❖CR 914 NEWS❖

Issue 11 MARCH - APRIL 1998

STATUS OF THE RULES VOTE

Ballots are still coming in on the proposed rule changes. The intent had been to provide the final results in this issue of the NEWS. However I made an error of omission by not putting a date in the last NEWS for when voting would be closed.

Last Chance to Vote
Your ballot on the rules must be postmarked or sent by e-mail no later than May 30, 1998. There is a ballot on page 11.

For your ballot to be counted you must be an owner who has registered his boat with the Class. Surprisingly, at least to me, I have received a few ballots from owners who are not registered.

Status
As of April 30 fifty-nine ballots had been received. The vote count on each of the seven issues will not be revealed until the close of voting. That would risk effecting the decisions of those who have not yet voted.

As in all democratic organizations, those who vote have a better chance of being satisfied with the vote results. It is possible that without your vote, class rules will be changed in ways that will make you unhappy. The voter response in some areas has been poor. That is disappointing to me.

If you want to vote on the issues, and I hope you will, but don't have the Jan-Feb. issue of the NEWS, let me know and I will get the discussion and rationale on the proposed rules and a ballot to you. They can be sent to you by US or e-mail.

Buttons Padin's ***GONZO*** in good position at the Larchmont MYC start line

Inside This Issue

Class Secretary's Report

Photo Quality in the NEWS
The reproduction quality of photos has been poor. Good pictures and crisp print copy are available by taking the NEWS to the printer on a disc. The problem is I am still learning and have not been able to produce a disk that a printer can use. The goal for the next issue is to acquire the required knowledge and a ZIP drive. The NEWS file is too large for floppies.

Currently, I make a hard copy on my printer and Staples uses xerography to make the needed copies. The problem is that xerography does not do good pictures.

Registration's This month there are 350 boats registered versus 313 in February. See page 8 for the new owners. Through April, about 160 subscribe to the NEWS.

Chuck Winder

1998 CR 914 NATIONAL CHAMPIONSHIPS
at Marblehead, MA
September 12 and 13

The Marblehead Model Yacht Club will host the nationals at historic Redd's Pond in Marblehead, MA. Marblehead is a scenic vacation destination with a large harbor with almost 2000 full scale boats.

The Marblehead area has an extremely busy tourist season starting in September and building to a peak in October. It is a good idea to have your reservations in as early as you can. Rooms should be available at the Boston YC and the B&B's in town. There are no hotels or motels in Marblehead.

If you intend to come and race, ask me for a regatta package which is in preparation now. When it's done it will be sent to you.

1998 CR 914 3rd Region 1 Regatta
at Marblehead, MA
June 27, 28, 1998

Please note the date change!
This regatta provides an opportunity to train at Redd's Pond in preparation for the Nationals in September.

Registration - 9am, June 27 at Redd's Pond
Eligibility - Must be a registered CR 914 owner and a paid up member of AMYA
Entrance Fee - $20 includes lunch at the pond Saturday and Sunday
Accomodations - E-mail, call or write:

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FLEET NEWS

Larchmont MYC Spring Regatta
RACE RESULTS
(Much of the content of this article is from Buttons Padin's report to the LMYC.)
On the first day, Saturday, April 18, the 31 boat fleet was divided into three groups. For Sunday's finals, the top third of each of these groups made up the Championship Division, the middle finishers were in the Commodore's Trophy division and the last third formed the Navigator's Trophy division.

Saturday was sunny and warm with light and extremely variable winds. These conditions and some pesky floating weeds, made luck play a part in the results. Each division raced 10 heats. However, as always, most of the historically best skippers overcame the conditions to make it into the top division for the Sundays final races.

....throughout the regatta, no tempers were lost, only a few disparaging words were heard, people did their turns and the sailing quality was exceptional. That's they way it's supposed to be.

Thirty-boat Fun Races
Two thirty-boat fun races were the high point of the day. All boats entered in the regatta raced together! The winds were still light and that was probably a good thing. The planned windward start of one race became a run to the turning mark. My experience was typical of many.

In that race, the view of my boat was completely blocked as the whole fleet headed away from the skippers to the first mark. There was nothing to do but let the boat go straight and watch. After what seemed like minutes, my boat appeared out of the pack headed for the next mark. Another boat had turned mine onto the proper course.

Interestingly, with thirty boats racing and the skippers standing shoulder-to-shoulder on the float, there were no radio glitches?

