BLUEWATER CRUISING YACHTS

" BLUEWATER 450M FAQ"

1.# Hull construction?

Solid glass construction.

12mm balsa core in bow section only (increased stiffness in slamming areas).

Thickness ranges from:
Topsides – 10mm
Bottom – 14mm
Centerline – 25mm
Keel Stub – 45mm

First 5mm of thickness utilises vinylester SPV1265 which is an epoxy/polyester hybrid resin to eliminate osmosis.

Forward of main bulkhead has a single layer of 300gm^2 kevlar for increased impact resistance.

The hull is layed up over a 2 week period to ensure correct resin/glass ratios/ laminating thickness as well as thorough compaction.

Laminate is made up of chopped strand and 600 biax cloth.

Topside - 2 layers biax
Bottom - 3 layers biax
Centreline / Keel - 6 layers biax

The hull is further strengthened by 4 off 100 x 100 mm longitudinal stringers laminated:

3 x 600 DBias
2 x 900 Unidirectional

The hull construction does not require any internal fitout for additional strength (see attached notes from Peter Lowe Design).

The keel is supported by a series of solid GRP structural floor bearers:

12 in total.
Laminate 300 CSM / 4 x DBias / 300 CSM / 4mm Coremat / 300 CSM / 4 x DBias / 300 CSM.
Joined to hull with 8 x 600 DBias.
Thickness 13mm to 25mm.

What this means is every structural member is individually glassed to the hull eliminating the problem of delamination that can occur from using hull grids / starter mould construction technique.

Only the highest quality vinylester and isophalic unwaxed resins are used to eliminate further delamination problems that can occur if using a low styrene emission (LSE) type resin.

Solid glass structural floor members.

Solid glass chainplate knee detail.

Access to keel bolts / main bilge.

Forward cabin under floor hull stiffening.

Please see attached: *Laminate Schedule*
Hull Construction Plan
Peter Lowe Design Letter

Hull (Deck) Construction

GRP foam sandwich construction.

600 biax either side of foam core.

Approx 18mm thick solid GRP under all deck fittings.

All fastenings drilled and tapped and bolted through with washers / backing plates. This is the only guaranteed way to prevent deck leaks.

All fastenings 316ss to prevent staining.

Deck Layup:

Gelcoat
CSM 300
CSM 600
Biaxial 600
CSM 600
Core 12/20mm Divinycell
3 x 3mm Coremat (under deck fittings with CSM between layers)
18mm ply in cockpit sole winch coamings
CSM 600
Biaxial 600
CSM 600

2.# Ballast ratio?

Ballast Ratio: 35.7%

3.# Lwl/Displacement ratio?

211 Moderate Displacement.

Hull / Speed Formula: 1.34 x √ LWL = 8.5 knots

SA / Displ: 18.85 Cruiser – Racer

AVS: 127°

4.# Bulkhead construction to hull and deck? Pls elaborate?

A-Bond varnish grade structural plywood.

Thickness 12-17mm. Rebated then glassed with 1 x 300 CSM / 3 x 600 Dbias either side of bulkhead then 4mm A-Bond veneered ply epoxy glued over making total thickness 20-25mm.

Main bulkhead made semi watertight.

IE. All plumbing / wiring protrusions are fitted just under the sidedecks. The main saloon door is 20mm foam cored / Dbias panel then timber veneered which is designed to compress a seal around the door jamb in case of an emergency holing severely minimising water entering the main cabin from the bow section.

This would enable the bilge pumps to keep up with any water that may get through to the main cabin.

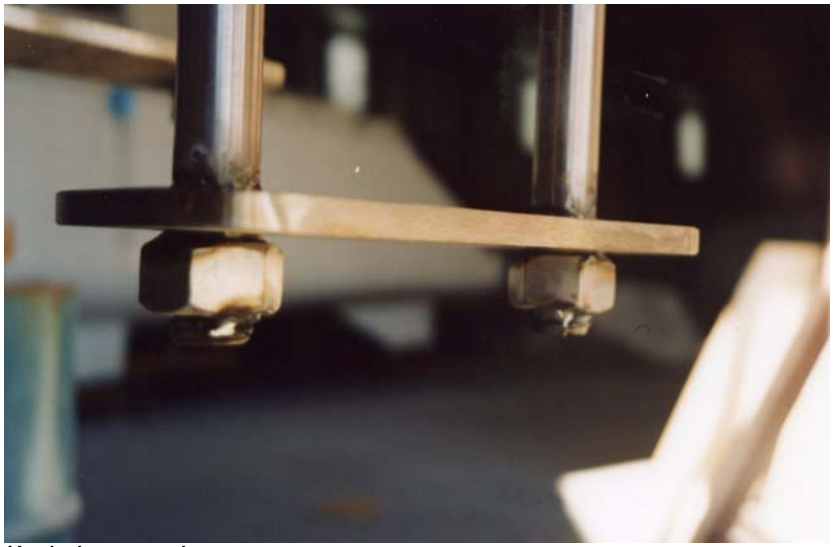
Structural plywood bulkheads being fitted.

