

BARRACUDA XSV 17. 50kt+ WAVEPIERCING, INTERCEPTOR 2017 EX DEMONSTRATOR 'THUNDER CHILD'

TECHNICAL SPECIFICATION



Main technical features

- *High speed capabilities of 53kts*
- *700nm range at 40kts*
- *All weather capabilities*
- *Wavepiercing hull design allowing high speeds to be maintained in rough conditions*
- *Shallow draft with surface drive propulsion*
- *6- 10 person crew capacity*
- *Fully Enclosed cabin with Shock mitigation seating*

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GENERAL DESCRIPTION

Thunder Child is an XSV 17 ex demonstrator launched in late December 2016. The vessel has been used as a demonstrator, and to set a UIM world record for a circumnavigation of Ireland via Rockall (500+ KM into the North Atlantic) covering a distance of 2,067km in 34hrs at an overall average speed of 32kts including stops and a underway speed of 37kts totally proving the designs ability to maintain high speeds in offshore conditions and its engineering reliability.

The craft has 170hrs recorded on her engines with an average load factor of 55%, conforming to Caterpillars rating guidelines and warranty.

The vessel is in 'as new' condition and can be fitted out in respect of her f/wd accommodation area to suit a clients requirements, factoring the available space. The craft is renowned in the marine sector and quite famous having being featured in numerous publications and television documentaries.

Construction and hull design

The design of Barracuda XSV 17' is for a 17m very high speed, wavepiercing Interceptor / patrol vessel. Operational roles are envisaged as for long range extended patrol offshore utilising its 700nm range, for high speed pursuit and apprehend and for coastal and offshore surveillance.

Propulsion is by Caterpillar- twin C12.9 1000hp engines and Metamarine Surface drives. XSV 17 is capable of maximum speeds of 53kts. A crew of 6 are comfortably seated on high tech shock mitigation seats with additional bench seating for 4 aft in her main cabin for a total of 10 personel. Her spacious forward cabin can incorporate extra seating for passengers / survivors / combatants or incorporate live aboard extended operations facilities which can be included if required on request with galley, berths, seating etc or fitted out to suit a clients requirements.

XSV 17 is fitted with long range fuel tanks of 5,000L providing a range of 700nm at 40kts and 800nm at 25kts.

XSV has an innovative and unique hull form that allows it to operate in two distinct modes, fully planning and wavepiercing. The hull combines a deep V hull form with a 24 degree transom deadrise for her aft planning area with a wave piercing bow, which is designed to run clear of the water at high speeds reducing drag and maximising speed, but which can be brought into dynamic effect with running trim control from large hydraulic trim tabs allowing the bow to become wavepiercing and dramatically

reduce slamming in head seas thereby maximising endurance for her crew when operating in rough conditions. Another unique feature is adjustable anti-submersion fins at her bow, hydraulic in operation they can be adjusted for speed and wave height and prevent excessive submersion in large following seas in very rough conditions when speed inevitably must be reduced. The hull provides exceptionally high levels of seakeeping abilities on all courses with its twin chine arrangements providing for high levels of both static and dynamic stability.

The design is capable of 'all weather operation' survivable up to sea state 8, is self-righting, capable of recovery if capsized by a large breaking wave. Capable of operating effectively in up to sea state 6, (5m waves) and Beaufort F9 wind strengths and maintain operational speed in sea state 3.

The vessels original gel coat colour is light grey, but can be re-sprayed if required to a colour of clients choice.

PRINCIPLE DIMENSIONS / MAIN PARTICULARS

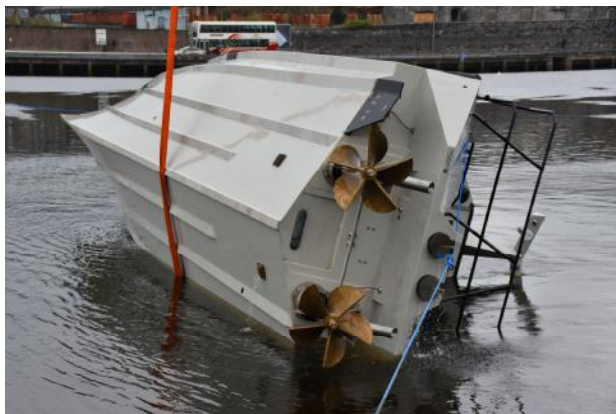
L.O.A. (moulded)	17.9m (17.2m)
Beam moulded / overall	3.95m / 4.2m
Draft	.85m
Lightship / Fully loaded	13,500kg / 16,500kg
Fuel capacity	5,000L long range tanks
Range	700km+ @ 40kts*
Crew capacity (Main cabin)	6x on shock mitigation seats 4x on bench seating
Passenger capacity (optionally seated)	12, or full live aboard facilities incorporated
Total personnel capacity	15
Engines	Caterpillar C 12.9 1,000hp
Gearbox	ZF 550
Surface Drives	Metamarine
Generator (optional)	6kw
Air conditioning (optional)	27,000btu
Speed Maximum light loaded	53kts * Surface drive
Cruise speed (MCR)	40kts
Construction material	FRP composite



Design standards	Lloyds SSC rules area G3
Classification	<p>Classification All versions are based on the following levels of classification:</p> <p>The craft is to be constructed in accordance with the United Kingdoms MCA (Maritime Coastguard Agency) CAT II Workboat regulations, and under their survey and will be supplied with an MCA Cat II work boat certificate on delivery.</p> <p>The hull and superstructure are to be moulded in general accordance with Lloyds Register of Shipping (LRS) SSC Rules as applied to small commercial vessels. The Laminate weights and scantlings were determined using Lloyds Special Service craft software.</p> <p>The design has full plan approval from the IACS classification society PRS (Polish Register of Shipping) construction of the Hull, deck and cabin structure. The vessel will be built under survey by PRS, to PRS approved plans, in respect of its the <u>Hull, deck and cabin structure only</u>. It will be issued on delivery with a PRS construction certificate in respect of this only.</p> <p>In all other respects the vessel engineering, its mechanical and electrical installation as well as safety equipment, will be in accordance with the aforementioned UK's work boat regulations</p> <p>CERTIFICATION</p> <p>The following level of certification is supplied:</p> <p>Class approval</p> <p>The vessels hull, deck and superstructure are built to classification society PRS approved plans, in relation to this extent of the vessels construction.</p>

