A BAD DAY SAILING BEATS ALMOST ANYTHING ELSE WORTH DOING!

The Wisdom and Wit of Catalina 22 Sailor Dick King

In 1994, I was seriously bitten by the "sailing bug". A good friend took me sailing on her Neptune 14, and while we did not have the best sailing conditions (very light winds), I was hooked. Two weeks later we bought a 1977 Catalina swing keel. It was in decent shape and pretty much in original condition. I bought every decent sailing how-to book I could lay my hands on, crewed at the Catalina 22 Nationals on Lake Tahoe that year and spent nearly every summer and fall weekend on the boat on Folsom Lake.

By the time our second year of ownership rolled around, I was ready to start upgrading and repairing this sailboat that had become such an important part of my life. One invaluable resource helping me through my long list of projects was the old Catalina 22 list. The wealth of information was enormous, and I knew if I did not find the answers there, I probably would not find them anywhere. And, Dick King was one of my favorite "posters". Through nine years and four computers, I saved hundreds of posts from that old list.

By the time we sold **$lush Fun!** in March of last year, she was one of the best 22's around. In fact, Chip's adventures with Chip Ahoy remind me a lot of what we went through over the ten years we owned her. Our current boat is (what else) a 1989 Catalina 25 Wing Keel. While I love "Wing'n It", there will always be a warm spot in my sailing soul for my old Catalina 22.

I was very saddened when I learned of Dick's untimely death in late August. Although I never met the man, he taught me a great deal about sailing and life in general. I decided I wanted to do something that would help preserve some of the knowledge he so freely shared with all of us. I sorted through my hundreds of emails, pulled the ones authored by Dick and organized them into this handout. In it, you will find a little of what made Dick the great person he was. He always took the time to answer everyone's questions. He wasn't too proud to apologize if he felt he was wrong and he could always laugh at himself when he did some thing not-too-smart.

Dick will be sorely missed but he will not be forgotten. Feel free to pass this along to any of your friends. A lot of the information applies to all sailing, not just the Catalina 22.

Respectfully,
Dee in Sacramento

FYI, all text in italic*s* represents questions or comments from other members of the list. Dick's responses are in regular type.

SECTION 1: BOAT MAINTENANCE & TRAILERING ISSUES

Getting the Boat off the Trailer onto Boat Stands — November 5, 1999

The previous owner of my boat used 3 2x6s bolted together to form a beam that was supported by two 55-gallon drums. The drums were placed outside the trailer and the boat and trailer were jacked up until the beam could be inserted over the drums and under the boat. The rig was lowered until the boat rested on the beam and the then trailer was pulled out from under the boat. (By the way, the rear support was another set placed under the transom. Wedges were used to keep the boat from rolling from side to side.

Alternative to Climbing the Mast — April 14, 1998

I have read all the replies about climbing the mast and I would like to offer an easy alternative. Wrap one of your halyards around the mast a few times as close to the top of the mast as possible. That means throwing the end of it across each spreader a few times. Gather a few friends and get next to a dock that has some real estate next it. Hold the boat away from the dock and have your friends pull the halyard abeam. With surprising ease the boat will roll over and you can repair, retrieve, fix the masthead fly, or whatever you were going up the mast to do in the first place. If you can't round up a lot of friends, anchor the boat parallel to a beach with a lamppost, tree or other solid object. Tie one end of your mainsheet block and tackle to the tree and the other to the halyard. I could easily careen my previous boat "Elixir" to clean the bottom all the way down to the keel. She actually floated on her side; with the mast head about six feet above the beach. The keel kept her from being dragged up on the beach.

To answer your questions:

1) If I tie the boat off parallel to a dock, wrap the halyard up high, step ashore and pull real hard, with friends, can I get the mast low enough to change an anchor light bulb or install a windex?
Yes

2) Why wrap the halyard? It seems like you'd have a better angle just pulling from the top of the mast.
Wrap the halyard to keep from pulling side load on a masthead sheave. You could damage the plastic sheave or jam the halyard between it and the masthead

3) With a swing keel, I presume you want the keel all the way down before trying to pull the boat over?
Wrong. Make sure the keel is all the way up. You want to reduce the righting moment to a minimum. You are trying to capsize the boat.

4) Have you ever had a problem with the boat taking on water as the mast was pulled down?
No, but Elixir did not have a pop-top and Jagged Edge's has been permanently locked down and sealed. If you have a pop-top, make sure it is sealed tight or make sure the water does not go above the edge of the upper deck.

Trailering with an Outboard Motor **May 7, 1997**

I have to carry my Evinrude 6hp outboard when I trailer my C22. I have been putting in my vehicle or in the boat, but not on my motor mount. What is the best way to carry an outboard when trailering?

I always carried my six on the cabin sole with the power head forward and a boat cushion wedged between the motor and the starboard settee. Rode many a mile that way- until some very bad person stole it off the transom while stored in the yacht club parking area. Those fancy locks that slide over the clamp handles and lock in place are not worth having. Now I stow the OB whenever I am not using it.

You didn't mention the age of your motor, but the new ones with the big foot weigh about 15 lbs more than the old model. DO NOT trailer the boat with the motor on the motor mount.

"Active" Discussion Between Dick and Murf **May 10, 1997**

The following exchange between Murf Murphy and me was initiated by a "heat of the moment" comment made by me concerning whether or not to trailer with the O/B motor stowed on the motor mount. I apologized for my hair trigger response and asked permission to post our exchange for the rest of the list to consider.

At 08:55 AM 5/6/97 Murf wrote:
Although there are probably plenty of folks who'd disagree, I don't think there is that much peril in trailering with the outboard in place.

At 11:32 PM 5/6/97 I responded:
Please count me as one who vigorously disagrees with you. I hope I am not driving along behind when you hit a speed bump and the OB bounds off the boat into the path of my car. Your recommendation is irresponsible----However, if I had to horse that Honda 10 on and off the mount, I might be persuaded to do the same irresponsible thing.

At 10:56 PM 5/7/97 Murf replied:
I'm sorry if you think my recommendation was irresponsible. Maybe it was, or maybe it's a matter of perception and safe practice. Would it be unsafe to have a 40Lb outboard on a secure transom mount? If not, what about 60, 70 or 80 pounds? Where does one draw the line between responsible or borderline irresponsible decisions in this area? I really don't know the answer, but base my towing experience on the following:

1. Towing a 3,000 to 6,000 sailboat/trailer package is serious business. Checking out everything one can before hitting the road is mandatory! One certainly has to think about the perils to others from anything (and certainly an outboard) flying back into their path. That includes loose gear like lifejackets as well as booms strapped to the trailer, fenders or any other loose gear.

2. I've always towed boats with an adequate (usually overkill) tow vehicle. For the past 10 years, I've always pulled with a 155" wheelbase Super Cab Ford Truck. The oscillations when hitting a bump are very small on the trailer when the tow vehicle is nearly as long as the boat.

3. I don't know about the dynamics of loads created when going down the highway - as far as a "bouncing" outboard is concerned. But, I've always felt that the design of the outboard (tilt lock) and the mount took most of this into consideration. I don't even know why kind of loads may be generated on the mount/outboard in rough sea conditions. Again, I (maybe foolishly) assume that I am not making a major compromise in safety.

I think that, as is true in many sailing situations, the judgment factor must reign supreme!

If you think it is unsafe to trailer with an outboard on the transom – you should trust your judgment and make whatever decisions seem prudent. If my judgment says that, with proper precautions, it is not unsafe - I should act accordingly.

I don't think that either of us is completely right or wrong - there is problems with carrying an outboard on its mount - and other perils in placing it on jury-rigged trailer mount of carrying it in the cockpit, tow vehicle, etc.

I appreciate your comments - They have made me consider whether my practice is safe. I'll try to do the responsible thing. But, as you noted, hanging an outboard after a trailer trip has its own set of complications.

My father, rest his soul, always said: Marriages and horse races - they're both based on differences of opinion.

At 07:43 PM 5/8/97 I apologized:
The bad thing about E-Mail is its' immediacy. My term "irresponsible" was a trigger response and too drastic. For that I apologize. The vision in my head as I was writing, was a Catalina 22 ahead of me in Sanford, Fl. Just before a big regatta a few years back. As the boat passed over the railroad crossing, it bounced so hard, that the motor flipped down hard and the whole assembly banged hard from side to side as well. Probably an under-maintained mount, but it scared the H--- out of me.

The message I wrote did however, achieve the desired result; thoughtful replies from you, the person to who it was directed, and a dialog on how to best carry the OB. Lots of food for thought. Variety of opinion is the lifeblood of this list.

With your permission, I would like to post your reply to the rest of the thoughtful owners on this list. Let me know.

At 10:57 PM 5/8/97 Murf graciously accepted:
Sure, Dick - Go ahead and post it! I didn't take the least bit of offense at your initial comments; By nature, sailors must be more methodical and safety conscious than most folks in other activities. We just had a different view on the degree of safety involved. In the final analysis, none of us know exactly what to do in a given situation - that's why this method of sharing ideas is so powerful and helpful.

SECTION 2: KEEL ISSUES

Regarding cable hum noise:
First the cable should be loosened not tightened. Think of it as a guitar string. The tighter it is the higher the pitch, and the looser is it the lower the pitch. If the string is slack it will not make a sound. Neither will the keel cable.

Regarding the keel winch handle.
Adding a washer to the handle screw could interfere with the operation of the winch. The action of the winch is controlled by the tension on the threaded axle of the winch drive system. As the handle is turned clockwise, it screws onto the axle and pulls tension on the clutch assembly and drives the drum clockwise to wind up the cable.