The first of these was won by Joe Fontanella, CRASH theoretician, followed by Howie McMichael who tried to destroy a winter stick by ramming it. The second race winner was Bizzy Monte-Sano.

There was the inevitable bumping during these two fun races, but there was only good humor shown by the skippers.

The Championships
Sunday dawned cloudy with a nice east wind. The rains started before the races did and persisted all morning. The winds played games, too, and made for challenging racing.

Final Results
Bizzy Monte-Santo won the Championship Division with 14 points, only two points ahead of Joe Burbeck, who is a consistent top performer at Larchmont. Marblehead MYC's Kevin Dooley and Howie McMichael tied for third, only six points out of first. The tie-break for second went to Dooley.

(Note: Bizzy and Joe had set out the course marks before the racing started. Strange, don't you think?)

The Commodore's Trophy was won by HL DeVore with seven points with Rich DuMoulin in second with 14. Marblehead's Chuck Winder was third at 16 points.

Stan Bell won the Navigator's Trophy with 10 points. Ken Sutton took second only one point ahead of Nick Langone with 16 points.

Of particular note is that throughout the regatta, no tempers were lost, only a few disparaging words were heard, people did their turns and the sailing quality was exceptional. That's they way it's supposed to be.

(Continued on page 6)

BATTERY MANAGEMENT

NiMH BATTERY LONGEVITY

Do NiMH batteries pay-off?
One advantage of rechargeable batteries is lower cost. But to realize lower cost the batteries must remain healthy long enough to be cheaper than alkaline batteries. We now have some data on this subject.

Two different brands of NiMH four cell flat packs have been in use for several months. They use AA size cells and are labeled 1200-1250 mAh capacity. Note that in each case, the experience is based on only one sample each.

Conclusions

- NiMH rechargeable batteries are cheaper than alkaline disposable batteries on a cost per race day basis.
- A HydriMax® NiMH Rx (receiver) flat pack from Tower Hobbies® has experienced disappointing decay in capacity after 42 race days/charge cycles.
- A GP Green Charge® NiMH Rx (receiver) flat pack from TechAmerica has had reletively small capacity loss after 28 race days/charge cycles.

Recommendation

On the basis of my one sample experience todate, I would buy the GP Green Charge® NiMH cells from TechAmerica. At this time assembled packs are not available from Tech America. If you can not build your own pack, order the cells with "consumer tips". TechAmerica, (800)877 0072, Part No. 960-0242, $4.88 plus $4 shipping. There is a price break for orders of 12 cells or more.

HydriMax® Battery Pack

A four cell flat pack was purchased from Tower Hobbies in June 1998. It was advertised to have 1200mAh capacity. A bench test showed that it actually had a capacity of 1720 mAh! It was used in racing starting in late June and has accumulated about 42 race days. Except when racing, the pack was under 50 mA charge at all times.

In early April 1998 , after only about 3 hrs of hours of racing in fresh breezes, this pack gave the first sign of weak batteries! The sails were slow to be sheeted in.

The pack was tested after the race in the "CR 914 Laboratory" and confirmed to be practically discharged. The pack should have lasted close to 6 hours at a capacity of 1700 mAh.

Additional testing showed the capacity of the fully charged pack was down to 880 mAh compared to 1720 mAh when new! That is a loss of 20 mAh per race day. (A good fresh alkaline battery has a capacity of about 1200 mAh and a good NiCd battery gives about 600 mAh.)

Note that a 600mAh battery pack should last between 2 and 3 hours in the boat.

Cost per race day for the HydriMax pack is $0.60 per race day. [$25 (w/S&H)/42 days = $0.60 per race day.] Alkaline batteries would have cost $0.66 per race day. [$0.41/battery x four batteries = $1.64 / 2 1/2 days) = $0.66 per race day.] The cost of the battery charger was not factored in because they have such long life.

Summary of theHydriMax Pack

- Capacity when new was 1720 mAh
- Capacity decayed to 880 mAh after 42 race/charge cycles
- Reduced capacity of 880 mAh is still good for ~3 hrs hours af racing.
- That is a loss of capacity of 20 mAh per race day
- Cost is cheaper than alkaline batteries
- How much useful life remains is unknown

GP Green Charge® Battery Pack

Four AA cells with solder tabs were purchased from TechAmerica in September of 1997. The label capacity was 1250 mAh. They were assembled into a four cell flat pack with soldered connections and shrink wrap.

