



BOAT REPORT

BROOM OCEAN 31

Resurrecting a proud name from their past, Broom's new displacement cruiser returns to their roots in other ways, being built primarily for the river.



BROOM Boats of Norfolk have been attracting more attention recently for their offshore cruisers, with a range of aft-cabin models which now extends from 33ft to 44ft (10m-13.5m). However, the company have never lost sight of the fact that their history (see 'Profile' MBM Jul 93 p56) lies in inland waterways craft.

Based at Brundall on the busy Norfolk Broads, they have produced high-quality cruisers for these and for other rivers in the UK and Europe, setting the standard for construction and design for over 80 years. Their models provide the mainstay of many of the Thames motorboat clubs, and many are much sought-after for their combination of practical accommodation, high-class finish and easy river handling, whilst still being strong and seaworthy enough for coastal or cross-Channel cruises.

All of the current range are capable of both inland or offshore use, but the trend towards higher speeds, and better seakeeping at over 20 knots, has directed Broom's hull designs into deeper-vee sections, and their engine options higher up the power band. The company decided it was time they returned to their roots.

The result is a boat designed from the outset as a river cruiser, but still with seagoing capabilities. Appropriately, the Broom 31 was unveiled to the public at the first Inland Boat

Finished in attractive mahogany, the interior of the Ocean 31 is conservative and comfortable. Left: the master cabin has an en-suite WC and plenty of stowage space in a hanging locker and drawers. Above: the saloon is practical and spacious, the table stowing neatly into a recess immediately behind the helm seat. Above right: the hob in the U-shaped galley has a rail around it to keep pots and pans in place.



Show, at Nottingham in May.

The new model takes account of the present economic climate, with low engine powers giving a low starting price and low running costs, while maintaining the usual Broom standard of fit-out and finish. As such it is taking on, head-to-head, the Dutch steel cruisers which in recent years have had an unchallenged run at this market. Aided by the devalued pound and some careful production-line thinking, it has achieved this and more, with a price that is £15,000 to 20,000 lower than its competitors.

Design

The 31 is designed for displacement speeds only, which allows a sensible hull shape for river use and makes a single engine the standard option, though twins are available for customers who anticipate more frequent coastal cruises, and want the extra security.

The design is by Andrew Wolstenholme, also Norfolk-based, who has produced several recent hulls aimed at giving economical and low-wash performance with modest engine powers.

The 31 features shallow-vee underwater sections, with a deadrise of 13°amidships and 5° at the transom. The line of the bottom sweeps smoothly up to the stern, where an integral

bathing platform gives extra waterline length. It also allows the immersion of the transom, a key factor in determining slow-speed resistance and wash, to be kept to 3in (75mm), giving a clean run of water aft and minimising suction.

The effectiveness of the hull form is illustrated graphically by the fuel-consumption figures we recorded on our test.

A further underwater feature specifically aimed at river use is the full-length deep keel. This runs right back to the propeller, with an extension skeg underneath it to carry the bottom bearing of the rudder. It is impossible to avoid every piece of flotsam, and all boats will occasionally touch the bottom, but this arrangement will limit any rudder or prop damage that might ensue.

Interior

The 31 uses Broom's favoured layout, with an aft cabin, a central saloon, and a galley and second cabin forward. This arrangement makes the optimum use of interior space, while retaining an aft deck for the outside helm position and seating. It also gives plenty of privacy, with the main cabins completely self-contained and separate, not disturbed by people staying up late in the saloon.

The first impression as you enter the





accommodation is how much space Broom have found in a boat that has a hull length of just over 29ft (8.9m).

The second is an almost impossible one to define, but the boat just feels right. There are no surprises, and everything is where you would expect to find it, like putting on a favourite suit. It is comfortable and reassuring.

Of course, you would expect nothing less from a company that has been producing this same effect for three-quarters of a century. Before you step aboard there is the anxiety at the back of your mind that Broom might have taken the opportunity presented by a new design to experiment with layouts or materials, but thankfully they have resisted the temptation. The interior is finished in mahogany, to the usual standard.

You enter the saloon via a flight of six steps from the aft deck. Handrails are provided on the bulkhead, but another rail or post on the way down would be useful.

To starboard is an L-shaped settee which seats four or five people and will make into a single berth. As things stand, surprisingly it will not convert into a double, but no doubt this could be achieved if required. Storage underneath is provided by good-sized drawers, made from wood rather than plastic, and sliding on rollers for that extra touch of class.

