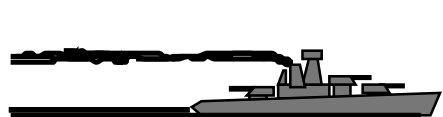


# TASK FORCE 144



The Official Newsletter of Model Warship Combat, Inc.

[www.mwci.org](http://www.mwci.org)

Spring - 2005

## CALENDAR OF MWC EVENTS

**Apr 23-24, 2005**

**Balsa Festival** - unsanctioned

Lee's Workshop, Port St. John, FL

Contact Lee McKinzie

**Apr 29-May 1, 2005**

**Farmington, MO**

Contact: Kevin Hovis (see BOD page)

**May 28- 31, 2005**

**Fray at Bray's**

Siloam Springs, AR

Contact: Kevin Bray, 479-871-5162

[kevin.bray@cox.net](mailto:kevin.bray@cox.net)

**June 19-24, 2005**

**MWC National Championship**

**Ionia, Michigan**

**Site Host:** Luis Negron, Mark Roe,  
Chris & Dave Au. Sanctioned. Fee:  
\$120. Banquet: \$19.

**Motel:** Super 8: \$52.88 + tax,  
(616) 527-2828, Mention "Model  
Warship Combat, Inc."

**Camping:** Lakeside Resort Campground  
(The Nats Site!). \$24/night (7<sup>th</sup> nite free)  
616-527-3216

NOTE THE DATE is a MONTH earlier  
than normal!



Old Vets breaking in the new ships, it must be SPRING!

Photo by Georgi Kunisch

## February Furball 02/04/05

by Peter Kunisch



Friday  
morning we  
headed for the  
new pond in De

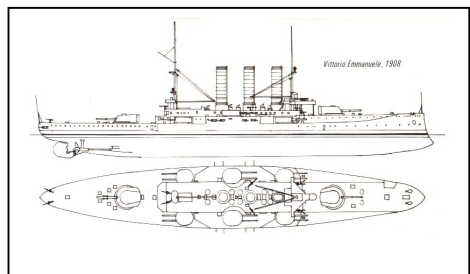
Bary Florida. It is a very chilly day  
but this never seems to matter to  
these Captains. It was planned to  
meet Jim Gariepry at the pond by  
noon. We stopped at a Denny's for  
breakfast as is our tradition on any  
away mission. This particular stop  
took longer than anticipated,  
construction season in Florida is year  
around but we still made it to the  
pond on schedule.

Several Captains were at the  
pond when we arrived, it was a lot

easier to find than we had figured on  
and with that we were delighted.

There was a bunch of greetings and  
battle smack before the ships got on  
the water. There were only 3 sorties  
and they did not count holes. There  
were some new captains with new  
ships so these sorties were a shake  
down time for them. During one of  
the sorties Pete rammed Jim's ship.  
This did seem to be unfortunate since  
we were guests at Jim's home for the  
weekend. When patching time came  
many Captains seemed to have a  
short supply of silk span, strange but  
better than forgetting a radio.

On the way to Jim's home for the  
evening we had a transmission  
problem; we nearly did not make it.  
Jim crawled under the van and  
discovered we had a major leak in a  
line. It was rubbing against





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something and wore clean through. Stress level was way up now. We were just absolutely delighted to discover that Jim has an outstanding work shop, that he had all the tools needed and was willing to fix this major headache for us and true to his word he did. Much thanks to Jim for

second turn, Monroe, but did get to the pond successfully.

At the pond on the Allied Fleet we had: Captain Frank Falango commanding USS Arizona, Captain Don Cole with USS Alabama, Rookie Captain Jim Gariepy with USS Massachusetts, Rookie Captain



Captains Jim, Frank, and Terry man the workshop.

Photo by Georgi

saving the weekend for us. While Jim worked on our RV, Terry made a supply run to Winn-Dixi and Georgi made supper, it seemed only fair. The shop did get used for working on ships as well as the usual after battle conversations. Frank was also a guest at Jim's so it made for a fun dry dock evening for all. Only wrinkle was that Frank somehow managed to lock the bathroom door while he was outside. Nothing that a clever photographer, an experienced Mom could not take care of with an ice pick. Way to go Georgi.

#### Saturday 02/05/05

We were up early in anticipation of a great day. Jim and Terry have a habit of turning alarm clocks off but Rick came to the rescue with a wake-up call to make sure every one was on schedule. Terry drew us a map of how to get to the pond but we wound up back at Jim's. Jim explained where we missed the turn and we were on our way again. Missed a

Terry Miller with HMS Lion, Charley the Termite with USS North Carolina (aka Killerina), Brian Koehler with HMS Ajax (he did sink this time)

On the Axis Fleet we had: Captain Rick King commanding DKM Scharnhorst, Captain Robert Stalnaker with DKM Tirpitz, the secret weapon U-Tirpitz, Captain Peter Kunisch with DKM Graf Spee, Rookie Captain John Craine with Rick's DKM Adm. Scheer, Lou Meszaros with DKM Leipzig, Rookie Captain Bata Cvetkovic with Royal Italian Navy Ship Scipione Africano.

