



Notes from the Bilge



www.lcacbs.com

March 25, 2023

Newsletter of the Lake Champlain Chapter of the Antique and Classic Boat Society, Inc.

Susan Haigh, President

President's Message



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This past winter has been a busy for the Chapter leadership. As we closed out the 2022 Int'l Show we were able to focus our attention to some long term goals such as continuing to build a mutually beneficial relationship with the Lake Champlain Maritime Museum. Some of our members may appreciate the opportunity to volunteer their time at the museum, acting as docents at some of the exhibits, or helping clean up the grounds before the Museum opens for the year. I will be sending out messages to the Chapter membership with these volunteer opportunities as they arise. Our Chapter will be sponsoring the Maritime Museum's "After Hours Summer Party" in early July.

We were also able to have two workshops this winter, the first at Snake Mountain Boatworks where we learned how a true 5200 bottom is applied. The different stages of the process were all demonstrated and folks got some hands-on practice as well. The second was at Bob Schumacher's boatshop where we gathered to see his work on his 23' 1935 Hacker runabout and look at slides of his restoration of Vagabond, his 1910 42' Consolidated cruiser that has an electric drive system. We has a great turnout for both events and it felt really good to get together again. Photos of both of those workshops can be found on our website, <https://www.lcacbs.com/rendezvous-roundup>.

We hope to have one more workshop before this year's boating season begins, so stay tuned!

Our Spring Dinner will be held at the Valcour Brewing Company in Plattsburgh on May 6th from 5 PM to 7 PM. Invitations will be going out in next couple of weeks.

The 36th Annual LCACBS Boat Show is scheduled for Saturday July 15th, 2023 at the Burlington Boathouse. We will have our after-show Awards din

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Bill Hancock's "Tech Talk" articles give great reminders and checklists.



A selection of his articles have been sourced from the *Sunnyland ACBS Chapter's - SHEERLINES MAGAZINE*. Bill is the Asst. Editor of the Publication.

Readers will enjoy "Batteries" on Page 3. A selection of Bills articles will appear in quarterly issues this year.


LCACBS Volunteers to the Museum

The Lake Champlain Maritime Museum (LCMM) has presented our chapter with volunteer opportunities.

Volunteer Interpreters: For individuals who enjoy talking to people and have an interest in history, interpreting for the public can be a great fit. Interpreters spend time on our replica gunboat *Philadelphia II*, in the center of the Museum lawn, and talk to visitors about Benedict Arnold and the Battle of Valcour Island, and more broadly, the American Revolution and other points of



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Follow us on 

President's Message—continued from pg 1

ner there as well, upstairs in the "Wakefield Room". Save the date!

Our rendezvous schedule will be coming out in May once the seasonal restaurants and marinas come to life. This year we hope to have a late August or early September rendezvous on Lake Memphramagog put together by long time member Jay Ancel, who lives in the Newport, VT area.

LCACBS - Save the Dates

*ALL DATES SUBJECT TO CHANGE AND ADDITIONS

May 6th

Spring Dinner

at Valcour Brewing Co. Plattsburgh, NY 5pm-7pm

June 8th-10th

New England Lyman Group Annual

Boat Show

Wolfeboro, NH

July 15th

LCACBS 36th Annual Boat Show

Burlington Boathouse

Aug. 4-5th

59th Antique Boat Museum

Boat Show and Auction - Clayton, NY

Oct 1st

LCACBS Annual Meeting

Luncheon - Location TBD

Small Boat Exchange

2649 Shelburne Road

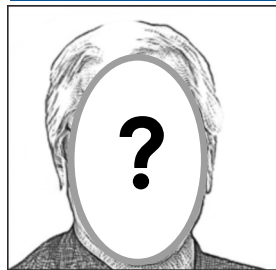
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**Note from
an Member**

Spring has sprung? It's been hard to tell what kind of season Spring will bring for boating. Late ice and snow has hampered efforts of working outdoors in March. Nonetheless, the sun will come out and rivers will flow...into your driveway and backroads. Eventually the ground will harden. Its this time before mud season, and at the start of Spring in the North that leaves us yearning for change. Change is Inevitable and like our chapter...changes happen. But, the friendships and smiling faces are a constant. This time of year, the LCACBS is warm beacon, in rough sea on our way to smoother sailing.

BATTERIES

All of our boats have batteries, and while an absolute necessity, they can be troublesome if not selected and cared for properly.



