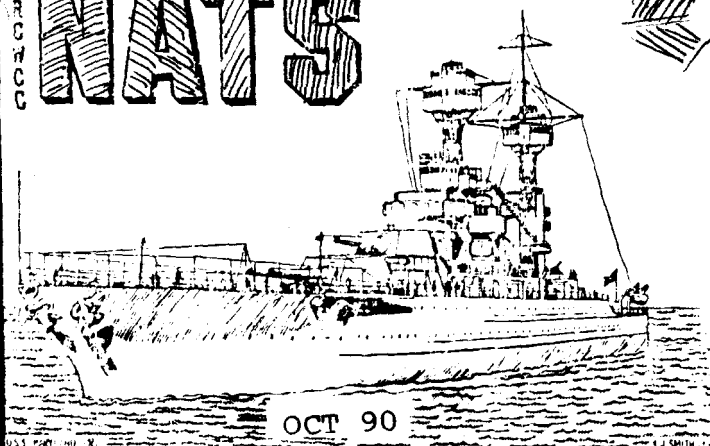


# HULL BUSTERS

OCT 90

# NATS



**JULY 9-13, 1990** ANNAPOLIS MARYLAND

## NATS T-SHIRTS

There are still a few Nats T-shirts left. If there is enough of a demand, I could have a few more made up. The T-shirt design is featured on the cover of this issue of HULLBUSTERS. The shirt color is light blue. Price is \$12 which includes shipping. Use the order form below. (Marty Hayes may have a few on hand, too.)

### T-SHIRT ORDER FORM

SIZES	S	M	L	XL	XXL	XXXL
	34-36	38-40	42-44	46-48	50-52	54-56
QTY						
AMOUNT ENCLOSED (Personal Checks or Money Orders only please.)						
ORDER FROM:	Steven J. Smith 8850 Goodrich Rd. #103 Bloomington, MN 55437	SHIP TO:				

## Blow-by-Blow

Tuesday

## Battle Reports

From The Bridge:  
Tuesday at Nationals  
By Chris Pearce

The day dawned hot and muggy, daring the dogs of war to do anything but sit and pant. But dare they did, and sent their minions, Allied and Axis out to battle. This is the tale of one of those minions...

My day began early as I sought to repair the damage to the USS Augusta's hull and propulsion that had been inflicted Monday. When she prepared to sail, however, it was discovered that she still had no reverse. So it was that I transferred my flag to the old relic USS Michigan, and prepared to sail.

## NEW PRODUCT REVIEW

by Steve Smith

### ELECTRONIC VALVE CONTROLLER

I've always wondered if there was a way to take the radio signal and electronically operate solenoid gun valves instead of using servos to operate microswitches. The DUAL ACCESSORY CONTROLLER from JOMAR PRODUCTS CORP. is such a device. It will control 2 valves or other devices that draw 1 amp or less. Its price at \$41 (includes shipping) may limit it to the "technology at all cost" crowd but it is quality throughout including documentation with schematic so you could build some more yourself if you don't mind etching circuit boards.

### HOSE QUICK-CONNECTS

The COLDER PRODUCTS Division of GENOA CORP. makes hose connectors in delrin and brass for 1/16" and larger hose/tubing. There are several styles including panel mount and built-in shut-off. Cost is about the same as Nycoil and Clippard connectors.

### WATERPROOF MICROSWITCHES & OTHER STUFF

HERBACK & RADEMAN, a surplus electronic dealer (via free catalog) recently had some waterproof microswitches for \$3 each. They also have batteries, motors, etc.

### ADDRESSES:

JOMAR PRODUCTS CORP.  
2028 Knightsbridge Drive  
Cincinnati, OH 45244  
(513) 474-0985

COLDER PRODUCTS  
GENOA CORPORATION  
1001 Westgate Drive  
St. Paul, MN 55114  
1-800-444-2367

HERBACK & RADEMAN CO.  
401 East Erie Ave.  
Philadelphia, PA  
19134-1187  
1-800-848-8001

Or contact me for more information.

while the USS Augusta was set aside for more repairs, hopefully to join us later in the campaign.

As the fleets sortied, I looked about to see my fleet mates. There were the battleships Indiana, Maryland, California, Warspite, Valiant, and Michigan, the battlecruiser Tiger, and the cruisers Oklahoma City, Houston, Houston, Louisville, Northampton, Houston, Phoenix, Savannah, and New Orleans. These were met by their Axis counterparts, the battleships Roma, Roma, Italia, and Konig, the battlecruisers Scharnhorst, Scharnhorst, Von der Tann, Von der Tann, Kongo, Hiei, Haruna, and Andrea Doria, and the cruisers Lutzow and Isuzu.

With war declared, the Axis sent out their battlecruiser force to wear down the Allied strength, so that their battleships could join later and clean up the carnage. The Allied strategy was mainly to survive, (a futile one at that) and with that in mind, the cruiser force quickly fled the area, pursued by a Scharnhorst. In the center of the action, I sensed that the Kongo was having difficulties. (She had caught a baggie.) Reaching the scene, I found survival my main concern as I was quickly surrounded by several battlecruisers. The boilers built up to flank speed, and I was holding my own against the horde. Then, I decided to show them my secret weapon... Placing my ship in reverse, I soon outran all pursuers. (I like to think that I can get out of trouble faster than I can get into it...) This action, however, was met with shouts of challenge from the decks of the Heerna, and so I chose to offer them a

target, and the company of my stern gun. The Scharnhorst close by me was sending a withering fire into my superstructure, penetrating even the 1/16" plywood armor over my superstructure. The Haruna was placing gaping holes in my hull, and several other ships were doing their part to add to the damage. I did my best to shoot back, and then, when my guns were empty, beat a hasty retreat toward the rear area. My pump was pumping well, and my tormentors were not keeping up an effective chase. However, my efforts were for naught, as my ship slipped below the surface, just feet from the channel that would lead to safety. At least the water was shallow and cool...

Meanwhile, the rest of the Allied fleet was having its own problems. The Indiana went for a long broadside session with the Andrea Doria, and came off second best, sinking because the water couldn't reach the pump. The Doria was punished in return, but was able to survive the damage. The Oklahoma City bravely attacked one of the Scharnhorsts, to draw its attentions away from the less experienced cruisers. The Savannah meanwhile traded favors with the Lutzow, and the Tiger took on the Italian battle squadron. The Valiant was learning about the power of the Scharnhorst's guns, and several of the Allied cruisers were in various stages of moss.

The Axis side had its own problems, too, in a target poor environment. The Konig and Von der Tann were left out because they couldn't catch the rapidly dwindling Allied fleet. The Italia was rammed by the Valiant, and as I mentioned before, the Kongo caught a baggie. Leif's Von der Tann was mosed, and lost its turning motors, and Joe's Roma ran out of receiver power. However, the Allies were not able to capitalize on these easy targets. The first sortie was a clear Axis victory with the Allies losing two battleships, and taking heavy damage to at least one cruiser, the Louisville.

In the second sortie, I was a video operator and got to see a little more of the action. The Louisville was hounded by the Axis, who wanted to add another sink to their total. She made it through the sortie, but not without tribulation. The Maryland and Warspite exited the battle early, with gun problems. The Warspite's guns worked, but to little avail, as she sank due to a clogged pump. The Oklahoma City also sank, due to speed loss and the presence of Japanese battlecruisers. Other Allies on the problem list were the Tiger, with battery problems, and the Valiant, with only two guns working. Shawn's new New Orleans, on the other hand, kept to the fringes of the battle and managed to survive the carnage, as did the other Allied cruisers.

On the Axis side, the problems continued with two ships, the Italia and Von der Tann, having radio interference problems. The Lutzow, Leif's Von der Tann, and the Konig were left out because of the target poor situation. The Kongo, Hiei, and Haruna, on the other hand, had an adequate source of targets, contributing to the demise of both the Warspite, and the "Floundering Father", Stan's Oklahoma City. Bob, with the Isuzu, however, didn't share the fortune of his compatriots, running out of control in the middle of the sortie.

When the carnage cleared, it was an obvious Axis victory, with four Allied ships sunk to no Axis. When the scores were totalled, we found it to be a victory on the order of three to one in the Axis favor, but I cannot be sure without score sheets. All I knew was that if this was the prelude, the Campaign, would probably be our Java Sea. And the weather agreed.