Turning the handle counterclockwise unscrews the handle from the axle to the point where the clutch assembly is allowed to slip and the drum begins to unwind the cable. The action screws the axle into the handle tightening the clutch assembly, which brakes the drum again. Continuous turning of the handle in a CCW direction repeats the process and allows the keel to drop in sync with the handle movement.

Please don't mess with the design of the winch by adding rubber washers where they don't belong.

On spending many hours fairing the keel:
I would rather spend my time learning to sail more tactically, or just plain sailing, than making a shapelier keel. A couple of blown tacks will certainly negate any advantage the faired keel might provide.

On installing spacers at the top of the keel and large washers at the keel pin to take up the extra space, preventing keel clunk:
The down side of the spacers on the sides of the head of the keel is that the walls of the trunk are neither vertical nor uniform in spacing from bottom to top. It is very easy to force the thickened keel up into a space that is not wide enough to accommodate it. I doubt that the trunk would split, but it is possible to put an undue load on the walls of the trunk. In addition, if the keel is not perfectly plumb, you will be putting an unbalanced load on one of the walls of the trunk. Delrin washers on the pivot pin do take up lateral space, but the outsides of the washers still punch against the hangers.

BTW, it is a good idea to replace those "tiny" bolts every other year or so. They are subject to galvanic corrosion. BE EXTREMELY CAREFUL REMOVING THEM. If you break off a head of the bolt, the repair job is a bear.

What is the 'easy' way to replace the keel cable with the boat on the trailer?
I just completed the job, and it was easy.

UNDER THE BOAT - I lowered the keel to the point where the keel end of the cable was about an inch or so below the hull. (You may have to raise the aft end of the boat from the trailer to do this.) I removed the cotter pin from the pin in the aircraft fork. (GET A NEW STAINLESS COTTER PIN)

INSIDE THE BOAT - I removed the panel in front of the keel winch. I removed the drum from the winch by removing the pivot bolt through the drum. I loosened the hose clamps holding the keel cable hose and pulled the hose off of the"volcano". I removed the turning ball pivot pin, pulled up the lower end of the keel cable and removed the turning ball from opening in the "volcano." Finally I unwound the old cable off of the winch drum.

The new cable was installed using the reverse of the sequence above. The two hardest parts of the whole procedure were 1) making sure to wind the new cable on the drum in the correct direction and 2) inserting the turning ball and installing the pivot pin. (making sure the cable went in the aft side of the turning ball slot.)

To those who are thinking about or do "lock" the keel down-

Think about it! The only way the keel is going to swing back into the hull is if the keel is higher than the hull. In other words the boat has capsized and rolled more than 90 degrees. That could happen if the boat fell off a big breaking wave.

The chances of that happening are by far outweighed by the chance of running aground or hitting a submerged object. Also, if you use the locking bolt a lot, it is more likely to leak.

Lock if you must. Mine is coated with Marine Tex and screwed in so that the end of the bolt is flush with the inside surface of the keel trunk.

On the ability of the keel lock to hold down the keel

Sorry folks, but you are misinformed. The "friction" is provided by the end of a piece of threaded rod bent 90 degrees on the inboard end, pushing against the side of the keel. The push is provided by turning the rod through a nut welded to a stainless strap buried in the port side of the keel trunk. If the keel is locked tightly, it is my opinion, that if the keel hits something, either the pin will bend, or the strap will flex and damage the keel trunk. I have been sailing Catalina 22s for almost 25 years and talked about this issue for that long. I have never HEARD of a 22 being damaged by a swinging keel. I have SEEN several boats with damaged keel trunks, several pins with bent tips, and have HEARD many complaints of leaks in the area of the keel-locking pin.

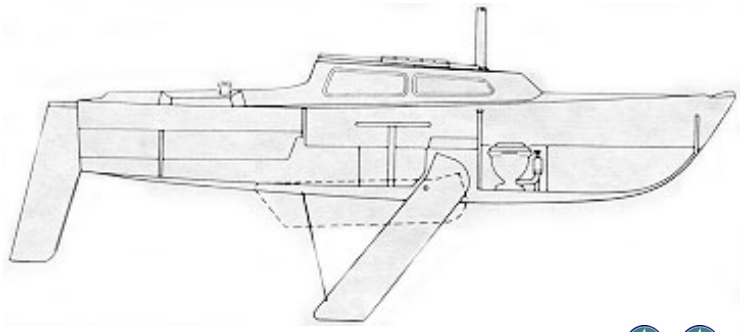
Enough said. Do your own thing.

On Swing Keel Klunk

I have attached a portion of a graphic that was displayed on the Catalina 22 Enthusiast Home Page. The klunk you heard was the head of the keel banging into the upper part of the keel trunk. The keel should always be lowered slowly to prevent the "loud klunk" If you have the right type of winch for the keel, the drum/handle connection is through a friction clutch. As you lower the keel, you are in fact unscrewing the handle from the body of the winch and allowing the clutch to begin to slip, which in turn screws the clutch parts back together and slows and stops the drum from turning. As you continue to lower the keel the process is continuous, so the keel goes down. If the drum axle is rusted, it won't turn smoothly and the process will be jerky as the clutch is loosened enough the weight of the keel to overcome the friction in the

drum axle. The keel drops, the drum spins, the clutch tightens and the keel stops again. Sorry for the long explanation, but that how the keel winch works. There are some gears and pawls involved but I won't get into that. Just stick you head into the quarter berth sometime and watch how the whole thing works.

As to the humming, your memory is a little hazy, I think. Actually, the cable will hum as long as it is supporting the weight of the keel. If you allow it to go all the way down, with the head against the back of the upper part of the keel trunk, the humming will stop. Some folks use the hum as a simple knot meter. The faster you go, the higher the pitch of the hum. Others say that a vibrating cable is added drag. **So is my excess weight.**



Eliminate Keel Lock? **January 11, 1998**

I decided to temporally eliminate the keel lock so I just glassed over the hole for now. Many have said not to do that because in very rough conditions the keel could "bounce" and cause damage or in the very unlikely event of a knockdown the keel could bang down into the hull making it very difficult to get the boat back up.

I have only had my boat out twice but managed to hit ground once already and the idea of that bolt passing through a section of the hull trying to stop a 2000lb+ boat is to me a little scary. I know there is a steel band that wraps around the trunk to support the bolt, but I think it is very likely that I will hit ground again and next time it might not be soft mud. Also consider the leverage involved here. The bolt is what, 14" away from the pivot and the keel is at least 3 feet. I understand the concerns of those who say it should be used, but ask them if they use theirs all the time.

You are right on with your comments about the pin NOT stopping the keel. The steel band however is only a small plate buried in the port side of the keel trunk and used only to provide a place to weld a nut in which to screw the pin. The keel is more like five feet from the pivot and its mass is not going to even slowed by the lock down pin.

For those of you who have a worn/corroded pivot pinhole in your keel, which allows the keel to rock from side to side, you are using a giant hammer against the end of the pin every time you heel over on a port tack. I have always and will continue to advocate coating the threads of the pin with marinetex and screwing in the pin just far enough to have the end of the pin flush with the inside wall of the keel trunk.

Removing the Keel **August 7, 1998**

I am planning on having my keel sandblasted and then refinishing it. Does the keel fall out once you remove the four bolts that you can see beside its pivot point?

Also, how do you "catch" a 550 lb. keel once you take out the bolts? Do you need a cart for rolling it out from under the boat, while the boat is in a lift?

A local yard removed the keel from Jagged Edge in the following manner:

First the boat was lifted off the trailer by a stationary lift (straps were put under her just forward and just aft of the trailer bunks). Then a Sunfish trailer, which had been modified with support to hold the keel upright was placed under the boat. The lift operator lowered the boat until the keel touched down on the trailer.

The casting bolts were removed and the keel cable was slacked off. The boat was raised slightly and the keel cable was disconnected. The Sunfish trailer with the keel resting on it was moved to the machine shop and the boat was placed back on the trailer. If she had needed it, I could have painted the area normally covered by the bunks while she hung from the straps.

Having a good yard with the right kind of equipment makes life a whole lot easier.

SECTION 3: SAIL HANDLING AND PERFORMANCE TIPS

Mast winch --to move or not to move: **May 5, 1999**

If your halyard is led aft, it makes sense to put the winch there. However, I would use it for the genoa, not the main. The main can be hoisted without a winch. Using the winch would probably lead to an over tightened luff and possible damage to the sail. If you really want to take the "speed wrinkles" out of the main, use a cunningham instead.

On Jagged Edge, we mounted genoa sheet winches on the cabin top. The sheets are led through Harken ratchet turning blocks mounted on the cockpit coaming aft of the winch pads. The sheet winches can be used as halyard winches for either the main or the genoa. I have sheet stoppers mounted forward of the winches to hold the halyards after the sails are hoisted.

If you have a pop-top, make sure you mount the winch on a solid pad. Drill the holes using the winch base as a pattern. Then hollow out the area under the deck with a hook on the end of a drill motor. Fill in the hollowed out area with epoxy resin. Red rill the holes and mount the winch using a metal backing plate. I used 1/8 inch aluminum.

If you decide to use the mast winch, fill the screw holes in the mast with cut off screws. Otherwise the holes may lead to stress cracks in the mast. Make them short so that any wires or line inside the mast, won't foul on the screws. Good luck with the project!

Telltale placement: **March 15, 2003**

A good place to put telltales on the main is on the leach of the sail at the aft end of each batten pocket. When the sail is trimmed properly, the tails will stream out behind the sail. If the sail is not trimmed correctly, the tails will lie on the sail pointed forward. This indicates the air is stalled and not flowing over and off the sail.