	<p><u>Classification society <u>Type approval</u> certification</u> (Generic refers to the fact the 'model' of engine has a generic classification approval relating to the 'model' of engine, it does not mean each engine has been built specifically under the classification societies survey for that particular engine)</p> <p>Type approval certificates (<u>generic</u>) for Main engines Steering system Propellers Bilge alarm panel Fire alarm panel Engine room fire suppression system Fire dampers Fire proofing material</p> <p>Classification society <u>Material</u> approval certificates for all components in: Bilge piping Cooling system piping Exhaust system piping / watertraps Hull construction (GRP materials) Electrical wiring Electrical circuit breakers</p> <p>Note, Specific, individual class approval for the specific system installation & drawings (ie fuel, bilge, cooling etc) is not provided.</p> <p><u>EU manufacturers certificates of CE compliance</u> for:</p> <p>Propulsion system Anchor Certificate Life Raft. Navigation equipment items. Communication equipment items. Life Saving Equipment. Thermal insulation materials. Noise insulation materials. Fire (engine driven) pump. Hydrophors. Ventilation fans. Windows Doors Valves</p>
Machinery	
Main engines	<p>2x Caterpillar C12.9 1,000hp electronic diesel engines.</p> <p>The engines are mounted on substantial engine beds bolted through taped glassed in 15mm steel with 16mm bolts. Six Vector engine mountings per engine are used, four for the engine and two for the gearbox. Vector engine mounts are used by the RNLI and are extremely durable as well as providing excellent dampening.</p> <p>The machinery is installed in accordance with the manufacturer's recommendations and installation instructions and commissioned by the appointed agent / engineer and tested to provide conformity with the manufacturer's recommendations.</p> <p>Care and attention is paid to providing durable machinery installation with adequate support and neatness on all piping and cable runs. Special attention is paid to provide ease of ongoing maintenance and ensuring all service items are readily accessible. All piping and connections to the engine and throughout the overall installation are to be of an approved type. All water and fuel valves shall be clearly marked and labelled</p>
Maximum power	1,000hp

output	
Gearbox	ZF550, electronic shift controls
Propulsion	MTS Compact drive surface drives
Self-Righting capabilities	<p>The vessel is designed for 'all weather capabilities' and as such is self-righting being able to recover should she be capsized by a large breaking wave.</p> <p>Various special design features are incorporated such as a fully watertight cabin, extra strong windows and structure, automatic closing air vents for ER and cabin, anti air lock fuel system etc.</p>





Engine specification

C12.9

MARINE PROPULSION ENGINE

1000 mhp

(985 bhp)

735 kW



Image shown may not
reflect actual engine

SPECIFICATIONS

I-6, 4-Stroke-Cycle-Diesel

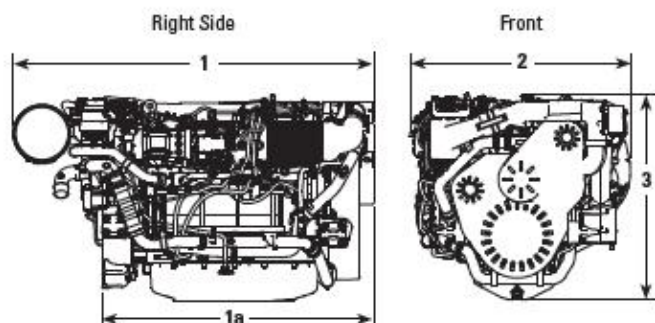
- Recreational Certifications
 - EPA Tier 3 (E5 Cycle – Recreational Only)
 - IMO II (EPA, GL, CCS, and SeeBG)
 - Recreational Craft Directive (EU) RCD
- Commercial Certifications
 - EU Stage IIIA
 - IMO II (GL, CCS, and SeeBG)
 - CCNR Stage II through reciprocity with EU Stage IIIA
- 12.9 L displacement
- 2300 rpm rated speed
- 135 mm (5.31 in) bore x 150 mm (5.91 in) stroke
- Electronically governed
- Common rail fuel system
- Series turbocharged, supercharged, aftercooled
- Heat exchanger cooled
- Refill capacity
 - Lube oil system: 47 L (10.3 gal)
 - Cooling system: 45 L (9.9 gal)
- SAE No. 1 flywheel housing
- SAE No. 14 flywheel (155 teeth)
- 250-hour oil change interval
- Counterclockwise rotation



FEATURES

- High power density
- Industry-leading torque and throttle response at low speed
- Smooth, quiet operation throughout the entire operating range
- Closed crankcase ventilation system improves engine room cleanliness
- Common rail fuel system enables optimum combustion, low emissions and reduced noise
- Available on-engine control panel with "Start," "Stop," and display for engine diagnostics
- Inlet air heater for improved cold weather startability
- Low maintenance (fresh water/coolant) aftercoolers
- 12V or 24V electrical system
- *glink* ready for remote engine and vessel monitoring

DIMENSIONS



ENGINE DIMENSIONS & WEIGHT

(1) Length	1960 mm	77.1 in
(1a) Length to flywheel housing	1476 mm	58.1 in
(2) Width	1195 mm	47.0 in
(3) Height	1117 mm	43.9 in
Weight, dry (approx.)	1672 kg	3686 lb

Note: Do not use these dimensions for installation design. See general dimension drawings for detail.

MARINE ENGINE PERFORMANCE

Max Power
E Rating – EM0872

rpm	bhp	g/hr	bkW	g/bkW-hr
2300	986	50.7	735	218.9
2000	940	46.9	701	212.6
1800	846	40.4	631	203.5
1300	612	27.3	456	190.0
950	433	20.8	323	201.6
600	107	5.4	80	213.0

Prop Demand
E Rating – EM0872

rpm	bhp	g/hr	bkW	g/bkW-hr
2300	986	50.7	735	218.9
2000	650	32.8	485	214.7
1800	475	24.0	354	215.4
1300	178	9.2	133	220.3
950	70	3.8	52	231.9
600	17	1.2	13	291.2

STANDARD ENGINE EQUIPMENT

- Electronically controlled supercharger
- Series turbochargers with heat shield
- Watercooled exhaust manifold
- Dual aftercoolers
- Closed crankcase ventilation system
- Thermostats and housing
- Gear-driven sea water pump with bronze impeller
- Common rail fuel system
- Plate-type heat exchanger
- Engine oil cooler
- Engine-mounted fuel cooler
- Vibration damper and guard
- Grid heater
- Electric fuel priming pump
- Seawater pump outlet pressure sensor
- Water-in-fuel detection switch
- Exhaust gas stack temperature sensor
- Coolant level sensor

OPTIONAL ATTACHMENTS

- Alternators
 - 24V 120 amp
 - 24V 160 amp
 - 12V 200 amp
- Transmission gear oil cooler
- Transmission sensor packages for on- or off-vessel monitoring
- Instrument panel – MECP I
- Electric starting motor
 - 12V
 - 24V

RATING DEFINITIONS AND CONDITIONS

E Rating (High Performance)

Typical applications: For vessels operating at rated load and rated speed up to 8% of the time, or 1/2 hour out of 6, (up to 30% load factor). Typical applications could include but are not limited to vessels such as

pleasure craft, harbor patrol boats, harbor master boats, some fishing or patrol boats. Typical operation ranges from 250 to 1000 hours per year.

