NEWS FROM THE SHED IN AUGUST

I story **PETER BRADY**

Finally the Pathfinder Pilothouse 52 ,ÄúFine Alley,Äù is in the water and her owners Alan and Shirley are starting to enjoy their time on the water in what is a very fine power catamaran. Alley, the second word in her name is a mixture of both of the owners names with their previous boat called Alley Cat: there will be a full description with more photos of her in the next issue.

PATHFINDER 45 COMMERCIAL FISHING BOAT.

In my previous article I discussed our latest new build in the form of a 45ft fishing boat and now that the last details have been finalised and construction has started, I can provide pictures and a more complete description for readers.

As the drawings show, this design is about deck space, functionality and the ability to multi-purpose because these are the features that make its construction and operation economically feasible. The design simplicity takes a bit of getting used to when looking at the drawings, because we are all so used to looking at multiple portholes, hull windows and engine air intake grills on the topsides. However in this case clean and simple is the way to go as it is more economical to build, there are less things to potentially go wrong or need maintenance, which in turn means more time working at sea and therefore more profitability.

Starting at the transom, there is a heavy duty ladder-platform each side providing easy access from a tender or the dock on to the boat. Fish can also be landed from either a dory or from the water direct, plus they can serve as dive ladders should the boat be used for scientific research or in dive operations.

Across the back between the transoms is a box beam that works in concert with the deck, saloon floor and all the bulkheads, ringframes and fore and aft partitions to ensure the torsional rigidity of the boat. Designing and building to the NSCV Code using Lloyds Construction Rules includes assessment of the vessels torsional rigidity, so ensuring that these parts of the structure work together is critical given that the vessel has such a large work deck area and wide beam. This working deck is cambered for extra stiffness and strength and also follows the sheer line in its fore and aft rake to help shed water quicker and to ensure this water runs aft to the transoms. Even though it is a little more complex to build a raked deck, it is worth it as it provides additional benefits by creating a greater structural depth between the wingdeck and the deck mid length of the boat, plus it keeps the gunwale to deck height the same along its length for more comfortable fishing at the minimum height required by survey.

Pathfinder 45 Commercial elevation.

At the outer edges of the transom beam is a seat height structure that forms the raised ‘at sea’ entrance to the engine rooms with the larger flush deck hatches providing access to the enginerooms for servicing in port. Whilst it was tempting to raise the area over the engines as a combined ‘at sea’ entrance and maintenance hatch, it would have made the boat difficult to work, as the ability to walk the length of the deck along the gunwale is critical. The provision of a raised or protected engineroom entrance on commercial boats is a survey requirement that has sometimes been ignored in the past and I think should also be fitted to any power boat with pretensions to blue water capability. By placing it aft and inboard, the design meets the NSCV requirements while keeping the decks clear and safe, plus creates an efficient multi-functional work space. On most power cats we have built with aft enginerooms, we have had a second or protected engineroom hatch and don’t understand why designers ignore this basic safety feature as it could make the boat vulnerable to a wave flooding the engineroom at sea if the flush deck hatch was the only access in an emergency.

Moving forward along the deck is a wide but relatively shallow 750mm fish or ice hold on each side just aft of the designs fore and aft centres. The fuel tank is located underneath to provide even trim, because as the fuel is used, it is hopefully replaced with fish and by making the hold relatively shallow, it will be easier to access and use, plus being above the waterline will make it self-draining.

Access to the wide side decks and foredeck is up three steps each side with ‘off the shelf’ deck hatches being used to load fenders and ropes in the forward deck lockers.

The wheelhouse is short proportionally to the boat’s length, but takes full advantage of the catamarans greater beam to provide all the comforts needed when fishing including a good sized galley, comfortable settee and a bathroom that is deliberately accessed from the deck only to increase privacy as well as keeping steam from the shower out of the boats interior.

Comprehensive electronics are a key requirement of any successful fishing operation these days and in particular when trying to open up new grounds, so the helm station and its surrounding area has been given a high priority in terms of space and accessibility to equipment. The forward raked windows will reduce glare and heat and I have increased the angle of the outer window facets to provide better visibility over the front corners of the boat.

The sleeping arrangements of two singles and two doubles have been configured so that the value of the boat has been future proofed as the starboard double cabin could have a door fitted if more privacy was required should a couple purchase the boat sometime in the future. On-board power will be provided by a Seawasp 18kva genset, there is an induction top and microwave for cooking, domestic fridge, a domestic aircon system, hydraulic pump and the bilge-fire pump are all AC. The batteries and major switching are located under the settee for minimal wiring runs and power loss, also providing an easy way of venting the batteries which is a survey requirement.

