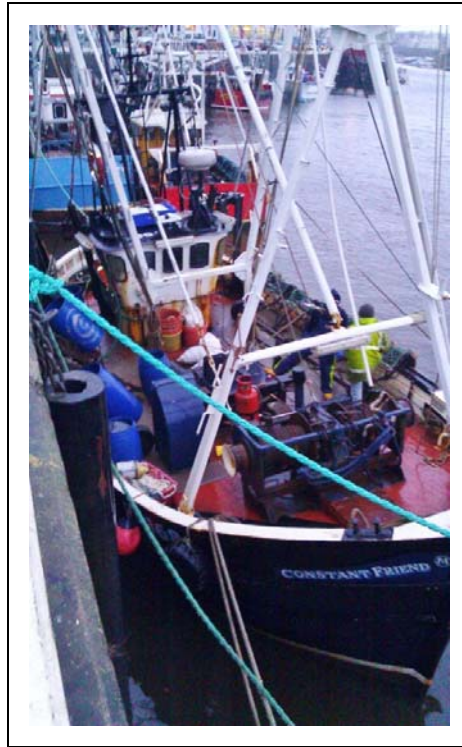


**Serious injury on board Manx-registered fishing vessel Constant Friend (PL 168)**



**Fishing vessel particulars**

Date registered with Isle of Man: **23 April 2013**  
Registered length: **11.19m**  
Length overall: **12.13m**  
Official number: **M201**  
Breadth: **5.06m**  
Depth: **2.04m**  
LSA maximum capacity: **3 persons**  
Propulsion power: **127kW (stated)**  
Gross and net tonnage: **18.37**  
Isle of Man Small Fishing Vessel certificate: **Issued 24 April 2013, expires 8 April 2018**

The vessel was last inspected by a surveyor to the Isle of Man Ship Registry on 9 April 2013. Following this (initial) inspection, the vessel was certified as compliant with the requirements of the Isle of Man Code of Practice for the Safety of Small Fishing Vessels, as applicable to vessels between 10-12m registered length.

**Crew members on board**

- Skipper, with 30 years of fishing experience, around ten years having been spent as Skipper on board boats of various sizes.
- Deckhand 1 with experience of working almost continually on fishing boats from 2004.
- Deckhand 2 (the Skipper's son) with experience of working almost continually on fishing boats from around 2008.

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### **Summary**

On the morning of 17 December 2013, the subject vessel was engaged in dredging for scallops in Ramsey Bay, off the Isle of Man. On board were the Skipper and two deckhands.

At 0735, the skipper and Deckhand 1 were engaged in emptying the last dredge from the starboard side tow onto the deck, the frame and belly attached to the tow bar being raised to permit this using a non-wire rope wrapped around the rotating starboard winch drum end and held by Deckhand 2. Without warning, the belly the Skipper and Deckhand 1 were emptying started to rise unexpectedly. The Skipper and Deckhand 1 immediately turned to where Deckhand 2 had been standing to see him entangled by the rope he had been handling, his body wrapped around the drum end and turning with it as it rotated. The Skipper immediately went to try to free Deckhand 2 from the drum end while Deckhand 1 quickly went around to the port side of the winch machinery and stopped the drum end from turning using the control lever. Deckhand 1 then cut the hemp rope from above where this was tangled around Deckhand 2's left arm. He and the Skipper then manoeuvred the injured man to a semi-reclining position on the deck.

While the Skipper went to the wheelhouse to make a distress call, Deckhand 1 assessed the casualty's injuries, noting them to be serious and made efforts to stem bleeding from the left arm. The casualty remained conscious throughout.

The Skipper's distress call was answered first by Belfast coastguard and shortly thereafter was transferred to Liverpool coastguard. The Ramsey lifeboat was launched, reaching the vessel by 0813. A search and rescue helicopter reached the vessel twenty minutes later. After consultation on board between helicopter crew members, lifeboat crew members and shore-based services, the casualty was winched on board the helicopter and flown to hospital in the Liverpool area. The lifeboat and fishing vessel then made for Ramsey harbour.

### Vessel's working arrangement

When fishing for scallops, the vessel's dredging gear consists of two tow bars, one on each side of the vessel with five steel frames/bellies attached to each bar.