Bench tests showed the new pack had a capacity of 1504 mAh! It was used in racing starting in September and has accumulated about 28 race days. Except when racing, the pack was under 50 mA charge at all times.

In April the bench test capacity was 1324 mAh, a loss of 6.4 mAh per race day. If the loss rate is linear, at 42 days use the capacity will still be ~1240 mAh compared to 880 mAh for the HydriMax.

Summary of a GP Green Charge® Battery Pack

- Capacity when new was 1504 mAh
- Capacity decayed to 1324 mAh after 28 race/charge cycles
- That is a loss of capacity of 6.3 mAh per race day
- Reduced capacity of 1324 mAh is still good for ~4 ½ hrs hours af racing.
- Cost will be cheaper than alkaline batteries
- How much useful life remains is unknown

Radio Shack NiMH Cells

Last issue we reported that Radio Shack now sells NiMH AA cells. They are a new product for them. Cost is $5 each.

Based on the experience to date with several brands of batteries as well as Radio Shack's, it would be wise not to buy them until there is data that says they have acceptable new performance and longevity.

Boat Performance Compared using

SAIL AREA/DISPLACEMENT RATIO

Sail Area/Displacement Ratio is one well known non-dimensional parameter for estimating the performance of sail boats. The higher the ratio, the faster the boat. It is obvious that for a given boat design if the sail area is increased the boat will be faster. At least it will be faster in the wind strength where it is not overpowered with too much sail.

There are many relationships used by naval architects to estimate sail boat performance. They involve weight (displacement), sail area, length, hull proportions, stability, etc. The only one discussed here involves the sail area and weight of the boat.

If all boats weighed the same, the ratio could be simply sail area divided by weight. But the laws of physics complicate things. We are required to use the 2/3 power of the weight in the ratio to compare boats of different weights.

One other thing. Naval architects choose to use the cubic feet of water that is displaced to float a boat in saltwater instead of the weight in pounds. The two are the same, really. If a boat weighs 64.4 pounds it will displace one cubic foot of seawater because that is what seawater weighs. That's the physics of it.

The formula for the ratio is:
Sail Area, sq. ft. / (Displacement, cubic ft.)^2/3,

For the **CR 914**:
Sail Area = 658 sq. in./ 144 in./sq. ft. = 4.57 sq. ft.
Displacement = 6.25 lb./64.4 lb./cubic ft. = 0.097 cubic ft.
Therfore, Sail Area / Disp.^2/3 = 4.57 sq. ft. / (0.097 cubic ft.)^2/3
= 21.7

Note that actual sail area is used. The CR 914 kit box states that the sail area is 549 sq. in. That area is from the area of simple triangles and does not include roaches.

The ratio was calculated for several other boats, both models and full-scale boats. One can see from the data shown below that the CR 914 should be faster than the Soling One-meter in all conditions except very strong winds. Our experience has shown that to be true.

Of course, the Ratio does not take into account the relative efficiency of hull designs, fins or sail plan.

The **Soling One Meter Class** is a popular class in AMYA. It is a one design boat.

The other three model boats are all "development classes". The boat's design can be anything within the rules of the class.

The **Marblehead Class** has the highest ratio and is a very fast model. However, to allow it to sail in stronger winds, the class permits each boat to have three different sail rigs. If the winds are too strong, a sail rig can be used that is more suitable.

FULL SCALE BOATS

The **America's Cup** boat has a large ratio as does the "**Merlin**". The Merlin is a very light weight boat that held the Transpac record to Hawaii for many years. The **Cal 40,** designed in ~1963, was an outstanding race boat in its day. It is now an excellent high performance family and cruising boat. (It is mentioned here for the simple reason that I own one, but its ratio is typical of good performing cruising sailboats.)

Smaller full scale boats rely on moving human ballast for stability. (So do the larger ones, for that matter, but not to the same degree.) The result is that these small boats have excellent performance because of their large sail area/displacement ratios.