On keeping the boat level **March 15, 1993**

The bubbling and gurgling is a sign of turbulence caused by the transom being dragged through the water. You need to move some weight forward to get the transom out of the water. A good way to do that is to get some small levels and mount them on each side of the cockpit. Get a couple of helpers and have the boat in smooth water next to a dock. Get one of them to move forward while the other watches the transom at the water line. When the bottom of the transom just touches the water, stick the level gages so that the gages read zero degrees.

When sailing try to keep the gages on zero. Too much down in the stern and your "tail dragging." Too much down in the bow and you're "plowing." Both modes are slower.

May 12, 1999

I have heard that when the wind is up and you're going down wind wing and wing, the rule of getting transom out of the water no longer applies. I have also heard that sailing her "on her lines" is fast. We had a similar experience and had a really friendly meeting of skipper and two crew at/on the transom. I know ours is a displacement hull, but it felt like planing to me. The bow wave was coming off the boat just below the rear cabin windows. My crew would not let me turn and look at the "awesome"stern wave. Our knot meter reads a little high anyway. Good for the ego. Anyway, it was pegged at 10kt. It was greaaaatt!

February 8, 1997

In my experience, sails rather than keel position cause steering problems. We sail with the keel full down. In following seas and heavy air the bow tends to go deeper so keep the crew weight as far aft as possible, and you MUST keep the boat flat. Try to balance the main (reefed) with a winged out headsail. Get yourself a 2" Forespar 6'-12' whisker pole and a heavy duty mast ring to which to attach it.

We bailed out of a race one time with recorded 40kt winds on the stern. We had seen it coming and had a working jib up and a reefed main. We poled out the jib on starboard and the put the reefed main on port, and the three of us got real cozy at the transom. We hit 8.5 on the Kt Meter. The storm only lasted about twenty minutes, so I can't speak for long duration heavy air sailing, but it was fun while it lasted.

On Reefing: **August 15, 1998**

On Jagged Edge, I use two-line reefing, but I have fixed the position of the boom, so that it can't drop when I release the main halyard. I used a spare sail stop (aluminum slug with a threaded stud in it). I used the sail stop to position the boom where I wanted it. I marked the edge of the boltrope slot on the mast for the position of the screw. I drilled and tapped the slot with the same screw size as the stud in the sail stop (10-24 I think.) I removed the stud from the sail stop and replaced it with a round head machine screw and permanently mounted it in the mast slot below the boom. Now when I release the halyard to reef, the boom does not drop down the mast. This arrangement should work equally well with single line reefing.

On Neutral Helm: **February 9, 1999**

I agree the comments about seeing your boat from off of it. It is not, however, a good way, when you are in the water and the boat, with her helm perfectly balanced, is sailing away. I highly disagree with trimming the boat so that the boat has neutral helm. First you lose a feel in the tiller for those lifts and headers, but more importantly, you should have a slight weather helm, so that when you release the tiller, the boat steers itself gently up into the wind, into irons.

I know, I know, we all wear harnesses on a short tether when sailing alone! However, it would be very nice if the boat would stop and wait for you, should the short tether break. Just my opinion.

Anyone Capsize or Broach a C22??? November 25, 1996

I'm really just curious, but this might make some good off-season conversation.

I would like to know if any of you have ever actually capsized or broached a C22 (or know of such an incident). If so, what were the circumstances, wind and wave conditions, point of sail, what sails were up, etc? How did you react? What did you do that was right (or wrong) under the circumstances? Did the boat right itself? How much water got inside? Did the keel stay in place or bang into the bottom?

Does the boat on its side with the spreader in the water count?

Racing in building wind conditions. We were on the last leg to the finish and decided that changing down from the genoa would cost us more than it was worth. We decided to hang on to the finish. About 200 yards to go and the wind jumped up dramatically. We were on a beat, so the wind just pushed the boat over on its side. I released the main and the crew tried to release the genoa. The winch over wrapped and locked the sheet in place. It then disappeared under water. Standing on the side of the cockpit, I reached down to my elbow and got hold of the genoa sheet, wrapped it against the over wrap and pulled it free. Amazing what strength you have when the adrenalin is flowing. Once the genoa was free the boat stood up again. The dock was down wind. We didn't finish.

On Sailing in Heavy Weather

My former Catalina 22, ELIXIR, was kept in the water for the first few years of her life. I used to careen her to clean the bottom. I would anchor in shallow water and wrap the main halyard around the mast a couple of times and attach it to a nearby telephone post with the mainsheet tackle. The boat could be hauled over until it was actually floating on its side. A second line was used to haul the top of the mast down until the mast was almost parallel to the water.

Even this far over, the water line was still below the companionway. HOWEVER, the aft hatch seals had been upgraded with dense foam weather stripping, and the hasps were secured with spring clips. The cabin windows were still well sealed and the boat had no pop-top. The hull deck joint had not been "exercised" by hot dock landings, close encounters with fellow competitors, or over-zealous rig tuning, to the point where it might leak a little.

We have a very sturdy boat that can take a lot of mistakes and recover. However there are several things I would recommend to reduce the chance of capsizing or to mitigate the results if you do.

Try to always sail with the keel down.

Install an easy-to-use mainsail reefing system and practice using it until the sail can be reefed in 30 seconds or less. Reefing won't help in microbursts, but it will when the wind speed picks up rapidly.

Practice releasing the main sheet at the first sign of being over powered. Reinstall the mainsheet tackle so that the cam cleat is on the boom. With a little practice a wrist snap will release it. You might have to get a new sheet that is ten feet longer, but I highly recommend the new setup.

When the wind pipes up put the companionway hatch boards in. The boat will float above the

companionway hatch in CALM water, but not in waves! NEVER, NEVER SAIL WITH THE POP TOP UP OR THE AFT HATCH HASPS OPEN. Just think of how big those holes are when the boat is rolled 90 degrees.

Object Lesson in Sailing **November 16, 2004**

Hi Listers - Here's one for you all. Hobie said I didn't want this on the list, because it might start something. I think it should. Here was the situation.

On Sunday afternoon, Hobie and I sailed Jagged Edge in the Toho Reach on East Lake Tohopeliga near Kissimmee, FL. Except for the wind gods, the weather was beautiful. Saturday had been a very light day with the wind never above 5 knots. We were only able to sail 2 races out of the 5 scheduled.

A front moved through Saturday night and Sunday dawned cloudy and breezy. The winds continued to build throughout the morning as we sailed out to the racecourse. At the skipper's meeting we had agreed that if the winds reached 20kts, we would abandon racing for the day. We sailed three races with a full main and working jib.

After the last race, Hobie wanted to drop the sails and motor in to the launch area, about a mile away. I elected to sail in, as my OB tends to cavitate when the water gets bumpy. Sailing is usually smoother and dryer. As we headed in, a gust hit very hard and the boat heeled hard to port and rounded up into the wind.

I lost my balance and slid off the cockpit seat onto the cockpit sole. My body pushed the rudder hard over to port and the boat continued to turn, pushed around by the now-backwinded jib and the hard over rudder. I was yelling to ease the main, which I think Hobie did. He wanted to release the jib also. I said no, thinking if I could get the jib back winded again as the boat made a second circle, I could heave to, climb off my back and get things under control again. However, my thinking was flawed in that with rudder hard over to port, the boat continued to turn. Each time it turned, the main would tack and then jibe, snapping the main sheet against my head. I was helpless.

I am still not sure how I managed to regain my feet, but somehow I did.

Hobie was careful to point out that when he learned to sail, one of the first things he learned was that if you get into trouble, just let all the sheets go and the boat will come to heel at some point, so you can sort things out. With hindsight, I know I did the wrong thing. Hindsight is a wonderful thing. It allows you to think in moments of serenity about what ought to have been, based on clear thinking after the moments of sever stress have passed. As I recall, I did shout for Hobie to ease the main, but not the jib. I was counting on the jib back winding and forcing the bow down against the rudder pressure. I was wrong, as the rudder helped the turn instead of countering it. I will have to remember that if we ever have to perform 360s. They go pretty fast in 15 to 20 knots.

OK, list. There you have it. I was wrong. Now put your self in my place and pretend that the wind is whistling around your ears. You're having a brisk sail toward homeport in 15 to 20kts. Would you have drop sails and cranked up the iron genny? Now lay down on the cockpit sole with one leg bent under you

and the tiller jammed up against your left shoulder and the mainsheet whipping back and forth over the back of you neck. What would you have done? Maybe we can all learn something here.

Dick, because you stated that you thought you could "heave to" by the second turn with the jib back winded, I don't think you did anything wrong from a seamanship judgment point of view.

However, it should be noted that the event occurred after you participated in three races. I think it is reasonable to assume that by that time both you and Hobie were probably quite tired, especially since I feel that the winds during the races were fairly strong which while making exciting and quick racing, also required relentless attention from you and Hobie. Further, I suspect that racing was ended because the wind had reached 20 knots, although you did not mention how many races were scheduled for that Sunday but I guess possibly five as on Saturday.

Hobie's desire to power in I think was a sound request, as he may have more acutely assessed your and his exhaustion after two days of racing. However, I agree that using sails is always more preferable than an engine, and your decision to sail home cannot be faulted.

Nevertheless, I think there should have been a compromise between your and Hobie's positions. I think you should have at least reefed the main before heading back in. While this would not have changed the violent jibing of the main (I myself have busted a mast vang hound with a reefed main), it may have possibly reduced the initial heeling of the boat to prevent you from falling down onto the cockpit sole. This in turn would have allowed you a more commanding position from which you could make more accurate decisions.

Further, I quote you from page 4-42 of the Catalina 22 National Sailing Association Technical Manual 2001: "Another safety feature which every boat should have is some system which allows fast and easy reefing of the main sail. Such a system can save ...frayed nerves of the skipper and/or crew when the wind suddenly pipes up before you can get back to port....The reefing system on my boat, I believe, fits the criteria of one which is fast, easy, and simple to use."