While all the other captains were enjoying lunch, I frantically rewired the Augusta, with a new speed control. The Michigan was retired permanently, because I didn't have the heart to slow it down enough to make it legal. And besides, I knew that a

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Sortie Results

		Fleet 1				AXIS WIN	
AXIS	Ship	Captain	Sortie 1		Sortie 2		Total Score
			Damage	score	Damage	score	
	Roma	Joe Vilar	70	400	120	405	805
	Roma	Frank Pitteli	60	400	310	405	806
	Italia	Carl Shaffer	120	400	285	435	206
	Haruna	Gerald Roberts	915	286	1385	290	575
	Andrea Doria	Rick Schultz	20	286	135	290	575
	Von der Tann	Lief Goodson	75	286	30	290	575
	Von der Tann	Nathan Blattau	0	286	20	290	175
	Gneisenau	Bob Amend		0		0	0
	Scharnhorst	D.W. Fluegel	230	343	70	347	691
	Scharnhorst	Futschnik	345	343	150	347	691
	Kongo	Dave Haynes	200	286	200	290	575
	Koenig	Michael Blattau	70	343	55	347	691
	Hiei	Will Montgomery	630	286	80	290	475
	Graf Spee	Wade Koehn	0	229	30	232	460
	Magador	Mike Deskin		0	10	58	58
				0		0	0
Totals			2735	4175	2630	4285	7360

		Sortie 1		Sortie 2		Total Score	
ALLIED	Ship	Damage	score	Damage	score		
	Indiana	Jim Pate	70	286	315	275	561
	Iowa	Danny Schultz		0		0	0
	Massachusetts	Jim Foster		0		0	0
	Warspite	Marty Hayes	655	245	0	236	480
	Valiant	Dan Hamilton	675	245	420	236	480
	California	Steve Andrews	640	245	230	236	480
	Maryland	Danny Schultz	360	245	1910	236	480
	Tiger	Tom Jass	420	204	145	196	400
	Augusta	Chris Pearce	170	163	480	157	320
	North Hampton	John French	150	163	280	157	320
	Houston	Francis Rogowski	120	163	10	157	320
	Houston	Richard Whitsett	10	163		0	-137
	Louisville	Ron Thibault	720	163	250	157	320
	Phoenix	Paul Broring	165	163	235	157	320
	New Orleans	Shawn Finley		0		0	0
	Oklahoma City	Stan Watkins	10	163	0	157	320
	La Galissonier	Mike Deskins		122		119	240
	Savannah	Brian Craven		0	10	157	157
Totals			4175	2735	4285	2630	5065



Steve breaks Bob's son over knee.

**AXIS**

AXIS Ship	Captain	Sortie 1 Damage	Sortie 1 score	Sortie 2 Damagescore	Sortie 2 score	Total Score
Roma	Joe Vilar	30	373	165	750	1123
Roma	Frank Pitteli	290	373	140	750	1123
Italia	Carl Shaffer	180	373	0	0	373
Haruna	Gerald Roberts	670	238	0	536	802
Andrea Doria	Rick Schultz	225	266	60	536	802
Von der Tann	Lief Goodson	60	266	60	536	802
Von der Tann	Nathan Blattau	175	266	40	536	402
Gneisenau	Bob Amend	205	320	130	643	963
Scharnhorst	D.W. Fluegel	120	320	190	643	963
Scharnhorst	Futschik	365	320	415	643	963
Kongo	Dave Haynes	100	266	150	536	802
Koenig	Michael Blattau	150	320	70	643	963
Hiei	Will Montgomery	230	266	455	536	802
Graf Spee	Wade Koehn	40	213	295	429	642
Magador	Mike Deskin		0		0	0
Totals		2840	4210	2170	7715	11525



The bobsays lying Indiana.

tasted bottom. With the Allied hopes of supply dashed, I launched, and prepared for the Axis to launch their convoy ships, which they did shortly. I, joined by the Valiant and others, attacked, but we were daunted by they myriad Axis battleships that were guarding the convoy ships. They made the round trip with little difficulty. This first period set the tone of the entire battle. The Axis, it seemed, owned the lake and could go anywhere they wished, while the Allies could go only where the Axis let them, which wasn't very far. The Axis continually seemed able to bring greater force to bear when and where they needed it, while the Allies milled about. The first convoy run was the closest the Allies came to getting a convoy through. All following convoy ships were dispatched relatively quickly. The Axis convoys rarely encountered serious opposition.

The battle soon became a rout as the Allied captains began running out of ammunition. Many gave up and started patching and packing their ships up for the evening. Others courageously continued the fight. At one point, the Valiant caught fire, (I didn't think it was THAT hot out...) and Dan left it out there to maintain the Allied presence. In another area of the battle, the Axis were getting so cocky as to leave their ships unattended. After I put a few holes in the bow of the Roma, this was stopped.

The targets were a lively area of competition, as the only Allied hope lay in destroying the Axis supplies on shore, since we couldn't seem to stop their convoys, and since the Axis only had to destroy our cups to win a strategic victory. Many b-b's were expended on the targets before the battle's end. At one point, the Indiana was attacking the Axis cups, and the Italia chose to block them with her hull. Jim took advantage of

**ALLIED**

ALLIED Ship	Captain	Sortie 1 Damage	Sortie 1 score	Sortie 2 Damagescore	Sortie 2 score	Total Score
Indiana	Jim Pate	100	288	1130	249	537
Iowa	Danny Schultz		0		0	0
Massachusetts	Jim Foster	610	238	1385	249	537
Warspite	Marty Hayes	425	247	410	213	460
Valiant	Dan Hamilton	430	247	1210	213	460
California	Steve Andrews	100	247	390	213	460
Maryland	Danny Schultz		0		0	0
Tiger	Tom Jass	150	206	165	178	384
Augusta	Chris Pearce	95	165	1175	142	307
North Hampton	John French	965	165		0	165
Houston	Francis Rogowski	50	165	20	142	307
Houston	Richard Whitseil	1155	165		0	165
Louisville	Ron Thibault	60	165	65	142	307
Phoenix	Paul Broring	10	165	1685	142	307
New Orleans	Shawn Finley		0		0	0
Oklahoma City	Stan Watkins	0	165	10	142	307
La Galissonier	Mike Deskins		0		0	0
Savannah	Brian Craven	60	165	70	142	307
Totals		4210	2840	7715	2170	5010

ship that slow would be a sitting duck for the Axis battlecruisers. As the Campaign battle started, I was still not ready, so I took a few minutes to view the start of the battle.

The Allied strategy for Campaign was to send the convoy ships around the far end of the lake, in hopes that the Axis wouldn't notice them until they were on the opposite side. Then, they would have to run around the lake in order to see their ships and attack the convoy ships. During that time, their ships would probably be unattended, and it was hoped that some good targets would be provided for us, and that by the time the Axis managed to get to the convoy ships, their time would be up and they could simply sail into base.

The Axis strategy, on the other hand, was to divide their fleet into three groups, each consisting of several warships and a convoy ship. Each group was responsible for bringing in its own supplies, and for protecting both their convoy ships and the target. Their overriding mission, however, was to sink the Allied convoy ships, as we soon found out.

The Allied convoy ships launched as soon the battle began and began their trek around the lake. Two were sunk before they could make it fifty yards, one due to loss of propulsion. The third was met on the far side of the lake by the Gneisenau, and soon



Jim strikes Stan with baseball bat.

the target and began emptying his three stern guns into the Italia, which then backed off. There was rarely anyone to protect the Allied target, especially as the battle wore on.

At one point, the Axis launched their secret weapon, Gerald's aircraft carrier. This was hardly necessary, as there were very few Allied ships left fighting at this time. Those that were tried to take their chance at sinking this target, or at least putting a couple of holes in it. Someone rammed the carrier, and when Gerald brought it in to check it, he did a little fiddling around inside, and his pump was seen to turn on. This caused a stir, because the Allied observers thought Gerald had turned on his pump. However, the ram had dislodged a battery which had jammed on Gerald's "foolproof" pump float, and Gerald only moved the battery back to its proper position. Gerald was rightly incensed at the accusation.

