After 25 years of serious offshore passagemaking on sailboats designed by himself, Steve (Skip) Dashew and wife Linda decided that the effort required to handle huge sails on ocean crossings was getting a bit too much. Cruising the world’s oceans and discovering new places and people is a long held passion for Skip and Linda. A passion they were not willing to give up. There are places they want to re-visit, amongst them higher latitude places like Alaska, Newfoundland, Iceland and Tierra del Fuego, all of which would be more easily reached by powerboat. After much deliberation, Skip and Linda agreed they needed a powerboat – a well designed powerboat would provide them with comfort, safety and less work load. After more than 40,000 miles of exhilarating ocean crossings aboard their ketch Beowulf, Skip was a little reluctant to accept that a powerboat was now probably more appropriate. And who could blame him? The adrenaline rush of Beowulf on a full plane, averaging 16 to 18 knots and regularly hitting speeds in the high 20’s is something many of us would find hard to part with. But the reality is, two handed sailing of a yacht as powerful as Beowulf requires physical effort. Thus the project of designing and building an offshore powerboat was born.

A POPULAR MISCONCEPTION OF THE TRAWLER HULL

Over the years Skip had observed that the most common hull design utilised for long passagemaking was the trawler. Not content to accept that he should utilise the trawler hull purely for reasons of tradition, Skip began researching. There seemed to be a popular
misconception that because the hull was used for offshore commercial fishing, the hull had good seakeeping abilities.

In reality, the primary objective of the trawler design was to have a vessel that was stable at slow speed or rest and could contain a large catch of fish. Hence trawlers tend to have a large beam and high topsides. More beam creates stability but also drag. High topsides affect initial stability, roll period and capsize resistance.

Capsize resistance is a function of both polar moments and the limit of positive stability (LPS – the heel angle at which the boat will capsize).

The question is, how far can the boat heel before it will keep going and how quickly will it right itself, if at all? For most power vessels that seemed to be 65 to 70 degrees, after which the boat would keep going and not right itself. A further consideration is directional control. Many sailboats, and almost all trawlers, suffer from a rhythmic rolling induced by following seas. For reasons of comfort and to reduce the risk of broaching, most craft, both sail and power, often need to slow down and change direction to maintain steerage. All this may sound pretty daunting, but these factors need to be taken into account when designing blue water vessels.

THE 'UNSAILBOAT'

Skip’s findings led him to the decision to begin with a clean slate. Well, not entirely a clean slate. Most of their requirements for a hull design capable of handling extreme offshore weather conditions had previously been achieved with Skip’s sailboats. But this was a powerboat. The design challenge is knowing what will work had previously been achieved with Skip’s sailboats. Apart from removing the need for maintenance, the boat has a low-key ‘workboat’, almost military look about her. In fact, from the stern she almost resembles a Fairmile, a minesweeper used by the Royal NZ Navy in World War II. Compared to the high gloss finish that could be achieved by painting Wind Horse, adopting a low-key approach means that she will stand out less in the third world countries they intend visiting.

The need for longitudinals (stringers) has been greatly reduced due to the use of the heavier plate. This has several advantages. Firstly, it is easier to get a fair hull and secondly, the large smooth areas of plate enable the use of a special high-tech closed-cell insulating material known as Armaflex.

Armaflex not only reduces heat loss and eliminates condensation, but also has tremendous sound absorption qualities.

THE 'BASEMENT' – 21 CUBIC METRES OF STORAGE.

Forward of the owners stateroom is a watertight bulkhead. The frame closest to the bow is the aft end of a forward saltwater ballast tank, as well as being a collision bulkhead. Integral fuel and water tanks run the length of the boat and are located under the cabin and main saloon soles. The raised pilothouse style saloon provides an enormous storage area between the underside of the sole and the top of the tanks. Skip refers to this area as the ‘basement’. Measuring 5.2 metres in length and width and almost a metre high, the ‘basement’ has a massive 21 cubic metres of gross storage space. Also located here are a freezer, central vacuum unit, trash compactor, fridge and air-conditioning compressors, inverters and batteries.

Underwater hull appendages consist of a small fin keel, stabilisers, propeller skegs and rudders. Decks are constructed from treadplate aluminium. You could be forgiven for thinking that on deck Wind Horse has a number of similarities to a sailboat. She has stainless steel staunchions and lifelines, a special pushpit aft and double pulpit forward. Four Lewmar self-tailing winches are located at various points. A more serious Lewmar #66 electric winch (with remote control on the flybridge) is deck-mounted port side of the companionway ladder to the fly bridge. The winches are primarily used for handling dock lines, dinghy lifts and rigging etc.

