

### REPORTER

#### THIS ISSUE:

Boat Speed etc. - Peter Commette Big Fleet Starts - Willie DeCamp More Recall - Mike Meyer

#### **NEXT ISSUE:**

Focus is on the 21st Annual at Lake Geneva





# THE COMMODORE COMMENTS:

#### ANNUAL NCESA MEETING

The annual meeting of the membership of the NCESA is held every year during the annual regatta. In addition to the usual business and the election of Officers & Directors, there are two important matters that will come up at this years meeting. I would like the members to come to the meeting prepared to discuss these matters and I also solicit written comments from anyone who cannot attend.

1. Financial Base of the NCESA. The NCESA has managed to keep dues unchanged for many years in the face of inflation by cutting certain printing and distributions costs and by increasing advertising revenues. We have about reached the limit on these economies. We have also relied on 'profit' from the annual regatta for a large part of our operating budget. This causes a problem because host Yatch Clubs have widely different regatta costs, facilities and financial situations. It is difficult to devise an arrangement that is acceptable and fair to all parties. The comments by Sam Merrick and Skip Wynkoop in the Spring Reaches discuss this issue from opposite points of view. Obviously, if we decrease our share of regatta revenues, dues will have to be increased accordingly. We will have a discussion of this issue at the annual meeting and I would particularly like to hear from sailors on behalf of the various

Yacht Clubs on our regatta 'circuit'.

Re-apportionment. For many years the 'voting power' on the board of directors of the NCESA was equally divided between the ILYA and non-ILYA. This was done intentionally to eliminate fears that one group or the other would 'take control'. I think that there is no longer any fear that one region will control the NCESA and, infact, I cannot recall any issue on which the directors have voted along regional lines. The new Mid-States region has already been created and has one director. The board has approved and the members will be asked at the annual meeting to authorize an additional board member for the ECESA based on the current census of E boats in the various regions. This will give both ILYA and the ECESA one director for each 30-35 yatchs. Two questions should be discussed: Should the WMYA continue with 2 directors or be reduced to 1 (If directors were allocated on the same basis as the ILYA & ECESA, they would be entitled to about 1 1/3 directors). Should we continue to allocate directors based on the number of yachts sailing or switch to the number of NCESA members in each region (Less ILYA sailors are members of the NCESA due in large part to the attitude of the ILYA).

Stuart W. Wells III

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Ed Malone

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Skip Wynkoop

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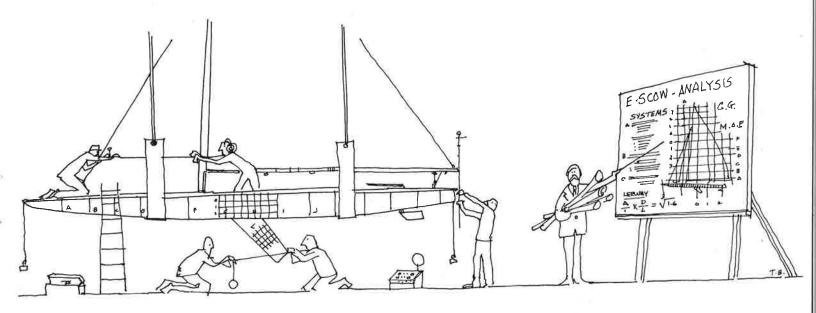
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COMMENT BY SAM MERRICK

#### THE NEW "YOUNG TURKS"

The great appeal of scows, especially for E's and C's, is the loyalty over time of a bunch of sailors who were in the class when both they and the boats were much younger. Developments have been gradual enough not to obsolete accumulated skills -- and the boat remains a source of fun and challenge quite the equal of more recent designs and passing fashions.

Now suddenly there is a new group on the racing scene invading the scow family, as it were, which may shake many of our rather easy going assumptions. I call them the Laser generation, and if you watch a group of hot shot Laser sailers you would know what I mean. There's body English galore - they wear out the seats of their pants before their knees as they rock and roll and respond to the waves and wind. Not only that, they have studied all the books and broken down the component parts for reassembly like management analysts. The Reporter is pleased to have two of them, Peter Commette and Willie DeCamp, speak for themselves.

If you examine the records of the National Regatta for the past two years, these two young sailors from Barnegat Bay have come as close as you can get to becoming National Champion without winning that coveted honor. In 1977, Willie DeCamp took second place behind Gordy Bowers at Crystal Lake; in 1978 Peter Commette was number two on Chatauqua with Buddy Melges out front. Apart from their club affiliation, (Mantoloking - one of the Barnegat fleet clubs - Little Egg is different) they have several things in common: they learned to sail, and sailed a lot, as kids where summer thermals insure varieties of wind conditions; they are products of intercollegiate competition and coaching on a scale hardly conceived a generation ago; they are tough competitors, a generalization for which I can vouch from first hand experience; they can write; and finally they are thorough. As their two articles show, attention to detail is what has made them both successful -- DeCamp more methodical, perhaps, over a longer period of time; Commette with total concentration for the year or so that he plunged into the scow class. (He is now out again pursuing an Olympic Medal in the Finn Class as he did in 1976.)

To some degree, reading these pieces is intimidating. Not many of us can hope to neglect our other interests nor call upon our aging nervous systems to match wits with the likes of DeCamp and Commette. Sailing an E Boat can be as complicated as Commette describes, but then, it's his style, his means for a one year blitz to get to the top and gain all the brass rings in the game.

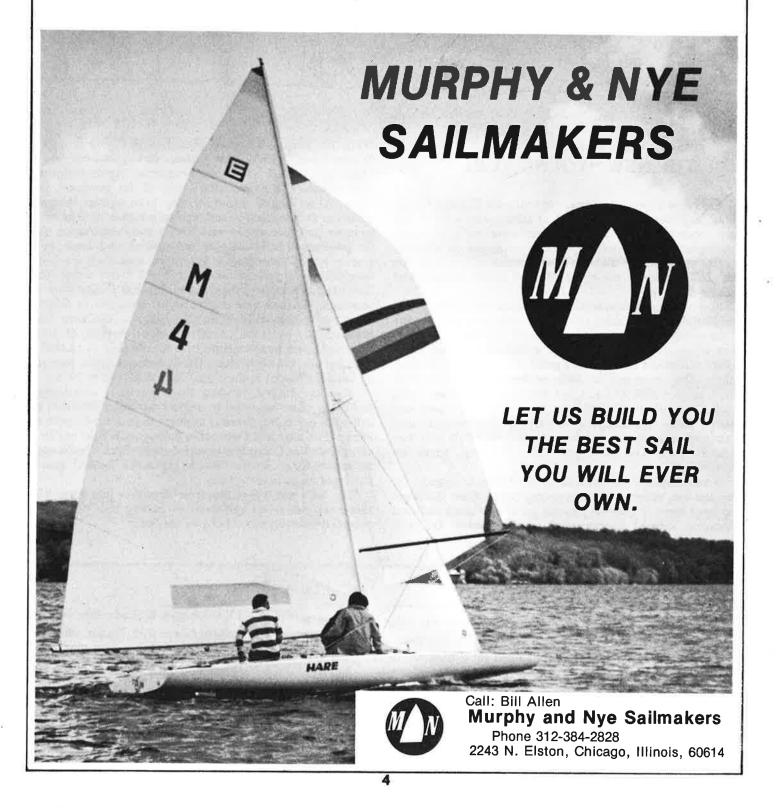
But let's not forget the scow appeal -- just learn what these two can teach and keep on getting fun from all the potential that remains wherever we finish.

