

Guidance to RYA Powerboat Instructors ~ avoiding & mitigating the effects of a hook.

Fortunately crew ejections from leisure craft are few and far between however when they do occur the consequences can be catastrophic. Following their training course some students may go on to purchase higher-powered craft and it is therefore important to prepare them for situations that they may not encounter during the course of their training. In some cases, for instance when training on a student's own boat, practical type specific training can be provided, however the majority of courses will be conducted on the Training Centres own vessel.

Whilst concentrating on safe boat handling we should ensure that students understand what may happen if they do not apply the lessons taught during their training especially at higher speeds. We teach how to correctly trim and balance our craft and explain the different handling characteristics of the various hull types that may be encountered.

When teaching boat trim, balance and loading it is preferable to incorporate practical sessions especially at low speeds to demonstrate the effects on steering and the possibility of swamping astern etc.

Taking the lessons learned at low speed discuss the increased effect of the forces that can act upon a boat at higher speeds including the cause and effect of "hooking". In the course of general leisure boating and during RYA training courses incidence of hooking are unlikely to be encountered. This can be attributed to the emphasis placed by the RYA on safe boat handling and is the reason for not demonstrating what might happen if you operate a boat outside of sensible limits.

So what is a 'hook'? Hooking is a term that is well known within the realms of powerboat racing. In basic terms hooking is used to describe a violent alteration of course and deceleration

resulting in a significant, momentary, delivery of G-force being exerted on the craft and its occupants. Often unexpected a hook can occur in relatively benign

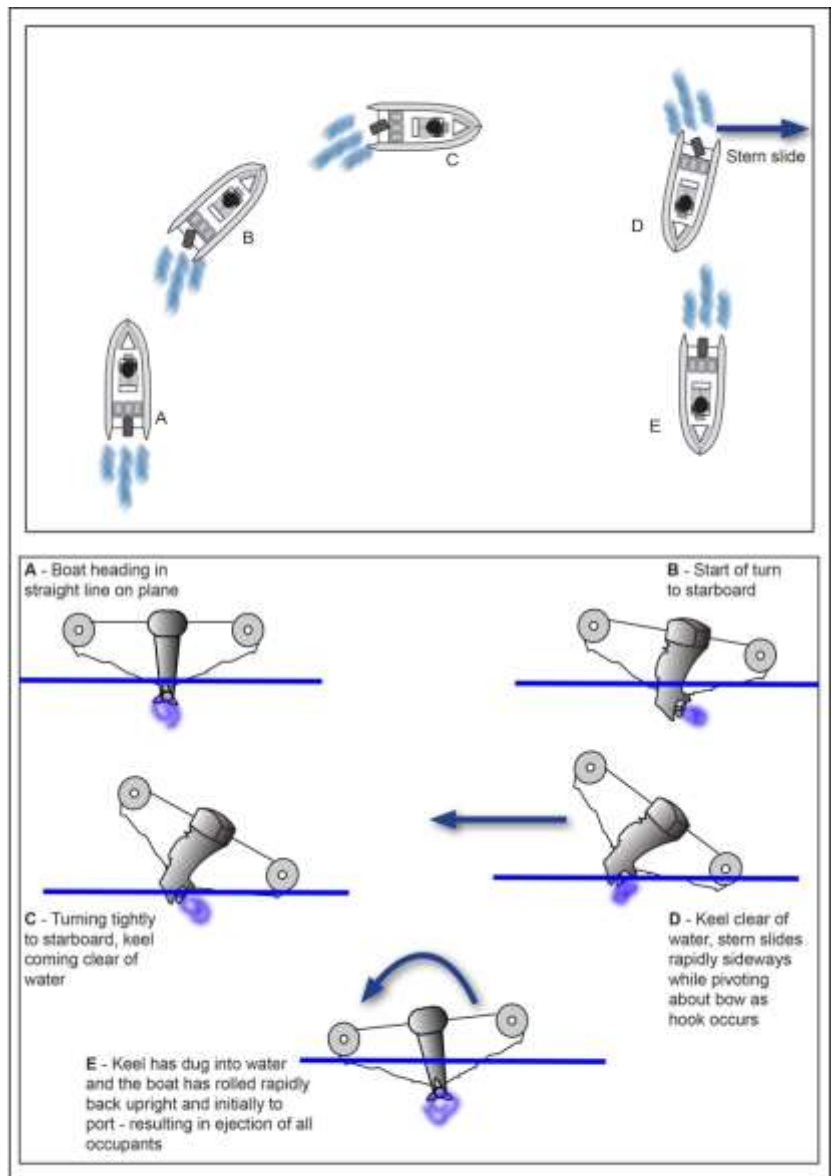


Figure 12: Diagram showing a hook during a turn

conditions, in waves or when crossing the wake of another craft even when steering in a straight line.

Hooking cannot be attributed to one specific circumstance and most, if not all, high-speed monohull craft could be susceptible if inappropriately trimmed, balanced, loaded or if being driven inappropriately for the prevailing conditions. It is therefore essential that students be aware that many small factors, when combined, can have serious consequences and most importantly they must understand what they should do to avoid a hook and how to limit the severity of the outcome should one occur.

Hook diagram from MAIB Milly Report 2014

Teaching points

1. How to avoid a hook

When teaching loading, trim and balance, ensure that you highlight the importance of the crew being seated securely in positions that do not compromise the trim or balance of the boat, especially when operating at higher speeds. Even if there are sun bathing cushions, avoid positioning crew members too near to the bow when underway, usually there are limited handholds and the seating posture is less than perfect; this is compounded by the effects of waves and rougher sea conditions which are amplified nearer to the bow.

Continually assess the conditions and always drive at an appropriate speed. Avoid sudden increases in speed especially when turning.

Communicate with the crew any intentions to alter course or change speed.

2. How to mitigate the effects of an unintentional hook

Wear the Kill Cord at all times when underway.

Secure seating and appropriate handholds will ensure that passengers and crew have a better chance of remaining in the craft should a hook occur.

Further advice to students that maybe incorporated into your teaching could include, but is not limited to, the following;

Always follow the vessel manufacturer's guidelines.

Wherever possible, when buying a new craft, try to have a demonstration and ask about any handling characteristics specific to the particular make and model being considered.

Important Note

These notes provide guidance to instructors on ways to pass on a safety critical message without the requirement to demonstrate potentially unsafe high-speed manoeuvres. **RYA instructors must not set out to demonstrate the effects of hooking.**