❖CR 914 NEWS❖

Volume 1 Issue 2 December 1996

1997 CR 914 NATIONAL CHAMPIONSHIPS IN XENIA, OHIO

AMYA President, Donald Peacock, and Harry Robertson, AMYA Membership Secretary, are our hosts for next years Nationals.

The venue is in Xenia, a charming Ohio community about 10 miles southeast of Dayton.

The dates are Saturday and Sunday, September 27-28, 1997. The temperatures should be comfortable at this time of year and the winds will be more dependable.

Tentative plan: Friday will be for practice. A restaurant will be identified where we can all hang out together Friday evening. Racing all day Saturday with a late afternoon class meeting, followed by a banquet. Racing continues on Sunday with the awards ceremony in the afternoon.

You should all plan to attend. Our goal is to have at least 36 boats at this most important event.

CR 914 Region 1 Championships will be at Redd's Pond in Marblehead, MA. The weekend of May 31 and June 1 was chosen to be late enough for early season tuning and practice to be completed, but early enough to avoid the summer aquatic grass season. Winds should be good at this time of year.

This is the place to race if you plan being prepared for the Nationals. Marblehead has the most competitive fleet of 914s in the country. This group took eight of the top nine places at the 1996 Nationals.

Marblehead is a scenic tourist

CR 914 SAIL EMBLEM

Inside This Issue

Class News

Subscriptions to the 914 NEWS

Nine owners have subscribed to the newsletter. There are over 100 boats registered. Some may not have subscribed because of the old fashioned "tomorrow I'll send it in" syndrome. Some are not interested. Some want to think about it a little while.

And some have elected to have one person in their area subscribe and then copy the newsletter for them all. I don't quarrel with this. My objective is to get the greatest possible exposure. (But note that for you to locally copy a 12 page newsletter at 5 cents a page costs $0.60 per copy. And you have to wait for your copy from the one subscriber.)

The initial issues of the newsletter were made possible because Worth Marine donated $200 to support it. But the owners must now support it until it is established that there is enough owner interest to continue publishing.

Each copy of the newsletter (at 12 pages) costs ~$0.90 to get in the mail. For some period of time, the number that are mailed must be larger than the number of subscribers until a subscriber base can be established.

It turns out that this situation is the same as a start-up business that operates in the red until it sinks or swims.

It doesn't take a "rocket scientist" to figure out that the larger the subscriber base, the longer the money losing start-up phase can be supported. It will finally become apparent what the real subscriber base is. Then the mailings will equal the subscriptions and costs will be stable.

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I hope my message is understood. If you owners want a newsletter, you have to support it with subscriptions. And for those of you who can, out right donations would be an enormous help.

Newsletter via email

In the last newsletter**,** I proposed that individuals who could get the newsletter by email act as distributors for others in their area. There is a problem with that idea. It simply transfers the responsibility and cost of distribution to someone else. For those of you who are still interested in doing it and think it would work in their area, let me know.

Using email to send the newsletter to individuals is still a money saving idea. It saves money for me in postage and copying expense.

To receive an email newsletter still costs the recipient at least 5 cents a page (probably a lot more in real costs) to print a newsletter. Jeez, there just never is a free lunch! But it is still an option in the future for those who want it.

After I get this newsletter out, I will determine what has to be done to send it email or present it on a Web page..

CR 914 Owner Survey Results

At the Nationals and in the inaugural news letter, there was a class survey which requested input from owners. There have been a total of 18 responses. There are ~110 boats registered.

Thank you to those who have taken the time to respond. I have no idea how many responses to expect. Just as I don't know how many boats and owners are really out there and interested in participating in the class.

To those of you who intend to respond, please do so. This is the sort of thing that is easy to put off. I am hoping to get useful input from you about what direction you owners want the class to take. Without your input, I will do my best to choose a direction and pursue it.

I have entered the survey data in an Excel database. This makes it very easy to look at and allows easy manipulation.