Total Allied Ships: 6 Total Battle Units: 30.5

Total Axis Ships: 6 Total Battle Units: 22.5

Rick had donuts and snacks which we greatly appreciated on this second chilly morning. You would never know that it is Florida. Our rookie Captain Bata Cvetkovic came with a brand new ship, the Italian



ship the Capitainia, not sure of the spelling. He built it in his dorm room between classes. It did very well for it first time on the water. Lou and Charley arrived for the weekend of fun and battling.

First sortie and all ships on the water. "War" and the battle started and soon Rob's ship sank, the battery had shifted, a servo bit the dust and U-Tipitz started its covert mission to obliterate the Allies but the wonder weapon got waterlogged and did not work. Victory will be to the brave and mighty Axis and ..... but we can not tell more about this as we are sworn to utmost secrecy. Bata's ship developed a problem with props slipping but with a Dremel tool it was quickly corrected. This sortie was counted to make it a sanctioned battle but is was not a great triumph for the Axis but rather a monstrous victory for the Allies, (sniff, sniff).

Get a load of this fellow Charley, everybody needs stuff, Charley I need a motor, Charley I need gears..... and Charley closes the car door with the keys still in it, bummer. (And we have photos of that). But have no fear, AAA to the rescue and all was well. While Captains were patching Georgi took a few shots of the pond and the



Robert searches for the proper pump angle on the Tirpitz.

Photo by Georgi

entrance way for the FRAG site, the new SAS.

For the second battle it was flag - No flag and lucky for me that we had Charley on our side. Jim went down and so did John Craine's ship, the one he borrowed from Rick. John is not finished building his own. Bata had to leave early for a school fund raising event so the ranks of battlers started to thin.

Third sortie Terry was chewed up by Charley and his NC earned the

Killerina title all over again. Terry, Frank and Rob all sunk. Pete was unable to make this sortie, he barely made it to shore last battle with way too many holes one more time complements of Don, The Merciless. At the end of this sortie we packed up and went back to Jim's to get ready for supper. Terry had an opportunity to look at the stuff in Pete's Armory and he had another happy customer.

Dinner was at a really great place called the Swamp House Grill. We were in the party room. We loved it, the menu had great choices and very reasonable prices. We vote for going there again. T-shirts and coffee mugs for souvenirs and Georgi loves it. We all had a terrific time at dinner. Georgi rode back with Frank in his "Frostbite Special" while Jim rode with Pete to direct



Them's fightin' words.

Photo by Georgi



the way. Great ending to a fine day of battling and camaraderie

**Sunday  
02/06/05**

We were up at sunrise, coffee now for everyone is mandatory. Arrived at the pond to find gate was locked. We phoned Rick and were assured that he was on his way with the combination.

Lou was not able to make the Sunday battles. Rob sank and get this BRIAN, with his Ajax

sank also, we thought we would never see that day. There were three sorties in quick succession as the battlers did not want to get caught in Super Bowl traffic on the way home and we can relate to that. After all the sorties everyone packed up. One more patrolling of the grounds for tools, left-overs and trash. Rick, Charley, Pete, Don and myself were the last to leave. There was discussion about using this pond for a Nats and all agreed that it would work out quite well.

We left shortly thereafter and arrived home without incident, the transmission gave us no problems, Thank you again Jim. All of you other Captains that could not make it, you were missed and all Captains agreed that they could have used more targets.



Admiral Scheer staggers to shore after a bit too much bubbly.



Lutzow and Admiral Scheer work on German-American relations.

Photo by Georgi



Ajax slides under the tag.

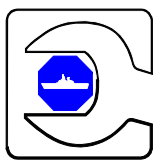
Photo by Georgi

# Hull Construction

By Tom Jass

(A reprint from the Feb. 1989

Hullbusters, back when the only home-built hulls were wood.)



Over the years that I've been in this hobby (I'm beginning to sound like Fluegel and Stan), I have modified the techniques that I've used to build hulls. My first model, the original RODNEY, had a 1" balsa bottom and a 1/4" balsa deck. This was soon changed to plywood for both members to increase the vertical interior space within the ship. I now use 3/32" plywood for both the decking and the bottom of my ship models. One technique which I have stayed with, however, is that I build all my hulls upside down on a wooden jig. I firmly advise this method over the practice of building the hull rightside up with the keel on a work surface for several reasons. The gunwale line is build absolutely straight and without warps. Much of the hull finishing work can be completed with the model attached to the jig. More about the jig and its use later in the article.