5.# Keel material; construction and mounting? Pls elaborate?

Keel is 4% antimonial lead. 13 x 1" 2205 SS bolts set in lead at varying depths to prevent weak points. All bolts have 13mm ss plates attached which have a welded nut underneath. This means bolts cannot pull through the lead casting.

Keel stub is 45-55 mm thick solid GRP to which keel bolts are attached. 13mm ss backing keel plates are embedded in keel stub to spread the keel nut compression loads. Bolts are fitted in between the structural floor members. Each bolt has a tensile strength of 8,000 kg.

Keel bolts set at varying depths.



Keel plate attachment.

Please see attached keel plan.

6.# AVS?

AVS: 127°

Please see attached Peter Lowe Design letter.

7.# IRC Stability Rating?

Will enquire if necessary.

8.# ABS Standards'?

The Bluewater 450M is constructed to comply with Uniform Shipping Laws (USL) Code to offshore survey requirements which is the Australian standard, and is considered more conservative than foreign codes such as ABS, Lloyds, and DNV.

9.# Rudder construction?

The 2 rudder halves are layed up to approximately 8mm thick solid GRP with layers 600 biax. The 100mm 316ss shaft is then wrapped with GRP, bogged into position, then heavily glassed to one rudder half.

In between the tangs and top / bottom of the rudder polyurethane foam is fitted then resin sealed. 3 x 600g CSM is then draped over this foam and rolled along the trailing edge which compresses when joined.

The second rudder half is then clamped down after resin / qcell / 6mm fibre mix is poured in. Excess slurry squeezes out through the join ensuring 100% filled.

After releasing, the leading edges are then glassed with 2 layers DBias.

Rudder shaft is wrapped in GRP then bogged into position.

Joined rudder. Note excess filler has squeezed out ensuring no voids are left.

Please see attached rudder shaft details.

10.# Bow thrusters? Type and operation?

We are fitting a 12v / 75kg thrust sidepower bowthruster to current build.

Fairing forward and aft of 6" bow thruster.

NB. This hull design however is very responsive steering forward and reverse, and does not necessarily require a bow thruster to manoeuvre.

11.# Draft? (With the given draft of your boat, are we going to have difficulties for example in and out of Lake Macquarie or general coastal cruising?

Standard Draft: 1.9m
Shoal Draft Option: 1.65m

Both drafts can enter Lake Macquarie however with 1.65m you can probably navigate at low tide.

12.# Engine size and any size option?

Standard is Yanmar 4 cyl 75 hp which can propel the vessel at 9.3 knots which is 0.8 knots above hull speed, more than enough to cope with big seas!

13.# How substantial is the boat insulated for heat/noise?

Heat

The deck is a foam sandwich construction which insulates against heat. It is commented by the owners that even when the boat is locked up in 40° ambient temperature when going down below for the first time the interior is always surprisingly cool.

Noise

The engine room is sound proofed by using foil faced 32kg barium / foam insulation with foam sealed openings closed by compression locks. Foam insulation is further protected / sound deadened by fitting ss perforated mesh over.

14.# Shaft drive or sail drive? (Shaft drive seems preferential)

We have designed a shaft drive installation with excellent access and safety features such as built in highrise manifold, PSS shaft seal, survey specified shafting.

15.# Folding Propeller?

We have included a standard fixed 3 blade propeller with the option of an Autostream 3 blade feathering propeller.

16.# What is your steering system?

