



MARCH/APRIL 2003

“There is nothing - absolutely nothing - half so much worth doing as simply messing about in boats . . . or with boats . . . In or out of 'em, it doesn't matter... that's the charm of it.” - Kenneth Grahame / “The Wind in the Willows”

Just a quick note: Please share this with your wives, partners, mates... The one downside to delivering newsletters, etc. via email is that you can't leave it sitting on the counter for your significant other to see...After all, they are part of the club as well...

”He or she and spouse/mate are entitled to all privileges of the Club...” – OYC Bylaws

Welcome New Members!!!!

JEFF & PAM STALLINGS live in Winston-Salem and have a C&C 30 moored at Holiday Harbor...We have Butch Bercham to thank for bringing us this fresh meat. Welcome aboard Jeff & Pam!

Also - AND THIS IS A MAJOR ANNOUNCEMENT – **DAVE SAUNDERS**, that OLD SALT, has officially joined Outrigger Yacht Club. Dave crews with Ralph Theriault on Contagious and is well known to those of us who hang around the beer cooler at our parties! Welcome aboard Dave!

“So you say it’s your Birthday...” - The Beatles

<u>April</u>	<u>May</u>
8 – George Ellis	6 – Kathy Byrum
9 – Richard Mayberry	26 – Pete Rounds
14 – Camille Jarrett	27 – Jan Richardson
17 – Bill Carroll	
23 – Mike Magee	
27 – Gretchen Heiler	

LAKE NORMAN PHRF RATINGS

Our intrepid Vice Commodore, Rick Rowan, has provided the second installment of his overview of the PHRF Rating System for this issue. This is the handicapping system used by OYC, LNYC, PYC, and LNKC for all racing events held on Lake Norman.

In order for this system to work, we all need to have a rating. It’s free, it’s quick, it’s painless, and it’s easy. PLEASE fill out the PHRF application form that we’ve attached, fill it out and send it to Jim Bost as instructed at the bottom of the page. It will help to keep down the arguments after the races!



Report from the Commodore

This year is starting out to be Great! We had a slamming cold Icicle Series and an 80-degree Top Gun and look out, spring is here. It's the most wonderful time of the year. No not Christmas - Regatta *time*. Get your crew, stock your coolers and if you are not planning on racing your boat, crew on someone else's. If you need crew, give us call!!

Lake Norman road tripping to St. Petersburg FL...Wow, what a great time. The National Offshore One-Design turned out to be a lot of fun - great racing, good conversations and a great turn out from the Lake.

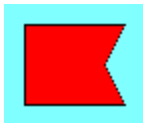
We had one J-24, two Tripp 26's, and three Ultimate 20's. The J-24 class had the most competition with almost 30 boats. The level 123 class that our own John Ogden raced (the farewell regatta for Ego Tripp) was tight. Unfortunately John was edged out of first by 2 seconds in one race - what a finish.

The Ultimate 20 Class was dominated by Lake Norman's own Don Corey on Uh-Huh and Bob Macgrath on Pinnocchio. The regatta came down to the last race. Bob Magrath had the luck that day and Don Corey came in Second.

The midwinter was pay back time with Don Corey cleaning house Sunday for the Victory. Congrats Don !! Or should I say, Mr. TOP GUN?

Everyone, we have a lot of events planned this year. Please come out and join us!

Andrew Howell
Commodore



Report from the Vice-Commodore...

As most of you know, we awarded trophies for the Icicle Series and the Top Gun Race(s) this past weekend at the Frogmore. The big winners in the Icicle were Bob Handley in the Spinnaker A Division, John Guthrie in the Spinnaker B Division, and our own Vice Commodore Doug Riley in the Non spin Division. Taking second in Spinnaker A was Sam Bender who put up a valiant fight against the Mum. A second place trophy also went to Bill Carroll in the Non spin Division. Although turn out was lighter than expected, everyone who participated seemed to really enjoy the series.

The Top Gun Race turned out to be a real exercise in the posting and reading of course flags. Everyone, including me, learned or relearned some things about how to post the course you want the fleet to sail and how to read the flags that are posted. Out of nine skippers and Race Committee (me), only Vern Heiler read the course flags correctly before the start of the race. When it was all over, I decided to score two races - the posted course, and the more logical course that most of the boats sailed.