BOAT DESCRIPTION	Length, ft.-in.	Sail area, sq. ft.	Disp., lbs.	SA/Disp. Ratio
Model Keel Boats				
CR 914	3	4.57	6.25	21.7
Soling One-meter	3-3.4	5.05	10	17.5
36/600 (Min. Wt. Unspecified)	3	~5.35	6 ?	~26
One Meter One Design	3-3.4	5.35	7.0	23.5
Marblehead Class	4 - 2	7.64	~10	26.5
Full Scale Keel Boats				
IACC Boat (America's Cup)	~75	3300	55000	36.7
"Merlin", a sled	67	1834	24000	35.7
Cal 40 with a 150% Genoa	39-4	938	16600	23.1
Boats using crew as movable ballast				
Flying Dutchman*	~20	190	700	38.7
International Canoe*	~17	106	350	34.2
A Scow*	38	557	2840	44.6

CONCLUSION

This data shows why the CR 914 does well against the Soling One Meter, the closest competitor in the galaxy of AMYA models. It is a well rounded design that can sail well in a wide range of wind conditions. Its ratio is similar to good full scale cruising boats.

I hope this little analysis was of interest to a few people. There are now some full scale boat naval architects as owners in our class. Possibly they will contribute some observations and analyses for our amusement.

RULE INTERPRETATIONS

Eligibility for AMYA Sanctioned Regattas

The individual must own a registered CR 914 and be a member in good standing of the AMYA.

Mark Zurmuhlen, CBMRA Commodore, requested two rule interpretations:

1. Do the rules control the location of fittings on the booms? Mark wondered if rule 9.2 applied.

Rule 9.2 ***All mast fittings*** supplied in the kit shall be used (spreaders, jumper strut, gooseneck, vang base and mast head crane). They shall be located within +/- 1/4-inches of the location specified in the kit instructions.

The Interpretation
Rule 9.2 reads, "All mast fittings ….". Thus any interpretation that boom fittings are included is not supported by the words of the rule. In addition, only specific mast parts are listed in the rule. No boom parts are mentioned.

Thus the location of fittings on the booms is not controlled by the rules.

2. Can the forestay and jib halyard be lead directly to the masthead?

The Interpretation No. They both shall be routed upward through the hole in the forward side of the mast ring portion of the jumper strut assembly.

SAILS
The class rules state that the sails shall be from the kit.

Interpretation Any alteration to the sails shall make them illegal. Example: Removal of the luff tape and replacing it with new tape risks making the sails illegal.

Chuck Winder, Class Secretary

Photo by Stan Bell

Approaching the Turning Mark at Larchmont MYC Spring Regatta

photo by Jim Dolan

Nineteen Boats Shortly After The Start At The LMYC Spring Regatta
The on-course judge boat in background. The rescue boat in forground.

(Continued from page 2)

After lunch on the Club House porch, the awards ceremony was held in the "Men's Bar". As usual, the presentation by Commodore Buttons Padin was humorous and entertaining.

The "Low and Gross Trophy" went to Sears Wullschlegger, whose beet-red blush of appreciation was something to behold.

It was a weekend to remember.

Chuck Winder

Sailing at Annapolis with the CBMRA

by Chuck Winder

On our trip to Florida in March, we stopped at Annapolis to sail with the CBMRA (Chesapeake Bay Model Racing Association). They race every Sunday morning all winter.

The day we were there dawned rainy, windy and cool. Despite that about 13 boats showed up to race from the Chart House Restaurant. Mark Zurmuhlen, the commodore of the club, arrived early and despite the cold rain, used the electric launch to set the marks.

We sailed 13 heats in challenging racing conditions. The wind was strong and gusting, requiring careful technique to keep the boats in control. A water tight boat was important since there were frequent broaches and knockdowns. There was a certain amount of attrition from wet electronics, but in general the boats handled the conditions well if the skipper did the right things.

For the most part, we sailed from inside the Chart House out of the rain and cold. There was a compromise involved with the comfort of being inside. The visibility was marginal at times. The windows are of small panes and pilings on the dock outside the windows blocked the view of the windward mark for some of us.

In the strong gusty conditions boat speeds were high and things happened fast at the mark. One boat was holed amidships about half-way between the shear and the keel. No one saw it happen. In fact the skipper, who had borrowed the boat, didn't realize he had damage until his electronics quit and it was obvious the boat was sinking! Fast work with the electric launch recovered the boat just before it sank. Whew!

The holed boat obviously had been laid over from a knockdown and another boat had tee-boned her. The sharp edge formed by the deck and prow did the damage. A couple owners are studying how to make a suitable bow bumper to avoid such damage.

The foremost memory I have is many of the boat hulls had beautiful and creative graphics. I have not seen anything like that anywhere else. One boat had little foot prints walking around on deck, another had graphics of line on deck and trailing over the side. Another striking boat had the hull below the shear done with the Stars and Stripes. (Our nations flag, not Dennis Connors blue.) I wish I had had a camera to record the art.

