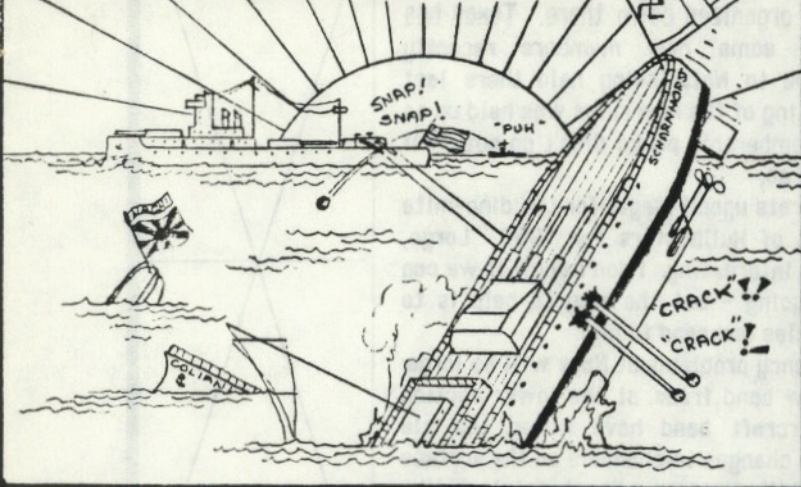


# HULLBUSTERS



SWEET DREAMS

Greg Wilson  
Draftsman

WAS. THERE HAVE BEEN A FEW ARGUMENTS IN THE N.E. ABOUT THIS. THE 1-150TH RULE. IF YOU ARE FOR IT OR AGAINST IT, IT CAN'T BE IN EFFECT BECAUSE OF ITS TIMING. SHOULD WE IMPEACH THE SECRETARY. (HA-HA)

### N.E. FALL 88 REGIONALS

I THOUGHT THE ARTICLE BY CHRIS PIERCE WAS A MOSTLY ACCURATE ARTICLE. AS FOR WHO WON THE REGIONAL (SEE FIGURE) AS YOU CAN SEE A ONE POINT VICTORY FOR BOB AMEND'S QUEEN ELIZABETH OVER MY SALT LAKE CITY. OTHER MISSING FACTS. CHRIS'S RADIO PROBLEMS OF SATURDAY, GETTING SUNK OR DECLARED SUNK THREEE OUT OF FOUR SORTIES. WHEN NOT OUT OF CONTROL RUNNING THE ONE HUNDRED FOOT COURSE IN 19 SECONDS AND REFUSING TO ADJUST THE PITCH OF HIS PROPS TO SLOW DOWN. MY FAVORITE PART OF THE REGIONALS WAS SHOOTING THE BATTERY LEAD OF THE QE'S PROPULSION BATTERIES. (WHILE BOB WAS UNLOADING SIDEMOUNTS INTO CHRIS WHILE HE WAS AGROUND.)

AS BOB DRIFTED BACKWARDS, I UNLOADED ALL MY BB'S INTO THE QE'S REMAINING BALSAM. BOB RECEIVED NO EFFECTIVE HELP FROM REAR ADMIRAL MARTY HAYES INVISIBLE OR RICK SHULTZ CRAPITANI. THE QE'S SURVIVED THE SORTIE BUT QUICKLY AND BEAUTIFULLY SANK IN A SECOND. WITH THE INVISIBLE OUT WITH RADIO PROBLEMS AND THE QE SINKING EARLY IN THE SORTIE IT WAS JOHN FRENCH'S NORTH HAMPTON, CHRIS PIERCE SALT LAKE CITY AND MY SALT LAKE CITY. AGAINST RICK SHULTZ'S CRAPITANI. THE CRAPITANI WOULD HAVE SUNK IF NOT FOR CHECKING A RAM BY TURNING THE BOAT OVER AND LETTING THE WATER RUN OUT OF IT HIS HULL. THE CRAPITANI SUFFERED OVER 500 POINTS DAMAGE MOSTLY INFLECTED BY THE NORTH HAMPTON.

THIS IS MY FIRST ARTICLE IN HULLBUSTERS I LIKE TO TELL THINGS THE WAY I SEE THEM, NOT TO WHITE WASH THEM. IF SOMEONE THINKS I AM DOING SOMETHING WRONG LET ME KNOW! CONSTRUCTIVE CRITICISM IS ONE WAY TO YOURSELF OR YOUR BOAT.

WILLIAM MONTGOMERY  
110 THOMAS ROAD  
GLEN BURNIE MD, 21061  
301-760-8991 HOME  
301-766-8928 WORK

P.S. WHERE IS MY TROPHY? D.W.

## BREAKING THE SILENCE

BY WILLIAM MONTGOMERY NATIONAL CHAMPION AND ALLIED GRAND ADMIRAL

I HAVE A LOT OF AREAS TO COVER IN THIS ARTICLE I HOPE YOU CAN FOLLOW IT.

### NATIONALS

I HAD A GREAT TIME AT THE 88 NATS. AMARILLO HAD GREAT FACILITIES AND VERY GOOD WEATHER. I WOULD RATHER HAVE NATS THERE AGAIN INSTEAD OF AT KNOXVILLE TENN. AN UNTESTED SIGHT. MY FIRST CHOICE IS STILL MARYLAND. IT WAS FANTASTIC TO WIN THE 88 NATS BUT I FELT THE VICTORY WAS LESSONED BY THE SMALL TURN OUT. I FELT THE ALLIES GOT LITTLE RECOGNITION FOR WINNING NATS EVEN THOUGHT THE AXIS TRY TO SAY THEY WON NATS BECAUSE POINTS FROM CAMPAIGN DID NOT COUNT IN THE POINTS STANDINGS. MAYBE THAT IS WHY NO TOTALS WERE PRINTED IN HULLBUSTERS. IF SO MUCH TIME IS GOING TO BE SPENT AT NATS ON CAMPAIGN YOU HAVE TO COUNT THE POINTS TOWARD THE FLEET VICTORYS. THURSDAYS ARTICLE FOR NATS DIDN'T SHOW UP IN HULLBUSTERS. ALLIES SWEEP THE AWARDS EXCEPT FOR ROOKIS OF THE YEAR (WADE COHEN) AND SMALL SHIP (GERALD ROBERTS). MUST BE AXIES EDITING. I FEEL THERE IS A PROBLEM WITH THE SELECTION OF THE SIGHT FOR NATS. IT SHOULD BE SELECTED BY A VOTE OF ACTIVE CAPTAINS FROM THE COMBAT YEAR LEADING UP TO NATS. NOT THE MONOPOLY IT IS NOW, ALLOWING ONLY THE PARTICIPANTS AT NATS TO VOTE. THIS CAN KEEP NATS IN ONE REGION OF THE COUNTRY.