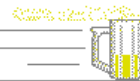
After finishing the logical course, Don Corey then completed the posted course as well, making a nice recovery to win both races and the Top Gun first place trophy. Vern was the legitimate winner of the Second place trophy with Alan Blythe sailing "Maggie" to a third place in his first OYC race. (He freely admits though that he knew where to go only because he watched Vern sail the posted course.) In the unofficial race, Doug Riley took second place and Sam Bender took third place honors. Again, a fun time was had by all, especially those who watched me dance on a string at the awards presentation.

Included with this newsletter is the second of two articles on PHRF handicapping. This one attempts to unravel time-on-time scoring. I hope you enjoy it and I welcome your comments and questions regarding either of the two articles.

Don't forget the upcoming Spring Series, which starts April 5, the Pursuit Regatta on May 3-4, and the Hospice Regatta May 30 to June 1.

See you on the water,

Rick Rowan, Vice Commodore



Report from the Rear Commodore...

The Frogmore Stew was an outstanding success...I believe it was the largest event we've had in some years. We counted over 50 people that attended. Thanks **to Chester and Susie Davis** for all of their hard work over the years to stage this fun event. Chester's passed the stew pot on to Sherry & I to keep the tradition rolling. Also, many thanks to **Dick Walker** for the daiquiris!

OYC provides opportunities for members to race their sailboats some 60 or so days per year...However, at least for the past few years, we've only provided three non-racing events – the Chili Cook-off, the Frogmore Stew, and the Christmas Party..."The times they are a-changin'" (Bob Dylan, 1965)...

On April 26th we will conduct a **Flotilla to the 150 Bridge**. Not a race but a nice leisurely cruise up the Lake where anyone who wishes can spend the night at anchor and return with us the next day...Others can just turn around and head home – sunset's not until after 8PM. Notice to go out soon. Mount your grills and come on up!

A **Poker Run and BBQ** on the Sunday afternoon (May 25) of Memorial Day Weekend is planned. Pack a cooler and be ready to draw a hand of poker that WILL win you a prize. Each captain is guaranteed to win something. Another non-racing, but on the water, event...Cruise around to various points on the lake (we don't even care if you use your motor!), pick up a card, then hightail it to Mariner Villas by boat or by car and get the last card to complete your hand. We'll have a full BBQ dinner waiting along with your favorite beverages. If you can't make the Poker Run, come on by for the dinner and fellowship.

On June 28 we will have the **Cheeseburgers in Paradise raft-up**. We'll meet up on the water and OYC will provide burgers, brats, potato salad, chips, etc. **BYOB for this event**. The **Margaritaville raft-up** (wonder what we'll serve???) will be held July 19 and the **Changes in Latitudes raft-up** will be held August 16. What the hey, there's no wind for sailing!

We'll have a **Camp-out Cruise** on September 13 and we're looking to have an old fashioned **pig'pickin'** at the **Sailing for Huntington's Disease Regatta** (October 4-5). We're looking to really pump up this event to make it one of the premiere events on the Lake this year.

For the past few years at least, we haven't had an event to mark the end of the sailing season and our club championship, The Commodore Cup. This year we plan to hold an **Oyster Roast** on November 15 after the Cup to celebrate our champions (Spin & Non-spin), the winners of the Fall Series, and the participants in the 150 Bridge Race.

We will, of course, finish off the year with the Christmas Party/Dinner and Annual Meeting, which is scheduled for December 6 at Mariner Villas and where/when we will elect officers for 2004.

If anyone has any other suggestions, I'm all ears!

