



INSIDE THIS ISSUE

Vice Commodore	2
Bay	3
Membership/River	4
Training /Filling Up our Events Calendar	7
Racing	8
River Training	9
Bay Sailing: True or False?	12
BVI 2011	15
MDRU	21
Coast Guard Academy: Leadership 44 STC	24

For Upcoming Events....

See the Pentagon Sailing Calendar on the PSC Web Site at www.pentagonsailing.org

State of the Ship

Larry Paulson

Commodore 2011

commodore@pentagonsailing.org



Spring Fever is in the Air!

Our schedules for the sailing season are posted. Our first two classes for the River Course are filled. Winter Training has a record number of attendees. We have recruited over 30 new members since November. We have settled on Bailey's as the new home for our monthly membership meetings (3rd Monday of each month). All we need now is for members to sign up for our Bay, Raft-Up, and BVI sails.



Larry Paulson, Commodore

Vice Commodore's Page

Tony Skivo

vicecommodore@pentagonsailing.org

2011 New Year

Meeting Location

We received notice during the last week of the year that McGinty's, which had hosted us for a year and a half, had gone out of business.

We have settled on Bailey's Crystal City for our new meeting location. It has space for about 80 people. We had sixty attendees at our February meeting. Check the website, but we are planning all club meetings at Bailey's on the third Monday of each month.

Bailey's is located in Crystal City, and has lots of free parking. The menu selections are varied and inexpensive.

Tony Skivo, Vice Commodore

Please join us on April 18th, Monday at 7:00PM at our new location in Bailey's, Crystal City! Enjoy the good company and camaraderie!



The Bay and Beyond

Ryan Yost, baycommodore@pentagonsailing.org

Fellow PSC sailors,

This year's Bay Calendar has been posted, and we have already had some bay sails filled by the end of February. As I mentioned in the last edition of the *Lubber's Line*, we won't be using the old standbys of *Chasen the Wind* or *Freogan*. We are using new boats like [Blue Heron](#), [Blown Away](#), and [Time For Us](#). We'll be using [Blue Heron](#), a 2011 Beneteau 34, for our day sails and [Blown Away](#) and [Time For Us](#) along with old faithfuls like [Steel Aweigh](#) and [Flying Cloud](#) for our overnights.



Some of our overnight sail costs have dropped from \$300 to \$210 by taking advantage of 4-day charter rates; those particular overnight sails will span Friday-Saturday and Sunday-Monday. **However, we need to start filling those sails.** Give us your feedback on these sails. baycommodore@pentagonsailing.org

Volunteers needed to coordinate the BVI trip and the Labor Day Raft-up (LDRU). The BVI trip this year will be 9-19 July. Request interested skippers notify me and start soliciting for crew. Horizon Yacht Charters has a limited boat selection this year; however two other charterers have considerable offerings at good discounted rates for PCS members.

We're also in need of a boat owner to take point on our first endeavor for a boat-owners 4th of July raft-up (FJRU) which we will have one charter boat available. Thanks to Hal Moore and Dave Kunselman for coordinating the MDRU.

See you on the bay!

Ryan Yost
Bay Commodore

On the River

Eddie Conde and Tom Pullin

Eduardo.conde@gmail.com / tpullin@tpullin.com

Folks,

We are planning to get our fleet back in the Water on the weekends of 26 March and 2 April. So we are hoping to have lots of help with last minute painting and other work. Please shoot us a note if you are available to help.



We have found a buyer for GALE III, which was replaced by GANNETT, a new member of our Capri/Catalina 22 family. We hope to use the proceeds to help buy new sails for GANNETT and OSPREY. GANNETT came with a new engine, so we are continuing our plan to replace our older engines with new ones.

Eddie Conde and Tom Pullin
River (co-Commodores)

Membership

Cynthia Houston-Ross Rosiak

Membershipcommadore@pentagonsailing.org

Fellow PSC sailors,

We are overjoyed that we have had thirty new members join the club since November! This is a record!. Renewals are running much better than previous years, so this will be another year of club growth.

We are working on a lot of technical stuff to make the membership process more smooth and efficient. And of course, we are anxious to get on the River and the Bay.

Ross Rosiak and Cynthia Houston
Membership (co-Commodores)



Training Corner Hal Moore

Training commodore@pentagonsailing.org

Our Winter Training Program (WTP) is about to come to an end. My thanks to Nona Pucciariello for all of her hard work in making that program a success. The last WTP class will be on 2 April, the Celestial Class.

After that, we will be holding training clinics, our first Bay Sails, and our Training Clinics. Please see more details on the next page.

We have just filled the first two River Classes in May and June, with registration forms dated in January and February. We have also started filling up the August and fall classes as well. We have had lead instructors volunteer for all of our classes. I JUST WISH THAT I COULD GET PRIMARY INSTRUCTORS TO VOLUNTEER FOR THE PRIMARY INSTRUCTOR POSITIONS in our schedule. I still have gaps in August through October. Plus you get a spiffy PSC River Instructor Polo Shirt (red) for being an instructor.

The B-KBS program provides the flow of funds and new blood that makes all of our other programs, especially the Bay and Racing work. If you enjoy Bay Sails, Racing, or even the meetings, please think about giving back through teaching on the River. It is not onerous. Teaching new sailors helps you to meet new club members. It also keeps your skills "sharp." Nothing builds skipper confidence than teaching new sailors. Finally, you earn 10 FVSM hours for each day that you teach.

Our Bay Sail program has been posted. For the new sailors, even if you have not taken the B-KBS / ASA 101-103 class on the river, you can still go as crew on bay sails. It will help you understand what is happening on the river, under the supervision of a very experienced skipper and crew. Any hours that you accumulate on the Bay (prior to your B-KBS Qualification) can still be accredited to your Cruising Skipper candidate log sheets, should you decide you want to go for your D-CS / PSC Bay SOR. The same holds true for the Raft-Ups and BVI trip. You do not have to have any sailing experience to go on these trips. However, the time on board and any skills you demonstrate goes toward your qualification as a D-CS /PSC Bay SOR.



Training Clinic Hal Moore Training commodore@pentagonsailing.org

Fellow PSC Members,

We are going to do something different this year with regard to Training Clinics.

9 April, Saturday, Baileys, 1130– 1530

Our first clinic will be on 9 April, Saturday, from 1130-1530 at Baileys. This clinic is designed to go over the composite River program with a review of the training continuum. Its intended audience are the River primary, Lead, and assistant instructors. It is also intended for new members. PSC Bay SORs who have attended a River training clinic in the last two years, are not required to attend.

30 April, Saturday, Port Annapolis, 0830-1700 Senior Cruising Instructors Only

On 30 April, we will be holding a CQM session for SENIOR CRUISING INSTRUCTORS only at Port Annapolis. The content of this class has been discussed offline with these individuals.

1 May, Sunday, Port Annapolis, 0830-1700 PSC Bay SORs and Cruising Instructors

On 1 May, we will hold a PSC Bay SOR cruising skipper session. There will be a short chalk talk, followed by some basic CQMs and some navigation skill building underway. The audience are PSC Bay SORs and PSC Cruising Instructors. Those Senior Cruising Instructors who attended the session on the previous day, are not required to attend.

I recognize that we do not have “secondary” dates to provide “maximum capture” for these events for those on travel or having a special day. However, we were given the offer of a “free boat” by Annapolis Bay Charters on which to do training, and we could not pass it up. The problem was inserting it into an already tight schedule.

Filling Up Our Events Calendar



If you have questions about this information, please contact any of the Bridge (club officers) to learn more. We want you to be informed members and appreciate your input on why some things are working and some are not.

This year, our Winter Training Program has had an enrollment per class (when you not count Celestial Navigation and First Aid) of about 20% above what we had last year. Our B-KBS enrollments at this

point are 400% of where we were last year. We had about 20 inquiries after last year's classes closed out. At this rate, we will have filled all of the B-KBS classes by the first of May. Membership renewals and membership meeting attendance is up.

We are not having the same success in our Raft-up, British Virgin Island, and Bay Sails. We are currently running at about 75% of where we were last year at this time in Bay Sails, and about 50% of where we were last year in MDRU enrollments. We have had had no interest in the BVI. We have three families who are chartering boats, but no one signing up for general crews.

