

March 2018 Volume 40 Issue 3

# THE BINNACLE

Victoria Model Boats  
Victoria, B.C.



Casting the Lead  
Edward White



Pascal's Couronne  
The Prototype



Big Guns sink Ships  
Mike Creasy reprise.

Happiness is a sunlit pond!  
Sunday March 4th.



<http://www.vmss.ca>



**From  
The Bridge**

Greetings everyone

Well it was a great day on the pond on Sunday and I'm hoping we are starting a drier warming trend. Hopefully lots more of these days ahead

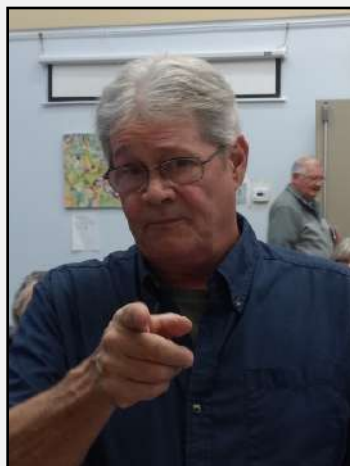
It was really good to see everyone who turned out at the pond and some new boats to check out.

Up and coming event this month is Beaver Fever out at Beaver lake on March 17 and 18. Always lots of fun, see Peter Stevens for any info or questions.

We believe the executive have the final draft of the new constitution and regulations and will be mailing them to all members because we are required to before a vote to ratify them. We will not be voting this next meeting we have to present it to the members for final approval, if all goes well the vote will be April 12th 2018 meeting

To vote on the Constitution you must be a paid-up member, so please plan to get those dues paid by the end of March. If you have already paid, thank you.

Regards. Mike Bush



**2018 Executive Committee**

<i>President: Mike Bush</i>	<i>418-5527</i>
<i>Vice-Pres: James Cox</i>	<i>382-3266</i>
<i>Secretary: Bev Andrews</i>	<i>479-2761</i>
<i>Treasurer: Mike Creasy</i>	<i>888-4860</i>
<i>Director @ Large: Bill Andrews</i>	<i>479-2761</i>
<i>Show Coordinator: Vacant</i>	
<i>Binnacle Editor: Edward White</i>	<i>385-6068</i>
<i>Quartermaster: Bob Rainsford</i>	<i>383-2256</i>
<i>CRD Liaison: Adrian Harrison</i>	<i>592-4232</i>
<i>Parks Liaison: Mike Claxton</i>	<i>479-6367</i>
<i>Sailing Director: Peter Stevens</i>	<i>656-8999</i>
<i>Membership: Bev Andrews</i>	<i>479-2761</i>
<i>All above area code (250)</i>	



**ON THE RADAR**

Upcoming Events

**Beaver Fever: March 17th. - 18th.**

**Nanaimo Club Show: see page 12.**



**Meetings: Second Thursday 7:30-9:30**  
**St. Peter's Anglican Church, Lakehill**  
**3939 St. Peter's Road**  
**Upcoming meeting: March 8th.**



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



**SAILING: 1st. and 3rd. Sundays**  
**Beaver Lake**  
**Beaver Fever to come March 17-18**



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



**Victoria Model Shipbuilding Society  
General Meeting - February 8th, 2018**

Call to order: 7:30 pm by President Mike Bush

New members/visitors: None

Health and Welfare: Barry's wife had surgery - broken kneecap

Financial Report: Bill for insurance - \$850.00  
Harrison pond fee - \$150.00

Mike went over the draft proposed constitution/bylaws which must be finalized and submitted by the fall of 2018. All members received a copy and by next meeting final edition can be drafted. Must have 2/3 members in good standing at meeting.

Sailing Report: Nothing to report at this time.

Upcoming Events: Buccaneer Days - Jim Cox  
Historical Society - Ed White  
Saanich Fair - Vacant position  
Romaine's Bench - Jim Cox

Miscellaneous: Ron Armstrong passed around an interesting article in a magazine about Ron Burchett.