Respectfully

Doug Riley
Rear Commodore

RACE RESULTS:

2003 ICICLE SERIES

Series Totals - Time on Distance

DIV 1 - SPINNAKER A

<u>Skipper</u>	<u>Boat Type</u>	<u>Boat Name</u>	<u>PHRF</u>	<u>Sail #</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Total</u>
Bob Handley	Mumm 36	Por Fin	51	7	T5	1	1	1	1	4
Sam Bender	Pearson Flyer	Raw Power	138	20	1	2	2	T3	1	8
Dean Forbis	Benetueu 36.7	Echo	84	22763	3	3	T5	2	2	10
Don Corey	Ultimate 20	Antics	138	88	2	T5	5	5	5	17

DIV 2 - SPINNAKER B

<u>Skipper</u>	<u>Boat Type</u>	<u>Boat Name</u>	<u>PHRF</u>	<u>Sail #</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Total</u>
John Guthrie	Ranger 28	Lone Ranger	189	20240	1	1	T4	1	4	7
Mike Magee	Lindenbug 26	Wiz	174	22789	2	T4	1	4	2	9
Lynn Strange	Pearson 30	Viento	183	1188	T4	4	4	4	4	16

DIV 3 - NON SPINNAKER

<u>Skipper</u>	<u>Boat Type</u>	<u>Boat Name</u>	<u>PHRF</u>	<u>Sail #</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Total</u>
Doug Riley	Catalina 25	Life o' Riley	228	5231	1	1	1	T5	1	4
Bill Carroll	Catalina 27	Gone W/ the Wind	201	5103	2	T5	2	5	5	14
H. Mardirosian	Tanzer 22	None	240	1911	T5	5	5	5	5	20
Paul Kurzeja	Catalina 22	Sound Sider	285	TBD	T5	5	5	5	5	20

TOP GUN RACE

Date: March 28, 2003 PHRF Time on Distance Wind: SSE 10 Knots

DIV 1 Course: WXP2 Distance: 7.8 Start Time 10:35:00

<u>Rank</u>	<u>Boat</u>	<u>Rating</u>	<u>Sail#</u>	<u>Finish</u>	<u>Elapsed</u>	<u>Corrected</u>	<u>Sec/Mile</u> <u>Behind</u>
1	Antics	171	88	12:02:10	1:27:10	1:04:56	0
2	Jezebel	108	43571	11:56:55	1:21:55	1:07:53	23
3	Maggie	234	13288	12:55:57	2:20:57	1:50:32	351
DNF 10	Raw Power	159	20				
DNF 10	Tabasco	243	978				
DNF 10	Life o' Riley	249	5231				
DNF 10	Gone W/ the Wind	222	5301				
DNF 10	Lone Ranger	210	20240				
DNF 10	Devil Dog	135	43546				

TOP GUN RACE 2

Date: March 28, 2003 PHRF Time on Distance Wind: SSE 10 Knots

DIV 1 Course: WXPX Distance: 7.3 Start Time 10:35:00

<u>Rank</u>	<u>Boat</u>	<u>Rating</u>	<u>Sail#</u>	<u>Finish</u>	<u>Elapsed</u>	<u>Corrected</u>	<u>Sec/Mile</u> <u>Behind</u>
1	Antics	171	88	11:55:58	1:20:58	1:00:10	0
2	Life o' Riley	249	5231	12:05:31	1:30:31	1:00:13	0
3	Raw Power	159	20	11:55:31	1:20:31	1:01:10	8
4	Tabasco	243	978	12:06:48	1:31:48	1:02:14	17
5	Lone Ranger	210	20240	12:04:33	1:29:33	1:04:00	32
6	Devil Dog	135	43546	11:57:48	1:22:48	1:06:22	51
7	Gone W/ the Wind	222	5301	12:14:05	1:39:05	1:12:04	98
DNF 10	Maggie	234	13288				
DNF 10	Jezebel	108	43571				

Ladies and Gentlemen: YOUR TOP GUN CHAMPION – DON COREY!



1989 Michelob Cup Regatta Tragedy

(Article by Chip Richardson)

Imagine Peninsula Yacht Club with a small board-and-batten building in place of the blue roofed stucco clubhouse. Imagine the million dollar mansions along Harbor Lights replaced with miniscule A-frame cottages and camper trailers decorated with Chinese lanterns scattered among ten times as many trees. Imagine in the harbor three times as many sailboats supporting the barely floating docks. Imagine dozens of sailors spending the entire weekend on their boats with their families and crews. Imagine hundreds of sailors entertained by live bands, a free beer truck and the whole peninsula to party on all weekend. Imagine having a spring regatta with ninety-three boats entered. This was the scene for the Outrigger Harbor Sailing Association Michelob Cup in May, 1989, when the unimaginable struck.

