Level 2: Teaching power trim

One of the harder subjects to cover effectively at Level 2 is Power Trim. It is best done afloat, usually with a demonstration. However, a quick explanation first can often help.

An outdrive leg or outboard can be trimmed in or out to change the angle of the propeller's thrust; this changes the fore and aft trim of the boat. Trim affects comfort, fuel consumption and the handling characteristics, especially in heavy weather.

Leg in to start – to keep the prop in the water and help the boat get on the plane.

Leg in to start

On the plane, throttle back a touch and ease the leg out to achieve the best speed.
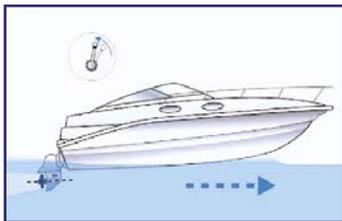

On the plane, ease throttle and trim out

Ease out too much and the prop sucks in air from the surface, making it spin faster but lose grip on the water, slowing the boat. Ease the leg out by the correct amount and the revs increase slightly without the throttle being adjusted, therefore speed increases.

If the boat starts to porpoise (bow rising and falling), trim the leg-in to regain control, and then slowly ease out to re-trim.

Even when trim gauges are fitted, they are often unreliable. Practise to get the correct trim in various conditions. Watching the difference between engine revs and speed is a good indication of correct trim; also, the helm will feel lighter as the trim is raised. Generally you trim in (bow down) when running into a head sea and trim out (bow up) when in a following sea.
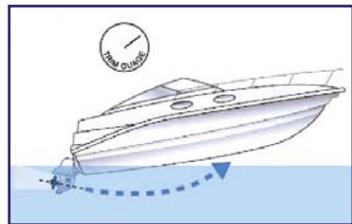
Trimmed out for a following sea

Most importantly, teach your students the good practice of trimming in before high speed turns – if you don't and they turn sharply with the propeller trimmed out, the propeller can lose grip and the back of the boat can suddenly slide. This can be highly dangerous, as the bow can suddenly dig in and the whole boat will pivot around the bow, potentially throwing the occupants into the water.

Illustrations are from the new RYA Powerboating Handbook, to be launched at the London Boat Show, 6th-16th January 2005.