

Surge!!

Newsletter of the Friends of Williamsburg Rowing
a not-for-profit 501(c) corporation, organized for charitable purposes

Fall 2004 Edition

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A Message from the President

Dear Friends,

Many of you may be receiving this newsletter for the first time. For those of you unfamiliar with the Friends of Williamsburg Rowing (FWR), we are an umbrella organization dedicated to furthering the sport of rowing in the Williamsburg/James City County area. To that end, our primary goal is to support the William and Mary Rowing Club; however, to the extent that all rowing programs in the area are mutually beneficial to each other as they serve to increase interest in the sport, we also support Williamsburg Boat Club (WBC), a newly formed community program. Additionally, we will support any other community rowing programs should they form in the future. As a qualified 501(c)(3) organization, we provide an opportunity and a vehicle for people to make tax-deductible contributions through us to the William and Mary Rowing Club and Williamsburg Boat Club. Any donation made to a specific organization will be passed on to that organization. Our donation form appears at the end of this newsletter. Dues paid to FWR help fund our operating expenses (such as publication of Surge). Surge is generally put out twice a year, in the early fall and early spring.

Moving onto new business. FWR will hold our annual general meeting on Saturday, December 11 in Williamsburg, VA at the home of Stan Lewis (our treasurer). We will be electing new officers and directors as well as discussing the e-launch project, our continued relationship with W&M rowing and our relationship with the newly formed WBC. All interested parties, and most especially current officers and directors, are invited to attend. For more information (address and meeting time), please contact me at billandchristie@comcast.net.

In this issue of Surge, you will see an update from Stan Lewis on the financial status of FWR. You will also see a report from Jay Graham on the electric launches that are in development to help facilitate rowing at Little Creek Reservoir (which does not permit gasoline engines). You will also hear from Mary Lewis on the Williamsburg Boat Club regarding their successful learn-to-row program this summer as well as future plans for the club. Finally, there is an update on the William and Mary team and a preview of the fall season. A note to alumni: please see the notice directed to you at the end of the newsletter (below the pictures). We will be running an "Alumni Notes" section in the next issue (due out in early spring), so please send in your updates!

We look forward to working with the Williamsburg Boat Club, the William and Mary team, and their supporters in the coming year.

Christie Davis Ashton '00
President

The Electric Coaching Launch Program

Our two Stillwater L26 electrically powered coaching launches are located at Little Creek Reservoir, near Toano, VA. One is fully equipped with a Reservoir Runner electric motor and has been used during the 2004 season as a coaching launch for the Williamsburg Boat Club. The boat is a perfect match for the requirements of a learn-to-row program and follow-on rowing sessions. During the summer, the W&M Crew Club loaned an eight, a four and a single to the WBC for use at Little Creek, as well as supplying some coaching and rower participation. The launch was perfect for the job. In the meantime, our other electric motor is still in Westminster, MD, being modified for additional power output to meet the needs of a varsity crew program. The development program and its status are best described by this update from the developer, Jay Graham.

See Page 3 for Jay Graham's Update

Officers and Directors

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Vice President/Secretary - Peter Michaud '93
(703) 585-5130 e-mail: pnmichaud@hotmail.com
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Director - Dr. Charles E. Ehrlich (coach 1996-99)
e-mail: ehrllich@post.harvard.edu
Director - George C. Livingston (coach 1996-97)
(757) 564-9367 e-mail: gcl@widomaker.com
Director - Douglas L. Turner (Parent '94)
(703) 455-6382 e-mail: 71544.1475@compuserve.com

FWR Treasury Status

Friends of Williamsburg Rowing's fiscal progress has been stable but not really growing during 2004. FWR has been able to act as a solid financial source supporting the W&M Crew Club and the Williamsburg Boat Club, but has not seen enough financial contributions to seriously build for the future. The ability to designate what program donations should be allocated to has proved to be useful to our contributors. Out of 23 donors to FWR so far this year, thirteen donations were earmarked by the donors for Williamsburg Boat Club (\$1,015), five for the W&M Crew Club (\$500), six for the unrestricted use of the Friends (\$325) and two for the Boathouse Fund. Ten percent of the unrestricted FWR donations are automatically deposited in the Boathouse Fund savings account. Three donors split their designations to meet their personal preferences.

At the beginning of September, There was \$595 in the checking account and \$415 in the savings account after all designated donations were distributed as desired and all expenses, such as the annual state incorporation fee, line of credit interest, printing and postage had been paid.