COMPACT DRIVE DRIVE REVOLUTION

STANDARD EQUIPMENT DRIVE SYSTEM:

- n° 2 surface drive;
- n° 2 directional fins;
- Mounting flanges;
- Hydraulic cylinders kit for rudder and trim;
- Rubber guard for trim;
- Transmission oil tank;
- Hydraulic unit for rudder and trim control.

OPTIONAL:

- stainless steel bolts kit
- cardan flange
- isolation plate for aluminium boat
- cavitation hose
- position indicator for dashboard (rudder/trim)
- hydraulic unit
- hydraulic pump
- helm

DRIVE FEATURES:

- 1) Ball seal with o-ring does not require maintenance.
- 2) Axis with double bearings for less vibration
- 3) Cooling system on input bearing
- 4) Triple viton shaft seal on the output of the axis for less friction and at the same time safety of sealing against water income.
- 5) completed with sacrificial anode



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METAMARINE

COMPONENTS

XSV 17 poses excellent sea keeping abilities and can operate in SAR operations in extreme weather conditions.



CONSTRUCTION SPECIFICATION



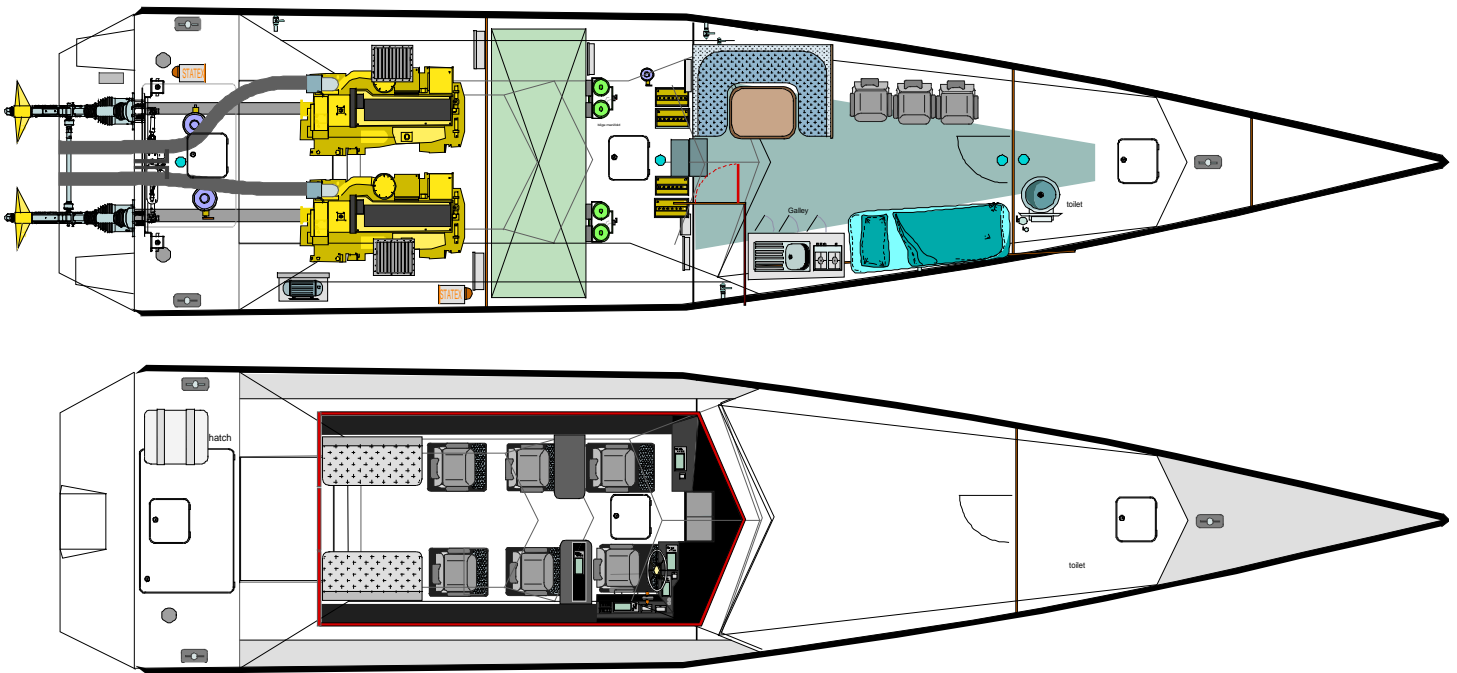
Hull construction
For full information see
'Lay up schedule'

The hull design is very strongly constructed utilising cored side decks and closely spaced (.5m) large transverse framing
GRP composite construction, E Glass composites & polyester resin.
Side shell laminate – 2,500 / 25mm core / 4,100gm²
Bottom shell laminate – 4,100 / 5,000gm²
Chine laminate - 6,800gm²
Keel Laminate – 7,600gm²

	<p>structure, complete with baffles and stainless steel inspection hatches in the front of the tanks and are glassed into the main hull structure. The tanks are fitted with a suitable no of baffles. Each tank is fitted with an inspection hatch in the front into which fuel take off and returns as well as venting is fitted. Fuel fillers are positioned on the wheelhouse side and use 2" dia fire retardant fuel hose in accordance with ISO 7840: 2004 runs from the deck to the top of the tank. 38mm tank vents are used to ensure quick filling without blow back, the vents are positioned well above the weather deck.</p>
Fenders	<p>The boats fendering consists of a 80x80mm rubber 'D' section fender extending around the hulls side from transom to the bow using Silkaflex adhesive to attach the fender to the hull.</p>

Accommodation compartments

The accommodation is fully customisable to suit the vessels operational role and client requirements.



XSXV 17 has a high degree of survivability incorporating 3 watertight Bulkheads sub dividing the vessel into four separate watertight compartments.

