

THE PUBLICATION OF THE CHAIN-O-LAKES SAIL AND POWER SQUADRON

The Link

A UNIT OF THE UNITED STATES POWER SQUADRONS® DISTRICT 20

April 2011

Volume 11

Issue 2

Commander's Corner

We just concluded our spring conference on March 25 and 26 at the Hilton Hotel in Northbrook.

The conference was very informative and a lot of fun for all that attended. The theme of the conference was membership and involvement. Every squadron shared their views and a lot of great ideas came from everyone. Chain O Lakes sponsored a hospitality suite Friday and Saturday evening. Our room Friday evening was a Cantina atmosphere that in my opinion was the best decorated and we had 14 members that help host the hospitality room. Gary Breaker won the top prize for the game competition Friday evening.

Saturday evening concluded with the instillation of D/lt/C Karen D'Amico as our new District Commander. Karen's acceptance speech was based on communications and involvement.

Chain O Lakes also won the Distinctive Communicator award. We also won for the 21st. Educational fund certificate of merit for financial contributions to the fund.

This looks like a very exciting year ahead for our squadron and the district.

Start planning for the Cruise and Rendezvous. This year will it will be held at Clinton, Iowa on July 15th and 16th. The Two Rivers Squadron have put together a great weekend of activities set in Fulton and Clinton. This looks like a lot of fun and it would great if our squadron can get involved.

With vessel safety checks starting in May, I would like to set one of our goals to have every boat in our squadron checked. We will try to set up a time to bring your boat by or we will come to you.

The best way to promote safety is to get involved yourself.

In next month's link, we will give more details on the Cruise and Rendezvous and vessel safety checks.

Remember to invite your boating friends to any of our activities.

Chip Byrne
Commander

THE LINK

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**Visit <http://chain-o-lakes.org/>
for all events for this year**

Mark Your Calendar for These Upcoming Events

May

- 4 **COL Bridge Meeting - 1930 hrs**
Don/Judy Kerr, Village of Lakewood
- 6 **Bridge Meeting D/20**
Holiday Inn, Elgin
- 24-27 **Safe Boating Week**
- 24 **Anchoring -**
Great Lakes Yacht Sales, Rt. 12, Fox Lake
- 25 **Trailer Your Boat**
Fox Lake Harbor, Grand/Rt. 59, Fox Lake
- 26 **Boat Handling under Power**
Munson Ski & Marine, Grand/Rt 59, Fox Lake
- 27 **Trailer Your Boat**
Sequoit Harbor, Rt. 173, Antioch
- 21 **Potluck**
Fred/Marilyn Bies - Antioch

*Plan to attend
one of our many
educational or
social events.*

June

- 1 **COL Bridge Meeting - 1930 hrs**
Gary/Pat Braker, McHenry
- 12 **COL, Skokie Valley, DuPage,
Racine Cardboard Boat Race**
Cedar Lake, Lake Villa - Jim/Cindy Geske
- 16 **Blarney Island Races**
Grass Lake - Lance Piekos
- 18 **Cruise to Nowhere**
Racine PS

- 24 **Bridge Meeting D/20**
Holiday Inn, Elgin

July

- No COL Bridge Meeting**
- 15-16 **D/20 Cruise & Rendezvous**
Clinton, IA
- 16 **Bridge Meeting D/20**
Holiday Inn, Elgin
- 23 **Treasurer Hunt**
Fox Lake - Chad Braker

From the Chain-O-Lakes Sail & Power Squadron Educational Department

Knowledge helps us make good choices, keep learning!

We are off to a great start for 2011! Before I let you know what is happening now, I forgot to mention someone who helped teach a knot tying session in our Fall Seamanship class. Our 1978 P/C and current Flag Lieutenant Bill Struve, AP shared his expertise in tying knots and spicing lines. His skills with lines are amazing.

The Piloting and Advanced Piloting exams are complete and I am proud to say we have three new Piloting grade members; Don Kerr, Tim Levo, and Vince Romanelli. Congratulations! I know you worked hard during the class and your efforts on the exam paid off.

We are still waiting for the Advanced Piloting grades but I am confident we will have great results. Thanks to everyone who helped teach the classes; Vince Byrne, Jim Geske, and Jim Bowgren helped me present the material to the classes.

The Engine Maintenance class is well underway. We had a late start but once the new books arrived we were ready to go. We have six Chain members and two new members from Waukegan squadron joining us. Sean Moore and Steve Townsend seemed to enjoy the first night of class; we may be able to convert them to Chain members by the end.

The ABC class at the Fox Waterway Agency is have the exam this week. We have 11 students and have had a full class every night. Our new six-month trial membership policy has yielded some interested. We may have some new members form this class. Thank you to all the instructors; Jim Bowgren, JN, Jim Fuerholzer, JN, Pat Braker, JN and Gary Braker, AP as well as our Cdr Vince Byrne, AP and P/C Jim Geske, P for helping out and promoting the squadron.

We now have our USPS University seminars lined up and the participating marinas are ready to promote our efforts. The schedule is for the week of 24 – 27 May at Great Lakes Yacht Sales, Fox Lake Harbor, Munson Ski & Marine, and Sequoit Harbor. The two-hour seminars will cover Trailing, Anchoring, and Boat Handling. All members are also welcome to join the educational experience and promote our squadron's activities.

Many of you may have heard about the USPS partnering with Brunswick to offer boating education to their customers. I have attended meetings with other squadrons and the head of Skipper Bud's regarding our participation. We have been in contact with the local store to promote our willingness to teach in their location. We will continue to pursue this and hopefully find mutual benefit for our investment.

Learning give us power and choices; become a life-long learner!

Lt/C Ron Herbig, AP
Squadron Educational Officer





TRIDENT

'EXTRA'

UNITED STATES POWER SQUADRONS®

Sail and Power Boating



United States Power Squadron

Combined D20/D30 2011 Cruise and Rendezvous

Host Squadrons: D20-Two Rivers P & S squadron, D30-Waterloo Power and Sail Squadron

"Registration"

Fulton IL/Clinton IA Steamboat Days Rendezvous July 15-16th, 2011

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

Arrival Date: _____ Departure Date: _____

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1301 17th Street, Fulton IL 61262. 815-589-3333 Email: GM.II241@choicehotels.com
This is 100% non-smoking facility

2. Holiday Inn Express, Clinton IA – Double \$79.00: _____ King \$79.00: _____
2800 South 25th St, Clinton IA 52732. 563-242-9300 Email: clintonhiexpress@yahoo.com
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Signature: _____

Make your reservations directly with the hotel you plan to at.
Reservations are subject to cancellation unless guaranteed with a credit card or one night's deposit.
To qualify for the C&R room rate reservations must be received by the hotel no later than June 30, 2011.

