



The Binnacle

Victoria Model Shipbuilding Society
Victoria BC Canada
vmss.ca



Yahoo! Newsgroup : VIRCB
Vancouver Island Radio Control Boaters

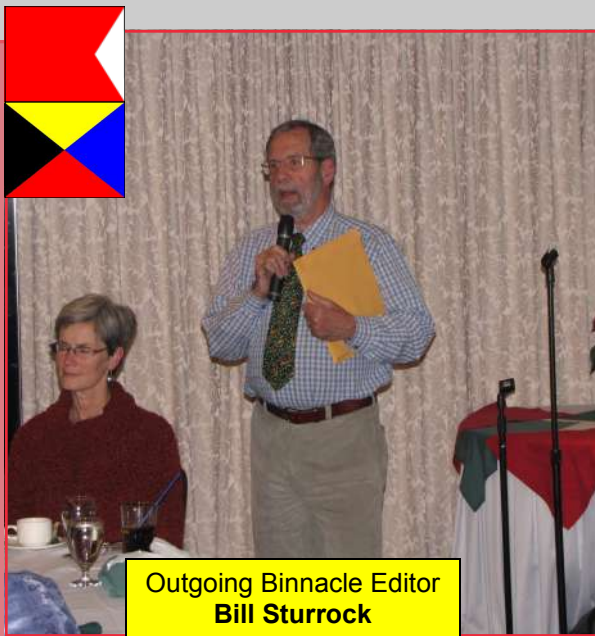
Christmas Awards Dinner



VMSS Members
Cathy Munford & Romain Klaasen



Ron Armstrong entertaining us
with a song, see page 10 for lyrics



Outgoing Binnacle Editor
Bill Sturrock



Good turn-out of members

Bravo Zulu to **Bill Sturrock** for the years
he has done the Binnacle. Great Job Bill.



DUES ARE DUE!

RSVP

(Regular Sailors Volunteer Payment)



2012 Executive Committee

President: Barry Fox	294-0350
Vice-Pres: Ron Armstrong	385-9552
Secretary: Graham Smith	477-8234
Treasurer: Mike Creasy	888-4860
Show Coordinator: B. Andrews	479-2761
Binnacle Editor: Scott Munford	382-1673
Quartermaster: Bob Rainsford	383-2256
CRD Liaison: Barry Fox	598-4619
Parks Liaison: Mike Claxton	479-6367
Sailing Director: David Cook	388-5994
Librarian: Dave Denton (Plans)	478-1800
Librarian: Don Meyer (Books)	381-3356
Publicity: Ron Armstrong	385-9552
Director@Large: Jim Briante	590-5708

All above (250) area code



Your Executive meets the last Thursday of every month!]

The Victoria Model Shipbuilding Society is a non-profit club, open to all, established in 1978 under the Societies Act of B.C.

Mailing address:
106-4480 West Saanich Road
Box 55
Victoria, BC V8Z 3E9

Contributions to the Binnacle are welcomed.

Deadline for submissions: **Sunday before the monthly meeting.**

Editor: newsletter@vmss.ca

BC Shaver & Hobbies

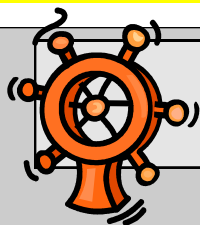
Garnet Rancier

742 Fort St, Victoria BC V8W 1H2
(250) 383 0051
<http://www.bcshaver.com/>



Ship Kits & Accessories
Radio Control
Tools and Materiel





The Prez Says...

Prez Says

Another year under way already. A great turnout for the Christmas Light Parade with a lot of spectators hanging about the edge of the pond for at least the first half of it all. And why? Because we had a very good turnout of boats and they were all well lit up. The Barbie girls even made an appearance in their AmphiCar!!!

The Awards Night/Christmas party was well attended with our Best New Build boats all on display for everyone to view. Another excellent meal, great friendship and door prizes and awards all given out. Now onto the New Year.

As seems to be the normal case, your Exec gets away without having a December meeting as it falls between Christmas and New Years, and we are all usually a bit busy right then. But back to the routine this month and moving ahead.

Earlier last year, we had discussed the possibility of VMSS having some sort of presence in the annual Victoria Day Parade through downtown and where ever else the route takes us. We have secured a space in the parade and **Ron Armstrong** is coordinating what our display will look like and whatever we need to do to produce a small but appropriate "float" to show of what our club does. This is a chance to show a lot of people who don't even know we exist that we do. Maybe even a few new members to help us keep that level near where it needs to be.