Perhaps the only error you committed was not adhering to your own solid advice and wisdom
I recently read four books about the disastrous 1998 Sydney to Hobart race. A common conclusion in these books was that the vessels that retired from racing and headed back to the southeast corner of Australia, as opposed to those that valiantly struggled forward through the hurricane to Hobart, were more likely to suffer serious damage, knockdowns, capsizes, and lost and injured crew. Apparently the physiological effect of withdrawing from the race greatly reduced the sharpness of the crews and they were more likely to incur costly sailing mistakes than they would have if still attempting to make the best way in speed and distance to arrive quickly at the finishing line.

For you and Hobie, I think you were in a somewhat similar position. You were finished with racing although you completed your races. You both were probably pretty beat from the day's activities and you were no longer on the razor sharp alertness of racing. Yet the conditions still warranted exceptional attention. Thus, here I think the precaution of a reefed main, despite the definitive speed loss, would have been a meritorious action. But in your diminished physical and intellectual condition, you possibly made the mistake of not taking this precaution.

Nevertheless, I hope you and Hobie will find many more fine days sailing and achieve success in your endeavors.

Hi Bayard - Thanks for your insightful analysis. Yes, we had completed the racing for the day. The boat had handled well under full main and jib. We had discussed how to reef, but had not. Hobie and I were tired - no doubt about it. My reefing system, while fairly easy to use, does require the crew to go to the mast. I elected not to send Hobie forward, for two reasons. First, as you say, we were both tired and Hobie was wearing a knee brace. I elected not to risk what I considered an unnecessary procedure on a wet pitching deck. Second, Hobie had been talked through the reefing procedure, but had never done it on my boat. Why risk something with an uninitiated crew for what appeared to be little gain in stability?

The gust, while expected, hit with a suddenness and intensity that was not.

Hobie had the right idea. He was overruled by his skipper. Luckily for both of us no harm was done. Next time, you will see sheets (all of them) flying.

Dick, this is not a criticism but a long-winded question. The problem as I understand it was not the gust and rounding up but the fact that you slipped down and got caught under the tiller and had this not happened you would have recovered from the gust and thought nothing of it. I further understand that the reason this happened was that you were sitting aft because the mainsheet comes from the transom. Others have said that the 22, like some other of Frank's boats, sits down by the stern and everyone should sit forward to keep the transom out of the water. If the foregoing is true, would it not be an advantage to have the C.D. mod that brings the mainsheet to the center of the boom so you could sit up by the winches and pull down rather than forward? In the dinghy we raced I had to sit up where the jib cars were and the crew forward of that. I can't imagine of doing it any other way and I have been planning on making that mod the first after my trailer is done. Is my thinking flawed?

*Hi Dick- Regarding your statement "*I further understand that the reason this happened was that you were sitting aft because the mainsheet comes from the transom."

My mainsheet is attached to the traveler bar per class rules. However, it is also routed to a mainsheet block that is mounted on a piece of C channel that is mounted between the seats about midway between the transom and the companionway. I used to use the "head knocker" to which you refer. However, I found the cockpit mounted mainsheet block to easier to reach and control, than one hanging from the boom. I usually sit just aft of the mainsheet block, leaving the area forward of it for the crew. This positions me on line with the genoa sheet winches. I know the boat is a "tail dragger" and during a race the crew is usually on the windward rail, while I sit forward of or at the same level of the mainsheet block. This activity all happened after the races were over and both Hobie and I were in the cockpit.

Sail Stop Solution **June 13, 1997**

I have another inexpensive solution. I have lost a bunch of those screw-stoppers over the years. Finally, I screwed a very small eye strap on the side of the mast 6 inches above the exit. Then I tie a small nylon cord similar to a shoelace onto the eye strap permanently. After the main is slid into place tie the line under the

mainsail with a bowtie, or square knot or slipknot. Holds the main all summer, but instantly releases for dumping the main out when desired. No more lost screw-stoppers (at $10.00 a piece).

What a great idea. That's why I like this forum so much. I absolutely agree with Brent. Those sail stops are a pain in the backside. If you leave then attached for any length of time, the aluminum bonds to the stainless steel screw and you can't loosen the thing to drop out the slugs. When you are trying to reef in a blow, it usually takes more hands than one person has to remove the sail stop, drop out the slugs and reinstall. I have had several go over the side in the process.

Jibbing the Whisker Pole **July 10, 2003**

Although you can usually jibe safely by bringing the pole back alongside the mast between the mast and the stays, I have found it less expensive to do it another way:

Face the mast and get your feet in between the starboard and port jib sheets.
Jibe the main to blanket the jib, Ease the working jib sheet
Release the pole from the mast and push the aft end straight up into the sky in front of the mast
Turn to face forward and sweep the fore end of the pole across the deck from one side to the other. The Jib should want to go forward on the new side opposite the main at this point .As it does the aft end will come down from the sky.

With the jib forward, turn back to face the mast and push the pole out to enable it to slip on the mast ring once it is clipped on the mast ring, holler "Made" At this point the cockpit occupant should sheet in the new working jib sheet to the optimum trim.

There is a certain rhythm and flow to all this and on a typical jibe during a race you will hear something like this dialogue in the boat:

Captain: Prepare to Jibe!
Crew: Do we have to? Can't we make the mark on this tack? I'm not done with my drink yet
Captain: Yes, No, Too bad, we're racing.
Captain: Jibing the main! Dang, I should remember to secure my pigtail!
Captain: DON'T PUT THE WHISKER POLE IN BETWEEN THE MAIN AND THE SHROUDS, IF THE WIND CATCHES THE SAIL YOU WILL MAKE A PRETZEL OUT OF IT!!!
Crew: What? I can't hear you because the sail is flapping too much!
Captain: DOH!!!
Crew: Darn! The Jib sheet is wrapped around my feet
Captain: You are standing on the jib sheet you moron! DON'T LOOK DOWN, KEEP THE POLE IN FRONT OF THE MAST!!!!
Crew: Don't call me a moron, bilge breath! and how am I supposed to get my feet in the right place when you are rocking the boat?!!
Captain: oops! I forgot to release the old sheet. There!
Crew: Hey Captain Crunch, keep your head up and watch where you are going. Your job is to steer the boat, you almost hit that boat over there and now you are by the lee.
Captain: (now getting somewhat agitated) Secure that pole, Sailor!

Crew: (Feet untangled now) Man this thing is hard to push out - are you sitting on the new sheet?
Captain: I hate it when I do that butt cleat thing! OK, it's free now
Crew: Made!
Captain: Sheeting in! Why won't it sheet? Uh-oh, wrapped the sheet the wrong way around the winch....JUST A MINUTE!!! There, Sheeting in! You stay in front of the mast for a while, we need some space between us.
Crew: Roger that Skipper! Did you know three boats passed us during our jibe? I thought you said it was faster to jibe downwind? Those guys didn't jibe and look where they are now.
Captain: Excellent jibe! (Translation: We suck at jibing, but at least the pole did not get bent or dropped overboard!)

Jim Johnstone

Jim - That is a great description of how to jibe the whisker pole. It also sounds like you had a recorder secreted on my boat during some our exciting jibes. We call what you describe, "a heavy air jibe." In light to medium air, the mast end of the pole is released from the mast, and placed on the deck between the feet of the foredeck person, who is facing aft in front of the mast. The outer end of the pole is lifted up and through the fore triangle and out on the new jibes side of the boat. The mast end of the pole is then lifted and snapped back on the mast fitting. The trick is to keep the boat going directly downwind, during the jibe and to make sure there is enough slack in the genoa sheets to allow the clew of the genoa freedom of movement. When done well, it is a thing of beauty. For many years I have watched Mickey Richardson's crew do it to perfection as they sailed away from us jibing downwind.

SECTION 4: RIGGING TIPS & ISSUES

Jib/Genoa Sheets **February 15, 1999**

My experience has been that a combination of the PVC rollers on the uppers and forward lowers keeps my bowlines from snagging on the shrouds. I carry three sets of sheets on board. 1/4 for really light air, 5/16 for most of the time and 3/8 for when the white caps are in full swing. Using two sheets of equal length lets me change sheets to lighter (or heavier) ones while sailing. We just untie the lazy sheet and use it to pull the new one around mast. It only takes a couple of minutes to get the right weight on. Really ticks off the crew, though, when I tack before the deed is done. I know, I know. I'm supposed to watching the tell tales instead of watching the crew and letting the boat sail up into an inadvertent tack. But that is what makes racing fun.!

Tuning the Rig: **May 25, 1998**

One of my failings is that I get into too much detail. However, I must jump into the shroud tension thread with a correction. The authors are referring to tensions in pounds, when in fact they are actually talking about readings on a Loos Tension Gauge. However, the conversion scale on my gauge has long since worn away to an unreadable state, so I can't say what the scale numbers convert to in pounds of tension. Suffice it to say that the tension in pounds depends on the number on the gauge and the size of the wire being measured.

On Jagged Edge, which is primarily a racing boat, the numbers vary with the conditions. The uppers are set at 40. (The tension is only on the boat while the mast is up-we trailer sail. If you leave the mast up, be sure to back off the tension to avoid driving the mast into the deck.) The Aft lowers are set to 15-20, higher in light air and lower in heavy air. The forward lowers are set from 20 to 25, lower in light air and higher in heavy air. (AVOID ADJUSTING TURNBUCKLES UNDER LOAD.) Check the tension on the loaded shroud, tack and adjust accordingly, while the shroud is unloaded. The boat is equipped with a 6-1 backstay tensioner. I have a mark on the control line to know when the forestay tension reaches 42. We have found that the mast begins to compress out of column after about 42. With the backstay off, the forestay is slack. Check out the tuning guides on the Catalina 22 Association home page.

