MAIB SAFETY BULLETIN 4/99

Unstable Dories

Flooded Void Space

22 November 1999

MAIB SAFETY BULLETIN 4/99

This document, containing Safety Recommendations, has been produced for marine safety purposes only on the basis of information available to date.

The Merchant Shipping (Accident Reporting and Investigation) Regulations 1999 provide for the Chief Inspector of Marine Accidents to make recommendations at any time during the course of an investigation if, in his opinion, it is necessary or desirable to do so.

The Marine Accident Investigation Branch (MAIB) has carried out a number of investigations into the capsize and sinking of several dory-type boats. Some of these craft were later recovered but, when refloated, did so with a noticeable list. It was discovered that this was caused by water trapped in the void space between the deck and main hull. The loss of both freeboard and buoyancy, and the free surface effect were the principle factors in why the dories capsized. In one accident, three of the six people on board lost their lives. This incident is described to demonstrate the nature of the problem.

J S Lang
Rear Admiral
Chief Inspector of Marine Accidents

Press Enquiries: 0171 890 4691 / 3387; out of hours: 0171 873 1985
Public Enquiries: 0171 271 5000
INTERNET ADDRESS FOR DETR PRESS NOTICES:
http://www.coi.gov.uk/coi/depts/GTE/GTE.html

SAFETY RECOMMENDATIONS

Background

A privately owned sea angling dory capsized and sank on Loch Awe near Ardanaiseig, Scotland, with the loss of three lives on 29 May 1999. She was returning to a camp site in bad weather when she encountered some large waves and shipped water over the bow. Shortly afterwards she lost stability and capsized. She briefly remained upside down on the surface before sinking by the stern. Although only about 100 metre from the shore, three of the six anglers onboard lost their lives. None were wearing lifejackets.

Inspection of the recovered boat showed that water had, without anyone being aware of it, penetrated the void between the main hull and the deck. This had two serious effects: the boat sat lower in the water making her more prone to swamping; and the sloshing of the trapped water reduced its stability making it more vulnerable to capsize. It was seen to be low in the water just before the accident, confirming she was carrying a greater weight than could be attributed to those embarked. This additional weight was found to be water in the void space and, because it is enclosed, the crew were unaware of the water's presence. It had accumulated over a period of time and had progressively reduced the freeboard. Nobody had noticed this on 29 May.

Water can enter the void if the hull becomes damaged or if hull/deck fittings are removed. Some voids are foam injected, but this is not a guarantee of safety as some foam absorbs water. In some cases voids are only partially filled with foam, leaving a space on top of the foam where water can accumulate.

Over the last five years, six people have died in a number of serious accidents involving older dory-type boats that are commonly used for commercial fishing, sea angling, and pleasure. Some of these craft were recovered and when righted, floated with a list. In each case it was found the list was caused by water trapped in the void between the deck and main hull.

A well constructed dory which is properly maintained and undamaged, with full buoyancy both in the void space and up the sides, will still stay afloat in the upright position and be able to support her crew when swamped.

A dory with water in the void space is potentially unstable.

Safety Recommendations

Owners and operators of dory-type boats are recommended to:

1. Check for any unexplained changes in freeboard or heeling angles, as these might be the result of water entering the void between the inner and outer hull.

2. Check carefully for any damage to hull and decks.

3. Check for water leaking from the void space when the dory is beached, slipped or put on a trailer, and at the same time listen for water sloshing in the void space when rocking the dory.

4. Ensure that the boat is properly maintained.

5. If there is reason to believe that water is present in the void space, seek expert advice before attempting to use the craft.

6. Ensure lifejackets are worn by everyone on board in bad weather. The MAIB strongly recommends that they are worn at other times as well. They should **ALWAYS** be carried.