

❖ CR 914 NEWS ❖

Issue 22

JANUARY - FEBRUARY 2000

1999 Nationals Report

PERFORMANCE versus BOAT WEIGHT

The title of this section may be misleading in that we have no data directly correlating boat performance and weight. However, almost without exception, lower weight means better performance in all kinds of racing machines.

What we do have is the weights of boats that raced at the 1999 National Championships. The table shows the top ten skippers, their score and boat weight

Class rules specify minimum boat weight of 100 oz. (6 pounds, 4 ounces). That is really convenient because it automatically tells us the percent a boat is over the minimum weight.

Championship Division

Place	Name	Score	Wt., oz.
1	Ramos	22	101.0
2	Follett	32	102.2
3	McMichael	37	100.0
4	Spencer	38	100.0
5	Mangus	39	110.2
6	Venegas	49	100.0
7	Watt	50	102.2
8	Kavs	55	101.2
9	Snow	69	100.2
10	Freeland	78	104.2

Average Weights

- Average weight of the top ten boats was 101.2 oz.
- Average weight of the entire fleet was 101.5 oz.

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FROSTBITING at COTTAGE PARK YC, Winthrop, MA, March 5, 2000

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Class Secretary's Report

SPRING HAS ARRIVED

The ice is out at many sailing venues. The crocuses are up. The warm season of sailing is about to begin. Tune-up your boats, those of you who haven't been frostbiting, and be prepared for another great season.

Advisory Committee has been *resting* the last two months. Nothing to report.

AMYA CSOG

A committee of class secretaries was formed to create a document named the *Class Secretary Operating Guidelines* (CSOG). Apparently new class secretaries had been asking AMYA

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(Continued from page 1)

(Tim Mangus' uniquely heavy boat was not used to calculate averages.)

Tim Mangus placed fifth with the heaviest boat in the fleet! It was 10.2% over the minimum and 4.6% heavier than any other boat. *(He is currently working to reduce his boat weight.)*

Ernest Freeland, his boat was 4.2% heavy, placed 10th mostly because of boat reliability problems, not because of his boat weight.

Observations

1. It is apparently easy to get close to minimum weight. More than half the boats were within 2% of minimum weight. This is a healthy sign for the class.
2. Weight seemed not important to how a boat placed. The top boats were only 0.3% lighter than the fleet average. Tim Mangus placed fifth in a very heavy boat.
3. The skipper who wants the psychological advantage of knowing his boat is as fast as it can be can easily get his boat down to minimum weight.

BOAT SET-UP FOR PERFORMANCE

Following the Nationals the top performers were asked to tell their secrets of success. Rob Follet's Secret was in the last NEWS. Tim Mangus placed fifth with the heaviest boat in the fleet. He tells us how he sets-up his boat :

Main Boom Trim Going To Windward

I position the main boom in different positions. In light air the boom is eased out. In heavy air with smooth water, it is in tight. In heavy air with big waves, it is eased out slightly.

I may change its position with the tactical situations, but my initial set-up always allows me to bring the boom tightly amidships.

Vang Adjustment

One thing I have noticed is that vang tension is critical to boat speed. In

overpowering conditions, I find that an eased vang helps. For puffy conditions I'm experimenting on ways to get the vang to stretch or ease with a puff and to tension up with a softening breeze. To do this I may change the position of the vang on the boom or use less purchase or another type of string material.

Additional settings are listed in the tables.

Wind Strength	Heavy	Light
Shroud Tension		
Jumpers	Snug	Snug
Lowers	Snug	Tight
Mids	Loose	Loose
Uppers	Snug	Snug
Backstay	Loose	Loose
Other Settings		
Main Downhaul	snug	loose
Jib Boom to mast	2 1/8"	2 1/4"
Jib Draft	7/8"	1 1/4"
Main Draft	3/4"	1 3/8"

These settings are not changed for different wind strengths.

Mast Rake (Under transom to center of mast head)	53 7/8"
Jib Boom height from deck	15/16"
Jib Boom Tack Line from forward end	2 1/2"
Jib Sheet Fairlead from forward end	7 1/2"
Vang Attachment on boom from mast	5"
Main sheet fairlead on boom from mast	8 1/8"
Boom height from cockpit sole	2 3/8"

There you have it.

- Make your boat light,
- Set-up to go fast,
- Practice, practice, practice,
- Win the next Nationals

Why are there so many Smiths in the phone book?

They all have phones.

