

Scale Model Truckable Pushboat

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Building a scale model "truckable pushboat" to the RC model Springer specifications was a little difficult but not impossible. A fair amount of researching, comparing hull dimension and shapes resulted in a close replication in producing a reasonable scale model "Springer".

The "Springer" type RC model pushboat seems to have reached all corners of the globe. The design of the original Springer was created in 1998 by Dave & John Springer (Northwest Model RC Ship Modelers club, Washington State).

The Springer was meant to be a one-design. That is a design with tight specifications so that the same type model from different builders would remain competitive in various navigational events such as racing, water polo, etc. However, many have chosen to deviate from the original Springer specifications for various reasons yet they still opt to call their models "Springers".

The intent with building this Springer, which I have called "Springer #1" for build purposes, was to stay with the original Springer specifications as much as possible, yet be able to have a "close to scale model" based on a real boat.

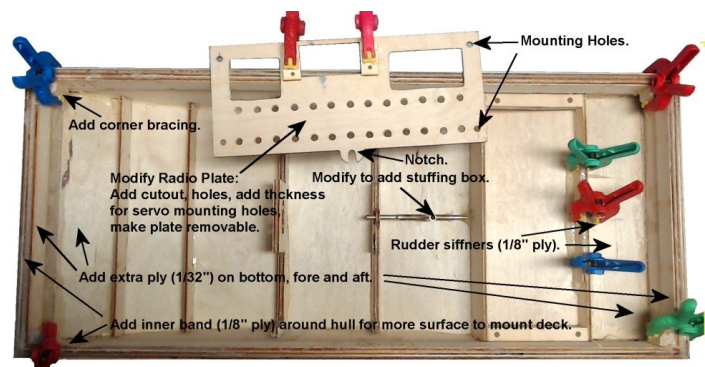
First was the option of how to build the hull – kit or scratch. Upon researching various options I found the "Zippkits Tugster" (single drive) a good choice as it stayed very close to the Springer specifications as well as being easy build. I know several others that also have done this.

So, my son ordered four "Tugster" kits and four drive accessory kits from Zippkits. I ordered the motors, speed controllers, servos, and batteries from other suppliers.



The "Tugsters" are an easy build model. (I have built many boats from scratch so I was not afraid of that option if I had decided to take that route.) All of the parts in the basic Tugster kit are plywood, 1/16, 1/8 inch and 1/4 inch thick. They come in the laser cut sheets and just need to be popped out using a small cut here and there. Everything went together very well. The instruction booklet was easy to follow and in very little time the hull was ready.

Both inside and outside were sealed with resin. Some internal modifications were made to strengthen the hull. This including adding corner blocks so the outside corners could be rounded (1/4 inch radius), and reinforcing added strips across the bow and stern and sides. This resulted in a very strong hull.

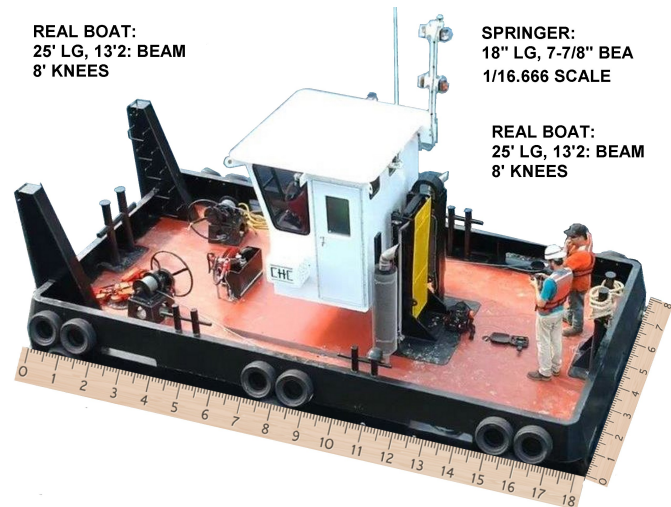


Once everything was installed in the hull (motor, battery, radio, speed controller, rudder servo, rudder post and drive shaft it was time to install the deck. I did not use the supplied deck or pilot house as it would not work with the design I opted for.

Before building the hull I researched what my first Springer would look like. Important item was determining the scale. Obviously the shape of the hull was only found in a select amount of the smaller real truckable towboats, typically 22 to 26 feet in length. I determined to scale would need to be around the 1/16 to 1/20 range.

It was not too easy finding a suitable real boat in that nothing seems to match the criteria of the Springer hull shape and the proportions of the length, beam, and draft.

Upon finding a reasonable (and more important usable) real truckable pushboat, something had to give. This resulted in distorting the dimensions slightly. As the model had fixed proportions as to length, width, and height, little changes had to be made here and there as to the layout of most things mounted on the deck. In this case, the proportions of the Springer versus the real boat it was the beam that had to give a little.

