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Marine Casualty Investigation Board

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REPORT INTO THE FATAL INCIDENT INVOLVING *"MFV DEAN LEANNE"* ON 12th JUNE 2013

The Marine Casualty Investigation Board was established on the 25th March, 2003 under the Merchant Shipping (Investigation of Marine Casualties) Act, 2000.

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1. SUMMARY

(Note: All times are in UTC +1)

1.1 The *"MFV Dean Leanne"*, a 5.91 metre (m) L.O.A. Irish registered, open fishing vessel departed Dunmore East at 06.53 hrs on the 12th June 2013 with a crew of three on-board with the intention of re-positioning pots laid in Tramore Bay.

1.2 The vessel was reported missing at 17.29 hrs at which time the emergency services were tasked.

1.3 At 17.58 hrs first casualty was sighted in the water by Waterford based helicopter R117.

1.4 The three casualties were recovered by 18.14 hrs, two by the Dunmore East Lifeboat and one by the Waterford based helicopter R117.

1.5 The vessel was found capsized and partially sunken.

2. FACTUAL INFORMATION

2.1 Particulars of the Vessel:

Name of Vessel:	*"MFV DEAN LEANNE".*
Fishing No:	W296.
Year of Build:	Approximately 1973.
Overall Length:	5.91 (m).
Crew:	Certified to carry a crew of two.
Breadth:	1.78 (m).
Depth:	0.75 (m).
Engine:	A Honda outboard engine of 7.4 KW capacity manufactured in 2007.
General Description of Craft:	Traditionally built, open, wooden vessel of carvel construction (a method of vessel building where hull planks are fastened edge-to-edge, gaining support from the frame and forming a smooth surface), with a raked stem and transom stern. The vessel is believed to have been originally built in circa 1973 and was stated to have been substantially rebuilt in 1992 – 1993. In 2010 the outside of the hull of the vessel was fibre glassed over. The vessel was fitted with a hydraulically operated pot hauler driven by a petrol engine.
Code of Practice:	Code of Practice Declaration of Compliance for the "*MFV Dean Leanne"* was carried out on the 28th June 2010 and was valid until 28th June 2014. However, this is only on the basis that an intermediate Declaration was to be carried out between 28th of April 2012 and 28th of September 2012. A copy of the Declaration is attached to this report without the required intermediate Declaration. (See Appendix 7.1). On this basis the Declaration became invalid and consequently the vessel did not have a valid Declaration for use as a fishing vessel. The operational area of the vessel was the Waterford Estuary within five miles of a safe-haven. The vessel was operating outside this area.
Type of Marine Casualty or Incident:	Very Serious Marine Casualty.
Location of incident:	In the vicinity of Brownstown Head, Co. Waterford.

Injuries/fatalities: Three fatalities.

Damage/
environmental impact: Nil.

Persons on-board: 3

2.2 Crew Particulars:

Crew Member No. 1 Death caused by drowning induced by hypothermia.
Aged 49 years.

Crew Member No. 2 Death caused by drowning induced by hypothermia.
Aged 47 years.

Crew Member No. 3 Death caused by drowning induced by hypothermia.
Aged 44 years.

All crewmembers were experienced fishermen.

All of the fishermen had the required safety training under SI(2001)587 and the Design, Construction, Equipment and Operation of Small Fishing Vessels of less than 15 (m) length overall Code of Practice.

The three persons on-board had valid radio qualifications, ie, SRC1. The vessel had a valid radio station licence and its EPIRB was registered on the 6th of February 2009 and it was verified as correctly registered to the vessel *"MFV Dean Leanne"*.

2.3 Environmental Conditions:

The weather report for the area of the casualty was as follows:

Winds: Moderate to Fresh Force 3-5.

Visibility: Good to Moderate.

Seastate: Moderate, with significant wave heights of 1.5 (m), from a south-westerly direction, just outside the bay.

Low Water at 14.08 hrs.

(See Appendix 7.2)

However, the vessel was operating outside its operational area and a weather report for the operational area in the Suir Estuary was as follows:

Winds: Light to Moderate Force 3-4.

Visibility: Good to Moderate.

Seastate: N/A.

Low Water: Cheek Point 15.07 IST.

2.4 EPIRB:

The vessel's EPIRB (Emergency Position Indicating Radio Beacon) was stated to be normally stowed in a bracket in the forward locker of the vessel. The type of EPIRB fitted to the *"MFV Dean Leanne"* could either be manually operated or would automatically operate if it came into contact with seawater, assuming the satellite could track the signal emitted.

Manufacturer: GME (Standard Communications PTY Ltd) Australia.

Model: EPIRB MT401-e999B.

Type: C/S Class 2 Water Activation.

Serial Number: 70117320.

Battery Replacement Date: July 2013.

The vessel's EPIRB was found on Saturday the 15th June 2013 on a beach in the vicinity of Tramore. The EPIRB was handed into the Tramore Garda Station on the 16th June 2013.

The EPIRB button cover was found to be lifted in an open position; the test and manual activation buttons were visually exposed. The manual activation security seal was unbroken.

No transmissions were recorded as ever having been received from the EPIRB registered to the *"MFV Dean Leanne"*.

2.5 Personal Floatation Devices (PFDs):

When the bodies of crew members Nos. 2 & 3 were recovered they were found to be wearing PFDs. No PFD was found on the body of Crew Member No. 1.

The PFD on crew member No. 3 was fitted with an automatic hydrostatic release mechanism and was found to have inflated. However, the bladder on the PFD was found to be partially filled with water.

The PFD on crew member No. 2 was found to be still folded inside its protective cover and had not been inflated. This PFD would be operated by pulling the operating cord manually to release inflation gas into the bladder.

(See CH Marine test report in Appendix 7.3).

3. NARRATIVE

3.1 The vessel departed Dunmore East with three crew members on-board at 06.53 hrs on the 12th June 2013 to tend to lobster pots which were shot between Falskirt Rock and Brownstown Head. A total of about 170 pots, shot in strings of 12-14 pots. Each string had a marker and weight at each end.

The last known sighting of the vessel was about 14.00 hrs on the 12th June 2013 in the vicinity of Brownstown Head. (See Appendix 7.4).

At 17.29 hrs MRCC Dublin received a call from a member of Dunmore East Lifeboat advising of an overdue fishing vessel that had left Dunmore East that morning.

At 17.31 hrs Dunmore East Lifeboat were tasked to search for the missing vessel.

At 17.32 hrs Waterford based helicopter R117 was tasked.

At 17.48 hrs MRCC Dublin tasked Tramore Lifeboat.

At 17.53 hrs Tramore Lifeboat advised they were launched.

At 17.54 hrs Helicopter R117 advised they were on scene.

At 17.58 hrs Helicopter R117 reported sighting a casualty in the water and was recovered to the aircraft. Position 52°08.3N 007°06.61W.

At 18.02 hrs Helicopter R117 reported sighting a second casualty.

At 18.06 hrs Helicopter R117 reported sighting the casualty vessel in position 52°08.57N 07°07.29W.

At 18.12 hrs Dunmore East Lifeboat had the second and third casualties on-board.

On the evening of 12th June 2013 the Tramore Inshore Lifeboat placed an anchor and buoy on the semi-submerged capsized *"MFV Dean Leanne"* for recovery when weather conditions permitted. It is understood that when the vessel was recovered it was found with the bow protruding out of the water.

On the 13th June 2013 an unsuccessful attempt was made to salvage the *"MFV Dean Leanne"*.

On the 16th June 2013 the *"MFV Dean Leanne"* was successfully salvaged and taken to a Garda compound.

3.1.1 No distress messages were received from the *"MFV Dean Leanne"*, by EPIRB, VHF or mobile telephone. The partner of the No. 3 crew member tried to contact him without success at approximately 11.45 hrs on the 12th June 2013.

3.1.2 No flares, marine equipment approved lifejackets, VHF radio or lifebuoys were recovered from the vessel or washed up ashore. The foregoing items were all items of safety equipment shown to be on-board the vessel at the time of survey in June 2010.

3.2 Survey & Inspection:

3.2.1 The vessel had undergone a Code of Compliance Inspection on the 28th June 2010 and was valid until 28th June 2014. The Declaration would continue to be deemed valid if an intermediate Declaration had been carried out between 28th April 2012 and 28th September 2012, but because this was not carried out the Declaration became invalid. The operational area of the vessel was the Waterford Estuary within five miles of a safe-haven. At the time of the incident the vessel was operating outside the parameters of its Declaration of Compliance.

3.2.2 On inspection of the craft on the 16th June 2013 (the day of salvage) it was noted that there was extensive damage to the stem of the vessel and to the transom of the vessel, with delamination of fibreglass sheathing starboard side amidships. The outboard engine was broken off from the transom bracket. The pot hauler was lying in the vessel, with the pot hauler driving engine missing. Four pots and an assortment of pot ropes and anchors were lying in the vessel.

3.2.3 It was not possible to determine hull integrity prior to the incident, what damage may have occurred during the incident or what damage was subsequent to the incident during the salvage of the vessel.

3.2.4 The MCIB Inspection of the vessel noted that the vessel had been fibre glassed externally. The external structure of the vessel was in a poor condition with evidence of extensive rot and decay, effectively giving a fibreglass shell with reduced structural integrity.

3.3 Personal Floatation Devices:

3.3.1 The PFD on crew member No. 3, a Mullion Neptune 150 newton PFD was fitted with an automatic hydrostatic release mechanism and was found to have inflated. The rupture disc on the CO_2 bottle was found to have ruptured. However, the bladder on the PFD was found to be partially filled with water. The hydrostatic release on the PFD was found to be out of date, the expiry date being December 2010.

3.3.2 A subsequent test of the PFD was carried out at an approved facility by fitting a replacement CO_2 bottle and hydrostatic release. When the PFD was placed in a tub of water it was found to inflate but leak at the left hand side of the bladder.

3.3.3 When initially activated the PFD would have some floatation benefits, which would gradually decrease and then become negative as the bladder filled with water.

3.3.4 The PFD on crew member No. 2, a Baltic 150 newton PFD was found to be still folded inside its protective cover and had not been inflated. This PFD would be operated by pulling the operating cord manually to release inflation gas into the bladder. The CO_2 bottle was found to be in a heavily corroded condition, with the rupture disc intact. No crotch strap was fitted or designed to be fitted by the manufacturer with this PFD. In an attempt to give the safety advantages of a crotch strap a make shift rope crotch strap had been fitted at sometime.

3.3.5 A test was carried out on the PFD with the corroded CO_2 bottle in place. When the operating chord was pulled the PFD inflated in the normal manner, but was found to leak at the left hand side of the bladder.

3.3.6 If the PFD had been activated it would have had floatation benefits which would gradually decrease and then become negative as the bladder filled with water.

Neither PFD had any traceable service record.

3.4 EPIRB:

3.4.1 The type GME MT-401 EPIRB fitted to the *"MFV Dean Leanne"* could either be manually operated or would automatically operate if it came into contact with seawater provided the aerial could give a clear transmission.

3.4.2 The vessel's EPIRB was found on Saturday the 15th June 2013 on a beach in the vicinity of Tramore.

3.4.3 The stated normal stowage position of the EPIRB was in a bracket in a locker at the forward starboard side of the craft. (See Photograph No. 5 Appendix 7.5).

3.4.4 It is understood that the vessel did not fully sink and that the bow remained out of the water. If the EPIRB had remained in its bracket it would not have activated, as it needs to be semi-immersed to activate. The EPIRB was found after the incident on a beach. The EPIRB may have been removed from its bracket by hand or it may have remained in its location only subsequently becoming dislodged. It is considered most likely that the EPIRB was removed by hand from the bracket. In any event it did end up in the water but no signal was received by the Coast Guard.

3.4.5 The EPIRB button cover was found to be lifted in an open position; the test and manual activation buttons were visually exposed. The manual activation security seal was unbroken. However, the button was found to have been depressed and this would indicate that it is likely that the EPIRB operating button was operated manually. Additionally, if it had become immersed in seawater with the aerial near or above the surface and with a charge in the battery it should also operate. The battery in the EPIRB was in date at the time of the incident.

3.4.6 The owner advised that he carried out the manufacturer's test recommendations on the EPIRB, the last one he carried out being in or about March 2013. It is understood that a subsequent test was carried out in May 2013, but there is no evidence provided to show any test after May 2013. The manufacturers recommend that monthly tests be carried out. Additionally, the requirement under the Code of Practice is that the EPIRB is to be tested on a monthly basis.

3.4.7 No alarm transmissions were recorded as ever having been received from the EPIRB registered to the *"MFV Dean Leanne"*.

3.4.8 Subsequent to the incident a new battery was put into the EPIRB and operational tests carried out. The EPIRB was found to be defective in operation. The test report for this test carried out in Tramore Garda Station is included in this report. (See Appendix 7.6).

3.4.9 The MCIB sent the EPIRB to the Australian Transport Safety Board, ATSB, in Australia – to carry out detailed testing on the EPIRB and to witness these on behalf of the MCIB. The test report is attached. (See Appendix 7.7). The test report indicates that the EPIRB operated when the microprocessor was replaced.

3.4.10 The microprocessor was sent to the Philippines Board of Marine Inquiry (BMI) – (See Appendix 7.8) to allow them to witness further testing at the facility of the manufacturer on behalf of the MCIB. The test report notes that the microprocessor had failed.

3.4.11 For the purposes of this report the EPIRB and the microprocessor were found not to be functioning at the time of the testing.

3.4.12 Subsequent to the casualty with the *"MFV Dean Leanne"* the EPIRB manufacturer GME issued a safety bulletin as several of their EPIRBs had been found to have an inherent fault. A copy of the GME EPIRB Safety Alert is attached (See Appendix 7.9) in this report. The EPIRB carried by the *"MFV Dean Leanne"* is covered by this "Safety Alert". Following on from this safety alert GME have now instigated a global recall of affected EPIRBs. A copy of this recall plan is included in this report (See Appendix 7.10).

4. ANALYSIS

The purpose of the analysis is to determine the contributory causes and circumstances of the incident as a basis for making recommendations to prevent similar incidents occurring in the future.

4.1 The vessel was operating outside its designated area as detailed in its Code of Compliance. The comparison of weather reports indicate that the weather conditions in the incident area were more adverse than those in the area that the vessel was certified to operate in.

4.2 The vessel was a small open vessel of weakened structural integrity that was fishing inshore on a falling tide.

4.3 The vessel was fitted with a hydraulic pot hauler driven by a petrol engine. The MCIB Investigator was informed that there was no safety device fitted to the hauler.

4.4 It is not known how many pots were on-board at the time of the incident. Three men and pots in a small open vessel would have a significant adverse effect on the vessel's freeboard and stability.

4.5 During the course of the day the swell had built up in the area of the incident.

4.6 No MAYDAY messages were received from the crew of the *"MFV Dean Leanne"*.

4.7 The evidence would suggest that the incident happened very quickly and it is understood that no MAYDAY was sent by radio or mobile phone, no flares activated nor was an EPIRB signal received.

4.8 The EPIRB fitted to the vessel was of the manual and automatic activated non-float free type and was stored as permitted by the Code of Practice.

