

CARE AND MAINTENANCE OF YOUR LIGHTNING

By C. J. PRADOS, President L. C. A.

The Lightning like any other yacht, power or sail, requires a reasonable amount of care and upkeep. This is not unusual because all of your worldly possessions such as your home and its furnishings, guns, power mowers, automobiles, etc., require constant care if you desire to keep them in topnotch condition and looking their best. And let me say here that there is no bigger thrill than to sail a well-turned boat in splendid condition.

In considering the care of your Lightning, let us take those boats that are kept in the water and secondly the boat that stays in dry storage. And may we go further and say that a boat should be either wet stored or kept out of the water because the practice of leaving boats in for several weeks and then out for similar periods is hard on planking, fastenings, and paint.

The wet boat should be painted on its bottom with a good anti-fouling paint, preferably copper or bronze finish, and from the water line up with paints and varnishes made by some reputable marine paint manufacturer. It is well to talk to some fleet member or individual who successfully maintains his boat and to find out just what he uses and how he uses it. Don't forget that wet and dry sandpaper must be used freely between coats. Weather conditions should be just right for painting. If it is damp the paint does not adhere well to the wood and if too hot it will set up so fast that you cannot get a good finish. Never paint the bottom of a boat when it is wet or exposed to the hot sun as it will blister. Both before and after the first coat use a good surfacing putty (one that won't shrink) to touch up nicks and scratches.

If it is necessary to remove old varnish, apply remover freely and then rub it down with a "Chore Girl" pot cleaner or some heavy metal wool facsimile. After the varnish has been removed use a belt sander on seats, floors, and spars if they are in real bad condition and follow up with a vibrator type. Never use circular sanders or scrapers on flat surfaces. You'll be surprised how fast the above method works and the good results that will be obtained.

As to whether a boat should be painted by brush or spray is entirely up to the individual and his ability to use each method. Sometimes it might be well to prepare the hull and then furnish the paint to an automobile body shop for doing the job. Sides and bottom should have not less than five coats and deck (new canvas) not more than three. Varnish work a minimum of four coats with sanding in between. After the paint on sides and bottom is about thirty days old, splendid results can be obtained by rubbing with a good automobile body compound.

Now that the boat is in good condition moor it safely in the slip so that rubbing or banging up will not be possible. Allow for rising or dropping tides and don't just forget about your boat. If any unusual weather conditions should develop, go out and look things over, for after all the boat depends on you for its safety. Never let bilge or rain water stand in the boat for over 48 hours and be sure you don't have a cover which keeps out the air as condensation will develop, followed by rot.

Some owners never scrub or wash down their boats. Just imagine what your car, bathtub, or kitchen sink would look like without proper cleaning. I make it a practice to scrub down my deck with a stiff brush at least once a week and the sides with a mild soap and water. Perhaps once a month a cleaner such as "Skidoo" should be used on the sides if necessary. Wipe the bright work down with a sponge or chamois. The bottom can be washed and water sanded as it becomes necessary.

Then there's the question of keeping a neat shipshape boat. Have aboard at all times a sharp knife, pliers, adjustable wrench, tape, cord, paddle, bucket, sponge, and an anchor and rope which will do the job when needed. An eight-pound "Northhill" and about sixty-five feet of line will generally do the job nicely. In any event you should have an anchor rope that is in length from 5 to 7 times the depth of the water.

In spite of what some may say to the contrary, I am of the opinion that all sails, both cotton and synthetic, should be broken in properly and given the utmost care. Always remember that your sail is your motor and the best is not good enough. Never leave your boat anchored or tied to the float with sails up slatting in the breeze. If you are using cotton sails and it starts to rain, slack off a little on the outhaul and downhaul so that the sail will not draw up and stretch out of shape. After sailing spread your sails out to dry but do not stretch them while wet. When mainsails are again used after having been wet, do not stretch them to their limits until they have been sailed for about ten minutes.

As a word of caution about your standing rigging, do not trust lock nuts to hold turnbuckles as soon as or later they loosen up and you may lose a spar. A good electricians or plastic tape over the nuts will do the job.

Many of the things we have spoken of also apply to the dry boat. However, in lieu of an anti-fouling paint a good enamel can be used on the bottom. Drain plugs should be installed and removed when the boat is hoisted. Care should be taken to see that the boat is properly cradled just under the mast step and behind the aft end of the trunk so as not to place undue strain on the hull. Sufficient ventilation at each end of the cover is necessary. Be sure that the boat is secured so that it cannot blow off the cradle.

In storing both the dry and the wet boat during winter months, avoid heated buildings or placing them bottom up to the hot rays of the sun. A well ventilated shed or building is best. Support spars well so they cannot get out of shape. And remember a wet boat should be thoroughly scrubbed from stem to stern immediately upon being taken from the water. This will save many hours' work in the spring.

Although spring is generally considered the time for "fitting out," small boats such as Lightnings can be kept up in topnotch condition at all times. If you are not already doing so, try it out and see how much easier it is and notice the added enjoyment you will derive from your boat.

"WHAT'S IN A NAME?"

By ROSS G. ALLEN, Chief Measurer

"I am building a Lightning and would like to know whether I can use tempered masonite instead of wood for the deck," or "Can 3/32" wire be used for the jumper stays?" or "Can I use a stainless steel board?" or "Can I leave out the between frame so as to save weight?" These are not questions by people trying to get an unfair advantage. The askers would like to have the deviations approved for all Lightning owners, not just themselves; but they have not considered the overall effect, and they are overlooking the most important asset of the Lightning Class Association. This asset is intangible and will never appear in the Treasurer's report, but it has a fabulous value.

The name Lightning implies many fine things, among which are uniformity, continuity, high standards, simplicity, a high regard for the factors that bring about obsolescence, etc.

All boats must qualify within the tolerances established at the inception of the class in order to be designated a competitive Lightning. In other words, they must have a Measurement Certificate. This makes for a uniformity within reasonable limits. The tolerances are fine enough to prevent an unfair advantage, but broad enough to allow a comparative novice to build within them.

Any member attending a meeting of Lightning Class Association will attest to the difficulty of getting changes approved. Since the class was established, there have been very few changes in the plans and specifications, and these have been minor and were made after exhaustive studies and consideration. Anyone can build a Lightning and be assured that at a later date there will be no

radical changes. Also, because of this assurance through the years, one can buy an old Lightning, recondition it and compete on an equal basis with newer boats. Low numbered boats continuously surprise the owners of brand new "hot rods" and always will, I hope.

The only thing complicated about a Lightning is the tuning. Everyone has a pet idea on the subject of tuning, but tuning is not a problem unique to Lightnings. However, the hull is simple, conventional and easy on the eye. The rigging is standard and devoid of the adjusting gadgets found in many other classes. It is roomy and comfortable and does not require trained acrobats as crewmen. Normally, these attributes would also mean mediocre performance, but the experts will verify that its performance is well above average.