We have advertised the schedule since early January. However, we will soon have to start cancelling sail dates to ensure that we do not run at a loss on these events. You can consult the Bay Sail Crew List on the Learn to Sail/ Cruising Page to see how filled the various events are. It is updated as soon as we have a change.

If you are planning to sign up for Bay Sails this year, now is the time to sign up.



The PSC Web Site is your GO TO place for PSC information. Send an email to the Webmaster if you need help getting signed up or finding information

Racing Steve Calhoun



Fellow Sailors,

The Pentagon Sailing Club Racing Squadron is a group of club members who have fun by promoting the sport of sailing both inside and outside the club. We are always improving the racing squadron as a venue for club members to improve their sailing skills in an environment of friendly competition. As a group we like to promote camaraderie with our fellow sailors on the Potomac by regular participation in racing events with the Daingerfield Island Sailing Club, the Sailing Club of Washington and others. Helping maintain the river fleet has become a tradition for the team and we want to continue the racing squadron's exemplary record of participation supporting PSC boat maintenance and the river training program.

We race the club's three Capri 22s against other skippers from the [Daingerfield Island Sailing Club](#). The racing fleet of over 50 vessels is a mixed design, performance handicap fleet racing in both spinnaker and non-spinnaker classes. We also race the occasional weekend regatta with DISC. Weekly Tuesday evening races begin in mid-April and continue through October. The team had a great time last year and took home first place class trophies for the Tuesday evening racing series and for the 2010 Leukemia Cup Sailing Regatta. This year we are looking to expand club participation in the annual Leukemia Cup where we test our skills against crews from as far away as Quantico.

The Racing Squadron is planning a River Raft Up, which will use our river boats on an overnight rafting trip.

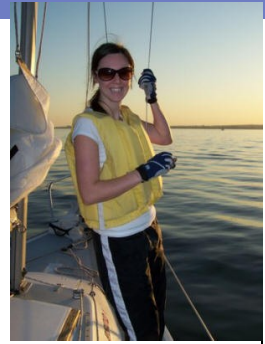
Racing is a great way to add an exciting new dimension to your sailing experience and the Squadron continues to welcome new members every year. The annual fee of \$200 buys your racing all season (about 24 races) including participation in the Leukemia Cup. There are also opportunities to sail in other DISC-sponsored races on an ad hoc basis, usually on the weekends. If you are considering joining the Racing Squadron or simply want more information, please send a note to RS@pentagonsailing.org.

Fair Winds,

Steven Calhoun
Racing Commodore

River Training Coordinator Katie Harrison

rivertraining@pentagonsailing.org

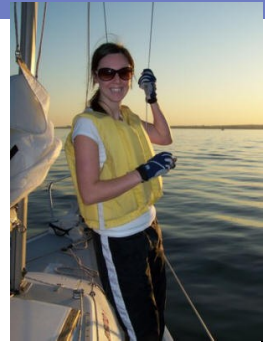


Teaching in the B-KBS / ASA 101-103 classes is a great way to get to know new members as well as fellow instructors, expanding your sailing network. It is a lot of fun !

Class	B-KBS III	B-KBS III	B-KBS III	B-KBS III	B-KBS IV	B-KBS IV	B-KBS IV	B-KBS IV
Weekend Dates	6 August Sat	7 August Sun	13 August Sat	14 August Sun	17 Sept Sat	18 Sept Sun	24 Sept Sat	25 Sept Sun
Lead Instructor	Bob Manning	Bob Manning	Bob Manning	Bob Manning	John Buescher	John Buescher	John Buescher	John Buescher
Primary Instructor	Chris Cooper	Larry Paulson	Hal Moore	Chris Cooper	Hal Moore	Larry Paulson	Chris Cooper	Chris Cooper
Primary Instructor	Shep Barge	Shep Barge	Vilma Baez	Vilma Baez	David Kunselman	David Kunselman	David Kunselman	David Kunselman
Primary Instructor	John Buescher	John Buescher	Chris Cooper		Shep Barge	Shep Barge	Eddie Conde	Eddie Conde
Primary Instructor	Eddie Conde	Eddie Conde					Ryan Yost	
Asst Instructor		Chris Cooper						

River Training Coordinator Katie Harrison
rivertraining@pentagonsailing.org

You earn 10 FVSM hours per day for teaching on the River! You can use these FVSMs for River Boat Rentals, Bay Sails, Winter Training, and the holiday party !



Class	B-KBS V	B-KBS V	B-KBS V	B-KBS V
Weekend Dates	15 Oct Sat	16 Oct Sun	22 Oct Sat	23 Oct Sun
Lead Instruc- tor	Jorge Gracia	Jorge Gracia	Jorge Gracia	Jorge Gracia
Primary In- structor	Hal Moore	Larry Paulson	Eddie Conde	Chris Cooper
Primary In- structor	David Kunsel- man	David Kunsel- man	David Kunsel- man	David Kunsel- man
Primary In- structor	John Buescher	John Buescher	John Buescher	John Buescher
Primary In- structor	Chris Cooper	Chris Cooper	Chris Cooper	
Asst Instruc- tor				

Bay Sailing with PSC True or False?

Bay Sails are only for graduates of the B-KBS class who want to become D skippers.

FALSE!

Bay sailing in the club is for everyone. You do not have to be a graduate of the B-KBS course. You do not have to be “chasing your D qual.” Anyone can go on a Bay Sail, including children and handicapped adults (so long as we can get some warning). It is a great activity for a family, while under the tutelage of a highly trained PSC Bay SOR. It is a great way for someone to “try out sailing”, especially when they think that “big boat” sailing is ultimately something that they would like to do as a single, couple or a family. There are no prerequisites. It is also great for someone who just wants to sip on their drink on the bay and cruise around reading a book. We might ask you to occasionally handle a line, but what you do is up to you.

The raft-ups are a great way for new sailors to discover the “fun” of sailing. They are relaxing sails where you get to explore new areas of Chesapeake Bay. We raft the boats (one boat anchors and the others tie up next to it) in secluded areas of the Bay. Each boat prepares a dinner in accordance with the raft up “theme” and crews wander back and forth between boats. The next day, we break the raft, sail around in the morning, and meander to our port of call, where we moor at a marina. We tour the town, or lounge by the marina pool, and congregate for a dinner on the Sunday evening. Awards are passed out for best themed boats, best drinks, and

best meals. Then we head for home the next day.

Overnight sails are not necessarily the super intense training experience that you might imagine. They are often no more intense than a day sail. Night sailing can be a wonderful experience if you have never done it. Attached is a photo of my then (12 year old) Sabrina at the helm pulling into Solomon's for refueling. She loves sailing at night on the Bay in 20 knots of wind with a double-reefed main and a #3.



Bay Sailing with PSC True or False?

You must buy a lot of expensive equipment (foul weather gear, harnesses and tethers).

FALSE!

On the Bay Sails, we have two “overnight bags” that contain harnesses and tethers for use by sailors who do not own them. The boats are also equipped with life jackets.



You must be a graduate of the B-KBS class to go on a Bay Sail Cruise.

FALSE!

Anyone can go on a Bay Sail. In fact, if you are enrolled in a June or August class, you can still go bay sailing prior to your class. It will be a great introduction to sailing with our very experienced Bay Skip-pers. You will pick up skills that you can use in the B-KBS class. About 85% of our B-KBS students pass the ASA 101 and 103 examinations and on-the-water evaluations. The pass rate would be much higher if some of these sailors who struggled tried a couple of Bay Sails prior to the B-KBS class.



2010/08/15 12:20

Bay Sailing with PSC True or False?

The Bay Sails are expensive.

PARTIALLY TRUE

At \$135 a day, bay sailing can be expensive. However, the club does a number of things to “lessen the pain”. First, if you put in 8 hours worth of volunteer time to one of the Commodores, you get a Frequent Volunteer Sea Mile that is worth \$25. In addition, new graduates of the B-KBS class get a \$35 discount for use on a bay sail. If you have paid for your B-KBS class and want it in advance, that is possible. In addition, we permit deposits of \$50 for a bay sail, and \$100 for an overnight. In addition, we have a first timer discount for raft-up participants of \$50. So, for example, help the River Commodore with getting the boats ready for the season, the Training Commodore with some training event, or the Membership Commodore distributing flyers, you can end up with three FVSM coupons pretty quickly. So, your \$375 three day Memorial Day weekend cost, gets decremented by the three coupons (\$75), plus the \$50 first timer discount, and finally, the \$35 B-KBS graduate bay sail coupon, bringing the cost down to \$215.