Looking forward, we will be having a fall event to share with our fellow modellers in Burnaby with hopefully a good number of us going to their place earlier in the year to enjoy their hospitality and boating venue. More details as dates firm up on both events.

Toward the end of March we will be hosting a 2 days sailing regatta that will be the second "Beaver Fever" event, following up on the first one held at the end of 2010. Moving this to spring will give us more water in the lake and should get us away from too much of a weed problem. Some help will be needed to pull that together so give me a holler if you would like to help out.

If you are working on a winter project that looks like a new boat, remember to aim to have it complete by



ON THE RADAR

INFORMATION ON UPCOMING EVENTS

February 3,4,5th: Westshore Hobby Show



Meetings: Second Thursday 7:30-9:30
4050 Carey Road
Next is: February 9th, 2012



POWER: Sundays 10 – 12
 Harrison Model Yacht Pond (HMYP)
Dallas Road at Government Street



SAILING: 1st and 3rd Sundays 1 – 3 PM
 Beaver Lake
 Next is January 15, 2012



LANGFORD LAKE NAVY
Wednesdays 9:30
 Langford Lake, Leigh Rd at Trillium

November and enter it in the Best New Build judging that will take place at our AGM at that time.

So let's get those batteries charged, our wiring tidied up, the leaks at least slowed up and get out to as many club functions as we can this year. We have a lot of very nice boats in our club, let's use them.

-Barry



THE SUB SUBJECT

During the week starting August 14, 2000, the media were full of the news that a Russian submarine (the Kursk) had perished in the Barents Sea while on Fleet exercises.

Few details came "off the wire" and press, radio and TV basically passed on what they were fed, with, at that point, no investigative reporting involved. This much became known to the general public: Kursk, an Oscar II in NATO speak, had gone to the bottom in relatively shallow waters, i.e. about 320'-350'. It was not known if there were survivors among the 107 man crew and 11 observers (several torpedo experts among the latter).

In dribs and drabs, it was learned that Kursk had carried one or more high speed experimental torpedoes. One had blown up in it's tube or in the torpedo room. Some of the crew were killed right there and then, but there were survivors in the stern compartment(s). The Russian Navy would make rescue efforts.

The efforts were not successful. The wreck lay at a 60 degree angle to starboard and, initially at least, at some 45 degree down by the ravaged bow.

Some days passed before the help offered by the RN and Norway was accepted. The boat's position and damaged escape hatch frustrated all efforts. Ultimately, all aboard died.

But the rumour mill started to spin, and a broad variety of conspiracy theories found willing audiences.

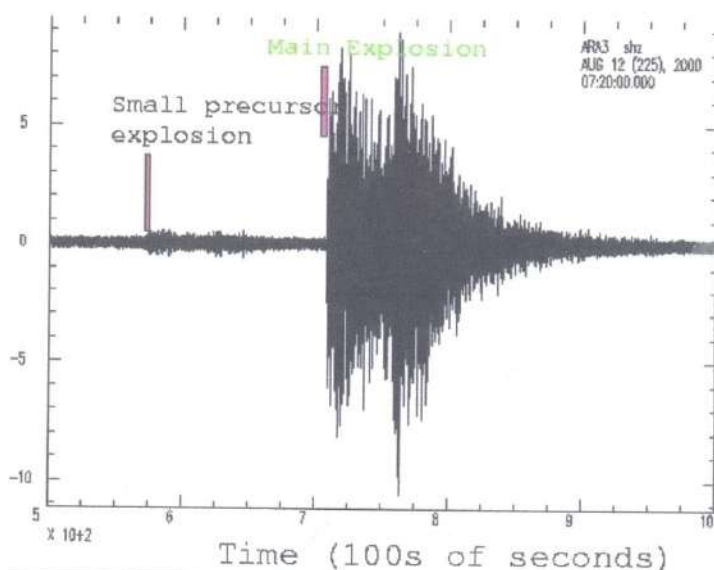
Meanwhile (and later confirmed) Putin and Clinton put in much time on the phone -- Clinton had the upcoming Presidential elections on his mind and, yes, to Russia US green-backs would be welcome, but why all these discussions?

Well, quite a lot of (more than) interesting info had not been released for short-term public consumption.