Our two supported rowing organizations have also successfully conducted individual fund raising efforts. WBC has held a garage sale and will soon offer donated articles for sale on eBay, the cyber equivalent of a garage sale. W&MCC is currently conducting their annual "Rent a Rower" program, where crew members hire themselves out for weekend yard work, etc, the proceeds going to the Crew Club.

It is essential for the long term goals of a vibrant, competitive and physically supported rowing program that FWR membership and contribution levels continue to grow during 2004. The generosity of our donors is much appreciated. Let's keep it up. Remember, all donations to FWR are tax deductible, no matter how they are specified. All specified donations for WBC, W&MCC or the Boathouse Fund are carefully and promptly allocated as requested. Unrestricted donations to FWR enable us to meet our modest operating expenses and also meet the additional needs of the rowing organizations as needs arise.

Stanley Lewis, Treasurer

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William and Mary Rowing Club

20 September 2004

To the Friends of William and Mary Crew,

Greetings! It is good to be back.

The big news is the novice team. My one regret from last year is that we did not do enough recruiting. I am glad to say that we have solved that problem and then some. As I write these words, we have no less than thirty-three men and twenty-seven women signed up. That is a lot of bodies. Maybe we do not have as much raw talent as last year, but the team certainly has more depth.

I am also excited about the varsity crews. Nearly all of the top novice rowers from last year have returned, including the four women that placed fifth at Dad Vails. They will be the engine room of a heavyweight eight that may be the fastest ever to come out of this program. The lightweight women are probably going to race a four this fall. I know very little about lightweight rowing, so I will not make any predictions. We will have to see. The men's varsity eight is a mixed bag: some heavy, some light, some veterans, and some recruits. This will be a building year from them. They lost their coxswain and their stroke to graduation, and their coach moved on to a better job in New York City. Vicky, Fia, and Courtin, you are sorely missed.

In other news, Recreation Sports more than doubled last year's budget allowance. They also took over the payments for the women's M2 (we sold the men's M2 to Georgia Tech last spring). That is a huge burden off our shoulders. Money is always an issue in this sport at the club level, but considering the size of our team, the support of Rec Sports, and all the fundraising we do on the side, I think we might actually finish this year in the black.

This year, the goal is to win back the Waterfield Cup from Virginia Tech. I am happy to say that we are moving in the right direction. We are recruiting and keeping good athletes, I am taking care of the training and the equipment, and we have more support from the school than ever. We are getting faster. Slowly but surely, we are moving toward winning at Dad Vails by 2014.

See you at the races!

Sincerely,

Robert Montague
Head Coach, William and Mary Rowing Club
757 565 5034
ergmaster@hotmail.com

Schedule for Fall 2004

Sunday, 17 October: Occoquan Chase (northern VA)

Saturday, 30 October: Head of the Schuylkill (Philadelphia, PA)

Saturday, 6 November: Head of the Occoquan (northern VA)

Congratulations to the US Rowing Team at the 2004 Olympic Games in Athens

Gold Medal – Men's 8+

Pete Cipollone (cox), Bryan Volpenhein, Beau Hoopman, Dan Beery, Matt Deakin, Joseph Hansen, Chris Ahrens, Wyatt Allen, Jason Read

Silver Medal – Women's 8+

Mary Whipple (cox), Lianne Nelson, Anna Mickelson, Laurel Korholz, Caryn Davies, Alison Cox, Megan Dirkmaat, Sam Magee, Kate Johnson

Williamsburg Boat Club Update

The Williamsburg Boat Club (WBC), the community group under the Friends of Williamsburg Rowing, is off to a good start. After years of planning and many meetings at a local coffee shop, some very dedicated individuals have formed a community rowing program. George Livingston, Stan Lewis, Tim Bodine, and Pete Kresky were trying to get the ball rolling when Mary Lewis and Susan Patterson moved to Williamsburg within the same year and picked up FWR brochures. Being rowers, they were excited to learn about FWR and the opportunity for rowing in Williamsburg. Mary and Susan joined the meetings and over a two year period helped plan how WBC might become a reality. What resulted was WBC's participation in the 4th annual National Learn to Row Day sponsored by USRowing and Concept 2. Thanks to James City County Parks and Recreation Department, the event was held at the beautiful Little Creek Reservoir on June 12, 2004. Club members placed posters around Williamsburg and took advantage of free advertising in two local newspapers.

