BERTHON

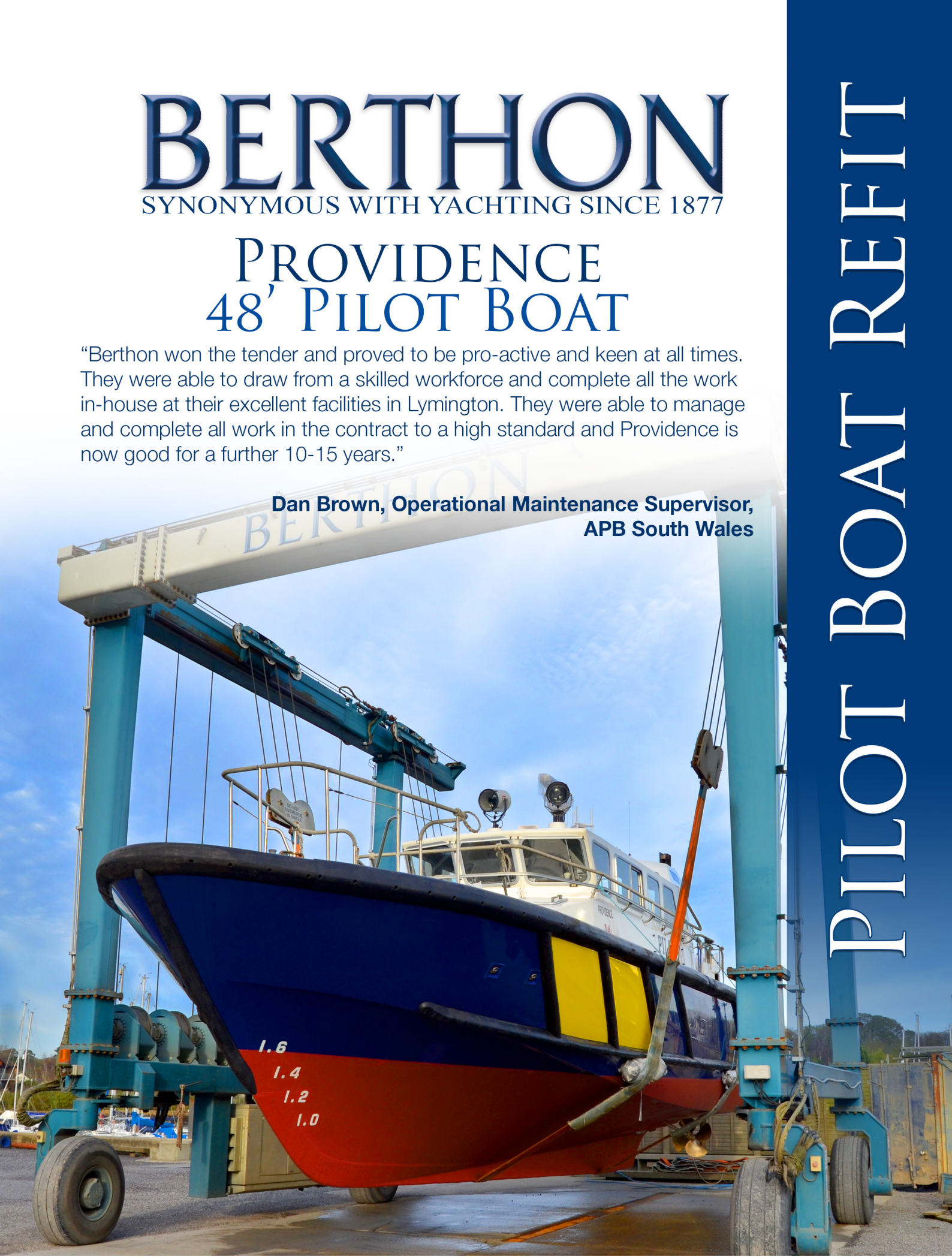
SYNONYMOUS WITH YACHTING SINCE 1877

PROVIDENCE
48' PILOT BOAT

PILOT BOAT REFIT

"Berthon won the tender and proved to be pro-active and keen at all times. They were able to draw from a skilled workforce and complete all the work in-house at their excellent facilities in Lymington. They were able to manage and complete all work in the contract to a high standard and Providence is now good for a further 10-15 years."