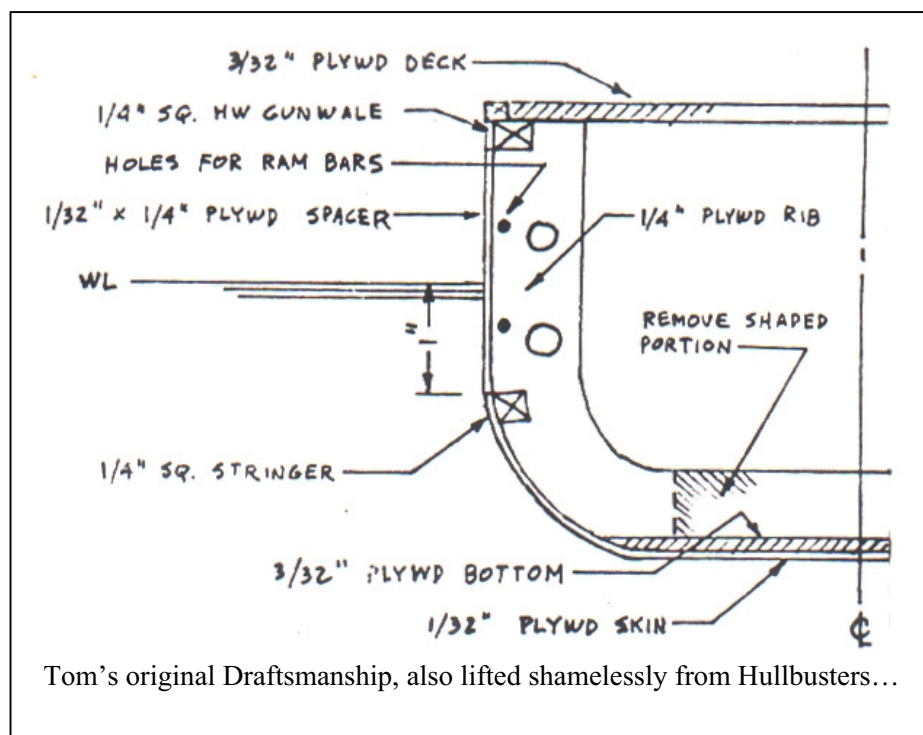
Obviously the hull framework is the skeleton of the model; if it's sloppily built and finished the model will be a mess from day one. It's sad to see a model discarded after one year's use because it is crooked or waterlogged or inaccurately built. Why spend hours on superstructure detail, gun systems and electrical installation if the hull construction is sloppy? Also a hull which is well built is much easier to reskin – and this will happen several times throughout a ship's career. So, with those reasons in mind let's discuss the building of a hull which will last 5 to 6 years.

The use of a jig is essential in constructing a true hull. I usually employ a 1" X 8" piece of pine (without warps) for the jig. If the

ship you're building has a step in the deck you must duplicate the step in the jig. By using shims or shaving the forward jig board you can duplicate the correct step height – this is a crucial step in constructing an accurate jig. The step must be located in the correct fore and aft position as well. I then draw a centerline on the jig and lay out the rib locations in full scale on the centerline with a drafting triangle. The width of the ribs can then be established on the jig. Because of the techniques that I use INSURE THAT ALL RIB WIDTHS ON THE JIG ARE LAYED OUT 1/8" NARROWER THAN THE FULL SIZED RIB WIDTH FROM THE PLANS. Cover the jig with waxpaper so you don't glue the frame to the jig and have to build an Axis ship. When this has been done accurately the gunwales which are 1/4" square hardwood can be fastened to the jig with small nails. Drill holes through the gunwales so that the nails will not split the hardwood. If the gunwales have extreme curves at the bow or stern the gunwales may have to be made by laminating 1/4" X 1/8" hardwood pieces together so the gunwales will

not split. At the extreme ends of the ship I glue and screw a piece of 3/32" plywood between the gunwales for additional support.

The ribs should be constructed of aircraft plywood (5 or 7 ply) not hardwood, balsa or thin door skinning. For cruisers and smaller ships I use 3/32" plywood for the ribs. 1/4" plywood should be used for battleship ribs. I usually place the ribs 3" apart on the ship; however, you can make more rib locations if you desire so long as you don't exceed the 15% rule. As shown in the diagram each rib should be laid out and cut 1/8" undersized in width (to allow for the skin width); also cut off 1/8" from the bottom of each rib to allow for the plywood bottom(s). Cut a 1/4" square from the top outside corner of each rib for the gunwale location, and another set of 1/4 square notches in each rib 1" below the waterline location. Also drill two 1/4" diameter holes in each side of each rib to allow electrical wiring to be threaded throughout the ship during that phase of installation. If you are going to install "ram bars" made of music wire to minimize ram damage, now is the time to provide notches for them.



Tom's original Draftsmanship, also lifted shamelessly from Hullbusters...