D/20 TRIDENT

‘EXTRA Part II’



2011 C&R SCHEDULE OF EVENTS

United States Power Squadron D20/D30 2011 Cruise and Rendezvous

July 15 & 16, 2011

Lunch & Dinner Reservations

Rank	Name	Grade	Squadron
------	------	-------	----------

1 _____

2 _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

E-mail: _____

Meals

Luncheon: Cost \$14.00 -your choice. Just tell the server which you would prefer.

Chicken George, Baked White Fish, Prime Rib

Total _____ X \$14.00 = _____

Dinner: Cost \$22.00 – your choice

Traditional Buffet Style - 4 main entrée's, 2 vegetables, 1 starch, 1 pasta, plated salad, coffee, ice tea and/or hot tea included.

Total _____ X \$22.00 = _____

Total Check amount \$

MAKE RESERVATIONS BEFORE June 30, 2011

Make checks payable to: Two Rivers Sail & Power Squadron

Send registration and payment [check] to:

William M. Griswold, CPA

604 W 12th St

Sterling IL 61081

815-625-5172

Dress Code: - Casual

Contact for information: 815-703-5069 [Ron Williams]

Slip Reservations call early at: 563-242-3600

FRIDAY 15 JULY

Hotel Room Check-In

1700-1830 Registration at Eagle Point Pavilion and at 1830 Meet & Greet Reception and wine tasting event, sponsored a Wide River Winery [This may be an opportunity to re-stock your wine rack]

SATURDAY 16 JULY

Continental breakfast at your hotel

0900-1000 D20 Dockside Mingle on the waterfront - coffee will be served

0900→ D30 Meeting Location & Schedule will be communicated to D30 membership

1000-1130 D20 Executive Meeting & Council Meeting – Candlelight Inn

1140-1225 Combined D20 & D30 NOAA Weather Presentation– Amy Seeley, Candlelight Inn location

1240-1340 Combined D20, D30 Luncheon - Candlelight Inn

1345 ----- Afternoon activities--*Information on activities available at the Registration and Information Desk. Maps will be available.*

Guided tours [small groups] of Lock and Dam #13 [Sign-up is required-check at registration desk. Several groups will be scheduled throughout the day]

Fulton:

Windmill (Down Town Fulton) [A Must]

Museum Cultural Center (Down Town Fulton)

Heritage Canyon (Far North 4th St.) [A Must]

Eagle Point Park for a fantastic view of the #13 Lock & Dam Mississippi upper pool

Clinton:

Smith's old Fashioned General Store [A Must]

Wide River Winery [You will enjoy it]

Wild Rose Casino [Feeling lucky?]

1200 Sextant readings [Check with Two Rivers Member if interested – [check at registration desk]

Clinton "A" league baseball: 6pm Fri 15th and Sat 16th, 2pm Sun 17th. The field is on the other side of the levee from Candlelight Inn

Clinton Show Boat Theater overlooking the River

Launch Ramp and rentable slips available for those who bring their boats for some time on the river

1830-2200 Cocktail reception and dinner at Rastrelli's, 238 Main Ave, Clinton [Lyons District]

2200 --- Hospitality Room at Comfort Inn, Fulton
Location: Comfort Inn: Breakfast Room [room capacity 100 guests]

From the

MENTORS CORNER

It's no secret that we are all looking for opportunities to save on expenses these days. But did you know that as a USPS member some of those opportunities are only a few clicks away!!!

Just think, 12% off on that new computer system or 1/3 off the annual subscription to a popular boating magazine. What about cruise tickets with the only 110% Best Price Guarantee in the industry? With spring right around the corner how would you like to save up to 50% off on some new home furnishings or maybe some lawn and garden products. Or perhaps you would just like to have saved 55% off that latest prescription drug.

Whatever your needs, USPS has partnered with over 30 national companies to make numerous benefits available to our members. So if you have not taken a look at the USPS Member Benefit page lately, click on this link:

http://www.usps.org/national/admin_dept/benefitsdescription.htm#Cruisesonly

Remember, those SAVINGS OPPORTUNITIES are only a few CLICKS AWAY!!!

P/C Pat Braker, JN
Mentoring Chairman

SAVE
with USPS membership benefits

*Sign up for
Lock & Dam #13
Tour*

*Call
815-589-3073
to register
for this
activity*

United States Power Squadron

2011 Cruise and Rendezvous

Host Squadrons

D20-Two Rivers Power and Sail Squadron and
D30-Waterloo Power and Sail Squadron

Lock & Dam #13 Tour

Reservations are required for this activity
Early Registration is important to facilitate planning.

Tours will take place in small groups of approximately 8 persons at a time under the guidance of Rangers from the US Army Corps of Engineers.

Please call:

Stanley Tenboer, SN at 815-589-3073 to register for this activity

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What is USPS?

- a. A non-profit organization dedicated to safe boating through education
- b. An organization comprised of boating and non-boating volunteers across the country
- c. The organization sponsoring the United States Power Squadron University
- d. The organization that certifies power and sail boaters in Inland, Coastal, Advanced Coastal, and Offshore Navigation
- e. The organization with premier educational boating offerings including hands-on and on-the water training
- f. An active partner with many other nautical organizations and agencies.

Who are the members of USPS® ?

- a. Power boaters, sailors, and paddlers.
- b. Non-boaters.
- c. People seeking to improve their knowledge and skills through boating education.
- d. People with a desire to teach others.
- e. People seeking like-minded people and fraternity.
- f. People seeking civic opportunities to fulfill a need for social responsibility.
- g. People from partnering organizations.
- h. All of the above.

What is USPS® and who are its members?

g. All of the above.

Answers:

- a. *You are partially correct.* Since 1914, over 4 million safe boating students have taken our courses.
- b. *You are partially correct.* Nearly 40,000 members can be found throughout the country's waterways.
- c. *You are partially correct.* Courses range from inland to off shore navigation, boating systems and equipment, and tides and weather.
- d. *You are partially correct.* Hands-on and on-water training lead to certification on navigable waters
- e. *You are partially correct.* Our courses and seminars cover everything a boater will ever need.
- f. *You are partially correct.* Partners include West Marine, Boat US, Maptech, C-MAP. Soundings magazine, NOAA, American Canoe Association, U.S. Sail, Sea/Tow, Genmar, NMMA, USCGAux, and USACE, and NMMA.
- g. **CORRECT.** The United States Power Squadrons does all of the above.

