BUILD LOG FOR THE SEATTLE FIREBOAT

After finishing an RC model of the LA Fireboat I began looking for another project and thought, why not the Seattle Fireboat, Leschi, close to home? I contacted Jensen Marine Consultants for the plans which they e-mailed to me in a PDF file. The length I chose was 40 inches, so I had Kinko copy and make the necessary scale adjustments to obtain full size plans from which actual measurements could be taken, which really facilitated scratch building the model. A great benefit in scratch building a model is to have actual photos of the full size boat. I had the great fortune of being escorted through the fireboat by the skipper who was very helpful, showing me many details and answering my questions. Since I decided to RC this model and run it in water, I elected to make the hull out of fiberglass and the superstructure out of styrene. To obtain a fiberglass hull a plug had to be made before a mold could be crafted. The plug was made by employing 1/8 inch door skin and planks of Alaska cedar. Bulkhead and keel patterns were copied, cut out and pasted to the door skin. In order to keep the bulkheads relative to one another a line was drawn above the bulkhead patterns, then cut out with a band saw and jig saw and glued to a building board at the designated stations taking care to match them to the center line of the building board. See Photos 1, 2, 3, and 4.

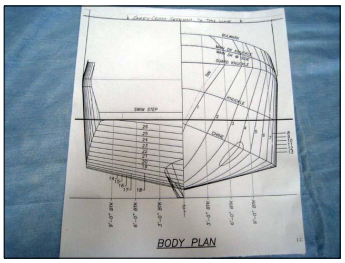

Photo 1

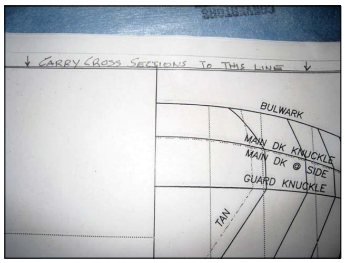

Photo 2

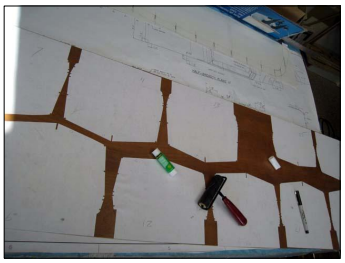

Photo 3

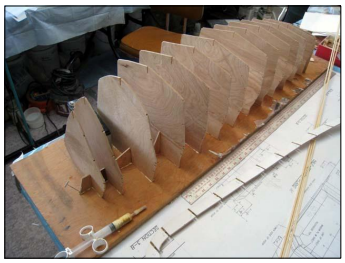

Photo 4

The keel was placed and stringers wired and glued into place. Balsa blocks were employed in the bow to prevent bending the planks too sharply and risking splitting the planks. See Photos 5, 6, 7, 8 and 9. The planking was rough sawn into 3/16 x 5/8 inches x 5 feet lengths. The Alaska cedar was rescued from an old fence which was removed. A Byrneôs saw was used to get the planks down to 1/8 x ½ inches and then run through a thickness sander to obtain uniformity. See Photo 10. The planks were shaped or spiled with use of stealers, nailed or wired and glued into place with Tightbond 3 glue. The nails were removed and the hull removed from the building board. See photos 11, 12, 13, 14, and 15. A transom piece was placed at the end of the transom step and thinner planks attached, leaving a depressed area which marked the area to be removed later. See photos 16, 17, and 18.

