



Leeson Lane, Dublin 2.  
Telephone: 01-678 3485/86.  
Fax: 01-678 3493.  
email: [info@mcib.ie](mailto:info@mcib.ie)  
[www.mcib.ie](http://www.mcib.ie)

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**REPORT OF INVESTIGATION  
INTO LOSS OF THE  
FV "AMY JANE"  
13 MILES NORTH OF  
MALIN HEAD, CO. DONEGAL  
ON  
7th OCTOBER 2011**

**REPORT No. MCIB/207  
(No.11 of 2012)**

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## 1. SUMMARY

(Note all times are UTC)

- 1.1 The Irish fishing vessel “*Amy Jane*” experienced flooding of the pot hold during the morning of 7th October 2011. The vessel foundered and sank some time later. The 6 man crew abandoned the vessel to a liferaft and were rescued by helicopter without loss of life or injury.

## 2. FACTUAL INFORMATION

### 2.1 Vessels Particulars

Name of Vessel:	FV “ <i>Amy Jane</i> ”
Internal Number:	IRL000I11506
Port of Registry:	Sligo
Gross Tonnes:	126.00
Length Overall:	18.28 metres
Registered Length:	16.55 metres
Beam:	6.10 metres
Depth:	3.65 metres
Year of Build:	1990
Builder:	Sheepswerft Visser B. Holland
Main Engine:	Cummins KTM19M
Power Output:	317 Kw /224 Kw

### 2.2 Vessel Construction

The FV “*Amy Jane*” was of carvel welded steel construction. She was one of a series of Vivier “crabber” vessels built by the Sheepswerft Visser B. Holland yard in the 1990’s.

### 2.3 General Layout of Vessel

- 2.3.1 The vessel had a 30 cubic metre Vivier tank in the hold to preserve the catch. This tank was fed with seawater from two pumps in the engine room which pumped seawater into the bottom of the tank. The tank had overflow drains in the coaming where the water drained down through pipes out the bottom of the vessel. Both pumps were started on departure from port and kept running throughout the whole voyage.
- 2.3.2 The tank top of the Vivier tank (and the deck of the pot store above) was approximately 0.84m below the waterline.
- 2.3.3 Above the Vivier tank was a pot store with a wooden bait locker built into the port aft side. The inboard side of this locker was in contact with the trunking to the Vivier tank.
- 2.3.4 Forward of the Vivier tank was a compartment housing a bow thruster. The access hatch to this compartment was covered with a bolted aluminium hatch.

2.3.5 Diagrams of the layout of compartments and tanks are shown in Appendix 6.1.

2.3.6 There were two bilge alarms in the engine room and one in the bow thruster compartment. There were no alarms in the pot store or bait locker.

2.3.7 There was an electric bilge pump with suction through a valve manifold so various compartments could be pumped out. A second general service pump could also be connected to this manifold. Both these pumps were electrically powered and located just underneath the engine room floor plates. There was no manual pump or pump outside the engine room.

2.3.8 The bilge line from the pot store had three suction wells. The suction wells were not fitted with non return valves. The suction line ran through the Vivier tank before passing through the bulkhead to the engine room.

## 2.4 Vessel History

2.4.1 The vessel was built in Holland for McBride Fishing Co Ltd. in 1990 and remained in his ownership throughout its history.

2.4.2 The vessel was built to Lloyd's class and remained in class until 2007.

2.4.3 Alterations to the vessel since construction included:

- The attaching of anodes inside the Vivier tank because the welds in the top of the tank were eroding.
- The inlet and outlet pipes for the Vivier pumps were originally galvanised steel. The outlet pipes from the pumps to the tank were replaced with heavy grade stainless steel pipes. The inlet pipes were never replaced.
- The original Vivier system only allowed one pump to operate at a time. However, recently the electrical switching arrangement was changed to allow both pumps to operate simultaneously.
- The vessel was classed with Lloyds from construction until 2007 when class was discontinued.
- The Vessel was surveyed for a Fishing Vessel Safety Certificate by the Marine Survey Office in 2007 and an interim Safety Certificate issued until the 31st of December 2011.

## 2.5 Crew Particulars

### **Skipper**

Mr. Patrick Mc Clafferty,

26 years fishing, sea survival course Greencastle, GMDSS radio certificate.

**Mate/Engineer**

Mr. James Shields,

16 years fishing, sea survival course Greencastle, VHF certificate.

**Crew**

Mr. Patrick Prendergast,

12 years fishing, sea survival course Greencastle, VHF certificate.

Mr. Paul Gallagher,

8 years fishing.