**LARCHMONT MYC
3RD SPRING
INVITATIONAL
REGATTA**

April 15 and 16, 2000

There were 48 boats at this spectacular regatta in 1999. It will no doubt be better than ever this year. The host:

Buttons Padin

**2nd Annual
Cherry Blossom Regatta
Invitational Match Racing
March 18 & 19, 2000**

Capitol Reflecting Pool, Washington DC

Hosted by

Capitol Area Model Racing Assoc.
(Pre-Registration Required)

*Mark Zurmulen,
mjz.vqc@
worldnet.att.net*

**2000 REGION 2 CHAMPIONSHIPS
April 22, 23**

At Mezick Pond, Annapolis, MD

*Ernest Freeland
cbmra@yahoo.com or
(410)956 0780*

**2000 REGION 3 CHAMPIONSHIPS
April 29, 30**

**At Norfolk Yacht Club
Hosted by the Virginia Model YC
and Capitol Area MRA**

*John Atwood
AtwoodJ@
tea-emh1.army.mil
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FLEET NEWS

San Diego YC

San Diego, CA

E-mail from Sandy Purdon. Sandy has extensive experience in full scale boat racing including a lead role with Dennis Conner in one of the America's Cups. He is an ex-commodore of SDYC.

I thought I would bring you up to speed regarding our fleet here in San Diego.

We have formed a fleet of model yacht racers at the club. It is composed of some 20 model boats and about 35 members.

The boats consist of 8 CR 914's, 9 Lasers and the rest a variety of Solings, 1 meters, one-offs, etc. The CR 914's are being built as we talk. The other two belong to myself and another guy.

We will have a full regatta at our Opening Day on Sunday, April 16th, at the club. It will consist of a series of starts for the CR 914's, Lasers and an Open Class without handicaps. We will be running these races off our docks at the club for starters. It is not ideal because of the windage from the buildings, but it is a low key program and the idea is to have fun before we get too serious.

During the summer we will have an every other Friday evening regatta in front of the main clubhouse at 5 PM in the main channel to the clubhouse. This should get a lot of attention and interest started. That starts in June.

We will have another day or two of Sunday regattas between Opening Day and the summer series. There is lots of interest and enthusiasm.

So its not much yet but we are having fun starting out. Thanks for your continued support and help.

*Staff Commodore
Sandy Purdon,
SDYC Model Yacht Fleet Captain*

Cottage Park YC

Winthrop, MA

CPYC (see page 1) is the venue for CR 914 Frostbite racing north of Boston. There are 6 to 10 boats racing every Sunday, 10-12 AM, ice permitting.

Two new owners arrive with their boats in hand and their babies either strapped on their backs or in strollers! Chip Terry, brings his well behaved dog as well! To see them both walking the snow covered docks with Tx in hand, babies mounted and a dog tagging along behind, defines the word "enthusiast".

CPYC will hold their Spring Regatta for CR 914's on March 18 this year.

*Hatch Brown
Mike "Blush" Gahan
hubbleg@aol.com*



Chuck Winder Photo

Chip Terry races his CR 914 at CPYC, assisted by "Splinter", his dog, and beautiful baby daughter Juni. The sport has lost a few skippers to the burdens of parenthood, but Chip manages to do it all.

British Virgin Islands

Tortola, Virgin Gorda

Alastair recently wrote asking for a "New Fleet Package".

Dear Chuck,
We are soon going to have five CR 914s here in the British Virgin Islands and are obviously planning to do some racing.

If we get things going maybe we can entice some participants down for a Caribbean event?

*Alastair Abrehart
alastair@broadswordcomm.com*

The idea of a winter regatta in BVI does have a good ring to it. Ed.

Atlanta America's Cup

Club

Atlanta, GA

Randy Phillips is the commodore of this newly formed club. They race at Lake Lanier near Atlanta, Ed.

We have finally started a club with 6 members. There are 5 more boats being built in this area right now. As the first commodore, I plan to limit membership to CR-914 owners only with the added requirement that every member be a class member. That's the only way it's going to work.

I've already been approached about PHRF numbers [by owners of other

(Continued on page 5)

IMPROVE RELIABILITY

WATERPROOF THE RECEIVER

This article shows one way to improve the water resistance of the boat's Rx (the receiver). An article in the the September-October 1998 issue of the NEWS, page 8, presented a way to make servos more water proof.

Water, especially saltwater, is the enemy for electronic components. To assure reliability it is a good idea to spend time and thought making the electronics as water resistant as possible.

The first line of defense, of course, is to keep water on the outside of the boat, but some will usually still get inside.