The boats we charter from Annapolis Bay Charters, typically cost around \$1,200 for a Saturday and Sunday. Mondays and Fridays, before and after the weekend, are typically only an extra \$150 per day. So by creating two day sails on, let's say, a Friday and a Monday, we are able to lower the cost for a two with one night sail to \$210.

I don't get any credit toward my D skipper qualification if I go on a Bay Sail prior to obtaining my B-KBS /ASA 101-103 qualification.

FALSE!

If you go on the Memorial Day Raft Up, for example, and are a student in the B-KBS Class, and after that class, you wish to join the Cruising Skipper program, the Training Commodore will log your hours and (after checking with the Raft Up skipper), the skills you demonstrated on the trip. You can easily get most of your Senior Crew (the first step in the Cruising Skipper program) completed. Plus, you will have a real leg up when your B-KBS class begins.

BVI
Ryan Yost
baycommodore@pentagonsailing.org

2011 PSC CARIBBEAN TRIP

Great News, once Again we are headed back to the BVI!!

*REGISTER by 1 April
2011.*

Greetings PSC Sailors,

Each year for the past eight years, members of the Pentagon Sailing Club and their friends have traveled to the British Virgin Islands to sail in one of the finest and most beautiful sailing areas in the world. In 2011 we will do it again.

The dates are 9 to 19 July 2011 and there is no restriction on who can go; all PSC Members, their families, and guests will be welcome, but the space is limited.

If you haven't been to the BVI before and wish to know more about this destination, take a look at <http://www.bviwelcome.com/>. If you want to see how much fun PSC has had there in

the past, check out the photo gallery on our website (www.pentagonsailing.org/photos.htm) for a little taste.



BVI Ryan Yost
baycommodore@pentagonsailing.org

WHAT: As in past years, the trip will focus on introducing PSC members, their families, and their friends to the wonders of the Caribbean with over a week of sailing in the British Virgin Islands -- truly one of the most beautiful sailing (and diving/snorkeling) experiences in the world!

WHO: Anyone may go: all PSC Members, their families, and guests are welcome.

PLEASE NOTE: A VALID PASSPORT is required for travel to BVI.

WHERE: Bareboat charter out of Tortola, British Virgin Islands.

WHEN: July 9th through July 19th, 2011. That's right, we are getting a full 11 days on the water for the price of only 7 days (we will be able to accommodate those who can't take off more than a week).

CHARTER COMPANY: [Horizon Yacht Charters](#), located at the [Nanny Cay Marina](#) on Tortola in the BVI.



BVI Ryan Yost
baycommodore@pentagonsailing.org

BOATS: Three PSC club members have already privately booked their own boats. There are many other boats in Horizon's fleet to choose from, including a Bavaria 40, 42 & 50.

ITINERARY: Includes visits to most of the major islands in the BVI: Tortola, Virgin Gorda, Jost Van Dyke, Norman Island, Peter Island, Cooper Is-



land, and Anegada. Most legs of the trip are relatively short and allow ample time to stop for lunch and snorkel or sightsee. Our boats will often spend the night at the same anchorage, which allows crews to eat together ashore. There will also be scuba diving opportunities for any interested divers.

ONE WEEK TRAVELERS: Although we have the boats for 11 days, some people may not be able to take off more than a week. We will try to put those people on the same boat/boats so they can return to the marina at the end of one week (there is no penalty for early return of the boats). If only one or two people must leave early from any boat, they can be dropped off on their departure day at a ferry dock (Road Town or Soper's Hole) for departures from St. Thomas or at the dinghy dock in Trellis Bay (only a short walk from the airport) for departures from Tortola. Please arrange your departure details with your skipper. The trip cost is the same for 7 or 11 days.

BVI Ryan Yost
baycommodore@pentagonsailing.org



FLIGHT ARRANGEMENTS: Participants will be responsible for booking their own flights. You can fly to Beef Island Airport (EIS) on Tortola in the BVI. Alternatively, you can get a flight into St. Thomas (STT) in the U.S. Virgin Islands and take a ferry to Tortola (for about \$50 round trip). Right now (Feb 2011), airlines departing the Washington, DC (WAS) area for Tortola have fares less than \$600 (including taxes and fees). Airlines departing the Washington, DC area to St. Thomas have fares less than \$400 (including taxes and fees).

ARRIVAL PLAN: Whether you are arriving in Tortola, BVI, or St. Thomas, USVI, please make every effort to arrive at the Horizon Yacht Charter Base at the Nanny Cay Marina on (or before) July 8th. In past years many of our sailors arrived the day before our charters started allowing our boats to depart on the first charter day. Picking up the boat requires time to complete such items as the skipper's chart briefing, the boat briefing & checkout, crew briefings, provisioning, etc. so it helps to have everybody there. If you are unable to arrive on or before July 9th, you will need to be at the Horizon Yacht Charter Base by 3:00 PM on Friday July 9th. For those sailing for the full 11 days, please schedule your return home **NO EARLIER THAN 3:00 PM, Tuesday, July 19th.** The [Nanny Cay Hotel](http://www.nannycay.com/hotel-rates/) offers very convenient lodging at the marina and reasonable rates. <http://www.nannycay.com/hotel-rates/>. If you would like to spend some extra time in the islands, arrive earlier than July 9th or stay after July 19th. A wide variety of lodging/resorts are readily available in the BVI and the USVI.

BVI Ryan Yost
baycommodore@pentagonsailing.org

SAILING EXPERIENCE: No sailing experience is necessary; we expect enough participation by veteran PSC sailors so that every boat will be sufficiently crewed.

CHARTER RATES: The cost per person is approximately \$625 depending upon which and how many boats PSC charters. This may seem high, but remember that we are getting 11 days on the water so the cost per day is still very reasonable. The price includes hull damage waiver, BVI cruising taxes, and BVI National Park fees. It does not include taxi fares to and from the airport/ferry dock or ferry tickets for those flying into St. Thomas. **PLEASE NOTE:** These prices are based on 28 people sailing on four boats. If more crew and/or boats are added, the price per person could decrease. If the price does decrease, either the final payment amount will be adjusted or the difference will be refunded after the trip.

OTHER COSTS: There are some other costs that are shared by each boat's crew. Provisions (about \$150/pp, includes some alcohol) are purchased by each crew upon arrival or ordered prior to arrival. Each crew determines what meals they eat aboard/ashore. Meals ashore are about \$15-\$30. Mooring fees are normally \$25-\$30 per night. You will also need to purchase ice almost every day and fuel and water when you return the boat at the end of the charter.

TRIP DEPOSIT: A deposit of \$200 (per person) is required to reserve your space.



BVI Ryan Yost
baycommodore@pentagonsailing.org

TOTAL COST: Estimate ~\$1,500 for everything (flight, taxis, charter, provisions, fuel, incidentals).

TRIP INSURANCE: Things happen, so most charter companies strongly recommend travel insurance. Horizon Yacht Charters recommends [CSA Travel Protection](#). For past trips, some of our members have used AMEX's [Global Travel Shield](#). While your BVI trip coordinator doesn't recommend any particular company or policy, we do recommend that you seriously consider getting travel insurance for your trip. Travel insurance policies that cover trip cancellation, trip interruption, medical, etc., start at about \$35 and go upwards of \$100 or more for comprehensive policies.

CANCELLATIONS: In the event you need to cancel, we will make every attempt to fill your slot; however, we can't guarantee that we'll be able to provide a refund. Again, we strongly recommend you consider trip insurance.

SIGN UPS & PAYMENTS: To reserve your space contact BVI trip coordinator [RYAN YOST](#) and make your \$200 (per Person) deposit payment.

