THE BINNACLE

JANUARY 1989.

NEXT MEETING APRIL 13TH 1989 7.30 pm

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

COMMITTEE 1989.

President.	Ron Wild.	478-5430.
Vice President.	Elwood White.	478-3115.
Secretary.	Ron Hillsden.	479-5760.
Treasurer.	Don McLeod.	478-5380.
Director.(Newsletter)	Tony House.	652-0305.
Director.(Entertainment)	John Marsh.	385-5740.
Director.(Public Relations)	Ron Armstrong.	658-5129.
Director.(Librarian)	Don McCord.	652-0188.
Director.(Newsletter)	Stan Jacobs.	479-3989.
Director.(SHAS Liason)	Fred Haire.	478-3650.

From the President

As most of you know, (except those who were in warmer climes, names unmentioned) our show at the CanWest Mall was a definite success even though the weather did its best to freeze us out. I wish to thank once again those members who braved the snow & ice to bring their models out, and also those who braved the elements to man the display. This is,indeed, dedication to the hobby. My heartfelt thanks fellows.

Ron

Hints & Tips

If you're still getting "glitches" even after putting capacitors on your motor brushes, try running a wire that is soldered to the stuffing tube to the motor case.

FOUND

A flat bottomed R/C model boat approx 14" long by 12" wide has been found near Trial Island. Has a Futaba receiver & a model airplane motor. If you know the owner, call Mike at 595 7640

Upcoming Entertainment....John Marsh.

April.....Hank Wansink will talk on "Getting the most out of your Hobby store."

May.....Cdr. Barry Hodgkin, QHM RCN will talk on "Ships for Various Roles."

June, July, August...Meetings to be held at the lake.

September...Jim Greenwood. His talk will be on "Naval Architecture."

October...Film.

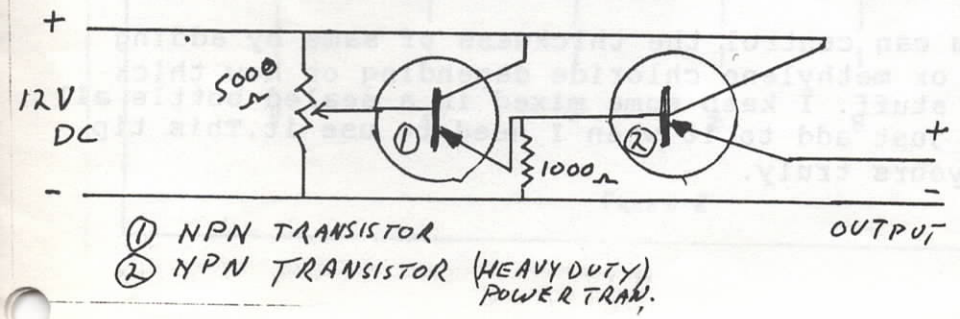
November...John Gough..."Propellers for models."

December...Dinner and Surprise entertaiment.

All events are of course, subject to change.

The End of Fallgatta.

Fallgatta has come to an end. This year the Regatta will be held on July 9th 1989 at Sandhill Lake on the Saanich Historical Artifacts Society grounds. The reasons for the change are twofold...one is the game of Russian Roulette we play each year with the weather and the other the problem of keeping enough water in the pond. By going to a date in July, which we hope will not conflict with too many other events we hope we can overcome both problems. Anyway, we are going to give it a try this year and see how it goes.

