

TEN REASONS WHY MODEL WARSHIP COMBAT BEATS MODEL AIRPLANES

By Lars

10. Don't have to deal with those annoying model airplane people who are oh so protective of their radio frequencies.
9. Those lead acid batteries don't spill all over your clothes like the airplane fuel.
8. Getting sprayed by your warship can be cool and refreshing, but getting sprayed by your plane means a run to the showers.
7. "Doing a corkscrew" is unheard of unless you're running a destroyer, the Sverige, or the Bellerophon.
6. Tundra Teddy doesn't do planes.
5. Combat in warships has nothing to do with ribbons.
4. A sudden unexpected loss of altitude just means you have to drain and oil the moving metallic parts, as opposed to reconstructing a wing.
3. Where's the water when your plane catches on fire?
2. How many gung-ho airplane guys go out and 'try to get crashed'?
1. Who ever would come up with the concept of 'speed by length' for an airplane?

JEFF'S CLUB REPORT.

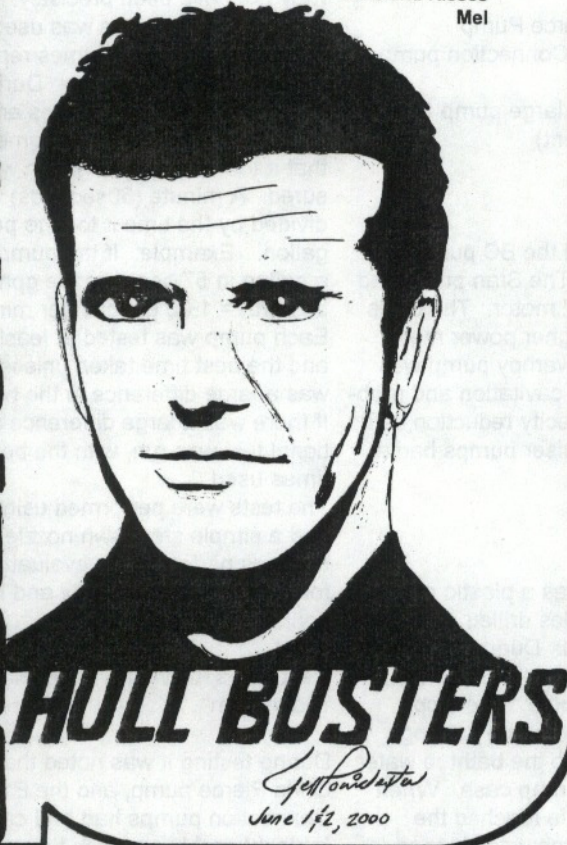
As I sit here looking out the window at 7:00 o'clock in the evening, it has been raining here, at my home in Amarillo, Texas for about four hours. We have already received over three inches of rainfall in that time period and the weather bureau says it is suppose to rain for three more days! I arrived home from work about 6:20 P.M. and walked out back to an acre of ground that is about an ankle to knee deep water. I could just kick myself for not renting or borrowing a back-hoe machine this past spring and digging out

a little pond to allow me to capture the vast amount of water that is flowing though that run-off right now. I figure I could have dug one three foot deep, 200 foot long and 50 foot wide (property is only 80' wide but about 300' long).

I think that when I do get around to cutting a pond I'll have to name something like 'Jeff's Lake' or 'Home of the Jeff's Club Sea Combat Nationals' or something like that! Which reminds me that I am thinking of holding the first Jeff's Club Nationals on Saturday, July 15th, 2000. This is the Saturday between the MWC and IRCWCC Nationals. (I do regret that I will be unable to attend either event, that is unless Ed MacMann or the Texas State Lottery commission comes though. But then again you have to send in entries or buy tickets and I have not done neither!) This tentative schedule may allow me to actually win the meet! I have...a few people in the club right now but only one has shown proper bribery...er...social skills needed to get achieve standings in my organization. (By the way Fluegel, I could use a few more bucks!)

Well Fluegel needed an article so I wrote one. Jeff Poindexter [Jeff, make it 7/2 or 3 and I could attend, Fluegel].

My Dearest Mrs. Fluegel.
When the Admiral is out of town, this July,
playing with his boat, why don't you come
and visit me on my ranch 'downunder'?
Love and Kisses
Mel



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HULL BUSTERS

HULL BUSTERS, THE STATE OF THE NEWSLETTER REPORT.

Greetings fellow combatants. This is my favorite time of the year, it's the preNats rush! A 23 year tradition; ships to test, lists to keep, stuff to buy, things to pack, and a lot of fun.

Hull Busters has kind of been hard to produce. You may have noticed, I am the author of too many articles. I haven't really received as much help as I will need in order to sustain the newsletter. The new club has really been a success, but not from this newsletter's point of view. Only so many authors and two newsletters have always meant the death of one of the newsletters. Hull Busters has always been the survivor, but perhaps not this time. Besides, newsletters are "yestertech," information is better done on the internet. I asked a site-host for an article, he asked

what they would "look like," I told him to look at any "Nats to You" article from any Hull Busters, 98 and older. He sent me the web address where all the information was posted.

Another classic example is the e-mail posted below. I recieved this after asking a new potential author too write an article. His resonse was....

"Good morning herr Fleugel! I'm not discouraged, just more anxious than ever! I'm going to the MWC Nats only. **Isn't Hull Busters mainly for the old club?** I will try writing an article but if you've seen my other post-ings....."

Anyway, the state of this newsletter is weak, but even if it's ending, it has been fun and will continue to be positive for the remainder of your subscription.

IRCWCC PRESIDENT'S REPORT

MWC PRESIDENT'S REPORT

Treasures Report. IRCWCC

By Fluegel

Hi! Well, this term is almost over and it was like the e-board never existed. We did oh so little. In fact, we have not even made our rules so the treasurer, me, could mail them out. This is one money making organization. Oh well, we should know the rules by now anyway. If you want to join, mail me \$6, and you will be on the

list of members. I am hoping we make some really nice name tags for all the members, kind of as a present for everyone's patience. Also, name tags just make good sense for any organization that is working at including newcomers and insane old salts as well.

I am excited to see so many friends at both Nats. It was sooo much fun last year, it could be even better this year.

Performance testing of 6 pumps

By Stan Watkins, 5/11/00

Recently I have been concerned with "cavitation" or "airlock" of pumps. I have done some experimentation and have also done some performance testing. To me there are 3 main factors in pump performance and a fourth very desirable factor.

These factors are:

1. Pumping capacity out of a 1/8" nozzle (in gallons per minute or minutes per gallon)
2. Current consumption at max. pumping capacity
3. Efficiency (amps per gallon per minute)
3. Case vent hole (yes or no) needed to prevent cavitation

I tested 4 different pumps as follows:

1. 1997 Modified Swampy battle-ship pump

2. 1997 Swampy Cruiser pump
3. 1984 Stan Watkins "Vortec V6" pump
4. 1996 Chris Pierce Pump
5. 2000 Battler's Connection pump (BC)
6. 2000 Swampy large pump Standard except with (BC vent)

Motors

The Swampy pump and the BC pump both had the same motors. The Stan pump had a old 380 "grasshopper" motor. The Chris Pierce pump had the higher power motor that Chris uses. The Swampy pump was also modified to reduce cavitation and probably suffered some capacity reduction as a result. The swampy cruiser pumps had a smaller motor also.

Standards

The "gallon" standard was a plastic milk bottle with two small holes drilled side by side at the 1 gallon level. During testing, the water was pumped from the bathtub into the weighted 1 gallon bottle. The stop watch was started and then the running pump was immersed into the bathtub water to about the top of the pump case. When the water inside the bottle reached the drilled holes the stopwatch was stopped. This test took cavitation/priming time into

effect so that the slower priming pumps were penalized in time. The quantity may not have been precisely 1 gallon, but the same volume was used for each pump test. So the volumes reported are the same for each pump. During the testing, the time, in minutes and seconds (or just seconds on some pumps), that it took to pump a gallon was measured. A minute (60seconds) was then divided by the time it took to pump 1 gallon. Example: If the pump pumped a gallon in 57 seconds the gpm would be $60/57 = 1.05$ gallons per minute. Each pump was tested at least twice and the best time taken unless there was a large difference in the two times. If there was a large difference an additional test was run, with the best closest times used.

The tests were performed using 6 volts and a simple stepdown nozzle. (A later test was performed to evaluate the performance of the Swampy and Battler's connection nozzles.)

