



Radio Problems Diagnosis and trouble shooting

BECAUSE MOST OF THE SUBSCRIBERS to the *NEWS* have already built their boats, the first few subjects I will be covering in this column will involve maintenance and tuning. One of the problems we have in the 914 is the simple fact that water and electronics don't mix well. Combining them can lead to a number of problems, the symptoms of which range from glitching or twitching to complete failure of the servos and/or receiver (Rx).

Substitution strategy

Trouble shooting involves isolating the component that is causing a problem. You will need to borrow the radio system of another 914 that is problem-free. Because we know that this second system works properly, when we substitute one of its components for one in the malfunctioning system and find that cures the problem, we know that we have identified the culprit. And when a substitution doesn't result in a cure we know we need to keep looking for another malfunctioning component.

Twitching servo

The following steps will identify the cause of twitching, and may produce a cure.

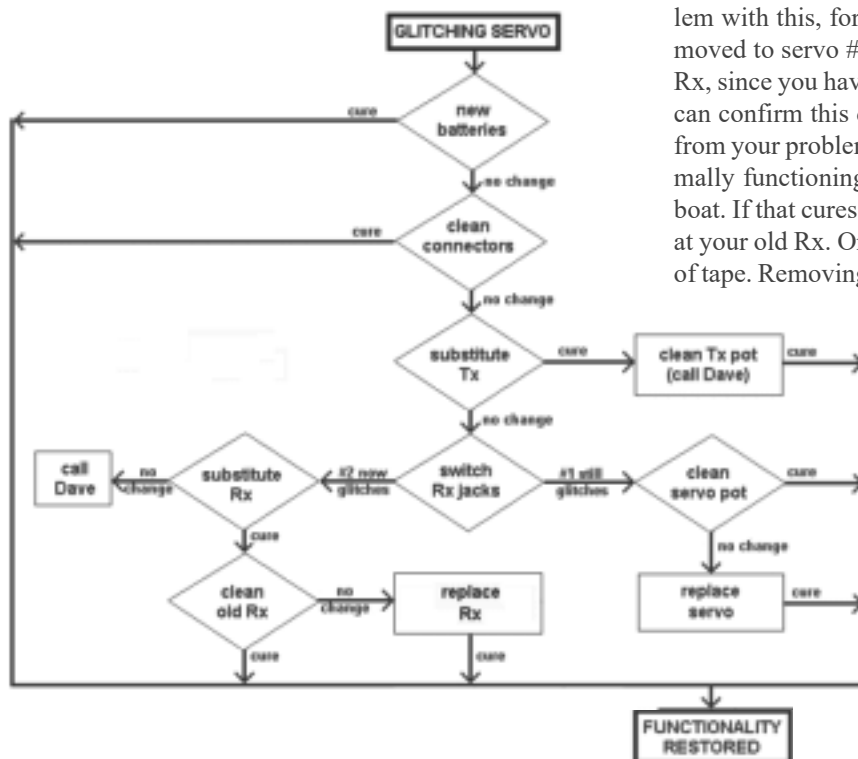
Step 1. Batteries and Connectors – The first thing to do is to try new or freshly charged batteries. When that doesn't help, check to make sure all of the servo plugs, battery and Rx connectors are as clean as possible. Clean the leads and connectors with an electronic contact cleaner you can get at Radio Shack or Boats US. Sometimes that's all it takes..

Step 2. Detecting a malfunctioning Tx – The next step in trouble shooting is to determine whether the fault lies in the boat electronics or the transmitter (Tx). First, remove the crystal from the Tx of your problem system and insert it into the borrowed Tx. If the problem goes away, then your old Tx is the cause of the twitching and you can jump to step 5 below.

Step 3. Detecting and treating a bad servo – If the twitching involves only one servo (e.g., #1), first remove the offending servo wire plug from socket #1 of the Rx and plug it into the other servo slot (#2). If the twitching is still apparent, the most likely cause is that the potentiometer (pot) in servo #1 has become dirty and needs to be cleaned, or the servo needs to be replaced. You will find a step-by-step procedure for cleaning the pot on my web site at www.rcyachts.com/Build/servorepair.htm.

Step 4. Detecting and treating a bad Rx – After switching the servo jacks, if problem servo #1 no longer twitches, insert servo #2 into slot #1 and see if you now have a problem with this, formerly OK, servo. If the problem has now moved to servo #2, the twitching is probably caused by the Rx, since you have already exonerated the Tx in Step 2. You can confirm this diagnosis by plugging the receiver crystal from your problem boat into the Rx from the borrowed, normally functioning, boat and installing this new Rx in your boat. If that cures your problem then you need to take a look at your old Rx. On the edge of the case you will see a length of tape. Removing it will let you open the case and check for corrosion. A good cleaning with an electronic corrosion cleaner has resurrected a number of receivers that were otherwise unusable. If after a good cleaning the problem persists, it is time for a new Rx.

