**Response Marine, Inc.**

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# Specifications: *RESPONSE FR-7.9*

## 1.0 GENERAL

Built for: Skaneateles Fire Department

Built by: Winninghoff Boats, Inc.

Delivery: December, 1990

| | |
|---|---|
| Hull Type: | Modified Vee |
| Hull Length Overall: | 25' 10" |
| Beam Overall: | 8' 6" |
| Draft (hull): | 1' 4" |
| Freeboard Fwd.: | 4' 0" |
| Norm. Oper. Displ.: | 5200 lbs. |
| Power: | Twin Outboard; Evinrude 140 HP; Counter Rotating |

Reference Design: Winninghoff 7.4m Cape Ann Sea Skiff- Stretched

Design and outfitting were developed in conjunction with the Skaneateles Fire Department in the Fall of 1990. The mission was to provide a special purpose boat for rescue and fire fighting service on Lake Skaneateles. Reliable service in adverse conditions including skim ice was a priority.

## 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 bet-ween the stem and the cabin/cockpit and another in the area of the fuel tanks.  Scantlings shall be as per the following table:

| Item | Dimension | Alloy |
|---|---|---|
| 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 |
| Lonitudinals- Topsides | 1.5" x 1.25" x ..190" Tee | 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 | .160" Plate | 5052 H32 |
| Pilothouse & Trunk | .160" Plate | 5052 H32 |
| Cabin Beams | 1.5" x 1.25"x .125" Chan. | 6061 T6 |
| Fuel Tank | .160" Plate | 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 120 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 engine to draw full or zero flow. There shall be an additional fuel feed line plumbed to the fire pump.  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 140 hp, OMC, counter rotating outboard engines. Engines shall be installed with the following related accessories: voltmeters, water temperature gauges, hour meters, fuel, trim gauges and dual binnacle shift and throttle controls.  All such accessories shall be OMC products for use with the specified engines.  Engines shall be mounted at least 36" 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 and Stainless Steel Tiebar.  The helm shall be fitted with a 15" Stainless Steel, destroyer type steering wheel.

## 4.0 SUPERSTRUCTURE
There shall be a small trunk cabin with a fully enclosed pilothouse.  The helm console shall be on the starboard side. The front windshield shall have three aluminum framed windows with the outboard windows fixed and the middle sliding vertically.  Side windows shall be aluminum framed and shall slide horizontally.  Aft windows shall be fixed with aluminum frames.  Pilothouse shall be accessed by a hinged door.

Pilothouse outfitting shall include, Pilot's Seat, space for four crew to fit comfortably and lockable Pilothouse and Companionway doors.

## 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 control-able 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.

## 5.2 FIRE FIGHTING SYSTEM
The fire pump shall be a Hale XL-2000 permanently installed with electrical and fuel supply being part of the boat's main systems.  The pump shall be installed at the Pilothouse bulkhead, to port of the Pilothouse door, facing aft.  Pump installation shall include the plumbing of engine exhaust, primer exhaust, thermal relief valve and muffler drain overboard.  Such plumbing shall include necessary check valves to prevent contamination of any of these systems.

Suction plumbing shall be a 4" schedule 40 aluminum pipe fabrication .  Thru hull shall be welded flush and include a flat bar grating.  Above deck, the suction shall include a 4" Butterfly Valve and a clean out Tee providing access to the pump mounted suction screen.  All or portions of this above deck plumbing shall be PVC in order to isolate pump vibration.

Discharge plumbing shall include a pump mounted 3" Ball Valve and a 3" main providing flow to a 3" NST fitting mounted at Transom centerline, facing forward. Discharge plumbing shall be run under Port side decks. The 3" main shall be fabricated with 3" schedule 40 aluminum pipe. There shall be a section of double jacket discharge hose between the fire pump and the main in order to isolate pump vibration.

The fire pump shall discharge in excess of 500 gpm at 100 psi as installed and shall prime via the 12 volt primer within thirty seconds.