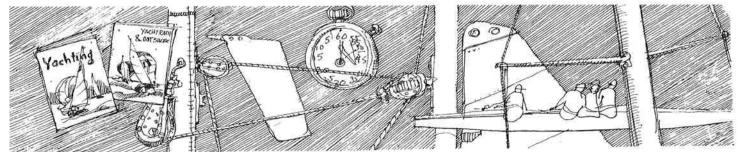
The Reporter has been watching with interest the large scale R & D project ongoing at Melges Boat Works. It is a fiberglass A Scow for Bill Perrigo of Pewaukee and is scheduled for a trial run in July. We look forward to reporting in the Fall/Winter issue how she fares in her first season.

1978 Johnson E Scow. Top and Bottom Cover with Trailer. New 1979 Bower Main Jib Soling Chute and Lift. Chuck Kehnast 219-424-1971, or 219-424-2296

## WE ARE EVEN FASTER IN '79!

It is the small changes which are making Murphy & Nye Sailmakers the fastest, easiest to trim and best built sails for E Scows.





# SOME DISJOINTED THOUGHTS ON BOAT SPEED & OTHER THINGS By Peter Commette

This is not going to be a traditional boatspeed article. There is no need for one in the class. They have already been written and can be found in past issues of this magazine---but I won't leave you hanging at that. I'll at least tell you my favorites: "Boom Vangs" by Gordy Bowers, "Spinnaker Design" by John Gluek, "The Race: Things to think about. .or whatever" by Billy Allen and "Setting, Jibing and Taking Down Spinnakers" by Sam Merrick. If these articles are integrated with two more pieces of literature, some sort of respectable boat speed should follow. The two additional articles are: "From the Experts: E Scow" by Gordy Bowers which was printed in Feb. 1977 YACHT RACING, Pp. 48-51 and the other would be whatever literature your sailmaker puts out on going fast. Probably the most important source of speed information is your sailmaker. Those of them with a good business sense and who care do a very competent, thorough job writing their "Go Fast Up-Dates," as Bowers calls his.

I will try to supplement these articles. To do this, I will deal with the five basic, broad components of boatspeed: Attitude, Knowledge, Teamwork, Practice and Studying.

1. ATTITUDE: Three rules to keep in mind:

A. "No one is an innately better sailor; he is just doing something(s?) different". Gordy Bowers said this. (He has a point even though it is not entirely accurate.) This is the first great rule of boat speed. It even applies when that old man Melges from Zenda, or his youthful protoge John Gluek is sailing by you. The game then becomes "what is he doing?" The answer is always there. When we were being "outspeeded" last year upwind, we would look at Mr. Competitor's rake, heel, trim (in & out and up & down), mast bend and cunningham. When we were sailing off the wind, we would look at his pole and boom (in & out and up & down). If you can't tell during the race, swallow your pride and ask them.

B. "In the last few years I have limited my sailing to only a few classes and my performance has suffered. Don't let that happen to you" said Runnie Colie, the only person who is as natural a sailor as Buddy Melges gave this advice years ago, and it should be taken to heart. In sailing our "E", Terry and I borrowed ideas from the F.D, 470, Star. Even the Laser and Finn and some college dinghies we had sailed had something to offer. Look at the top guys. They all have a broad (recent) experience in various sailing craft. Never turn down the opportunity (make opportunities) to sail other boats, even at the expense of some embarrassment. (I actually saw Sam Merrick in a Finn last year!).

C. "Your sailmaker knows best." Old sailmaker's axiom. Work with your sailmaker. Whatever he says goes. Read and follow his literature. There are no finer sailors in the country than the ones making "E" sails. They should and do know how to make their's go best.

2. KNOWLEDGE: As I mentioned, this area has been well covered. The material which follows is merely meant to supplement or futher illustrate. I have divided KNOW-LEDGE up into two areas: **Building** your rocketship and sailing it.

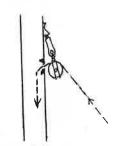
A. Building the Boat.

- 1. General Attitude and Theory. In the face of the obvious, always:
- a. Work for fingertip adjustment on controls. (If you have to grunt, increase the mechanical advantage).
- b. As the mechanical advantage increases, the size of the line should decrease.
  - c. Shoot for the thinnest line possible.
- d. The more times a line turns a corner, the more friction it has.
  - e. Small line has less friction than thicker.
- f. The more mechanical advantage, the less the necessity for wire and thick line.
- g. Better to have something run smoothly than stretch less.
  - h. Where stretch matters use either wire or prestretch.
- i. Where stretch doesn't matter, use the thinnest polypropeline, nylon or polypropeline-cored line possible.
- 2. Specifics. I won't bother showing how our entire boat was rigged, but I will mention ten important points to

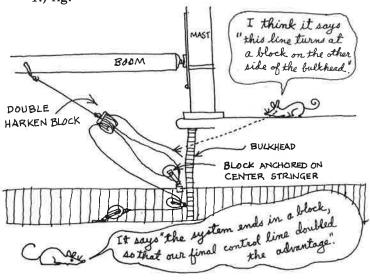
a. Spinnaker Halyard.

1.)rig:

As I am trying to show in the illustration, we used a swivel shackle attached to a Harken bullet block. Zero friction. The key to the system is that the hole leading into the mast must be directly behind the bullet block or slightly under so that the block will not twist.



- 2.) line: Marlow Pre-Stretch, 5/32", 60'.
- b. Boomvang.
- 1.) rig:



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- 2.) line & wire: standing wire was 1 x 19, 5/32'', 2' the wire running through our maze of blocks was 7x7, plastic coated, 3/32''. I am not sure of the length, the final control lines were each Marlow Pre-Stretch, 5/32'', 30'.
- c. Leeboards. The boards were led inside to the side of the cockpit to a Harken cleat mounted on a swivel Fico base. This made roll tacking easier because the board could be pulled up from the leeward side (The vang and main traveller were led to over-under blocks, so that they could also be adjusted easily from inside or to leeward). The board lines were double ended so that there need be no fishing for the line. To stop the board we used a figure eight knot with a shackle guard made for a big boat's guy backing it up. To reduce friction in the boardwell, we put horizontal formica strips at the top and bottom of the well which, reduced the bearing surface. There is a way to cheat the rules when adding these formica strips, so be careful or Ed Malone will be after you!

[Ed. Note: Rather ANYTHING than THAT !]

d. Jib Halyard.

1.) rig: 64:1. It is the most important adjustment on the boat. We played with it constantly up the weather leg.

2.) line & wire: 5/32" jib halyard, 5/32, 1x19 standing wire from magic box coming out of deck for the jib halyard to hook into, 5/32" Marlow Pre-Stretch inside magic box, 50' 5/32" Marlow Pre-Stretch going to both sides.

e. Rudder Posts. To reduce drag, we smoothed in the

posts with auto body mender.

- f. Twing Lines. We found that when we took down to leeward that Chrissy had a hard time reaching the sheet without twing lines (we felt that they were unnecessary as an adjustment). Therefore we put on twing lines which merely served as retrieving lines.
- g. Guy. To reduce stretch and to make it easier for the crew to hike on a reach we cut out the sides of two large aluminum clam cleats and placed them next to the stays. We later found this made it easier to pull the guy back when on a screaming plane and to let it forward without having it crash against the headstay. The technique for the latter was to ease some slack into the guy at the backup cleat and then to merely lift the line at the clam and let it run until stopped.

h. Spi. pole. We then discovered that with this lead the pole bend under load. Dev Colie suggested a thicker pole. Gordy Bowers suggested using the lower ring on a reach. The combination was devastating. Rather than have the whole rig stretch in a puff, the boat would surge. By the way, on a Melges boat the top ring is so high that I am sure I remember John Gluek saying he uses the bottom ring exclusively.