Harry Dunning, a yacht designer with Bruce Farr, had worked on the New Zealand AC challenger campaign. His 914 replicated the graphics of NZL 39. It was beautiful.

Of course, there were also the plain "ABS White" boats so prevalent everywhere. I wish space and my memory permitted me tell about all the other boats.

I thoroughly enjoyed myself sailing with the friendly and enthusiastic owners at Annapolis.

LMYC SPRING REGATTA

by Chuck Winder

This is a report on the experience, not the race results found elsewhere in the NEWS.

The Marblehead Model YC was invited to Larchmont Model YC's "Intergalactic" 1998 Spring Regatta. The affair was held April 18 and 19. Our team was graciously accomodated at the homes of club members.

Buttons Padin, Commodore of LMYC, provided the organizition and energy that resulted in the best regatta I have ever attended. That includes ~50 years of full scale boating, too. His adjective "intergalactic" is appropriate, the regatta was out of this world.

The LMYC five boat team soundly defeated the MMYC team of five for the Challenge Cup. MMYC is considering appealing the lopsided victory. They clearly used a grossly excessive amount of talent and boat speed to achieve the victory. It just wasn't fair.

This regatta set a standard that none will equal, I am sure. But it is a great target for us to aim at in future events.

Some Highlights

- The luxurious 100 year old LYC Club House and grounds were the ultimate venue for a regatta.
- Thirty-one boats registered, the largest fleet of CR 914's to ever race in this country.

(Continued on page 7)

Twenty CR 914's rounding the wing mark at Larchmont YC.

Photo by Jim Dolan

(Continued from page 6)

- There were two fun races Saturday with 30 boats! Another record.
- The dinner Saturday evening was outstanding. Following the meal, Buttons had committee chairmen give faux reports. These monologues were hilarious.
- Buttons reported that the CR 914 fleet at Larchmont is the largest one design fleet on Long Island Sound.
- There was remarkably little acrimony during the intense racing. It was gentleman having fun.(Wendy Lull had fun, too.)
- The regatta was expertly run by an experience goup of about ten volunteers
- There were on course judges to rule on infractions on the water
- All boats had assigned channels. No need for channel switching during the regatta.

Conclusion

The CR 914 Class is fortunate to have the LMYC fleet. Their input on class rules and other things have been invaluable as the class grows and evolves.

This regatta set a standard that none will equal, I am sure. But it is a great target for us to aim at in future events.

The Larchmont MYC Race Venue

Photo by StanBell

It was different from many other model venues. All skippers were located at the end of a ~twenty foot wide floating dock. The starting line was defined by a flag pin on the dock and a starting mark placed by course workers to give a square line.

The turning marks were chosen from a large selection of marks deployed in an arc around the end of the dock. The marks were about 200 feet from the skippers.

This paced a premium on a skipper's ability to manage his boat at long distance and to judge mark roundings.

Skippers did little walking except from side-to-side on the end of the dock. Surprizingly, no one was pushed off the dock.

From left to right: Chuck Winder, Peter Kelly and Dr. John Hodgson
They are trying to determine which boat is theirs in the view to left.
Photo by Stan Bell

CRASH Explained

The following is a transcript of the paper given by Joe Fontenella to the CR 914 owners gathered for dinner at the Larchmont MYC 1998 Spring Regatta. Fortunately, the paper was presented after all had eaten.

Editor

Our greatest technical difficulty and a scourge upon the 914 fleet has been a phenomenon known as ***Collective Receiver Anomaly Syndrome Hyperbolae***. Around the docks, it is more commonly referred to by it's acronym ***CRASH.***

CRASH can afflict a perfectly normal and well found boat instantly, and without warning. For those of our guests that have never witnessed a case of ***CRASH***, let me tell you, it's not a very pretty sight. The commander of a finely tuned racing machine suddenly loses complete control and the vessel begins unpredictable, erratic, and otherwise crazy maneuvers. The skipper also behaves badly.

The onslaught of ***CRASH*** is usually signaled to the fleet by the unfortunate skipper exclaiming, (if it is his first experience) "Hey whose controlling my boat !!". Or, if he has known the anguish before, he will probably say, "bleep bleep boat, or boat bleep bleep, or just bleepity bleep bleep. In any case , upon hearing those exclamations, it is in your best interest to sail your boat far away from his boat as fast as possible.

