WIND HORSE

WIND HORSE

A 25.4 METRE DASHEW OFFSHORE MOTOR YACHT

Sailing images: Ivor Wilkins

The flybridge – practical and appealing on warm, balmy evenings

THIS WOULD HAVE TO BE THE MOST INTRIGUING OFFSHORE CRUISING POWERBOAT I HAVE COME ACROSS. CONCEPTUALLY, STEVE DASHEW HAS POSSIBLY DEVELOPED A NEW PARADIGM FOR OFFSHORE CRUISING.

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 lattitude 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 exhilirating 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 trawler 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 a 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 and what won't. Years of experience and instinct, coupled with exhaustive tank testing and computational fluid dynamics (CFD), produced a vessel Skip refers to as the 'unsailboat'. A powerboat that has hull proportions of long waterlines (24.84 metres) and modest beam (5.46 metres), low drag and VCG (vertical centre of gravity), an LPS in excess of 130 degrees and amazingly low running costs. Skip tells me that 'the running cost per mile will be less than half of what was necessary with *Beowulf*, when maintaining her sails and rig are considered'.

Before I get to her on-water performance, let me take you on a virtual tour of this unique vessel. Constructed from 6mm aluminium plate, *Wind Horse* is deliberately left unpainted and will take on a dull patina as it self-anodizes. This actually suits Skip and Linda. 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 absorbtion 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.

The saloon has 360 degree views

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

The owner's stateroom – a special part of the boat

The dressing room adds a glamorious and practical touch

The galley enables you to interact with guests whilst preparing meals

A view of the active stabilisers

DASHEW 83 – OFFSHORE MOTOR VESSEL

LOA	83′
LWL	81′
Beam Deck	17.8′
Draft (full load)	5.0′
Engines	Twin John Deere 4,045 TFM diesels
Prop Shaft	2.25″ Aquamet
Props	26″ diameter, 5 bladed, Nibral bronze props
Engine Room Air Supply	Morse Cable controlled dampener for shut off
Fire Control	Fireboy automatic fire suppression system
Fresh Water system	Village Marine NF800
Bilge Pump	Pacer Hydraulic damage control pump
Gray Water pumping	Whale Gusher sump pumps
Heating	Interior and domestic water via a Kabola 67,000 BTU Diesel heater Each engine has 40,000 BTU heat exchanger
Air Conditioning	Marine Air 4 units in all, 2 @ 16,000 BTU, 1 @ 12,000 BTU and 1 @ 10,000 BTU
Stabilisation	NAIAD series 302 active stabiliser system, with Multi Sea control
Windlass	Maxwell V4000 chain stop
Anchors	240lb Bruce and Fortress F80 and F125
Deck Hardware	Lewmar, electric, self-tailing two speed #66 winch. Also 4 #40 Lewmar Self-tailing winches
Ventilation	Luke cowl vents

in the stern lead to a swim platform. Either side of the swim platform are lockers used for propane cylinders, diving gear and gas for the dinghy outboard. Atop of the raised pilothouse is the flybridge. Fitted with a sun awning, Skip anticipates this area will be the perfect place to enjoy a relaxing meal around the table on balmy tropical evenings. From a practical standpoint, the flybridge helmstation gives 360 degree sightlines around the entire vessel.

A weathertight door from deck leads to the pilothouse/saloon area which is glazed with 19mm toughened safety glass front and side. The mullions and thickness of the glazing far exceed the Lloyds standard but, as Skip says, "in the case of a rollover the loads become huge. There's also the possibility of impact from gear such as a wing mast, radar or antennae breaking loose. In the event of extreme weather we will carry storm shutters, but we don't expect to ever need them".