When all the ribs have been cut out, drilled and notched they can be attached to the gunwales on the jig with ZAP. Use a triangle to insure that the ribs are installed true and perpendicular – don't eyeball the job. Next, using ZAP install the 1/4 square stringers in the rib notches which were cut 1" below the waterline. If the ribs you made are 1/4" stock you should use brass countersunk screws to fasten these stringers to the ribs in addition to the ZAP. 3/32" ribs are too thin to accept screws. Cut the ship's bottom to shape from 3/32" plywood, making it as long as possible to give strength. Only install this 3/32" plywood where the hull bottom is flat. Using a sharp block plane or a sanding block with rough sandpaper, sand the outside edges of the 3/32" bottom so that it fits into each rib shape—this step is important. Next cover the entire bottom of the hull with 1/32" aircraft plywood, wrapping the plywood around the hull from one below the waterline stringer to the other. Sheet between as many adjacent ribs as possible with one sheet, but where adjacent rib profiles are not identical the hull can only be skinned between two ribs. It is best to cut patterns from light cardboard to determine the exact shape of each piece of 1/32" plywood skin before you begin chopping and ruining expensive plywood. If the curves are extreme you should soak the plywood in warm water for a minute to increase its bending ability. The skin pieces can be ZAPPED to the frame using clamps to fasten the skin to the stringers while the ZAP is setting. Glue solid balsa blocks or laminated sheets to the bow and stern ribs (1 1/2" at the bow and 1" at the stern are the maximums allowed by the rules). (Editor's note: the rules were changed years ago to allow a 2" solid bow rather than the 1 1/2" mentioned by Tom.) Does this all sound like a lot of trouble? It may take a little longer than other methods, but you

will build a hull frame which is strong, light and capable of lasting many battle seasons if you take your time and follow these directions. After the 1/32" plywood skin has been attached between all the ribs the enter frame can be removed from the jig. Now is the time to double coat all glue joints especially on the inside of the hull where the 1/32" skin is attached to the stringers between ribs. Also use more of the brass screws to fasten the gunwales to the ribs at each rib location. Form the bow and stern shapes from the solid balsa using knives, Dremel tools and much sanding.

Reattach the ship to the jig and sand the bottom of the hull skin with sandpaper. Fill any imperfections in the skin at the panel joints or wherever there are dings. Mix up a few shot glasses (2 ounce portions) of epoxy resin and coat a portion of the sanded hull bottom. Drape fiberglass cloth over the wet epoxy resin and gently pull out the wrinkles. The cloth will form itself easily around the compound curves of the hull so don't worry. Use epoxy resin and fiberglass cloth to cover the entire hull bottom. Don't try to do the whole job in one step as the epoxy resin will set up in about 15 minutes if you mix the two liquids in the correct proportions. Let the first coat of epoxy resin dry overnight, then sand the shine from the dry bottom and paint on one more thick coating of epoxy resin. Cut away the excess fiberglass cloth from the bottom of the skin when the second coat is dry. Now you can sand and sand to your heart's content to smooth the bottom of the hull' begin with rough sandpaper or you'll be on this step for weeks as the epoxy is rock hard when dry.

Remove the hull frame from the jig and apply fiberglass and epoxy resin to the inside of the hull bottom. Cut pieces of fiberglass to size to fit between the ribs. This inside coating is what makes the 1/32" plywood strong enough despite its thinness.

Once again apply tow coats. No need to sand the inside unless you're Axis. When the epoxy is dry use a Dremel tool to remove the center of the ribs. See the diagram; the cross-hatched portion should be removed. This allows water which gets inside the hull to run to the pump and also provides additional room inside the hull for system installation.

Because the 1/32" hull skin is raised from the sides of the ribs it is necessary to install 1/32" X 1/4" plywood fillers to the outside edge of the gunwales and each rib. ZAP these in place and sand the outside of the frame so that all surfaces are smooth and flush. These spacers have added 1/16" to the sides of the hull; the balsa skin will add another 1/16" – now you see why the rib patterns were cut 1/8" less than the play width. Fill any voids and sand some more. When your hull could pass for an Allied beauty (not an Axis pig), you are ready to finish the completed frame. **ALL EXPOSED WOOD SURFACES SHOULD NOW BE PAINTED WITH 2 COATS OF EPOXY RESIN.** This step will seal your hull frame and make it watertight. Sand all outside surfaces after the epoxy resin is dry. Now the hull is ready for skinning with 1/32" balsa. The sealing of the frame with 2 coats of epoxy resin will make subsequent reskinning easy.

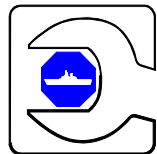
I construct the decking of 3/32" plywood with the wood grain running athwartships rather than fore and aft. This minimizes warping in the wrong direction. Glue together enough 3/32" plywood to rough out a deck. Lay the plywood on to of the frame in the correct location and draw around the perimeter of the gunwales on the bottom of the deck with a soft pencil. Remove the deck plywood with the pattern drawn on it and place a 3/32" square by 36" long piece of hardwood on the pattern so that you draw another line inside the original line. Do this on each side of the deck – you are locating new deck

edges which are 3/32" inside of the hull outline. Cut out the deck pattern following the inside lines. The 3/32" plywood can easily be cut with a utility knife if you make several passes' this works better than a saw as it gives a smoother more accurate edge. Sand the edge smooth and place the decking back in place on the gunwale frames. ZAP the 3/32" square hardwood pieces to the outside edges of the gunwales while the deck is laid in place. Just tack glue these pieces to hold them in place. Remove the deck and ZAP the 3/32" stringers solidly to the gunwales. After all is dry the deck will be a force fit when reinstalled on the gunwales. Except on DDs, I've never found it necessary to use caulking or a gasket material to seal the deck joint using this method.