Step 5. Fixing the Tx – Tx joysticks use the same kind of pots as the servos, and with use they, too, can get dirty. To clean a Tx it is necessary to open the Tx case to get at the pots. Because this is a more involved process than we have room for here, you can contact me and I can walk you through the cleaning process.



Dead servo

In this case, you need to take the dead servo (e.g., #1) and plug it into the functioning servo socket (#2) in the Rx and see if it now will work. If not, take the functioning servo #2 and plug it into jack #1 to make sure the problem is in fact in the servo and not in the Rx. If servo #2 works in jack #1 and jack #2, then servo #1 is probably bad and needs to be replaced.

Dead system

In this example, the boat system is totally dead. No twitching, no movement, nothing. Take the battery from the second boat and plug it into the problem boat's system and see if you get power. If you do, your original battery is defective or its connector or battery box contacts are corroded. If the boat still will not power up, then your on/off switch or Rx is at fault. If you use a rechargeable battery pack its plug will fit into any of the three sockets on your Rx. If not, you will need to splice a Hitec/JR male connector to a BEC female connector (you can probably find these inexpensive parts at your local R/C hobby store). Unplug the on/off switch jack from the Rx and plug the rechargeable battery or your standard battery pack connected to the BEC-to-Hitec/JR cable, straight into the battery socket of the Rx. If you now get power, your on/off switch is probably defective and needs to be replaced. If the system still seems dead, remove one of the servo plugs from its socket and plug the battery directly into that servo socket on the Rx (the Rx does not care where power is coming from, so you can plug it into any of the three sockets). If the remaining attached servo now gets power it will operate normally when you plug in the power. If that is the case, the power jack on the Rx probably has some corrosion and needs to be cleaned. ■

Rescue at sea



photo credit: Nils van den Beemt

The crew of the Blue Crab Model Yacht Club's tug boat prepares to cast a tow line to Terry Patterson's CR 914 which had run aground during one of the club's races at the Germantown, Maryland Soccerplex pond.

Autumn, 2004

How do I join the CR 914 class?

And why should I subscribe to the newsletter?

Recently Sandy Purdon asked me to explain to the members of the San Diego Model Yacht Club "how to join the CR 914 class." I suspect that the questions that the San Diego sailors had are fairly common, so here for everyone to read is the answer I emailed to them.

Things don't work the same way as they do with the peopleboat classes and US SAILING. You, and your boat, "joined the class" when you originally paid your \$5 registration fee to obtain a sail number. And, the way the CR 914 class and most of the other RC classes are structured under the rules of AMYA, you don't pay class dues. Instead, you pay annual dues to AMYA (\$25/year, which provides you a subscription to its quarterly magazine called *Model Yachting* and a variety of other benefits including the right to enter AMYA-sanctioned CR 914 regattas like the Nationals).

Thus classes like ours cannot charge "class dues," and their class organizations have no direct source of income other than that one-time \$5 registration fee. That means that most of the classes can afford no other means of communicating with boat owners (i.e., the "members of the class") than AMYA's magazine and its website.

In the CR 914 class we have a class newsletter, and for many CR 914 owners subscribing to it has become more or less the same thing as paying class dues and being a "member of the class." Most (but, alas, not quite all) of the movers and shakers in the class are among the 300 or so subscribers at present. But subscribing is not required. Why, then, should you subscribe, and renew your subscription when it is about to expire every one and a half to three years?

I hope that the content will be of sufficient interest to keep you coming back for more, obviously. In addition, the fairly large circulation of the *NEWS* helps encourage the people who write the articles and provide the photographs that have made it so successful, to keep up their good work – although, obviously, none of us get reimbursed or paid for our efforts. And, finally, I think it is not unrealistic to feel that our newsletter, which wouldn't be published unless lots of CR 914 owners subscribed to it, also helps motivate the folks who volunteer to serve in the leadership of the class and the clubs that sail '914s and run our regattas as well. ■

The Editor

Deadlines for future issues of the *NEWS*

issue	submission deadline	publication date
Winter '05	December 15	January 2
Spring '05	March 15	April 1
Summer '05	June 15	July 1
Autumn '05	September 15	October 1

But submissions are **welcome any time**. There's no law that says you must wait until the deadline! ☺

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