



CLUB NEWS

Kurt Van Dahm, Director, Nautical Research Guild (NRG) announced that on the 1st of December 2022, the MSON became their 11th **Chartered Chapter**. The NRG has members in over 20 countries around the world and we are the first international chartered club. There is an annual US\$30 registration fee that has been paid Alan. He donated the payment from two Shop Note article submissions to the Nautical Research Journal (NRJ), the quarterly magazine of the NRG. If both are accepted and published this would apply to 3-1/3 years of registration fees.

To learn more about the NRG on the internet visit thenrg.org

R/C BOATING IN THE SPRING

Ron Campbell is maintaining a list of people interested in R/C boating on the Welland Recreational Canal. He reports boating will be scheduled to begin in the spring of 2023 with the hope it might possibly become a regular monthly event into the fall. If this is something you would like to take part in send us an email and we will forward it to Ron so you can be added to the list.

E-mail us at: modelshipwrightsofniagara@gmail.com

SEARCH FOR A MODEL

We have received a request from another club helping a museum search for a model of HMS Terror and/or HMS Resolute. The museum is working on an exhibition of Arctic exploration in the 19th century and hope to have a model (or two) to go with it. If anyone has a model, or knows of someone that has a model of either ship, and might consider loaning to the museum, please send us an email to discuss further.

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MEETING ATTENDANCE

35 members registered but only 23 were able to attend our December ZOOM meeting. On this day the MSON presently has a total of 85 members from across Canada, the USA and the UK.

MEETING PRESENTERS NEEDED

The MSON is constantly looking for volunteer members to show us your "*in construction*" or completed models, techniques, tools and tricks at our meetings. We would like to have some 5 minute regular model progress updates from individuals (such as Mort Stoll did as reported in this newsletter) to supplement some new and fresh 15 - 20 minute main presentations. Will you answer the call?

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TOOL BOX

If you are looking for a supply of small diameter drill bits (Number size drills) **Ron Campbell** bought a nice set for Cdn\$16 at amazon.ca/dp/B09LGYDRHC?psc=1&ref=ppx_pop_dt_b_product_details

David Tozer reports he has had good luck finding building materials (springs and 2mm rod) on the internet from aliexpress.com

John Brackett provided a link to an **aerosol can of Argon Gas** sold by **Lee Valley Tools** used to top fill containers like paint tins, resin and silicone bottles to preserve or extend their storage life. Trapped air degrades (oxidizes) the contents shortening their storage life. The inert argon gas displaces the oxygen and creates a protective topping layer.

<https://www.leevalley.com/en-ca/shop/tools/supplies/finishing/30268-finish-preserve?item=53Z2101>

PRESENTATIONS



1) **Pat Portelli** made a presentation on **Silicone Mould Making and Resin Casting**. Pat discussed the tools and materials, one piece silicone moulds, and resin casting.

He uses Alumilite high strength 3 mould making rubber bought from the USA. It includes a tin based silicone and a catalyst that are mixed together.

Tools and Supplies

- ▶ Xacto Knife
- ▶ Scissors
- ▶ Sharpie
- ▶ Ruler
- ▶ Cotton swabs
- ▶ Tape
- ▶ Scale
- ▶ Wax Paper
- ▶ Isopropyl Alcohol
- ▶ Paper Towel
- ▶ Mixing Containers
- ▶ Stir Sticks
- ▶ Hot glue gun
- ▶ Wood or Foam core
- ▶ Plastic Mold
- ▶ Aluminum Foil

Silicone mold making
Material



ALUMILITE

High Strength 3
Flexible tin-based silicone mold making rubber – it's great for making molds of parts with deep undercuts or negative space.