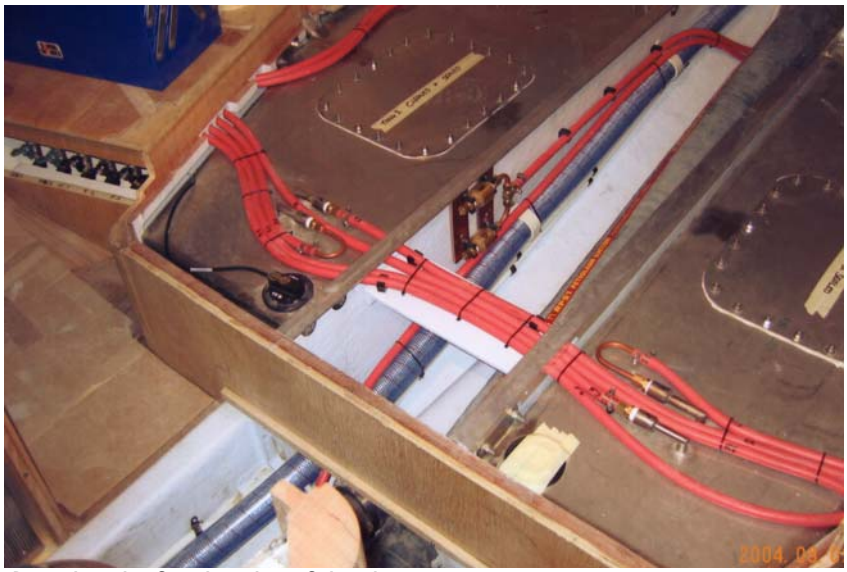
The steering system used is an Edson pushrod system which offers exceptional feel / directness compared to other systems available.

17.# Fuel tank a) size and b) range?

4 fuel tanks totaling approximately 560lts made from 2.5mm 316 ss built to survey specifications.

NB. This is the best quality material to use for this purpose. Avoid alloy tanks due to corrosion as well plastic tanks which NSW Maritime do not approve.

Range – 160 hrs @ 7 knots = 1120 NM



Diesel tanks fitted under aft berth.

18.# Bilge pumps?

We fit the following:

2 Electric	1 x 100 lt per min capacity
	1 x 150 lt per min capacity
2 Manual	140 lt per min capacity (external)
	90 lt per min capacity (internal)

as well we fit a diverter to the engine inlet water pump providing another 66 lts per min capacity. Total capacity approx 540 lts per min.

19.# What is your proposed Sail configuration? IMPORTANT: Keep in mind to accommodate short handed sailing (husband/wife).

The Bluewater 450M is set up as a masthead sloop with a 122% overlapping genoa which is efficient from 5-20/23 knot wind strength without the need to furl. From 25-28 knots the genoa would be furled.

Wind strengths 25-40 knots are catered for with the self tacking staysail.

The mainsail can be electrically furled to any size making it suitable for a 5-45+ knot wind range.

Above this wind range the storm jib and trisail can be hoisted on a separate track.

All controls lead back to the cockpit and a wide range of sail configurations are readily accessible depending on conditions making the Bluewater 450M ideal for shorthanded husband / wife crew.

Cockpit controls leading back to Andersen 46 ST electric winch.

20.# Sail(s) area? Main; Headsail?

Genoa: 64m2
Main: 41.3m2
Staysail: 17m2

21.# Sail manufacturer; material and expected life?

Standard Sails: Hood (Sydney)
Material Type: Dimension HMT
Expected Life: 5-10 years

22.# NOTE that ALL controls MUST come back to cockpit, pls elaborate?

All controls lead back to cockpit.

Please see attached drawing.

23.# NOTE all winches to be electric, pls elaborate and include manufacturer?

I would recommend the following winches to be made electric.

Port Halyard Winch Andersen 46 STE
Port & Starboard Primaries 2 x Andersen 58 STE

All winches are Andersen stainless steel which I believe are by far the best winches in the world due to superior materials , ie. '316' stainless steel (not chrome bronze or alloy which corrode). Also unique ribbing protects ropes from chaffing.

24.# Do you provide a polar wind diagram?

Can supply if necessary.

25.# Do you offer in boom furling?

We use the NZ made Leisurefurl Boom system which is recognised as the best quality for strength, reliability and ease of use.

26.# With in boom furling, how much is the sail shape compromised?

Not being able to adjust the tension of the foot is the only disadvantage I can see which would affect the performance down wind in light airs. As this is not a race boat this is usually acceptable.

27.# Do you offer in mast furling?

