

Response Marine, Inc.

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Specifications: *RESPONSE FR-8.9*

1.0 GENERAL

Proposed to: Milford Fire Department

Builder: Winninghoff Boats, Inc.

Delivery: 1995

Hull Type: Modified Vee

Hull Length: 29' 4"

Hull Beam: 10'

Draft (hull): 1' 4"

Freeboard Fwd.: 4' 6"

Norm. Oper. Displ.: 10,000 lbs.

Power: Twin Outboard

2.0 CONSTRUCTION

The boat shall be of all welded aluminum construction featuring both transverse and longitudinal framing. There shall be four watertight bulkheads; one comprising the anchor locker, one forward of the fire pump compartment and one on each end of the fuel tank compartment. Scantlings shall be as per the following table, subject to engineering review in accordance with accepted marine standards:

<u>Item</u>	<u>Dimension</u>	<u>Alloy</u>
Keelson	.375" Plate	5086 H116
Transverse Frames	4" x 1.7" x .190 Tee	5086 H32
Bulkheads	.190" Sheet	5086 H32
Bulkhead Stiffeners	2" x .190" Flat Bar	6061 T6
Longitudinals- Bottom	3"x .190" Flat Bar	6061 T6
Longitudinals- Deck	2" x .190" Flat Bar	6061 T6
Longitudinals- Topsides	1.5" x 1.25" x .190" Tee	6061 T6
Bottom Plating	.250" Plate	5086 H32
Chine Bar	.375" Plate	5086 H32
Topside Plating	.190" Sheet	5086 H32
Transom	.375" Plate	5086 H32
Working Deck	.190" Sheet	5052 H32
Pilothouse & Trunk	.160" Plate	5052 H32
Cabin Beams	1.5" x 1.0"x .125" Chan.	6061 T6
Fuel Tank	.190" Sheet	5052 H32
Pipe & Tubing	Primarily Schedule 40	6063 T6

Welding- MIG and TIG processes using 5356 filler wire. All underwater seams shall be continuously welded inside and outside. All frames and stiffeners shall be stitch welded both sides.

3.0 FUEL & PROPULSION

3.1 Fuel

Fuel capacity shall total 150 gallons in single aluminum tank constructed and tested as per USCG and ABYC standards. Fuel feed plumbing shall include a twin filter manifold with valves to enable either outboard engine to draw full or zero flow. There shall be a third fuel feed line plumbed to a filter on the fire pump engine. There shall be primer bulbs in each line enabling the priming of all engines. All hoses shall be appropriately sized so that all engines can operate at full rpm without suffering flow restriction., and all hoses shall be USCG approved. The tank shall be fitted with a fuel level sending unit wired to gauge at console.

3.2 Propulsion

Propulsion shall be twin 225 hp, Mercury, counter rotating outboard engines, each with 25" shaft installed on a 24"-30" hull extension. Engines shall be installed with the following related accessories: voltmeters, water pressure gauges, hour meters, fuel, trim gauges and dual binnacle shift and throttle controls. All such accessories shall be Mercury products for use with the specified engines. Engines shall be mounted approximately 40" center to center for maximum maneuverability and control of fire nozzle reaction.

3.3 Steering System

The steering system shall be SeaStar two line hydraulic. Components shall include; Helm Pump, Front Mount Cylinder (one on each engine) and Stainless Steel Tiebar. The helm shall be fitted with a 15" Stainless Steel, destroyer type steering wheel.

3.4 Trim Tabs

Bennet electric/hydraulic w/ gauges.

4.0 SUPERSTRUCTURE

There shall be a small trunk cabin forward of a fully enclosed pilothouse. The trunk cabin shall measure approximately 4' 6" fore and aft and shall extend the full width of the hull. This space shall be arranged to accommodate a short "Vee berth" type arrangement with stowage below the flats and shall accommodate a marine toilet.

The Pilothouse shall measure approximately 7' 6" long and wide. Inside headroom shall be 6' 6" minimum- not including any overhead rails or electronics. The arrangement shall be per the referenced drawing with helm to starboard and a companionway door (leading to the forward cabin) extending to port of the centerline. The windshield shall be western style, three panels.

5.0 AUXILIARY SYSTEMS & EQUIPMENT

5.1 Bilge Pumps

The boat shall be outfitted with two electric bilge pumps of at least 1,500 gph each. Pumps shall be wired to float switches with float assembly enclosed and protected from debris. Manual/Automatic operation shall be controllable from either the main circuit breaker panel or a separate panel near the helm.