### RULES

I NEED SOME INPUT AS TO THE INTERPRETATION OR CLARIFICATION OF A RULE. IF YOU ARE RAMMED WHILE AGROUND (AFTER CHECKING RAM) CAN YOU PUT YOUR BOAT BACK IN OPEN WATER OR BACK WHERE IT WAS. I THINK IT SHOULD BE PUT BACK WHERE IT

\*\*\*\*\* CONTEST \*\*\*\*\*

WILL MONTGOMERY IS SPONSORING A CONTEST TO GIVE THE EDITOR OF HULLBUSTERS A FIRST NAME, THERE ARE NO RULES BUT HERE ARE SOME SUGGESTIONS.

D IM WHIT FLUGEL  
D W FLUGEL  
FLUGEL

THE WINNING NAME WILL BE PRINTED IN THE NEXT HULLBUSTERS. SEND SUGGESTIONS TO.  
WILLIAM MONTGOMERY  
110 THOMAS RD  
GLEN BURNIE MD, 21061  
OR CALL: 301-760-8991

\*\*\*\*\*



(Feb. 25, 1989)Marty Hayes

Our organization continues to grow - so far and this is just the first month, we have 50 paid members this year out of almost 150 registered members. Most of the oldtimers have yet to enter their names as has been there custom. I would like to remind everyone to get their membership in early so they can get their Hullbusters on time, but those who haven't won't read it because they won't get their Hullbusters. Sounds like the chicken and the egg. In past years, our organization has numbered less than 50 paid members in 1987 and about 78 in 1988, so we are off to a great start this year.

Increases this year can be blamed upon the publicity we got last year and two major areas which are undergoing growth: Minn.: Curly's Port Polar Bear seems to be growing

and Maryland Attack Group grew last year and this winter. One of the new areas experiencing growth is Fla. - You people should get organized down there. Texas has picked up some new members recently perhaps due to Nats. being held there last year. Printing of the new rules was held up so the new membership packs didn't go out until the end of Feb.

Congrats upon Fluegel for the dino-mite first issue of Hullbusters for 1989. Large, varied, and interesting. I don't know if we can keep him going - but the way to help is to write articles and send to him.

Frequency problems at Nats will be large: New narrow band freqs. at the lower section of the Aircraft band have killed the old radios, and changes to channels on the surface band have killed others. Check catalogs like Tower for a listing of the new legal freqs. Remember that the old 27 band is legal but requires a PCM radio to be useful, I am told. You all knew this was coming, ya know.

## Catch 22 by MWD Von Frederick

Hello my long lost friends. I finally got Fred to write an article on the only battle he was able to participate in at the S. E. Fall Regionals this year so here is my counter article on the same battle.

Sunday, Oct. 2 - Fleet Battle #3

### Britain

Queen Elisabeth  
Valiant  
Belfast  
Swiftsure  
York

### World

Gniesenou  
Szent Istvan  
Jean Bart  
Indianapolis  
Pensacola  
N. Hampton

The game plan called for Fred & Myself to run together as Bart w/ three bow guns in turret II and I side mount in Turret I would blast a hole in the enemy formation thru which we would both run and after pulling ahead of the German, I would turn back and help engage any ship which might be chasing him. I was late launching due to a power lead off. So as Fred led the Hampton into battle, I saw the Q.E. and Valiant bearing down on him. So living up to his name, Von Fearless engaged the enemy heavies.

Seeing my comrads plight, I swung Turret I up front also and launched. Soon I came upon Pennacola and Belfast and added my cents worth. But as the Belfast retired southwards, I heard Fearless expressing his discontent w/ all of the attention he was getting.

Battle speed was rung up and soon the German was in sight running westwards led by the York and flanked by the Q.E. and Val. I was catching them ever so slowly and soon the Belfast entered the melee. I sent a signal to my comrade to wheel around and bring the enemy under my guns.

As my comrad led by Valiant crossed my bow from port

to starboard, I cut into the middle of the enemy column behind them and took several hits from the trailing Belfast and possibly also Q.E.

The time had come for the pursuer to become the pursued! As Fred hauled off to the south, th Val slowed in a hard turn to Stbd. and was taken under salvo fire by turret II at point blank range. It was the high point of my R/C combat experience to see all that death and destruction hurled at the enemy. Lacking the manoverability for such close quarters fighting I backed out of it and was surprised to see Q.E. run down my stbd. side and run afoul of Val. right in front of me, so turret II opened up on both of them. It appeared they were after Gniesenou. Just like the British to go after the cripples.

So off we went again, and as Fred rounded the tip of the island he turned to the N.W. surrounded by the enemy and cut thru our cruiser force and again the two enemy heavies had to reverse engines to avoid a lethal ram and again Bart took them under fire.