The main winch is also positioned to enable controlling the rodes for a para anchor off the bow or a drogue fed out the stern. Wind Horse also carries a rig – of sorts. Two 6.5m aluminium wing masts/booms are mounted to the aft end of the pilothouse. As a backup to the active stabilisers, the long booms have a solid aluminium stabiliser known as a ‘fish’ hung from the end. They will mainly be used to maintain the peace and quiet when at anchor. Active stabilisers working all night could become a little annoying. The third function of these masts is for use in an absolute emergency should the engines ever retire. With the assistance of a sail-maker, wind tunnel testing and software used to develop sail plans for America’s Cup and Volvo race programmes, Skip had a 68sqm sail made for their ‘get home’ jury rig.

Two dinghies can be stored on the aft deck and integral steps
Wind Horse

Props 26” diameter, 5 bladed, Nibral bronze props

Engines Twin John Deere 4,045 TFM diesels

Beam Deck 17.8’

LWL 81’

active stabilisers

Deck Hardware Lewmar, electric, self-tailing two speed #66 winch. Also 4 #40 windlass Maxwell V4000 chain stop

Stabilisation NAIAD series 302 active stabiliser system, Lewmar Self-tailing winches

Air Conditioning  Marine Air 4 units in all, 2 @ 16,000 BTU, 2 @ 16,000 BTU Diesel heater

Heating Interior and domestic water via a Kabola bilge pump Pacer Hydraulic damage control pump

Bilge Pump Pacer Hydraulic damage control pump

Fresh/Water system Village Marine FR800

Gray Water pumping Whale Gusher sump pumps

Fire Control Fireboy automatic fire suppression system

Fire Pump Firedobson 100 AMP charger for charging by shore power or the Genset. By

Bilge Pump Pacer Hydraulic damage control pump

Gray Water pumping Whale Gusher sump pumps

Fire Control Fireboy automatic fire suppression system

Fresh/Water system Village Marine FR800

Fuel Oil 660 US gal

Bakelite fuel tanks, each with a capacity of 330 US gal.

Fuel Filter Racor

Fuel Sending Unit Racor

Pumps 4 x 25 gpm, one each for fuel, water, and greywater; two 25 gpm, 12 volts.

Windlass Maxwell 16,000 chain stop

Deck Hardware Lewmar Self-tailing winches

Ventilation Luke cool vents

Six Thousand Nautical Miles Without Refuelling

Hours of CFD analysis and tank testing, combined with Skip’s cumulative years of offshore sailboat design experience, suggested that Wind Horse could become a new paradigm for offshore motor yacht cruising. The real test would be on the water. Low drag and hull efficiency mean that propulsion requirements for Wind Horse are miniscule — two 200HP diesels. Skip spent a lot of time researching which engines and transmissions met the criteria. In both cases, service ratings were of paramount importance due to the intended long passages. John Deere 4045TSM’s were the engines of choice and ZF280-1A transmissions with a 2:47:1 reduction. Both have an expected time between overhauls of 20,000 plus hours. Propeller engineering was the other major consideration. Here the choice was 26 inch 5-bladed Nibral bronze prop, designed and built by Henley Propellers in New Zealand.

We were after a decent blow to put Wind Horse through her paces, but the best on offer, after waiting for several days, was a 20-25 knot south westerly. Wind against tide gave us 1–1.5 metre steep seas. Surprisingly, Wind Horse has no wheel. She is controlled on the helm with an electronic box measuring 125mm wide and 75mm high with a black steering knob. Turning the knob directly controls the rudders even when on autopilot. A red gain button doubles rudder gain for use in heavy weather and a fast/slow switch adjusts the response rate of the rudders to the knob - fast being used for docking. Despite her length, Wind Horse proved to be agile manoeuvring in and around the marina.

The optimum cruising speed for Wind Horse is 11.5 to 12 knots. At this speed you can almost hear the ticking of a clock in the saloon. A digital sound meter records just 53 decibels - that’s about the level of normal speech. The total draw from the engines is 130HP, so we have plenty in reserve maintaining our speed or breeching into a heavy sea. At full throttle we record 16 knots. Cruising at 11 knots, the 13,900 litres of fuel is enough to get us from Auckland to California (with an allowance for headwinds) without refuelling - a distance of 5,600 nautical miles and half the running cost. The calculated range on full tanks is 6,000 nautical miles at 12 knots. Beam on to the close up sea, Wind Horse remains almost flat, the active stabilisers doing an amazing job. Switch them off and the reality of a round chined hull with a small keel hits home. With the stabilisers back on, Skip heads Wind Horse into the sea and she remains equally as stable. Whilst we weren’t exactly experiencing blue water cruising, on an earlier trip to the Bay of Islands Skip says that they encountered reasonably large seas and she remained as stable as ever.

Skip’s ‘unsailing’ boat would have to the best example of a purpose-built offshore cruising motor yacht I have come across. Wind Horse was not built for commercial purposes, she was built for Skip and Linda to continue cruising the globe’s oceans in safety, comfort and style. There is no doubt, however that Skip and Kelly Archer will be fulfilling a barrage of orders once people experience Wind Horse for themselves.