Port tow bar attached to five frames/bellies



Port forward belly raised for emptying onto deck

Tow bars are raised and lowered using the wires of the forward winch gear, one side at a time. Following a tow across the dredging grounds, the tow bar is raised to deck level and bellies lifted one by one using a hook attached to a rope which is manually wrapped, using one or two turns, around the rotating port or starboard winch drum end, the loose end of the rope being held by a crew member normally standing on the working deck forward of the drum end. A full belly weighs approximately 20-30kg. Tension on the rope provided by the crew member's hands permits the drum to fully or partially grip the rope thus hauling the belly up. Once elevated, the crew member handling the rope relaxes his grip slightly allowing the drum end to rotate within the rope turn(s) while maintaining a degree of tension sufficient to support, but not further raise, the belly. Bellies are then shaken and emptied of their contents onto the vessel's deck by one or two crew members. The catch is shovelled into the fish hold, either at intervals or when dredging is completed.



Forward main deck

Starboard steel wire winch drum

Winch drum end

Winch operation lever position

Entrance to crew accommodation



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Position where Deckhand 2 was standing when accident took place



Crew member's typical working position (on port side), handily adjacent to winch operation handle.  
Accident took place on starboard side.

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Crew member simulating working with starboard drum end, unable to reach winch operating handle



Port winch drum end

A 'riding turn', resulting in the drum end pulling both ends of the rope onto the winch at the same time.

Unless the tangle can be flicked out quickly, further rope handling is impossible without stopping the winch and manually untangling the rope.

## **Narrative**

*The following narrative is based upon interviews and a written statement of the events given by the Skipper and Deckhand 1. Further information was provided by the Ramsey lifeboat coxswain, Douglas Harbour division members, Seafish UK and Deckhand 2's own doctor.*

*All times are GMT (UTC) and are approximate.*

At 0345 on the morning of 17 December 2013, the subject vessel's Skipper and Deckhand 2 (the Skipper's son) departed their home in Peel and boarded the vessel in Douglas. Deckhand 1 had slept on board, having joined the vessel the previous evening. Crew members were all experienced fishermen.

All three crew members prepared the vessel for sea, departing the berth around 0410 and made directly for Ramsey Bay. Initially, Deckhand 2 was helmsman while the Skipper took a short rest below deck. After around an hour, the Skipper relieved Deckhand 2 at the wheel while both deckhands took around an hour's rest. On reaching the fishing grounds around 0600, the deckhands rose and all three crew began dredging for scallops. The weather was dry, wind south-westerly at Beaufort 5-6 with a light to moderate swell. All crew members were wearing overalls, rubber safety boots and robust rubber gloves into which their sleeves were tucked in order to avoid snagging while handling ropes, winches and other deck machinery. None was wearing a lifejacket.

At around 0735, with the vessel's engine idling, the Skipper and Deckhand 1 were engaged in emptying the last belly from the starboard side tow onto the deck, the belly's lower end being raised up using a rope turned around the rotating starboard winch drum end and held by Deckhand 2. Without warning, the belly the Skipper and Deckhand 1 were emptying started to rise unexpectedly. The Skipper and Deckhand 1 immediately turned to where Deckhand 2 had been standing to see him entangled by the rope he had been handling, his body physically wrapped around the drum end and turning with it as it rotated, his head knocking against the deck with each turn of the drum end. The Skipper immediately went to try to extract Deckhand 2 from the entanglement while Deckhand 1 quickly went around to the port side of the winch machinery and stopped the drum end from turning using the control lever. Deckhand 1 then cut the hemp rope above where this was tangled around Deckhand 2's left arm. He and the Skipper then manoeuvred the injured man to a semi-reclining position on the deck.

While the Skipper went to the wheelhouse to make a distress call using the vessel's VHF radio, Deckhand 1 assessed the casualty's injuries. Noticing through a rent in the sleeve that the left arm was nearly severed above the elbow and that there was heavy bleeding, he took a piece of thin polypropylene rope and used it as a tourniquet, twisting it with his fingers until the flow of blood slowed. He noticed that the casualty's right arm also appeared to be broken at the wrist but saw no bleeding from the right arm nor from any other part of the body. The casualty remained conscious throughout.

