

# ❖ CR 914 NEWS ❖

Issue 21

NOVEMBER - DECEMBER 2000

## Advisory Committee Report

The first issue decided by the committee appointed in November 1999 was to call ourselves the "Advisory Committee".

### MODUS OPERANDI

For general discussion of issues and voting we are using e-mail in plain text format. It seems to work.

### PENALTY TURNS

The *360 vs. 720 Penalty Turn* issue took a lot of discussion. The unanimous decision was to use the 360 penalty.

Your Class Secretary has been an advocate of using the 720 as is done in full-scale boats under ISAF rules. Our discussions were prompted by frequent violations of RRS 18.3 at the nationals and other venues. We had arrived at what was a rather complicated and possibly unworkable decision.

We then consulted with Larry Robinson, chairman of AMYA'S Racing Rules Committee. He gave us a comprehensive presentation and gently persuaded us to use Appendix E of the Radio Sailing Division (RSD) of ISAF. Appendix E specifies the 360 penalty.

The *Penalty for Hitting a Mark* was also addressed. At the nationals there was no penalty.

It is a *local decision* based on the viewing distance to the marks of the course.

At venues where skippers are confined to one location, marks are often sufficiently distant to make a clean rounding difficult. When a model hits a mark it is often slowed considerably, thus hitting it is a penalty in itself. Of course, the mark must always be rounded on the correct side.

### CORRECTION WEIGHT LOCATION

Unanimous Decision: Correction weights may be attached to the underside of the deck in  
*(Continued on page 3)*



### MERRY CHRISTMAS NEW OWNERS

Greg Worth ran out of kits as Christmas approached. Not wanting the new owners to be empty handed on Christmas morning, he photographed the kit box top and interior. A small box was made and an inkjet print of the box pasted on. The black and white photo does not do justice to the full colored mini-kit box.

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## Class Secretary's Report

### 2000 NATIONALS

Many of our most active owners are also active in the full-scale boat season. After reviewing local yachting activities and consultation with the Advisory Committee, CBMRA decided to have the nationals the first of November. The weather should be good in Annapolis that time of year.

### America's Cup Trials

The drama and intensity of the Louis Vuitton trials have been fascinating. All those high-tech CR 914 "look-a-likes" seem to have just as much fun and excitement as we do. The major difference is that we are one-design,  
*(Continued on page 8)*

## CR 914 Designer is Interviewed in Japan

By Rick Martin

*Rick Martin is our foreign correspondent in Japan. He lives in Tokyo representing The Boeing Company. Over the years he has supplied us with interesting articles on the 914 racing scene in Japan. He has his CR 914 with him. The "Japan Super Mini America's Cup" is sailed in CR 914's. The following was sent as an e-mail October 28, 1999. Ed.*

Dear Chuck,

I did get to the 15<sup>th</sup> Japan Super Mini America's Cup a day after returning from the US. After winning the opening six race series of the four-part, one-day, event the jet lag caught up with me and I wound up fourth overall out of 33. [*That sounds like excellent performance, Ed.*] The same format that I described in my report on the 1995 JSMAC was used again this year and Motoshi Munesuke the '95 champion prevailed for his 6<sup>th</sup> win. It turns out Munesuke-san is also a top competitor here in the IOM Class (International One-Meter).

I managed a couple brief discussions with Kazuo Takei, the designer of the CR 914. Although Mr. Takei speaks good English, Isamu Kawata, the son of AG's President, acted as interpreter for part of our conversation. The following is taken from memory and some scribbled notes and is not an exact transcript of our conversations.

Rick Martin: How did you get into model yacht design?

Kazuo Takei: About 10 years ago I got involved in racing the 36/600 and Marblehead classes in Japan and thought I could come up with better designs. My designs were successful and that led to design work for AG and currently in the IOM class.

RM: AG commissioned you to do what is now the Cup Racer?

KT: Yes, First we decided to do a half-meter version of an America's Cup 12 Meter. [*This was probably ~1983, Ed.*] It was important to AG to keep the yacht small because there isn't a lot of space to store things in Japanese homes and we wanted to be able to easily store and transport the boats fully rigged. That design proved to be too small to perform as well as we wanted so our efforts shifted to a model of the newly forming America's Cup Class.

RM: Did you model the Cup Racer after any particular boat of the early AC class?

KT: No. There wasn't a lot of knowledge in Japan about what AC boats would look like at the time so I did my best to anticipate what the shape might be. Generally speaking you can't take a full size design and simply shrink it down. Exact scale models usually do not perform well and need a lot of refinement. I started with what I knew about the 36/600 class and married that with what I thought the AC class rules would create to come up with the initial design.

RM: So you actually started with a 36-inch boat, how did the CR 610 come into existence?

KT: AG still believed that a smaller boat would be more readily accepted in the Japanese market so we developed both boats simultaneously however the CR610 was mass-produced first.

