

# ❖ CR 914 NEWS ❖

Issue 19

JULY - AUGUST 1999

## 1999 CR-914 National Championships

### *Notice of Regatta*

Larchmont Model Yacht Club announces the 1999 National Championships for the CR-914 Class. LMYC will host this year's championships at the Larchmont Yacht Club in Larchmont, NY (30-minutes north of New York City). Over the past two years, LMYC has demonstrated its ability to host highly memorable regattas and the Class is looking forward to this year's Nationals drawing the largest fleet in Class history. The details are as follows:

#### **When**

Friday - October 28<sup>th</sup> - Noon to 4:30

Unofficial practice racing

Saturday - October 29<sup>th</sup> - 9:30 to 4:30

Qualification heats

Sunday - October 30<sup>th</sup> - 9:30 to 12:30

Championships

#### **Regatta Limit**

It is the Committee's intention to limit entries to 52 competitors.

#### **Format**

Races will be staged from two floating docks moored in Larchmont Harbor. Eight race marks will be deployed around each dock to permit selection of good courses. Competitors with boats will be ferried to and from the docks using club launches. The fleet will be divided into four divisions in order to limit the number of boats at each start line and avoid radio channel conflicts.

Two of the four divisions with non-conflicting channels will race at one time from their own dock. After four heats are sailed the other two divisions will be ferried to the docks for their four heats.

*(Continued on page 2)*



### **RED FLEET RETURNS TO SHORE**

The 50 boat fleet at the Larchmont MYC Spring Regatta were divided into four fleets. Two fleets raced at one time on separate courses in Larchmont's harbor. Skippers were situated on large double floating docks in the center of an array of course marks. Boats and skippers were taken to the floats on the club launches. It was an outstanding arrangement which will be used again for the Nationals..

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### **Class Secretary's Report**

#### **NEWS Copy**

I am always looking for articles from owners and subscribers. News about what is going on with your group. Problems you have had and how they were solved. Constructive criticism of the NEWS, the class rules, the kit, the AMYA, is always welcome. Send me any ideas that can make the Class better for us all.

#### **Website**

Steve Lang has made a start towards creating a CR 914 website (see page 8). We haven't had one since Ric Naff's had to close his excellent product. Stay tuned.

#### **Registrations**

This month there are 513 boats registered and ~230 get the NEWS. Seventeen new

*(Continued on page 6)*

(Continued from page 1)

The cycle will be repeated until the end of racing.

Saturday's racing will be qualification heats with the top quarter of each division's finishers racing for the Championship Sunday morning. Sailors qualifying in the second, third and fourth quarters of their respective fleets on Saturday will be matched with the respective finishers from the other divisions and sail for separate prizes within each division on Sunday.

It is the intention of the Committee to have everyone racing for the duration of the entire regatta and prizes will be awarded for all four Sunday divisions.

### Housing

LMYC members have offered to house all racers and significant others for Friday and Saturday nights of the Regatta. Sailors not within convenient driving distance may be housed Thursday night if special request is made. Note that children and pets can not be accommodated.

Hotel accommodations are available if competitors prefer and will be detailed in the sailing instructions sent to entrants.

### Fees

The Regatta entry fee is \$60.00 per boat. It includes a Friday night cookout plus breakfast and lunch both Saturday and Sunday for the competitor and guest.

### AMYA / Class Memberships

As this is an AMYA sanctioned event, all competitors must be members of the AMYA (\$25) as well as the Class (Class registration is a \$5 one-time fee). For non-members, these fees can be paid at time of registration. AMYA membership will be for calendar year 2000.

### Entry Deadlines

It is anticipated that there will be more entries than slots open. If entries only slightly exceed the 52-boat target, all entries will be accepted. If they significantly exceed the limit, a system will be initiated that distributes acceptances among Class model yacht clubs. The individual clubs can then



## LARCHMONT YACHT CLUB

determine which of their sailors

will "qualify" for the Nationals.

All entries (see page 11) received by October 1, 1999 will be deemed as having been received at the same time. All entries received after the first will be addressed on a first-come, first-served basis.

### Shore-side Activities:

Friday night cookout for all competitors and guests (included in entry fee).

Saturday night – Dinner is a la carte.

There may be dancing. Dress is sailing attire.