Answer:

- a. *You are partially correct.* Members can be found on every type of watercraft all across the country.
- b. *You are partially correct.* You don't need to own a boat to be interested in boating.
- c. *You are partially correct.* In the classroom and on-the-water, squadron instructors offer all our courses and seminars that also includes hands-on training.
- d. *You are partially correct.* All members have opportunities to become certified USPS instructors
- e. *You are partially correct.* Whether cruising together or just hanging around the dock, members share a common bond.
- f. *You are partially correct.* Our programs help keep our waterways safe while helping the community.
- g. *You are partially correct.* A long list of supporting partners include West Marine, Boat US, Maptech, C-MAP. Soundings magazine, NOAA, American Canoe Association, U.S. Sail, Sea/Tow, Genmar, NMMA, USCGAux, and USACE.
- h. **CORRECT.** The United States Power Squadrons'® members are all of the above. People from all walks of life enjoying the benefits of learning and participating in the marine environment while helping others in their communities. Why not join us as a member or make a tax-deductible contribution to assist in our mission.

Why not join us as a member or make a tax-deductible contribution to assist in our mission.

USPS Mission Statement: *To promote recreational boating skills and boating safety through education, hands-on training and civic activities while providing fellowship for members.*

Learn more about the United States Power Squadrons® at:

- www.usps.org
- District 20 at www.uspsd20.org or
- Chain-O-Lakes Sail and Power at www.chain-o-lakes.org

Calling all Boaters

The EPA is currently accepting public comments toward finalizing their Best Management Practices (BMP) requirements for incidental discharges from recreational vessels.

Discharges include bottom paint sloughing, rinses from exterior washings, bilge water, gray water, and others that are part of everyday operation and maintenance.

These sources have minimal impact to the environment but will increase costs significantly to boaters and to our marinas/yacht clubs. Tell EPA that employing their initiatives under the guise of environmental protection without performing meaningful cost/benefit analysis including subsequent public comment wastes public funding, increases unnecessary cost to the boating community, and restricts personal freedoms guaranteed to all US citizens.

The U.S. Environment Protection Agency (EPA) is developing future clean boating requirements for all recreational boats in the next few months, and they need to hear from you. During April, they are hosting weekly "webinars" to solicit boater input (April 6 - 6 pm, April 14 - 8 pm, April 22 - 10 am, and April 25 - 12 pm; all eastern time).

For more information on the webinars and to register in advance (which is required):
<http://water.epa.gov/lawsregs/lawsguidance/cwa/vessel/CBA/participate.cfm>

A specific list of proposed requirements is not yet available. We do know that sewage will not be discussed or covered - it's part of a different

law. EPA is looking at several broad categories of vessel discharges:

- Anti fouling paints and zincs
- Gray water (from showers and sinks)
- Bilge water (with concern about oil and grease, which is already illegal to discharge)
- Cleaning products/maintenance practices
- Disposal of garbage and fishing waste
- Transport of invasive species

You can help the EPA know that any new mandatory "management practices" must be based in science, and should be reasonable, practical, and economical. You should share with EPA the clean boating practices that you already employ, or that can be easily adopted within your boating.

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A tisket, a tasket... volunteer to make a raffle basket

We are halfway to reaching our goal of 20 baskets to raffle off at the Fall 2011 D20 Conference, and a big shout-out and thank you to those who have already volunteered: Ron Herbig, Nancy Byrne, Pat Braker, Justina Dreary, Jamie (friend of Vince Romanelli), and Cindy Geske, who volunteered three baskets. And we even have a volunteer from another squadron – a big thank you to Linda Abens-Erdmann of Racine Sail and Power Squadron for graciously volunteering to make a basket for COL.

I need to count on more of you, though, to help COL reach its fund-raising goals. We got off to a great start with the sale of raffle tickets at the Spring Conference. Many of the Spring Conference Attendees who bought raffle tickets in advance were persuaded to do so by the attractive sample display of some of the baskets we already have. If you would like to contribute a basket but don't have the creative flair to do so, you can donate the cost of the

basket (approximately \$25.00) and we will be happy to make a basket to be raffled on your behalf.

We want COL to shine as the host squadron at the Fall Conference, and we really need your support! Please see the February issue of THE LINK for complete details, or contact me for further information.

Lt. Nancy Herbig,
Basket Coordinator
D20 Conference

847- 223-9594 or
nherbig@leydig.com



Raffle Prizes

Supporting the USPS
District 20 Fall Conference
21-23 October 2011

Basket Raffle. Approximately 20 different themed baskets will be raffled off Saturday night. Tickets are **\$5.00** or **5 for \$20.00** before the conference. Each basket value average is about \$25.00.



Raffle tickets can be held and deposited at the conference or indicate your prize preference on the ticket stub.

*All tickets on Sale
NOW!!*

Guess and Win!



Guess the exact number of **LifeSavers** in the jar and split the pot. Only **\$1.00** per guess. Winner announced at the luncheon.

TV or Liquor Raffle

Win a **40" LCD** television or a wheelbarrow full of **wine and liquor**. Tickets are **\$10.00** each. Winner announced at the dinner Saturday night.



TV image for illustration only, actual item may look different.



Both prizes, TV and the Liquor will be Won!

Wheelbarrow not included.

Wheel, Throttle, and Gearshift... why things happen the way they do - whether you want them to or not.

by Bill Baldwin

You've carefully set things up to bring your venerated runabout onto the dock perfectly; done everything; thought of everything. This one's gonna' be a greaser for sure. Then, without warning, you realize you're moving too fast; you're caught with full right rudder, and the stern's drifting left toward the dock like it's on ice. All of a sudden, you're only along for the ride. You try everything, but the forces are more than you can control... WHAM! BAM! [Editor's Note: In order to preserve the family orientation of this publication, the remainder of the paragraph has been deleted due to violent content and language.]

Another faultless varnish job bites the dust as that gleaming mahogany showpiece ignores all inputs to helm, throttle, and gearshift, then gleefully goes itself on the one place at the dock that is capable of defeating rub-rail protection supplied by the best marine designers of the antique and classic boat world. Of course, this happens before an audience made up of people who never show up when you glide onto a mooring like you've been doing it all your life (even if you actually have been doing it all your life).

Just what is it that lets people make perfect landings every blankety-blank time? What right do others have to back a Riviera into a slip as if it were a Buick? Why do some people's boats look if they just came off the production line — in spite of frequent operation in adverse wind and waves? The rest of us mere mortals (with our scratched and battered boats) would love to dismiss these talented Skippers as people with more luck than skill, but we simply can't. They operate with focus, skill, coordination, and — most importantly — an inherent connection to the implacable principles of physics governing all boats with rudders and single, non-pivoting propellers. Probably the biggest difficulty about maneuvering our old boats and their "traditional" propulsion systems is that the only directional control we have is pivoting the stern left or right. In case anybody hasn't yet noticed, steering a boat forward only seems like driving a car, but any resemblance to following a couple of wheels that reliably lead a chassis right or left is only a dangerous dream. And in reverse, most

of the time, no matter which way we turn the steering wheel, we can only pivot the stern to the left. Aside from that, we can make them go forward or backward, but that's it. Worse yet, unless we hit something or let them glide to a halt, the only way to stop is to throw the propeller into reverse — with all the trouble that causes. It's a difficult life we suffering Skippers lead, and there's not much we can do about it because our problems are caused by largely immutable principles of physics. Here's what we're up against:

SIDE FORCES — BLAME THE PROPELLER

Most basic maneuvering problems are caused by unexpected Side Forces that pivot the sterns of our boats right or left, independent of how we've turned the steering wheel. Most of these are caused by the propeller — or at least the effect of the propeller — on the boat hull. The worst part about these forces is that there's not much you can do except deal with 'em. But that very art of dealing is what separates real boat handlers from the average klutz. Read on and weep!

