

## ***Response Marine, Inc.***

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## **Specifications: *RESPONSE FR-7.4***

### **1.0 GENERAL**

Built for: Verplanck Fire Department

Built by: Winninghoff Boats, Inc.

Delivery: March, 1991

Hull Type: Modified Vee (50 deg. deadrise fwd., 12 aft)  
Hull Length Overall: 24' 8"  
Beam Overall: 8' 6"  
Draft (hull): 1' 3"  
Freeboard Fwd.: 4' 0"  
Norm. Oper. Displ.: 4,900 lbs.  
Power: Diesel Inboard, Hamilton Jet

Design and outfitting were developed in cooperation with members of the Verplanck Fire Department. The original bid specification was for single outboard propulsion and a stand alone fire pump system. The subsequent revisions yielded a much more versatile fire/rescue boat. The boat has remarkably shallow draft, and it has a powerful fire system which has been put to the test.

The most unusual features of this boat are the fire pump/propulsion engine combination and the twin console mounted monitors.

The hull is a version of the successful Winninghoff 7.4m Cape Ann Sea Skiff.

## **2.0 CONSTRUCTION**

The boat shall be of all welded aluminum construction featuring both trans-verse and longitudinal framing. There shall be a watertight bulkhead between the stem and the cabin/cockpit. The fuel tank bay bulkheads shall be watertight below the waterline. Other frames may be frames or bulkheads. Scantlings shall be as per the following table:

<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	.160" plate	5086 H32
Bulkhead Stiffeners	1.5" x 1.25" x .190" Tee	6061 T6
Longitudinals- Bot. & Deck	1.5" x 1.5" x .25" Tee	6061 T6
Longitudinals- Topsides	1.5" x 1.50" x .190" Agl.	6061 T6
Bottom Plating	.190" Plate	5086 H32
Chine Bar	.250" Plate	5086 H32
Topside Plating	.160" Plate	5086 H32
Transom	.250" Plate	5086 H32
Working Deck	.190" Plate	5052 H32
Side Decks	.160" Plate	5086 H32
Console	.190" Plate	5052 H32
Fuel Tank	.160" Plate	5052 H32
Pipe & Tubing	Primarily Schedule 40	6063 T6

Note: Beds, knees and other heavy duty reinforcements shall be provided in areas of high stress such as engines and fire system plumbing.

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 80 gallons in twin 40 gallons saddle tanks constructed and tested as per USCG and ABYC standards. Tanks shall be mounted above cockpit sole and under side decks. Fuel level sending units shall be wired to gauges at console.

Fuel feed plumbing shall include a filter manifold with valves to enable the engine to draw full or zero flow from each tank. All hoses shall be appropriately sized and USCG approved.

### **3.2 PROPULSION**

Propulsion shall be Hamilton Jet Drive #211 driven by a Volvo TAMD 41B (200 hp, diesel). Engine shall be fitted with Borg Warner direct drive transmission for back flushing of Jet. Engine gauges shall include standard Volvo panel. Jet and Throttle Controls shall be teleflex cable and Hamilton Jet controls.

Jet Installation shall include the plumbing of an air clutch to enable depowering the jet. Air Clutch shall be partially integrated into the fire pump priming system but shall have separate pull cable controlling valve to atmosphere. Pull cable shall have locking Tee handle and be clearly marked and appropriately located to afford ease of use by the helmsman.

### **3.3 STEERING SYSTEM**

The steering system shall be teleflex cable as per Hamilton Jet specifications with a 15" stainless steel wheel.

### **4.0 SUPERSTRUCTURE**

There shall be a center console located approximately six feet aft of the collision bulkhead. Center Console shall be of all welded aluminum construction with integral handrails on all sides. Features shall include lockable electronics compartment. Console shall be designed to house fire pump and discharge assembly.