The Skipper's distress call was answered first by Belfast Coast Guard and shortly thereafter was transferred to Liverpool Coast Guard. In addition, Douglas Marine Operations Centre (Harbour's Division) coordinated and assisted. While awaiting the arrival of rescue services,

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the Skipper and Deckhand 1 made what use was possible of the contents of the vessel's category C medical stores. They gave the injured man two Paracetamol tablets for the pain and made use of the bandages. Both took turns at holding the tourniquet tightly in place and maintaining radio contact with rescue services. Efforts were made to keep the casualty warm with any cloth and towels available. They continued talking to the casualty throughout.

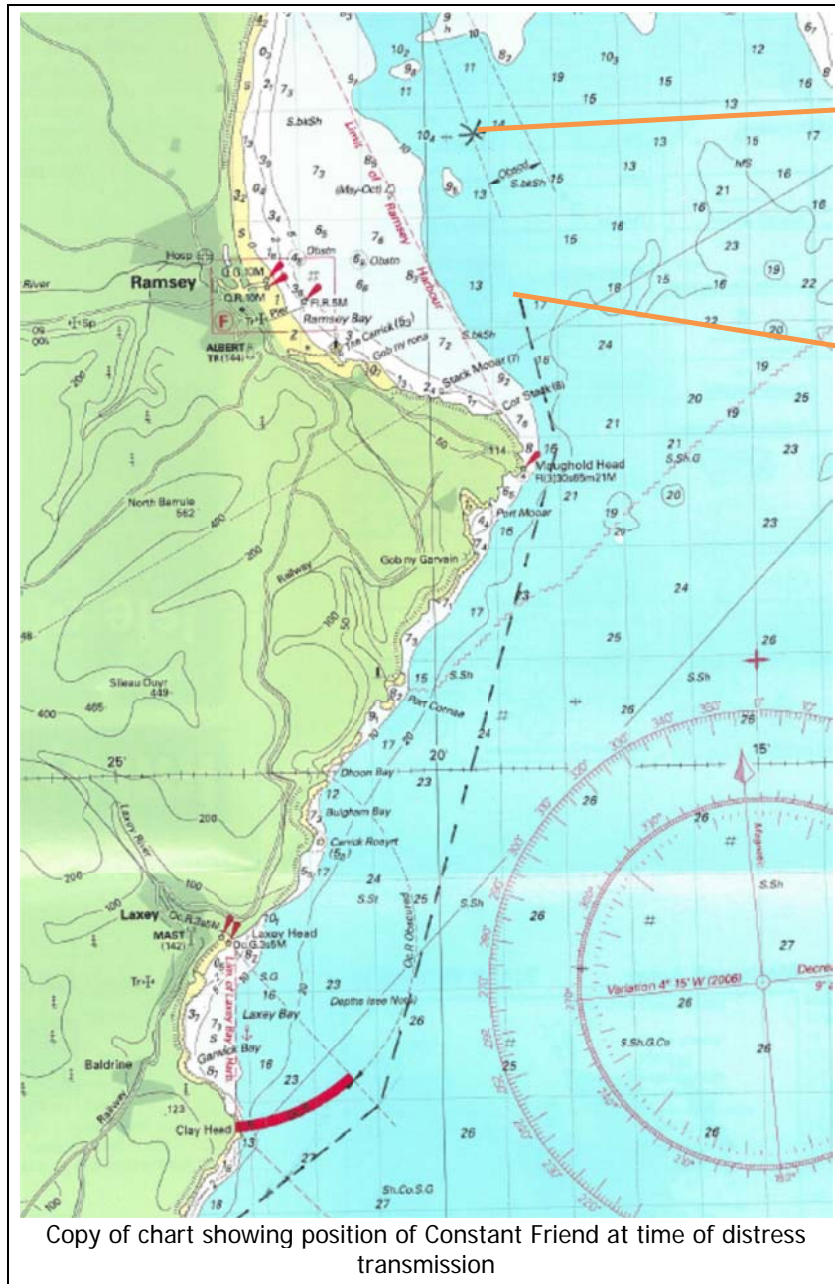
Further to communication with shore-based emergency services, the Ramsey lifeboat was launched, reaching the vessel by 0813. Lifeboat crew members boarded the vessel and took over treatment of the injured man, the Skipper and Deckhand 1 giving assistance as necessary, at one point providing two pieces of a broken broom handle for use as a makeshift splint for the nearly severed left arm. Oxygen was administered when the casualty became drowsy. A search and rescue helicopter (RAF R122) reached the vessel at 0827 and a member of its crew was winched down to the vessel. After consultation on board between helicopter crew members, lifeboat crew members and shore-based services, the decision was taken to move the casualty to a hospital in the UK where treatment could most speedily and best be given.