Finish the bottom of the decking with two coats of epoxy resin and the top with lacquer and silkspan (or plank the deck with planking if you're a scale nut).



## Nickel Metal Hydride Batteries



by Luis K. Negron  
—IRN Garibaldi,  
IJN Kongo,  
SMS Ostfriesland

I know many cruiser owners currently use Nickel Metal Hydride (Ni-MH) batteries in order to save weight and space. Cruisers generally require every effort be made to save substantial amounts in those two categories. Battleships and battlecruisers generally, however, don't require such savings as they have sufficient space and weight capacity to carry the traditional gel cells.

But what do you do if you happen to have a bad back and cant carry the weight of the large battleships? Or what do you do if you want to build one of those small pre-dreadnaughts? This is where I turned to the latest in Ni-MH battery technology for my IJN Kongo and SMS Ostfriesland.

I bought my Powerex Ni-MH D-cell batteries at [www.thomas-distributing.com](http://www.thomas-distributing.com). I would recommend avoiding the cheaper green casing, Chinese-made Ni-MH batteries. That's what I used in my Garibaldi and they took a VERY long time to stabilize. Initially they would put out enormous power for a very short period of time then die.

New Ni-MH batteries will require several charge and discharge cycles ( I did 15) to settle down and work in a predictable manner. A bonus is that they gain amperage with repeated use.

I had my local hobby shop make the packs with the standard battery back braided cord (which your

local hobby store will carry) and 12g R/C car wire with the connector of your choice. ( I used the ones that don't allow you to plug your wires in backwards .) I then coated the ends with Tool Dip to keep any moisture out of the battery.

The website *officially* rates them as 11 amps but they are actually more like 12. Because of this high capacity not all Ni-MH chargers will work. I use the INDI 16X2-Pro and charge the batteries twice at the 6 amp setting (I already owned the charger and the battery company had not made a charger for them as of summer 2004). The second charge cycle will be much faster than the first.

When I plopped the batteries (with the electrical wire plus connector) on my rather crude scale I got slightly less than 4 lbs for a 12 amp gel cell, vs slightly more than 1 pound for the Ni-MH pack. So my Kongo saved over 5 lbs in battery weight.

The Ni-MH packs (when built 5-in-a-row style) sit about 45% lower in the ship, are about 33% narrower and only about 5% longer than gel cells. Even if you have to add weight to get the freeboard down, the lead weights will sit much lower (giving better stability) and can be dispersed about the hull in a manner that allows you to route internal components however you like.

They are, however, not cheap. I spent roughly \$155 for the 2 packs, not including S&H and having the hobby shop build them ( I think that was \$20). Lou Meszaros found Powerizer brand 10 amp D-cells, for \$6.39 ea. (for a total price of \$60.39 for two 10amp packs) on [www.batteryspace.com](http://www.batteryspace.com). I have not used this brand yet so I cant give an opinion on their performance.

So, if you need to save weight and want a smaller, narrower battery pack, nickel metal hydride batteries may be an option for you.



Jass with his first model ship.



## From Your NATS Site Host

by Luis Negron

see BOD list for Luis' contact info

This year's NATS will be hosted by the Great Lakes Attack Squadron, based in Michigan, a state where the summer temperatures are a bit less "intense" than in other years.

**WHEN:** June 19 – 24. Yep, its early this year. July is a VERY hectic month in that area, with zero hotel/campground space available. Parking and traffic congestion would also be issues.

**WHERE:** Lakeside Resort Campground, 750 E. Grand River, Ionia Michigan 48846 (616) 527- 3216.

**LAKE:** The campground's lake will be our battling site. We will be using most of the west shore with a roughly 600' by 200' area of water cordoned off to keep any canoes or pedal boats a safe distance away. Only electric trolling motors are allowed on the lake. Our section of beach will also have barriers to keep spectators a safe distance away, with safety glasses being issued to anyone coming within those barriers. All depths within the battle area do not exceed 8ft.

**COST:** \$120 if you sign up before 5/19, \$135 if after. Yes there is a price increase this year. At this point there is a 60% chance that money will be used

to pay for a large shade pavilion like the one in Perry, Georgia. If the money is not needed for that we will use the funds to pay for each member's banquet.

**LODGING:** Super 8 Motel - \$52.88 + tax per night if 2 people are staying in the room. The motel is less than 1 mile from the lake. (616) 527-2828 ask for the "Model Warship Combat Inc" block of rooms when you call. Reservation # - 66740510. **NOTE: Our block of rooms will be released to the public on 5/26 so reserve early!**

Lakeside Resort Campground – Stay right next to the battle site! \$22 per night if we get 10 or more battlers to stay. (616) 527 – 3216. Spaces have water and electrical hookup. Showers on site.

**AIRPORTS:** Both Grand Rapids and Lansing have airports you can fly into and both are about 1/2 hour away from the lake.