Several large international classes have, at one time or other, radically changed their plans and specifications, with the result that thousands of boats were immediately outclassed and obsolete. To the everlasting credit of the past officers and members, any tendencies which would have resulted in costly obsolescence have been actively and successfully resisted. Assume an average cost of \$1,000 for the approximately 6,000 Lightnings in existence, and the extent of the investment to be protected is \$6,000,000. That is what it would cost all Lightning owners in the event of obsolescence.

It is incumbent on each of us to jealously guard our basic plans and specifications, to keep our standards high, to prevent obsolescence and to keep the emphasis on sailing ability. As long as we do this, the Lightning name will signify the finest all-around class boat in the World.

LIGHTNING SAILS

"Often Copied—Seldom Equaled—Never Surpassed"

Used All Over The World—Larsen Sails Are Known For Their Fine Design, Cut, and Excellent Performance. Made in Fine English Egyptian Cotton, Dacron or Orlon.

LOUIS J. LARSEN

50 WARREN ST.

NEW YORK

LIGHTNING NUMBER ONE

By LEWIS B. AYERS, JR.

Reading "The Lightning Story" by Barney Crittenden in the program for the International Lightning regatta in September, 1954, led me to believe that some Lightning sailors might be interested in the story of Number One. As Barney pointed out, she was built late in the fall of 1938. Since then she has spawned over 6,000 Lightnings, she is still sailing and last summer the grand old lady actually won a cup!

Her first owner was Gordon Cronk of Skaneateles, New York, who was the first Secretary-Treasurer of the Association. With Gordon's skillful hand on the tiller she was the club champion several years.

The Ayers family moved to Syracuse in July of 1941. The location was chosen with the vague thought that some fun might be had at Skaneateles Lake not too far away. Late in the summer of 1944 while visiting our friends, the Hoags, at Skaneateles we decided suddenly that we just had to do some sailing that very day. Diligent inquiry brought forth the information that there were no sail boats for rent but that Gordon Cronk might sell his. The search for a boat had so whetted our appetite for sailing that we looked up Gordon and journeyed to the club to see the boat. What a beauty she was! It was a case of love at first sight and we had to restrain ourselves to appear to be businesslike. A few minutes later the pram had us alongside the Lightning with our arms on the gunwales. What on earth does one look for in a boat to see that it is worth \$600? (I'm gonna buy this boat!) It's 19'-0" over-all, you say? (I'm gonna buy it! Jib, main and spinnaker sails? Umm-m-m (what's a spinnaker?) You have three suits of sails? That's nice. (Have I waited long enough to act dignified? Fully five minutes have elapsed at the boat.)

"Mr. Cronk, we will take it. Here's a deposit, the balance to be paid tomorrow, but we want to sail the boat all over this lake today!"

What a way to buy a boat? The fact that it was a Lightning Class boat and Number One meant nothing to us. All we saw was a nice roomy boat for day sailing. Later, when we undertook to race her, we regretted that she was Number One since we couldn't do credit to the old lady.

Our sailing experience up to this time was rather sketchy and on rented boats with every kind of rig imaginable. Now we set out to see what it was really all about. Our first sail was from the club to the Hoag cottage the Saturday of the purchase. (We just moved in on the poor people.) Sunday it was a picnic sail with four adults and two children; we sailed it right up on the beach about four miles up the lake, the two men jumping overboard to hold her off. What seamanship! Lunch followed a swim and then we sailed home again. We thought it was always like that, but weekend day sailing the balance of that season taught us that the wind doesn't always blow.

In 1945 we joined the Skaneateles Country Club where Lightning Fleet No. 1 makes its home. At the urging of our new sailing friends, we timorously undertook to race the boat with borrowed crews and visiting skippers at the tiller. My wife, Betty, goes for day sailing but avoids racing ever since the day the water poured over the combing into her lap and we retired from the race in a near-swamped condition. Our eleven-year-old son, Bill, was away at camp and nine-year-old daughter, Peggy,

was a little young for crew. Result of first year at racing spasmodically: Last in every race.

The next four years it was pretty much the same story—if Bill wasn't at camp, Peggy was. Never had the same crew twice. Our favorite position at finish: Last, with once in awhile a third. Much reading of "Lightning Flashes" and books on tuning and finishing and in 1950 a new suit of nylon sails. This made a big improvement and we moved out of the cellar.

In 1952 an article in "Flashes" on the correct trim of a jib really set us afire. By this time Bill was eighteen and Peg sixteen, an excellent smooth-working combination. But the real trick was the change in trim of the jib. It's as simple as this: the line of the mitre in the jib should bisect the angle made by the jib sheet attached to the foot of the jib. Heretofore, our deck fastenings for the fixed end of the jib sheet and the deck pulley were so placed as to pull downward too much. After this adjustment our record for the next three races was two "firsts" and a "second" and we just had to go to the District Eliminations at Canandaigua to try our luck with the big boys. It seemed to us we never managed to get her tuned right in resteping the mast at Canandaigua. The cranky wind, mostly lack thereof, didn't help. Old Number One needs wind to make her go. And the other boys were too big. Out of thirty-five boats our final average was somewhat below the middle.

In 1953 Peg was in Holland, so again we had as the third crewman the house guest of the time. Racing results: indifferent.

In 1954 (the year we finally won a cup) Peg, now eighteen, was home but Bill was in forestry camp, a course requisite at Syracuse University, so we latched on to Bob Holton as our third crewman. A new set of Ratsey cotton sails coupled with a pumice-rubbed finish and the smooth-working crew did the trick for us in winning the Sunday Series for July. The fact that Al Poole was late in getting his new Lippincott Lightning in the water and missed some races was a big help.

Our racing schedule at Skaneateles is divided into four series, so winning one series is not a great accomplishment. We also stage one long distance race in which we placed third with Peg skippering the boat. Skinner Reynolds in boat No. 2784 and Alex Reynolds in No. 556 were way out in front in first and second place. Our moral victory was in beating Al Poole to Peg's great joy.

It took ten years of indifferent attempts at racing to bring home a piece of hardware, but it was fun all the way. The point, as Hank Cawthra brings out in his article "Why Sail a Lightning," is that the building and measurement rules of the Association permit the first boat built to show its transom at times to much newer boats.

And what of Number One now? All the bright work that would come loose reposes in my cellar in the process of being stripped to the bare wood and three coats of Calahan's chilled varnish will be applied. Peg and Mayo Snyder, our sailing instructor of two years ago, were sailing her in a blow preceding "Carol" and a stay pulled out of a tang and let the mast go. We couldn't get the right solder to set new stainless steel stays in 1952, so a new mast will be stepped in 1955 with Electro-line fittings for the stays to avoid the use of solder.