4.9 A vessel of the type and build as the *"MFV Dean Leanne"*, working in the weather conditions at the time of the incident, could become swamped or capsize, resulting in the persons on-board falling into the water.

4.10 The post mortem reports established that all the deceased crewmembers died due to drowning induced by hypothermia. In seawater in the 10°C to 16°C range exhaustion or unconsciousness is expected to occur within 1-2 hours, with death within 1 – 6 hours. This would be indicative that the casualties had been in the water in excess of 1 hour prior to the emergency services reaching them.

4.11 If all casualties had been wearing well maintained PFDs with working hydrostatic releases it could have increased their chances of survival.

4.12 In addition to the PFDs, the vessel was also required under the Code of Practice to carry lifejackets for all persons on-board. These lifejackets are certified to a higher standard than the PFDs, which were worn by two of the crew members.

4.13 No formal system was in place for giving an estimated time of arrival or for alerting rescue services, if overdue.

4.14 Once the emergency services were alerted they were on the scene within 30 minutes of the first alert. If an early alarm had been raised the casualties' chances of survival would have been greatly enhanced.

4.15 The GME MT-401 EPIRB carried by the *"MFV Dean Leanne"* was certified by the international certification company Bureau Veritas, in accordance with the European Union Directive on Marine Equipment (MED). Bureau Veritas was appointed as a Notified Body (NB), under the Council Directive, 96/98/EC on Marine Equipment, as amended, to certify such equipment under the Authorisation of France as the Authorising State. In accordance with the internal market and EU Directives other Member States may not prohibit the fitting of a certified piece of equipment to their vessels. A copy of the certification for the EPIRB issued by Bureau Veritas is included in the Appendices to this report. (See Appendix 7.11). In accordance with the certification issued by Bureau Veritas under the MED, they carried out an initial assessment of the EPIRB manufacturer GME in Australia and continued to certify the production of the EPIRBs. The roles of both Bureau Veritas as the NB and GME as the manufacturer are set out in the MED. Subsequent to the sinking of the *"MFV Dean Leanne"* a number of similar GME EPIRBs were detected as apparently defective. These EPIRBs were tested by the manufacturer GME in Australia. The results of this testing resulted in the manufacturer GME issuing a Safety Alert for the EPIRBs, a copy is attached to the Appendices. In addition they have now instigated a global recall.

4.16 As advised by family members the last known test carried out on the EPIRB was in May 2013. It is not known if crew members had carried out any subsequent tests. The requirement in accordance with both, the Design, Construction, Equipment and Operation of Small Fishing Vessels of less than 15 (m) length overall Code of Practice is for monthly testing.

4.17 The manufacturer's requirement is to carry out monthly tests to determine the EPIRB's capability to operate properly.

5. CONCLUSIONS

5.1 The vessel did not possess a valid Declaration of Compliance in accordance with the Fishing Vessel Safety Code of Practice. This is a requirement for a fishing vessel to operate.

5.2 The vessel was not operated in accordance with the conditions as had been set out in its invalid Declaration of Compliance as it was operating outside its defined operational area.

5.3 The vessel was carrying more crew than indicated in the Declaration of Compliance which listed safety equipment for two-people, but there were three people on-board.

5.4 The vessel possibly encountered wind or wave action or a combination of both. This may have caused the vessel to be swamped and lose reserve of buoyancy beyond which it was unable to recover for its loaded condition, resulting in its sinking.

5.5 Only two of the crew were found wearing PFDs. However, following testing it was found that the PFDs had not been maintained and were not in a serviceable condition or capable of sustaining buoyancy. The chances of survival would have been enhanced if the PFDs were in a good condition.

5.6 MED approved lifejackets, as required by Chapter 7 of the Design, Construction, Equipment and Operation of Small Fishing Vessels of less than 15 (m) length overall Code of Practice, were not found on-board. Had they been on-board and circumstances permitted the donning of the MED lifejackets they would have provided an enhanced chance of survival than the two defective PFDs that were recovered.

5.7 It would appear that whatever caused the *"MFV Dean Leanne"* to founder occurred very quickly as no MAYDAY was transmitted by VHF radio or flares.

5.8 Whilst there was no distress call made or alarm raised, if the EPIRB had activated this could have assisted in a timely and directed response from the emergency services.

5.9 The EPIRB had last been tested by the owner in March 2013 and then again in May 2013. The requirement in the Design, Construction, Equipment and Operation of Small Fishing Vessels of less than 15 (m) length overall Code of Practice is to carry out a monthly test.

5.10 Had the details of the intended trip been left with a responsible person or persons ashore, together with a latest time of return, then persons ashore could contact the emergency services to raise the alarm shortly after the expected time of return had passed.

6. SAFETY RECOMMENDATIONS

The Minister for Transport, Tourism & Sport is recommended to:

6.1 Require that fishing vessels less than 12 (m) be fitted with automatic float-free EPIRBs. – Note this has been introduced as a requirement under the revised Design, Construction, Equipment and Operation of Small Fishing Vessels of less than 15 (m) length overall Code of Practice from the 3rd of March 2014. (Please refer to Marine Notice 39 of 2012).

6.2 In addition to EPIRBs for the vessel it is recommended that fishers on fishing vessels less than 15 (m) be required to carry Personal Locator Beacons, PLBs. Note this has been introduced as a requirement from the 3rd of March 2014 under the Design, Construction, Equipment and Operation of Small Fishing Vessels of less than 15 (m) length overall Code of Practice. (Please refer to Marine Notice 18 of 2014).

Owners and Skippers are recommended to:

6.3 Comply with all the requirements of the Design, Construction, Equipment and Operation of Small Fishing Vessels of less than 15 (m) length overall Code of Practice including the requirement for intermediate declarations and to operate their vessels as per the requirements of their designated operational area. Compliance is a continuing process and Owners and Skippers must ensure that their vessels are in a sound, structural, seaworthy condition, prior to the vessel going to sea.

7. APPENDICES

Appendix 7.1 Code of Practice Declaration of Compliance.

Design, Construction and Equipment of
Small Fishing Vessels of less than 15 m Length overall

Code of Practice
Declaration of Compliance

To be completed by an Authorised Person

Declarations on page v to be signed by the Authorised Person and Owner

Name of Vessel	Fishing Letters & Number	Official Number	Port of Registry
DEAN LEANNE	W 296		WATER FORD
Overall Length (less than 15 metres)	**Breadth**	**Depth**	**Date keel laid**
5·91	1·78	0·75	© 1985
Engine Make & Model			**Engine Power (kW)**
YAMAHA 8HP			

Name & Address of Owner	[redacted]

Description of vessel
OPEN WOODEN BOAT

Description of operational area
WATERFORD ESTUARY WITH IN 5 MILES OF SAFE HAVEN

Appendix 7.1 Code of Practice Declaration of Compliance.

Chapter 2 Construction, Structural Strength and Weathertight Integrity

*2.1	Is hull suitable for the intended fishing method and sea areas?						(Yes) / No
*2.2	Construction Materials	Hull	WOOD	Superstructure		N/A	
*2.3	Is structure sound, watertight & free from significant damage & corrosion?					N/A	Yes / No
*2.4	Do decks comply?						(Yes) / No
2.5	Number of bulkheads	Non-watertight	0	Watertight		0	
*2.6	Do bulkhead doors comply with Annex 7 (2.3.4)?					N/A	Yes / No
*2.7	Doors	Coaming height				N/A	
		Are doors of sound construction and weathertight?				N/A	Yes / No
2.8	Hatchway coaming height					N/A	
*2.9	Can hatches be secured weathertight?					N/A	Yes / No
*2.10	Do flush hatches comply?					N/A	Yes / No
*2.11	Do skylights comply?					N/A	Yes / No
*2.12	Do side scuttles & portlights comply?					N/A	Yes / No
*2.13	Do windows comply?					N/A	Yes / No
*2.14	Do ventilators comply?					N/A	Yes / No
2.15	Is exhaust system acceptable						(Yes) / No
*2.16	Do air pipes comply?					N/A	Yes / No
*2.17.2	Do sea inlets and discharges comply?					N/A	Yes / No
*2.18.3	Do valves, piping & hoses comply?					N/A	Yes / No
*2.19	Do freeing ports comply?					N/A	Yes / No

Chapter 3 Stability

*3.1	Is stability information supplied?			N/A	Yes / No
	Are requirements of Annex 7 applied?			N/A	Yes / No
*Annex 7 (para.4)	Stability standard applied	ROLL TEST			
	Freeboard	0·45	Roll coefficient	1·6	
Annex 2	Are guidance notes on board?			N/A	Yes / No

Chapter 4 Machinery and Electrical Installations

4.1	**Machinery**		
*4.1.1.1	General Requirements - comply?		(Yes) / No
*4.1.2	Propulsion Machinery and Stern Gear - comply?		(Yes) / No
*4.1.4	Controls and Instruments - comply?		(Yes) / No
*4.1.5	Steering System - comply?		(Yes) / No
4.2	**Electrical Installations**		
*4.2.1	General - comply?	N/A	Yes / No
*4.2.2	D.C. Systems Up To 24 volts - comply?	N/A	Yes / No
*4.2.3	A.C Systems - comply?	N/A	Yes / No
4.3	**Pumping & Piping**		
*4.3.1	Fuel Oil Installations - comply?		(Yes) / No
*4.3.2	Cooling Water Systems - comply?		(Yes) / No
*4.3.3	Bilge Pumping Systems - comply?		(Yes) / No
*4.3.4	Bilge Pumps - comply?		(Yes) / No
4.4	**Anchors & Cables**		
*4.4.1	General - comply?		(Yes) / No
*4.4.4	Towline - comply?		(Yes) / No
4.5	**Fishing & Handling Equipment**		
*4.5.1	Winches, tackles and lifting gear - comply?	N/A	Yes / No
*4.5.2	Running gear - comply?	N/A	Yes / No

Appendix 7.1 Code of Practice Declaration of Compliance.

Chapter 5 Fire Protection, Detection & Extinction

5.1	**Fire Safety**					
#5.1.1	Machinery space capable of being closed down?				N/A	Yes / No
*5.1.2	Fire Prevention - comply?					(Yes) / No
*5.1.3	Cleanliness and Pollution Prevention - comply?					(Yes) / No
*5.1.4	Open-Flame Gas Appliances - comply?				N/A	Yes / No
*5.1.5	Gas Detection - comply?				N/A	Yes / No
5.2	**Fire Fighting Appliances**					
#5.2.1	Are extinguishers of an approved type					(Yes) / No
#5.2.2 – #5.2.5	Portable Extinguishers			Serviced Date		05/12
		Engine room	Type POWDER	Rating 13A		Nº 1
		Other spaces	Type	Rating		Nº
			Fire buckets			Nº
#5.2.6	Remote controls for fuel tank valves	Yes / No	Number	N/A		
			Location			
#5.2.6	Are means of closing skylights, doorways etc to machinery and cargo spaces adequate?				N/A	Yes / No

Chapter 6 Protection of Crew

6.1	**Protection of Personnel**				
*6.1.2	Bulwarks, Guard Rails and Handrails - comply?				(Yes) / No
*6.1.4	Surface of Working Decks - comply?				(Yes) / No
#6.1.5	Personal Protective Equipment - comply?				(Yes) / No
#6.2	**Medical Stores** - comply?				(Yes) / No
***6.3**	**Securing of Heavy Items or Equipment and Fishing Gear etc** - comply?			N/A	Yes / No

Chapter 7 Life-Saving Appliances

#7.1	Are all items of LSA of an approved type					(Yes) / No
#7.2	Have relevant items of LSA been serviced					(Yes) / No
#7.3	1 Lifejacket for every person on board				(Yes) / No	Nº: 2
‡7.4	Liferafts sufficient for 100% persons	Yes / No	Nº	Last Serviced		N/A
	Hydrostatic Release Unit (HRU)	Yes / No	Nº	Last Serviced		N/A
#7.5	Lifebuoys	Total N° of Lifebuoys				2
		N° with 18m line				1
		N° with combined light & smoke signal				0
#7.6	1 Personal Floatation Devices (PFD) for every person on board				(Yes) / No	Nº: 2
#7.8	Distress signals	6 red star	(Yes) / No	12 parachute rockets		Yes / No
*7.9	Means for Recovering Persons from the Water					(Yes) / No

Chapter 8 Manning, Training & Certification

#8.2 *8.8	Manning - comply?	(Yes) / No
*8.3	Standards of Competence - comply?	(Yes) / No
*8.5	Operation and Maintenance of Propulsion Machinery - comply?	(Yes) / No
#8.6	Operation of Radio Equipment - comply?	(Yes) / No
#8.7	Safety Training - comply?	(Yes) / No
	Is there a copy of the Code of Practice on board?	Yes / No

Appendix 7.1 Code of Practice Declaration of Compliance.

Chapter 9 Radio Equipment

	Sea Area (A1 or A1 & A2)	A1
#9.3	Functional requirements - comply?	Yes / No
#9.4	Installation, location and control of radio equipment - comply?	Yes / No
#9.5	Radio equipment to be provided for all sea areas - comply?	Yes / No
#9.6	Additional radio equipment to be provided for sea areas A1 and A2 - comply?	Yes / No
#9.7	Radio Watches - comply?	Yes / No
#9.8	Sources of energy - comply?	Yes / No
#9.9	Performance standards - comply?	Yes / No
#9.10	Serviceability and maintenance requirements - comply?	Yes / No
#9.11	Radio personnel - comply?	Yes / No
#9.12	Radio records - comply?	Yes / No

Chapter 10 Navigation Equipment Lights, Shapes & Sound Signals

*10.1	Navigation Equipment - comply?		Yes / No
*10.2	Are navigation lights fitted?		Yes / No
#10.3	Steaming Lights - comply?	N/A	Yes / No
#10.4	Fishing Lights - comply?	N/A	Yes / No
#10.5	Additional Fishing Light - comply?	N/A	Yes / No
#10.6	Anchor Light - comply?	N/A	Yes / No
#10.7	Positions or Lights - comply?	N/A	Yes / No
	Are any all-round lights obscured by mast, etc. by more than 6°?	N/A	Yes / No
#10.8	Day Signals: 2 Black Cones with apexes together or a basket		Yes / No
	Day Signals: 1 black ball		Yes / No
#10.9	Sound Signals - comply?		Yes / No
*10.10	Charts and Nautical Publications - comply?		Yes / No

Chapter 11 Accommodation & Working Spaces

*11.6	Toilet Facilities - comply?	N/A	Yes / No
*11.7	Access and Escape Arrangements - comply?	N/A	Yes / No
*11.8	Ventilation - comply?	N/A	Yes / No
*11.10	Lighting - comply?	N/A	Yes / No

Annex 7 New Vessel Construction

N1	Construction Rules used	
*1.6	Are relevant chapters of Code complied with?	Yes / No
*2	Construction and Structural Strength - comply?	Yes / No
*3	Weathertight Integrity - comply?	Yes / No
*4	Stability - comply?	Yes / No
*5	Machinery - comply?	Yes / No
*6	Piping Systems - comply?	Yes / No
*7	Shafting and Stern Gear - comply?	Yes / No
*8	Bilge Pumping Systems - comply?	Yes / No
*9	Steering Gear - comply?	Yes / No
*10	Electrical Systems - comply?	Yes / No
*11	Fire Safety - comply?	Yes / No
*12	Accommodation and Working Spaces - comply?	Yes / No

- iv -

Revision 1 14/02/2005

Appendix 7.1 Code of Practice Declaration of Compliance.

