

Report on the examination of *Olivia Jean* on 18 October 2009

Report of examination of the UK Beam Trawler

***Olivia Jean* TN 35**

while alongside at Shoreham

18 October 2009

Marine Accident Investigation Branch
Mountbatten House
Grosvenor Square
Southampton
United Kingdom
SO15 2JU

SECTION A1 PURPOSE AND BACKGROUND OF DOCUMENT

A1.1 PURPOSE

The purpose of this document is to record the partial examination of the beam trawler *Olivia Jean*, as found when lying alongside at Shoreham on 18 October 2009. This document forms part of the MAIB Full Investigation of the accident to person on 10 October 2009.

A1.2 BACKGROUND

The fishing vessel *Olivia Jean* is a steel hulled beam trawler, built in Holland in 1980. Length overall 33.86m, registered length 29.99m. At the time of the accident, there was a crew of nine.

Olivia Jean is registered in Troon to Olivia Jean Limited, a subsidiary of TN Trawlers based in Annan, Dumfries. Director(s) of TN Trawlers Limited also operate an unknown number of other vessels registered to TN Trawlers.

Olivia Jean was fishing in the English Channel, landing scallops at Shoreham. The accident occurred on 10 October 2009 at about 1015. The trawl wire parted as the dredge beam was lifted, and a crewman was struck by the bridle chains. He was crushed between the chains and the conveyor belt, then slipped and fell approximately 1.5m to the deck. He was evacuated by helicopter and was found to have three broken ribs and severe bruising.

A very similar accident happened on 17 November 2007, when the trawl wire parted and the towing bar crushed a crewman's foot. He was kept on board for 16 hours before the skipper landed him ashore, giving him £20 for a taxi to the hospital. Doctors saved his foot, but later reported that they nearly had to amputate due to the damage. In the circumstances, MAIB deferred the case to the MCA¹ Enforcement Branch.

At least two other TN Trawlers' vessels (*Tobrach'n* and *George'n Lou*) were operating out of Shoreham.

For operational reasons, the ship was boarded on arrival at Shoreham by a team of five MAIB Inspectors. Four inspectors formed two teams of two, so as to interview crew members. The examination of the vessel was undertaken concurrently by an MAIB engineering inspector as a part of the MAIB investigation into this accident. Highlights of the examination were later shown to the rest of the MAIB team.

The accident on 10 October 2009 is now the subject of a Full Investigation; however, at the time of this examination it was at the Preliminary Enquiry stage.

¹ Maritime and Coastguard Agency

SECTION A2 ARRANGEMENTS FOR THE EXAMINATION OF *OLIVIA JEAN*

A2.1 MAIB INSPECTOR EXAMINING

The MAIB inspector conducting the examination was a professional engineer, experienced in the survey of fishing vessels and other small craft. His past work had also included the survey and testing of lifting appliances on board a variety of ships.

A2.2 EXAMINATION OF *OLIVIA JEAN*

A2.2.1 Background

Olivia Jean had just returned from a successful fishing trip, with a good catch of scallops. The external examination was undertaken in daylight, with the trawler moored starboard side against the quay at Shoreham.

As a result of the nature of the two accidents that had precipitated this visit, initial efforts concentrated on the fishing equipment. The remaining time available was used to make a limited examination of other items, including documentation.

A2.2.2 Limitations of the examination

The vessel was discharging her catch into a lorry, using her deck mounted crane. This meant that care had to be taken so as not to place the inspector in danger from the ongoing lifting operations.

Due to the MAIB interviews being undertaken, and the need to promptly discharge the catch, no crew members/owners' representatives were available to assist with the vessel examination.

The fish hold, engine room, galley/mess and crew accommodation were not inspected.

Physical evidence of the accident, specifically the broken trawl wire, was not available on board; these items were reported by the crew as having been "dumped".

SECTION A3 FISHING EQUIPMENT

A3.1 OVERVIEW

A3.1.1 Trawl gear and the main working deck

All fishing gear was on board, with 18 scallop dredges fitted per side; it was of conventional type. The trawl warp was rigged with large double purchase blocks attached at each of the trawl beams, meaning that these blocks are towed along the seabed. All dredges were of the full chain type - both the top and bottom of the bag are made from chain mesh.

Beam securing chains, referred to by the crew as “safety chains”, were arranged so as to enable each trawl beam to be secured to the ship at its fore and aft ends, and so prevent the beam from swinging about when lifted at sea. The safety chains comprised short lengths of chain attached to a pad eye at deck level, and fitted with a hook at the loose end.

No identification or test markings of any kind were visible on any part of the trawl system. No preventers or similar safety devices were fitted to any blocks or suspended loads. The normal working practices of the vessel mean that crew members must routinely work beneath suspended loads.

During examination, the port side double-purchase towing block and bridle chains were suspended from the derrick, with dredges hooked over the bulwark; the trawl beam and tipping bar lying at bulwark height, with the Gilson attached to the tipping bar. The starboard side was similarly arranged, but with the towing block lowered to the main deck, so as to allow crane access to the quay.

Since being sold, and then converted from a beam trawler (*Olivia Jean* was the Brixham-based *Sasha Emiel*) to a specialist scallop dredger, the vessel had been fitted with a conveyor belt system on each side of the main deck. The main purpose of these labour-saving devices was to allow rapid and easy discharge overboard of the discards from each dredge bag, forwards and then out through a freeing port/garbage chute. To facilitate these new arrangements, the bulwarks had been raised by about 400mm over the full length of the main deck. In order to allow the vessel to self-discharge her catch, she had been fitted with a telescopic jib type deck crane; mounted above the main deck, on an extension to the whaleback. This crane was capable of reaching inside the open rear doors of a lorry, when parked on the quay next to the vessel.

The main deck was well provided with freeing ports, mostly of the over centre hinged type. However some were partly obstructed by the conveyor system (**Figure A.1**).

A3.1.2 Derricks

Both derricks were inspected when topped, very close to the vertical position. Topping lift wires were crossed above the main deck that for the port derrick being taken to the starboard winch drum, and vice-versa.

Each was fitted with a manual “knock-out” type quick release system, arranged so as to release the derrick end towing block in case of emergency, by means of a pelican hook arrangement at the base of each derrick (**Figure A.2**).

Each derrick was supported by a wire fore-guy, of fixed length, and an adjustable wire after-guy (**Figure A.3**).

A3.1.3 Gantry and towing posts

Olivia Jean was rigged with a simple “goal-post” type forward gantry, supported by solid fore-stays; with no safe access it was only possible to view this structure from the deck (**Figure A.3**).

Two towing posts, one mounted on each shoulder of the whaleback provided attachment points for both the trawl warp turning blocks and the bitter ends of the trawl warps. Each warp was attached to a bow shackle by a soft eye, formed by a “Flemish splice”, and backed up by three “bulldog grips” (**Figure A.4**).

A3.1.4 Trawl winch

Manufactured by Maskant of Stellendam, Holland in 1980; plated as type M.190.EP.6, serial number 568.

The trawl winch was located in a dedicated, and substantially weathertight compartment below the wheelhouse at main deck level (**Figure A.5**). Driven by a variable speed DC² electric motor, the main haul/veer and clutch controls were on a console at the forward face of the wheelhouse (**Figure A.6**).

The winch consisted of six drums on a common shaft (port and starboard wires for each of Gilson, trawl, and derrick topping lift), plus warping drum ends that protruded through the port and starboard sides of the winch house (**Figure A.5**). Each wire drum was controlled by an individual air clutch. Once the required clutch was engaged, direction (hoist or veer) and speed was controlled by a common single lever on the port side of the console.

The conveyor belt system obstructed the drum ends, making them very difficult to use. Winch emergency stop buttons were provided in the wheelhouse, and next to each drum end on the main deck.

The main trawl warps passed forward at above head height; the topping lift wires exited the winch house at a steep angle, and were similarly clear above the working deck (**Figure A.5**).

² Direct current

A3.2 FISHING EQUIPMENT – EXAMINATION

Overall first impressions were that *Olivia Jean* was an acceptably clean, tidy and perhaps reasonably well maintained vessel. However, closer examination quickly revealed many safety-critical defects.

This section is not exhaustive; it provides examples of the general condition of the gear as seen.

A3.2.1 Trawl gear and the main working deck

- Main trawl beam attachments to lifting chains poorly designed and manufactured. Fabricated using “fishing gear” type shackles and cut links of trawl chain. Many shackles and chain links also badly worn (**Figures A.7, A.8**).
- Damages and modifications to trawl beam/tipping bar repaired poorly (**Figures A.9, A.10**).
- Most lifting shackle attachments for trawl beam and tipping bar loose, damaged, and not properly secured or moused. However, a small number of shackles had been welded secure (**Figures A.11, A.12, A.13**).
- Main double purchase trawl blocks worn, damaged and with parts missing (**Figures A.14, A.15**).
- Trawl warps - that visible was generally in an acceptable condition, and appeared to be relatively new. It is understood that the wires seen on board are not those in use at the time of the accident; they have since been renewed, and the original wires (including the broken part) have been dumped.
- Gilson wires - that visible was damaged, deformed and distorted; not lubricated. In poor condition.
- “Safety chains” - various parts of these chains were worn and/or distorted by overload; the assembly being made up from a mixture of ill matched components. The hooks in use consisted of either a proprietary item, or something similar fashioned from a section of shackle; however, spare new hooks were seen in the deck store (**Figures A.16, A.17, A.18**).

It was apparent that the conveyor system had several important safety implications:

- With the gear “landed on deck” (effectively draped over the bulwarks and on top of the conveyor system) it was not possible to safely move from aft (where the normal egress points from the wheelhouse and accommodation are located) to the main working deck; it was necessary to climb over the top of the gear and conveyor system (**Figure A.19**).

- With the gear cleared away over the side, the conveyor formed a ready access platform. However it then presented additional hazards, including a bulwark height reduced below minimum rule requirements, and a bouncy, trampoline-like working surface when standing on top of the conveyor (**Figure A.20**).
- Although not seen moving, the system appeared to have potential for entrapment/shearing hazards due to exposed moving parts. No emergency stops were seen.

Most freeing port shutters were found to operate correctly.

A3.2.2 Derricks

Significant defects:

- Quick release hooks chained up, possibly with the intention of preventing inadvertent release? (**Figure A.2**).
- Worn and cracked derrick heel assemblies, and their attachments to the gantry legs (**Figures A.21, A.22, A.23, A.24**).
- Unsecure shackle at derrick forestay attachment (**Figure A.25**).

A3.2.3 Gantry and towing posts

Many significant defects:

- Wear in shackles and associated attachment eyes. Unsecured shackles (**Figure A.26**).
- Cracks in gantry and associated attachment to ship's structure (**Figures A.27, A.28**).
- Heavy wear on sheaves and pins of main towing blocks (**Figure A.29**).

A3.2.4 Trawl Winch

Not tested, but it appeared to be in reasonable condition and was apparently fully functional.

SECTION A4 *OLIVIA JEAN* – GENERAL EXAMINATION

A limited examination of other aspects of the vessel was conducted, significantly limited by the non-availability of ship's staff to assist.

A4.1 LIFE SAVING APPARATUS

A4.1.1 Liferrafts and HRUs³

Both liferafts were both serviced, in date, and stowed/rigged correctly.

However both Hammar type HRUs expired June 2008. These defects were brought to the attention of both the skipper and mate, who reported it to their office ashore, by telephone.

A4.1.2 MOB⁴ light/buoy/smoke units

- Port - In date, but found damaged; defective when light tested. Requires replacement (**Figure A.30**).
- Stbd - Date illegible, defective when light tested. Requires replacement.

These defects were brought to the attention of both the skipper and mate, who reported it to their office ashore, by telephone.

A4.1.3 EPIRB⁵

Casing/bracket not marked with details, and no paperwork available on board to provide details of expiry dates or service history.

A4.1.4 Pyrotechnics

The skipper did not produce the flares or line throwers.

