THE BINNACLE

DECEMBER 1989.

INC. VICTORIA 1978

MODEL SHIP BUILDING SOCIETY

NEXT MEETING JAN 11th 1990 7.30pm.
AT THE FLEET CLUB.

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

COMMITTEE 1989.

President	Ron Wild.	478-5430
Vice President	Elwood White.	1-743-5441
Secretary.	Ron Hilsden.	479-5760
Treasurer.	Don McLeod.	478-5380
Director.(Publicity)	Ron Armstrong.	478-1952
Director.(Newsletter)	Tony House.	652-0305
Director.(SHAS Liason)	Fred Haire.	474-3650
Director.(Newsletter)	Stan Jacobs.	479-3989
Director.(Librarian)	Don McCord.	652-0188
Director.(Entertainment)	John Marsh.	385-5740

FROM THE EDITOR.

Well this is the last Binnacle from the pen (maybe that should read computer) of yours truly.It has been an interesting if sometimes frustrating two years but it is now time for some new blood and some new ideas. My thanks to those of you who gave me material to print.

To the new editor, I extend my best wishes, and, if I can help you in any way, please let me know.

FOR SALE DEPARTMENT.

Rob Glennie is disposing of some of his massive fleet. He has for sale the following:-

1.	A Dumas wooden PT109	$75.00
2.	A Linberg PT109	$150.00
3.	A Scratchbuilt German E boat	$300.00

The German E boat has running lights fitted. None of the boats has a radio fitted. If you are interested in any of the above, please see Rob, or give him a call at 381-0083.

NOTICE.

The time of year is once again upon us when we have to dig deep and come up with our next year's dues. They are the same as last year namely $20.00 for regular members and $10.00 for members under the age of 16 years.

not listed them. The list obviously is far from complete as a numerical count of just VMSS members does not give enough for even the active members. Maybe the new committee will try and compile a list of frequencies used by the club.

As a matter of interest, there are all the ODD numbered frequencies now available starting at channel 61 which is 75.410 Mhz.

CHANNEL	FREQUENCY	VMSS	VMBC	MVIMM	WCMBC	NRCSM	BAMM	OTHER
62	75.430	3						1
64	75.470	3					1	1
66	75.510	1						
68	75.550	2					1	1
70	75.590	1		1		1	1	1
72	75.630	3			1			
74	75.670	2	1				2	
76	75.710	2		1				
78	75.750	5			1			
80	75.790	3						
82	75.830	1					1	
84	75.870	3		1				
86	75.910						1	
88	75.950							
90	75.990				1			

OF INTEREST.

Hank Muersing has some literature,(too lengthy to print here,) about NICAD batteries which, so the advertising goes, do not form a "memory" after partial charging and discharging. If you are interested in looking at these brochures, please see Hank and I'm sure that he would be only too glad to show them to you.

Fred Haire now has a new source of caps. They are a little different from the old ones and I think better. They are available in both winter and summer styles and cheaper than the old ones. If you would like one, please see Fred and place your order.

MODEL COMPETITION WORLD SHIP SOCIETY.

On Sunday October 15th, Bernard Eeles and I caught the 7am ferry to the "Big City!" My small Toyota was struggling under a huge roof-mounted box 5' x 6' x 1'2" holding my recently completed (one of those quick five year jobs) "Bluenose." We were off to test the skills of a Victoria modeller against the big boys at the Vancouver Maritime Museum.

The World Ship Society (a seaman's, not a modellers group) have sponsored an annual competition for the past five years. The Museum is in a wing of the building which houses the old RCMP vessel St Roche - making me feel at home immediately - and contains interesting nautical paintings, models and paraphernalia. The competition itself is held in an inadequate room, being too small for the 40 odd exhibits and the general public - but as is often the case, it's the best available.

Several familiar faces were amongst the exhibitors including Don Ferguson who, following a first last year, was content to have his fine work on display only.

Classes included scratchbuilt sailing / powered; semi scratch sailing / powered; kits wood / plastic; modified kits wood / plastic.