With no close neighbors to bother, Friday evening's party rang loud and ran long into the wee hours. Saturday dawned cool, partly cloudy and blustery, the lake a froth of whitecaps. The Skipper's Meeting opened with the National Anthem followed by an invocation and the usual litany of introductions, sailing precautions and special rules. By noon, ninety skippers were pacing the starting line, facing sailing conditions where few would normally venture and in which some had never sailed, most had never raced. In fact, for many of the participants, the Michelob Cup was more about the partying than the racing. Several racing novices had taken on more experienced skippers to guide them through the procedures and rules.

Given the strong breeze, the Race Committee set a long course upwind to the dam, downwind to Marker "Z", and return. Competitors reported an average of 18 knots of breeze at the noon start, with some reports as high as thirty knots. The Spinnaker Fleet started first, followed by the Non-Spinnaker Fleet, with many crews struggling to manage their boats in the unfamiliar conditions.

The first Mayday was called shortly after the start of the Non-Spinnaker Fleet when a port tack boat rounded up in a gust, striking a starboard tack competitor amidships at full speed. In the resulting confusion, a pregnant crewmember was swept from the deck of the second boat in an uncontrolled gybe. Quickly retrieved from the still chilly water, the crewmember was transported back to Outrigger Harbor and, from there, to the hospital. They were safely ashore before conditions dramatically deteriorated.

What happened approximately thirty minutes later has as many descriptions as witnesses. Some competitors described a black cloud appearing in the western sky. Some reported dramatically increased winds preceding the cloud. A few reported thunder, lightning and/or hail. Reported wind directions vary from southeast through west to north. Near Channel Marker "2", current OYC member and Past Commodore Bill Gray, assisting a novice crew in their first regatta in the Non-Spinnaker Fleet, reported a "white wall" rapidly approaching across the water from the direction Lake Norman Sailing Club, with driving rain or spray stinging like hail, and the water blown flat with streaks of foam snaking along the surface. Bill recalls dropping all sails, passing out life jackets and motoring into the wind, only to have the boat knocked rail down under bare poles. With near-zero visibility, he could not see what was happening just a mile to the north.

At this point most of the Spinnaker Fleet was streaking down the lake under spinnaker in 30+ knots of wind and were more concerned about dousing the chute for the leeward mark than looking over their shoulder. A few had rounded the mark and were face-to-face with the monster appearing over the lake. Reported wind speeds leaped to 60 knots within minutes, peaking at a reported 78 knots, hurricane force. The boats began to be knocked down like dominoes. Suddenly, nineteen crew members from seven boats were in the water, most without life jackets, and the remaining fleet turned to assist. Two sailors, both OHSA members, both experienced skippers, and both not wearing life jackets, could not be rescued in the prevailing conditions.

After approximately twenty minutes of fury, the storm passed, leaving clear skies, an abandoned race, shredded sails, fractured rigging and two missing sailors. An intensive search effort failed to immediately locate the missing. OHSA faced the grim reality of tragedy, abandoning the regatta and mourning the loss of friends.

The Lake Norman keelboat fleet was further decimated in September, 1989, by Hurricane Hugo; many sailors lost interest in the sport after facing two devastating storms in one year. In May, 1990, a smaller and more somber group of sailors gathered to dedicate a new flag pole erected in Outrigger Harbor in memory of Bob Curtis and Nick Wodogaza. This flag pole with memorial plaque, currently in place at Peninsula Yacht Club, remains the property of Outrigger Yacht Club.

The OHSA committee investigating the tragedy concluded:

“As the events of the 1989 Michelob Cup here show, yacht racing can be a very dangerous sport. Weather conditions can change at any moment and can cause injuries and death to the participants. Each skipper accepts this responsibility when he/she elects to race and is totally responsible for the safety of the boat and crew.

“All involved will long remember this day on Lake Norman and our lost comrades. It is hoped that their deaths will be a reminder to us of the dangers of the sport and will save lives in the future and will provide some comfort to the survivors of this regatta. It is also hope the findings and recommendations of this Committee will provide information that, if used, will help improve the safety of racing for all on Lake Norman.”

A summary of the committee report remains in the OYC archives.