This can be offered however due to the extra weight aloft and the much more compromised mainsail sail shape I would not recommend this configuration.

28.# With in mast furling, how much is the sail shape compromised?

The most efficient mainsail shape utilises horizontal battens which is only possible with in boom furling.

29.# What are the pros and cons of in boom vs. in mast furling?

IN BOOM:

Advantages: Retains sail shape and maximum area.
Centre effort lower.

Disadvantages: Raising and lowering no more than 25° from centre.

IN MAST:

Advantages: Pull sail in and out any direction.
Less wear and tear.

Disadvantages: Loss of area.
Loss of sail shape.
Less performance up to 15 knots.
UV Wear.
Requires longer boom to compensate for loss in sail area.

30.# Do you offer self tacking?

Yes we offer a self tacking staysail.

31.# What is your opinion on self tacking systems?

The sail configuration we recommend is efficient from 5-50+ knots. Having an overlapping genoa gives lighter wind performance plus the addition of a self tacking staysail provides heavy wind performance.

Self tacking arrangement.

32.# Headsail electric in furling and manufacturer?

Our experience says this is not required for vessels of this size, however, if required can look into further.

33.# How easy to implement a Spinnaker and is that a standard sail in your offering? If not, then specify and include a spinnaker in pricing.

For a husband and wife crew an MPS is the better option. It is easier to handle, requires no pole and only 1 control line.

34.# What sail configuration do you recommend for extreme storm weather conditions and ease of operation? Please elaborate?

Sail configuration in extreme weather:

40-50+ knots	Storm jib / trisail.
50+ knots	Storm jib only.
Above 60 knots	Heave to storm jib only.

All controls lead to cockpit. Easy to move around deck if necessary.
Cockpit made so can be fully enclosed.

35.# Do you have any data for boat speed vs. wind speed?

Can supply if necessary.

36.# Do you offer a) a boom brake and b) do you recommend a boom brake?

Yes, and it is highly recommended to control gybing as well acting as a boom preventer.

Boom brake arrangement.

37.# Do you have well-placed foot braces at the helm when well heeled?

Foot braces are positioned in each corner of the T-shaped cockpit at 25° heel angle.

38.# Do you have good vision forward from behind wheel?

The low wedge style cabin makes for excellent visibility.

Excellent visibility from cockpit.

39.# Do you have good access on deck to go forward and adequate toe rail?

The Bluewater 450M has excellent accessibility. The sidedecks are 600mm wide and the cabin top is only 290mm high which is easy to step up to.

The Goiot toerail is 55mm high with plenty of tie off points. The anchor windlass is mounted below deck for extra bow deck space.

Generous sidedecks and low cabin top make moving around deck easier.

Large T-Shaped cockpit can seat 10 people.

Mast controls lead to cockpit halyard winches.

40.# How do the crew attach to safety rail in rough conditions?

The following is fitted:

4 large padeyes in cockpit to attach safety harness.
Jackstays (nylon web runs along deck) attach to 4 folding padeyes mounted both sides of deck. Attach harness to cockpit or sidedeck jackstays.

41.# What anchor(s) come standard? Weight?

Standard anchor Manson plough 60 lb.

42.# Would you recommend additional anchor?

Good practice to have spare say 45 lb plough.

43.# What you would recommend as extra chain length?

Standard length is 70m x 3/8". Extra chain say 30m plus 100m high strength nylon rope.

44.# Do you have Anchor winch control located in cockpit, auto release and counter?

The anchor windlass is operable from the cockpit pushbutton up/down switch plus chain counter. Anchor is self launching via pivoting bowfitting.

Self launching bowfitting.

Windlass is mounted below deck. Extra foredeck storage locker houses fresh / saltwater deckwash hosereel.

45.# Electronics – NOTE - Require display panels to be repeated on TV monitor and also on portable notebook (located at navigation desk).

Complete electronics package available from the following brands:

Raymarine
B & G
Coursemaster
Furuno
Twin scope forward facing sonar
Maxsea Navigation

I.# Autopilot
II.# GPS
III.# Plotter

IV.# Weather forecasting internet??
V.# Radar (plus guard)
VI.# Other standard instruments supplied?
VII.# Anchor winch control
VIII.# Any other instruments available?
-# C.A.R.D.
-# AIS
-# Sonar

46.# Communications – what do you recommend for close inshore and offshore? Is BGAN available? WiFi?