*Buttons Padin*

### A Note from Buttons Padin,

Stepping back from the details of the *Notice Of Regatta*, on behalf of the Larchmont Model Yacht Club, I would like to say that this will be a 914 regatta fitting to cap off the Millennium. We will have lots of racing, lots of camaraderie, some excellent social events and tons of prizes. If you have any interest in the Nationals, try to make it. We will do everything we can to accommodate all interested parties. If you have any questions, e-mail me at [erpadin@aol.com](mailto:erpadin@aol.com) or give me a call during the day at my office – 212-897-3150.

*Buttons*



## Who Should Attend the Nationals?

All owners are invited. The objective is to get members of the Class together to enjoy what the sport has to offer.

If you feel your racing experience is not good enough, you should come and race and gain some of the experience you need. You will see what it is all about and carry the message back to your fleet.

A proper regatta is part social and part competition. Larchmont makes sure there is the correct mix of the two.

If the number of entrants exceeds the maximum it is practicable to handle, a fair selection process will be used. So get yourself on the list.

COME TO THE NATIONALS, YOU  
WILL BE HAPPY YOU DID!

*Chuck Winder  
Class Secretary*

### Class Secretary's Comments

There is no question that it doesn't get any better than the model racing at Larchmont YC. Our Marblehead MYC team attended LMYC Spring Regattas in 1998 and 1999. Everything was superlative: hospitality, racing, environment, etc. The generosity of the members who offer the comfort of their homes to the visitors is unparalleled.

The sociability and convenience of having excellent breakfasts and lunches right at the racing venue surrounded by our boats is simply great. We all get a chance to get to know one another and talk about our boats.

The Saturday night dinners are a delight. Dining with fun people on excellent food in a classic luxurious clubhouse is hard to beat. And the entertainment Buttons orchestrates adds to it all.

If you enjoy socializing with fine people and like to race model boats, the CR 914 Nationals at Larchmont is an event you do not want to miss.

*Chuck Winder*

## BUMPERS ARE MANDATORY AT THE NATIONALS

### BOW BUMPER STATUS

The reasoning of what appears to be the majority of active racers is: *If damaging collisions are an inevitable part of racing model sailboats in strong winds, then let's use bow bumpers to prevent that damage.*

### THE PLAN

It is proposed to make bow bumpers mandatory using the design *concept* shown on page 10 of the March-April 1999 CR 914 NEWS. That concept uses the dark gray foam pipe insulation available at hardware and building supply stores.

The original design has been improved and simple production tooling has been completed. The tooling assures that all bumpers will be close to identical. The tooling also speeds the production rate.

(The Marblehead MYC CR 914 fleet has made this new design mandatory.)

The pipe insulation is polyethylene. It appears to be open-cell foam and may absorb water. Since all boats will use the same bumper, that is not an issue. (After being submerged in water for an hour, a bumper weighs less than 0.03 ounce.)

The bumper can be painted with latex paint though we have not done that as yet.

A virtue of open cell foam is that its damage protection capacity is superior to solid rubber or closed cell foams.

### Background

Read "Bow Bumpers" in the March-April, 1999, issue of the NEWS. Larchmont MYC pioneered mandatory bow bumpers at their 1999 Spring Regatta.

### Mandatory at the Nationals

The plan is to have enough bumpers to satisfy demand at the 1999 Nationals. They will have double-sided adhesive tape on the mounting surface. Simply

remove the protective paper and carefully apply the bumper to the bow. They are easily removed without use of solvents.

### The Original Plan

The original objective was to produce an aesthetically pleasing *molded* bow bumper of synthetic rubber that would offer excellent crash protection. Every boat would have had identical bumpers. Any effect on boat speed would be the same for everyone.

That goal was unobtainable because of cost and cosmetics.

A model of the bumper was produced to show casting and mold companies what was wanted. They recommended a ~20 cavity "pour" mold approach. Catalyzed liquid elastomer would be poured into each cavity of the mold. The free-surface of the liquid would form the top of the bumper in a plane parallel with the deck.

However, we discovered that as the elastomer cures in a pour-mold, shrinkage produces a top surface that would not be attractive.

### Cost was Prohibitive

Even if that problem could be overcome, the quote for the mold was \$5000 and each bumper poured would cost ~\$5. Even if 500 bumpers were sold (probably an optimistically high number), the mold cost is \$10 per bumper. Adding the pour cost gives a \$15 per bumper cost before shipping, handling, profit etc.