In an effort to better understand and eventually cure ***CRASH***, I have conducted an extensive scientific study. I shall not bore you with the intricate technical details of this research, but rather, I shall share my notes with you, from the compilation of which, you will logically draw your own conclusions.

In the 75 kilohertz range, where of course our vessels operate, the presence of a dipole has significant effect on the settling time of the system, since it produces a slowly decaying transient termination, assuming that the open loop zero shall be canceled by the closed loop pole.

Of course, if the attenuation characteristic of the system indicates that only series elements have been considered, it will be apparent that feedback loops must be included. In addition, the quantitative effect of changes in the phase lag characteristic may be used effectively to decrease the velocity error coefficient of the system.

It is interesting to note that the phase lag network of the servo permits the system to operate with a higher gain at low frequency and that reduces the amplification in the region where the transfer function crosses the negative real axis.

Irregardless of the aforementioned discussion , we must not disconsider the possibility of alpha, gamma or beta cosmic radiation effects due to solar flares and/or lunar phase anomalies.

So, there you have it Ladies and Gentlemen, these are the known scientific facts regarding ***CRASH.*** You may now draw your own conclusions. Thank you very much.

Joe Fontenella, #373

NEW MEMBERS

First Name	Last Name	City	State	Sail No.
Arthur S.	Bailey	Toms River	NJ	220
Ron	Brinkerhoff	Inverness	IL	790
Ernest	Brown	Wyers Cave	VA	243
J.T.	Charles	Schaumburg	IL	780
Peter	Costa	Winthrop	MA	221
Godbout	Scott	Norfolk	VA	228
Ian	Gordon	Annapolis	MD	237
Peter	Gordon	Annapolis	MD	273
Ernest	Hardy, Jr.	Winthrop	MA	830
James	Hitch, Jr.	Broadway	VA	625
Andrew	Hughes	Annapolis	MD	987
Jennifer M.	Hughes	Annapolis	MD	240
Wayne	Krumheuer	Middleburg Hts.	OH	219
Roger	Kuebel	Larchmont	NY	372
Mark	Landwer	Inverness	IL	779
Gary	Leduc	S. Dartmouth	MA	152
Jodi	MacGibbon	Annapolis	MD	275
Craig	MacGibbon	Annapolis	MD	289
Peter	McChesney	Annapolis	MD	234
Langone	Nick	Larchmont	NY	381
Lee	Mairs	Falls Church	VA	278
Brian	Martin	Seattle	WA	579
Ben	Martin, Jr.	Essex	MA	624
Bob	Oberg	Annapolis	MD	313
Jeff	Peck	Annandale	VA	224
Lloyd	Poole	Novi	MI	170
James	Reed	Lititz	PA	226
Jim	Sagerholm	Annapolis	MD	269
Jim	Sagerholm	Annapolis	MD	812
Robert	Schmidt	Chicago,	IL	300
Daniel K.	Slear	Baltimore	MD	256
David and Kaye	Stewart	Ocean City	NJ	307
Ken	Sutton	N. Sutton	NH	574
Donald G.	Tyson	Annapolis	MD	227
Cazzie	Walsh	Marblehead	MA	225
Tom	Weaver	Annapolis	MD	711

BOAT REGISTRATION BY STATE
April 22, 1998
Sorted by number of boats
Total Boats Registered - 345

STATE	BOATS	STATE	BOATS
MA	86	DC	3
MD	57	GA	3
NY	33	NH	3
CT	17	DE	2
CA	14	MI	2
NJ	14	NC	2
NM	14	OR	2
MN	12	RI	2
FL	11	AR	1
IL	11	IN	1
VA	11	IO	1
PA	9	MO	1
OH	8	OK	1
ME	7	SC	1
TX	7	TN	1
WA	5	VT	1

The Story About the New Sails

This article was written to report what we know about the different sail material AG Industries is now using to produce the kit sails. There was a report from Maryland owners that the newer material was lighter and more durable. We requested the source of that info but, so far, have received no response. Ed.

A Brief History of Kit Sails

The original kits introduced in the US in 1991 had sails of white nylon rip-stop. This a material used for full-scale boat spinnakers. Starting sometime in 1996, AG started to use a polyester rip-stop material. Dacron® is Dupont's polyester. (See page11 of the NEWS, November 1996.)

(Also in 1996, Worth Marine produced and sold several Mylar sails which appeared to be very fast. Durability was never demonstrated because the sails were voted illegal in 1997.)

