

## **Response Marine, Inc.**

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### **Specifications: RESPONSE FR-6.7**

#### **1.0 GENERAL**

Built for: Antioch Fire Department

Built by: Winninghoff Boats, Inc.

Delivery: March, 1992

Hull Type: Modified Vee (50 deg. deadrise fwd., 12 aft)  
Hull Length Overall: 22' 0"  
Beam Overall: 8' 0"  
Draft (hull): 1' 3"  
Freeboard Fwd.: 3' 6"  
Norm. Oper. Displ.: 3,500 lbs.  
Power: Twin Outboard; Mercury 115 HP

Reference Drawing: Winninghoff #900D

The mission was to provide a special purpose boat for rescue and fire fighting service on the chain of lakes area in Antioch, IL and occasionally on Lake Michigan. Past experience with pontoon boats and fiberglass boats, led to this welded aluminum specification.

The hull is a stretched version of the successful Winninghoff 6.2m Cape Ann Sea Skiff. The outboards are mounted on the transom as opposed to a hull extension which has been our normal procedure.

## **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 40 gallons in single aluminum tank constructed and tested as per USCG and ABYC standards. Tank shall be installed in watertight compartment and shall be located at the vessel's normal operating LCG.

Fuel feed plumbing shall include a twin filter manifold with valves to enable each engine to draw full or zero flow. 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**

The vessel shall be outfitted with twin 115 hp, 25" shaft, Mercury outboards. Outboards shall be mounded on 27" centers in a transom splashwell. Outboard accessories shall include the following:

- (2) Aluminum Propellers
- (1) Speedometer
- (2) Tachometers
- (2) Water Temperature gauges
- (2) Trim gauges
- (2) Battery meters
- (2) Hour meters
- (1) Fuel gauge
- (1) Dual Binnacle Control w/ Trim Switches
- (1) Dual Engine Key Switch
- (1) Lanyard Stop Switch

Engine wiring, controls and plumbing shall be routed from the starboard side of the splashwell to the engines in three 2" Commercial gray hoses. Hoses shall attach to welded aluminum grommets at the transom.

### **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 center console located approximately seven feet aft of the collision bulkhead. Center Console shall be of all welded aluminum construction with integral handrails on all sides. Features shall include windshield, electronics compartment and at least one weather tight stowage compartment.

### **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. The watertight bulkheads shall be fitted with drain plugs in order to enable draining to appropriate bilge pump.

## **5.2 FIRE FIGHTING SYSTEM**

The fire fighting system shall consist of a portable fire pump which will not normally be kept on the boat. There shall be a 3" thru hull just forward of the center console. It shall be furnished with NSTM threads and a cap. The thru hull shall be 3" sch. 40 aluminum pipe welded to hull with flush grating. The top of the thru hull shall be just below deck., accessed by a 10" deck plate.

## **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 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 pump 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.

Courtesy Lights:	(4) Red, flush mount
Docking Lights:	Morse; 100 watt
Strobe Lights:	CFE
Navigation Lights:	Port; Starboard; Pole/Anchor
Siren:	CFE
Depth Finder:	Hummingbird Dimension 3, transom transducer

VHF Radio: CFE

## **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 sheerline. Rail shall extend approximately 18" above deck from the bow, seven feet aft. Rail shall be port and starboard with an 18" opening at the bow centerline.
  - 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, (2) Transom Eyes, Aluminum Fabrication welded to hull.
  - Engine Guard Rail. The transom shall be fitted with a guard rail extending aft of engines and suitably braced for impact. Rail shall be at least 1.5' sch 40 Aluminum pipe welded in place.
  - Tow Rope Fairing Bar. Between the tow post and engines there shall be a fairing bar with end pins to keep tow rope clear of engine cowlings.
  - Sheerline Rub Rail. PVC running full length each side and thru bolted on approximately 8" ctrs.
- Hull & Dk. Eq. -cont.
- 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: - Dive Door. Vessel Topsides shall include a 36" dive door on the starboard side. Door shall hinge downward to form integral boarding ladder. Dive Door shall be located to starboard, aft of tow post assembly.
- Rescue Rails. Dive Door and starboard side shall be fitted with 10' rescue rails running fore & aft approximately 6" above the waterline. Rails shall be 1" sch. 40 aluminum pipe welded to hull.
  - 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.
- Below Deck. Forward of the center console the cockpit sole shall be fitted with a Freeman 1524 watertight stowage hatch, welded to deck.
  - Console Stowage. Center Console shall be fitted with two 10" x 24" weathertight hatches accessing stowage and wiring within,
  - Transom Stowage. Transom shall be fit with two 10" x 20" weathertight hatches on the port and starboard, sides of the splashwell. Port hatch shall access batteries and battery switch. Starboard hatch shall access wire and cable runs and miscellaneous stowage.

- Stow & 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.
- (cont.)

## **7.2 CENTER CONSOLE JOINER WORK**

Console outfitting shall include the following:

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

Windshield: - There shall be a .25" Lexan Windshield molded to fit console and thru bolted with rubber washers.

### **8.0 PAINT & FINISH**

All exterior topsides surfaces shall be painted with International Interthane paint systems (two part polyurethane). The side decks shall have a non-skid finish and the cockpit sole shall be covered with a diamond tread matting. Colors and lettering shall be to suit customer specifications.

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

The boat will be provided with the following:

Trailer:

E Z Loader,3,400#, painted, Roller, Dual Axle, Surge Brakes.

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 Antioch, IL. Inspection trips and participation in factory sea trials is encouraged.**