The MSF⁶ 1301 states that the line throwers expired April 2008. It is considered likely that those on board were expired, and this was discussed with the skipper.

A4.2 DOCUMENTATION AND CERTIFICATION

Olivia Jean was understood to be under full survey by the MCA, and was not classed.

³ Hydrostatic Release Units

⁴ Manoverboard

⁵ Emergency Position Indicating Radio Beacon

⁶ Marine Survey Form

The following documentation was not available on board:

- Valid IFVC⁷. That onboard expired 07 June 2007 (having been issued on 23 April 2007, no periodic or intermediate surveys were recorded on it).
- Valid stability book. The IFVC produced referred to a stability book dated 16 February 2001. This was pre-modification; *Olivia Jean* had subsequently been substantially modified to fish for scallops, so invalidating this stability data.
- MSF 1301 (was form FV2) Record of Particulars of a FV - not updated to reflect recent addition of the deck crane and conveyor systems.
- Risk Assessments: The MSF 1301, records at page 8, that RAs⁸ have been carried out; no comments are recorded.
- Valid safety radio certificate or records of annual radio inspections.
- Certificate of servicing for fire-fighting or fire detection equipment.
- Official logbook or crew list/agreement.
- Records of inspections and drills.
- Records of testing/inspection/maintenance of lifting appliances/equipment.

A4.3 WATER/WEATHERTIGHT INTEGRITY

- Many minor defects; broken/missing seized closures on doors and hatches.
- Various seized fire flaps.

A4.4 OTHER SAFETY ISSUES

- The MSF 1301 states that a gangway is provided; however none was rigged, or seen stored on board.
- LPG⁹ cylinders found stored inside foc'sle.
- Cabin escape hatch inoperable from outside on the aft deck.
- Portside compass corrector(s) appear to have become detached and are missing.
- Fishing signal permanently fixed in position; displayed when FV was examined alongside at Shoreham.

⁷ International Fishing Vessel Certificate

⁸ Risk Assessments

⁹ Liquefied Petroleum Gas

SECTION A5 SUMMARY

- First impressions were of a reasonably clean, tidy, fairly well maintained and adequately equipped fishing vessel.
- The overall condition of the vessel and its fishing gear suggests a regime of hard fishing, in what is known to be a productive and lucrative fishery.
- Evidence suggests that significant maintenance is undertaken only during lay-by periods, primarily when the vessel is under statutory survey, or when critical items require major overhauls, or suffer breakdown. It was stated that the fishing gear will only receive major attention while the vessel is laid up for machinery overhaul.
- Operators appear to have a similarly haphazard approach to onboard documentation and record keeping. That available on board was insufficient for anyone examining the vessel to make an accurate, informed judgment on critical aspects of the safe operation of the vessel.
- Compliance appears to be achieved only at the time of survey; evidence indicates that little attempt is made to maintain the vessel and its equipment in a compliant condition, for example by replacing time-expired LSA¹⁰.
- The MSF 1301 available on board referred to a stability book that clearly pre-dated the fitting of the deck crane and conveyors, begging the question that did accurate and up-to-date versions of these documents exist?
- The missing evidence, due to the dumping of the broken trawl wires was problematic; this was despite the operators having been asked by the MAIB to retain these items.
- This accident happened when a trawl wire failed, allowing heavy equipment to fall on to a crew member; this was a very similar scenario to the previous accident. The MAIB examination of this vessel indicates that there are still a number of faults/problem areas that could cause a similar accident.

¹⁰ Life saving appliances

Figure A.1: *Olivia Jean* - General Arrangement (starboard)



Figure A.2: Detail - quick release pelican hook (starboard)



Figure A.3: GA from forward



Figure A.4: Starboard towing post and turning block



Figure A.5: GA looking aft, showing winch house, below wheelhouse



Figure A.6: Winch control console in wheelhouse



Figure A.7: Detail of port towing bridle chains – note: worn chain, unsecure shackle



Figure A.8: Detail of trawl beam - poor welding



Figure A.9: Repairs/modifications to port trawl beam - hole cut through trawl beam



Figure A.10: Crack extending over 1/3 circumference of port trawl beam, in way of hard facing/sleeving. Evidence of earlier repair(s) also visible



Figure A.11: Unsecure shackle at lifting chain to tipping bar - found hand tight

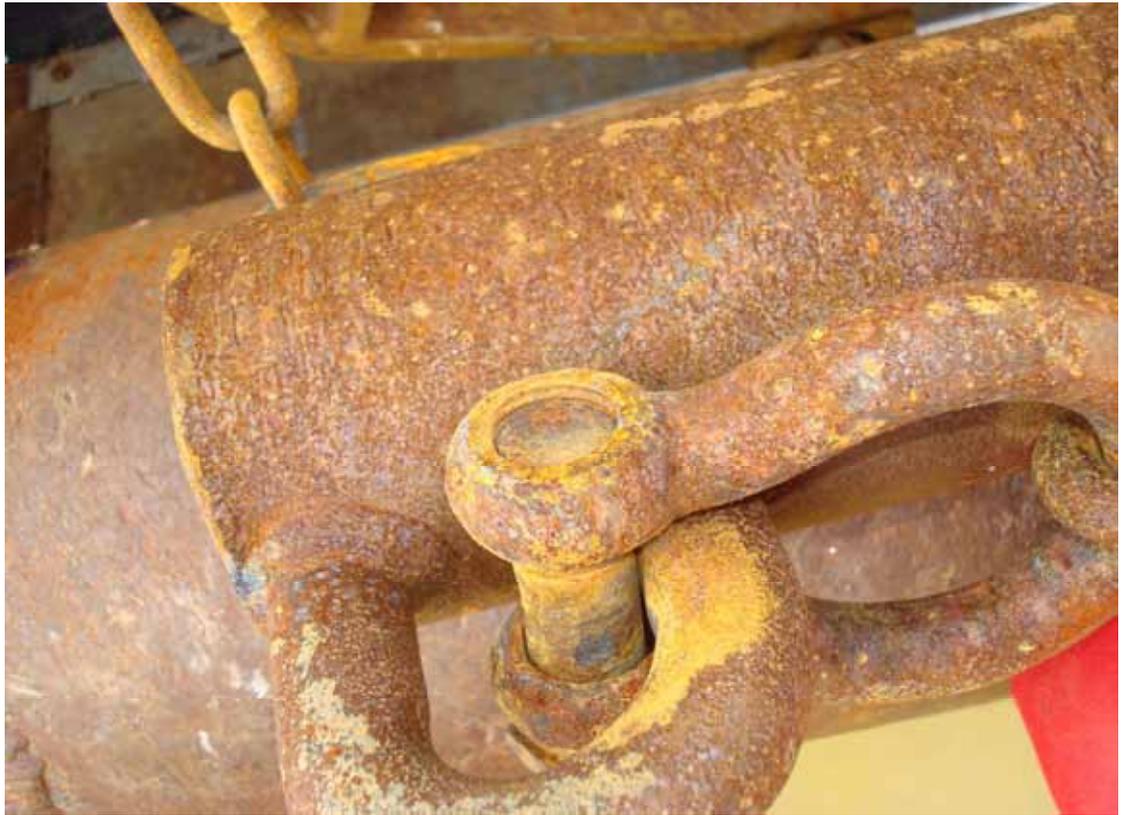


Figure A.12: Unsecure attachment of towing chains to beam - shackles found hand tight

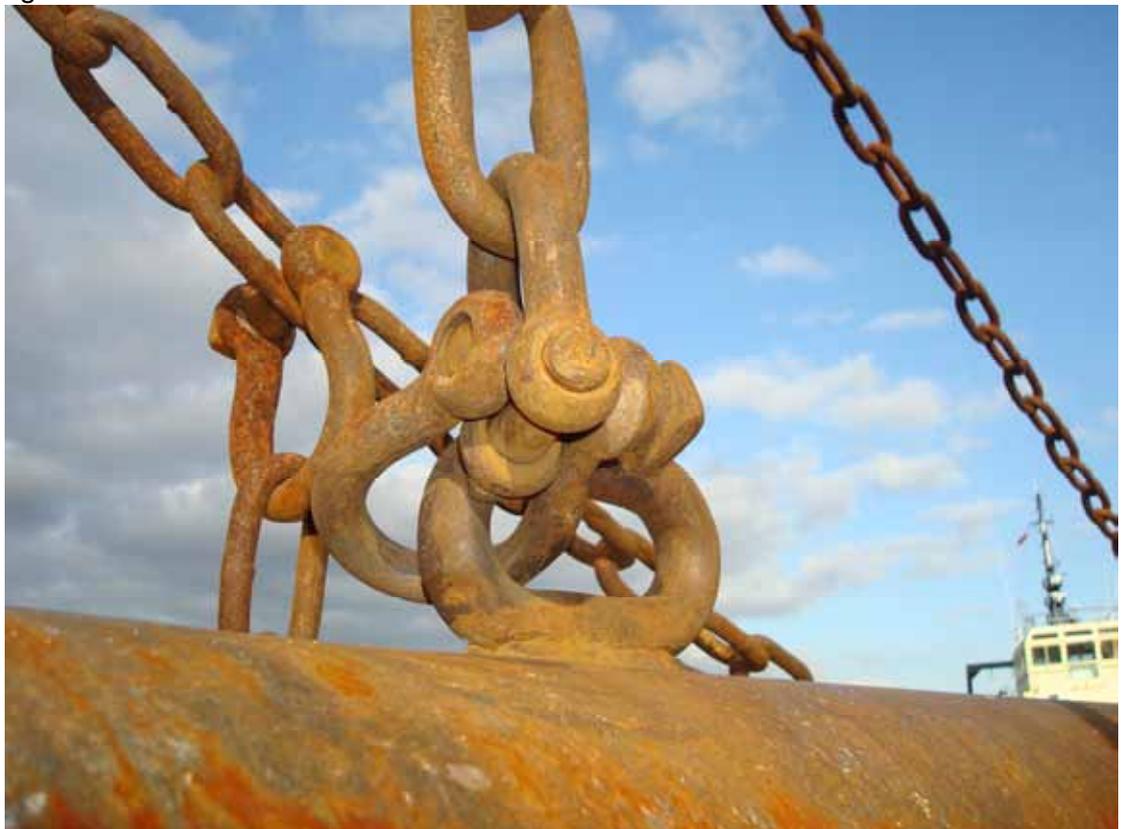


Figure A.13: Damage/missing parts at port tipping bar at connector sleeve



Figure A.14: Port trawl block. Missing parts, damage, wear, unsecure shackle attachments, sheave pin rotating