However, at the other side of the lake, Fluegel was indulging in another of his acts which will live in infamy. After ramming the escorts for the last Allied convoy ship, Fluegel refused to come in on the ram check, and instead sank the convoy ship. This time, the Allied captains were rightly incensed, and Fluegel was given a stiff penalty for his indiscretion. The stiff penalty did not make up for the fact that the Allies got no

supplies, though.

In the end, the Axis were faced with a choice. They did not have enough supplies to win a strategic victory, nor could they manage to destroy all the Allied ships. Dan's Valiant was the only Allied ship left on the water, and had been for the past half hour. The Axis realized that they could gain a strategic victory by sinking the Valiant and thus wiping the sea clean of the Allies. However, in a rare act of mercy, the Axis decided to save their b-b's and save Dan the patching, as the Valiant is a very difficult ship to sink.

The final tally was an Axis tactical victory, with six convoy ship sinks, and several thousand tons of excess supplies, to the Allies' none. It was one of the biggest routs in the history of Campaign battling, and shook what was left of the Allied confidence.

Thus ended Tuesday's battling, with the Axis jubilant and triumphant, and the Allies wondering if they could possibly turn the tide Wednesday, or even make a decent showing in the rest of the week's battling. If this was to be the Allies' 1942, then we could all hope that we would soon find our Midway. But that is a tale which I will have to leave for another.

Tuesdays Results

fleet 3

AXIS WIN

Thursdays Results

fleet 4

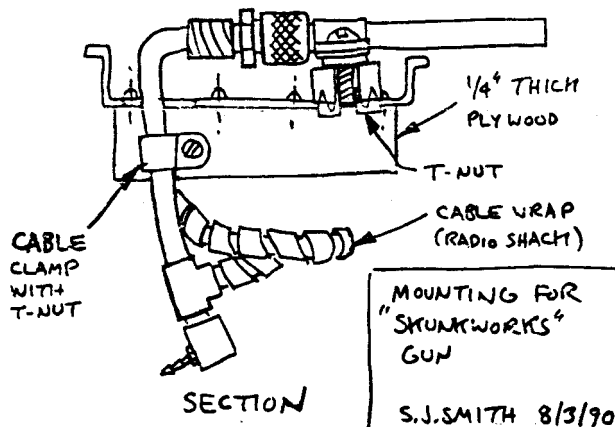
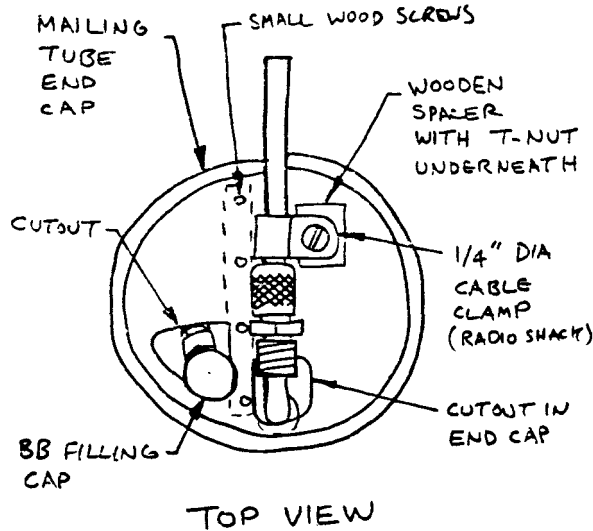
AXIS WIN

AXIS		Sortie 1		Sortie 2		Total Score	AXIS		Sortie 1		Sortie 2		Total Score
Ship	Captain	Damage	score	Damage	score		Ship	Captain	Damage	score	Damage	score	
Roma	Joe Vilar	70	347	40	580	928	Roma	Joe Vilar	30	522	100	221	743
Roma	Frank Pittell	145	347	10	580	928	Roma	Frank Pittelli	125	522	140	221	533
Italia	Carl Shaffer	190	347	30	580	928	Italia	Carl Shaffer	0	522	60	221	743
Haruna	Gerald Roberts	375	248	705	414	663	Haruna	Gerald Roberts	485	373	10	158	244
Andrea Doria	Rick Schultz	150	248	290	414	663	Andrea Doria	Rick Schultz	190	373	100	158	531
Von der Tann	Lief Goodson	35	248	30	414	663	Von der Tann	Lief Goodson	120	373	0	158	531
Von der Tann	Nathan Blattau	175	248	100	414	663	Von der Tann	Nathan Blattau	0	0	0	0	0
Gneisenau	Bob Amend	0	0	0	0	0	Gneisenau	Bob Amend	0	0	0	0	0
Scharnhorst	D.W. Fluegel	170	298	160	497	795	Scharnhorst	D.W. Fluegel	130	447	80	189	637
Scharnhorst	Futschik	165	298	205	497	795	Scharnhorst	Futschik	100	447	140	189	637
Kongo	Dave Haynes	80	248	60	414	663	Kongo	Dave Haynes	145	373	80	153	531
Koenig	Michael Blattau	60	298	20	437	795	Koenig	Michael Blattau	0	447	40	189	637
Hiei	Will Montgomery	255	248	20	414	663	Hiei	Will Montgomery	70	373	0	158	531
Graf Spree	Wade Koehn	10	198	30	332	530	Graf Spree	Wade Koehn	80	298	210	126	424
Magador	Mike Deskin	0	0	0	0	0	Magador	Mike Deskin	0	0	0	0	0
Nagara	Bob Amend	0	149	50	249	398			0	0	0	0	0
Totals		1880	3770	1750	6300	10070	Totals		1475	5070	960	2145	6615

ALLIED		Sortie 1		Sortie 2		Total Score	ALLIED		Sortie 1		Sortie 2		Total Score
Ship	Captain	Damage	score	Damage	score		Ship	Captain	Damage	score	Damage	score	
Indiana	Jim Pate	575	209	900	168	377	Indiana	Jim Pate	35	154	75	116	270
Iowa	Danny Schultz	0	0	0	0	0	Iowa	Danny Schultz	0	0	0	0	0
Massachusetts	Jim Foster	0	0	0	0	0	Massachusetts	Jim Foster	0	0	0	0	0
Warspite	Marty Hayes	115	179	2190	144	323	Warspite	Marty Hayes	150	132	235	99	231
Valiant	Dan Hamilton	520	179	700	144	323	Valiant	Dan Hamilton	295	132	450	99	231
California	Steve Andrews	295	179	310	144	323	California	Steve Andrews	0	820	99	99	99
Maryland	Danny Schultz	0	0	250	144	144	Maryland	Danny Schultz	1550	132	0	0	132
Tiger	Tom Jass	210	149	80	120	269	Tiger	Tom Jass	1390	110	0	0	110
Augusta	Chris Pearce	0	0	0	0	0	Augusta	Chris Pearce	130	88	100	66	154
North Hampton	John French	290	119	45	96	215	North Hampton	John French	0	88	0	66	154
Houston	Francis Rogowski	80	119	155	96	215	Houston	Francis Rogowski	70	88	175	66	154
Houston	Richard Whitself	45	119	160	96	215	Houston	Richard Whitself	1120	88	0	0	88
Louisville	Ron Thibault	30	119	445	96	215	Louisville	Ron Thibault	0	88	155	66	44
Phoenix	Paul Broring	420	119	145	96	215	Phoenix	Paul Broring	60	88	10	56	154
Minneapolis	Shawn Finley	0	0	10	96	96	New Orleans	Shawn Finley	0	0	0	0	0
Oklahoma City	Stan Watkins	105	119	910	96	215	Oklahoma City	Stan Watkins	90	88	0	66	154
La Galissioner	Mike Deskins	0	0	0	0	0	La Galissioner	Mike Deskins	0	44	115	33	77
Savannah	Brian Craven	10	119	0	96	215	Savannah	Brian Craven	0	88	10	66	154
Michigan	Chris Pearce	1075	149	120	0	269	Magador	Mike Deskin	100	66	0	50	116
Totals		3770	1880	6300	1750	3630	Totals		5070	1475	2145	960	2435

**MOUNTING FOR "SKUNKWORKS" GUN**  
by Steve Smith

Here is a mounting I came up with for my GRAF SPEE (Lutzow class). See the accompanying photos and sketches. I use the cardboard ring from a roll of masking tape for my turret base and the mailing tube end cap fits snugly right inside yet is still removable. The plastic cable clamps and wrap are available from Radio Shack.