Dan Brown, Operational Maintenance Supervisor,
APB South Wales



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Berthon Boat Co Ltd, The Shipyard, Lymington, Hampshire, SO41 3YL, United Kingdom
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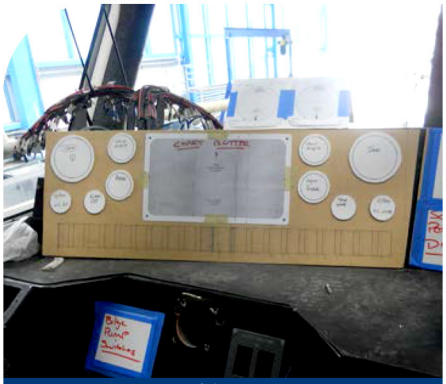
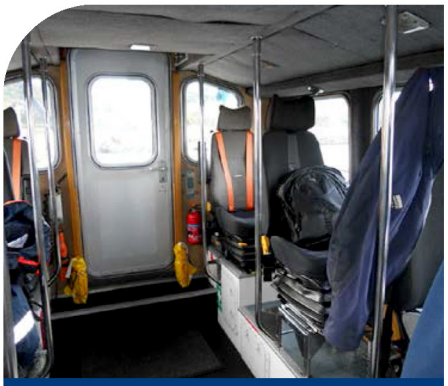
Pilot boat refit

Original helm station



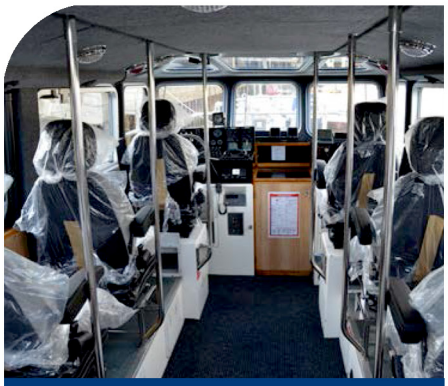
Template testing

New modern helm station



Interior prior to removal

Stripped out



New interior

Original engine looking tired

Engine bay ready for engines

New port engine in place

Old engine room ducting

New Scania DI13 engine

New ducting and engine

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Pilot boat refit

Berthon repairs and refits commercial workboats. Built by VT Halmatic in 1998, Providence has been in continuous use at ABP South Wales since this time. With around 15,000 hours under its belt, the boat was starting to become unreliable and was looking tired. Rather than commission a brand new pilot boat, ABP decided to extend the life of the vessel by repairing and refitting her, investing in new machinery and improving several design aspects of the boat, on the recommendation of the crew.

When we repair and refit a workboat we will normally be able to:

- Install lighter and more economical machinery helping to reduce fuel costs and allowing higher maintainable boat speeds matching the engine rating to the user profile
- Modernise navigation equipment on the helm and crew consoles
- Modernise safety equipment to ensure current safety standards are met
- Adjust wheelhouse accommodation layout to better suit operations
- Extend the life of a favoured hull and superstructure
- Minimise the retraining of crew post refit

This offers a viable alternative to commissioning a new vessel with large capital outlay and, with the incorporation of new technology and materials, a significant reduction in running costs.

Initial Assessment & Engineering

In order to fully assess the fabric condition of the hull, all of the fendering and skin fittings were removed and a full polish carried out, with any local repairs being checked and carried out as required. The signature double yellow flash was repainted, ensuring that the hull looked fresh post refit. The underwater section was blasted back to reveal any damage which was repaired before new layers of Antifoul paint were applied.

Main Work Completed

As part of a comprehensive refit, Berthon fitted or carried out the following:

- New: Engines, exhaust system, electronics, external lighting, shafts, carpets and wheelhouse lining.
- Reconditioned: MOB platform, propellers, steering system.
- Rebuilt: Gearboxes.
- Full cut, polish and repair of the hull and superstructure.
- Redesigned: Engine room ventilation system.