To port is a sideboard, with a fiddled shelf top and a large locker underneath. At the forward end of this, behind the helm seat, is a neat and effective stowage locker for the saloon table, allowing you to keep the saloon clear when entertaining. Similarly useful is the oilskins locker at the aft end of the saloon; many boats forget this vital facility.

The lower helm position is forward to port, with a single seat facing a simple but complete console. Full engine instrumentation is provided, plus a comprehensive ready-use switch panel and a control for the optional bow-thruster. The Morse single-lever control is alongside the helmsman's left knee, while sliding windows port and starboard are similarly well placed, allowing ventilation and conversation with deck crew.

Visibility from the helm is generally excellent, important on the river where you may frequently

find yourself manoeuvring at close quarters in bad weather. The view aft, of course, is restricted by the rear bulkhead of the saloon, though you can see out through the door or put your head out of the window.

A hinged panel under the console gives access to an excellent press-button breaker panel, and reveals a simple but good standard of electrics.

Moving forward, you find the U-shaped galley to starboard, down three steps. This is a good size, with a reasonable amount of worktop space, a three-burner gas hob and a stainless steel combined sink, rinser and drainer.

The hob has a sensible rail round it to keep pots and pans in place, just as important on the river as at sea when you take into account the inconsiderate speed many boats are driven at. Storage is good, with lockers and shelves under the worktop, outboard and in the aft bulkhead, where you also find the fridge.

Opposite to port is the good-sized guest toilet, which is superbly finished. The sink and surround are a single GRP moulding, which appears to have been manufactured by the simple expedient of moulding around a domestic basin then recessing it by $\frac{1}{2}$ in. You get a practical-sized sink with all water draining back into it from the surround, and no joins or water traps.

Similarly well thought-out is the locker underneath, which is made from an internal moulding to give a clean finish while being easy to manufacture. A shelf outboard completes the



Above: cruising through Nottingham. The 31 builds on Broom's traditions but is more than just a river boat, offering seagoing capability at a competitive price. Below: two hatches in the saloon carpet give access to the single Volvo Penta MD22L diesel engine.

Broom Ocean 31

Engine: single Volvo MD22L diesel, 50hp at 3000rpm, 4cyl, 1990cc.

Conditions: non-tidal River Trent. **Load:** fuel 75%, water 100%, crew 3.

rpm	knots	gph	lph	mpg	range	trim	sound levels dB(A)			
							saloon	fwdcab	aftcab	aftdk
1500	4.3	0.4	1.8	10.8	648	—	68	57	66	68
2000	5.6	0.6	2.7	9.3	558	—	73	64.5	73.5	69
2500	6.5	1.0	4.5	6.5	390	—	76	70	81	71
3000	7.1	1.8	8.1	3.9	234	—	79.5	72	83	77

Loa 31ft 0in (9.45m) **Air draught** (screens down) 8ft 6in (2.60m)

Hull length 27ft 0in (8.23m) **Displacement** 5.3 tonnes

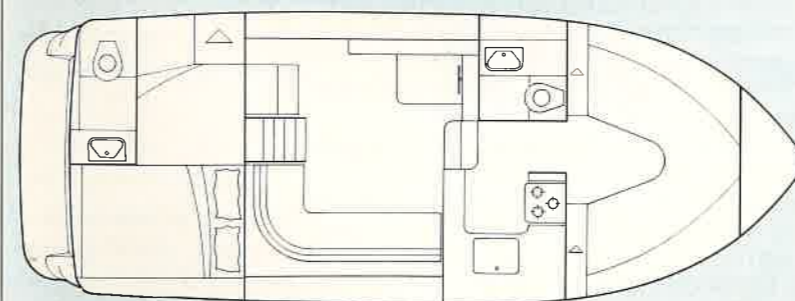
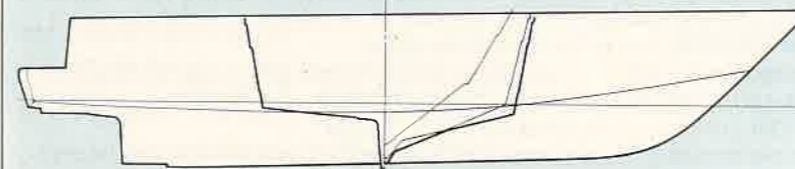
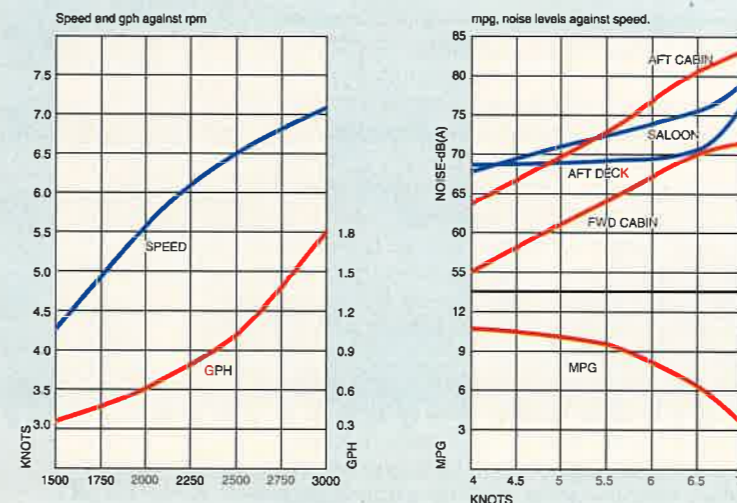
Beam 11ft 6in (3.50m) **Fuel capacity** 60gal (270lt)