Out of the 18 responses (18 boats):

- Two people have no boat and no interest
- Two surveys reported on two boats
- ten owners are retired
- 12 owners use email
- 9 boats are white polished ABS
- 16 are built from kits
- 3 use owner built sails
- 4 use Worth Mylar sails
- 11 use the stock Ranger II radio
- 2 sail in saltwater
- 15 use four AA batteries for their receiver
- 2 use five 1/2 AA batteries (250-300 Ahr) for their receiver
- 2 use Alkaline batteries in their transmitters.
- 15 use NiCds in the Tx
- Rick Martin uses alkalines in Tx and Rx.
- Frank and Cynthia Lawson use Alkaline rechargeable batteries called Rayovac "Renewal"s.

(Note a future issue of the News will analyze factory technical data to determine how good "Renewal"s are for use in the 914.)

- Twelve people use email but only four would like to get the newsletter by email?

AMYA RENEWAL

Now is the time to join or renew your AMYA membership. To make it easy for you, a renewal form is provided on page 11.

Membership should be paid by December 31 this year for 1997.

Sail Emblem and Sail Numbers

The AMYA Chandlery now has in stock CR 914 sail emblems and 3 inch sail numbers for $6.50 for a complete set. Tom Shipp sent me a sample of the emblem and it is excellent.

He also sent a sample of the numbers which are 3 inches, but of a narrow font. My personal preference is for a wider, fuller font for the best possible visibility at distance.

After some experiments, I chose as my favorite for readability the **Arial Rounded MT Bold** font that appears in MS Word. The numbers look like this:

123456780

The Chandlery numbers may look something like the numbers below. I only had an "8" to go on. The AMYA "8" was much narrower, about 2/3 as wide:

1234567890

The Arial Rounded is much more readable, in my opinion.

Also, I will propose a rules change from the 2 1/4 inch to 3 inch numbers in the next newsletter.

IMPROVED CLASS RULES

My goal was to have almost this entire December newsletter devoted to discussion and ballot to improve our class rules. Unfortunately, the task grew in size beyond my expectations and that isn't possible. I plan it for the January issue, so expect it.

But start now to develop your mental self discipline so that when it does come, you will jump on the job. This will be your opportunity to shape the future of the class. You *must* vote intelligently on the rules. Our class numbers are small, so it is possible for a small organized group to swing the vote against what the majority wants.

The emphasis of the improvements is to strengthen the one-design class objective of the rules. Our class is the most rigorously one-design class in AMYA. Let's keep it that way.

Remember. To vote on the rule improvements, you must be a registered owner! The registration form is on page 11. Registration is free if you subscribe to the Newsletter.

Chuck Winder, Class Secretary
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Marblehead, MA 01945
617 631 6727
chuckw88@msn.com

Sail a 58 knot America's Cup Boat

Chuck Winder

With about 50 years of full scale sail boating experience, I started racing R/C model sailboats in August of 1995. My boat of choice was a Worth Marine CR 914 one-design, a 36 inch long America's Cup boat look-a-like.

My first races were an epiphany. (Dictionary: **a.** *A sudden manifestation of the essence or meaning of something.* ***b.*** *A comprehension or perception of reality by means of a sudden intuitive realization.)* Basically, I was always behind the boat. Our fleet races often have 15 boats and I was always in trouble. Tactical situations developed so quickly that it was beyond my ability to properly respond.

What I discovered (new to me, common knowledge to experienced model racers) was the impact of "scale speed" on the perception of boat speed. After some analysis, it became clear that the scale speed of models is incredible.

Starting with the well known "hull speed" formula (hull speed in knots is equal to ~1.4 times the square root of the water-line length of the boat in feet), it was possible to calculate the time it takes for any boat to travel ten boat lengths. (A boat is approaching its hull speed when there is a bow wave and a stern wave with one long trough in between. In general, a boat can not exceed its hull speed unless it is capable of planing.)

The table below summarizes the impact of *scale speed* on the new model boat racer.

Even Couts, Conners, Dellanbaugh, and others of that ilk, would require a certain amount of adaptation to race a 58 knot AC boat.