RM: How did you arrive at the details such as sail area/displacement ratios, keel weight, draft etc.?

KT: (Big Grin) Frankly, through a lot of trial and error. We modified the hull shape at least 30 times and tried maybe 20 different keel configurations. I wanted to get performance that would be satisfying to both the novice and the experienced sailor. At the same time the boat had to be suitable for mass production as well as easy to build so it couldn't get too sophisticated like the 36/600. It was a constant compromise. The rig and sail plan took a lot of time to finalize and we ended up testing as many as 80 variations.

RM: Most everyone familiar with the Cup Racer would agree it came out extremely well. Would you change anything if you were doing the design today?

KT: I would probably experiment with a narrower boat. The boat is really intended for the lighter winds we experience in Japan. Narrow and lighter are better in our conditions. But overall I am very pleased with how close my design parallels the early AC designs.

RM: As a seven-time winner of the Super Mini America's Cup do you have any tips your can share on setting up or sailing the Cup Racer?

KT: The boats should be sailed free and not pinched to get the best performance. Upwind I sail with the jib boom pointing towards the leeward chain-plates and the main boom pointing toward the leeward corner of the transom. The mainsail leech needs to be kept tight when it's windy and the mast raked forward to balance the helm.

RM: That's all it took to win seven times?

KT: Well, that plus get good starts, play the wind shifts correctly and don't get tangled in traffic.

RM: Have you or are you working on any full sized boats?

KT: No, I have only consulted informally on other Japanese yacht designs. There is not a lot of demand for full time yacht designers in Japan.

RM: Is there anything else you would like to add about the 914

KT: Well, I would to see more opportunities for international competitions like we had in San Diego in

*(Continued on page 3)*

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***Never lend your car to anyone  
to whom you have given birth.  
-Erma Bombeck-***

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(Continued from page 2)

1991 and I would like to see the class grow to be as popular as some of the other model yacht classes around the world.

Kasuo Takei is currently the General Manager of the Shin Nishinomiya Yacht Harbor, a modern, marina near Osaka Japan. It is home to about 300 large pleasure craft. In addition to his duties as head of the marina he acts as race chairman for many yacht racing activities in the Osaka-Kobe area.

*Rick proposed he work with Mr. Takei to examine the differences between the rules and practices governing the Japanese CR 914 Class and our class rules. I support Rick in this endeavor.*

*It would be interesting if in the future there could be international competition in our class.*

Editor

## 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*

## 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.*

## (ADVISORY COMMITTEE)

(Continued from page 1)

addition to the area specified in the current rule.

The weights need not be permanent. If an owner's modification increases the boat weight, he may remove correction weight to keep his boat at the class minimum.

### **RULE 4.6 Should the rule be changed?**

The rule reads: "Steering wheels, primary winches and the three forward winches from the kit shall be installed. Winches may be modified to avoid fouling sheets. Bow foot rails are required but design is optional. Deck cleats and the stern hatch cover are optional."

There was considerable discussion on this issue. The objective of the rule is to preserve the *one-design image* of the CR 914. There is clearly no boat speed advantage involved.

The majority voted to not change the rule. All agreed to abide by the rule. As always, local fleets can use discretion in application of the rule, but at Regional and National events, it shall be observed.

### **Bow Bumpers**

The unanimous opinion of the Advisory Committee is the bow bumper used at the 1999 Nationals be a requirement for the class.

### **Additional AGENDA Items to be addressed**

1. Create CR 914 "Sailing Instructions" to be used at all regattas. Should reduce work load for hosts and provide more consistency for competitors.
2. Define a format for the nationals to be used by a host club. Or a selection of formats based on how many enter the regatta. How are divisions seeded? Should each boat race against all the others? Etc.
3. Guidelines for changing the Class Rules. Simple majority or 2/3 vote? How often? Vote done in the NEWS? Etc.

### **ADVISORY COMMITTEE**

*Ernest Freeland                      Steve Lang  
Howie McMichaels                  Buttons Padin  
   Chuck Winder*

## BOW BUMPERS

The "one-design" bow bumper developed in the past year for the Nationals is in production at Worth Marine. The price is \$4.20 plus shipping. The bumper has demonstrated that it reduces the incidence of damaged boats. They were a requirement at the 1999 Nationals.

The bumpers at present are not a requirement in the class rules. The next vote on the rules will include whether or not to make bow bumpers mandatory.

Larchmont MYC, a large fleet, and Marblehead MYC require them for their local races. They are a benefit even for small fleets and individuals. Even single boat collisions with immovable objects such as pond stone walls can cause damage that is minimized by the bumper.