### Conclusion

A molded bumper is too expensive. If: 1) an "angel" paid for the molds, and 2) the problem with cosmetics of the top could be solved; then a molded rubber bumper would be attractive.

The foam rubber bumper discussed at the beginning of the article will be the Class bow bumper.

# RACING RULES OF SAILING

## Introduction

For sailboat racing to be fair and fun, the Racing Rules of Sailing must be well understood and applied by all participants. The rules have been developed over many years from on-the-water experience of thousands of racers.

The rules we use for model racing are the same as the ISAF rules for full scale boats with small modifications defined by Appendix E for radio-controlled boats.

This **new feature** of the NEWS will present common racing situations that seem to cause the most problems.  
Editor

## ERRATA:

Mary Savage, US Sailing Rules Judge, Larchmont YC, our mentor on the Rules, wrote to me about the discussion of Rule 18.3 on page 5 of the May-June 1999 NEWS. **Delete the sentence below from the discussion :**

(While **P** is tacking she must stay clear of **S**; Rule 15 applies first and then 13.)

Mary also correctly advised me to identify the author for any discussions on Rules. Your editor, Chuck Winder, is the author except for those passages with quotes.

Thank you again Mary

## Region 3 Regatta

### Virginia Model YC

The regatta at Norfolk YC, VA that was planned for September 11, 1999, has been postponed. For more info contact John Atwood at:

(757)596-9701, or  
atwoodj@tea-emh1.army.mil

## TWO REASONS TO KNOW THE RULES

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

Which is the more important reason?

The excerpts below and on page 5 are from Dave Perry's excellent book. They provide brief but comprehensive explanations of the Rules. Brad Dellenbaugh's illustrations on page 5 show most of the racing situations and refers you to the Rule that applies. This is an excellent place to start your education about the Racing Rules of Sailing.

## A QUICK OVERVIEW OF THE MAJOR GAME CHANGES UNDER THE 1997-2000 RACING RULES

by Dave Perry

Illustrations by

**NOTE:** These brief summaries are not intended to be actual representations of the rules.

[Words in bold italics are RC model rules, Ed.]

•A boat that completes a tack less than **four** lengths from the windward mark must do it in a place that allows other boats to pass the mark with no interference, and without ever having to sail above close-hauled to avoid hitting the boat that tacked. (Rule 18.3)

•There is no more "Mast Abeam". Before the starting signal, L (leeward boat) can always sail up to head to wind, even when overlapped with W (windward) by only a couple of feet. After the starting signal, L can also sail up to head to wind regardless of Ws position, unless L established the leeward overlap from clear astern; in that case L can't sail above her proper course during the overlap (as in the previous rules). (Rule 17.1)

•L can no longer luff as fast as she pleases. Now when L luffs, she must give W "room" (space and time) to keep clear of her. W still needs to act promptly so L will still be able to luff fairly quickly. This requirement is exactly the same both before and after the starting signal. (Rule 16)

•Whenever a r-o-w (right-of-way) boat

changes course near another boat, she must simply give her "room to keep clear." Therefore, when P (port tack boat) is passing near S (starboard tack boat) (upwind or down), S can change her course toward P as long as P can take evasive action that is safe and not too extreme. (Rule 16)

•Now, when a boat is involved in contact that causes any damage at all, and she could have reasonably avoided it, she can be penalized. Also boats (including right-of-way boats) can do a "720" to absolve themselves when they break this rule. Give-way boats (P and W) can now seek redress if they are physically damaged by a r-o-w boat in a way that significantly worsens their finishing place. (Rule 14 and 62.1(b))

•At marks, whenever any inside right-of-way boat's proper course is to gybe around the mark, she has to do so, even when she's not otherwise limited to sailing her proper course. Also, at windward marks, a boat astern can now sail above close-hauled to make it more difficult for a boat ahead to tack around the mark. (Rule 18.2 and 18.4)

Reprinted with permission of Dave Perry and US SAILING. Dave Perry's book "Understanding the Racing Rules of Sailing 1997-2000" is available through US SAILING, 1-800-USSAIL-1.