Figure A.15: Starboard trawl block. Damage, wear, unsecure sheave pin



Figure A.16: "Safety chains" - worn, distorted, mis-matched



Figure A.17: "Safety chains" - hook, link, and D-shackle



Figure A.18: "Safety chains" - hook made up from cut shackle



Figure A.19: Access forward to aft with gear landed on deck

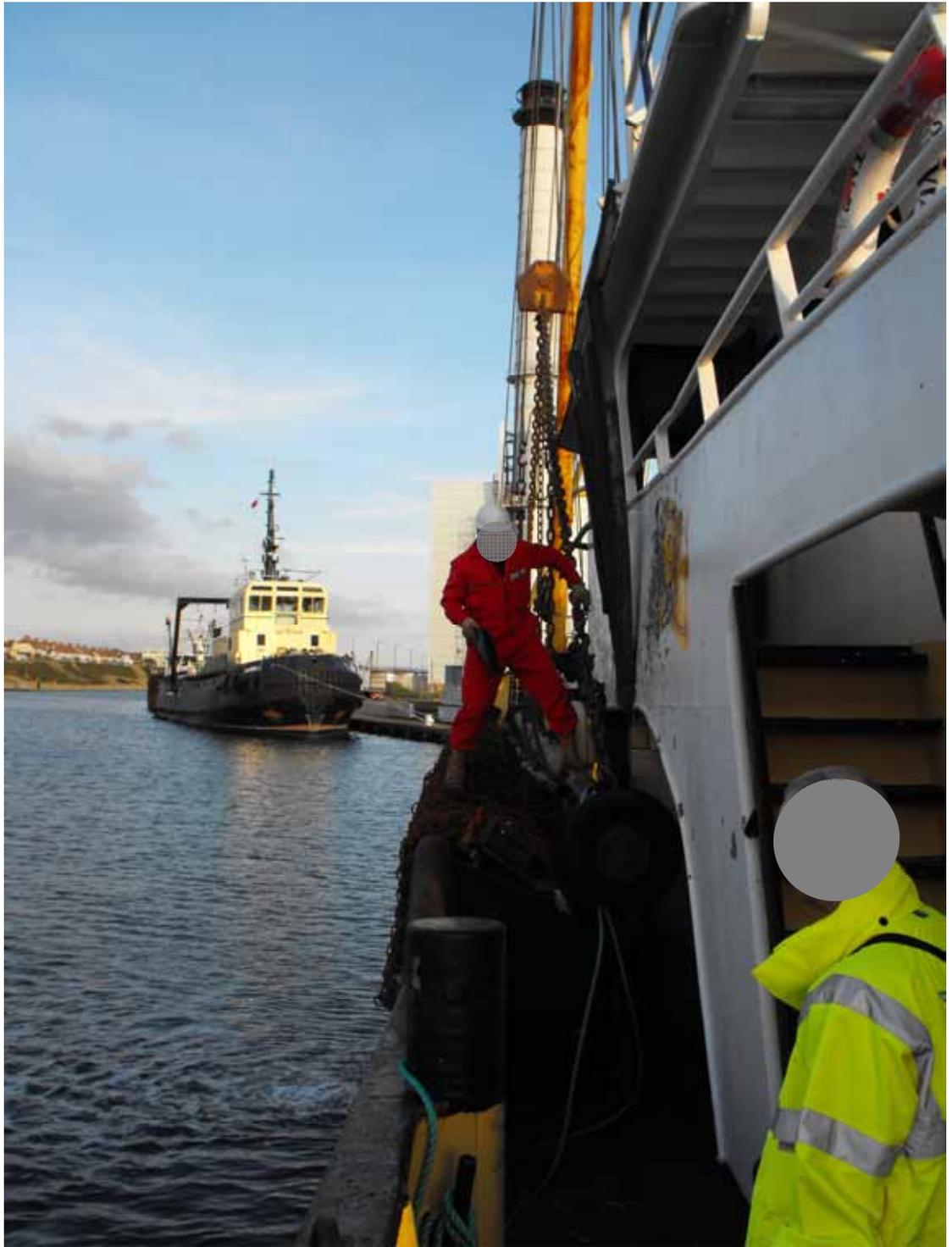


Figure A.20: Working standing on the conveyor, beneath a hanging load



Figure A.21: Port derrick heel pin



Figure A.22: Port derrick heel pin - close up



Figure A.23: Port derrick heel assembly - crack at attachment to gantry post



Figure A.24: Crack in base of port derrick heel assembly



Figure A.25: Unsecure shackle at derrick forestay attachment, port



Figure A.26: Wear at attachment of port trawl block to towing post



Figure A.27: Crack in attachment of gantry post to ship structure



Figure A.28: Evidence of “temporary” repairs to cracks in gantry structure



Figure A.29: Heavy wear on sheaves and pins of main towing blocks



Figure A.30: Damaged MOB unit, port side



MCA SIAS Record for survey of *Olivia Jean* on 4 November 2009



UK & DT Inspection/Survey Details

Ship Details

Ship ID 70126

Next ID

Group ID 36284

Ship Name OLIVIA JEAN

IMO Number 0000000

Official Number B12608

FV Number TN35

Call Sign MPMZ2

Ship Type F1 - Fishing Vessel - Steel

Flag 670 - UNITED KINGDOM

Class. Society 0 - NONE

Owner Olivia Jean Ltd

Year of Build 1980

UK Class Code X

Kw 749

Dead Weight

Length(m) 29.99

Gross Tonnage 000242

Inspection Details

Marine Office Dover

Inspection Date 04/11/2009

Input Date 05/11/2009

Detained? Y

Release Date 06/11/2009

Country UNITED KINGDOM

Place Shoreham (D)

Inspection Type In conjunction with a survey

Inspected at Sea? N

MACRIS Codes

Comments [REDACTED]

Ship Actions

Inspection has no ship actions

Survey Details

Survey Type	Survey Description
IFVC(M)	International Fishing Vessel Certificate(INTERMEDIATE)

ILO Survey Details

Inspection has no ILO Survey

Certificate Details

Inspection has no certificates

Deficiency Details

Code	Surveyor's Description	Regulation Ref	Relates to survey?	Actions
199	INTERMEDIATE SURVEY NOT CARRIED OUT		S	17
199	ANNUAL RADIO SURVEY NOT CARRIED OUT		S	17
252	CREW CERTIFICATION NOT AVAILABLE		S	17
252	SKIPPER'S CERTIFICATION NOT AVAILABLE		S	17
730	FIRE HYDRANT AFT INOPERABLE		S	17
730	FIRE HOSE AND NOZZLES MISSING		S	17
711	CO2 DOOR INOPERABLE		S	10
741	FUEL QUICK CLOSING VALVES INOPERABLE		S	17
1550	NAVIGATION LIGHTS DAMAGED/INOPERABLE		S	17
1550	SOUND SIGNAL INOPERABLE		S	17
660	2 X LIFEJACKET LIGHTS REQUIRED		S	17
1671	EPIRB HYDROSTATIC OUT OF DATE		S	17
743	FIRE FLAPS SEIZED/INOPERABLE		S	17
715	FIRE ALARM SOUNDER ALMOST INAUDIBLE		S	16
1099	BILGE ALARM ALMOST INAUDIBLE		S	16
1099	ER BILGE ALARM TO WITNESS		S	16
1550	SIGNAL LAMP INOPERATIVE		S	17
371	MEDICAL KIT REQUIRED		S	17
999	NO RECORD OF L&P CHECKS BEING CARRIED OUT		S	16
0	INSPECTION SUSPENDED. VESSEL TO BE PRESENTED FOR FULL INTERMEDIATE SURVEY ON COMPLETION OF ALL DEFECTS		S	0

[Return to main menu](#)
[Back](#)

Stability Assessment of *Olivia Jean*, following the accident

Stability issues identified for the scallop dredger *Olivia Jean* during the MAIB investigation into the accident on 10 October 2009

Section C1 INTRODUCTION

C1.1 BACKGROUND

On 10 October 2009, a crewman onboard the 33.86m scallop dredger *Olivia Jean* was injured by a falling bridle chain when one of the two main towing wires parted as the beam was being lifted inboard. The crewman was airlifted to hospital with chest injuries.

During the MAIB investigation into this accident, it became apparent that the vessel had not been complying with the operating restrictions stipulated in the approved stability book. It was also evident that a number of alterations have been made to the vessel, which the Maritime and Coastguard Agency (MCA) had not been made aware of.

MAIB therefore has conducted an analysis of the operational stability of *Olivia Jean* in light of these differences, as detailed in this annex to the main MAIB investigation report.

Section C2 ANALYSIS

C2.1 OVERVIEW OF ALTERATIONS AND VARIATIONS

Olivia Jean's stability book at the time of the accident was issued in 2007 and approved by the MCA in 2008, subject to a number of working restrictions. These included:

- The shortening of the derricks, and a reduced maximum of 14 dredges per side;
- A maximum catch of 20 tonnes onboard.

During the MAIB investigation it not only became evident that the vessel had been operating with 18 dredges per side (**Figure C.1**), but also that catches of more than double the permitted weight had been being landed and 9 crew were onboard rather than the authorised 6. During 2009, a number of modifications were also made to the vessel. These included the extension of the forward shelter to accommodate a new crane (**Figure C.1**) and the installation of new main deck conveyors, all of which added weight above the vessel's vertical centre of gravity, thus reducing stability. Although it is understood that ballast had been fitted in the engine room to compensate for these changes, none of these alterations had been notified to the MCA, as required, for formal approval. It was also understood that further alterations were planned to help improve stability. These included additional engine room ballast and the creation of above waterline buoyancy by plating in an aft shelter, but both were believed to still be outstanding at the time of the accident.

For the purposes of the stability analysis, the following variables were therefore used to represent the identified departures from the working restrictions and the various unauthorised vessel alterations:

1. An increase in lightship displacement of around 6.5 tonnes was used to account for the modifications made since the approval of the 2007 stability book, including the forward shelter deck extension, deck crane, main deck conveyors and engine room ballast. This increased value is referred to hereafter as the 2009 lightship, and includes the changes understood to have been made prior to the accident.

2. As no data was available at the time of the analysis for the change in weight due to the increase from 14 to 18 dredges per side, two assumptions were modelled. Firstly, a simple increase in the overall trawl gear weight of just over 350kg representing the weight of 8 additional dredges, and secondly an overall increase of 1.6 tonnes, which was documented as the reduction when the beam length and dredges had previously been reduced from 18 to 14 per side.



Figure C.1 FV *Olivia Jean* alongside Shoreham, 18 October 2009

3. A maximum embarked catch of 1550 bags of scallops with an average bag weight of 28kg was assumed for the relevant “maximum catch” loading conditions. This was based on information available on the vessel, and would have been equivalent to 43.4 tonnes. It was estimated that this number of scallop bags would have almost completely filled the hold, and an appropriate VCG was therefore used.
4. The stability book weight allowance for 6 crew was scaled up for 9 crew.

C2.2 STABILITY ANALYSIS METHODOLOGY

In order to establish the effect of the above variations and alterations on stability, MAIB conducted a static stability analysis based on the 2007 approved stability book loading conditions and combinations of the above variables.

For each condition, compliance was assessed against the required stability criteria for a scallop dredger of this size, as stipulated in The Fishing Vessel (Safety Provisions) 1975 Rules; the details of these criteria are included for an example case below at **Figure C.2**.

C2.3 STABILITY ANALYSIS RESULTS

The stability analysis identified that the vessel failed stability criteria both for the 2007 and 2009 lightship conditions when a “maximum catch” of 43.4 tonnes of scallops was onboard, even with the original 2007 stability book trawl gear and crew weights. It was however found that for the original 2007 lightship, only an increase in the dredge/beam weight by 1.6 tonnes and to 9 crew was required to produce stability criteria failures for the arrival in port condition with 20% catch.

The alterations made to the vessel subsequent to the approval of the 2007 stability book (i.e. the 2009 lightship) were also found to result in marginal failures of stability criteria without any variations from the original 2007 stability book crew, trawl gear and catch limits. These failures were further exacerbated with the increases in crew, gear and scallop weights. Indeed, with an estimated catch of 1550 scallop bags onboard, significant criteria fails were identified for the 2009 lightship condition, thus seriously degrading the vessel’s safety margins.

The typical effects of these changes are illustrated at **Figure C.2** below, using condition 4 from the stability book as an example, with the vessel departing the grounds with a “maximum” catch onboard. The upper table in **Figure C.2** contains a matrix of some of the scenarios modelled, based on combinations of the four variable factors listed above. The lower table details the required stability criteria and minimum values, along with the calculated criteria values for each of the scenarios, with **green** depicting compliance with a stability criterion, **red** depicting a failure.