### **Region 1 Championships - June 24, 25**

At Redd's Pond, Marblehead, MA

Chuck Winder, chuckw88@msn.com  
(781)631 6727

### **Region 2 Championships - April 22, 23**

At Mezick Pond, Annapolis, MD

Ernest Freeland, cbmra@yahoo.com or  
410-956-0780

## Pertinent Web Sites

### **AMYA Web Site,**

<http://www.amya.net> 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>

## FLEET NEWS

### North Cove Yacht Club Old Saybrook, CT

Growth of this club continues since it was formed last summer. The fleet has 18 boats with more on order. Racing has been very competitive at this new club.

There were three regattas in 1999: Pig Roast Regatta, Gobbler Regatta and the Polar Bear Regatta. Commodore Knight Merritt created beautiful original trophies for each of these events.



Old Saybrook is located on Long Island Sound at the mouth of the Essex River.

*Commodore Knight Merritt  
geemageepa@webtv.net  
(860)388 4035*

### Groton Long Point Regatta Sunday, December 12, 1999 Groton Long Point, CT

Doug Peacock hosted the first CR 914 regatta at this excellent venue. Winds moderated from the previous day's forty knots to give excellent fresh sailing conditions.

There were seven boats from North Cove Yacht Club, Old Saybrook, CT: Bill Spencer, Knight Merritt, Bob Cika, Dick Hall, Sarge Tower, Ann Troy, and Tom Isele.

Ted Spencer, Bill's son, came from Larchmont MYC, NY; and Chuck Winder came down from Marblehead, MA.

Dan Benfield, Stonington, CT, could not sail but sent his boat. Host Doug's boat rounded out the fleet of eleven.

Doug, the one man Race Committee, set a narrow triangular course with an excellent start line. Racing was once around in fresh winds that early on produced white caps. As on all ponds, the winds varied in direction and strength to provide challenging sailing.

The pond permits several alternate race course locations to favor the existing wind. It is an excellent venue for model racing. Doug has plans to improve boat-launching facilities.

There were numerous exciting broaches, submarining and spinouts. A lot of experience was gained from the fresh conditions.

Water in boats that were not well sealed caused some attrition, as did some rigging and fitting failures. This is a new fleet on the steep part of the learning curve.

Several visiting big boat sailors and their kids raced Doug's boat as they investigated the world of model sail racing. They sailed well, managing third in three races, despite inexperience.

Everyone enjoyed the regatta on a lovely sunny winter day.

*Doug Peacock  
dp2nddraft@aol.com  
(860)536 2160*

### Thin Air MYC

#### Evergreen and Boulder, CO

The fleet's two divisions have 21 boats registered and a total of about 35 in the area, some still under construction.

The Boulder division still has unfrozen water to race on. Steve Lang, fleet leader, and Greg LaLiberte, fleet captain in Boulder, are working on improvements to the building instructions for their new owners. They have evolved good ideas, which we hope to report in future issues of the NEWS.

*Steve Lang*

*Steve@builtbyu.com  
303)670 4670*

*Greg LaLiberte*

*Couper@aol.com  
(303)786 7488*

## VIRGINIA MYC

### Norfolk, VA

VMYC operates out of Norfolk YC. They have at least ten boats registered and a new crop of Xmas boats coming up.

They have been very active with their club racing program with 20 to 30 heats on a given day. Not scoring races seems to provide for happier racing overall.

Randy Stokes is currently the top sailor often winning by large margins. John Atwood, the local correspondent asks, "Why is that?" [*It must be because you're slow, John.*]

As in the past, there was racing Christmas Eve, the day after Christmas and New Years Eve.

John invites all CR sailors to join them any weekend. They will be glad to put-up any visitor, especially one who could beat Randy.

*John Atwood  
AtwoodJ@tea-emh1.army.mil  
757/596-9701*

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***Despite the cost of living,  
have you noticed how  
popular it remains?***

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## IMPROVE RELIABILITY

### PREVENT FOULING OF SHEETS

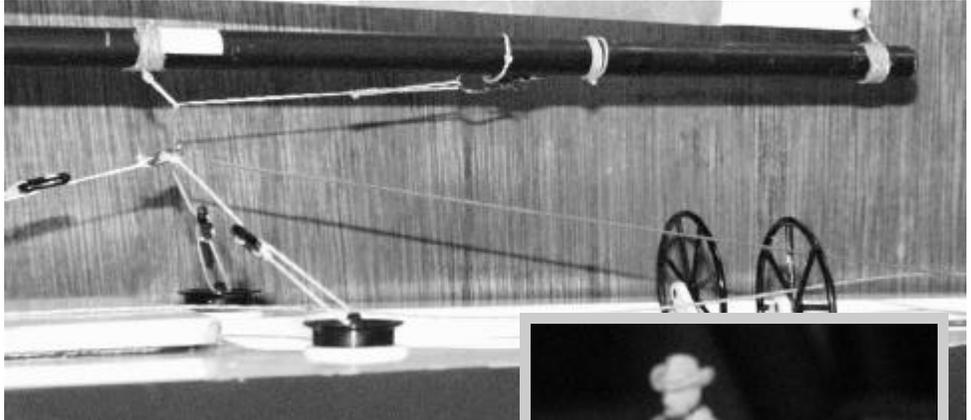
It is annoying when a sheet fouls on deck hardware making the boat slow or uncontrollable. Though it happens infrequently, "Murphy's Law" requires it to happen during a key race at the Nationals. When not racing, it will occur on a large body of water with a strong offshore wind and no rescue boat. It is the kind of thing to avoid and it is easy to do.