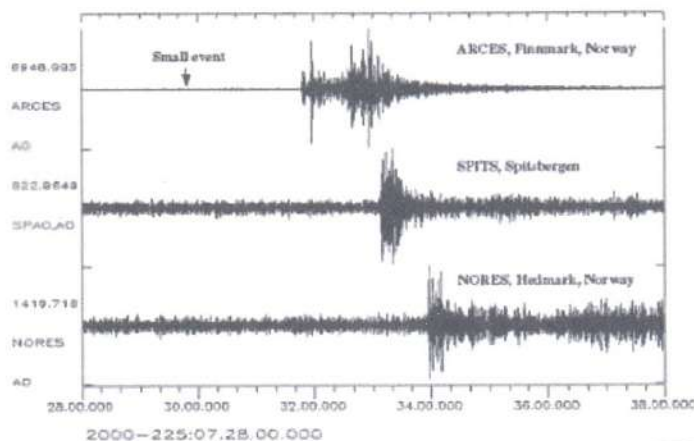
No mention was made that, as a matter of routine, the US Navy had chaperoned the Russian's activities big time. They had two Los Angeles class subs, i.e. USSN Toledo and Memphis, plus the USNS Loyal (a towed array surveillance ship) in close proximity to the Kursk. In fact, Toledo had been so close that Russian

sonar had observed her to be lying at the bottom to Kursk's starboard side. Shortly after that observation, the US boat had crept away at quite low speed. Not too much later, radio interception indi-

FIRST SEISMIC TRACE RELEASED BY NORWAY



NEXT RELEASES FROM THREE DISTANT LOCATIONS



Note that in these subsequent releases, from Finnmark, Spitsbergen and Hedmark, the "Small precursor explosion" was downgraded to "Small event."

(Continued on page 5)

(Continued from page 4)

cated that she was seeking permission to enter a Norwegian port for repairs (not food as it had been misinterpreted by the embassy in Moscow). Apparently, to someone not fluent in the Russian language, the two words can sound quite similar but why, one may wonder, would a US sub need extra food during patrol.

Many details and obvious misinformation aside, something very close to the likely truth of the incident was revealed by the following (Norwegian) seismic traces. In the first one, the left portion of the trace is labelled "Small precursor explosion". In the second set, that interpretation reads "Small event". Upon more detailed visual and audio examination, it was considered to be a loud, grinding sound which was then followed by the warhead explosion. Conclusion: The American sub had collided with the Russian one -- not quite head-on but under a 30 degree angle. That collision caused the Russian (experimental and very sensitive) torpedo to go off.

Underwater photographs of **Kursk's** bow, and right up and into her sail, show hull damage caused from the outside (collision) and the inside (explosion). Putin and Clinton most all likely knew all of that. Then turned to compensation and salvage.

No doubt, in these negotiations, Clinton was dealing from a position of strength. The seismic, sonar and photographic evidence was too compelling to allow for much argument. In the meantime, the Kursk topic went off the air, until it was learned that the USN/Pentagon, had hired a reputed Dutch salvor to raise the wreck and haul it back to her Severomorsk base. One little twist: the bow section was to be severed from the hull, and left where it was. That action, apparently, was a "safety" precaution. But once more: who is to know? Meanwhile, humanitarian obligations were met. The bodies received an honourable military funeral.

As an aside: the Dutch outfit, apparently, used a very special saw to sever the bow. No cutting torches required.

At this point, there may not be much more worthy of exploration. Naval collision involving boats and ships of the USN and Russia are relatively frequent and often unreported events. But one nagging question remains: Why did Vladimir Putin not cut short his Black Sea holiday, and go a make speech at

Kursk's base? Put in a same and perhaps less dramatic position, any American President or Canadian Prime Minister would have done so posthaste.

For next month, provided that dullness can be avoided, it is tempting to deal with some 19 sub-to-sub, USN-USSR at sea collisions. Much of that was suspected, but the relative frequency is still surprising.

P.S. Thanks for the research, **Bill Sturrock**.

Romanus Unicum

(Inspired by **Len Gibbs**)



SALUTE TO BILL

by

Ron Armstrong



As founding editor of the Binnacle (when type, cut, and paste had a very primitive meaning!), I can well appreciate the excellent work **Bill Sturrock** has done for us these last five (?) years as editor. Not just the fonts, graphics and layouts raised to higher levels but his classic photography augmented the product as well. Bill could be relied upon to cover any club event or venue with clear, well-framed results (Scott assures me he will continue that coverage).

