

## SYNOPSIS



The UK-registered, twin-rig stern trawler *Aurelia*, BF15, sank 78 miles west of St Kilda, at approximately 0015 on 13 August 2001. The MAIB was notified that morning and an investigation began immediately.

*Aurelia* was 23.79m long, built by Macduff Shipyards and completed in February 1998.

While on passage to the St Kilda edge fishing grounds, *Aurelia* suffered extensive flooding of her engine room, which went unnoticed until the main engine began to surge because it was three quarters submerged.

Although *Aurelia* was fitted with a bilge alarm, it did not operate in this instance.

The cause of the flooding is uncertain, but its speed indicates a failure of the main engine sea water cooling system; much of which was already submerged by the time the flood was noticed. Either the failure of the aluminium brass pipework, or an expansion coupling in the system, is considered to be the most likely source of the leak. The pipework condition had not been monitored, and there was evidence of misalignment of pipes and poor construction methods in the pipework.

No extended spindles were fitted to the main sea water inlet valves. This meant that since the flooding was at an advanced stage when it was discovered, the crew were unable to shut them.

The crew endeavoured to pump out the engine room, but power to the electrically-driven bilge pumps was soon lost. The hand bilge pump had a negligible effect on a leak of that size. Had an engine-driven salvage pump been available on board, more could have been done to save the vessel.

While the crew were monitoring the level of the flooding in the engine room, its aft escape door became blocked open by fishing nets, which were being washed across the then submerged after deck. Also, the engine room bulkhead was not watertight, and other doors were left open when *Aurelia* was abandoned. These conditions increased the rate and extent of the downflooding, which eventually sank the vessel.

The five crew had to retrieve lifejackets from their cabins below deck, before they could be donned. Both liferafts were launched successfully, and *Aurelia* was abandoned without injury. The fast rescue craft (FRC) from the SFPV *Norna*, which was in the vicinity, picked up all five crew about 25 minutes after *Aurelia* sank.