### Cleats at the Mast

The jib sheet will foul on these cleats. One way to prevent it is shown in the lower left-hand corner of the top center photo on page 10. A small triangle of scrap material is glued to the deck aft of the cleat.

Removing the cleats is the ultimate efficacy. Using the main downhaul shown on page 10 gets rid of one cleat.

Greg LaLiberte, Boulder, CO, gets rid of the other cleat by routing the jib boom tack line to a chainplate instead of to a cleat.



o'clock looking from aft) on the port wheel. See the AG Assembly Instructions, page 7 at the top.

Next, terminate the aft end of the main sheet about 3 inches from the aft end of the boom. Use an adjustable *string ring* (or one of those black boom rings, if you must). Now the sheet can not sag down and catch on the wheels.

### Jib Boom Tack Bowsie

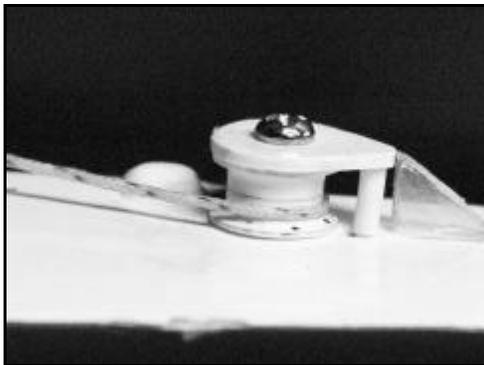
The jib sheet can also foul on the bowsie used to adjust the height of the jib boom. Prevent that by locating that bowsie as far forward as possible, out-of-reach of the jib sheet.

A few owners have fixed the height of the jib boom by tying the tack line directly to the deck padeye with no bowsie adjustment. Both the bowsie and the cleat are eliminated by this very clean arrangement.

### Primary Winches

The photo above right shows a couple pieces of scrap plastic glued to the winch to prevent the sheets from fouling. Another way is to use a couple triangles at each winch as described for cleats.

Removing the top lip on the outboard side of the winches is effective, too.



### Exit Block for the Common sheet

Occasionally the common sheet from the sail winch will loop behind the sheet exit block at the port aft transom. The boat can still be operated but the friction load slows the sail servo and will run down batteries quicker. The same sort of plastic triangle as used for cleats will prevent that.

[Note the small black dots on the sheave (pulley) to tell if it is turning freely.]

### Steering Wheels

Some owners report that the mainsheet fouls on the wheels. The first step to prevent that is to route both jib and main sheets between spokes (at approximately 11

## NEW MEMBERS

First Name	Last Name	City	State	Sail No.
Emily	Carruthers	Old Saybrook	CT	614
Frederick	Chadsey	Gulf Shores	AL	342
Fred	Everson, III	Meridon	CT	619
Frank	Gallander	Kingwood	TX	474
Ted	Garman	Bellvue	WA	688
Mark	Goble	Chicago	IL	316
Mark	Hafen	Boulder	CO	926
David W.	Hitt	Annapolis	MD	315
William	Howat	Salem	MA	317
Robert G.	Ives	Hixson	TN	521
Robert S.	Lawrence	Boulder	CO	456
Andy	Majewski	Mercer Island	WA	868
William	Mansfield	Boulder	CO	527
Eric	Mentzell	Takoma Park	MD	227
Eric	Mentzell	Takoma Park	MD	327
Lars	Mossberg	Evergreen	CO	324
Scott	Myers	Edgewater	MD	960
Kent	Overbeck	Signal Mountain	TN	328
Ken	Poulsen	Lyons	CO	696
Brooks	Ritchey	South Norwalk	CT	848
Charles M.	Saltsman	Old Lyme	CT	612
David	Schneider	Bloomington	IL	584
Steve	Stephens	Dillon	CO	749
Will	Van Cleef	Annapolis	MD	961
Jon	Vass	North Pomfret	VT	802
Erik	Walerius	Clyde Hill	WA	336
Donald	Weatherly	Boulder	CO	522
Jeff	Woodbury	Annapolis	MD	725
Bob	Wright	Marblehead	MA	314

# BATTERY MANAGEMENT

The "Battery Management" articles in this issue address the problem of batteries causing a boat to be out of control shortly after launching. Races are not won that way. Even if not racing, it is no fun to have to rescue an out-of-control boat. An attempt is made in each article to give the message up front. Those interested in more detail can read to the end.