Show & Tell: Jim Cox - Edward J. Engle - Deck and stretching  
Terry Gerard - Riba - Varnish  
Mark Giles - Winch on 4 x 4 climber and remote

50/50 \$23.00 won by Bev Andrews

Camp Stove Won by Mike Bush

Meeting adjourned at 8:50 pm





## February's Show and Tell

Jim Cox showed off the progress on his model of Tug Edward J. Engle. The deck is now in place, and the foam core shows the shape of the wheelhouse to come.



Terry Gerard brought back his Riva Speedboat model to show the beautiful decking now varnished. He also showed the original kit box.

Mark Giles showed the installation of two winches on a 4\*4 climber truck. The distinctive feature of these was that they were controlled externally to the main radio by a car key fob transmitter and receiver module. The key fob only gives one channel, switching between the two winches is by a toggle switch mounted on the truck. The winches are made by tweaking a standard servo.



Four nice project boats sold off at the end of the meeting. A Victoria complete with radio, a tug or freighter, a bread and butter sailboat hull, and a modern small schooner. Good things and some stories to come.





## Casting the Lead.

### A story of mistakes.

As many of you know, I am building a rather large model sailboat. A 1972 design, very successful in its day, an "A" class racer.

The design has an old fashioned keel, with the forepart of the keel being solid lead. Thirty-nine pounds of lead.

I have in the past cast lead in fishing weight quantities, and I did succeed with a bulb keel for my model Thames barge, 26 lbs, cast in two halves in an open plaster of paris mould. It took quite a lot of filing to get the open faces flat and fitting together, but epoxy and fibreglass can cover many, many, sins.

But for the sailboat keel I wanted to make a single casting with a bolt moulded in.

I started by making up the whole keel shape "bread and butter" in cedar. I liked that, it was fairly easy, and I could trust its accuracy.

Then I cut the cedar along the near vertical separation line of lead from the aft part of the keel, to use the forepart as the plug for moulding the lead, and the aft part to become the actual keel.

The plan was to use plaster of paris again, forming the mould by casting plaster around the plug in wood frames with the plug suspended in the wood frames on its vertical centreline. I drilled the plug and put two 1/8 inch rods through to sit on the wood frames and suspend the plug while casting the plaster. Pour one half and smooth the surface around the centreline of the plug, let it set. Take out the plug and put it in the second frame to pour the other side of the mould. With the plug removed, it wasn't too difficult to cut a pouring hole and a vent into the plaster. Then I left the two moulds for a couple of weeks to dry, finishing with leaving them for 24 hours in the kitchen oven on low to get the moisture as low as practicable. Somewhere in that process I completely forgot to form space for, and cast in, a bolt!

The super-drying in the oven made the plaster quite weak and crumbly at the sharper edges where the two mould halves would join, but by then I was on a deadline, moving house down to an apartment in Victoria from Courtenay, and in the process losing my workshop and back garden. So the pour went ahead.





I was still surprised by the amount of bubbling and steam venting as the lead poured in, but it went safely enough and I had something close enough to think of using it. There were one or two void spots that could be filled with small pours of lead and filed back down, and the surface was disappointing but I would be covering it all with epoxy glassfibre anyway.

Nearly a year went by as we completed the house move. I had lots to do to complete fibreglassing the hull, planking and fibreglassing the deck, playing down the pond with the rest of you, and figuring out the change of lifestyle in Victoria. So by the time I got back to thinking about the keel, I had joined Saanich Heritage Acres as a volunteer, and subsequently found out that they had a few guys working a foundry there on a Wednesday morning. The temptation to recast the keel and do better was irresistible. The foundry was using casting sand and the right way to do it was to actually split the plug down the centreline with a couple of register pins so the first half mould could be packed face down, and then the second half of the plug added and the other half of the sand packed down onto the first. The frames for the two halves have their own register pins. A bit of talcum powder between the two sand surfaces lets you separate the two halves to remove the plug and form the casting and vent holes, and put in the bolt that you are moulding into the lead. Easy eh!