Side Forces Underway

You'd think since propellers are designed to propel your boat, that turning one AHEAD (to the right) would cause the boat to move straight ahead, and that turning one ASTERN would cause it to move the boat straight astern. Oh no. That's the reason "pointable" stern drives and outboards are so popular these days. One of the biggest problems is that a propeller produces clearly demonic Side Forces in addition to thrust along the propeller shaft. These demons can be broken down into the following four elements: Following Wake Effect, Inclination Effect, Helical Discharge Effect, and Shallow Submergence Effect. They are (more or less) illustrated in Figure 1.

Pivoting the Stern Left

The Following Wake Effect, pivots the stern to the left and is caused by the hull dragging water along with it because of skin friction. The closer to the hull (high wake effect), the closer its velocity is to that of the hull. Farther below (low wake effect), the velocity slows. This dragged water is called the frictional wake, and starts out at zero thickness at the bow but can reach

considerable thickness towards the stern — and the propeller. Within this wedge-shaped envelope of water moving along at different speeds, the propeller blades exert more torque when turned through regions of high following wake near the hull. With right-rotating screws, this tends to move the stern to left (causing the boat to veer to the right).

Pivoting the Stern Right

The three remaining demons attempt to pivot the stern right and your bow left. Together, they overpower the Following Wake Effect and insure that you nearly always have to apply a little right rudder to make your boat go in a straight line.

In addition to its fore-to-aft motion, the Following Wake Effect also has an upward motion aft that has an important effect on propeller behavior; this is called the Inclination Effect. As the propeller blades move downward (along the right side of their circular path), they meet water that is moving upward as well, increasing their thrust in this arc — and decreasing thrust on the upward, right arc. The effect is heightened because we incline the shaft upward so it can pass through the hull to the engine.

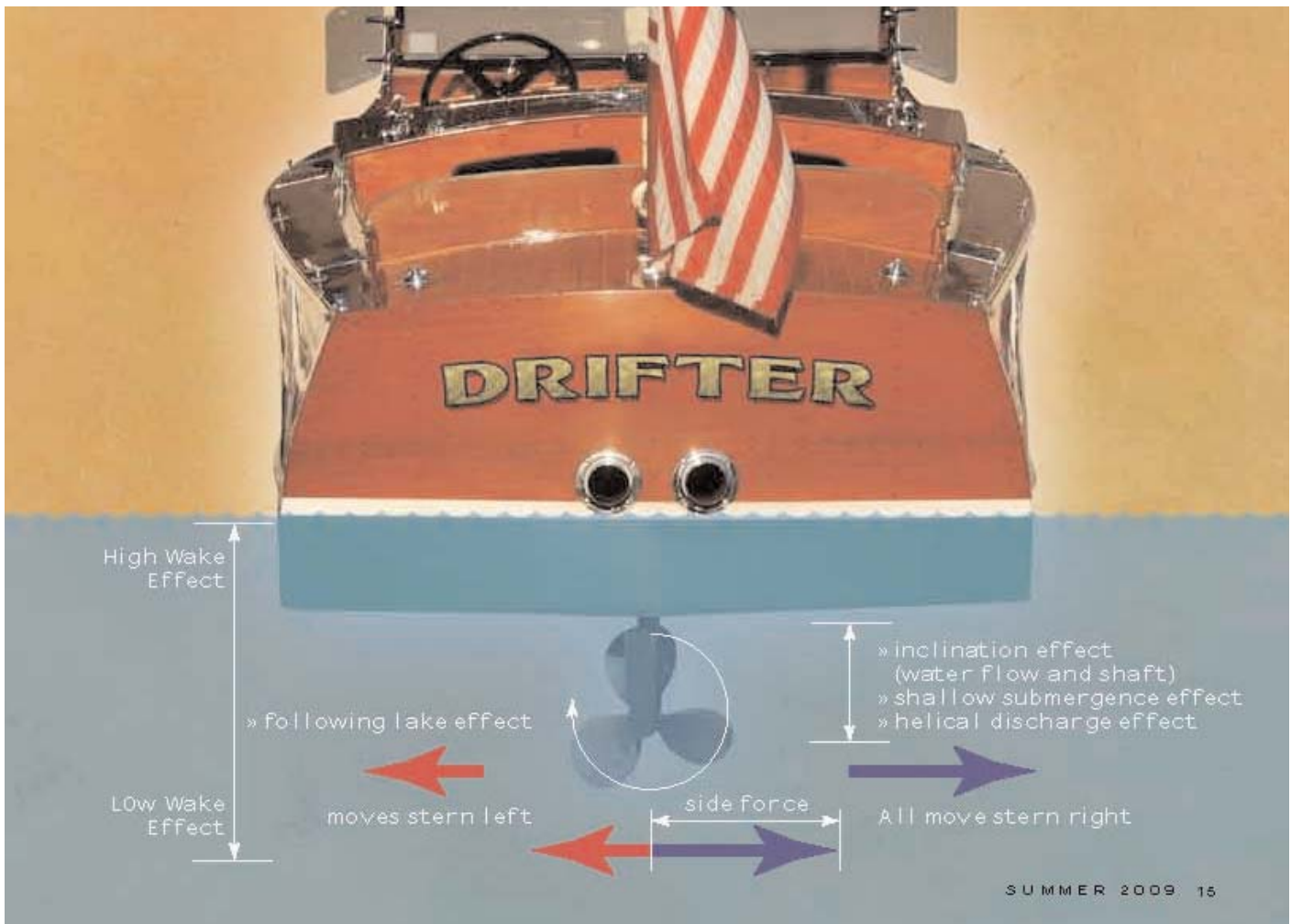
Helical Discharge from the propeller of a single-screw boat impinges directly on the rudder. That part of the discharge above the propeller hub creates a force that tends to pivot the stern to the right while the discharge below the propeller hub tends to pivot the stern to the left. Because of the increased blade angles of attack in the upper arc (due to the Following Wake Effect), the discharge from the upper half of the arc is stronger and the net effect tends once more to pivot the stern right along with the Helical Discharge.