So Fearless extricated his ship from the carnage. Val renewed the chase but Q.E. engaged Bart w/ the possible intent to divide and conquer. After being bested by the Q.E. in a short shoot-em-up slug match, I beat a hasty retreat and found Val once again picking Freds bones. So approaching them stbd. bow to, I signaled Fred to swing around to Stbd. which left Val out in left field which happened to be in front of turret II at point blank range. Fire was returned from her stern gun as I crossed behind her to close w/ Fred who was headed eastwards.

To our surprise, we both survived the sortie and the battle. Sortie 2 was beyond my resolution apart from one little incident.

Bart was about to enter the strait from the east when she unexpectedly bore down on what was thought to be the hapless Swiftsure. After about three salvos from turret I & II at P.B.R., I proceeded along her Stbd. side with the intent of continuing my run to the west when all of a sudden the poor defenseless cruiser came to life under full power and hard port rudder and commenced to perforate my entire port side with rapid fire shots. About 12 to 15 in all. My pain



1988  
FALL REGIONALS IN THE NORTHEAST - ANNAPOLIS, MARYLAND  
Sept 10-11,88

SHIPS	CAPT	Fleet	CLASS	Fleet #1	fleet #2	fleet #3	damage	1	Eff.	Total Score
Queen Elisabeth	Bob Amend	World	2	1157	2236	1264	5360		0.87	4657
Salt Lake City	Will Montgomery	US	4	1290	453	773	1910		2.44	4656
Salt Lake City	Chris Pearce	US	4	1290	453	373	6340		0.67	4221
Capitani Romani	Rick Schultz	World	5	661	1278	722	1410		2.72	3836
Invincible	Marty Hayes	World	3	762	1916	1084	1800		2.09	3762
North Hampton	John French	US	4	1290	153	773	4080		0.68	2756
Maryland	Dan Schultz	US	2			360	2930		0.28	830
California	Steve Andrews	US	2		420		1610	20	0.27	440
Iowa	Dan Hayes	US	1					120	6.00	120

was only relieved by the fact that Swiftsure was taken under fire by Indianapolis while chowing down on my poor defenseless Bart. I felt like the captain of the Hiel at Guadalcanal. Many thanks to Dan & Mary for the hospitality and thanks to Tom for building a bigger ship.

**Fred's Version**

My reception at Decatur was sent by way of 15" guns, plenty of them. I would like to thank Dan & Bob for a wonderful reception. After all the problems I had Saturday, I thought I would not find excitement on Sunday.

The Battle plan called for me to fall in behind the guns of the Jean Bart and keep people off her unprotected stern. I did not know there had been a change, until I turned to see Jean being hastily repaired on land.

Hasty packing and the long trip had given me several little bits of trouble, two guns acting up, and one motor not working, had my patience gone and my nerves on edge. I felt

lucky just getting in the water, so I was content to just stick behind and cover the rear.

I had always intended to fight the Qniesenu as a front line ship. I was not going to do so today, not without full guns and a speed advantage, or so I thought.

The battle was declared I ran through the allied line figuring maybe getting off a few shots and running until the Bart came in. Dan and Bob apparently had other ideas, I felt like a lame goose, with two vultures waiting to pick my bones.

Imagine the Gniesenu with a British escort, that's what it looked like. She was running straight and slow, all I could think about was the two BB's circling like sharks, there were splashes everywhere and I heard the loud cracks from the shells penetrating my hull.

I remember Carl's two stern guns firing off my bow, Dan and Bob hitting me from both sides, I could hear Steve calling for me to turn around. I kept her full throttle and the guns firing as fast as I could.

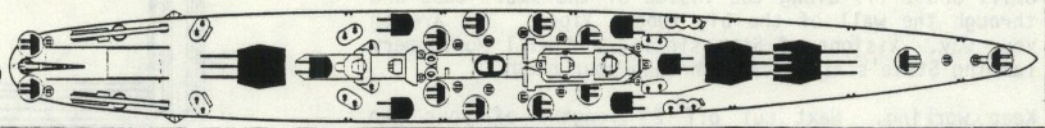
I saw my pump kick on, Carl Camerati, don't let me down now. I turned and saw the axis coming to my rescue. When I reached my comrades the BB's broke off long enough for me to catch my breath, and let my pump catch up.

Thanks to my comrades I survived this sortie. The next sortie I ran and hid, due to gun valves being froze. Luck seems to run that way. At home, she works and away she doesn't. Last year, I almost walked away from this obsession, because of too much work and little satisfaction.

The two or three minutes being surrounded and out matched gave me a feeling I've never felt before. It stays with me always. Sometimes I get all hyped up just thinking about it. As long as it's inside me, I'll return again, maybe this time everything will work. But even if it doesn't, We'll be back next year!

Thanks to everyone at the Decatur regional.

The Des Moines (CA 134) as designed (July 1945)



**NEWS FROM BATTLE GROUP BB63**

FLASH!!!! The Spring Regionals scheduled for April 15 and 16 in Springfield, MD has been rescheduled for May 19, 20, and 21. This is due to a scheduling conflict with the Decatur regionals.

If you plan to attend the Springfield Spring regionals, you will be interested to know that we have again been given approval to use Sequoia Lake and Ray Kelly Craft Center. The Springfield Park Board still welcomes battlers with open arms.

The Battlefield Inn is still the motel of choice. For rates and reservations call 1-417-883-1340.

If you plan to attend we ask that you please pre-register. Entry fee will be \$10.00 if you pre-register before May 5th. Pre-register after May 5th will be \$12.50. Register upon arrival will be \$17.50. Registration for each additional family member who competes will be \$5.00. Anyone who pre-registers but doesn't show will be refunded.

See you then  
Steve Milholland  
3950 Magnolia  
Battlefield, MO 65619

**BUILDING GUNS**

by Peter (send me a tape) Futschik  
31A New South Head Road, Vaucluse 2030  
Sydney, AUSTRALIA

Greetings to all you wonderful RC Warship Combat fans - I love you all. Due to my very wonderful Axis upbringing I am gong to impart to you what I have learned about making guns! I don't feel a traitor to the Axis, because allies with good guns can still ram each other, go dead in the water, beach themselves and generally do allthose clever things that make the allies such feared enemies!