MOUNTING FOR "SKUNKWORKS" GUN  
S.J. SMITH 8/3/90

# Observations of the Founding Father

Greetings Combatants! The following is a service of Your Founding Father:

MEASURING THRUST PRODUCED (AT CURRENT) USING DIFFERENT MOTORS AND PROPS. (OR FLEET AUXILIARY SHIP USS O'TESTBOARD).

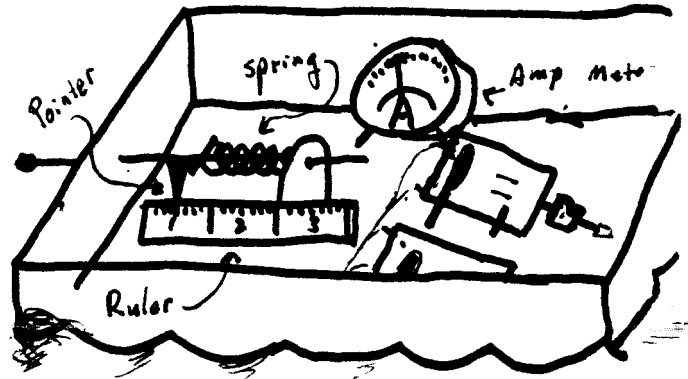
By Stan Watkins 7/1/90

NOTE: This article was supposed to be in the last Hull Busters, but due to an incompatible information exchange interface (?) between Stan and Fluegel it did not make it.

As those of you at the Spring Decatur, Alabama Regionals know, I did not compete the Oklahoma City II in any of the fleet battles. Why? She was running about 28 seconds in the 100 feet. A cruiser that slow in these times is "dead meat"!!! What to do? She was using 2 380 motors. That used to drive her too fast, but now she's too slow. Was the drive line friction changing? Are her 380s worn out? Would different props help. She could not stand more current hungry larger motors as her battery load of 6 X-cells was already at the ships load carrying limit.

A few quick prop changes were made without much help. What to do now? Each test required a drive to the 1989 Nats site. This was too much effort and I was not sure I was learning enough for each trip to the lake to solve the problem before Nats time.

Without quick (and repeatable) quantitative results of testing, the correct solution to the problem would be a matter of luck. To begin to efficiently evaluate results some other way of testing outside of the ship was needed.



But what if my shafts were to blame? I might never solve the problem. Then it came to me build a new set of shafts and mount them on a board with a quick change motor mount system! After a few hours this had been completed. The shafts were mounted at a down angle through a 1X6 (so testing could be done with props mounted) for current measurement with props both out of and in the water. Then why not add a 0-10 amp meter. After another hour or so this had been done. Now to test the 380 motors. All testing was done with 2 motors, shafts, dumas universals, and props. This kind of drive system had run my ship at 28 seconds in 100 feet at Decatur.

The result of the no load test (props not in the water) was that the 2 380s were consuming about 6 amps out of the water and about 7 amps with dumas "P39/.049" props in the water.

Now for the "Skunkworks" motors. Two of these motors consumed about 2 amps out of the water and about 2.2 amps in the water. This kind of drive system had run my ship at about 34 seconds in the 100 feet.

Obviously, there was a relationship to current and speed, but was that exactly it, speed is proportional to current consumed? What about props? Well maybe if Thrust could be measured, props, motors, current and voltage could all be evaluated.

My test board needed a thrust measurement system. It had to become a ship with a spring thrust meter on the bow. (A detachable thrust meter could be added to the bow of your ship for testing.) And why not add an off/on switch for easy turning off and on of the motors? A few

hours later side boards and a flat bow and stern plate had been added. At 10:40 PM on 6/30/90 the USS O'Testboard was launched in the "Guest" bathroom bathtub at 1042 Lovell View Drive in Knoxville TN (that's the most convenient location for me!). (Maybe she can be converted into a Convoy ship for the 1991 Nats!)

It was decided that one more thing should be controlled in an effort to make the test data meaningful and repeatable, the water depth in the bathtub. Since mine was 8 3/4 inches deep (above the drain hole) that became the standard.

The spring used in the test is made by Century Spring Corp. Los Angeles and is stock number C-582. This information in case you want to duplicate the test results. Also the props used for the test data below were some props that Martin Schneider used on his Lutzow (white nylon with a bullet shaped hub. As I got ready to make the test runs the New 380s that I had ordered from Eric Noble arrived (Thank You Jesus for people like Eric and Suzy Noble!).

The test results were obtained as follows:

Motors	Current	Volts/ Batteries	Thrust
1. SkunkWorks	2.2 amps	7.2v Nicads	7mm
2. " "	2.0 amps	6v Xcells	5mm
3. My old 380s	6.0 amps	" "	14mm
4. New 380s	9.0 amps	" "	19mm
5. SkunkWorks	2.0 amps	7.2v Nicads	4mm*

I guess that proves that my Oklahoma City II was too slow at Decatur because the 380s were down on power (or about worn out) as I had suspected all along.

When I put these new 380s in my OKC II and went to the 1989 Nats site the ship ran 24.3 seconds through the 100 feet and after running a while increased its speed and 30 minutes later was still running faster than 24 seconds in the 100 feet. Thanks Again Eric Noble (and Suzy) for putting out the extra effort to get the new 380s!!! They came just in time for testing and getting my ship ready for Nationals!



Now to play with different props to determine the greatest thrust per amp. I like the USS O'Testboard and will probably make a convoy ship out of her.

\* New information since the Nationals!!! This thrust was produced with the SkunkWorks supplied 3 bladed props. The thrust variation between test #1 and test #5, (7mm to 4mm) was caused only by a change of propellers. A significant difference!

A picture of the USS O'Testboard will appear in an issue of Hull Busters soon.

*Stu*

# Blow-by-Blow

Taleslay Night  

# Battle Reports

**Night Action - Patuxent Pond, July 11, 1990** - After waiting for quite awhile for other naval units to join up for the night action, we decided to go ahead with the sortie at 10:00. Unbeknown to us, the night action had been canceled by the fleet admirals at the Hotel (due to weather?). The sides were: Warspite (Marty), Houston (Francis), New Orleans (Shawn), Augusta (Chris), and the borrowed Italian BB Roma (Frank) vs. Hiei (Will), Koenig (Michael), and two VonderTann's (Nathan & Lief). Nathan was heard to comment that the sides seemed balanced and that didn't seem to be fair. All were launched and while Will tried to check out the Allies with his lights, Frank pointed out that all of the Axis had permanent lights lit and the Allies with the exception of the New Orleans could turn their lights on/off by radio control. At the whistle, battle was joined and the pond went mainly dark. Warspite and Hiei fired passing shots and Hiei's lights went out. .... Frank's lights went on, blinding most captains near the center of the pond ..... shots, shots..... VonderTann comes in for ram check ..... shots, shots ..... Will sinks (unseaworthy) ..... shots, shots..... Nathan out of control near shore and Warspite empties a few bb's into her.... Frank's lights on again ..... shots, shots ..... Koenig chases Warspite off ..... Houston retires from battle ..... All cruisers have retired ..... Frank's lights again ..... Koenig chases Warspite (on five) toward outer pond but gives up chase..... Warspite quietly lays off of the Axis port running out it's five ..... Warspite off.

As you can tell there was not a lot to see at night battle although there was quite a lot of action. Final score was: Allies 65 pts. and Axis -140. The next morning the Allied night battle fleet was informed that we did such a great job that they were not going to break us up and we could go out again in regular fleet battle (just the one BB and three cruisers), we declined.

		nite battle			
Battle #				ALLIES WIN	
ALLIED		Sortie 1	Sortie 2		
Ship	Captain	Damage	score	Damage	score
		Total		Score	
Roma	Frank Pittelli	50	74	0	7
Warspite	Marty Hayes	200	64	0	-136
Houston	Francis Rogowski	20	42	0	42
New Orleans	Shawn Finley	140	42	0	42
Augusta	Chris Pearce	0	42	0	42
Totals		410	265	0	65
				IN	
AXIS		Sortie 1	Sortie 2		
Ship	Captain	Damage	score	Damage	score
		Total		Score	
Von Der Tann	Lief Goodson	175	98	0	98
Von der Tann	Nathan Blattau	60	98	0	-102
Koenig	Michael Blattau	30	117	0	117
Hiei	Will Montgomery	0	98	0	-252
			0	0	0
Totals		265	410	0	-140

## 1990 Rule Changes

Another Axis ploy of mental exhaustion resulted in a majority of Axis Executive Board members, again. Knowing that holding the election of the Executive Board members after another 1:30 A.M. in the morning session of rule proposals would weaken or destroy everyone's will to nominate different members to the E.B., except for Will as the C.D., the entire E.B. of 1989 was re-elected to 1990 service. I thank you all for the honor to serve you in the Devine Obces sion. Anyway on with 1990 Rule Proposal results.

