

# Powernews

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Power Equipment – Australia, New Zealand & South Pacific

MAGAZINE

## **YANMAR** *Fuel Efficient,* **POWERFUL** *& Dependable*



YH SINGLE PHASE



WOODEN BOAT  
SHOW REVIEW



TORQUEEDO  
POD DRIVES



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torqueedo

NORTHERN LIGHTS

mase GENERATORS

Gori propeller

ARCTIC STEEL

HUNDESTED PROPELLER

OXE DIESEL

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# MEDIUM SPEED YANMAR IDEAL MATCH WITH NEW KIWI TRAWLER

The launch of the NZ trawler *Santy Maria* represents one of the most significant new vessels to be built in 2016. The *Santy Maria* is powered by a Yanmar 6EY17W medium speed marine diesel engine and the performance at sea has proven to be exceptional.

The *Santy Maria* was designed by the Australian (Adelaide) company Ocean Tech and constructed by the Aimex Service Group in Nelson, NZ. The state-of-the-art trawler was built for Tauranga based fisherman Roger Rawlinson who named the *Santy Maria* after his mother.

With a LOA of 23.9 m and beam of 7.7m, this is a heavy duty hull designed to work in some of the toughest sea conditions imaginable.

Through the design and development process, both the designers and shipbuilders were determined that the Yanmar 6EY17W was the engine most suited to this application. Specifically, the Yanmar 6EY is a medium speed, high torque engine which is also very quiet.

This model Yanmar is a 6 in-line cylinder configuration with a displacement of 31.3 litres. Peak power output of 1138 mhp (837 kW) is developed at the rated speed of 1450 rpm. Dry weight is 3880 kgs.

When researching the Yanmar 6EY17W, the initial purchase price and on-going operating costs proved to be market leading.

In the engine room, the Yanmar is mated to a Twin Disc MGX 5321DC transmission with a 4.96:1 ratio. At the end of the prop shaft is a huge 1.8m diameter Mikado high skew Kaplan propeller with Ryce nozzle.

Designed specifically to suit New Zealand's sea conditions, the *Santy Maria* is proving to be

fuel efficient, powerful and stable. Productivity when operating at sea is highly impressive. Typically the *Santy Maria* spends between 2 to 5 days at sea at a time with the Yanmar engine operating 24 hours a day.

The performance of the engine in sea trials returned impressive data. At 1350 rpm the speed is 10 knots and bollard pull is 10.5 tonnes. Under regular trawling conditions the fuel consumption is rated as low as 70 litres per hour, while the fuel usage while steaming at a comfortable 9.5 knots is 80 litres per hour.

According to Mark Teece of Aimex Service Group, the *Santy Maria* is performing very well having logged just over 2000 hours on the Yanmar 6EY17W.

"We've just done an oil change and the engine is running well," Mark Teece said.

"We're very happy with the entire configuration of the engine and the hull. The low engine noise from the Yanmar is a crucial benefit, as the crew accommodation is directly above the engine room."

"The high torque developed is also a key attribute of the Yanmar. The Yanmar provides outstanding pulling power whilst winching and hanging nets"

"In summary the Yanmar 6EY17W has delivered good reliability, easy maintenance and a simple engine system with no electronics."

On the decks and below, is the latest commercial fishing hardware designed to make deep sea fishing efficient while leaving minimal environmental footprint in the ocean.

The vessel uses cutting edge Precision Seafood Harvesting (PSH) technology. The modular net system corrals the fish in the water, so they are in a more rested state when they are landed on the vessel, resulting in them being landed in pristine condition.

In addition, the *Santy Maria* has been specifically designed with the most advanced bird protection measures on any vessel to date. It stores offal on board to be released when it is not trawling, and discharges it below rather than above the water so there is no free lunch for sea birds.



The 6EY17W on its way into the engine bay.



them solo, including the single “three times around” voyage and a lifetime of significant contributions to sailing.

In 2015 the Ocean Cruising Club of the UK (OCC) awarded Jon Honorary Life Membership. Jon is a Fellow of Curtin University and a life-time member of the Royal Perth Yacht Club.

This year is the 400th anniversary of the landing by Dutch voyagers on Australian shores. The event was commemorated in October 2016 with the Dirk Hartog Yacht Race. Commencing off Fremantle, the race course, to include a stop in Geraldton, will finish off at Dirk Hartog Island with the yachts berthing at Denham. This race was being organised in concert with the South of Perth Yacht Club and Fremantle Sailing Club with input from the Geraldton Yacht Club and the City of Greater Geraldton.

The Dirk Hartog Yacht Race was excuse-enough for Jon Sanders to set off on his 10th voyage around the planet. This will be another record-breaking feat by Jon that is unlikely to be bettered any time soon. Once Jon completes the Dirk Hartog Yacht Race it will be easier, apparently, to take the trade winds around the planet and back to Fremantle rather than bash back against the persistent “sou-wester” winds and Indian Ocean rollers back down the Western Australian coast to Fremantle.

Jon intends making the journey in his trusty 45 year old Sparkman & Stephens 39 SV Perie Banou II. This will be his “swan-song” voyage. Perhaps because it could indeed be his last circumnavigation and perhaps, too, as a nod to his return late 2017 back into the Swan River and to his historic sailing base, the Royal Perth Yacht Club on Matilda Bay.

Jon’s swan song voyage commenced in October 2016 and include the following routes:

# JON SANDERS 2016-2017 “SWAN-SONG” VOYAGE

Jon Sanders and SV Perie Banou II are iconic and synonymous with the Royal Perth Yacht Club in Australia. Many people would recognise Jon Sanders as a yachting legend. He holds numerous single handed sailing records and has covered thousands of ocean miles.

A Western Australian yachtsman based at the Royal Perth Yacht Club, Jon is best known for completing the first solo non-stop triple circumnavigation of the planet in 1988. This accomplishment was made aboard SV Parry Endeavour, covering 71,000 nautical miles in 658 days – the longest distance sailed continuously by any person or vessel.

In 1982 he completed the first solo non-stop double circumnavigation on aboard

SV Perie Banou, a 34 foot Sparkman & Stephens designed yacht. SV Perie Banou became the first Western Australian yacht to circumnavigate the Planet.

Jon has also competed in seven Sydney to Hobart yacht races, two Fremantle to Bali yacht races and three Cape to Rio yacht races.

Jon has been awarded the post nominal’s AO (Officer of the order of Australia), OBE (Officer of the Order of the British Empire) and CitWA (Citizen WA) after his name. He has been inducted into the Single-Handed Sailor’s Hall of Fame in Newport USA. In 1983 he was awarded the world’s most prestigious personal yachting trophy, the Chichester Award.

In March, 2016 The Cruising Club of America (CCA) selected Jon to receive its Blue Water Medal “Without Date,” a designation that has been used only five times since inception in 1923. This Award recognizes “a meritorious example of seamanship” that ranges over a lifetime of achievement. Sanders was cited for his nine circumnavigations – eight of



A Yanmar 4JH4AE provides all the power Jon needs when not under sail.

**Expected Dates Destination:**

<b>15 October 2016</b>	Fremantle to Geraldton Race with crew
<b>20 October 2016</b>	Geraldton - Dirk Hartog Island Race with crew then on to Carnarvon to provision PBI for the crossing to Cape Town, with crew
<b>November 2016</b>	Carnarvon to Cape Town – solo
<b>January 2017</b>	Cape2 Rio Race with crew
<b>February 2017</b>	Rio to British Virgin Islands – solo
<b>March 2017</b>	British Virgin Islands to Panama Canal – solo
<b>June 2017</b>	Panama Canal to Sydney – solo
<b>October 2017</b>	Sydney to Perth - solo



Jon's SV Perie Banou sailing out off Fremantle on his history making voyage.

Jons trusty yacht is powered by a Yanmar 4JH4AE, 54mhp @ 3000rpm with more than 4800 hours running time. Jon performs most of the routine servicing himself when it is due and relies on Bruce Calder of East West Marine in Perth for other mechanical work. To date, no major engine work has been completed. Even after the 4800hrs of use, the engine doesn't blow any smoke and performs like a new one which is why Jon is confident of making this trip with the Yanmar engine.

Jon Sanders is celebrated for a two-consecutive non-stop (SV Perie Banou) and then a three consecutive non-stop (SV Parry Endeavour), unassisted circumnavigations of the planet by yacht. His yacht SV Parry Endeavour is on display at the Fremantle Maritime Museum where it has pride-of-place next to the Americas' Cup winning Australia II.



Dry docked and getting ready to go.

**Power Equipment wish Jon well with his voyage. You can check on Jon's progress here at [www.jonsanders.com.au](http://www.jonsanders.com.au)**

**Jon Sanders has achieved numerous sailing records, including:**

1. The longest DISTANCE ever sailed continuously by any vessel unassisted and solo, 71,023 nautical miles; and
2. The longest TIME ever spent alone at sea, 657 days.

**First-time single handed (solo) records to Jon Sanders include:**

- 5 times non-stop circumnavigations (the first in 1981-82 & 86/88);
- 5 times Cape Horn roundings (one east-west & four west-east);
- 5 times Cape Horn roundings during non-stop circumnavigations;
- 4 times roundings of the five southernmost capes;
- 1 times circumnavigations using the west-east route;
- Circumnavigate non-stop via Cape Horn west-about & east-about;
- Skipper of small yacht (less than 15.5m) to complete 5 times circumnavigations' crewed or single-handed; and
- Yachtsman to complete to complete 5 times circumnavigations via Cape Horn, crewed or single-handed.