Notes:

1. # indicates Statutory requirements
2. * indicates mandatory requirement for Code compliance
3. ‡ indicates statutory requirement for vessels ≥ 12m L_{oa} and mandatory requirement for Code compliance for vessels < 12m L_{oa}
4. Only Statutory and mandatory Code requirements are to be addressed when completing the Declaration.
5. If 'No' is answered to any question, please supply, in a separate statement, the reasons why the particular item is not complied with.
6. If a particular item is not applicable, please state the reason why.

Declaration by Authorised Person

Name of Vessel	Fishing Letters & Number	Official Number	Port of Registry
DEAN LEANNE	W296		WATERFORD

I hereby declare that on 28/6/10 at PASSAGE EAST I completed the inspection of the Fishing Vessel DEAN LEANNE and that:

1. the particulars given on this form are true and correct;
2. in my judgement the vessel complies with the Code of Practice and is fit for its intended fishing method and for the sea areas in which it is intended to operate.

Dated at PASSAGE EAST

this 28 day of JUNE 2010

Signed [redacted]

This Declaration is valid until

28 day of JUNE 2014

Company Stamp. [redacted]

Declaration by Owner

I/We [redacted]

Owner(s) of the above-described vessel declare that the particulars given on this form are correct and that we have no reason to believe that vessel is not fit for its intended fishing method or for the sea areas in which it is intended to operate.

Signature(s): [redacted]

If company, state position held:

Date 28/6/10

Appendix 7.2 Met Éireann Weather Reports.

MET ÉIREANN
The Irish Meteorological Service

Glasnevin Hill,
Dublin 9, Ireland.

Cnoc Ghlas Naíon
Baile Átha Cliath 9, Éire.
www.met.ie

Tel: +353-1-806 4200
Fax: +353-1-806 4247
E-mail: met.eireann@met.ie

[redacted]
Marine Casualty Investigation Board
Leeson Lane
Dublin 2

Marine Casualty Investigation Board
26 JUN 2013
Bord Imscrúdú Tasimí Muirí

25/6/2013

Our Ref. **WS3018/2_15095**
Your Ref. **MCIB/12/231**

Re: Estimate of weather conditions in the Tramore Bay sea area, on the 12th June 2013, between 6 and 18 hours

Dear [redacted]

Please find enclosed the above report.

Yours sincerely,

[redacted]

Appendix 7.2 Met Éireann Weather Reports.

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The Irish Meteorological Service

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www.met.ie
Tel: +353-1-806 4200
Fax: +353-1-806 4247
E-mail: met.eireann@met.ie

25/6/2013

Our Ref. WS3018/2_15095
Your Ref. MCIB/12/231

Marine Casualty Investigation Board
26 JUN 2013
Bord Imscrúdú Tasimí Muirí

Estimate of weather conditions in the Tramore Bay sea area, on the 12th June 2013, between 6 and 18 hours.

General Situation
A depression moved north-east wards towards the south west coast of Ireland. Associated frontal troughs (rain-belts) moved over the Tramore area.

Details 6-12 hours

Winds: Light to Moderate, Force 2 to 4, from variable directions, mainly from the north-west at first and the south-east later.

Weather: sunshine mixed with cloudier periods and occasional spells of rain and drizzle also.

Visibility: good, greater than 10 km.

Seastate: Moderate, with significant wave heights of 1.5metres, from a south-westerly direction, just outside the bay.

Appendix 7.2 Met Éireann Weather Reports.

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The Irish Meteorological Service

Glasnevin Hill,
Dublin 9, Ireland.

Cnoc Ghlas Naion
Baile Átha Cliath 9, Éire.
www.met.ie

Tel: +353-1-806 4200
Fax: +353-1-806 4247
E-mail: met.eireann@met.ie

.....continued WS2012_15095

Details: 12-18 hours

Winds: increased Moderate to Fresh, Force 3 to 5, from a south to south-west direction

Weather: rather cloudy with bands of rain, drizzle and fog moving north-eastwards across the area, some heavier spells especially in the second half of the period.

Visibility: quickly decreased in the afternoon to Moderate, and further decreased to Poor in the spells of rain, drizzle and fog.

Seastate: Moderate, with significant wave heights of 1.5metres, from a south-westerly direction, just outside the bay.

[redacted]
Research, Environment & Applications Division
Met Éireann

Appendix 7.2 Met Éireann Weather Reports.

MET ÉIREANN
The Irish Meteorological Service

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

13/2/2014

Our Ref. **WS3018/2_15351**
Your Ref. **MCIB/12/231**

Re: Estimate of weather conditions in the Suir Estuary near Arthurstown, on the 12th June 2013, between 6 and 18 hours

General Situation

A depression moved north-east wards towards the south west coast of Ireland. Associated frontal troughs (rain-belts) moved over the Tramore and Suir Estuary areas.

Details 6-12 hours

Winds: Light, Force 1-3, from variable directions,

Weather: sunshine mixed with cloudier periods and occasional spells of rain and drizzle also.

Visibility: good, greater than 10 km.

Appendix 7.2 Met Éireann Weather Reports.

MET ÉIREANN
The Irish Meteorological Service

Glasnevin Hill,
Dublin 9, Ireland.

Cnoc Ghlas Nafon
Baile Átha Cliath 9, Éire.
www.met.ie

Tel: +353-1-806 4200
Fax: +353-1-806 4247
E-mail: met.eireann@met.ie

.....continued WS3018/2_15351

Details: 12-18 hours

Winds: increased Moderate, Force 3 to 4, from a south to south-west direction

Weather: rather cloudy with bands of rain, drizzle and fog moving north-eastwards across the area, some heavier spells especially in the second half of the period.

Visibility: quickly decreased in the afternoon to Moderate, and further decreased to Poor in the spells of rain, drizzle and fog.

[redacted]
Forecasting Division
Met Éireann

Appendix 7.2 Met Éireann Weather Reports.

MET ÉIREANN
The Irish Meteorological Service
Glasnevin Hill, Dublin 9, Ireland.
Cnoc Ghlas Naíon Baile Átha Cliath 9, Éire.
www.met.ie

Beaufort Scale of Wind

Force	Description	Speed* knots	Speed* km/hr	Specification -sea	Wave height** (metres)
0	Calm	<1	<1	Sea like mirror	
1	Light air	1-3	1-5	Ripples	0.1 (0.1)
2	Light breeze	4-6	6-11	Small wavelets	0.2 (0.3)
3	Gentle breeze	7-10	12-19	Large wavelets, crests begin to break	0.6 (1)
4	Moderate breeze	11-16	20-28	Small waves becoming longer, frequent white horses	1 (1.5)
5	Fresh breeze	17-21	29-38	Moderate waves, many white horses, chance of spray	2 (2.5)
6	Strong breeze	22-27	39-49	Large waves, white foam crests, probably some spray	3 (4)
7	Near gale	28-33	50-61	Sea heaps up, streaks of white foam	4 (5.5)
8	Gale	34-40	62-74	Moderately high waves of greater length	5.5 (7.5)
9	Strong gale	41-47	75-88	High waves, dense streaks of foam, spray may reduce visibility	7 (10)
10	Storm	48-55	89-102	Very high waves, long overhanging crests, visibility affected	9 (12.5)
11	Violent storm	56-63	103-117	Exceptionally high waves, long white foam patches cover sea	11.5 (16)
12	Hurricane	64+	117 & over	Air filled with foam and spray, sea completely white	14 (-)

*Speed = mean speed at a standard height of 10 metres.
**Wave height is only intended as a guide to what may be expected in the open sea. Bracketed figures indicate the probable maximum wave height.

Wave Heights / State of Sea

The wave height is the vertical distance between the crest and the preceding or following trough. The table below gives a description of the wave system associated with a range of significant wave heights. The Significant wave height is defined as the average height of the highest one-third of the waves. (It is very close to the value of wave height given when making visual observations of wave height.)

Sea State (Descriptive)	Significant Wave height in meters
Calm	0 – 0.1
Smooth(Wavelets)	0.1 – 0.5
Slight	0.5 – 1.25
Moderate	1.25 – 2.5
Rough	2.5 – 4
Very rough	4 – 6
High	6 – 9
Very high	9 – 14
Phenomenal	Over 14

Individual waves in the wave train will have heights in excess of the significant height. The highest wave of all will have a height about twice the significant height

Visibility Descriptions of visibility mean the following:

Visibility (Descriptive)	Visibility in nautical miles (kilometres)
Good	More than 5 nm (> 9 km)
Moderate	2 – 5 nm (4 – 9 km)
Poor	0.5 – 2 nm (1 – 4 km)
Fog	Less than 0.5 nm (< 1km)

Note:

If there are no measurements or observations available for an exact location, these estimated conditions are based on all available meteorological measurements and observations which have been correlated on the routine charts prepared by Met Éireann.

Appendix 7.2 Met Éireann Weather Reports.

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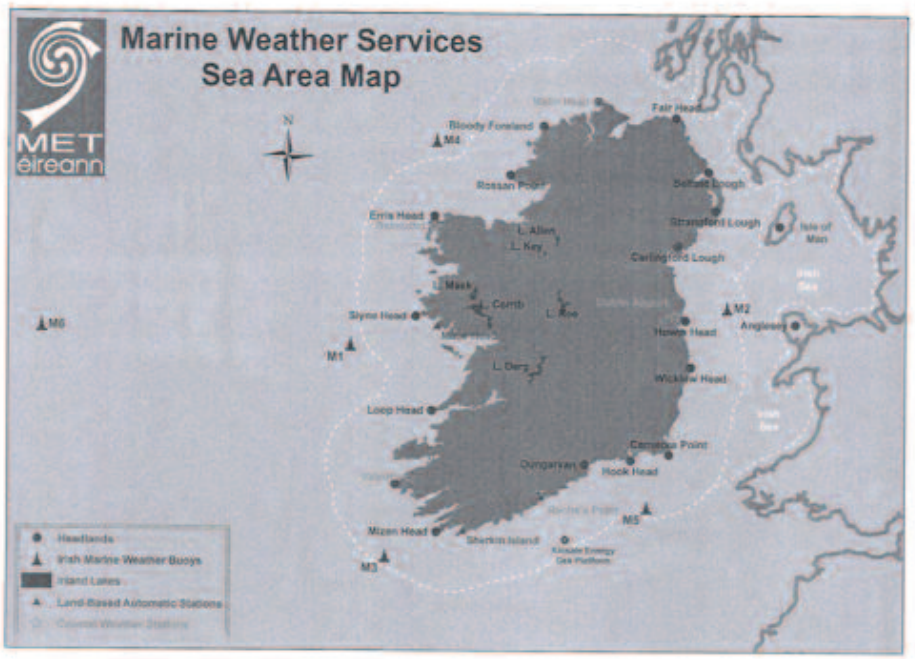


http://www.met.ie/marine/marine_map.asp

Appendix 7.3 CH Marine- PFD Survey Report.

CHMARINE Ltd

Nautic House, Marsh Rd, Skibbereen, Co. Cork, Ireland

PFD Survey Report – 17th December 2013

Summary

At the request of the MCIB, CH Marine Ltd has been engaged to report on the condition and working state of 2 x Gas Inflation PFDs summited for inspection by [redacted] Tramore Garda Station, Co Waterford

Inspecting Technician

[redacted]

Inspection Date

17th December 2013

Observers present

MCIB

[redacted]

Detective Garda [redacted]

Venue

DTTAS Approved Service Station.
C H Marine Ltd, Nautic House, Marsh Rd, Skibbereen, Co Cork

Tel: +353 (0)28 23190 | Fax: +353 (0)28 22028 | Email: sales@chmarine.com | Web: www.chmarine.com
Company Reg. No. 298371 | VAT Reg. No. IE8298371W | Directors: J.P. Bendon N.A. Bendon

Appendix 7.3 CH Marine- PFD Survey Report.

PFD No 1

Details

Make:	Mullion
Model:	Neptune 150 Automatic
Serial No:	017408
Date of Man :	04-2008
Operating Cartridge:	United Moulders
Cartridge Batch No:	30292539
Cartridge Expiry Date:	12-2010

Observation Report

The PFD was presented in an open but deflated condition. The evidence showed the Gas Cylinder had been discharged and the Operating Cartridge had been activated. The presence of the Manual Clip (Green) in its correct location confirms the PFD inflated automatically and that the manual override was not applied.(See Fig. 1)

Fig. 1 United Molders Auto Head - Manual Clip in place

The Bladder had become detached from the outer cover on the left side (oral tube side) of the PFD. It appears the Cord Ties between the Bladder and the Safety Harness had been cut. The Bladder also showed minor ingress of water.

It should be noted the Gas Cylinder showed heavy corrosion and the Operating Cartridge had expired. Expiry date printed on capsule 12-2010.

Page **2** of **6**

Appendix 7.3 CH Marine- PFD Survey Report.

Inspection and Working Report

A new Cylinder and Auto Capsule were fitted and the PFD was repacked to its original state. The PFD was then tested by submerging in water to simulate a normal automatic activation.
The PFD inflated correctly but immediately showed signs of losing pressure and deflating. On further, inspection I discovered two small holes in the bottom section, right hand side of the bladder. The holes were conducive to being pierced by a sharp object, such as a wire spike or similar small sharp pointed object. (See Fig. 2.)

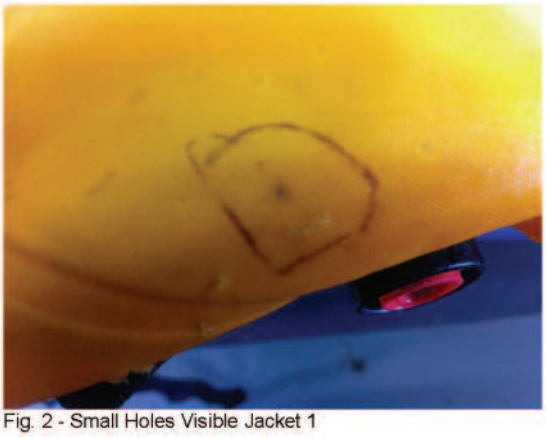


Fig. 2 - Small Holes Visible Jacket 1

Conclusion and Findings

It would appear that this PFD did inflate correctly but would have deflated quite rapidly given the 2 holes found in the Bladder. It is hard to estimate how long it would take before this PFD would become ineffective as it would vary with body weight and sea conditions, however, my estimate would be between 15 - 30 min. There was no evidence to show that this PFD had ever been through a service procedure and this finding is supported by the fact the Gas Cylinder was heavily corroded and the Operating Cartridge was 4 years and 1 month out of date.

Appendix 7.3 CH Marine- PFD Survey Report.

PFD No 2

Details

Make:	Baltic
Model:	150 Winner - Manual
Serial No:	Not visible markings through wear & tear
Date of Man :	Not visible markings through wear & tear
Operating Head:	United Moulders
Bladder No	00200242226341

In the absence of legible information as regards to the Date of Man. I was able to determine from the Bladder No. that the Bladder was produced on October 18th 2002 and the PFD was most likely manufactured within two months of this date.