Perpetual trophies were awarded for the best static, best tug, and judges' choice, with small take-home shields for the winners. Certificates were awarded for winners of all the other classes.

I was pleased to win "best static" for the Leon and a first for the "Bluenose" in the semi scratch class (as the hull was not made by me.) The judges choice award went to a very fine model by a man from Washington State. It was a sailing ship model about a foot long made of whalebone which had been sawn from a section of rib. As an ardent "doweller" I was particularly intrigued by his use of dowells made out of whale baleen.

As I am now on the shelf until I make another model - just another five years to go - I'm hoping that others of our group will take some of their fine models to English Bay and try their luck. You'll be sure of a welcome from those in charge.

BILL BARKER.

Financial Report.

Victoria Model Shipbuilding Society.
For year ending Oct 31 1989.

Bank balance at November 8th 1989	$1500.60	
REVENUE.		
Bank interest	17.62	
Donations and raffles	253.42	
Badges and crests	46.00	
Binnacle advertising	70.00	
Coffee profits	41.95	
Regatta concessions	795.02	
Regatta registration fees	185.00	
Membership fees	1280.00	
Banquet 1988 tickets	648.00	
Total income	3330.51	3330.51
Total		4837.61
Expenses		
Pond excavation	$455.00	
Banquet (1988)	725.50	
Election cost	25.51	
Public Relations	23.63	
Display pool (Plastic and tarp)	61.47	
Coffee Maker	127.19	
Postage	271.52	
Signs	149.77	
Club shed	1244.54	
Concession (regatta)	765.35	
Paper supplies (Binnacle)	72.93	
Bank charges	2.30	
Total expenditures	3924.71	3924.71
Total funds		4837.61
Expenses 1989		3924.71
		912.90
Bank balance October 31 1989		912.90

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Last month I wrote an article describing an electronic servo. Some of the more pertinent points were left out so I will reprint the whole thing again complete with setup instructions etc.

Build an electronic servo for your boat

Tony House and Derek Baker.

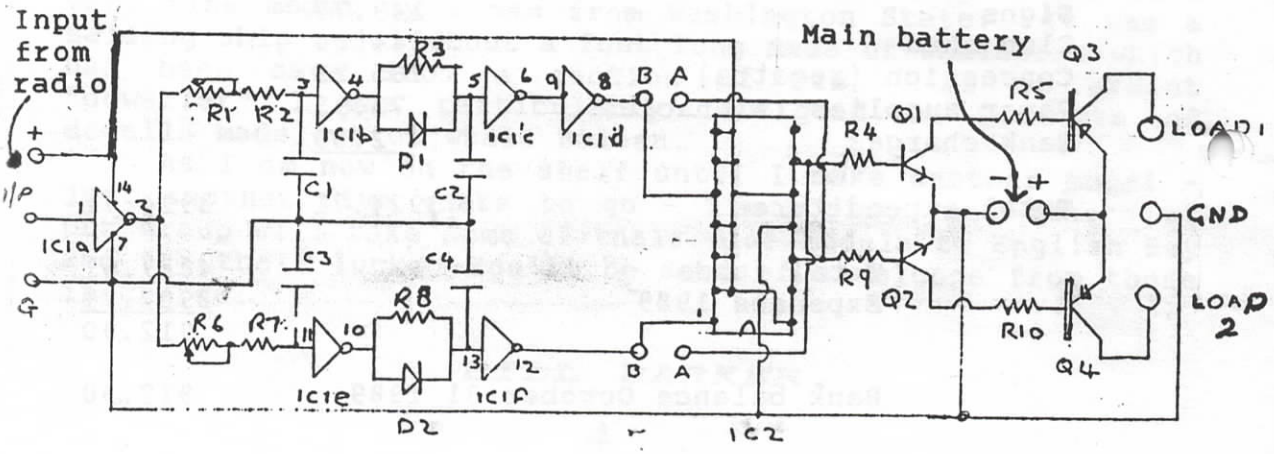
Last month, you may have seen a little circuit that I brought along for "show and tell." Here is how to build it. This little gadget will turn on and off two circuits in your boat either latching them on (that is turning them on with one touch of your transmitter and turning them off with the second,) 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.	D1,D2...IN914 diodes.
R2,R7...10k resistors.	Q1,Q2...2N2222 transistors.
R3,R8...1M resistors.	Q3,Q4...TIP42 transistors.
R4,R9...1k resistors	IC1 4585 hex inverter.
R5,R10.330 ohm resistors.	IC2 74HC73 dual J/K flip flop.