Opening the Receiver

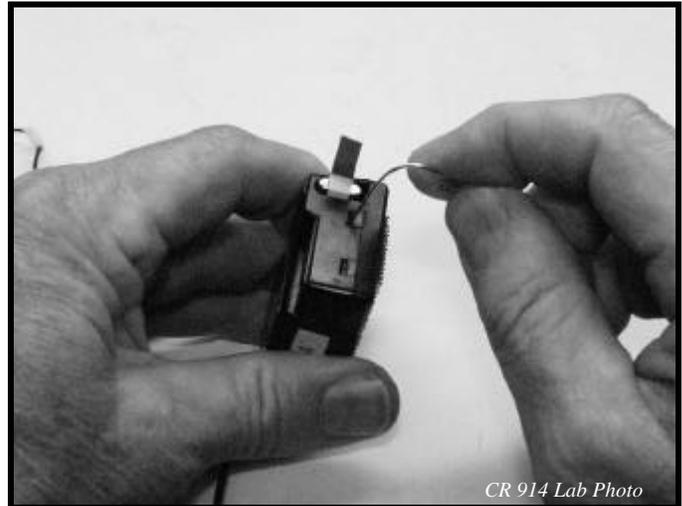
It is a good idea to know how to open the Rx. At times an Rx can be brought back to life by cleaning and drying the Rx circuit board. (See the November-December 1997 NEWS, page 3)

The Rx case is held together by two small latches at each end. The Rx shown here is the stock *hitec* HP-2NRB used with the

Ranger II and newer Ranger IIz. The photograph shows a straightened paper-clip being used to depress the latches through the small rectangular openings. Usually the latches at only one end will do the trick. Gently remove the case. The circuit board is also held by plastic tabs which can be pushed aside to lift the board out of the case bottom.

Coat with Petroleum Jelly

Petroleum jelly, Vaseline® is one brand, is an easily handled material that will protect the electronics from water. Coat the entire circuit board, top and bottom, so everything is covered. Partially extract the channel crystal to get Vaseline into the space between it and its mount. Then push it back in again. A small brush like an old toothbrush is useful to assure that everything is fully coated.



CR 914 Lab Photo

After reassembling the board and case, remove Vaseline from the outside of the case. Hook it up and do a range test before reinstalling in the boat.

Using Balloons, etc.

Some owners protect their Rx's using a balloon or plastic wrapping. The problem with this is that if moisture does get inside from a leak or just condensation, it won't dry. Moisture in long-term contact with the Rx cannot be healthy.

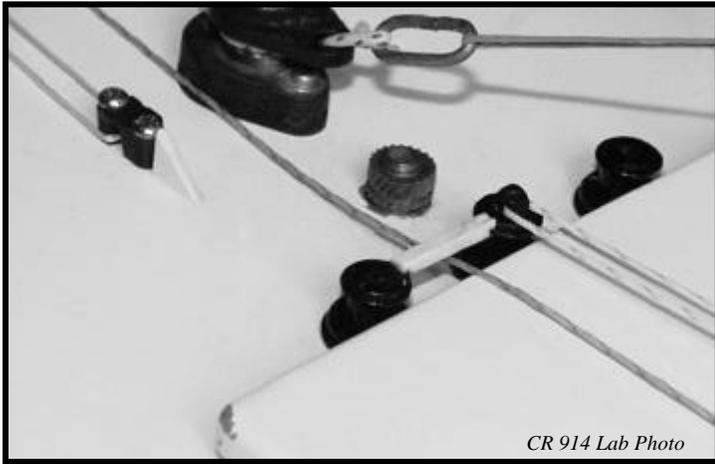


CR 914 Lab Photo

NEW MEMBERS

First Name	Last Name	City	State	Sail No.
Mike	Armstrong	Killingworth	CT	616
David L.	Bennet	Marblehead;	MA	448
Craig	Boyle	Denver	CO	331
Thomas	Corbit	Duncan	SC	322
Kevin	Eley	Hampton	VA	335
John	Fallon	Arlington	MA	781
Alex	Furnary	Rye	NY	976
Jeff	Gilbert	Germantown	MD	350
Dale	Leidheiser	Fort Collins	CO	669
Jack	Lord	Boulder	CO	993
Dick	Maiese	Durham	CT	326
John	Murray	Boulder	CO	816
Diane	O'Donnell	Naperville	IL	940
Tom	Ritter	Ruxton	MD	332
Chip	Terry	Cambridge	MA	318
Scott	Taylor	Flowery Branch	GA	471
Edward W.	Wolcott, Jr.	Virginia Beach	VA	755

IMPROVE RELIABILITY (Continued)



CR 914 Lab Photo

PREVENT JIB SHEET FOULING

The jib sheet is a very long string that can become quite slack at times. Wind or water action can move the string until it hooks around something on deck.

It is not a good thing to have the jib sheet foul anything. The least that happens is the jib is sheeted-in closer than the finely tuned adjustment intended. At worst the jib can't be let out at all and the boat is almost uncontrollable. Neither event wins races.

Two schemes to avoid fouling are shown

in the photo. The cleat with its horns removed and a "wedge" behind it was discussed in the last issue of the NEWS. Inventing a way to remove this cleat is another solution.