Drum roll please. With a total of 64 total

votes mailed in, and a two-thirds majority of 43 votes of yes to pass, ALL of the rules passed. This is the first time in the history of our hobby that I know of that all the rules passed. There were seven rules that passed by four votes or less. I guess our hobby is stabilizing in direction and members. Here is how the voting broke down.

1. Change Ship classes; Add one-half Units  
44 Yes, 20 No
2. Ships Speed a Function of length 46 Yes  
18 No
3. Turning System Is Rudder 44 Yes, 20 No
4. Use Warship As Convoy Ship 44 Yes, 20 No
5. Abolish 1/150 Scale 46 Yes, 18 No
6. Casement Guns 60 Yes, 4 No
7. Location of Guns in Turret 59 Yes, 5 No
8. Maximun Down Angle on Sidemounted Guns  
44 Yes, 20 No

9. Include USS DES MOINES on Ship List 49 Yes  
15 No
10. Annual Championship Site Selection 60 Yes  
4 No
11. Sink and Withdrawal After Sortie 1 46 Yes  
19 No

A few observations on the voting. Relatives voted identically. And that created small voting blocks of four votes. One set of relatives voted No on all rules, and many changed their minds on the ballots more than once. One more thing I have to say is that I have moved again. If you call or send something to my old address it will still reach me.

Wade Koehn  
1251 Wilcrest Apt. 103  
Houston. TX. 77042



The Axis cruiser fleet; WADES

Thursday's battling-The Allies STRIKE BACK!

by Brian Craven

Thursday's fleet battle 4 picked up where Wednesday's night battle ended. The night battle had been the first allied victory of the Nats. The Axis Gross Admiral had come by to say that it look like rain and that there was to be no night battle! Saddened we return to our dockyards to find out the night battle had taken place and was an allied victory.

The allied Cruiser captain's gathered around the new Squadron Commander (Stan) to plan the new strategy. The plan was to use two groups of cruiser's, four in each group, and to use hit and run. Wade's Graf Spree had been hiding deep inside the axis side of the lake. The Graf Spree would be the first allied target.

As war was called the allied cruisers had grouped up behind the axis battle line. The cruiser's, with the help of Jim Pate's battleship, quickly move in on the Graf Spree. Jim lines up on the Graf Spree and try's to shoot (no Freon). Jim call's 5min. and ask's Savannah to guard the battleship.

Having flushed the Graf Spree from her hiding place, she RUNS thought the narrow channel with 4 or 5 Allied ships in hot pursuit. The Graf Spree turns to attack with the help of two battleships (Peter and Will). Some how the Graf Spree is pushed or rammed by the axis battleship and he runs aground in the narrow channel. The Allied's smell blood and move in for the KILL! The Maryland attack's and get's into a battle with Will and Peter. Maryland fights like a tiger but Will and Peter are too much for her and she slowly sinks. (25 above, 4 on, 8 below). About this time Tom's TIGER is rammed, but Tom does not call the ram and sink's. The Graf Spree has 100s of BBs flying around her for the 5 min. She comes off 5 min. with 42 above, 2 on, and 12 below.

In the 2nd sortie the allied target is again the Graf Spree and Carl's ship (he had guns and radio problems). Wade puts his ship in the water with four battleships to protect him. But the Allied fleet (8 cruisers, and Jim's battleship) are close to the Graf Spree. Shooting starts just as the Graf Spree enter's the water. The axis started first! We shoot at the defensive ships. Wade sinks in about 3 min with no more hits. Four cruiser now attack Carl. Carl holds his own. The battle moves to the allied side of the lake. The Phoenix moves into to help Steve who is battling with Gerald and Dave. The two allied ships make a tactical retreat.

## Blow-by-Blow

Thursday's battling = O

## Battle Reports

Steve's Calif.



fleet 5					AXIS WIN		ALLIED		Sortie 1		Sortie 2		Total Score
Ship	Captain	Damage	score	Damage	score	Ship	Captain	Damage	score	Damage	score		
AXIS						Indiana	Jim Pate	40	355	340	339	684	
						Iowa	Danny Schultz	0	0	0	0	0	
Roma	Joe Vilar	345	321	40	319	Massachusetts	Jim Foster	0	0	0	0	0	
Roma	Frank Pitteli	190	321	160	316	Warspite	Marty Hayes	1070	304	355	291	583	
Italia	Carl Shaffer	210	321	510	316	Valiant	Dan Hamilton	110	304	990	291	1415	
Haruna	Gerald Roberts	425	229	10	228	California	Steve Andrews	615	304		291	595	
Andrea Doria	Rick Schultz	185	229	45	226	Maryland	Danny Schultz	730	304		291	195	
Von der Tann	Lief Goodson	325	229	960	226	Tiger	Tom Jass	150	254	190	242	96	
Von der Tann	Nathan Blattau	130	229	0	226	Augusta	Chris Pearce	100	203	80	194	397	
Gneisenau	Bob Amend	0	0	0	0	North Hampton	John French	385	203	730	194	397	
Scharnhorst	D.W. Fluegel	100	275	125	271	Houston	Francis Rogowski	20	203	20	194	397	
Scharnhorst	Futschik	145	275	275	271	Houston	Richard Whitsell	10	203	10	194	397	
Kongo	Dave Haynes	130	229	90	226	Louisville	Ron Thibault	10	203	0	194	397	
Koenig	Michael Blattau	35	275	270	271	Phoenix	Paul Broring	80	203	20	194	397	
Hiei	Will Montgomery	135	229	110	226	New Orleans	Shawn Finley	0	0	0	0	0	
Graf Spree	Wade Koehn	1055	184	650	181	Oklahoma City	Stan Watkins	10	203	20	194	397	
Magador	Mike Deskin	0	0	0	0	La Galissonier	Mike Deskins	0	0	0	0	0	
		0	0	0	0	Savannah	Brian Craven	0	0	0	0	0	
						Magador	Mike Deskin	20	152	540	145	298	
Totals		3400	3350	3245	3295	Totals		3350	3400	3295	3245	5845	

### Fleet Battle Five

The Allies now have renewed hope with the war motto "KICK AXIS" and "DIED MEN DON'T SURRENDER, WE DIE WITH OUR SHIPS !!!!! "

The cruiser task group starts the battle deep in axis waters. The target is again Carl's battleship because he has had radio problems. Carl fights four allied cruisers. The Savannah calls 5 out of control. Ron's ship helps by pushing the Savannah to shore. Dan goes dead in the water. Marty intervenes. Mike is fighting Marty all around Dan. But does not shoot at the defenseless Dan! Once Mike sees that Dan is dead in the water, it's too late, Dan is off his 5 min.

The allied cruisers have made 21 above on Carl's battleship and no hits on the attacking allied cruisers. For the first time all week the allies did not have a ship kiss the bottom!

#### 2nd sortie

Gross Admiral Fluegel says that he and Peter will attack and sink the two allied cruisers that have not sunk. (Ron and Brian's ship's) Cruisers attack Carl's

ship. Fluegel's Scharnhorst chase's the Savannah around the lake looking for Peter to help corner the Savannah. Peter is no where to be seen, and Fluegel gives up. BAD communication and Very bad gunnery on the axis side has helped the allies close the gap! The Allies new strategy had worked very well. The Allied battleships had the hard task of keeping the axis scum from picking on the cruisers. The battleships would go toe to toe with the axis battleships and slug it out!

The Allied fleet had been outgunned and beat up but we will never surrender!

" KICK AXIS "

" DEAD MAN DON'T SURRENDER "

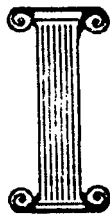
My camera was not working right. If anyone has some pictures

they don't want please send them to me!

Thanks to the Maryland Attack Group for a great NA Special thanks to Marty Hayes and John French for ALL their help. John where are the plans you promised me?