Not only did 20 people show up at the reservoir that day, several former rowers saw our posters and called to get information about the club. One in particular, Rebecca Margioni, had rowed in college and coached high school rowing for several years. She was (and still is) a huge asset to the club with her knowledge of teaching beginners to row. Of the 20 people who came to the Learn to Row Day, 12 signed up for six weeks of classes that started on June 26th at Little Creek Reservoir – a perfect body of water on which to learn. Ten of those people have become WBC members and three former rowers have, as well. Including the six original members, WBC has 19 members.

The College of William and Mary Crew club provided much needed support to WBC. If not for the hard work of Travis Moore, crew club president, coach Robert Montague, and sophomore rower Mike Schobel, WBC would not have been so successful. They made sure we had equipment to use and they rowed with the beginners all summer. WBC still uses the crew club's boats now that the College crew has moved to the Chickahominy River. WBC members are trying to row at least twice a week in between the College's practices and are hoping to share the crew team's workout space at the College where the rowing machines are housed.

Requests for information about WBC are still being made and several people are planning to sign up for learn to row classes next spring/summer. In addition to community members interested in learning the sport, calls from parents of children attending local high schools have begun. One of WBC's goals is to start a high school rowing program but that will take some hard work and dedication on the part of the school system, parents, and club members.

The club's first annual meeting is being held soon to elect new officers and appoint committee members. This group of members is enthusiastic about rowing and determined to make the club successful. What a great start for something that benefits the College of William and Mary and the Williamsburg community!

For information about Williamsburg Boat Club, contact Mary Lewis at mqlewis@cox.net or call 757-566-9615.

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The Electric Coaching Launch Program – Jay Graham's Update

As you know, I have been working with eCycle for several years to utilize their motor technology to power boats. These motors are brushless DC motors that have 12 Neodymium magnets on a rotor and a 3 phase winding on a stator. The elimination of brushes eliminates the weak point in "conventional" DC motors and the efficiency of the motors is about 94% compared to the 83% of the motors I had been using. I initially thought to use their standard MG13 motor, rated at 100 amps, with water cooling, for this purpose. I constructed several motors for testing purposes, one for use at 48 volts for "ordinary" use and one for up to 96 volts for special high output applications like the coaching launches.

These motors provided very good performance, providing a speed of 12 MPH in my 18 foot catamaran when operating at 96 volts and 100 amps. This is a power output of about 12 HP. The 26 foot coaching boats would be about 20% faster (14.4 MPH) with the same power. The motor used in the original motors I supplied produces about 7 HP, but is subject to overheating. The eCycle motor also was much quieter in use due to the use of water cooling which eliminated the fan noise in the motor. A friend who has a long time association with electric boat power accompanied me on one of the tests said that it was absolutely the quietest motor he had ever heard. The 48 volt version provided 6 HP at 100 amps.

Unfortunately, however, the motors did not have adequate internal heat transfer from the motor windings to the case of the motor. The case of the motor was kept at a low temperature by the water cooling, but the windings themselves overheated under continuous full power operation. This was the first application of the eCycle MG13 motor that was operated at a 100 amp current under continuous operation and demonstrated that their ratings for the motor were not able to be met. It could operate intermittently at up to 100 amps, but continuously had to be kept at less than 50 amps.

I have worked closely with eCycle to resolve these difficulties and we found that there were several design issues that had to be addressed:

1. The electrical insulation in the slots of the magnetic stator (where the wire was wound) was a thermal insulator that kept the heat from being transferred from the wire to the stator where it would be transferred to the outer motor case to be carried away by the water cooling. This was corrected by eliminating the fiber "liner" in the slot and replacing it with a hard thermally conductive coating directly on the steel laminations of the stator.
2. The size of the wire used in the windings was too small to carry the current without heating. In addition, the shape of the wire caused very little physical contact with the sides of the slots, so only limited heat transfer could occur. This was corrected by fabricating conductors of copper bars that were formed to be a slip fit into the slots of the stator. This not only increased the size of the conductor tremendously (eliminating most of the heat formation), but also provided a large surface area of contact between the conductor and the stator to provide an efficient heat transfer path for the heat that was produced.
3. There were high current "spikes" produced in the windings of the motor that we could not initially explain. These spikes caused additional heating in the magnets of the motor, as well as the windings, and loss of efficiency. This issue was discovered to be caused by inconsistency in the magnets which caused variations in their magnetic fields that interfered with the proper timing of the electrical pulses to the windings--the motor was fighting itself. This was able to be corrected by sorting the magnets on hand and by specifying higher quality in future magnet purchases. Research is continuing to further improve the magnets.