The circuit requires that you connect a power battery at the point shown because this device can switch heavier current loads than the receiver battery can supply. This extra battery can be the same one that you run your motors from.

The circuit as shown, is the latching version, ie, the one which will turn on a devices such as radar, lights.etc and leave them on until you touch the control on your transmitter a second time. If you want to use it for momentary control such as for a horn, leave out the chip marked IC2 and connect resitors R4 and R9 to the "B" connections instead of the "A" positions. The rest of the circuit stays the same.

Setting up the circuit is best done with a test meter. First, set trim pot R1 fully counter-clockwise and R6 fully clockwise. Plug the circuit into your radio and turn everything on. Set the meter to the 12 volt scale (or the one closest if you don't have a 12 volt scale) and place the ground lead on the negative terminal of the battery and the positive lead on the "B" connection or pin 8 of IC1. Push the control on the transmitter which will control the device and then slowly adjust R1 until a voltage appears on the meter (this voltage is either on the pin or not. There are no in between voltages.) This is then set. Now move the positive lead of the meter to the other "B" connection or pin 12 of IC1. Move the transmitter stick to the opposite position and adjust R6 slowly until the voltage appears. The device should now be ready to use.

We would once again like to point out for the benefit of new members, that the club does not allow smoking during the business and entertainment portions of the meeting. Smoking is only allowed during the coffee break.

We thank you for your co-operation.

BACK TO BASICS

Here we are in month three of Back to Basics and it's time to make practical use of what we have learned so far. This month I will show you how to connect a meter in a circuit and measure voltage, current and resistance.

To make things easier let's have a picture. Figure 1 shows a simple battery connected via a switch to a load. Pretty simple you say. You are right but you would be amazed how many people cannot connect a meter correctly in a circuit and make basic measurements. So let's break out our trusty meter and first measure the voltages in our circuit.

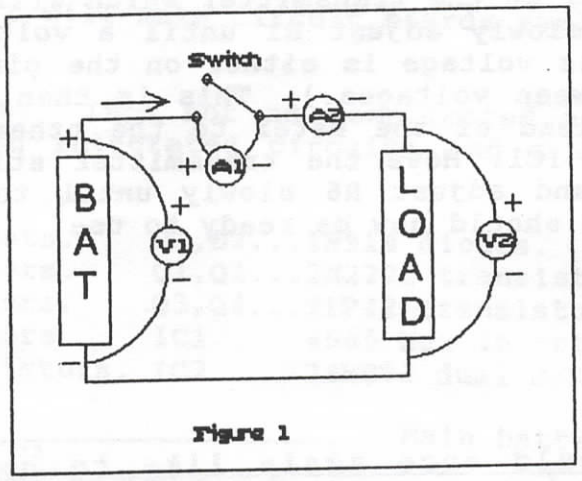


Figure 1

Your meter generally has one terminal called common, ground, or —. Connect your black lead to this terminal. Connection of the other lead, which is probably red, depends on what kind of meter you have. If your meter uses a switch to set the various ranges, connect your red lead to the terminal marked +, or V. If your meter is like mine, which does not have a range switch, we have to analyze our requirements a little bit further.

We must first determine what range we want to set on the meter. Always select a range higher than the voltage you want to measure. For example if you have a 6 volt battery and your meter has ranges of 5,10,25 and 50 volts, use the 10 volt range. If your battery is 12 volts however, you will have to use the 25 volt range. If your meter is mine, with no range switch, plug your red lead into the hole marked with the appropriate range.