ST. PETERSBURG YACHT CLUB

Home of Fleet No. 109

and the Midwinter
Lightning Championship



"FLYING DUTCHMAN"
Harry Sindle of Barnegat, N.J.
Midwinter Champion 1955

SOME OBSERVATIONS ON PARACHUTE SPINNAKERS

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By WALTER W. ROLLER

More races are probably won or lost by or because of parachute spinnakers than by any other sails. They likewise offer the greatest challenge to the sailmaker's art and to the sailors, but in this study only the former shall be considered. It is difficult to hold them to one-design standards for several reasons, such as: they are relatively new and have no parallel among other sails; their geometry is difficult of solution; fabrics vary in physical properties and new ones are replacing old ones; techniques of using them now demand that they reach as well as run in classes that do not carry reachers; and so forth. Sailors and sailmakers are all trying different ideas with varying degrees of success and one-design sailors may not know it, but they are very definitely "at sea." Most systems of measurement do not control shape, area, or performance. A new sail may perform poorly until it is broken in, or vice versa. Also a sail which measured one year may not measure the next. Of two sails which measure to standards, one may present 30 percent more area to the airstream or may reach three or four points higher. It would be better if the following analysis of why these things are so were presented by a sailmaker instead of an engineer. It is hoped that it will provoke discussion and comparison of experiences by other sailors and sailmakers, and so result in a more hasty return to one-design competition.

Since the Lightning Class is the largest one-design class using parachute spinnakers, and since they have tried to specify a fixed girth of the sail, and since they

$HD=20'$; $DC=7'$; $HA=5'$; $HB=10'$; $HA'=6'$ chord;
 $HB'=11'$ chord; $AA'=5'7"$; $BB'=8'2"$.

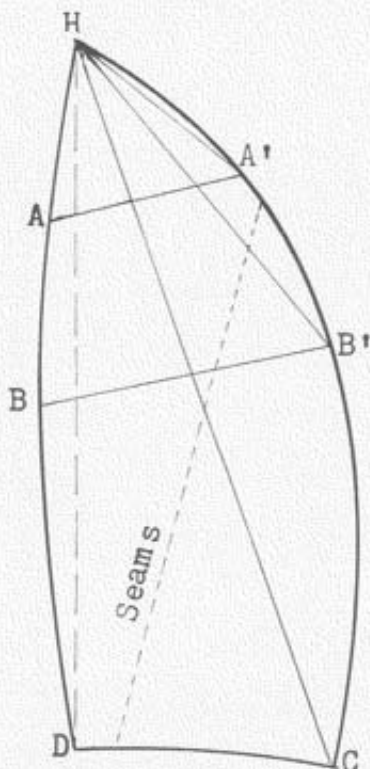


Fig.1

do not carry reachers and present techniques of racing require reaching with them, and since they are relatively inexpensive so that sailors have tried new ideas on them, this sail has been chosen as the basis of this analysis. Figure 1 shows the dimensions of their sail which has been folded on the center seam with the leech and luff lying over one another. Tolerances on leech and luff are 6" plus or minus and on DC and AA' and BB' are 3" plus or minus. In the arguments which are to follow regarding differences in sail areas and shapes the tolerances are not used, but only the exact dimensions. The official sail plan that is issued to sailmakers shows the luff and leech curved and scaling 19' 6" chord length with offsets of 8" and 10 1/2" and A and B respectively. The distance HC in a straight line scales 21' 3". The plan also shows a dotted line indicating run of seams and states that seams should be pulled into straight lines before measuring. The intent is good but none of these curves or dimensions are specified. It is expected that the fabric will rack and pull in direction of the strain and contract in the other directions. The amount of distortion varies with the kind of fabric and the angle at which the seams are run and results in a great many

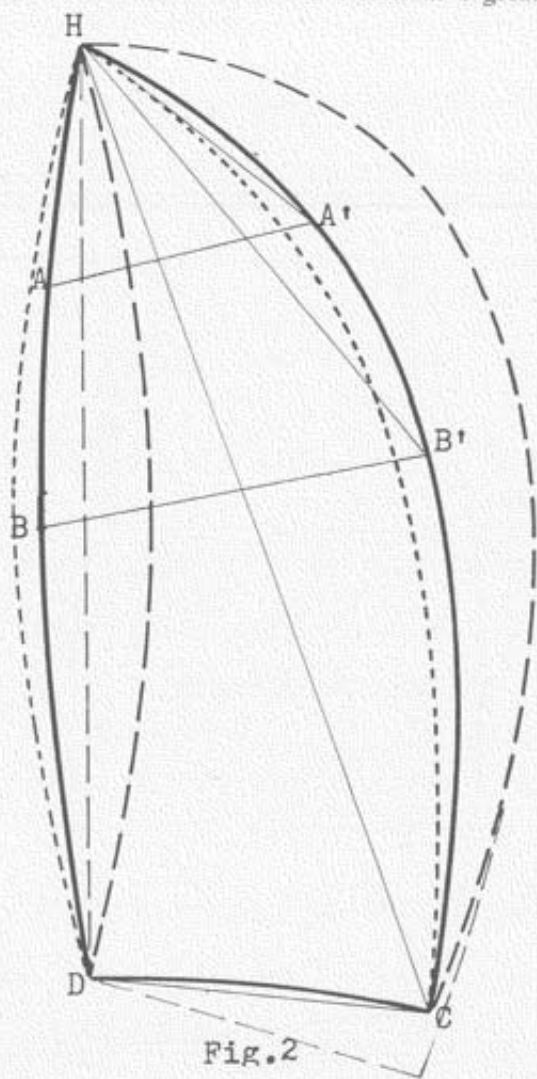


Fig.2

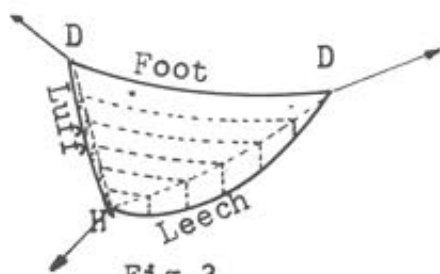


Fig. 3

different shapes of sails with consequent varying degrees of performance.