The use of the formed bars for slot conductors in the stators required a new method of assembling the motors. In the original design the wire had been wound into the stators on the same automated machinery that is used to wind alternators for cars and trucks. The new design requires that the bars be inserted into the slots of the stator individually and then bonded to their connections. The past months have been spent in working out these assembly details and in the fabrication of the slot conductors and their connections.

I was notified by eCycle on Sept 8 that the final components needed for the assembly of the motors for testing are due in the beginning of next week.

It has been a long and often frustrating time of development, but the time spent has resulted in both the identification and correction of design issues and, in addition, important development of improved methods of electrical power control.

The original speed controller was a large proprietary unit that could not be mounted within the hood of the outboard motor and was limited to a 100 amp output. Since the eCycle motor is a brushless DC motor, it relies on electronic circuitry to sequentially apply power to the motor windings (electrically the windings are the same as a 3 phase AC motor). This was combined with a DC speed controller in a single unit.

During the past six months, a separate electronic "commutator" has been developed, and is in production, that mounts on the end of the motor and which now allows the use of a conventional DC controller for speed control. This is a great advantage since it allows greater current capability (which the new motor design will allow), reduces costs considerably and allows the mounting of all of the speed and power control components inside the motor hood. It allows operation at up to 72 volts.

The tests that I ran on the original motor design provided a speed of 12 MPH in my 18 foot catamaran when operating at 96 volts and 100 amps. This is a power output of about 12 HP. This means that if a 72 volt battery power is used, a current of 133 amps will be required. Since the new design motor is more efficient, a bit less power will be needed.

I look forward in the next few weeks to being able to test the new design and will send the results as soon as they are available.

James M. Graham III

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Learn to Row Pictures



Rob Montague



Boathouse Fund

The Friends of Williamsburg Rowing has created a Boathouse Fund to facilitate our long-term goal of building a boathouse in the Williamsburg area.

The Boathouse Fund is a capital account. All contributions to the Fund stay in the account and are distributed only to build a boathouse. Until that time, the fund will preserve all contributions while gaining interest and dividends.

Currently, ten percent of all undesignated contributions go to the Fund. We encourage all contributors to consider designating a higher portion of their donation to this Fund.

The Friends consider the building of a boathouse to be the greatest contribution that the organization can make to advance rowing in the Williamsburg area.

Be a part of this achievement, CONTRIBUTE TODAY!!



Alumni

The William and Mary Rowing Club is over 15 years old!!

We have had close to 1,000 students participate in rowing for this club over this time, but we have little information on many rowers. All of you are living interesting lives and we want to share them with other members of the club.

Where are you? What are you doing?

Drop us an email. Give us a quick update. The next issue of Surge (due out in early spring) will feature an "Alumni Notes" section to help alumni keep in touch.

To help us keep in touch with you, please be sure to update your contact information (address, phone, and e-mail) with us. Send an e-mail to billandchristie@comcast.net.

Send Us Your E-mail Address

We are continually updating our database to keep all past, current and future "Friends" informed on the happenings of rowing in the Williamsburg area. If you would like to receive future issues of *SURGE!!* as well as other periodic updates by e-mail, please send an e-mail to billandchristie@comcast.net.

Electronic communication will save the Friends printing and postage costs. It will also enable us to contact you more efficiently.

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Contribution Form

Friends of Williamsburg Rowing

I/we wish to support the Friends of Williamsburg Rowing with a tax-deductible contribution:

| Levels: | Contribution Amount | Designation: |
|------------|---------------------|-------------------------------------|
| Benefactor | \$300 _____ | _____% Undesignated |
| Patron | 150 _____ | _____% William and Mary Rowing Club |
| Sponsor | \$75 _____ | _____% Williamsburg Boat Club |
| Member | \$30 _____ | _____% Boathouse Fund |

Name(s): _____

Address: _____

Phone: _____

Email: _____

Are you a resident of Williamsburg or James City County? Yes No

Would you like more information about the Williamsburg Boat Club? Yes No

Are you a W&M Graduate? Yes No Graduation year: _____

Former crew member? Yes No Years _____

Are you a parent/relative of crew member? Yes No Student _____ Graduation _____

The name/address or other information above is new or corrected: Yes No

You may acknowledge my contribution in future publications (dollar amounts are not published)

I/we wish to remain anonymous.

Please contact me regarding a major gift to William & Mary Crew.

Please send Friends newsletter and membership information to:

Return this form and check payable to "Friends of Williamsburg Rowing" to:

Friends of Williamsburg Rowing
PO Box 303
Williamsburg, VA 23187-0303