SIGN UP NOW: Sign up by contacting [RYAN YOST](#) (Bay Commodore) with your intent, filling out the [BVI Trip Registration Form & Crew Questionnaire](#), and mailing your completed Registration Form/Crew Questionnaire and your deposit check to:

Ryan Yost
PSC 2011 BVI Trip
4649 Battenburg Ln
Fairfax, VA 22030.

MDRU David Kunselman



PENTAGON SAILING CLUB

MEMORIAL DAY RAFT UP 2011



Raft Location: **Crab Alley** (38°55.0' N, 76°16.5' W), Sat, 28 May

Marina Location: **St. Michael's**, Sun, 29 May

Cost: **Boat Berth, \$375**

ST. MICHAELS is *THE* place to be...Wonderful walking,
**Maritime Museum, Tons of history...and lots of
shops!**

**Meal: \$50 per person (Harbour Inn Restaurant...inclusive of meal, gratuities
and tax...cash bar)**

**Docking Cost: approx \$25 per person (based on boat length)
Docking at St. Michaels Harbour Inn and Spa...a **first class resort****

This Year's Theme: Cowboys, Cowgirls, and the Wild Wild West!
Boats will compete to see who can have the best Wild West theme, including:

- best "Saloon" decorations
- best costumes
- Southwestern style food

**Please contact the raft up coordinator David Kunselman by email
(kunselmn@hotmail.com) or phone (717-856-3177)
A registration form and more details are on the PSC website**

MDRU David Kunselman



If you are thinking about the raft up, this year we will be going to St. Michaels. St. Michaels is a beautiful town, with a wonderful bay museum, lots of historic buildings, great restaurants, and lots of neat shopping. It is a great place for all ages. It corners the market for “boutiquey-chiquey-weekey” on the Eastern Shore.

We will be berthing at the Harbour Inn (<http://www.harbourinn.com/index.html>) in St. Michaels. They have free bicycles for our use, a pool, Jacuzzi, and an on-premises spa. It has wireless internet, free cable hookup, and complimentary newspapers and coffee, shuttle service

through town, and free water taxi to take you over to the museum side of the harbor. However, you will probably want to walk in St. Michaels.

The Chesapeake Bay Museum (www.cbmm.org) brings to life the story of the Chesapeake and its people with nine exhibit buildings and the world's largest collection of traditional Bay boats. Explore our 1879 Hooper Strait Lighthouse, working boatyard, and hands-on displays. The boatyard specializes in maintaining traditional Bay boats using traditional methods. It is very much like Williamsburg in that there are exhibits with craftsmen, with whom you can interact. Discover exhibitions detailing the Bay's roll throughout history, oystering, steamboats, water fowling, and more. There are usually skipjack captains and boat builders giving presentations. It also has an historic bay lighthouse that you can explore.



The St. Mary's Square Museum has historical exhibits on St. Michaels the way it was from the 1800's. Open from May to October, Sat/Sun, 10 AM - 4 PM. Other times by reservation. Private tours are available; please call 410-745- 3984. St. Mary's square has a number of beautiful buildings in the area. The St. Michaels website (www.stmichaelsmd.org) has a complete list of activities.

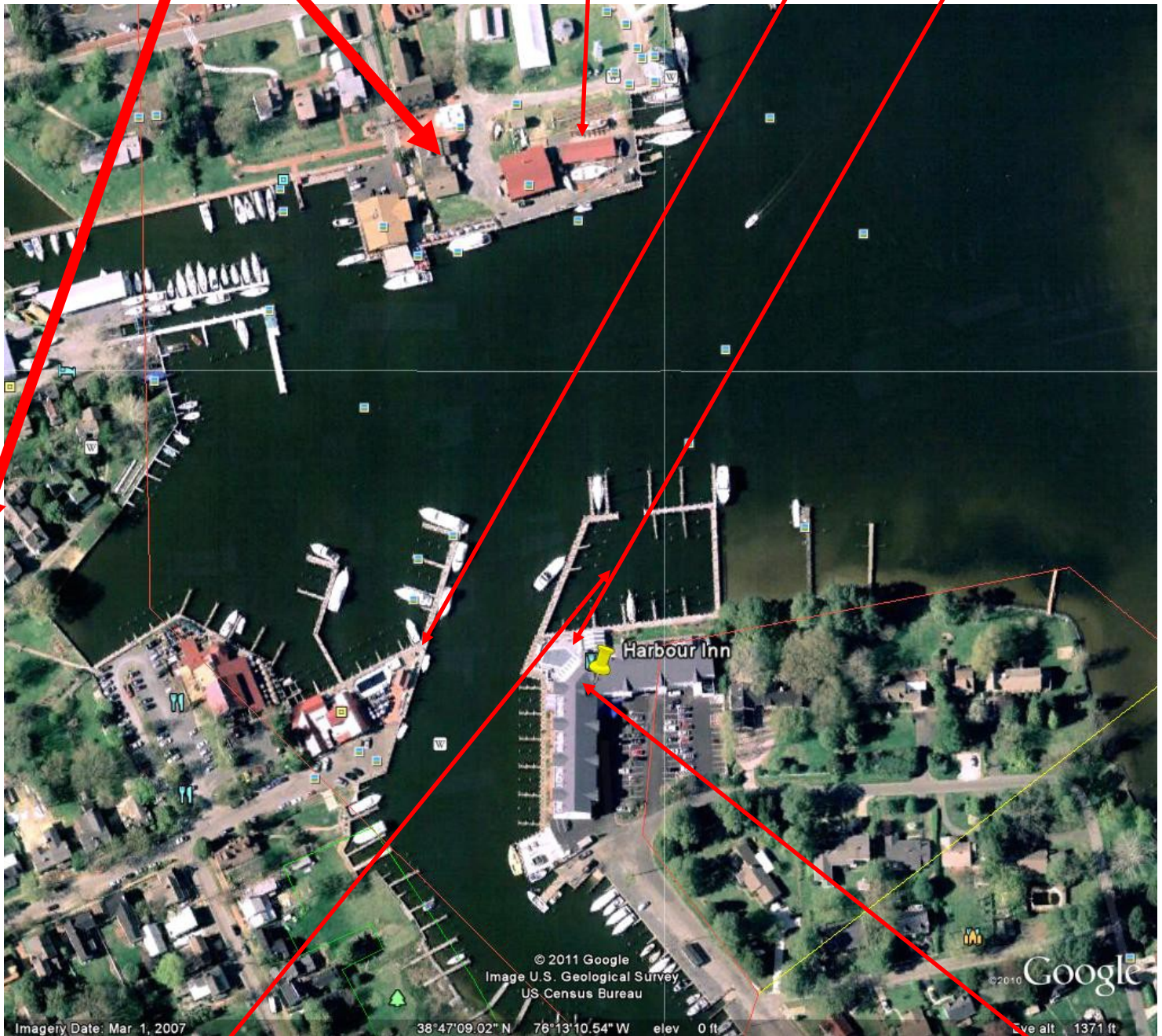
MDRU David Kunselman

SHOPPING !

**Chesapeake Bay
Museum**

Stuff for the Boat

We will swim here.



We will moor here.

Google Earth View of St. Michael's Harbor

We will eat here.

