

The Bilge Pump

The Official Log of the Northwest R/C Ship Modelers



April, 2012

THE BOATING SEASON IS HERE!

DATES OF INTEREST

May

- 3rd Club Meeting
- 6th Spring Springer Event - Bellevue
- 7th Skagit Meeting
- 12th Tug Boat Races
- 19th Hilton Lake Float

June

- 2nd Anacortes Festival
- 4th Skagit Meeting
- 7th Club Meeting
- 16th Regatta - Bellevue

July

- 2nd Skagit Meeting
- 5th Club Meeting
- 8th Fun Float
- 28th Spokane - Tidewater Cup

May means that our outdoor activities are beginning in earnest. Let's hope that the weather cooperates. Our main event is our **NWR/CSM's Regatta** on June 16th. The events between now and the Regatta are intended to give our skippers an opportunity to hone their skills.

In May there will be three opportunities to do just that. The first will be the Spring Springer Competition, on the 6th of May at Bellevue. More info to follow.

On the 12th, we will have the opportunity to run our boats at the annual Seattle Maritime Festival's Tug Boat Races. Kevin Klocke will have his pond set up for our use. (more info elsewhere) The final outing will be on the 19th. We have been invited by the Hilton Lake Homeowners to use one of their lakes to have a float and the opportunity to show off our club activities. We will set up a course for navigation practice and have a few boats for the residents to try.

When we get to the **Regatta** everyone should have had many opportunities to work out the quirks of their new boats or upgrades done to older boats and the kinks in the control muscles. It is my desire, this year, to offer a challenge to all our skippers. This means all types of boats. The competition committee will try to create an event which will be both challenging and interesting to everyone.

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MESSAGE FROM THE BRIDGE

There is no limit to the satisfaction of building and operating your own model ship or boat. The fact is, there has never been a bad model built by anyone. Every model reflects the builder's creative ideas and as such is a unique and valuable expression of the builder.

These words have a great deal of truth to them and should be remembered by everyone as they look at or discuss a model with its owner/builder. Nothing discourages a person faster than to not be given credit for what they have done.

As we move into the outdoor season, our club activities pick up considerably. Please check the ***Bilge Pump*** and the website for schedules. And if you do not find what you are looking for, please call one of the officers.

Our Fun Float this month is this Sunday at Bellevue. Let's hope for pleasant weather. May is really busy. May 2nd is the day at the Seattle Yacht Club, May 6th the club Spring, Springer Event at Bellevue. May 12th will be the Fisherman's Festival/Tug Boat races and May 19th will be another Fun Float at Hilton Lake in South Everett, to practice for the Regatta.

The Regatta will be June 16th at Bellevue and we will be looking for competitors from many of our neighboring model boat clubs. Work has already started on the Regatta and hopefully we will present one which will be of the quality of the last two years. Several of our members have been pressed into service already and there will be others asked to fill jobs that will be needed.



April Minutes by Mel Suelzle

Captain **Lee Stewart** brought our meeting to order at 7:01 pm. Our meeting was well attended with 19 members including one member who joined the club at the meeting. Our newest member is Brian Morse who has a few boats in process and is looking for help and ideas to complete them.

In his ongoing effort to keep things interesting and the members awake, Lee switched the program around by starting with Show 'n Tell instead of the usual business topics.

Dain Webster showed off the new buoys he has built that have elaborate lighting systems for night float operation. The electronics provide 12 lighting sequences for the 360 ° LEDs he uses. Joining in the buoy fabrication presentation was **Bob Wickham** who also is building buoys to build up our inventory of buoys for our water events. Bob's design offers a quick build (less than 5 minutes) and cost less than \$2 to build.

Next up, **Norm Hyatt** presented his newest project which is building the U.S. Navy's first aircraft carrier, the *U.S.S. Langley* which was built in the 1920s. Norm demonstrated how the entire deck was removable to provide full access to the hull.