Observation Report

The PFD was presented in partially opened but showed no signs of inflation. It appeared badly worn with the cover in poor condition. The Gas Cylinder showed severe corrosion with rust scale present. (See Fig. 3 & 4)

Fig. 3. Cover showing worn condition

Fig. 4 Cylinder showing heavy corrosion

Page 4 of 6

Appendix 7.3 CH Marine- PFD Survey Report.

Inspection and Working Report

The Gas Cylinder was removed and weighed at 149.8g, conclusive with a fully charged cylinder. The PFD was then re-packed and fitted with the same Cylinder and a Manual Inflation was effected by pulling on the Inflation Toggle.
The PFD inflated correctly but immediately showed signs of losing pressure and deflation. On inspection I discovered a small hole on lower, right hand side of the Bladder. The hole was conducive to being pierced by a sharp object, such as a wire spike or similar small sharp pointed object. (Fig. 5)

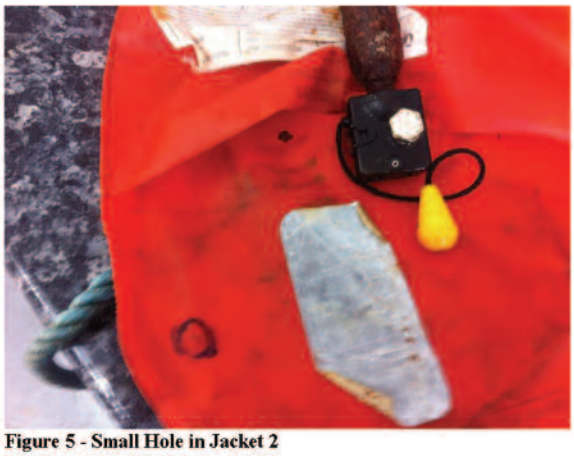


Figure 5 - Small Hole in Jacket 2

Conclusion and Findings

It would appear that this PFD was never activated. It was a manually activation PFD and if the Toggle Cord had been pulled, it would have inflated correctly but would have rapidly deflated due to the hole found in the Bladder. It is hard to estimate how long it would take before this PFD would become ineffective as it would vary with body weight and sea conditions, however, my estimate would be between 15 - 30 min.

There was no evidence to show that this PFD had ever been through a service procedure and this finding is supported by the fact the Gas Cylinder was heavily corroded.

Appendix 7.3 CH Marine- PFD Survey Report.

Signed :

……

[redacted]

Date : 27/01/2014

Appendix 7.4 Approximate Position of Casualty.

Appendix 7.5 Photographs.

Photograph No. 1 - General View of Vessel

Photograph No. 2 - Damages to Transom

Appendix 7.5 Photographs.

Photograph No. 3 - Damages Starboard Side

Photograph No. 4 - Damages to Stem

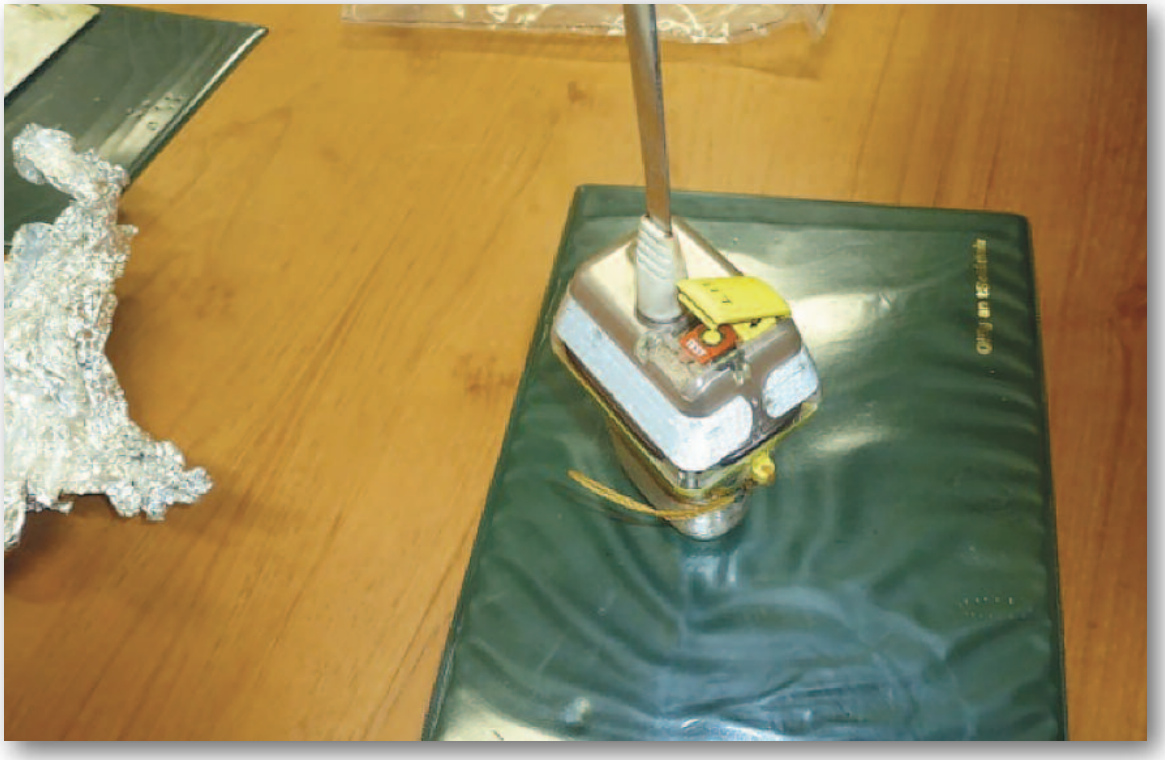
Appendix 7.5 Photographs.

Photograph No. 5 - EPIRB Fitted in Holding Bracket
Unlikely to come out of bracket without manual assistance from a person

Photograph No. 6 - Typical Internal Timbers of Vessel

Appendix 7.5 Photographs.

Photograph No. 7 - Vessel Internally



Photograph No. 8 - EPIRB as Given to Gardaí 16th June 2013

Appendix 7.5 Photographs.

Photograph No. 9 - EPIRB as Given to Gardaí 16th June 2013

Photograph No. 10 - PFD Worn by Casualty No. 2

Appendix 7.5 Photographs.

Photograph No. 11 - CO_2 Bottle in PFD Worn By Casualty No. 2
Note Tell-tale Indicates bottle Not Triggered.CO_2 bottle heavily corroded

Photograph No. 12 - Seal on CO_2 Bottle Still Intact

Appendix 7.5 Photographs.

Photograph No. 13 - Leaking Bladder on PFD from Casualty No. 2

Photograph No. 14 - Leaking Bladder on PFD from Casualty No. 3

Appendix 7.5 Photographs.

Photograph No. 15 - Hydrostatic Release on PFD From Casualty No. 3
Date indicates that it should have been replaced

Appendix 7.6 Sartech- EPIRB Test Notes.

SARTECH ENGINEERING LTD 13 Trowers Way Holmethorpe Industrial Estate REDHILL Surrey RH1 2LH UK
Tel: +44 (0)1737 372670 Fax: +44 (0)1737 772795 Email: info@sartech.com Website: www.sartech.com

Notes of tests carried out on GME EPIRB S/N 70117320 from vessel DEAN LEANNE
Tramore Garda Station 6 August 2013

Present

[redacted]

Test procedure following guidelines supplied by GME

1. Carry out visual examination for any signs of physical damage or potential water ingress
No signs of physical damage seen. Sand particles were observed inside the clear shrink wrap retaining the tether and around the switch mechanism. The vessel name DEANE ANN (incorrect) and callsign EI8980 (correct) were marked in ink on the upper body but the previous programming details (UK) were shown on the side of the beacon. [redacted] *said that there may have been a Dymo label covering this which could have fallen off since.*

2. Check the integrity of the safety seal across the slide switch
Seal was intact, and the slide switch in the OFF position. However it was noted that the seal was not stuck down firmly in the middle, and it may have been possible to operate the slide switch without damaging the seal (not tested)

3. Hold TEST button down for 3 seconds and observe if the beacon under test emits a "beep" and momentarily flashes the LED strobe.
No beep or flash observed. Button found to have limited travel, and no "click" felt by comparison with a known working EPIRB. Switch suspected to be stuck in the ON position.

4. Using a calibrated Beacon Tester, repeat the beacon test procedure then record and save the received information.
No transmission detected on either BT100A supplied by Sartech, or Futronic GMDSS Testset supplied by MSO.

5. Carefully open the EPIRB by removing the 4 screws that secure the top and bottom cases.
Observed that one screw head was sealed with Loctite or similar witness product, showing that in all likelihood the beacon had not been opened since its manufacture in 2007.

6. Separate the cap and electronics assembly from the battery pack housed in the bottom half of the EPIRB
Interior was found to be clean and with no signs of water ingress or corrosion.

7. Using a calibrated voltmeter measure and record the "off load" voltage across the battery pack connector. If the measured voltage is less than 5.6V DC, connect a new battery pack to the electronics circuit and retest the EPIRB.

Appendix 7.6 Sartech- EPIRB Test Notes.

Open circuit voltage found to be 0.3V. A low wattage lamp load was connected (12V 14W) and the voltage dropped to 0.0V. Additional test: A continuity test was made on the beacon switch contacts, confirming that the switch was stuck in the ON position.

A new battery pack (open circuit voltage 6.2V) was connected to the electronics assembly. No flash or beep was observed. The beacon testers detected continuous transmission on the homing frequency (121.5MHz). No modulation could be confirmed.

Additional test: The battery was connected for about 10 minutes and the on-load voltage recorded at 5.7V. It was observed that the central screening can had become quite hot to the touch, and the RF power amplifier module on the reverse side of the board was too hot to hold. The assembly was beginning to give off a smell consistent with overheating so the battery was disconnected. The EPIRB was reassembled with its original battery disconnected and the screws fitted loosely.

Examination and further tests on board DEAN LEANNE at Waterford

The mounting bracket was found to be undamaged and securely mounted on the starboard side within a partially enclosed area under the foredeck. A known working EPIRB of similar age (MT401 S/N 61016824) coded 9D0E4106E00022D (UK 16824) was fitted to the bracket and found to be secure. This EPIRB was then activated with local coastguard and MCC permission to verify transmission was possible from the vessel, even with the EPIRB in its bracket with the antenna folded. The EPIRB was kept on for approximately 10 minutes.

A BT100A tester confirmed correct reception of both 406MHz and 121.5MHz signals at a range of approximately 2m, but with 406MHz signal strength indicated at 52% and the 121.5MHz signal strength at 21% Via Irish Coast Guard, UKMCC Kinloss reported detection via the LEO (Low Earth Orbit) satellite constellation, but not via the GEO (Geostationary Earth Orbit) constellation..

I have today checked with UKMCC and the data shows that 7 bursts from the EPIRB were relayed from the SARSAT-10 satellite, giving a location of 52:17.41N, 7:04.34W which is about 0.6nm from the true position.

Conclusions & recommendation

The EPIRB was found to be physically undamaged and watertight. However it appears to have suffered mechanical failure of the activation switch (stuck ON) and failure of the electronics, at some time since it was last known to have been tested in January/February 2013 (as reported by [redacted]) It is recommended that the EPIRB be fully analyzed in the manufacturer's facility In Australia with independent observers as necessary.

[redacted]

[redacted]

7th August 2013

ISO 9001:2008 REGISTERED FIRM

CIRM

RTCM

Registered in England No. 3328421

Appendix 7.7 ATSB- GME EPIRB Examination Report.

Australian Government
Australian Transport Safety Bureau

Examination of *Dean Leane*'s GME EPIRB – 12 February 2014

1015 Opening meeting with [redacted] and [redacted]. It was agreed that inspection and testing would take place in accordance with the procedure that had been supplied by GME (copy attached) and that no action would take place unless I advised that the action was acceptable.

1045 Inspections began with [redacted] dismantling the device and carrying out observations in tandem with myself. All observations and actions taken were documented (copy attached). The procedure was recorded (video) and a series of still photographs were also taken. Present during this entire process were [redacted] and [redacted]. Others including [redacted] and [redacted] attended from time to time.

The notes taken at the time of the inspection/testing are self-explanatory and should be read in conjunction with this statement. GME will produce a report that will be provided at a later date. While the GME report will not be duplicated by the ATSB, below are a few observations that may be of assistance to the MCIB.

- The mating of the EPIRB in a mounting bracket was observed, as was the process of releasing the EPIRB from the bracket. The conclusion was drawn that while it is possible that the EPIRB was knocked free of its bracket, it is more likely that it was removed by the crew.
- While hairline cracks were found on one corner of the EPIRB body and there were some imperfections in the internal coating, there was no evidence of water ingress.

Figure 1

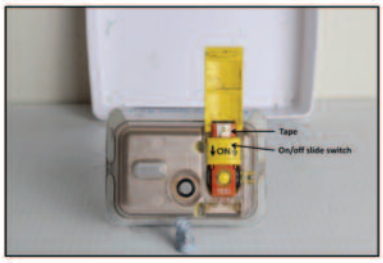
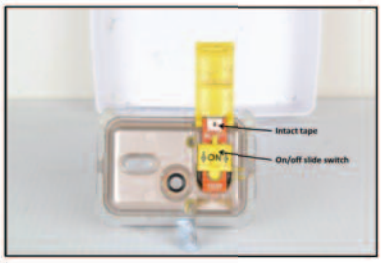


Figure 2



- On initial inspection, the on/off switch (Figure 1) was in the off position and its sealing tape was intact. As the tape was meant to tear when the switch was turned on, this indicated that the unit had not been switched on. However, the test button was latched

62 Northbourne Ave
Canberra ACT 2601
Australia

PO Box 967
Civic Square
ACT 2608 Australia

Telephone 02 6257 4150
24 hours 1800 020 616
Fax 02 6247 3117

Web www.atsb.gov.au
Email atsbinfo@atsb.gov.au
Twitter @ATSBinfo

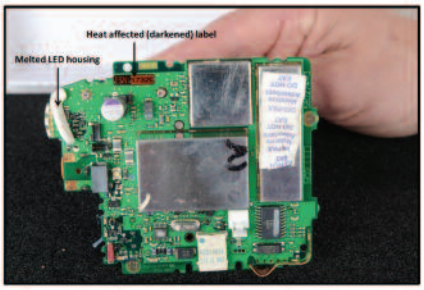
ABN 65 061 156 887

Appendix 7.7 ATSB- GME EPIRB Examination Report.

in the on (depressed position) by accumulated salt and sand. Tests later in the day showed that contrary to the design intention, it was possible to slide the on/off switch to the on position without tearing the sealing tape (Figure 2). This indicates that it is possible that the EPIRB was switched on by the vessel's crew. It is also possible that it was switched by some other person after its recovery.

- There were signs of heat damage inside of the EPIRB, the LED housing had melted and the identification label had discoloured (Figure 3). Both batteries had full discharged.