# RELIABILITY and SALTWATER

## EXTERNAL BOAT SWITCHES

*Electronics failure in the boat is the most common reliability problem in model boats. The predominant cause is water, especially saltwater. To improve reliability, exclude water from the boat. A route to this goal is to seal the main hatch and have an external switch so the hatch seal need not be disturbed until racing is finished for the day.*

Editor

### Magnetic Switch

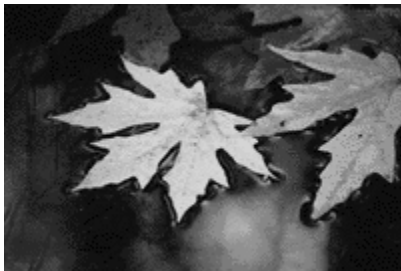
Steve Lang writes from Colorado:  
Chuck –

I installed a magnetic switch on my boat. I bought it at Radio Shack, Cat #49-533. Made for a security switch on windows. You had written up this idea earlier. The reason it is important to me is that I have a contrary hatch and I hate to open it once I have it sealed for a day of sailing. So I wired in this switch. When I remove the magnet from the deck (dot of Velcro), then the switch closes and gives me power below. I have the magnet part on a wrist loop of Day-Go orange ribbon so I can't forget it or lose it.

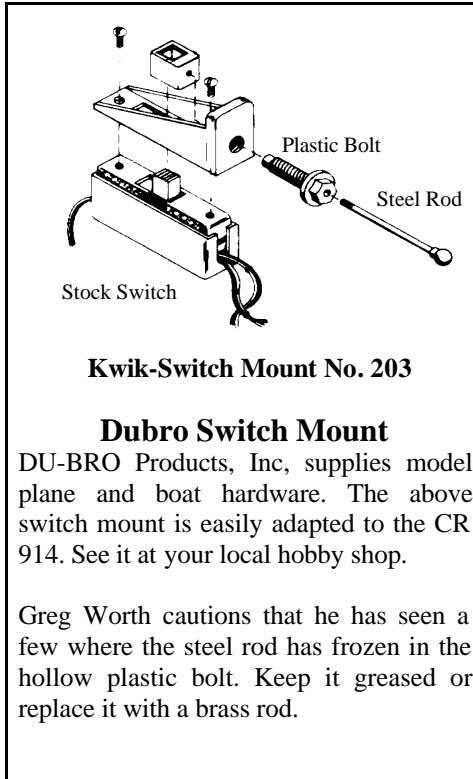
Steve

*Steve's switch is mounted on the underside of the deck where it is well clear of water in the boat bilges. It would still be a good idea to waterproof the switch. A coating of Vaseline is one way.*

Editor



Where did Summer go?



**Kwik-Switch Mount No. 203**  
**Dubro Switch Mount**  
DU-BRO Products, Inc, supplies model plane and boat hardware. The above switch mount is easily adapted to the CR 914. See it at your local hobby shop.

Greg Worth cautions that he has seen a few where the steel rod has frozen in the hollow plastic bolt. Keep it greased or replace it with a brass rod.

*(Continued from page 1)*  
owners are listed on page 6.

**STILL LOOKING FOR GOOD PHOTOS.** (Does this sound familiar?) If you have good action shots of 914's, send them to me. I would like to see boats in strong winds submerging, pitching, planing with big bow waves, etc. Use e-mail or US Mail. Also send photos showing your venue, club house, lots of boats at the start, etc. And don't forget your people. Or good photos of innovations you have used to improve your boats. Even photos of damaged boats would be interesting or even humorous. Help me make the NEWS as good as it can be.

Good sailing,

The Editor

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**The face of a child can say it all, especially the mouth part of the face.**

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## NEW MEMBERS

First Name	Last Name	City	State	Sail Number
Robert	Adams	Langhorn	PA	452
Jay	Connolly	Marblehead	MA	484
Rod	Crawford	Carefree	AZ	525
John	Dodson	Shorewood	MN	292
Walt	Douglas	Humble	TX	479
Walt	Douglas	Humble	TX	490
Walter D.	Harris	Old Saybrook	CT	607
Lindsay	Johnson	Chestertown,	MD	301
Tony	Johnson	Excelsior	MN	552
Ben	Martin, Jr.	Marblehead	MA	654
Robert	Mathews	Chestertown,	MD	446
Thayer	McDougal	Evergreen	CO	713
Jim	Owens	Bellevue	WA	302
Joost	Reidel	Evergreen	CO	345
Richard E.	Roose	Lakewood	CO	306
Paul	Schlossbach	Pt. Pleasant Boro	NJ	700
Gary	Williams	Rome	NY	293

# BATTERY MANAGEMENT by Chuck Winder

## BATTERY STRATEGY WITH THE NEWER RADIOS

Frank Pitts, #810 from Reston, VA, wrote to ask about battery management. He had read an early NEWS article which recommended changing boat batteries when the Tx (transmitter) batteries were changed. The objective was to change boat batteries before the boat was disabled by low batteries.