To show the degree to which this is true, Figure 2 has been drawn and on the given triangle HDC three sails have been drawn. By increasing the offset at B to 18" but holding AA', HA', BB' and HB', a sail with slightly less area and a flatter center seam results. Then by curving the leech and luff concavely with the same 18" offset and again holding the girth dimensions to specifications a sail with a larger area and much more of a curve on the center seam has resulted. This latter said looks like a great many much-used old spinnakers with one difference, namely, the old used spinnakers are short on the AA' and BB' dimensions in excess of allowed tolerances. To correct this deficiency, sailmakers have been known to add a strip along the center seam, and of course the area of the sail increased by the area of the strip. The areas in question are: 269 square feet

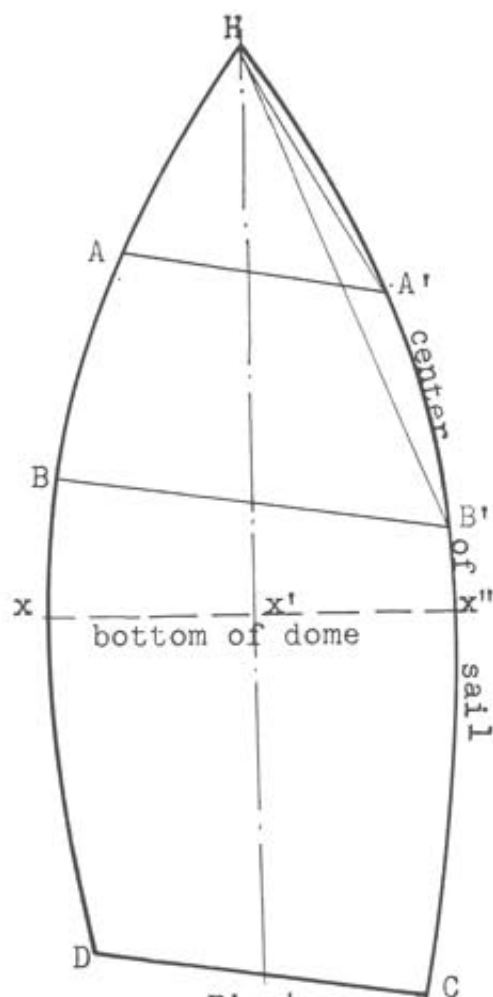


Fig. 4

in the original sail, 265 square feet in the flatter sail, and 285 square feet in the concave sail. The latter has a concave foot and if HC is not held and the foot is straightened out its area is 295 square feet. Now then, the specifications do not require that HC be held (in some classes they do) nor is the curve of the leech and luff specified. It therefore follows, that the next logical step is to see how far these can be varied and with what results in the shape of the sail and on its performance.

To avoid technicality and still to prove that the straightness of the center seam is of vital importance in the shape of the sail in use, it should be said that the Lightning specifications could be applied to a sail with a straight line for its folded center seam. Such a sail when unfolded would be perfectly flat. However, when this sail is picked up at its three apexes the leeches would drop down in sweeping segments of a circle and hang like valances of a window curtain. See Figure 3. The question is, therefore, "How much curve should the luff and leech and center seam have?" This can best be seen by taking an egg and drawing a line from the center of its large end as straight as possible down the middle of its side for about two-thirds of its length. Then, looking at its large end, divide it into three equal parts and draw another line similar to the first on one of these

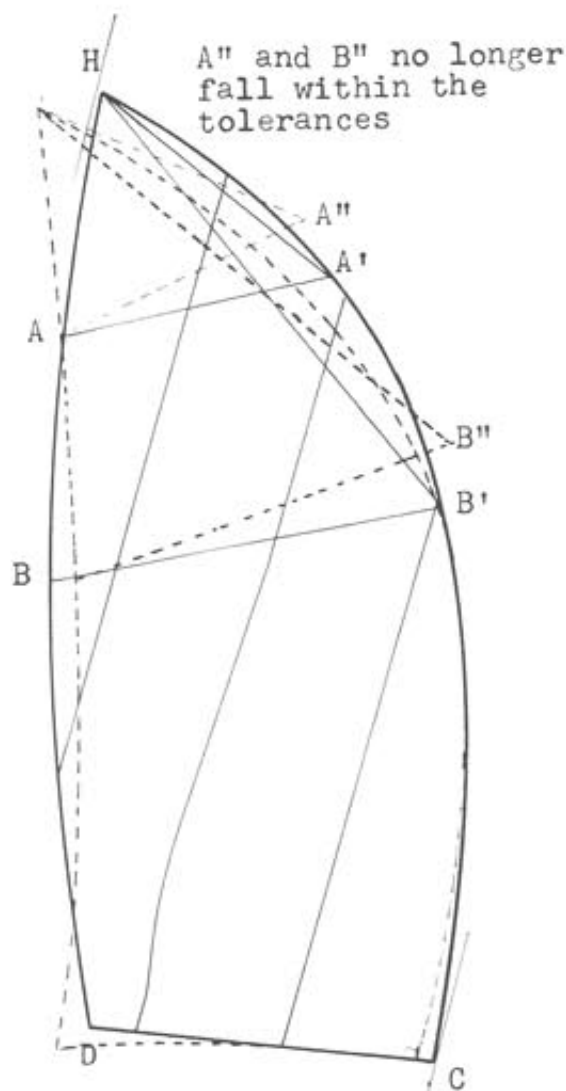


Fig. 5

divisions. Then, looking as squarely as possible at the two lower terminals of these two lines, connect them with a third line to indicate the foot of the spinnaker. Now draw a line half way between these two luff and leech lines to indicate the center seam. If one is technically inclined one can go further to prove to oneself that the sail measures up by dividing the luff and leech lines in two halves to find points B and then dividing the upper halves of these lines in halves again to find points A. Then with HA as a scale it is easy to tell where six feet would fall on the center seam for point A' and also to mark off point B' about 5 1/4 feet lower than A' (The extra quarter foot allows for the curvature as HB' is eleven feet on the chord). Now AA' can be drawn and also BB'. Finally it will be seen that the foot is a little too long. Therefore estimate where 14' should be for the foot and curve the lower part of the leech lines to meet these points. The sail just drawn is the flattest spinnaker that it is feasible to fly. The reason is because the luff follows the great-circle route. In use the sail will deflect to leeward and the luff will follow the bend of the sail also. The clew and tack will be to windward and at no point will the soft fabric of the luff be expected to stand up into the wind even tho in the final determination of the length of the foot, the contrary was seemingly done. Now look squarely at one half of the sail. One sees a symmetrical boat-like shape with the

lower leech curving a little more inward and a little shorter than the center-seam line. Figure 4 shows such a sail laid out flat with the center seam folded as for measuring and with all dimensions as per specifications. This then answers the question and the next step is to see how to best make it. Its area is 245 square feet but as you will realize later the area of cloth is not a criterion of performance.