### **5.0 AUXILIARY SYSTEMS & EQUIPMENT**

#### **5.1 BILGE PUMPS**

The boat shall be outfitted with two electric bilge pumps of at least 1,000 gph. Pumps shall be wired to float switches with float assembly enclosed and protected from debris. Manual/Automatic operation shall be controllable from main circuit breaker panel. Forward pumps shall be located at after portion of forward bilge, and aft pump shall be located just forward of the transom. The watertight bulkheads shall be fitted with drain plugs in order to enable draining to appropriate bilge pump.

#### **5.2 FIRE FIGHTING SYSTEM**

Pump: Fire Pump shall be American Godiva CSD 750,(Bronze) and shall be driven by shaft off the front of the main engine. Gear shift assembly shall be installed to afford simple and clear operation by Helmsman at normal Helm position. Pump shall discharge at least 750 gpm at 150 psi as installed. Pump assembly shall include 6" suction with strainer, 4" discharge feeding monitors and 2.5" discharge feeding pre-connects.

- Priming: Fire Pump shall be primed by suction line between volute and the suction side of the Jet Drive. This line shall have an Akron "Swing Out" ball valve to control priming. Valve shall be clearly labeled and operable from normal Helm position.
- Discharge: Discharge Assembly shall include two console-mounted Elkhart Stingray #8393 Monitors and two 2.5" outlets at the forward side of the console.

Monitors shall be fed by 3" aluminum piping with Akron "Swing Out" Ball Valves. Valves shall be located inside console and handle plates shall be clearly labeled. Valves shall be operated at side of console.

2.5" outlets shall be fed by 2.5" brass piping and shall have Akron "Swing Out" Ball Valves. Valves shall be located inside console with outlet flanges fastened to console and facing forward. Handle plates shall be clearly labeled, and valves shall be operated at front of console. Both the 3" and 2.5" lines shall be isolated from the pump by short sections of appropriate sized discharge hose.

## **6.0 ELECTRICAL SYSTEM**

### **6.1 BATTERY SYSTEM**

The vessel shall be outfitted with two batteries each of which shall be Group 27 Marine Type batteries. There shall be a four position Battery Selector Switch to control flow of current to and from the fire pump and outboard engines and to the accessory system.

### **6.2 ACCESSORY SYSTEM**

The vessel shall be outfitted with a 17 position circuit breaker panel which will provide for individually protected and labeled circuits for the circuits listed below. Wiring and installation shall be such that an individual breaker can be replaced without interruption of any other circuits. All breakers shall be fed independently from the hot buss which is controlled by the battery switch. The sole exception is the bilge pumps circuit breakers which are wired directly to Battery 1 or 2 in order to enable operation with the battery switch in the "Off" position.

<u>Emergency</u>	- Strobe	<u>Navigation</u>	- Depth
	- Siren		- Radar
	- Aux.		- Loran
<u>Radios</u>	- VHF		- Aux.
	- Fire	<u>Lights</u>	- Deck
	- Aux.		- Spot
<u>Bilge Pumps</u>	- Fwd. (Man/Auto)		- Dock
	- Aft. (Man/Auto)		- Dash

- Nav. (Run/Anchor)

### **6.3 ACCESSORIES**

Vessel shall be outfitted with the following electrical accessories.

- Docking Lights: Collins, Par 46, 100 watt, Custom
- Strobe Lights: (2) Blue; Federal 131DST, LP
- Siren: Federal PA300 w/ CP00s Speaker
- Depth , Speed, Temp: Datamarine DART 2490
- Compass: Ritchie SS1000 w/ light
- Radar: Raytheon R20 w/ Radome Antenna
- Navigation Lights: Port; Starboard; Pole/Anchor
- Spot Lights (1) Rayline 8", 425,000 CP
- (1) Guest Handheld w/plug & outlet
- VHF Radio: Icom M56 w/ antenna & ratchet mount.