Stability Book Condition 4: Depart Grounds with Maximum Catch - Scallop Fishing							
Condition Variables							
1. Lightship ⁽¹⁾	2007	2007	2009	2009	2009	2009	2009
2. Dredges per side	14	18 ^(2a)	14	14	18 ^(2a)	18 ^(2b)	18 ^(2b)
3. Maximum Catch	20te	43.4te	20te	43.4te	43.4te	43.4te	43.4te
4. No. of Crew	6	9	6	6	9	9	9
		↓	↓	↓	↓	↓	↓
Stability Criteria	Minimum	Actual	Actual	Actual	Actual	Actual	Actual
Area under GZ curve between 0° and 30° (m.radians)	0.066	0.090	0.082	0.088	0.081	0.080	0.079
Area under GZ curve between 0° and 40° (m.radians)	0.108	0.129	0.115	0.126	0.113	0.112	0.110
Area under GZ curve between 30° and 40° (m.radians)	0.036	0.039	0.033	0.038	0.033	0.032	0.031
Angle of heel at which maximum GZ occurs (degrees)	25.000	25.615	23.730	25.512	23.316	23.267	23.013
Maximum GZ at an angle equal to or greater than 30° (m)	0.240	0.248	0.211	0.239	0.205	0.202	0.198
GM fluid (m)	0.420	0.782	0.741	0.769	0.739	0.736	0.730
Notes							
1. The 2007 Lightship value is as stated in the approved stability book, whilst the 2009 value includes an increase of over 6te to the lightship displacement due to the alterations made to the vessel subsequent to the approval of the stability book.							
2.(a) An estimated increase of over 350kg in the 2007 trawl gear weight due to the additional weight of 4 extra dredges per side.							
2.(b) An estimated increase of 1.6te in the 2007 trawl gear weight, based on a previous reduction in the gear weight.							

Figure C.2 Comparison of stability criteria for FV *Olivia Jean* stability book Condition 4: Depart Grounds Maximum Catch – Scallop Fishing

The first loading condition column in **Figure C.2** confirms that the vessel complies with all the required stability criteria for this condition with the 2007 stability book data. The five columns to the right however highlight varying magnitudes of criteria failures as different combinations of increased weights are added to the base condition. The sixth (rightmost) column depicts the worst case scenario – the post-stability book alterations combined with the additional 1.6 tonnes of trawl gear, 9 crew and more than double the allowed catch of scallops onboard; this results in what can be considered to be significant criteria failures.

Section C3 CONCLUSIONS

C3.1 GENERAL CONCLUSIONS

Given that the scallop dredger *Olivia Jean* was known to have been operating outwith the limitations of the approved stability book with various unauthorised modifications, concerns were raised regarding the vessel’s stability and safe operation. A stability analysis conducted by MAIB has confirmed that the alterations and departures from the working restrictions will lead to failures of stability criteria for the stability book loading conditions, particularly when more than double the allow catch of scallops is embarked.

At the time of this analysis it was understood that the owners intended to fit further ballast in the engine room and introduce additional above waterline buoyancy, which would help address these stability issues. However urgent action was still considered to be required by the owners and MCA to immediately ensure both the vessel’s compliance with the required stability criteria and its safe operation at all times.

MAIB Safety Bulletin 1/2010

MAIB SAFETY BULLETIN 1/2010

Safety critical stability issues identified
on board the beam scallop dredger *Olivia Jean*

Marine Accident Investigation Branch
Mountbatten House
Grosvenor House
Southampton
SO15 2JU



MAIB SAFETY BULLETIN 1/2010

This document, containing safety lessons, has been produced for marine safety purposes only, on the basis of information available to date.

The Merchant Shipping (Accident Reporting and Investigation) Regulations 2005 provide for the Chief Inspector of Marine Accidents to make recommendations at any time during the course of an investigation if, in his opinion, it is necessary or desirable to do so.

A handwritten signature in black ink that reads 'Stephen Meyer'. The signature is written in a cursive style with a long horizontal stroke at the end.

Stephen Meyer
Chief Inspector of Marine Accidents

NOTE

This bulletin is not written with litigation in mind and, pursuant to Regulation 13(9) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2005, shall not be admissible in any judicial proceedings whose purpose, or one of whose purposes, is to apportion liability or blame.

**This bulletin is also available on our website: www.maib.gov.uk
Press Enquiries: 020 7944 3231/3387; Out of hours: 020 7944 4292
Public Enquiries: 0300 330 3000**

BACKGROUND

During an ongoing investigation, the MAIB has identified major concerns with the operational stability of the 33.86m scallop dredger *Olivia Jean*.

The MAIB believes that the vessel should not undertake any further fishing operations until its safe operation can be ensured.

Without a full audit of the inherent stability of the vessel and its operating procedures, the MAIB has identified:

1. Significant structural and equipment modifications made since the current stability book was issued in 2007 have resulted in the failure of the vessel to meet required stability criteria
2. The current safety restriction of 14 dredges per side is not being observed. The vessel is currently operating with 18 dredges per side
3. The maximum catch restriction of 20 tonnes is known to be routinely exceeded by factors in excess of 100%.

Additionally, *Olivia Jean* is operating with a crew considerably in excess of the authorised number.

RECOMMENDATIONS

2010/S101 **Olivia Jean Ltd** is recommended to:

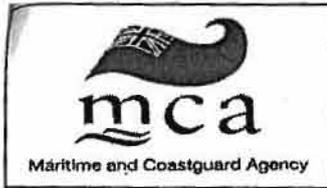
- Take immediate action to cease operations of the scallop dredger *Olivia Jean* (TN 35) until all necessary actions have been completed to ensure the safe operation of the vessel
- Commission a full stability assessment of the vessel to reflect its current condition
- Ensure that all operational limitations required for the safe operation of the vessel are strictly adhered to.

2010/S102 The **Maritime and Coastguard Agency** is recommended to:

- Ensure that the stability of *Olivia Jean* (TN 35) is verified and all safety critical limitations are applied before allowing further fishing operations to take place

Issued January 2010

Minutes of the FISG Health and Safety Group meeting held on 18 April 2007



Fishing Industry Safety Group
Health & Safety Sub Group
Meeting
MCA – Spring Place
18th April 2007

Attendees

[REDACTED]	MCA
[REDACTED]	MCA (Secretariat)
[REDACTED]	MCA
[REDACTED]	MCA
[REDACTED]	MCA (Chairman)
[REDACTED]	MCA
[REDACTED]	NFFO
[REDACTED]	NIFF
[REDACTED]	RNLI
[REDACTED]	Seafish
[REDACTED]	Seafish
[REDACTED]	SFF

MAI
18 DEC 2009
RECEIVED

CHAIRMAN'S OPENING REMARKS.

The Chairman, after welcoming the attendees, advised that apologies were received from [REDACTED] (SFF) and [REDACTED] (Seafish - [REDACTED] was attending on his behalf)

1. GUIDANCE ON THE APPLICATION OF POWER AND LOLER

1.1 The Chairman gave a brief background on the topic advising that the PUWER and LOLER Regulations, which came into force in November 2006, were created to implement the European Use of Work Equipment Directive. Subsequent to their introduction there have been concerns voiced about how the Regulations apply to the Fishing Industry.

1.2 MGNs 331 and 332 cover the PUWER and LQLER Regulations. A leaflet has also been produced however Group members felt that it would be helpful to have some guidance/checklist that would indicate to the Industry what the MCA Surveyors would be looking for and it would also be an aid to the Surveyors themselves.

1.3 The Chairman explained that [REDACTED] had done some work in respect of larger vessels and the MCA had drafted some guidance for all vessels for discussion

by the Group. She added that the Regulations do not specifically mention the Testing of equipment although that does not mean that testing should not be done and such requirements may well come under the various FV Codes.

1.4. The Chairman invited comments, points covered included

- Surveyors currently do not have a consistent approach on this – [REDACTED] and [REDACTED] explained that no significant action has been taken in their Regions as they are awaiting the outcome of this meeting which will clarify the generic MCA approach.
- Who can be regarded as a competent person? The Group agreed that as long as the person was suitably experienced it could be the skipper, another member of the crew or shore based person. The need for all Trawl blocks to be marked with a Safe Working Load (SWL) was raised, it would be too much to do retrospectively but should it not be done for every new and replacement block? When should a block be replaced? Need to separate gear lifting equipment from catch lifting equipment. The Group agreed that all new and replacement fixed gear blocks should be marked with a Safe Working Load (SWL) or equivalent. (And in addition the blocks may also be certified). It was agreed that it was not practical to use blocks certified SWL for running gear, i.e. trawl and seine blocks and leads, as these were often manufactured to the particular need of the vessel. It was also agreed that surveyors would not normally require load tests. However these may be required if the surveyor had reason to suspect any lifting gear.
- Trawl blocks and all other blocks and fair-leads that are associated with the deployment and hauling of gear should not require to be certified or SWL marked as this equipment was frequently built to purpose. Other fixed blocks used exclusively for lifting should be marked with a safe working load but may or may not be supplied with an individual certificate dependant on test regime employed (i.e. the block may be individually tested & certified or batch tested with batch certificate held by manufacturer)

1.5. The Chairman then ran through the table attached to the Guidance line by line to see if the Group was happy with the content. Changes were made as indicated:-

Row 1: Replace "LOLER Reg.12" and "PUWER Reg 8" with "Lifting Equipment" and "Work Equipment"

Row 3: Monthly LOLER "Thorough examination" becomes an Annual one.

Row 3: Comments column: replace current words with "All [*new and*] replacement fixed gear blocks should be marked with a Safe Working Load (SWL) or equivalent. (And in addition the blocks may also be certified).

Row 4: 3 Month PUWER "Inspection" becomes 1 Month.

Row 9: Replace "Conveyors" with "Fish Handling and Processing Systems"

Merchant Shipping Notice 1786 (F)

Application of the Fishing Vessels (Working Time: Sea-fishermen) Regulations 2004

Notice to Owners, Operators, Skippers and all crew on sea-fishing vessels

This Notice takes effect from 16 August 2004 and should be read in conjunction with the Regulations.

Summary

This Merchant Shipping Notice contains the detailed mandatory requirements specified by the Secretary of State under the Fishing Vessels (Working Time: Sea-fishermen) Regulations 2004 which come into force on 16 August 2004. It gives guidance on the application of the Regulations. However the Regulations do not apply to the self-employed, including self-employed share fishermen.

Key points

Parts 1 to 3 explain the requirements of the Regulations which:-

- apply to United Kingdom fishing vessels wherever they may be;
- specify that a worker's working time shall not exceed 48 hours per seven day period averaged over 52 weeks;
- entitle a worker to adequate rest, and the total hours of rest are to be not less than 10 hours in any 24 hour period and 77 hours for each seven days;
- entitle a worker to a free, confidential health assessment before becoming a night worker and require an employer to move a night worker to other duties, where possible, if night working is causing problems with the worker's health;
- require a worker to be given reasonable rest breaks if the pattern of work puts a worker's health at risk, particularly if the work is monotonous;
- entitle a worker to paid annual leave of at least four weeks;
- permit exceptions to the limits on hours of rest for objective and technical reasons or reasons concerning the organisation of work. The Fishing Industry Code of Practice on Working Time Standards at Annex 1 to this MSN constitutes an approved exception. Provided the conditions in the Code are met, an individual application for an exception need not be made. Individual exceptions in circumstances falling outside those in the Code may also be permitted, subject to authorisation by MCA; and
- permit a skipper to require a worker to work any hours of work in an emergency.

Part 4 sets out the way in which duties will be enforced and the remedies available to workers where they do not receive their entitlements.

1.0 Introduction and Background

1.1 The Fishing Vessels (Working Time: Sea-Fishermen) Regulations 2004 (referred to in this notice as “the Regulations”), which come into force on 16 August 2004 introduce new working time rules for employed sea-fishermen. They are based on Directive 93/104/EC (the Working Time Directive) as amended by the Horizontal Amending Directive (HAD) (2000/34/EC).

2. Application and Definitions

2.1 The Regulations apply to United Kingdom fishing vessels wherever they are. The Regulations relating to detention of vessels apply also to fishing vessels registered in other EU Member States while those vessels are in UK waters.

2.2 They place duties on the employers of sea-fishermen on these vessels, and provide certain entitlements to those workers.

2.3 “employment” means employment under a contract.

2.4 “working time”, means:

(a) any period during which the worker is working, at his employer’s disposal and carrying out his activities or duties,

(b) any time during which he is receiving relevant training.

2.5 “relevant training” means work experience provided pursuant to a training course or programme, training for employment, or both, other than work experience or training-

(a) the immediate provider of which is an educational institution or a person whose main business is the provision of training; and

(b) which is provided on a course run by that institution or person.