His gracious and cheerful personality invited contributors; eventually steady columnists like the two Mikes and Dave D. joined the long established submariner Romaine.

There is much more to say, and others probably have. I'll just close with "Bravo Zulu" Bill...Scott has big shoes to fill!

Part 1: Schnellboote Schoop

Last summer, despite the resolution I had made to not take on any more new projects, I succumbed to a temptation that all model builder fear. I fell prey to another project! The trigger was Rob's Schnellboote. I simply could not resist the desire to acquire such a fine hull. It was just what a *needed* (to model ship builders '*needed*' means '*wanted*'). I was not disappointed with this impressive hull! It is beautifully crafted, fast, and large enough to carry tons of electronics. A perfect platform to test the **JB High Tech ESCs** powering three Pittman motors and later for installing the **Non Destructive Model Warship Combat System** that is now on printed circuit boards and ready to be tested.

To ESC/Motors speed and power consumption tests were carried out on October 20, 2011 at Langford Lake with the help of Rob and Craig. The Schnellboote had following equipment:

- Three ESC 2011: Starboard and Port ESCs on proportional channels, Centre ESC on non proportional on/off channel programmed with soft start/stop
- Three High Tech Pittman Motors: 1400 series wound to operate at 30.3VDC
- Three Propellers: Rivabo 4 bladed 70 mm
- Lipo batteries: 15vdc, 24vdc, and 30vdc
- Telemetry to measure current consumption

Test results are shown below. The ESC/Motors combination performed as expected. Highly efficient delivering high torque with very little power consumption!

Test 1: Hull Held 24VDC		Test 2: Hull Moving 24VDC		Test 3: Average Speed for 100'		
Motor(s)	Current	Motor(s)	Current	Voltage	Time Sec	Time mph
Port	3A	Centre	2.2A	15	18	3.8
Centre	2.9A	Port & Star	3.5A	24	13	5.2
Starboard	2.8A	All Three	5.1A	30	9	7.6
All Three Off	.35A					
All Three On	8A					



(cont. on pages 7, 8 & 9)



A Schnellboote Needs Functioning Torpedoes!

According to Rob, a Schnellboote needs to have working torpedoes. Actually an excuse for another project! Rob now is very close to having a working system. His torpedoes are built and working. A live launch should happen soon if it hasn't happened already. I'm still at the planning stage and learning from his mistakes!

The approach that I've taken for the **Torpedoes System** is based on my own personal interests and experience. The general plan of what I would like the **Torpedo System** to do is outlined below.

- Torpedoes should be easily configurable as radio controlled or autonomous
- Autonomous torpedoes to employ *Inertia Sensors* based on electronic programmable accelerometers capable of sensing acceleration and deceleration
- A **Programmable Torpedo Launch Controller** will supervise all aspects of a launch including
 - Decoding valid RC commands to initiate a torpedo launch event
 - Reading the status of safety sensors in order to determine whether a launch can take place
 - Activating sequentially the various mechanisms to safely eject torpedoes
 - Aborting any launch command that is not safe

The Torpedo Hull

A torpedo needs to carry electronic/mechanical parts without sinking and needs to float with 95% to 99% of its cross sectional area below the surface of the water. The weight (payload) that a torpedo can carry depends on the geometry of the outer shell and the density of the material used in its construction. The first step is to determine the payload for a given geometry. This information is necessary because the maximum payload places severe weight/volume constraints on the type of hardware that can be used to propel and control a torpedo. The maximum payload can be determined experimentally after the hull has been constructed or approximated mathematically before any construction takes place. The first method had no appeal to me. I computed the maximum payloads mathematically for hulls made of PVC and Aluminum tubing. The PCV is a standard 1" outside diameter pipe that can be purchased at any hardware store. The aluminum tubing has also a 1" outside diameter but with a much thinner wall thickness. The formulas assume that the torpedo tube is a long cylindrical shell of uniform cross section and does not include the cone of the torpedo or any other external parts such as fins or rudder. The cone and other external components can be treated as part of the payload. However, the actual weight must be replaced the corresponding weight under water. This can be done experimentally by weighing these objects submersed in water or mathematically by computing their volume. The mathematical approach only works if the density of the material used is known and personally *love* math! Once the maximum payload has been established the next task is determine what type of hardware can be put inside. The major components that gobble payload are the weights of the drive system and batteries. The physical dimensions of motor(s), batteries and other electronics components are also factors to be considered especially for thin torpedo tubes. The RC torpedo poses additional challenges. It requires addition components an RC Receiver, ESCs, servos, and batteries. The receivers needs to fit in the tube and if you can't find one that fits its back to the drawing board. In my own application either the PVC or aluminum tubing can be used to construct the hull. The weights of the components I plan to use are below the maximum calculated payload both for RC and Autonomous torpedoes. The ESC is of my own design. It is tiny, very light and can operate within a large range of voltages from 2.5v to 30v. The torpedoes will be powered a single 3.8V power source.