The score's for fleet battle 4 and 5 are as follow's:

## President's Column



By Tom Jass

I hear from Wade Koehn that ALL the rule proposals have passed. That's certainly a first!! We should see a slightly different form of battling next year. The ranges between ships exchanging broadside shots should increase because of the gun downangle limitation -- this should make for safer battling with fewer rams and prop cuts. Passing the "speed by length" proposal should cause more of the large ships to appear. I have already heard of three BISMARCKs being layed down -- Fluegel's, Koehn's and Goodson's. Since Fluegel (the purist) didn't support the extra speed for the BISMARCK I suppose he will build his as a 29 knot (26 second) ship. Sure he will!! Gerald Roberts has begun an IJN YAMATO -- I hear he purchased three 4' X 8' sheets of 1/32" balsa to skin her. With the half unit rule we should see more big DDs and big light cruisers on the water. And Ron Thibald will finally be able to build the USS DES MOINES. And if Chris Pearce doesn't get the HMS VANGUARD in one sortie of Dan Hamilton's Fall Regional she will be forever be a display model only (she is 1/150 scale). There will be a sizeable job involved in updating our Constitution and Ship List for

1991; I hope my wife is up to the typing task.

I have been spending my summer building another heavy cruiser, HMS SHEFFIELD. Do I need another ship? No, but I want to publish a two part construction article in "U.S. Boat & Ship Modeler" and Bill Northrup convinced me that he really needs a full sized plan set to accompany such an article. Well, I haven't done any formal drafting since my college days, so I'm learning the process all over again. The plan set will be 50" X 35" (full size) with all the details concerning the gun system, water tight boxes, electrical system installation, etc. in addition to the rib profiles and hull and superstructure construction details. I believe we are at the position where our club needs this detailed type of article in a national publication. The tentative publishing dates will be the spring and summer 1991 issues. At this time I have the model's hull and superstructure complete, the first article written and the plan set roughed out awaiting tracing. I'll make the deadline, yet!!

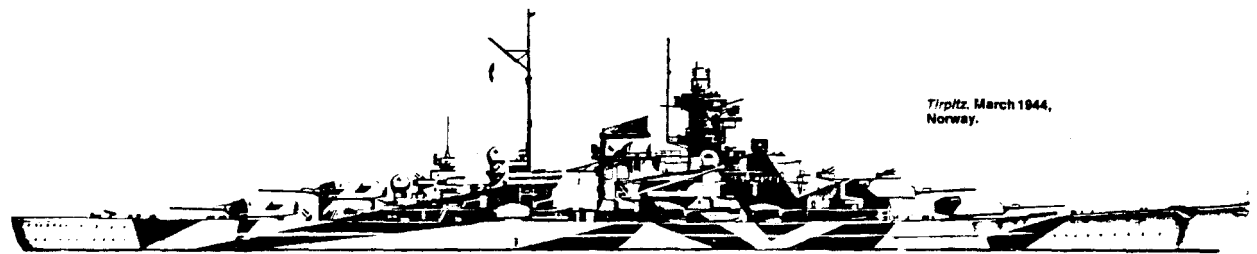
The Board is open to input from you guys as to how (and if) we should get into compliance with the 1991 frequency changes. Steve Baker has already given us his ideas on a phase-in plan which would get us there by 1992. We need to talk about this in the winter and spring months ahead. Call me at (708) 620-5835 and give me your opinions.

Hope all of you had a great time at Fall Southeastern Regionals -- I had to miss the battling to attend a wedding. Not a good trade!!



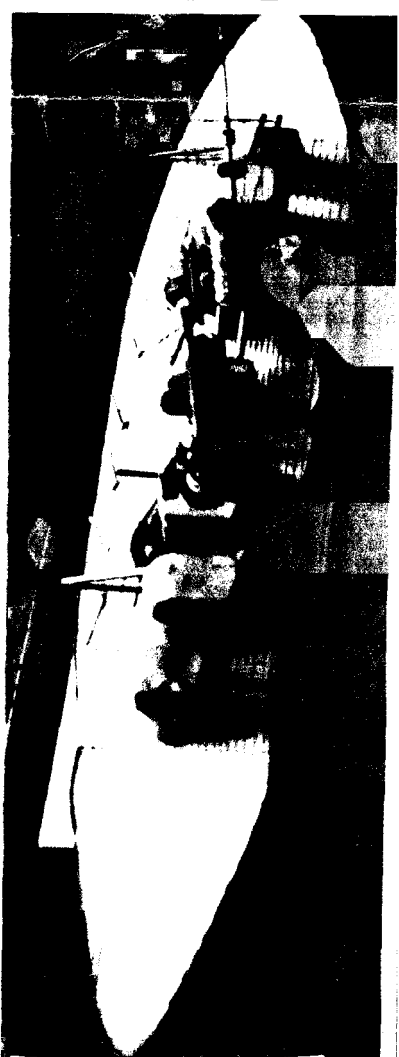
AXIS

AXIS		fleet 6				ALLIED		Sortie 1		Sortie 2		Total
Ship	Captain	Damage	score	Damage	score	Ship	Captain	Damage	score	Damage	score	Score
Roma	Frank Pittali	345	217	50	398	Indiana	Jim Pate	70	313	0	300	613
Italia	Carl Shaffer	335	217	55	398	Iowa	Danny Schultz		0	0		
Haruna	Gerald Roberts	130	155	100	284	Massachusetts	Jim Foster		0	0		
Andrea Doria	Rick Schultz	10	155	160	284	Warspite	Marty Hayes	320	269	2000	257	521
Von der Tann	Lief Goodson	675	155	0	284	Valiant	Dan Hamilton	340	269	240	257	521
Von der Tann	Nathan Blattau	20	155	150	284	California	Steve Andrews	475	269	430	257	521
Gneisenau	Bob Amend		0	0	0	Maryland	Danny Schultz	320	269	350	257	521
Scharnhorst	D.W. Fluegel	130	186	210	341	Tiger	Tom Jass	325	224	160	214	439
Scharnhorst	Futschik	130	186	95	341	Augusta	Chris Pearce	70	179	120	171	350
Kongo	Dave Haynes	125	155	800	284	North Hampton	John French	260	179	625	171	350
Koenig	Michael Blattau	90	186	0	341	Houston	Francis Rogowski		0	0	0	
Hiei	Will Montgomery	210	155	100	284	Houston	Richard Whitsell	0	179	80	171	350
Graf Spree	Wade Koehn	120	124	790	227	Louisville	Ron Thibault	0	179	10	171	350
Magador	Mike Deskin		0	0	0	Phoenix	Paul Broring		0	0	0	
			0	0	0	New Orleans	Shawn Finley		0	0	0	
			0	0	0	Oklahoma City	Stan Watkins	40	179	0	171	350
			0	0	0	La Galissioner	Mike Deskins	0	90	10	86	176
			0	0	0	Savannah	Brian Craven	40	134	125	129	259
Totals		2700	4260	2615	4150	Totals		2260	2730	4150	2615	5345



Tirpitz, March 1944, Norway.