However, the boat must be properly reinforced before going to the loads I listed in my previous post. The tack fitting has been tied to the stem fitting like the picture on page 4.35 of Catalina Directs handbook. The shroud eyebolts have all been replaced with the one half inch version and the upper shroud chain plates have been tied with SS cable to eye bolts mounted on 4x4 blocks that are epoxied to the hull, below the V berths. In addition, the bulkheads to which the chain plates are mounted have had their sheet metal screws replaced with three eighth inch SS bolts. The mast is the new section with flat sides. The setup is very stiff. I have very little slack in the leeward shrouds while sailing to weather in a good breeze.

BTW you will find the camp about evenly divided between tight banjo rigging and loose mast practically falling out of the boat rigging. The main thing to avoid is the middle of the mast moving forward and aft or side-to-side while sailing in rough seas. You will fatigue the mast, maybe break off a spreader and then ultimately loose the mast over the side. Trust me on this.

November 26, 1996

A few years ago I bought a North Sails San Diego One Design Main for Jagged Edge. It was worth all of the many pennies I paid for it. Included in the box was a Catalina 22 Tuning Guide. I know that many have seen it, but with all the questions about tuning lately, I thought I might share it with those who haven't.

With Chris Snow's permission, we started handing out copies at the Eastern Catalina/Capri 22 Midwinter Championships. Note: the procedure assumes an adjustable backstay. If you don't have one, get one. It really does help with sail trim in different conditions and points of sail. On Jagged Edge, light tension on the adjuster results in less than 100 lbs tension on the head stay. Moderate tension results in 250 lbs tension on the head stay. Hard tension gives about 500 lbs tension on the head stay. I have marked the control line of the tensioner, to know when these settings are reached. Note: All of Jagged Edge's standing rigging is less than five years old, the tack fitting on the bow is reinforced from below and I have upgraded the forestay
turnbuckle from 1/4" to 5/16" . Be very careful about loading the head stay to a heavy tension unless you know the condition of you rigging and hardware.

Please forgive the long post, but I thought it wise to quote the guide exactly as it was written. I have added some of my own comments to the guide in [brackets]. **If you are using the professional model, the numbers in North Sails tuning guide are INCORRECT. They relate to the Loos regular Model (91A).**

Where do I position my tension gauge on the shrouds for a correct reading?
Chest high, so you can easily read the gauge. Don't worry too much about the absolute reading, but rather whether the other shroud of the set is at the same reading taken in the same place. Make sure the sail track is straight before you begin the process of adjusting the shroud tension.

North Sails One Design San Diego
Catalina 22 Tuning Guide

Our goal is to give you a rig that is fast in all conditions and easy to adjust.

General - Some relatively minor modifications are necessary to the standard C22 deck layout in order to get the most from your boat and sails.

Genoa Tracks - We have found it a huge advantage to install inboard genoa lead tracks. These should be 2-3' long centered on the aft edge of the cabin. The track should be 2" out from the intersection of the deck and the side of the cabin. [Before you start drilling holes in the deck consider whether you can get access to the underside, to install nuts and lock washers. On the port side, be especially careful of the wiring for the cabin, v-berth, mast and bow lights.]

Shroud Rollers - A good idea to improve tacking is to install shroud rollers on the upper and forward lower shrouds. Install 36" rollers on the forward lowers and 12" rollers on the upper shrouds. [Use the smallest thick wall PVC pipe that will fit over the lower ends of the shrouds.]

Mast Tuning - Before sailing [Make sure all of your turnbuckles adjust easily when not under load. If you have closed barrel turnbuckles you need both right hand and left hand threaded nuts on each turnbuckle. I would recommend you clean and lubricate all of them before you begin your rig tuning. Check all threaded

areas and replace any that look worn or galled. Turnbuckle parts are a lot cheaper than a mast]

First loosen shrouds until they are somewhat loose.
Mast Rake - The mast rake is probably the single most important element of tuning your boat. Note that mast rake should vary from fixed to swing keels with swing keels having slightly less rake.

Start with the boat sitting on its lines in the water. [The lowest edge of the transom should just touch the water. While you have the boat on its lines; put some small clinometers, set to 0 degrees on each side of the cockpit. A friend (movable ballast) will help.] Hang a weight from the [shackle] end of the main halyard and cleat off the main halyard with the weight and shackle 12" below boom. Measure the distance from aft face of mast to halyard where it crosses boom. This measurement should be 8" for fixed keels. 6-7" for swing keels. Adjust head stay turnbuckle to achieve desired measurement. [Before you start the next procedure, mark a spot on the rub rail insert abeam of the base of the mast. Measure the distance from the spot to the center of the bow (along the rub rail insert). Mark a spot on the other side of the boat at the same distance from the bow.]

Tighten backstay until snug. No slack. Remove weight from halyard, attach a tape measure to halyard [30 footer, if you have one. If not, put five feet of no stretch line between the end of the halyard and the end of the tape.] and haul to the top of the mast. Measure from side to side [using the spots on the rub rail] tightening or loosening upper shrouds until the mast is centered [athwartship].

Now start tightening the upper shrouds until they have 400#s of tension. [about 37 for 1/8" wire on the Loos Gauge. Alternate sides when tightening turnbuckles, taking a few turns on one and then the other.] Tighten the forward lowers until they are hand tight with no slack. Tighten aft lowers until they have 100#s of tension. [a reading of about 15 for 1/8" wire on the Loos Gauge. Sight up the mainsail slot to make sure the middle of the mast is not bowed to port or starboard. Adjust the lower turnbuckles accordingly to straighten the mast.] To measure shroud tension use a Loos Model B Tension Gauge.[Check the capacity of the gauge before you buy it. You want the one that handles wire from 3/32 to 5/32. According to my gauge and my catalog, that is a model A, not a model B.] You are ready to go sailing.

Sailing up wind with moderate backstay on, sight up the backside of the mast checking that it is straight. Tighten or loosen lower shrouds until mast is straight side-to-side. [I recommend that you not attempt to adjust the turnbuckles under load. Decide how much you need to adjust AND in which direction. Tack and make the adjustments. Then tack back and check it. You will get plenty of tacking practice in addition to pampering the threads on your turnbuckles.] Your mast is now tuned for moderate winds.

Sail Trim [while sailing upwind]

Light Air 0-8 knots
Main: Outhaul should be tensioned so clew is 1"-2'" in from [forward edge of] band. [The Catalina 22 Class rules state that "forward edge of the boom band must be placed no more than 9 feet 10 inches aft of the aft edge of the mast." Don't get concerned if you can't match the 1-2 inches. I have found that mainsails from different lofts over the years have had a variable foot length. The intent here is to specify a loose foot.] Cunningham/halyard should be loose so there are horizontal wrinkles coming off the mast.

Traveler should be centered or slightly to windward, Adjust mainsheet tension so top telltale is flying 90% of the time. Note; Top batten will be slightly outboard of parallel to boom. This may be impossible in very light wind.

Genoa: Tension genoa halyard so that there is a hint of wrinkles in the luff. Be careful not to over tension. Adjust genoa lead for and aft so luff breaks evenly. If top telltales luff first move car forward. If bottom telltales luff first, move car back.

Upwind trim sail so it is approximately 3" away from end of spreader.

Moderate Air
Main: Pull foot out to band - traveler in center. Tension mainsheet so top telltale flys 70% of time; top batten will be parallel or slightly inboard of parallel. The helps generate power. Tension main halyard/cunningham to just remove horizontal wrinkles in luff.

*Genoa: trim sheet so sail is 1-2" from end of spreader. Tension backstay to medium setting. This will straighten head stay and slightly flatten sail. If sailing in waves and chop move genoa lead **forward** 1-2 holes to generate more power. [This pulls more down on the clew of the genoa and closes the top of the sail.]*

Heavy Air
Main: Outhaul out to band - max tight. Tension halyard or cunningham hard to keep draft forward. Tension aft lower shrouds to keep mast from bending too much. Backstay on very tight. Top batten should be outside of parallel. Traveler should be dropped to leeward enough to keep boat on its feet. Remember flat is fast. [Move crew weight on to the windward rail at the shrouds and skipper onto the cockpit coaming with tiller extension, to help keep the boat from heeling too much.]

Genoa: Tighten halyard quite tight to keep the draft forward. Move lead 1-2 holes aft of light air position. Trim sail so that it is 3-4" off end of spreader. Tighten backstay very tight to make head stay as straight as possible and flatten sail.

Please note that the above trim settings should be taken as starting points only. These are meant to show the range of settings from light to heavy air. We have found it useful to keep a logbook every time we go sailing to note fast settings or ideas.

Again, thanks for choosing to sail with North sails.

Topping lift vs. boom kicker? **January 1, 1999**

Go with the boom kicker, if you can possibly afford it. I wish I had had one years ago. The boom can be totally controlled by simply adjusting the boom vang. Now I can drop the mainsail for reefing without having to worry about hitting anyone in the cockpit. In light air, it is fantastic for keeping the weight of the boom from destroying the mainsail shape. And--- no topping lift line flapping against the mainsail or fouling the telltales on the leech of the mainsail

Jib Cars **February 19, 1999**

For many years I have been annoyed by the aggravating adjustment of the jib cars. The thumbscrew constantly hangs up on the screw head as I try to move it. Is there some way I can transform this odd track into a smooth operating adjustment?

On Jagged Edge I use a slightly different system for adjusting the lead on the genoa tracks. I took a page from the J-24 "twings" used for adjusting spinnaker sheet leads. Here is how it works.