If two pieces of plastic film were cut to this shape and joined at the center seam the sail would open up in a shape similar to the bow-end of a plywood boat hull with a very definite ridge on its center seam where the stem and keel of the boat appear on the hull. If the same were done with two pieces of woven fabric, the ridge would be there but in a more rounded form, which would be greater or less according to the direction in which the threads of the fabric were run. Woven material, it is well known, stretches very little in the direction of the threads, but in any other direction it stretches quite considerably, the maximum being on a diagonal running from corner to corner of its thread intersections. At the same time that it stretches in the direction of the strain, it narrows in width almost as much at right angles to this elongation. Now, when a seam of the sail runs on the bias of the fabric, the seam can stretch because the sailmaker uses a zig zag stitch to sew it, or it can shorten if the strain is across the seam. This stretch-

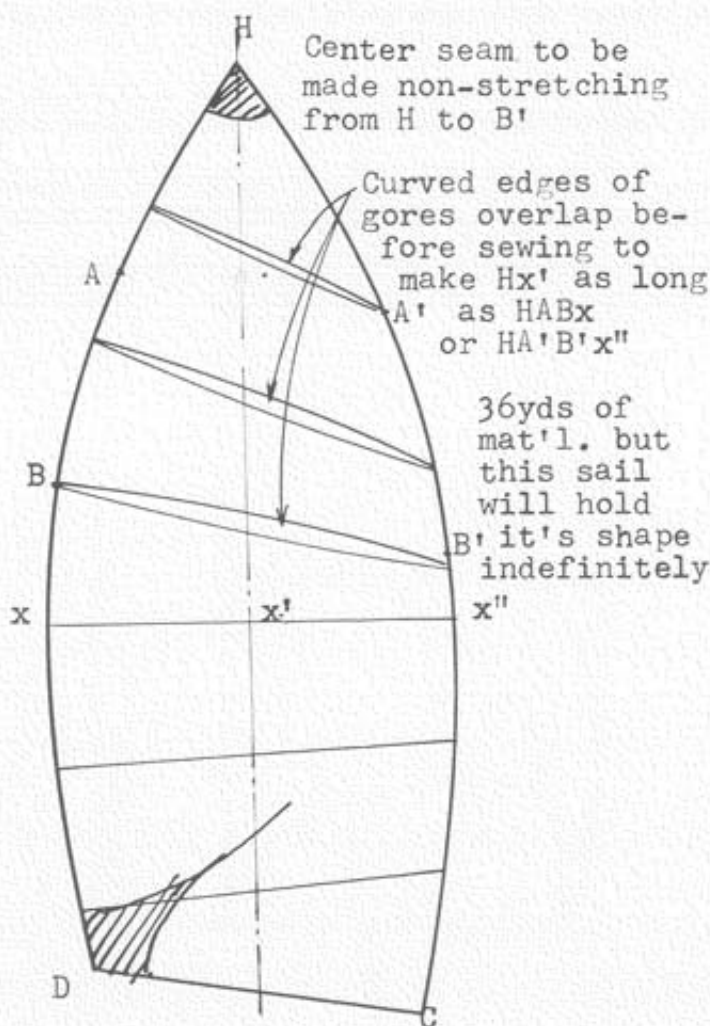


Fig.6

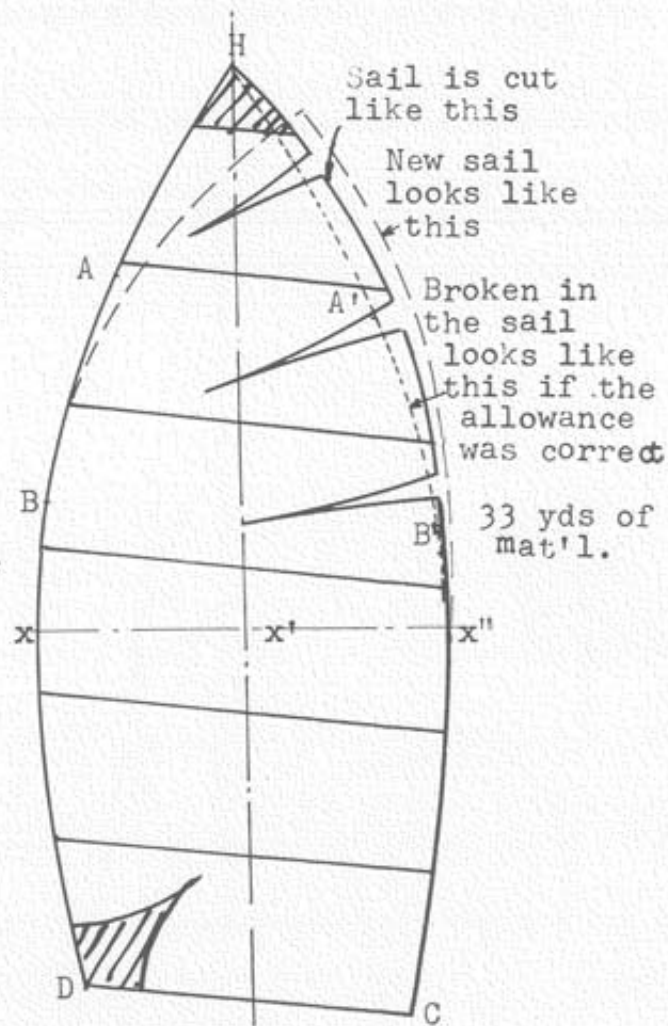


Fig.7

ing and shortening varies in amount with the amount of space between threads of the fabric and with the slipperiness of the threads at their crossings and the hardness of the threads and their elasticity. So all materials do not react exactly alike. When the sailmaker does not want the material to stretch on the bias, as at the sail margins, he sews a non-elastic tape or "Tabling" to the sail cloth which takes the strain. The sail cloth transmits its load to this tabling at right angles to it, which is, however, still on the bias of the cloth. Therefore the cloth wants to narrow down behind the tabling, thereby causing that margin to tend toward looseness and flutter. All of these things are born in mind when the sailmaker lays out his cloth on the pattern of the sail that he has drawn on the floor of the sail loft. Today, there is a marked tendency to run the cloth horizontally, but sailmakers are not all in accord as to the best way to treat the upper part or dome of the sail. Likewise, some sailmakers believe that the cloth should run at right angles to the leeches as in a main or jib. It will be seen that with each shape of sail in Figure 2 or the one in Figure 4, the seams can not run in the same way and produce the same end effect on the sail. The sail transmits all of its effort to its three corners. This may be done directly by the cloth or it may be transmitted first to the leeches or tablings and then to the corners, depending on how the seams run. At the head of the sail the pull is directly in line with the center seam and the luff and leech which intersect it at an angle to the line of strain, take only a small percent of the strain. Therefore an elastic center seam at the immediate head is very bad, as the head will pull into a long narrow point and may alter the shape of the sail. At the tack and clew the

luff, leech and foot transmit the load when the cloth is running horizontally, but when the cloth is running on the diagonal, the clew and tack will not tend to pull out as much. The pulling out is not as severe as at the head and also does not affect the shape of the sail as much as at the head. Figure 5 shows the original sail as per the official sail plan with diagonal seams and the effect upon its shape by the strain is shown dotted. Figure 6 shows the sail of figure 4 with cloth run at right angles to the leeches and the sail in figure 7 has the horizontal seams. In all cases the dotted lines show the changes in shape caused by use. Therefore Figure 7 shows how the sailmaker anticipates the change of shape so that the shape is finally the desired one of Figure 6.