Note -- Rumor has it that the boat that suffered the worst loss and damage had her name changed just a few weeks prior to the 1989 Michelob Cup and that the owners did not perform the proper naming ceremonies – Editor

MORE SCHEDULE CHANGES

Your Rear Commodore fried so many brain cells in college that he can't seem to get anything right the first time...Please note the following changes and additions to the social events calendar. You will receive notices as the time nears for each:

- **The First Annual (?) OYC Memorial Day Weekend Poker Run and BBQ** – Originally scheduled for Saturday, May 24 will be held on **Sunday, May 25** --- Monday's a holiday, so it should be a good day for everyone who's smart enough NOT to go to the Beach that weekend.
 - The first raft up of the season (of many seasons actually), the **Cheeseburgers in Paradise Raft-up**, will be held on **Saturday, June 28**, rather than Saturday, June 21 as originally scheduled. More info to come...
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PHRF TIME ON TIME SCORING – WHAT IS GOING ON HERE?? **by Rick Rowan, OYC Vice Commodore**

I started the research for this article hoping to find out why many Lake Norman racers do not like PHRF Time on Time (TOT) scoring and some even refuse to participate in TOT scored events. I was aware vaguely that the faster rated boats were generally at a disadvantage relative to Time on Distance (TOD) scoring under the method we are currently using for the Wednesday Night Series and determined to find out to what extent this was true and what, if anything, should be done about it.

Time on time scoring utilizes a Time Correction Factor (TCF) to adjust for the different handicaps in the race. The elapsed time for each boat is multiplied by the TCF to arrive at the corrected time. The formula for the Time Correction Factor is “Time Correction Factor equals a variable A divided by (a variable B plus PHRF)” or

$$\text{TCF} = A / (B + \text{PHRF})$$

where TCF = Time Correction Factor

A and B are Variables selected to adjust for fleet and course conditions

PHRF = Rating in seconds per mile

US Sailing, in its time on time scoring information, offers the following commonly used numbers for the variables in the above formula. It suggests that variable A be set at 650 and that variable B be set at (a) 480 for heavy air or all off the wind racing, (b) 550 for average conditions, or (c) 600 for light air or all windward courses. Accordingly, the formula adopted for the Wednesday Night Series and other lake regattas using TOT scoring has been that suggested for “average conditions” or

$$\text{TCF} = 650 / (550 + \text{PHRF})$$

Where do these numbers come from? A little more research into the TCF reveals that the denominator (B + PHRF) should represent the number of seconds it takes to sail a nautical mile in good conditions. Another way to look at it is that the denominator divided into 3600 (seconds per hour) should be the average boat speed in knots. Also, US Sailing suggests that the A variable be selected so that the TCF for the middle of the fleet is about one. To make that happen mathematically, the difference between the A and B variables must approximate the PHRF for the middle of the fleet. If you look at the formula we are currently using, you will see that it is set up for a fleet with a PHRF of about 100 as the middle of the fleet and a boat speed of 5.54 knots.¹ For a 174 rated boat the speed comes out to be 4.97 knots for the “normal conditions” formula,² and 4.65 knots for the “light air” formula.³

So how does the “normal conditions” formula we are currently using stack up against TOD scoring? That’s where the attachments come in. Attachment 1 shows two “races”, 7.5 miles and 9.0 miles long, with the entire range of ratings on the lake participating. Will wonders never cease, in both

¹ Where middle PHRF = 100, $3600 / (550 + 100) = 5.54$

² $3600 / (550 + 174) = 4.97$

³

racers the fastest boat finished in 1 hour and 30 minutes due to different conditions and all the boats tied for first place in each race using TOD scoring (note identical TOD corrected times for each race). But look at what happened using the TOT formula to score the very same races. In the Column A results you can see that the faster rated boats took a pretty good beating in the lighter air race, while things evened out in the 9.0 mile race where the two systems yielded approximately the same results. Although this may not seem right, the formula is doing exactly what it was intended to do. As average speeds on the course decrease, the formula adjusts for the disadvantage higher rated boats experience in a slower race.