**BANQUET:** The Corner

Landing is right across the street and will be the site of our banquet. For \$19.00 you will have a choice of ham, oven fried chicken or prime rib with, mashed potatoes, vegetable medley, rolls, salad bar, pudding, fruit and drinks.

**RESTAURANTS:** Most restaurants will be in the actual town of Ionia which is about 7 miles away from the motel.

**STORES:** There is a large truck stop next door to the motel open 24 hrs, a Meijer (sort of like a WalMart but larger) 5 miles away and hobby stores in Grand Rapids and Lansing about 30 minutes away.

**PAVILION:** Due to popular request we have reserved a pavilion for the lake. Battlers will have to bring their own chairs and tables.

Looking forward to seeing all of you this June!



That Red Star to the left of Lansing is the 2005 Nats site. Stolen from GLAS website.



# Clippard Cannons?

(An alternative to KIP solenoids)

by **Brian P. Koehler**

Submitted to TF144:

February 11, 2005



Being a cruiser captain, weight has ALWAYS been a premium concern for all the components of my ships. This was especially true when I was rebuilding the HMS Ajax, one of the three Leander class light cruiser hulls originally built by Bart Purvis. I had (with great help from Charley Stephens) installed push buttons on my radio for cannon firing but was not totally satisfied with the response of the servos. I wanted to try using solenoids but was afraid the weight of the KIPS would be too much for such a small cruiser.

That was when I noticed the system Rob Stalnaker was testing in his DKM Tirpitz using Clippard solenoids. These solenoids are small and light but can only tolerate 100 psi maximum pressure. To avoid having to fire the cannons at a lower pressure, he used these only as “triggers” for activating Clippard PAV’s (pressure-activated valves), which were connected directly to the 150 psi main CO<sub>2</sub> line and were what actually fired the cannons (see the Figure 1).

Using small double-threaded connectors and a few 90° elbows I was able to join two solenoid-PAV systems into a small, compact block (see Photo 1). The 150 psi main is the large tubing in the middle, which splits and supplies the two PAV’s in the center. The two black solenoids

at the left are supplied by a sideline, which is dropped to 50-80 psi by an additional small regulator (also sold by Clippard). These were directly connected to the low-pressure “trigger” ports of the PAV’s using small adaptors that were threaded on both ends. The result was a small, compact unit that could fit even under the motors of the Ajax (see Photo 2).

I have been very happy with the solenoids so far. I like that the

solenoids are stock inventory items that do not require a special group order. Also, because these solenoids separate from their manifolds, they can be cleaned or replaced without having to disconnect any CO<sub>2</sub> plumping. The only disadvantage I have seen was that since I fire my sterns individually, and hence need two solenoids, the result was only slightly lighter than straight KIPs (a typical “dual” stern cruiser would save more weight). It did, at least,