The casualty was loaded with some difficulty onto a stretcher which was then winched on board the helicopter. At 0922, the helicopter finally departed, the injured man being taken to Aintree Hospital where he immediately received medical attention.

The lifeboat and fishing vessel then made for Ramsey harbour. All SAR units were stood down at 1112.



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## Analysis

The vessel was certified by the Isle of Man Ship Registry in accordance with the applicable Code of Practice for the Safety of Small Fishing Vessels (less than 15m LOA) following inspection by an Isle of Man Ship Registry surveyor on 9 April 2013. The inspection resulted in deficiencies which were closed out on 10 April 2013 and the vessel registered with this administration on 23 April 2013. As seen on board on 18 December 2013, the condition of the vessel's equipment and the standard of maintenance were not considered to be contributory factors to the accident other than as noted below.

The Skipper had completed all relevant (and recommended) Seafish training courses, including the following:

- Basic Sea Survival
- Basic Fire Fighting and Prevention
- Basic First Aid
- Safety Awareness (including accident prevention and risk assessment)
- Intermediate Fishing Vessel Stability Awareness
- Radio operation resulting in the issue of an MCA short range radio operator certificate

Deckhand 1 had not completed relevant (recommended but not required) Seafish training courses or the equivalent. It was noted that Deckhand 1 had previous experience of working with Peel lifeboat crew during which he had received extensive, although uncertified, training in various aspects of safe working practices including first aid.

Deckhand 2 – Seafish training courses completed (in 2011):

- Sea Survival
- First Aid

Deckhand 2 had not completed recommended training course in Fire-fighting nor in Health and Safety.

The vessel's forward winches are controlled from a single non-spring-loaded handle provided adjacent to the port winch drum end. This handle can be left in the forward or aft position and needs no hand pressure to maintain powered winch rotation. While a crew member engaged in rope handling duties on the port side is easily able to reach the operation handle, and hence able to maintain one hand on the handle and another on the rope, this handle cannot be easily reached from the starboard side. A crew member handling the rope on the starboard side needs to move frequently between handle and rope-holding position. In the event of a problem, such as the occurrence of a riding turn in way of the starboard drum end (see example photograph), the crew member handling the rope around the drum end will not be able to stop the winch machinery from turning without making a long step to port. The temptation will therefore not be to immediately release the rope, reach for the handle and stop the winch but to attempt to manually rectify the problem, particularly in view of the potential danger were the raised belly to drop on the heads of the crew member(s) engaged in emptying it.

There is no evidence to suggest that fatigue was a significant contributory cause of the accident.

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There was no evidence to suggest that the concentration or co-ordination of Deckhand 2 was unduly influenced by any medication at the time of the accident.

No record of any written risk assessment was available on board nor was one available at the owner's offices. The vessel's skipper confirmed that verbal assessment of risk takes place at frequent intervals. No Seafish brochure concerning safety awareness and risk assessment was provided on board. No records of safety drills were available on board. It may be noted that the Code recommends, but does not require, the provision of written assessments of risk.

Records of course completion certificates for the basic four safety courses recommended by this administration through the Code were not available in the owner's offices for any crew member nor were records available on board for crew members other than the Skipper. It is considered good practice for fishing vessel owners to maintain records of crew members' training, especially training recommended by vessels' administrations and specified or recommended in applicable codes of practice.

The actions of both uninjured crew members immediately following the accident were considered exemplary. Both did their utmost to aid the injured man.

Lifejackets and safety harnesses were on board but not worn during fishing operations. PFDs are not provided. Appropriate working clothing is provided and appeared to be in good condition.

