

THE Binnacle

NOVEMBER 1989.



NEXT MEETING DEC 14th 1989 7.30pm.
AT THE FLEET CLUB.

Victoria Model Shipbuilding Society.
Box 4114 Postal Station A
Victoria, BC.
V8X 3X4.

COMMITTEE 1989.

| | | |
|--------------------------|----------------|------------|
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| Director.(Librarian) | Don McCord. | 652-0188 |
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NOTICE.

Next month's meeting will of course, be the Christmas Dinner followed by the Annual General Meeting.

Don McLeod is selling the dinner tickets until Dec 1st. There will be no tickets sold after that. The menu was published last month but for those of you who have forgotten or didn't read your last month's Binnacle, here's what you will get for \$11.00 per person...

Choice of four salads, cheeses, fruit, Baron of Beef, BBQ Ribs, Veggies, and tea and coffee.

As mentioned earlier, that evening is also the time at which we elect our new committee. John Gough is heading up the nominating committee. He and his "henchmen" are looking for members to serve for the next 12 months. The job is not an onerous one and no experience is necessary so give it a try. Incidentally, if you do not want to attend the dinner, please do plan to attend the meeting part of the evening afterwards. It will be in your best interest to do so.

BACK TO BASICS

Last month we talked about volts, amps and ohms. This month we are going to look at a device to measure these three beasts.

The device we will use is called a meter. There are many on the market but they all do basically the same thing. Some meters need a battery to operate. You can tell these types of meters because they have an ON/OFF switch. Needless to say, before you use these meters, make sure the battery is ok and the switch is on. All meters need a battery to measure resistance. Again, when measuring resistance, make sure that battery is ok.

There is one more way in which meters can be classified and that is whether they are digital or analogue. The digital type has a window in which the reading is displayed. The analogue type has a needle which indicates the reading on a scale (more on this later).

Before you start measuring, you must make sure that your meter is properly zeroed. A digital meter, has electronic circuitry to do that for you. In the analogue case you have to do it yourself. If there is a

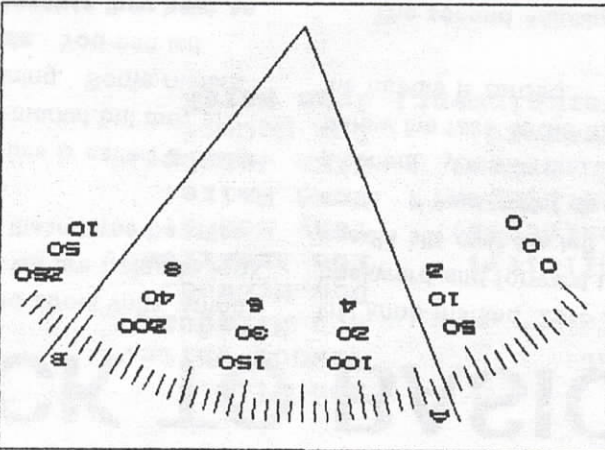
tiny knob marked 'Zero Adjust', rotate it backward and forward until the meter's needle sits over the left hand end of the scale. If your meter does not have this adjustment, you will find a little screw just below the face of the meter. Rotate it until the needle is zeroed.

The second adjustment is for the measurement of resistance. This knob is generally referred to as 'Ohms Adjust'. We will talk about this adjustment when we discuss the measurement of resistance.

Before you try and measure anything we must know how to read your meter. A digital meter is easy. You set your meter to the correct setting and read the answer in the little window. Analogue meters are a little more complicated.

In the diagram is a typical analogue meter scale. It has 3 different scales. The scale you read will depend on what range you are using. For example, if you have set your meter to the 50 volts range, you would use the center scale. That's the one marked 0,10,20,30,40 and 50. If your reading falls between the marked lines, you must count the lines between the marks. Our scales have 10 short lines between each numbered line. So if we are using the 50 scale, each

readings. Suppose our meter is set to read a maximum of 5 amps. What do need. First of all we have to determine the value of each little division. Going back a couple of paragraphs we find we would use the 50 scale, but because we are on the 5 amp range, every reading we make on the 50 scale must be divided by 10. We already know that each small division on this scale is 10/10 or 1. Therefore when making measurements in the 5 amp range we must divide this value by 10 making each small division equal to 1/10 or .1. Thus needle "A" reads 1 + 3 times .1 or 1.3 amps. Needle "B" reads 4 + 6 times .1 or 4.6 amps.



division between the numbers is 1 (10/10). If you were using the 250 scale, each division would be 5 (50/10). Finally, on the 10 scale each division is 2 divided by 10 which is .2. So that's all there is to it. Not quite, I'm afraid.

Now suppose you have set your meter to measure a maximum of 25 volts. What

scale do you use? There isn't one marked 25. There is one marked 250 though and in case you haven't guessed already, that's the one you use. So if your meter needle goes all the way to the right, you have 25 volts. But what if the needle is somewhere in between. In the previous paragraph we said that each division, on the 250 scale, was 5. To determine the value of each division, when the meter is set to 25 volts, you divide the maximum value by your setting (in our case $250/25 = 10$) and divide the value of each division by that number. So the value of each division on the 25 setting is 5/10 or .5.