### **7.1 OUTFITTING EQUIPMENT & HARDWARE**

The vessel shall be outfitted with the following:

- Safety Rails: - Pilot Rail. Mounted at Bow, extending at least 23" off side decks. Shall provide at least 16" of deck width outside of rail. Shall be positioned so that one person can stand on foredeck inside of rail. Fabricated with 1" Schedule 40 Aluminum pipe and welded to deck.
- Safety Rails (cont.): - Hand Rails. There shall be handrails on all sides of the Center Console. Rails shall be at least .75" sch. 40 aluminum pipe, welded to console.
- Hull & Deck Equip.: - Leaning Post. Leaning post shall be welded aluminum and shall be integral with Signal Arch.
- Signal Arch, Hinged. Arch shall provide at least 26 linear inches of top mounting surface. Top of arch shall be at least 6'8" above cockpit sole. Construction shall be all welded aluminum.
- 8" Aluminum Cleats. (6) Welded to deck.
- Bow Eye Aluminum Fabrication welded to Stem.
- Transom Platform. The transom shall be fitted platform extending nearly the full width of the transom. Platform shall serve as a guard for the jet drive and shall be fitted with a fold down ladder. Platform structure shall be at least 1.5' sch. 40 Aluminum pipe welded to transom. Surface shall be aluminum plate with non-skid finish.

- Sheerline Rub Rail. PVC running full length each side and thru bolted on approximately 8" ctrs.
- Rubbing Strake. Topsides shall have a 10' rubbing strake each side, approximately 12" above the waterline. Material and installation is as per Sheerline Rub Rail.
- Rubber Scupper Flaps. Fitted at transom port & starboard for self bailing cockpit.
- Radar Arch, Hinged. Vessel shall be fit with a radar arch extending full width between the side panels just aft of helm. Arch shall be at least 6'6" above deck and shall provide at least 26" of top mounting surface. Arch shall be primarily 1.5" sch. 40 aluminum pipe.

Rescue: - Tow Post. Constructed of welded aluminum pipe and designed to withstand bollard pull of the specified engines. Tow post is integral to the Leaning Post/Signal Arch structure.

Stowage & Access: - Anchor Locker. Forward collision bulkhead shall form an anchor locker with a 10" x 20" hatch.

Stow & Acc (cont.): - Below Deck. Forward of the center console the cockpit sole shall be fitted with a Freeman 1524 watertight stowage hatch, welded to deck.

- 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.
- Dive Tank Rack. Forward cockpit deck shall be fitted with three bottle Tank Rack. Rack shall be fit to permit stowage of tanks under side decks, forward of console.
- Litter Stowage. Boat shall be outfitted with stokes litter and litter stowage rack. Litter shall stow under forward side decks on port side.

## **7.2 CENTER CONSOLE JOINER WORK**

Console outfitting shall include the following:

- Electronics Cabinet: - Console shall feature lockable electronics cabinet complete with sliding polycarbonate doors.
- Dash: - Custom dash arrangement to accommodate engine gauges and controls, breaker panels and electronic accessories.

## **8.0 PAINT & FINISH**

All exterior topsides surfaces shall be painted with International Interthane paint systems (two part polyurethane). The decks shall have a non-skid finish, and the bottom shall be painted with an EPA approved, aluminum compatible anti-fouling paint. Colors and lettering shall be to suit customer specifications.

## **9.0 FINAL OUTFITTING & SEA TRIALS**

The boat will be provided with the following:

- "Coast Guard" Package to include:
  - (6) F110 Life Jackets
  - (2) 10BC Fire Extinguishers
  - Olin Alerter Flare Kit
  - Boat Hook
  - 30" Ring Buoy w/ 60' Nylon Rope
  - (4) 8"x 20" Fenders
  - 13# Danforth Anchor w/ 150' of 3/8" Line
  - (6) 1/2"x 25' Dock Lines

The boat will be provided with one copy of manufacturer and component manufacturer manuals.

**The vessel will be provided with half fuel and personnel for sea trials at Rowley, MA. and then delivered to Verplanck for acceptance trials. Inspection trips and participation in factory sea trials is encouraged.**