Editor

## BEWARE OF "BATTERY CHECKERS"

A battery checker may pass a battery that will have your boat out-of-control in less than 30 minutes.

Examples:

1. A NiMH Rx battery pack had given excellent performance for 2 1/2 years. Recently, a battery checker said it was OK to use. In fact, one cell in the pack had failed. Its capacity would give only about 20 minutes life in the boat.

2. A battery checker indicated that a fully discharged Alkaline Rx pack was "GOOD" because the needle was in the green region of the meter. The pack would have given about 15 minutes life on the water!

### The Message

A battery checker may not tell that one cell of a pack has suddenly failed as in the first case above.

In the second case the battery checker used was simply not suitable for assessing batteries for use in a model boat. Most "checkers" are not suitable.

Battery checkers are called by various names such as: battery checkers, battery testers, expanded scale voltmeters (ESV), etc.

### What Does a "Battery Checker" Do?

It measures voltage while loading the battery. (Measuring battery voltage with no load is useless.)

A typical Battery Checker implies that

batteries are acceptable if the meter's needle remains in the green portion of the scale.

### Battery Checkers may not tell if a battery pack is defective.

This reality was recently discovered while evaluating a device that determines actual battery capacity. It does this by timing how long it takes to discharge a fully charged battery pack to 4 volts (one volt per cell).

A 2 1/2-year-old HydriMax™ NiMH Rx pack that previously had consistently produced better than 1300 mAh, produced only 85 mAh this time! That is about 20 minutes life in the boat!

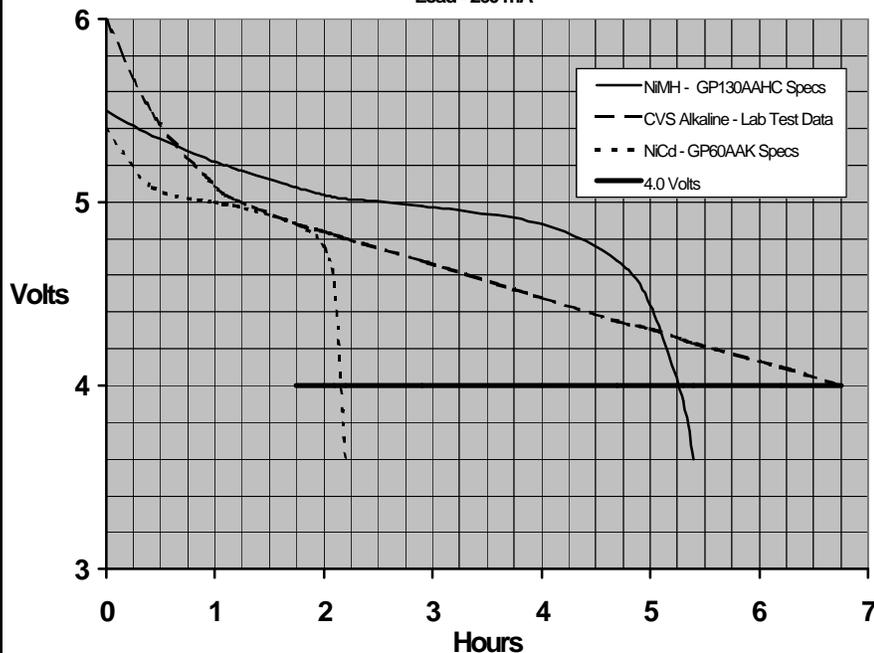
Further work showed that one cell of the pack had failed. The other three cells were fine. Typically, when a pack fails, only one cell is at fault.

The no-load voltage of this defective pack was 5.5 volts, despite having been

*(Continued on page 7)*

### Volts vs. Time

Four-cell A-A pack  
Load - 260 mA



## BATTERY CHARACTERISTICS

The chart at left illustrates differences between NiMH, Alkaline and NiCd batteries. The CVS Alkaline data are test data from the CR 914 Lab. The other data are from battery specs from the manufacturer, Gold Peak Industries Group.

The load of 260 mA is the estimated average consumed by the boat. The boat will go out-of-control when voltage drops below 4 volts.

**Life** No surprises. The Alkaline have longest life. NiMH, rated 1300 mAh, is next and NiCd, rated 600 mAh, gives shortest life.

The NiMH gives **strongest sail winch performance** because the voltage is higher.

fully discharged!

*This same defective and discharged pack was "OK to Use" when tested using a "Battery Checker"!*

**How did THAT happen?**

The battery checker applied a load of 300 mA for 10 seconds. If the voltage during the test did not fall below 4.8 volts, the battery was judged "OK".