Figure 3



- The unit did not operate when tested. It drew an excessive amount of current and produced a constant voltage output from the micro-processor (this voltage output should have oscillated).
- When the miro-processor was replaced with a new programed unit, the EPIRB operated correctly.
- It was concluded that the micro-processor failed due to an internal fault and not as a result of the failure of another component or erroneous input.

The video recordings, photographs and related documents will be forwarded to the MCIB along with the GME report, when it is received.

[redacted]

Appendix 7.8 Cypress Report.

CYPRESS SEMICONDUCTOR
CUSTOMER FAILURE ANALYSIS REPORT – F1424003
CY8C27243-24SXIT Not Known failure returned from Arrow Electronics Australia

Cypress Philippines, June 18, 2014 — CyLink Case#: 489394-2566109061

CUSTOMER: [redacted] **CUSTOMER CONTACT:** [redacted]

CUSTOMER REF#: Not provided **REQUESTER:** [redacted]

CUSTOMER PART#: Not provided **DATE RECEIVED:** June 9, 2014

CYPRESS PART#: CY8C27243-24SXIT **# UNITS RETURNED:** 1
FUNCTION: PSoC™ Configurable Mixed-Signal Array w/On-Board Controller
PACKAGE TYPE: 20L SOIC **DATE CODES:** 0549

FAILURE ANALYST: [redacted] **CY SALES CONTACT:** [redacted]
CY APPS CONTACT:

KEY FINDINGS: Oxide: Delamination at oxide / dielectric layer
CAR: N/A

1.0 HISTORY:

1.1 Failure information provided in FA request form by requester ([redacted]):

1.1.1 Description: "Hi Cypress team, As discussed, could you kindly organise with your FA team to conduct the test on the failed PSOC1 device (CY8C27243-24SXIT) submitted by MCIB? Thank you. Best regards, [redacted]

1.1.2 Failure Detection Point: Not Known Hours to Failure: Not provided

1.1.3 Failure Rate: Not provided Samples Tested: Not provided

1.1.4 Level of Analysis Requested: Physical Failure Analysis

2.0 FAILURE ANALYSIS CONCLUSIONS:

2.1 One unit was returned to Cypress Philippines for failure analysis.

2.2 Scanning Acoustic Microscopy (CSAM) analysis revealed delamination.

2.3 X-ray inspection did not find any anomalies.

2.4 The unit was tested on the ATE and bench.

2.4.1 The unit failed opens on pins 15(XRES) and 18(P0[4]) and short on pin 20(VDD) on the ATE using the QA test program at room temperature.

2.4.2 The same failure mode was confirmed on DC bench testing.

2.5 After the unit was decapsulated, visual and Scanning Electron Microscopy (SEM) inspection on the unit showed die-level delamination in the area of failing pins 15(XRES), 18(P0[4]), and 20(VDD).

2.6 This type of die-level delamination is termed "die-edge delamination," as it appears to originate from the sawn edges of the die. The unit was verified as a valid failure due to die edge delamination. It is unknown if the returned unit was the cause of the application failure; further confirmation of the exact circumstances of the failure is required.

2.6.1 Die-edge delamination results from moisture absorption during extended storage in high humidity environments. Moisture ingress occurs at the edge of the die, at the doped oxide layer. This oxide swells and delaminates from the over or underlying layers. As the delamination front propagates to internal circuits, it can sever metal contacts, rendering the device inoperable. The presence of a thermal gradient

[redacted]

Appendix 7.8 Cypress Report.

CYPRESS PERFORM

will prevent moisture ingress, and thus this phenomenon does not occur during normal system operation when the chip is powered up.

2.6.2 An effective corrective action, the introduction of a Nitride Seal Mask (NSM), was deployed across all affected products. Through the deployment of NSM, a moat is etched around each die down to the silicon substrate, and the final nitride layer covers this moat. The nitride-covered moat surround the die; the edge of the die exposed during singulation prior to assembly is outside of this moat, and therefore any die-edge delamination that occurs at this edge will be arrested at the moat and will not affect any circuits.

2.7 Sample disposition: Sample returned to the customer.

3.0 IMPACT:

3.1 Reliability impact for this failure mechanism cannot be quantified through accelerated reliability testing as we have been unable to duplicate the failure mechanism through such testing. Overall customer return rates for this failure mechanism are in the 10ppm level, however, prolonged storage in high humidity conditions prior to end product installation and power-up can result in significantly higher failure rates at first power-up.

3.2 NSM forms an impermeable barrier against moisture.

4.0 LOT HISTORY DETAILS:

4.1 Lot numbers and Failure Codes

S/N	Cust. Marking	Date Code	Mark Lot	Assy Lot	Fab Lot	Failure Code
1		0549	6105586649	6105586649	4541745	FO2 - Oxide Delamination at oxide / dielectric layer

4.2 Manufacturing sites and Technology

S/N	Fab Site Code	Assy Site Code	Test/Finish Site Code	Manufacturing Part No.	Technology
1	On file	R	On file	8C27243BC-**RSZI	SONOS CLK

5.0 ANALYSIS:

5.1 Analysis Techniques used:

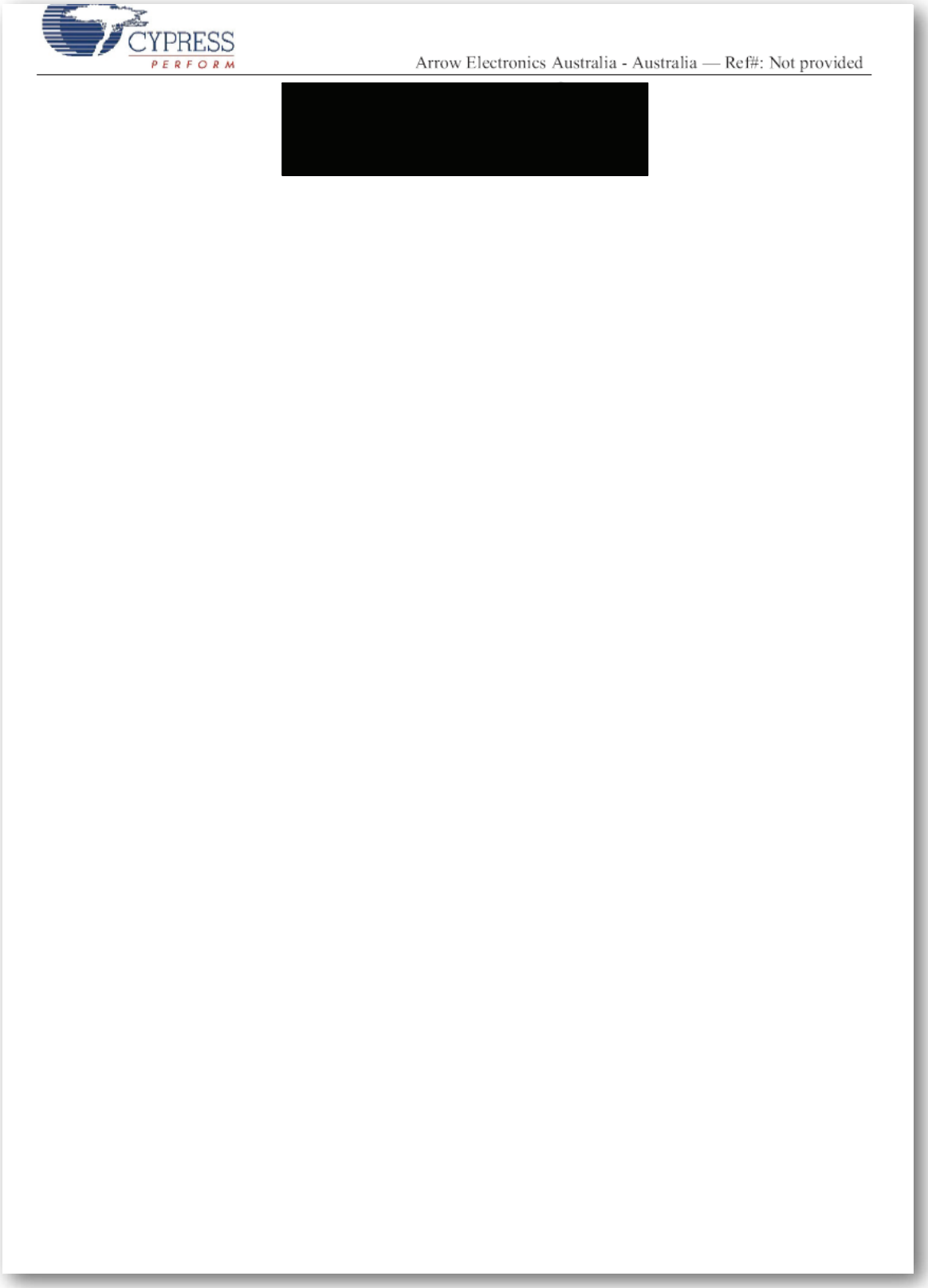
Type of Analysis	Device	Technique	Result	Reference
V/M inspection	1	Optical microscopy	External visual inspection showed top package scratches upon receipt showing that the top mark was intentionally removed.	Figure 1
V/M inspection	1	CSAM	Top die and paddle delamination was noted.	Figure 2
V/M inspection	1	Radiology	No apparent wire bond anomaly was observed.	Figure 3
V/M inspection	1	Lead reconditioning	All leads were reconditioned.	N/A
Electrical analysis	1	DC bench test	The unit failed open on pins 15(XRES), 18(P0[4]) and failed short on pin 20(VDD).	Figure 4
Electrical analysis	1	ATE test	The unit failed open on pins 15(XRES), 18(P0[4]) and failed short on pin 20(VDD) using the QA test program at room temperature.	N/A
Physical analysis	1	Chemical decap	Top die was exposed.	N/A
V/M inspection	1	Optical, Nomarski and SEM microscopy	Die-level delamination was observed.	Figure 5

6.0 APPROVALS:

[redacted]

[redacted]

Appendix 7.8 Cypress Report.



Appendix 7.8 Cypress Report.

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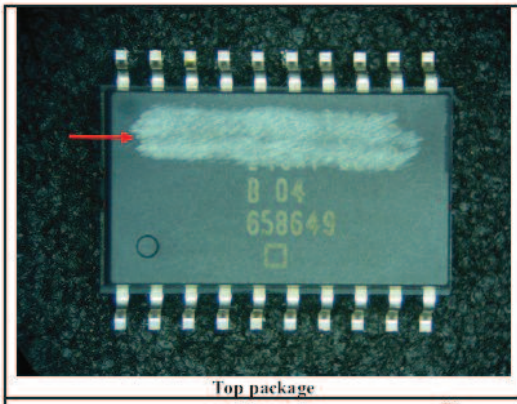
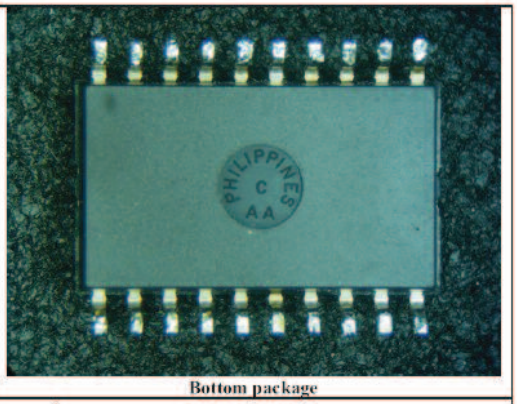
Arrow Electronics Australia - Australia — Ref#: Not provided

APPENDIX: ANALYSIS DOCUMENTATION

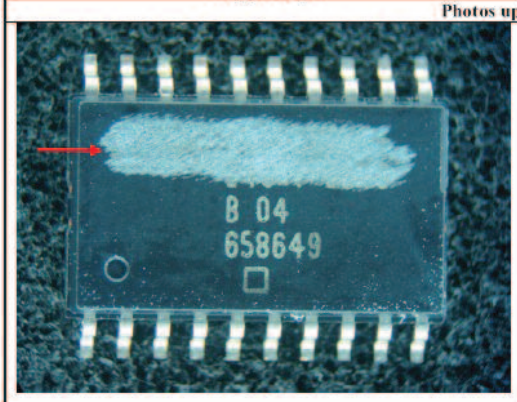


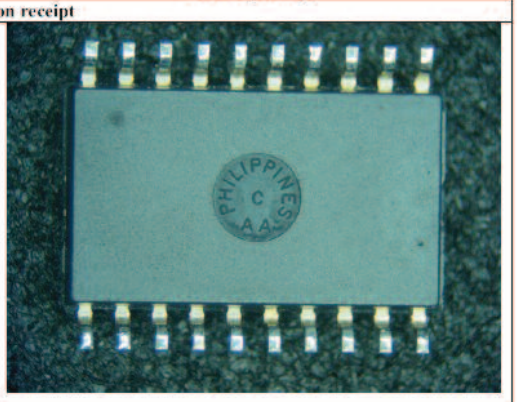
Top package



Bottom package

Photos upon receipt





Photos after lead recondition

Figure 1. Back to analysis

S/N #: 1

GRAPHICS: Representative optical photos

COMMENTS: External visual inspection showed top package scratches upon receipt showing that the top mark was intentionally removed.

Appendix 7.8 Cypress Report.

CYPRESS PERFORM

Arrow Electronics Australia - Australia — Ref#: Not provided

Focused on die

Focused on top paddle

CSAM photos upon receipt

S/N #: 1
GRAPHICS: CSAM photos
COMMENTS: Top die and paddle delamination was observed.

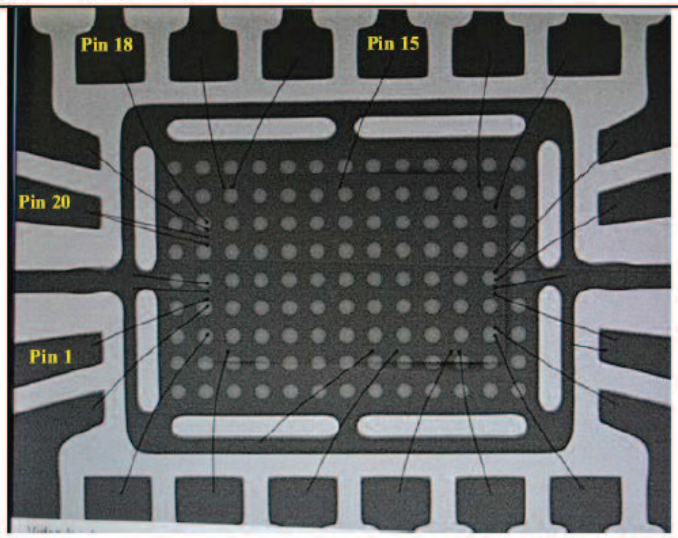


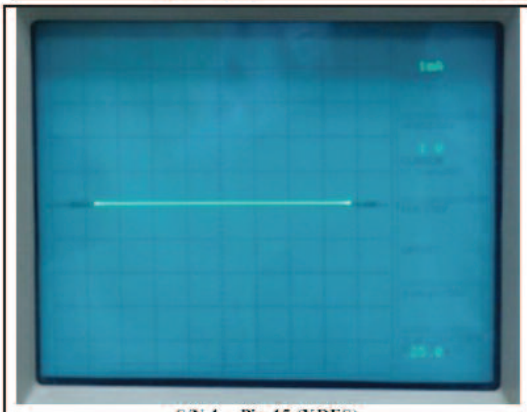
Figure 3.
S/N #: 1
GRAPHICS: X-ray photo
COMMENTS: No apparent wire bond anomaly was seen.

