

# ***THE FOGHORN***

***Newsletter of the Marine Modelers Club  
of New England***

**2017-- Our 28th Year!!**

**December 2017**

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Note: Use [officers@marinemodelers.org](mailto:officers@marinemodelers.org) to reach all the club officers as a group.

## **Upcoming Events**

**Sunday, December 3, 12-4 pm:** Annual Holiday Dinner. Social hour starts at noon, with dinner at 1:30pm. Menu will be similar to last year's, with any changes to be finalized at the November meeting. As always, we will have some door prizes to give out to the attendees-- let the club officers know if you have anything you'd like to donate.

You need to get payment to Ed Arini to reserve a spot. The due date is Wednesday, 29 November. Cost is \$25 per person.

The dinner is being held at **Prezo Grille and Bar, 229 1/2 East Main St, Milford, MA.**

## **Club Election Results**

The election was held at the November meeting. All positions were un-contested. Your Club Officers for 2018 are:

Commander: Mike Hale  
 1<sup>st</sup> Officer: Gaspar LaColla  
 Treasurer: Ed Arini  
 Events Officer: Charlie Tebbetts  
 Publicity Officer: (vacant)  
 Clerk/Newsletter: Bill Michaels

## November Club Meeting

Our November meeting was held at the church hall in Medfield. The following members attended: Bob Prezioso, Ed and Linda Arini, Gaspar LaColla, Mike Hale, Bill Michaels, Shaun Kimball, Willi Zankel, Charlie Tebbetts, and new member Frank Cook.



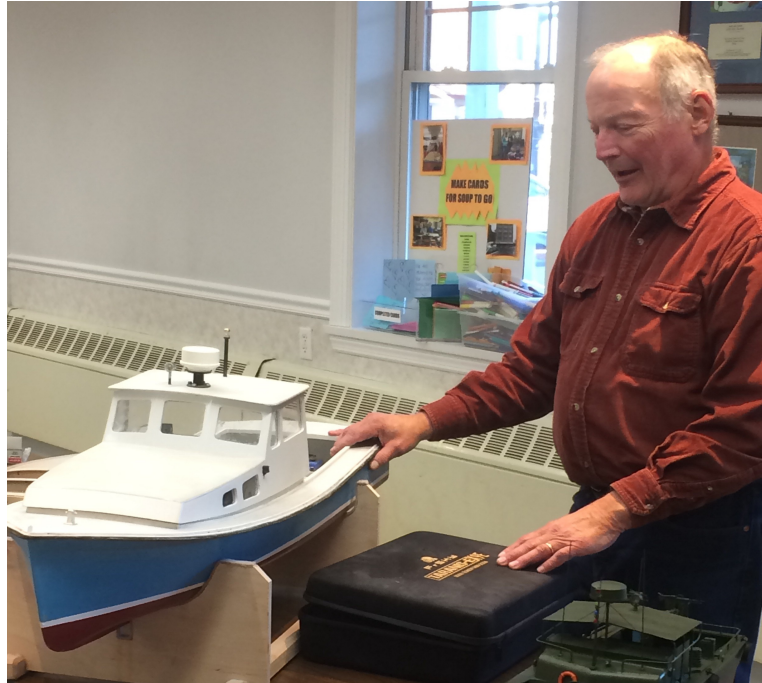
Left: **Bob Prezioso** is working on a Dumas Barrelback kit. Bob said that the kit has been changed since he last built one a decade or so ago-- that the kit has been simplified to make it a little easier for a novice to assemble, but at the expense of accuracy of shape. Bob said that he still has the plans from his first build, so he is using them to help get the shape right.