OK! A minigun consists of a metering device and this is followed by a barrel restrictor of some type to hold the BB, temporarily, until full pressure is obtained and the BB exits with maximum force.

Assuming you have built your freon tank so that water can get to it easily, and that you have a proper high volume flow of gas to your valves, you now need to build your single shot metering device.

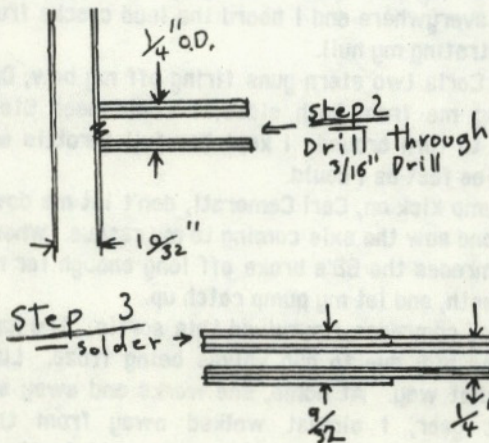
To do this you will need some solder that has a bit of silver in it and is stronger than ordinary electrical solder. It can still be melted with an ordinary soldering iron.



You will also need some  $1/4"$  ball bearings and four different sizes of K&S brass tubes.

The smallest will have  $3/16"$  inside diameter and  $7/32"$  outside diameter. The next is  $7/32"$  inside and  $8/32"$  or  $1/4"$  on the outside. The next two larger sizes are also required. These are  $9/32"$  and  $10/32"$  outside diameter.

### Step 1 "Solder"



Take the largest tube and cut off a 2" length. Take the two smallest tubes and cut off a 1" length from each. Carefully clean all surfaces with fine sandpaper and solder the two small tubes inside each other.

Then solder this assembly to the biggest tube, at right angles to it and half way along it.

You have just built a T intersection. Take a  $3/16"$  drill and drill along the inside of the small tube and through the wall of the big tube. Yipee! You are on your way. Visions of Stan sinking and Will Montgomery ramming Steve's Alabama go through your head.

Keep working. Next cut off 2" lengths of your two smallest tubes and a one inch length of your second largest tube (the one you haven't used yet.)

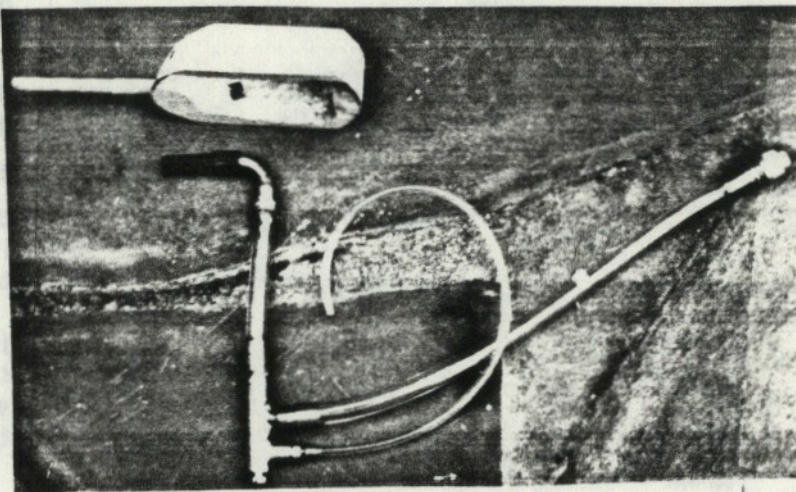
Solder these together after having cleaned them so that they are shiny. All three are together at one end. Now insert this assembly into the T you made previously. If it is a sunny day, hold your assembly up against the light. If you live in Port Polar Bear, use a desk lamp.

Now slide your soldered (or should that be soldered?) assembly into the T assembly so that the bottom end of it shows half way across the hole you drilled through the big tube. Solder it in place with ordinary an electric solder. If you are a bit careful, there will be very little risk of your T joint coming undone as the solder can be applied around the top of the big tube, away from the T join. You are doing well. If you are Allied and have got to this stage, you deserve to be sunk by Axis gunfire rather than being ram sunk by one of your friends. (Beware of the HMS Invisible).

You have just set the upper limit of travel of your  $1/4"$  ball bearing by the work you have carried out so far. This is what stops more BBs than one from getting out of your gun.

Now drill with your  $3/16"$  drill through the 1" tube and into your T intersection so that your BBs can run into the chamber.

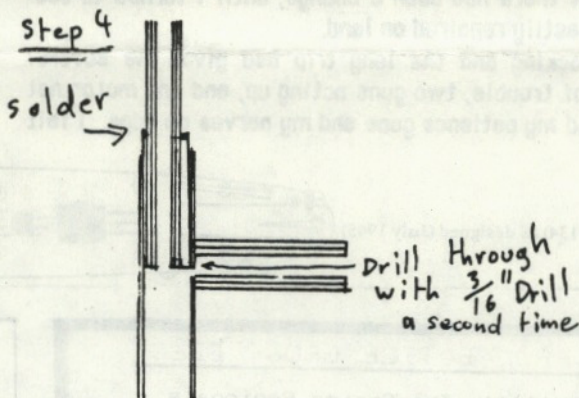
Clean up every thing carefully, we want no burrs! Check that BBs will flow through the openings.