Back to analysis

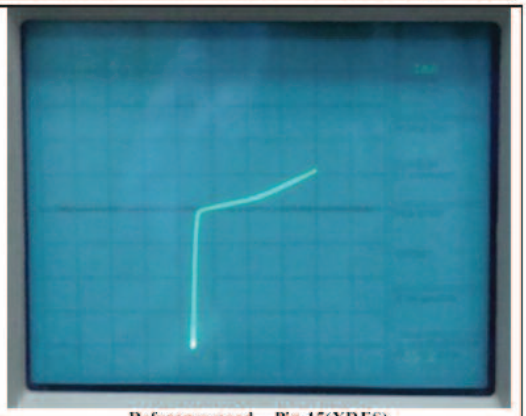
Appendix 7.8 Cypress Report.

CYPRESS PERFORM

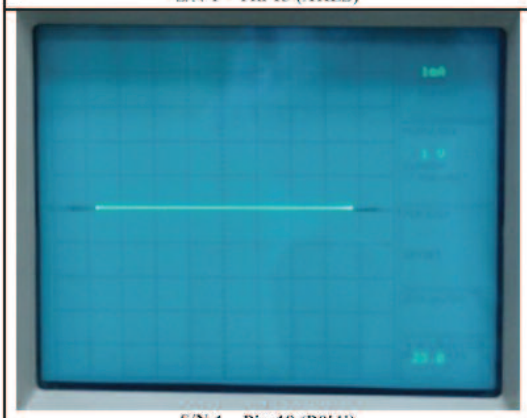
Arrow Electronics Australia - Australia — Ref#: Not provided



S/N 1 – Pin 15 (XRES)

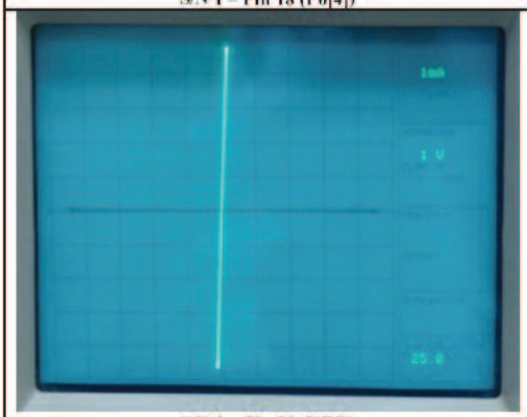


Reference good – Pin 15(XRES)

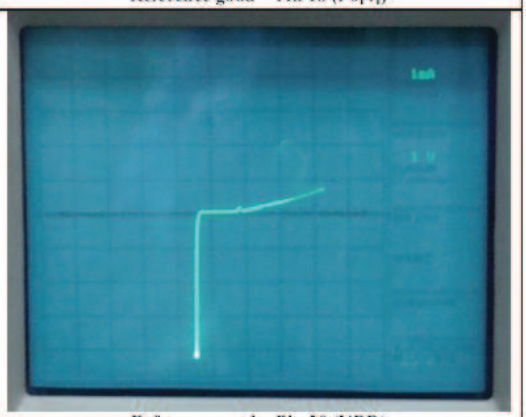


S/N 1 – Pin 18 (P0[4])

Reference good – Pin 18 (P0[4])



S/N 1 – Pin 20 (VDD)



Reference good – Pin 20 (VDD)

Figure 4. Back to analysis

S/N #: 1

GRAPHICS: Representative I/V curve trace photos

COMMENTS: The unit failed open on pins 15(XRES), 18(P0[4]) and failed short on pin 20(VDD).

Appendix 7.8 Cypress Report.

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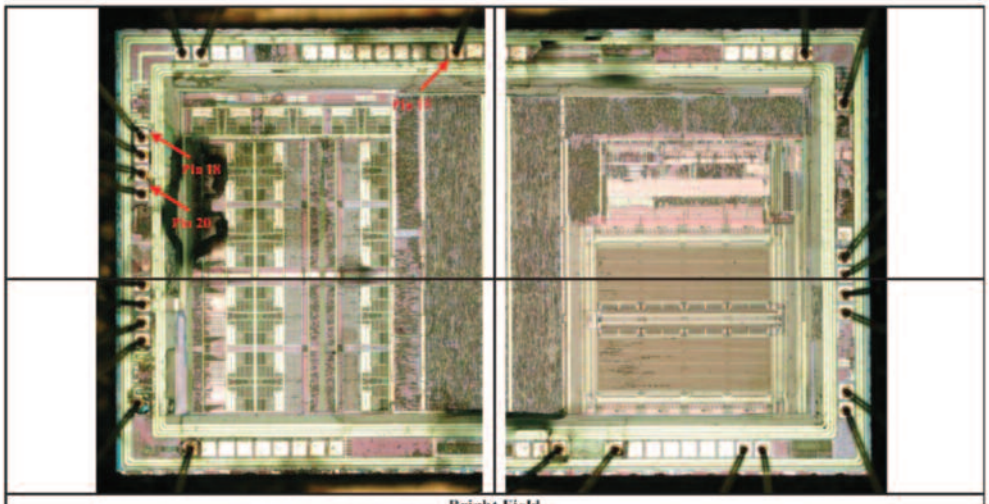
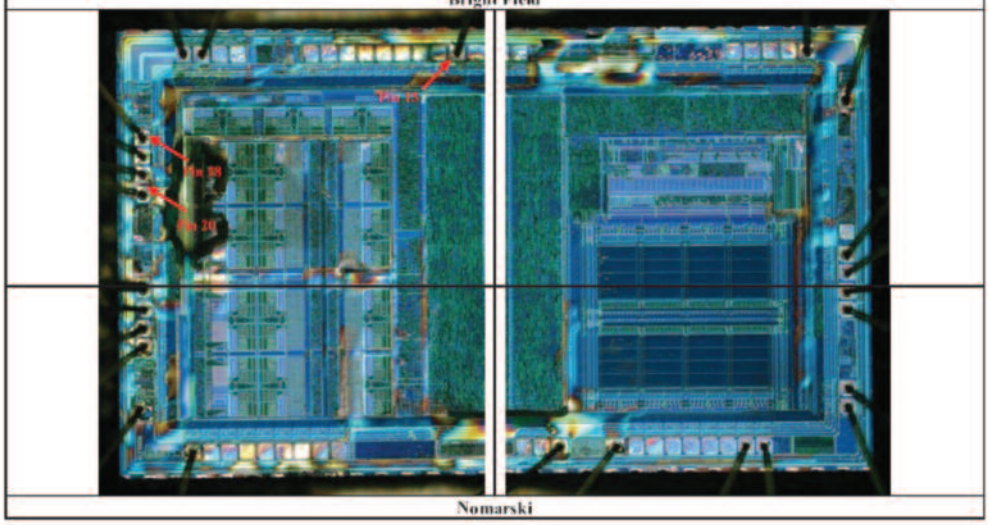
Arrow Electronics Australia - Australia — Ref#: Not provided



Bright Field



Nomarski

Appendix 7.8 Cypress Report.

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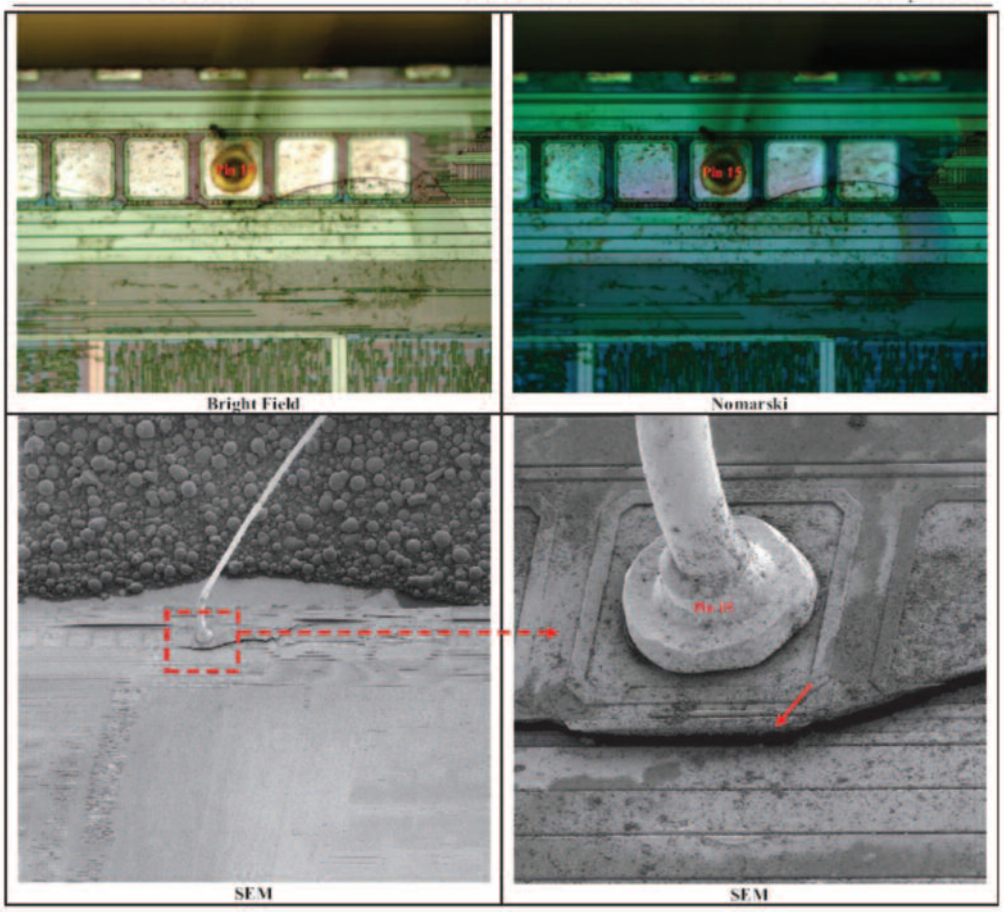
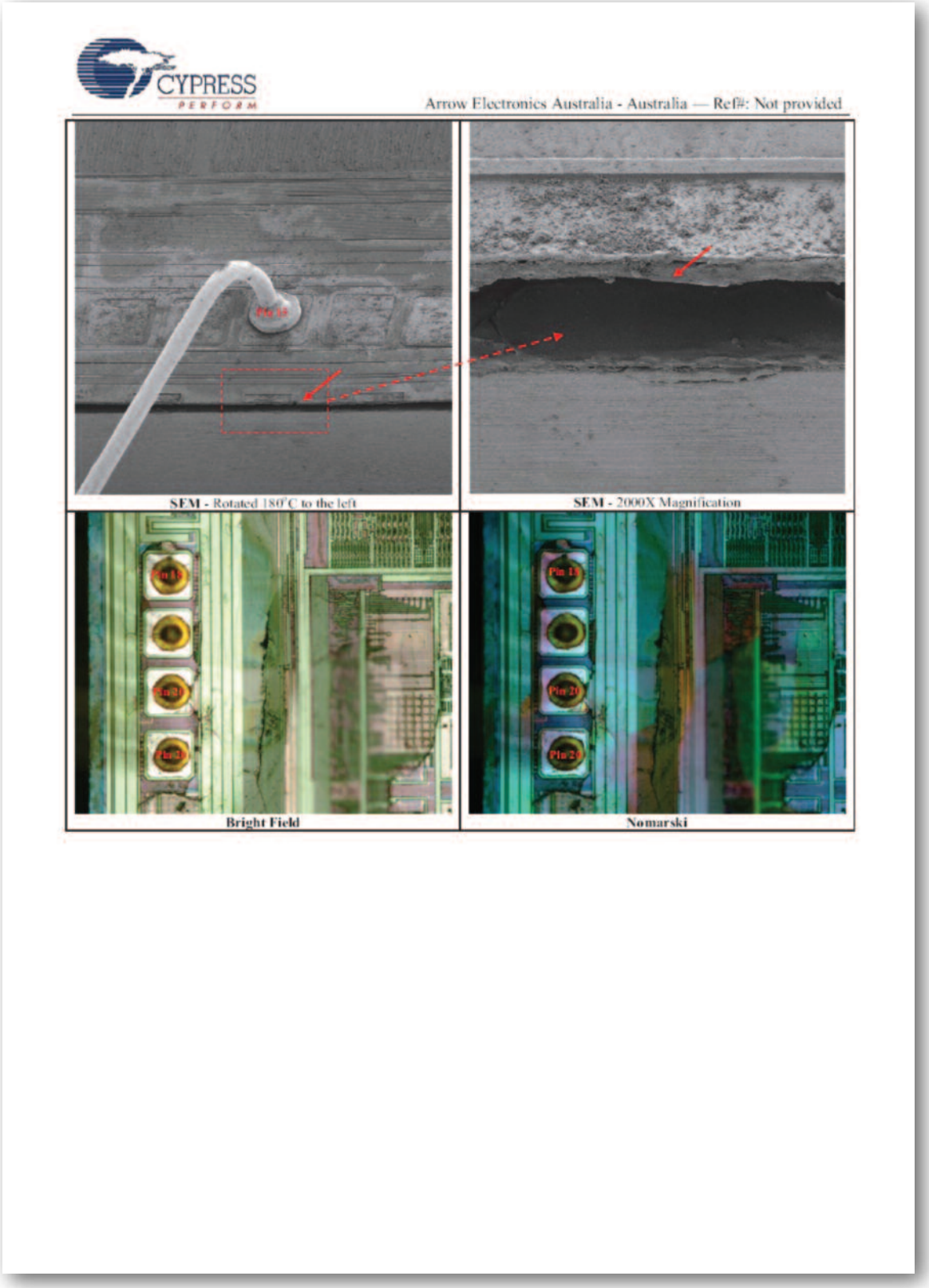
Arrow Electronics Australia - Australia — Ref#: Not provided



Appendix 7.8 Cypress Report.



Appendix 7.8 Cypress Report.