VMSS MODEL BOAT PHOTOGRAPHY CONTEST

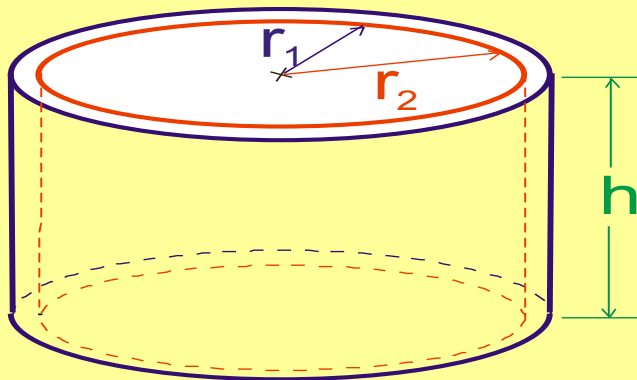
OPEN TO MEMBERS OF ANY MODEL BOAT CLUB

Just a few Rules:

1. Maximum of 3 entries per amateur-photographer/member: **DIGITAL (jpg) only!**
2. Send by email attachment to: newsletter@vmss.ca **subject line: "PhotoContest Entry" (important!)**
3. Model ships and related topics only, please. **Limit of 3 (three) entries per person.**
4. **Deadline November 14th, 2012.**
5. Judges decision final; prizes to be announced at a later date in **The Binnacle**.

NOTE: It is intended that the top 12 BEST entries will be used in our VMSS Calendar for 2013. **Questions:** email to: newsletter@vmss.ca

GOOD BOATING AND SHOOTING!!

**Cylindrical shell variables:** r_1 outer radius r_2 inner radius h height D density**Computed variables:** V_h Volume of shell W_h Weight of shell V_d Volume H_2O displaced by r_1 W_d Weight of displaced H_2O

$$V_h = (r_1^2 - r_2^2)h \quad \text{---(1)}$$

$$W_h = (r_1^2 - r_2^2)hD \quad \text{---(2)}$$

$$V_d = r_1^2 h \quad \text{---(3)}$$

$$W_d = r_1^2 h(1) \quad \text{---(4)}$$

Calculations for 10" PVC Torpedo Tube:

$h = 10" = 25.4 \text{ cm}$, $D = 1.4 \text{ g/cm}^3$, $r_1 = 0.5" = 1.27 \text{ cm}$, $r_2 = 0.41" = 1.04 \text{ cm}$

Weight of tube using equation (2) : 59.44g

Weight of displaced water using (4): 128.70g

Payload = $(128.7 - 59.77) \text{ g} = 68.77 \text{ g}$

Calculations for 10" Aluminum Torpedo Tube:

$h = 10" = 25.4 \text{ cm}$, $D = 2.7 \text{ g/cm}^3$, $r_1 = 1.27 \text{ cm}$, $r_2 = 1.12 \text{ cm}$