Vent holes, Cavitation (airlock), and "Rainstorm"

During testing it was noted that the Chris Pierce pump, and the Battler's Connection pumps had bad cavitation (airlock) problems when the case vent hole was plugged. This is a very unde-

Pump Screening

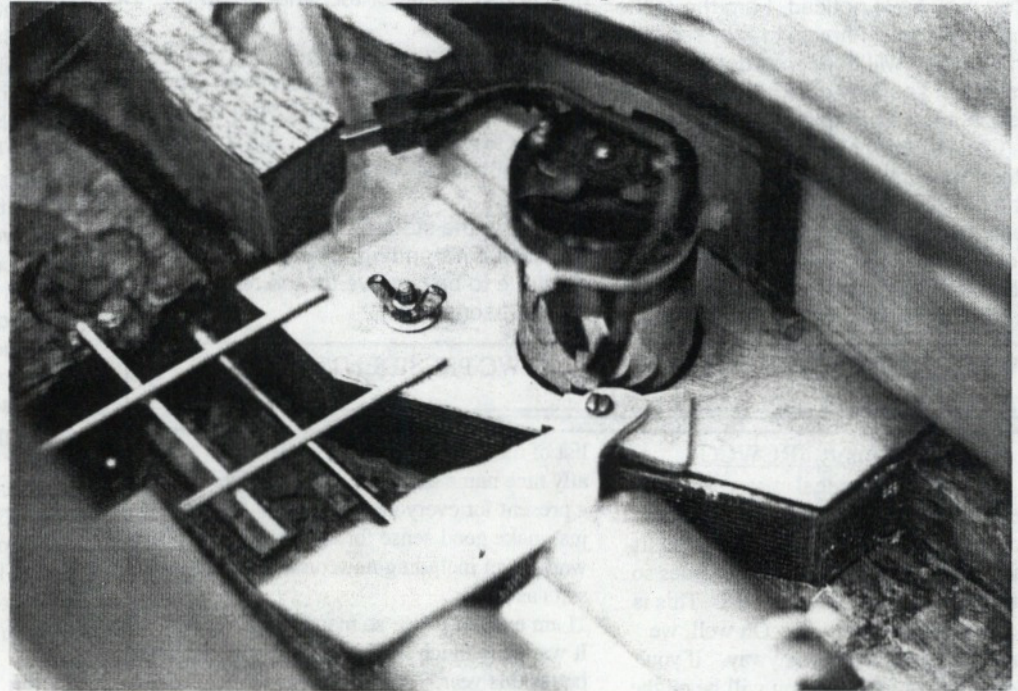
By, I Forgot?

Recently, I had the pleasure of watching an HMS Tiger settle by the stern and slide from view. The result of gunfire from the SMS Posen. Yet the amount of damage 17-3-8 seemed too light to sink a battlecruiser. Further investigation revealed a ugly clump of balsa chips clogging the mesh screening over the pump inlet.

My "tip-for-the-day" regarding pump screening: Use a skirt of screening around the bottom edge of your pump as well as over the inlet. The skirt provides a larger surface area that is not quickly clogged with balsa and much more easily cleaned than the inlet screen.

[Editor and photographer's

One thumb screw secures the screened area and the pump.



sirable feature as the vent hole is the source of a major "rainstorm" inside the ship whenever the pump is pumping at full capacity (pressure). The Swampy cruiser pump was the worst on "rainstorm" because of the huge vent hole that was used to access the impeller set screw. The huge vent hole was then plugged as per manufacturer instructions and the pump would still start/prime fairly well since it also had two small vent holes in the top of the case. Its "rainstorm" was much smaller but still objectionable. Some deflection device would probably dramatically reduce the problem. The Stan (Vortec V6) pump was specifically designed in 1984 with an anticavitation feature and did not have to have a vent hole or the associated (messy, unprofessional, and personally aggravating) "rainstorm" inside the ship. The Swampy battleship pump is not representative of regular production unit since it was modified (by Stan) to eliminate the need for a vent hole. A late entry in the testing was a new Swampy "production" battleship pump that arrive after the other testing was complete. The results are included.

At 1.24 gpm and consuming only 4.2 amps, the production Swampy Battleship pump blew the others away. For a vent hole the Battler's connection vent

hole (drilled in the 10-32 impeller access hole plug screw) was used. No hole was drilled in the case. But without a vent it cavitated badly.

The Swampy cruiser pump originally pumped a respectable 0.8 gallons per minute with a hermongus vent hole. (very messy rain storm) Once the set screw access hole was plugged the little cruiser pump increased to a phenomenal 1.22 gpm, but the current went from 3.6 amps to 4.0 amps. Hello !!! Surprise, Surprise !!!

Next was the Chris Pearce pump, pumping about 1.11 Gallons per minute. The current consumption was considerably higher at 7.7 amps.

The Vortec V6 pumped 1.05 gallons per minute at 4.6 amps. (with no

vent hole).

The Swampy Modified Battleship pump pumped about 1.0 gallons per minute at a current of 5.0 amps. (With anticavitation modification, no vent hole needed.)

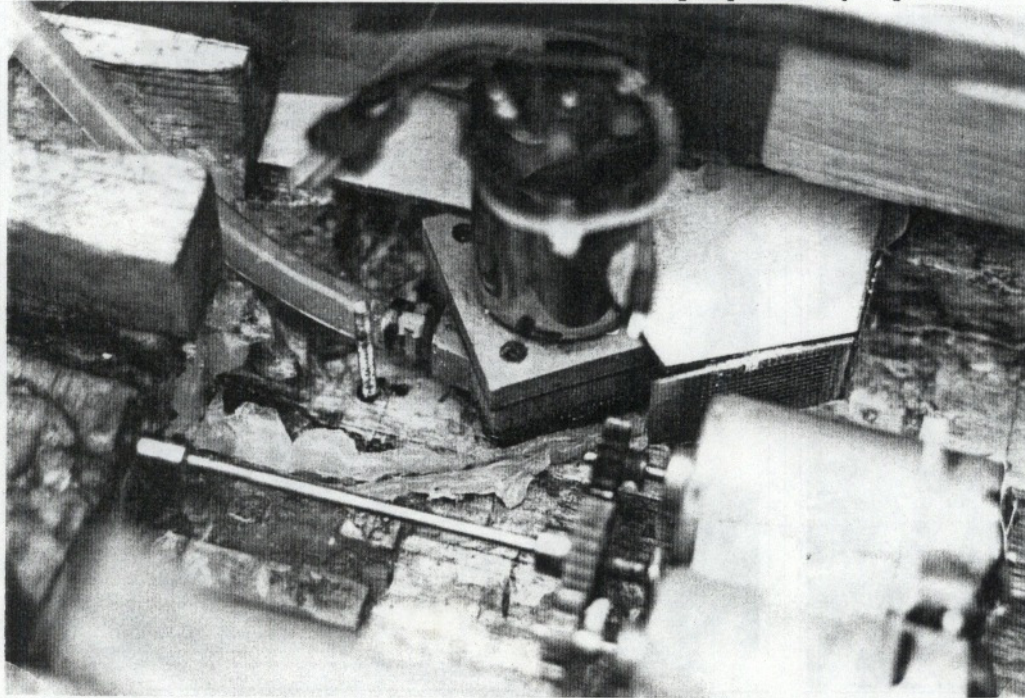
The Battlers Connection pump pumped 0.9 gallons per minute at 4.0 amps small vent hole.

Swampworks Pump

Perace Pump



View with the removable part of the screen box removed. The pump can easily be pulled out.



notes] I used three sets of screens: one on the pump inlet, one as a "skirt" around the base of the pump, and one around the pump that also serves as the securing devise for the pump. To view the cleanliness of the first two screens, I have a 1" window in the bottom of the ship.

THE PUMP ISSUE.

A huge thanks to the contributing authors of this issue. For the logo, Jeff, for photos, Curly, and Bart, and for text, Lars, Jeff, Stan, "I forgot", Reichenbach, King, and Wade.

I need several responsible authors to contribute one page (one day) for Nats coverage. E-mail me if you will serve as a war corospondant. fluegel7@juno.com

I summary for the performance areas the pumps are rated as follows:

1. Pump Capacity

1. Swampy production Battleship Pump at 1.24 gpm, 2. Swampy cruiser pump pumped an amazing 1.22 gallons per minute with the plugged set screw access hole. (vertical dual rain storm)
3. Chris Pierce pump at 1.11 gpm, 4. Stan's 1984 Vortec V6 at 1.05 gpm, 5. Swampy modified Battleship pump at 1.0 gpm, 6. Battler's Connection new pump at 0.9 gpm.