Main Cabin	<p>The wheelhouse is capable of seating a crew of 6. All crew are seated on high tech shock mitigation seats supplied by AMP Power, Holland the seats 6" travel and damping very effectively absorb accelerations imparted onto the crew in rough weather. Visibility is excellent all round.</p> <p>The wheelhouse contains a GRP helm console f/wd. The following operative / crew positions are incorporated.</p> <ul style="list-style-type: none"> • Helmsman. To st/bd at a steering position ergonomically designed to provide a highly focused comfortable position
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	<p>where all controls fall easily to hand, all navigation and vessel control instrumentation is recessed, clearly viewable f/wd and alongside, the steering wheel is adjustable around horizontal and provides a 4x4 style driving position with excellent all round visibility.</p> <ul style="list-style-type: none"> • Navigator: To port f/wd opposite the helm, incorporating console with navigation and radio communication equipment. • Engineers position, To st/bd behind the helm position and elevated slightly for visibility. A table in front of the seat housing a console fitted with large 15" Caterpillar touch screen display showing all engine parameters. • Crew position main. To port behind the navigator position and elevated slightly for visibility. A table in front of the seat is provided. • Crew positions. Two additional shock mitigation crew seating positions are provided to port and st/bd aft. Bench seats with cushions are provided at the aft of the cabin allowing 4 extra seating positions. <p>GRP side panels house storage lockers. The area is fully panelled in vinyl headlining to provide a luxurious environment for long duration patrol applications, The cabin sole is grey soft touch non slip stripped matting.</p>
Other compartments	
Midships lower cabin	The midships compartment houses the fuel tank, main batteries and main distribution board as well as various electrical installation components and bilge distribution manifold. It is accessed via a GRP deck hatch positioned centrally in the main cabin sole and entered via a S/S ladder.
Forward Cabin	The forward accommodation area is accessed via a central door incorporated into the helm console, steps lead down into the area which can be fitted out to suit a clients requirements and incorporate galley, berths, dinette etc. A small separate heads compartment is provided.
Engine room	Containing the main engines and generator, accessed via a watertight hatch on the aft deck.
Fore Peak	Containing the anchor, chain and warp. Accessed externally via a Herculese HD aluminium watertight hatch on the fore deck and internally through the forward compartment via a watertight Seaglaze aluminium door in the collision b/head allowing safe internal access to the bow for anchor deployment at sea.



Above, f/wd cabin bare ready for conversion to clients accommodation requirements.







ENGINEERING SYSTEMS

Bilge system

System 1

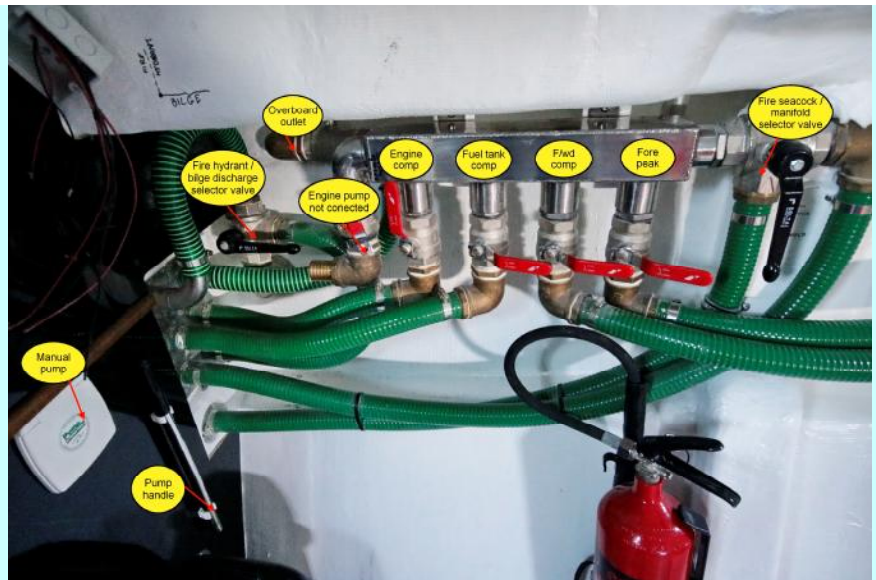
4x electric bilge pumps, one in each watertight compartment. Pump Capacity 3,5m³/hr. Hose dia 38mm.

Back up system 2-

A Jabsco 16m³ p/hr engine driven bilge pump is connected to a stainless steel distribution manifold with valves which select and distribute to suction lines to each watertight compartment. Hose dia 38mm.

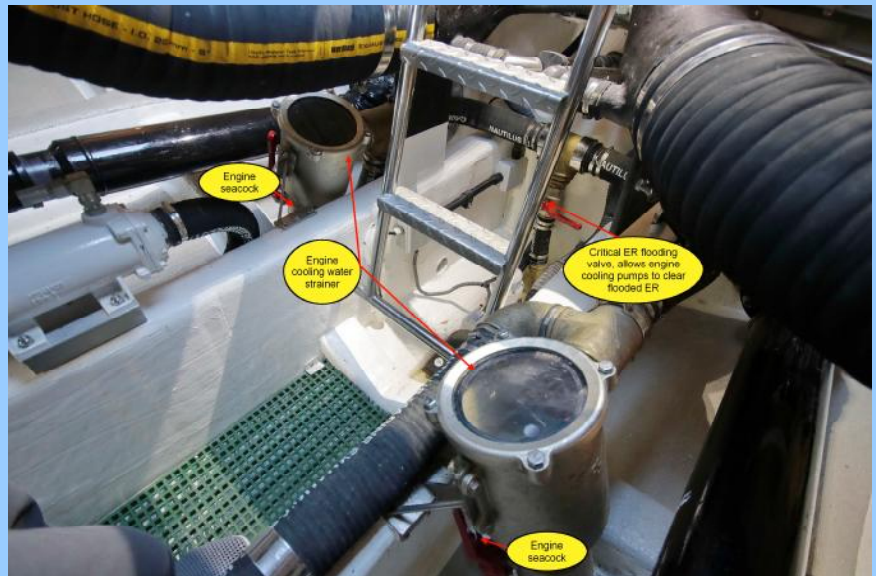
Both systems use PVC ribbed suction hose, non return valves and lever valves at hull overboard discharges. Strum boxes are fitted in each bilge at the end of the suction hose.

The fore peak is drained overboard as it is above the waterline.



Engine cooling

Twin 50mm intake seacocks with lever valves connected to large nickel plated bronze water strainers, each is interconnected with a lever valve. Fire proof 50mm reinforced hose connecting the intakes to the engines.



Exhaust system

153 / 186mm exhaust hose to a Halyard watertrap / silencer exiting through the transom via a GRP ex outlet exiting below the waterline.

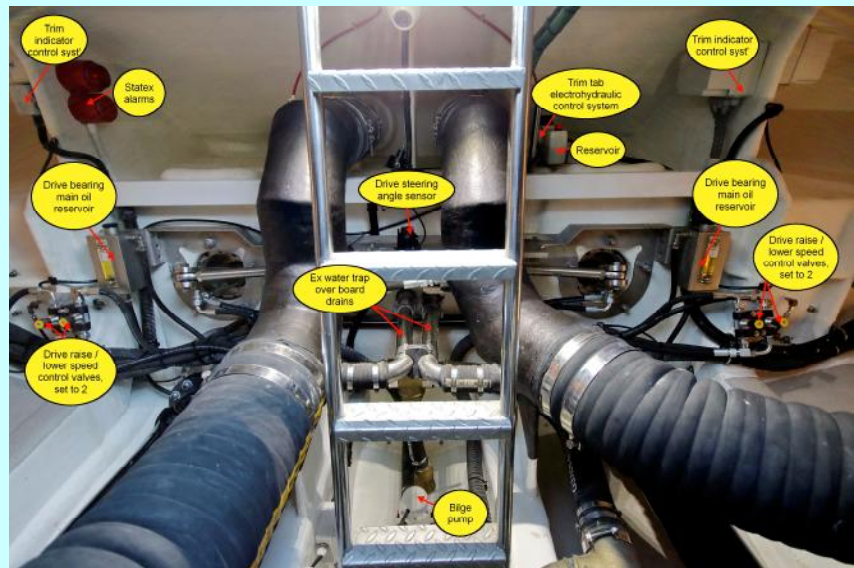
Fuel supply

Stainless steel 316 pipe with compression fittings. Twin Racor 9000 series Duplex fuel filters. Shut of valves at tank remotely operated from inside the main cabin.