So now it is easier for me to understand why it is so difficult to sail a boat at its best performance and also look ahead to plan successful tactical maneuvers. Only time will tell if this understanding will result in improvement in my race finishes.

This analysis shows the wisdom of the originators of the "four boat length overlap for room at the mark" rule for models.

**Scale speed* is defined here as the speed an America's Cup boat would need in order to travel ten boat lengths in 7.4 seconds. That is the time it takes a CR 914 to travel ten boat lengths.

	CR 914	AC
Water line length, feet	3	70
Hull speed, knots	2.42	11.7
Time to go ten boat lengths, sec	7.4	35.9
Scale Speed, knots* (see text)	2.42	**57.7**

NEW FLEET NEWS

Annapolis, MD

Tucker Thompson is promoting the growth of a fleet that races from a floating dock in front of a restaurant on the Annapolis water front. For more information contact:
Tucker Thompson
PO Box 321
Saint Mary City, MD 20686
301 737 4889
tuckert1@aol.com

Rockport, ME

Frank Lawson, a professional yacht captain, is starting a fleet which is blessed with two ponds from which to choose. He invited us up to sail on November 17. He told us there was no problem at that time of year. Only the upper pond was frozen. The week before they had to bring the boats ashore occasionally to free-up the ice forming on the sheets. Made it hard to trim the sails, he said. He expects to have at least six boats active next season.
Frank Lawson
269 Mill Street
Rockport, ME 04856
207 594 7885

Rye, NY

Joe Burbeck, #43, American Yacht Club, is at work building racing activity. He has been organizing racing at his club and at the Larchmont YC across the water. There are many 914s in that area. We wish him success.
Joe and his group strongly support the one-design philosphy. But only Joe is registered.
Joe Burbeck
11 Stonycrest Road
Rye, NY 10580
914 967 1504
joeayc@aol.com

We in Marblehead are happy to see new fleets at Rye and Rockport. They are close enough to plan interclub races next season. Such events are always enjoyable.

Annapolis is not a long drive, either. They would be a good venue in early spring and late fall when ice and cold are a problem here.

DRAG AND SAG

A discussion about standing rigging, not elderly cross-dressers.

Chuck Winder

Hypothesis
The right choice of standing rigging will significantly improve boat speed.

Five of the first six boats at the 1996 nationals used low stretch line. Four used Kevlar line.

Drag

The standing rigging on a CR 914, using the stock white and green Dacron line, has a frontal area equal to a disc 3.1 inches in diameter. Visualize, as you sail to windward, the drag of a parachute 3.1 inches in diameter streaming from the mast. (If you use Kevlar rigging, the parachute is 2.8 inches in diameter.)

Standing rigging on a sail boat causes a lot of drag. When sailing to windward, the boat's sails have to push the rigging through the air.

America Cup boats used streamlined solid bar for standing rigging . Solid bar is thinner than twisted stranded wire of the same strength. Furthermore, solid bar can have a streamlined shape to reduce the drag even more. Those folks thought rigging drag was very important.

How was the parachute size calculated?
To calculate the rigging frontal area, the measured rigging string thickness of 0.024 inches was used (see the table above). This is conservative because the string is oval, not round. The easy dimension to measure is the thinner one. The rigging was the white and green line included in the Worth Marine upgrade kit. The total length of rigging line was 312 inches. That included the shroud lowers, mids and tops, the jumpers and the backstay. Each of these had a length of string doubled back for the bowsers.

The area of the line is thickness times length.

Area = .0244 x 312
= 7.6 sq. in!

What line is in use.
There are several kinds of rigging line in use. The white and green line that comes with the kit as part of the Worth Marine upgrade is 30 lb. test polyester. (There is also a dark blue Dacron line that is supplied in the kit by AG Industries.)

The boats built by Greg Worth use 70 lb Kevlar braided line for the standing rigging. Worth uses 110 lb. Kevlar for some applications. Some of the other skippers here in Marblehead have switched to Kevlar.