2.6 “worker” means a person employed aboard a United Kingdom fishing vessel.

2.7 The Regulations do not apply to the self-employed, including self-employed share fishermen.

3. Duties and Entitlements

3.1 Maximum working time

3.1.1 The Regulations require employers to take all reasonable steps to ensure that a worker’s working time does not exceed 48 hours per week averaged over a 52 week reference period. The calculation of the average weekly working time takes account of a worker’s absence during the reference period because of paid annual leave, maternity, paternity, adoption or parental leave, or sickness, by adding the hours worked during the period immediately following the reference period for the same number of days as those when work was missed.

3.2 Health Assessment and Transfer of Night Workers to Day Work

3.2.1 The employer has a duty to ensure that any worker required to do night work has the opportunity for a free health assessment – i.e. at no cost to the worker. If a doctor finds that a worker’s health is suffering, and there is a connection with night work, the employer must, wherever possible, move that worker to day work to which he is suited.

3.2.2 Night work generally means between 11pm and 6am, or any period specified in a relevant agreement, but in any case a period of not less than 7 hours, which must include the period from midnight to 5am (local time).

3.2.3 A night worker is one who:
- as a normal part of his duties, works more than 3 hours of his daily work time at night; or,
- is likely to work an agreed proportion of his annual working time during night time.

3.3 Rest breaks

3.3.1 Where the pattern of hours of work may jeopardise the health and safety of a worker, and particularly where the work is monotonous, the employer must provide reasonable rest breaks. There is no statutory definition of a rest break, but MCA would generally consider any rest of less than 30 minutes to be a “rest break”.

	Periods taken as rest breaks are not counted in the calculation of hours of rest for the purposes of regulation 6.		in instalments, but may not be replaced by a payment in lieu, except where a worker's employment is terminated.
3.4	Records	4.	Exceptions
3.4.1	The employer is required to keep records adequate to demonstrate that employed sea-fishermen are receiving the minimum rest to which they are entitled, subject to any exceptions which may be approved under regulation 13 and that the requirements on health assessments for night workers have been complied with.	4.1	Regulation 13 explains that exceptions to the limits for rest described at 3.5.2 above may be authorised. Such exceptions shall, so far as possible, comply with the standards laid down but may take account of more frequent or longer leave periods or compensatory leave. Provided that the objective or technical reasons, or reasons having to do with the organisation of the work apply, as set out in the Fishing Industry Code of Practice at Annex 1 to this Notice, it is not necessary for individual employers to apply for an exception nor is a separate application needed for each exception. It will also be possible to apply for individual exceptions to cover circumstances which fall outside the Code. However the Secretary of State retains the right to alter or cancel any exception if it appears that the health and safety of workers are being compromised.
3.4.2	If it is possible to derive this information from records which an employer keeps for some other purpose, then separate records need not be kept. Records must be kept for two years from the date on which they are made.		
3.5	Rest periods		
3.5.1	Regulation 7(1) entitles a worker to "adequate rest", so that safety and health are not jeopardised as a result of fatigue.		
3.5.2	Regulation 7(3) requires that every worker shall have minimum rest of 10 hours in any 24-hour period and of 77 hours in any 7-day period. This provides a safeguard against excessive hours being worked over periods shorter than the reference period. Under Regulation 7(4) daily hours of rest may be divided into no more than two periods, one of which shall be at least six hours in length, and the interval between consecutive such periods shall not exceed 14 hours.	4.2	Applications for authorisation of individual exceptions should be made in writing to any MCA Marine Office (listed at Annex 2).
3.5.3	Rest periods include days off, and any rest period which is not a rest break.	5.	Enforcement/Remedies
3.5.4	It should be borne in mind that one long break is more effective than a number of relatively short breaks in providing adequate rest.	5.1	MCA is the enforcement authority for employer duties in relation to: <ul style="list-style-type: none"> • maximum working hours (reg 6(2)); • provision of health assessment for night workers (reg 8(1)); • transfer of night workers to day work on advice of a medical practitioner (reg 8(4)); • provision of adequate rest breaks (reg 9)
3.6	Annual leave	5.2	Regulation 15 requires an employer to provide MCA with information on night workers when required to do so. (MCA surveyors have powers under the Merchant Shipping Act to have access to any ship, company offices and company records relating to compliance with Merchant Shipping legislation.)
3.6.1	For the purposes of these regulations, a worker is entitled in each year to a period of annual leave totalling at least four weeks, for which he is entitled to be paid at the rate of a week's pay in respect of each week of leave. Annual leave may be taken	5.3	If a worker considers that his entitlements under the Regulations to adequate rest or

annual leave are being denied he may complain to an employment tribunal or to the Advisory, Conciliation and Arbitration Service (ACAS) (Tel. 08457 47 47 47).

6. Further Information

6.1 Questions on these regulations should be directed to MCA's Seafarer Health and Safety Branch. They may be e-mailed to:

seafarer_health&safety@mcga.gov.uk

Alternatively, the address is:
Seafarer Health and Safety Branch
Maritime and Coastguard Agency
Bay 2/09 Spring Place
105 Commercial Road
Southampton
SO15 1EG

Telephone: 023 8032 9216
Fax: 023 8032 9251
MCA Website Address: <http://www.mcga.gov.uk>

File Ref: MC110/13/6

Published: August 2004

© Crown Copyright 2004

Safer Lives, Safer Ships, Cleaner Seas

Department for
Transport

The MCA is an executive agency
of the Department for Transport

FISHING INDUSTRY CODE OF PRACTICE ON WORKING TIME STANDARDS

Preamble

Fishing is a hunting activity. It deals with a highly perishable commodity and operates in an unpredictable working environment. These require that work activities must be prioritised to ensure the safety of the vessel, the effective prosecution of fishing operations and the rapid initial processing, icing and refrigeration of the catch.

1. Purpose

In recognition of European Directives 93/104/EC and 2000/34/EC, the purpose of this *Code of Practice* is to apply common standards of working time throughout the fishing industry, to ensure that the crews of fishing vessels receive adequate rest, thereby minimising risk to health and safety arising from fatigue.

2. Self-employed Fishermen

This *Code* recognises that the limits in the Working Time Directive cannot be enforced against self-employed fishermen. However they should regard the *Code's* limits on working hours as useful benchmarks to avoid excessive hours.

3. Skippers

Insofar as the masters of fishing vessels meet the conditions set out in article 17(1) of Council Directive 93/104/EC of 23 November 1993¹ it is for the individual master/skipper to determine his/her own compensatory rest and compensatory leave periods, within the context of the principles of the protection of health and safety and the overall safety of the vessel,

4. Working Time Standards

This Code acknowledges the merit of applying working time standards to all personnel aboard fishing vessels. Directive 2000/34/EC recognises the distinctive characteristics of the sea-fishing sector and provides that, in accordance with the general principles of the protection of the health and safety of workers, Member States may allow exemptions from daily and weekly rest periods within it. It is in line with the spirit of the Directive that this Code complies with the standards laid down in the Directive as far as practically possible.

5. Scope for Compensatory Rest

Within the pattern of activity of most fishing vessels, there is considerable scope for compensatory rest and relaxation when the vessel is steaming to and from the fishing grounds, between operations and when the vessel is in port. The application of compensatory rest periods to offset those occasions when the standards set out in Clause 7 below are not met for operational or technical reasons or for reasons having to do with the organisation of the work, is, therefore, a central feature of this Code.

¹ Article 17(1) "1. With due regard to the general provisions of the protection of the safety and health of workers, member States may derogate from Articles 3, 4, 5, 6, 8 or 16 when, on account of the specific characteristics of the activity concerned, the duration of the working time is not measured and/or predetermined or can be determined by the workers themselves, and particularly in the case of ...managing executives or other persons with autonomous decision-taking powers,"

6. **Definitions**

For the avoidance of doubt and for the purposes of this *Code* working time shall be as defined in regulation 2 of the Fishing Vessels (Working Time: Sea-fishermen) Regulations 200X.

7. **Working Time Standards**

Subject to the exceptions and compensatory arrangements, the following working time standards shall apply:

Minimum Daily Rest

10 hours rest in any 24 hour period

Minimum Weekly Rest

77 hours in a 7 day period

Annual Limits

A maximum of 2304 hours

Rest Periods

Rest periods may be divided into no more than two rest periods, one of which shall be at least six hours in length and the interval between consecutive periods shall be at least six hours in length.

8. **Annual Leave**

Under the Working Time Directive employed fishermen are entitled to paid annual leave. The normal patterns of work and remuneration in the fishing industry incorporate both minimum requirements for annual leave and payment for such, into the usual operational patterns of the vessels and the system of remuneration by trip.

9. **Exceptions and Compensatory Leave**

For objective or technical reasons or for reasons having to do with the organisation of the work, the standards in Clause 7 above may not be able to be met. In such cases, while the standards will remain as a benchmark, exceptions to the limits may be allowed provided that the general principles of the health and safety of the workers are respected. Such exceptions should take account of more frequent or longer leave periods or the granting of compensatory leave.

The degree and regularity to which the standards laid down in Clause 7 will be met and compensatory rest required will vary according to the type of fishing vessel, method of fishing and area of operation. However there are constraints to the strict application of limits on working time which arise from the nature of fishing as an occupation. For example, operational parameters and working patterns are, to a considerable degree, dictated by external factors such as weather, seasonal fishing, quota constraints, tidal conditions and daylight hours.

10. **Fleet Specific Constraints**

The table in ATTACHMENT A illustrates common working patterns within some specific fisheries. The table describes some of the objective technical/operational circumstances in which exceptions from the standards laid down in Clause 7 may be required and for which compensatory rest/leave may need to be made available.

11. Endorsement

This Code of Best Practice is recognised and commended by

The National Federation of Fishermen's Organisations

The Scottish Fishermen's Federation

The Northern Ireland Fishermen's Federation

and other sea-fishermen represented on the Fishing Industry Safety Group.

**OBJECTIVE TECHNICAL/OPERATIONAL CIRCUMSTANCES IN WHICH
EXCEPTIONS FROM THE STANDARDS MAY BE
PERMITTED IN SPECIFIC FISHERIES**

FLEET SEGMENT	OPERATIONAL AND TECHNICAL FACTORS	COMPENSATORY REST FACTORS
GILL NETTERS	Gill netters' operational patterns are to a large degree dictated by tides. It is not possible to work static nets during spring tides. Work time is therefore concentrated on the two weeks in the month when the neap tides occur.	Compensatory rest is available during the two weeks when the vessels are unable to work their gear. Due to the tidal nature this type of fishing and extreme weather conditions it is not uncommon for this class of vessel to lose up to 170 working days per year.
BEAM TRAWLERS	Beam trawlers target prime species in the main. It is not possible to tow the gear for long periods of time, as the catch will be subject to damage and spoilage due to abrasion in the net. Long tows would result in increased debris (sand/stones) in the gear damaging catch and increasing weight in the gear. This would risk the safety of the vessel. Work time is therefore concentrated around regular hauls throughout the trip.	Compensatory rest is available in periods steaming to and from the grounds, between hauls and between trips. Short tows, small quantities of prime fish result in relatively short time on deck and longer overall periods of rest. Due to extreme weather conditions it is not uncommon for this class of vessel to lose up to 130 working days per year.
WHITE FISH TRAWLERS	Work time is concentrated around the hauling operations and working the catch. Heavy fishing will routinely result in a requirement for prolonged periods of intensive work in order to gut, ice, stow and process the catch (which might include freezing). Snagging of gear and subsequent repair could also result in periods of intensive work.	Compensatory rest is available in periods steaming to and from the grounds, between hauls and between trips. A system of crew rotation is also common (in particular on the larger vessels operating longer trips) Although dependant on the size of vessel and area of operation due to extreme weather conditions it is not uncommon for this class of vessel to lose up to 130 working days per year.