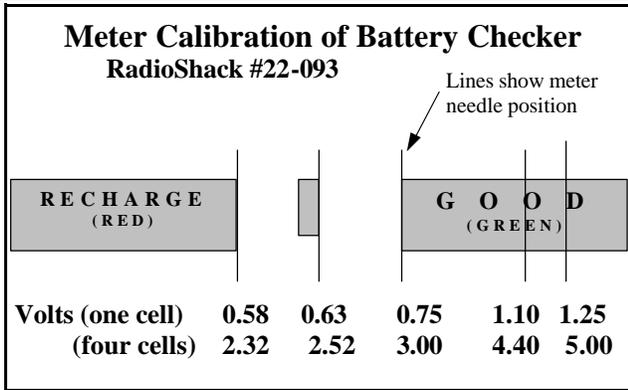
When a battery pack is disconnected from its load after being discharged, it rebounds to a higher voltage. (It happens, don't ask why.) When allowed to rest a short time the battery above, which had only 85 mAh capacity, produced another 63 mAh without being recharged.

That small but unacceptable capacity was enough to easily fool the "Battery Checker".

**Conclusion**

A battery checker could not reveal that a battery pack was defective. Using that pack a boat would have been out of control in about 20 minutes.

This may explain why some boats go out of control a short time after a battery checker has indicated the battery was OK.



were in the middle of the GOOD range!

**WHY?**

The unmarked voltage scale of the #22-093 was calibrated in the CR 914 Lab. (See the meter schematic at left.) At the low limit of the green "GOOD" range the voltage was 0.75 volts! That's 3 volts for a four-cell pack.

The boat stops working at about 4 volts, but the #22-093 says the batteries are good!

It was suspected that the unit we tested was uniquely defective. A second #22-093 was tested with the same result!

It is palm sized and has a hinged arm that lifts up to make contact with a cell. It tests one cell at a time. There is a meter with portions of the scale colored green, yellow and red. The green portion is labeled "GOOD".

Four **fully discharged** CVS Alkaline AA cells were tested. The tester indicated they were good batteries, even though when cycled they gave only 15 mAh capacity (about 4 minutes life in the boat)!

The same batteries were then tested using the RadioShack 9-range battery tester, #22-090, \$14.99. The results were the same! The meter needle was at the same location as the #22-093 relative to the "GOOD" printed on the meter scale.

Calibration of the meter showed that voltage of the discharged cells was about 1.15 volts under the ~370 mA load applied by the #22-093.

Neither of these units (#22-093 or #22-090) are useful for model boats. In fact they will pass batteries that will last only a few minutes in the boat.

At the low end of the green "GOOD" scale, the voltage was only 0.75 volts! Apparently there are battery applications that can operate at 0.75 volts per cell, but not a radio control boat.

If the #22-093 were used by

**Evaluation**

**Of Two RadioShack™ Battery Testers**

**CONCLUSION**

Two RadioShack battery testers (#22-093 and #22-090) were evaluated. *Neither of these units is useful for testing boat batteries.* In fact they rated a pack of Alkaline batteries "GOOD" that would have lasted only a few minutes in the boat.

Testing rechargeable batteries would have yielded even worse results.

**Discussion**

A RadioShack battery checker, #22-093, \$4, was purchased for evaluation. Its performance was a surprise.

**Description of Tests**

1. Four discarded CVS AA Alkaline cells were removed from the trash and tested using the #22-093.
2. They tested well up in the GOOD range. (Note that there are no numbers on the meter scale to indicate voltage.)
3. The cells were then discharged as a four-cell pack at 300 mA until voltage dropped to 4.0 volts. Capacity was 255 mAh (about one hour in the boat) vs. ~1300 for new cells.
4. These discharged cells were retested by the #22-093 and all passed with readings well up in the GOOD range.
5. They were again discharged as in (3) above. Capacity was 15 mAh (about 4 minutes life in the boat)!
6. **Retested using the #22-093, they still**

**HOW TO BUY AND USE A "BATTERY CHECKER"**

*[Note that the CR 914 Staff Engineer believes battery checkers are of limited value. A better strategy is to use NiMH batteries and a good charging system that assures batteries are always fully charged. Or use Alkaline batteries and change them frequently. Ed.]*

All the discussion below is for a four cell AA battery pack for the boat. The transmitter has its own battery checker using colored lights.

**Where can a battery checker be**

*(Continued on page 8)*

(Continued from page 7)

### bought?

Not at RadioShack®. (See the "Evaluation" article in this issue.)

Tower Hobbies offers an "ESV" (Expanded Scale Voltmeter), #TOWP1180, suitable for testing boat batteries, if it is used correctly. The low limit of the green "OK" bar is at 4.9 volts, which is much too low for boat batteries. But the volt scale is graduated in 0.1 volt increments, thus a more suitable low limit can be used. Accuracy of the voltmeter reading was not checked.