- i. Pole Stowage. We stowed our pole on the bottom. We clipped it in at the forward end to a big bolt with a washer welded on the end (Thank you, Dev) and rested the pole 3/4 of the way back on a six inch long piece of aluminum tubing rivited lengthwise on the boom with about 1/4 of the side cut away at the top. It does make things easier.
- j. Rigging Stretch Windage, Weight. lowers were 1/8", jib halyard was 5/32", uppers were 5/32", forestay was 3/32", back stays (when we used them) were 3/32".
  - B. Setting Up the Boat.
- 1. On Land. Some of the more important areas to work on are:
  - a. Spreaders.

- 1.) Fore & aft. Ever had the nagging suspicion that one spreader was out of line? On a Johnson, which uses the standard double pin method, the best way to check is to take the mast down and set it on two horses. With a plumb-bob, make sure the leading edge is straight up and the trailing edge is straight down. Seize the mast in this position. Place a level underneath the spreaders with a straight board on top of it extending to the ends of the spreaders. Now measure up to the tips. A Melges, with the screws, could be done the same way, but it seems to me an easier way is available. Take the screws out. When the stays bring the spreaders into line, they are even. Then just take equal turns on the screws.
- 2.) Up & Down. Spreaders should be angled up so that they bisect the angle of the stays. Otherwise they might buckle under load:

NOTE: Not only should they be up but they should be equally up. Otherwise, the lowers will have to be offset to keep the mast straight when the uppers are under load.

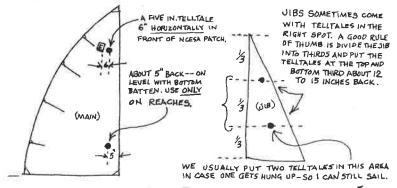
- b. Rake Measurement Marks. Find out from your sailmaker what his preferred range of rake is, mark it so that you will know what you have when sailing and then a certain condition so that it can be duplicated or avoided in a similar condition, or compared after the race with your competitors/friend. Rake is measured by pinning your spreaders (or with a screw arrangement by using the average setting(, putting up your medium jib, running a tape measure up the main halyard to the full up position, lifting the bow of the boat (so that the tape sags toward the transom), and with only a negligable amount of pressure applied to the tape (of course on a day with no wind and without twists in the tape) reading the number that appears at the top of the transom. HINT: Next I will talk about varying the uppers' tension for flat and choppy water. When this is done, the rake will have to be measured again. How much a one inch change in the magic box affects the rake will also change.
- c. Stay Tightness. On a lake, the name of the game is flat leading edges on sails and pointing. Looser uppers are in order. A full sail with a rounder leading edge will kill you, especially if you are sailing light (the tendency these days). Some might wonder why I don't suggest angling the spreaders further back. If I had screws in my spreaders or multiple holes, maybe I would. Then again, looser stays will give you a sharper leading edge for a wider range of wind strengths.

Obviously, there is a converse of this rule which applies

to tight uppers and choppy water.

d. Pole Height Marks on Jibs. We never did this, but it is a good idea. Gordy says his reacher should be flown with the pole at right angles to the forestay from the lower ring, while the big chute should be flown with the pole at right angles to the mast. Marks on the jibs for these positions seem like a good idea. Whatever Billy Allen, John Gluek, and Dev Colie say should be marked on their jibs. Keep in mind, though, that in lighter air to keep the clews even, a lower setting must be used.

e. Telltales. The object of sailing is to have your sails act as an airfoil. Once a sail is finished the designing stages, the only telltales necessary are at the top and bottom of the sail. The bottom telltails tell you whether you are trimmed in and out correctly, while the top ones monitor up and down trim. Telltales on the leach are worthless, because they don't tell you which side is not drawing. This is how we position them on the "E":



- f. Board Positions Fore and Aft. On a Johnson, we prefer the middle position, because Gordy prefers it. If nothing else, at least it insures we always have the boat heeled, or else the helm just feels horrible. Probably hurts us in light air.
  - 2. On Water Before Start. We always checked five things:
- a. Battens. Tests showed us this summer that both Melges and Bowers mains would take better shape with flexible battens in the upper two pockets. In light air, the flexible battens looked beautiful in the bottom two also. However, as soon as the wind came up to blow steadily over ten, both types of sails looked much better with stiff battens in the lower pockets. This advantage became more dramatic as the wind increased over ten, but never to the point where stiff battens up top seemed to be called for.
- b. Spreaders. The rule of thumb is: set your boat to go like a rocket ship the first weather leg and lug it the rest of the way. Don't play Stuart Walker. Even if there is a hurricane coming, if it looks like light air for the first leg, take the pins out. In flat water, the pins can come out up to seven miles an hour (read summary of race two at the Easterns for proof). On choppy water, the pins should be put in at about three to five miles an hour. The following is a summary of what you want and how to get it.

#### THE MEANS

Spreaders - pins in moves draft forward pins out moves draft back Cunningham - pull it, and the draft goes forward ease it, and the draft goes back

#### THE END

Draft-(at least from the top of the jib down) at 50% in the main, 40% in the jib.

Flat water - flat sail Chop - fuller sail

Even if you have an inherently flat or full sail, there is still quite a bit you can do with it.

c. Headboard Hole. aft hole - more power, more pointing forward - good for light air, squirrely conditions, a confused chop, or when the boat is overpowered.

d. Proper Jib. Forget your pocket book. First decide whether you would like to win. If you would, then get all the jibs your sailmaker offers. Besides, you can go two years on three good jibs. So, in the end, you won't lose that much money, anyway.

d. The Lowers. Basically, the mast should be straight laterally. All the time. Set them looser in heavy air, tighter in light air. They stretch less than the uppers.

3. On Water After the Start. The more important things

to keep in mind are:

a. Rake. As the boat becomes overpowered, let the rake back. As it becomes underpowered with the wind dropping, the importance of a 64:1 jib halyard becomes important. The crew can effortlessly pull the rake back up (even if the skipper forgets to release the backstay).

b. Telltales on the Main. "The mainsail is 80% of the

speed." Gordy Bowers.

Constant attention must be paid to the main upper telltails. Never ask someone how much vang tension he uses or how tight he trims on any leg of the course. Read your telltails. They can't lie. They moniter the wind. Do what they say.

c. Heel of Boat. Flat water sailors tend to sail a boat too too flat in choppy water. Choppy water sailors tend to sail a boat too heeled in flat water. There is a lesson to be learned

here somewhere.

d. Bow Down Off the Wind. At least one person should be in front of the mast off the wind, preferably two (Thank you, John.)

- e. Tillerwork. Never make the tillers do what they don't want to. Bodyweight is the key here, and so is the skipper's mobility. Assuming that your crack crew is working like crazy to keep the boat at the optimum heel, if your boat is set up correctly, it will sail relatively straight. If you desire it to stop sailing straight, the best way to accomplish this is to have the tillers move themselves to bring the boat to its desired course. If the skipper moves just a little bit to leeward, the boat will head up. How much? As far as he feels (this is a physical feel, not a mental feel) the boat needs to respond. How fast? As fast as he thinks the boat should respond. If the skipper ever goes to head up, head off, tack or jibe, and he feels pressure on the tillers, he is not moving enough.
- f. Pucker String Off the Wind. Unless it is very light air or a very tight reach, use it. Still watch the top telltales.
  - g. Rake. Flat water rake back, travellers up
    Chop rake up (in an "E", anyway). travellers
    down

#### III. TEAMWORK

A. Tacking. Refer to Gordy's YACHT RACING article.

B. Jibing. The key here is the pole man. He dictates when the skipper can bring the boat up to get speed. After he hooks in, he grabs the pole and / or mast and tries to pull the boat over on top of him. If the skipper jointly gives a little jump down to leeward (I hope Mr. McGowan has noticed that I have not used the word "rock" once), the boat should take off.