But what if what we see happening is too much of a good thing? Lets try the recommended light air formula $TCF = 650 / (600 + PHRF)$ and see how it works. These results, shown in Attachment 1, Column B, show that the light air formula does reduce the disadvantage to the faster boats somewhat. Now that we know how the formula works, we can adjust it further to better represent our fleet and a lower average speed to further reduce the disadvantage. We can even adjust it to match TOD results for any given conditions. For example, using a middle PHRF of about 175, the average PHRF for the Wednesday Night Series, at a course speed of say 4.25 knots (very close to the 4.26 knots the 174 rated boat averaged in the 7.5 mile race), the formula comes out to be $TCF = 850 / (675 + PHRF)$.⁴ Column C of Attachment 1 shows that the results for this formula do in fact closely approximate the TOD results for the 7.5 mile race. But looking at the 9.0 mile race, we can also see that under this formula, the faster boats gain a significant advantage in the faster race. Remember, the ratings are established assuming optimum conditions. Adopting a formula for a series of races that gives the faster rated boats a further advantage in a fast race (reaching course in good wind) is not a good thing. These conditions occasionally do occur on Lake Norman.

So now that we understand the theory, lets look at the real world impact of the “normal conditions” formula on two Wednesday Night races. Given what we’ve learned so far, the results may surprise you. Some of you may remember Race 17 last summer. It was a windward leeward R-P-R course in good wind. The other race was a lighter air shorter course sailed on July 31. The TOT and TOD results for both of these races (those boats that finished within the time limit) are shown in Attachments 2 and 3. Note that the winners and losers didn’t change, although boats did move around some in the middle. We see then that the TOT scoring system we are now using does not turn the results upside down. It merely provides for a more level playing field in lighter air conditions for the slower rated boats.

With all of this said, should we abandon TOT scoring or adopt a new formula? I don’t think so. The formula we are using works fine for a long series with the potential for a variety of racing conditions and a wide PHRF spread within divisions. The “heavy air” and “light air” formulas should only be used for weekend regattas when unusual conditions are expected, or for all upwind or all off the wind racing.

I welcome comments and questions on any of the issues I’ve discussed here or in the previous article “PHRF – The Basics.” Please don’t hesitate to email or call me. Believe me, its been fun researching the subject and making an attempt to present it.

⁴ Use desired average speed to determine the B value as follows: If $3600 / (B+175) = 4.25$, then $B = (3600/4.25) - 175 = 672$. Thus, to keep things simple, B can be set at 675.

Time on Time vs Time on Distance Scoring
TCF = 650 / (550 + PHRF) Suggested for average conditions
TCF = 650 / (600 + PHRF) Suggested for light air conditions
TCF = 850 / (675 + PHRF) Middle PHRF 175 / 4.25 Kts average speed

Distance	7.5	Avg Course	TOD	A		B		C	
				TOT	Sec/Mile	TOT	Sec/Mile	TOT	Sec/Mile
Rating	Elapsed	Speed	Corrected	Corrected	Behind	Corrected	Behind	Corrected	Behind
48	1:30:00	5.00	1:24:00	1:37:50	39	1:30:17	20	1:45:49	0
66	1:32:15	4.88	1:24:00	1:37:21	35	1:30:02	18	1:45:49	0
84	1:34:30	4.76	1:24:00	1:36:53	32	1:29:48	16	1:45:50	0
102	1:36:45	4.65	1:24:00	1:36:27	28	1:29:35	15	1:45:50	0
120	1:39:00	4.55	1:24:00	1:36:03	25	1:29:22	13	1:45:51	0
138	1:41:15	4.44	1:24:00	1:35:39	22	1:29:11	11	1:45:51	0
156	1:43:30	4.35	1:24:00	1:35:17	19	1:28:59	10	1:45:52	0
174	1:45:45	4.26	1:24:00	1:34:56	16	1:28:48	8	1:45:52	1
192	1:48:00	4.17	1:24:00	1:34:37	14	1:28:38	7	1:45:53	1
210	1:50:15	4.08	1:24:00	1:34:18	11	1:28:28	6	1:45:53	1
228	1:52:30	4.00	1:24:00	1:33:59	9	1:28:19	5	1:45:54	1
246	1:54:45	3.92	1:24:00	1:33:42	6	1:28:10	3	1:45:54	1
264	1:57:00	3.85	1:24:00	1:33:26	4	1:28:01	2	1:45:55	1
282	1:59:15	3.77	1:24:00	1:33:10	2	1:27:53	1	1:45:55	1
300	2:01:30	3.70	1:24:00	1:32:55	0	1:27:45	0	1:45:55	1