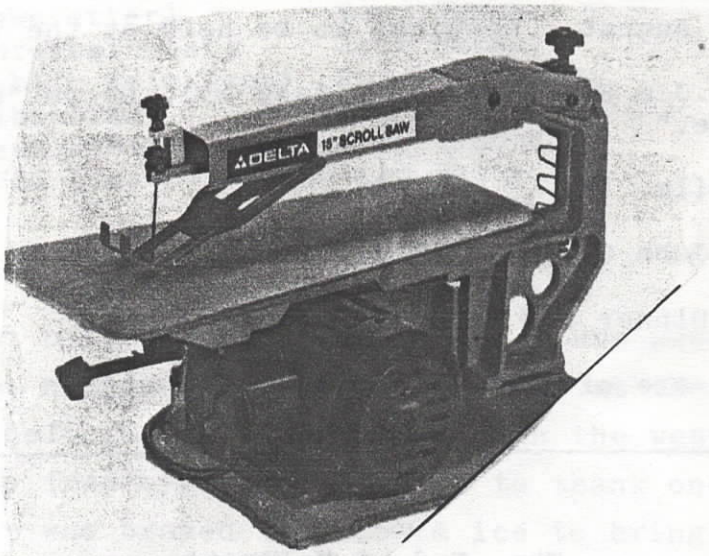


① NPN TRANSISTOR
② NPN TRANSISTOR (HEAVY DUTY) POWER TRAN.

SIMPLE SPEED CONTROLLER FOR WINCHES, RADAR ETC. MAY BE REVERSED BY ADDING DPDT SWITCH ON OUTPUT.

For Sale.

Delta 15" scroll saw. One piece cast base 17" x 7" worktable. Brand new. $175.00 ($300.00 new) See Don Gorbie if interested. His phone number is 478-6283.



DELTA 15" SCROLL SAW

Hints and Tips.

If you want to fill and sand a wooden hulled ship, use a mixture of five minute epoxy filled with some "micro balloons." You will find that it is stronger than the plastic putties (which are meant for plastics) and it is easy to sand. Tip supplied by Adam at Royal Oak Hobbies to Jack Lenfesty who is passing it on to you.

Talking of plastic putties, it is easy to make your own putty by melting pieces of styrene in some methylene

chloride. You can control the thickness of same by adding more styrene or methylene chloride depending on how thick you need the stuff. I keep some mixed in a sealed bottle all the time and just add to it when I need to use it.This tip supplied by yours truly.

SHIP DISPLACEMENT AND ALL THAT

There I was one afternoon approaching the end of phase I of my SUN XXI Tug - that's before paint, engines, radio installation etc - when I realized that I had no idea how much the thing would weigh. I recalled from basic naval architecture that if a vessel is too heavy, it will sink and if not heavy enough it tends to fall over. I looked at the drawing, but no mention of displacement. What to do ? Back to basics says I.

I did recall a fellow named Archimedes from a school course somewhere. You remember him - "A body when immersed in water gets wet". What I had to do, somehow, was figure out the underwater volume of my trusty tug, multiply that by the density of water and I had it. But how does one calculate the volume of such an irregular figure. Not to be confused with irregular verbs for you french speakers.

The first step was to divide the underwater shape into manageable proportions. Then one could approximate the volume of each piece, add them together, and Eureka (another famous Greek) I would have it. So I took my boat plan. Wait a minute - before I get you as confused as I am - how about a picture, so you know what I am talking about.