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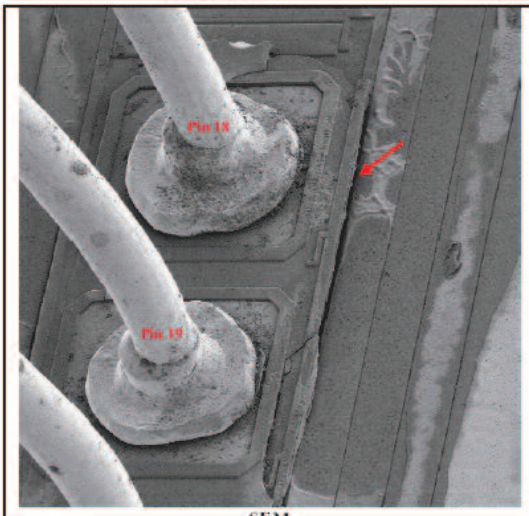
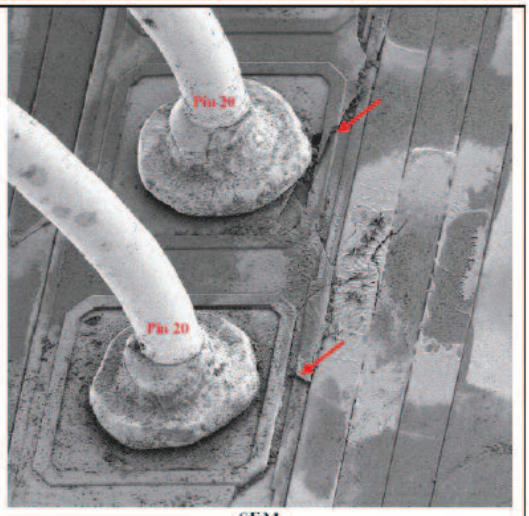
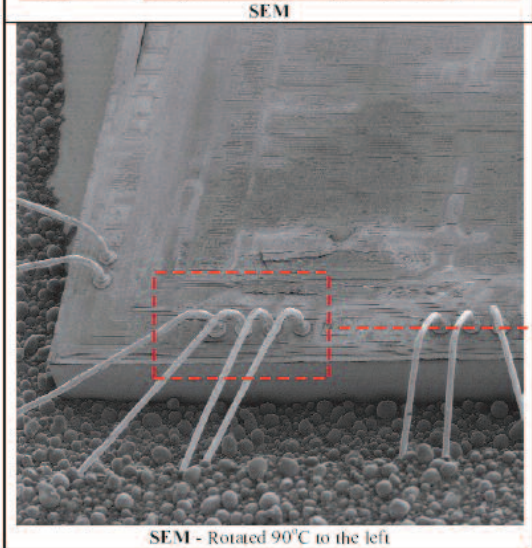
Arrow Electronics Australia - Australia — Ref#: Not provided



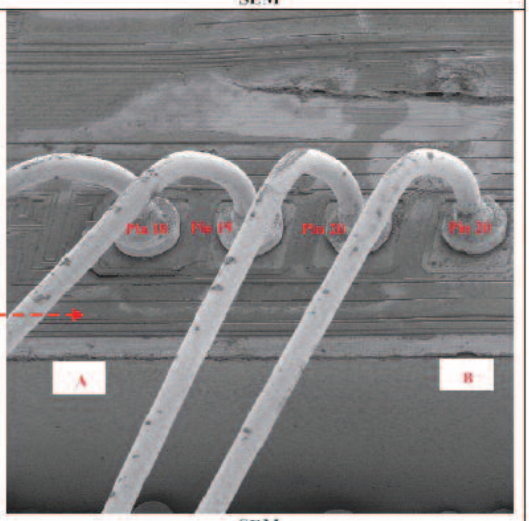
SEM



SEM



SEM - Rotated 90°C to the left

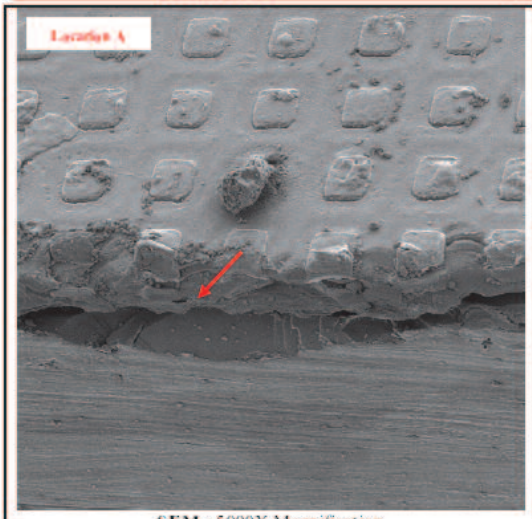


SEM

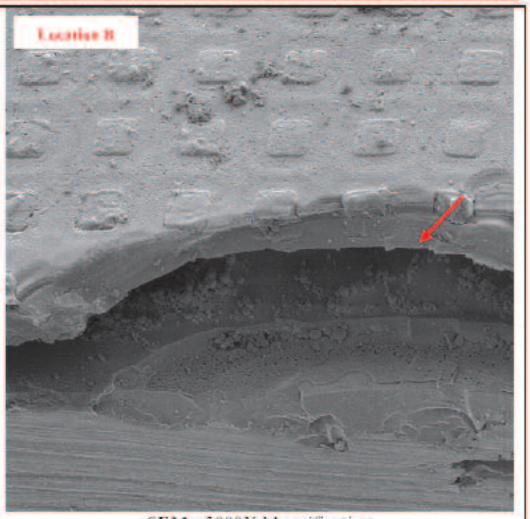
Appendix 7.8 Cypress Report.

CYPRESS
PERFORM

Arrow Electronics Australia - Australia — Ref#: Not provided



SEM - 5000X Magnification



SEM - 5000X Magnification

Figure 5. Back to analysis
S/N #: 1
GRAPHICS: Representative Bright Field, Nomarski and SEM photos
COMMENTS: Die-level delamination was observed.

Appendix 7.9 Marine Notice No. 63 of 2013 (GME Precautionary EPIRB Safety Alert).

An Roinn Iompair Turasóireachta agus Spóirt
Department of Transport, Tourism and Sport

Marine Notice No. 63 of 2013

Notice to all Shipowners, Fishing Vessel Owners, Agents, Shipmasters, Skippers, Fishermen, Yachtsmen and Seafarers

GME EPIRB Safety Alert

The Department of Transport, Tourism and Sport has been advised of potential GME EPIRB failures.

The following GME EPIRB models, manufactured in the 2005-2010 period, have been identified as being at risk of failure.

GME MT400, GME MT401, GME MT406G, GME MT401FF, GME MT403/G and **GME MT403FF/FG**

Owners of all GME EPIRBs are advised to carry out immediate testing of their beacon as detailed in the annex to this notice.

For further information, please see the attached annex, which reproduces the safety alert on this matter, issued by GME.

Irish Maritime Administration,
Department of Transport, Tourism and Sport,
Leeson Lane, Dublin 2, Ireland.

11/11/2013

Encl. Annex

For any technical assistance in relation to this Marine Notice, please contact:
The Marine Survey Office, Leeson Lane, Dublin 2, tel: +353-(0)1-678 3400.
For general enquiries, please contact the Maritime Safety Policy Division, tel: +353-(0)1-678 3418.
Written enquiries concerning Marine Notices should be addressed to:
Maritime Safety Directorate, Department of Transport, Tourism and Sport, Leeson Lane, Dublin 2, Ireland.
email: marinenotices@dttas.ie or visit us at: www.dttas.ie

Appendix 7.9 Marine Notice No. 63 of 2013 (GME Precautionary EPIRB Safety Alert).

GME

EPIRB PRECAUTIONARY SAFETY ALERT

DATE: NOVEMBER 4 2013
EFFECTIVE: IMMEDIATELY

BACKGROUND

Standard Communications Pty Ltd designs and manufactures a range of Emergency Position Indicating Radio Beacons (EPIRBs) that are marketed globally under the GME brand.

As a result of market place feedback Standard Communications Pty Ltd has become aware of a small number of instances where GME EPIRBs have failed the self test procedure. A consequence of such failure may mean the EPIRB will not operate in an emergency situation.

INVESTIGATION

Subsequent testing and investigation in the company's Sydney engineering laboratory, indentified a microprocessor malfunction that effectively shuts the beacon down, hence the self test failure.

Detailed analysis has shown that the failures have occurred in EPIRBs manufactured in the 2005 – 2010 period; to date the overall failure rate remains low, never the less as a responsible supplier of safety at sea equipment, Standard Communications Pty Ltd has in consultation with National Maritime Authorities voluntarily elected to publish this precautionary safety alert.

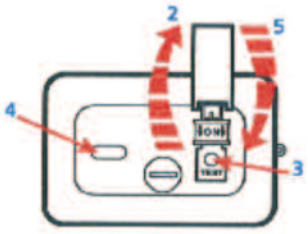
MODELS IMPACTED

GME MT400, GME MT401, GME MT406G, GME MT401FF, GME MT403/G and GME MT403FF/FG

GME EPIRBS manufactured between January 2005 and June 2010 have been identified as being at risk.
None the less, **GME strongly recommends that all EPIRBs** are tested at regular intervals (approximately monthly or prior to an extended voyage).

ACTION REQUIRED

Owners of all GME EPIRBs are required to undertake an immediate test of their beacon using the following procedure:



1. Remove the beacon from the bracket. Keep the antenna well clear of metallic objects during testing.
2. Lift the cover marked 'LIFT'.
3. Briefly press then release the yellow 'TEST' button.
4. The unit will give a double beep and flash of the strobe light to show it is functioning correctly.
5. Close the switch cover and press firmly into place until it clicks.
6. Return the beacon into the bracket.

Self test instructions are printed on the beacon's front panel, they are also detailed in the owner's instruction booklet.

In the unlikely event of any beacon tested failing to produce a positive self test result, owners should immediately contact their point of purchase or the GME email hotline of **mtfail@gme.net.au**

CONTACT INFORMATION
A division of Standard Communications Pty Ltd.
PO Box 96, Winston Hills, NSW 2153, Australia
PHONE: +61 (0)2 8867 6000, **FAX:** +61 (0)2 8867 6199
www.gme.net.au
mtfail@gme.net.au

Appendix 7.10 Marine Notice No. 41 of 2014 (Global EPIRB recall).

An Roinn Iompair Turasóireachta agus Spóirt
Department of Transport, Tourism and Sport

Marine Notice No. 41 of 2014

Notice to all Vessel Owners, Operators, Masters, Fishing Vessel Owners, Skippers, Fishers and Recreational Craft Users

GME EPIRB Recall

The Department of Transport, Tourism and Sport wishes to advise it has been informed that Standard Communications Pty Ltd, the manufacturer of GME EPIRBs, have issued a Product Safety Recall of the following affected EPIRB units:

GME MT400/MT401/MT403 EPIRBs with serial numbers between 50101000 and 80250722.

For further information please see the attached annex, which reproduces the Product Safety Recall on this matter, issued by GME.

Irish Maritime Administration,
Department of Transport, Tourism and Sport,
Leeson Lane, Dublin 2, Ireland.

10/07/2014
Encl: Annex

For any technical assistance in relation to this Marine Notice, please contact:
The Marine Survey Office, Leeson Lane, Dublin 2, tel: +353-(0)1-678 3400.
For general enquiries, please contact the Maritime Safety Policy Division, tel: +353-(0)1-678 3418.
Written enquiries concerning Marine Notices should be addressed to:
Maritime Safety Policy Division, Dept. of Transport, Tourism and Sport, Leeson Lane, Dublin 2,

Appendix 7.10 Marine Notice No. 41 of 2014 (Global EPIRB recall).

Product Safety Recall

GME EMERGENCY POSITION INDICATING RADIO BEACONS (EPIRBS)

MT400/MT401/MT403

Standard Communications Pty Ltd designs and manufactures a range of Emergency Position Indicating Radio Beacons (EPIRBs) marketed globally under the GME brand.

Problem

After exhaustive testing we have identified a fault in the microprocessor of certain units that effectively shuts the beacon down. We are concerned that the beacon may not work in an emergency situation.

Action

In consultation with national maritime authorities, Standard Communications has decided to recall certain EPIRBs manufactured between January 2005 and February 2008.

The affected units are the MT400, MT401 and MT403 beacons with serial numbers between 50101000 and 80250722.

What should you do?

If you have a GME EPIRB, please check the model number and serial number. The serial number can be found on the left side of the beacon at the base of the identity panel.

If you own one of the affected units listed above, please contact GME at recall@gme.net.au or your local distributor to arrange a replacement of your beacon at no extra charge.

Standard Communications would also like to take this opportunity to remind all EPIRB users, regardless of the brand, to regularly test the unit. There should be a simple self-test mechanism on all units. You should also ensure that beacon batteries are replaced at intervals recommended by the manufacturer.

Standard Communications Pty Ltd
PO Box 96, Winston Hills, NSW, 2153, Australia.
www.gme.net.au

See www.recalls.gov.au for Australian product recall information

Drawing No: 47EID-1

Appendix 7.11 Bureau Veritas.

MARINE DIVISION
17 bis Place des Reflets - La Défense 2
92400 Courbevoie - France
Tel. 33 1 42 91 52 91
Fax. 33 1 42 91 28 94
www.veristar.com

BUREAU VERITAS

Certificate number: 13686/A2 EC
File number : RAD 01/22643/01
Annex A1 Item number : A.1/5.6
This certificate is not valid when presented without the full attached schedule composed of 7 sections

EC TYPE EXAMINATION CERTIFICATE

as per Module B of European Union Council Directive 96/98/EC on marine equipment as last amended by Commission Directive 2002/75/EC of 2 September 2002

This certificate is issued to

Standard Communications Pty Ltd

Gladesville - AUSTRALIA

for the type of product

406 MHZ EPIRB (COSPAS-SARSAT)

Non float-free satellite EPIRB type: GME-MT400 & GME-MT401 +++ Float-free satellite EPIRB type: Type GME-MT401FF.

Regulations and standards :
SOLAS 74, as amended, Regs. IV/14, IV/7.1.6 (except IV/7.1.6.4), X/3 - IMO Res.A.694(17), MSC 36(63) 14.6.1.6 (1994 HSC Code), MSC 97(73) 14.7.1.6 (2000 HSC Code), MSC/Circ. 862., A696(17), A810(19), as amended by IMO Res.MSC 56(66) and MSC 120(74)- IUT.R M633-2 (05/00), IUT.R M 690-1 (10/95) - IEC 60945 (1996) - IEC 61097-2 (1994). - ETS 300 66-2/V 1.3.1 (2001-01).

This certificate is issued under the French Maritime Authority to attest that BUREAU VERITAS did undertake the relevant type-examination procedures for the product identified above which was found to comply with the relevant requirements of the Council Directive 96/98/EC of 20 December 1996 as amended

This certificate is valid until : 27 Jul 2009

At Paris la Défense, on : 02 Dec 2005

For BUREAU VERITAS, Notified Body N°0062
By order of the Secretary

[redacted]

Approval office

BUREAU VERITAS SURVEYORS AT PARIS 1828 INTERNATIONAL REGISTER PARIS

Local office : BV BRISBANE
Surveyor : F. Zaharia

BUREAU VERITAS SURVEYORS AT PARIS 1828 INTERNATIONAL REGISTER BRISBANE

This certificate does not allow to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark) to the products corresponding to this type. To this end, the production-control phase module (D, E or F) of Annex B of the Directive is to be complied with and controlled by a written inspection agreement with a notified body.
This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. BUREAU VERITAS S.A. is designated by the French Maritime Authority as a "notified body" under the terms of the French Regulations Division 140 Chapter 140-2. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

BV mod. Ad.E 536 August 2005

This certificate consists of 4 pages

Appendix 7.11 Bureau Veritas.