FLEET SEGMENT	OPERATIONAL AND TECHNICAL FACTORS	COMPENSATORY REST FACTORS
NEPHROP TRAWLERS	<p>Traditional single net: Operational parameters are generally set by natural phenomena such as daylight and tide. Work time is concentrated on favourable weather and tidal conditions.</p> <p>Twin rig: Vessels tend to be bigger and more powerful and as result tows are generally longer. Work time is concentrated between tows working the catch and preparing the decks ahead of the next haul.</p>	<p>Compensatory rest is available throughout the year due to unfavourable weather and tidal conditions. This may be concentrated on spring tides or periods of prolonged poor weather.</p> <p>It is not uncommon for this class of vessel to lose up to 160 days per year because of the factors outlined above.</p> <p>Compensatory rest is available throughout the year due to extremes of tide and weather.</p> <p>It is not uncommon for this class of vessel to lose up to 120 days per year because of the factors outlined above.</p>
CRABBERS	<p>Larger crabbers at sea for more than one day often work from first light. Work time is then concentrated for the period of time taken to haul and re-shoot the gear.</p>	<p>Compensatory rest is available in periods steaming to and from the grounds. It is uncommon for hauling to continue through the hours of darkness. Compensatory rest is often available on the basis of crew rotation. Due to extreme weather conditions it is not uncommon for this class of vessel to lose up to 120 working days per year.</p>
INSHORE DAY BOATS	<p>Diversity in mode of fishing characterises the inshore fleet. Work time is dictated by weather, season and tide and is, therefore, concentrated on periods of good weather and suitable tides/seasons.</p>	<p>Compensatory rest is available through out the year due to factors such as weather, season or tide. This may be concentrated during seasonal extremes.</p> <p>It is not uncommon for this class of vessel to lose up to 170 days per year because of the factors outlined above.</p>

MCA Marine Offices

- | | | |
|-----|--|--|
| 1. | Aberdeen Marine Office
Blaikies Quay
Aberdeen AB11 5EZ | Tel: 01224 597 900
Fax: 01224 571 920 |
| 2. | Belfast Marine Office
Bregenz House
Quay Street
Bangor
Northern Ireland BT20 5ED | Tel: 0289 147 5300
Fax: 0289 147 5321 |
| 3. | Cardiff Marine Office
Anchor Court
Keen Road
Cardiff CF24 5JW | Tel: 02920 448822
Fax: 02920 448810 |
| 4. | Dover Marine Office
Langdon Battery
Swingate
Dover CT15 5NA | Tel: 01304 227710
Fax: 01304 218505 |
| 5. | Falmouth Marine Office
Pendennis Point
Castle Drive
Falmouth
Cornwall TR11 4WZ | Tel: 01326 310811 |
| 6. | Glasgow Marine Office
Navy Buildings
Eldon Street
Glasgow PA16 7QY | Tel: 01475 5533550 |
| 7. | Great Yarmouth Marine Office
4 th Floor
Havenbridge House
Great Yarmouth NR30 1HZ | Tel: 01493 744300
Fax: 01493 744329 |
| 8. | Harwich Marine Office
East Terrace
Walton-on-Naze
Essex CO14 8PY | Tel: 01255 682107 |
| 9. | Hull(Beverley) Marine Office
Crosskill House
Mill Lane, Beverley
North Humberside HU17 9JB | Tel: 01482 866 606
Fax: 01482 869 989 |
| 10. | Leith Marine Office
Suite 3, Waterside House
46, The Shore
Leith, Edinburgh EH6 6QU | Tel: 0131 554 5488
Fax: 0131 554 7689 |

- | | | |
|-----|--|--|
| 11. | Liverpool Marine Office
Hall Road West
Crosby
Liverpool L23 8SY | Tel: 0151 931 6600
Fax: 0151 931 6615 |
| 12. | London Marine Office
Central Court,
1B Knoll Rise, Orpington
Kent BR6 0JA | Tel: 01689 890 400
Fax: 01689 890 446 |
| 13. | Milford Haven Marine Office
Gorsewood Drive, Hakin
Milford Haven
Pembrokeshire SA73 3HB | Tel: 01646 693272 |
| 14. | Newcastle Marine Office
MCA Tyne
Compass House
Unit 1, Tyne Dock
South Shields,
Tyne and Wear NE34 9PY | Tel: 0191 496 9900
Fax: 0191 496 9901 |
| 15. | Plymouth Marine Office
New Fish Market
Baylys Wharf, Fish Quay
Plymouth PL4 OLH | Tel: 01752 266 211
Fax: 01752 225 826 |
| 16. | Shetland Marine Office
The Knab, Knab Road
Lerwick
Shetland ZE1 0AX | Tel: 01595 743514 |
| 17. | Southampton Marine Office
Spring Place
105 Commercial Road
Southampton SO15 1EG | Tel: 023 80329329
Fax: 023 80329351 |
| 18. | Stockton On Tees Marine Office
3 rd Floor, Victoria House
Pearson Court, Pearson Way
Teesdale Park
Stockton On Tees TS17 6PT | Tel: 01642 611040
Fax: 01642 614048 |

Facsimile dated 15 June 2007 from Olivia Jean Limited to the
Maritime and Coastguard Agency

Olivia Jean

L i m i t e d

Facsimile Message

To: M.C.A. Aberdeen – [REDACTED] **From:** [REDACTED]
Fax: [REDACTED] **Pages:** 1
Phone: [REDACTED] **Date:** 15 June 2007
Re: MFV Olivia Jean TN35 **CC:**

Urgent **For Review** **Please Comment** **Please Reply** **Please Recycle**

We respectfully make application for an exemption certificate under the following

- **The vessel will not carry more than six persons**
- **The vessel normally operates within easy reach of shore rescue**
- **The vessel carries a Jacob's ladder**
- **The vessel had an exemption certificate in it's previous name Sasha Emeil**

Should you require any further information do not hesitate to contact me

Regards

[REDACTED]

[REDACTED]
Telephone/Facsimile
Email: [REDACTED]

Company Registration SC318781

Chief Inspector's letter to the Maritime and Coastguard Agency of 11 January 2006 listing issues identified during the MAIB investigation into the capsizing and foundering of the fishing vessel *Harvest Hope*

MAIB

MARINE ACCIDENT INVESTIGATION BRANCH

CARLTON HOUSE, CARLTON PLACE, SOUTHAMPTON SO15 2DZ
SWITCHBOARD: (023) 8039 5500 FAX: (023) 8023 2459 Email: maib@dft.gsi.gov.uk

Our Ref: 1/4/200

██████████
Deputy Director (Standards)
Maritime & Coastguard Agency
Spring Place
105 Commercial Road
Southampton
SO15 1EG

11th January 2006

Dear ██████████

**Capsize and Foundering of *fv HARVEST HOPE* on 28 August 2005 –
Follow-up Actions from MAIB Recommendations Meeting on 20 December 2005**

Many thanks for your attendance and participation in the above meeting, which I am sure you will agree, was extremely useful. As discussed during this meeting, a number of issues have been identified by my Inspectors concerning the MCA's involvement in the certification and survey of the fishing vessel *Harvest Hope* prior to her loss. As agreed during this meeting, these issues are summarised below, and I would be grateful if you could confirm either the MCA's intentions to address the issues raised, or any actions that may have already been taken in this respect.

1. Design & Construction

1.1. Status of the vessel's Net Drum Space;

Background: During the early design and construction stages of *Harvest Hope*, the watertight status of the Net Drum Space, aft on the Main Deck, appears to have been uncertain. A letter in 1995 from an MCA Surveyor based at Spring Place to the consultant for the vessel confirmed that the space should be treated as non-watertight for the purpose of calculating the vessel's aft freeboard. However in 1996, the initial Stability Booklet was approved by the MCA including this space as watertight, despite written clarification from the consultant to the MCA that this was the case. The MCA became aware of this discrepancy in 1997, which was not resolved until 2002, with the approval of the revised final Stability Booklet. This gap included a period of some 19 months, during which time the Marine Office dealing with the vessel awaited a response from MCA Headquarters regarding their proposed way ahead on the matter.

Issues: 1.1.1. At the time of the initial stability approval of *Harvest Hope*, the then approval procedure allowed the Net Drum Space to be included in the vessel's watertight envelope in the initial approved Stability Booklet;
1.2.1. During the resolution of the stability and freeboard problems for *Harvest Hope*, the level of technical support provided from MCA Headquarters to the Marine Office was limited;

1.2. Design displacement exceeded;

Background: It is understood that during the vessel's construction, her design displacement increased due to heavier steel being used in various areas and additional ballast being fitted to attempt to counteract stability problems. Earlier intervention at the design and construction stages either by the attending MCA or Class Surveyors could have potentially averted the later problems. It is also noted that the MCA Surveyor attending the shipyard was an Engineering Surveyor. It is possible that if a Naval Architect Surveyor had become aware of the additional ballasting, he would have been more alert to the potential affects of the increased displacement on both the vessel's freeboard and stability. During the vessel's design and construction, it was noted that Class were responsible for the survey and approval of amongst other things, the vessel's watertight integrity, although the MCA were responsible for the vessel's freeboard and stability. It is uncertain as to what extent the MCA views the responsibility to oversee stability and freeboard matters during a vessel's design and build stage or to what extent this may be delegated to the Classification Society.

Issues:

- 1.2.1. Potential for earlier and closer liaison with designer/builder during the construction stage to identify issues that may affect stability and freeboard;
- 1.2.2. Use of qualified Naval Architect Surveyors to oversee construction stage, or additional training provided to non-Naval Architect Surveyors regarding stability and freeboard matters;
- 1.2.3. Role of MCA or Class surveyors to approve the initial freeboard and stability aspects of the design of a fishing vessel being built under Class supervision;

1.3. Application of freeboard dispensation;

Background: With the Net Drum Space no longer included as part of the vessel's watertight envelope for the calculation of both stability and freeboard, *Harvest Hope* was unable to comply with the aft freeboard requirement stipulated by MS Notice M.975. The MCA document Survey Memorandum No. 55 was therefore applied by the Marine Office to give a dispensation of 27% for the aft freeboard. This document however appears to indicate that this concession should only have been applied to vessels built prior to 1981, *Harvest Hope* having been completed in 1996. Given that the history and background to this Survey Memorandum has not yet been determined, it is suggested there also must remain a certain element of doubt regarding the validity of the safety-related dispensations offered in this document.

Issues:

- 1.3.1. Marine Office interpretation of Survey Memorandum No.55, and it's applicability to *Harvest Hope*;
- 1.3.2. Validity of freeboard dispensations contained within Survey Memorandum No.55;

1.4. Use of uncontrolled, obsolete policy documents (Survey Memoranda);

Background: It is understood that Survey Memorandum No.55 should now be obsolete, as indeed is the case for all such Memoranda, as these were intended to be replaced by OANs in 1998-99. However, my Inspectors have been made aware of various such Survey Memoranda are still being used within the MCA. These documents are uncontrolled, being undated and unreferenced, and do not appear as part of the MCA's own document management system.

Issues: 1.4.1. Continued use of uncontrolled and obsolete Survey Memoranda to supplement formal regulations;

1.5. Required remedial measures;

Background: Survey Memorandum No.55 allows a standard dispensation of 20% for the aft freeboard allowance. Para. 1 (ii) (b) of this document however effectively authorises a dispensation of up to 50% with the consideration of constructional modifications to the vessel. To allow the 27% dispensation granted for *Harvest Hope*, the modifications included the installation of two additional tonnage valves in the Net Drum Space. However, it is understood that the vessel's operators had already been experiencing problems with the original tonnage valves in this area, as the vessel's low freeboard conspired to allow water ingress into the space through these supposedly non-return scuppers.

Issues: 1.5.1. Practicality of the MCA's requirement for the installation of additional tonnage valves in the Net Drum Space;

1.5.2. Potential for increased liaison with operators regarding development of design modifications to resolve safety issues.