VHF
HF
Satellite mobile

Nav station.

47.# What is the standard battery configuration?

Standard is 6 x 8GGC2 – 6v Gel batteries providing 675 amp hour house supply. Engine start is dedicated 100 amp hour 8G31DT 12v gel.

48.# What spare battery capacity would you recommend?

2 x 8GGC2 6v Gel – Electronics Bank 225 amp hour.

49.# Do you have a battery for engine start only?

Yes as above. 1 x 8G31DT 100 amp hour gel.

Engine access.

50.# Generator required? Alternator/Inverter comments, if any offerings?

Options available:

Mastervolt 3 KW Genset
Mastervolt 6.4 KW Genset

Standard alternator is 80 amps. Option 2 x 80 amp alternators.

Recommended Mastervolt 2000w / 100 amp inverter / battery charger.

Genset installation under forward bunk.

51.# Are fuel cells an option?

Can look into further if required.

52.# A/Conditioning not required but fans required in main sleeping cabin and it would be desirable to have the provision for portable fan in main cabin?

If this was required I would recommend a single unit fitted to aft cabin which could spill into saloon. Turbo fans can be fitted throughout.

53.# How good is your ventilation? Pls qualify?

Catered for by 14 portholes, 7 deck hatches, and 1 companionway hatch totalling 22 openings. This enables excellent ventilation from any wind angle. Rain covers can also be fitted to opening portholes.

Opening ports in main cabin for crossflow ventilation.

7 deck hatches for flow through ventilation.

54.# How good is natural lighting? Pls qualify?

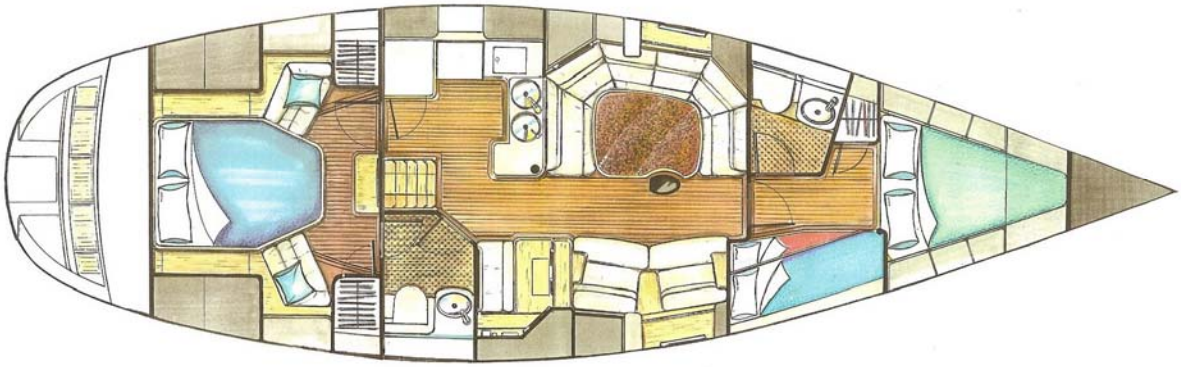
Catered for by 22 openings.

55.# Three double cabin layout required?

The Bluewater 450M is layed out to offer the owner the most comfortable berth aft where the motion is less with a double and 2 singles forward. The forward cabin bunks can lower to form a settee thus effectively creating two owners cabins with their own ensuites if required.

The galley, nav station and aft head are positioned beside the companionway steps for easy access in rough conditions.

The saloon can seat 10 and nav station 2 people. When passage making there is a port and starboard sea berth in the saloon.



Owners aft cabin.

Main Saloon Layout.

Large nav station.

Forward V-berth.

Forward double bunks.

Forward head.

56.# What options for furnishings?

Due to our construction techniques the interior timber / fabrics and design style can be customized to suit owners requirements.

57.# Can you easily brace yourself in galley?

The galley design is U-shaped to allow bracing yourself either on port or starboard tack as well a strap is fitted to hold yourself in when required. The galley setup allows for passing while someone is working in the galley.

Port galley. Note proximity to companionway.

Liquor cabinet with built in bottle and glass holders.

58.# How good are hand hold locations?