Jib Sheet Fairlead

The "bridge" between the port and center winches creates a fairlead that keeps the jib sheet under better control. The bridge shown is made of a scrap piece of plastic from the white tree in the kit. It could just as easily be made from a piece of string glued between the winches.

The point is that it helps keep the sheet from blowing around and becoming fouled.

Details

Of course, success is in the details. What ever is used to create the fairlead must be done carefully. For example, if a small crack exists that can catch and jam the sheet, then the fairlead becomes a detriment instead of improving reliability.

(Continued from page 3) **FLEET NEWS** models]. It is simply not practicable to do that.

Our web site is at www.ibphil.com Select "the wind", then pick the AACC, that's us.

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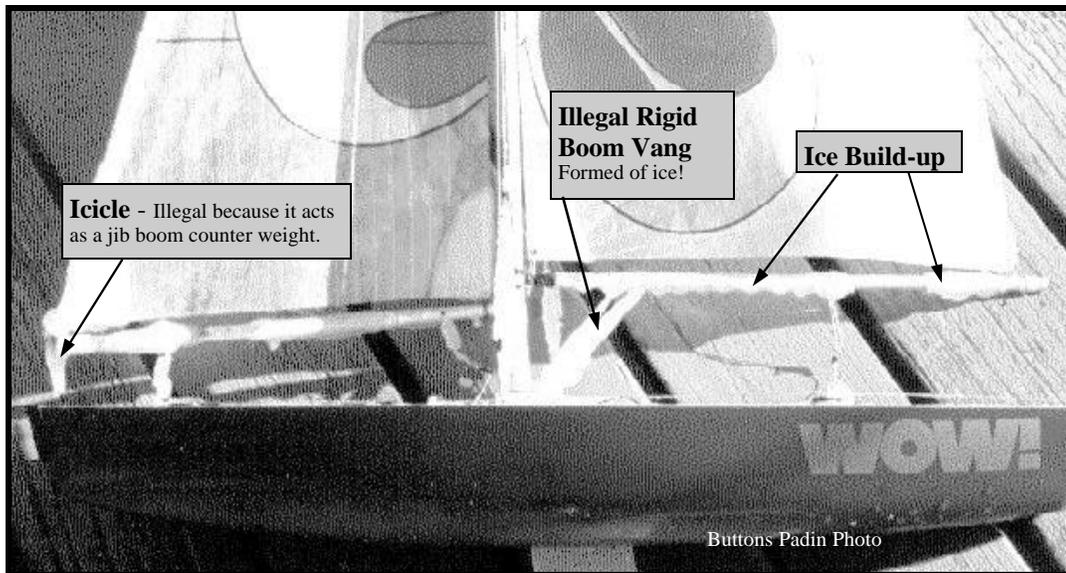
New Bedford YC Padanarum, MA

Joey Mello is the local fleet leader and a sales agent for Worth Marine. He writes:

Just a quick overview of what we are doing. We race every Sunday, from 10 to 12 am. It's been a long winter with little racing because of ice. We average 6 boats every Sunday, sometimes more. No true "TOP GUNS" but Gary Leduc has been a constant power. We do a lot of windward leeward, because it creates a more competitive race rather than a drag race.

Joe Mello, Sr., [Joey's father] recently built an RC tug boat. It is perfect for moving marks depending on wind. It's also great at rescuing boats. It maneuvers great in tight quarters using three motors and no rudders.

Joey Mello
jsail700@aol.com



Buttons Padin Photo

Larchmont MYC Diehards

The lumpy white build-up along the booms of Hank Buchanan's **WOW!** is **ICE!** Buttons Padin sent the photo, explaining that the temperature was 18 degrees F. the day it was taken. The wind chill was 18 below!

Hank, always the quitter, stopped racing just because his sheets were frozen and he could no longer control the boat.

BATTERY MANAGEMENT

What is Your Battery Capacity?

Battery **voltage testers** were discussed at considerable length in the November-December 1999 **CR 914 NEWS**. However voltage testers do not reveal battery capacity.

This article examines ways to measure battery capacity.

The common sense way to know if your **rechargeable batteries** have enough capacity is to install fully charged batteries and go sailing. If they last long enough for the way you sail, that's all you need to know.

Sometimes that's not enough. We may want to know if newly purchased batteries are as good as advertised. Or we may find that our old batteries seem not to last as

long as they used to and we want to find out what capacity they now have.

BATTERY CAPACITY TESTERS

These devices discharge batteries at some rate until output voltage drops to 1.0 volt per cell. Radios stop working when voltage is much lower than that.

THE CHEAPEST SOLUTION (but inconvenient)

Building a Tester

Make a 20 Ohm resistor using two 10 Ohm, 10 watt, resistors. (RadioShack #271-132, 99 cents). Connect them in series with a connector compatible with the boat battery pack. The photo below (upper left) shows two 10 watt resistors, a Dean's connector and a couple pieces of heat shrink insulation. Some wire and a soldering iron are needed.