The measured battery load of the ESV is ~200 mA (26.8 Ohms) compared to the 200-300 used by the boat.

(There must be other units available in the market place. If any of you know of a good one, let us know.)

### How to Use It

Connect the battery to the ESV *for thirty seconds*. Observe the meter. For healthy batteries, the voltage will initially drop and then remain steady.

### "OK-To-Sail" LIMITS

Minimum voltage limits recommended below are *only when using the Tower Hobbies ESV*. Each type of battery has different characteristics, therefore the limit used for each type will have to be different.

Note: The minimum voltage limits below are at 30 seconds after the pack is connected to the ESV.

### NiCd Batteries

A fully charged healthy 600 mAh NiCd pack will give about 2 hours life in average wind conditions. Use a minimum voltage of 5.2 volts to assure the pack is fully charged.

### NiMH Packs

A fully charged healthy 1300 mAh NiMH pack will give about 5¼ hours life. A fully charged pack should give at least 5.4 volts minimum. Use a minimum of 5.1 volts to assure three hours life.

### Alkaline Batteries

Use a minimum of 5.6 volts to determine that new batteries are fresh. A new Alkaline

pack should give over 6 hours life.

For a used battery pack, use a minimum of 5.3 volts to assure three hours life.

### Make Your Own Battery Checker

Next issue there will be an article telling how to make your own simple battery checker and how to use it.

*CR 914 Lab Staff*

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### *How many men does it take to open a beer?*

*None. It should be open when she brings it.*

*Gloria Steinhem ☺*

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## Sources for NiMH Batteries

They are now sold at local photo shops. Sun Pak, a company supplying the photo market, offers a four pack of 1400 mAh NiMH AA cells for \$12.99. A four hour charger with four cells is \$29.99. The virtue is no shipping and handling, though there may be sales tax.

About three years ago the NEWS recommended NiMH batteries when they first appeared. At the time they were available from only a few catalog houses. Tower Hobby and TechAmerica were the two identified at that time. Then Thomas Distributors was discovered. Rick Martin reported from Japan that they had replaced NiCd batteries in the market place. It was predicted that they were the future of rechargeable batteries for RC boats.

At the same time digital cameras were emerging and they started using NiMH AA cells as power demands grew. The camera market is huge. We can expect that NiMH batteries will become more common than NiCds and the prices will move even lower.

### Class Secretary Report

(Continued from page 1)

which holds our cost down compared to their programs.

### CR 914 Availability

For some reason AG did not ship enough kits from Japan and Worth Marine ran out during the important pre-Xmas season. Hopefully this situation will be corrected for the important boat show season when so many 914's are sold.

### Photo Quality

The photo department has acquired a high resolution digital camera which should improve photos from the CR 914 Lab. The photos of hardware in this issue are from the new camera.

Also, the publishing staff has learned how to increase the fineness of the half-tone screen used by the printer to reproduce the photos. 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. 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. Help me make the NEWS as good as it can be.

### Registrations

This month there are 571 boats registered and ~244 get the NEWS.

New owners are listed on page 5.

Good sailing,

*The Editor*



## Rob's SECRET

By Rob Follett

*Rob took second place at the 1999 National Championships. He has been a top competitor for several years. The top skippers at the nationals were asked to share their secret of success with the rest of us. Being the engineer, I expected the responses to be detailed dimensions and other settings on the boat that maximize boat speed.*

*Instead, Rob responded with a philosophy of winning, something far more important. We all will benefit from understanding and applying what he tells us.*

Editor

Hello Chuck,

My secret to speed is in relation to Yin & Yang. What I mean is to sail in balance with everything going on around me. I cannot change what has already happened or is happening right now. I focus on what is ahead.

Sound weird? Not really.

If you want to sail a clean race don't move into congested areas. The likelihood of fouling or being fatally fouled increases dramatically. (*Fatally* meaning going from second to last). Either side of a foul is slow and could cost valuable points. I keep my mouth closed as much as possible. I attempt to limit my comments during a race

to what will help competitors avoid a collision with me. If I get into a tiff, even a short one, I tend to tighten up and sail poorly for a few minutes.

But even then some less experienced model sailors with right-of-way feel that collision is more important. A near miss that preserves boat speed is preferred. In many cases the right-of-way boat ends up on the short end of the stick anyway.

In either case, on any tack, conflict with another boat is slow and I like to avoid it. Even if it means swallowing my pride sometimes to let a hot-dog port tack boat go by. Chances are he will hit someone else during that race anyway.

Play the odds. No one sails every race perfectly. Even Kevin Dooley eats dust once in a while. The goal is to know who you have to beat as the race develops.

If I have to beat the boat right next to me the goal is not to focus on that boat more than mine. I miss marks that way.