Rick Martin, third at the Nationals, uses a kite string called "Mighty Line", a 50 lb. test low stretch polyester. Rick used it because of its suitable silver/gray color. (He finds the yellow Kevlar repugnant.)

The table above shows that there are differences in the thickness of the line. Measurements were taken with a dial caliper using the 5/8 inch long flat portion of the jaws.

The line was measured by placing it length-wise in the jaws. Thus a 5/8 inch length of line was measured. This made the measurement less sensitive to the pressure applied to the line by the caliper.

The string thickness was measured under several different loads, but at loads above 2 lbs. the thickness did not change. Thus, a load of 2 lb. was used for the thickness table data.

Windage drag of the rigging is proportional to the thickness. Therefore, the Kevlar line has about 20% less drag than the stock white and green line.

AVERAGE LINE THICKNESS - 0.001 inches
- ten measurements at 2 inch spacing
- Load on line - 2 lbs.

Line	Avg. Thickness	Thickness - per cent
White/green	24.4	100
Blue	21	86
70 lb. Kevlar	20.3	83
110 lb. Kevlar	19.3	79

Sag

With the four different kinds of line in hand, it was decided to test for line stretch. See the table on page five. A load of eight pounds was used for the data in the table. The difference in line stretch is the same at lower loads.

The Kevlar has dramatically less stretch. The stock white/green rigging line stretches almost ten times more than the 70 lb. Kevlar under the same load. The 110 lb. Kevlar stretches even less.

Effect on performance?
So what does it mean relative to boat performance? Consider a rig using Kevlar headstay, backstay and jumperstays.

As wind speed increases, the forces acting on the sails also increases. Because of that, the sag of the headstay increases. The less stretch in the stays, the less the sag in the luff of the jib. With Kevlar stays, the sag will be ~1/10 of the sag using the white and green line.

Headstay sag makes the jib fuller which means more power in the sail. More power in the sail is exactly the wrong thing in strong winds.

Remember that a very small amount of luff curvature, even only ~1/8 inch, will make a significant change in the shape of

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a sail

Full scale boats that are raced seriously go to extreme lengths to reduce headstay sag. They use the lowest stretch stays and even put strong, stiff carbon fiber structures in the hull so that the hull doesn't bend up at the ends.

In a nutshell, with low stretch standing rigging, the rigging settings a skipper chooses to use will change less over a wider range of wind strengths.

With this data in hand, I can remember seeing very large sag and fluttering in my headstay and jib luff in strong winds this past summer. (My boat has white/green line rigging.) Headstay sag makes the jib fuller which means more power in the sail and a greater tendency to flutter.

Conclusions

Kevlar standing rigging is clearly superior to the other lines in this study. A boat with Kevlar should go faster in a wider range of wind conditions than the same boat using the stock white and green line. This assumes that the same tuning skills and sailing skills are used for both boats.

Low stretch rigging is not an advantage in light winds. But smaller size rigging is an advantage in all wind strengths.

Since the CR 914 has a fractional rig, the most important lines to minimize headstay sag are the headstay, backstay and the jumperstays. The jumpers are very important to keep the mast from bending under the loads from the head- and backstays.

The Dilemma

Kevlar rigging is illegal. At least that is my interpretation of Rule 10.1 (in paragraph 10.0 Standing Rigging). It reads, "All lines must either be those furnished with the kit (30lb test Dacron) or replacement line of similar size and strength." The line Rick Martin uses is also illegal, even though he picked it because of the color.

Some Choices We Can Make

Choice 1

All boats with low stretch rigging (Kevlar, Rick Martin's kite string and there may be some others) are declared illegal. Anyone using low stretch rigging would have to change their rigging to the soft, larger diameter white and green line, or equivalent (?), to be legal to compete.

Choice 2

The rule is changed to make low stretch rigging line legal. A possible rule would limit only the minimum line thickness.

Concerns

Cost of the low stretch rigging string is not excessive. A survey of local fishing equipment stores suggests that less than $4.00 will buy more than enough to re-rig a boat. The only problem, however, is that you may have to buy in quantities of 150 yards to get the 12 yards required.