It is necessary to emphasize the importance of the degree of curvature of the center seam. Sails with much curvature make greater demands upon the fabric than it is capable of adjusting, with the result that a more or less rounded ridge appears in the upper part of the center seam. Furthermore, the leech and the luff have a built-in sag which develops so great a component of force to leeward, that the pressure within the sail can not swing the sag outward as much as it should. This effect is further abetted by the clamping action of the ridge along the center seam, with the end result that the sail does not open wide to scoop up the wind. In Figure 8 such a sail is shown viewed from above. The shaded area which is superimposed over the other, represents the amount of wind that the sail intercepts to windward of the mast. It is based on the pole being horizontal and squarely abeam 16 feet from the head and is 85 sq. ft. Figure 9 is the sail on the official plan, with the pole at the same height, and assuming that the sail is cut so as

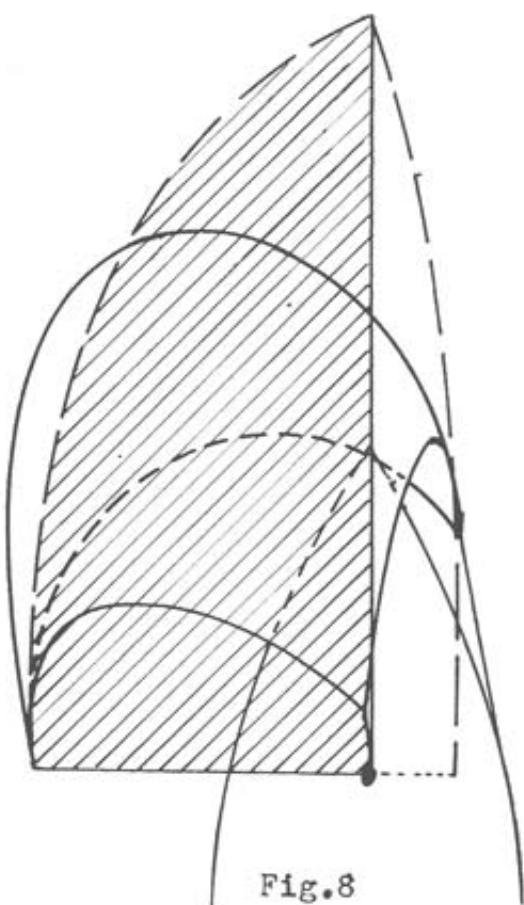


Fig.8

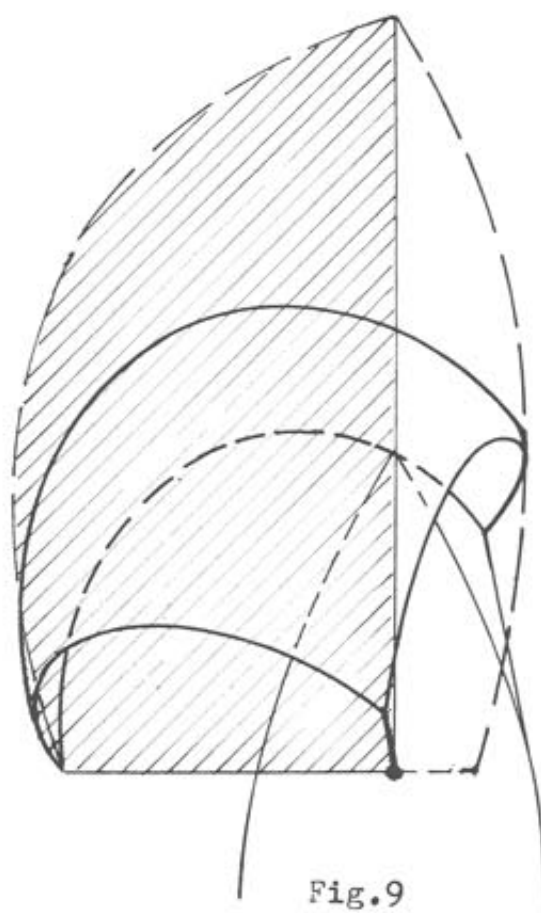
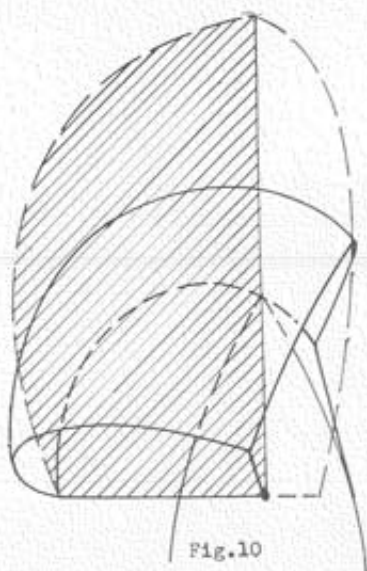


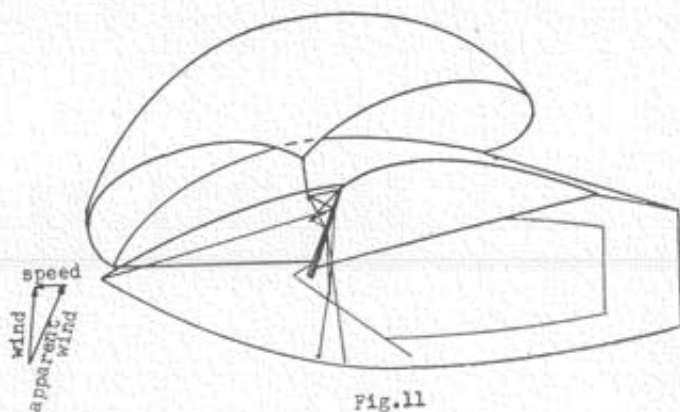
Fig.9



to have no ridge. It presents 100 square feet of scooping area to the wind. Figure 10 is the flat sail under like conditions and scoops 110 square feet of the windstream. Greater variations than these can be obtained by manipulation. These figures are based only approximately upon geometric analysis, and they only illustrate a relative tendency of the different shapes of sails that are possible under this system of measurements to control the size of parachute spinnakers in a one-design class.

Parachute spinnakers are designed to scoop up the wind and spill it off the foot. Even on a reach most of them operate in this fashion. Consequently, as the boat sails higher on the wind, they exert a driving component forward, only so long as they pull in a direction which is forward of abeam. That means that the wind must be on the quarter and if the sail is not cut for it any attempt to reach higher only results in a heeling force on the boat no matter how far aft the clew is sheeted. Of the three sails illustrated, only the flat-cut one will really reach. It is illustrated in reaching trim in Figure 11. The luff is not pulled taut as if it were a balloonier. The pole is carried at that height which allows the luff to sag off just the right amount to prevent easy collapsing, and the halyard is slacked off a couple of feet to prevent backwinding the main, and then that soft luff will stand into the wind which will flow off the leech and foot diagonally behind the main to produce a suction on the main and this boat will drive into the wind above abeam.