Mr. Daniel Butterfield,

8 years fishing, UK sea survival course.

Mr. Ricardas Saltis,

3 months fishing, Lithuania sea survival course.

**2.6 Environmental Conditions**

- The weather conditions before and during the incident were:  
Wind NW force 4-7,  
Sea NW swell 3-4 metres.
- Visibility good.
- Sunrise was at approximately 06:30 hrs. UTC at the vessels position.

## 3. NARRATIVE

### 3.1 Vessel Operations Prior to Incident

- 3.1.1 The vessel was operating out of the port of Greencastle, Co Donegal and departed that port on 7th October 2011 at 02:00 hrs. intending to arrive at her fishing grounds North West of Malin Head during daylight.
- 3.1.2 The vessel had full fuel and water tanks, including the forepeak tank, and the bait store was full. The Vivier tank was full with both pumps running.
- 3.1.3 Watches were set at 02:30 hrs. with the skipper taking the first watch until 03:40 hrs. The next watch keeper also stayed in wheelhouse with him.
- 3.1.4 At approximately 03:00 hrs. the skipper heard/felt an unusual bump forward of the wheelhouse. He turned the deck lights on and went and walked around the decks and did not find any loose equipment. He did not look down the pot hold.
- 3.1.5 The watches changed again at 04:50, 06:00, 07:10 and 08:20 hrs., when the mate came on watch.

### 3.2 The Incident

- 3.2.1 At 8:20 hrs. the mate came on watch and noticed that the vessel was down by the head. He went forward and looked down the pot store where he found it full of water.
- 3.2.2 The skipper was alerted and the mate went into the engine room, started the bilge pump and commenced pumping from the pot store bilge line. He confirmed that the pump was working by observing water from the overside discharge on the port side.
- 3.2.3 The vessel was head on into a North Westerly sea and shipping water on deck forward. The skipper turned the vessel around to run with the sea.
- 3.2.4 At 08:46 hrs. the skipper alerted Malin Head Coast Guard Radio stating that the vessel was taking water and had 6 persons on board. He also phoned McBride Fisheries Office and kept an open line to Mr. Pete Mc Bride throughout the incident.
- 3.2.5 The mate attempted to deploy a portable electric pump but failed to get it running. The Vivier pumps were kept running to prevent the level in the tank dropping below the trunking and causing a large free surface area in the tank. The vessel was already rolling severely.
- 3.2.6 At 08:48 hrs. Belfast Coast Guard assumed coordination and tasked Helicopter R118.

- 3.2.7 At 08:53 hrs. Lough Swilly Lifeboat was tasked.
- 3.2.8 At 09:06 hrs. Lough Swilly LB was launched and gave an ETA at casualty of 11:00 hrs.
- 3.2.9 The vessel continued to trim by the head and the bilge pump appeared to be making no impact on the ingress of water. The two Vivier pumps were still running pumping water into the tank.
- 3.2.10 The skipper mustered the crew on deck and told them to prepare to abandon the vessel. They donned survival suits and lifejackets and launched the liferaft.
- 3.2.11 At 09:13 hrs. Helicopter R118 reported airborne giving ETA at casualty of 10:00 hrs.
- 3.2.12 At 09:16 hrs. the water was running up the side decks by the accommodation and the vessel was rolling severely. The skipper gave the order to abandon the vessel and the crew climbed down a ladder into the life raft. The skipper sent a mayday and advised they were abandoning the vessel.
- 3.2.13 At 09:26 hrs. the vessel listed about 80° to starboard and sank bow first, in position 55°36.69' N 007°16.40' W in approximately 50 metres of water.
- 3.2.14 The skipper established communications with Belfast Coast Guard by hand held radio.
- 3.2.15 At 09:18 hrs. Portrush Lifeboat launched - ETA 10:30 hrs.
- 3.2.16 At 10:10 hrs. Helicopter R118 located the life raft and commenced to lift off crew.
- 3.2.17 At 10:31 hrs. all crew were lifted off and R118 reported proceeding to Derry Airport.
- 3.2.18 At 10:36 hrs. Lough Swilly Lifeboat stood down.
- 3.2.19 At 10:49 hrs. Portrush Lifeboat recovered the life raft and advised no sign of debris or pollution in the area.
- 3.2.20 At 10:49 hrs. R118 landed at Derry Airport. The crew were taken to hospital with no injuries reported.

### 3.3 Events after the Incident

3.3.1 McBride Fisheries reported the loss of the vessel to the Marine Survey Office on 8th October 2010 by e-mail.

## 4. ANALYSIS

4.1 The loss of the vessel followed after a sequence of events namely:

- Ingress of water into the pot store.
- Failure to detect this ingress quickly.
- Inability to pump out the water.