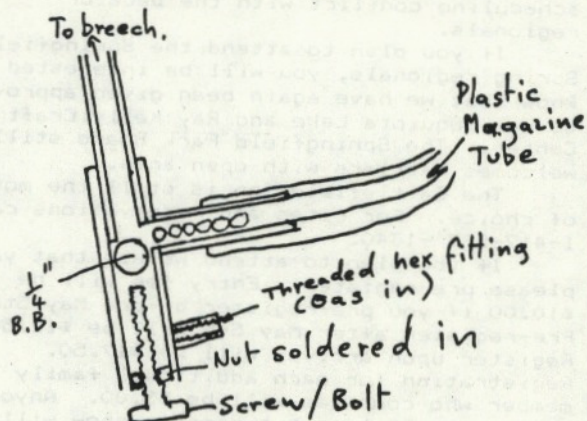
Now place a  $1/4"$  ball bearing into the bottom of your T piece. When you push it up, BBs can no longer come out of the magazine tube and into the chamber.

We now need to fix the bottom location of the  $1/4"$  ball bearing. I use a convenient brass nut and screw assembly. The nut is soldered into the bottom of the big tube, after the ball bearing is in place. When the bolt is screwed into the nut, it raises the  $1/4"$  ball bearing so that it becomes visible when you look through the magazine tube. This is too high! Relax the bolt down a turn.

Now a BB can fall into the chamber! When you are happy with the adjustment, a drop of super glue will hold the bolt in place. If you are allied and have got this far you are probably ready for a one on one with Curly Barrett!



### Step 5 (Joins in tubes ignored to show working method)



Now we need to get the gas into the gun. Solder on a hexagonal female fitting (From Tom) near the bottom of your T piece. Drill a  $1/16"$  hole carefully inside the fitting and through the T piece.







## INTRODUCTION OF THE IAMWC TO THE IRCWCC MEMBERSHIP

By Stan Watkins,

Proud Founding Father of the R/C Warship Combat, Proud member in the International R/C Warship Combat Club, and humble Director of the International Association of Model Warship combat.

Greetings Combatants of the world!

I am honored to be associated with you fellow battlers. In addition to my activities associated with you I have chosen to associate with a new group of as yet "unborn" battlers. These new battlers will come to us as members of a new combat organization. As director of that organization, I will strive to introduce my current cherished fellow battlers to the new battlers. I will encourage them to do as I am doing (and as I hope many of you will do) become active members in both the IRCWCC and the IAMWC. We can learn valuable ways to make our hobbies better. This will best occur if we share each others activities. The expense of the NAMBA membership will provide for insurance coverage for either group.

So, you ask, why create a new group? The answer to that question is tied to needs of manufacturers and hobbyists. Hobbyists need kits to become involved in increasing numbers in our sport hobby. The manufacturers need stable construction rules (to maintain stable product lines) and improved safety rules (to lessen product liability risks).

The new Association provides both by establishing a set of combat rules that is not subject to the normal (democratic) change process. These rules provide for stability of the ship design definition so the ship kits (from Skunkworks) will not be changed without the manufacturer having a healthy involvement in the changes. New combatants need a few years to properly understand the hobby and could create a situation that was unhealthy for the common good (and I believe it can be a common good) of the hobbyist and the manufacturers.

I believe, since no set of rules is perfect, the rules of IAMWC will require changes. Changes will be made. Indeed some changes will probably be required very soon. But these changes can be made without all of the time consuming efforts that currently are required in my club, the IRCWCC.

I had to ponder the decision to associate with IAMWC for some time before making a decision. At first I was highly negative. I felt as if I would be betraying (and rejecting) my best friends. I cannot and will not do that. I cherish the friendships that I have with you members of the club that I started.

The people coming into the new club may not be exactly like us. They will be people that just have to assemble a kit. Us scratch builders are a different breed (perhaps fanatics is the word). The Skunkworks kits are not compatible with the rules of the IRCWCC. So they would have to be modified to participate in the IRCWCC. It would not be a really simple and easy modification either. If you (or IAMWC members) want to participate in each others events, a different ship will be needed for each.

Examples of some significant changes are these:

On the safety end, the guns will be fitted with

regulators that will be set for 100 psig maximum. Barrels must be able to accept the size of brass tubing that was used for the Mk IX (that's right Tom, it was the Mk IX that you complain about so much, not the Mk IV, as you stated in your recent article. What a cry baby! With out the Mk IX there never would have been any R/C Warship Combat to fight about!) from muzzle to breech. The illegal radio frequencies are specifically prohibited, as is clearly the only viable choice.

For construction, each class ship (Class 1, Class 2, etc.) will have a single total required size of area of penetrability, regardless of ship length. Batteries may also be changed each sortie for any ship. This favors lower expense for batteries through the ability to use just two sets of quick charge batteries. Pumps will be allowed 1/4 inch outlets but will have to have an internal target (1 X 2 inches) attached to a switch that can be hit by BBs that will turn the pump off. A similar target/switch will be installed for each drive motor or set of two drive motors.

For performance, all ships will be allowed 24 second speed in the 100 ft. Wow, that's a big one! The battleships will be zooming around killing the cruisers! Well, maybe not. Remember the pump/motor/targets. And hits on battleships count more than hits on cruisers or destroyers. The old scoring system (as with the IRCWCC) has been tampered with. Now I'll never know how to score a hit! A hull hit above the waterline has been 20 points for 10 years and I honestly see no reason to change it! But I am caught in the tide of time, so I'll try to follow the whims of the people and the dictators. I am going to play my game regardless how many needless changes you make. It is still a fun game. And we have proven (over and over again) through the hundreds of rule changes, that there is more than one "right" way to play the game. Yes even if it is different, it is still good old FUN R/C Warship Combat! And I like it. Besides these "wet behind the ears" low life "kit builders" in the IAMWC may need some different rules.

I will strive to maintain excellent relations between the two organizations. I will strive to welcome new people to both. I will strive to remember the names of people in both groups and to participate in the games of both groups. The handicap system of the new group may force me to favor (like Fluegel) shooting rookies in the IRCWCC. In the mean time, I am looking forward to fighting (probably the British) at the Southeast Regionals at Decatur, Alabama. I welcome you guys that resent my "defection" to express your displeasure (like men, or are we big boys?) with your BB guns. But I will shoot back. I know that you would not have it any other way.