### Things have changed

That won't work with the newer radios.

In the beginning the *hitec* Ranger II was the radio in the kit. Using fresh **alkaline** batteries the Tx battery warning light came on at about 6h 45m. The boat batteries were depleted at about 9 hours, *depending on average wind strength*.

So the advice was good at the time.

**However**, the kit now has the Ranger IIz, a new more efficient radio system. (Many recent kits used the Futaba Attack-SR system.) Fresh alkalines will last more than 12 hours in the new Tx! But the boat

### Estimated Battery Life-Alkaline AA Cells

	<b>Tx</b>	<b>Boat</b>
Ranger II	6h-45m	~9h
Ranger IIz	>12h	~9h
F. Attack SR	>12h	~9h

batteries will still last only ~9 hours. That early advice doesn't work with the new radios.

### A New Strategy is Required for the Newer Radios

There are different ways to decide when to change batteries in the boat:

- 1. Sail it until it can't be controlled** and then rescue it. There are obvious problems with this approach. On a small pond it's a small problem. On a large lake or the ocean with a brisk offshore wind, it could be a little more of a

challenge.

- 2. Keep track of the hours** the boat has been sailed and change batteries based on your past experience. This requires some personal discipline that some of us don't have enough of. I don't.
- 3. Learn to judge the speed of the sail servo.** When batteries are fresh, move the Tx sail control stick back and forth with full travel. Observe the speed the sail servo trims the sails. When that speed becomes noticeably slower, change batteries.

Battery voltage declines as the battery is used and that causes the motor driven servo to slow. Fortunately, the radio designers arranged for the Rx to operate at quite low voltage. When using alkalines, there is comfortable warning because their voltage declines relatively slowly as they become depleted.

**Rechargeable batteries are not as forgiving.** When they are close to being depleted, the voltage drops rapidly with time. So the "window-of-opportunity" to detect a slow servo is much shorter between when the servo becomes slow and the boat is out-of-control.

### THE BEST SOLUTION

Use rechargeable NiMH (Nickel Metal Hydride) batteries and a simple \$20 charger. The NiMH cells will last about 6 hours in the boat, longer than you are likely to sail at one time. Put them on charge when you return and they will be ready, fully charged, for the next time.

See page 9 of the March-April 1999 NEWS for battery sources. BatteriesPlus®, 800 677 8278, offers four batteries and a charger for \$25.

January-February 1999 NEWS, page 9, shows a simple system for both boat and Tx batteries.

## BATTERY LIFE IN THE BOAT

Experience tells us boat battery life (using fresh alkaline AA cells) will be ~9 hrs. In extremely light winds the the life will be longer. Life will be shorter in strong winds.

Actually, with no commands from the Tx, the boat batteries would last more than 25 hours! But the minute the Tx sticks are moved, the power consumption jumps because the servos motors are drawing more energy from the battery.

If the boat were sailed in winds so strong that the sail winch operated close to stall the whole time, battery life would be little more than one hour!

Also, if the sail servo arm is incorrectly installed so it hits the keel pipe, boat battery life will be drastically reduced.

### How to Install the Servo Arm

1. Remove the sail servo arm from the winch.
2. Turn on the Tx and boat.
3. On the Tx, move both the sail control stick and the trim lever all the way down until they stop. (The trim lever is the smaller lever located left of the larger control stick.)
4. Reinstall the sail servo arm so that its forward end is as close as possible to the keel pipe. Tighten the screw that fastens the arm to the servo.