2. Current consumption (Lowest is rated #1)

1. Swampy Cruiser pump at 4.0, 2. Battlers Connection at 4.0 amps, 3. Swampy production Battleship pump 4.2 amps, 3. Vortec V6 at 4.6 amps, 4. Swampy Modified Battleship pump at 5.0 amps, 5. Chris Pierce pump at 7.7 amps.

3. Cavitation (air lock if vent hole is plugged)

1. Vortec V6 (no vent hole, no cavitation), 2. Modified Swampy Battleship pump (all vent holes plug no cavitation). 3. Swampy Cruiser pump (when the set screw service hole is plugged), 4. Bat-

tlers Connection small vent hole but cavitates when plugged tied with the Swampy production pump (using the BC vent hole plug). 5. Chris Pierce pump larger vent hole (cavitates when vent hole is plugged).

4. Efficiency (Amps per gpm) (in case you have limited batteries)

1. Swampy cruiser pump 3.28, 2. Swampy battleship pump 3.39, 3. Vortec V6 at 4.38, 4. Battlers Connection at 4.44, 5. Swampy Modified Battleship pump 5.0, 6. Chris Pierce Pump 6.9.

Summary (author's choice)

It's interesting how the old 1984 design stacked up with the competition. Third most efficient and forth in total output. And NO RAINSTORM at all. It only has a 2 lobed impellor and very small motor. In size, it is dwarfed by the newer "high tech" theoretical designs (with the exception of the Swampy cruiser pump. Oh well, some things are just ahead of their time. But it is a unique, one of a kind museum curiosity item, and so it is not in the running, at any price.

The Clear Winner(s) !

The remarkable Swampy production battleship pump was the most powerful and highly efficient. The clear winner. Simply the best! Its closest rival was the astound-

ing Swampy cruiser pump. I would recommend it for cruisers due to size, capacity, and low current requirement. However, its assembly can be tricky and require special help. The Chris Pierce pump is next but is out of production (and a real current, amperage, hog) so is not an option. The modified Swampy battleship pump is a possible contender only when you find vent holes to be an obscenity. But it can't be purchased as tested. The battler's connection pump is a good pump and comes PREASSEMBLED ! That is a unique feature and a real plus for new and old battlers alike. Since it comes pre-assembled, all possible assembly errors are eliminated. It also has only a small vent hole (hole drilled in the impellor setscrew access plug). It is taller than any other pump tested which could be a negative feature in some ships. The Vortec V6 was the author's honorable mention choice because of personal bias and because it is fairly efficient and has kept up very well with the competition (like the old Lockheed SR-71 Blackbird).

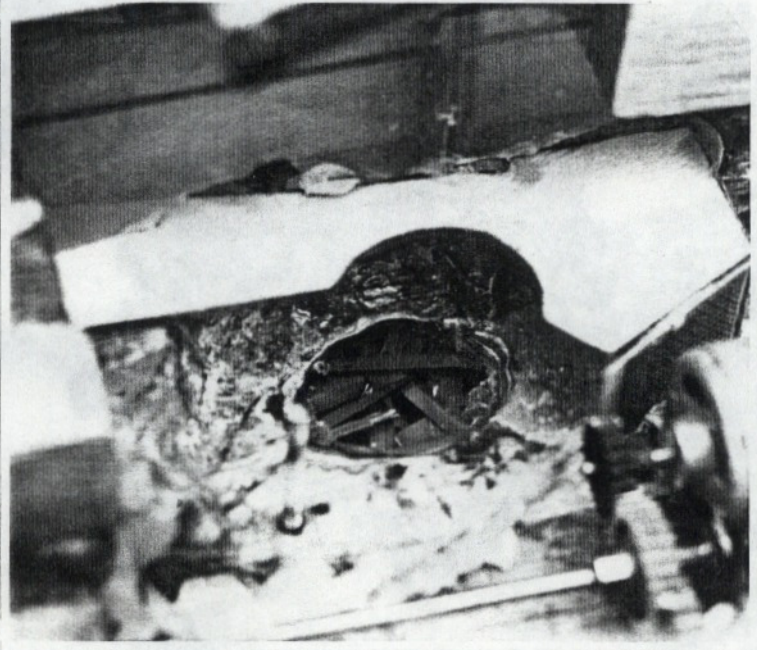
EXTRA TEST FEATURE, Nozzle Comparison

Following conclusion of the testing the Four types of nozzles were tested on the Swampy Cruiser pump. The gpm's varied as follows:

Removable pre screen part



Viewing window shows boat is setting on grass. Normally, the window is used to look from the bottom of the ship up into the pump screen area.



1. Simple Stepdown nozzle 0.8 gpm, 2. Battler's Connection nozzle 0.81 gpm, 3. Old Swampy nozzle 0.91 gpm. (The simple step down nozzle was a home made nozzle utilizing two sizes of K&S tubing to get down from the 1/4 inch O.D. copper tubing to 1/8 inch I.D. tubing for the legal pump outlet size.) While examining the Swampworks nozzles, it was noted that there are actually two different configurations. The old nozzle was a brass cylinder with a 1/8 inch hole drilled in it. The outlet end had a relief hole drilled in it about 1/8 inch deep.

The new nozzle externally appeared almost identical to the old nozzle except

when viewed looking down the end facing the pump. The inside appeared to be a somewhat hyperbolic cone that ended in a 1/8 inch hole. The output end shares the relief hole with the old Swampy nozzle.

The Old Swampy nozzle gave a performance improvement of almost 14% over the Battler's Connection nozzle and the simple stepdown nozzles. The pump current draw (amps) appeared to remain the same. I would therefore recommend the Swampy nozzle over the other two. Just for kicks, I then put the Swampy nozzle on the old Vortec V6 for one last test. She pumped the gallon in 49.63 seconds. Wow, that was 1.21 gpm and an increase of about 15% this tracked the other nozzle performance test fairly well.

An additional test of the new Swampy nozzle gave an additional 15% increase in output over the old Swampy nozzle. The old Swampy nozzle came on my battleship pump bought about 3 years ago. The new nozzles came with my cruiser pumps purchased about 2 years ago and the two battleship pumps purchased and received during this testing period. If you have the older swampy nozzle you may want to invest in the new nozzle.

Summary

My USS Washington has been converted from the home made step down nozzle to the new Swampy nozzle. By my test results I have increased my pump capacity

Pick Your Posen by Curly Barrett

Coffee or tea? Smoking or non-smoking? For here or to go? Axis or Allied?

Life is full of choices, and this hobby is no different. You chose sides; you chose ships. You chose technology; you chose which events to attend.

I recently chose to build the SMS Posen (Nassau-class battleship) in spite of my peers suggesting that was not a very wise choice. How do you make educated choices? One way would be to consult a veteran captain. Captains like Fluegel and Marty, in spite of their boyish youthfulness, have been successfully making decisions in this hobby for years.

However, don't let another battler sway you from your choice of which ship you want to build! You'll probably be with your ship for a few years, and need to be very excited about building and improving it over time.

Veterans have a way of helping you choose something safe that "looks good on paper," and hence we have large numbers of a few ships on the water.