4.2 The unusual thump/bump at 03:00 hrs. was significant and loud enough to prompt the skipper to investigate the deck for loose equipment. It could have been an impact on the side of the hull or the rupture of some part of the Vivier tank below decks. It is reasonable to assume that the ingress of water began around this time.

4.3 The ingress of water into the pot store could have been from the following sources:

- A breach of the shell plating below the waterline.
- A rupture of the Vivier tank top or coaming.
- A failure of the bilge line within the Vivier tank and back filling through the suction in the store.

4.4 A breach in the shell plating

The condition of the shell plating was found to be good at the last survey in 2007, and any rapid corrosion would more likely lead to pinholes and a slower ingress of water. It would require the impact with a large semi submerged object to create a significant hole that would lead to the flooding experienced. There were no reports of such objects in this sea area.

Secondly once the level of water in the store had equalised with the water outside the hull the rate of ingress should have decreased and the bilge pump should have prevented further ingress of water. The evidence points to a continued increase of incoming water after the bilge pump was started.

4.5 Rupture of the Vivier tank top and or coaming

The Vivier system was known to have a corrosive environment. Anodes had been fitted inside the tank to combat corrosion of the welds, and pipe work had been replaced. Routine thickness readings of the tank top, trunking and pipe work were not taken. It is possible that the tank top or trunking to the main deck ruptured - see Photos 1 and 2, Appendix 6.2.

4.6 Failure of the bilge lines

The bilge line was within the Vivier tank and subject to the same corrosive

environment. Failure of the line would result in water backfilling through the line into the pot store as there were no non return valves on the suctions - see Photo 3, Appendix 6.2.

- 4.7 The bilge pump had no effect in stemming the water flow and water ingress continued. This would indicate that the water was coming from the Vivier system and the bilge pump could not compete with the two Vivier pumps.
- 4.8 The bow thruster compartment had a bilge alarm, but this compartment was effectively isolated from the pot store. Had the pot store had an alarm the exact source of ingress would have been ascertained and corrective action taken much earlier. The water ingress had probably continued for about 5 hrs. before it was detected, by which time the vessel was trimmed by the head and in a perilous condition.
- 4.9 The fully stored vessel was making way into large seas. During the hours of darkness it would have been difficult to detect the change in trim of the vessel, particularly by the less experienced crewmembers who were on watch for just over an hour at a time.
- 4.10 The reason given for not stopping the Vivier pumps was that the level in the trunking would drop and then there would be a large free surface which could capsize the vessel which was rolling severely due to the flooded hold. If the Vivier pumps had been stopped it would have taken some time for the level to drop and may have given the bilge pump time to lower the level in the pot store.
- 4.11 The most likely source of the ingress of water was the Vivier system, and the bilge pump could not compete with the two pumps. Had the Vivier pumps been stopped the bilge pump may have had enough effect to prevent the vessel floundering.
- 4.12 The Vivier seawater circulating system is exposed to the same environment as the underwater hull of the vessel. Whilst the hull had been checked for corrosion and plate thickness as part of the surveys of the vessel the Vivier system was not subject to such detailed surveys.
- 4.13 The crew prepared for and abandoned the vessel to the life raft in an orderly and efficient manner wearing survival suits and lifejackets.

**5. SAFETY RECOMMENDATIONS**

- 5.1 That the regulations for fishing vessels SI (2007) 640 should be changed to include a requirement for bilge alarms in compartments such as holds and stores which extend below the waterline.
- 5.2 Consideration should be given to when next updating the survey guidelines to include requirements for the Vivier systems, if fitted.