C. Accelleraton Off the Start and Out of a Tack. Sail a slightly lower course with the sheets cracked a little and

pump and rock like crazy. (all right, I said it).

D. Division of Labor. The worst thing that can happen is to have two people jump to do the same job or to have no one jump. This rarely happened on our boat. One of the reasons for our excellent teamwork besides the fact that my crew was smart, agile, strong, experienced, had the ability to think for themselves, and could ad-lib in any new situation was that there was a sharp, defined division of labor which arose out of many hours of sailing together. EXAMPLE: upwind.

Jib man - He was the least moveable person on the boat,

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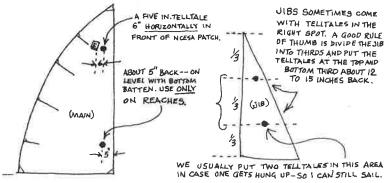
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to tight uppers and choppy water.

d. Pole Height Marks on Jibs. We never did this, but it is a good idea. Gordy says his reacher should be flown with the pole at right angles to the forestay from the lower ring, while the big chute should be flown with the pole at right angles to the mast. Marks on the jibs for these positions seem like a good idea. Whatever Billy Allen, John Gluek, and Dev Colie say should be marked on their jibs. Keep in mind, though, that in lighter air to keep the clews even, a lower setting must be used.

e. Telltales. The object of sailing is to have your sails act as an airfoil. Once a sail is finished the designing stages, the only telltales necessary are at the top and bottom of the sail. The bottom telltails tell you whether you are trimmed in and out correctly, while the top ones monitor up and down trim. Telltales on the leach are worthless, because they don't tell you which side is not drawing. This is how we position them on the "E":



- f. Board Positions Fore and Aft. On a Johnson, we prefer the middle position, because Gordy prefers it. If nothing else, at least it insures we always have the boat heeled, or else the helm just feels horrible. Probably hurts us in light air.
  - 2. On Water Before Start. We always checked five things:
- a. Battens. Tests showed us this summer that both Melges and Bowers mains would take better shape with flexible battens in the upper two pockets. In light air, the flexible battens looked beautiful in the bottom two also. However, as soon as the wind came up to blow steadily over ten, both types of sails looked much better with stiff battens in the lower pockets. This advantage became more dramatic as the wind increased over ten, but never to the point where stiff battens up top seemed to be called for.
- b. Spreaders. The rule of thumb is: set your boat to go like a rocket ship the first weather leg and lug it the rest of the way. Don't play Stuart Walker. Even if there is a hurricane coming, if it looks like light air for the first leg, take the pins out. In flat water, the pins can come out up to seven miles an hour (read summary of race two at the Easterns for proof). On choppy water, the pins should be put in at about three to five miles an hour. The following is a summary of what you want and how to get it.

#### THE MEANS

Spreaders - pins in moves draft forward pins out moves draft back Cunningham - pull it, and the draft goes forward ease it, and the draft goes back

#### THE END

Draft-(at least from the top of the jib down) at 50% in the main, 40% in the jib.

Flat water - flat sail Chop - fuller sail

Even if you have an inherently flat or full sail, there is still quite a bit you can do with it.

c. Headboard Hole. aft hole - more power, more pointing forward - good for light air, squirrely conditions, a confused chop, or when the boat is overpowered.

d. Proper Jib. Forget your pocket book. First decide whether you would like to win. If you would, then get all the jibs your sailmaker offers. Besides, you can go two years on three good jibs. So, in the end, you won't lose that much money, anyway.

d. The Lowers. Basically, the mast should be straight laterally. All the time. Set them looser in heavy air, tighter in light air. They stretch less than the uppers.

3. On Water After the Start. The more important things

to keep in mind are:

a. Rake. As the boat becomes overpowered, let the rake back. As it becomes underpowered with the wind dropping, the importance of a 64:1 jib halyard becomes important. The crew can effortlessly pull the rake back up (even if the skipper forgets to release the backstay).

b. Telltales on the Main. "The mainsail is 80% of the

speed." Gordy Bowers.

Constant attention must be paid to the main upper telltails. Never ask someone how much vang tension he uses or how tight he trims on any leg of the course. Read your telltails. They can't lie. They moniter the wind. Do what they say.

- c. Heel of Boat. Flat water sailors tend to sail a boat too too flat in choppy water. Choppy water sailors tend to sail a boat too heeled in flat water. There is a lesson to be learned here somewhere.
- d. Bow Down Off the Wind. At least one person should be in front of the mast off the wind, preferably two (Thank you, John.)
- e. Tillerwork. Never make the tillers do what they don't want to. Bodyweight is the key here, and so is the skipper's mobility. Assuming that your crack crew is working like crazy to keep the boat at the optimum heel, if your boat is set up correctly, it will sail relatively straight. If you desire it to stop sailing straight, the best way to accomplish this is to have the tillers move themselves to bring the boat to its desired course. If the skipper moves just a little bit to leeward, the boat will head up. How much? As far as he feels (this is a physical feel, not a mental feel) the boat needs to respond. How fast? As fast as he thinks the boat should respond. If the skipper ever goes to head up, head off, tack or jibe, and he feels pressure on the tillers, he is not moving enough.
- f. Pucker String Off the Wind. Unless it is very light air or a very tight reach, use it. Still watch the top telltales.
  - g. Rake. Flat water rake back, travellers up
    Chop rake up (in an "E", anyway). travellers
    down

#### III. TEAMWORK

A. Tacking. Refer to Gordy's YACHT RACING article.

B. Jibing. The key here is the pole man. He dictates when the skipper can bring the boat up to get speed. After he hooks in, he grabs the pole and / or mast and tries to pull the boat over on top of him. If the skipper jointly gives a little jump down to leeward (I hope Mr. McGowan has noticed that I have not used the word "rock" once), the boat should take off.

C. Accelleraton Off the Start and Out of a Tack. Sail a slightly lower course with the sheets cracked a little and

pump and rock like crazy. (all right, I said it).

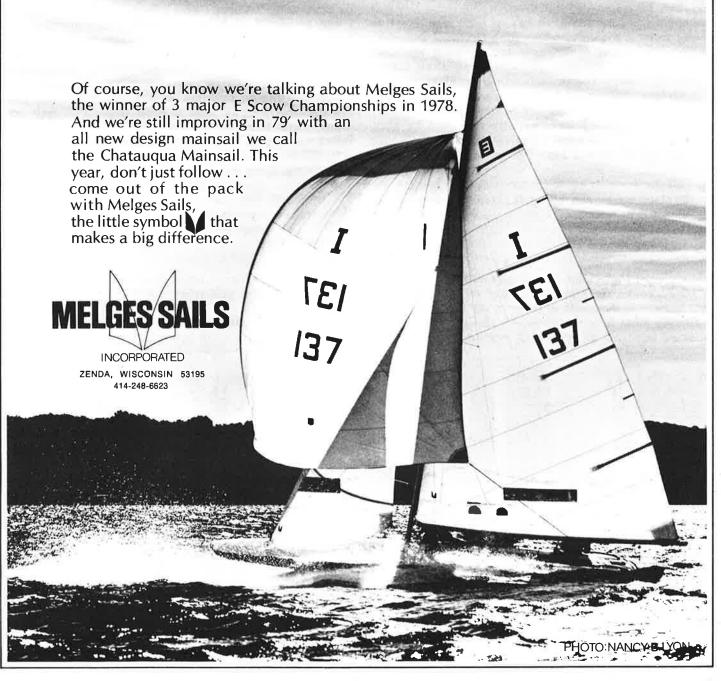
D. Division of Labor. The worst thing that can happen is to have two people jump to do the same job or to have no one jump. This rarely happened on our boat. One of the reasons for our excellent teamwork besides the fact that my crew was smart, agile, strong, experienced, had the ability to think for themselves, and could ad-lib in any new situation was that there was a sharp, defined division of labor which arose out of many hours of sailing together. EXAMPLE: upwind.