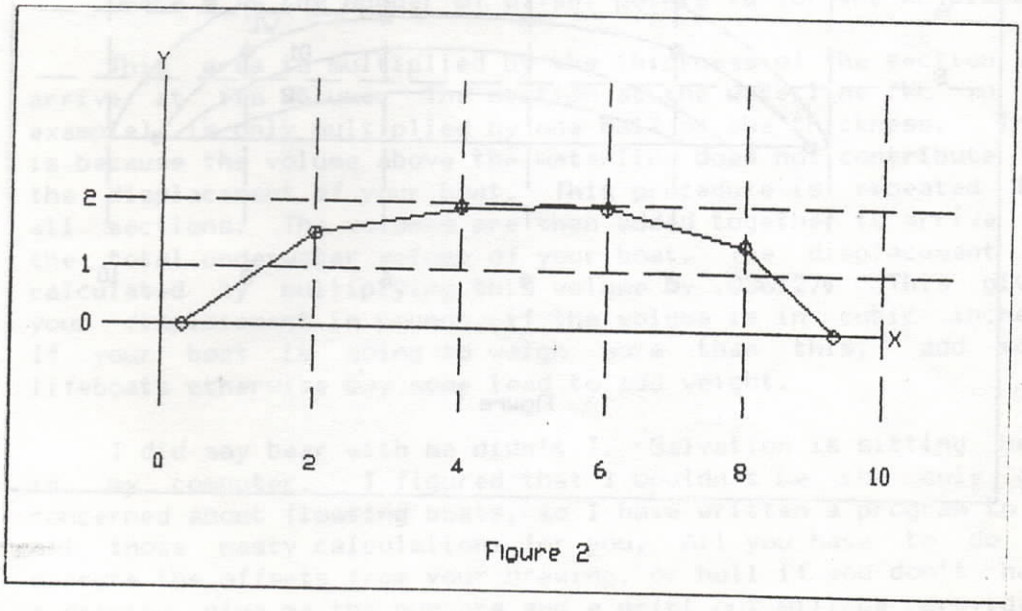


Figure 2

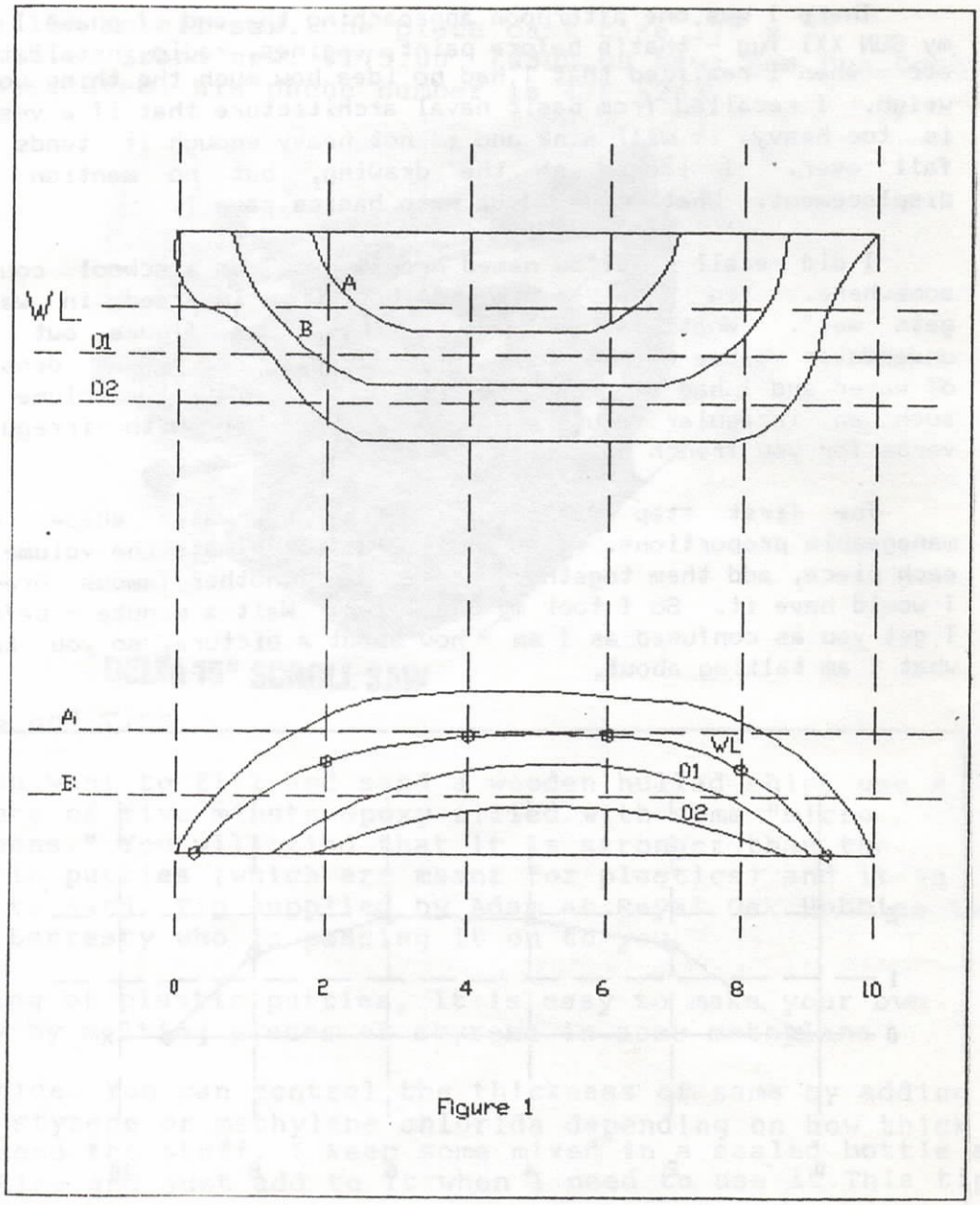


Figure 1

Switch to Figure 1. No that's not my tug but it will help illustrate the principles. WL (waterline), 01 and 02 are horizontal planes shown as lines on the profile view. Where these planes intersect the hull one gets curved lines which are shown on the plan view. By calculating the area (on the plan view) contained by these curved lines and the centerline, and multiplying by the distance between the planes, one can arrive at the volume of the underwater hull. We are still not there though. It is difficult to calculate an area bounded by curved lines. To solve that problem I drew straight lines between points on the curves. These points are referred to as offsets. The offsets for plane WL are shown as small circles on Figure 1. Figure 2 shows the results of this procedure. This process would be repeated for the all the other planes (01,02 in this example). Don't give up yet - bear with me, there is salvation at the end of the tunnel.

You can see that Figure 2 is laid out on an X-Y axis. This leads into the formula for calculating the area. The formula is:

$$\text{Area} = \sum_{n=2}^{m} (X_n - X_{n-1})Y_{n-1} + .5(X_n - X_{n-1})(Y_n - Y_{n-1})$$

where m is the number of offset points (6 for the WL plane)

This area is multiplied by the thickness of the section to arrive at its volume. The section at the waterline (WL in my example) is only multiplied by one half of the thickness. This is because the volume above the waterline does not contribute to the displacement of your boat. This procedure is repeated for all sections. The volumes are then added together to arrive at the total underwater volume of your boat. The displacement is calculated by multiplying this volume by .036127. This gives your displacement in pounds, if the volume is in cubic inches. If your boat is going to weigh more than this, add some lifeboats otherwise buy some lead to add weight.