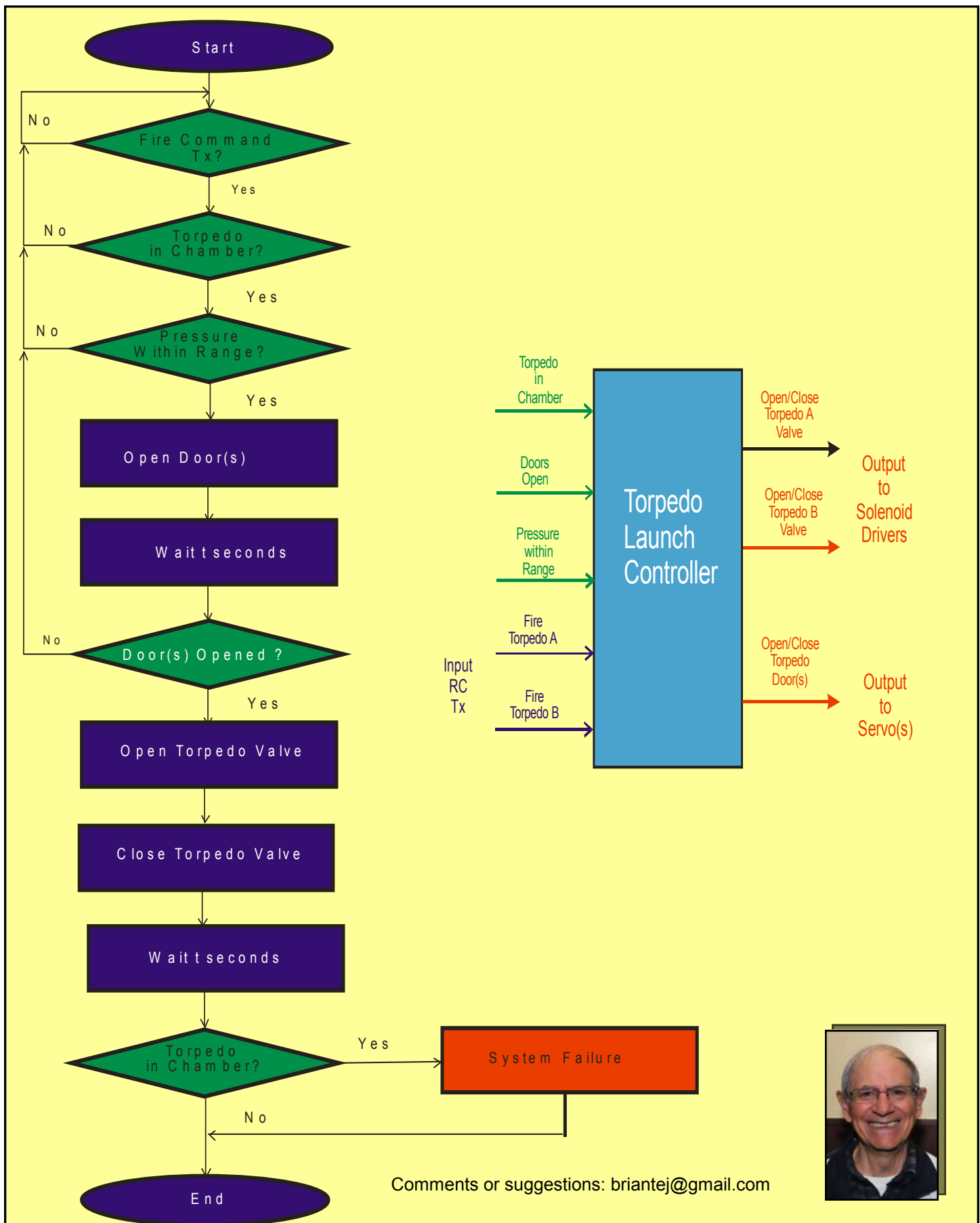
Weight of tube using equation (2) : 77.2g

Weight of displaced water using (4): 128.70g

Payload = $(128.7 - 77.2) \text{ g} = 51.5 \text{ g}$

Programmable Torpedo Launch Controller

The Torpedo Launch Controller, shown below together with the corresponding flow chart, will be a microcontroller based device that can control the firing of any type of torpedo. The ejection system can be electrical/mechanical, pneumatic (air or CO_2) or other. The Launch Controller is programmed for the type of ejection system used and requires no changes to hardware. However, each type of ejection system will require its unique drive modules and input sensors. The block diagram shown below is for a pneumatic ejection system that uses standard servo to open/close torpedo doors. Note that the servos are not driven by the RC Receiver but are driven by the Launch Controller.

Comments or suggestions: briantej@gmail.com



SKIPPERS ON THE SHORE

We're the guys who build the boats,
Sail them and drive them:
Radio control whatever floats;
We're the Skippers on the Shore!

We learn to laugh and take a joke,
Egos never last for long;
Dave's tug blew up pink smoke:
Another day for a Skipper on the Shore.

Barry had a dancing tool,
A tug, which he stood on end,
And chased us all from the pool;
Laughing Skipper on the Shore!