The original, and now unreliable, Scania D14's were removed early on so that the engine room bilges could be drained of any residual water and oil. The bilges were then cleaned, repaired and repainted. For ease of access, many of the detailed overhaul and repair jobs were carried out after the engines were removed. New hydraulic pipework and the steering overhaul were among other jobs completed at this time.

The main longitudinal stiffeners, which provide the engine foundations, were cut out and remodelled to accept the new engine and gearbox geometry, ensuring a perfect alignment was created for the new propeller shafts. Once this was completed, brand new Scania DI13's were fitted These are not only more powerful than the D14's, but are lighter and more fuel efficient too. In order to transmit the power to the propellers efficiently and reliably, the old gearboxes were removed and fully rebuilt using new parts. They were then refitted at the same time as the engines.

One of the major redesign jobs Berthon carried out was the rearrangement of the engine room ventilation system. The original 'factory' fitted trunking was very large, taking up too much space. This allowed too much sea water spray into the machinery space which led to salt contamination, corrosion and electrical problems. Berthon overcame this by fitting Premaberg mist eliminator filters and resizing and redirecting the vent trunking. Also, more powerful fans have been fitted to lower the operating temperatures inside the machinery space. This allows the engines to run more efficiently.

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Pilot boat refit

Wheelhouse work

The wheelhouse required extensive work both internally and externally.

Internal

- The Helm and crew consoles were remodelled to include brand new Raymarine electronics along with new Scania engine displays. With this came an extensive rewire of the boat.
- Kobelt electronic engine controls were fitted to control the new Scania engines in the existing morse lever control area. This affords more precise throttle control over traditional cable systems whilst maintaining the coxswains favoured ergonomic layout of the helm console.
- All of the deck head panels were removed, reinsulated and carpeted.
- Wheelhouse glazing (x19 windows) were all removed, replaced or reconditioned.
- The old cab seats (x8 seats) were removed and replaced.
- Trim panels were repaired and replaced.
- Any exposed woodwork was removed and varnished.
- Fire control panel was reworked and relabelled.

External

- Mast removed, stripped and repainted.
- New Navigation and signal lights fitted.
- New remote controlled search lights fitted.
- Antenna and radar mounts refurbished and refitted.
- New GPS and radar antennas fitted.
- Full polish of the superstructure and any damage repaired as required.

On the initial post-refit sea trial, staffed with Berthon's sea trials team, Providence proved to be light on her feet, achieving nearly 24 knots which was a gain of 2.5 knots over its previous top speed. Providence also ran more smoothly and quietly, with a significant reduction in diesel consumption at all speeds. Providence once again looks fresh and ready for many years more service with ABP South Wales.

Insulated deckhead panels

Gleaming Superstructure

Navigation & search lights

Dan Brown, Operational Maintenance Supervisor, ABP South Wales stated that "We decided to refit Providence rather than build a new vessel. Providence was favoured by her crew but let down by ageing machinery and reliability issues and the ship's systems were prone to regular failures. Berthon won the tender and proved to be pro-active and keen at all times. They were able to draw from a skilled workforce and complete all the work in-house at their excellent facilities in Lymington. They were able to manage and complete all work in the contract to a high standard and Providence is now good for a further 10-15 years. The new engines make a fuel saving of 20 litres per hour of operation and the reliability of the craft continues to give us peace of mind. Berthon's thorough approach to aftercare has been impressive too"

Ian Stables, Senior Project Manager, Berthon Boat Company continues "At Berthon, we understand the rigours of a pilot vessel's life well. ABP pilot boats have a busy schedule, so reducing downtime was absolutely key to the success of the project. This was a life extension refit and, from the outset, we scheduled the work to ensure that downtime was kept to an absolute minimum. The major risks to any project timeline are generally centred around sub-contracted work elements. We were able to completely eliminate outsourcing risk by completing all the work in our commercial shed using Berthon's skilled workforce. We were delighted to have worked with ABP to breathe new life into Providence"

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