Maybe Worth Marine would offer to sell a Kevlar rigging kit to owners who want it.

There may be special precautions required for the successful use of any low stretch rigging line.

Bowsers have been reported to slip on Kevlar: How can that be solved?

Kevlar is more prone to breaking if it has to go around a sharp corner.

Sunlight is said to weaken Kevlar, though the total hours of exposure for a model boat is small.

BOTTOM LINE

The next time my boat is raced it will have some form of low stretch line. Unless the rules prohibit it.

A RECOMMENDATION

In the upcoming rules voting , I will offer rule change options as follows:

Current rule

10.1 All lines must either be those furnished with the kit (30 lb. test Dacron) or replacement line of similar size and strength.

Proposed Change

Option 1

10.1 Standing rigging line shall be the white and green 30 pound test braided polyester line provided in the kit.

Rationale: This is the choice for those owners who do not want the annoyance (it is not a cost issue) of changing their rigging. Performance improvements are not important to them. The rule is more restrictive than the original rule to assure that only one line is in use in the entire fleet.

Option 2

10.1 Standing rigging line shall have a minimum thickness of 0.018 inches. Line thickness shall be measured with the line under 2.0 lbs. tension. The thickness is the average of ten measurements spaced at 2 inches along the line.

Rationale: This option permits low stretch rigging line. The minimum thickness is required to prevent the use of very thin, low drag line that might be too weak.

The cost is negligible. Line thickness is easily measured on the boat. Most boats are kit boats and, therefore, the owners are capable of re-rigging with the low stretch line if they choose.

The owners can even choose the color that suites their aesthetic needs.

LINE STRETCH
Load 8 lb. (Initial load 0 lb - 4 oz.)
Line length - ~33 inches

Line	**Stretch,** inches
White/green	2 ¼
Blue	2
70 lb. Kevlar	~1/4
110 lb. Kevlar	~1/8

Stretch was measured with a yard stick

The CR 914 dominates the Chowder Race

The 1996 Chowder Race at Redd's Pond, Marblehead, MA, was a resounding success with a record 28 boats. Marblehead Model YC hosted this traditional event on Sunday, October 27,1996.

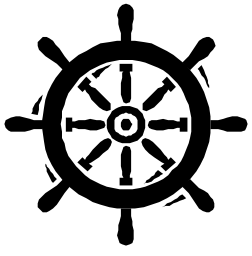
Six different designs from 30 to 50 inches long were divided into two fleets, each boat sailing eight heats. There were nine boats (eight of them were "M"s) in the 40 inch and over fleet. Boats came from Maine, New Hampshire and from other clubs in Massachusetts. Many boats were from the Minuteman Model YC, Needham, MA.

The only non-914s in the top 11 were a highly modified Victoria in third and a Soling One Meter in ninth

In the 19 boat under 40 inch fleet, Greg Worth, Marblehead, sailed his 1996 Championship CR 914 into first place Chuck Winder was second.

The only non-914s in the top 11 were Alec Torrie, Marblehead, sailing his highly modified Victoria to second place, and Joe San Antonio, Derry, NH, sailing his Soling One Meter to ninth place.

The over 40 inch fleet of nine boats was won by the JR LeBlanc sailing an M boat.



BATTERIES

(*This is the first of a series of articles on the subject of battery life in a CR 914.)*

At our pond there is a lot of anecdotal information about certain magic batteries that have fantastic life.

At our pond their is always someone who is in a panic because their batteries are running down.

What's wrong with this picture? If there are magic batteries with long life, why are so many skippers in battery trouble?

At the 1996 nationals it was the same story. Racing was frequently delayed because yet another skipper had batteries that had to be changed.

There are no magic batteries. Batteries are nothing more than bucket-like devices filled with electricity. Some buckets are large and some are smaller. Some are full and some are partly filled (or partly empty) depending on your attitude.

Rechargeable batteries can be refilled after they have been emptied. You don't have to completely refill them; it's up to you.