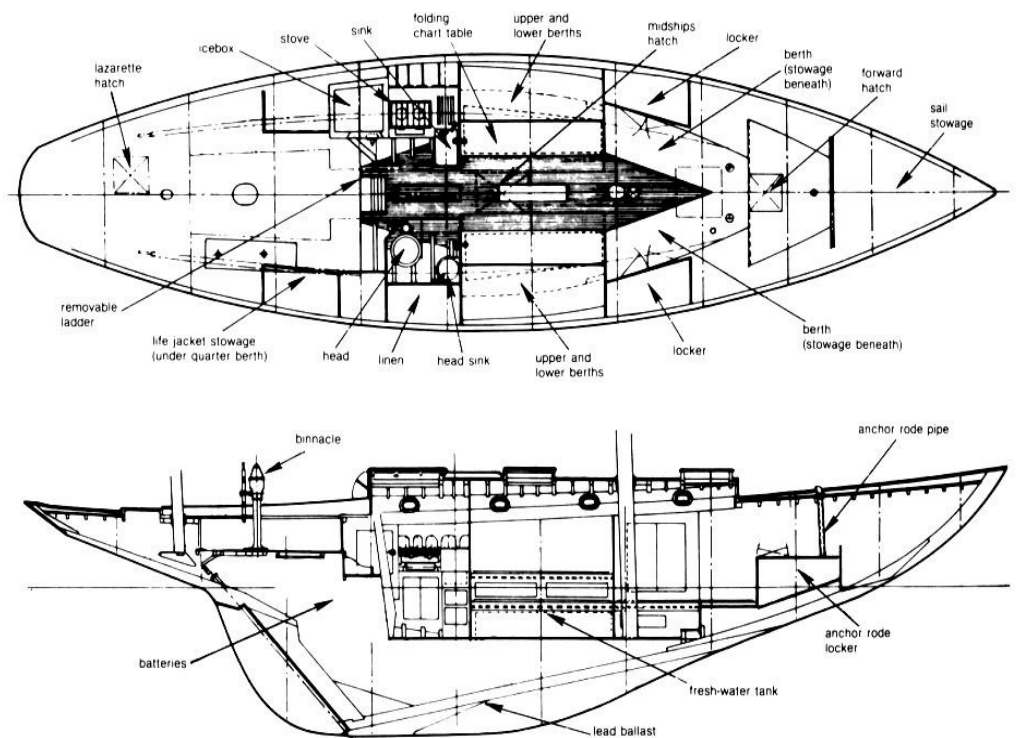
Coast Guard Academy's Leadership 44 and It's Lineage

The Coast Guard Academy (CGA) has recently commissioned the fourth in the series of a successful design of Sail Training Craft (STC) used by the CGA and the Naval Academy.....**the Leadership 44. This article is a review of the Leadership 44's lineage.**

The Naval Academy had various vessels that were used for Midshipmen training (many of them not in good condition). However, for most midshipmen, the only resources available to them for training were actually going aboard naval warships during their summer break. In the 1930s, a Midshipman Boat Club was started to encourage seamanship skills. It involved both sailboats and power boat handling. In the late 1930s, it became the most popular extracurricular activity on the Yard. The interwar period also saw the first "donated boats" to the Naval Academy for midshipman use. Most of these were fast ocean going yachts built by wealthy individuals who had grown tired of using them. As the program gained more structure, the Academy realized that it needed a more standardized design.

In 1939, the Luders Marine Construction Company designed a 44 foot yawl for use as the United States Naval Academy's sail training craft, and twelve mahogany yawls were delivered to Annapolis by 1943. A "yawl" is defined as a sailboat with an aft or "mizzen" mast that is smaller than the main mast and sits aft of the rudder post. Starting in 1963, these were replaced by twelve fiberglass cutter rigged yawls, which were basically identical to the wooden boats, with the exception of a new cabin layout, aluminum spars, and an inboard diesel engine. **Four fiberglass yawls were also built for the Coast Guard Academy.**

During the 1960s, the Naval Academy's training program continued to solidify around the basic requirement for all naval officers to be able to handle a basic keelboat, NCAA racing, and offshore racing. In the 1980s, a program of structured long-distance cruises began to take shape. The core of this program coalesced around the Luders 44 Yawls.



Coast Guard Academy's Leadership 44 and It's Lineage

In the 1960s, building yachts out of fiberglass was a new technique. As a result, they poured the fiberglass extra thick and created more structural members than would be considered the norm in more modern construction. The rod rigging was also supersized. The over-engineering of these boats was partly intentional, given the sheer mileage that the midshipmen would put on them during the year (about 10 times what a normal cruising boat experiences) as well as the tendency of the midshipmen to come into the slips at Santee basin "a little hot" and ram the bows against the cement quay wall. The heavy aluminum spars and heavy shrouds and rigging were considered excessive by the standards of the time. Nevertheless, given that almost all of the Sail Training Craft (STC) were spending 8 weeks per year in open ocean transits with one experienced skipper, one civilian or senior midshipman with some experience, and 8 midshipmen with little experience, the desire was to have something "safe" and forgiving, vice "twitchy" and fast.

By the 1980s, the Naval Academy was ready for a new design. The design approach was to keep a heavy ocean cruiser (Luders had a PHRF of 150) that had some racing capability. However, some changes were desired. One of the advantages with the Yawls is that the number of different sail combinations is much greater than with a sloop. You can sail the boat "jib and jigger" (only the jib and mizzen are hoisted, with the main staying on the boom) in heavy weather. The boat will sail six knots with a 25 knot beam wind, and only have 10 degrees of heel. You can also have people moving safely in between the mizzen mast and main mast without worrying about a boom hitting them. In a sloop, you would have to reef the main and switch to a smaller headsail in similar conditions.

Note the mizzen stay sail between the mizzen mast and the main.



Coast Guard Academy's Leadership 44 and It's Lineage

Traveling downwind, the presence of the mizzen mast permits a number of combinations such as the mizzen stay sail and the minnaker. These sails are easier and safer to handle than the spinnaker, which the Yawl can also handle. The sloop design is limited to the spinnaker.

However, other factors were not in favor of a "yawl" design. By the early 1980s, the international yacht racing handicap rules no longer favored the Yawl configuration. Although the full form keel of the Yawls gave them excellent performance on a beam reach and good sea keeping capability, it also gave them a great deal of drag, and made them less optimal for sailing upwind. The small rudder in the full form design, combined with the resistance of the full form keel, made them difficult to maneuver in tight marinas.

Another problem of the Yawl and their angled stern design was that in heavy following seas, the stern would get picked up by the waves. Without trailing a drogue, turning broadside to the waves was hard to prevent. Although narrow hold deep draft boats with full form keels have very high angles of vanishing stability (the point when they would roll over), their initial righting moments were not as strong. As a result, when rounding racing

marks, if the Yawls were carrying lots of sail, they were difficult to turn (small rudder and full form keel), while it was also easy to have them heel over and put their rigs in the water.

From a maintenance point of view, the Luders Yawls used a balsa core between the fiberglass layers. Through hull fitting leaks, the core would experience leaks from outside the fiberglass surface, which would eventually cause the balsa to turn into "potting soil."

As each new class of STC has been built, the Navy has disposed of the old class via the Defense Reclamation Management Office (DRMO) process. If another naval or military facility does not want them, they are offered up to the public for auction. Navy Pax River was the recipient of two of the wooden Luders Yawls (which were later given up), as well as two of the fiberglass Luders Yawls. Annapolis MWR also had one of the Luders 44 Yawls, until this year, when it was transferred to an Ohio-based Sea Scout troop.



Coast Guard Academy's Leadership 44 and It's Lineage



The Luders 44 Yawls continue to be competitive. In the 2004, Maryland Governor's Cup Race, NPSC's ALERT and VIGILANT finished 2nd and 3rd among 20 plus competitors in the PHRF non-spinnaker class. During this period, the Coast Guard, which had four Luders Yawls from the 1960s, continued to sail them in an offshore training program.

The Navy 44 MK I, designed by McCurdy and Rhodes and built by Pearson Yachts, was introduced in 1986 and solved a number of these problems. It had a cutter rigged sloop design. It had a fin keel, instead of a full form keel, to reduce drag and improve maneuverability. However, the keel ballast was increased by 3,000 lbs, and the keel depth by over one foot. Although the Luders Yawl still held a slight advantage in vanishing angle of stability, the Navy 44 had a much higher righting moment for angles of less than 90 degrees. As a result, it is virtually impossible no matter how much sail you are carrying, to put the Navy 44 MK I's rig in the water, when rounding a mark.

The Navy 44's core was made of vinylester resin over Airex and Termento cores to eliminate the "potting soil effect". It was equipped with a skeg rudder, as opposed to a spade rudder. In the 1980s, the ruggedness technologies were not as developed as they are in the 21st century for spade rudders. Early spade rudders were more easily damaged by following seas and groundings, than the reinforced skeg rudders. However, the Navy 44 was a substantial improvement over the Luders in steering control.

The Navy 44s sit very heavily in following seas and do not have the tendency for the stern to "bob" as with the Luders Yawls. There is less room in the cockpit area on the Navy 44s than on the Luders. The Luders have a large deck area aft of the cockpit around the mizzen mast, which gives them more space for passengers to sit or lounge.