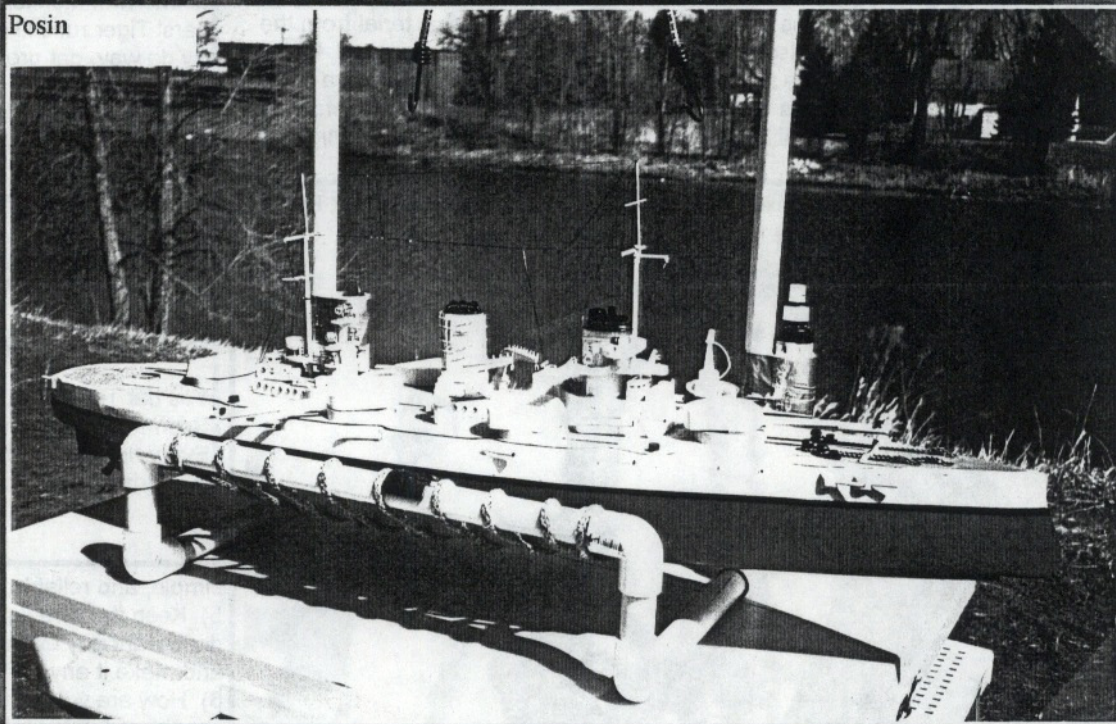
For example, in 1986, there were 39 battlers represented by 36 different ship types. But in 1998, with 50 battlers the club sported only 28 different ship types!

Part of this is a result of the unavailability of fiberglass hulls, but much of it is due to the battle-hardened veterans talking people out of building boats that "look worse on paper."

When I chose to build my Konig back in 1987, every veteran I asked told me I was daft to build a small, slow ship. Yet today, the small slow ship is accepted (my poor battling had nothing to do with that). And my Konig has just been retired after 13 years of service, in which she never once sank locally or at NATS.

New boat...time for another choice! I looked around, and asked around, and decided on a Posen. A 39" Nassau-class bat-

Posin



tlanship with 4 units, three props and twin rudders. I was told by veterans that these little ships were worthless because they lacked the muscle to survive in the bump-and-grind melee of the battleship skirmishes.

The veterans also told me to use the bow and stern turret as a 90-degree sidemount and aim a wing turret off the back to use as a stern gun. But I opted for a bow gun and two wing turrets spun outward

25-degrees to use as a down-angled sidemount.

The result of my "bad" choices. In local battling with "everybody against Curly" as the theme, the "poorly chosen" and "unwisely designed" battleship has faced 11 opponents, including a Tiger, Inflexible, Houston, Vincenes and a Gearing. Of the 11 ships sent to destroy my, nine were sunk by the Posen!

So don't let anyone talk you out of building what you want, or battling the way you want, or setting up the boat the way you think will best suit your battling style. It's your choice—make it and live with it.

by some 30%. I decided that I wanted more length on the nozzle, to give more length for pump hose attachment, so I installed the next larger size of K&S tubing over the outside of the input end of the new nozzle. To assure that I did not destroy any of the geometric "magic" of the nozzle, I conducted another test of the lengthened nozzle and found that the output was not diminished. Actually it measured a tiny increase but I write that off to testing repeatability errors.

"Cruiser Construction Corner"

by Steve Reichenbach

In this column, I pick a good question about how to build a cruiser, and provide the answer. In this issue, I've chosen a question from Patrick Clarke, who is building his first cruiser, a Houston.

Q: I was shocked to learn my ship weighs 11 pounds, and is only allowed to weigh 10.56 pounds. The ship looked like it was on the scale waterline, but I still want to obey the rules. What do I do?

A: The rule set does indicate a Houston gets it's heavy weight plus ten percent, which is about ten and a half pounds. Here are some tips on how to keep your cruiser within the allowed weight...

1) You want the superstructure as light as possible. This means a lot of folks hollow things out. It also means it is tougher to stay looking nice, cause lighter is more fragile.

2) If you have small accumulators on your poppets, have you removed any excess weight by simplifying the number of fittings you

have?

3) How heavy are your motors? Can you use lighter motors and still be on speed?

4) What kind of bilge pump are you using?

Have you removed any unnecessary material from the pump? No need for extra screws, bolts, etc, just keep it light,

Steve at the first ever MWC club battle, in Baxley Ga. Host and photographer, Bart



Ballad of the Port Polar Bear Boys By Lars, with lines lifted from Ballad of the Norskie boy.

By Craig "Snuffy" Smith

(sung to the tune of Ballad of the Green Beret)

Fighting Bears from the Nort'
Ve fight boats, caus' ve is bored.
Six hundred rounds, not ones a dud,
All but t'ree will hit da mud.

Ya sure you bet, by golly wow
Jumpin' jimminy, and holy cow.
Dees model boats have guns dat shoot,
Sinking Lars, dat's quite a hoot.

Curly's Konig, the German scow,
teams with Moltke, a BC proud.
Lars' Tiger runs like a moose,
By da way, dat prop shaft's loose.

Curly's hull is leaking good,
Das he sink, just like he should?
Lars he curses dat Axis luck,
Curly's scow just rammed a duck.

Tiger's speed has gone away
Dar it sits amidst the fray
Taking shots from bow to stern,
While dose wires begin to burn.

Yes dat Tiger's got a fire,
Seems Lars loves dose funeral pyres.
Every time he starts to win,
He ends up takin' da big swim.

simple, and reliable.

5) Keep the wire light and to a minimum. You don't want any extra wire to clutter up the ship, and make it any heavier.

6) How are you actuating the guns? Have you considered using micro servos and mini poppets? The small poppets are much lighter than the MAV-3s, and are less than ten bucks each I think (just ask Swampworks).

7) Is your water channeling light? Balsa makes good channeling. Is it coated with thinned epoxy? Unthinned epoxy is a bit heavy.

8) Are your motor mounts, bottle holder, and any other clamps or holders small and simple? In my Houston, I cut the drive motor cradle into two small cradles.

9) Cut more out of your deck. Any deck covered by superstructure is useless weight.

10) Battery - the last resort - you can really get by using a 4.5 ah battery, which is much lighter than the 7ah battery.

Send your comments or cruiser construction questions to wtpat2@yahoo.com

Rigging

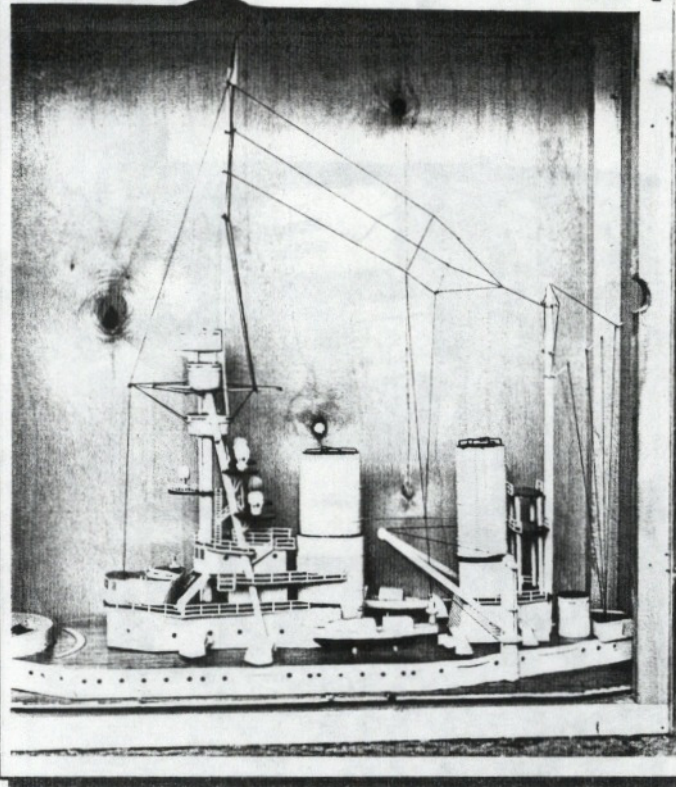
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By D.W.Fluegel

Looking at quality plan sets and photos of real ships, I am often amazed by the nest of wires running everywhere. To add these to our ships is really quite easy, and it holds the many parts of the superstructure together, visually, as one ship.