The battery's function is to provide current to start the engine. Once the engine is running, the current required to keep everything like the ignition system, bilge pump, lights and other components operating, as well as replenishing the current used to start the engine comes from the charging system, provided it has adequate charging capability. In theory, once the boat has started, current is provided by the charging system, and you no longer need the battery until the engine is stopped.

A typical battery utilizes a reversible chemical reaction to provide the necessary current to operate our boats. Traditional flashlight batteries simply

produce current until they are depleted. By using the boat's charging system or a battery charger to provide current to reverse the chemical reaction, our lead-acid boat batteries can be recharged. Eventually however, a battery will wear out and will no longer hold a charge. A 12 V. lead-acid battery has 6 individual cells which each produce approximately 2 volts. Occasionally, you will experience a bad cell. The way to check for this is with a hydrometer. A typical battery well cared for will last reliably for approximately 3 years.

The fluid in a lead acid battery is a mixture of 2 parts of distilled water and 1 part of sulfuric acid. To measure the charge of a battery place the tube of



By Bill Hancock

Assistant Editor

Bill Hancock is a retired engineer with extensive experience in auto racing, engine design and problem solving.

the hydrometer in the cell you wish to check and withdraw enough acid into the tube to cover the float. The float will rise and float at a certain level. Merely read the scale on the float which lines up with the meniscus of the fluid to determine the specific gravity. Check each individual cell and look for any sign of a gross difference between cells. If one cell is noticeably lower, it is probably bad, indicating that the battery should be replaced.

Batteries are rated several different ways. The first and most obvious is by Voltage. The Reserve-Capacity Rating is the number of minutes a 12V. battery at 80 deg F can be discharged at a constant 25 amps and maintain at least 10.5V. Another way of looking at this rating would be to think of how many minutes your battery could sustain a 25 amp draw until it dipped below 10.5 Volts.

The second rating called Cold Cranking Amps or CCA involves how long a battery can operate a starter in extreme cold conditions. The rating specifies the minimum amps a battery at 0 deg. F can deliver for 30 seconds without falling below 7.2 Volts. Starters typically draw 300 amps or more under these conditions. As a general rule of thumb, when choosing a battery always try to get a battery that has at least 1 CCA for each cubic inch of engine displacement.

Our boats have two types of batteries; 6 Volt and 12 Volt. Many of our earlier boats, typically those made pre-1955 will have 6 Volt systems. While 6 Volt



A hydrometer uses a graduated float or bobber to determine the specific gravity of the battery acid. The specific gravity determines the state of charge for the individual cells.

HYDROMETER A hydrometer is a special float contained within a glass tube similar to a turkey baster. See Fig 1. As the charge of the battery is increased, the specific gravity of the battery liquid rises. Interestingly, a fully charged battery will actually weigh slightly more than a discharged one. The float is carefully calibrated to measure the specific gravity or state of charge. When charging or checking your battery, aim for a specific gravity number around 1.270.



This small sticker is used by some sellers and installers to indicate the in-service or manufacturing date of the battery. Useful information in case of warranty issues. Make sure when you purchase a battery that the tag is never more than a month old.

systems work just fine when properly maintained, you may want to consider updating your system to 12V. Unless you feel obligated to maintain and preserve absolute originality, a 12 V, system is far superior for the following reasons:

Parts Availability Compared to 6V. batteries, 12 V. batteries are cheaper and more plentiful and are readily available in a wide variety of physical sizes. Accessories like bilge pumps, starters, and other electrical components are starting to become difficult to find in 6 V. configurations, which provide additional reasons to upgrade to 12V.

Functionality 12 V. systems offer much more power for starting which translates to reliability since they are not as affected by adverse current draw due to poor connections, and hot or cold conditions.

Cost 12 V. components such as bilge pumps, lights, and instruments, are much more available, and sold in a competitive market as opposed to 6 V. parts which enjoy a somewhat captive market.

By having a 12 V. system, you can now utilize an alternator in your charging system as opposed to a generator.

Size - Batteries are classified by group number. This relates to the physical outside dimensions as well as the current capacity, post layout, and orientation. Charts giving the various dimensions for battery group designations can be found online. Learn your Group number and CCA rating so you can shop and compare batteries more effectively.

Tools - There are several dedicated battery tools which make dealing with batteries much easier. These tools are available as a kit at some auto and tools stores.