Finally, a Shallow Submergence Effect frequently draws air from the surface when considerable power is applied to the propeller and causes the blades in the upper arc to act as if it were in a less dense medium; thus also pivoting the stern right.

As mentioned above, all three of these forces completely negate the Following Wake Effect and what is left over becomes the diabolical Side Force.

Side Forces Starting Under Way

With your boat at rest or just starting to move, the stern usually pivots to the right. Why? Well, since the hull isn't moving, the Following Wake Effect is virtually nil. And since only the Shallow Submergence Effect is inde-



pendent of the Following Wake Effect, it's got to be responsible. Look at the water in the vicinity of the propeller when you watch someone start off rapidly. You'll see a churning action as air is drawn down into the propeller disk, even though the propeller is well below the surface, and sure enough, the stern will be pivoting to the right.

Side Forces When Backing

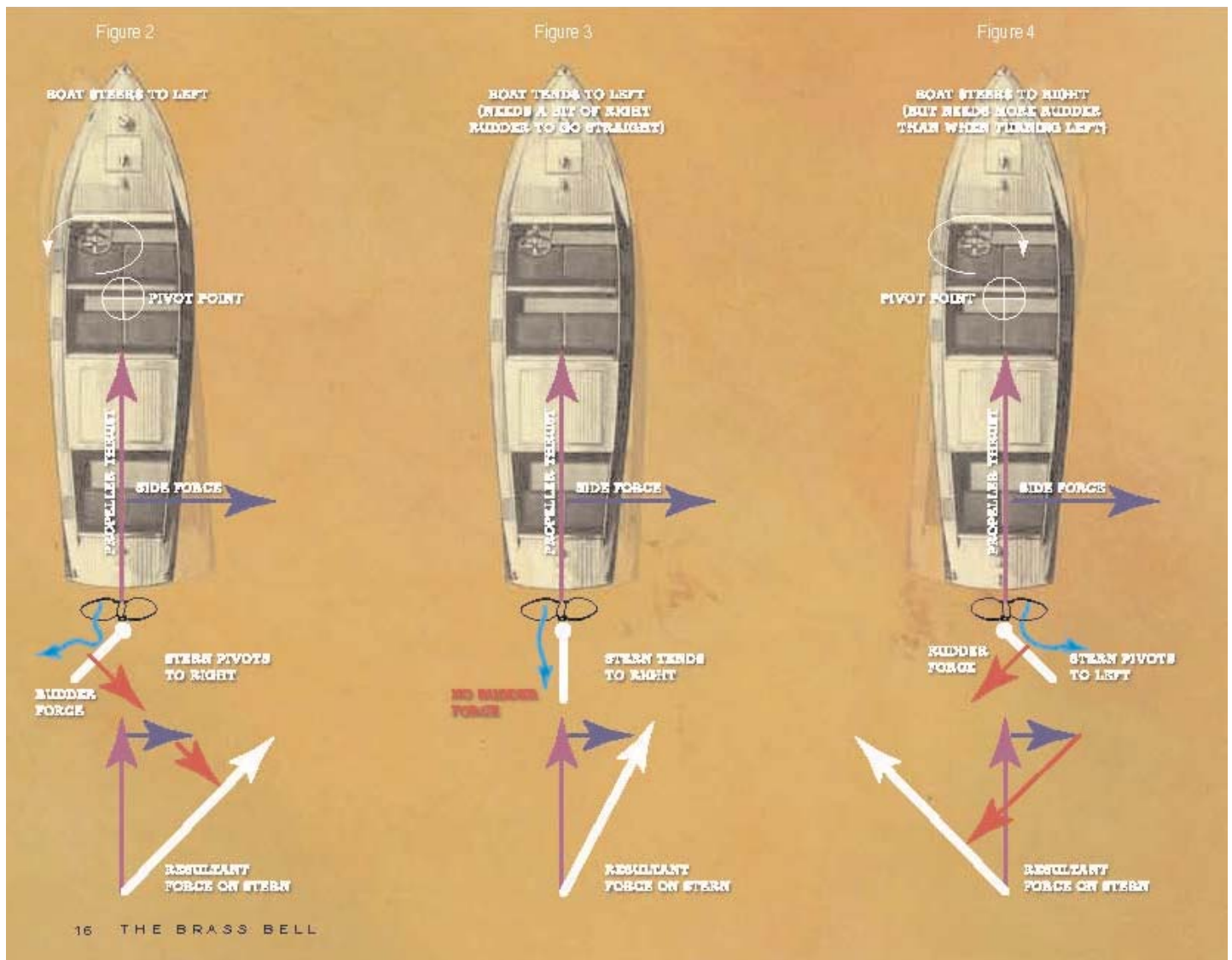
It's when you're in reverse that things really go haywire. When turning the propeller in reverse the resulting Side Force is now on the other side, pivoting the stern to the left this time.

When you begin to back up with the boat dead in the water, the propeller is biting into undisturbed water; therefore there is no Following Wake Effect to pivot the stern right — and counter discharge from the propeller whose upper half tends to bank up against the right side of the counter while the lower half spills under the keel. The result strongly pivots the stern to the left. For this reason, it's necessary for a single-screw boat to build up appreciable sternway before the tendency to

back to left can be overcome by use of the rudder.

RUDDERS: THE ONLY STRAIGHT SHOOTERS

Rudders are hydrofoils, designed to obtain a lift force perpendicular to the flow of water running past them. If they are swung to the left, this lift factor drags them to the right, and visa-versa — with no other side effects. Rudders also produce a drag force parallel to the flow of water that acts against the lift, so the turning power of any rudder is a resultant vector somewhere in-between the two forces. A most important thing for we single-screw Skippers to remember is that since rudders are mounted directly astern of our propellers, a large Rudder Force can be obtained from the propeller current flow as the propeller turns to move the boat ahead, even though the hull has not begun to move appreciably. Unfortunately, putting the boat in reverse from a standstill can cause only a very slight current to flow past the rudder, so no appreciable Rudder Force will be felt until the rudder itself is moving smartly through the water.



PUTTING IT ALL TOGETHER

Under our own power, we Stinkpotters steer boats by means of the three forces described above: Propeller Thrust, Side Force, and Rudder. And although we've considered them separately, we've got to combine them if we're to predict what they do in concert.

If we define Propeller Thrust as the component of propeller action that acts in line with the propeller shaft (turning forward or aft), we can lump all other components of propeller action in the horizontal plane and call it simply, Side Force. Similarly, because the force on a rudder inclined to the flow is nearly perpendicular to its faces, we can define that force as Rudder Force. Next, since all three forces act at nearly the same place near the stern of a boat, we can, for all practical purposes, consider the combined effort as a Resultant Force. We Skippers do the controlling of our boats by knowing how to live with — and control — this Resultant Force.