Photo 5

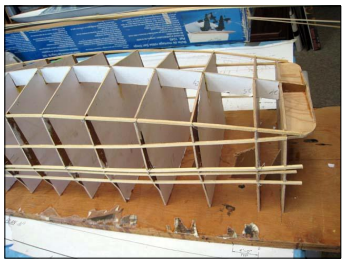

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

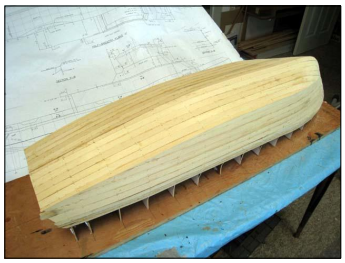

Photo 12


Photo 13


Photo 14


Photo 15

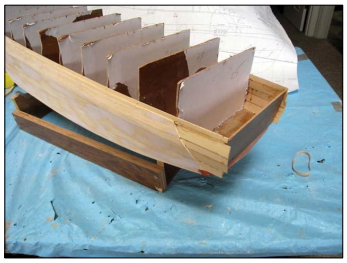
Photo 16

Next, the areas above the sheer on the cross sections were removed and a piece of 1/8 inch door skin attached. See photos 17 and 18. The rear keel and thruster assembly was fabricated and glued into place. See photo 19. Once the hull was sanded, primed and painted (see photos 20, 21, 22, and 23) it was placed in a jig so only half the hull was visible in order to make a two part mold. To insure a tight fit, modeling clay was applied along the perimeter of the hull at the junction of the hull and jig. See photo 24. The half hull and jig were waxed, sprayed with PVA (polyvinyl alcohol parting agent) , gel coated and fiberglassed. The half mold was removed from the jig and a similar process carried out for the other half. Stiffeners were glassed in and bolts with wing nuts installed to keep the mold straight and add stability. See photo 25. The finished mold can be seen in photo 26.


Photo 17


Photo 18


Photo 19


Photo 20


Photo 21


Photo 22


Photo 23


Photo 24


Photo 25


Photo 26

Once the mold was made it was waxed and sprayed with PVA and several layers of fiberglass applied. Areas where the rudders and shafts pierce the hull were strengthened with several more layers of fiberglass. When lifted from the mold the areas previously marked for removal were cut with a diamond Dremel blade and removed. See photos 27 and 28. Deck beams and supports were attached with Bondo and screws and a transom step of styrene secured. See photos 29, 30 and31. Shafts of 3/16 inch stainless steel were produced and placed into brass shaft logs into which Dumas bearings were secured at either end. Struts and rudders were made of brass employing a mini torch, flux and silver solder taking care to heat sink already soldered parts. See photos 32, 33, 34 and 35. The shaft logs were secured with a mixture of polyester resin and fiberglass reinforced Bondo. See photo 36 . Motor mounts were made of brass and soldered to the shaft logs. Belt drives were installed and a rear motor mount was placed to prevent wobbling of the motor. See photos 37 and 38.

Photo 27

Photo 28

Photo 29

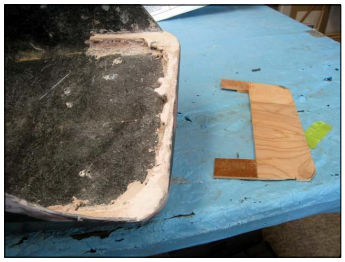

Photo 30

Photo 31

Photo 32

Photo 33

Photo 34

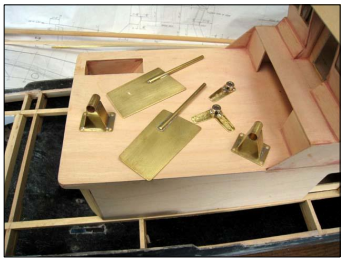

Photo 35

Photo 36

Photo 37

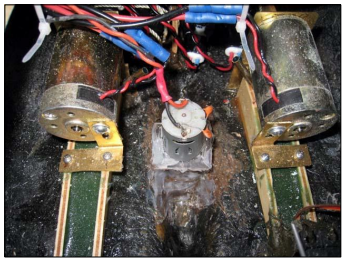

Photo 38

A water chest of styrene was constructed amidships to provide sufficient capacity for the four water pumps which were installed to operate the fire monitors. Two ¾ inch holes were drilled on either sided of the keel and covered with screens to prevent particulate matter from entering the chamber. See photos 39 and 40. The outlets to the pumps were made from drip irrigation connectors. See photo 41. The four windshield washer motors were connected to snap connectors which were then secured to plexiglass pieces located at deck level. See photo 42 and 43. Power for the motors and an MCD switch 16 is supplied by a 12 volt 7 amp/hr gel cell battery and power for the bow thruster and radio receiver is supplied by a 6 volt 3 amp/hr gel cell battery. The thrusters are connected to reversing switches operated by the key pad of the switch 16. The water pumps are connected to 12 volt 30 amp automotive relays which are likewise controlled by the switch 16 key pad. The key pad also controls the house lights by way of a 9 pin connector between the house and deck.

