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**REPORT INTO INCIDENT ON
MFV JAMES COLLINS
NORTH EAST OF
ERRIS HEAD, CO MAYO
ON
20th APRIL 2012**

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**REPORT No. MCIB/216
(No.1 of 2013)**

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1. SUMMARY

- 1.1 On 20th April 2012 whilst returning from a fishing trip and in a position about 5 miles North East of Erris Head the leg of the skipper of a fishing vessel got caught in the propeller shaft of the vessel. The injured man was airlifted to hospital and is now recovering use of the leg.

2. FACTUAL INFORMATION

2.1. The vessel (Photo 1, Appendix 7.1)

Name:	James Collins
Port of Reg:	Westport
Reg. No:	WT 202
LOA:	11.63m
GRT:	14.65T
Engine:	50Kw
Type:	Multipurpose
Built:	2002/2004 at Ballina
Construction:	Carvel steel
Skipper :	Jonathan O'Donnell
Crew:	Garry O'Malley
Crew:	Darren O' Doherty

2.2. Vessel History

The vessel was bought in kit form from Steel-Kit Ltd, Aberystwyth, UK in 2003/4 and constructed in Ballina/Killala, Co. Mayo under the direction of Jonathan O'Donnell and his father Patrick.

On completion in 2004 the vessel was surveyed for compliance under the code of practice for fishing vessels under 15meters LOA and granted a declaration of compliance. The vessel has been surveyed twice since and granted a declaration. The latest declaration was issued in 2011 following a refit and modifications in Mooney Boatyard, Killybegs in 2010.

2.3. Crew Qualifications

All the crew had attended the 3 day BIM Basic Safety Training Course at Greencastle.

Jonathan O'Donnell had a GMDSS Restricted Operators Certificate.

2.4. Voyage Particulars

Inshore fishing voyage from and to Porturlin, Ballina, Co Mayo.

Vessel departed on morning of 19th April on a crab fishing voyage.

The vessel was returning to Porturlin on the morning of the 20th April.

2.5. Marine Incident Information

Type:	Occupational Accident
Date:	20th April
Time:	07:50 UTC
Position:	Lat 54° 21.13'N - Long 009° 54.90'W
Weather:	Wind N-NW 3 to 5 Clear with showers Visibility mostly good Sea state moderate
Ship Operation:	Fishing
Place on board:	In shaft space below fish hold
Human factors:	Not following safe practice/procedure
Vessel factors:	Ease of removal of guard to moving machinery
Consequences:	Severe injury to left leg.

2.6. Shore Authority Involvement and emergency response

The following Situation report was received from MRSC Malin Head:

07:59	Skipper of MFV James Collins reports one of his crewmen has his leg entangled in the propeller shaft. He requested immediate medical assistance and medivac to hospital. A link call was made to medico Cork.
07:58-08:16-08:41:	Tasked Helicopter R118 - proceeding - on scene.
07:59-08:20-08:24:	Tasked Ballyglass All Weather Lifeboat (ALB) - proceeding - on scene
08:19-08:20-08:25:	Tasked Ballyglass Coast Guard Unit (CGU) - proceeding - on scene
08:25	Ballyglass ALB attended casualty, administered first aid and freed leg from shaft. The Casualty was made ready for transfer to the Lifeboat. The winch man from R118 was lowered to the casualty vessel. The casualty was put in a stretcher and transferred to the Lifeboat and then winched to R118 and airlifted to Sligo general hospital.
09:35	Ballyglass CGU returned to base
09:58	R118 landed at Sligo hospital and handed the casualty over to hospital staff.
10:13	Ballyglass ALB was back on moorings and closed down.
10:20	R118 returned to base and closed down.

3. NARRATIVE

- 3.1. At about 07:40 on 20th April the MFV James Collins was proceeding home to Porturlin, engine revs about 1,700 rpm, $\frac{3}{4}$ of full speed. The vessel was owned and skippered by 26 years old Jonathan O'Donnell.
- 3.2. The bilge alarm sounded and after pumping out the bilge it sounded again shortly afterwards. The skipper went into the fish hold and lifted the covering boards over the bilge containing the pump and the propeller shaft. The engine was not stopped or put into neutral and the shaft was turning. The skipper put his foot into the bilge beside the turning shaft in order to reach down to clear debris from the bilge pump.
- 3.3. His waterproof leggings were caught by the coupling on the shaft (see Appendix 7.1 photo 2) and his left leg was wound around the shaft about two times. He shouted to the crew and the engine was quickly stopped.
- 3.4. At 07:59 a mayday call was sent out and the crew proceeded to extract the skipper's leg from the shaft.
- 3.5. At 08:24 the lifeboat crew from Ballyglass arrived and rendered medical assistance.
- 3.6. At 08:25 the helicopter arrived and the casualty was transferred to the helicopter and airlifted to Sligo General Hospital, Morphine was administered on the way.
- 3.7. The tibia, fibula and ankle bones of the left leg were broken with considerable soft tissue damage. The leg did not require amputation and it is currently healing well with prospects of full recovery of function and movement.