The polyester sails looked the same as the nylon. However, the nylon was 0.035 inches thick versus 0.023 inches for the polyester sails. The polyester was noticeably more supple, probably because it was thinner. Most owners felt that the new material offered superior performance. Some replaced their nylon sails with the newer sails.

January 1998

In January of 1998 AG started shipping sails in the kits of a third material.

In December, 1997, AG had sent Greg Worth three or four of the newer sails for evaluation. It appeared that AG wanted Greg's approval. Greg gave me a set and asked for an opinion.

My Opinion

The new sail material is very similar to the old and probably will have no detectable effect on boat performance.

- It appears to be polyester as were the previous sails.
- The rip-stop grid pattern of the newer sails is larger. (0.57 in.x.37 in. vs. 0.30 in.)
- The measured thickness of the cloth is the same.
- The "hand" or suppleness of the newer material seems slightly softer, but that is very subjective judgement.
- The elastic stretch of the new sails is about 25% more.
- I have no way to assess durability of the sails.

The Recommendation

The Worth Marine and Class Secretary recommendation to AG was to continue using the original material. The reasoning was to maintain the ***perception*** and the fact of strict one-design even though the effect of the newer material on performance was probably negligible.

However, it became clear that AG had already decided to use the newer material. AG stated that the newer material had been approved by Mr. Kazuo Takei who designed the CR 914 in 1986.

Note that in Japan there are reported to be a few thousand CR 914's. Competition is intense. Their class rule requires the use of the AG sails from the kit, as do ours.

A Sail Makers Opinion

In April, 1998, Doyle Sails of Marblehead were asked to assess the two sail materials. Two sail makers at Doyle offered this:

- Both sails are of polyester
- The newer material is probably 0.5 oz. polyester spinnaker material called "Tetoron" made by Teijin, a Japanese sail cloth maker. They said that Tetoron originally came to them with the larger rectangular rip-stop pattern that the kit sails now have. The newer marerial currently in use at Doyle has a smaller square pattern.

AG Industries has been asked to identify the sail materials. Stay tuned.

History of Class Rule

Our sail rule reads:
13.4 Sails shall be those provided in the kit. Replacement sails shall be those supplied by the kit manufacturer.

This portion of the rule was approved in 1997 by a vote of 71% of the owners who voted. The objective of the rule was to assure that an owner could buy a kit and build a competitive boat without having to buy or build custom sails. The owners elected to avoid the necessity of buying the "sails-du-jour" to have a competitive boat.

At the time of the vote, Worth Marine offered excellent custom sails made of light weight Mylar with a scrim of white fibers. The Worth sails were soft and supple and were perceived to be faster than the kit sails. The cost was $50.

The vote for the stock sails says that the owners did not want to invest the effort and $50 to change to the new sails to be competitive

Sails will always have to be replaced occasionally because of damage or just plain aging. Replacement stock sails cost $30 and require a small amount of assembly. But stock replacement sails will be as competitive as all the others.

CONCLUSION

We wish that AG had continued to use the

(Continued on page 10)

BOAT MAINTENANCE

The following maintenance ideas are from Howie McMichael e-mail over the last few months:

SLACK RIGGING AFTER HEAVY AIR RACES
Howie marks his rigging at the center of the bowsie with a permanent marker and finds that they slip rather than the rigging stretching. Howie uses the 70 lb. Kevlar standing rigging.

PREVENTING KEEL LEAKS
Avoiding running into solid objects with the bow is also recommended.

Howie recommends the use of fiber glass mat to prevent the hull cracks. Obviously, this is best done with the servo board removed.

For best adhesion, thoroughly clean the area where the glass mat will go with alcohol and give it a good roughing with 100 grit paper.

Use a roughly 2" wide mat with a vee cut in it to fit around the keel molding. (The hull keel molding is about 3 inches long.) Saturate it with epoxy and install it in front and along the sides of the keel molding.

The above also works to repair leakers but it is best done by removing the servo platform for access.

MAST FITTING INSTALLATION
Howie writes:
I also have been putting an epoxy ring around the mast just under the spreaders so they can't slip down over time and will rotate when the boats collide rather than snap off in cold weather. An epoxy ring above the jumper lower attachment ring keeps it from moving up and the jumpers don't need anything to stay in place.

The only parts on the mast I epoxy solid are the boom vang and the gooseneck fitting. It will rotate under the loads on the vang in heavy weather.