A completed tester, at the center of the photo, used smaller 2 watt resistors and

has a couple alligator clips to allow testing of other batteries. The recommended 10 watt resistors will not get as warm as the 2 watt resistors.

The tester has short lengths of bare wire at each end where the multimeter alligator clips are connected.

Test four-cell boat batteries

Connect the resistor to a fully charged four-cell battery pack (NiCd or NiMH) and time how long it takes for output voltage of the batteries to drop to 4 volts. (Please ignore the fact that the battery case in the photo contains alkaline batteries.)

The photo shows a small digital volt-ohmmeter connected to the tester. (Read **Multimeters** on page 10.)

Set a timer for one hour intervals while reading the Racing Rules of Sailing or watching America's Cup tapes on TV.

Every time it rings, record the voltage until the voltage decreases to 4 volts (1.0 volt per cell). When the voltage drops below 4.8 volts, use much shorter timer intervals so you don't discharge below 4 volts. This doesn't have to be done in one session all on one day.

Unplug the resistor when voltage has dropped to 4.0 volts.

Using the 20 Ohm resistor, the four-cell pack will have an average current of 250 mA.

Capacity Calculation

You have to do some simple arithmetic. Battery capacity is simply how long (in hours) a battery will deliver a current in milliamps (mA). A milliamp = 1/1000 of an Ampere.

If the battery pack takes 5 hours to discharge to 4 volts, the

(Continued on page 7)



CR 914 Lab Photo

battery capacity is 1250 mAh (250 mA x 5 hours)

Test five-cell boat batteries

The same procedure is used except the average load is now 300 mA because of the higher voltage of a five-cell pack. And disconnect the resistors at 5.0 volts instead of 4.0.

Test Transmitter Batteries

This is easier. Fully charge the batteries in the Tx. Turn it on and time how long until the red light starts to flash. (It flashes when the voltage of the eight batteries drops to ~8 volts.)

The older Ranger II Tx has an average load of 265 mA. The newer Ranger IIz and the Futaba Attack SR Tx load is 160 mA.

If the Ranger IIz or the Futaba Attack red light starts to flash at 7 hours and 45 minutes, the battery capacity is 1240 mAh (160 mA x 7h-45m). The Futaba Attack Tx has an audible alarm, too, which makes timing easier.

The above is cheap but inconvenient. It is doable if you have the patience.

A MORE CONVENIENT SOLUTION

One unit, the *Hobbico® Accu-Cycle™*, will charge both Tx and Rx batteries. With the push of a button it will automatically determine battery capacity. Battery capacity is displayed in mAh for the Tx and Rx on separate LCD digital readouts. Everything is automatic except plugging in the battery connectors.

A borrowed *Accu-Cycle* was exercised in the CR 914 Lab. It was easy to use and worked well.

(As with all test devices you will be more comfortable with it if you do a simple calibration to assure that it accurately measures battery capacity.)

Accuracy

Tx battery capacity was measured very accurately. However, Rx batteries were measured at 89% of actual capacity. That would be embarrassing if batteries were returned because they tested below specs



Buy at COSTCO stores
Only 23 1/2 cents a cell!

CR 914 Lab Photo

when in fact they were fine.

The *Accu-Cycle* supplier, Tower Hobbies, was asked about this and said to send the unit back for a replacement.

More on this below.

Do You Want One?

Remember, the only reason to get one of these things is to conveniently test battery capacity. To simultaneously charge Tx and Rx batteries, all you need is a \$20 charger. See the Jan-Feb 1999 NEWS, page 9.

Where to buy one.

Buy the *Accu-Cycle* from your local hobby shop. It operates on house voltage. Cost is ~\$100. (Do not get the "Accu-Cycle Plus" model unless you plan to never use NiMH batteries, which all of us should do.)

If your local hobby shop can not supply the *Accu-Cycle*, try Tower Hobbies, 800 637 6050. Their shipping is at least \$7.

TEST FOR ACCURACY

It was easy to test the *Accu-Cycle* for accuracy. There are only two things measured to determine battery capacity: load and time.

ALKALINE BATTERIES

Using the *KISS* principle (Keep It Simple, Stupid), many owners are happy using non-rechargeable alkaline AA cells.

If you have a COSTCO store that is convenient, buy the Kirkland brand of batteries. (See above.) They are sold in 48 cell packages at only 23 1/2 cents each, or \$11.30 for the package.

That compares with 70 cents and up at local hardware and drug stores. All alkaline batteries perform the same so the only criteria is to buy the lowest price cells available.

We still recommend using NiMH rechargeable cells for an owner who plans to race regularly. They are more convenient and cost less if you plan to do a lot of sailing.

Biff Martin

What's the difference between roast beef and pea soup?