I use nylon, stranded, upholstery thread. Elastic thread sounds like a good idea, but it is not. I have been using the same spool for 20+ years. It's easily super glued (thin, not gap filling, use with an extension tip on the bottle).

Rigging is like painting the deck tan, or below the water line red. All three are easy, and for a small amount of time and money, dress up our ships a lot.



ROOKIE FEVER!!!!!!!!!!!!

Well, there I was sitting on the "throne" reading a copy of Naval History Magazine that a friend had given me, when suddenly I see this small ad with a couple of model warships apparently battling. I yelled "Swampworks, at last I found you!" and almost fell off the stool! Wifey thought I had had a heart attack, but now she knows I just went a little nuts.

Ever since I was a kid, starting with my Davy Crockett Alamo sets, I've tried to come up with ways to battle and destroy the enemy using marbles, rubber bands, rocks, whatever was at hand. My favorite was a spring loaded toy cannon that I fired pencils out of. Later as I got older and smarter???, I started making plastic models. Now how do I fight and sink these? Fireworks were obvious but very hard to come by for a poor inner city Yankee kid. So how about stuffing empty co2 cartridges with match heads? Come on! I know some of you have done it! Well some worked and some didn't, but Praise God, I still have all my fingers! I even found out what gunpowder was made of. Can you imagine what the druggist thought when a 10 year old kid asked for a can of saltpeter and sulfur for his mom? So I got older and took out my aggressions by hitting golf balls (well most of the time anyway). Over the years I heard vague stories about grown men battling model warships to the death but I always seemed to just miss exactly where, when and who was doing this, until my revelation on the "throne".

I've since found out that there were guys right here in Orlando doing it. OH! The wasted years just playing golf! So here I am, pushing 60, I've sold my soul to the devil (Model Warship Combat) for the chance to do battle as I've always imagined it would be. I've been to two small battles using Frank Falango's Graf Spee, got sunk and blasted to bits but was happier than a hound with a coon up a tree. Of course, it wasn't my boat! What a great group of guys! Who else would lend a \$500 item to a guy he had only known for a few hours? A MWC guy, that's who! Many thanks to Frank!

Now it's 3 weeks to Nats and I'm frantically trying to build my Swampy kit Adm. Scheer in time. Luckily, I've got another super guy, Don Cole, helping me, so I might just make it. I can't sleep. Everything I look at gets me wondering if I can use it in my boat to make me more reliable, faster, powerful. I've given up golf! GULP!! I'M OBSESSED!!!!!! Hope to meet you all at Nats (Perry, Ga) or another battle. Rick "Starry Eyed Rookie" King

Random photo from first MWC battle, I-boat attacks hospital ship!



BATTERIES, TESTS, AND RECORDS

By Fluegel

Scott Lide told me years ago not to use gel-cell batteries. He said they would last only two years and he was going to stay with Gates X-cells (when I purchased my gel cells, the battery sales person noted that Gates X-cells were the "cadillac of batteries"). I, however, coveted the way the gel-cell's captains charged their batteries so effortlessly. They would buy German sounding chargers at Wall*Marts that were so automatic. Charging X-cells required effort.

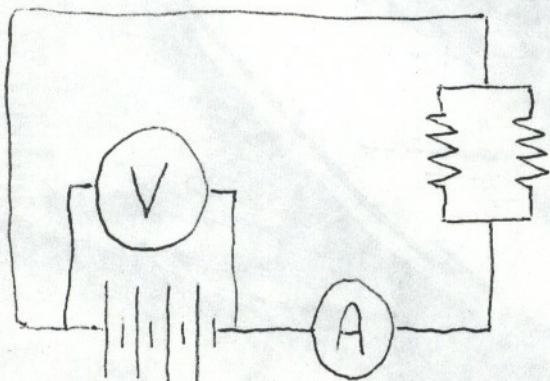
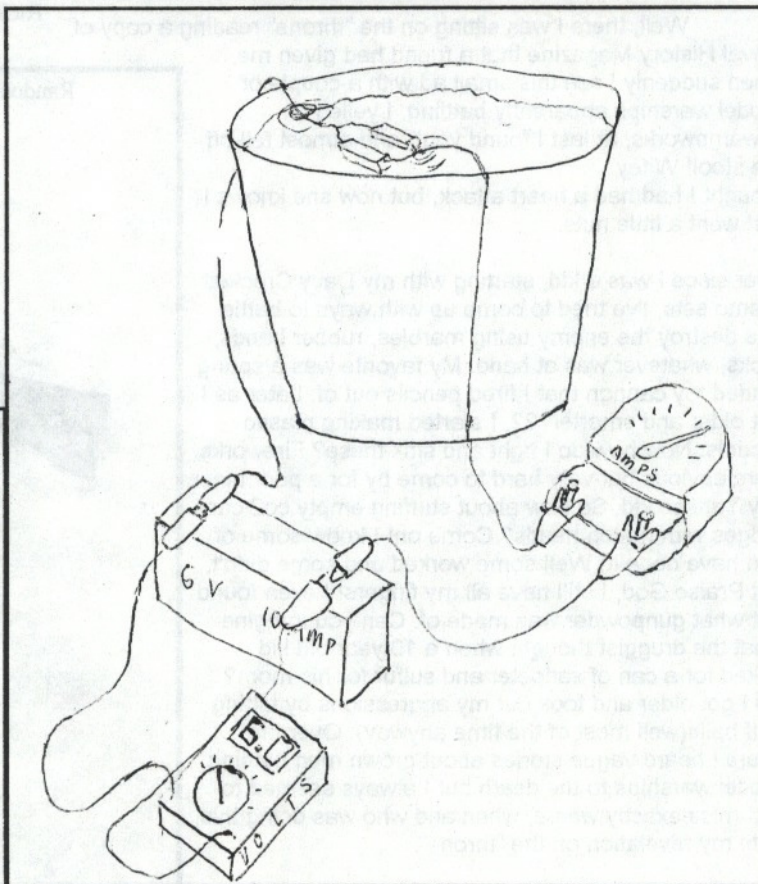
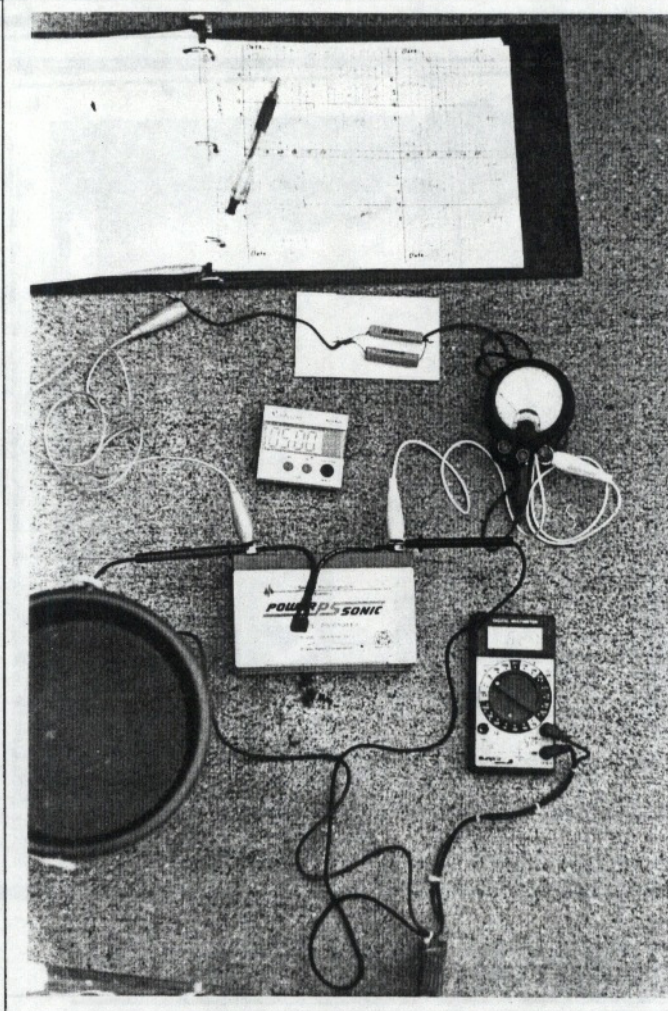
As I was building my new ship, I did "what every body else was doing", I purchased gel-cells. Well, they have been nice, but I have suffered some guilt since I gave into convenience and what "every body else was doing." Now, after two full years, I noticed my ship slowing down at the end of it's pre-Nat's trials. I bought new batteries, and voila, problem solved. Was Scott right? Will I have to replace my batteries every two years? I would not have had to replace X-cells for many years. Oh well, it's only money....!!