Drawings 2 through 8 contain vector diagrams that vary combinations of Propeller Thrust, Side Force, and Rudder Force into Resultant Forces that can be

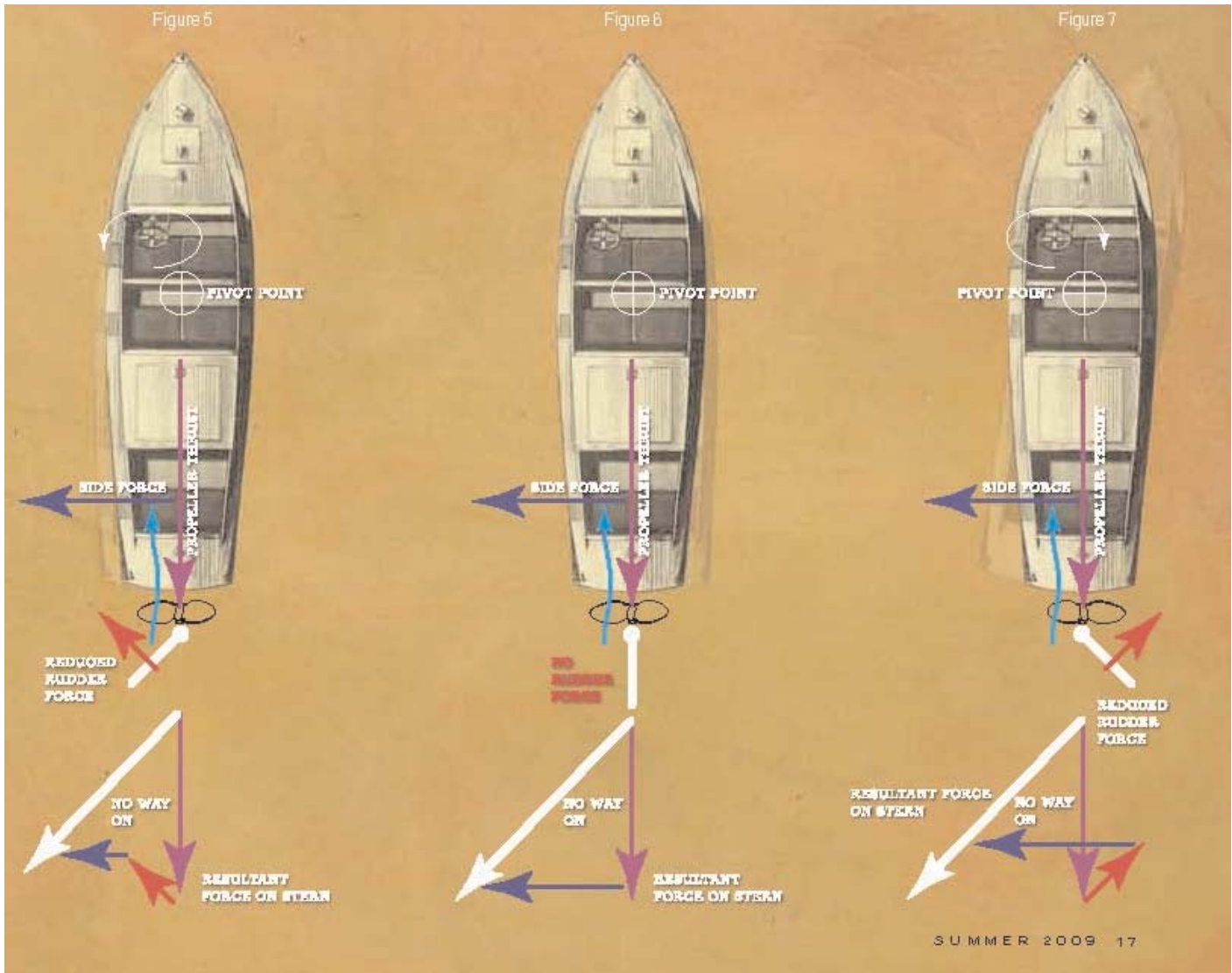
used to predict which way the stern will pivot when we use varying combinations of propeller and rudder. Clearly, throttle settings impact the magnitude of most stern movements, and these has been left as an exercise for the reader.

In Forward Gear

Figure 2 shows what happens at the stern when you turn the wheel left as the propeller is turning forward. The stern pivots to the right because the combination of Side Force and Rudder Force, and the bow goes to the left — pretty much just like you want it to.

Figure 3 shows what happens when the propeller's going forward and the rudder is fore-and-aft. Even though your steering wheel is straight, the stern inexorably pivots to the right, and this is the reason you always have to run a straight course with a little right rudder (even though you adjusted the steering wheel to perfectly line up when the rudder is fore and aft).

Figure 4 shows why you've got to turn the wheel farther when you're steering right than when steering left. Even though the rudder is operating normally to



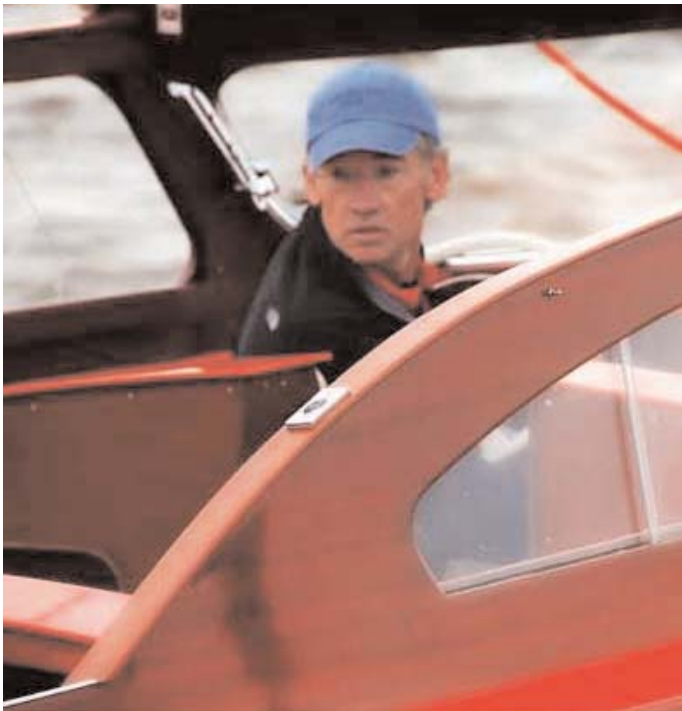
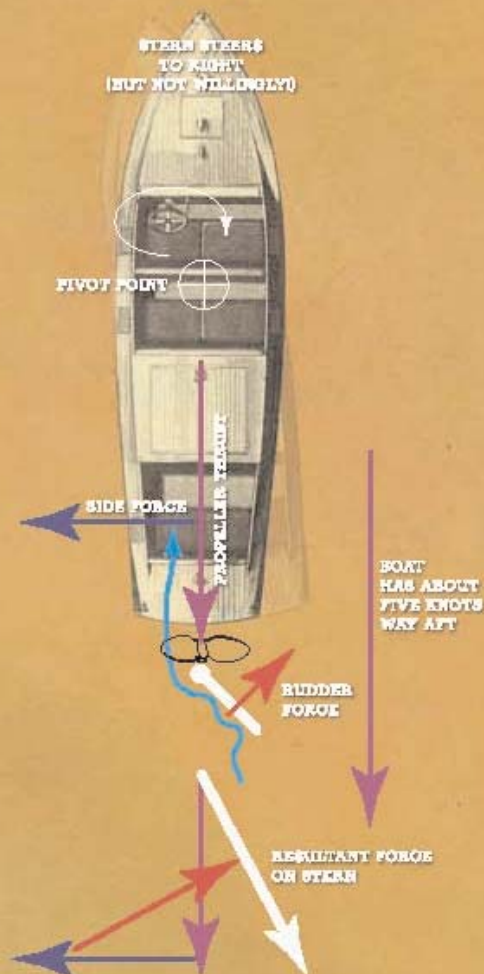