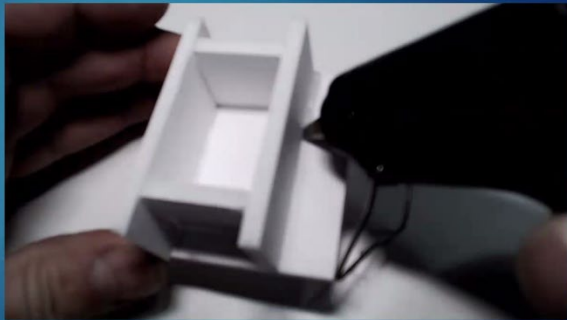

- Doesn't require degassing
- Picks up exact detail of original part
- 45 min work time
- 12-18 hrs remold time

www.alumilite.com

To start you need to make a mould box to contain the silicone when pouring it. They can be made with adjustable size plastic moulds box pieces, assembled foam core mould box, or an aluminium foil box.

Silicone mold making
Building a foam core mold Box

- ▶ Measure the pieces
- ▶ Cut Foam Core
- ▶ Assemble sides
- ▶ Glue all joints
- ▶ Close off gaps with glue
- ▶ Let Dry



We watched a short video of the assembly of a foam core box. The material can be bought at most hobby stores, craft stores, or even Dollar Stores. The pieces are cut to size and joined together with a hot glue gun. Once the bottom and sides are joined the seams are sealed all around with hot glue. The silicone material is very watery and will seep through any open unsealed joint.

The box is sized to assure you have at least 1/4" clearance from the part to the inside of the wall. Pat made a mould for three plastic stacked life rafts. The part used as a pattern was cleaned with Isopropyl alcohol and then hot glued to the centre of the floor so it would not move. He measured the part and the inside of the mould and used the volume calculator provided on the Alumilite website to determine

the weight of mould making rubber mixture that would be required. To this he adds about 20% by volume to ensure he has enough as some will adhere to the cup being poured from.

Silicone mold making

Pouring

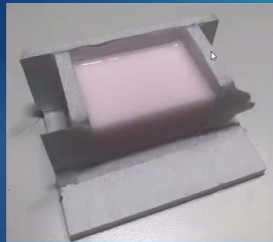
- ▶ Work Time 45 min
- ▶ Demold time 12-18 hours
- ▶ Mix thoroughly, make sure to scrape the sides and bottom of the container until a uniform consistency is achieved.
- ▶ Remove as many bubbles as possible.
- ▶ Pour slowly.



The container is placed on a scale and the two parts are poured individually in portions (10:1 ratio) into the container being measured by weight. Pouring slowly to keep the bubbles down and mixing with a bamboo stir stick. Any bubbles that rise can be popped with the stir stick. This is then poured slowly into the mould box, starting in a corner and working around the part to fill the box. The box instructions read that it is cured after 12 to 18 hours but he leaves it for 24 hours before removing it from the box.

Silicone mold making

Demolding, inspection and cleaning



The silicone mould is then removed from the box and the part removed from the mould. Then came time to mix the resin and cast new parts.

The two parts of the Alumilite resin RC-3 are also mixed at a 1:1 ratio in a container on a scale. There are clear materials and Alumilite dyes can be added to make coloured parts. The mould is cleaned with Isopropyl alcohol and after drying the mould is preheated in the microwave to keep down bubbles and cure the material evenly. Shake the resin parts A and B before pouring and measure the pour by weight. Pat uses red SOLO cups. Stir for about 20 seconds and then pour slowly into the mould. Squeeze the mould slightly to get the mixture into the narrow tiny spots. When done wait about 10 minutes and then pull the part out! Pat showed us the three stacked piece he had cast, a single raft, a funnel top, an ammunition locker and an insulator. The material takes plastic putty and holds paint quite well. Then he

showed us the various moulds used to create the parts. The silicone mix cost is about US\$25 for 1 lb and the resin mix is about US\$16 for 12 oz.

Resin Casting



Alumilite (RC-3)
Easy to mix and pour resin that is great for casting large and small, durable pieces.