## 6.0 ELECTRICAL SYSTEM

### 6.1 BATTERY SYSTEM

The vessel shall be outfitted with two batteries each of which shall be at least 85 Amp-Hour 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 circuits for the following: Strobe, Siren, VHF Radio, Fire Radio, Radar, Loran, Depth Finder, Deck Lights, Spot Lights, Instrument Lights, Navigation Lights, Bilge pump- Fwd., Bilge Pump- Aft, and six (6) Auxiliary. The circuit panel shall be fed from the battery switch, with the sole exception that the bilge pump breakers are wired directly to Battery 1 or Battery 2 in order to provide for operation with the battery switch in the "Off" position.

An additional two breaker panel shall be dash mounted for the windshield wipers.

### 6.3 ACCESSORIES

Vessel shall be outfitted with the following electrical accessories.

| | |
|---:|---|
| Cabin Lights: | (3) Guest Red/White Dome Lights |
| Deck Lights: | (2) 3' x 5" Halogen |
| Compass: | Ritchie SS1000 w/ Light |
| Depth Finder: | Hummingbird HDR 4001 w/ Transom Transducer |
| Navigation Lights: | Port; Starboard; Pole/Anchor |
| Spot Light: | Rayline 5" Electric Remote |
| VHF Radio: | Standard Titan+ w/ Antenna & Ratchet mount |
| Windshield Wipers: | (2) AFI, self parking, Pantographic Arms |

Other accessories to be customer furnished and installed include; Light Bar, Hailer and Fire Radio.

## 7.1 OUTFITTING EQUIPMENT & HARDWARE

The vessel shall be outfitted with the following:

Safety Rails:
- Bow Rail. Fabricated with 1" Schedule 40 Aluminum pipe. Welded to deck at sheer. Bow Rail shall extend approximately 30" above deck and shall run from after edge of pilothouse to stem.
- Interior Rails. Pilothouse shall be fitted with overhead and side hand rails.
- Exterior Rails. Pilothouse Roof shall be fitted with handrails extending at least 4' each side. Aft bulkhead shall be fitted with vertical rails each side extending from roof to side deck.

Hull & Deck Equip.:
- 8" Aluminum Cleats. (4) Welded to deck.
- Mooring Bit on Foredeck. 4" Diameter with pin.
- Bow Eye. Alum. Fabrication welded to Stem.
- Sheerline Rub Rail. PVC running full length each side and thru bolted on approximately 8" ctrs.
- Rubbing Strakes running at least 12' each side approximately 12" above waterline. Material and installation as per Sheerline Rub Rail.
- Rubber Scupper Flaps. Fitted at transom port & starboard for self bailing cockpit.

Rescue:
- Dive Door. Vessel Topsides shall include a 36" dive door on the starboard side. 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 a total of 8'. Fore and aft portion of rails shall be approximaelty 6" above the water-line.
- Tow Post. 4" Diameter Aluminum fabrication mounted at aft transom deck and suitably braced to hull structure.

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.

- <u>(2) Freeman 1524 hinged watertight deck hatches.</u> Welded to deck. Hatches shall be located in aft cockpit sole for stowage access to largest available compartments.

## <u>7.2 PILOTHOUSE & CABIN JOINER WORK</u>

Pilothouse outfitting shall include the following:

Windows: - One set of Windows to include three forward (two fixed, one sliding vertically), three aft fixed panels, and one each port and starboard horizontal sliders. All windows shall be aluminum framed, clamp ring design with .25" safety glass.

Seating: - Pilot Seat with stowage pedestal. Seat shall adjust fore and aft.

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 eyes for securing door open/closed.

- Companionway Door (hinged) with knob set and eyes for securing door open/closed.

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

## <u>8.0 PAINT & FINISH</u>

All topside and cabin surfaces exposed to weather shall be painted with International Interthane paint systems (two part polyurethane). In addition, all deck surfaces shall have a non-skid finish, and the bottom shall be painted with an Imron paint system. Colors and lettering shall be to suit customer specifications.

## 9.0 FINAL OUTFITTING & SEA TRIALS

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

The boat will be provided with the following trailer:

E Z Loader, Painted, Roller, Dual Axle, Surge Brakes.

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