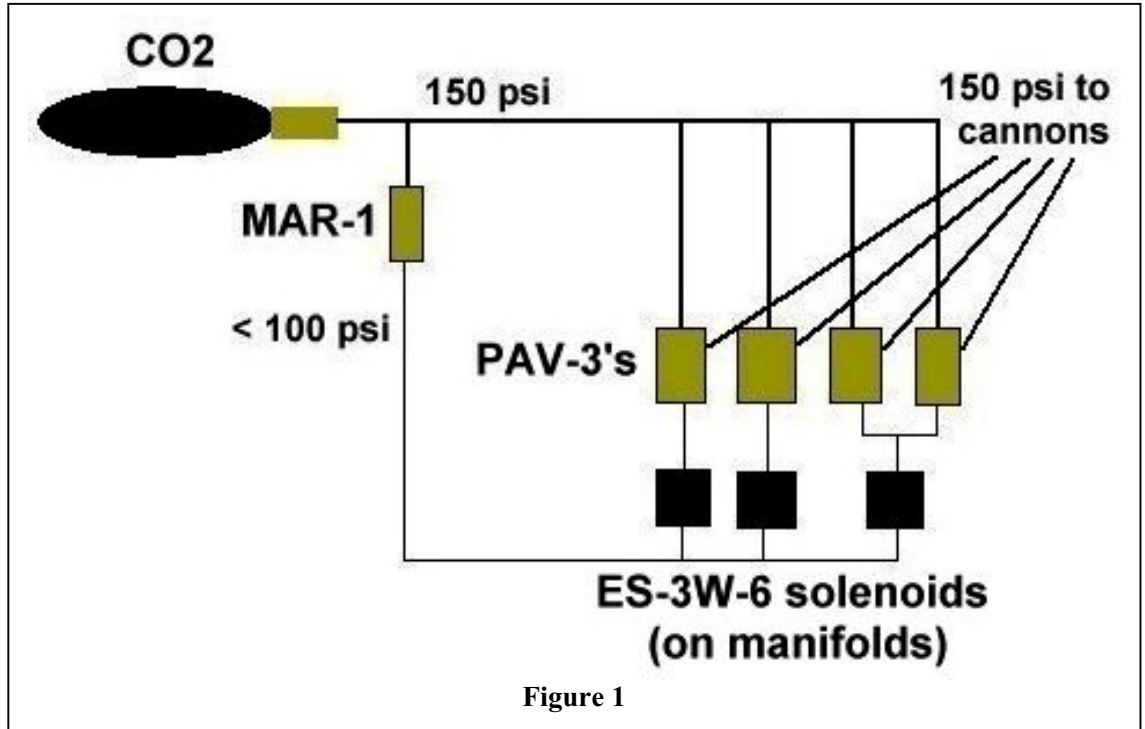


Figure 1

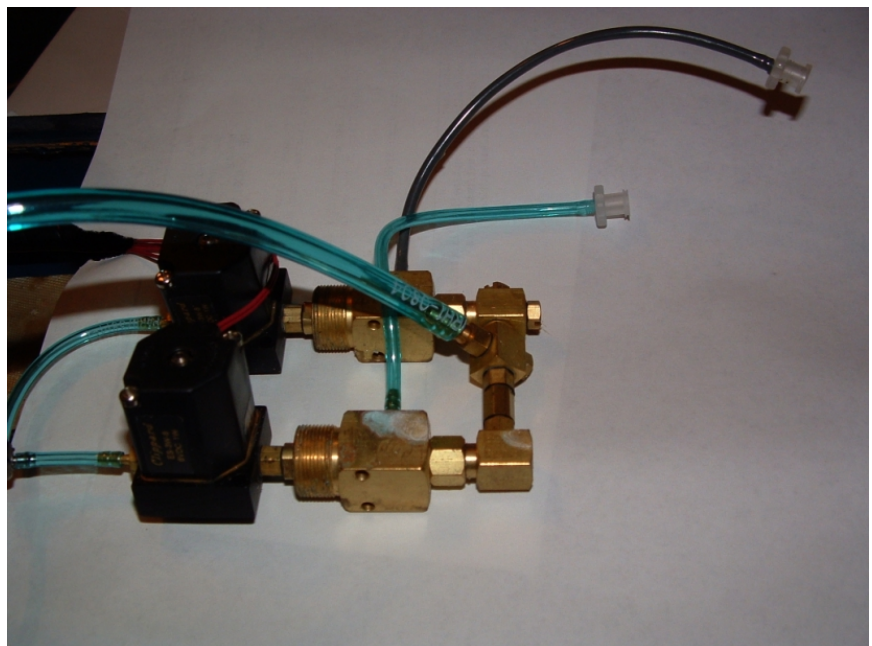


Photo 1

allow me to spread the weight around the ship a little (the extra 100 psi regulator is in the front).

For reference and comparison below is a table listing the components weights for the various cannon system options and also part numbers for the Clippard components. As you can see, the traditional servo/MAV combination is still the cheapest and lightest option (and probably the best recommendation for new captains). Also, I should note that standard servos with MAV poppet valves actually CAN be made to fire about as quickly as the solenoids if all the sources of “free play” and “flex” is removed (I later reworked Christopher’s USS Chester and am very pleased with the results). So to “sum it all up,” I don’t think old ships need to have all their cannons ripped out and replaced with solenoids to be competitive, but if you are building a new ship and plan on using solenoids, it is good to know the details of both options. I have included the total weights for a sample cannon configuration of a

four cannon ship (2 side mounts and 1 dual stern).



Photo 2

**How to set-up:** start with the MAR-1 regulator open all the way (no pressure). The solenoids need 20 psi minimum to operate, so when you fire the cannons, nothing should happen. Incrementally screw in the knob on the regulator while firing the cannons until you get a good rapid response from the solenoids (and then give a little extra turn for good measure).

### Weight Comparison Chart

#### **Clippard Solenoids**

Part	Weight
RCE-200 RC card	4.2 g
PAV-3	44.6 g
6V solenoid	49.9 g
Manifold	13.6 g
100psi regulator	81.6 g

#### **Servo/MAV-2**

Part	Weight
Servo	47.6 g
MAV-2	32.4 g

#### **KIPS**

Part	Weight
RCE-200 RC card	4.2 g
KIP solenoid	160.0 g

Ex. Sample Configuration (dual sterns and 2 individual cannons)

Clippard System (1 regulator, 3 RC cards, 3 solenoids, 4 PAV’s): 463.1 g

KIP System (3 RC cards & 4 solenoids): 652.6 g

Servo and MAVs (2 servos, 2 MAV-2’s, 1 MAV-3 and 2 PAVs): 281.6 g

#### Part Description

#### Part #

Clippard 6V compact solenoid	ES-3W-6
Clippard manifold	26090-1
Clippard 100psi variable regulator	MAR-1
Clippard PAV-2	PAV-2
Team Delta R/C switches	RCE-200(A)



# MODEL WARSHIP COMBAT, INC.

## 2005 Nats Entry Form

Each person attending the MWC Nationals MUST be a current member in good standing of the MWC as of May 15.

The membership application is available on-line for downloading. **No Nats fees will be accepted after June 10.**

In the space provided below, please list any alternative channels you can move to in order to ease frequency usage.

Additional t-shirts are available. Please contact the Treasurer for more information at [treasurer@mwci.org](mailto:treasurer@mwci.org).