BELOW DECK - ABSOLUTE PERFECTION

Below decks, *Wind Horse* reflects nothing of her 'workboat' exterior. In the tradition of builders Kelly Archer, the interior joinery is absolute perfection. According to Skip, "we have worked with builders all over the world and of all of them Kelly Archer is our favourite." The pilothouse has windows front, side and rear which means that all the cabinetry is below window height. This provides a visual openness. All cabinetry and soles throughout *Wind Horse* are high gloss teak, with an attractive walnut non-skid pattern on the soles. The well-equipped galley is C-shaped and located portside, aft of the main saloon. Home comforts are provided by way of a top loading freezer, underbench fridge with port and starboard access doors, 3-burner gas stove and microwave. Complimented by bench areas topped with corian, and plenty of cupboard and drawer space, the galley affords 360 degree views around the boat. Bin lockers above the benches provide ample storage. In fact, there's more than 5.5m of bin lockers. Opposite the galley, to starboard, is a counter with separate washer and dryer below the bench. The benchtop can be used for ironing or as a servery. Forward of the counter is a desk. At the forward end of the pilot house is the saloon. Portside is an L-shaped settee wrapped around a large dining table. Under the forward screen is the main helmstation with central helm chair. Starboard is a bench style settee and companionway steps leading to the owner's stateroom. The head and hull liners are finished in ultra leather whilst the settees are upholstered in ultra suede.

THE ACCOMMODATIONS

Although most of one's time is spent sleeping in this area, Skip subscribes to the approach that the owner's suite should be special. The whole area forward of the saloon up to the collision bulkhead is devoted to the stateroom. A queen-sized island bed is hung from the aft stateroom bulkhead. All the settees and beds throughout the boat are designed in this way so that there is storage for soft bags underneath.

Visually, with more sole area , the cabin space has a feeling of openness. With the engine room being positioned well aft, the area is virtually silent when underway. On starboard side is a bench settee. Natural lighting is provided via a largedeck hatch and portholes either side. Forward of the sleeping area of the stateroom is what Skip refers to as their 'dressing room'. A bathtub and shower is on the portside with the head to starboard. The dressing room, exquistly finished in teak, is U-shaped and has benchtop space forward and starboard with a corian-topped sink/vanity unit

to port. On both sides, above counter height, are doors to shelved lockers. Below the bench top, again on both sides, are drawers – 19 in all. At the forward end is hanging locker space that runs the full beam of the boat. Skip has attained his goal of making this part of the boat a very special place.

Back up to the raised saloon area and aft companionway steps (which, by Skip's own admission, are a little steep and will be modified) lead to port and starboard guest suites. The portside suite has a double bed and the starboard suite has upper and lower single bunks. Each of the aft suites has a head/shower ensuite and vanity.

THE ENGINE ROOM

Aft of the companionway is a watertight door leading to the engine room, a large area with full head height, walkarounds and a workshop starboard side. It is also home to the rest of the vessel's plant. The Engine Room, specialist engine installers in New Zealand, have done a superb job on the installation of the twin diesels. The entire area has an almost clinical ambience. Skip has included just about every conceivable piece of plant necessary for long periods at sea. Output from the watermaker can be directed to the forward or aft hull freshwater tanks which have a combined capacity of 7,650 litres. The electrical system aboard *Wind Horse* is primarily DC current. The modest amount of AC power requirements (a few appliances, air conditioning and watermaker) means that the main source of power can come from large alternators fitted to each of the twin John Deere diesels, feeding an enormous traction type battery bank housed in the 'basement'. Two 4000W continuous load inverters are used when not running the engines and, as a backup, there is an 8 KW Genset. The inverters have a built-in 100 amp charger for charging by shore power or the Genset. By Skip's calculation, the battery bank has enough storage to run the electrical system for up to two weeks before recharging. Heating on board *Wind Horse* is via heat exchangers off the engines when running or a diesel heater that has a 65,000 BTU rating. The boiler, which is located aft starboard side of the engine room, has an integrated califont type water heater built in.

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 150HP 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 4045TFM'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 final choice was a 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 engines, an autohelm and an electronic box measuring 125mm wide and 75mm high with a black steering knob. Turning the knob directly controls the rudders even when on autohelm. 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 manouevring 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 55 decabels – 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 beating into a head 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 steep 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.