Let's Battle (in R/C Warship Combat)!

*Stan*

Stan Watkins

### TREASURER'S REPORT

By Dan Dees

Our club currently has a balance of \$217.48 (as of March 23, 1989). In addition, I've heard rumors that there was some money left over from the 1988 Nats, but I don't know how much or what happened to it. I feel that the small dues increase was a big help in increasing our treasury (previously \$1.00 per member went to the club; now the club gets \$3.00). Also, our secretary, Marty Hayes, has been kind enough to personally deliver the membership packages to members in his area and leave \$3.00 per member, which would normally go for postage and handling, in the club treasury.



# News from the Northeast

Feb, 1989

Marty Kaysen

Okay, What do I have to do, Fluegel. We in the Northeast are having a regionals on May 20-21, 1989 but we are not included in your battle calendar. Please put us down and make us a sanctioned event! We have mentioned this before - last year! So it shouldn't come as any great surprise. Also I know you get the northeastern newsletter - read it.

Other news from the N. E. and from the Maryland Attack Group is that we are joining with the Meade Modelers (an Airplane club) and will form their Marine division. This will give us: a meeting place, use of a pond at Ft. Meade ( a large Army base near Baltimore) for non-combat purposes, and a larger voice in the modeling community. Also we can help promote model boating of all types in the State of Maryland.

We are also sponsoring a precision steering contest on Burbe Lake at Ft. Meade, Md. on June 10. This will also allow us to meet with and confer with other scale boating people. I can hardly wait to see what SSM has to say about a R/C model warship combat club dealing in events that have been the center of their attention for several years on the west coast. If we can get some good pictures, we should be in at least one model boating mag. and community support for us crazies is already building.

MAG is putting on a show at the local Mall - thanks to one of the local hobby shops, who have rented an empty store for us. (two doors from them) The show will include some of our ships on display, finished and under construction, and some of our video tapes. The show will be on March 4th.

Many new members are constructing ships this year, in the N.E. we have Frank P., Nathan B., Francis R., Ron T.; all of which will be ready for combat this year. The oldsters are hard at the dockyards also - with Rick, Will, John French and Myself constructing new ships. Carl C., Joe Y., Beth S., Danny S. and Steve A. are reconditioning old ships. Bob Amend is said to be building anew again. I assume that the Deekin Boys of Ohio will be out in strength again this coming season. Rick Strickland of N.C. claims he is coming this year. So we ought to have a good regionals. Stan W., remember you said you wanted to come this year! And Jess now is the time.

Well, that's enough for now. - See the rest of you at Nats.

## THE GOOD OLD DAYS?

By Tom Jass

Often we humans (even Axis) bemoan the current state of affairs (what with the "current" rules controversies and hassles) and call for the return of the "good old days". Sometimes we let nostalgia get the upper hand and forget how bad the "good old days" actually were. With that spirit in mind, let's examine the "good old days" of R/C Warship Combat -- the days before.....

### Speed Rules

When you complain about your ship's speed and how you could use a few extra knots to be competitive, just remember that someone else (probably everybody else) would have increased their speed also and your supposed advantage would be wiped out -- after you had spent \$\$ for those new motors or extra batteries. In the "good old days" rumors were always rife in Texas about Schneider and his "14 second, 36 volt" cruiser that planed across the pond throwing a 6' high rooster tail. Since the rules in the "good old days" didn't specify that you had to use electric motors, we Allies lived in mortal fear that Schneider and Fluegel would figure out how to build a clutch and a transmission so that they could power their ships with a gasoline engine and still provide reverse (the rules did specify that). Yes, the "good old days" fostered a constant arms race to increase your speed -- we were almost at the point where a ramming ship could completely cut a rammed ship in half. At least with our present rules my 24 knot RODNEY can't outrun your 33 knot MISSOURI.

602

MAKE signal Don't miss a  
single issue of Hull  
Busters



### WATERTIGHT BOXES

In the "good old days" a sink (and we Allies were always sinking) meant at least three hours lost to battling because all the radio gear had to be disassembled and dried out. A common sight at early battles after a first sortie was numerous Allied servos and Xcvrs disassembled, laying on towels, drying in the sun. Yes, the sun was the first servo dryer! Later as the arms race escalated, a battery powered hair dryer was a common item in many tool boxes. I first thought that the battlers were all extremely vain people when I saw all the hair dryers; at one regionals Steve Milholland had gone to the trouble of completely coating his Xcvr with wax to keep it dry when the ALABAMA did one of her standard by-the-bow sinks. The advent of effective watertight boxes has enabled all of us (Axis included) to return to combat quickly after a sink. Forget the "good old days"!!

### FOSTER BREECHES AND GEEK GUNS

In the "good old days" when we used Mark IV breeches there were only a few people in the hobby (Fluegel, Schneider, Watkins, Milholland and Darby) who knew how to tweak guns. We non-tweakers went into battle knowing that we were in trouble from the start. Getting more than 2 guns tweaked was impossible; it was like trying to start all 6 engines on a model B-36. When #6 was finally lit off, #1 was running rough or out of fuel! I remember sitting in front of the Ray Kelley Craft Center one evening with John trying to tweak one of the RODNEY's guns; after about 60 minutes and 750 bbs and no progress, Terry Darby walked up and tweaked the offending gun in about 15 seconds. Great -- but did he leave it tweaked? No, he untweaked it and told us, "See, it's easy. You can learn to do it." (And he was an Allied captain who you would think would be interested in effective Allied guns.) Seemed like those who could didn't want to share the secret with those who couldn't. At that same Nats John finally had the Frog cruiser that LaDonna Poindexter was driving right in front of one of RODNEY's guns -- he pulled the trigger and at least 40 bbs trickled from the barrel and dropped into the water 3" in front of the gun!! What "good old days" -- give me our modern breeches with a setting that lasts all weekend long!