Jib man - He was the least moveable person on the boat,

you'll probably see this ahead of you...



# unless you've got one on your sails!



besides myself. This was because Douglas had to concentrate on jib trim. In a lift, he would immediately ease and then inform me that he was eased. As I would head up, he would trim in. In headers, he would trim, inform me, and ease as I bore off. He would sit in a position which on the average would not hurt the boat's heel.

Third person - Chrissy was our most moveable person. Her job was to jump at the slightest change of boat heel. She also had to be ready with the traveller of keep the boat on its feet. (NOTE: if I had ever had to ease the main in a puff, because the traveller was too slow, I would kill. This is rather extreme action for two reasons: 1, a study of the top telltails tells you to trim in a puff, and 2, when I ease, the jib stay slacks, and I can't point.). Also, there were limits which I would set in certain wind and sea conditions which the traveller could not be let out past or trimmed in past. She would have to keep her eye on these. To go beyond a limit, would dictate a rake change. Two additional jobs are to make sure the spinnaker was ready and, along with Terry, look for marks.

Middle man - Terry Kempton was my main man. His first job was to be a source of information (read his compass, look for marks, watch competitors, look for wind, etc.( and ideas / tactics). He was the only one that talked (theoretically) unless Douglas was telling me about changes in his jib trim (Off the wind, this was replaced by Chrissy telling me about changes in her spi. trim). Suggestions, ideas and information were usually screened by him. Terry's concurrent job arose out of the fact that the entire boat was set up around him. For instance, in a lull he would:

 Pull the traveller up if Chrissy was busy getting the the chute ready, and he would jump to leeward, since Chrissy was busy.

- 2. Ease the cunningham.
- 3. Look at my top telltails.
- 4. Ease the vang, if it was blowing.
- 5. Possibly pull the jib lead in.
- 6. Help call the trim of the jib if the jib traveller had been changed.
- 7. Check the cunningham. Usually he would consult me about this adjustment first. If we decided it was necessary, he would hold Douglas' jib while Douglas made the change.
- 8. Jump if Chrissy was on her normal job, but her weight was not enough to compensate.
- 9. Ask me about the heel of the boat. If the feel was wrong, i.e., too much or too little helm, we would discuss a rake change. If such was in order, he would take Douglas' jib, and Douglas would make the change.

Skipper - Beyond the obviously trimming the main and steering, I would make the immediate fine tuning of the feel with my weight. Chrissy would then be directed where to move so that I could reassume a better position for concentration. I would read my compass, have the final word on tactics, and do the backstays when I remembered.

IV. PRACTICE. Short windward-leewards with lots of tacking and jibing are the best. Sometimes it is good to go off for a while on one tack or jibe just to get the feel. Practice accellerating from a dead stop. It is best to practice with someone. If there is another boat out, match racing can also be done, which is a gas in an "E" Scow.

V. STUDY. Read the articles I suggested. Ask questions. Keep notes. Keep a log (The more often you sail the boat and the more experienced you become, the less important this becomes). For those who have never kept a log, the following is a page out of mine.

#### SORRY, NO LOG PAGE THIS ISSUE

(Editor's note) Unfortunately, the copy we were to use was not clear enough for reproduction and on top of that we can't locate it in the stacks of paper at the 11th hour.

The log page is very, thoroughly thought-through and organized and will be of critical interest to any serious

sailor. It resembles a cross between a flight log and notations from a psychiatrists' couch. We hope Peter will provide us with another (original) sheet for reproduction here next fall/winter.







Collecting silver is one of the dividends that well-organized (and good) sailors like John fluck, Bill Allen and Will Perrigo earned at the mid-may regatte at Nagawicka 10

# WHY OUR DESIGNS GIVE YOU THE RACERS EDGE. SAIL TESTING: COMPUTER DESIGN: This feel our computer is need to be seen to b

Our computer does not give all the answers. We sail test all our new and existing designs. We take time comparisons, pictures and notes to further refine our "feel" of what is faster.

#### **CLOTH ANALYSIS:**

Every lot of sailcloth at Bowers has been stretch tested, thread counted, weighed and finally recorded in order to reproduce the same fast shape every time. This fall our computer is helping to (a) design faster sail shapes (b) keep track of existing designs (c) duplicate existing sails on non-stretch mylar patterns.

#### **REGATTAS:**

We and our customers go to as many regattas as possible to race our sails against the competition in as many classes as possible.

#### **WORKMANSHIP:**

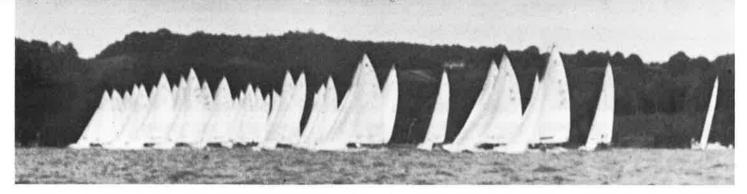
All our panels are taped and double stitched to better hold shape so your sail will stand-up to hard use.

#### SERVICE:

We are involved! Our knowledge is put to work for you in the form of Newsletters, Booklets and update sheets on boat and sail trim for your class.

**1978** was another outstanding year for Bowers Sails and our customers. Regatta results were gratifying with Boats carrying Bowers Sails winning more national, regional and club races than ever before. We learned alot in 1978 and we're incorporating that knowledge in our sails now. Making our sails a little better and a little faster. So buy Bowers Sails and get the Racers Edge in 1979.





## MY APPROACH TO STARTING IN BIG FLEETS By Willie DeCamp

A great start is not a free ticket to a great finish - but it sure helps! With the growing number of E boats on the line the art of starting has become more challenging than ever. The line at last season's National Regatta was so long that it took three minutes just to run it. And a long line is not guarantee against congestion at the favored end. To emerge cleanly from the confusion I try to think carefully and in advance about what each start requires.

The first necessity for a good start is to **get on the water early**. Especially if I am in unfamiliar waters, an early arrival enables me to determine which side of the course is favored. I sail up both sides of the course checking wind velocity and compass readings. Watching the progress and headings of other boats is also helpful in determing the favored side. Windshift theory helps too: the wind may be channelling along a leeward shore, lifting off a windward shore, or light in the middle. Even on fairly open water it pays to consider the influence of land on the wind; most sailors underestimate it.

As I check the course for wind, I also put the finishing touches on my boatspeed. I find that before a race I learn almost everything while sailing upwind and little while sailing downwind. For this reason I always fly my spinnaker when running before an important start. This gives me more time to sail upwind to check boatspeed and compass readings.

In choosing the favored side of the course it is important to determine whether any new major windshifts are likely. At Beach Haven or Crystal Lake, for example, the sea breeze may come in if conditions are right. Sometimes a look at the sky will reveal the approach of new wind. In the third race of the Easterns at Keuka Lake a big cloud passed off the course just in time to surprise the fleet with a big starboard lift.

Frequently the major consideration is not which side of the course is favored but which tack is favored under oscillating conditions. When this is the case, a competitor is amply rewarded for arriving at the course early. After a half hour of sailing the full range of lifts and headers becomes clear. Several times I have watched the fleet sail off on what they mistakenly thought was the lifted tack because they had not put enough time into collecting compass readings.

When the warning signal is fired, it is time to head for the favored end of the line. This is usually the side closest to the favored side of the course. However, if the line is heavily slanted, it may be best to start at the upwind end even though it is farther from the favored side of the course. This is a matter of judgement; it depends on the degree to which the line is slanted and the degree to which one side of the course is favored. Be careful: It is tough to recover from a start at the wrong end of a quarter mile line.