I did say bear with me didn't I. Salvation is sitting here in my computer. I figured that I wouldn't be the only one concerned about floating boats, so I have written a program to do all those nasty calculations for you. All you have to do is measure the offsets from your drawing, or hull if you don't have a drawing, give me the numbers and a print out will be provided.

Figure 3 is a printout for our fictitious boat in Figure 1. For those of you who have a computer, come on round for a copy of the program. Who knows you might have some ideas to help me, as a number of club members already have.

This procedure is only an approximation of boat displacement. It is accurate enough, however, to give you some idea of what your boat should weigh fully loaded. Happy Boating!

Derek Baker
658-2345

Calculation of Vessel Volume and Displacement

Calculation Of Volume for Section # 1

Point #	X coord(ins)	Y coord(ins)
1	0.250	0.000
2	2.000	1.500
3	4.000	1.900
4	6.000	1.900
5	8.000	1.500
6	9.250	0.000

Thickness of section # 1 is .5 inch(es)

Volume of Section # 1 is 12.85 cubic inches

Calculation Of Volume for Section # 2

Point #	X coord(ins)	Y coord(ins)
1	1.250	0.000
2	2.000	0.750
3	4.000	1.500
4	6.000	1.500
5	8.000	0.900
6	9.000	0.000

Thickness of section # 2 is 1 inch(es)

Volume of Section # 2 is 16.76 cubic inches

Calculation Of Volume for Section # 3

Point #	X coord(ins)	Y coord(ins)
1	1.900	0.000
2	4.000	0.800
3	6.000	0.800
4	8.000	0.400
5	8.500	0.000

Thickness of section # 3 is 1 inch(es)

Volume of Section # 3 is 7.48 cubic inches

Total Volume = 37.09 cubic inches

Displacement = 1 lbs 5 ozs

Figure 3

THIRD ORDER INTERMODULATION.

First of all, ignore the title. If you really want to know what it means come and ask me.

The following comes to us from San Diego via The Westcoast Model Boat Club Newsletter.

A potential exists for interference to occur in the 75Mhz band when two frequencies are operated too close together. Two frequencies will mix to produce interference on another entirely different frequency. An example of how this can happen is as follows...