5.2 Fire Fighting System

The fire fighting system shall be based on Hale 60-FB pump (bronze) close coupled to a Ford 351 CID gasoline, marine engine. As installed the system shall deliver at least 1,000 gph at 150 psi. The engine shall be furnished with heat exchanger cooling, wet exhaust, vernier throttle control and standard engine gauges and alarms. The control and gauge panel shall be located in the aft/port corner of the cockpit. This panel shall include engine controls & gauges, pump primer control and compound pressure gauge. Pump/Engine Installation shall be in a sound insulated compartment with the pump being under the aft deck and the engine being enclosed in an engine box. Ventilation, fuel and electrical installations shall be in accordance with USCG, ABYC, NMMA and engine manufacturer standards.

The balance of the system shall include the following:

Suction- A welded aluminum fabrication with flush grating, fine strainer, clean-out (accessible from above deck) and 6" plumbing. There shall be a short length of 6" hose and a PVC butterfly valve between the thru hull inlet. There shall be a 12v, non-lubricated primer plumbed to the volute with controls at the pump panel.

Discharge- The pump shall discharge into a 4" main which will supply a 4" storz outlet with removable Elkhart #9713 manifold and a 3" line w/ Akron #7830 ball valve leading to the foredeck monitor. The foredeck monitor shall be an Elkhart #8393 Stingray, Brass. There shall be a short section of 4" discharge hose between the pump and main, in order to isolate pump/engine vibration.

Foam- The aft manifold arrangement shall include a Feecon AP1.5, around the pump system with pickup inlet and metering valve at the pump panel..

De-Watering- The vessel shall be supplied with Zico 2.5" Jet Foot Pump complete with 20' of suction hose and strainer. Additionally there shall be a portable, gas driven dewatering pump. This pump shall be based on a Briggs & Stratton 3 hp engine with 2" pump ports.

5.3 Heat

Espar D3L, 11,000 btu, diesel/electric heater with at least three ducted outlets; two windshield defrost and one pilothouse or forward cabin heat. Heater shall be installed with 5 gallon diesel tank.

5.4 Halon

Fireboy 100 M/A with manual override.

5.5 Head

Theford porta potti.

6.0 ELECTRICAL SYSTEM

6.1 Battery System

The vessel shall be outfitted with two batteries each of which shall have at least 275 minute reserve capacity. The system shall include four, four position battery switches- one each for port engine, starboard engine, pump engine and accessory panel. There shall be two positive leads to the accessory panel, each with a 100 amp breaker, one from the accessory battery switch and the other directly from battery #1.

6.2 Accessory System

The vessel shall be outfitted with a 32 position circuit breaker panel which will provide for individually protected circuits for the following:

Aux. (4)	Radar	Flood Lts- Aft
Horn	Loran/GPS	Port
Strobe	Depth	Stbd
Siren	Nav. Lts. - Run	Cockpit Lights
Search Light (s)	Anchor	Cabin Lights
Search Light (p)	Heat	Spot Lights
VHF Radio	Fans	Wipers- Port
Fire Radio (1)	Blower	Stbd
Fire Radio (2)	Bilge Pump- Fwd	Trim
Chart Unit	Bilge Pump- Aft	Trim Tabs

6.3 Accessories

Vessel shall be outfitted with the following electrical accessories.

Blower:	Jabsco 3"
Cabin Lights:	(3) Guest Red/White Dome Lights
Chart System:	Raytheon 600XX Chart Link System
Compass:	Ritchie Navigator FN201 w/ Light
Courtesy Lights:	(4) Aqua Signal
Deck Lights:	(4) 3" x 5" Halogen- 2 aft, 1 each port & stbd
Depth Finder:	Raytheon V-850 Color Video
Horn:	AFI deluxe, dual trumpet, stainless steel
Loran & GPS:	Raytheon RayNav 298 w/ Raystar 108 GPS & Raystar 508A Loran
Radar:	Raytheon R40XX
Radios:	Motorola Triton II VHF (2) Motorola Maxtrac
Navigation Lights:	Port; Starboard; Pole/Anchor

- Search Lights: (2) 225,000 cp, manual remote, Vetus Z7012
 Siren: Federal PA 300 w/ Federal CP100s Speaker
 Spot Lights: (2) Handheld, Guest Great White #234, 300,000 cp, w/
 two remote outlets installed.
 Strobes: (2) Federal 131 DST
 Windshield Wipers: (2) AFI, self parking, Pantographic Arms w/ washers

6.4 AC Electrical

120v AC system shall consist of one 30 amp shore power inlet, galvanic isolator, Professional Mariner 20 amp, 3 bank battery charger.