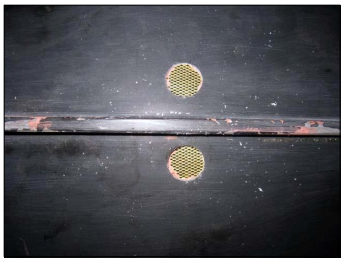

Photo 39

Photo 40

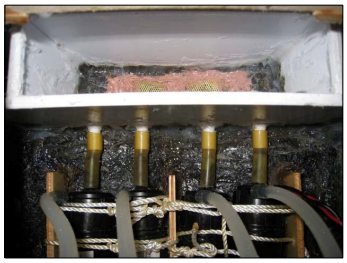

Photo 41

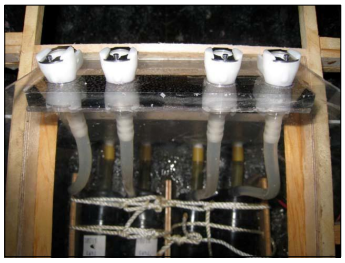

Photo 42

Photo 43

The rear thruster was fabricated from PVC pipe, plexiglass, a brass connector between the motor shaft and rotary paddle shaft and fiberglass reinforced Bondo. See photo 44. However, it appears to let water in around the shaft but only an insignificant amount depending on how much it is used.

Photo 44

The decks were made of 1.5 mm styrene and secured to the deck supports with 2-0 ¼ inch stainless steel screws. See photos 45, 46, 47, 48, 49, 50, 51, 52, and 53. The rear ramp deck was made water tight with silicone sealant covered with plastic wrap before screwing it down. After screwing the ramp down the silicone was allowed to cure before it was unscrewed and the plastic wrap removed. All decks were screwed in order to gain access to hull components if ever necessary. A rotary switch was fashioned into the capstan located on the forward deck so that electronics can be activated without removing the house to flip switches. See photos 45 and 46.