Since the year 2000, Jon has skippered a 44ft sloop from Sydney to Europe via the Red Sea and Suez Canal; including his 11th crossing of the Indian Ocean and fourth transit of the Suez Canal.

**Other voyages and transits include:**

- Indian Ocean (14 times)
- Atlantic Ocean (11 times)
- Pacific Ocean (12 times)
- Australian seaboard, west-to-east and east-to-west (45 times)
- Cape Horn (5 times)
- Cape of Good Hope (11 times)
- Panama Canal (6 times)
- Suez Canal (4 times)

**Major yacht races include:**

- Sydney-to-Hobart Race (7 times)
- 1979 Parmelia Yacht Race, United Kingdom-to-Australia; and the
- Cape-to-Rio de Janeiro (3 times)

# **YANMAR**

## *expands YH series with NEW single phase models*



- 4 Pole, Single Phase Diesel Generator Sets
- Sound attenuated canopy to minimise noise output
- Optional larger capacity fuel tank for longer operating hours
- Compact and simple to operate in any environment
- Powered by a reliable Yanmar TNV series Engine
- 5 models available from 6.6-29.2kVa



## The renowned Yanmar YH series of diesel-powered commercial and industrial three phase generators has been expanded with five new single phase four pole (1500rpm) models, ideal for a wider range of settings – including residential.

Like their premium quality three phase YH series counterparts, the new single phase four pole YH series generator sets feature quality, fuel-efficient Yanmar engines manufactured in Japan.

The generators are ideal as standby for businesses or households using solar power, plus other uses such as back-up in the case of power cuts or as electricity for those who are unable to access the grid.

All models available are, as standard, fully enclosed and sound proofed with industry leading sound attenuation. For example, the new YH220DSLS-5F soundproof model emits only 59db(A) at seven metres.

The new single phase four pole (1500rpm) models range from 6-26kVA prime power, with larger high capacity fuel tank bases optional – and all tanks are fully bunded.

Technically advanced, the YH series generators remain easy to operate, with user-

friendly design and safety features including a turn-key start, digital control panel, rain cap for outdoor use, key-lock fuel access, engine oil drain pump for easy maintenance, emergency shutdown and more.

At the heart of the Yanmar YH series of water cooled generators is the world leading Yanmar TNV series engine, a robust Japanese-manufactured workhorse that meets all current Australian non on-highway emission standards.

The new YH series single phase four pole (1500rpm) generator sets are available and in stock now, and can be purchased via Power Equipment or any of its national network of authorised dealers.

The units are easy to transport via forklift or, alternatively, can be installed by crane.

Power Equipment Business Manager, Noel Heritage, said Yanmar units were the gold standard in terms of longevity, reliability and ease of use.

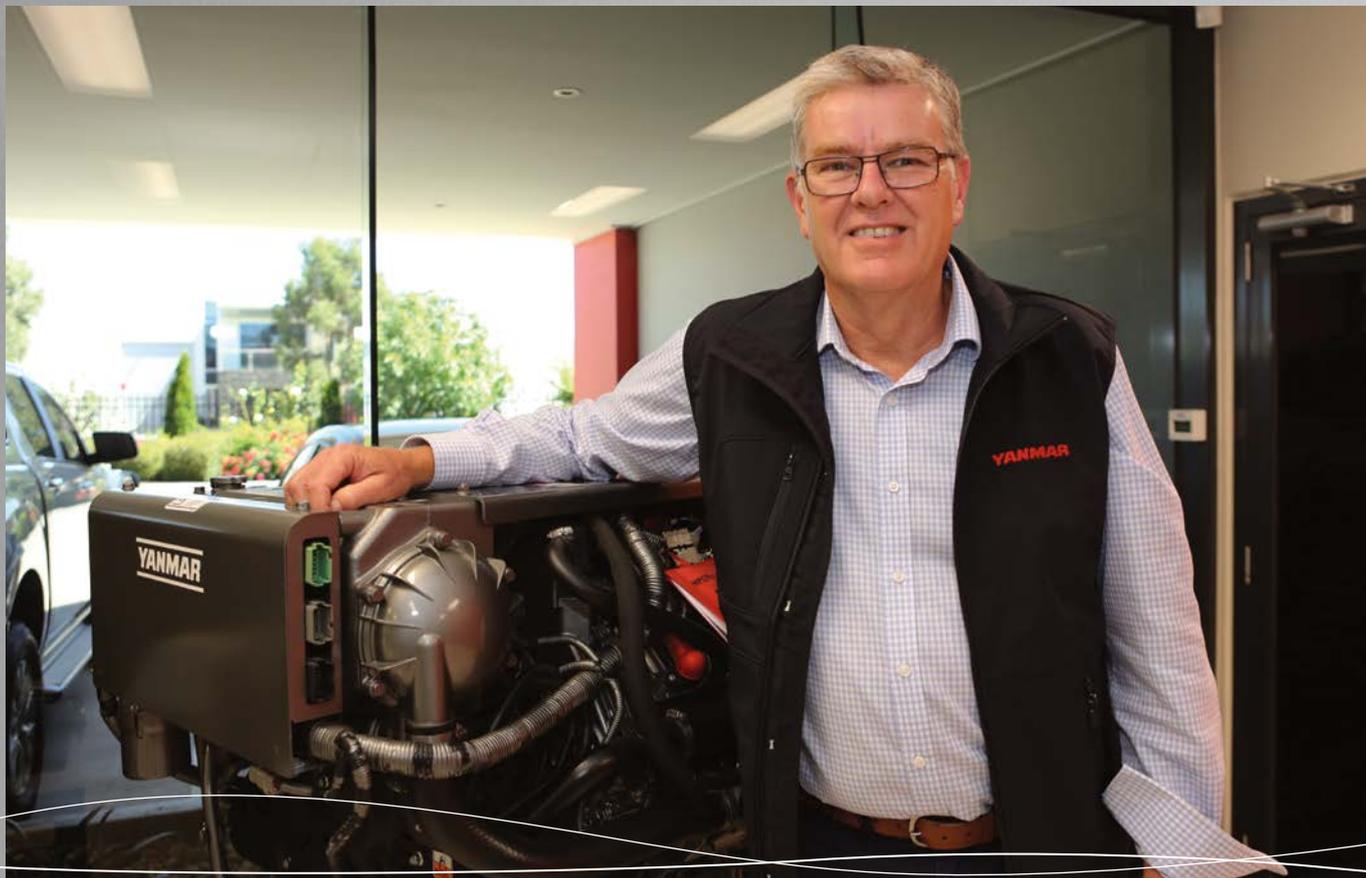
“The market has been telling us there’s a need for a quality single phase Yanmar option, and that demand can now be filled,” he said.

The following models are available:

- YH110DSLS-5F rated at 6.6KVA S/By & 6.1KVA Prime (optional 100-litre fuel tank base)
- YH170DSLS-5F rated at 10.8KVA S/By & 10.1KVA Prime (optional 100-litre fuel tank base)
- YH220DSLS-5F rated at 15.3KVA S/By & 14.1KVA Prime (optional 190-litre fuel tank base)
- YH280DSLS-5F rated at 17.9KVA S/By & 16.4KVA Prime (optional 190-litre fuel tank base)
- YH440DSLS-5F rated at 29.2 KVA S/By & 26.6KVA Prime (optional 190-litre fuel tank base)

Since the Yanmar YH three phase series was introduced to Australia at the end of 2011, Yanmar now continues to build on its long heritage and reputation for premium quality, reliability and longevity with the new YH single phase four pole models.

Yanmar and Power Equipment are committed to offering quality Yanmar diesel generators, providing a comprehensive range for all applications from 2.2kva to 62kva.



## **POWER EQUIPMENT APPOINTS IAN PAYNE **YANMAR** MARINE AREA SALES MANAGER**

Power Equipment has announced the appointment of Ian Payne to the position of Yanmar Marine Area Sales Manager.

Based at Power Equipment's head office in Lynbrook (Melbourne), Ian Payne has regional responsibility for Victoria, South Australia and Tasmania.

In taking up the position of Marine Area Sales Manager, Ian's prime function is to provide support in the field for both pleasure and commercial applications of Yanmar's range of marine diesel engines.

In addition to the Yanmar product range, Ian will be assisting Dealers, customers and alike with the full line of marine brands distributed by Power Equipment, being MASE diesel marine generators, Gori high quality folding sailboat propellers, PSS Shaft Seals, Northern Lights Gen Sets and the soon to arrive OXE Diesel outboard.

For Ian Payne, the appointment enables him to follow his passion for boating and the marine industry. Over the past 20 years, Ian has filled senior management positions in the banking industry. Utilising his accountancy training, Ian occupied various senior roles at the ANZ Banking Group ranging from Finance Manager Projects to Head of Project Accounting.

Signing on at Power Equipment and representing the Yanmar brand is something of a homecoming for Ian. From the mid 1970's, Ian forged an impressive and diverse career in the Australian marine industry.

Over an impressive career spanning two decades, Ian worked in retail sales then area management with several outboard and power product brands. These included Johnson/Evinrude, Force Outboards and Suzuki.

Ian brings to Power Equipment and the Yanmar customer base, a unique blend of marine industry knowledge, marine engine experience and an exceptionally strong management and financial skill set.