I have developed a test to compare my batteries against a standard, for comparison. Now I can test my batteries in the shop and know their condition. The key to doing this is to first do it with new batteries, so you can compare your old battery's performance with what they once would do.

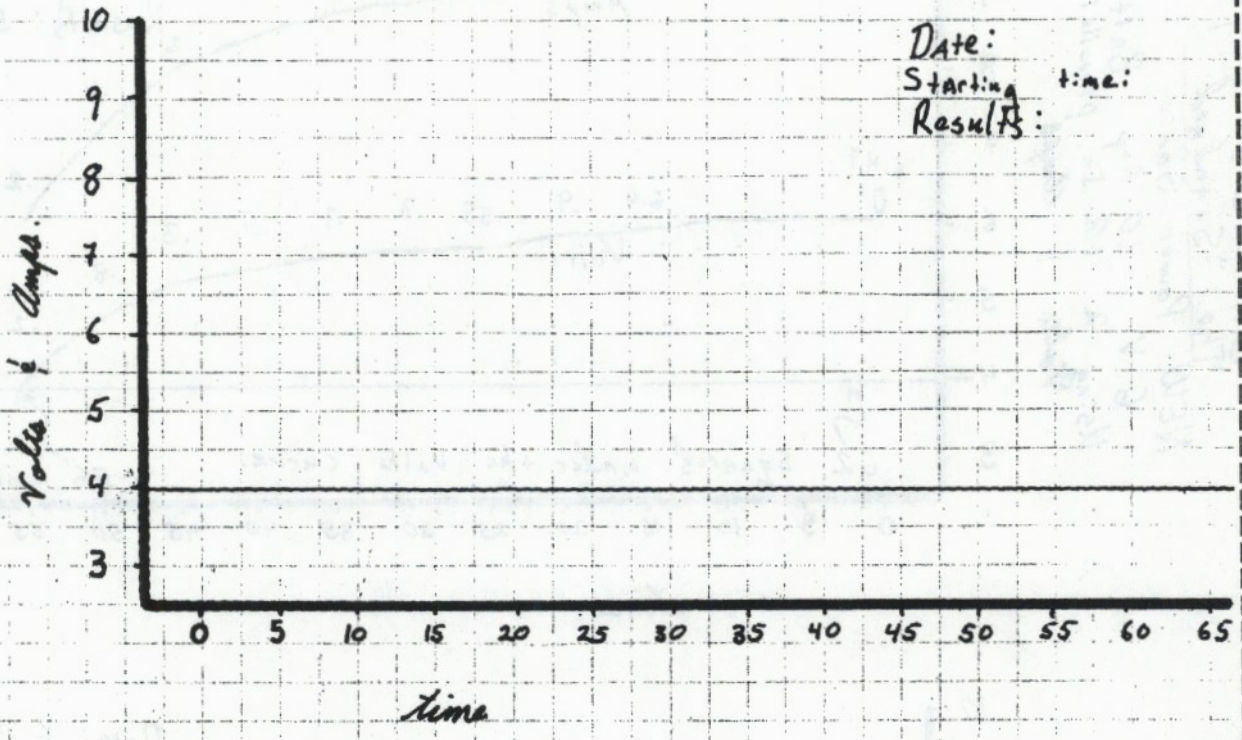
The method of testing is not too difficult. You will need some quality (1) electrical leads to attach the test circuit together (Radio shack; # 278-002B at \$4.69 or 278-001B at \$3.69) and (2) two large porcelain resistors (R-shack; 271-131 or # 271-132 both are in a two pack for 99 cents) each one Ohm, and wired in parallel. Also, a (3) volt meter and an optional 10 amp current meter. You will also need a (4) plastic bucket with a gallon of water and a (5) 5 minute timer. Oh, also some (6) graph paper (provided on next page).

The gallon of water is to cool the resistors. Hook the resistors up and submerge them in the water. Every 5 minutes record the voltage and amps (optional) on the graph paper. When the volts are at 4 volts you will notice that the batteries are "crashing." The once "flat" graph line is plummeting. This represents a ship with less than one minute until "ship dead in the water." My new battery (Power Sonic 10 amp 6 volt) will last 57 minutes before it's voltage reaches 4 volts. My two year old batteries last 37 minutes. All of this at about 7 amps for the old battery and 8 amps for the new battery. I use several calculations to evaluate the batteries, but those two numbers are significant all by themselves. Another measure is to work in calories. Measure the amount of water and the change in temperature. A calorie is one degree C per mL of water.

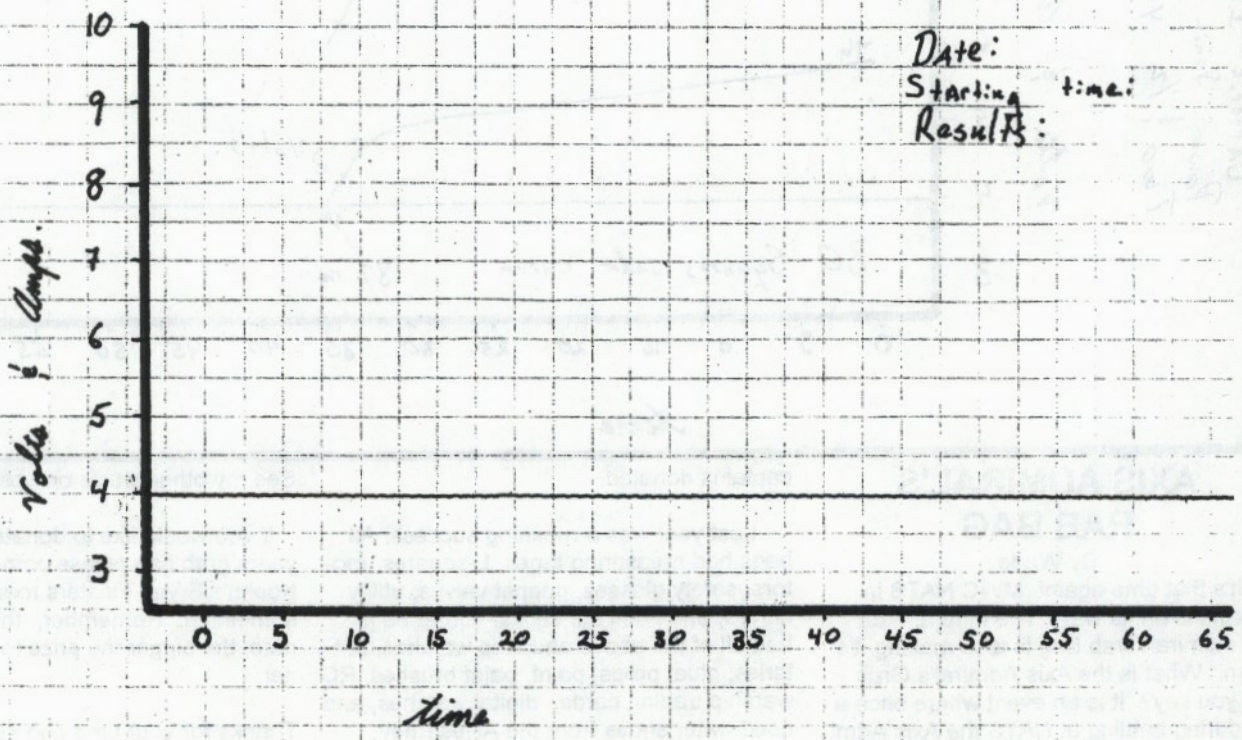
The manifestation of the new batteries in the water is 0.3 sec per 100'. More important than top speed is duration, which I have not measured...YET, because I want to get this Hull Busters mailed!