The following description is duplicated on port and starboard: The genoa lead block is set about even with the cabin bulkhead. I mount a small block (Harken Micro block) shackled to another slide about two feet forward of the genoa lead block. There is a cam cleat mounted on the side of the cabin at the aft top corner, forward and down enough so the mounting screws penetrate clearly into the cabin and not into the cabin overhead or aft bulkhead. A control line about six feet long is routed thru the block and the cam cleat. The line has a SS thimble in an eye splice at the forward end. The genoa sheet is routed through the thimble and then aft through the genoa lead block. Upwind, the control line is loose so the sheet leads from the genoa clew straight to the lead block. On a reach, the control line is tensioned to the point, the desired genoa shape is reached. More tension for a closed leach, less tension for a more open leach. Varying the tension of the twing is like moving the lead block forward or aft, without the hassle of spring pins or screws or binding blocks. A lot less weight and expense of the Harken adjustable genoa car.

You will have to play with the exact position of the twing block on your boat, but you can forget about stuck or binding genoa block slides.

Jib Sheets **May 24, 1997**

I am using 3/8 yacht braided polyester sheets, tied into my 150% genoa with a bowline. The tack was tied about 15 inches above the deck to avoid the bow pulpit. On almost every tack the knots in the sheet ropes hung up on the side stays and I had to backwind to fly them loose or go forward (I was single-handing).

Is there a better way to secure the sheets to the genoa than a bowline? Could 3/8 be too large for the sheet rope? It does fine on the winches.

I had one other complication. There is a ring about 1-2" in diameter stitched to the stays about 15 inches off the deck which. I think is for a whisker pole, at least it worked well for that purpose. It also catches the genoa sheets when they come across.

I had the same problem on Jagged Edge until I added a five-foot length of 1 inch PVC pipe to the forward lower and upper shrouds. Now the knots just slide right by. Get rid of the rings. The shrouds have enough work to do with out holding a whisker pole. The whisker pole should be
attached to a ring on the mast

I use "Brummel Hooks" (I think that's the name) which you can purchase through the M&E Marine Catalog. Theirs are a metal alloy, rather than plastic or nylon. Brummel hooks are a quick disconnect, sister clip type of attachment device. Works great!

While I agree that mechanical devices work great to attach sheets, consider the damage they can do to your or your crew's head should they be hit by a sail flailing in the wind. A bowline will also hurt, but won't do

as serious damage. Nice thing about two sheets tied on with bowlines, is that you can change up or down one sheet at a time depending on the wind strength. We carry 1/4 inch for really light air and 3/8 inch for medium and heavy air.

Jib Track Problems **June 24, 2003**

What a mess. Rainwater is leaking into my old craft from the Nut/bolts that hold the jib track. Sticky brown water is leaving its mark as it finds its way along the small shelf by the windows down by the seats to the bilge and storage areas. It set off to remove and re-bed the track, but only a couple of nuts are accessible with a thin nut driver from underneath. Access to most is obscured by the interior liner. They appear to be installed before the liner was put in!!?? What do I do now? Do I have to goop it up from the outside! Looks to be a design problem in this 1973 product.

I had a similar problem with my '76 model. It is really a design problem in the earlier boats. The deck hardware was mounted before the deck was bonded to the hull. I took a drill and hack saw to the top of the inner hull liner to open up enough room to get vise grips on each nuts. I had a friend back off the screws, while I held the nut. After the track was off, rebedded and back on. I screwed a strip of 1/4 inch mahogany to the liner to cover up the butchered strip of liner.

By the way, Catalina used an adhesive strip between the track and the deck rail. As the rail screws are tightened the strip expands and seals around the screws. I couldn't find the material so I just caulked around each screw hole in the deck

Cunningham Setup **August 8, 1997**

I have the factory cunningham set up on our 84 C22. An eye strap on the port side of the mast and a cleat on the other. I am going to add a control with a cam cleat but not sure how much purchase is needed.

On Jagged Edge, we set up the main cunningham as follows:

The boom has a cheek block mounted on the port forward end of the boom. This block is used as part of the main reefing system. Anyway, a length of ¼ inch line is tied to the post of the cheek block, lead up through the cunningham cringle on main luff, down to a small Harken block shackled to the stainless mast step, out to a Schaefer triple sheave deck organizer mounted on the deck (not the pop-top)and then aft outside the hand rail to a double Spinlock rope clutch. There is enough tail aft of the rope clutch to wrap around my hand for a good pull. I feel I have plenty of purchase to tighten the luff.

If you think you need more purchase, just change the setup to a Cunningham hook shackled to a light three-part tackle system using Harken Bullet blocks. Tie a No. 082 to your eye strap, and rig it with a No. 083, with a cunningham hook attached to the upper eye. If you use more than a single part system, be careful that you don't over stress the luff of your mainsail. By the way, if you make the control line long enough, you can also use the system for your forward reef line. Just place the hook in the reef cringle instead.

At the control end, you can use a cam or ALUMINUM clam cleat to save money. The previous owner of Jagged Edge had thoughtfully installed the rope clutch for a halyard, so I used the other side for the cunningham. Whichever holding device you use, be careful drilling the mounting holes. Because of the

thickness and angle of the cabin bulkhead, you will have to drill the aft hole far enough forward to clear the inside surface of the cabin bulkhead, otherwise, you will drill down into it.

You will find the cunningham to be very useful in controlling the draft of your mainsail. BTW, you can have the same control over your foresail, with a jib cunningham. If you don't have a cunningham cringle on your jib/genoa, see your local sail maker. He/she will be happy to install one at a very nominal fee. Well worth the investment.

Rigging a Downhaul January 13, 1997

Is it common for C22 sailors to use a downhaul for the main to adjust luff tension or do they set a stop in the track above the gooseneck then adjust tension with the halyard? I'm not referring to a Cunningham, but using the bottom hole in the gooseneck and rigging a set of blocks and leading the line aft.

The bottom hole in the gooseneck fitting is for a downhaul. On Jagged Edge I have a screw in the sail track so the top of the boom cannot go below the top edge of the bottom band. (3 feet 6 inches above the deck). The downhaul is a short piece of line, which is cleated to a jam cleat located about a foot below the boom also mounted in the sail track. The downhaul keeps the gooseneck from lifting when I raise the mast. If you are not concerned about sticking to the one-design rules, then by all means use a small tackle on the gooseneck to tension the luff of the mainsail. It is a lot easier than adjusting the halyard tension.

Here is another alternative. Tie the gooseneck down with a downhaul. Put a hook at the end of your tackle and hook it into the cunningham hole on the main. Lead the end of the control line back to the cockpit thru a sheet stopper or cam cleat. Then you can easily control the main luff tension with the use of a cunningham that you weren't talking about.

Sheet Knot or Snap Shackle **July 28, 2004**

I've been trying to address a problem with connecting the sheet to the jib. The previous owner used a snap shackle and a rather large knot. Problem is, the knot gets caught in the shrouds in light wind and I have a heck of a time getting it loose. The knot is very simple (don't know exactly what knot it is) and is large due to the size of the rope.

My question is, do I just get rid of the convenience of the shackle and attach the sheet directly to the jib? What knot? Is there another hardware item that would be more appropriate?

I have sailed on boats that have your setup and similar problems. I made it a point on Jagged Edge to avoid them, if possible. I race JE and having a sheet hang up during a tack is not fast. I also don't want a piece of metal on the clew of the genoa whacking my crew anywhere on their body. That tends to distract them and that results in going slow. At the same time, I want the option of being able to change to a lighter sheet in lighter air. Having a single sheet tied in any fashion to the clew of the foresail makes it virtually impossible to change sheets while the sail is loaded. So here is my solution. I have been quite happy with it.

I use two (port and starboard) sheets. Each is tied to the clew of the foresail with a bowline. I leave a short tail (2-3 inches) on each knot, so the knots do not work themselves untied. (Yes it can happen) OK, the knots are going to try and catch on the shrouds during a tack. So cover the upper and forward lower shrouds with 4-5 ft sections of PVC pipe. Get the smallest diameter that will fit over the thimbles at the lower end of the shrouds. The pipe provides a smooth surface for the knots to slide around. I can't remember ever having a sheet knot hang up on the covered shrouds.

Try it. I think you will like it.

SECTION 5: BOAT HARDWARE AND SYSTEMS

Replacing Standing Rigging — August 8, 1998

I guess I am not one of those "better" sailors, because my previous boat Elixir, 6614, also had her mast go over the side. In my case the port upper shroud failed about six inches down from the top. It does seem to happen in slow motion, by the way. However, when you are beating, there is really no time to react.

You suffered from the same fate as I, old rigging. In the aftermath, the factory told me, that any rigging over five years old is suspect, especially if the boat is sailed hard. Elixir was raced year round here in Florida.

New wires are a lot cheaper than a new mast-and possibly new sails-not to mention the possibility of injury. I would say to anyone with rigging older that five years, you ought to seriously consider replacing the wires.

On another note, I notice that you have an older model boat. The newer models have a shorter mast, which compensates for the taller cabin overhead. I think the difference is about three inches. Make sure the supplier of your mast doesn't try to sell you a "short" mast.

Kick-up Rudder — June 10, 1997

That is the best way I know of to join the ranks of those (yours truly included) who have broken the blade off the kick up rudder. An unprotected hole in the blade allows moisture to enter the core (plywood) and begin the rotting process. As the blade works in the head, the outside fiberglass gets scored and snap!!! Usually, when you most need your rudder.

Solution. After you drill the hole (1/4 inch is plenty) remove the blade and drill out the hole to 3/8 or 1/2 inch. Fill the hole with marine tex and let it harden thoroughly. Remount the blade and redrill the hole to ¼ inch. The hole is now through the filler and the interior of the blade is sealed from moisture.