MARINE DIVISION

Certificate number: 13686/B0 EC
File number: RAD 01/22643/01
Annex A1 Item number: A.1/5.6

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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Notified Body 0062 - MARINE EQUIPMENT DIRECTIVE 96/98/EC

EC TYPE EXAMINATION CERTIFICATE

as per Module B of European Union Council Directive 96/98/EC on marine equipment as amended by Commission Directive 2008/67/EC

This certificate is issued to

Standard Communications Pty Ltd
Gladesville - AUSTRALIA

for the type of product

406 MHZ EPIRB (COSPAS-SARSAT)
Non float-free satellite type: GME-MT400, GME-MT402, GME-MT401, GME-MT403 & GPS type GME-MT403G +++
Float-free satellite type: GME-MT401FF, GME-MT403FF & GPS type GME-MT403FG.

Requirements:
SOLAS 74, as amended, Regs. IV/7, X/3 - IMO Res. A.662(16), IMO Res. A.694(17), IMO Res. A.696(17), IMO Res. A.810(19), IMO Res. MSC.36(63)-(1994 HSC Code) 14, IMO Res. MSC.97(73)-(2000 HSC Code) 14, IMO MSC/Circ.862, IMO Comsar Circ.32, ITU-R M.633-2 (05/00), ITU-R M.690-1 (10/95), IEC 60945(2002), IEC 61097-2(2002) and ETSI EN 300066 V 1.3.1 (2001-01).

This certificate is issued under the French Maritime Authority to attest that BUREAU VERITAS did undertake the relevant type-examination procedures for the product identified above which was found to comply with the relevant requirements of the Council Directive 96/98/EC of 20 December 1996 as amended.

This certificate will expire on: 22 Jul 2014

For BUREAU VERITAS Notified Body 0062,

At BV BRISBANE, on 22 Jul 2009,

[redacted]

[redacted]

BUREAU VERITAS SURVEYORS AT PARIS 1828 BRISBANE INTERNATIONAL REGISTER

This certificate does not allow to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark ⚙) to the products corresponding to this type. To this end, the production-control phase module (D, E or F) of Annex B of the Directive is to be complied with and controlled by a written inspection agreement with a notified body.
This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. BUREAU VERITAS is designated by the French Maritime Authority as a "notified body" under the terms of the French Regulations Division 140 Chapter 140-2. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

BV Mod. Ad.E 536 May 2009

This certificate consists of 4 page(s)

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THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

I **Manually Activated Satellite EPIRB without a float-free mechanism -** **Type GME-MT400 1) & GME-MT402 2) (Class 2)**
II **Water Activated/manually released Satellite EPIRB without a float-free mechanism -** **Type GME-MT401 1), GME-MT403 2) & GME-MT403G** **- with integral GPS receiver (Class 2)**
III **Water Activated/manually released Satellite EPIRB with a float-free mechanism (automatic release mechanism) -** **Type GME-MT401FF 1), GME-MT403FF 2) & GME-MT403FG** **- with integral GPS receiver (Class 2)**

1.1 - **Main Characteristics:**

- Beacon type:	Maritime
- Antenna model:	Flexible blade integrated with the beacon
- Operating temperature range:	-20° C to +55° C (class 2)
- Operating lifetime:	48 hrs
- Beacon Battery type:	1) Li-SO_2 (2 D-cells), type Saft LO26 SX or 2) Li/MnO_2 type: either VARTA (CR 2/3 AH, 5x2 cells) or VARTA (CR 123 A, 5x2 cells)
- Frequency:	406,028 Mhz ± 0.001 Mhz
- UHF Output power:	5 W ± 2dB
- Class of Emission:	16 KOG1D

1.2 - **Physical characteristics:** (EPIRB only)

- Dimensions:	260(H) x 102(W) x 83(D) mm
- Weight:	535 g

1.3 - **Homing device:**

- Frequency:	121.5 Mhz ± 0.005 Mhz
- Homer Power (PERP):	50 mW ± 3dB
- Class of Emission:	3K2OA3X

1.4 - **Stobe light:**

- Brightness:	> 0.75 Candela
- Rate:	20/21 flashes per minutes

1.5 - **Self-test**: Short.

1.6 - **Automatic release system**: GME.

2. DOCUMENTS AND DRAWINGS :

2.1 - In accordance with the manufacturer's drawings and documents, at latest and at any subsequent issue endorsed by Bureau Veritas:

2.1.1 - Drawings N°s:

- 41973-2	- 41738-1	- 41576-2
- 41974-1	- 41784-2 [MT401 only]	- 41784-2
- 41950-2	- 41776-5	- 41739-2
- 42383-4	- 42719-1 [MT401 FF only]	- 41785-3
- 41576-2 [MT400 only]	- 42867-2 [MT401 FF only]	- 42421-2
- 41739-2	- 42421-2 [MT401 only]	
- 41785-3 [MT400 only]	- 44089-1	
	- 44241-1	

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2.1.2 - Operating instructions:
42210-1, P/N 310221(MT400/401), 42723-2, P/N 310337(MT401FF), 44041.2, P/N 310403 (M1400/403), 44212-1, PN 310424 (MT403/403G), 44055-1, P/N 310406 (MT403FF/403FG).
2.1.3 - Technical manual: ED030703-x rev.1 dated 03/Jul./2003.
2.1.4 - Marking ref.: ED051026-04 dated 26/Oct./2005.
2.1.5 - Annex E (Change Notice Form) & Annex J (Beacon QA Plan).
2.1.6 - Protocol serial user / Maritime user / call sign user.
2.1.7 - Approval Submission for C/S ref.: ED070913-04 ed.3 dated 24/Oct./2007.
2.1.8 - Standard Communications annex H- Change notice form dated 11/Jul./2007.
2.1.9 - C/S amended web report for TAC 139 revision date: 09/Nov./2007.
2.1.10 - CR123A Data sheet dated 18/Jul./2006.
2.1.11 - Annex F beacon type approval test results dated Jul./2007.

Nb: This above list can be revised to show changes to drawing and documents issue status.
Before changes can be implemented, new drawings must be provided to Bureau Veritas for review and acceptance.
The new drawing list will be stamped and endorsed accordingly.

3. TEST REPORTS :

3.1 - Type approval certificate: 139 - dated: 18/Nov./03, amended 24/Feb./04, 23/Dec./04 and 05/Oct./05 - Issued by: COSPAS-SARSAT		3.2 - Test report: M4586 - dated: 28/Nov./2003 - Issued by: Intespace
3.3 - Test report: ED040520-05 - dated: 20/May/2004 - Issued by: Standard Communications Pty Ltd.		3.4 - Test report: ED040414-02 - dated: 15/Apr./2004 - Issued by: Standard Communications Pty Ltd.
3.5 - Test report: - dated: 21/Sep./2004 - Issued by: Geoscience Australia Earth Monitoring Mineral and Geohazards division (Aus. Gov.)		3.6 - Test report: 041115-01 - dated: 15/Nov./2004 - Issued by: Standard Communications Pty Ltd.
3.7 - Test report: ED041012-06 - dated: 26/Nov./2004 - Issued by: Standard Communications Pty Ltd.		3.8 - Test report: ED040520-06 - dated: 20/May/2004 - Issued by: Standard Communications Pty Ltd.
3.9 - Test reports: SJ614521-001 & SJ614521-002 & SJ 614521-003 Issue 1 & SX614521-001 Issue 1 & SX614521-002 Issue 1 & SX614521-003 Issue 1, SX614521-004 Issue 1, SX614521-005 Issue 1 - dated:13/Sep./05,13/Sep./05, 7/Oct./05, 13/Sep./05, 23/Sep./05, 11/Oct./05, 23/Sep./05, 26/Sept/05 - Issued by: TÜV		3.10 - Test report: 3110 - dated: Sep.2005 - Issued by: Cardiff University - tests witnessed by TÜV.
3.11 - Test report: 75901906 THC 01 Issue 1 & 75901906 THC 02 Issue 1 - dated: 02/Aug./2007 - Issued by: TÜV.		3.12. Test Report: 7590 1666 Report 04 Issue 2 - dated: 19/March/2008 - Issued by: TUV
3.13 - Type approval certificate: 186 - dated: 25/Mar./2008 - Issued by: COSPAS-SARSAT		

Note: The above tests § 3.3 and § 3.8 were witnessed by a Society's Surveyor.

4. APPLICATION / LIMITATION :

As per requirements of Regulations stated on front page of this certificate.

5. PRODUCTION SURVEY REQUIREMENTS :

This certificate does not allow the applicant to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark) to the products corresponding to this type. To this end, the production-control phase module D "Production Quality Assurance" or E "Product Quality Assurance" or F "Product Verification" of Annex B of the Directive is to be complied with and controlled by a written inspection agreement with a Notified Body.

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6. MARKING OF PRODUCT :

Provided with a label or labels containing the following information at least in English:
- Type designation, serial number, type of battery specified.
- Date of battery replacement.
- Adequate instruction to enable manual activation, deactivation and self test.
- A warning to the effect that the satellite EPIRB shall not be operated except in an emergency.
- Ship name / Call sign / MMSI N°.
- Class of the EPIRB.
- Identity code programmed, namely hexadecimal representation of bits 26 to 85 of the digital message
- The compass-safe distance.
- Markings as per MED 96/98/EC when authorized by a Notified Body:

¤ YYYY/XX where YYYY is the number of the Notified Body undertaking surveillance module (when BV, 0062) and where XX are the last two digits of year mark affixed.

7. OTHERS :

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the EPIRB at any time, and that **Standard Communications Pty Ltd., Gladesville - AUSTRALIA** will accept the responsibility for informing shipbuilders or their sub-contractors of the proper methods of use and general maintenance of the EPIRB and of the conditions of this approval.

7.2 - This certificate supersedes EC Type Examination Certificate N° 13686/A5 EC, issued on 24/04/2008 by the Society.

***** END OF CERTIFICATE *****

8. CORRESPONDENCE RECEIVED

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

Correspondence 8.1 M.M. Halley & Son Solicitors and MCIB response.

M.M. HALLEY & SON
SOLICITORS
"Presentation House", Slievekeale Road, Waterford, Ireland.

Marine Casualty Investigation Board
Leeson Lane
Dublin 2.

Date 10 September 2014

Our Ref REH/CC/BOL009/0001
MCIB/213

Your Ref

RE: [redacted]

Dear Sirs,

We have now had the benefit of your draft report. The family as a unit would like the following matters be brought to your attention:-

3.1 [redacted] the owner of the boat was unaware that he needed an intermediate declaration. He didn't receive any notice from anyone that he had to have this done.

4.8 To the best of the family's knowledge, the EPIRB fitted was both manual and automatic.

4.10 They question why this was included in the report as no inquest has been held and no Death Certificate has issued to date.

4.13 To the best of the family's knowledge the lads were due in at 2.30pm that day. It would not be unusual for them not to come home straightaway.

4.16 As [redacted] was the only person asked about the self-test on the EPIRB, the report states that it was March 2013. If other family members were asked they would say that it was tested in May 2013. They were not interviewed but they are available to be interviewed and give a statement.

Yours truly,

[redacted]

Marine Casualty Investigation Board
15 SEP 2014
Bord Imscrúdú Tasimi Muiri

Solicitors: Gerard M. Halley, R. Emmet Halley, Elizabeth M. Dowling B.C.L.,
Orla Kenny B.B.L.S.
Legal Executives: Anne McGuire, William Crowe, Yvonne Hanrahan

Tel. No. (051) 874073, 873978, 870911/12 Fax No. (051) 875828 DX 44013 Vat No. IE 0094165 N
Web: www.mmhalley.com

MCIB RESPONSE:
The MCIB notes this observation and advises that the Code of Practice for the Design, Construction and Equipment of Small Fishing Vessels of less than 15m Length Overall requires in Section 1.4.5.1 that the owner carries out an intermediate declaration.

MCIB RESPONSE:
The MCIB notes this observation and has amended the report accordingly.

MCIB RESPONSE:
The MCIB notes this observation and advises that the referenced section refers to the post mortem results rather than an inquest.

MCIB RESPONSE:
The MCIB notes this observation.

MCIB RESPONSE:
The MCIB notes this observation and has amended the report accordingly.

Correspondence 8.2 Correspondence from GME Kingray and MCIB response.

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GME Kingray

HEAD OFFICE 17 Gibbon Road, Winston Hills, NSW 2153, Australia
T (02) 8867 6000 F (02) 8867 6199 SALES 1300 463 463 F (02) 8867 6190
POSTAL ADDRESS PO Box 96, Winston Hills, NSW 2153, Australia
EMAIL enquiries@gme.net.au

Division of Standard Communications Pty Ltd ABN: 93 000 346 814 ACN: 000 346 814

www.gme.net.au www.kingray.net.au

18 September 2014

Marine Casualty Investigation Board
Leeson Lane
Dublin 2
IRELAND

Attn: [redacted]
Secretariat
Marine Casualty Investigation Board

Dear [redacted]

Ref no: MCIB / 12 / 231

Re: Draft Report of the Investigation into the fatal incident involving the MFV Dean Leanne on June 12 2013.

We are in receipt of the above mentioned draft report.

In the opinion of Standard Communications Pty Ltd, the manufacturer of the GME MT401 EPIRB, the report is presented in a professional, well balanced manner and we have no further comments or observations to offer.

Please do not hesitate to contact me directly at any time should any additional information be required.

Yours sincerely

[redacted]

Managing Director

MCIB RESPONSE: The MCIB notes the contents of this observation.

1/10-12 Harvard Way, Canning Vale, WA 6155 T (08) 9455 5744 F (08) 9455 3110. 2/24 Bishop Dunn Place, East Tamaki, Manukau, NZ 2013 T (09) 274 0955 F (09) 274 0959

Correspondence 8.3 Sartech Engineering Ltd. and MCIB response.

From: [redacted]
Sent: 18 September 2014 09:20
To: Marine Casualty Investigation Board
Cc: [redacted]
Subject: [redacted]

Good morning [redacted]

Further to your letter dated 27 August, this is just to let you know that we have no comments or observations to make on the Draft Report of the Investigation into the fatal incident involving the MFV Dean Leanne on 12 June 2013.

Best regards,

[redacted]

[redacted]

SARTECH

Sartech Engineering Ltd
13 Trowers Way
Holmethorpe Industrial Estate
Redhill, Surrey
RH1 2LH

Registered in England No. 3328421

www.sartech.com Tel: +44 (0) 1737 372670 Fax: +44 (0) 1737 772795

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MCIB RESPONSE:
The MCIB notes the contents of this observation.

Correspondence 8.4 Bureau Veritas and MCIB response.

BUREAU VERITAS

MARINE & OFFSHORE DIVISION

[redacted]
Secretariat
Marine Casualty Investigation Board
Leeson Lane
Dublin 2
IRELAND

Neuilly sur Seine, September 22nd 2014

N/Ref : DTE/14/00024

Y/Ref : MCIB/12/231

Subject : Draft Report of the Investigation - MFV Dean Leanne on 12 June 2013

Dear [redacted]

Reference is made to your letter dated 27th August 2014.

We appreciate the opportunity afforded to us by the Marine Casualty Investigation Board to offer our comments on the Draft Report.

We would like to inform you that we have no comments or observations to make on the Draft Report.

Yours Sincerily.

[redacted]
Head of Department Equipment and Materials Certification
Bureau Veritas Marine and Offshore Division

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MCIB RESPONSE:
The MCIB notes the contents of this observation.