### POPPET VALVES

All the tweaking problems in the "good old days" can't be blamed on the Mark IV breech, however. The needle valves that we used to open the freon tanks did not contribute to reliability. Those needle valves needed about 90 degrees of servo throw to allow sufficient freon to enter the



breech and fire a bb (if you were Fluegel) -- if you were an Allied captain the bb never left the breech even if the needle valve opened. It always seemed that when the gun breech was tweaked, the needle valve wouldn't open far enough to power the bb. Probably the combination of the Mark IV breech and the use of needle valves were jointly responsible for about 90% of our tweaking nightmares. The "good old days" were cursed -- give me our present poppet valves and solenoids any day.

#### SUPERSTRUCTURES OF 1/32" Balsa

If you complain today of making casement guns of 1/32" balsa, just remember the "good old days" when the entire superstructure had to be made of 1/32" balsa. I went to my first Nats scared to death that the RODNEY was illegal because the mast was built from wire not balsa. I just couldn't see how to construct it from 1/32" balsa and not have it droop like Schneider's pants. Boy, did the ships look like Swiss cheese after a few sorties of battling. Boy, did one spend long hours repairing superstructure so that the Axis could cheese it again tomorrow. All of that for 5 points a hit -- guess Fluegel just wanted to get credit for each and every one of his hits. The "good old days" -- phooey!!

#### SINGLE SHOT GUNS

It wasn't bad enough that the use of Mark IV breeches and needle valves kept the secret of guns which actually worked to a fortunate few, it got even worse because the guns in the "good old days" were shot guns. Usually 10 to 12 bbs spewed forth from a barrel each time the transmitter stick was pushed. More bbs could be fired, but the last ones just trickled out of the barrel so 10-12 was optimum. To compound the Allied problems, magazines could carry any amount of bbs that could be jammed in. When (not if) Schneider or Fluegel hit you, the hole they usually produced was about 1/2" X 1/2"!! You didn't even need a pump -- you were going down. Even worse was when they purposely hit your superstructure on the first few passes just to make the evening's repair session more difficult for you -- then they plastered your hull with quarter sized holes and giggled the entire time. One year at Decatur the RODNEY (equipped by this time with poppet valves and Foster breeches so our shotguns worked) caught a German Z destroyer in front of her bow guns. The resulting twin shotgun blasts flopped the Axis DD on her beam end and a piece of balsa about 1" X 3" was vaporised -- it was just gone!! Foster breeches and poppet valves made reliable guns available to the masses (read Allies); the single shot valve

603 was finally voted in when Fluegel and Schneider and the Axis crew began to suffer the same huge quantities of carnage we dumb Allies had been taking for years. The "good old days" were by in large Axis "good old days".

#### FREON TANKS

In the "good old days" the freon tanks we used were stainless steel globes (known as "Stanley's balls" because he sold them), and a separate ball tank was installed for each gun. Their use, coupled with the use of needle valves caused a bulky installation. See some old copies of HULL BUSTERS for schematics of this nightmare Rube Goldberg installation. It involved sliding rods that activated the needle valves and returned to neutral position with the aid of rubber bands. Required also were plywood mounting trays where the servo, the ball freon tanks and the needle valves were all grouped together -- it all took an area about 3" X 3" (no wonder we had no room for watertight boxes). What fun we had in the "good old days"!!

#### PUMP TURN ON DEVICES

The present use of single shot guns causes "slow sinks" and consequently a reliable pump turn on device is needed. In the "good old days" if you were Allied you were going to sink anyway, so a pump and a turn on were academic. We only installed them to impress the Axis with our technical knowledge!! Many of the early Allied ships (Texas) used ball floats similar to those used in toilet tanks to attempt to turn on the pumps so that Schneider could inflict even more punishment on the hapless target. Speaking of ball floats and toilets, at least such an installation on Schneider's BB looked right at home. We Allies used to pride ourselves in the "good old days" on the damage we could take (sometimes we even ran them out of bbs)!! I remember one of Poindexter's BBs had a float device at the 1985 Nats. It failed to operate because a lead ballast weight in the hull fell (probably blasted from one of Fluegel's shotguns) on the float and kept it from floating. The present transistor circuits are a vast improvement over the ball floats of the "good old days". We don't always stay afloat, but its better by far than it used to be!!

They say its hard for an old dog (like me) to learn new tricks. But if I hadn't I would still be cruising around with Mark IV guns, Stanley's balls tanks, wet servos and a 1/32" balsa superstructure -- but the old RODNEY would still be battling and she'd be almost breaking the 10 second speed barrier!! All in all, the present game is 1000% more fun than the "good old days".

### KNOW THE ENEMY!

by: Wade Koehn

The importance to any fighting man of knowing his enemy can never be understated. Winning is that much easier when you understand your opponent's aberrant psychology. With that in mind, we present a short profile of the Allied forces.

1) The English: sallow-faced, boot-licking lackeys of the imperialist running-dog Amerikans, the English are abject cowards who excel at running away and hiding. They swell their livers to unnatural dimensions by drinking copious amounts of weak tea and their national poison, gin. They are the ~~masters~~ of farmyard animals stuffed with ~~gunpowder~~. Their flimsy boats, built by child labor, are incapable of staying afloat for more than a few hours, and will not attack unless they enjoy at least a five-to-one advantage, or can gang up on a helpless, crippled Axis ship. All English sailors are ~~cowards~~.

2) The French: sissified, snot-nosed, slug-eating dandies, the French are the only people more cowardly than the English. Faced with the prospect of a fair fight, the French would rather sink their own boats than engage in battle. When captured, they babble incoherently in their incomprehensible language, and offer their wives and sisters in exchange for freedom. Most Frenchmen are alcoholics.