A final word to sailmakers is that fullness must be built into the dome part of the sail to avoid the ridge. The sphere on which the top of this Lightning sail could be laid is 16 feet in diameter. As the folded sail is laid on the floor the distance from the head to the line xx' of greatest girth is 13' on leeches and center seam and



at all points between. Therefore the seams of 38" gores above this line must be cut on opposing convex curves with a 54' radius as shown in Figure 6 no matter how they are run. The barrel shape below this line can be formed with flatter curves of say 100' radius. The amount of allowance for stretch must be determined by trial and error, and varies with the cut and direction of the seams. Also the exact degree of flatness which is best must be determined by trial and error in the final analysis.

A final word to sailors is that your old sail may be made to approximate this shape by taking enough generous darts out of the sail at right angles to the center seam to haul the head back where it belongs and eliminate the ridge. It will also make AA' and BB' traverse the sail where it has greater girth and so if they were less than tolerances permitted, they may then fall within tolerances. See Figure 12. Best of all the performance will have been improved.

Sailors have been ordering 'Broad-shouldered' spinnakers from their sailmakers for the past few years with varying degrees of success because some sailmakers and almost no sailors knew what made them broad. There are still many theories that could be discussed, but they are for sailmakers. If the sailor has been enlightened on the subject, this article has accomplished its purpose.



YEAR'ROUND

Sailing



**CALIFORNIA
DISTRICT**

**CORONADO
FLEET 114**

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**SANTA MONICA
FLEET 102**

•

**MISSION BAY
FLEET 194**

•

**BALBOA
FLEET 107**

CAROL CALLS AT STONINGTON

By JIM GALE, Sailing Instructor at the Wadawanuck Yacht Club, Home of Fleet 183

Hurricane Carol hit Stonington with the seeming force and suddenness of an H-Bomb. Although we had warning that the storm was moving up from the Bahamas two days before it hit, and further warnings that it was somewhere off the Carolinas the day before, such warnings could in no way prepare us for the actual fury of the storm which was to destroy half the Lightning fleet and disable the other half, to say nothing of the much more serious destruction of a good part of Stonington's large fleet of commercial fishing boats, many large sailboats and stinkpots, and a good part of the town itself. We were all experts. We could remember the hurricane of 1938 which all weather experts called a freak. Hurricanes just don't veer into the New England coast. They always follow a path from Hatteras out into the middle of the North Atlantic. So while this might be a big blow, that's the worst we could expect. So why worry about this one. The weather hypochondriacs were just at it again!

The day before Carol hit the wind blew strong out of the East, and dirty white clouds scudded across the sky all day. The breeze continued to build up throughout the day, so that although to plane at about 15 knots from Stonington to West Harbor, Fisher's Island on a broad reach was a cinch, we were unable to beat back across Fisher's Island Sound, which was becoming nastier by the hour. Little did we know that by leaving the Paychee in West Harbor overnight that it would be the only whole Lightning in Fleet 183 when everything was over except for the Hot Canary, which was at that moment rattling its way across New York State bound for the Internationals in Detroit.

Back in Stonington we put out extra mooring lines on all the Lightnings and Long Islands. We still had no conception of what was still to come, although we were starting to worry. What if the impossible happened again and this one veered into the coast too.

By morning we knew that Hurricane Carol was really upon us, but it was too late to do any more preparation to check its effect. We could only watch while it ran its course. People began arriving at the club about 8:00 a. m. to see what was going on, but no one could get out to any of the boats. Gusts too strong to stand against were already starting to do their work. By 9:00 a. m. all the Lightnings and Long Islands had capsized at their moorings, and the incoming tide had brought the level of the water up even with the level of the lawn (about three feet above high water), with two hours still to go before high tide! Commodore Winter, Irma, his wife, Ivy Bartholet, the club tennis instructor, Alston Chase, the swimming instructor, and I made a tactical withdrawal from the lawn into the clubhouse itself from where we could watch the chaos which reigned in the harbor before us. Fishing boats were struggling to free themselves from their berths so that they would not be pounded to bits against the pilings to which they were moored. Owners of cruising boats who were riding the storm out aboard could be seen making their way forward to check on their chafing gear or to ease out a little more scope on their already straining anchor lines. Many boats, big and small, had broken loose from their moorings and were drifting down towards the ominous



rocks of the railroad embankment.

Soon the waves were breaking across the lawn and the tennis courts, and the clubhouse itself became an island in an angry sea. We began to think of our own safety. Walking across the parking lot, now knee deep in water, we reached the New Haven tracks, under which the water was just beginning to creep. We made our way along the tracks into the village, where we were able to reach higher ground. Hospitable neighbors provided hot soup and we prepared to relax and let the storm blow itself out when Alston Chase suddenly remembered his priceless accordion (cost as much as a new Lightning) which he had only recently acquired and which was peacefully resting in his room back at the club, and in great danger of being washed away with everything else. So back we went.

By now the water was considerably higher. Motor launches floated at us at crazy angles out of side streets as we made our way through the town, and the tiny beads from a plastic factory were floating around on top of the angry water by the billions. For weeks after the storm they could be found all over the borough, wherever the water had been. The water on the railroad tracks was waist deep and in the parking lot up to our chests. As we approached the clubhouse, which acted as a wind-break and breakwater for us, we were somewhat protected from the full fury of the storm, but as boats both large and small swept past us heading for the railroad tracks we were constantly reminded of the force of the storm. The clubhouse itself by this time was a complete shambles. All the windows on the weather side were broken, the water on the main floor was knee deep. Debris of every description was floating around inside the place. The building was creaking and groaning, and although it finally moved only a total of about two feet from its foundations, it sounded as though it were in danger of imminent collapse. Having gathered our personal belongings (including the precious accordion), we again made our way back through the parking lot, being careful not to get caught between the parked cars which were now floating around and banging into one another.

During the course of the day the wind swung around through a complete arc of 180°. Finally, at about two, the sun came out. By three wind and water had both subsided to a considerable degree. By four people were poking around in the wreckage along the railroad tracks

recovering rudders, oars, and other loose gear that was worth saving. The Town of Stonington was a shambles. From a community of ordered streets, ancient shade trees, and neatly parked cars, it had been transformed into a tangled mess of broken branches and tree trunks, downed telephone wires, collapsing houses, with an assortment of craft of every description spotted here and there where the high water had left them, some on the streets, some on front lawns, and a couple even in a cemetery situated about a mile from the village.