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**Tell a man that there are 400 billion stars and he'll believe you. Tell him a bench has wet paint and he has to touch it.**

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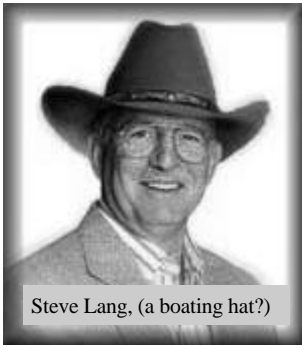
## FLEET NEWS

### Thin Air MYC

Steve Lang is the force driving this fast growing fleet in the mountains of Colorado. The name derives from their racing venue at an elevation of 7200 feet in Evergreen, CO. The air density is only 79% of the density at sea level. The force of a 15 knot wind is equivalent to less than 12 knots at sea level. (Evergreen is about 20 miles West of Denver.) Visit: <http://heartbeat-of-evergreen.com/yachtclub>

The club was conceived in April 1999 and is already up to 14 boats through the promotional skills of Steve who writes: "Sailing at 7200 feet in the Rocky Mountains is really a spectacular experience everyone should enjoy. Mountain peaks to 10,000 feet are all around, draped with the fantastic pines from which our community gets its name Evergreen."

In order to promote the Class, Steve has started a website at: <http://builtbyu.com/914>. It is an excellent site and I recommend a visit. Steve plans to expand the 914 pages to



Steve Lang, (a boating hat?)

include information and advice to benefit existing and prospective owners. It can become a valuable resource for us all.

Steve and possibly one other TAMYC member plan to attend the nationals in October.

The TAMYC venue has unique challenges: fishermen and recreational boaters. Steve posted "No Fishing" signs along the 180 feet of shore used by the sailing members. It worked! But they are still plagued with "lookyloos" in their kayaks, canoes, pedal boats, etc., that can't quite grasp the significance of being right in the middle of the weather leg.

Steve Lang and TAMYC are great assets to the Class.

*Editor*



### Stalwart Members of the Thin Air MYC

*From the right: Don DeLaria, Al Hermann, Doug Backstrom, Dick Roose and Steve Lang*

### Marblehead MYC

The active summer season at Redd's Pond in Marblehead, MA, included two Sunday series of six races each. The Red Robin Series (April to June) was won by Jose Venegas with Biff Martin a close second.

The Osprey Series (June through August) was won by Sasha Kavs with Biff Martin one point behind. Chuck Winder was third in both series.

Attendance averaged nine boats at each of the two Sunday series though a total of about 15 boats participated.

Three Thursday Night Series have been completed, six races each. The winners, in order, were Biff Martin, Jose Venegas and Biff Martin, again. Biff is clearly the most improved skipper this season. Attendance at the Thursday races ranged from 6 to 10.

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Give a man a fish and he will eat for a day. Teach him how to fish, and he will sit in a boat and drink beer all day.

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### CBMRA

Earnest Freeland is the new Commodore of the Annapolis based Chesapeake Bay Model Racing Association.. Tagg Zurmuhlen was the first Commodore during whose reign the membership grew to over 60!

CBMRA is similar to Larchmont MYC in that the summer season is slower because the owners mostly participate in full-scale boating. When those boats are laid up the frostbite season heats up.

### CAMRA?

Tagg Zurmuhlen has plans for a new region 3 CR 914 fleet in Washington DC called the "Capitol Area Model Racing Association" (CAMRA). They have the three AMYA members needed to apply for club sanction and expect to be operating in early 2000.

The Reflecting Pool will be the main venue. The Cherry Blossom Regatta will be the annual invitational regatta.



# THE BOATYARD

## SERVO "GROWL"

Steve Lang, Thin Air Model YC, Evergreen, CO, asked about servo "growl". The noise caused concern among the new owners at this new club.

### Discussion

In most cases there is no cause for concern when a servo makes a noise.

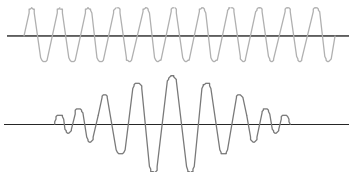
Any servo may "growl" or "buzz" when it is at stall load or close to it. A servo is stalled when it has a load that is so large that it can't move the servo arm to the position being commanded by the Tx. In strong winds the sheet loads can pull out the sheet, actually reversing the servo arm. It certainly buzzes when that happens but you will never hear it.