"Ian Payne is a highly-credentialed marine professional who is an invaluable resource for our customers to access," said Mark

Butterflyed, National Marine Sales Manager for Power Equipment.

"Ian is now available to assist Yanmar OEM customers and the dealer network. His background and experience specifically enables Ian to advise on product selection and installation."

"A strength of Yanmar is that we have people like Ian within our structure who are available to provide application engineering advice to customers."

According to Ian, his appointment to the position of Marine Area Sales Manager at Power Equipment completes the career circle.

"Working in the marine industry was my passion," Ian said.

"To leave my banking career and return to marine is a genuine delight. This is an industry which I know. I have great affinity with the Yanmar product, the customers and the applications."

"The Yanmar brand is a premium quality product and the product range is exceptional. I'm very thrilled to be representing the brand and I am looking forward to working with our Dealers, OEM customers and end users alike."



## REMOTE ESCAPE WITH **YANMAR**

As the world shrinks with easy air travel and instant digital communication, the appeal of genuinely remote locations is stronger than ever. With isolation comes a need for absolute reliability, and that's precisely why the luxury expedition charter vessel MV Great Escape has been repowered with dual Yanmar 6AY-WET engines.

A wilderness adventure aboard the MV Great Escape along the Kimberley Coast is an authentic, enriching experience like no other. The Kimberley Coast cruise demands a vessel as unique as the remote environment, and the MV Great Escape delivers in every regard.

MV Great Escape was built in 2006 by Geraldton Marine to a Gavin Mair catamaran design which met the specific design parameters set down by Chris Tucker and Kylie Bartle at The Great Escape Charter Company. The hull is a 26m aluminium catamaran with a beam of 10m. Fully loaded it displaces 120 tonnes.

Apart from the on-board luxury fit out, the defining feature of MV Great Escape is the helicopter which sits on its own helipad on top of the superstructure. There are also small dinghies and tenders associated with the vessel, but in this region, nothing beats an aerial perspective. Comfort and style define MV Great Escape.

After some years of operation the original engines were heading towards a major rebuild. While the owners could have squeezed more operational time from them, it was inevitable that extracting more life out of the original engines would have involved

a compromise in terms of reliability. The safe solution was to repower.

The decision to repower with Yanmar proved to be a relatively easy choice. While the original engines from a US manufacturer could have been updated, the research showed that the fuel consumption was considerably more than the Yanmar engines. In addition, the owners had previously repowered another vessel with Yanmar engines and had been very impressed with the complete process and outcome.

The engines selected for the MV Great Escape was a pair of Yanmar 6AY-WET marine diesel engines. These were matched to the existing Twin Disc transmissions running a 2.45:1 gear ratio which in turn were spinning Mikado 40" x 40 1/8" 5 blade props.



YANMAR 6AY-WET

The Yanmar 6AY-WET is a six in-line cylinder engine with a displacement of 20.39 litres and a continuous rated power output of 911 mhp (670kw) at 1938 rpm. Engine weight (without the gearbox) is 2,365 kilograms.

The Yanmar 6AY-WET offers strong performance, low fuel consumption and low emissions. The versatile 6AY Series is extensively used in many applications of heavy-displacement work boats but has quickly gained an excellent service history and reputation in many high speed applications such as passenger ferries, patrol craft and commercial fishing boats.

Fleet Hydraulics at Geraldton undertook the repower quickly and efficiently so that MV Great Escape was back on the water and operating charters with minimal downtime. According to skipper Jeremy Tucker, the Yanmar repower has been an outstanding success.

"With 3000 engine hours since the Yanmar repower, we have nothing but positive things to say about our new Yanmar engines," Jeremy Tucker said.

"Although we have come down on rated power, we also dropped a large amount of weight. We are achieving the same top speed and cruise speeds as we used to, but in the process we are saving a whopping 20% in fuel consumption."

The top speed of MV Great Escape is an impressive 22 knots. However, a comfortable cruise speed of 11 knots is achieved at 1300 rpm with fuel consumption recorded at 70 litres per hour per engine. At this rate of fuel burn, the 14,000 litres of diesel fuel on board provides a cruise range of 1100 nautical miles or 2000 km.

The cruises on offer with MV Great Escape range from a 4 night fishing experience, through to the Kimberley Classic Adventure trip, which is a 13 night cruise. Over the longest cruise, MV Great Escape can log up to 1000 Nm in a two week period.

"The Yanmar 6AY-WET engines have provided the essential safety factor that we demand for our remote cruising grounds," Jeremy Tucker said.

"The mechanical injection fuel system is an important feature. It makes servicing in our remote region easier and in the event that there is an issue while at sea, chances are that we can fix it ourselves and get back to our home port in Broome."

"As an added bonus the Yanmar 6AY-WET engines are narrower than our previous engines and this gives us better access in the engine room to check and service the Yanmars."

# **YANMAR** SELECTED FOR TWO WORLD-BEST-PRACTICE PILOT VESSELS



Following an exhaustive nationwide review of pilot boats, Flinders Ports has purchased and commissioned two new vessels. Both boats are powered by dual Yanmar 6HYM-WET marine diesel engines.

Flinders Ports is South Australia's largest private port operator.

A dedicated team was charged with investigating the market to identify a vessel that would meet world's best practice. The Flinders Ports team visited ports around Australia, sea trialling various Pilot vessels.

The entrance to Melbourne's Port Phillip Bay is a treacherous passage called The Rip. Here, Senior Coxswain Dennis Williamson, a Senior Launch Master with 52 years at sea, went to out to sea with 20 knot winds and moderate seas to trial the Hart Marine ORC Fast Pilot Boat. The vessel handled the conditions confidently. Dennis Williamson rated the vessel as "the best Pilot vessel that I've been aboard" and the Flinders Ports team had found their new hull.

The Hart Marine ORC Fast Pilot Boat is a planing hull which has a distinctive beak

bow. The hull is of self-righting design and is built with a unique suspension wheel house arrangement.

The suspended wheel house serves several purposes none the least is a significant reduction in the transmission of mechanical noise and vibration to the wheel house.

The great benefit of this is the resulting improved working environment and reduced fatigue of the skippers.

When it came to the brand and specific model of engines to power the new Pilot vessels, key consideration for Flinders Ports was standardising the fleet with the one engine for today and beyond. Making the correct choice with the first vessel was important.

Thorough research was undertaken and the Hart Marine ORC Fast Pilot Boat with the Yanmar 6HYM-WET engine was selected.

"One of our existing boats, the Norman Carr, has a pair of Yanmar 6CX-GTE2 engines installed and has performed well over many years," said David Underwood, Marine Services Superintendent at Flinders Ports.

"Quality and timely service work has also been forthcoming from the local Yanmar authorised dealer Webb Marine Services during this period which we are grateful for."

"Beyond our previous good experience with Yanmar and their local service dealer we felt that the Yanmar brand is reliable and performs to a superior level. Weighing heavily in our selection criteria was the fact that our Pilot vessels are spread throughout South Australia. We favoured a purpose built marine engine with a mechanical fuel management system."

Yanmar's 6HYM-WET model is a purpose built commercial marine engine. It includes Yanmar's latest combustion chamber design,

*"The best pilot boats  
I have been aboard"*  
Senior Coxswain  
Dennis Williamson



*So impressed with the first two  
vessels, they have now commissioned  
another two vessels which are  
currently under construction.*



*The Alert and Reliance pilot boats ready for work.*

The hull measures 16.0m long with a beam of 5.43m. The maximum draft is just 1.5m and the hull displaces 21.5 tonnes.

In sea trials the Flinders Ports vessels achieved a maximum speed of 27 knots with the Yanmar 6HYM-WET engines spinning over at 2150 rpm. The normal service speed of the Alert and Reliance is 24 knots where the engines are operating at a very comfortable pace, and at only 62% of their rated capacity.

Operating a normal duty cycle, fuel consumption has been measured at approximately 65 litres per hour total for both engines. With 3000 litres of fuel on board, the vessels have the capability of up to 46 hours of operation, assisted by the efficiency of the Yanmar 6HYM-WET engines.

"Our ORC Fast Pilot Boats have been specified to have a lot of engine power in reserve," said Dennis Williamson.

"A regular run off Port Adelaide involves us meeting a ship about 7 Nm offshore.

There we transfer the Pilot to the ship which is making between 7 and 10 knots.

Once the Pilot is safely transferred, we need a big burst of power to break the Pilot boat away from the venturi effect of the ship's hull which draws the Pilot vessel alongside."

"The Yanmar 6HYM-WET engines have plenty of power in reserve and are exceptionally responsive to the throttle by nature of their twin turbo charger design.

They are very impressive."

The feedback from the crews who have worked aboard Alert and Reliance has been positive. The independent wheelhouse and deep beak bow have proven to be of operational benefit.

With the most frequently used vessel logging up to 2000 engine hours a year, the 500 hour service cycle of the Yanmar 6HYM-WET has cut the previous service interval in half.

named ASSIGN, a system originally pioneered by Yanmar on their large bore, low speed propulsion engines.

These engines are IMO Tier 2 compliant, ensuring emissions are exceptionally low.

This technology combined with Yanmar's mechanical fuel system delivers impressive fuel consumption results and provides commercial operators with excellent fuel economy. The cylinder head is a quad valve design. In this configuration, the Yanmar 6HYM-WET excels in conditions demanding continuous commercial use.