First frequency....CH62.....75.430.
Second frequency...CH64.....75.470.
Third frequency....CH66.....75.510.

Now for the arithmetic...

75.470 x 2 (2nd harmonic) = 150.940 Mhz.

150.940 - 75.510 = 75.430Mhz.

Therefore, the third transmitter gets "hit" or interfered with by the resulting "created" frequency. Dangerous combinations are:

Channel	May be interfered with by the following pairs.			
62	64/66	66/70	74/68	70/78
64	66/68	70/76		
66	68/70	70/74	62/64	
68	66/74	74/80		
70	66/52	68/66	74/78	
74	68/62	70/66		
76	70/64			
78	70/62	74/70	76/74	
80	74/68	78/76	82/84	
82	74/66	76/70	78/74	80/78
84	74/64	76/68	89/76	82/80

Maybe sometime at the pond we should try to create these conditions and see what happens. Could also be an answer to some of the problems we are experiencing at the pond.

Here's an article reprinted from the
NORTHWEST R/C SHIP MODELERS ISSUE OF FEBRUARY 1989

Building Small Boat Propellors
By Bob Jacobsen

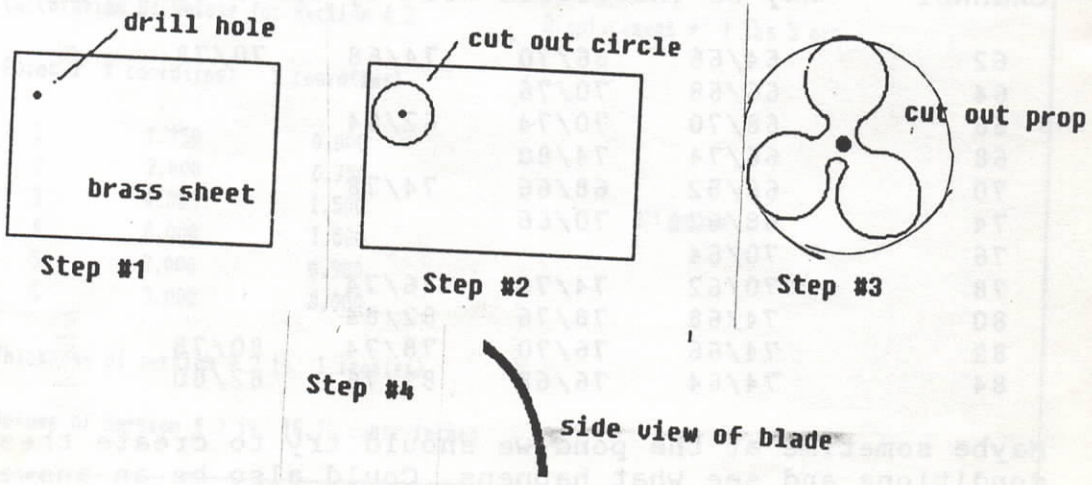
Recently it has become very popular to convert small plastic models to R/C. With the advent of miniature r/c gear it is easy. Most plastic models have everything except a stuffing tube and a good propellor. Since my props seem to work pretty well (at least on my minesweeper) I will attempt to tell you all how to do it.

I always make my stuffing tube from a length of brass tubing. My shaft is the next smaller size of tubing, that's right, tubing. Music wire makes lousy shafts because it rusts. Brass tubing is plenty strong and it is easy to solder a prop to it. You can fill the shaft with a piece of brass wire to make it solid.

A small piece of clear fuel tubing connects it to the motor.

The prop is cut from brass sheet - usully about .015 First drill a hole in the sheet that fits tightly over the shaft, then draw a circle around the hole the size of the prop you want. Draw 3 blades on the brass sheet and cut out with scissors. Clean up your prop with a small file and solder to the end of the propshaft.

Final step is to bend some pitch into the blades. With a pair of needle nose pliers bend a small amount of pitch and then cup the back edge. Cupping means to bend the back edge of the blade up (see drawing). The best part about this is that you can change the pitch easily to change the performance and load on the motor.



COULD THIS BE YOU ?
LET'S GET THOSE DUES IN !