1.6. Windows in the forward watertight bulkhead in the Net Drum Space;

Background: Although the application of para. 1 (ii) (b) of Survey Memorandum No.55, involved the fitting of alarm sensors to the two watertight doors in the Net Drum Space, no such action was required for any of the four watertight opening windows in the forward bulkhead of this space. It would also appear that no request was made by the MCA to introduce Warning Signs in the vicinity of these windows highlighting the necessity of keeping these closed at sea. It is however understood that these windows were in fact regularly kept open for ventilation purposes whilst the vessel was at sea.

Issues: 1.6.1 Holistic approach to all design features that may affect watertight integrity;

1.6.2 Applicability of "internal" watertight integrity issues to other similar fishing vessel designs?

1.7. Location of the junction box in a non-watertight space;

Background: The two additional electric submersible pumps in the vessel's Net Drum Space were fitted voluntarily by the owners, and considered by them to represent the primary means of removing any water from the Net Drum Space. However, it is apparent that the Marine Office dealing with the vessel considered the tonnage valves to be the principal method of freeing water, and was therefore possibly not as concerned about the pumping arrangement; this is demonstrated by the MCA's ongoing acceptance of the junction box being sited in the same non-watertight area as the pumps.

Issue: 1.7.1. Re-evaluation of the requirements for locating and installing junction boxes required for safety-critical electrical items, such as pumps;

1.8. Tonnage valves

Background: As discussed during the Recommendations Meeting, and as indicated again at 1.5 above, it has become evident that although tonnage valves are fitted to many fishing vessels to act as non-return freeing ports, there are a number of design issues associated with their design, installation, maintenance and operability.

Issue: 1.8.1 Ongoing concerns raised by designers, operators, and MCA surveyors about the reliance of flap-style tonnage valves as safety-critical features on board fishing vessels;

2. Survey regime

2.1. Scope of surveys:

a) Tonnage valves;

Background: The four latest MCA surveys conducted on board *Harvest Hope* appear to have failed to identify that the six tonnage valves in the Net Drum Space had been welded closed at the outer shell in 1999. It is possible that a typical survey of a tonnage valve simply includes a check that the functionality of the valve is acceptable, but no check that the opening is clear through to outboard.

Issue: 2.1.a.1. Scope and thoroughness of fishing vessel surveys, in particular with respect to the survey and testing of tonnage valves;

b) Submersible pumps/junction box;

Background: As for 1.8 above, it would appear that a non-watertight junction box was probably fitted in a weathertight space, yet not identified during MCA surveys as a potential safety issue.

Issue: 2.1.b.1 Scope and thoroughness of fishing vessel surveys, in particular with respect to the survey and testing of safety-critical electrical fittings in non-watertight spaces;

2.2. Recording of survey details;

Background: Based on discussions my Inspectors have had with the Marine Office dealing with the vessel, and the MCA's Survey Policy and Fishing Safety Branches, there appears to be currently no Checklist or Aide Memoire to be used for undertaking fishing vessel surveys. It is noted that the audit conducted by the National Audit Office in 2001 of the MCA's Survey & Inspections functions recommended that such checklists should be created for surveys, but there appears to be no immediate plans to introduce these for fishing vessel surveys. As indicated at 2.5 below, the CM files for *Harvest Hope* do not always contain full records of the surveys carried out, and unfortunately there also does not appear to be any requirement for the retention of supporting survey documentation, such as Surveyor's notebooks. It has also been noted that MCA Surveyors regularly carry digital cameras during surveys, yet there is no guidance for the use of these cameras – for example, a limited number of photographs could very helpfully support the vessel's Record of Particulars (see 2.4 below), and provide confirmation that requested actions have been undertaken satisfactorily (see 2.3 below).

Issues: 2.2.1. There are currently no available Checklists or Aide Memoires to support fishing vessel surveys and provide positive confirmation of tests undertaken;

2.2.2. The current policy for recording survey details on file does not appear to be robust;

2.2.3. There appears to be no policy for the retention of survey records/notebooks;

2.2.4. There is no current guidance for the use of cameras to supplement survey records;

2.3. Process for confirmation of remedial actions;

Background: The CM files for *Harvest Hope* indicate that there appears to be no procedure for highlighting requested constructional changes to a vessel and then triggering a follow-up to confirm the actions have been undertaken. For example, it is not obvious from any of the MCA records held for the vessel how many tonnage valves were actually fitted when she sank. It is also noted that only written confirmation from the vessel's owner of rectification is required for "minor" defects identified during a fishing vessel survey, with a revisit to the vessel to be conducted only if "considered necessary" by the Surveyor. There however appears to be no clarification provided to assist Surveyors in distinguishing between "minor" and non-"minor" defects, nor to help them consider whether a revisit is necessary.

- Issues:** 2.3.1. No current procedure for highlighting the requirement for design modifications, nor for confirming that these have been satisfactorily effected;
- 2.3.2. There appears to be no available guidance to surveyors regarding the level of defect that requires physical MCA confirmation of acceptable rectification;

2.4. Records of Particulars (FV2)

a) Not updated with vessel changes;

Background: The Record of Particulars held on file by the MCA for *Harvest Hope* does not appear to have been updated to record any of the changes made to the Net Drum Space in 1999. This includes no details of either the additional tonnage valves or the new electric submersible pumps.

Issue: 2.4.a.1. The Record of Particulars for *Harvest Hope* was not maintained as a true record of the vessel's design evolution;

b) No document control procedure;

Background: The Record of Particulars (FV2) for *Harvest Hope* was an uncontrolled document, containing no details either of the date of the latest version, or who undertook the relevant survey(s). Discussions with the Deputy Head of the MCA's Fishing Safety Branch have indicated that the latest version of FV2, now known as MSF1301 was issued in December 1998, but is only applicable for new vessels after this date. This later format does include a document control front sheet, and it is suggested that there is scope for introducing the front sheet from MSF1301 to the original FV2 for all pre-1998 vessels. Likewise, it is considered that there is also scope for introducing an "Modifications" sheet to both FV2 and MSF1301, a feature which it is understood has already been carried out by the MCA for the Record of Particulars for other commercial vessels.

- Issue:** 2.4.b.1. The Record of Particulars (FV2) for pre-1998 vessels has no means of document control for recording revision dates/authors;
- 2.4.b.2. Neither the FV2 or MSF1301 include "Modifications" sheets which it is understood are being introduced on the equivalent Record of Particulars forms for other vessel types;

c) Inflexible format of Record of Particulars

Background: There is no record of the watertight opening windows in the forward bulkhead of the Net Drum Space on the Record of Particulars (FV2) for the vessel, largely it would seem because there is no relevant section on the FV2 to record these

details. Details of these windows were recorded on completion in Poland by the Class surveyor by hand on the reverse of one of the pages of the original FV2, but not transferred onto the formal typed version.

Issue: 2.4.c.1. The official Record of Particulars for *Harvest Hope* does not contain details of the watertight opening windows in the Net Drum Space, as the form contains no appropriate section for recording these details;

2.5. Incomplete SIAS records & CM files;

Background: Both the SIAS system and CM files contain incomplete records of the vessel's certification and survey history. The former includes no record of the 2000 Category A Renewal Survey for *Harvest Hope*, and also includes a number of entered defects for the vessel that have not been clearly defined. It has also been noted that there is no facility in SIAS for determining which Surveyor(s) conducted a particular survey; this can only be established with recourse to copies of the original handwritten "Report of Inspection And/Or *Survey". However, for *Harvest Hope*, copies of these have only been sporadically retained in the CM files, and the administration section of the Marine Office, which uses these reports to update SIAS appears to only retain these records for a limited period. As alluded to above, the vessel's CM files do not contain copies of all relevant certification and correspondence relating to the vessel. It is also of note that a "Rough Office" file was found to exist in the Marine Office for the vessel, which contained unique copies of some documentation for the vessel – it is understood that the practice for holding uncontrolled files of this nature is currently being discontinued by the MCA.

Issues: 2.5.1. No procedure exists for confirming that details of a survey have been successfully entered into SIAS;

2.5.2. The standard for recording details of defects on SIAS appears to be inconsistent;

2.5.3. There is no facility in SIAS for identifying which surveyor(s) undertook a particular survey;

2.5.4. There appears to be no procedure for the retention of survey documentation in the Marine Office;

2.5.5. The CM files held for the vessel do not contain copies of all relevant certification and correspondence relating to the vessel;

2.5.6. An uncontrolled "Rough Office" file was maintained by the Marine Office for the vessel which contained unique copies of documentation relating to *Harvest Hope*;

2.6. Use of different surveyors for separate visits during one survey;

Background: For a Category A survey on a fishing vessel, two visits to the vessel are required, "out of" and "in" water. It was noted that for *Harvest Hope*, two different surveyors had been regularly used to conduct these visits, and this seemed to be the norm in this Marine Office. It is of course appreciated that resourcing requirements will often necessitate different surveyors be used for these tasks. However, there appears to be no procedure for hand-over notes between the two surveyors, and when interviewed by my Inspectors, the Head of the MCA's Survey Policy Branch, expressed some surprise that different surveyors were regularly being used for this purpose.

Issue: 2.6.1. Different surveyors appear to be regularly used to conduct the two parts of Category A surveys, and it would seem without a clear procedure for

“handing over” the survey, to ensure that important matters are not overlooked;

3. Certification process

3.1. Issue of Short Term certificates;

Background: Whilst the stability and freeboard problems were being resolved for the vessel, Short Term UK Fishing Vessel Certificates (UK FVCs) were issued for nearly five years. It is also noted that the duration of these certificates varied during this period, and the certificates between 1997 and 2001 did not record the reason for the Short Term nature of the certificate.

Issues: 3.1.1. Short Term UK FVCs were issued to *Harvest Hope* for an extended period, for much of which it would appear that there was no clear way ahead regarding the resolution of the stability and freeboard issues;

3.1.2. The majority of the Short Term UK FVCs issued to *Harvest Hope* did not indicate the reason for the temporary nature of the certificate;

3.2. Gaps between certificates;

Throughout the vessel’s operational history there have been a number of gaps in her certification record for UK FVCs. During this period there appears to have been no MCA system for identifying these gaps.

Issue: 3.2.1. During the period in question there appeared to be no system for identifying certification lapses and gaps;

3.3. Issue of Certificate of Registry without a valid FVC;

Background: In January 1996, the Marine Office wrote to the vessel’s consultant and owner confirming that the vessel had been satisfactorily surveyed, and a Full Term UK FVC would be issued in “due course”. Subsequently in May 1996, copies of the approved Stability Book were also forwarded to the consultant by the Marine Office. However, although there is no record of the original Full UK FVC having ever been issued, it would appear that RSS issued the vessel with a Certificate of British Registry when the vessel entered service in January 1996. It is understood that RSS rely on the MCA’s Fishing Safety Branch’s Fishing Vessel database to identify which vessels have valid UK FVC’s, and that RSS do not generally see either the original or a copy of the UK FVC when registering a vessel.

Issues: 3.3.1. It is possible that *Harvest Hope* was issued with a Certificate of British Registry without a full UK FVC being issued;

3.3.2. It is understood that RSS issue Certificates of British Registry for fishing vessels based only on information contained within the MCA’s Fishing Safety Branch’s Fishing Vessel database, and do not view the UK FVC as part of this process;

4. Pipeline Issues

4.1. CG use of inaccurate pipeline information following an incident;

Background: At the time of the vessel’s sinking, the co-ordinating MRCC referred to the latest Admiralty Chart for the area to identify that there were two pipelines in the vicinity of the vessel’s sinking position. However, it has since become apparent that this chart does not include details of two further pipelines that were in the area. The local knowledge of the CG regarding the location of subsea pipelines was therefore not

current, as indicated by their use of inaccurate pipeline information as the basis for informing pipeline operators of potential hazards.

Issues: 4.1.1. At the time of accident, the local knowledge of the co-ordinating MRCC regarding subsea pipeline locations was incomplete, given their use of inaccurate subsea pipeline information as the basis for informing the pipeline operators. The possibility therefore existed for a delayed response from the oil companies to pipeline damage;

4.2. CG procedures for contacting pipeline operators following an incident;

Background: Even though the co-ordinating MRCC identified there were two pipelines in the area of the vessel's sinking, they only contacted one of the relevant operating companies. This was on the belief that both pipelines reached shore at the same terminal (St. Fergus), and the information would be shared at this point. There however currently appears to be no formal procedure at St. Fergus for the sharing of any such information.