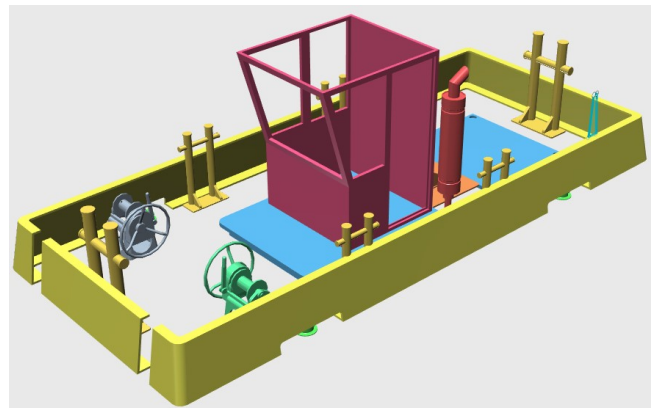


One thing about this real boat design there was a bonus. This one had an elevating pilot house! Maybe a difficult project to implement, but having 3D Design software and a 3D printer helped tremendously. Besides, I now had a use for the belt drive I salvaged out of an old inkjet printer a while back.

Next step was on to enter the entire design for all of the components from the deck up (plus a few parts inside the hull). Virtually everything from the deck surface on up is 3D printed. The only exception is the tow knees which I made from 1/4 inch (two layers of scrap 1/4 inch wood from the kit) plywood, plus the metal hand rail and steps in the right knee.

The bulwarks (sides above the deck) completed but with the task of making them in multiple sections due to the size limits of the printer. Next, the H-bitts then it was time to move on to making the pilot house.

A big advantage to 3D design is not only making single 3D parts but to design assemblies with multiple parts so they will fit together after printing. (*Screen print shows a few of the 3D designed items.*) No need to physically building a part, then another to fit to the first part, then another, etc. One can easily build an assembly on screen and pull the parts apart for printing. In this case I needed parts to fit together yet be movable to extent of the pilot house rising and lowering and where to put the limit switches. Once I printed these parts it was a matter of assembling everything.



A small gearmotor and slide switch from Amazon completed the pilot house assembly. Wiring everything and testing resulted in a smooth running assembly that took several seconds to move up and down. Just the right speed!

In manning the crew, I wanted to stay close to the 1/16 scale that I found the best proportions for this boat. I opted for three Bruder (#60020) construction workers. Their scale was listed as 1/16, but in measuring them they are either less than 1/17.3 scale or less than six feet tall as scaled. These are great as they can be posed and painted. Once posed, a little superglue was put in the joints, dried, filler, sanded and painted.



In the photo at the right, the figure on the right has been modified.

In comparing the model with the real boat, there had to be a few compromises here and there. Nothing very obvious, so it might not be an exact scale but certainly much closer than standoff scale.

One may notice the use of dual exhausts on a single prop (and motor) boat. That is because I wanted the boat to look like the real one but stay real close to the Springer Specification of operating with a single motor yet keep the above deck look realistic.

Performance wise, this boat runs great. I had to trim down the forward speed to less than 20% of the full speed as it wanted to skip out of the water. This boat will turn just about within its own length as well. I can see why this is popular in RC model boat water sports.

What I enjoy about working in larger scales is the model is almost a part of you. One can get down close and look around and “explore” the boat. A four foot battleship has a lot of parts to enjoy, but this 18 inch 1/16 scale pushboat with all the details is an eye opener. (This is just my opinion.)



Above you can see the real versus the model of the pushboat. The pilot house raises and lowers using a belt and cogs from the disposed ink jet printer. The drive is that

inexpensive miniature 60 RPM gearmotor mentioned earlier. The pilot house takes about 4 seconds to move completely in one direction. Operated by a servo controlled three position switch, there are upper and lower limit switches for automatic stopping.



Above, the pilot house is in a middle position. The model also has a flexible “drag chain” (also 3D printed) located to the right of the yellow safety mesh that rolls as the pilot house moves. All 18 bumper tires were 3D printed and have great detail down to the treads.



In the photos above, you can see where I had to “give” a little liberty to fit the real boat features in to the slightly narrower proportioned Springer configuration. The pilot house had to be a little narrower as well as the deck space on either side of the house.

Even lifting eyes are included on the corners of the pilot house. These are for lifting the house off for transport on highways with limited overhead clearance.

With all that visibility of large “glass” areas of the pilot house, it was necessary to add the boat’s operator. An operating door invites the viewer to look in and see the controls, gauges, navigational aids, tools, radio, ice chest, and broom for that long work day and even a drink with a straw for that extra “pick-me-up” for the operator.

You can see more of Lew’s Model Boats on the website LewsModelBoats.org or visit the Suncoast Scale Model Boat Club at SSMBC-fl.org for hundreds of photos and many of model boats.



So, just what is that truckable pushboat?

There are many rivers and lakes where there is virtually no access via a navigable waterway. Perhaps work is needed on a bridge or dock, so a barge and a push boat might be needed.

Brought in on a commercial flat bed trailer, these truckable pushboats can be off loaded into the water, sometimes by simply backing the trailer into a launching site but probably more common is via a crane. The one in the photo appears to be a little larger than the one modeled in this article.



The pushboat here is in three pieces, the hull on the back of the trailer, the mid section house (blue box) on the front, and the pilot house in the middle.

Perhaps you might now see what my next model will be. Hint: It will be made from a toy 1/16 scale Peterbilt 367 semi that will have all to goodies added to transport this truckable pushboat (and my RC 1/16 scale Abrams M1A2 tank). - *Lew*