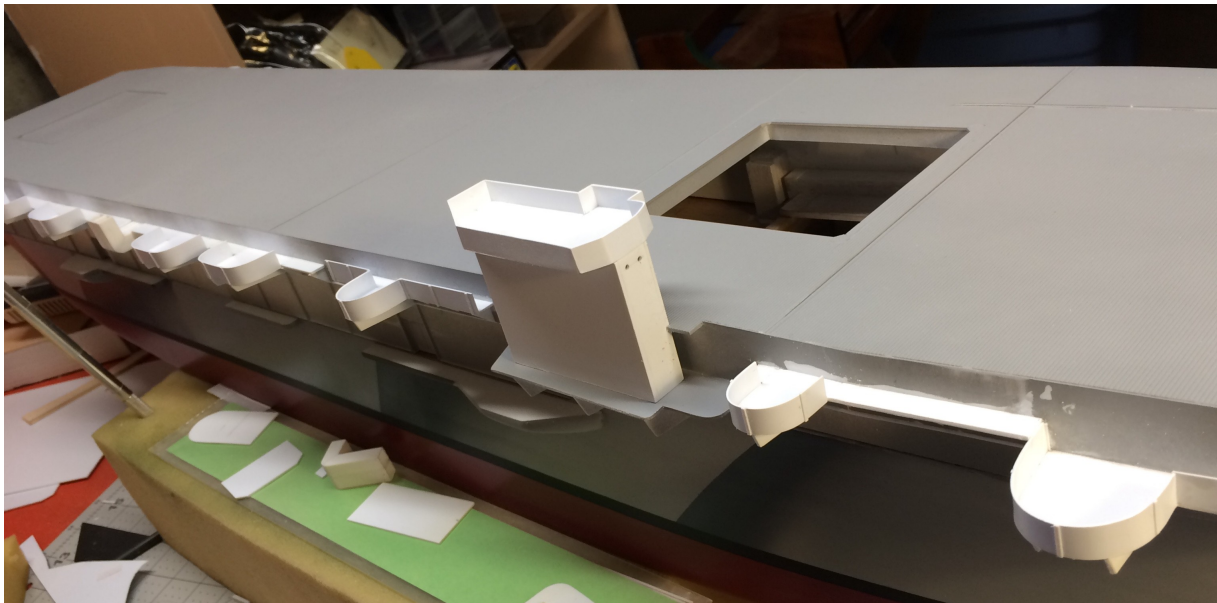
Left: **Mike Hale** brought in the new Pro-Boats ready to run Viet Nam-era PBR-- a River Patrol Boat. The model is 1/18 scale, and is powered by a waterjet system, just like the original. The boat is only 21 inches long, but Mike said it runs well on the supplied power plant. Mike also said the boat is designed to run on either a 7.2V NiCad or a 7.4V LiPo battery pack-- but the access hatch isn't big enough to allow you to install a standard 6-cell flat pack!

**Charlie Tebbetts** brought in his Lobster Boat, which is powered with a brushless motor. Charlie's boat is modeled on one of the boats used in the annual Maine Lobster Boat races.

Charlie also had a new Turnigy 9 channel radio with him, that he is learning to program to optimize it for model boat use. These radios have tremendous capability for customization, and are inexpensive, to boot. As I write this, a Turnigy 9X9ch radio & receiver Mode 2, 2.4GHz system is on sale at HobbyKing for \$49.99!



Your editor brought in the 1/144 scale USS Guadalcanal, the WW2 Escort Carrier that captured the U-505 in June 1944. The model is based on the Glynn Guest Stand-off Scale plan that appeared in Model Boats magazine. I am adding detail to the model, primarily by using sheet styrene to scratch build the gun tubs and catwalks along the edge of the flight deck.





## **Editor's Notes**

**2018 Schedule:** In January, the club officers will be getting together to build out a draft schedule of events to present to the membership in February. If you have ideas on ways to improve the schedule, please share with any or all of the officers. While we are always looking for new ideas, please keep in mind the following:

The reality is that an idea that starts with “The Club officers should do XYZ...” is not as well received as one that starts with “We could do XYZ-- I checked, and “X” can be found here, and “Y” and “Z” should be easy enough to do if a couple of us work on it.”

**Providence Boat Show:** We have confirmation from the show organizers that we will be invited back to the 2018 show. (They had been waiting to first confirm that they would have the pool.) The show will be held on February 2-4, 2018, at the Rhode Island Convention Center in Providence, RI. At the time of this writing, we are still working with the show team to sort out the requirements for the pool....

**Using Arduino in Model Boats:** At the November meeting, I did a demonstration and short presentation on ways you could use an Arduino programmable micro controller to animate functions on scale boats. I had a two-page handout that is attached to the end of this edition of the newsletter.

**Brentwood Model Boat Club:** I thought I'd share a story the MMC membership may find interesting....

In September 2016, I was in the UK on business, and had a weekend to kill. I connected with the guys at the Brentwood Model Boat club, and had a wonderful visit with them at their annual night run. Located in Essex, just northeast of London, they have a lovely dedicated pond that they lease from a local farmer, with a permanent Navigation Course, docks etc. They were very welcoming, and I really enjoyed getting to meet a number of fine modelers. (I still send them a copy of the Foghorn every month.)

A few months ago, I heard from Dave Brumstead, the Club Chairman. He told me that when they arrived for a club sailing session, they found a large tree had been hit by lightning and fell into the pond! (The downside, I guess, of having your own facility.) He recently sent along a couple of photos that I thought I'd share....

Check the club website for the latest version of our activities schedule:  
[www.marinemodelers.org](http://www.marinemodelers.org)



You can see where the tree broke and fell into the pond. A good portion of the navigation course's buoys are under that tree!

I'm told it took a couple of months of club work parties to get the tree out-- a little at a time.

No hobby tools here-- fortunately, a couple of members had access to chainsaws. Note the pond looks rather dirty as a result of all the runoff from the heavy rains that accompanied the thunderstorm.