This set of dedicated battery tools can be very handy when installing or maintaining your battery



One of the best tools for somebody who just needs a quick analysis. It gives a quick reading of the charging system as well as the battery condition.



The battery data label gives all of the pertinent information for the battery including the in-service date in some cases.

ALTERNATOR VS GENERATOR

An alternator provides DC current by switching alternating current to DC current. Alternators are far superior for our boats because they can deliver ample current at very low RPM as opposed to generators which perform poorly at low RPM. This deficiency comes into play when you have long periods of idle, such as an extended no-wake zone where your bilge pump, lights, stereo, and electric fuel pump and ignition may all be demanding current. A generator at low RPM cannot maintain the necessary current, so as a result, the battery becomes discharged. Unless an idle period is short, the ignition system fails because there is not enough current to operate it.

Purists and preservationists will have to live with a generator unless they are crafty and utilize an alternator hidden in the casing of a generator.

If you decide to retain your 6 V. system, here are some tips to keep the system running at peak performance.

1. Make sure ALL connections are clean and tight.
2. Make sure All grounds are in place and check them for resistance.
3. Cables and wires for 6 V systems must be much larger diameter than those found in 12 V. systems to prevent current loss. It is getting more difficult and expensive to find these heavier cables. They must often be fabricated or in some cases they can be sourced from heavy truck dealers.
4. Batteries should be maintained at full charge when not being used, and water must be replenished to prevent boiling due to overcharging. Using a Smart Charger which senses battery condition and does not overcharge the battery makes a lot of sense.

Overall good procedures for prolonged 6V. or 12V. battery life:

1. Keep all connections clean and well maintained.



A plastic battery box is the preferred method of housing a battery. In addition to physically restraining the battery, it is impervious to battery acid and vapors and it protects the battery from foreign objects which can damage or short out the exposed terminals.

2. Keep the batteries fully charged and topped off with distilled water.
3. Unless absolutely necessary, try not to utilize rapid chargers which tend to overheat the batteries and boil off the water.
4. Make sure all components are operating properly. A starter motor which drags will consume an inordinate amount of current and will eventually fail; usually at an inopportune time and in a remote location. I have never known a starter to fail in someone's driveway on a day when they decide to just start their engine for the heck of it. Usually when the starter does fail, it will almost always be on a holiday weekend when you have a boatload of people and are as far away from the ramp as possible.
5. Make sure the starter cables are correctly sized to prevent current loss.
6. Use a bigger battery than you feel you need. Too big rarely ever hurts, too small is a constant source of trouble.
7. Make sure your battery is properly anchored to the boat to prevent movement and protected from objects which may come into contact with the positive terminal. A plastic battery box is the preferred method, unless you are trying to maintain originality.



A simple battery hold down frame when space is a consideration.

If used be sure to cover the terminals with rubber boots to insulate them.

Jump Box
– A handy accessory to have onboard when the battery is discharged. It will allow

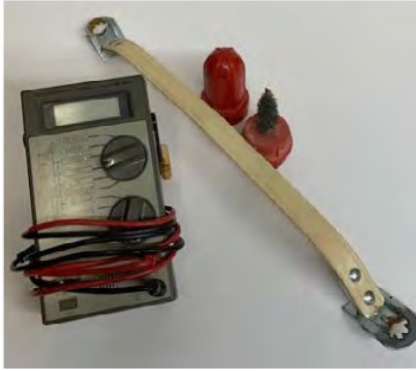


you to start the engine so the charging system can restore the charge. These are relatively inexpensive and worth their weight when you have a dead battery.



A small low amperage digital charger. These are sometimes called a battery maintainer. They are a perfect way to maintain your battery's charge when not in use. They are very low amperage, so they do not overheat the battery like the fast chargers do.

8. The marine environment is a breeding ground for corrosion, so take the time to clean the terminals on both ends of each battery cable thus ensuring good current flow.
9. Maintain your charging system by making sure the charging system belts are tight and the connections are clean and secure.
10. You may want to carry a backup battery system called a jump box if you are on an extended cruise or you don't trust your charging system or battery. At 7 PM on a Sunday, they are worth every penny spent.



A DVOM (Digital Volt-Ohm Meter) is indispensable for trouble shooting an electrical problem. Perhaps the handiest item is a battery carrying strap which attaches to the terminals and allows the battery to be safely lowered into close fitting boxes and surroundings as well as carried without having to cradle it and get acid on your clothes. The battery terminal brush allows the terminals and clamps to be properly cleaned.