BOW BUMPERS
We (at Larchmont MYC) have been discussing bow bumpers for cold weather sailing when the boats are brittle and tend to hole more easily. I understand the Marblehead Class require it? If we can come up with something small yet supple to take the bang out of a collision we will let you know.

MAIN HATCH LEAKS
I have also been using silicon grease on my hatch slide. This seems to have totally stopped water from getting into the boat beyond that which comes in the steering rod hole.

*****

Chuck Winder writes:
ROUTE SHEETS THROUGH STEERING WHEEL

When all the sheets were replaced recently, I forgot to route them through the steering wheel as shown at the top of page 7 in the AG Instructions. Until I fixed it, the sheets fouled around the wheels on every race. A quick fix was to cut the rim of the wheel, insert the sheets and then CA glue the cut in the wheel.

BOOM RING BREAKAGE
The vang Boom Ring loads are very high and they often break. (See at the of top page 9 in the AG Instructions. The boom rings are shown attached to the black plastic tree at the top of page 2.)

One fix is to replace the ring with rigging string tied around the boom and forming a loop for the vang to run through. Use a Clove Hitch around the boom. CA glue the line in place on the boom.

BREAKING BOWSIES
Many owners use bowsies to allow adjustment of the jumper stays. ("Bowsie" is a model sailboat term for the little three hole "adjuster". See part #32 on the black plastic tree at the top of page 2 of the AG Instructions.)

These bowsies are heavily loaded and often break. Worth Marine sells larger stronger bowsies.

You can make your own using 1/8 inch diameter brass rod. Flatten it with a hammer to make it as wide as the plastic bowsie. Drill three holes in it and cut it off to the correct length. Make sure to smooth the edges of the holes to prevent wear on the string.

Worth Marine Web Page

http://www.worthmarine.com

Many owners call and e-mail Greg Worth and me asking questions about how to build the CR 914. Some things are difficult to describe in words. Someone once said, "A picture is worth a thousand words."

So, those of you who are either building or modifying boats and have questions might benefit from seeing the excellent pictures at Greg's Web Page.

Find and click on the CR 914 picture. When that page appears, scroll down and click on *"close up shots for building assistance"*.

Editor

Sails*(Continued from page 9)*
same sail material. However, the newer material appears to be quite similar to the previous polyester cloth. In my opinion there is no need to change sails to remain competitive. The reality of this great one design class is that about 98% of the performance depends on who is holding the transmitter.

Class Secretary

CR 914 YACHT REGISTRATION AND SUBSCRIPTION TO "CR 914 NEWS"

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Ballot for Rule Changes - Please circle your responses. Mail to:

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Rule 1 Gives the Class Secretary the authority to interpret the rules to decide the legality of changes to the boat. (See page 4.)
Yes, I approve giving the Class Secretary that authority.
No, I do not want him to have that authority.

Rule 4.6 Preserves the appearance of the CR 914. (Page 5)
Yes, I approve the revised rule 4.6.
No, I do not want to change the rule.

Rule 11.2 Mainsheet Fairlead with Strings. (See page 5.)
Yes, I approve **Option 1** of the revision.
No, I do not approve Option 1.

Rule 11.2 Optional Mainsheet Fairlead without Strings.
Yes, I approve **Option 2** of the revision. (See page 5.)
No, I do not approve **Option 2 .**

Rule 14 Increases minimum boat weight by 4 ounces (4%).
Yes, I approve the revisions to rules 14.1 and 14.3.
(See page 5 and 6.)
No, I do not approve changing these rules.

Rule 14.4 Permits a Non-Removable Keel
(See page 6 and 7.)
Yes, I approve deleting Rule 14.4 which deletes the requirement of removing and weighing of the keel assembly.
No, I do not approve deleting Rule 14.4.

Rule 14.4 Minimum Keel Weight (Note: Vote on this rule even if you vote yes on the above. The above rule may not pass.)
Yes, I vote to increase the minimum weight of the keel assembly to 3 lb. - 7 oz. (See page 6 and 7.)
No, I don't want to change the minimum keel weight.

Print Name_____

Signature_____

Date _____/_____, 1998

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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.

-History of the class
-Tuning for best performance
-Battery management - continuing
-Surviving salt water - continuing
-Race rule topics
-Why do radios "glitch"?
-Class Rules Interpretation - continuing
-Maintenance and repair of radio components
-Building and maintenance tips
-Sail Area/Displacement Ratio study of different models and full scale boats.

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.