If you enjoy annoying your fellow skippers and enjoy the excitement of losing a race you had in the bag until you started to worry about the batteries, then you should never completely refill your batteries. That way you can always enjoy the surprise of the batteries unexpected demise.

Disposable batteries, on the other hand, are full buckets when you buy them. You use them until they are empty and then you dispose of them in a responsible manner.

There is no worry about whether or not you got them full the last time you charged them.

Rechargeable or disposable? That is the question.

Most of us use NiCd rechargeable batteries. Few of us know why. Some one told us that was the way to go.

But Rick Martin, third at the Nationals, uses disposable alkaline batteries and is happy with his choice. But even he is wondering about rechargeables.

So an analysis was done. That's what I like to do.

The **Results** are summarized in the table below. (I like tables, too.)

Where did those numbers come from? It was necessary to make make the following assumptions:

1) The boat will be raced in 80% of the seasons 46 scheduled races. Each race will be ten heats taking a total of three hours. (A 23 week season with two races per week.)

2) Both transmitter (Tx) and receiver (Rx) batteries are changed when the Tx batteries are depleted.

3)Alkaline batteries were assumed to have a capacity of 1200 mAhrs and cost $0.44 each at a local warehouse. (Rick Martin buys them in Seattle for $0.23!)

4) The Ranger II Tx consumed 265 mAmps and the Futaba 160 mA.

5) NiCd batteries had a capacity of 600 mAhrs and cost $2.75 each. Two sets of twelve were needed for the Ranger II and one set for the Futaba.

6) Two sets of NiCds were required for the Ranger II because the 600 mAhr batteries wouldn't last for 3 hours of racing. (Only one set of batteries are required if 800 or 850 mAhr NiCds (~ $3.70 each) had been assumed.)

In reality, every one would want to have more than one set of batteries for back-up. They could be NiCds or alkaline.

7) The simplest available battery chargers cost ~$11.50 each. Four were needed for the Ranger II (unless 850mAhr batteries were used) and two for the Futaba.

(Note: Few people will choose such simple, inexpensive chargers, but that is the assumption used here.)

8) It is assumed that the NiCds will last 3 years and more than 100 cycles of charging. (Good NCds will last 200+ cycles.)

Observations Once the chargers and the NiCds are purchased, it doesn't matter how much you race. The cost is the same. But with alkaline batteries, the more you race the more it costs.

To be practical, the cost for NiCds and chargers for the Futaba are the same as the Ranger II. A skipper would

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COST PER YEAR FOR BATTERIES AND CHARGERS

RADIO	Ranger II	Futaba
Alkaline-first year	$129	$78
NiCds-first year	111	56
Alkaline -3 years	129	78
NiCds -3 years	37	18

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always want to have spare batteries and the ability to charge all of them at the same time.

Alkaline batteries are easy. Just buy them and go sailing. No hassle. But the cost is higher.

Lower Cost is the only reason to use NiCds. They are a hassle. You have to acquire knowledge and make decisions about which chargers and batteries to buy. You must have the discipline and knowledge to keep the batteries healthy and fully charged. There is always the opportunity for mistakes or equipment failure that leaves you without useful batteries.

It's your decision! Enjoy.

HOW TO NEVER RUN OUT OF BATTERIES

Or at least never be surprised by the need to change batteries. This discussion applies to both rechargeable and disposable batteries.

I have never been surprised when I followed three simple rules:

1) When the transmitter (Tx) battery indicator turns red, change batteries in both the Tx and the boat's receiver (Rx). (The stock hitec Ranger II has green, yellow and red battery lights. Some radios use different systems.)

2) Always install <u>fresh</u> fully charged Tx and Rx batteries at the same time.

3) Use Tx and Rx batteries of the same capacity. I use 850 mAhr batteries both places.

The reason this approach always works is simple. The Tx always depletes batteries faster than the Rx. Therefore, when the Tx battery light tells you that the Tx batteries need replacing, the Rx batteries are still healthy, but replace them anyway. They are probably more half discharged.