Handholds are placed strategically throughout the interior / exterior as follows:

Interior	Companionway x 2
	Galley post
	Cabin sides
	Saloon overhead
	Heads
	Mast tierods
	All fiddles and door jambs
Exterior	Cabin top railings
	Lifelines
	Pedestal
	Dodger / bimini
	Rear arch
	Stays

Starboard lounge can convert to seaberth if full length settee option chosen.

Port dinnette can be used for sea berth.

59.# Is electric cooking an option?

Electric cooking is an option however probably requires a genset to power.

60.# If gas only, how many burners?

3 burner with oven and grill. Force10 brand.

61.# Fridge?

The 120lt fridge utilizes the most efficient foam insulation available with an R 6.4 rating. 12 / 240v water / air cooled compressor freezing a single U-tectic tank. Performing in 35° ambient at +2° consumes
32 amps per day.

62.# Freezer? Will your genuine freezer freeze fresh fish?

The 100 lt freezer utilises the most efficient foam insulation with R 6.4 rating. 12/240v water/air cooled compressor driving 2 eutectic tanks. Performing in 35° ambient at minus -18° C consumes 42 amps per day.

Front opening fridge and top opening freezer.

Please see Fish comments from Peter Mackay, Ozefridge.

63.# Microwave?

Microwave fitted as standard 240v x 800w powered from shore power, inverter or genset.

64.# External BBQ?

Gas powered is fitted either on pushpit or aft deck depending on stern configuration.

65.# Separate showers to toilets, where does water drain?

Water drains to the shower sump then pumped out by 12v Gulper pump.

Aft head with mylar shower curtain drawn.

Aft head accessed from saloon or owners cabin.

Mylar shower curtain runs on built-in track.

66.# Do you have a holding tank?

Holding tank is fitted under forward bunk.

Capacity with bowthruster - approx 250 lt
Capacity without bowthruster - approx 380 lt

67.# Fresh water toilets?

Standard is Jabsco 12v quiet flush saltwater flush toilets. We can look at converting these to freshwater if required.

68.# Electric toilets?

Yes, electric toilets as above.

69.# What is the Fresh water capacity? Any option for extra capacity?

Maximum water capacity 1100 lt made up of:

2 x 325 lt integral tanks	650 lts
2 x 225 lts ss tanks	450 lts
Total	1100 lts

70.# Fresh water maker? OPTION ONLY

As standard we fit deck drains that can be diverted to either drain overboard or fill the water tanks. The usual practice is to initially wash the decks down before filling tanks. The owner's comments are that since owning the boat they have only filled the water tanks by this method.

If you opt for a watermaker a high capacity unit is preferable due to having to make sufficient water while the genset is running, usually 2 hours per day.

71.# TV and DVD?

Optional Extra.

Flat screen TV monitor built into port cupboard front.

72.# Is the dodger factory fitted?

Yes.

Standard dodger incorporates mainsheet arch.

73.# Is the bimini factory fitted?

Yes, and is an option.

Bimini – optional with pushpit arch.

Pushpit arch incorporates transom seats, bimini solar panels, davits, outboard mount, and bbq.

Bimini stows into targa garage.

Standard dodger with bimini stowed.

74.# Is the bimini able to withstand storm conditions?

Yes. Similar type stood up to 60+ knots OK.

75.# Is it possible to remove bimini easily and where to stow?

Bimini stows in this targa garage.

76.# Is the bimini infill factory fitted?

Yes. Stowed rolled up in bag.

77.# Do you have side covers to fully enclose and be able to withstand storm conditions? NOTE this is where the pilot house offers significant benefits?

Yes we can fit covers all round as well as mosquito screens.

78.# Where is the life raft stowed? How easy to access?

A liferaft can be stowed in the lazarette locker or pushpit.

79.# What Safety equipment is provided? Life jackets; flare kit; fire extinguishers etc

Safety Equipment supplied as an extra.

80.# Where would the dinghy and outboard be stowed?

Dinghy is stowed on davits or foredeck. Outboard is stowed on pushpit or cockpit locker.

Dinghy stored on pushpit arch davits.

81.# What warranties on hull; rigging; sails; electronics etc

10 year structural warranty covers everything Bluewater manufactures. Other equipment covered by Equipment Suppliers warranty (usually 12 months) however Bluewater acts as Owner's Agent in case of any claims.

82.# What is your boat perceived strengths?

The perceived strength of all of our yachts is that you the customer will be purchasing into a family of genuine cruising yachts built for long distance offshore sailing. Each yacht is tailored to suit the individual not a mass produced impersonal product.