Figure 8



pivot the stern to the left, the Side Force subtracts from it, making a lesser Resultant Force when you're steering to the left. Remember, we're not making this up!

In Reverse Gear

Figure 5 shows what happens when you turn the wheel to the left, then throw the gearshift into reverse. Note that there's hardly any Rudder Force at all because no water is flowing along its faces — but the Side Force is now magnified. Why? Because the propeller is biting into undisturbed water; therefore there is no Following Wake Effect to diminish discharge from the propeller on the counter and the keel, and this magnifies the Side Force. The stern swings to the left.

If you have a few knots of forward way on, this is the easiest way to kill your forward motion and swing your stern smartly to the dock. Life would be so much easier if all docking situations were exactly like this.

Figure 6 shows what happens when you shift into reverse with the rudder in fore-and-aft position — pretty much the same thing, only less thrust to the left.

Figure 7 shows what happens when you turn the wheel all the way right, then shift into reverse. There's still not enough Rudder Force to deal with the magnified Side Force and... Surprise! Your stern still pivots to the left — proving once more that physics, not you is always master of the situation.

Finally, Figure 8, at left, shows what happens once you're underway in reverse. Now, you've got some water moving over the faces of the rudder and viola! The stern at last pivots to the right just as you wanted it to (if a bit grudgingly).

THE CONCLUSION

No matter what boat you're running, if it has a single, fixed propeller and a single, fixed rudder mounted astern of that propeller, it's going to handle according to the physical principles described above. All this varies, of course, with the configuration of your particular hull. But in most cases, the only variances will be in the magnitude of the pivoting — although it is true that in rare cases, some single-screw boats have a tendency to pivot right when moving ahead. How to handle all of this? First of all, know the physics of things so you can make at least half-accurate predictions of what will happen. Then, practice, practice, practice on your own, particular boat until you have a pretty good idea about the magnitude of the vectors that actually happen.

Finally, there will come a day when you can put that runabout on the dock every time — better, even, than Chris Smith, himself. Then just as you're about to impress a large crowd at the gas dock with your magnificent handling skills, the wind will come up, you'll be caught with full right rudder, and the stern will start drifting left toward the dock like it's on ice. All of a sudden, you'll only be along for the ride as your prized hat blows from your head. You'll try everything, but the wind will be more than you can control, and... WHAM! BAM!

Wind? That's a whole 'nother subject.

Chain-O-Lakes Power Squadron "Potluck Dinner"



When: Saturday May 21st at 18:00

**Where: Fred and Marilyn Bies home
94 Netherlands Dr., Antioch, IL. 60002**

*Please RSVP to Marilyn at 847-838-9866 by 5/16
and let her know what you're bringing!*

**Fred and Marilyn will have Sloppy Joes
or Italian beef**

What to Bring:

Please bring your own Beverages and a Favorite Dish to share (or one you don't like but think we would)

We will need Appetizers, Salads, Bread, Desserts and a Casserole is always welcome

"Appetizers probably should come with early arrivals"

Cardboard Boat Regatta

We have been challenged to a Re-Match!

Chain-O-Lakes vs. Skokie Valley

Sunday, June 12, 2011

Squadron Only Races Start Promptly at **1:00 PM**

Admission is \$8.00 for advanced registration and \$10.00 the day of the race.

Boat kits are \$15.00 each.



Lehmann Park
Downtown Lake Villa, IL

Bring your choice of meat and a dish to pass
If your not in the mood for cooking – concessions are available
Grills are provided in the park on a first come first serve basis

Chain-O-Lakes Contacts:

Cindy Geske

antongeske@juno.com

847 703 0884



CARDBOARD BOAT REGATTA RULES

Lake Villa Area
Third Annual Cardboard Boat Race
Sunday June 12, 2011
Lehmann Park Downtown Lake Villa
Instant boat construction begins at 11:00 a.m.
Squadron Races start at 1:00 p.m.

Division	Age range	Other Prize Categories
1. Youth	7-12	5. Most creative theme (costumes encouraged)
2. Junior	13-16	6. Most original design
3. Adult	17 and up	7. Most Spectacular Sinking
4. Professional	Boats designed for Multiple events	8. Peoples Choice Award
		9. Political Sign class

For more Info contact Lake Villa Township at 356-2116 or
Village of Lake Villa at 356-6100

Admission is \$8.00 for advanced registration and \$10.00 the day of the race.

Boat kits are \$15.00 each.

Race Rules & Procedures:

- Minimum age of any race participant is 7 years old.
- No one under age 12 is allowed to participate unless his/her parents or legal guardians are present and watching the races.
- All crewmembers will be required to sign a liability-release/registration form on race day. Parents or guardian signatures are also required on the registration forms for anyone under age 18. Boats will not be allowed to race without a signature for each participant.
- Date of birth on the day of the race determines age. The division the boat will be entered in will be determined by the age of the oldest paddling crewmember. A parent may ride in Youth & Junior Division boats as a non-paddling crewmember.

EVERY RACE PARTICIPANT AND CREW MEMBER MUST WEAR A COAST GUARD APPROVED AND PROPERLY FITTED PERSONAL FLOATATION DEVICE (PFD) WHILE IN OR ON THE WATER.