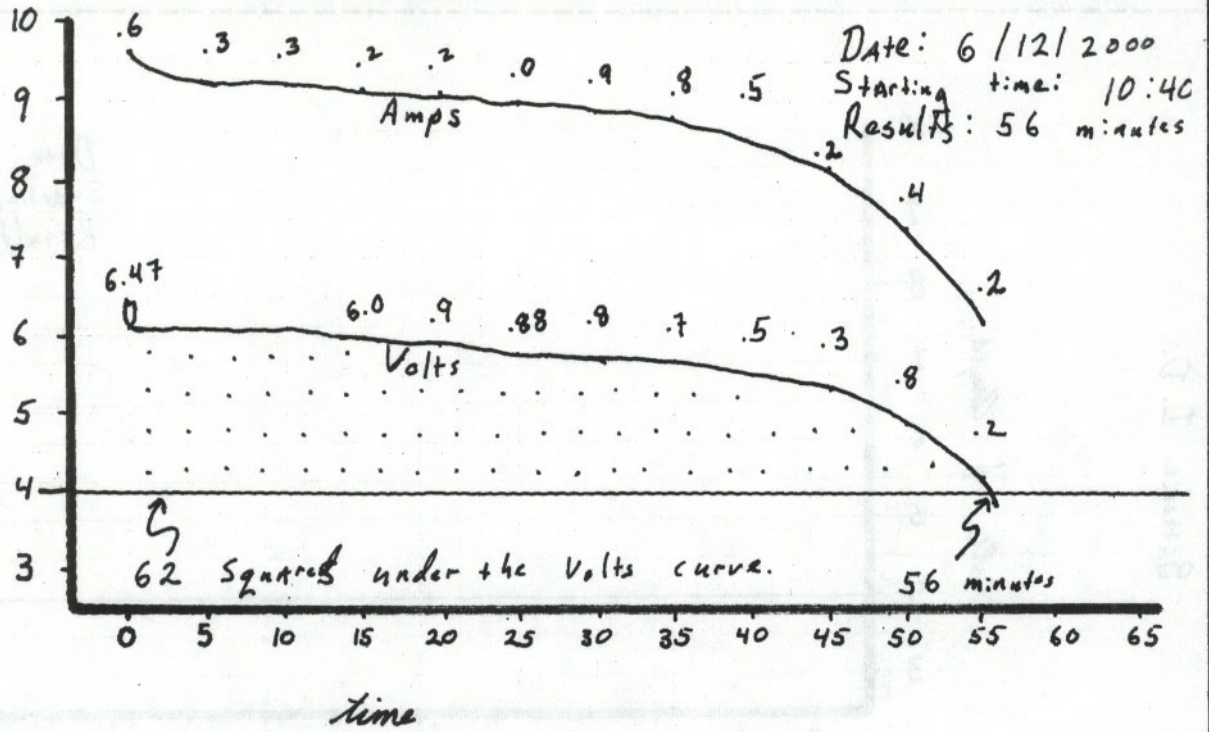
Battery I. D.



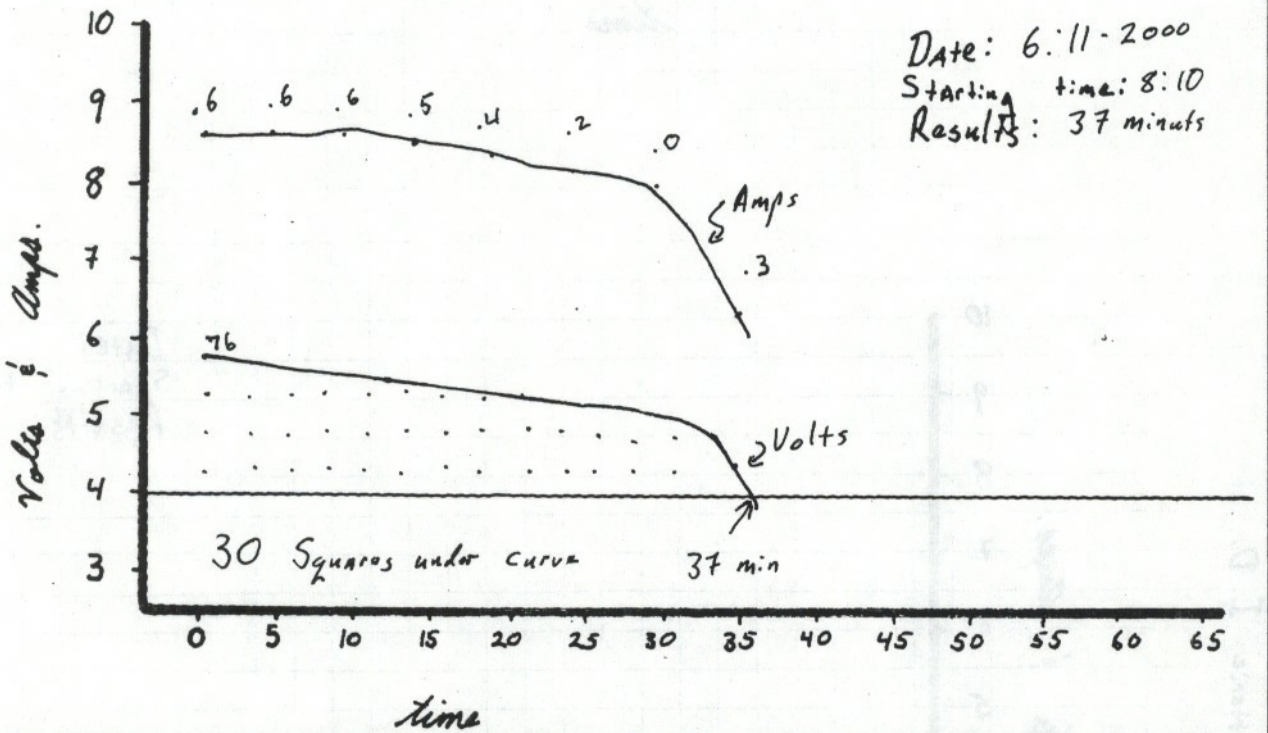
Battery I. D.



Battery I.D.
The "Standard" !!
NEW Power Sonic
6 V 10 Amp Battery
Using 2 1.2 In parallel.
Volts & Amps.



Battery I.D. P.M.
Power Sonic 6 v 10 Amp.
Two 1/2 years @ 10.



AXIS ADMIRAL'S RAB BAG

By Wade

It's that time again! MWC NATS in Georgia is on its way. The third annual Axis Admiral Grab Bag is also making its return. What is the Axis Admiral's Grab Bag you say? It is an event where once a day during battling at NATS the Axis Admiral pulls names out of a hat on an Axis captain that will receive goodies that other Axis

captains donated.

Last year was a mashing success. All bags had measuring tapes, L-squares, motors, safety glasses, poppet valves, utility knives, and paint stir sticks. Other bags had all of the above and stop watches, batteries, glue, props, paint, paint brushes, RC warship trading cards, digital watches, and used water shoes from the Allies (they needed them, just kidding!). I have sunk enough to have used pairs of water shoes.

See my other article on post sinking.

If you would like to donate item(s) to this years grab bag please come to Wade Koehn's/Bryan Finsters room and donate something. Remember, the more you donate, the bigger the prize for the lucky winner.

Thanks for your time and support!

THAT SINKING FEELING OR WHAT TO DO AFTER YOUR SHIP GOES DOWN

By Wade

Well you've just built that awesome, unsinkable ship during the off season. You're at NATS. BB'S are flying everywhere. Then you find you are on the worse end of it. Your ship has begun the death spiral. Fantasy meets reality, and your awesome, unsinkable ship slips beneath the waves.

REWIND TO BEFORE NATS

While I won't go into the water tight box building scenario now, Fluegel asked me to write an article with pictures to intrigue the rookies, and bore the knowing veterans later, there is are just a few things I will talk about in the building process now. I suggest you build a water tight box. Many people will say it's not necessary because they have water proofed their servo's and receivers to the point that they don't need a water tight box. More power to them. At the very least a water tight box will protect your gear from the arrant BB that finds it way past your amour.

Water tight boxes should include your servo's, receiver, speed control, and switches for pumps, lights, ect. It should have enough room inside, and built as such so that all of your gear and be changed out, cleaned, or dried at NATS. A lot of NATS is reliability, durability, and simplicity. The better job you do of this will pay HUGE dividends at NATS. Water tight boxes are rarely water tight. You're a better man than me Guna Din if you can build a COMPLETELY water tight box. Water proof your servo's by smearing electrically friendly silicon gasket sealer that you can get a automotive discount house like Pep Boys or Auto Zone. Also there's some stuff out there called STUF. I put in a order on the members E-mail of the MWC list. I haven't used it yet, but it's really supposed to be good. Make sure your servo's are a little bit off the bottom of your water tight box so if you do sink and water gets in they won't be sitting in the water, I also suggest you put your receiver in a small clear plastic sandwich bag and use a small pull tie and tighten it around the wires. This will keep your receiver dry if water gets in. Some people put their receivers in a balloon. Whatever you do, keep your receiver dry. Wet servos are bad, wet receivers are worse.