The excitement of your new adventure starts from deciding finishes, design styles and aspects, laying of the hull through to structural stages, fitout, final finishing, commissioning on Lake Macquarie to handover.

You the customer can be involved as much or as little as you like all the while gaining knowledge and appreciation for each aspect in anticipation for cruising in your new yacht. To me this process is vitally important as it is much like experiencing the birth of a child which in the end feels much closer than an off the shelf product.

Of course our yachts perform impeccably for their purpose: fast, well balanced, easily handled and forgiving. Confidence comes from knowing how they have been built and who is behind them.

Other features of Bluewaters include our superior attention to detail. We have built in safety features such as designed stability, and combined this with massive construction in every aspect which offers increased safety margins. The vessel is easy to maintain being able to access all the internals, and has large tankage and storage capacities. Dealing with a local company who actually build the yachts and not just sells them also makes for a much more satisfying relationship.

Bluewater yachts have built a solid reputation for build quality, superior design, high resale and excellent customer service which is the foundation for a superior Bluewater boating experience.

83.# What is your boat perceived weaknesses?

Perceived Weakness Delivery time due to superior build quality.

Small Australian company compared to large production builders, however, if you value personalised service and not just being a number, then this is a strength not a weakness.

84.# Please elaborate on how your sail boat performs vs. the competition?

The Bluewater 450M has a performance pedigree which combined with Bluewaters build and design philosophy ensures a yacht that is built to sail and cruise equally as well. All Bluewaters are designed with safety, strength of construction, performance, function and comfort in mind. Production boats simply cannot compare.

Our niche is to produce a limited number of purpose built cruising yachts for the serious cruising sailor.

Design Criteria Summary:

LOA		13.725m	45’
LWL		12.20m	40‘
Beam		4.2m	13’10”
Draft (Standard)		1.9m	6’4”
Draft (Shoal)		1.65m	5’5”
AVS		127°	
SA / Displ		18.85	
Displ / Length		211	
Displacement		13,500 kg	
Ballast		4,820 kg	
Aux. Power		75 hp	
Freeboard Fwd		1.35m	
Freeboard Aft		1.15m	
Hull Speed		8.5 knots	
Max Motoring Speed		9.3 knots	
Tankage:	Water	1100 lts	
	Fuel	560 lts	
	Holding	250-380 lts	
Internal Storage Capacity		4.5m3	
External Storage Capacity		1.75m3	
Classic Stern Storage Capacity		1.7m3	
Sail Area:			
	No 2 Genoa	64m2	
	Main	41.3m2	
	Staysail	17m2	

(All measurements are approximate only).

85.# Delivery?

Delivery. Mid-late 2009 depending on options.

Approximately 10,000 hrs goes into building a Bluewater 450M. This time taken is necessary to ensure that the utmost integrity and care is taken throughout the build. Bluewater is not interested in compromising build quality for extra output. If you want a quality product then you should appreciate the time it takes to do a job properly.

86.# What is your planned commissioning program for handover and during the first twelve months?

The vessel is launched at Marmong Cove Marina, Lake Macquarie where the mast is stepped and the final finishing and commissioning takes place. This involves working through every system to ensure 100% performance. Towards the end of this process the customer is encouraged to spend a weekend or two aboard cruising the Lake to check operation of all the systems. Feedback is given after these cruises and attended to immediately.

After this process is complete a trip further a field is necessary usually to Pittwater / Sydney, and then returned for adjustments.

This process can usually take up to a month or so with only minor adjustments made after three (3) and twelve (12) months.

Having the Builder at call makes this a relatively painless experience as any modifications can be easily and quickly made.

87.# Specify if the boat needs to be returned to a location for warranty work?

For any warranty work the vessel must either be returned to the Builder or the Builder's nominated repairer which would be organized as near as appropriate to the location of the vessel.

88.# Base boat price?

Base Boat Price $960,000.00 plus GST

89.# Based boat price complete with all options? (Based on the above questionnaire, please specify a sail boat to meet our needs?) NOTE that I will carefully compare prices as I envisage that many of the options are locally sourced and will be common to all of you.

Base Boat Price	$960,000.00 plus GST
Optional Extras	$228,396.00 plus GST
Total Price (inc Options)	**$1,188,396.00 plus GST**

Please refer to Standard Specification and Optional Extras List