Coast Guard Academy's Leadership 44 and It's Lineage



Going downwind, the Navy 44s are not very fast, unless the large tri-radial symmetrical spinnaker is flown with its spinnaker pole, which on both the Luders and Navy 44s, requires two people to lift. The Navy 44, if flying the spinnaker downwind with 13 knots of apparent wind, and there is a man overboard, can quickly turn up into wind to recover the man. The boat will have substantial heel when going from a beam to broad reach, but it will not broach. The spinnaker when heading upwind past the man, will just plaster itself against rigging if you cannot get it down the turn. If a Luders Yawl is flying a spinnaker, full main, mizzen, and minnaker, you will need to get the minnaker and spinnaker down before heading back to the

man. Heading on to a beam and then close reach with that much sail would probably cause the boat to heel over and put the rig in the water.

Other improvements in the Navy 44 MK I relative to the Luders Yawls included an expanded sit-down navigation table; the Luders Yawl's have a smaller table that you must stand up to use. A propane stove system and a reefer were new additions for creature comforts.

The Varsity Offshore Sailing Team (VOST) team regularly raced the Navy 44s in the major Chesapeake Bay Races, including Governor's Cup, Screwpile, and local Annapolis races. In addition, the Naval Academy hosted other military and maritime service academies for match racing in the Fall. Offshore, the Academy has regularly participated in Newport to Bermuda, Marion to Bermuda, and Marblehead to Halifax, using these boats.

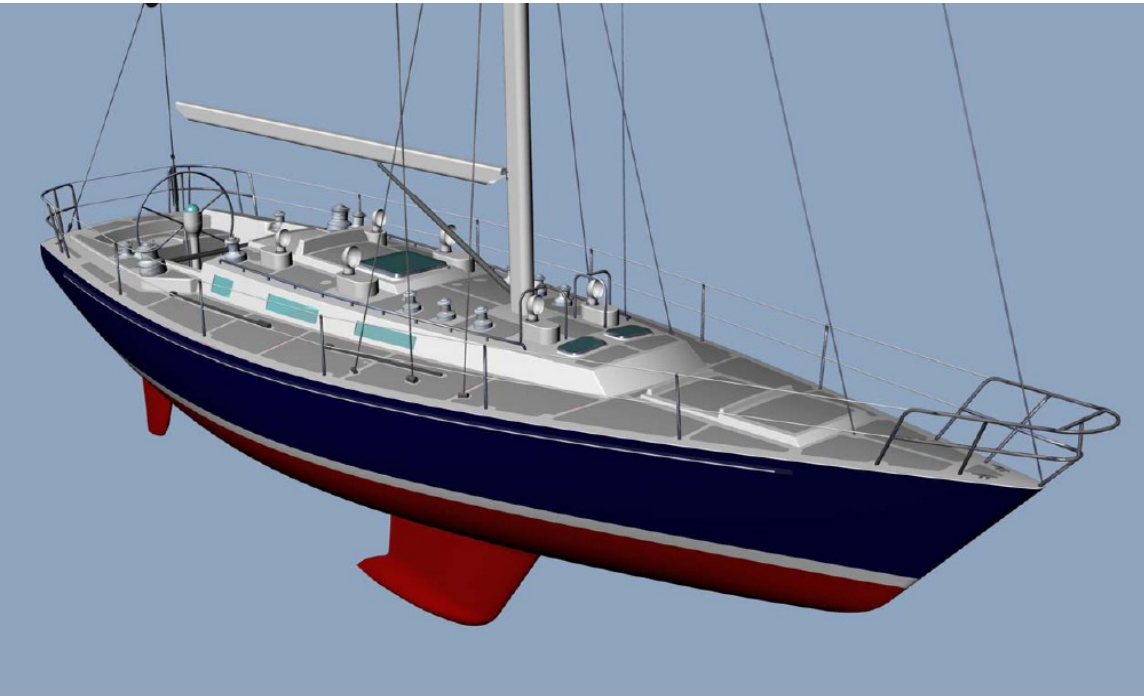
The Naval Academy sailed the Navy 44 MKIs from the mid 1980s until 2008. During this period, the Academy added a formal offshore sailing component to its other components (NCAA-Varsity Intercollegiate Dinghy Sailing, BST=Basic Sail Training for Plebes, and VOST). This program, which is designed to build leadership and good watch standing skills, has been known as the Command, Navigation, and Seamanship Training Squadron (CSNTS) and the Offshore Sail Training Squadron (OSTS). In its early years, Midshipmen would run a circuit between Newport, Rhode Island, Annapolis, and Bermuda. Some trips included Andros Island, Bahamas. With the closure of US bases (with their cheap lodging) in the Caribbean and Bermuda, the circuit became more limited to Annapolis to Newport.

The Navy 44 MK Is are comprised of three relatively similar "batches". The first group comprised NA-1 through 8. These boats have a older B&G Hornet sailing instrument suite, older radios, and were not equipped with weather fax. One of the boats, ALERT, was equipped with a larger 50 hp Perkins diesel, while all of the others had a 37 hp Westerbeke. The middle batch, NA 9-12, were equipped for racing. They had a foil Tuff-Luff dual groove headstay for quick sail changes. This batch was equipped with lines that could also adjust the genoa and jib traveler cars fore and aft from the cockpit. The Academy continues to use two of these boats (SWIFT and FLIRT). NA-9 through 20 were equipped with a more modern B&G Hecta sailing instrument suite and were equipped with weather fax. Other than those items, they were all identical, except for the first boat, which had a wooden cabin sole, while the others had removal sole plates. Practical Sailor Magazine in 2007 ranked the Navy 44 Mk I the "strongest production boat" in the world.

Coast Guard Academy's Leadership 44 and It's Lineage

In 2005, the Naval Academy began the design of a new class of boat to replace the Navy 44 Mk I. Although satisfied with the Navy 44 Mk I design, if they were going to build a new class of boats, some changes would need to be made. With a design team led by David Pedrick and Paul Miller of USNA, as well as using Pearson in Newport again as the builder, the Navy 44 Mk II was born. In looking at the boats from a distance, most laymen would be challenged to tell them apart. A few improvements and changes were made over the MK I.

A major improvement between the MK Is and MK IIs is the electrical panel. Turning on the navigation and B&G cockpit lights is not an intuitive process on the MK I. The MK II design made it very simple and even has a pictorial of what topside lights were on. The addition of a rub rail along the sides will prevent the tendency of dock lines and power lines to rub away the awl grip paint.



One of the principal concerns was how to retain the Navy 44s "strength", while making it a bit faster in "beercan" racing. About 3,000 lbs of ballast was removed, but the keel was lengthened several inches, and a bulb was formed at the bottom to increase the righting moment. The skeg rudder was replaced with a spade rudder, which reduced weight and underwater drag. Spade rudder technology has made them stronger. The CBYRA PHRF rating for the Navy 44 Mk I is 93, while that of the MK II, is 81.



Much of the MK IIs greater speed results from lighter weight, and less drag from the rudder, while adding sail area. However, in racing results, the VOST team is discovering that the slightly faster MK II is not able to overcome its lower PHRF rating, and so they are winning more races with the MK Is. The VOST Team will continue to keep two MK IIs and two MK Is (SWIFT and FLIRT). OSTs will control the remaining boats.

The Navy 44 Mk I was designed with a 10 gallon holding tank. It was very difficult to get out of Chesapeake Bay and into the ocean in time to dump with a crew of 10 onboard. The larger holding tank (50 gallons) in the MK II made the problem less of a concern.

Coast Guard Academy's Leadership 44 and It's Lineage

Fuel usage was always a concern in the Navy 44 MK I. If you wanted to keep the reefer going, and cool the interior with fans, it was very difficult to avoid using 15-20 amps per hour (higher at night). With two ship service systems with a combined 400 amp capacity, the engine had to come on for about two hours every 6 hours. With an effective fuel supply of 44 gallons, the Annapolis to Bermuda and Annapolis to Newport (via Chesapeake Light) transits, had many skippers watching their fuel supplies very closely. The fuel supply of 65 gallons on the MKII's provides greater margin. Thirty years of appliance efficiency incorporated into the MK II resulted in amp loading one half that of the MK I.