(Speaking of mark rounding, I do much better to sail all the way around a cluster of boats at a mark than try to thread the needle through opening and closing gaps between boats and the mark)

Back to the first statement of putting yourself into conflict. I can yell for all the rights in the world, but a bunch of boats all locked up and not moving is an obstruction and I am the fool for sailing into it.

Finally, reading wind shifts and patterns is the best and fastest way to climb out of a lousy position into a top seat. Since I view the course from an advantaged height (*Rob is tall*), I can read three to four major shifts ahead, as well as my competitions shifts. This may not give me the upper hand unless the competition doesn't read the wind.

I hope this helps someone,

Rob Follett, #184  
American MYC  
Rye, NY

## TWO REASONS TO KNOW the RACING RULES of SAILING

1. To allow you to win races.
2. To know when not to interfere with your fellow sailor who has the right-of-way.

*Which is the more important reason for you?*

## CD Start Clock

Hugh Fletcher (hfletch@aol.com), Larchmont MYC, NY, discovered a CD that has a model boat start sequence. LMYC currently uses it.

The CD is available from its creator, Eric Bourlet: eboulet@gte.net. (253)460-7283.

The tapes are \$10 each. He recommends buying three for which the total shipping is \$3.50. Hugh thinks this is a good idea since CD's can be damaged. Having a readily available back up is handy.

Hugh says CD boom boxes can be had for less than \$75.

The CD Start Clock (CDSC) has three different tracks for countdowns. LMYC uses the one-minute sequence.

It is a vast improvement over the audiocassette tape method of counting down the start sequence. The clarity and ability to amplify without distortion are but two advantages. Unlike audiotapes, CD's are incapable of stretching. They will always remain 'time perfect.'

Thank you Hugh.

## THE BOATYARD

### “STRING RINGS”

(With illustrations)

Greg Worth first used string rings in ~1994 for the highly loaded vang, the jib boom tack and the headstay attachment to the jib boom. At some point they started to be used to replace other applications of boom rings.

Steve Lang wrote on this subject in the Sept-Oct 1999 NEWS, page 10. The excellent article had no illustrations, which is corrected in this article.

Recall that string rings are a recommended replacement for the fragile and difficult to adjust stock “Boom Rings”, Part #29, page 8 of the AG Instructions.

The top photo shows two applications of string rings. The jib outhaul is shown with a string ring instead of a Boom Ring. The outhaul is frequently adjusted to tune the jib for different wind strengths.

The second application uses a string ring to adjust mainsail downhaul tension (Steve’s creation) . It replaces the troublesome deck cleat at the foot of the mast. That deck cleat often fouls the jib sheet, which makes the boat almost impossible to control. Another benefit is the mast and rig are more easily removed.

***On many competitive boats all boom rings are replaced using string rings.***

If the string ring application does not have to be adjustable, simply glue it to the boom.

If it is to be adjustable, tightly wrap thin plastic (Saran Wrap™, etc.) around the spar (mast or boom) so the ring won’t be glued to the mast. (In the lower photo to the right the Saran wrap hasn’t been fully trimmed.)



**String Rings used to adjust the jib outhaul and mainsail downhaul**



**Main downhaul detail**

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*I've been on so many blind dates,  
I should get a free dog.  
-Wendy Liebman-*

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### MAKING A “STRING RING”

Some owners may not have been good Scouts and learned their knots. The photo above shows a clove hitch tied around a glass cylinder so that the back part of the hitch can be seen.

Tie a small loop in the center of a 15” string. Tie the loop to the spar (mast or boom) using clove hitches on each side of the loop. The photo shows a clove hitch on one side of a loop. The other string from the loop is used to tie a second hitch. Though a clove hitch normally has only two turns, more turns can be added to suit the application. See the downhaul detail on page 10.

After adjusting the loop the desired distance from the spar, snug-up the clove hitches. Tightly tie the string ends using a square knot on the side of the spar opposite the loop.

Depending on the application: glue only the square knot or, saturate the entire string ring with CA glue. Let it cure thoroughly.

If it’s to be adjustable, tie the string ring over Saran Wrap and then glue it.

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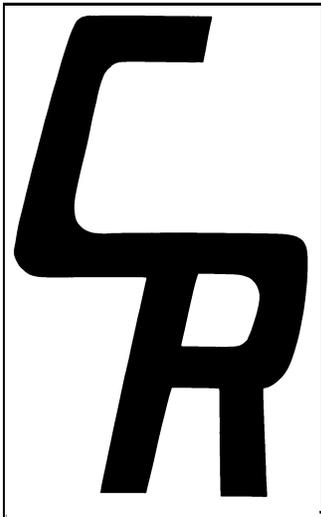


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**BOAT SHOW SCHEDULE**

**Cleveland, OH**  
**Chicago, IL**

**January 14-23**  
**February 3-6**



**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