4. ANALYSIS

- 4.1. The propeller shaft was located beneath the sole boards of the hold and thus screened from any contact from persons working in the hold. These sole boards were not secured and were easily removed thus exposing the revolving shaft. (See Appendix 7.1 photo 2).
- 4.2. Two items below the sole boards in the vicinity of the shaft, the bilge pump suction and the shaft seal both require access for cleaning and maintenance purposes.
- 4.3. The general safe working practice with revolving shafts, belt or gear drives is to stop the machinery before removing any protective covers or screens. This basic safe practice was not adhered to in this case, and the danger was further increased by the moving platform of a vessel at sea and the type of clothing being worn by the casualty (baggy loose fitting waterproof trousers).
- 4.4. Safety should not be only reliant on safe working practices being adhered to and the statutory requirement for protection from moving parts is given S.I. No. 299 of 2007 Safety, Health and Welfare at Work (General Application) Regulations 2007, Section 33. (See Appendix 7.3).

The relevant points of section 33 in respect to protection from moving machinery are:

- 4.4.1. *33(f) (iii) that the protection devices are not easily removed or rendered inoperative.*
- 4.4.2. *33(f) (vii) that protection should restrict access for maintenance work only to the area where the work is to be carried out, if possible, without removal of the guard or protection device.*
- 4.5. The Code of Practice for Fishing Vessels less than 15 LOA states: Chapter 4 (4.1.1.1) *Effective guards must protect exposed moving parts such as shafts, drive pulleys and belts.* (See Appendix 7.4).
- 4.6. Where it is required for persons to reach down with their arms to carry out cleaning or maintenance then the protection should be close to the shaft to enable this to be done safely.
- 4.7. The reason for lifting the covers was to clear fishing debris from the bilge pump. This apparently happened from time to time. The covering boards were loose fitting plywood panels with the possibility of dirt and small debris falling down into the bilge.
- 4.8. The vessel had been surveyed 3 times for the Code of Practice with two different

surveyors carrying out the surveys. During these surveys the inadequacies of the shaft protection and the fact that debris could pass easily from the hold to the bilge had not been picked up and rectified.

- 4.9. Examination of The Code of Practice for Fishing Vessels less than 15 LOA shows that the reference to protection of shafts is included in Chapter 4 (4.1.1.1) along with other general requirements. (See Appendix 7.4). When signing off on the declaration of compliance this item is not a separate item, it is included in the General Requirements of section 4.
- 4.10. The wording in the code does not reflect the requirements of S.I. No. 299 of 2007 in particular the necessity of the guards being secured in place and not easily removed, and also the provision to safe access to parts for cleaning and maintenance without removing the guard.
- 4.11. Examination of The Code of Practice for Fishing Vessels less than 15 LOA shows that there is no reference to the prevention of debris from fish holds falling into bilges.

5. CONCLUSIONS

5.1. The accident was due to a combination of factors:

5.1.1. Lack of attention to basic safety precautions. The skipper was too intent on solving the bilge pump problem and neglected basic safety procedures.

5.1.2. The shaft protection did not comply adequately with the regulations enabling it to be easily exposed and present a hazard.

5.1.3. The ease with which debris could enter the bilge and block the pump suction.

5.2. The casualty was fortunate not to lose his leg. This was partly due to the relatively slow revolutions of the shaft, the quick actions of the other crew members and the prompt attendance of the Lifeboat and Helicopter.

6. SAFETY RECOMMENDATIONS

- 6.1. That the Code of Practice for Fishing Vessels under 15 LOA section 4.1.1 General requirements and recommendations should be amended to include a paragraph highlighting the danger of accessing the bilge area when shafts are rotating.
- 6.2. That the Code of Practice for Fishing Vessels under 15 LOA section 4.3.3 Bilge Pumping could be amended to include assessment of the sole boards in fish holds to prevent debris passing through to the bilges. Routine cleaning of bilges may provide adequate protection.

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Appendix 7.1 Photographs.



Photo 1: MFV James Collins



Photo 2: Sole boards in fish hold lifted. Casualty's leg caught in coupling of the shaft.

Appendix 7.2 Met Éireann Weather Report.