Distance	9.0	Avg Course	TOD	A		B		C	
				TOT	Sec/Mile	TOT	Sec/Mile	TOT	Sec/Mile
Rating	Elapsed	Speed	Corrected	Corrected	Behind	Corrected	Behind	Corrected	Behind
48	1:30:00	6.00	1:22:48	1:37:50	1	1:30:17	0	1:45:49	0
66	1:32:42	5.83	1:22:48	1:37:49	1	1:30:28	1	1:46:20	4
84	1:35:24	5.66	1:22:48	1:37:48	1	1:30:39	3	1:46:50	7
102	1:38:06	5.50	1:22:48	1:37:48	0	1:30:50	4	1:47:19	10
120	1:40:48	5.36	1:22:48	1:37:47	0	1:31:00	5	1:47:46	13
138	1:43:30	5.22	1:22:48	1:37:47	0	1:31:10	6	1:48:13	16
156	1:46:12	5.08	1:22:48	1:37:47	0	1:31:19	7	1:48:38	19
174	1:48:54	4.96	1:22:48	1:37:46	0	1:31:27	8	1:49:02	21
192	1:51:36	4.84	1:22:48	1:37:46	0	1:31:35	9	1:49:25	24
210	1:54:18	4.72	1:22:48	1:37:45	0	1:31:43	10	1:49:47	26
228	1:57:00	4.62	1:22:48	1:37:45	0	1:31:51	10	1:50:08	29
246	1:59:42	4.51	1:22:48	1:37:45	0	1:31:58	11	1:50:28	31
264	2:02:24	4.41	1:22:48	1:37:44	0	1:32:05	12	1:50:48	33
282	2:05:06	4.32	1:22:48	1:37:44	0	1:32:12	13	1:51:07	35
300	2:07:48	4.23	1:22:48	1:37:44	0	1:32:18	13	1:51:25	37

Attachment 1

WEDNESDAY NIGHT SERIES Race 17

Date: August 28, 2002

Wind: NE 12-14 Kts

DIV 1 - SPINNAKER

Start Time: 18:35:00

Course: R-P-R

Distance: 6.0

TCF = 650/(550+PHRF)		Time on Distance	
Div	Sec/Mile	Div	Sec/Mile

Boat Name	Rating	Finish	Elapsed	Rank	Corrected	Behind	Rank	Corrected	Behind
Luvit	195	19:57:22	1:22:22	1	1:11:52	0	1	1:02:52	0
Margi	174	19:59:41	1:24:41	2	1:16:02	42	2	1:07:17	44
Devil Dog	132	19:55:40	1:20:40	3	1:16:53	50	3	1:07:28	46
Just Dandy	174	20:00:55	1:25:55	4	1:17:08	53	5	1:08:31	57
Antics	150	19:58:07	1:23:07	5	1:17:11	53	4	1:08:07	53
Quixotic	174	20:03:24	1:28:24	6	1:19:22	75	8	1:11:00	81
Pearl of Great Price	87	19:52:52	1:17:52	7	1:19:27	76	6	1:09:10	63
22 Caliber	183	20:04:54	1:29:54	8	1:19:43	79	9	1:11:36	87
Cielo	102	19:55:44	1:20:44	9	1:20:29	86	7	1:10:32	77
Perseverance	150	20:04:23	1:29:23	10	1:23:00	111	10	1:14:23	115
Tabasco	222	20:15:58	1:40:58	11	1:25:01	131	11	1:18:46	159