If you are measuring an unknown voltage use the maximum range on your meter. This will give you a rough reading and enable you to select a range that closer to the voltage you are measuring.

Now, back to our circuit. Let use first measure the battery voltage. Look at the battery and find the negative or — terminal. Connect your black lead to that terminal.

The red lead is then connected to the positive or + terminal. In the diagram I have shown this meter connection as V1. The meter will indicate the battery voltage.

Let us now see what voltage we have across our load. Our load might be a motor, lights, a relay or some other circuit. Now where do we connect our leads. There probably isn't a + or – on the load. Remember a couple of months ago I said that a voltage pushes current around the circuit. Conventionally we say that current flows out of the +ve terminal of a battery and into the –ve. In our figure an arrow indicates the direction of current flow in our circuit. When current flows into a load it creates a positive voltage at that connection. Therefore we will connect our red lead at the top connection of the load in our figure and the black lead to the bottom.

Your are probably thinking that in our diagram the load voltage would be the same as the battery. Not always. Sometimes the connecting wires are too small or the switch is defective. In that case you will find that you can measure a small voltage between the battery and the load. Thus your load voltage would be less than that of the battery. So much for voltage measurement. Now let's measure the current in the circuit.

First of all, as with our discussion on voltage, set your meter at a range higher then the expected reading. When measuring current we quite often have no idea of what the reading will be. If that is the case, first set your meter to the highest range. Then progressively use lower ranges, to get a more accurate reading, always stopping at a range higher than the reading. If your meter is set on too low a range the needle will swing hard to the right and in the worst case you might even burn out the meter.

To measure current we have to make a break in the circuit to allow the current to flow through the meter. You can either disconnect one of the leads or open the switch and insert the meter across the terminals. Sometimes circuits will have fuzes. In that case remove the fuze and place the meter across the fuze terminals.

Now to the leads. We want the current to flow into the red lead and out of the black lead. Putting it another way, we want the current to flow into the +ve terminal of the meter and out of the –ve. So connect the black to the common or -ve lead of the meter and the red lead to the +ve or A terminal. With a non- switch meter, connect the red lead to the appropriate range for current. In some meters there is a separate terminal for the maximum current range of the meter. Use this terminal when making your initial measurement. Then use the normal current terminal when using lower ranges.

In our figure I have shown our meter connected in two different positions in the circuit. A1 is connected across the switch with the switch open. A2 is connected after the circuit is broken. The +ve or red meter lead is connected closest to the bat-

tery. The -ve or black lead is connected farthest from the battery. This ensures that current flows into the +ve terminal of the meter.

The last thing we might want to measure is resistance. Before discussing this measurement we should understand how a meter measures resistance. Your meter uses an internal battery to pass current through a load. The meter measures the amount of current and from good old Ohm's Law determines the resistance which is then indicated on the scale. If you look at the resistance scale on your meter you will see that it is the opposite of the other scales. The zero resistance position is on the extreme right whilst the maximum position is on the left. That is because the lower the resistance of the load, the more current flows.

To measure resistance connect your black lead to the common or -ve terminal of the meter and the red lead to the terminal marked R or Ω which is the symbol for resistance. Before making the actual measurement we must adjust the meter for zero resistance. This is done by joining the red and black leads together and rotating the knob on the meter (marked "ohms adjust") until the meter needle is lined up with the right hand end of the scale.

Prior to measuring resistance one must make sure that there is no current flowing through the device. This can be accomplished either by disconnecting the load or opening the switch to the battery.

Now place the meter leads on either end of your device and read the resistance on the meter. It doesn't matter which lead is connected to which end of the device unless it is polarized. Discussion of that subject is a bit beyond this article. In our diagram, meter position V2 is the connection for measuring resistance.

There you have it. All you have ever wanted to know about using a meter but were afraid to ask.

To summarize — your meter can measure voltage, current and resistance. Make sure your meter is set to the correct range. Then ensure that the leads are connected to the meter and the circuit correctly. Don't try to measure voltage with the meter set to read current. That can be dangerous to the health of your meter.

Happy Metering!

Derek Baker
658-2345