Be sure to carry extra pieces of dowel. One of our fleet had to drop out of the race this past Sunday, because his "pin" broke and he had no spare. DO NOT SAIL WITH THE RUDDER BLADE KICKED UP. It will overstress the side plates of the rudder head and can actually pop the heads of the screws holding them to the frame of the head. Big money to replace!!

Whisker Pole Storage and Usage — February 17, 1999

On Jagged Edge, we place the pole on the cabin top, with one end clipped to a short length of line between the line guides on the cam cleats for the spinnaker pole topping lift and the genoa cunningham control line. The forward end of the pole is routed inside the lower shrouds and through the legs of the bow pulpit. To deploy, the skipper unclips the aft end and the foredeck crew slides the pole aft to clear the pulpit and then raises the forward end to get the pole in position for attaching to the genoa sheet.

CAUTION!!!!! Make sure the genoa sheets ARE LED OVER the stored pole. Avoid the fire drill that results on Jagged Edge, when this extremely important point is overlooked. It is not pretty; especially when you have just executed what you thought was a perfect lee bow tack just before rounding the windward

mark. (See what fun you cruisers are missing.)

When considering a whisker pole, go for the two-inch pole (Forespar 6-12 is a good one) if you can possible afford it. When (not if) you bend the lightweight pole, I believe Dennis Slayton knows how to make a tubular mechanical boom lifter out of light air pole remnants.

I use a 6-12 permanently extended, locked and taped at 12 feet. I have seen too many struggling to re-extend the pole after it has collapsed to six feet. You would think Forespar would come up with a better locking device on twist lock poles. I priced a pin locked pole, and reached for the duct tape.

Attach the pole to the sail you intend to pole out. I hope it is a 150. Have someone hold the inboard end of the pole to the front of the mast, while you sheet the sail aft until the pole touches the forward lower shroud. Lift or lower the inboard end of the pole until the pole is horizontal (straight out). Mark the mast and mount the fitting at the mark.

If you want up or down adjustment, mount a piece of genoa track (we use a four foot section) on the front of the mast and use a sliding ring car. Use a solid cast ring, if you ever plan to use spinnaker gear. The downward force of a pole whose foreguy gets loose will the heck out of the ring welded to the slide kind.

On the Value of Having a Knot Meter **January 10, 1998**

I use a Speedmate and like it very much. The impeller is mounted on the hull about even with the forward end of the keel trunk and about 6 inches out on the port side. I selected that position based on mounting the magnetic pickup on the hull in the forward starboard corner of the compartment under the forward dinette seat. I think you could find a spot that would not be inline with your rollers. The system functions extremely well and if carefully calibrated is very accurate. I use it for spotting differences in boat speed while racing. I once over sheeted the main sheet in a drag race to the finish line. The boat speed began to drop off. I immediately let out on the sheet until the boat speed began to increase until the point where it stopped increasing. I gradually pulled ahead and won the duel. Good tools always make the job easier. Go get one ASAP!

On Where to Place the Knot Meter Sending Unit: **March 15, 1997**

I worried about the same thing for months until my boss who was also a sailor, said "I am tired of hearing about the possible location of your knot meter unit. Be at my house at 7:00 AM tomorrow." (He was a Colonel and I was a Major.)

I was instructed to sand smooth a 1 square foot area of the hull under the forward dinette seat, in the forward inboard corner. He built up the thickness of the area with alternating layers of fiberglass cloth and roving, until the thickness of the hull and glass was about 1/2 inch. After the sandwich set up, he glued a 4 inch square piece of 3/8 marine plywood to the center of the area with 3M 5200. The wood was meant to absorb any flexing of the hull. He said, "be here next Saturday and don't touch that area."

A week later, he cut a hole in the middle of the built up area with a hole saw. He started on the inside and drilled through the area until the bit exited the hull. Then he finished cutting the hole from the outside of the hull. (Nice clean cut that way.) Next he started beveling the outside edges of the hole with a half round

bastard file(Yes that is what it is called!) to accommodate the flush-mounted edge of the knot meter thru hull fitting. He put some graphite on the surface of the thru hull and turned it in the hole. Then he filed off the high spots marked by the graphite. The routine was repeated until the entire surface of the bevel was evenly coated and the thru hull fit flush in the hole. The area was thoroughly cleaned with acetone. Finally the thru hull was put in place, bedded in 3M 5200 and the collar was screwed down firmly enough to begin to squeeze out the excess. He said "don't touch anything for three days." After waiting his admonished time. We tightened down the collar firmly, trimmed off the little bit of excess sealant on the outside of the hull, and installed the knot meter impeller.

In all the years afterward, until I sold the boat, the installation never leaked a drop.

Rewiring Jagged Edge **May 11, 2004**

You have not answered my message concerning the wire length, color and buss bars, did you get it?

For the wiring, I think I am going to concentrate on the following:

Bow and stern lights - two conductor (red and black) 40 ft #14
Rewire deck plug - two conductor (black and some color other than red) 20 ft #14
Knot meter - four conductor (black, green, white and red) 10 ft #16
Cabin light over table - two conductor (black and blue) 15 ft #14
Compass Lights - two conductor (black and green) 20 ft #16

Did you put in the order for the wire?
I do have a local place to get it - West Marine. However, the price will be much higher. I would prefer not to just mark the ends of the wire, but rather use a different color based on its use. The preferred colors are listed above.

I think I need seven or eight screws for grounds on the grounding buss bar.
What I meant was that the buss bar should have enough screws in it to attach 7 or 8 wires. I prefer to use spade connectors crimped to the wires instead of wrapping the ends around the screws. I think the switch panel will serve as the positive buss bar. In my last panel, all of the open sides of each switch were wired together with a piece of copper wire and connected to the positive side of the battery.

I plan to run the wiring behind the cabin trim or through the protective sleeves you mentioned.

Mounting the whisker pole

Being cheap and seeing this as a one-year boat, I bought a fixed mount ring. How far up the mast from the deck should the ring be mounted to allow full deployment of my 155?

Don't be cheap, go for the 1" track on the front of the mast. If however you want to use the ring in the meantime, put the height of the ring so that the whisker pole is parallel to the horizon (or to the water is the boat is sailing flat)when the genoa is flying wing and wing with the main. Trim the pole aft until it just touches the forward lower shroud. The idea is to get the pole square to the apparent wind. The Catalina 22 does not like to go directly down wind except in medium to heavy conditions. It is very slow. Instead, jibe

down wind so that the apparent wind is about 135-150 degrees (over the stern quarter). If you have a Windex, put the vane on the tacking arm. With the wind in this position, the pole will not have to be trimmed into the forward shroud.

If you are using the small diameter pole (Forespar 6-12 twist lock), start saving your money for the heavy-duty version. You will need it before long. Whichever one you have, tape the joint with duct tape, to help keep it extended. The twist lock will ALWAYS slip at the worst possible time. Remove the tape after each sail, or you will end up with a sticky mess.

As far as the crew is concerned, practice, practice, practice. I ordered a "reaching strut" end fitting to replace the outer end fitting. It takes too many hands to (1) hold the pole, (2) pull open the spring-loaded pin on the end fitting, and (3) pull the sheet of the genoa into the open-end fitting.

On Jagged Edge, the foredeck crew grabs the pole near the outer end and guides the finger of the reaching strut end fitting into the two-inch loop of the sheet made by tying the bowline with a large loop in it. With tension on the lazy sheet to keep the loop from jumping off the end of the pole, the crew then pushes the pole out on the windward side of the forestay and locks the inboard end to the mast slide. When I hear "Made", I sheet the genoa in and square the pole to the wind. If I have a mid deck crew, they sheet in the genoa.

Chain plate Reinforcement — January 6, 1999

A relatively simple way to tie the bulkheads to the inner liner is to replace the sheet metal screws with 3/8 stainless steel bolts. I cut small access holes in the aft end of the V berth to gain access to the nuts on the inside. I also used fender washers on both sides of the installation to add additional holding power. The bulkhead loads from the upper shrouds actually lifted the deck slightly until the modification. Now everything is steady as a rock.

Mounting Screws for an Adjustable Backstay — November 20, 1997

To all "tappers" out there. I heard somewhere that the threaded depth of a tapped hole should be at least the diameter of the screw to be inserted. This is not the case for the plate buried in the glass of the transom. The best way to insure the eyebolt installation is strong enough, is to put a nut on it. On my previous boat, I drilled a hole in the top of the transom and measured its thickness. Then I drilled three 3/8" holes side by side to align with the bottom "edge." I used a rat-tail file to smooth the edges of the slot. I was able to tape a self-locking nut to an open-end wrench and get the nut started on the end of the eyebolt. By reversing the open end I was able to securely tighten the nut and be assured that it would not loosen nor would the bolt strip out of the brass plate. I made the same kind of access holes to tighten the nuts on the traveler bar. All of the holes were covered with small teak strips.

Stainless Spreader Brackets — June 1, 2004

Today I had a "Chip" day, where my planned project went all wrong- for a while at least. Several weeks ago, I was coming in from the first day of a two-day regatta. Hobie Davidson had crewed for me in a long down the river and back race. As we approached the docking area, we were caught by several heavy gusts and pushed sideways against an overhanging roof on the covered dock next to the slips I was headed for.

Before we could fend off, the port upper shroud was trying to saw its way thru the overhanging roof. We finally got clear only to blown back into the roof on the opposite side. I just knew the rig was going to come down. The spreaders both took a pounding. When we finally go into the slip, I examined the rigging as best I could without taking the mast down. I probably should have done that as well. I could see no obvious damage; a credit to the toughness of a Catalina 22.