Anyone can roast beef.

(Continued on page 9)

RECHARGEABLE BATTERY SYSTEM

Steve Lang, entrepreneur and innovator, offers to his Colorado fleet a clever package which may interest others. His goal is to make battery management simple, and allow skippers to race all day without opening the hatch.

The \$75 package includes:

1. A set of 12 NiMH batteries
2. A Battery Charger that charges transmitter and boat at same time
3. A magnetic boat switch
4. A waterproof battery charge receptacle that mounts in the cockpit
5. A connecting wire pigtail
6. Solderless wire fittings
7. Velcro to install magnetic switch
8. A balloon
9. Complete installation instructions.

The magnetic switch replaces the stock on-off switch. When not sailing, the magnet sticks to a dot of Velcro on deck to turn off the boat batteries. When sailing, the magnet goes into your pocket.

At home, snap open the charge receptacle rubber door to plug in the boat charger. The second charger lead plugs into the transmitter. The charger remains plugged-in indefinitely with no battery damage.

The balloon is used to waterproof the boat batteries.

Editorial comment:

- *I like what Steve has created by assembling the bits & pieces in one package.*
- *Water will always get into the boat.*
- *After a day of racing I recommend opening the hatch, move the batteries out on deck, and let everything dry out.*
- *If saltwater was inside the boat, rinse the inside of the boat with freshwater.*
- *None of the below deck components, including stock boat kit components, are designed to get wet, especially with salt water. Protect them with Vaseline© or some other suitable material to prevent electrical shorting and corrosion.*

Contact: Steve Lang, steve@builtbyu.com

KIT AVAILABILITY PROBLEM

Greg Worth reports that he has no kits in stock and 50 unfilled orders. There are no kits in the AG Seattle warehouse or in Japan. It is not clear why that has happened. AG is aware of the seasonal upsurge of kit sales in the Christmas and boat show season.

The good news is that AG plans to continue producing the kit. There was a perception by some that the kit might be discontinued because it is not a large enough part of AG's business. In fact, AG has recently taken some steps to improve the product.

Mr. Kawata, President of AG Industries, has assigned a VP, his son, to expedite production and delivery of kits.

The immediate problem is for AG to get kits back into the pipeline. Christmas and the boat show season are an important time for Worth Marine and growth of the class. Greg reports some orders have already been cancelled because of the delay.

AG ships kits by container ship from Japan to Seattle. AG Seattle then ships them by truck to Worth in Marblehead. This is a time consuming process that won't get started until AG can produce some kits.

Used Boats

The situation may improve the resale market for existing CR 914's. For some reason, despite about 4000 kits sold, there are seldom used boats available.

Tell me if you have a boat or a kit for sale. I am often asked about used boats. There may be someone out there waiting to buy your boat:

chuckw88@msn.com
(781)631 6727

Class Secretary Report

(Continued from page 1)
officers for help

to understand what the job entails. Most AMYA class secretaries volunteered to work the problem.

As it stands now, only partially completed, the tone of the CSOG is more a directive in somewhat strong legalese terms. It is not a friendly guide and has too many words to be easily used. But it is a work in progress. Before it completed it may become a friendly and useful tool.

What has been interesting is the dynamics of 16 faceless individuals working a problem using e-mail only. I know none of the others on the committee. There is wide diversity in this group. Dick Rutledge, AMYA VP, is the guy with the committee chairman's job. He has to keep the legendary horse-design committee from designing a camel.

"November-December 2000" NEWS

Some of you more astute readers may have been concerned that the last issue was dated 2000. It was not an advance issue. It was a real Y2K problem caused by defective software between the editors ears. There will be a second Nov.-Dec. 2000 issue later this year. Don't confuse the two in your NEWS archives.

America's Cup

The drama and intensity of the Louis Vuitton trials were good entertainment. The America's Cup itself lacked suspense after the first race, or maybe even the first windward leg. It is hard to comprehend how the NZ'ers can be so dominating. *(Maybe they take Dave Ramos pills.☺)*

Next time the challengers should hire CR 914 designer Mr. Kazuo Takei to get themselves a faster boat.☺

Photo Quality

The company that prints the NEWS uses a 100 lines/inch half-tone screen at 45 degrees for the photos. That can give pretty good quality if the photo file given to the printer is of suitable quality.

(Continued on page 9)

(Continued from page 8) **Class Sec'y Report**

We are still climbing the learning curve in the production of the NEWS.

NEWS Copy

I am always looking for articles from you, the owners and subscribers. Send me any ideas that can make the Class better for us all.

ALWAYS LOOKING FOR GOOD

PHOTOS. (Does this sound familiar?)

- Action shots of 914's are what we need. Telephoto close-ups. Boats in strong winds submarining, pitchpoling, planing with big bow waves, etc.
- Send photos showing your people, venue, club house, lots of boats at the start, etc.
- Or good photos of innovations that improved your boat.
- Humorous photos are always good.