The preventer system on the MK II is much better than on the MK Is. On the MK I, the preventers were attached to a

“bungee” that was attached to the aft end of the boom. A preventer line was then attached to an eye of the bungee and run outside the shrouds to a snatch block near the bow. It was then run aft to a foot block and from there, to the auxiliary winch. The preventer lines, if both sides were rigged, would often get tangled around the winches and cowlings on the winch deck. With the MK II design, the preventer runs through the boom, through a series of blocks to the cabin top winches, which is a much more effective setup. The only deficiency with the MK II preventer design is that when it exits the boom, the metal edge on the first boats was sharp enough to cause chafing.

A design problem was that placing the head forward on the MK II near the sail locker removed one of the storage lockers, reducing spare parts storage. Because extra sails or coolers put on the deck in that area, these items interfere with opening the door to the head.

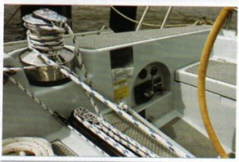
CRITICS CORNER: NAVY 44 MkII

PROS

- Cockpit ergonomics and mainsheet and winch placement
- Six dorade vents
- Simplicity of cleats and bow fairleads without chocks
- Nonskid superiority of Treadmaster
- Wide side decks, low cabin house

CONS

- Deep draft
- Poorly setup for short-handed sailing
- Layout poorly suited for living aboard
- Too Spartan for many cruisers
- No anchor windlass or locker, small bow roller



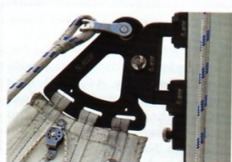
Mainsheet



Gooseneck



Chainplate



Headboard

The Navy 44 MK IIs are equipped with a wet locker on the port side aft, where the head is located on the MK Is. Wet lockers are always a nice idea, on paper. The problem is that when the off watch team's foul weather gear is stuffed into a wet locker, there is insufficient air flow for the gear to dry. Many skippers prefer to buy those cheap plastic coat hooks with the suction cups to stick on the galley locker on the MK I and around the mast in the cabin. In that way, the “wet stuff” could get some air. A “clothesline” down the center of the cabin where we could hang PFDs and personal clothing that needed to dry was also rigged.

Hatches above the sail locker were an improvement over the MKI, which in turn, where an improvement over the Luders Yawls. The sails on the STCs are very large and are stored in forward sail lockers. They are hanked on. There are no roller furlers. The forward hatch on the Luders Yawl and MK I was a pop-up design, which was widened on the MK Is to make it easier to move them up and down than on the Luders Yawls. One of the problems with the pop up hatch design, was that it was very heavy and would slam into the deck when pulled up and released. It would also get caught on jib sheets when left open for ventilation. The MKIIs were designed with a sliding hatch that eliminated the disadvantage of the MK I design. It is also wider, which helps make it easier to get the sails up on deck.

One problem that was noticed on RENAISSANCE and DEFIANCE (the first two MK IIs delivered) was that the bilge pump hoses did not go all the way down into the bilge. Hopefully, the problem was corrected in the later variants of the Navy 44 MK IIs.

Coast Guard Academy's Leadership 44 and It's Lineage

The main sheet traveler placement philosophy between Bill Luders, McCurdy and Rhodes, and David Pedrick has been all over the place. On the Yawls, the traveler is just behind the helmsman. It is out of the way, but it does not have enough length to really be effective. It does make a nice back rest when at the center position. On the Navy 44 MK Is, it moved to the life raft bridge in the cockpit just aft of the companionway. Although an effective placement from a sail trim perspective, it was not as safe. Anyone going between the cockpit and cabin had to go over it. Because the cockpit on the MK I had less space than the Luders Yawl or the MK II, crew members would want to sit in the space between the traveler and the companionway. One had to constantly warn people not to put anything on the traveler that they could not afford to lose. Main sheet trimmers (winch on the starboard side of the cabin top) had to be told to stand in the companionway with their backs to the port side when trimming or risk getting thrown over by the traveler becket as it slid across.

With the MK II, the placement moved back to the binnacle due to the added length of the mast, as well as the desire to make it adjustable by the helmsman. The mainsheet was given a dual winch system that permitted the crew to remain on the upwind side while trimming, a desirable characteristic for sailboat racing when you want to keep the crew on the windward side of the boat when close hauled. The problem is that the main sheet on the MK IIs has had a tendency to "catch" the binnacle or an unsuspecting crew member when the boom swings across as the boat changes tacks.

The engine box for the Yanmar on the MK II had apertures that were probably designed to perform most of the engine checks without actually pulling the box off. However, the apertures were not big enough, and many skippers found the need to pull the engine box off anyway. The insulation on the box sometimes get torn in that process, which made the blower system on the MK II engines less efficient. It would have been nice to design larger apertures.

Although some people liked the neutral helm of the MK II, many preferred the "feel" of the Mk I. On the MK I, if you were plowing along at hull speed with a number 3 and full main, the boat would want to round up if you let go. However, you could be sitting on the windward rail and just apply a bit of pressure on the wheel to prevent that from happening. It was not onerous, but you could feel it. With the MK II, you cannot feel any pressure on the wheel. It is though the MK II had "power steering" and the MK I "rack and pinion". You can "feel the road" in the MK I.

On the MK I, the B&G electronic indicators had three brightness levels. On the MK II, the indicators were mounted on the slide above the companionway. The early experience of many skippers may have been operator error, but the lights could not be dimmed.

The Navigation Suite on the MK II is very nice. It has one deficiency in that it can only hold nine weather fax charts. Many skippers prefer the printer-based weather fax system on the later blocks of the MK I. You can have it printing most of the day, then cut off the charts you like and compare them. You can then keep those charts for comparison the next day.



Coast Guard Academy's Leadership 44 and It's Lineage

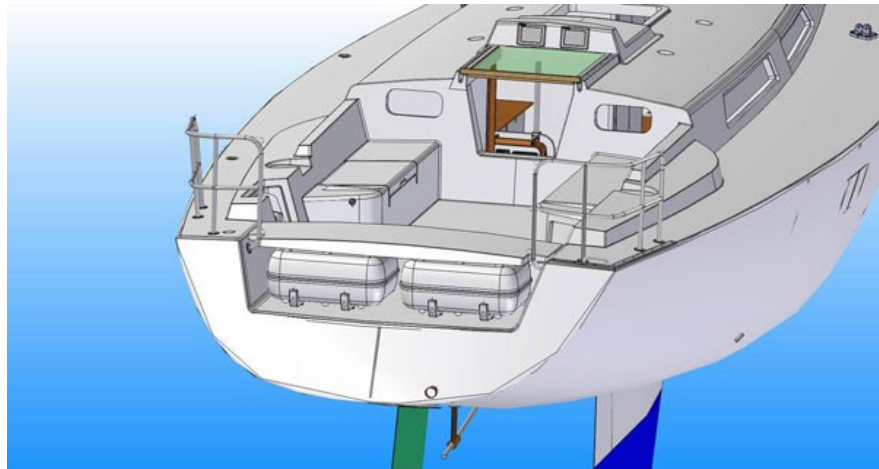
In early 2008 a group of Coast Guard Academy (CGA) supporters and staff began looking at the possibility of piggy-backing on the Navy 44 MK II contract and contracting for eight boats to create the new Coastal Sail Training fleet, and replace the existing fleet of Luders 44 Yawls that the CGA had been using for 40 years. The CGA has a similar program to the Naval Academy that emphasized seamanship, navigation, and watchstanding performance. The Luders Yawls had served their purpose, but with only four boats, the CGA only had half of what they needed to fully implement their program of training all of their second year students.

A fleet of 8 boats would allow the Academy to train 100% of the second-class cadets during their summer rotation. The replacement of the Luders fleet was moved to the number 1 priority on the Superintendent's priority list, and in July of 2008 the Alumni Association voted to commit to the funding and purchase of a minimum of two of the new boats at a maximum of \$750K per boat. The Coast Guard Foundation fundamentally committed to the same. The \$750K figure was based on the anticipation of some increase in the Navy44 MK II price but the final price was expected to be significantly lower than \$750K.