Often when the warning signal is fired, I do not feel fully

prepared for the start. Either my boatspeed does not seem good, or I am still undecided as to which side of the course to play. I find that with ten minutes until the start it is best to accept whatever boatspeed I have. Now I concentrate on the race. If the wind is oscillating, the favored tack may not be clear until a few minutes before the start. If the wind is extremely steady, there may also be indecision. In either case I can keep my options open longest by heading for the middle of the line. I may be waiting to see where the committee sets the windward mark, or whether a certain windline approaches. Some skippers who are completely undecided - or just plain chicken - wait to see where the really good sailors are grouping. This method is not always reliable. In the first race of the Nationals at Chautaugua all of the salt water sailors followed their hotshots up the right hand side of the course while most of the inland types followed their gurus up the left side.

In an oscillating wind the major goal is to be on the lifted tack as soon as possible after the start. This will take you in the direction of the coming header. In a practical sense oscillating shifts are no different from stationary ones except that in oscillating conditions the shifts are moving toward the boat rather than the boat toward them. Again, it is almost always best to start at the end of the line that is closest to the expected shift. However, if the line is grossly slanted, it may be necessary to start at the end of the line that is farther upwind.

After the preparatory signal I divide my start into four phases. Each phase requires greater concentration. First, I set up my approach. By this time I have generally decided where to start, so I must set up a schedule that will get me there approximately on time. I sail back and forth in a pattern that will place me in position to make a final approach with about one and a half minutes to go. In heavy air it is safe to sail far from the line. In light air, however, the classic mistake is to stray too far. Nothing is as disheartening as the discovery that with two minutes to go there is three minutes worth of distance between oneself and the line. The main problem is that the presence of other boats creates a lull before every start. Because everyone lines up on starboard, the fleet creates not only a lull but a starboard tack header as well. It is essential to anticipate this effect. The lighter the air, the greater the lull will be when boats congregate. In a true drifter I never go more than two boat lengths from the line before the start.

During the second phase I carefully case the situation. I am on my final approach but I have left ample time for getting to the line. Now it is more important than ever to think independently. Don't just plough into the mob and join the screaming. Consider the factors of wind velocity and the amount of traffic to be encountered. Watch the situation develop and look for a spot where there is likely to

be a hole. If no hole develops where I most want to start, I move down the line until I find an opening. The whole trick is to keep my options open as long as possible.

Sooner or later either time-pressure or a golden opportunity make it necessary to establish a position in the front row. Because I have delayed in making a commitment, I will have an easier time holding my position until the gun. When starting in traffic I like to keep a hole to leeward of me by gently luffing windward boats. Carving out a hole too early, however, only guarantees that some opportunist will fill it. In the traffic along the line it is important to live and let live. All any skipper wants is a clean start for himself. If someone is overriding me to windward, instead of luffing him I may slow down and let him go by. If I catch someone barging, I don't try to play policeman unless it is really necessary to protect my own start. A good starter avoids trouble.

A boat that establishes a position in the front row has certain advantages over the latecomers who are scrambling for a clear air slot. First, a windward boat is not required to respond to a luff until an overlap is established. A good light air technique is to stop the boat dead in the water so that the speed of the leeward boat carries her by before a response to a luff is possible. A second advantage of windward over leeward is that leeward is not allowed to luff abruptly, as she may do after the start. She must give windward opportunity to respond. Another problem for leeward is that it is difficult to accelerate in the disturbed air and water behind the first row. Finally, if a skipper has chosen the middle of the line, he may well have underestimated line sag. In this case a little encouragement from a leeward boat often turns out to be a friendly act.

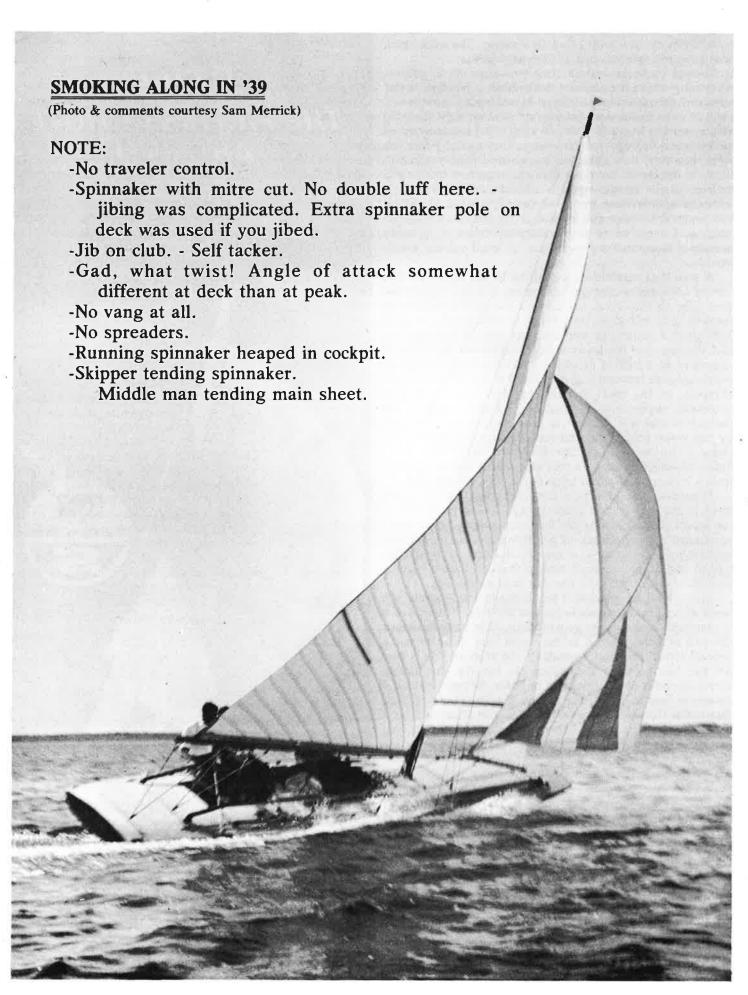
Whatever the strategic considerations, every start involves the necessity of good timing. Timing is the key to the fourth phase - hitting the line with speed. I have often mentioned the importance of practicing getting a boat to a specific point in space at a specific moment in time. The typical bad starter doesn't realize that he couldn't get a good start even if he were the only boat on the line.

In the final ten seconds I try to figure out whether the boats around me are likely to be over the line. If they are, it is absolutely necessary to go with them. It is useless to take the risk of being buried in the event that there is not a general recall. Practically speaking, the starting line is now not the line between the stakeboats but the line drawn across the bows of the front row of boats. Be agressive. If a cluster of four or five boats is over the line, the odds are that either they will all get away with it or there will be a general recall. The only exception is for a boat in a position that is highly visible to the committee; in this case caution is warranted.

When the boats around me are not going to be over the line - as is usually the case - I hold back a little and then hit the line on the gun with maximum speed. Those who get too close to the line have no space remaining in which to accelerate. For these skippers ten minutes of hard work is squandered in the last few seconds. Well executed acceleration in the last ten seconds can make up for myriad earlier mistakes. Hitting the line with full speed on the gun almost always guarantees clear air.

Unquestionably a good start is a lot easier to get on paper during the winter than on water during the summer. Still, a thoughtful approach never hurts. If I get a bad start, I try to determine in which phase the trouble started. Other than that there is nothing to do but sail the race, because the points are awarded at the finish.







