[1]

A research project, published in 2007 showed that the fatal accident rate for UK Fishermen for the decade 1996-2005 was 115 times higher than that of the general workforce in Great Britain. When compared to specific areas of other work, it was 81 times higher than in manufacturing and 24 times higher than the construction industry.

A number of recommendations came as a result of the safety study. Some of these are to:

- Work towards progressively aligning the requirements of the Small Fishing Vessel Code, with the higher safety standards applicable under the Workboat Code.
- Introduce a requirement for under 15m vessels to carry EPIRBs.

Emerald Dawn[6]

This vessel suddenly capsized without warning and then foundered. The skipper lost his life in the accident, and the vessel's owner, who was also the deckhand, spent a night adrift in a liferaft before being seen by a passing ferry and then rescued. Possible causes for the sudden capsize of the vessel were considered, and it was concluded that flooding in the engine compartment was the only plausible one. A bilge alarm would have alerted the crew, but a liferaft saved one life.

Jann Denise II[6]

Jann Denise II foundered 5.5 miles south-south east of the River Tyne. The two crew lost their lives. Evidence indicates water coming into in her aft steering compartment and her engine room went undetected by her crew until the latter stages and before the bilges could be emptied, the vessel was swamped by seas; significant downflooding occurred and she sank rapidly by the stern. There was no time to transmit a "Mayday".

Bounty[7]

At about 0930 on 23 May 2005, the small fishing vessel *Bounty* capsized and sank in Lyme Bay. The vessel had her trawl caught on a seabed obstruction at the time. The two crew members found themselves in the water, with lifebuoys, but were able to board the vessel's liferaft and were rescued about 5 hours later. The liferaft helped to save their lives. A recommendation has been made to the Maritime and Coastguard Agency to inspect all new small fishing vessels for compliance with the Small Fishing Vessel Code before they go into service.

Vision II[9]

On 1 August 2008, fire broke out on the 18.6m fishing vessel *Vision II*. There were three people on board the vessel at the time of the fire, all of whom lost their lives. The vessels was not operating on shore power and the effect of this on their fire detection systems was a significant factor in the incident.

Purbeck Isle[13]

The 11.64m wooden potting vessel *Purbeck Isle* foundered with the loss of her skipper and his two crewmen in the English Channel about 9 miles south of Portland Bill. *Purbeck Isle* went down so suddenly that the skipper and his crew were unable to raise the alarm, collect their lifejackets or manually release and inflate the vessel's liferaft. Due to the environmental conditions it is likely that all three fishermen had perished by the time the coastguard was informed that *Purbeck Isle* was overdue. *Purbeck Isle* probably sank as a result of rapid flooding following the catastrophic failure of her hull fastenings. She was in a poor material condition and was heavily loaded when she sank.

MAIB recommended that EPIRBS are carried on all fishing vessels under 15m in length; and to mandate a minimum standard for the liferafts they are required to carry.

Pamela S[14]
On 17 June 2006 the fishing vessel *Pamela S* suddenly, rapidly and without warning, capsized and sank. One crewman died. Electrical faults were discovered on the bilge pumping system, no bilge alarm was fitted and, at the time of the sinking, nine securing bolts from the base of the stern gantry were missing.

Kirsteen Anne[15]
On 31 December 2002, *Kirsteen Anne* and her crew of two failed to return to Oban from a fishing trip as planned. A search began and the vessel was found partly submerged that evening; there was no sign of her crew. It is concluded that *Kirsteen Anne* capsized as a result of poor stability caused by modifications made to her since she was built, the weight of the fishing gear carried, and a build-up of water in the bilge.

Recommendations made to the MCA are aimed at the introduction of a stability standard for fishing vessels under 15m, the improvement of the Code of Practice applicable to these vessels, the inclusion of vessel stability in health and safety risk assessments, and raising the awareness of stability among fishermen.

Denarius[18]
During the afternoon of 9 July 2012 the fishing vessel *Denarius* suffered a major fire. Prior to the accident, the vessel's main engine had been running with severely retarded timing for several hours, resulting in a build-up of unburnt fuel within the exhaust system. This fuel subsequently ignited; the resulting heat transferred through areas of poor insulation to wiring close to the exhaust trunking, causing the electrical insulation to catch fire. Dense smoke and fire then spread quickly, forcing the crew to abandon to liferafts.

Betty G[19]
On 23 July 2012 the 9.92m fishing vessel *Betty G* capsized while beam trawling. All three crew were rescued approximately 10 hours later. The vessel capsized as a result of the load in the starboard trawl net releasing suddenly. *Betty G* then progressively flooded and sank. The crew acted swiftly and deployed the liferaft, which ultimately saved their lives.

Onward[20]
On 11 April 2012, a fire was discovered on board the UK registered stern trawler *Onward,* 60nm off the north coast of Scotland. The vessel's crew did not attempt to fight the fire and eventually abandoned the vessel and boarded a liferaft. The MAIB investigation established that the fire probably started in the engine room and that the spread of smoke inside the ship was assisted by several doors and hatches being left open.

Kingfisher II[21]
On 26 April 2004, MRSC Stornoway received a "Mayday" mobile telephone call from the skipper of the fv *Kingfisher II.* The report indicated the vessel was suffering an engine room fire. Realising the fire was beyond his control, the skipper alerted the MRSC using his mobile telephone, stating that the crew were about to enter the liferaft. The fire was probably caused by an electrical defect, which ignited cable insulation, the wooden after bulkhead and the main electrical distribution panel.

Recommendations centre on amendments to the Fishing Vessel Code of Practice for vessels under 12 metres in length, stowage of emergency equipment, and the conduct of risk assessments.

Eshcol[8]
During the morning of 15 January 2014, two fishermen were found dead in their bunks on board the scallop-dredger *Eshcol* in Whitby, North Yorkshire. The men had died from carbon monoxide poisoning as a result of leaving the grill of a butane-fuelled gas cooker lit when they went to bed. The grill was being used to warm the wheelhouse and sleeping area.