- You must provide your own PFD's.
- Boats that have not pre-registered **MUST** arrive by 12:00 P.M. **ONLY** Pre-Registered entrants shall be allowed after 12 p.m. You are considered Pre-Registered If you registered on or before June 6th 2008.
- **ON RACE DAY:** Please check in before you place your boat(s) in the display area. You **MUST** drop off your boat in the specified area then **MOVE** your car back to the parking lot. **AFTER** you have removed your car, you can set up your boat display. As soon as possible, you must report to the registration area which is in the fenced in area near the far end of the beach/waterfront.
- By 12:30 P.M. on race day: boats must be signed-in and in the display area; crews must be present, fitted with PFDs and signed the liability release forms; and all boat vehicles/trailers must be parked in the parking areas at the park entrance. As it would be unfair to the committee volunteers and other crews, boats and crews not meeting these conditions will not be judged or allowed to race.
- Boats will be raced two at a time. Boats may race other boats from a different category or division, but finishing times are compared to other boats in the same category and division to determine first place winners.

CLEAN-UP: ALL CARDBOARD, DECORATIONS AND BOAT RELATED MATERIALS MUST BE REMOVED FROM THE WATER AND GROUNDS BY THE BOAT CREWS

and either taken home or disposed of in the on-site "cardboard boat graveyard". If using the graveyard, all cardboard **must be** put on the trailers, not just left around it or at the water's edge. Teams are allowed to bring a trailer back to the waterfront to remove their boats after the races.

- Trophies will not be awarded until everything is out of the lake, so be sure to do your clean up as soon as you've finished your last race.

Construction Rules

- ✓ The ENTIRE BOAT must be BUILT OF CARDBOARD.
- ✓ The cardboard may be as thick as you want, but may not be glued or attached to wood, plastic, fiberglass, etc. except in the political sign category where corrugated plastic signs may be used.
- ✓ Cardboard can be found at recycling centers, appliance stores, department stores, discount clubs, electronic stores and, except for the cardboard carpet tubes, you must only use corrugated cardboard from these types of boxes.) Or kits are available for \$15.00.
- ✓ SONO-TUBES, or any other type of PRE-TREATED or COATED CARDBOARD that has been processed in such a way as to make the cardboard waterproof, MAY NOT BE USED. The emphasis is on the fun-filled process of turning discarded cardboard boxes or carpet tubes into floating boats.
- ✓ Metal (or plastic) Staples, Clamps, Nails, Screws, etc - are NOT allowed. These are dangerous to the crew and others and the lake, if sharp edges or points become exposed or fall off on the shore or in the water.
- ✓ Wood or Styrofoam - can NOT be used, the buoyancy provided from these materials is not necessary and defeats the whole purpose- build, float & race a "cardboard boat"
- ✓ NO CAULKING COMPOUND, such as Silicon, tar, wax or any similar waterproofing material is allowed.
- ✓ Boats CAN NOT BE WRAPPED with plastic, Fiberglass or any similar product.
- ✓ Care should be taken that construction does not include pointed objects and sharp edges that could injure anyone.
- ✓ Where the crew sits CAN NOT BE ENCLOSED (the boat crew must be able to get in and out of the boat easily).The propulsion system, including oars and paddles, can be made of anything and attached to the cardboard hull as long as it doesn't add to the strength or buoyancy of the boat.
- ✓ Decorations and props that are not part of the boat's hull or structure are allowed as long as they in no way effect the strength or buoyancy of the boat.
- ✓ Duct tape, masking tape, or adhesives such as 'liquid nails' can be used to connect cardboard to cardboard and can be used to reinforce all seams and stress points.
- ✓ If you don't want your boat to sink, waterproof the entire boat with any paint-able, one-part substance like Varnish or Polyurethane.
- ✓ SURFBOARD style designs are NOT ALLOWED. Consider "staying dry" part of the challenge.
- ✓ RAFT style designs ARE allowed, due to popular demand. The distinguishing feature of a raft design over that of a surfboard style is the use of cardboard "logs" and other such accoutrements as one would expect to find in/on a raft. Think Huck Finn.
- ✓ If there is any doubt about the construction, the judges reserve the right to use a probe, such as an ice pick, to test and verify that only cardboard has been used.
- ✓ Cardboard boat designers and builders are encouraged to use "fair" designs and building materials.
- ✓ Please contact either Festival Coordinator if you have any questions.
- ✓ Failure to abide by any race rule or direction of race official shall be cause for disqualifications. The decision of the Judges shall be final.

CARDBOARD BOAT REGATTA REGISTRATION FORM

Lake Villa Area
Cardboard Boat Race
Sunday June 12, 2011

Registration form and Waiver of Liability, Release Assumption of Risk & Indemnity

Agreement

TEAM NAME

_____ Name of participant	_____ Address of participant	_____ Age
_____ Name of participant	_____ Address of participant	_____ Age
_____ Name of participant	_____ Address of participant	_____ Age
_____ Name of participant	_____ Address of participant	_____ Age

It is the purpose of this agreement to exempt, waive and relieve releases from liability for personal injury, property damage, and wrongful death, including if caused by negligence, including the negligence, if any, "Releases" include Lake Villa Township, the Village of Lake Villa, the event hosts, other participants, coaches, officials, sponsors, advertisers, and each of them, their officers, directors, agents and employees. For and in consideration of the undersigned participant's registration in this and being allowed to participate in this event and member team activities, participant (and the parent(s) or legal guardian(s) of participant, if applicable) waive, release and relinquish any and all claims for liability and cause(s) of action, including for personal injury, property damage or wrongful death occurring to participant, arising out of participation in this event, and/or activities incidental thereto, whenever or however they occur and for such period said activities may continue, and by this agreement any such claims, rights, and causes of action that participant (and participant's parent(s) or legal guardian(s), if applicable) may have are hereby waived, released and relinquished, and participant (and parent(s)/guardian(s), if applicable) does(do) so on behalf of my/our and participant's heirs, executors, administrators and assigns.

Participant (and participant's parent(s)/guardian(s), if applicable) acknowledge, understand and assume all risks relating to this event and understand that this event and related activities involve risks to participant's person including bodily injury, partial or total disability, paralysis and death, and damages which may arise there from and that I/we have full knowledge of said risks. These risks and dangers may be caused by the negligence of the participant or the negligence of others

1 PARTICIPANT (or parent) SIGNATURE

#2 PARTICIPANT (or parent) SIGNATURE

PARTICIPANT NAME (PRINT)

PARTICIPANT NAME (PRINT)

#3 PARTICIPANT (or parent) SIGNATURE

#4 PARTICIPANT (or parent) SIGNATURE

PARTICIPANT NAME (PRINT)

PARTICIPANT NAME (PRINT)

Dated _____, 2011

PARENT OR GUARDIAN signature required if Participant is 17 years of age or younger)