Lee Stewart showed off his recently acquired steam powered Edwardian river launch, the *Topaz*. The model was beautifully crafted and nicely detailed. The Cheddar steam power plant should move this baby along very nicely. As far as Lee, knows, its maiden voyage is yet to come and he hopes to have that event occur very soon at one of our fun floats.

Tom Stevens reported on his attendance to the model boat show in Nanaimo, B.C. The show had a very wide range of high quality models of different types. This club is made up of a group of very experience and skilled modelers. Like most scale boat clubs they also have a high average age and look for ways to attract younger members. Tom had a very successful event as he took 2nd place in the work boat category, his barge took Best of Show, and his boat "Heidi" took the best new build award.

Robert Osmond demonstrated his super sound system for BIG boats. This very loud sound system utilized an 8" subwoofer and showed off his turbo diesel sound generator real well.

After a break, Lee turned our attention to club business.

Starting the Business portion of the meeting **Ed Mauer**, our Treasurer, reported our treasury has a balance of \$7,461.62.

Lee announced that the Seattle Yacht Club has invited us to run our boats on Wednesday, May 5th, from 9-3 pm. They will provide tables, canopies and power. This has been a good event in years past and we should see a lot of dock traffic as boaters arrive for opening day activities. For further information contact Scott Baumann, our Chairman of the day.

Mike Jones reported that our web site lists boat plans that our members have that are available to copy by other club members. If you have plans that you would like to share, contact Bob Wickham and he will see they are added to the web site.

Lee reviewed the plan for a fun float at Hilton Lake which will be on Saturday May 19th from 10-4 pm. Parking will be tight and carpooling is recommended where possible. More details on this event will be in the May newsletter.

Our May fun float on May 6th at Bellevue will be our spring **Springer** event organized by last fall winners, **Darlene Wing** and **Scott Wilson**. Details of the event will be listed in the May newsletter or an email.

May 12th is the date of the 2012 Tug Boat races in Seattle. **Kevin Kocke** will have his pond there and he will provide more details during our club meeting on May 3rd.

Al Kinsman reminded everyone that the BIMM event is April 21 & 22. They are working on getting a pond to run boats in and members are encouraged to support this event.

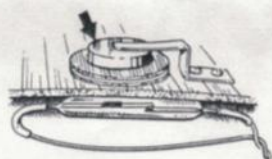
The June Regatta Planning is underway. The raffle prize committee is formed and is hard at work (Doc Bray, Mel Suelzle and Gordy Caney) soliciting prizes from vendors. The Competition committee members are Lee Stewart, Bob Wickham, Al Kinsman, Dave White and Scott Baumann.

Phil Northrup asked for clarification on fun float times. Lee stated the fun floats are from 10am to 4pm and it is up to members when they want to attend.

At 8:25pm our meeting was adjourned. Members stacked the chairs and departed for home ports.

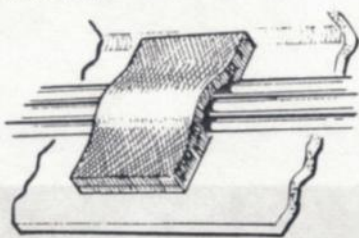


Tips & Tricks



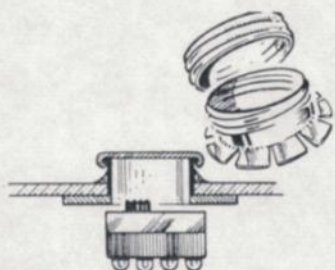
REED SWITCH BEATS CORROSION

Instead of using regular slide switches that corrode and generally require an access port, try hermetically-sealed reed switches from Radio Shack. They're magnet-actuated, so if you glue one just below deck in place of your regular radio on/off switch, and put a magnet (see arrow) into its receptacle on deck, the switch will do its stuff without a glitch. Of course, magnets can be disguised as bollards, ventilators, etc.