7.1 OUTFITTING EQUIPMENT & HARDWARE

The vessel shall be outfitted with the following:

- Safety Rails: - Bow Rail. Fabricated with 1" (1.25" OD) Schedule 40 Aluminum pipe.
 - Interior Rails. Pilothouse shall be fitted with overhead and side hand rails.
 - Exterior Rails, Pilothouse. Pilothouse sides at roof shall be fitted with handrails extending at least 7' each side. Aft bulkhead shall be fitted with vertical rails each side.
- Hull & Deck Equip.: - Aluminum Cleats. (3, 12": 4, 8")
 - Bow Eye. Alum. Fabrication welded to Stem.
 - Cockpit Rails. Aft quarters shall have handrails at side/transom deck.
 - Engine Guard Rail. Engines shall be protected by a 3" aluminum pipe fabrication braced to transom and transom platform.
 - Lashing Rails.
 - Mast. Heavy Duty, hinged for strobe, radar, etc.
 - Sheerline Rub Rail. 3" Rubber "D" running full length each side and thru bolted on approximately 10" ctrs.
 - Rubbing Strake starboard side, 12'. Material and installation as per Sheerline Rub Rail.
- Rescue: - Dive Door. Vessel Topsides shall include a 36" dive door. Door shall hinge downward to form integral boarding ladder. Door shall have exterior aluminum rails each side extending from cockpit sole to side decks and extending fore and aft approximately 4'.
 - Tow Post. 3" aluminum pipe fabrication with integral protection screen and manual take-up reel.

- Stowage & Access:
- Six & Ten inch deck plates. Deck plates shall be secured by dog handle. Appropriate sized plates shall be provided at all areas requiring access to include: Fuel tank fittings, Bilge Pumps and fittings, Wiring and plumbing connections.
 - Anchor Locker. Collision bulkhead shall have a 10" x 20" watertight hatch for access to anchor locker from forward cabin. Locker shall be fit with chain deck pipe leading to foredeck. Foredeck shall be fit with anchor chocks.
 - Tank Racks. Aft quarters shall provide for dive bottle stowage above deck. 4 tanks per side.
 - (2) Freeman 1524 hinged watertight deck hatches. Welded to deck. Hatches shall be located in cockpit sole for stowage access to largest available compartments.

7.2 PILOTHOUSE & CABIN JOINER WORK

Pilothouse outfitting shall include the following:

- Windows:
- One set of Windows to include two forward (fixed), three aft (one fixed in door, two drop down) and four side (one fixed, one horizontal slider, each side). All windows shall be aluminum framed, clamp ring design with 1/4" safety glass.
- Roof Vents/Hatches:
- (2) Bomar #1070-10A
 - (1) Bomar #1039-10A
- Seating:
- Helm Seat
 - Bench Seat, full length, port side w/ cushion & stowage under
- Dash:
- Custom dash arrangement to accommodate engine gauges and controls, breaker panels and electronic accessories. Dash shall be located to starboard and shall include stowage compartment/wiring access below helm.
- Doors:
- Pilothouse Door (hinged) with lock set and window.
 - Companionway Door (hinged) with knob set and eyes for securing door open/closed.

Cuddy Cabin: - Cuddy joiner work will consist of "bunks" to port and starboard. Construction shall be aluminum framework, painted plywood tops and cushions.

8.0 PAINT & FINISH

	<u>Primer</u>	<u>Top Coat</u>
Bottom:	Ameron	Ameron 635 (tin based, antifoulant)
Topsides & Interior:	Ameron 385 epoxy	Ameron 450 HS polyurethane
Decks:	NA	Ameron 400 epoxy w/ non-skid

9.0 FINAL OUTFITTING & SEA TRIALS

The boat shall be provided with the following accessories:

Anti-Exposure Suits- (6) Mustang MS-2175 work suits
Epirb- ACR RLB-20, class B
Propellers- (2 spare) stainless steel, one right hand, one left hand
Rescue Platform- Switlik MRP10S- Rescue
Rescue Sled- Switlik SRS MKIII, inflatable
Trailer- Nor'Easter triple axle, RTR-30-12000#, galvanized with brakes on four wheels, Powerwinch #912, 12v winch, caster jack, spare tire and rim.

Commissioning/Safety Package

Air Horn- Falcon Commander 3 w/ bracket, Handheld
Anchor Chain- 1/4" x 4', vinyl coated
Anchor Rope- 200' x 5/8", Caprolan 2000, Nylon Twist
Anchor- Danforth, Rule Deepset Standard- D1150
Bell- 8"
Boat Hook w/ holder
Fenders- (4) Taylor, inflatable, 8" x 27"
Fire Extinguisher- Badger 20#, BII
Flare Kit- Olin Alert/Locate, 12 gauge
Mooring Lines (6) 3/8" x 25' double braid nylon
PFDs- (6) Type I, Safeguard Commercial
Throw Ring- Type 4, 24" with bracket
Whistle

The boat will be provided with manuals a spare parts list per the bid specification.

The vessel will be provided with half fuel and personnel for sea trials at Rowley, MA. Delivery is FOB Milford, CT.