The Yanmar 6HYM-WET as specified by Flinders Ports is rated at a conservative 478kW (650mhp) at 2150 rpm.

The two vessels commissioned by Flinders Ports were named "Alert" and "Reliance" respectively. Both vessels are identical in terms of hull, power train and configuration.



*2 x YANMAR 6HYM-WET engines to provide all the power they need in each vessel.*

# YANMAR CHOSEN FOR TRAWLER'S TWO REPOWERS – 200,000 HOURS APART



*The Helm.*



*In the dry dock at its recent refit.*

The Petuna Endeavour is a commercial deep sea fishing trawler, a vessel with a long and proud history. Repowered with a Yanmar just four years into her life, some 30 years later the Petuna Endeavour was again repowered with another Yanmar.

Petuna Endeavour was built in Launceston in 1979 and named the Orange Roughie. The original engine installed into the 23.8m, 190 tonne trawler was a classic English brand which proved to be inappropriate for heavy marine use.

With just four years of fishing behind her, the heavy sea going trawler was repowered in 1984 with a Yanmar S165 marine diesel engine. This was a slow revving 1400 rpm, six cylinder engine which delivered 550hp with masses of torque. Powered by the Yanmar S165, Petuna Endeavour pressed on for decades of reliable service.

Today, Petuna Endeavour operates in the southeast of Australia, with between 2-3 months a year in Queensland waters.

In 1995 Petuna Endeavour was converted into an auto liner, one of only two such equipped vessels in Australia. With the Mustad auto bait hooking system capable of setting 15,000 hooks a day, the capability of this long liner is second to none. Petuna Endeavour fishes mostly for Pink Ling and Blue Eye Trevally with 80% of the catch destined for the domestic market.

Each time the Petuna Endeavour heads off to sea, the trawler carries a skipper plus four crew with each trip around a week in duration depending on the markets and sea conditions. Phil Hough, skipper of Petuna Endeavour of 16 years, has nothing but praise for his vessel.

"This can be tough and at times dangerous work," Phil Hough said.

"The Petuna Endeavour has been through some wild and very tough seas, yet has never flinched once. In the engine room, the Yanmar S165 performed faultlessly and we logged up 200,000 engine hours over 30 years, an outstanding achievement for the Yanmar brand."

At 1150 rpm the Yanmar S165 was pushing the Petuna Endeavour along at a steady 8 knots with fuel burn at 55 litres per hour. The trawler



Phil Hough, skipper of the Petuna Endeavour.

carries 35,000 litres of fuel and has catch tanks with a combined capacity of 55 tonnes.

Although there was nothing major wrong with the Yanmar S165, the owners decided that it was time to update and re-power Petuna Endeavour. In spite of the stunning record with the Yanmar S165, the owners undertook detailed research of competitive engine brands.

As part of the buying process, the owners and skipper went to Melbourne to personally check over the Yanmar models. Power Equipment, the authorised Yanmar distributor, impressed greatly, not only with their modern facility, but the people themselves responsible for sales, technical support and parts supply. Yanmar stood out as the preferred brand and a brand new Yanmar 6AYM-WST was purchased.

The re-power was performed by Rogers and Lough marine engineers in Brisbane. Due to the configuration of the hull and the location of the engine room, an access hole was cut into the bottom of the steel hull. The trusty

Yanmar S165 was removed through the hole and the new Yanmar 6AYM-WST with new Yanmar YXH240L transmission was winched into place.

The Yanmar 6AYM-WST is a six in-line cylinder engine with a displacement of 20.39 litres and a rated power output of 659 mhp (485kw) at 1,900 rpm. This Yanmar model is noted for its strong performance, low fuel consumption and low emissions.

The versatile Yanmar 6AY Series is extensively used in many applications including heavy displacement work boats but also in many high speed applications such as passenger ferries, patrol craft and fishing boats like Petuna Endeavour. A key attribute of this model Yanmar engine is the high torque output, particularly in the middle and high speed ranges for reliable work performance at sea.

Following the six week re-power project, Petuna Endeavour was put through extensive sea trials. Fitted with a 5.36:1 reduction ratio and retaining the original Mikado 66" x 54.4" four blade prop, the Petuna Endeavour could

comfortably steam at 1550 rpm for a speed of 8.8 knots. Fuel burn remained the same.

"The re-power gave us a 10% increase in speed for the same fuel consumption," Phil Hough said. "When we need to get back to port in a hurry or beat the weather, we can run at 10.5 knots at 1800 rpm."

"From the helm the enhanced performance of the Yanmar 6AYM-WST is easily felt. This engine delivers a massive amount of torque and it's good to have all that extra grunt on hand."

Typically Phil Hough will run the Yanmar 6AYM-WST engine for between 14 and 18 hours a day. Apart from the run out and back to port and then shifting from one fishing ground to the next, there is a lot of idling and constant gear shifting.

"The mechanical fuel system on the Yanmar engine is ideal for our application. Plus, the 500 hour service intervals is a big bonus and we are able to change filters and oil while we are away at sea if necessary."

"Our experience with Yanmar has definitely been a positive one," Phil Hough concluded.



The YANMAR 6AYM-WST in its new home.



The 6AYM-WST with YXH240L transmission re-power provided 10% increase in speed for the same fuel consumption.



# **YANMAR** **V8 makes revamped** **Matilda Bay 32 Sing**

A single Yanmar 8LV370 has been specifically selected to power the redesigned Matilda Bay 32. Following a comprehensive stem to stern makeover, this hull has been transformed into a stylish weekender, with its Yanmar marine diesel engine delivering a spirited performance.

In sea trials the Yanmar 8LV370 achieved a top speed of 28.5 knots (45.3 km/h) at wide open throttle of 3850 rpm. A more sedate cruise speed is 11.6 knots (21.4 km/h) was achieved at 2500 rpm with a fuel consumption of just 28 litres per hour. With 600 litres of fuel on board, this provides for a maximum of 21 hours of operation at cruise speed or a maximum range of 247 Nm or 458 km.

"We selected the Yanmar 8LV370 with the factory fitted KMH52 vee drive transmission for the compact installation envelope, low weight, power output and low fuel consumption," Laurie Toms said.

"The Yanmar 8LV370 is the maximum power that this hull can accommodate."

"With any boat like this where the engine is literally underneath the feet of the people on board, low engine noise is imperative. In this respect the Yanmar 8LV370 is exceptionally quiet to the point where engine noise is of no consequence."



The 8LV370 tucked away under the deck.

The Matilda Bay 32 is a vessel that has its origins in Western Australia, being previously marketed under the brand name Fury. The moulds were purchased by local marine agent Chas Milner of Matilda Bay Marine and rebranded as the Matilda Bay 32.

Recognising that the hull would benefit from a makeover, the moulds were shipped to the production facility in Northern NSW. Boat builder Laurie Toms in consultation with Chas Milner modernised the design and devised the modular construction process, where a significant level of customisation is possible without the prohibitive cost usually associated with custom builds.

The hull had 300 mm cut from the keel, an initiative designed to make the hull track better, particularly with the higher horsepower Yanmar 8LV370 installed. The other significant change was to raise the entire deck and cabin floor. This created the space to install the engine under the aft cockpit floor while at the same time providing a full 2.1m of headroom in the spacious, open cabin.

As a result the Matilda Bay 32 boasts a LOA of 9.8m, beam of 3.49 and a displacement of 5.2 tonnes lightship. On water and ready for a weekend away, the displacement could easily tip 6 tonnes with the addition of 600 litres of fuel, 500 litres of water plus passengers.

"The owner of the re-configured Matilda Bay 32 wanted a vee drive configuration so that the engine was under the aft cockpit floor and outside the cabin," Laurie Toms said.

"As this boat is designed to be used as a day boat or a weekender, the objective was to eliminate any intrusion into the cabin or aft cockpit with a raised engine box. The result speaks for itself thanks to the Yanmar 8LV370 configuration."

The Yanmar 8LV is offered in two configurations, 320 mhp (235kW) model 8LV320, and 370 mhp (272 kW) 8LV370. The more powerful model was selected as the optimum engine for the hull design in terms of overall performance and efficiency.

At the heart of the new Yanmar 8LV is a 90°, V8 cylinder block. It features twin turbochargers and direct injection with a common rail fuel system. There are four valves per cylinder. Weighing in at just 435 kgs dry, this impressive marine engine continues the Yanmar tradition of delivering high power from a low weight package.

Rounding out the drive train on the Matilda Bay 32 is a Yanmar vee drive transmission which is direct-coupled to the Yanmar 8LV370. The Yanmar KMH52V transmission has a 2.04:1 reduction ratio and spins a 21" x 21" 4 blade propeller. Through a shaft angle of 12°.

# YANMAR

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The Yanmar 6LY3 features a high-technology electronic control system that governs all engine operations from fuel management to twin engine synchronisation, gear shifting and diagnostics.

The intelligent electronic control system on the 6LY3-STP manages the fuel delivery system and injection timing of the high pressure fuel pump to dramatically increase torque, improve fuel economy, reduce noise at idle and particularly reduce fuel odour and white smoke at start up in cold conditions.

In extensive sea trials prior to official handover to NSW Marine Rescue, the Yanmar engines returned exceptional performance data. At wide open throttle the Yanmar 6LY3-STP engines revved out to 3340 rpm for a top speed of 31.2 knots. This performance was achieved with a full fuel load of 1350 litres, full survey equipment and five crew members on board.