Draught 2ft 9in (0.80m) **Water capacity** 80gal (365lt)

Price: £59,950 ex VAT as tested with single 50hp Volvo MD22; £70,500 with twin MD22s.

Builders: C J Broom & Sons, Riverside, Brundall, Norwich, Norfolk NR13 5PX.
Tel: 0603 712334. Fax: 0603 714803.

Suppliers: Newark Marina, 26 Farndon Road, Newark, Nottinghamshire NG24 4SD.
Tel: 0636 704022.



storage space. The guest toilet does not come with a shower as standard, but the sump is already moulded in.

The forward cabin has two wide vee-berths and 6ft (1.83m) headroom. Storage comprises drawers under the berths, a narrow half-height hanging locker and shelves outboard. The berths are at a good height for taking in the view out of the windows, which include one looking forward. These are good features for river cruising, where there is always something to see, even when you are moored.

A hatch overhead provides more light, plus an escape route. Another in the forward bulkhead reveals the chain locker, but has no seal round it. A panel in the floor lifts up to give access to the interior of the hull, with well-painted woodwork and GRP finishes.

The master cabin is aft, reached via three steps down from the port side of the saloon. Again, the layout is simple but practical. A large double berth runs fore-and-aft on the starboard side, and in the aft port corner is an en-suite WC.

Headroom in the cabin is 6ft (1.83m), and there is plenty of storage space in the form of drawers under the berth, a good-size hanging locker to port and a stack of three drawers under a dressing table. Plenty of light comes through hopper-style windows on both sides, and a solid overhead escape hatch is let into the aft deck.

The toilet compartment is a good size, with a similar layout to that of the forward one. Plenty of light comes from windows aft and outboard, while the more-than-generous 6ft 4in (1.93m) headroom is achieved by utilising the space under the aft deck seating.

Exterior

Outside, the 31 displays all the qualities of the rest of the range. All of Broom's boats are moulded by their associate company Aquafibre, who also produce hulls for many other boatbuilders on the Broads, so their standards are consistently high.

In addition to the version we tested, there is a flybridge model of the 31, designed initially for a hirefleet on the River Shannon in Ireland.

The full-width integral bathing platform is reached via a ladder down the transom, with a chain across the top for security. It would be a good place to stow an inflated dinghy, often a problem on river boats where davits would be just another item to be damaged or cause damage in locks.

The aft deck has comfortable room for half a dozen people or more. Aft, to starboard, is a generous single bench seat whose lid lifts up to reveal a gas bottle locker. A matching three-person seat to port has no stowage underneath, the space being devoted to maximising headroom in the master cabin's toilet compartment.

Ahead to port is a single helm seat, neatly tucked in behind the 'wing' extensions of the main cabin. These give a good protected feel to the area, aided by the dodgers around the gunwale rails. The helm is provided with a complete set of instruments, including engine dials, a log and a bow-thruster control, all neatly protected under a hinged perspex lid. We found the side-mounted single-lever engine control well-positioned but very stiff in operation, a problem that could be

rectified by freeing-off the cables below.

The aft deck is well protected by a deep wraparound windscreen, which hinges down to give the boat an 8ft 6in (2.60m) air draught for negotiating low bridges.

Two steps each side lead down to the side decks. The steps are narrow, and Broom themselves acknowledge that they have stopped the guardrail too short at the top, leaving only an inboard rail on the cabin top for security when moving forward. Extending the outboard rail down the steps would be an improvement, though leaving the midships decks open for easy boarding in locks is a good principle. For customers intending to spend extended periods coastal cruising, full-length outboard guardrails can be added as an option.