- 1:1 mixing ratio by volume or weight.
- Work time 3 min.
- Demolding time 10 min.
- Picks up exact detail of original part.
- Can be machined, sanded, drilled and tapped.
- Takes filler and paint well.

www.alumilite.com



Resin Casting

Finished Parts

- ▶ 1/96 Scale parts
- ▶ Funnel top of USS North Carolina
- ▶ Single balsa rafts
- ▶ Stacked rafts
- ▶ 20 mm deck ammo lockers
- ▶ Radio insulator

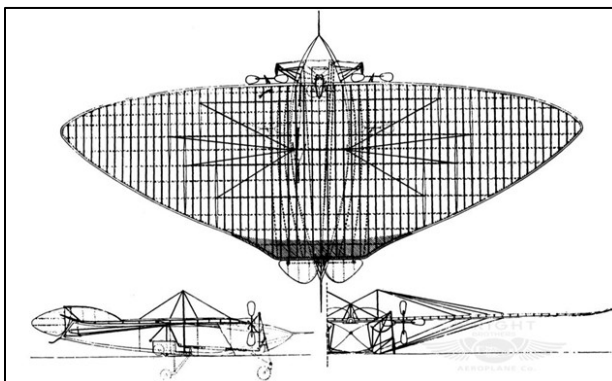


Molds

- ▶ Single raft, locker and insulator mold
- ▶ One piece funnel mold
- ▶ Two-piece rudder mold for a 1/24 scale tugboat.



2) Ron Campbell made a presentation on the **Construction of Seaplane Floats**. As a member of the local model airplane club he joined a group of "float fliers" and decided to modify his high winged Alpha 40 Trainer airplane. As floats are boat like, Ron recognized this would be something uniquely different for the MSON to see.

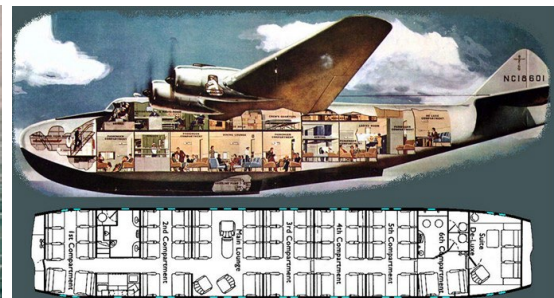


He began telling us the history of float planes, with the first patent for a flying machine that utilized a boat hull being awarded in 1876. It wasn't until 1910 that the first functional flying boat, a trimaran float plane, was built.

As there were no landing fields in the early days of aviation, water provided unlimited space for takeoff and landing. During WWI navies recognized the advantage of observation airplanes that might be launched and retrieved from a destroyer or cruiser. They were launched using a catapult. To retrieve the plane the ship used a steel mesh recovery sled dragged outboard along side in the water so she never had to stop as that would make the ship a target for the enemy. The plane would ride up onto it and a hook on one pontoon would engage with the mesh to hold her fast. A boom would be swung out to lift the plane back aboard the ship on the catapult ready for the next mission.



There are two types of sea planes. The first used some type of float system attached to the plane as seen above. The second being the flying boat where the airplane body is built in the shape of a boat.



Boeing built twelve model 314 "Clipper" boat planes from 1938 to 1941. In 1943 one became the first "Air Force One" aircraft, used by President Roosevelt to meet with Churchill at the Casablanca Conference. Ron discussed a few other planes including the PBY flying boats of 1936, bush planes and the Canadair 415 "super scooper" used for firefighting service, maritime surveillance, search and rescue and personnel transport.

Ron needed to do a few calculations before starting to build his floats. The length of the floats need to be about 75% of the distance between the rear of the propellers and the rudder hinge. Ron's plane measured 48" so he floats needed to be 3/4 of that, or 36" long. He was lucky to get a free set of



Styrofoam floats to which he attached the nose and rear blocks, carved them to match the shape to include the step necessary to allow the floats to break from the water surface capillary adhesion. This step is located at the point on which the plane rotates and is just behind the centre of gravity. Also, when mounted the nose of the float must be just ahead of the propeller so the plane does not "nose over". It also requires about 2° up thrust. Then finally he covered them with 1/16" thick balsa using Weld Bond glue. It is a water base glue which could have been a concern for the plane landing on water but Ron then sealed it all with a layer of fibreglass cloth and epoxy. The high density ultra thin cloth provides some additional strength to the float assembly. A layer of Z-POXY finishing resin was brushed onto the cloth. This is supplied as a two part mix, 1:1 resin and hardener plus an equal amount of 99% Isopropyl alcohol, NOT the 75% as it contains water, then stirred not shaken producing a very thin liquid. The cloth is stretched over the float and then the liquid resin mix is brushed onto it in multiple thin coats, NOT thick coats. Once the resin dries on the brush toss it out and use a fresh brush. Ron applied his thin coats over a period of a couple weeks allowing each application to completely cure before the next application. This was spray painted with a water proof paint purchased from Canadian Tire.