Sailing masters race in gales,
And call protests civilly;
Their camaraderie never fails,
Shivering Skippers on the Shore!

Pascal has brought us back to steam,
With a sedate open launch;
Only he has boiler dreams;
Skippers stand back on the Shore!

There are working submarines
Prowling the darkest depths;
Romaine is expert with these machines;
A Skipper looking down from Shore.

Murphy is our unwelcome mate.
In shop and on the water;
We blame him for all our fates;
Ghost Skipper on the Shore.

Ancient Rome had model ships,
And still they are such fun;
Anyone can go to sea,
Anyone can really be.....
A Skipper on the Shore,
A....Skipper....on the.... SHOOORE!

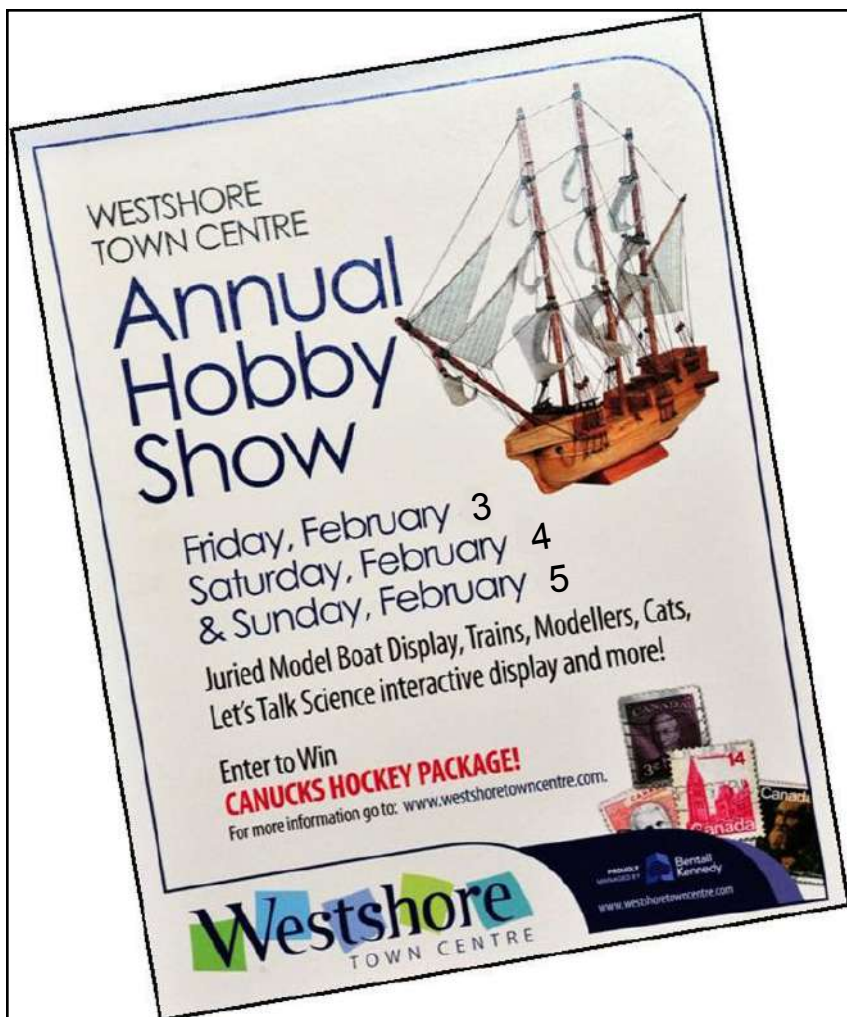


Bill Andrews Reno at Harrison

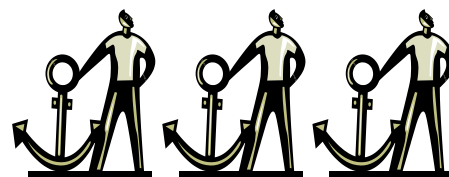
DUES 'R DUE!

RSVP

(Regular Sailors Volunteer Payment)



The Hobby Show is fast approaching and **Bill Andrews** is taking names for the sign-up sheets. If you can't make it to the meeting, you can contact Bill at (250) 479-2761.



Ships at our Lighted Boat Parade



New Year's Day Sightings



The sailors had some company at the lake, note the wakeboard in the background



Harrison Pond



Beaver Lake