Steering system

Engine driven hydraulic power steering system consisting of an engine driven hydraulic pump, a hydraulic reservoir & control valves, steering cylinder and helm pump. Providing the vessel with fast and light steering with a hard over to hard over of less than 4 wheel turns.



Trim control system

The transom is fitted with 10mm stainless steel trim flaps operated via 2x BSC bronze hydraulic cylinders and powered from a electro hydraulic power pack actuated via control buttons positioned at the helm position, allowing the vessels longitudinal and transverse trim to be adjusted to suit prevailing sea conditions.

Fire protection / Thermal insulation to engine room

Fire protection in the engine compartment consists of Neogel Firestop fire retardant gell coat applied on exposed GRP surfaces in the engine room, from the deck down to 200mm below the waterline. The compartment under deck area and b/head is lined in promaguard 6mm sheeting and 30mm Promaglass insulation, all aluminium faced and provides fire protection for the engine room.

Fire suppression to engine room

STATEX engine room fire suppression system. 2x G1500 extinguishing unit is installed in the engine room. An audible / strobe light alarm sounds prior activation warning persons in the engine room. Activation is remotely carried out via a control panel fitted in the main cabin. Engine ventilation fans are automatically stopped on activation.



Fire pump

The Manual back up bilge pump can be operated as a fire pump. A valve at the bilge manifold divers suction from this pump to a sea cock, outside the engine room in the mishaps compartment. A 3 way valve

	alongside the manifold diverts the pumps overboard discharge to a fire hydrant on the aft deck. This can be connected to a 10mm fire hose fitted with a spray nozzle that can be used to extinguish a fire on board or on another vessel.
Alarm systems Fire Alarm	Fire alarm. A 4 zone alarm with a sensor in the engine compartment, midships comp', electrical comp' & f/wd comp'. The control panel is fitted at the helm position. An audible alarm sounds on activation.
High bilge level alarm	Bilge sensor for each watertight compartment. Control panel with audible alarm installed at the helm position.
Heating / Air conditioning	Hot air blower taking hot water from engines to heat the cabin and demist screens. Can be operated without heat to ventilate the cabin with ambient air with direct ducting to outside fresh air. OPTIONAL EXTRA 1x 27,000btu Dometic reverse cycle air conditioning unit provides climate control and cools / heats the main cabin area.


ELECTRICAL SYSTEMS

Electrical	
Main voltage	24v DC
Circuit breakers	35 MCB's rated at 6 -20 amp as required for circuits, in dedicated distribution box.
Battery Engine start	The batteries are of the AGM type connected in series to produce 24v dc 240AH (2x 120AH) batteries in vented box
Boat load / Service	270AH (2x 135AH) batteries in vented box
Emergency	40AH, in vented box supplying power to: <ol style="list-style-type: none"> 1. Volt meter 2. Port VHF 3. Stbd VHF 4. Wheelhouse light 5. Navigation Lights 6. NUC light socket 7. GPS 8. Engine room Lights
Maintained power supply	The maintained loads are derived from the service battery bank of batteries which are connected to the live side of the battery isolation switches, to enable dedicated services (Engine room electric bilge pump, cabin Light, Fire alarm panel, Statex fire extinguishing panel) to be used when the boat is in a dead ship condition (main isolators switched off)
	Paralleling Switch for cross connection of battery banks (boat load and engine) to enable additional battery capacity to assist engine starting, should the engine start batteries become discharged.

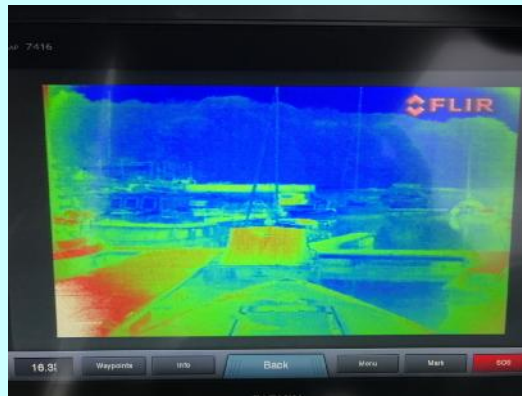
Conduit	<p>All cables runs secured in PVC flame retardant solid and flexible conduits as required.</p> <p>Steel trunking used in engine room.</p>
Isolators	<p>The engine start, service and emergency battery banks are isolated by remote control switches, from the wheelhouse helm position, and can be operated manually at link box.</p>
Charging	<p>The Batteries are charged via 2x 90 amp Alternators, one fitted to each of the main engines. Each alternator is fitted with a Battery Combiner, which enables the alternator charge to be split between batteries without putting them in a permanent paralleling situation, thus maintaining all batteries in a fully charged state at all times.</p>
Battery Charger	<p>There is also a 40 amp Battery Charger, supplied from the AC System, which is connected to the three banks of Batteries to enable charging when the Craft is moored. The Battery Charger can be powered from the Shore Supply, if available.</p>
AC Supply	<p>The AC System is supplied via a from a Shore which supplies Power to all the Onboard AC Circuits.</p> <p>Main AC supplies are;</p> <ol style="list-style-type: none"> 1. Computers and other onboard AC equipment 2. Battery charger 3. Main cabin, ER Room & f/wd cabin 240v sockets <p>Shore supply socket – mounted aft end of wheelhouse with own RCBO</p> <p>OPTIONAL EXTRA 4-6kw AC generator.</p>
Cathodic protection	<p>The Craft is wired with a Cathodic Protection System to assist in preventing corrosion occurring to underwater metal parts connected to:-</p> <p>All under water valves.</p> <p>Shaft, rudder 'p' bracket and propeller.</p> <p>The propeller shafts are connected to the system by means of an earthing brush arrangement, which consists of brushes making contact with the shaft via a bracket.</p> <p>2x anodes are fitted.</p>
DC Systems	<p>Lighting</p> <p>Forward cabin lights (2x surface mount L.E.D type)</p> <p>Engine room lights (6x surface mount L.E.D type)</p> <p>Midships compartment lights (2x surface mount L.E.D type)</p> <p>Main cabin lights (6x recessed 100mm dia L.E.D type)</p> <p>Side Deck lights, SS waterproof L.E.D. type 4x per side</p> <p>Aft deck flood lights x2</p> <p>F/wd deck flood lights x2</p> <p>Red night light in cabin</p> <p>Chart lights navigator and passenger seats.</p> <p>Equipment</p> <p>Wiper motors x 2 (Exalto) 2 speeds and intermittent speeds</p> <p>Windscreen washer fresh water pump.</p>