However, when I lowered the mast at the end of the regatta, I noticed that the starboard spreader bracket was bent and the port upper shroud had a broken strand.

Today, after completion of the wiring project, I started on the spreader bracket replacement. I had a set of stainless brackets that I had ordered for my previous boat. I am a packrat and never throw anything away. I actually found them after some twelve years of storage. No sweat, I will just remove the bent ones and replace them. WRONG!!!! After removing yards of tape and cotter pins, I found that both spreaders would not budge from their sockets. Aluminum spreaders and stainless brackets!! Of course they were welded together from galvanic corrosion. I tried everything I could think of the get them loose. No joy. I decided to cut them off at the bracket, so I could reach the bolt and nut that was holding them to the mast. Only after I cut them off, did I discover that the PO had epoxied them to the bracket. The bolt and nut were both covered with very hard epoxy. It was so strong, that I could actually turn one of the brackets to unscrew the nut from the through bolt. The through bolt got damaged trying to get it out of the old bracket, so I had to set off to my favorite store to get a replacement. Of course WM did not have one long enough, so I had to hit several marine stores to find the correct length. By the way I forgot to mention that the PO had also thru bolted the two small screws that hold the brackets in alignment, with pieces of 1/4 inch threaded rod with nyloc nuts on each end. I had a devil of a time getting those babies out of the mast.

All has ended well, I think. I was able to remove the through bolt,. while keeping the compression tube in place with a long screwdriver. If I can only put the new bolt through the mast without dropping that tube. I halfway considered using the old spreaders that are only one inch shorter than they should be. But I ordered new ones instead. The new spreader should be here Thursday or Friday.

All of the above could have avoided if 1) the spreader ends had been coated to prevent corrosion and 2) the PO had not got carried away with the epoxy and 3) I had done a better job on getting into the slip in high winds. Oh, I forgot to mention we had to sail in because the motor quit. I found out later that the fuel line had a pinhole leak and was letting air into the line.

If you are still with me, thanks for letting me vent. I feel much better now.

SECTION 6: MAST RAISING AND RELATED ISSUES

I have read quite a few messages that talk about raising the mast by pushing it up. When doing this you have to transition from the cockpit to the cabin top, a big step even when you are not carrying anything, much less a mast!

Here is my solution. I have done it many times over the twenty plus years I have owned "Elixir" (1976) and "Jagged Edge" (1978). First I made a mast prop that attaches to the rudder gudgeons. It consists of a 5 foot pressure treated 2x4 and a 3 inch bow roller attached to the upper end with two 7 inch pieces of 1-1/2 inch aluminum angle. The angle is attached on each side of the end of the 2x4 with short stainless lag screws. The roller turns on a 3/8 x4" stainless bolt. The "pintles" consist of two 3/8x 3# stainless bolts. These are dropped through 2 short pieces of angle each drilled with a 3/8" hole and thru bolted at the bottom end of the 2x4 the same distance apart as the rudder gudgeons.

I raise the mast as follows: The upper end of the mast is placed on the v roller and pushed aft until the base of the mast can be pinned to the mast step. Then I make sure all of the shackles and turnbuckles are not fouled or twisted. I attach a short piece of line from the bow docking cleat to the spinnaker halyard (or the jib halyard if you're not rigged for spinnaker). I stand facing aft on aft side of the closed cabin hatch and straddle the mast. Bending my knees (not my back), I grasp the mast and lift with my knees and step back toward the bow., pulling the mast to an upright position. When the mast is upright, I tighten and cleat the halyard. I attach the forward lowers and tighten the turnbuckles. The aft stay and the uppers are never detached or loosened. I make sure the backstay tensioner is fully off, and attach the forestay to the tack fitting.

It helps to have another person spotting and clearing any fouled stays or shrouds on the way up. If you have to stop part way up, the mast can be held in place with the halyard. It really works! Try it.

There are a lot of easier ways to get the mast up than starting to push it up from the cockpit.

For example, on Jagged Edge, before I got the Mast Up, I used a mast prop, which held the mast so that when the butt was pinned to the mast step, the mast lay just clear of the sliding hatch. To raise the mast, I stood on the aft edge of the closed sliding hatch facing aft and lifted the mast with my hands under the mast in a deep knee bend position. I straightened my knees and lifted the mast off the mast support. I then stepped back and continued to lift the mast to a fully upright position. You can use the genoa halyard to help hold the mast in position while you insert the pin in the forestay turnbuckle.

The secret is to not bend over at the waist. Straddle the mast facing aft. Squat down with your back as straight as possible. Extend your arms, grasp the mast and straighten your legs. The lifting comes from the legs, not the back. You will have more than enough leverage to pick up the mast. Give it a try.

If you can afford it, get a Mast Up. It really helps if you have to get the mast up by yourself.

Transporting the Mast — May 12, 1997

What to do with the mast has always been a challenge for trailer sailors. On Jagged Edge, since she has no stern pulpit, we do the following: The mast is laid at an angle across the cabin, so that it rests on a folded cloth between the hatch slide and a cabin top mounted winch. The aft end of the mast is supported by a piece of two inch PVC pipe. The pipe has a rubber V block, like the ones used on some trailers for the bow support, mounted in a notch in one end and the other end fits over the stern light, which is mounted on the starboard coaming about six inched forward of the transom. The combination of V block and pipe is just long enough to support the mast without it bending down. I drilled holes in the rubber of the v block and used two pieces of 1/4 inch line to tie the support in place. The aft end of the mast is held down by a line, from the stern cleat around the mast to the traveler bar. The forward end of the mast is lashed to the bow pulpit. The mast is carried with the masthead extended just beyond the transom, so that all of the overhang is forward.

A note of caution. For those who carry the mast across the bow and stern pulpits or some other rear support, be sure to support the mast in the center, so that it does not flex up and down in the middle as you go bouncing down the road. Excessive flexing could ultimately contribute to potential mast weakening and failure.

Bill Keaveney makes a good point about supporting the mast at three points. I have seen a lot of boats that carry the mast between the bow pulpit and a support mounted on the transom or the stern pulpit. This allows the mast to flex in the middle - at the spreaders-just about the worst place considering the screw holes already present there.

Mast Tabernacle — May 20, 2004

"In some boats (like yours apparently) there is a void underneath the deck sandwich, above the cabin top."

Sorry, I have to take issue with what you say. While it may be true that there is a void caused by rot brought on by a leaking mast step, it is not designed that way. There is a plywood core between the deck and the inner liner (cabin top). The mast step is supported by the deck and then by the plywood core and cabin upper liner. If there was space between the deck and the cabin upper liner, the load of the mast would depress the deck below the mast. If yours is that way, then the plywood under it has dissolved due to rot.

The repair involves cutting out the deck, cleaning out the gunk and replacing the core. Then the deck can be replaced. The support system will be whole once again. I speak from experience. On my previous boat, I noticed some kind of black "gunk" dripping from the screws that held up the V berth curtain rod. I could not figure out what it was. Several months later, an upper shroud broke (no connection to the rotten deck) and the mast went over the side. The mast step ripped out at the roots. The resulting hole exposed the awful truth. A really great fiberglass artist repaired it. While it was open, he planted an aluminum plate in epoxy paste in the area under the mast. It is better than new.

Mast Step Replacement — October 11, 2003

Sorry to hear the PO (Previous Owner) dropped the mast. The longer lag screw was the way I went after my mast went over the side, after an upper stay broke. If you are so inclined filling the hole in the support post and redrilling a pilot hole is probably the proper way to repair it. Be sure to seal the area where the two screws that hold the mast step in place thoroughly. It is famous for leaking and causing the deck core under the mast to rot.

Once the mast is up, the main force on the screw is in sheer. It keeps the butt of the mast from moving across the deck in any direction. The smaller bolt forward to the lag bolt keeps the mast step from rotating.

Location of Mast Step

Have any of you ever checked the location of your mast step?

Yesterday, I checked the lateral position of the mast step and found it to be offset from the centerline of the boat. To center the mast step laterally between the upper shroud chain plates (and deck edge), I would need to move the mast step 1/2" to port.

I also found the "J" measurement to be 2" short a 7' 10" rather than the expected dimension of 8 feet.

As you well know, precision was not necessarily a manufacturing goal. The PO of Jagged Edge did a survey of some of the boats at a National Regatta many years ago. He found a variation of 6" in the distance from the front edge of the mast to the tack fitting on the bows of the boats he checked. He was not able to confirm whether the mast steps had been moved or came that way. How about yours? Could the mast step have been moved by someone else?

The "new style" (above 13142) boats have a spot molded into the deck for mast placement, so the problem should have gone away.

Removing the Interior Post — August 20, 2003

First take the mast down. The downward pressure of the rigged mast must be removed from the post.

The bottom of the post is held by several long screws through the forward dinette seat backrest. The ring at the top is held by screws into the overhead. As I recall, one of them actually goes all the way through the deck and the forward end of the mast step. In addition there is a lag screw
that goes down through the mast step and deck, into the top of the post.

After you remove all the screws, the post may still be wedged in tight. I used some pieces of 4X4 on the armrest to support a bottle jack and a piece of 1X4 between the jack and the overhead to jack up the cabin overhead just enough to remove the post.

Hope that helps.

PS While you have it out, check the dinette armrest under the footprint of the post for any deformation. The support under the armrest is famous for being broken or non-existent.

Fixing Wire Slap in Mast **June 2, 1997**

Paul did a great job on the coax and wires part of the question. I can add some about the wire banging part. When you pull the wire/coax into the mast, wrap some foam rubber strips around the wire/coax bundle about every foot or so. I used a piece of carpet pad cut into 2 inch strips about six inches long. I wrapped the foam around the cable and then tightly wrapped the foam with electrical tape. Quiet as a sleeping child.