The next problem to tackle was steerage. Normally the plane's rudder and nose wheel are controlled by a single servo. Ron needed to devise a method so the rudder on the float turned in the same direction as the rudder on the plane. The rudder on the float is only used when the plane is moving slowly before takeoff and after landing when there is very little air passing over the plane rudder. When the plane is

moving fast the rudder on the plane is used for steering. A float rudder lowered in the water caused the plane to turn during landing so Ron created a rudder that was held down by a spring but when moving fast in the water, the water pressure would cause the rudder to lift. Steering was controlled via linkages by the single servo that controlled the plane rudder.



After having added weights to the nose of the floats to adjust the location of the centre of gravity he was off to the pond... and had a successful lift off and landing!



3) Mort Stoll presented a progress report on his build of **HMS Victory** a Caldercraft kit which he describes as a beast at almost 2 feet wide and 5 feet long. All his masts were in place and rigging is underway. The foremast, bowsprit, flying jib and jib boom are fully rigged. The main and mizzen mast has all lines connected to the mast but not yet belayed.



Presently he is working on the 4 boats: the launch, barge, pinnace and cutter. They are all plank on frame construction. The cutter was the most challenging as due to its small size he could not glue frames to the keel. He used spacers in between the frames to provide support for the supplied 3mm x 0.5mm walnut planking. Mort didn't like the quality of the wood so decided to use limewood instead

which he found easier to bend with his "really old" plank bender. After the first planking he sanded and used wood filler, then reinforced it with a coating of Elmer's School Glue which is a more consistent diluted Elmer's White Glue. Then he installed a second plank layer.



Mort installed floor grating in the small cutter whereas the other boats have solid flooring planking. That is where he is at presently with the hopes to be completed in another nine months.

Tijs Theijsmeyer emailed us a photo of his just completed project, a framed scenic mirror.



Tijs describes it as follows:

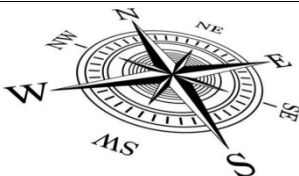


It was a challenge to make the small half shell boat. There are 6 animals: a blue bird, fox, owl, a bald eagle, butterfly and a snail. The tree on the left has the green stain glass for its canopy. It was a lot of carving to create the tree. The dock leads up to the fisherman's cabin. Blue stain glass under the boat for water and wispy stain glass for the clouds. It was just a fun scene I thought up. Hoping that the Owl Foundation will accept it toward their fund raising efforts. We will see what they say. Otherwise I will try to find another charity to donate it to.

That concluded our presentations and monthly meeting.

A special thank you to all members that have stepped up to present and add to the meeting content with comments and questions at all our past meetings. It is your attendance and participation that make this club successful and helpful to other members.

**Wishing everyone a very Merry Christmas
and Happy New Year!**



The MSON
*Helping to keep fellow modelers on
course since 2008*

Our next meeting will be held on **Sunday, 8 January 2023**

Forum opened at 1:15 PM ET for a 1:30 PM start

As always meetings and membership is open to all and free!

Notices will be e-mailed.

The upcoming December meeting presentations:

- **Scratch Building a 3 Blade Brass Propeller** - Bruce LeCren (20 minutes)
- **3D Printing and Using a Mariner's Astrolabe** - Alan O'Neill (20 minutes)

Have you anything you would like to share at a meeting?

If so please send us an email.

Modelshipwrightsofniagara@gmail.com