How do I know that? First, that's what I have been doing for the last ten months and I have never been surprised. Second, my bench tests of Tx , Rx and servo battery consumption confirms it. Third, the data in most radio owners manuals also agrees.

TRICKS OF THE TRADE

I am never surprised by batteries running down, but sometimes I run them down anyhow. The temptation is to do that last heat of the day even though the red battery warning is on. I have done that and lost control of the boat! Have you?

But all is not lost. Turn off the Tx and wait a short time. The batteries will recover a little bit. When you turn the Tx on, you will have control for a short time. Use that time to get the boat going the right way and trim the sails. Then turn it off again. Leave it off as long as you can before making the next steering and trim adjustment.

I have completed two lengths of the course using this technique. Some of my fellow skippers have unkindly observed that the boat went faster when the Tx was off.

WHEN RECEIVER BATTERIES DIE

So you didn't change your Rx batteries when the Tx batteries were changed. The boat is out of control. You are out of luck.

But there is no reason to be surprised by the batteries failing in the boat if you do the following:

1) Mentally record how fast the sail servo arm moves with fresh batteries.

2) As you sail observe if the speed of the sail servo arm has slowed.

My experience is that the servo arm can be moving very slowly and it will still be possible to control the boat. Use your own judgment to determine when the boat must be brought in to shore.

RAYOVAC "RENEWAL" batteries

Using RAYOVAC technical data, the Ranger II Tx would operate for 4 hrs, 30 min on its first cycle. On the 50th and 100th cycle, life would be about 2 hrs. and 1 hr 30 min., respectively.

They <u>must</u> be charged on a special "RENEWAL" charger.

A good NiCd would probably deliver more than 2 hrs life for more than 200 cycles.

No cost data is available at this time.

CR 914 RACING IN JAPAN

Rick Martin, #567 and #808, Seattle, mailed in an entrance form for a CR 914 regatta held in Japan in 1995. He also wrote a very interesting account of the regatta which starts on page 8.

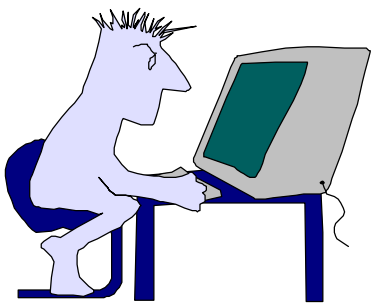
Rick reports that there are 1300 914s registered in Japan. We are trying to contact someone in the Japanese CR 914 organization. Rick has a Japanese friend who works for AG in Japan. He plans to contact him with the idea of sharing information with us.

It would be interesting and possibly useful to know how they are organized and to get details about their one-design rules.

I attempted to extract the pertinent info from the translation of the entry form mentioned above:

- Minimum weight is 5 lb.-14 oz.? Ours is 6 lb? (Worth's larger sail servo is 2 oz. heavier than the AG stock servo?)
- **No inside ballast is permitted.**
- **Sails by AG are the only sails permitted.** They can be cut down for storm sails.
- Strengthening of the rudder linkage is permitted. Worth Marine includes that in their standard kit.
- **Jib boom counter weights are permitted.**
- Deck mounted battery switch is permitted.
- Otherwise their rules are the same as ours.

The Japanese frequently travel in America. Rick's Japanese friend will also get him info on CR 914s sold in Great Britain. Maybe some day we will have an international competition.



Your Editor

THE CR 914 IS PROVING TO BE RUGGED

At the 1996 Nationals there were no gear failures. Worth Marine came prepared with enough spare parts to build an entire boat. No one asked for a part.

The practice day on Friday and Saturday had very strong winds. At times boats were out of control, unable to tack or jibe. There were numerous collisions and yet there were no gear failures.

The entire 1996 racing season here in Marblehead was much the same. During the course of the season more than 500 heats were run. One jib rack eye was broken as the direct result of a high speed collision with a much larger boat. There may have been other failures but I haven't heard of them. I was at the pond for all but ten heats during the entire season.