The Starship Enterprise (\*Harken's mobile testing unit No. 1) is a magnificent A-Scow, the fastest stock monohull in the world. Carrying up to 1400 square feet of spinnaker, this thirty-eight foot monster is held down by human weight only, and has such small rudders that sail control takes a complex system of blocks and lines that must react instantly and provides a perfect testing platform for Harken Blocks.

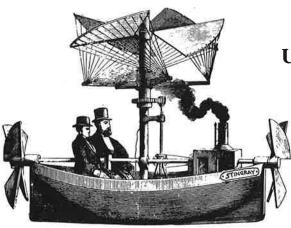
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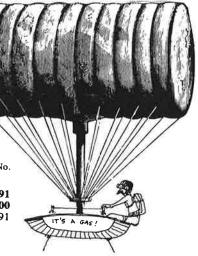
#### United States Patent [19]

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[52]	IIS CI	106/291
[22]	O.D. C	100/291
[51]	Int. Cl. <sup>2</sup>	C08K 7/00
1211	A	



#### ADDENDUM TO 55 YEARS OF "E" SCOW DEVELOPMENT

DESCRIPTION OF THE INVENTION

By Maynard W. Meyer This is a division of our application Ser. No. 401,208 filed Oct. 24, 1973 now U.S. Pat. 3,920,603

#### THE LUFF SPAR

No sooner had I come back home from Lake Geneva, having delivered the text of the "History" Article to Ted Brennan on the 4th of July last year, than I went down into my basement and there hanging from the joists was my "Luff-spar". I'd forgotten all about it! Never mentioned it in the history. How could I have forgotten? Well, the luff-spar was another one of those wild thoughts dreamed up on a sleepless night in spring between ice-boating time and the start of soft water sailing.

The idea of the luff-spar was to correct an ill that had plagued us over the years, namely the sagging off of the jib to leeward and the affect this had on the whole rig. I talked to Buddy and Harry Melges about it, they put their heads together and then they put the luff-spar together. This was back in 1959. The spar was of spruce, in streamline form, about 7 inches deep and 3 inches wide with a split aluminum tube for a tunnel on the aft edge. Running through it was a stainless steel rod stay with fittings on each end for attachment to deck and main mast. The luff-spar swiveled on the rod stay. It all worked as planned, and the only criticism I had was that it weighed far more than it should have. The rod was about 1/2 diameter and the wooden portion had only the hole in it for the rod. It should have been hollowed out to just a thin shell.

Mel Jones, who in my opinion was the top jib builder in those days, fashioned an excellent jib, quite flat because of the extra draft depth gained by the luff-spar. The luff of the sail had no cable in it because the jib itself (or cable) did not take any load, all of the load was taken by the luff-spar and rod.

Well, it worked, but I felt it was just too heavy to be really successful and of course, it was fun to try it.

One very interesting action to behold was (just what might be expected) that when you were running downwind with the large parachute full, and, if the backstay wasn't really in tight, the mast would lift right off the deck, like a pole vaulter going over the bar, with the luff-spar acting as the pole! Yes, we had many exciting and fun moments playing with the infamous luff-spar. Including, following its very first appearance at a regatta, our good friend and tough competitor from the northland, Jule Hannaford, immediately wrote a letter to the ILYA Board to get it outlawed. Things like that made it even more exciting.

#### **MORE MYLARS**

At the White Bear Invitational last summer (1978) I had the good fortune to chat with some of the best "E" boaters from the '50's era. J.G. (Smokey) Ordway, Jr. and E. Bronson Ingram, now turned golfers, who were out on the water enjoying the "new look" of the current colorful plastics and the myriad of adjusting devices. We were having Sunday brunch together at Smokey's when I suddenly remembered that, "Didn't Smokey also use Mylar Sails back in the early '60's?" Sure enough, he did, and I forgot to mention it in the first story. As I thought about it further I remembered one heavy air race, I believe at Minnetonka in 1959. Smokey was well up in the race with his Mylars snapping loudly (there's been no sail material as noisy as the Mylar was - thank goodness its gone - sounded like a motorboat) when all of a sudden with one loud snap it ripped from leach to luff. A fiberglas reinforcing tape down the leach held it together enough for him to finish, though limpingly. Here again was an interesting material to play with to see what could be done with it, but it lacked the durability of a woven material and washed itself out. But remember that with a roll of Mylar and several rolls of 3M Mylar tape you could make your own sails on the living room floor.

#### THE 28' ZIPPERS

Another recall that occurred to me up at the 1978 ILYA Invitational at White Bear last summer, came to me as we were passing that part of the lake along the southwest shore where old "Center" buoy used to be located. I suddenly remembered that that was where our zipper got stuck! I had completely forgotten to write about the sail adjustment devices of the '50's in the history article. Stifled by an increasing number of restrictions, when the number of sails allowable was cut back, some of us thought that a way to retain more flexibility would be to attach a zipper all along the luff of the sail just aft of the bolt rope and separate the two halves of the zipper in a careful manner to properly control the sail shape from a full, deep sail when the zipper was open, and then make that same sail into a flatter one simply by closing the zipper. Thus, if the Class rules limited one to just two sails you really still had four sails! It worked very well, but of course in little time at all, the zippers were outlawed. Zippers were also tried along the foot.

My recollection at White Bear concerned that embarrassing happening when one's zipper is halfway up, or down, as the case may be and it jams at that point. It was between the 5 minute gun and the start of a morning race. The weather had the appearance of gusting up sometime during the morning, not knowing quite when or how hard it might blow we picked up a young fellow, the son of an old "E" boat friend, Bill Graves. Young Billy was just right weight for us to add another 95 pounds and all was going well until we had about 3 minutes left before the start. The wind velocity kept increasing and I decided we'd better flatten sail. Middle-of-the-boat handyman (Dede) went up to the spar and started to haul down on the little cord halyard that operated one from the side. And what happened? If just jammed the zipper right there! There was only one thing to do - get young Billy up there as fast as possible to "un-jam" it. Billy was a good climber, got up there in no time - but that puff had jammed that zipper hard and he couldn't budge it. With "encouragement" coming from below he kept at it. Time was running down, I had to go for the line. Billy felt the boats converging, and thought it a bit unusual for him to be halfway up the mast at the start of the race. But he kept working hard at it and just as I had to start sheeting in to hit the line he shouted, "I got it", and

slid down the mast bringin the zipper tab along down with him and we had the flat sail I wanted as the gun sounded.

#### THE MELGES CORD

Another sail shortening device was dreamed up by Harry Melges in the late '40's or early '50's. This gadget was known as a "Melges Cord". It consisted of a cord running in a "pocket" from the clew of the mainsail to the peak just forward of the batten pockets. The cord was brought down to the boom and ran forward on the boom to a cleat. The cord could be pulled taut or left loose. When loose the sail had its original designed shape, but when pulled taut it effectively dropped the battens off to allow greater dumping of power. Like the zipper, it too was short lived - the Rules Committee being the executioner.

#### HOPEFULLY, HERE'S HERMAN

So, I've run out of forgotten items, but Herman Nunnemacher has promised to press his recall button and I'm sure he'll come up with some additional weird happenings in the "development" (?) of the Class E Scow our favorite boat.

#### HOPE WON'T GET YOU HERMAN--THIS TIME AROUND.

Editor's Note: Herman missed punching his recall button because of preoccupation with launching his A Scow as well as imminent retirement BUT-with Mike Meyer's help, we hope to waylay Herman this summer and tape anecdotes about the hazards of E-sailing at Pine Lake (where one's lawyer aboard was a must) and Championship regattas some years back.



Even a cumera shivers at some of the early spring Regrettas!



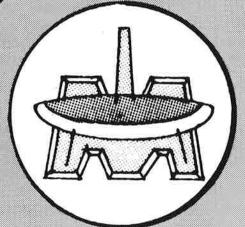
Bet they didn't listen like this in high school!