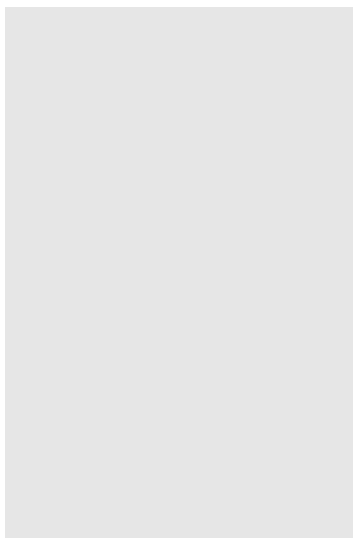
ER electric Bilge pump
 Midships comp electric bilge pump
 F/wd comp electric bilge pump
 Fore peak electric bilge pump
 Fire alarm panel
 Engine room Fire suppression (Statex)
 Engine room ventilation fan
 Socket for hand held search light externally on aft cabin b/head.
 VHF Radio 1
 VHF Radio 2
 VHF radio 3 (hand held)
 GPS display
 Radar display
 Radar scanner
 AIS
 CCTV Cameras
 Thermal camera

NAVIGATION / RADIO COMMUNICATION EQUIPMENT

Navigation equipment	
Radar	48nm high definition radome type, displaying on colour display at helm and navigators position.
GPS / Plotter	<p>Garmin GPS receiver.</p> <p>Displays:</p> <p>Helm position-</p> <p>1x 12" Garmin 8000 series 12" colour display</p> <p>1x 15" Garmin 8000 series 15" colour display</p> <p>Navigator position-</p> <p>1x 15" Garmin 8000 series 12" colour display</p> <p>All displays can be split to allow any combination of radar, plotter, video feed or sonar displays</p> 
Depth sounder	Sonar information with graphic display displayed as split screen on all navigation displays. Model Garmin integrated unit and plastic transducer.
Radio Communication	
VHF Radio	<p>Garmin GMD DSC VHF x1</p> <p>Garmin GDSC VHF x1</p>

Hand held VHF	Icom M235 x1
Ariel's	X 3 2.5m
AIS Class B	Comar AIS CSB 200
ERIPB	Mc Murdo Smartfind 406 float free aft of cabin external
SART	SART inside cabin
Video	Video cameras. 4x HD daylight / infra-red cameras for forward deck and aft deck and engine room views displayed on dedicated 17" colour monitor at helm position. CCTV Recorder
Thermal camera	FLIR RAY T200 thermal / Night vision camera operated via the navigators position displayed on navigators and helm navigation screens.
Engine monitor	Caterpillar 15" touch screen display monitoring all engine parameters.





Deck arrangements



Access to the fore deck is via 300mm wide side decks, safety is provided by stainless steel waist high level grab rails on the cabin sides extending around up to the fwd extremity of the cabin. Twin low level railings extend across the forward cabin roof up to the bow.

Access to the fore peak / anchor locker is via a GRP deck hatch, fully watertight. Access to the engine room is via a similar watertight deck hatch. The aft deck also incorporates a larger hatch that can be opened for engine removal or where easier open access is required to the compartment. The hatch is fully watertight.

Aft cabin door

The aft cabin door hinges upwards on hydraulic rams and can be fitted supported in an open position by two stainless fixed supports. The door has a clear opening of 900mm. The door is fully watertight.



	 
Mooring	Mooring cleats are provided at the bow, port and st/bd midships and at the transom quarters. At the bow and transom the bollards are recessed Amidships stainless steel 'pop up' cleats are fitted. The bollards are recessed below deck to prevent trip hazard.
Lifting arrangements	The vessel is lifted by slings and a suitable spreader system.
Safety railings	32mm Stainless steel in board / outboard arrangement designed to allow crew operate safety when boarding as well as protection for the aft cockpit which is fully enclosed by railings for crew safety.
Colour	Thunder Child has a navy grey gelcoat hull and superstructure. It is currently wrapped in metallic silver. It can be painted to a clients preferred colour.



Safety	1x 8 person Canister type liferaft in cradle on aft deck with hydrostatic release
	8 x lifejackets

	Flares (Full set, 10 hand. 6 x rocket, 2x smoke)
	First aid kit (marine type)
	Fire extinguishers x 3
	SART
	ERIPB
Anchoring arrangements	20kg Bruce type anchor, 20m 10mm chain and 70m of 16mm warp secured in the fore peak.



DOCUMENTATION

A full and detailed owners / operators manual will be supplied with the vessel in English language
A stability booklet, independently prepared is provided, and certified by the MCA
A full set of technical drawings will be provided as follows:

DRAWINGS

1. External elevations
2. GA Drawing
3. Bilge system
4. Exhausts system
5. Engine cooling water system
6. Fuel circuit
7. Transverse sections / Half plan
8. Hull scantlings
9. Deck structure scantlings
10. Superstructure scantlings
11. Fender plan
12. Stern gear plan.
13. Safety Plan
14. Fire Plan
15. Dry docking plan
16. Tank capacities
17. Essential electrics schematic
18. Main Machinery components schematic
19. Hull openings / freeboard plan

Training can be provided both in Ireland and on site at country of operation

WARRANTY

The vessel will be provided with a 12mth warranty by Safehaven Marine against any structural failure as a result of normal vessel operation, installation failure or equipment failure. Separate 12mth (or where extended) warranties will be provided by the Engine manufacturer, and where installed the Waterjet / propulsion system manufacturer.

DELIVERY

The vessel will be delivered in a clean and tidy condition at Cork, Ireland after customer acceptance trials and commissioning, and made ready for shipping to the client / end users destination.



Technical drawings

- General arrangement, As built
- General arrangement, Proposed commercial patrol version / fwd cabin fit out. Alternative arrangements to suit requirements can be offered and incorporated.