Blunt White's White Mist dragged within a hundred yards of the railroad bridge where she would have been smashed to pieces by the rocks, but was saved by the very strong ebb tide flowing out under the bridge and offsetting the force of the wind. At least five Lightnings

were total wrecks, and every one at least lost its spar. The Long Island fleet was equally hard hit. A much more serious tragedy than the damage to yachts was the enormous toll the hurricane took of the commercial fishing fleet and of the docking and servicing facilities in Stonington. The town will be many years recovering from this blow.

Fleet 183's job for fifty-five is to rebuild its decimated forces. Several new boats are in the picture for this summer and every boatyard along the coast is straining to capacity to meet the tremendous demand for boats to replace those lost in the storm. We will probably be a little shy of the sixteen boats we had last year, but we are all looking forward to a good year of racing against better competition than ever before.

EIGHTH ANNUAL ST. PETERSBURG WINTER REGATTA



Gloating, Papa Sindle looks on as Son Harry receives the "Mugs and Skeeter" cup from Steve Lang, General Chairman of the Regatta

With the bow wave of Bob Crane's Jimlin II washing the stern of the Flying Dutchman, Harry Sindle of Lavolette sailed home the winner of the eighth Annual Winter Championship held February 18, 19 and 20 at St. Petersburg Yacht Club, St. Petersburg, Florida. 48 entries from many sections and fleets participated. Weather, ranging from near calm to rain-spattered squalls marked the competition for the Wally Bishop "Mugs and Skeeter" trophy.

In the five championship races, wins were registered by Howard Foht sailing "Zephyr" who gained first place in two races, the first and fourth. Second race went to Sindle's "Flying Dutchman." "Flare" sailed by Tom Fallon, last year's defending champion led the fleet at the finish of the third race. The final race, Sunday morning, was taken by "Buccaneer, Too" with Oscar Nelson at the helm. Two tune-up races sailed Thursday afternoon ended at sundown with Tampa Bay reflecting the absence of wind in its mirror-like surface. With forty-eight entrants participating, keen competition resulted and any

prediction before the sailing of the last race as to who would possess the trophy would have been extremely difficult.

Friday morning, light to moderated air prevailed and saw Howard Foht's "Zephyr" first across the finish line, tailed closely by Sindles's "Flying Dutchman." Jim Schudel sailing "Fasinatin' Itch" was third, Tom Fallon fourth and Ruth Rifley sailing "Vixen" of the host St. Petersburg Fleet No. 109 finished in fifth place. In the afternoon, with the air somewhat lighter than in the morning races, Harry Sindle was first followed by "Two Bits," skippered by Herm Nichols. The honeymooning Schudels repeated the morning performance with another third place. Bob Crane was fourth and "Eega Beeva III" owned by Joe Stueland of St. Joe, Michigan was fifth. After points were tallied, Harry Sindle was high for the day. The air which had lightened during the first one and a half laps, freshened considerable with the approach of a minor cold front resulting in a high-side finish.

The Saturday morning race was sailed in a fresh breeze which saw Tom Fallon get the winner's gun followed by Paul Schreck's "Major Domo". Third place went to Harry Sindle, Jim Schudel was fourth and "Wee Dee II" sailed by Wes Weedrick, fifth. The afternoon was threatening with squall clouds just before starting time, causing some quizzical glances in the direction of the race committee as though some thought the race might be postponed. With the wisdom gained through experience with Tampa Bay weather, the committee boarded the "Vixen", serving as race committee boat and proceeded to the starting station. The Lightning fleet followed suit. Their decision to continue was soon proved correct, for after spattering a few drops of water on the surface of the bay, the storm quickly dispersed and the fourth race was under way. In a repeat performance of the first race, Howard Foht was the winner. Bob Crane finished second, followed by Oscar Nelson in third place. "Red Witch" sailed by Morgan Powell of St. Petersburg was fourth. Sunday morning, the start of the fifth and final race was marked by moderate breezes which went very light at the finish. Oscar Nelson sailing the "Buccaneer, Too" racked up his first place with Bob Crane second, Tom Fallon, third, Howard Foht, fourth and A. Carlin's "Glen Garry" finishing fifth. This final race proved to be unfortunate for the

newly-wed Schudels who fouled out. Up to this point, they were first in points. Harry Sindle was then declared the winner of the Winter Championship. The old perennials like the Obersons from Michigan, Sam Stowell from New Jersey, Pat Young and Bob Mann from Ohio arrived early and stayed late. Tall tales of summer winds and wins, near misses and near calamities and just plain ole excuses flitted back and forth. The Lightnings were put into the capable hands of "Bus" Mabry, the mooring chairman while everybody looked over everyone else's boat.

On Thursday evening at the St. Petersburg Yacht Club the Annual Winter meeting of the Lightning Class Association under the capable leadership of Cliff Prados, the President of L. C. A. took place. After the races Friday, Cliff, our impressive-looking president, Harry Sindle, the high man on the totem pole, at this point, and Louis Brewer, publicity chairman of the Regatta appeared on WSUN TV station and plugged Lightnings up one gunnel and down the other. Later sailors met for Auld Lang Syne at the Club House.

Saturday night, not in the least dampened by spray and rain, skippers, crews and families formed an impregnable mass around the Bridge Bar for cocktails. It was a high-spirited and motley crew that surged into the ballroom to the tune of "Showboat." Decorations by Chairman Dick Misener and Ruth Brewer, plus a host of helpers converted the ballroom into a Spanish moss and magnolia

hung river bank with Showboats as focal points. Entertainment by club members (girls, girls, girls!) under the direction of Dr. Bill Jennings was the high pulse of the evening. Betty Pearson and Louis Brewer sang "My Bill" and "Old Man River" respectively from "Showboat." The dance Choreography brought beautiful girls in top hats and canes, pink chorus costumes (such costumes—signed "Ye Editor.") and ladies and gentlemen of the Ole South on the dance floor center for a wonderful medley of tunes from "Showboat." Imagination and ingenuity went into the costumes of all the ladies and gentlemen present; these included dock hands, entertainers, Negroes, some questionable sailors and beautiful ladies. The crew of Tahiti came as cotton bales. A hot dixie-land band and rebel yells supplied the music for dancing until . . .

With the final race under our belts we stood at Hamburg Bar, licked our wounds, made our excuses, waited tensely before the point board and by five o'clock we were consoled and reconciled as to the winners, and even toasted them at the cocktail party in the Bridge.

Trophies were awarded in the ballroom after a sumptuous buffet supper. Steve Lang, who was general Regatta chairman (and a darn good one) presented the "Mugs and Skeeter" cup to Harry Sindle who filled the cup with champagne and was then tossed overboard. Bob Crane was in second place, Herm Nickels, third; Harold Balcom of Tampa fourth and Dr. Jim Kirk of St. Pete fifth.

*Smooth Sailing Always
to the
Lightning Class Association*

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