Experiment by using the Tx to set the arm in a mid-point position with no load. Grab the common sheet and pull until you back-up the servo arm. Or just use a finger to back-up the servo arm. It will growl or buzz.

For some reason when a rudder servo is overloaded it doesn't make much noise

There is no real danger in most cases. The battery drain is high when a servo is stalled. For instance, the stalled sail servo draws more than one amp (1000 mA). Drum type servos used by other classes of model boats have overheated and failed when operated at stall for too long. I have never heard of an arm type servo failing from that.

Occasionally an owner will set up the sail servo arm so it contacts the brass keel pipe when sheeted in. That stalls the servo and if continued for a long time might do damage to the servo.



## "GLITCHING"

Glitching (said to be a term first used by John Glenn in 1962) describes any uncommanded activity of boat servos. This can range from fast, small amplitude vibrations of the servo arms to large excursions.

In most cases it is caused by radio interference. We have observed glitching from:

- Standing the wrong distance from a chain link fence,
- Standing the wrong distance from other Tx(s),
- Having a couple people walk behind the Tx.
- Transmitter too close to the boat,
- No identifiable reason.

Try raising the antenna to vertical and move the transmitter to a different location. A couple feet can make a difference.

### Servo "Glitching" from dirt in the "Pot"

Dirt in the servo potentiometer (pot) can cause glitching. The dirt can cause the servo to not respond to Tx commands.

Replace the servo or disassemble it to clean the pot. It is a trade-off between servo cost and the time to clean the pot.

### Cleaning the pot

Remove four screws holding the servo case together. By removing only the bottom case, the gears in the top don't have to be disturbed. If you do remove the top case, remember how the gears are to be reinstalled.

The pot is usually at the bottom end of the output shaft for the servo arm.

Carefully remove the pot cover by bending back the metal "ears". Look for dirt in the track of the wiper arm on the pot. (Manually move the servo arm to see how the pot works.) A jewelers loupe, or magnification of some kind, will be useful. Carefully remove the dirt and test to see if the problem is fixed. Reassemble.

## JIB TOPPING LIFT

In light winds the self-tacking jib pulls the leach straight, closing the slot with the mainsail. That is slow. The causes are:

- The jib boom tack attaches to the boom aft of where the headstay attaches. This pulls down the aft end of the boom.
- The weight of the boom also pulls down on the leach.

A jib boom topping lift to hold up the aft end of the boom takes tension off the leach.

### But nothing is ever simple!

Steve Lang, Evergreen, CO, wrote because all three local boats that tried jib topping lifts had to remove them. They had the standard problem. In fresh winds the lift gets caught behind the end of a spreader. The jib can't be tacked. That takes a boat out of the race.

Buttons Padin and I responded to Steve's query.

### ONE METHOD

Use two pieces of thread as "preventers" to limit the amount the topping lift can move aft. The threads are attached to the jib leach *at the same height* as the upper and lower spreaders. Tie and CA the ends to the topping lift. Set the length so the lift can not get behind the spreader ends.

This is minimum weight and low windage. Also, the thin, light thread will not distort the leach of the jib.

### POTENTIAL PROBLEM AREAS

**1. Mast Twist** - One requisite is that the mast must not twist. If the mast twists, the spreader ends move closer to the jib leach. If you have made the thread preventers as long as possible with the mast square, the lift will catch on the spreader.

A screw through the mast step into the mast prevents the mast from twisting. Or fashion a key on the mast and a keyway in

(Continued on page 10)

(Continued from page 9)

the mast step.

**2. Removable Lift?** – Fouling the preventers on the spreaders is more likely when the winds are strong when a lift may not be required. It is a good idea to design the lift so it is easily removed and reinstalled.

As describe above, it is difficult to remove and replace because the preventers are CA'd to the lift. Consider using loops of the thread from the leach around the lift. The lift can be slipped out of the loops.

Another way would be to devise a mini-connector to attach the two preventers to the jib leach. The lift and keepers could then be removed as a unit.

### 3. Preventer Attachment

Using a dot of white vinyl electrical tape to attach the preventers to the leach is simple but usually comes off in a strong wind. A better way might be to install reinforced holes in the jib leach such as in the luff of the main.

Buttons used a piece of tubing left over from jib luff construction and a small strip of "ripstop" tape to keep the lift within 1/2" of the leach.. It was located at the level of the top spreader. He didn't consider fouling the lower spreader a problem.