The side decks themselves are a good width, with an angled lip outboard for extra safety. Fender eyes mounted on the gunwale are a good idea for a river boat, but as they are placed they make a potential tripping hazard. It would be very simple to mould recesses in the lip to get them out of the way.

The cabin top has a good inward slope, making it safer to move forward if you are carrying ropes or fenders, or to lean inboard in deep locks to avoid rubbing against chamber walls. It also has an engine removal hatch moulded in, complete with a drain channel.

Features such as this testify to the years of experience Broom have with their own and other people's hirefleet operations, where ease of servicing and repair is vital. The same principle is just as important to a private owner; you may not need to remove the engine every season, but if it does have to be done the boatyard will thank the builders for their forethought, and there will be a saving in the final bill. At the same time, routine maintenance is so much easier to carry out on a well thought-out boat.

Mooring is taken care of by 10in (250mm) bollards fore and aft, plus 8in (200mm) ones amidships. The foredeck is a good working area, with a Bruce anchor in a stainless steel stemhead fitting, and a central windlass which is manual as standard but with an electric option.

Engines

The 31 is designed for displacement speeds, so the standard unit is a single naturally-aspirated 50hp Volvo MD22 diesel. Options are the 60hp version of the same engine or twin 50hp motors.

The engine is mounted under the saloon, with access for routine servicing via two neatly trimmed hatches in the saloon carpet. These allow you quickly to reach the fuel filter and shut-off valve, and the cooling water inlet strainer. A third hatch forward gives access to an excellent battery box, with four batteries providing separate engine-start and domestic systems. A secure lid and a ventilation duct ensure trouble-free electrical power.

Climbing down into the engineroom allows you to reach the rest of the systems. There are separate manual and electric bilge pumps, with the engine sump isolated from the rest of the bilge to ensure no oil is accidentally pumped out into the river.

The 60gal (270lt) stainless steel fuel tank is mounted to starboard, well secured and with suitable drains. Two stainless steel water tanks,

with a total capacity of 80gal (365lt) are located one on each side of the boat. Noise insulation comprises foam and rubber compound, attached to the overhead.

Performance and handling

As the 31 is designed foremost as a river boat, it was appropriate that we carried out our test at the Inland Boat Show on the River Trent. After gathering our data, we took it down from Nottingham to Newark, covering 24 miles and four locks in four hours.

The optional bow-thruster makes manoeuvring simple, but even without it the boat turns tightly, thanks to its large rudder, and can easily be put where you want it. Out on the river it tracks a steady straight line, with little attention to the helm required. The long deep keel gives it a good grip on the water, resisting the effect of any wind on the superstructure.

The MD22 engine is well suited to the boat, pushing it up to its maximum hull speed of 7 knots. This would be fine for seagoing use, but you are not going to want to run at this speed on the river as the wash becomes unacceptable. A happier inland speed where there are no moored boats is 5 to 5½ knots (5.75-6.3mph).

Our fuel consumption figures graphically illustrate the energy which can be wasted in trying to push a boat at close to its hull speed. At 5 knots the Volvo uses a miserly 0.5gph (2.3lph), which would give you a maximum range of 600 miles — for most people nearly a season's cruising on one full 60gal tank. Push up to 6 knots and you increase consumption to over 0.8gph, bringing the range down to 400 miles; at 7 knots you more than treble the figure to 1.8gph, with a range of 230 miles.

Noise levels in the saloon are surprisingly high. The actual figures are not dramatic, being 73dB(A) at 5.5 knots and 80 dB(A) at maximum speed, but the engine note is a harsh one which can quickly become annoying. There is insulation under the floor, but the engineroom is a large one, running full-width, with many apertures and ducts through which noise can escape. A better solution for the single-engined boats might be to make a simple soundproof box around the engine itself, reducing the complexity of the insulation required.

Out on the aft deck the levels are much better, consisting mainly of the exhaust note, a deeper and less intrusive one than the high-frequency radiated combustion noise of the engine itself.

Conclusion

Broom's new 31 is an impressive package. The design and layout are perfect for river use, and the quality of finish is all you would expect from this company, yet the price is extremely competitive at just under £60,000 ex VAT for the single-engined option.

The hull and engine are well-matched, to give economical inland cruising, yet the boat is powerful enough to handle sea passages. For the family who want to cut their teeth on calm waters but with the potential for coastal or cross-Channel trips, this would make the ideal boat. And if they did decide to move up to something larger and faster, the Broom name will ensure a good resale value for their investment. □