Help make the NEWS as good as it can be.

Registrations

This month there are 588 boats registered and ~245 get the NEWS.

(Continued from page 2)

**2000 REGION 1
CHAMPIONSHIPS
June 24, 25
At Redd's Pond, Marblehead, MA**
*Chuck Winder
chuckw88@msn.com*

**2000 REGION 5
CHAMPIONSHIPS
October 7, 8 (tentative)
Evergreen, CO**
*Steve Lang
steve@builtbyu.com*

YEAR 2000 NATIONALS
Our host will be the *Chesapeake Bay Model Racing Association* located in Annapolis, MD. The regatta dates are November 3, 4 and 5. Contact is:
*Commodore Ernest Freeland,
cbmra@yahoo.com or
410-956-0780.*

(Continued from page 7) **Battery Capacity**

Load

A multimeter was connected in one wire to the batteries to measure current. The actual load on the batteries was 271 mA when the *Accu-Cycle* load was set at 250 mA. That's a large error.

The load of 271 mA remained constant as the batteries were discharged even though battery voltage dropped from 5.5 to 4.0 volts. The *Accu-Cycle* obviously has circuitry that controls the load. The load is not simply a resistor.

Time

The discharge to 4.0 volts was timed manually.

Actual Battery Capacity Error

Using the above data it was determined that the actual battery capacity was 1007 mAh. The *Accu-Cycle* indicated only 893 mAh, at ~13% error!

Conclusions

- The *Accu-Cycle* is a user-friendly tool for determining battery capacity and charging batteries
- Charging NiMH AA will take only 14 hours using the 125 mA setting.
- As with any test device, it should be calibrated for best results
- It is easily calibrated using a multimeter.
- If there is too much of an error, the manufacturer will correct the problem.

Pertinent Web Sites

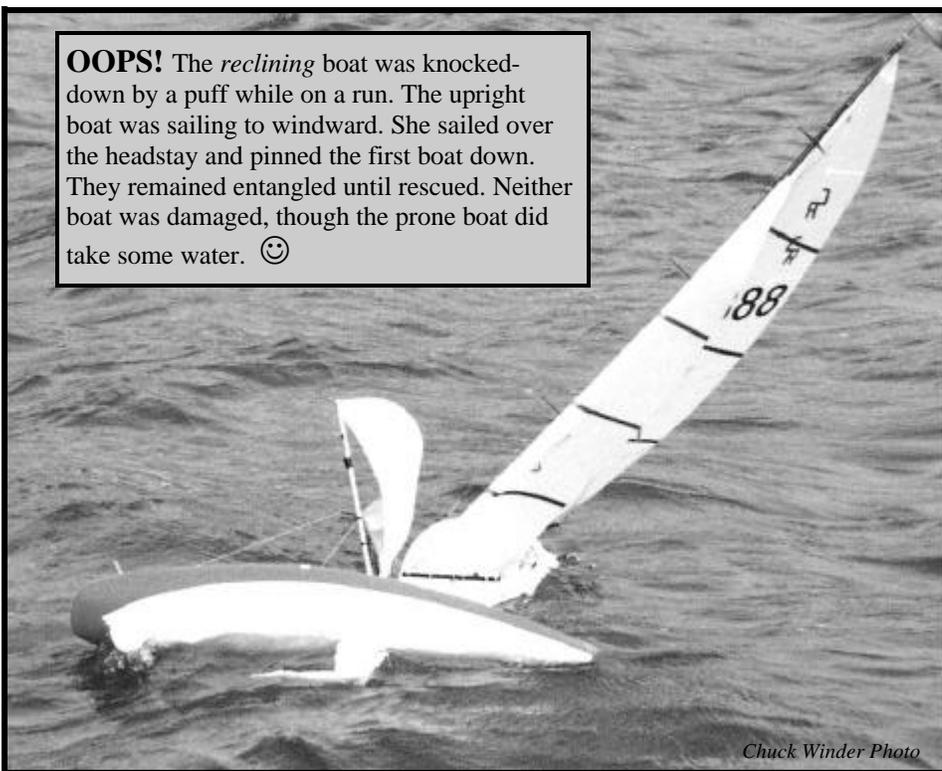
AMYA Web Site,
<http://www.amya.org> Add "cr914.html" to go directly to the CR 914 page.

Worth Marine,
<http://www.worthmarine.com>

Chesapeake Performance Model Yachts,
Steve Ramos, Annapolis, MD, <http://www.rcyachts.com>

Steve Lang, Evergreen, CO,
<http://builtbyu.com/914>

OOPS! The *reclining* boat was knocked-down by a puff while on a run. The upright boat was sailing to windward. She sailed over the headstay and pinned the first boat down. They remained entangled until rescued. Neither boat was damaged, though the prone boat did take some water. 😊



Chuck Winder Photo

THE BOATYARD

“MAST STICKS”

These things have been in use by model boat owners for as long as there has been model boats. They may have another official name.