Report any gear failures your fleet has experienced and what the successful fix was. If we can identify a weak component, we can work to define a fix that can be applied by the entire class.

If you do experience a broken fitting, call Worth Marine who will put a replacement in the return mail. The cost for components such as chain plates, jib rack eyes, etc., is only $2.00. All parts are available as individual items. In the early days of the class, Worth would sell only complete parts "trees". That made the costs higher. It is hard to beat $2.00 a part, even if you make it yourself.

BOW BUMPERS

No boats at the nationals or in Marblehead used bow bumpers. There appears to be no need. At the nationals, I was the only one to experience collision damage. The crack was quickly repaired using CA glue and I may have missed one heat of practice.

It was a puncture type crack in the topside just below deck level. It had obviously been made by the sharp edge formed by the intersection of the deck and the rounded bow. It occurred during the windy Friday practice session.

HULL CRACKS

There have been several instances of cracks emanating from the leading edge of the keel recess in the hull molding. The cracks sometimes leak enough to force a skipper to stop racing until it can be fixed.

The fix can be as simple as applying a little CA to the inside of the hull at the cracks. A slightly more involved fix uses light weight fiber glass in addition to the CA or epoxy.

The cause of the cracks has been discussed at some length. Two types of events start the cracks:

1) **Running into things**, like the stone walls at the pond, at inappropriate speeds. I hate it when that happens. But when the hull stops, the 3 lb. keel bulb wants to keep going. To stop the bulb, the leading edge of the keel fin punches into the hull at the front of the keel socket in the hull.

2) **Excessive standing rigging tension.** For no rationale reason, I initially used high shroud tension. Shroud loads are transferred directly into the region at the hull cracks by the post under the mast.

My hull was fair when it was painted. When I discovered the leaking cracks, I also discovered the hull had bulged out in the region of the cracks. The only thing that could cause that bulge was my excessive shroud loads.

The message? Don't run into things and use sensible shroud tension. (And don't sand the hull too thin.)

SUBSCRIPTION to the CR 914 NEWS

YES, I want to subscribe. (Note: Yacht Registration is free with a subscription to the **NEWS.**)

YES, I would like to receive my newsletter via email.

Chuck Winder
19 Robert Road
Marblehead, MA 01945
617 631 6727

Send $10.00 check payable to "914 News/C. Winder"

One way to reduce the Class Secretaries expenditures related to publishing and mailing a newsletter, would be to send it via email. Keep in mind, though, that the cost for you to receive and print a newsletter is probably about $1.00. It depends on the printer in use and how you do the accounting.

CR 914 YACHT REGISTRATION **(**is **free** when combined with a subscription to the **CR 914 NEWS)**

NAME _____ **PHONE** _____

ADDRESS _____ **EMAIL** _____

CITY, STATE, ZIP_____ **Preferred sail number(s)**

AMYA NO. _____
Send check for $2 (if without a subscription) to Chuck Winder payable to AMYA

Chuck Winder
19 Robert Road
Marblehead, MA 01945
617 631 6727

Note: Annual dues are payable in advance by December 31 each year.

AMERICAN MODEL YACHTING ASSOCIATION

_____APPLICATION _____ RENEWAL for 1997

Memberships are: Family - $27.50; Adult - $25.00 ; Junior - 12.50

(Canadian members, please add $2 for postage.)

Name _____

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Send to: Harry Robertson
2793 Shellwick Drive
Columbus, OH 43235

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ANNOUNCEMENTS

Circulation of this issue is ~110 and we plan on growth.

Cost will be small to help fund this none-profit newsletter.

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 "NEW FLEET' package if this interests you.

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.

-**914 spec changes**
-history of the class
-battery management
-battery charging systems
-salt water defenses
-skipper conduct at races
-Class measurement certificate
-race rule topics
-An in-depth report on the 1996 Championship boat.
-An analysis of the results, skippers and boats at the 1996Championships
-Technical assessment of Rayovac "Renewals" for use in the 914

CR 914 NEWS

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