You can see the large burn marks from the path the lightning took down the center of the trunk. No wonder the tree was felled!

This story is headed for a happy ending-- the update I got last month was that they were in the final phase of the cleanup.

Even with all that trouble, I'm still quite envious of their facility, and wish we could find something like that around here!



Final thought-- if you're ever in the UK, look up a local club! The model boating community in the UK is very friendly, and you'll surely have a great time and meet some interesting modelers!

## Arduino Programmable Micro controllers

### What is an Arduino?

Originally developed in Italy, the Arduino is an open-source electronics platform based on easy-to-use hardware and software. It was designed to be an easy tool for fast prototyping, aimed at students without a background in electronics and programming.

Arduino boards are able to read inputs - light on a sensor, a finger on a button, or an input from an RC channel - and turn it into an output - activating a motor, turning on an LED, moving a servo, sending a message. You can tell your board what to do by sending a set of instructions to the micro-controller on the board.

Arduino programs are called “sketches”. You create them on a computer, and then download the program to the board using a USB cable. Because it is Open-Source, the technology and the programming software are free to use-- all you need to buy is the actual hardware.

Arduino has been widely distributed since 2008. It is used today in all sorts of projects, from simple educational and hobbyist projects to complex scientific instruments. There is a worldwide community of “makers” - students, hobbyists, artists, programmers, and professionals – all using the Arduino and sharing their knowledge.

There are a variety of programmable micro-controllers available-- but the Arduino is the most popular worldwide, with a huge amount of tutorials, special add-ons, and examples available. (Raspberry Pi, Beaglebone, and Sparkcore are some others you may hear of.)

### Which Arduino model do I want?

There are a variety of Arduino boards available, in different sizes that provide different features. The Arduino UNO board is the most common-- an excellent balance of cost and capabilities. The UNO board is available from a variety of vendors in starter kits. Expect to spend \$25 for just the UNO, or \$35 - \$50 for a starter kit.

**My favorite supplier:** ADAFRUIT [www.adafruit.com](http://www.adafruit.com)

They have a great selection of Arduino products, and a ton of terrific online tutorials. I’d recommend their \$35 Budget starter kit if you want to start playing around with the UNO. You can also find a great variety of items on Amazon.

**Useful skills to have:** RC builders typically have a lot of skills that will help with learning and creating an Arduino project:

- Soldering
- Basic DC circuit experience- batteries, wiring, etc.
- Use of electric motors and servos



**Not Required:** Computer or programming skills. Knowing how to write even simple programs will help, but it is not a requirement. You can build all sorts of programs just by reading the tutorials and copy and pasting the sample code into your sketch.

### **What sorts of Accessories are available?**

The basic Arduino has about 24 pins available for use in input and output connections. But you can also buy add-on boards to add on other capabilities. These add-on boards are called “Shields” and are designed to plug into the base Arduino to expand the number of ports and connections. Multiple shields can be stacked on top of the Arduino, in nearly any combination. Some examples:

- Motor Controller Shield: Adds support with a reversible ESC for up to four brushed DC motors or two stepper motors (one stepper motor = two brushed motors), plus two servos.
- Servo controller Shield: Adds support for up to 16 servos.
- Wave Shield: For processing and playing audio files.

**What could I do with an Arduino in my scale boat?** Here are some examples of projects, from simplest to more complicated:

- Program an LED mounted in your signal light to send a specific message via Morse code.
- Custom light controllers- flash different color LEDs at different rates. (Blue strobe at one rate, yellow flashers at a different rate.)
- Coordinating the movement of gun turrets and the Fire Controls (such as on a Fletcher class Destroyer)
- Automating scale functions by creating a servo sequencer. Start the program via RC. Flashing “Crane in operation” yellow lights come on. Program then runs motor # 1 to lift crane boom, then rotates servo1 CW to swing boom out, then runs motor #2 to lower hook, pauses, then reverses the steps to return the crane to the original starting position.
- Channel multiplexers-- provide independent control of multiple servos or aux switches from one or more RC channels. A simple example shared on RC Groups allows you to take two RC channels and turn them into four independent on/off switches. Yes- you could do this mechanically, but you'd need more room, and the system would be finicky to adjust.
- Collecting on board measurements (e.g. battery state or motor temp monitors)
- Capturing boat speed using a GPS and sending the output to your phone via Bluetooth or WiFi.
- Integrating with a compass to have your gun turrets point to a specific compass heading, and then automatically adjust the turrets to “stay on target” as the boat changes course.
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This is just a short list of ideas that I collected by browsing the RC boat forums online.

Need ideas or help with a project? There are dedicated forums on a number of hobby sites, including the Boats section of RCGroups.com, and ModelBoatMayhem.co.uk. There is also a large community of robotics hobbyists who are doing things that could be adapted to our boats.

- Bill Michaels, Nov 2017