



## An open letter to all Masters, and bridge watch-keepers

### Collisions with fishing vessels

The safety of fishermen and people in small boats is a continuing concern in terms of safety at sea. In the course of your voyages you encounter many types of fishing operations from dug out canoes, with sometimes a candle or oil lantern, to large fishing/factory ships. In and around the Australian coast fishing vessels tend to be less than 20 m in length with a crew of two or three. They often exhibit very bright working lights, though these should be shielded in order to ensure that the fishing lights required by the Colregs can be seen clearly.

Since January 1991, the Australian Transport Safety Bureau has reported on, or is in the process of investigating, 21 incidents of collision between trading ships and small fishing or pleasure craft. Fishermen claim that 'near-miss' situations are common and from time to time, incidents are reported to the ATSB.

That these incidents occur is evidence that fishing vessels and other small craft are not being detected visually or by radar by the watch keeping personnel on board trading vessels. There is an obligation on the part of all vessels at sea to maintain a proper lookout. The fact that in some cases the crews of fishing vessels do not maintain a lookout and do not carry radar reflectors, even though their boats may provide a very poor echo, does not excuse trading ships in any failure to keep a proper lookout.

The following summary underscores the main issues and demonstrates that there are normally no mitigating factors to explain the vast majority of collisions. The only explanations are the lack of a proper visual lookout, or an over reliance on radar detection in circumstances where the radar set has either not been set-up properly, maintained properly or monitored with sufficient diligence.

- Eighteen collisions occurred in clear weather.
- Three collisions occurred in conditions of heavy rain and poor radar detection conditions.
- Fourteen occurred in darkness, five in full daylight and two occurred in the half-light of twilight.
- Eleven collisions occurred between midnight and 0400 in the morning.
- Seventeen collisions involved commercial fishing vessels and four involved yachts or pleasure craft.
- Five of the seventeen fishing vessels were actually engaged in fishing, four were at anchor and eight were in transit.
- Seven small vessels on steady courses were being overtaken by the trading vessel and had been in sight for some time.
- Six vessels were not making way (five were at anchor and one drifting).

The Australian coast generally enjoys good visibility and has relatively light traffic. It seems probable that watch-keeping officers:

- may be lulled into a sense of false security;
- attentiveness (arousal) is reduced in the clear conditions and they may easily become bored;
- lose track of time in open sea conditions;
- rely too much on radar to the detriment of a proper systematic visual look out.

## **Radar**

As professional mariners, certificated officers hold qualifications as radar observers. However, I must stress the importance of having the radar properly tuned to its optimum performance with both gain and clutter controls correctly set.

In investigating the 21 incidents two critical issues of radar observing seem to emerge.

When using ARPA, assessments of a target's course and speed are made too quickly. Also, it must be realised that where there is a proportionately small amount of relative movement, such as in an overtaking situation, ARPA readings may be inconsistent.

Small vessels, particularly of wooden or other non-metallic construction, can have a large number of separate reflectors (metal masts, booms, engine and other metallic reflectors). None of these is large enough to provide a constant echo. The close proximity of masts rigging, engine etc, acting as reflectors on a small vessel moving in the swell causes multiple reflections. This characteristic can result in either an enhanced echo or in the return echoes cancelling each other out. A very small change in relative distance from the radar antenna can make the difference between a fishing vessel returning a strong signal 'in phase' – or returning a weak or nil signal – 'out of phase'.

Similarly, the phase of the radar signal can be affected by multi-path signals due to reflection off the sea surface, resulting in signals that are 'out of phase'.

## **Conclusion**

You may think that a collision cannot happen to you. Experience suggests that accidents of all types can happen to anyone. The best people have the worst accidents.

Australian authorities have taken action against fishermen for the failure to observe the Colregs. They have also prosecuted a ship's master and watch-keeping officer for failure to observe the Rules.

A few minutes failure to keep a proper watch can result in the death of a fisherman and tragedy for the family. For you it can mean lengthy police interviews, delay to the ship, arrest and possible criminal charges which could result in a heavy fine or jail.

Please keep this letter in mind wherever you may be. Under normal conditions of visibility around Australia, there is no substitute for a proper visual lookout supplemented by sensible use of a well set up radar.



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3 August 2000

PS For further information on ATSB's marine casualty and incident reports visit our web site at [www.atsb.gov.au](http://www.atsb.gov.au)