The driveline comprises the Yanmar KMH-61A transmission with 2.43:1 gear and a pair of 22.5" x 32.33" pitch prop. A comfortable and efficient cruise speed is achieved by throttling back to 2400 rpm for a speed of 21.6 knots and fuel consumption of 40.5 litres per hour per engine. At continuous engine RPM rating of 2900 rpm, the Steber achieved a top speed of almost 28 knots.

Yanmar and Steber continue to enjoy a lengthy partnership in supplying almost 20 vessels to NSW Marine Safety. Following the launch of the Port Stephens 31, NSW Marine Rescue will shortly be taking delivery of an identical vessel, to be delivered to Port Macquarie.

Reflecting on the success of the Yanmar/Steber combination, Alan Steber (MD of Steber International) said, "We are using Yanmar marine diesel engines virtually exclusively on all of our commercial installations."

# IT'S **YANMAR** AGAIN TO THE RESCUE

The exceptional demand for Yanmar powered Steber built marine safety vessels has continued with the recent launch of a new boat for NSW Marine Rescue, Port Stephens 31 (PS31), the 'John Thompson'. Once again, dual Yanmar 6LY3-STP engines have been selected for this vessel.

The Steber 38 has proven itself many times over as being one of the finest vessels for water police, rescue and maritime safety agencies throughout Australia and overseas. This is an award winning hull design which is noted for its exceptional sea going qualities. The hull is renowned for its superb handling features such as high speed level planing, excellent cornering, dry soft ride and good all-round vision.

The sophisticated specifications required the PS31 be fitted with state-of-the-art radar, direction finding and navigation equipment as well as forward looking infra-red search equipment. The task of NSW Marine Rescue is to principally find and rescue mariners, then when appropriate tow vessels to safety.

When called on to work in unkind sea conditions and undertake dangerous work where there are lives at stake, there can be no short cuts in quality or equipment.

The PS31 cockpit is exceptionally functional and can be sealed from the elements to keep water and wind outside under the most adverse of sea conditions. Given the long hours at sea, day and night, the crew are well catered for, with essential comforts for long trips at sea.

Throughout the boat, there are hand holds everywhere. The aft cockpit is dominated by a giant and secure towing post which sits squarely amidships between two flush mounted engine hatches. Towing vessels large and small back to a safe port, forms a large part of the work undertaken by NSW Marine Rescue, a service greatly appreciated by marine insurance companies.

Underneath the aft cockpit floor, a pair of Yanmar 6LY3-STP engines with Yanmar's own KMH61A marine transmissions have been meticulously installed. The installation is as immaculate as any with an emphasis on ease of service and durability.

The purpose built Yanmar 6LY3-STP marine engines have a deserved reputation for low fuel consumption and are approved for light duty commercial applications. Low fuel bills and low servicing costs together with high reliability are critical factors which help contain the operating costs for NSW Marine Rescue.

Yanmar's 6LY3-STP engine is a turbocharged, direct injected, intercooled, 24 valve, in-line 6 cylinder displacing 5813cm<sup>3</sup> to produce 440mhp (324 kW) at 3300rpm. Weighing in at only 718 kilos complete with Yanmar's purpose built marine transmission, the 6LY3-STP delivers industry leading power-to-weight Yanmar diesel performance.



Dual YANMAR 6LY3-STP power the new NSW marine rescue vessel Port Stephens 31 – The John Thompson.

# CENTENARIAN COUTA TAKES OUT GANT PORTSEA CUP



Tim Phillips sailing Muriel on Port Phillip Bay.

The man responsible for the resurrection of the vintage car of the sailing world, the Couta Boats, raced his own 100 year-old Muriel to a handicap win in the 35th Gant Portsea Cup hosted by the Sorrento Sailing Couta Boat Club.

Division 1 handicap and heritage honours went to Tim Phillips' from The Wooden Boat Shop who competed in Centenarian Muriel.

The Wooden Boat Shop is one of the premier Yanmar Dealers in Australia, having sold, installed and serviced hundreds upon hundreds of Yanmar marine diesel engines. Tim Phillips is a wooden boat builder with an impeccable reputation, the world over.

The annual Portsea Cup is a high-profile event which attracts the rich, famous and fanatical to contest the prized trophy.

"Muriel's a lovely old boat," said Tim Phillips.

"With a fifth over the line on the Saturday we like to think we are competitive for line honours as well. We had a good team on for the Portsea Cup including Robert Clifford of Incat fame, Chris Maxted who was on Perpetual Loyal for the Sydney to Hobart and David Ham, a very good Flying Dutchman sailor."

At an event such as the Portsea Cup, there is enormous interest in the boats participating. The Couta boat Muriel is a very special boat.

Indeed, any one hundred year-old yacht still sailing is bound to have a wonderful history, and Muriel is no exception.

The Centenarian Muriel is powered by a Yanmar 2GM20 which was fitted by Tim Phillips 30 years ago. This is the sixth engine to have powered Muriel.

The original engine was an American Halliday, which according to Tim Phillips should have been called a holiday given its lack of reliability. Then there is the amazing story that in the spring of 1919 Muriel's skipper and his mate "pushed" (rowed) Muriel all the way from Port Phillip Heads to Spit Point, picked up his pots & met the Queenscliff Couta fleet going to sea at dawn the next day 24 hrs later. When there was no wind, you rowed! That's a distance of 50 NM and Muriel weighs in at 4000KG!

An English Kelvin engine was the second on board Muriel, this being followed by a series of three Rugby car engines. Then in 1986 the Yanmar 2GM20 was fitted at the Wooden Boat Shop and it remains as strong as ever today, 30 years later.

But back to the Portsea Cup....light and fickle eight knot easterly breezes off Portsea's Quarantine Station on Victoria's Mornington Peninsula separated the 45-strong fleet early on and made for leisurely and sometimes frustrating progress, which in turn set up a second weather challenge - an outgoing tide that cost some the chance to record a finish time.

"We were racing all the other competitors but the greatest competitor was the tide," Phillips said. "The Sydney boys reckon it's like sailing in a river entrance, and they are probably right."

The laid triangle course race of 7 nautical miles is the event of the year for the popular Couta Boat class. It's the day most owners prepare methodically for and bring their best crew combinations to, from Olympic gold medallists, around-the-world yachties and Sydney Hobart winners to everyday sailors.

Class president James Mighell said afterwards, "The Portsea Cup is our big annual race and tends to attract very good sailors sprinkled across the front end of the fleet. Handicaps get tweaked with loadings in the morning, depending on which hot sailors are on which boats. The strong ebb tide added another dimension this year."

Phillips is only the third owner of Muriel, his custodianship spanning 30 years, and before him Andy Johansen's ownership stretched a lifetime - 65 years. Phillips knows the story of the boat's launch well: "The date was March 5, 1917 and the original owner Gus Johnson thought he might have to choose between the birth of his son and celebrating his new pride and joy's first taste of saltwater, but he managed to attend the birth of the lad in the morning and the launch in the afternoon.

"They were the bitter and divided years. It was a pretty thin time and there must have been a lot of misery in the papers about WWI and the deaths on the Somme. They were dark days in Australia when Muriel was built and launched," Phillips reminisced.

Phillips is one of the Victorian owners committed to trucking his boat to Sydney in October for the class' first nationals to be held outside the state, and he's hoping for a combined Sydney/Melbourne fleet of 30.

# MELBOURNE TO BRISBANE

## YANMAR 6LPA EFFICIENCY AT WORK

Recently launched by Pacific Power Cats (Peter Brady's Brisbane based boatbuilding yard) is "Paradigm", a Pathfinder West Coaster 49 and the first of the Pathfinder "M" range. Like all of the power catamarans Peter has built over the last 10 years, she is powered with dual Yanmar 6LPA-STP engines delivering a total of 630 hp.

With Peter Brady's design emphasis on long-range cruising, he prefers simple uncomplicated fuel injection and engine control systems for his power plants wherever possible. These engines have a greater tolerance to the "not so perfect" fuel and more basic maintenance facilities often found in remote destinations.

"The high performance Yanmar 6LPA-STP2 - 315mhp engines have a mechanical fuel injection system that suits both mine and my clients design philosophy perfectly. When I design and build trans-ocean capable vessels, 'strong, simple and reliable' are the key requirements of both the boat itself and the mechanical components specified," Peter Brady said.

YANMAR 6LPA-STP2



Matched to the 2.43:1 reduction Yanmar transmissions, these Yanmar engines have the torque to swing big props slowly. This high reduction ratio with big props is part of Peter's formula in consistently delivering ultra-high fuel efficiency.

On sea trials with a full load "Paradigm" achieved a top speed of 23.2 knots with an economical cruise speed of 15 knots using 24-25 litres per hour per engine. A total compliment of 3,300 litres of fuel on board gives the West Coaster 49 a cruise range of 870 Nm at 15 knots or approximately 1,160 Nm at 8 knots with a 10% fuel residual for safety.

Inspired by the cray boats from Western Australia, "Paradigm" has forward raking windows for reduced glare and heat and because her intended long term cruising grounds are the Kimberley, the upper deck is set up as a comfortable viewing platform because the scenery is up on the cliffs as much as on the water.