FAST FORWARD TO SINKING AT NATS

Okay, your ship is underwater and unless you are lucky and the water is clear, or you sunk close to shore, you'll need a little help to find and recover it. Triangulation is the use of three people to locate an item. See how many people, besides you, saw your ship go down. Ask about where they saw it. Take off/out important things on you that you don't want to loose or get wet. You would be surprised how many people go into the water with radios, watches, and wallets. Now shoot your guns. No this isn't an action of vengeance from Davy Jones Locker. Your guns will fire underwater. Look for the bubbles. The bubbles will guide you to your ship. I also suggest you wear water shoes, or old shoes that you don't mind if they get wet. It's best not to step on hooks, beer cans-bottles, catfish, or whatever else you can't see. Start walking toward the bubbles. If you're lucky someone else will come with you. If you're Fluegel at NATS some minion will get it for you and you won't get wet at all.

As you arrive at the point were you think your ship went down have someone on the shore fire your guns again. Hopefully you will be close enough to see the bubbles and get your ship. If it's shallow you can find your ship with your foot. If it's deep, I hope your a good swimmer, or use a long stick to find your ship. I sank in Orlando FL. in about 15 feet of water WAY out. I was lucky because the water was clear, I'm a former lifeguard, and the alligators didn't get me. There was a few alligators there. Another way of finding your ship is to have someone turn your motors on, have everyone be quiet, and put your ear into the water. You'll be able to hear your ship. Rarely is a ship found exactly where it went down. Usually it five to ten feet from where it was sunk. Sometimes it's 30 to 40 feet from where it was sunk due to motors pushing it along the bottom, or currents.

You've found your ship. Wheew what a relief! Turn the reciver switch off. When you pick up your ship don't lift it above the water surface until you get to the shore. Two reasons. It heavy with water in it, and even heavier if you try to raise it out of the water. Secondly if you slip and fall you won't drop your ship as easily if it's on the surface of water.

ON THE SHORE

Dump all of the water out of your ship. Make sure your guns are pinned so in case you have servo chatter they don't shoot and

hurt someone. Open your ship and check to see if you have water in your water tight boxe(s). Get it out. Take your servos apart and either spray electrical cleaner on they, and /or use a blow drier if your have electricity. Replace non working servos. Check your receiver just like your servos. I have spare servos for everything, and a spare radio too. Spare parts, supplies, and tools are a large part of NATS. You must be able to change them out like a pit crew an Indy to be successful. Get the water out of your guns by firing them in a safe area. For a fix between battles WD-40 sprayed into the guns (cannons) will get rid of (displace) the water and keep the BB's from rusting your magazine and lube the moving parts. The WD in WD-40 actually stands for water displacement. The down side of WD-40 is that after awhile it will make the moving parts and BB's stick. So afer you spray it into your guns and fire out all of the BB's you'll need to clean out the WD-40. Electrical cleaner (expensive), or Isopropyl Alcohol (rubbing alcohol) (cheap), pour or sprayed into your guns will get rid of the WD-40 residue. Fire your guns again with no BB's to get rid of the WD-40 cleaners. Load with BB's and you're ready to go.

AT THE DRY DOCK

Once back in your room take everything out of your ship, open the water tight box and turn them all upside down. Take a shower, you smell like Fluegel after you got out of the water, and go to dinner with your buddies. When you come back from dinner, besides charging your batteries, and patching damage, you can clean your guns if you feel industrious. To clean your guns take off the metering device at the bottom of your gun. Then I take cotton from Q-tips, wad them up in a small ball, dip them in alcohol (not beer) and ram the through the magazine and breech with the same tubing I use for my CO2 lines to guns. This will clean all the gunk and WD-40 out of your guns. Reassemble your guns and check them out. Do not put anything by Fluegel's wet-drying out socks since they will either melt, rust, or fuse together.

I make a sink package of already water-proofed servos, WD-40, Alcohol, Q-tips, and a ram rod. Fluegel has pretty much the same things except he also has spare socks, and soothing music and or propaganda on a cassette to listen to for encouragement (REALLY, NO KIDDING).

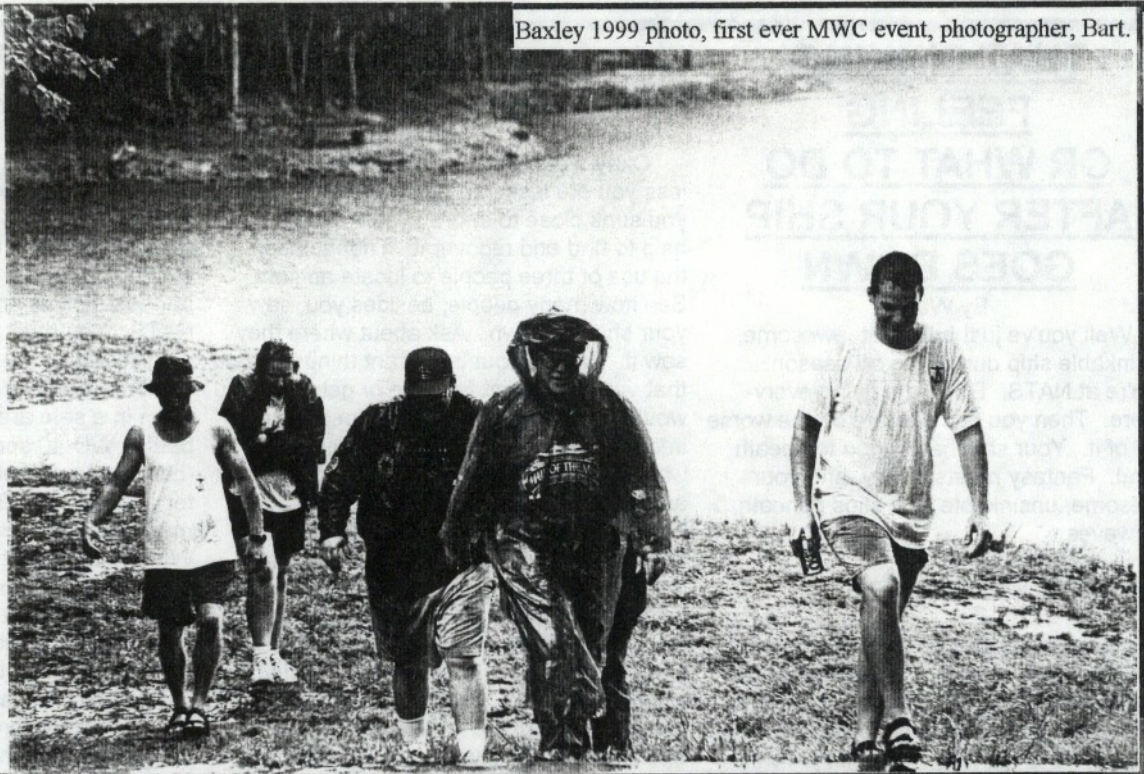
Well I hope this helps the rookies, and didn't bore the veterans too much. Happy sinking. See ya at NATS!
WADE

Baxley Spring Regionals 2000

By Stan.

I again attended the Baxley Regionals at Bart's place this year. It was great getting shot through by Don Cole's USS Missouri's twin sidemounts again. It was great to see some of my old battling friends and meet some new ones. The lake was down a couple of feet but still offered plenty of battling room (as Bart would say, room for Stan to run away and hide). Yep Bart, I say, battle smart, not hard. I just don't like all that patching that some guys seem to enjoy so much. There was a new Bismarck there which I found particularly fun to battle until he would drive it by Don Cole's twin sidemounts. I don't understand why Don Cole and I are always on opposite sides in Baxley. The fleets were yellow and non flagged and red and non flagged. Two new ships (Vitorio Vinneto and a Japanese Battle Cruiser) "abuilding" promised the improved possibility that the Baxley battle may graduate to "Allied/Axis". But as is most important, a good time was had by all.

Baxley 1999 photo, first ever MWC event, photographer, Bart.



Hull Busters
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