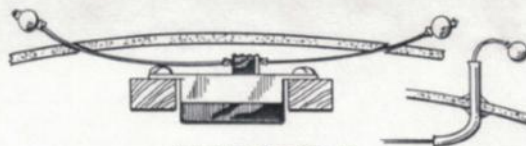
NEAT WIRING

Stick a piece of Velcro® to a suitable place in the hull, then neatly arrange your wiring on it, and trap the wires with the mating Velcro® piece. Wire connections that are held firmly are less likely to fracture.



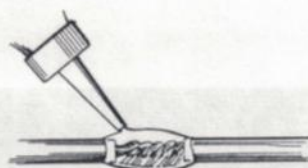
WATERPROOFING EXTERNAL SWITCHES

You can position your switch and charging socket under a water-tight snap-on lid. Use a cut-down 35mm film container that has been cut to length and roughened around its bottom edge. Glue it into the radio hatch and seal it with Loctite's new silicone sealant, to make a generous fillet as shown. If you can find a metal screw-on lid, cut and bend it as shown, and glue the tabs below the deck.



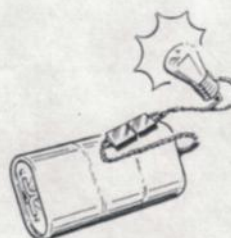
RADIO SWITCH

Here's a neat way to operate your radio switch without having to open the boat and risk water entering it. The switch is mounted below deck with a heavy nylon leader knotted through the operating knob. The leader is led out to port and starboard and up through tiny holes in the deck. For a lead-out, use two curved, aluminum-tube "stack pipes" of the smallest bore. These are epoxied through the deck and stand in such a way that water has very little chance of going down through them.



SOLDERLESS EMERGENCY CONNECTION

In an emergency, the pieces of a broken wire can be twisted together tightly and covered with thick CA. Spread the CA over the insulation, too, and you'll have enough support for the connection. When you return to your workshop, be sure to cut out the repaired area completely, because heating CA produces highly toxic fumes.



SIMPLE DISCHARGER

If you don't own a fancy charger/discharger, wire a $\frac{1}{2}A$ or $1A$ automobile bulb to a plug that matches your battery pack. The bulb acts as a suitable load on the pack, and when it eventually goes out, it signals that your Ni-Cds are ready for recharging.

Let's Have Fun!

What our Canadian friends are doing.



These pictures are from our friends to the North. They are from the BAMB show at the Brentwood Mall in Burnaby, BC.

They show the variety and quality of the work of our neighbors. It could be they are continuing the work of their English ancestors or the they have more time to learn the techniques with the long winters, what ever it is they certainly do nice work!

The Motors that Make Our Boats Go

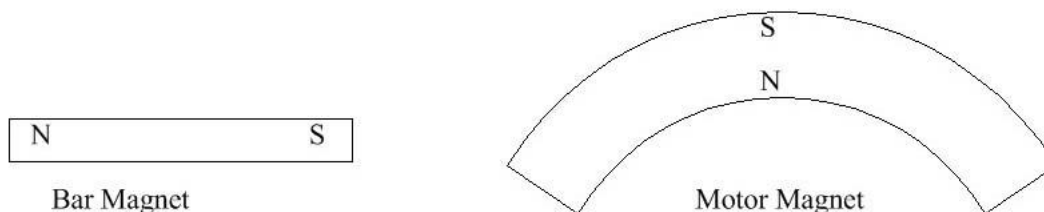
By Allan Wing

In the past few years many of us have been looking for motors to make our Polo Springers run faster and longer on a single battery charge. As a result, we have looked at many motors. Along with this I have received many questions about motors. So I figured that a look inside a basic motor and an explanation of how it works would be helpful. To do this I took apart a basic 540 can motor. It is called a can motor because the motor case is a pressed can. Examples of this motor are a Johnson 540 or the popular Graupner Speed 600 that powers most of our Springers.