Well, this is lead we're talking about. Thirteen times the density of water. Molten, it will float an awful lot of weight. And it did. The whole top box, sand and all, and the lead pouring out onto the ground between the two mould halves.

A cold chisel will cut the lead in half so it fits back in the melting pot in just about the same time as another bloke can go back to the plug and remake the sand moulds.

Weights and clamps to hold the frames together tight and stop the floating, and pour again. Now then, as lead solidifies it shrinks, so on a mould this size you need a reservoir of molten lead in the pouring hole to suck down into the centre of the casting as the shrinkage takes place. We had some, but not enough. So this casting came out with a nice bottom side, but a void in the centre and a big dimple in the upper surface.

And the evening and the morning were the first Wednesday.



But we are nothing if not stubborn and the next Wednesday we reconvened for another go. This time we added sand filled cans on the top of the mould to form deeper reservoirs. All was well till the lead level got about an inch above our previous high. The power of lead reasserted itself. Not that the clamps and weights let it out the side, but the sand split and lifted gently so the lead could fill the fissures.



We roped in the carpentry shop for a plywood cover with holes just for the pour and vent holes, and I was busy getting better with the cold chisel and re-tightening my hammer head.

The fourth pour was the best yet, but it did seem to take a lot of lead. When we got it out, it looked quite good except for a shallow void on the centre top, and it was significantly thicker than the original plug. But it was clearly something I could work with. When I got it home and trimmed off the sprues, it weighed 44 1/2 pounds and was something like 1/8 inch too thick.



I can now tell you officially that a 12 inch wood rasp will remove about 12 ounces of lead an hour if you work at it. But here it is, glassfibred to the rest of the keel, waiting fitting to the hull.



Now, I would love to publish some stuff from the rest of you who actually know how I should have done this, how I or other members could tackle it in future. There will be more lead to cast in my life. Please, if you do know how, tell the rest of us.

(But if I had asked you first, and followed instructions, would I have had this much fun?)

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**Langford Lake Navy in peacetime.  
Thank you, Jim Cox.**



## La Couronne.

Pascal Smyth's model of La Couronne is both really interesting technically, and also sooo! pretty. I decided to look up the history of the original.

Strangely, it's rather sparse. The Wikipedia entry has the bare bones. The ship was important as the first ship of the line built in France under Cardinal Richelieu's project to restore the French Navy. Previous ships had been built for France by the Dutch. She was constructed in La Roche-Bernard on La Vilaine river in Brittany. She was launched in 1632 or 1633 then towed in 1634 south to Brouage for completion in 1635-36, very much the pride of the French navy of the day.

Armed with a total of 68 guns, with an unusual arrangement of 8 6 pounder cannon in each of two batteries in the fore and after castles, aiming bow and stern, as well as 32 18 pounders and 24 9 pounders in the lower and upper side gun decks. These two fore and aft batteries were specifically designed to make her more effective against oared galleys, but they left her lightly armed for her size compared to other contemporary warships.

She played a part in the Battle of Guetaria in 1638, which was a decisive victory for the French against the Spanish, giving the French temporary control of the Bay of Biscay. Most of the action in that battle was by the smaller units of the French fleet, with fireships destroying the anchored Spanish.