In the meantime, there had been some problems in the Navy 44 MK II contract with Pearson Composites. There had been some installation and equipment alignment issues that caused delays. With the economic downturn, the builder was suffering economic distress. The Navy 44 contract was renegotiated from 20 boats with an option

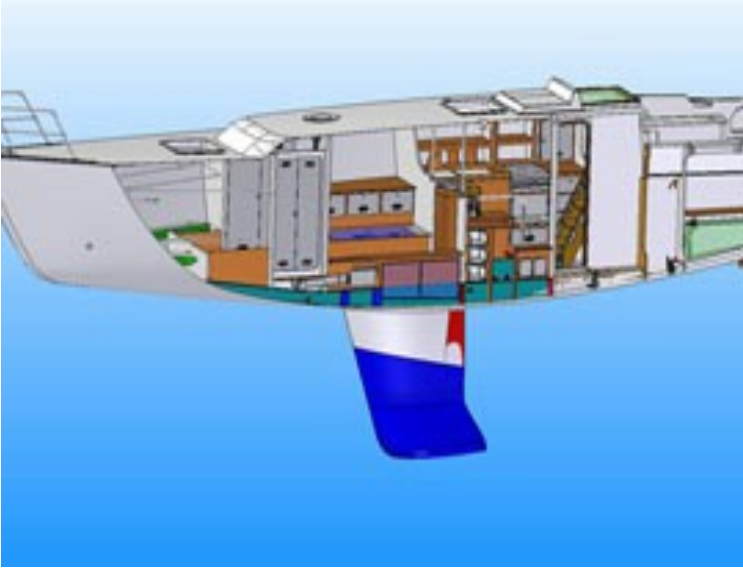
for four more to 16 boats with an option for four. Pearson would deliver the boats faster, but the price would remain essentially the same for the entire order.

When the CGA looked at piggy-backing on to the Navy contract, the cost would have been above \$1 million per boat. Pearson is not expected to complete delivery of the MK IIs for the Navy until 2012, which would have entailed later delivery dates than what the Coast Guard wanted. The CGA put out the Navy 44 MK II design to other yards, but the cost was still excessive. As a result, the CGA went back to David Pedrick and Paul Miller (head of ship architecture design at USNA), who designed the Navy 44 MK II, to design a different boat, but using Navy 44 principles. This design became known as the Leadership 44, and they are expected to be built for \$800,000 each. The builder will be Morris Yachts in Maine.

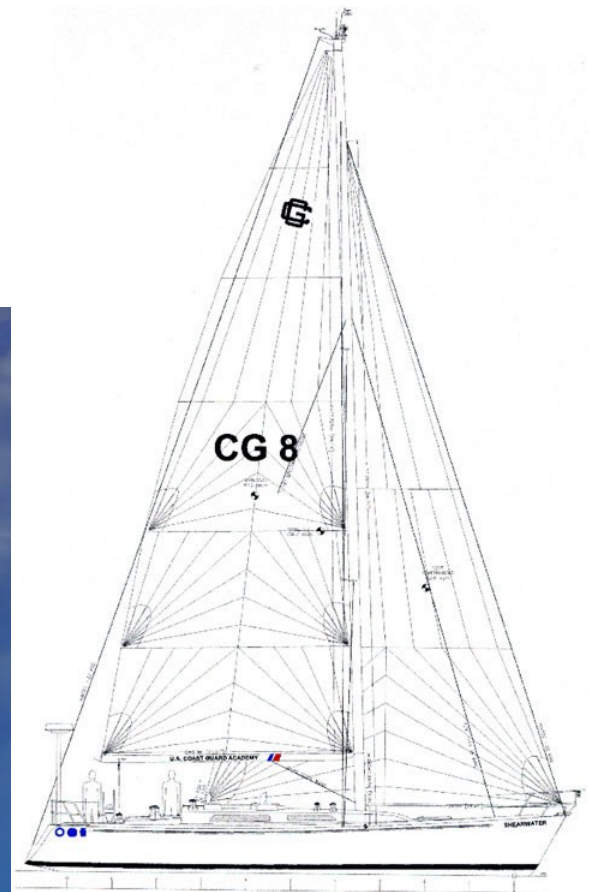


Coast Guard Academy's Leadership 44 and It's Lineage

Several differences between the Leadership 44 and the Navy 44 MK II are apparent. The Leadership 44 uses a fractional rig. The head was moved relative to the MK II from starboard forward to port aft, similar to the arrangement of the Navy 44 MK I. The open transom with the removable bridge and two (presumably 5 man) life rafts is a departure from both the Navy 44 MK I and II designs. The Navy 44 MK II had the life raft integrated with the transom. The Navy 44 MK I had a fixed transom with the life raft stored under the traveler. With the Leadership 44, In local waters or racing, one can sail without the liferafts or the removable transom bridge, thus lightening the boat. When sailing offshore, they can be re-installed. Removing this feature from the Leadership 44 probably saved weight and money relative to the MK II. The Leadership 44 continues to use the binnacle placement for the traveler and main sheeting arrangement adopted for the MK II. The Leadership 44 appears to have more carbon composites in its spars, lightening the weight.



There are no final specifics in terms of draft or PHRF available yet for the Leadership 44. All of the Coast Guard/Naval Academy STCs that have been built are compared with similarly sized boats on the next page.



Coast Guard Academy's Leadership 44 and It's Lineage

	Navy 44 MK I	Navy 44 MK II	Luders 44 Yawls	Capri 22	Island Packet 485	Swan 45	Caliber 47	
Designer	McCurdy and Rhodes, John Bonds	David Pedrick, Paul Miller	Bill Luders	Gary Mull (1983)	Bob Johnson	German Frers	Michael McCrery	
Builder	Tillotson Pearson	Pearson Composites	Luders Marine	Catalina Yachts	Island Packet Yachts	Nautor Swan	Caliber Yachts	
Length Over All	44.00	44.33	44.21	22.00	52.00	45.00	47.00	
ballast	12,310.00	10,472.00	9,850.00	700.00	16,000.00	9,500.00	13,000.00	
Height above water (includes VHF)	65.00	63.09	58.00	28.00	63.50	62.00	55.00	
LWL	34.50	36.75	30.10	20.00	43.15	39.60	39.50	
Beam	12.50	12.73	10.80	8.00	15.33	12.83	13.15	
Draft	7.25	7.64	6.10	2.50	5.25	9.19	5.15	
Sail Area	956.00	1,020.00	1,050.00	200.00	1,234.00	1,412.00	1,014.00	
displacement	27,654.00	29,156.00	24,800.00	2,250.00	39,000.00	20,940.00	33,000.00	
Engine	Westerbeke 37 hp	Yanmar 50 hp	Westerbeke 35 hp	Out-board	Yanmar 50hp	Volvo Penta 53.6	Yanmar 75 hp	
Fuel	44.00	65.00	40.00	2 gal	300.00	39.60	277.00	
Water	163.00	175.00	0.00	none	300.00	84.50	225.00	
Holding Tank	10.00	50.00	0.00	none	100.00	15.80	50.00	
Electric	400 amp SS (2SS/1start)	420 amp SS(1SS/1 start)	200 amp SS (1ss/1start)	100 amp	400 amp	290 amp	300 amp	
Ballast/Displacement Ratio	0.45	0.36	0.40	0.31	0.41	0.45	0.39	35 percent is a pure cruising boat. 45 % is a
Long tons	12.35	13.02	11.07	1.00	17.41	9.35	14.73	
Displacement/Length Ratio	300.64	262.25	405.98	125.56	216.71	150.54	239.04	Over 325 is a heavy cruiser. Less than 200 is an ultra light racer. Above 200, it will not bob around in heavy seas. It will produce a smooth
Sail Displacement Area	16.69	17.19	19.72	18.61	17.13	29.68	15.74	Conservative cruising boats are 10-15, cruiser racers are 16-20, racers above 24
Beam to Waterline Length	2.76	2.89	2.79	2.50	2.81	3.09	3.00	The higher the number, the jerrier the motion
Angle of Vanishing Stability	129.00	130.00	132.00					Greater than 120 for ocean cruising
Capsize Screening Formula	1.66	1.66	1.48	2.44	1.81	1.87	1.64	If less than 2, the boat is relatively safe from capsize