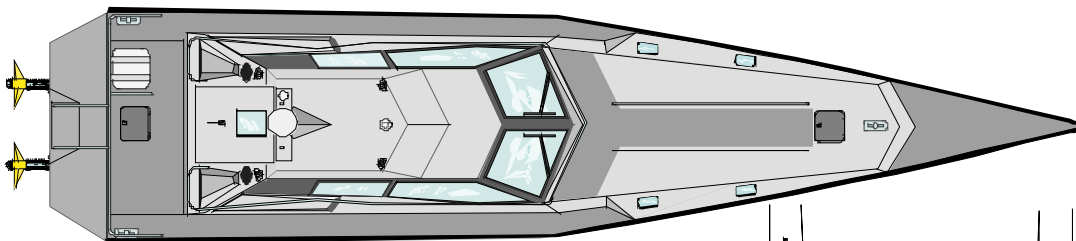
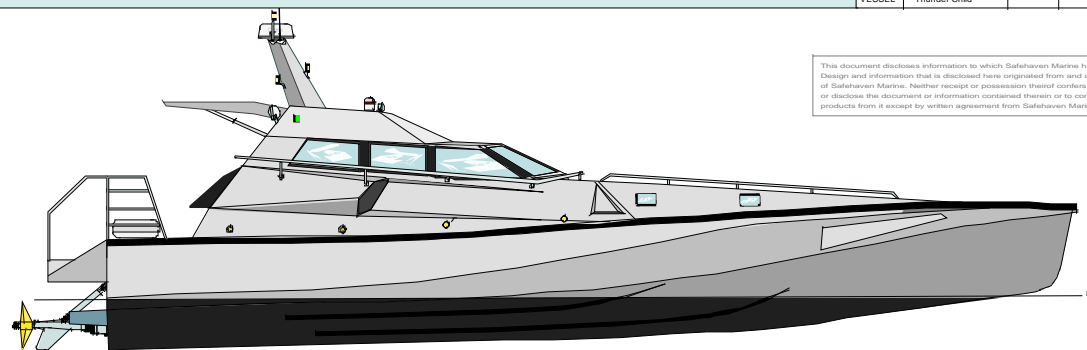
SPECIAL FORCES CRAFT
BARRACUDA XSV 17

HIGH SPEED WAVEPIERCING 17m 'INTERCEPTOR'
As built Demonstrator 'THUNDER CHILD'

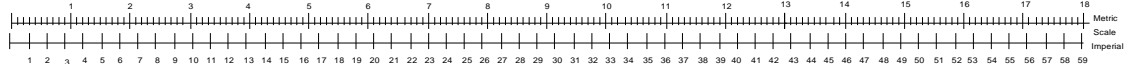
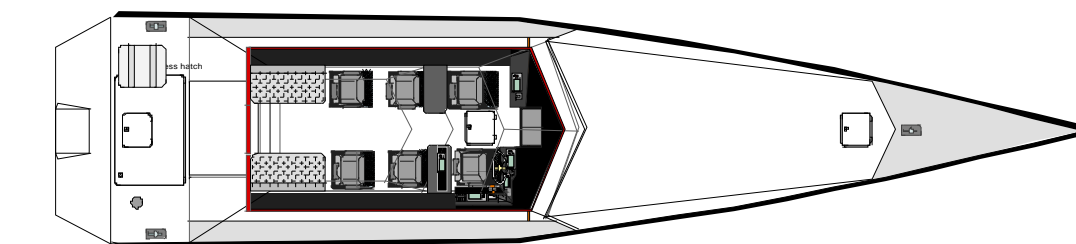
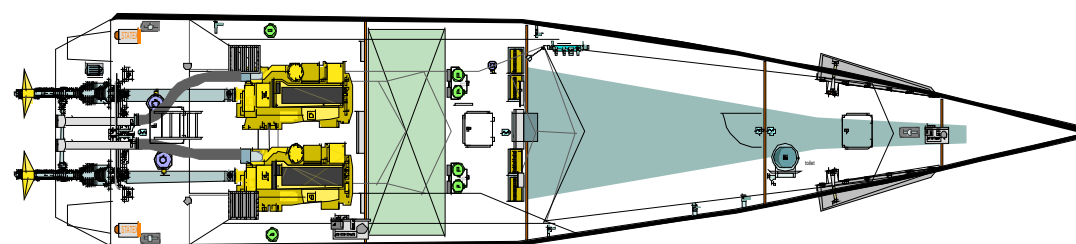
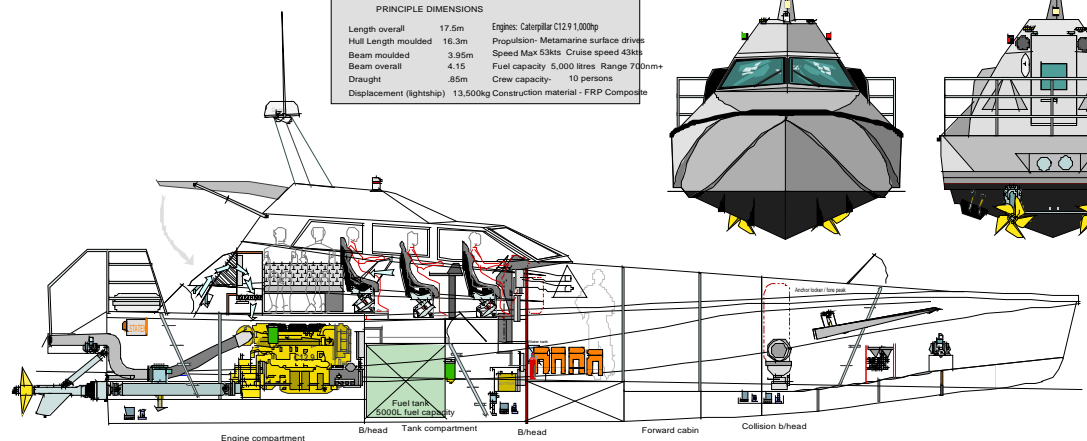
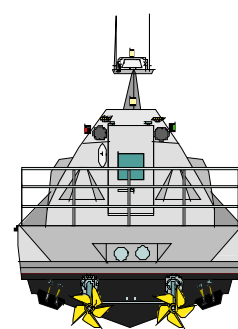
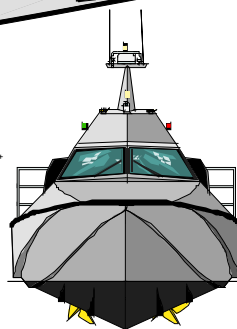
SAFEHAVEN MARINE