Figure 1 is a picture of the motor after it is taken apart. The motor consists of 3 basic parts, the armature, the end plate and the can. The armature is the round piece that turns inside the motor. In these can motors the armature has 3 poles, each wound with a coil of wire and a commutator (figure 2 shows a close up of the commutator on the end of the armature) that provides connection to the brushes. The end plate holds the bearing for one end of the armature and the brushes that contact the commutator. The final piece is the can which has the bearing for the other end of the armature and the magnets.

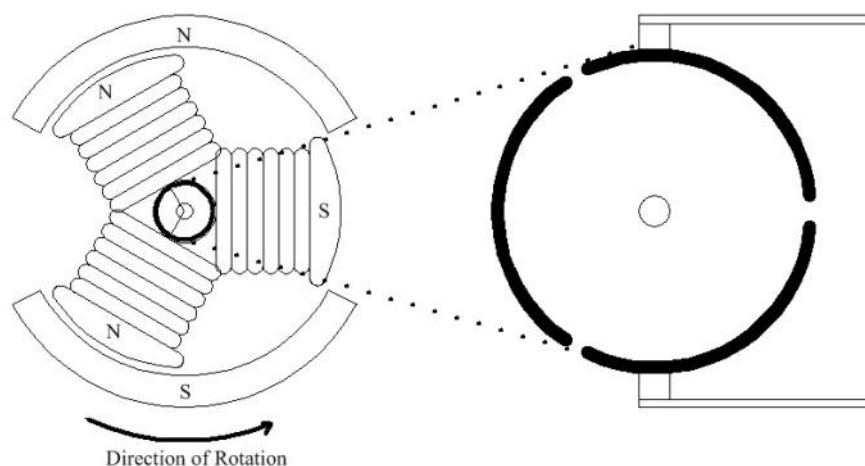


The motor operates by sending electric current through the windings and creating an electromagnet of one of the 3 poles. This causes the pole to be either attracted to or repelled from the magnets in the can. A magnet has two ends; they are labeled either North or South. This comes from the fact that if you take a bar magnet and suspend it from a string one end will point north and the other south. So the convention is that one end is north seeking and the other is south seeking. When two magnets come next to each other two north or two south ends will repel and a north and south end will attract. The magnets in the can motor are constructed that the inside of the magnet is one end and the outside is the other end. (See figure 3). The ability to make magnets with this shape greatly improved permanent magnet DC motors. The magnets are positioned inside the can such that one magnet has a north side of the magnet facing inward and the other has the south side of the magnet facing inward.



The operation of the motor is shown in figure 4. The brushes carry current to the commutator. The result is for the poles of the motor with the north/south ends as shown. The pole marked S is pulled up toward the top magnet that has

the north side facing inward. The other motor poles receive current that make them North. The upper pole is repelled from the top magnet and the lower pole is attracted to the bottom magnet. As the armature turns the brushes contact other areas of the commutator and the current in the poles of the armature are changed to keep the attraction and repulsion forces going. This results in the armature rotating.



The direction of rotation is determined by the polarity of the voltage applied, reversing the voltage will reverse the direction of rotation. The speed of rotation is determined by the voltage applied.

The speed of the motor is determined primarily by two things, the applied voltage and the number of wire turns on the armature. Motor speed is proportional to the applied voltage. That means that a motor will turn twice as fast with 6 volts applied as it turns with 3 volts applied. The second is the number of turns of wire on the armature. As the armature turns in the magnetic field created by the fixed magnets it creates an internal voltage much like a generator. As the armature spins faster the voltage rises until it approaches the applied battery voltage. The more turns on the armature the faster that voltage rises hence the sooner the internal voltage approaches the battery voltage. This results in a motor with a slower top speed. With more turns the motor draws less current and creates more torque. With less turns the motor will turn faster but it will have less torque and draw more current under load.



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