MET ÉIREANN
The Irish Meteorological Service

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Ms Helen Conway
Marine Casualty Investigation Board
Leeson Lane
Dublin 2

20/4/2012

Our Ref. WS301812_14576
Your Ref. MCIB/13/34

**Estimate of weather conditions in the sea area North-East of Erris Head,
Co Mayo, on the 20th April 2012, between 6 and 12 hours.**

General Situation

A complex area of Low Pressure mainly to the east and north-east of Ireland, gave a cool, unstable mainly north-westerly airflow over the area.

Details:

Winds: from a north or north-west direction, Force 3 to 5

Weather: some clear or sunny spells between showers, some of the showers were heavy and some with hail and thunder.

Visibility: mostly very good, but moderate for short periods in showers

State of Sea: Moderate

Temperatures: air, 8°C to 9°C during the period.

Evelyn Murphy B.Sc. M.Sc. Meteorologist
Research & Applications Division
Met Éireann



Appendix 7.3 Extract from S.I. No. 299 of 2007 section 33.

**Safety, Health and Welfare at Work (General Application) Regulations 2007.
Section 33 Guards and protection devices.**

An employer shall ensure that:

- (a) work equipment presenting risk due to falling objects or projections is fitted with appropriate safety devices corresponding to the risk,
- (b) work equipment presenting hazards due to emissions of gas, vapour, liquid or dust is fitted with appropriate containment devices, extraction devices, or both, near the sources of the hazard,
- (c) work equipment and parts of such equipment are, where necessary for the safety and health of employees, stabilised by clamping or some other means,
- (d) where there is a risk of rupture or disintegration of parts of work equipment, likely to pose significant danger to the safety and health of employees, appropriate protection measures are taken,
- (e) *where there is a risk of physical contact with moving parts of work equipment which could lead to accidents, those parts are provided with guards or protection devices to prevent access to danger zones or to halt movement of dangerous parts before the danger zones are reached,*
- (f) *guards and protection devices where required under subparagraph (e)*
 - (i) *are of robust construction,*
 - (ii) *do not give rise to any additional hazard,*
 - (iii) *are not easily removed or rendered inoperative,*
 - (iv) are situated at sufficient distance from the danger zone,
 - (v) do not restrict more than necessary the view of the operating cycle of the equipment,
 - (vi) allow operations necessary to fit or replace parts, and
 - (vii) *restrict access for maintenance work only to the area where the work is to be carried out, if possible, without removal of the guard or protection device,*
- (g) warning devices on work equipment are unambiguous and easily perceived and understood,
- (h) any part of a stock-bar which projects beyond the headstock of a lathe is securely fenced unless it is in such a position as to be safe to employees as it would be if securely fenced.

Appendix 7.4 Extract from The Code of Practice for Fishing Vessels less than 15 LOA.

4.1.1 General Requirements and Recommendations

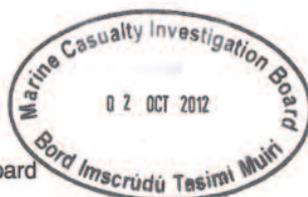
4.1.1.1 Access for persons to machinery spaces must be arranged clear of any moving or heated surfaces and the latter must be sufficiently insulated. ***Effective guards must protect exposed moving parts such as shafts, drive pulleys and belts.*** Access ladders must be securely fixed to the vessels permanent structure. Ancillary equipment and piping must be in accordance with the appropriate part of the code.

8. CORRESPONDENCE RECEIVED

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Note: The address and contact details of the individual respondent have been obscured for privacy reasons.

Ms. Helen Conway
Secretary
Marine Casualty Investigation Board
29 Sept 2012.



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Incident aboard MFV James Collins

Dear Ms Conway,

Thank you for the draft report on the above incident and for the opportunity to comment on its content. We are very pleased that the Skipper is recovering well.

Members of a Panel of Surveyors are authorised to survey fishing vessels of less than 15m LOA in relation to the Code of Practice and to issue a Declaration of Compliance on behalf of the Department of Transport. Members of this Panel have no Authority in relation to other Statutory requirements. The latest Declaration of Compliance for this vessel was issued in 2011 following repairs to the vessel at Killybegs. The vessel was also surveyed at that time by the Marine Survey Office (MSO), before and after the repair work.

Your Analysis

There must be ready access to some protected rotating equipment, such as pumps and drive belts, so that repairs can be carried out quickly while, for instance, drifting onto a lee shore. We disagree with your statement 4.6, as it refers to the Code of Practice, and would assume the rotating shaft would have been stopped before moving one of the central boards.

Your point 4.8 states the reason for lifting the covers was to clear fishing debris from the bilge pump; your point 3.2 states that the bilge alarm sounded and after pumping out the hold the alarm sounded again. Surely this indicates that the problem aboard was water ingress rather than a choked pump.