**4. Lift Attachment** - Some owners attach the upper end of the lift to the hole in the head of the jib. Others connect to the jumper strut mount at the mast. The latter may interfere with freedom of the jib boom to go out on a reach and go wing-and-wing on a run.

**5. Bowsie Location** - Buttons likes it near the boom. Some put it near the top. A bowsie at the bottom might be more likely to loosen as the jib is flogs in strong winds. But there is no data.

### 6. Reliability

The important ingredient is reliability. Most owners have problems with the lift. Witness three-out-of-three at Evergreen. So think out the details carefully. Even then there may be a period of design development before it works perfectly.

## RUDDER SENSITIVITY

*John Atwood wrote to ask if there were any class restrictions on rudder servo arms, etc. His interest was in changes to increase the maximum rudder angle. John is a founding member of the Virginia MYC based at the Norfolk YC, Norfolk, VA.*

### RUDDER DEFLECTION ANGLE

There is no restriction on servo or rudder arms in the rules. The newly rewritten assembly instructions locate both ball joints in the outer hole, about 5/8 inch from the center, on both the servo and rudder arm. This gives ~36 degrees of rudder deflection each way. This setting gives the boat a remarkably small turn radius. I suspect most boats are set-up this way. My boat has those settings and it works for me.

I doubt that a higher rudder angle would be useful. However, everyone can experiment to see what works for him.

Howie McMichaels, Larchmont MYC, reduces maximum rudder deflection when the winds are strong and boat speed is high. He feels it gives him smoother control. I don't do that but it sounds like a good idea. Oversteering because of high boat speed is common in strong winds.

I don't know how Howie does it, but there is an adjustable servo arm design that comes standard with some servos. By simply loosening a screw one can quickly change the length of the arm.

### RUDDER AS A BRAKE

If a rudder could be turned more than 90 degrees, it could be used as a brake. There are situations where that might be useful. But servo arms won't do it. To achieve that the servo and rudder arms could be replaced with drums (a larger one on the servo) connected by tensioned string.

However, my interpretation of the second paragraph of the class rules forbids it. In the past, speed brakes on full-scale sail boats have often been prohibited.

Chuck Winder

## PANEL GROMMETS REDUCE BOAT SPEED

When a panel grommet (Sept-Oct. 1998 CR 914 NEWS, page 10) is used on the jib boom to adjust the jib clew, it probably reduces light air downwind performance. The weight of the grommet makes it more difficult for the jib to go into a wing-n-wing position.

Rig geometry and gravity cause the jib boom to return to the boat centerline when the boat is level. The CG (center-of-gravity) of the boom is well aft of its pivot point. The jib pivots around a line from the deck tack fitting to the jumper strut at the mast. The slope of that pivot line creates a pendulum. The jib boom is the weight on the pendulum and wants to be at rest at the lowest position it can find. That position is at the boat centerline when the boat is not heeling. Test it out inside out of the wind.

A grommet adds weight at the aft end of the boom, and the center-of-gravity is moved further aft. Thus higher wind strength is required to lift the boom out to wing-n-wing.

On a light air run, not being wing-n-wing is slow.

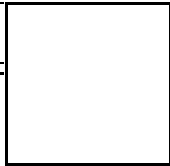
*The astute reader will conclude that a lighter boom (carbon fiber) and a weight in the forward end of the boom will be a performance advantage. Neither is permitted by the class rules.*

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**During the Middle Ages, probably one of the biggest mistakes was not putting on your armor because you were "just going down to the corner."**

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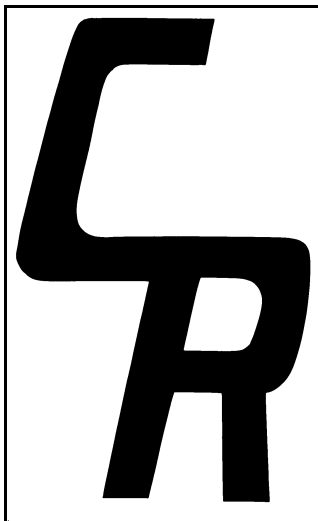
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**WORTH MARINE  
BOAT SHOW SCHEDULE**

Newport Boat Show      Sept. 15-19  
Annapolis Boat Show    Oct. 8-11



**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