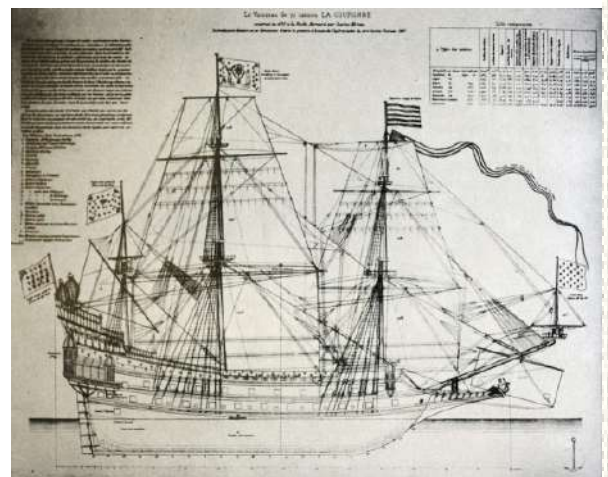
The main strategic purpose however, supporting an invasion of Fuenterrabia, failed when the French land forces were forced to withdraw from an unsuccessful siege only 3 weeks after the naval victory.

The fleet commander, Henri de Sourdis, (also Archbishop of Bordeaux!) led another expedition with La Couronne to Northern Spain the following year to attack another Spanish fleet in Coruna,(confusing), but the Spanish defence position was seen to be too strong and the action was called off.

Just two years later, in 1641, La Couronne's cannon were removed, and she was scrapped between 1643 and 1645.

A strange, early end to her career. One has to wonder if there were defects in design or construction that led to it. It is clear that the French forces of the time suffered from quarrels between their aristocratic commanders, and the inexperience of French shipyards and corrupt practices played a part, but who knows?

One source, Warships of the World to 1900, says that her timbers were taken from the forests of the defeated Huguenot leader the Duc de Rohan. Since Rohan's defeat wasn't till 1629, and







his death not until 1638, one could easily suspect that Couronne was built with unseasoned timber, in the heart of the Huguenot rebel area, by inexperienced and deeply resentful shipwrights saddled with imported management from the French Catholic establishment. Maybe she did quite well, considering.

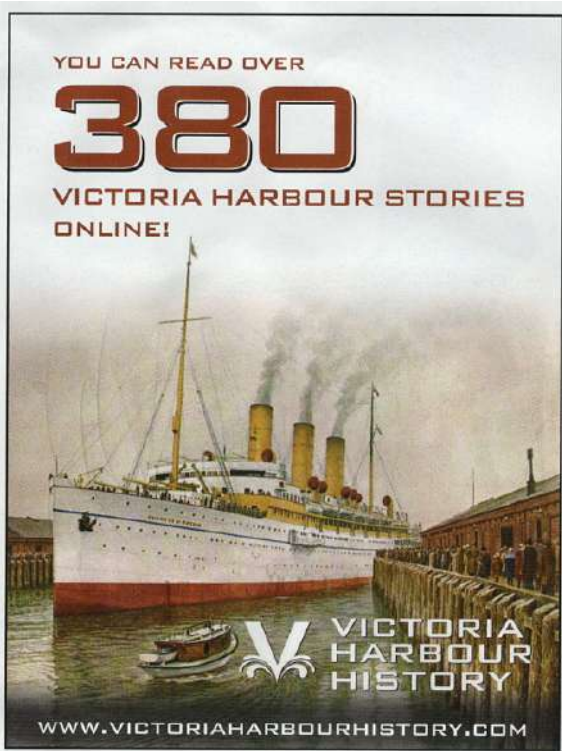
Rooting around in history is an awful lot of fun!

The name Couronne was carried by a further 12 ships of the French navy, finishing with an iron-hulled derivative of the Gloire class ironclad built in 1861.




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### Victoria Harbour History



The latest edition of Victoria's Focus magazine has an advertisement inside the back cover for [victoriaharbourhistory.com](http://victoriaharbourhistory.com). Well I'm not going to pass that by!

It's a group of people dedicated to the collection and presentation of the stories of Victoria's harbour. I'm impressed after a short visit to the web site, there's lots of stuff there to look at, and, I think, much more to come. They are obviously open to contributions and comments from anyone interested, joining the project is just a matter of putting a "like" on their facebook site, so I'm sure it's a site that all of us can learn from and enjoy, and that many of us can contribute to.