The electric bilge pump is not visible in your photo; it is probably located in the forward part of the fish hold bilge (ref our files); the shaft seal is located close to the aft end of the fish hold as shown in your photo. These two items are located beneath two different central boards. The coupling is located in the aft part of the fish hold in way of the shaft seal and probably out of reach of the bilge pump located forward.

We also disagree with your statement 4.9. The floor of a fishing vessel hold must allow water to drain to the bilge; this water will carry some debris to the bilge. The arrangement of close-fitting floor boards was found to be satisfactory in relation to the Code of Practice requirements by two panel Surveyors and separately in relation to other Statutory Requirements by the MSO.

Your Conclusions

We disagree with parts of your conclusion. The shaft protection was effective and the gaps in boards which allowed water to enter the bilge were generally tight fitting. We suggest (ref 4.8 & 3.2) that there was a problem with water ingress to the vessel rather than a blocked bilge pump.

There was no failure at survey stage in relation to the Code of Practice; the vessel was found compliant with the provisions of the Code of Practice and declared so; the vessel was also surveyed by the MSO and found compliant with other Statutory Requirements.

Your Recommendations

The relevant Code of Practice was last reviewed in 2005 and therefore could not reflect the requirements of SI 299 of 2007. We understand there is a review of the Code of Practice underway and we hope that, following appropriate consultation, the Code of Practice can incorporate the requirements of SI 299 in an appropriate way.

We disagree with part of your recommendation 6.1 where you suggest that safe access could be provided to the shaft seal on a rotating shaft or to a bilge suction if located beneath a rotating shaft. The only safe access to these places is to stop the rotating shaft. Protected access could be provided close to a rotating shaft in particular situations. .

Your recommendation 6.2 needs careful consultation; routine cleaning of bilges may provide the equal protection; we have remaining doubt that debris in the bilge was a factor in this accident.

Our Summary and Recommendations

There are lessons to be learned from this accident and protected access beneath the floor boards, close to rotating shafts, might be achieved with smaller access panels and local protective screening in way of these access panels. This would not be appropriate in dealing with a leaking shaft seal in which the propeller shaft continued to rotate. Careful consideration and consultation is required in this matter.

The enforcement of Statutory Requirements other than those contained in the Code of Practice, such as SI 299 of 2007, is not a matter for Panel Surveyors and it is inappropriate to make a statement like your 5.2. We are confident that Panel Surveyors are willing to co-operate with other Government bodies to ensure compliance with other requirements if they are incorporated in the Code of Practice.

We ask that you delete the first sentence of 5.2 and modify remaining remarks.

The review of the Code of Practice is to be welcomed in light of this and recent accident trends within the fleet. There is a need for dialogue between Government Bodies involved in Fishing Vessel Safety to ensure the best outcome and to avoid duplication of survey effort and overloading of Fishermen with red tape. This is part of the Croke Park Agreement. Fishermen are already subject to Code of Practice Survey and related Audits by the MSO. We suggest that you add a recommendation that "the Marine Survey Office and the Health & Safety Authority co-operate to include Statutory Health and Safety requirements in the Review of the current Code of Practice"

We confirm our commitment to improving safety in the fishing industry. We are keen to work with the MSO and the HSA to achieve this goal. Should your Investigator wish to discuss this accident with us or have access to our files and photographs please feel free to let us know.

Is mise le meas

Noel O'Regan,
Promara Ltd.



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MCIB RESPONSE

The MCIB notes the contents of this correspondence and have made amendments where considered necessary. It should be noted that the DTTAS and H&SA are currently in dialogue.

Bell Margaret

From: MOORE Stephen
Sent: 18 September 2012 10:09
To: CONWAY Helen
Subject: Draft Report of the Investigation into incident: Crewman injured on MFV James Collins North East of Erris Head, Co. Mayo on 20th April 2012

Hi Helen,
Regarding the above investigation, I wish to confirm that the Irish Coast Guard has no comments or observations to make.

Kind regards,

Stephen Moore
Irish Coast Guard Administration
Department of Transport, Tourism & Sport,
Leeson Lane
Dublin 2

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♻️ Please consider the environment before printing this email.

MCIB RESPONSE

The MCIB notes the contents of this correspondence.

CORRESPONDENCE

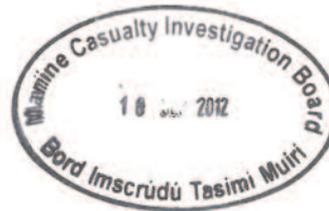
DOWD Assumpta

Sent: 18 September 2012 13:02
To: Marine Casualty Investigation Board
Subject: Draft Report MCIB/12/216

Ms Helen Conway,
Sorry for the delay in getting back to you, I have no further comments or observations to make to the draft report.

Regards

Jonathan O'Donnell



MCIB RESPONSE

The MCIB notes the contents of this correspondence.