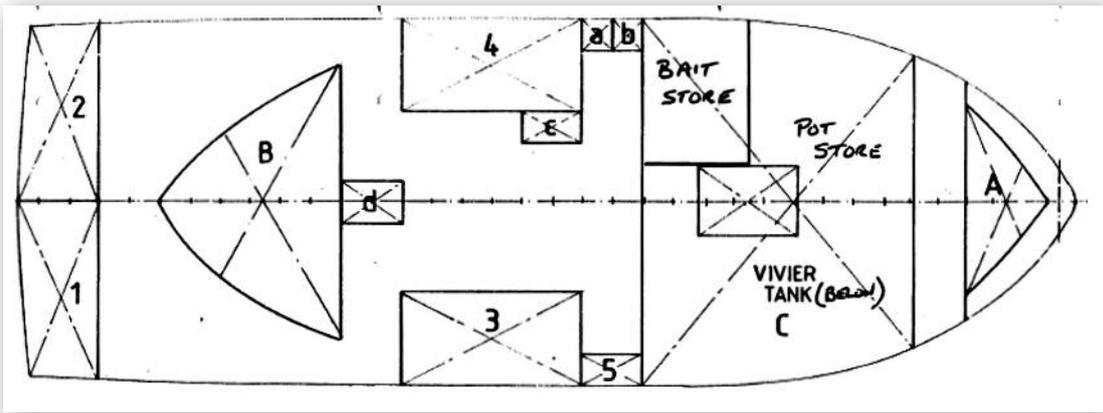
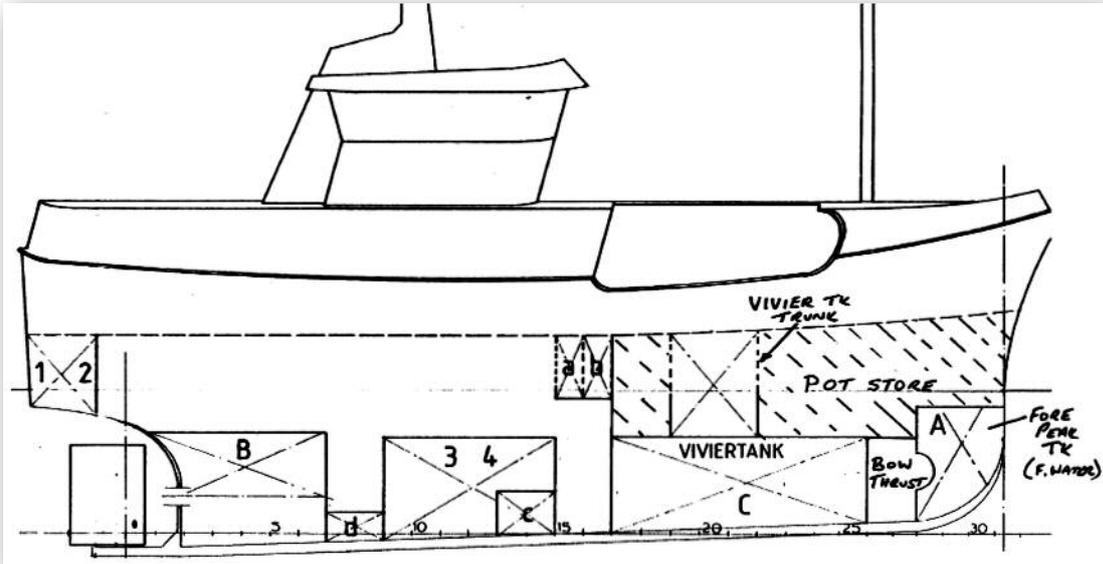
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Appendix 6.1 General arrangement plans of FV "Amy Jane".



## APPENDIX 6.2

### Appendix 6.2 Photographs.



Vivier tank trunking.



Top of Vivier tank, edge of bait store visible.

Appendix 6.2 Photographs.



Pipework within tank.

## Appendix 6.3 Met Éireann Weather Report.



**MET ÉIREANN**  
*The Irish Meteorological Service*

Glasnevin Hill, Cnoc Ghlas Naíon Tel: +353-1-806 4200  
Dublin 9, Ireland. Baile Átha Cliath 9, Éire. Fax: +353-1-806 4247  
www.met.ie E-mail: met.eireann@met.ie

17/10/2011

*Our Ref.* WS 3018/2C\_14320  
*Your Ref.* MCIB/13/11

**Estimate of weather conditions in the sea area at 55° 36.69'N and 7° 16.40'W, on the 7<sup>th</sup> October 2011, between 6 and 12 hours.**

**General Situation**

Ireland, including this sea area, lay in a north-westerly airflow, with a deep Low Pressure area moving away over Scandinavia and a High Pressure area approaching from the Azores.

**Details:**

**Winds:** from the north-west were Fresh to Strong, Force 5 to 7, strongest and gusty at first.

**Weather:** Good clear periods with some sunshine and occasional showers

**Visibility:** mostly good, occasionally poor in showers.

**Waves:** Very Rough at first, decreased Rough during the period.

**Temperatures:** air and sea temperatures were 12°C

*Note: some very high individual waves were observed at M4 (55N, 10W) the previous evening and earlier that morning. Some M4 observations are attached. Waves in the above area would have been similar or slightly lower than those recorded at M4.*

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



Appendix 6.4 Location of the incident.