It's the easiest way to determine if the mast is properly centered.

They are easy to make. Everyone should have one. The sticks in the photo at left are made from 3/16" dowel, but any material can be used. The pivot is a small bolt and nut. The length was set to fit inside the tool box, but most any length will work.

MAST SET-UP

To use them slack-off the mid- and upper-shrouds. Place the stick ends against the chainplates and adjust the lower shrouds until the mast centers on the bolt in the sticks.

Before adjusting the mids and uppers, check to assure that the mast is straight. The mast is soft aluminum and is easily bent, even in a collision with another boat.

This may take two people. One way is to hold the hull vertical with the bow up and the mast horizontal. Sight along the mast when there is no shroud tension. It is best to do this inside out of the wind.

If mast is bent, carefully straighten it using your hands. Readjust the mids and uppers to suit your tuning preferences.

Note that even a slight sidewise bend will ruin the way the main sail sets.

Some owners pre-bend the mast in the fore and aft direction if they think it will improve performance.



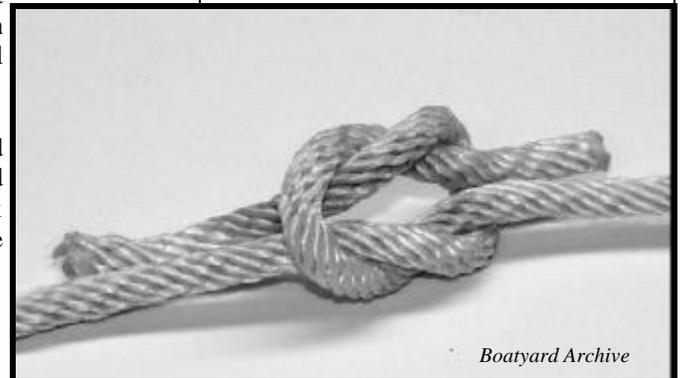
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KNOTS

The knot above is a *double half-hitch*, used in many places on the boat. In the AG Assembly Instructions, page 9, it is drawn incorrectly and is called “Knot B”. It can be made more attractive, but not stronger, by taking many half-hitches instead of just two.

The knot below is a *square-knot*. Some owners use it to form a loop around the mast to tie-on the mainsail luff instead of the Sail Rings provided in the kit. It is also used as the final knot to secure a “String-Ring” after the clove-hitches are completed.

The many uses of String rings have been discussed at length in the last two issues of the *NEWS*.



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MULTIMETER

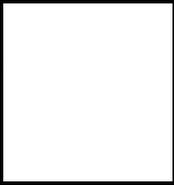
Anyone who owns a model boat (or home or car, for that matter) will benefit by owning and learning how to use a multimeter.

The RadioShack, #22-802, \$24.99, is an inexpensive unit. It measures volts and resistance and has a digital readout. It is similar to the unit in the photo on page 6. It has its own case and is small enough to fit in a boat tool kit.

A better unit is RadioShack #22-163, \$49.99. It will measure all of the above plus 10 Amp current. It also has a digital readout. This a very capable meter.

RadioShack meters have a good track record. Cheaper units with analog meters are not recommended.

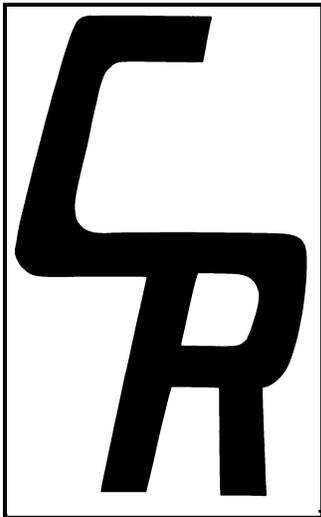
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CR 914 SAIL EMBLEM
Full Scale

**Future articles in the
CR 914 NEWS**

The following is a list of articles that are planned for future 914 News. What will actually appear depends on input from you owners in the form of contributed material and requests for particular information.

- Regatta results
- Fleet news
- Battery management - continuing
- Surviving salt water - continuing
- Racing rules of sailing topics
- Why do radios "glitch"?
- Class Rules Interpretation - continuing
- Maintenance and repair of radio components
- Building and maintenance - continuing
- Scoring systems
- Boat switches
- Conduct of a model race

START YOUR OWN MODEL YACHT CLUB

There are probably some owners who would like to race but don't have a local club. Start your own by getting three AMYA members together. That's all it takes! (Though it helps to have a place to sail such as a pond.) Ask me for a