DIV 2 - NON SPINNAKER

Start Time: 18:35:00

Course: R-P-R

Distance: 6.0

Boat Name	Rating	Finish	Elapsed	TCF = 650/(550+PHRF)			Time on Distance		
				Div Rank	Corrected	Sec/Mile Behind	Div Rank	Corrected	Sec/Mile Behind
Raw Power	138	20:02:21	1:27:21	1	1:22:32	0	1	1:13:33	0
Check Six	174	20:07:07	1:32:07	2	1:22:42	2	2	1:14:43	12
Life o' Riley	228	20:17:27	1:42:27	3	1:25:36	31	3	1:19:39	61
Catherine	186	20:14:08	1:39:08	4	1:27:33	50	4	1:20:32	70
Lone Ranger	189	20:14:40	1:39:40	5	1:27:40	51	5	1:20:46	72
Air Transit	201	20:21:08	1:46:08	6	1:31:52	93	6	1:26:02	125
Gone With the Wind	201	20:22:13	1:47:13	7	1:32:48	103	7	1:27:07	136
Elysium	147	20:16:54	1:41:54	8	1:35:02	125	8	1:27:12	137
Trinkets & Trash	219	20:27:32	1:52:32	9	1:35:07	126	9	1:30:38	171
Aluva	144	20:25:27	1:50:27	10	1:43:27	209	10	1:36:03	225

Attachment 2

WEDNESDAY NIGHT SERIES Race 13

Date: July 31, 2002

Wind: N 8 Kts

DIV 1 - SPINNAKER

Start Time: 18:35:00

Course: R-P-R Shortened

Distance: 4.5

Boat Name	Rating	Finish	Elapsed	TCF = 650/(550+PHRF)			Time on Distance		
				Div Rank	Corrected	Sec/Mile Behind	Div Rank	Corrected	Sec/Mile Behind
Margi	174	19:59:09	1:24:09	1	1:15:33	0	1	1:11:06	0
Quixotic	174	19:59:39	1:24:39	2	1:16:00	6	2	1:11:36	7
Just Dandy	174	20:01:00	1:26:00	3	1:17:13	22	4	1:12:57	25
Luvit	195	20:05:10	1:30:10	4	1:18:40	42	6	1:15:33	59
Antics	150	20:00:06	1:25:06	5	1:19:01	46	5	1:13:51	37
Pearl of Great Price	87	19:53:52	1:18:52	6	1:20:29	66	3	1:12:20	17
Devil Dog	132	20:00:33	1:25:33	7	1:21:32	80	7	1:15:39	61
TBD	138	20:04:07	1:29:07	8	1:24:12	115	8	1:18:46	102
Tabasco	222	20:18:44	1:43:44	9	1:27:20	157	12	1:27:05	213
22 Caliber	183	20:13:47	1:38:47	10	1:27:36	161	10	1:25:04	186
Yes Dear	183	20:14:46	1:39:46	11	1:28:28	172	11	1:26:03	199
Cielo	102	20:04:59	1:29:59	12	1:29:47	189	9	1:22:20	150

Good Night Chesty	183	20:20:41	1:45:41	13	1:33:43	242	13	1:31:58	278
Wiz	174	20:24:48	1:49:48	14	1:38:35	307	14	1:36:45	342
Sleeper	183	20:28:47	1:53:47	15	1:40:54	338	15	1:40:04	386

DIV 2 - NON SPINNAKER

Start Time: 18:35:00

Course: R-P-R Shortened

Distance: 4.5

Boat Name	Rating	Finish	Elapsed	TCF = 650/(550+PHRF)			Time on Distance		
				Div Rank	Corrected	Sec/Mile Behind	Div Rank	Corrected	Sec/Mi Behind
Raptor	138	20:06:16	1:31:16	1	1:26:14	0	1	1:20:55	0
Check Six	174	20:11:50	1:36:50	2	1:26:56	9	2	1:23:47	38
Catherine	186	20:17:26	1:42:26	3	1:30:28	57	4	1:28:29	101
Icarus	168	20:15:45	1:40:45	4	1:31:12	66	3	1:28:09	96
Life o' Riley	228	20:28:07	1:53:07	5	1:34:30	110	6	1:36:01	201
Lone Ranger	189	20:23:37	1:48:37	6	1:35:32	124	5	1:34:26	180
Gone With the Wind	201	20:26:43	1:51:43	7	1:36:42	140	7	1:36:39	210
Air Transit	201	20:27:59	1:52:59	8	1:37:47	154	8	1:37:55	227
Raw Power	138	20:26:40	1:51:40	9	1:45:30	257	9	1:41:19	272

Attachment 3