Well worth a bookmark in your browser.

## Big Guns Sink Ships!

by Mike Creasy



Or do they?? What did it take to sink a battleship or battlecruiser in a ship-to-ship gun battle? The answer is somewhere between "not much" and "a long pounding". One trouble is, there weren't many ship-to-ship gun battles in the dreadnought age and the actual hit count often a bit fuzzy. That's because the loser often sank and the victor liked to claim their highly accurate gunnery was the cause..... too often, the sinking was caused by bad habits (leaving magazine flash doors open), air dropped bombs or - the scourge of capital ships - torpedoes!!!

Let's look at some of the major ship battles in the 20th century between heavily armored ships with heavy guns (over 11"). The candidates are:

Tsushima Strait - in 1905;

Dogger Bank - in 1915;

Jutland - in 1916;

Denmark Strait - in 1941;

Savo - in 1943;

There were many other big ship encounters, but the effect of air dropped bombs and torpedoes was such that we can't really gain much insight into naval gunnery. So, let's start with the Russo-Japanese War battle of Tsushima.

Over 20 capital ships in each fleet, mostly pre-dreadnought armored ships and early dreadnoughts, mostly 12" guns and top speeds of about 23 knots. The battle lasted two days - each side "retired" for the night - and each side fired many, many shells. Hits were another thing. Japanese gunnery and battle tactics under Admiral Togo were far superior to Admiral Rozhdestvensky's poorly trained fleet, but it still took over 45 minutes for the battleship Knyaz Suvorov to be crippled. The Japanese fleet eventually sank or disabled most of the Russian fleet, while Japan lost 3 destroyers. The answer to our question here is: Lots!

The WW1 battle of the Dogger Bank was a little more precise, with 5 new British battlecruisers taking on 4 German battlecruisers. HMS Lion (13.5") opened fire on SMS Blucher (8.2") at 20,000 yards and obtained hits after about 10 salvos. Blucher managed one hit on Lion, but the shell did not penetrate her armor plate. Blucher took about 30 hits and capsized after an hour. Other heavy units exchanged ineffective fire for nearly an hour, until SMS Seydlitz (11.2") took a 13.5" hit on her after turret. The shell penetrated her armor and

started a fire in ready propellant charges. The after magazines were flooded before the fire could spread, but the ship was out of action. Soon after, Lion took several hits from SMS Derfflinger (12") one of which penetrated her armor a forward turret, causing a propellant fire. Another of these hits was to the port engine room, causing the stoppage of that engine.

The nine capital ships in this action fired upwards of 400 shells each, obtaining about a dozen hits. Mind you, those hits caused lots of damage, so the answer here is: 12 or less!

The battle of Jutland a year later involved much bigger fleets, over 20 big ships on both sides. Again, many shells were fired and the ratio of shots to hits was very small. The important thing, especially for the British, was the realization that the battlecruiser concept - reduced armor in exchange for speed - was not viable for two reasons. First, because the new turbine power plants could push big, heavy ships at destroyer-like speeds. Second, because long range gunnery meant that incoming shells could go over the top of massive side-armor belts; heavier deck armor was now required.