Unless you have the necessary crimping tools and assortment of various lugs and clamps, the easy solution is to purchase pre-made battery cables. They come in various lengths and are different for positive and negative applications.

CONNECTIONS

Batteries require good connections. To ensure not only full voltage but also full rated current capacity it pays to use large diameter cables and good terminals. There are two elements to every connection: Electrical and Mechanical. To have a good electrical connection, the terminal or clamp should be soldered in place after it is mechanically crimped onto the cable. The mechanical connection ensures that the cable will not pull loose during installation, removal, and operation. The electrical connection ensures that the joint will resist corrosion and be able to carry the full rated current. For these reasons, take the time to select or make the proper cables. The best place to find the correct heavy duty battery terminals is at heavy truck dealers. They also have to proper crimping tools to ensure a good mechanical connection.



These are the best terminals and clamps to use. Have them crimped on, then fill the crimp with solder to ensure a conductive connection as well as a good mechanical connection. Heavy duty truck dealers can supply the proper cables and do the crimping.



Battery clamp. Unless there is no other option, NEVER USE THESE! If you do, replace them at your earliest opportunity with a crimp type clamp.

IN SUMMARY

The keys to successful battery utilization are:

- Buy a bigger battery than you need.
- Keep it charged up with a trickle charger
- Keep the water level up
- Make sure ALL of the cable and terminal connections are clean and properly sized
- Mount your battery securely and protect the terminals from contact with foreign objects
- Maintain the charging system



Happy Boating

THANK YOU Bill and Bill!

A very special thank you goes to **Bill Robbins, Editor and Bill Hancock, Asst. Editor and Author for Sheerlines Magazine.** With their permission we are able to bring you this great content.

Also thank you to our President Sue, and Chapter Members Ed Bombard and John Dupee for putting it all together.

If you want to submit content or articles for future publications please email woodardwooden@gmail.com

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Volunteering - continued from page 1

interest in the period. We have plenty of materials to share with people who are interested in learning about becoming an interpreter, and people can also bring their own knowledge and enthusiasm to the position. People who are interested in history, enjoy performing or teaching, or just love meeting people can all be well-suited to being interpreters. Interpreting lends itself to the most flexible schedule of all of our volunteer roles.

Volunteer Boatbuilders and Boatshop Support:



Volunteering with boatbuilding projects is something that people can do even without prior boatbuilding experience. Volunteers help with a variety of tasks based on their experience and comfort level, such as boat repair, assisting with school groups, and working on new boats. Because

of the varied and unique nature of the volunteer roles, visiting the boat shop or having a conversation with Museum staff is the best way to learn more about the possibilities! Volunteers who lend their time to the boat shop typically come in on weekdays, but the times can vary.

Group Volunteering Opportunities: Group volunteering can take many forms but is often well-suited to projects around the grounds and in our exhibit buildings. Depending on the season, a group can help with garden upkeep, site improvements, and sometimes boat shop work.

- **New Gravel floor in *Steam to Gasoline* exhibit:**

Before we can reopen our *Steam to Gasoline* exhibit, we need to spread new gravel on the floor to provide better support for our historic boats on display. This project would be a good fit for a group of volunteers who would enjoy a lot of activity and would be comfortable using wheelbarrows and shovels to move heavy materials. This is something we would like to accomplish in or around April.

- **Painting in the *Hazelett Small Watercraft Center*:**

Our Hazelett Small Watercraft Center is undergoing some improvements to make it better for visitors and will need some fresh paint inside to be ready for summer. This project would be appropriate for a small or medium-sized group of volunteers and would be great to get done around mid- to late-March.



- **General grounds spring cleaning:** We will be conducting a general clean-up of buildings and grounds sometime in late spring to prepare for opening day. This can entail weeding the gardens, cleaning inside buildings, removing litter that has washed up on the beach, and generally sprucing up the site. This is something that can be done by any size group of volunteers, at any time in April or May

until Opening Day and is quite flexible in terms of specific tasks and timing.

Please reach out to Volunteer Coordinator Sarah Yamaguchi with any questions or to sign up: sarahy@lcm.org.

Thank you to Susan Evans McClure for outlining the possibilities of strengthening the bond of the LCMM and LCACBS!



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