Also featured on "Paradigm and all Peter's later designs, is a huge covered back deck as this is where the owners spend most of their time relaxing at anchor or on long passages. The interior is laid out for long range, self-sufficient cruising, yet has all the modern facilities of a beachfront apartment with a

practical yet luxurious finish: there is sleeping for six adults, the boat will be mostly occupied by the owners as a cruising couple.

"Paradigm" has been custom built for her owners who live in WA, and as their business is low voltage electrics, the vessel has a plethora of top end and cutting edge low voltage electrical equipment on board that is a story in itself.

Her owners plan to take her north, using Magnetic Island as her base while cruising the Barrier Reef, with the longer trip around the top end and through the Kimberley to her home in Western Australia planned for the future.

At the heart of Peter Brady's success is his ability to design a hull form which excels in both high cruising speeds and economy, setting the standard in the fast trans-ocean powerboat cruising market. The concept of travelling the Pacific or the most remote regions of the Australian coastline at anything but displacement speed, has been outdated by his solution to long distance powerboating.

This displaning hull form has narrower sponsons, a higher tunnel clearance and a wider tunnel width than most planing cats which improve its rough weather



# WITHOUT REFUELLING

performance in combination with Peter's unique Controlled Vapour Dampening (CVD) design features. Peter's displaning hull designs are just as efficient when running at lower speeds as they are at higher speeds, cutting through the water rather than trying to plane over it. This seamless transition between displacement and planing speeds allows the skipper to choose the safest speed for the prevailing conditions.

"The pathway to achieve efficiency is quite simple... a slippery displaning power cat hull, constructed from composite materials and powered by fuel efficient Yanmar engines."

While "Paradigm" prepares to head away cruising, building is already underway at Pacific Power Cats of the next in the Pathfinder "M" range. She is an Offshore 45

for charter operations and long range coastal cruising from the owner's home on Philip Island in Victoria, up Australia's eastern coast and beyond that again will be powered by a pair of Yanmar 4LHA-STP – 240mhp engines.

Following the Offshore 45 will be another new model in the "M" range, the Pathfinder Pilothouse 51. This will use many of the features developed on "Rehab", a 58ft Pathfinder Pilothouse. The Pilothouse 51 will be powered by a pair of 370hp Yanmar 6LYA-STP diesels running through Yanmar KMH 60A, 2.43:1 gearboxes for a top speed of 26 knots. The Pilothouse 51 will be fitted with a new bottom design with a carrying capacity suited to commercial operators that Peter will use to expand into this market.

This variety of displaning power cat sizes and styles in the Pathfinder "M" range perfectly demonstrates the ability of Peter Brady's

variable dimension hull moulding system. When applied in combination with the latest developments of his P.A.C.K. (Prefabricated Assembly Component Kit) boatbuilding system to utilise the platform engineering concept, the economic gap between production and custom boatbuilding is bridged.

"To compete with European and Asian imports we not only have to be better built, better designed and more fuel efficient, but we have also had to develop new boat building techniques that keep us competitive on price." Peter stated.

"We have proven that with the right combination of hull design and engines, we could save Australia importing millions of litres of diesel fuel a year if only a small percentage of the cray fishing fleet changed over to displaning power cats."

"This figure could be much higher again if other commercial operators followed suit."



Peter Brady

# HYDRO VACUUM MANUFACTURER 'SMALL BUT MIGHTY'



The humble team at VAC DIG in Shepparton, country Victoria, is achieving big things in manufacturing hydro excavation equipment, and is contributing to standardising the non-destructive excavation method.

Growing a team of one to four in just over two years, VAC DIG's hydro vacuum team punches above its weight, producing about six custom hydro vacuums a year – one of which was purchased by Tag Hire and used in a major Vic Rail project to install overhead pylons.

Due to the company's nimble structure, the engineers can tailor-make units specifically to the client's exact needs – from the capacity of the water storage, vacuum pump

and water pressure pump, to the type of steel and even the colour. The result? A cost-effective, high-quality system that delivers.

Engineer, Luke Farrall said: "Being a small team allows us to deliver exactly what a client wants from their hydro vacuum.

This means we don't put all the bells and whistles on like our competitors – simplifying the units keeps costs down for clients compared to an off-the-shelf product."

"No job is too big or small; the truck chassis arrives and we custom make every unit from there."

"We also source all our materials from local suppliers, bar the hydraulics, and the units are made here in Australia for Australian conditions. We're proud every time we see a job go out of the door," Farrall said.

Another point of difference of VAC DIG's hydro vacs is the diesel engine. A JCB DieselMax ranging from 108HP to 123HP is at the heart of the units, providing increased power at lower engine speeds, in comparison to other engines the same size.

The use of a more powerful motor means the hydro vacs can run at 100% capacity, whereas others can only run at 80%.

"We use a bigger motor so you can drive the vacuum at full power, and run hydraulics and the pressure washer all at the same time. The size of the unit determines how many cubic feet per minute can be excavated, but the vacuum power doesn't decrease," said Farrall.

Supplied by Power Equipment, the JCB DieselMax's robust design and heavy-duty structures make them perfect for the demanding hydro excavation applications.

Hydro excavation has already become standard industry practice in New South Wales where contractors are banned from using traditional excavators for services jobs. Thanks to local manufacturers like VAC DIG, Farrall believes this will soon be the case for Victoria – and most Melbourne utility companies are already insisting on using hydro excavation to locate and expose their underground services due to its minimally-destructive process.

"Take the National Broadband Network project – contractors have been using hydro vacuums for cable location and that's where it's really starting to take off now, because they have to locate the cables before they're allowed to dig a hole. Most now use hydro vacs to excavate as well, because it's pretty much non-destructive. We're definitely going to see hydro excavation as the norm in Melbourne very soon," said Farrall.

Safety is also extremely important for VAC DIG; their control units on the hydro vacs are limited to six buttons whereas many like units have up to 16. This simplifies usability and prevents users from operating the tank and boom at the same time, increasing safety. Farrall calls the control system "idiot proof".

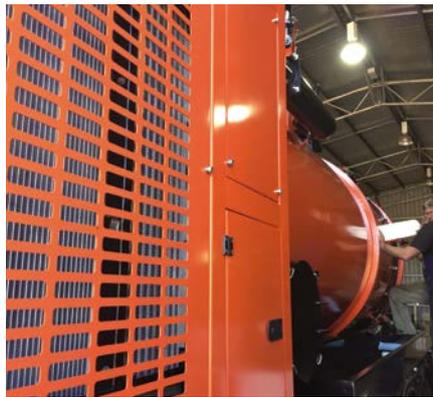
Hydro excavation is the process of using high-pressure water to break up soil, whilst simultaneously vacuuming up the unwanted earth and water slurry into a debris tank. The applications are almost limitless and hydro vac systems continue to become the industry standard in power, rail and telecommunications industries, among others.



VAC DIG's Australian-made hydro vacuums are custom-built, highly efficient and safe.



Luke Farrall with a finished hydro vacuum, proud every time a job goes out the door.



Applying the finishing touch, a brand sticker, to a hydro vacuum.



VAC DIG's 'blank canvas' before custom building a hydro vacuum.



The future is bright for hydro excavation, becoming the standard method in Australia.



This tailor-made unit weighs 5.3 tons and took 10 weeks to manufacture.



Inside the 'heart' of the unit where the JCB DieselMax engine is located.





# ORACLE TEAM USA AND **YANMAR** CONTINUE THEIR PARTNERSHIP

ORACLE TEAM USA and Yanmar continue their partnership for the upcoming America's Cup, the competition for the oldest trophy in international sport.

In its capacity as an Official Technical Partner, Yanmar will power the team's campaign for the 35th America's Cup, hosted in Bermuda, where the crew will defend its title in 2017.

The company provides 8LV inboard marine diesel engines and ZT sterndrive systems for the team's two 46-foot chase boats, renamed "Chase Boat YANMAR 1" and "Chase Boat YANMAR 2", respectively.

"Yanmar is critical for ORACLE TEAM USA", said skipper Jimmy Spithill. "The race boats are so fast now, the only way we can have our chase boats stay close enough to support us is to have them powered by the right engines.

"The chase boats help us gather and analyze data on the performance of the race yacht. The durability and reliability of the Yanmar engines allow us to go into the race with confidence. We are going for our third straight victory with Yanmar."

***Yanmar wishes Team Oracle the best of luck in the upcoming event.***

# TORQEEDO

*adds new range of discreet,  
yet powerful Pod Drives*



**Cruise Pod drives Melbourne sailor Matthew Geake recently became the first in Australia to experience the Torqueedo Cruise 4.0 FP – part of a new and award-winning breed of hull-mounted electric marine motors. The Cruise 4.0 FP (fixed pod) model installed on his wooden yacht Jolly, earned a rave review. “Putting my Torqueedo Cruise pod drive to the test was exciting – she performed really well, with a generous amount of power even with six of us aboard! And so very quiet, it’s amazing,” he said.**

The drives – which can power sail and motor boats up to 10 tons – recently won the 2016 DAME Design Award presented at Mets Marine Trade show in Amsterdam and judges’ comments included: “The pods are the most compact drive design; smaller, lighter and more economical than ever.”

The Cruise FP drives deliver the high-quality and eco-friendly performance Torqueedo – the world leader in electric marine motors – is renowned for, combined with a design that is convenient, saves space, is whisper quiet and has minimal drag.