For Radio channels, please remember that as of 2005, Allies use even numbered channels, and Axis are to use odd.

Captain: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Fleet (circle): Allied Axis Shirt Size (circle): S M L XL XXL XXXL

Primary Ship Name: \_\_\_\_\_ Ship Class: \_\_\_\_\_

Secondary Ship Name: \_\_\_\_\_ Ship Class: \_\_\_\_\_

Radio Channel: \_\_\_\_\_ Alternative Channel(s): \_\_\_\_\_

Captain: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Fleet (circle): Allied Axis Shirt Size (circle): S M L XL XXL XXXL

Primary Ship Name: \_\_\_\_\_ Ship Class: \_\_\_\_\_

Secondary Ship Name: \_\_\_\_\_ Ship Class: \_\_\_\_\_

Radio Channel: \_\_\_\_\_ Alternative Channel(s): \_\_\_\_\_

Captain: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Fleet (circle): Allied Axis Shirt Size (circle): S M L XL XXL XXXL

Primary Ship Name: \_\_\_\_\_ Ship Class: \_\_\_\_\_

Secondary Ship Name: \_\_\_\_\_ Ship Class: \_\_\_\_\_

Radio Channel: \_\_\_\_\_ Alternative Channel(s): \_\_\_\_\_

Entry fee (# Captains x \$120)  
After May 10 (# Captains x \$130): \_\_\_\_\_

Extra T-shirts ( \_\_\_\_\_ x \$12): \_\_\_\_\_ List Sizes: \_\_\_\_\_

**Total Fee enclosed:** \_\_\_\_\_

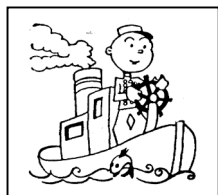
Please make checks payable to  
**Model Warship Combat, Inc.**  
Mail check and completed form to:

**Tim Krakowski**  
1479 Brookcliff Drive  
Marietta, GA. 30062

The banquet fee of \$19 (tax and gratuity included) will be paid  
at Nats, DO NOT pay it now. If a currently planned Large Tent is not  
used, the banquet will then be NO EXTRA CHARGE.

## The President's Column

by Patrick Clarke



Howdy All. Well its April and a number of Regional Battles and NATS are just around the corner. This is the time of year when boat workshops around the country are actively finishing, refitting, or tweaking a few bugs out of the MWC fleets for 2005.

The one thing you might notice this year is that our fleets seem a little smaller. Well, they are. Currently we have 72 paid members and while that number will grow a by few more before NATS, it is significantly down from several years ago when we peaked at approximately 120 members. This has been a concern for the BOD and we have put a good deal of effort into optimizing the clubs resources. The club finances are not in jeopardy, but we want to insure we are being good

stewards of the club.

Regarding membership, the one sure way to help our club is quite obvious and that is to increase our membership numbers. Along this line there are a couple of known and proven methods to increase membership, local meetings and battles held on a regular basis. To add to this I would like to ask the membership to invite some former members to attend your next meeting or battle. Many times members fade away due to a temporary busy point in their life or to not enough local activity. This absence is reinforced when they don't hear from anyone from within the club. As you may know the MWC now has the one time membership (good for one battle) to offer if a former member wants to participate at your next battle and the cost of this is deducted from their membership if they want to return to active status. If you would like a list of former members in your area to contact, then get in touch with your MWC Board member, and they will be happy to

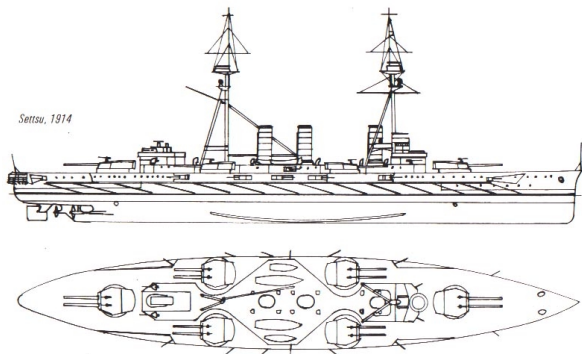
provide this information.

As I mentioned earlier, NATS is just around the corner and I am getting fired up about it. The Michigan NATS organizers have put a lot of work in preparing the site and making sure we all have a great time. Personally I am looking forward to the cooler temperatures they have been promising, but with that there may be a reduction in the crazy hats I have seen in the past, then again, maybe not. Either way it should be a great time for all. If you have never been, then I would encourage you to attend. Then you might understand some of the excited emails when someone announces they will be able to attend this year, or the word Banzi at the end of an email with a dozen or more exclamation points following it. Clearly, I can not fully describe the experience in one paragraph, but if you like battling, then what could be better than doing it for an entire week!!!!!!! And I didn't even say BANZAI !

See you at NATS 

### TASK FORCE 144

1486 Oakdale Ave.  
West St. Paul, MN 55118



"My Seamen are now what British seamen ought to be... almost invincible; they really mind shot no more than peas."

-Admiral Viscount Nelson, February 1794.