Ship	Captain	Fleet Battles							Total	Number of sortie
		#1	#2	#3	#4	#5	#6	note		
Roma	Frank Pittali	806	1123	928	543	637	615	74	5185	14
Koenig	Michael Blattau	691	963	795	637	546	527	117	4825	15
Hiei	Will Montgomery	475	802	663	531	455	439	-252	4603	14
Roma	Joe Vilar	806	1123	928	743	637	15		4251	12
Scharnhorst	Futschik	691	963	795	637	446	527		4238	13
Scharnhorst	D.W. Fluegel	691	963	795	637	546	527		4158	12
Von der Tann	Nathan Blattau	175	402	653	0	455	439	-102	3922	14
Von der Tann	Lief Goodson	575	802	663	531	155	439	98	3648	16
Haruna	Gerald Roberts	575	802	663	331	455	252		3570	13
Italia	Carl Shaffer	206	373	928	743	637	615		3501	11
Andrea Doria	Rick Schultz	575	802	663	331	455	439		3495	13
Kongo	Dave Haynes	575	802	663	531	455	439		3465	12
California	Steve Andrews	480	460	323	99	595	526		3436	15
Indiana	Jim Pate	561	537	377	270	694	613		3132	13
Augusta	Chris Pearce	320	307	0	154	397	350	42	2946	13
Graf Spree	Wade Koehn	460	642	530	424	364	351		2772	12
Vallant	Dan Hamilton	480	460	323	231	595	526		2616	12
Warspite	Marty Hayes	480	460	323	231	595	526	-136	2480	12
North Hampton	John French	320	165	215	154	397	350		1864	13
Houston	Francis Rogowski	320	307	215	154	397	0	42	1750	13
Louisville	Ron Thibault	320	307	215	154	397	350		1744	12
Oklahoma City	Stan Watkins	320	307	215	154	397	350		1744	12
Tiger	Tom Jass	400	384	269	110	96	438		1697	11
Maryland	Danny Schultz	480	0	144	132	195	526		1635	10
Gneisenau	Bob Amend	0	963	0	0	0	0		1573	3
Phoenix	Paul Broring	320	307	215	154	397	0		1538	11
Savannah	Brian Craven	157	307	215	154	0	263		1096	9
Houston	Richard Whitsell	-137	165	215	88	397	350		1078	9
La Galissioner	Mike Deskins	240	0	0	77	0	175		747	12
Massachusetts	Jim Foster	0	537	0	0	0	0		537	2
Magador	Mike Deskin	58	0	0	116	298	0		-81	8
Nagara	Bob Amend	0	0	398	0	0	0		398	2
Michigan	Chris Pearce	0	0	269	0	0	0		269	2
Lutzow	Lief Goodson								240	1
New Orleans	Shawn Finley	0	0	96	0	0	0	42	138	1
Isezu	Will Montgomery								100	3
Magador	Bob Amend								88	2
Augusta	Bob Amend								50	1
Magador	Chris Pearce								20	1
Iowa	Danny Schultz	0	0	0	0	0	0		0	0



Koenig at the dockyard, CURLYS

6/25/90

As the ship crawled in circles, out of control, and being pounded to pieces until it settles below the surface, the captain can be heard crying "But, those were freshly charged X-cells!!"

Does this sound familiar, has this happened to you? Then send now for the ROMCO "Remote on the Water Battery Charger" (1000 ft. extension cord not included), only \$19.95!

Seriously, there is a better solution to this problem, Gel-cell batteries.

## PART I

## Why Gel-cells?

Stan and a few other fellow combatants have written about how to test and select X-cell batteries for your ship. All these articles have had one major flaw. The X-cell batteries are just trouble waiting to happen. The problem is not the batteries themselves (at least not the battery type) but their age. Because new X-cell batteries are very expensive everyone buys the surplus ones. This is the problem, most of the surplus batteries have far exceeded their useful shelf life. That is why they are being sold as surplus. A lead-acid battery has a useful life of about 4 to 6 years (even if never used), after that the batteries, now much weaker than new, can fail any time. So by testing and carefully selecting your X-cells you can make some good packs, but you are only making a problem waiting to happen.

As I said before new X-cells would solve the above problem. New cells are expensive, and have some problems of their own. The main one is that they have to be wired together. In the two years I have been watching and fighting in this hobby I have seen more than a few ships in trouble because a jumper wire was shot off or broke.

Admittedly there is one advantage to this in that you can make odd voltages, but this is about the only one. Most ships do not need to have 8 or 10 volts available.

Gel-cells, on the other hand, can be had new for what most people pay for the used X-cells. The used X-cells go for about \$2 to \$5 ea. The \$2 is from a surplus house and may contain up to 50% bad to start with (not counting the dreaded marginal cell). A 6 volt 8 amp-hr Gel-cell in my area is \$17.50 ea. or \$15.50 ea. for three or more.

Gel-cells also have the advantage of being a single block, no extra leads to break or get shot off. There is a slight weight penalty over the minimum three X-cell setup. The three X-cells weight about 2 1/4 lbs and the Gel-cell weights about 1-1/2 lbs more. However the X-cell setup gives you only 5 amp-hrs. To get the same 8 amp-hr capacity you would need 5 X-cells, at about the same weight.

The weight of the Gel-cell may seem to be prohibitive, but I managed to put this battery as well as three guns and complete water tight boxes for my electronics in a 10,000 ton cruiser.

I use three Dumas 4.8s (one for pump) and have never had the battery drop below 6.4 v (starting at 6.6 v, all measured at no load) even at the 89 Nats, when I ran for a sortie and a half about 15 min of which was with the pump keeping ahead of 11 belows.

## PART II

## Care and feeding of Gel-cells.

The following recommendations are from

the manufactures literature for the batteries I buy.

First and foremost Gel-cells are not NiCads!! They do not have memories and should never be fully discharged as tired NiCads are!!!!

Gel-cells are generally lead-acid type batteries, but like X-cells they are sealed and can be used in any position. I get the Tamiya/Kyosho connectors (one of each makes a connector pair) from Tower and solder the leads right to the battery terminals, no leads to fall off and easy connection.

For the longest life the batteries should never be discharged below 1.66v per cell (three cells in 6v battery) or 5v for a 6v battery. This will give you, with three batteries, four years (the manuf. designed life) of four Regionals and a Nats ea. year plus and additional 140 battles. Even more if you do not discharge to 5v each time.

The recommended charging procedure is to charge the battery at an initial charge of not more than C/5 (C = the rated capacity). For an 8 amp-hr battery the max initial charging current should be 1.6 amps. Charge the battery until it reaches a voltage of 2.4v per cell (7.2v for 6v bat) and the current is C/50 to C/100. At this point the battery should be disconnected or the charge voltage reduced to 2.25 to 2.3v if the battery is left connected.

I have built a circuit using mostly Radio Shack parts that I will publish in a later article (as soon as I can find where I put the schematic). Basically it consists of an adjustable voltage regulator with a current limiting circuit built into the adjustment. The initial current is limited to 1.3 amps and the max voltage is set at 7.2v. When the battery is first charged the current is at 1.3 and the voltage about 6.7v. As the battery charges the voltage rises and the current drops. When the current drops to about 0.2 amps I remove the battery. It typically takes about 3 hrs. to recharge a battery after a battle. Using the above circuit a battery can be left on overnight occasionally without threatening it's life.

Another way to charge the batteries is to use the charger for the batteries in the children's ride-on toys. Care should be taken to monitor the voltage during charging and remove the battery as soon as the voltage reaches 7.2v, as these chargers are not limited in their maximum voltage (do not leave the battery on overnight).

I recommend the 8 amp-hr battery as the smallest capacity one to buy. Gel-cells are rated for capacity at a very low current draw. As the current goes up the effective capacity goes down. Two 4.8 Dumas draw about 5 amps, a 6amp-hr battery is rated for about 35 mins. at this draw. An 8 amp-hr is rated at 60 min. I did find that the 6 amp-hr only ran 40 min continuously with two drive and one pump motor running (no load on pump). I have run three individual sorties on an 8 amp-hr battery with no trouble, however.

There are, in general (at least around here), three useful sizes of 6v Gel-cells for our use. These are:

8 amp-hr	3.8 lbs	3.9 X 2.2 X 4.3 in.
10 amp-hr	3.9 lbs	6 X 2 X 3.75 in.

For big ships the 6v battery used in the children's ride-on toys.

The Gel-cells are also available in 2v, 4v, and a large variety of 12v types.

Below is a table of battery discharge time vs. current draw:

C	= amp-hr rating
Time1	= time until voltage starts to drop significantly from initial level
Time2	= time voltage hits 5v.

For example, if you have a 2 amp-hr battery, and you draw 3.3 amps, it will only last 10 min. It, therefore, has an effective capacity of (3.3 amp X 1/6 hr) .55 amp-hr at this current draw.

DRAW	TIME1(min)	TIME2(min)
1.65C	5	10
1.00C	15	27
0.60C	30	60
0.45C	40	90

# A Proclamation

to all  
Axis Captians

By order of the Grande Ammiraglio an election will be held amongst all Axis captians to select a Board of Admiralty. The Board will consist of three Admirals, one each from the German, Italian and Japanese Fleets. These Admirals will be entrusted to direct the efforts of the combined Axis fleet at all sanctioned events and to guide Junior Axis captians in all their endeavors. Of these three admirals, one will be granted the title of Grande Ammiraglio (i.e., Gross Admiral or Imperial Admiral) with the sole responsibility of directing the Axis fleet during the National Competition. The remainder of this communication discusses the reasons for this proclamation and for its execution.