Despite being virtually silent, the pod drives harbour a commanding punch with the performance equivalent of 5, 8 or 20HP; perfect for conquering tough swells and windy afternoons. The pod drives are available in three models; the Cruise 2.0/4.0 FP and Cruise 10.0 FP. All are lightweight with an optional folding propeller – which ensures plenty of space is saved on board. The Cruise 2.0/4.0 FP will propel a sailboat up to four

tons at over 11 km/h and has a running time of approximately nine hours at slow speed (boat dependent), Meanwhile, the Cruise 10.0 FP is ideal to propel motorboats and sailboats up to 10 tons up to 32km/h when at full throttle and has a running time of over six hours at slow speed (boat dependent). So efficient, these offer more range and power with limited battery capacity than any other electric pod motor.

Torqueedo Product Manager at Power Equipment, Jason Hodder said: “The Torqueedo Cruise FP drives have everything a sailor could want – they’re inconspicuous, mighty powerful, super quiet, solar chargeable and highly efficient, which ensures plenty of range. “We’re thrilled to help Matthew complete Australia’s first Cruise 4.0 pod installation and are confident many more will come. Like all Torqueedo motors, they’re backed by German technology – innovative, eco-friendly and convenient.”

“The most important benefit of the Torqueedo Cruise FP drives? They are so discreet you’ll forget all about them and focus on what’s important; enjoying time on the water!”

The Cruise FP series is first-class when it comes to convenience. There is minimal motor noise, even at full load, direct cooling in the water and an intelligent on-board computer with an interface for TorqTrac; the optional smartphone app for Torqueedo motors.

The lithium batteries also provide far greater performance with lower weight than conventional lead batteries – not weighing down your boat and resulting in increased range and power. Like all Cruise drive systems, the pod versions are saltwater-compatible, corrosion-protected, very robust and safe, thanks to an emergency magnetic kill switch and no need to carry fuel on board. Tests have found that a hull-mounted pod drive decreases performance by less than 0.1 knot – ensuring drag is not an issue.

RRP starts from AUD \$5,610. “The new Cruise 4.0 FP range and first installation comes off the back of a very successful 2016 for Torqueedo in Australia,” said Jason. After Power Equipment took over the distribution rights, over 150 outboards have been sold across the nation, and the outboards were recently mounted to the safety kayaks during the Massive Murray Paddle event from 21 to 25 November, with the safety team completing rescues quicker than ever before.



Christian Pho Duc, Senior VP Sales, Dr Christoph Ballin, CEO/Co-Founder, Dr Ralf Plieninger, CTO/Co-Founder accepting the DAME Design Award at Mets Marine Trade Show for the new Cruise POD Drives.

# YANMAR

## THE PERFECT MATCH FOR HI-TECH CATS



Some of the most stunning, recent multi-hull launchings share two common elements. Both vessels are Yanmar powered, and both were built by the Noosa Marine shipyard.

*Julian Griffiths, Noosa Marine – renowned for high quality multi hulls.*

The Noosa region is best recognised as an idyllic sub-tropical tourist destination. However, in the industrial zone the unassuming owner of Noosa Marine, Julian Griffiths, is turning out exceptional vessels.

Noosa Marine deals exclusively in high technology, composite constructions. The company only builds custom multi-hull vessels for the most discerning of owners who have a passion for multi-hull designs.

Julian Griffiths began his boat building career as an apprentice at the Norman R Wright & Sons shipyard in Brisbane. Julian's passion is sailing and his speciality has always been one-off, cold moulded or composite hulls. In 2008, he struck out on his own founding Noosa Marine, and in the process, returning to his home town.

Today at Noosa Marine the big cat under construction fills the shed to bursting point. A dedicated team of seven, including three apprentices, work on each project.

"I've been involved in the yacht racing scene for years, so my name is definitely out there in this niche market," Julian Griffiths said.

"While my customer base is predominantly in Australia, we are receiving a significant number of enquiries from the US. All of the international inquiry is for sail and the interest has been driven by word-of-mouth referrals as well as published reports of our recent launchings."

Some of the boats which have given Noosa Marine prominence have been the sailing cat Kato plus the most recent of launchings, the powercat Bajaca.

Kato was designed and constructed specifically for Gold Coast marine identity Tony Longhurst. The 18m cat is powered by dual Yanmar 75mhp 4JH4-TE engines matched to Yanmar SD60 Saildrives and Gori 3 Blade Folding propellers.

Bajaca came from the drawing board of Roger Hill in New Zealand and measures an impressive 18.7 meter loa.

Despite her bulk, Bajaca has flowing lines and is as sleek a cat as you will ever see. With dual Yanmar 530mhp 6CX-530CR engines in the engine rooms, Bajaca is capable of reaching 25 knots if required.

"Our strength at Noosa Marine lies in our ability to build custom designed hulls entirely from composite materials," said Julian Griffiths.



*The 6CX530 electronic engine in the engine bay.*

"Generally, when a customer comes to us they have already been working with a designer.

We add our perspective to the design and layout, before the drawings are finalised and purchased."

Construction begins with a male jig being built. The composite hull is formed over the jig which is later removed and discarded. The skin laid over the jig is a strip plank lay up in epoxy and carbon fibre. The exotic composite materials bring an impressively high level of strength to the hull, while eliminating the weight and bulk associated with a conventional fibreglass lamination.

The hull currently under construction in the Noosa Marine shed is the biggest hull to date with a length of 19.5 m. The build time is estimated at 13 months, with roughly 75% of the time taken to get the hull to the lock up stage. Generally, it takes 3 months to build the hull and side decks, 2 months for fitout then a further 3 months for filling, fairing and paint. Electricals, upholstery and the rig are contracted out to marine specialists.

The Yanmar brand is no stranger to Julian Griffiths. He fitted a Yanmar engine to his own boat, a H28 which he built during his apprenticeship years.

"Power Equipment is an ultra professional organisation," Julian said.

"The people on the ground are very forthcoming with advice and they are supportive of our work. They drop by during the build to make sure that everything is in order, then conduct comprehensive Yanmar engine tests during the sea trials."

Julian Griffiths is also a big fan of the Yanmar brand. The finish of the Yanmar engines, the way they arrive with protective packaging and the array of support information all rate highly.

"The Yanmar marine diesel range is massive. The Yanmar product is ideally matched to our applications. These engines deliver the right power for the right weight so that our hulls can perform really well."

With Noosa Marine cats capable of heading off to distant ports literally all over the world, Yanmar is the brand of choice when it comes to product support virtually anywhere in the world. Yanmar truly is, the global brand in marine diesel power.



*Kato - powered by 2 x 4JH4-TE with SD60 Saildrives and Gori 3 blade propeller.*



*The latest multihull under construction at Noosa Marine Shipyard.*

**NEW**

**YANMAR**

# Engines Power Aussie-Built Tourist Ferries in Mexico

The first two ship sets of the new Yanmar 6AYEM-GT common rail diesel engines have been installed by Aluminium Marine into a pair of passenger ferry destined for service in Mexico.

The new model Yanmar common rail 6AYM-GT engine develops 749 kW or 1004 mhp and delivers high torque throughout the rev range.

When it comes to aluminium catamarans and ferries, Brisbane based shipyard Aluminium Marine is a world leader. Of the past 12 vessels built at Aluminium Marine, everyone has been Yanmar powered.

The latest launching at Aluminium Marine is a pair of identical ferries, commissioned by IBS Broking. These vessels will operate a service in Mexico transporting passengers between the island of Cozumel and the mainland port

near Cancun. The trip is relatively short, but the passenger payload is high, with each ferry capable of carrying 300 people. A staggering 8 million passengers a year travel through Cancun aboard ferries.

Before settling on the specific design of the new ferries, Aluminium Marine sent Marketing Manager Matt Tynan to Mexico to see firsthand the ferry operations and berthing facilities so all details where fit for purpose.

With the research completed, Aluminium Marine drew upon their vast design experience and built the hull to 30m loa with a beam of 9m and draft of just 1.5m, a hull very similar to the Freedom Fast Cats vessel. The Mexico ferry displaces 70 tonnes lightships but this ramps up to 100 tonnes when fully loaded with passengers plus 4000 litres of fuel and water.

When it came to engine selection, the owners initially had a preference for an alternative brand of diesel engine. However, it didn't take too long for the team at Aluminium Marine to convince them that the Yanmar alternative was preferable.





YANMAR 6AYEM-GT offering a slim fit in the engine room.



Steve Cordingly (Managing Director), Jack Louwse (Project manager/Engineer, proud to showcase their vessel around the world.

"We very much like the Yanmar line of commercial engines," said Steve Cordingly.

"Our experience with the Yanmar 6AY and 6HY engine series is extensive. From an installation and operational perspective the Yanmar brand is first rate. Our customers are just as enthusiastic as us about the Yanmar engine and speak very highly about the impressive fuel savings, low operation costs and high reliability."

"Quite apart from the performance, fuel consumption and installation envelope all being favourable, a key strength of Yanmar is that it is a global brand and has solid technical support worldwide."

The engines selected for both catamarans were the new release Yanmar 6AYEM-GT common rail. These are the most powerful engines that have been installed in a hull built by Aluminium Marine.

"We chose the Yanmar 6AYEM-GT engines based on their power output," said Steve Cordingly.

"At over 1000 mhp per engine, these higher rated engines give us a nice boost in power for the relatively short ferry runs. The expectation is that the ferry will cruise comfortably at 24 knots with the engines ticking over at 1850 rpm. Fuel consumption at this speed is 100 litres per engine, per hour."