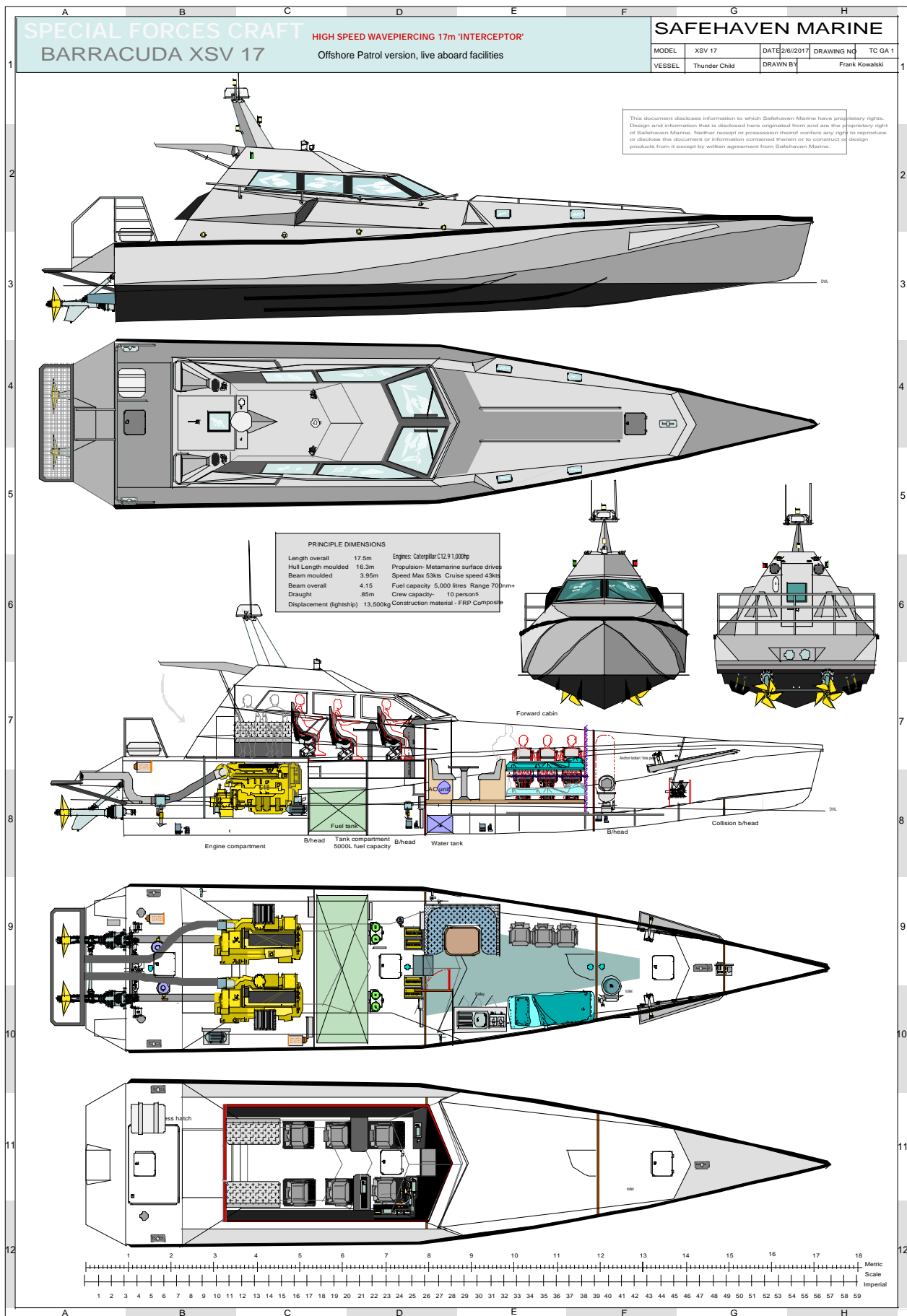
MODEL	XSV 17	DATE	2/6/2017	DRAWING NO	TC GA 1
VESSEL	Thunder Child	DRAWN BY			Frank Kowalski

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PRINCIPLE DIMENSIONS			
Length overall	17.5m	Engines	Caterpillar C12 9,100hp
Hull Length moulded	16.3m	Propulsion	Metamarine surface drives
Beam moulded	3.95m	Speed Max	53kts Cruise speed 43kts
Beam overall	4.15	Fuel capacity	5,000 litres Range 700nm+
Draught	85cm	Crew capacity	10 persons
Displacement (lightship)	13,500kg	Construction material	FRP Composite





PHOTOS







SAFEHAVEN MARINE SET NEW WORLD RECORD IN 'THUNDER CHILD'

'Thunder Child' Safehaven Marine's XSV 17, a 17m high speed wave piercing patrol vessel, returned home safely having set a new World record for a circumnavigation of Ireland via Rockall (awaiting ratification by the UIM) The crew of 5: skipper and managing director of Safehaven Marine and the designer of the vessel Frank Kowalski, Ciaran Monks, Mary Power, Carl Randalls and Ian Brownlee completed the 2,067km voyage in 34hrs and 1 min at an average speed of 32kts. Overall underway they ran at over 40kts for more than 50% of the voyage, which even with 5 tons of fuel aboard gave only a maximum of 80% load on the engines, (her Caterpillar C12.9 1,000hp engines ran faultlessly) and achieved an average underway speed of 37kts. According to skipper Frank Kowalski "we probably could have run her harder and set a faster time, but the destination 'Rockall' itself was important for us, and we had to pull back on speed to allow arrival in daylight". They then spent an hour launching their dingy and getting some epic photos and video at sunrise, which was important for sponsorship, and at their destination some 500km out in the North Atlantic there was 'no one else around' to take the photos and video! They also took time out to lay a wreath and pay tribute to the crew of Irish Coastguard helicopter Rescue 116 off Blackrock lighthouse, in Blacksod Bay where the crew were tragically lost earlier in the year.

Overall for the most part the weather they encountered 'manageable' according to her crew, the attempt was undertaken during an unsettled period in a short weather window between Atlantic frontal systems, a low centred over Ireland necessitating an anti-clockwise route. The South and East coast at the start were the toughest with up to force 5 winds and off Belfast they had 2m swells in wind over tide forcing them to slow down to 30kts. Heading out to Rockall the North Atlantic was lumpy at first during the night, but once they arrived conditions were relatively calm, and they had for the most part fair conditions for the run down the West coast, although visibility was poor at times in fog. The South coast leg past Fastnet on the final run, and knowing they had a good chance of success, meant with a lighter fuel load they were able increase their speed up to 45-46 kts and to 52kts for the final miles. They had a great reception from supporters at Portrush and Ballyglass where they refuelled as well as from the RNLI who came out to welcome them out at sea in Ballyglass, the old Head of Kinsale and when they entered Cork Harbour, as well as many other boats who came out to them on their journey. Arriving back home into Cobh, the Port of Cork sent out their tug to welcome them with water cannons, creating quite a spectacle as they came alongside to a large crowd of supporters. 'Thunder Child' herself performed flawlessly throughout keeping them safe and comfortable and allowed them to maintain high speeds in conditions where most other craft would have been forced to slow down, the hundred plus hours of rough weather trials and testing the crew carried out over the winter months paid off, ensuring the vessel was absolutely 'fit for purpose' during an endurance voyage, where the potential for challenging conditions so far offshore in the North Atlantic was always present.