After an OVERWHELMING Axis victory in Nats'90 we have time to reflect on how we (the Axis captians) will continue our domination over the less skilled, less motivated and down-right UGLIER Allied captians (i.e., steward-boys) through the 90's. Given our unmatched superiority in battleships and battlecruisers, it is clear that our equipment is well designed and managed. Furthermore, through the many records set by us at Nats'90 (e.g., over 200,000 tons hauled during campaign) it is clear that our ranks have never been more motivated. Axis domination on the lake and in the shipyards is fairly certain even without changes on our part. It remains now to organize ourselves into a close knit group of captians, devoted to a common goal of crushing not only the Allied captians of today, but also their off-spring, well into the 2000's. Furthermore, it is time to recognize those captians who have developed leadership within our fleets and to accord them the respect that they are due.

By establishing a Board of Admiralty we will be able to spread out the responsibility of leadership, thereby decreasing the burden on any single captain. Furthermore, each national fleet will have an equal say in the leadership of the overall Axis fleet, maintaining high levels of morale throughout our empire. The national fleet exercises held at Nats'90 proved to be both effective and fun. The Board of

Admiralty is intended to foster such efforts in the future. (Herr Fluegel is hereby forgiven for ALMOST selling out the Italian Fleet to the Allied scum.) Through an open election (to all Axis captians) we will select the best men for the job, guaranteeing future allegiance. (Naturally, there is no reason why you wouldn't want to vote for your humble Grande Ammiraglio.)

Clearly, such an important decision for the future of the Axis Fleet can not be left to the formal rule proposal system which is dominated by numerous Allied sea-lawyers, constantly trying to cripple the Axis fleet and their captians. Furthermore, since there are currently no formal rules established for selecting individual fleet admirals, I feel that it remains a purely Axis decision, made by fearless Axis captians. (The fearful Allied captians are free to select their own leader, if that's possible, in whichever manner they see fit.)

Therefore, as my first, and possibly last, action as your current Grande Ammiraglio I hereby direct ALL Axis captians to select three captians to serve on the Axis Board of Admiralty. The captians who receive the most votes in each fleet will be appointed to the Board and among those Admirals the one that receives the most votes overall will also be granted the title of Grande Ammiraglio. (In case of a tie, the current Grande Ammiraglio will cast the deciding vote.) The only stipulation is that each Admiral must currently operate a ship of the given nationality and that he continue to operate within that national fleet throughout his tenure on the Board. Once established, the Board will determine how to delegate responsibilities and authorities amongst both Admirals and Captians. Furthermore, they will determine how successors to the Board of Admiralty will be chosen, if one of them changes nationalities or can not continue in their role.

Votes will be collected at my headquarters until all Axis captians have been heard from or until 31 Dec 1990. I have directed Herr Fluegel to include a ballot for this purpose in this issue of Hullbusters. The results will be published in Hullbusters as soon thereafter.

Remember, if we want to continue our well-deserved dominance over the pitiful Allied forces, we must organize ourselves into a well-oiled military machine and that requires quality, respected leadership. Until next time, keep your powder dry and the wind to your back.

Respectfully,

*Frank Pittelli*  
Frank Pittelli  
Grande Ammiraglio

## "YOU KNOW THE RULES..."

by Mercury Peabody

.....  
My parents were always reminding me of the rules that I "knew"; No running in the house, no eating until we've said prayers, no TV until the homework is done, don't stay out past 10 P.M. on a school night, don't put the cat in the dryer, don't chew on the electric cords, never eat a piece of Halloween candy that you can pick up with a magnet, never

bite down on a wood file and then yank it out of your mouth.....

I thought I knew all of the rules, but as I sit down in front of the 13 page book we call "Our rules" I am amazed at the the way we interpret them and forget about them.

For example, did you know that you can't use a laser tracking system to line your guns up on another ship? Section II, paragraph E, article 10.....

And did you remember that it's illegal to have a leaky freon tank according to Section II, paragraph A, article 8, which states that "Any form of positive hull pressurization is illegal"?

Do you realize that you can't use bright lights in night battle to "blind" your opponent? Section II, paragraph F, article 1 states that no other forms of weaponry are allowed.

If you don't like the way the big bad battleships nuzzle you around for a side mount shot just wave Section III, paragraph C, article 6 under their nose and bring both ships off the water for a ram check. It won't penalize them but they will get very little battling in until they change their ways. It clearly states "any contact". They know the rules! That's the letter of the law.

With all of these great rules I am amazed that anyone would want or need more.

And yet, when a few people wanted to pass a rule that made your deck have holes in it and your deck latches limited to a sparse few, I queried them for a reason. They said some people have ships that list, and they rock back and forth from one side to the other, and their deck doesn't let in enough water to sink them.

I guess "they" don't know the rules. It says in Section II, paragraph B, article 4, that "The center of the marked waterline of the model must be within 1/8 inch of the actual floating waterline of the model." What could be simpler than that? If your ship has a list- it's history! Or at least it's subject to the discretion of the Contest Director.

I'm not trying to pick on people or lose friends, but it is unbelievable how adults fail to follow rules.

This winter I went to the St. Paul Stock Car Races held locally on the ice of a frozen lake. The rule was - you could have a Ford Escort with ice tires, but everything else had to be the stock issue, same size stuff...simple rules. Well, one of the guys thought he would use the stock block and bore out the engine to make it bigger and faster. They disqualified him.

He argued that his motor was the same size as the original stock motor everyone else was using. They said that while the engine block was still stock, he had altered the engine (see also displacement) and he could not compete. He knew the rules.

People in our hobby are now rushing to their soldering

The Rules for the Sun Battle

irons to rewire the inside of their turning motors for more power in the turns. STOP! You know the rules. Section II, paragraph A, article 9 states clearly that the turning motor must be the same size or smaller. The motor must be the same size, not the casing-- the motor! (That's the little bundle of wires inside the casing that burns out when you drive through moss.) Why on earth would the hobbyists worry about the size of the casing? OF COURSE we mean the motor inside the casing. You know the rules!

The game seems to be, "How can we, who know the rules, get away with stuff." Just because the rules say "you have to have a scale number of shafts, props and rudders" doesn't mean you can't place two of your props on the bridge and your second rudder up front, flying as a flag. Our current rules allow you to place them anywhere on or in your ship, as long as you have them.

If you're going to break the rules just to show us that the rules aren't perfect, break them all. Then we'll just stamp your file "Doesn't play well with others" and send you home before milk and cookies in accordance with the rules. The rest of us kids want to play.

When I was a child, my grandmother told us that if she caught us cheating at a game, she would never play that game with us again. That was her law. You break her law and grandma's house was one big game of solitaire.

Some of the best games we played as youths had very simple rules: Close your eyes count to twenty, open your eyes and come find me.

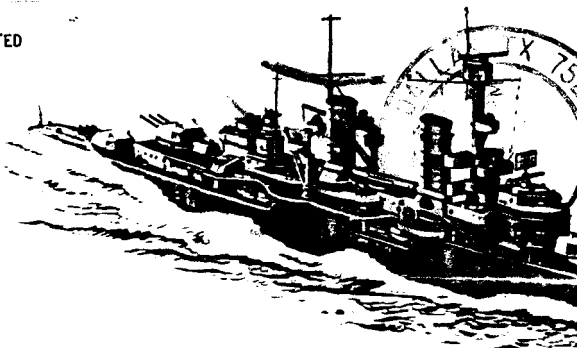
Oh, sure, we tried to follow the spirit of the law, which meant if we were hiding in the house we couldn't sneak out the back door and watch Hogan's Heroes across the alley at the neighbor's house. And there wasn't a law that said we couldn't hit the other person over the head with the rolling pin when he peeked into the room we were hiding in; there didn't have to be - we all wanted to have fun and play.

Not a lot has changed; We still like to play games, Hogan's Heroes is still on TV, and hide and seek is still a boring game. But two things have changed. The laws and rules of the game are getting more complicated, and grandma died. I just hope her law didn't die with her.

I'd rather see all of the creative energy that goes into bending the rules re-routed to good use. If all of you "loop-hole lawyers" would use that energy to perfect and uphold the rules, the seas would once again be safe for the children to play in.

I think we have to enforce the spirit of the law over the letter of the law, and I hope other battlers will support Contest Directors who feel this way and act upon it. Whew!

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