As I stated in the last issue, the boat will be powered by 2 x 240hp Yanmar 4LHAM-STP’s, running through Yanmar 2:43 to 1 gearboxes using conventional shaft drives and four bladed propellers. Working around and outside the Barrier Reef, the full length keels will provide protection to the stern gear and can take the ground if required. I am always amazed at how many boats either cruise or work around the reef with exposed stern gear, particularly given that a well-designed built down keel creates very little drag for the buoyancy it provides and adds so much in terms of tracking ability in a following sea and protection.

To further enhance its fuel efficiency and to help carry the weight of the forward mounted wheelhouse, this vessel will be fitted with high speed bulbous bows which will also balance the superstructures windage with the underwater profile. I cannot see much evidence that other designers take this balance into consideration, but I know from driving my designs and feedback from their owners that it makes a big difference as to how the boat handles when manoeuvring and when sitting at sea fishing. If the balance is not right then the boat will want to ‘peel away’ by the bow or stern whenever it is hit with a gust of wind. If you get the balance right, the boat will sit passively where you put it, even in a strong side wind, making for predictable handling and drift when fishing.

As you can tell by the designs description I have put as much thought and planning in to what looks on the surface to be a very simple boat as I do for all my other designs. Commercial vessels are being built and operated under AMSA regulations Australia wide and both the boatbuilders and commercial vessel operators know that the ‘good old days’ are gone. Not only have the rules got tighter and more complex, but everyone knows that a judgement day is coming where just because it has been accepted in the past, that it will be in the future. A national audit of all commercial vessels is planned, so taking the time and effort to make sure the design and construction meets all requirements of the new system and by using highly respected accredited people to sign off on every stage, we can future proof the value of the boat for our client. There is a strong possibility that in a comprehensive audit, it will not be economically viable to bring many existing commercial vessels up to standard, so I see this as an important opportunity to further demonstrate the displaning power catamarans credentials to a potentially large market.

During our discussions with the client, we both came to the conclusion that commercial fisherman are often painted as environmentally careless, while farmers who may have done more damage to the reef and marine life forms with their chemical runoff, are still seen as the salt of the earth and the backbone of the country. This is partly because commercial fishermen have not always presented the best face or case to the public, whereas in places like New Zealand where they have changed their practices and become better organised, the fishing industry are now seen more as farmers of the sea and not environmental vandals.

By designing and building an ultra fuel-efficient fishing boat from more environmentally friendly techniques

and recycled materials, we are making a good start in realigning the perception of the general public, politicians and environmentalists of the fishing industry and our client will play his part in this endeavour by moving out past the reef into new and less sensitive fishing grounds, plus using fishing methods that reduce bycatch to a minimum.

With its high economical cruise speed, long range, good load carrying capacity and its proven seakeeping abilities, this displaning power cat design and layout would suit a number of roles and the client has already had interest in the boat being used to deliver supplies to the resorts and work camps. He has also had interest in it being used for filming and research and for this role I have sketched out the design for an accommodation pod that would bolt to the deck for more berths, or for a workshop-laboratory. The frame and material top that will be used to shade the decks whilst fishing could be expanded to include side covers, which in combination with removable seats would turn the boat into a small ferry, ideally suited for around the Australian coast, or out in to the Pacific Basin. An inter-island ferry based on this design or its larger 52ft sister would make the perfect aid package for the Pacific Islands, because one of the most desperately needed things in the Pacific Basin is a way to move people and supplies quicker and safer to the outer islands. Few people realise that the Pacific Basin has a maritime safety record no better than many Asian or African nations with 33 people losing their lives in 2009 and a further 88 in 2018 when Kiribati inter-island ferries were lost at sea. Unfortunately because of a lack of financial resources plus minimal regulation and oversight, the Pacific Basin has in its small work boat fleets been the dumping ground for worn out and sub-standard vessels from overseas or cheaply built local vessels. The injection of a number of vessels that were modern, safe, economical to run and maintain to work as inter-island ‘village buses’ would make a huge difference to the locals and would be a very effective and high profile contribution that countries like Australia could make.

As I stated in the last issue this design has so much potential for different roles including other fishing applications, yacht club start boats, rescue boats, general workboats for salvage, commercial dive operations, and if fitted with more powerful engines and a higher top speed, as a first responder for search and rescue or patrol operations. These are all applications where rugged reliability, seaworthiness, range and an economical high cruise speed are priorities, so the current trend in power catamaran design towards inshore charter boat requirements makes that type of vessel unsuitable. This has left a market opportunity for local designers and builders, which given the more individual nature of commercial operators requirements, they are better suited to meet than overseas production boatbuilders.