Now we are ready to read a meter. In the diagram our meter has two needles "A" and "B". Our trusty meter normally has only one, but these two needles represent typical

Next month we will look at connecting the meter to make actual measurements. Till next time!

Build an electronic servo for your boat.

Tony House and Derek Baker.

Last month, you may have seen a little circuit that I brought along for "show and tell." Here is how to build it. This little gadget will turn on and off two circuits in your boat either latching them on (that is turning them on with one touch of your transmitter and turning them off with the second,) or simply keeping them on for as long as you hang on to the control.

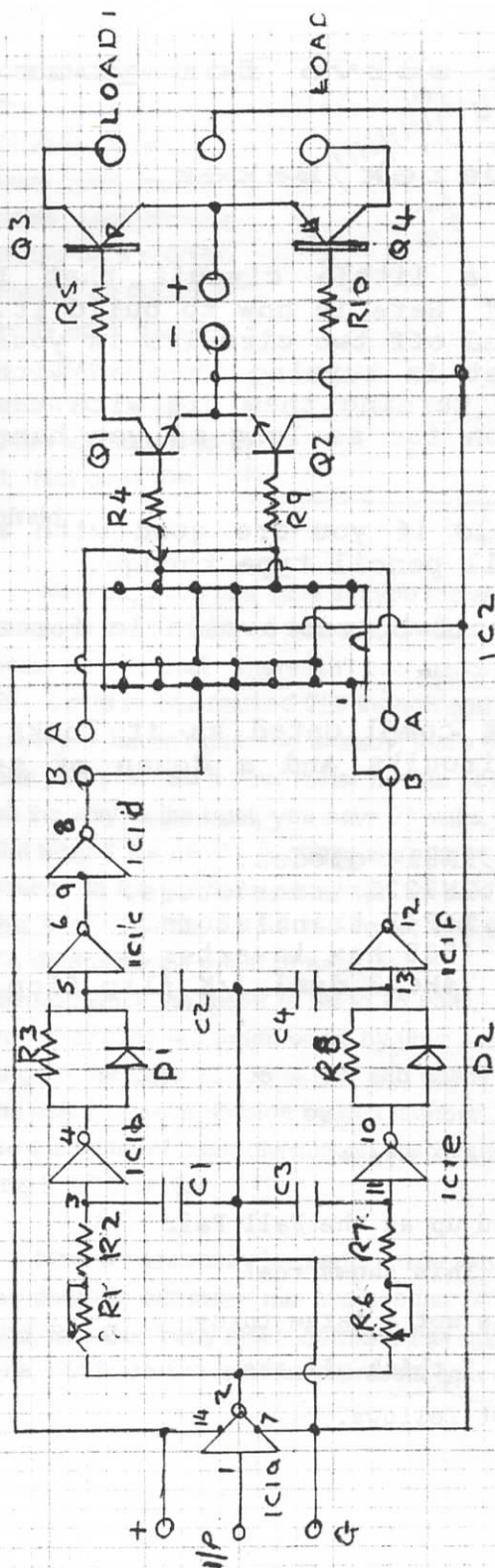
The gadget is easy enough to build if you are good with a soldering iron. It must be a small pencil type though.

If you so desire I will make circuit boards available for a small charge.

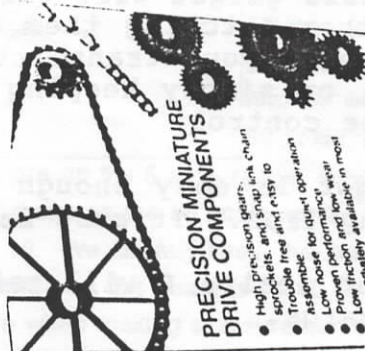
Here's the circuit. It's not as complicated as it looks. There are only two integrated circuits and a dozen or so other components.

R1,R6...20k trim pots.
R2,R7...10k resistors.
R3,R8...1M resistors.
R4,R9...1k resistors.
R5,R10...330 ohm resistors. IC2
D1,D2...1N914 diodes.
Q1,Q2...2N2222 transistors.
Q3,Q4...TIP42 transistors.
IC1 4585 hex inverter.
74HC73 dual J/K flip flop.

A much larger group of members showed up at the Fall Fair at Naden last month than were expected. This shows real enthusiasm for our club. While there was not a large turnout as far as the public were concerned, I think all the members enjoyed themselves. Thanks a lot fellows.



Don has handed me the above ad which appeared in the NMRA Bulletin (which is a model railroading publication) which may be of interest to those of you looking for gearsets, pulleys etc.



- High precision gears, sprockets, and snap link chain
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- Proven perfect and low wear
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Servo-O-Link Corp., 101 E. Fuller Dr., Euless, TX 76039, was displaying its line of precision miniature drive components, including gears, sprockets, and drive chain. A catalog and price list are available.


NMRA BULLETIN



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