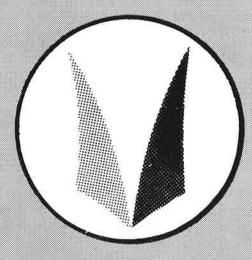
wherear sometimes it is idelicately warm - like at Nagawisea w, this mid-may



The Reporter would like to think the Committee and members of the Nagawicke y. l. for their worm and effective help.



MELGES
BOAT WORKS

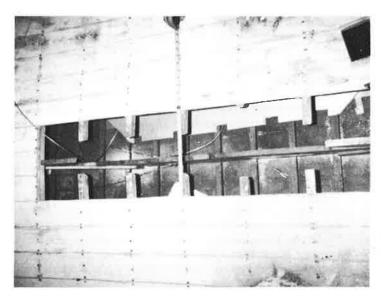


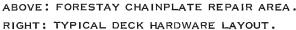
MELGES SAILS

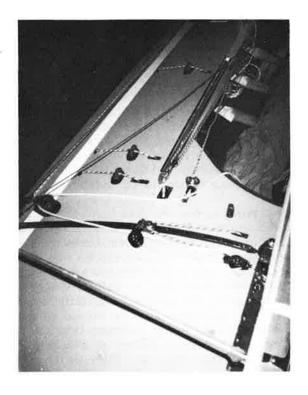


MELGES OFFSHORE

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#### **UPDATING BIG SISTER . . . PART II**

#### THE REPAIR AND RE-HARDWARING OF OUR A-SCOW

by John Spargo

Editor's note: In the last issue we presented hopes and plans for the preparation and up dating of a Class • A Scow to watch utilization of sophisticated "go fast" systems now aboard the "E". It seems like the "A" is ready to challenge for a rematch for supremacy.

Because it may be of general interest, and because it may stimulate thought among A-boat owners as to what their boats need, I would like to discuss specifically what we have done to our A-boat since purchasing it last fall.

First let me say that we feel that this particular boat has had absolutely impeccable care throughout its life. The general quality of all ribs, stringers, planks and internal structure was probably the best of any A-boat we have seen before or since buying this one. There is no A that has a fairer hull. There are simply no deformities at all. The hull appears to have the exact shape it was built with. However, the boat did have a few structural problems that we had to take care of over the winter. In addition, we wanted to update the deck hardware.

The first thing we did was remove all the old deck hardware and rubrail so that we could re-canvas the deck. Every piece of hardware was labeled as it came off so if we chose to re-use it rather than replace it, we would know which piece went where. Of course, we also planned on saving the old canvas for reference. After removing the old canvas we began examining the deck to see what preparation would be necessary prior to recanvassing. We noticed a very small area of dry rot in the center of the forestay chainplate area and, after some debate, decided that the only thing to do was to pull off the plank in that area to see how far the rot had progressed. To our dismay, the deck backbone was completely filled with rot for about four feet, and the adjoining deck beams and side laminations were rotted, too. So, our first major job was

about to begin.

We cut out all the rot, leaving a hole in the deck four feet long and a foot wide and a foot deep. And this was right where the forestay and jib tack attach! We then measured carefully and cut all the replacement pieces to fit. It was just like creating a jigsaw puzzle. None of us had ever done a repair of this magnitude before, but we had no choice but to learn how first hand. After all the pieces were cut and fit, which was a three or four day job in itself, we then glued them all in place. The pieces consisted of the deck backbone, two side laminations, six deck beams and sister beams, and four long side pieces to laminate over all the joints. After all this was finished, we then cut, planed, shaped and installed three deck planks to complete the repair. I have no doubt at all that this repair has resulted in the entire area being stronger even than when the boat was new. Our entire philosophy was one of overkill. Everything we put back was stronger than what had been there.

Our attention now was turned to preparation of the deck for the new canvas. Several A's that have been re-canvassed in the last several years have had to use two canvasses sewn together down the center, so we were most fortunate in obtaining a one-piece canvas. We first sawed out all the cracks in the deck and then glued them. After the glue had cured we sanded the deck for what seemed like weeks, but was actually about ten or twelve hours over a two-day period. When the deck was ready we painted it with a heavy white oil-base paint mixed with floor sealer, then immediately stretched and stapled the canvas, and immediately painted the canvas with the same mixture. When all this had dried another coat of white paint was applied, then two color coats of bikini blue. Following this, we put on a white border stripe. Now it was time to install the new rubrail. We had debated whether to use the plastic rubrail, which would be easier to install, as well as longer lasting, or to use the traditional varnished mahogany rubrail. We elected to go with the tradition and beauty. The only really difficult part was bending the oak strip around the bow, since we had no steamer. We simply soaked the oak piece in water for about three hours and it went on like a charm. It was not necessary to soak any of the remaining rubrail pieces. After filling all the screw holes with mahogany putty, we then stained the rubrail. Following that, over a period of a week or so, we applied five coats of varnish to the rubrail. Lastly, we installed the cockpit trim pieces, stained and varnished them, too, and then trimmed off the excess canvas around the rubrail and inside the cockpit.

Prior to installing any new deck hardware, we examined the interior structure of the boat to see if there were any additional areas of rot needing repair. Under the mast step, we found that the main backbone and its side laminations and H-braces and side pieces were extensively rotted for a distance of about seven feet, as well as virtually all the structure supporting the mast step. Similarly to our repair of the forestay chainplate area, we cut out all the rotted pieces, including eight feet of backbone. Once the area was free of rot, we completely soaked all adjoining ribs and struts with an epoxy fungicide. Then we went to work building the pieces to put this jibsaw puzzle back together. We were very careful to insure that all cuts were angled so as to distribute all loads in such a way that even without glue the entire structure would hold together. Then all the parts were glued in, the epoxy fungicide was applied to everything, Gougeon glue was applied, and then varnished. This entire area, we are certain, is now even stronger than when the boat was new. Lastly, the torsion bar compression member was installed between the chainplates, as well as G-string bars from the chainplates to the bottom of the backbone below the mast step.

Now we were ready to begin hardwaring. Having minimal A-boat experience, we decided to examine the

hardware on several "state-of-the-art" A-boats to see if there were any ideas that had not occurred to us. After much consideration we decided on the hardware layout shown in the accompanying diagram. Our goal was to have all controls located so that they could be adjusted with a minimum of crew movement, and to have adequate purchase to make adjustment simple. One problem here was that with adequate purchase there is an enormous amount of rope on each control. We decided, therefore, that to keep things simple and organized we had to bury all control line ends under the deck, so that chances for tangles would be at a minimum. The trouble was, enough shock cord to take up thirty feet of rope would have had to go all the way around the boat. So, we borrowed an idea from our M-20 experience, where a spring-load clothesline reel is used on the spinnaker halyard tail, and elected to install these take-up reels under the deck to take up our control lines' slack. Another problem with multiple underdeck purchase is that blocks must move quite a distance, and in moving invariably get caught or hung up on any of the many ribs, struts, stringer or other parts on a wood boat. To eliminate this problem we decided to run most systems inside lightweight plastic pipes. The padded hiking straps were then shock-corded underneath the floor to hold them in exactly the right place ready for use. All these ideas have resulted in a deck and cockpit layout that is extremely clean and uncomplicated. Another example of this is the cunningham. All the purchase for the cunningham is below deck. There is simply one wire that hooks into the sail.

After completing the hardwaring, we sanded and varnished the hull.

I feel that we now have an A-boat that is quite strong, as well as capable of being handled efficiently, due to the functional simplicity and efficiency of our hardware systems. The only thing remaining is for us to learn to sail the boat, which certainly means that the major work is still ahead of us!