The reported positioning and actions of all crew members immediately prior to the accident are entirely common fishing vessel practice. The dangers inherent to such common working practices – the proximity of the winch operator to the drum end and his need to manually handle the rope - were clearly contributory factors to the accident. There is a case therefore for suggesting changes to working practices, although whether such suggested changes are practically applicable to the industry is unknown.

The provision of self-tailing winches, which require a much reduced level of manual operation and which permit the winch operator to maintain a greater degree of physical separation from rotating machinery, may, depending upon the arrangement, mitigate risks associated with winch operation considerably. It is recognised that any such changes will require significant investment in vessels' machinery as well as additional training of crew members.

The provision of additional crew members on board fishing vessels, such that manual control of any lifting operation can be maintained at all times by a *single* stationary crew member not involved in any other aspect of the operations underway, will enhance safety. It bears reiterating that the Constant Friend is normally crewed, during scallop fishing, with only two crew members. On this occasion, had no second deckhand been on board to provide continuing care, including the maintenance of tension to the improvised tourniquet, and noting the need for the Skipper to make radio communications to SAR personnel, it appears much more likely that the injured crew member would have lost his life.

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### **Conclusion**

Further to the foregoing analysis of evidence obtained, it is concluded that Deckhand 2 became entangled in the port winch drum end due to a moment of inattention while handling a rope. There is no evidence to suggest additional contributory factors to this serious accident.

## Recommendations

1. The vessel's forward winches are controlled from a single non-spring-loaded handle provided adjacent to the port winch drum end. This handle can be left in the forward or aft position and needs no hand pressure to maintain powered winch rotation. It is recommended that, as a minimum, the winch control lever be repositioned such that it is operable from adjacent to both the port and starboard winch drum ends. To permit this, it may be necessary for dual controls to be provided. Alternatively, the provision of roller leads, or another means to run a rope from either side to a common operating position adjacent to the winch control lever, may be an option. Another possibility is the provision of an extension bar to the operating lever suitably supported and arranged to permit operation from two different locations.
2. Operators of fishing vessels of this size should consider working arrangements carefully with a view to making risk mitigation measures as necessary, through education, training and the modification of rotating machinery where considered practicable. The provision of an automatic 'kill switch', common on open motor boats and arranged such that in the event of the boat's helmsman moving away from the controls, the engine is switched off, may enhance safety during winching operations. It is recognised that the multi-faceted nature of many fishing-related operations may make the provision of such a kill switch impractical. Potentially, the provision of a foot-operated switch or spring-loaded foot pedal (commonly provided on lathes and other workshop machinery) arranged to shut down the winch motor in the event the operator moves from his position, may be a more practical, and safer, arrangement and would permit the winch operator to maintain both hands free for handling a rope.
3. While the Skipper and Deckhand 2 had sailed together on fishing vessels on numerous occasions in the recent past, Deckhand 1 had not sailed with the pair in the recent past, hence a combined drill, or as a minimum a familiarisation session with the Skipper related to fire, evacuation, and manoverboard would have been recommended.
4. The Isle of Man Code of Practice for the Safety of Small Fishing Vessels, section 4, requires that a vessel's owner must 'complete or arrange completion of an assessment of the health and safety risks arising in the normal course of work activities or duties on the vessel'. Section 9 of the Code further confirms that employers are required to make a 'suitable and sufficient assessment of the risks to the health and safety of workers arising in the normal course of their activities or duties'. The Isle of Man Ship Registry strongly recommends, but does not require, that such risk assessments be written. It is recommended that the boat's owner complete a documented risk assessment on board with respect to all aspects of fishing operations and discusses the results with all crew routinely.
5. Good practice should be actively promoted on board any vessel. In support of this, records of safety awareness training and risk assessment should be present on board and in owner's offices. Throughout this incident, however, it was apparent that the two uninjured crew members reacted quickly and appropriately to the accident in caring for Deckhand 2 until this was taken over by SAR services, hence it is arguable that the completion of formal documented safety drills would have been ineffective in this instance in either



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mitigating the risks to fishing operations or in improving the uninjured crew members' response to this specific accident.

6. The facts of this serious casualty should be imparted to the local fishing industry as a salutary lesson in exercising constant vigilance when operating potentially dangerous machinery. In this instance, a common practice resulted in the serious injury of a crew member due to what appears to have been a moment of inattention while handling a rope and winch.