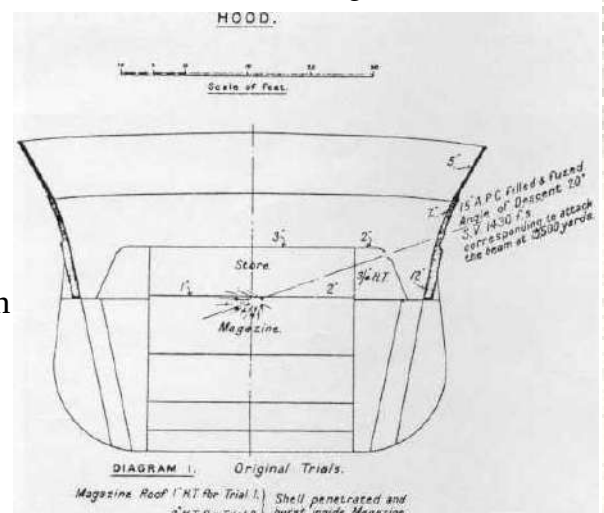
Large naval gunnery is a complex science, and there is no way to cover all the parameters. Each capital ship would have an assessment of their own vulnerability in terms of the range at which an enemy shell could penetrate their armor, and at what points. They would also have an evaluation of each enemy ship, in terms of its vulnerability to shellfire. All these assessments would be based on range, because that determines the angle of fall for the incoming shell as well as the striking velocity. The greater the range, the higher the angle of fall and the lower the striking velocity. Consider this British Admiralty assessment of the last battlecruiser built - HMS Hood. They knew when she was built in 1916/19 that an incoming 15" AP shell fired from over 19,500 yards could penetrate to a magazine.

When HMS Hood and KMS Bismarck met in 1941, Admiral Holland was well aware of this design flaw and planned a head-on intercept to close the range at the highest possible speed. His plan didn't work out, and Hood and Prince of Wales ended up approaching from the beam - the worst possible angle for Hood. At 25,000 yards all 3 ships began firing. Bismarck's third salvo set off a large fire on Hood's upper deck, probably some ready-use ammunition for the small guns. As the British ships closed the range to 19,000 yards, Admiral Holland ordered a turn to port to bring the X and Y turrets to bear, but it was too late. Hood took a perfect hit from Bismarck and a magazine exploded. Prince of Wales took four hits from Bismarck and some 8" hits from KMS Prinz Eugen. Her bridge was destroyed and she broke off the action.

Our answer here unfortunately, is: one.

Bismarck was brought to bay 3 days later by several heavy units. Disabled by an air-dropped torpedo, she took massive hits from HMS Rodney (16") and HMS King George V (14") at ranges from 16,000 down to 4,000. Rodney alone fired 380 16 inch bricks, each weighing 2,048 lbs. Reduced to a smoldering hulk, Bismarck stayed afloat until the coup de grace either from torpedoes or from scuttling charges, or both.

The answer: lots and lots and lots.







A night action in Ironbottom Sound near Savo Island in 1942 marked the first time radar range-finding was used. The American battleships USS Washington (16") and USS South Dakota (16") met up with the old Japanese battleship IJN Kirishima (14") while it was escorting a supply convoy to Guadalcanal. South Dakota takes a single 14 inch hit, plus numerous smaller calibre hits from escorting vessels. None penetrate her armor. Washington uses radar to approach Kirishima undetected to a range of 6,000 yards. She lands at least nine 16" shells (out of 75 fired) and sinks Kirishima.

The answer here: nine.

So the final answer to our question is: your call. Battleships and battlecruisers were magnificent machines for peacetime navies, well-suited to providing artillery support for land operations, but far too vulnerable to bombs and torpedoes to warrant their cost. Designed to fight the last war, these monsters were the naval version of the Maginot Line! Makes you wonder what the next version the battleship will be!

#### Bibliography

Naval Battles of the First World War, Geoffrey Bennett, Pan Books, 1974  
The War at Sea Volume 1, Capt. S.W. Roskill, HM Stationery Office, 1954  
Naval Battles of the 20th Century, Richard Hough, Constable & Co, 1999  
Naval Weapons of WW2, John Campbell, Conway Maritime Press, 1985

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### Notice from Mike Claxton

#### **Nanaimo Club's Annual Boat Show – April 5 – 8 at Country Club Mall.**

Country Club Mall is the one east side of Island Highway – north side of Bowen Road intersection.

Typically have boats in there before Friday noon, pick up Sunday afternoon or just have a run up and have a look at the models.

They may have a poster coming but this will be a start.

I'm also working on the Maple Bay Marina Wood Boat Show where they put a pond up for us – will chase them down for info!

Mike Claxton.



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

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