Issues: 4.2.1. The procedures used by the co-ordinating MRCC for informing pipeline operators of potential pipeline integrity issues following the accident were not consistent;

Your assistance with this matter is greatly appreciated, and I look forward to receiving your reply in due course. In the meantime, should you require any clarification of any of the above matters, please do not hesitate to contact [REDACTED] the Principal Inspector responsible for this investigation.

Yours sincerely,

Stephen Meyer
Chief Inspector of Marine Accidents

Maritime and Coastguard Agency - Over 24 metre fishing vessels
survey/inspection aide mémoire

Fire Blanket in galley			
Fixed Fire Fighting System for Galley and/or Exhaust system, operation, maintenance			
Galley cleanliness, suitability			
Provisions stores, refrigerated spaces, cleanliness			
Garbage arrangements			
Portable and non-portable fire extinguishers – correct type, condition, adequately maintained, location			
Factory Deck			
Tonnage Valves			
Trash Pumps			
Bilge Alarms			
Safety of Gutting machines etc.			
Refrigeration equipment, leak prevention etc.			
General			
Safety Signs			
SOLAS 1 Poster			
Safety belts/harnesses			
Muster List – more than 5 crew			
General Alarm tested			

SURVEY/INSPECTION			
Machinery Spaces			
Main and Auxiliary engines, condition, guards, exhaust, no exposed high temperature surfaces, fuel lines			
Gearboxes, Controllable Pitch Propeller controls			
Bilges, condition, no oil being pumped overboard.			
Disposal arrangements for Oily water			
Oily Water Separator, condition, discharge pipework, Oil Record Book, function test			
Bilge pumping – test of bilge pump/s and bilge alarms			
Arrangements for oil fuel, lubricating oil and other flammable oils. Operation of remote means of quick closing valves on tanks that contain oil fuel, lubricating oil and other flammable oils			
Remote Electrical Stops			
Examining and testing fire detection and alarm system, if fitted			
Portable and non-portable fire extinguishers – correct type, condition, adequately maintained, location			
Compressed air systems			
Condition of pipework, securing clips, skin fittings, sea cocks and their ease of operation (above floor plates)			
Electrical systems – alternators, motors etc.			
Electrical cables – condition, securely clipped, electrically safe			
Batteries, condition (Emergency and Radio)			
Emergency Lights			

Emergency Escape routes, not obstructed, clearly marked			
Bulkheads, frames, condition			
Fire doors, flaps etc. condition, self closing operation			
Steering gear, condition, operational test, alarms			
Refrigeration Plant, condition, operation			
Steam or Thermal Oil Boilers, condition, operation, test of safety devices, gauges glasses etc.			
Record of Planned Maintenance – see MT 4 questionnaire			
Fire risks and hazards			
Spare, adequate spares carried on board			
Communication systems to bridge and/or steering gear			

OUT OF WATER SURVEY (INTERMEDIATE/RENEWAL)			
Condition of Hull			
Steel – Ultrasonic test and report			
Bilge Keels			
Sea Chests			
Sacrificial Anodes			
Wood – condition of planking, nails, caulking etc.			
Stern Gear condition			
Report			
Clearances			
Lubrication			
Propeller			
Kort Nozzle			
Steering Gear condition			
Rudder			
Rudder Stock			
Clearances			
Condition of sea inlets and discharge valves/cocks			
Draught Marks – Condition/accuracy			
Anchor and Chain cable condition			
Note: for vessel not classed see separate Aide for Annual/Intermediate/Renewal Surveys			

COMPLETION OF SURVEY			
Should there be any doubt before completion of the survey/inspection contact the Principal Fishing Vessel Surveyor or local Marine Office for advice			
UKFVC or IFVC issued or endorsed:			
Inspection report left with Owner/Skipper			
Record of Equipment (check list) left with Owner/Skipper			

	OVER 24 METRE FISHING VESSELS SURVEY/INSPECTION AIDE-MEMOIR		Doc No
	(Based on the Over 24 m Code of Safe Working Practice)		MSF 5551
Name of Vessel		Revision	2
Date			16/09/09

CERTIFICATES AND RECORDS			
Validity of UK or International Fishing Vessel Certificate (Intermediate survey carried out?)			
Validity of IOPP Certificate (over 400 Gross Tonnes)			
Annual/Intermediate surveys carried out			
Radio Survey carried out at appropriate intervals – Annually			
Validity of Certificate of Registry			
Note: change of ownership and/or modifications to the vessel such as change of length, engine etc. will require that the Certificate of Registry be renewed/amended			
Validity of Crew Certificates of Competency			
Class 1 or 2 deck			
Class 1 and/or 2 Engine			
(Above 750 kW require Class 1 and 2 Engineers)			
Crew Training Certificates			
Basic Safety Awareness			
Sea Survival			
Fire Fighting			
First Aid			
Validity of Servicing certificates for Fire Appliances			
Life Rafts, etc			
Risk Assessments			
Copies on board/available in Risk Assessment folder			
Note: change of ownership or change of mode of fishing will require amended/new Risk Assessments			
Any new equipment fitted meets current rules/fit for purpose etc.			
Has any fire occurred on board necessitating the operation of the fixed fire-extinguishing systems or the portable fire extinguishers since the last survey?			
Safety Drills carried out and recorded (in Official Log Book as appropriate)			
Any requirements for Concentrated campaign or inspection have been confirmed – see any separate instructions			
Discuss use of lifelines/harnesses/belts			

INSPECTION ITEMS REQUIRED		
Lifejackets, with lights	1 per person	+ 10% or min 2 spare
Lifeboats, Rescue Boats – Survival Craft, Life Rafts		2
24 – 45 m Length		
45 – 75 m Length		
Over 75 m Length		
Refer to Rules and record of Equipment for exact requirements and number fitted on each vessel		
SARTS in Life Boats, Rescue Boats and Liferrafts for vessels in Northern Region		1 each
Lifebuoys		
24 – 45 m Length		4
45 – 75 m Length		6
Over 75 m Length		8
2 with light and smoke signal, 2 with 18 m buoyant line, 50% with light which may be combined with smoke		
Means of recovering a person from the water		1
May be in lieu of Rescue Boat on more manoeuvrable vessels with small crew numbers, Beam Trawlers		
Immersion Suits, Rescue Boat crew		1 each
Immersion Suits, if not in boats or rafts not requiring entry into the water		1 each
Immersion Suits, for vessels in Northern Region		1 each
Parachute Flares (SOLAS/MED Approved)		12
Line Throwing Apparatus (SOLAS/MED Approved)		4
Fire Detection System, including audible and visual alarms (new builds show location of fire)		1
Fixed Fire Fighting System for Machinery Space		1
Fixed Fire Fighting System for Galley if Structural Fire Protection not provided		1
Power Operated Fire Pump and hose/s – 24 m ³ /hr at pressure 2.5 kg/m ²		2
Emergency Fire Pump, outside machinery spaces		1
Fire Extinguisher suitable for accommodation		Min 3
Over 60 m Length		Min 5
Fire Extinguisher suitable for oil fires		3
24 – 60 m Length		
Over 60 m Length		
Capacities of Fire Extinguishers Water – 9 litre, Foam – 9 litre, CO ₂ – 3 kg, Dry Powder – 4.5 kg, Multipurpose – equivalent to 9 litre fluid extinguisher		
Fire Blanket		1
Firemen's Outfit, BA set, lifeline, torch, fireproof suit, axe, helmet, boots		
24 – 45 m Length		1
Over 45 m Length		2
Fire Control Plan		1
International Shore Connection		1
LPG Flame Failure devices and Low Pressure shut off valve		1
LPG Gas detection and alarm system		1
Bilge Pump		2
Bilge Alarm, Fish Room and Machinery Space		2
Possibly dry spaces, thruster rooms etc.		

Navigation Lights and Sound signals	Comply
VHF Radio Hand Held	2
24 – 45 m Length	
Over 45 m Length	3
Satellite EPIRB	1
SART	
24 – 45 m Length	1
Over 45 m Length	2
Compass and Deviation Card	
Nautical Charts and Publications	Up to date
Signalling Lamp	1
Stability Book (or Roll Test report)	On board
Safety Harnesses	2
Medical Stores and Kit to current MSN schedule	On board
Note: Existing vessels may still comply with the requirements of the Fishing Vessels (Safety Provisions) Rules 1975 as amended	

	SURVEY/INSPECTION	
	Y	N/A
Hull		
Stability, condition of vessel		
Inclining Test or Lightship Check carried out		
Hull condition, external, internal		
Mooring and anchoring arrangements		
Decks, Bulkheads, frames condition		
Deck		
Lifeboats, Rescue Boats condition of boats		
Equipment in boats to scale required and in date		
Embarkation arrangements and launching appliances for each survival craft including relevant tests and overboard lights		
Each inflatable liferaft, the hydrostatic release unit and float-free arrangements. Cradles free if appropriate		
Note: reduced strength HRU used for smaller liferafts		
Lifebuoys, self-igniting lights, self-activating smoke signals (not out of date) and buoyant lines, correctly marked		
Fire pump/s, Fire main, Hydrants, hoses and nozzles, Each pump, operated separately – jet/s of water produced at any part of the ship whilst required pressure is maintained in fire main		
Fixed fire fighting system for machinery spaces, as appropriate, and means of operation clearly marked		
Fixed fire fighting system for machinery: CO ₂ capacity has been checked. Distribution pipework proved clear		
Lifejackets (inc. whistles, retro-reflective material and lights)		
Parachute flares are not out of date		
Line throwing rockets and strikers are not out of date		
Operation of two-way VHF radiotelephone apparatus		
Operation of EPIRB – annual test certificate provided		
Operation of SART		

Emergency instructions available for each person on board. Copies of suitably up-dated muster list posted in conspicuous places and in a language understood by all persons on board and posters or signs in the vicinity of survival craft and their launching stations	
Portable and non-portable fire extinguishers – correct type, condition, adequately maintained, location	
Navigation lights, shapes and sound signalling equipment	
Safety of operation of fishing gear, winches, wires, blocks, nets, lines etc. (LOLER & PUWER Regs)	
Ease of access to safety equipment	
Watertight doors, condition	
Hatches and Skylights	
Scuttles, Flush Scuttles, Portholes and deadlights	
Ventilators	
Air Pipes	
Freeing Ports	
Pilot Ladder/Boarding arrangements	
Encourage owners and crew to wear working lifejackets at all times (Constant Wear Buoyancy Equipment)	
Gas Cylinders, storage, safety precautions	
Fire extinguishing and special arrangements in the machinery spaces. Operation of the remote means of control provided for: - opening and closing of the skylights, release of smoke, closure of the funnel and ventilation openings, closure of doors, stopping of ventilation fans, stopping of oil fuel and other pumps that discharge flammable liquids	
Wheelhouse/Cabin/Accommodation	
Windows, condition, clear view	
Doors, condition	
Record of LSA equipment examined	
Crew have received appropriate onboard training	
Instructions for on-board maintenance of LSA are on board. Inspect any immersion suits, thermal protective aids etc.	
Table or curve of residual deviations for magnetic compass provided	
As appropriate, the magnetic compass, gyro compass, radar installation, automatic radar plotting aid, echo-sounding device, speed and distance indicator, rudder angle indicator, propeller rate of revolution indicator, variable pitch propeller pitch and operational mode indicator. Automatic identification system, voyage data recorder, ECDIS, GPS.	
Operational and, where appropriate, maintenance manuals for all navigational equipment provided	
Charts and nautical publications necessary for intended voyage available and up-dated (within last 9 months)	
Examining and testing fire detection and alarm system, if fitted	
LPG Alarms and Flame Failure devices if fitted, test and condition	