Photo 45

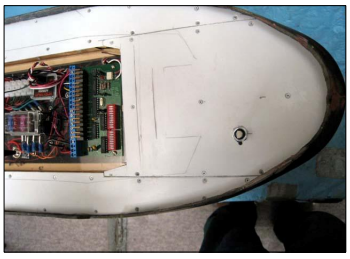

Photo 46

Photo 47

Photo 48

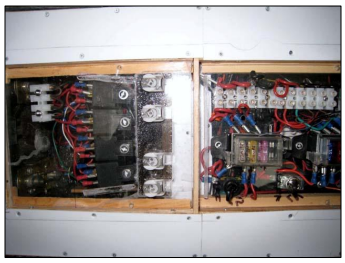

Photo 49

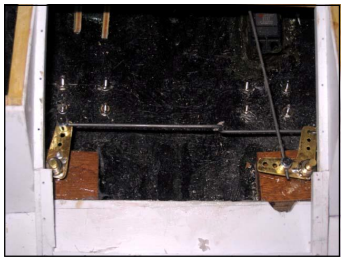

Photo 50

Photo 51

Photo 52

Photo 53

The house was constructed of 1.5 mm styrene employing Testorôs plastic cement. Windows are clear plastic mounted with canopy glue. All lights are LEDs. The deck, search and running lights were made by dipping the LEDs into a mold made from RTV silicone rubber and then filling it with clear polyester resin. The interior of the wheel house was crafted with the help of many photos and painted before assembly. Radar screens, compasses and depth finders were carved, molded in RTV and cast in two part high performance casting resin. See photos 54, 55, 56, 57 and 58. Shrouds for the fire monitors were made by carving a plug from Alaska cedar, molding it in RTV and casting it in the two part resin. See photos 59 and 60. The interiors were hollowed out with a Dremel rounded router bit and the barrels were made of styrene tubing, through which plastic hospital IV tubing was run. The barrels were made to move in the vertical axis and the unit in the transverse direction allowed by the flexible IV tubing. The IV tubing was then connected to a manifold made from brass tubing which in turn was connected to larger bore silicone tubing and then attached to the snap connectors. Many of the fittings such as the standpipes and valve assemblies were molded and cast in resin. See photo 61. The hand wheels of the valve assemblies were made from soft brass wire coiled around a styrene tube, then the coil was cut producing many circles which were soldered end to end. The spokes were made from 1/8 inch brass stock and soldered in place. The center and outer edge were drilled and a small pin was used as a shaft and small brass wire used for the handles.

Photo 54

Photo 55

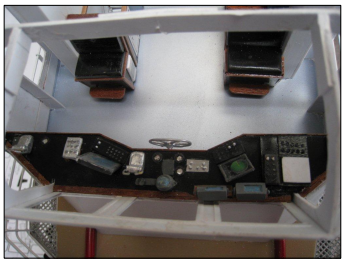

Photo 56

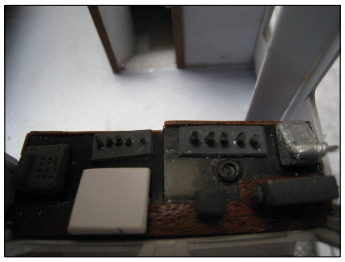

Photo 57

Photo 58

Photo 59

Photo 60

Photo 61

Railings were made from 1/16 inch brass rod and house stanchions from purchased 40 mm three hole flat brass which had to be shortened to be the right scale. The stanchions on the side decks and upper rear decks were drilled and plated with a Caswell Plug and Plate system. Plastic coated and braided jewelry wire was threaded through the holes drilled in the stanchions.

The open rescue boat was carved from a solid block of balsa, sanded, sealed and painted and then used as a plug to fabricate a mold from which fiberglass copies were made. The rubber rescue craft was constructed of wood doweling and 1/32 plywood, filled, primed and painted. See photos 62, 63 and 64. Outboard motors were carved, molded and cast with resin. The props were shaped from thin aluminum and shafted with small brass nails. See photo 65. The rear deck ladder, crane, fire monitor complex was fabricated with styrene and constructed so that the ladder will telescope, turn and be raised and lowered. The name on the hull and fire department logo on the house were printed on decal paper and were sealed with clear lacquer.

Photo 62

Photo 63

Photo 64

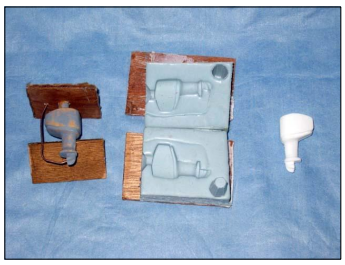

Photo 65

Painting the model and components was accomplished with a Testorôs Aztek spray gun, a touch up spray gun and compressor using PPG Duracryl Acrylic automotive lacquers. See photo 66. I like this paint because it never forms a scum upon storage and can be resurrected if thickened with ordinary lacquer thinner. A fish eye preventer can also be added to ensure a flawless paint job.

Photo 66

Making this model was a one and a half year project with an approximate outlay of around $400. The cost of automotive acrylic lacquer has gone out of site costing around $100 a quart. However a quart goes a long way and can be used for several models. I store the paint in Old Spice jars when they get used up in the kitchen because they fit nicely in the touch up gun canister and cleaning the canister is unnecessary. All in all the build was a challenging but satisfying project. See photos below of the finished model.

Dr. Ron