The Yanmar 6AYEM-GT features electronic control technology to deliver outstanding economy, power and reliability. This is a six in-line cylinder configuration, ideal for catamaran applications where space in the engine room can be tight. Displacement is 20.38 litres with maximum engine speed rated at 2000 rpm.

Careful combustion chamber design along with the Yanmar patented ASSIGN injection technology multi-stage fuel injection system via the 8 main and 4 secondary nozzles provides super-low emissions while maximising torque at low or high revs.

The Mexico ferries were also fitted with Yanmar transmissions. The Yanmar YXH240

parallel off-set gearboxes have a ratio of 2.27:1. Props are Nakashima branded 38" x 37 1/4, five blade units, fitted to conventional 90 mm prop shafts running 7°.

"We're really happy with the complete package," said Jack Louwse project manager.

"The new Yanmar 6AYEM-GT engines are perfect for our application. They are a slim fit in the engine room and leave plenty of space all the way around the engine for service and maintenance."

"The electronic management systems with the Yanmar 6AYEM-GT engines is a good match for the advanced systems at the helm. The Mexico ferries have joystick controls at both the helm and wing stations."

It takes Aluminium Marine around 6 months to build a ferry of this class, so to roll a pair down the slipway just a few weeks apart is testimony to the production capacity and capability of the shipwrights at Aluminium Marine. With a high degree of fit out including passenger seating for 300, bathrooms, crew facilities, hospitality station, air con systems and CCTV systems the quality of design and construction to come from this Brisbane based shipyard is truly world class.

"We're very proud of our ferries and Yanmar makes a significant contribution to the success of our product," concluded Steve Cordingly.

"Building ferries for Australia and global markets is something which we are immensely proud of. As we supply new markets, we know that more orders are already on their way."



6AY EM-GT common rail engine (737Kw 1002 mhp at 2000 rpm.



Advanced helm systems are a perfect match to the electronic engines and joystick control.

# YANMAR COMMERCIAL MARINE SPECIALIST ON-BOARD

Power Equipment has announced the appointment of Noël van der Meulen to the new position of Senior Applications Engineer.

Based in Melbourne at the Power Equipment Head Office at Lynbrook, Noël van der Meulen has a national responsibility to assist Yanmar customers with new builds and re-power marine installations, as well as the sales of the Yanmar Robotic Net Cleaners in Australia and New Zealand.

Prior to joining Power Equipment, Noël was employed by Yanmar Europe. He commenced there in 2010, fulfilling a role as Senior Application Engineer working throughout Europe, Africa and Russia.

This involved visiting ship yards and working with customers on installations and sea trials. The work in Europe was split 50/50 between new vessels and re-powers. In his final year at Yanmar Europe, his role was changed and he committed to the sales of the Yanmar Robotic Net Cleaners.

"The vessels I mainly worked on in Europe were steel built tankers, tug boats, fishing trawlers and quite a share of GRP built vessels. However, there are a lot of highly specialised companies throughout Australia focusing on the construction of aluminium catamarans, which is a very interesting and new market for me."

Prior to joining Yanmar Europe, Noël spent some time at sea. He worked as a maritime officer on sea going vessels, then decided to study maritime engineering and apply his skill set to shore based marine engineering.

Working in a specialist 3-man commercial team at Yanmar Europe, Noël had sales responsibility for Yanmar commercial high speed engines and the Yanmar Robotic Net Cleaners. In Europe, the large capacity Yanmar 12AYM engine is getting more popular amongst commercial operators with bigger tug boats, pilot boats and so on.

Noël also handled sales of the Yanmar Robotic Net Cleaner models NCL-SE3 and the latest large platform NCL-LX net cleaner in the European Aquaculture market. The Aquaculture market in Northern Europe is highly developed and intensely operated. The competition is strong but there are a lot of opportunities for the Yanmar Robotic Net Cleaners.

"The aquaculture market is growing intensively worldwide and presents us with significant market opportunities, also in Australia and New Zealand," said Noël.

"My role in Australia is to manage the Sydney Harbour Ferries new Ferry program, develop the market for Yanmar Net Cleaners and support commercial customers with Yanmar high speed marine diesel engines."

"Power Equipment is a great company, highly respected by the Yanmar community the world over. I'm looking forward to playing my role with the team at Power Equipment, developing relationships with the aquaculture community and working with the larger commercial operators."



Noël van der Meulen is looking forward to working with the Australian and New Zealand Aquaculture and Commercial operators.

# YANMAR *Ever popular at The Australia Wooden Boat Festival*



A full Power Equipment Team were on hand and kept busy all festival.

Every two years, Hobart becomes the Mecca for all things related to wooden boats. What began in 1994 as a humble event, the Australian Wooden Boat Festival (AWBF) has flourished to become an international event attracting more than 200,000 wooden boat enthusiasts over the four-day festival.

Yanmar again participated with a prominent display in the Maritime Marketplace. Ably supported by local Dealer, Spectrum Engineering, the display covered a range of key marine diesel engines, specifically selected to suit the target audience.

These engines included the 2YM15, 3YM30AE, 3JH5E and the 4JH4-HTE, together with the Mariner 70 gen set from MASE and a strong showing of Torqeedo electric outboard motors.

Yanmar was also well represented out on the water with a significant number of happy Yanmar customers travelling to Hobart by sea and participate in the AWBF.

Such is the passion of wooden boaters, that many take up to a month to motor or sail to Hobart from Queensland, NSW and Victoria and be a part of this exceptional event.



## Tideways

### David Shergold

This is a day boat designed by Pompei and Tim Phillips, built at the Wooden Boat Shop and launched in 2007. Powered by a Yanmar 4JH4, Tideways was designed as a day boat destined to operate on Port Phillip Bay, but for the AWBF owner David Shergold made the incident free trek across Bass Strait under power. Optimum boat speed of 7.5 knots with fuel burn reported at 4.8 litres per hour.





## *Merlyn*

### **Bryan Walpole & Liz Little**

This is an interesting yacht, a traditional Cousta boat design converted from a gaff rig to a sloop rig. Length overall is 10.1m, launched in 1988 and she now resides in Tasmania. Yanmar powered, Merlyn is proudly owned by Bryan Walpole and Liz Little.

## *Storm Bay*

### **Tim Phillips**

Tim Phillips' own boat is an impressive vessel by any standard and a perennial favorite at the AWBF. This is a 54' Huon pine planked Tasmanian built fishing smack which was originally built in 1925 by the legendary shipwright Percy Coverdale. Tim Phillips completely restored Storm Bay at his business, the Wooden Boat Shop.

Storm Bay has an 110mhp Yanmar 4JH4-HTE in the engine room. The Wooden Boat Shop is a long standing Yanmar Dealer and is responsible for the sales and servicing of many Yanmar's in their home waters of Sorrento – Mornington Peninsula Victoria.



## *Lady Kaye*

### **Ray Johns**

The Lady Kaye was built in 1968, planked in Fiji Kauri timber and specifically designed for cray fishing along the Victorian coastline. When her short-lived commercial fishing life was over, Lady Kaye was sold to a Queensland owner, before returning to Victoria late in the 1980's where she was moored at Portsea and used as a pleasure boat. Current owner Ray Johns purchased Lady Kaye, inspired by what he saw and experienced at the 2105 AWBF. A complete restoration followed at the Wooden Boat Shop. Lady Kaye is powered by a Yanmar 4JH.

## *Torea*

### **Stephen Shanasy**

This is a lovely carvel cutter, believed to have been built in Sydney in 1938. Over the years there have been several restorations undertaken on the hull, the most recent being 2005. Owner Stephen Shanasy has Torea configured as a cruising yacht, with a Yanmar 3YM20 installed.





## *Menindee*

### **Peter McKeand**

Built in 2014 by Corsair Boats, this is the first lobster boat to be built in Australia. It is modeled on the traditional Maine lobster boat and is powered by the latest generation Yanmar 8LV-370A. The traditional hull design is complimented by ample use of highly varnished mahogany and red cedar timber.

## *Apollo*

### **Bruce Fyffe**

When Bruce Fyffe went in search of a boat to restore, he didn't figure on picking up a vessel that had been submerged and in need of so much work. Apollo is an 11m cruiser, built by Pompei in 1969. Shipped to Bruce's backyard workshop in Tasmania, Apollo was completely restored from stem to stern. A fresh new Yanmar 4LH was installed in the process with the whole job completed just in time for the 2017 AWBF.



## *Athena*

### **Phil Heaney**

When a shipwright sells his personal boat and plans for retirement, a replacement boat is essential. Phil Heaney built Athena to replace Argos, the vessel in which he and wife Margaret travelled the world under Yanmar. Athena is inspired by the Maine lobster boats and has been fitted out for coastal cruising around Australia shores. She is powered by a Yanmar 4LHA-STP and makes a steady 8 knots at 2000 rpm.

## *Rachel Christine*

### **Rodney Clark**

Although the home port for Rodney Clark and his cray boat the Rachel Christine is Hobart, the vessel is popular nonetheless amongst the crowds who flock to waterfront.

This 2002 built 15m professional fishing boat is acknowledged as the last Huon pine built commercial fishing boat to be built in Tasmania. Power is in the form of a 278mhp Yanmar 6HA-HTE3 with a Yanmar powered MASE I.S.7 generator set also on board.





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