3) The Amerikans: sly, shifty, and spineless, ~~they are~~ masters of the sneak attack and the low blow. Too crafty to stand and fight, the Amerikans prefer to strap refitted depth charges to small children and leave them bobbing in the wake of unsuspecting vessels, pint-size perils at sea. Their ships are as slow as their officers are dull-witted, and even their largest battleships are easy prey for a motor launch, or a well-armed dinahy.

by: Wade Koehn

Technical assist by:

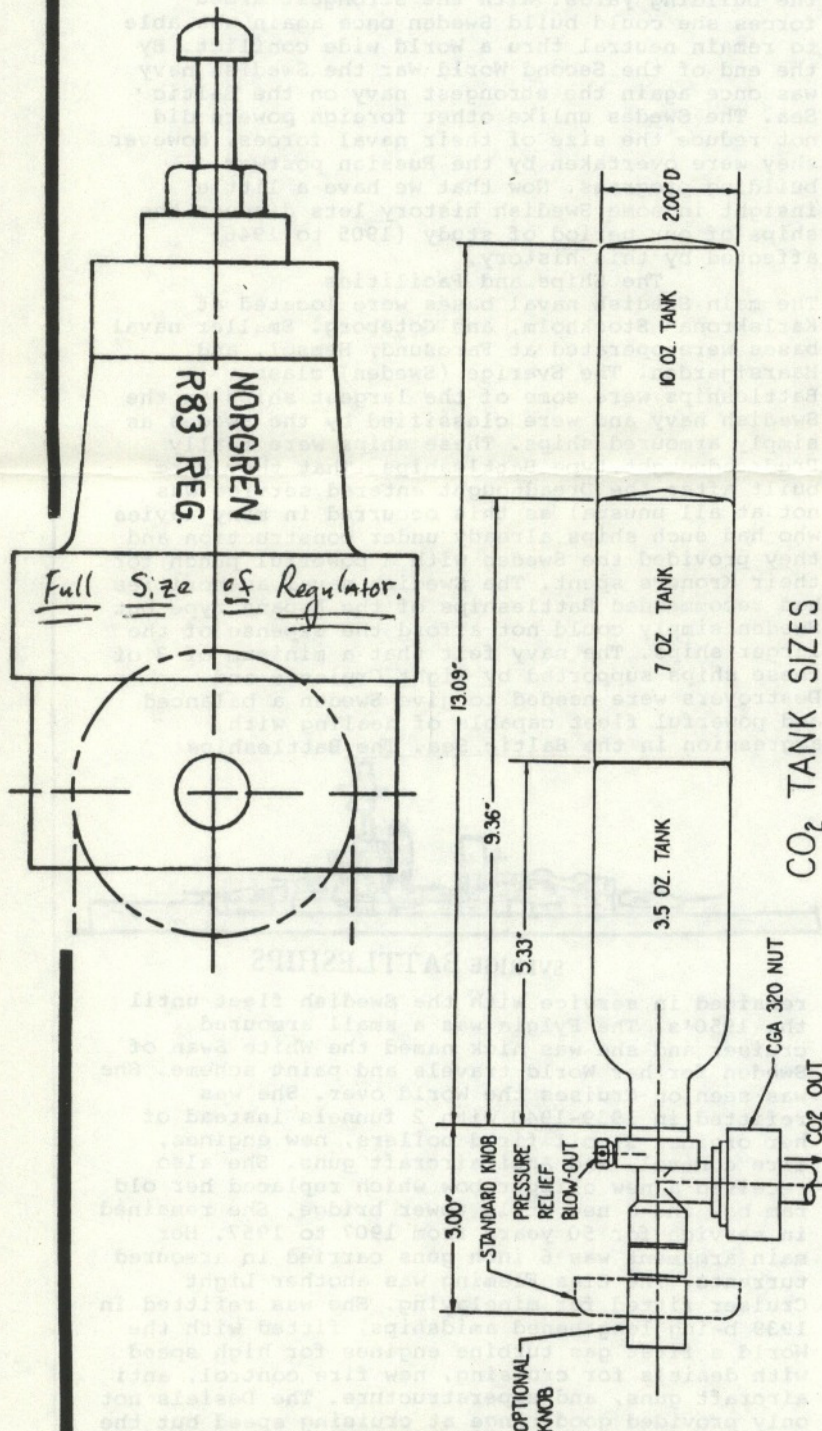
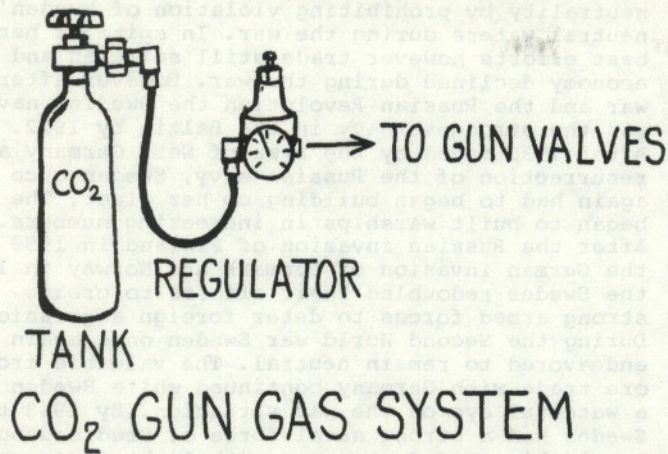
Muhammed (This Space For Rent)

Mohammed, Chief Petty

Squabble, Ugandan Navy



## CO<sub>2</sub> FOR SHIPS? by Steve Smith



When I was at Nats in addition to talk of different scales of ships and a standard class, there was some talk on alternatives to freon. One of the most promising is CO<sub>2</sub>. I know Milholland and some others are looking into this, but so far, no one has written an article on it, so here goes!

### WHY ALTERNATIVES TO FREON?

As I'm sure you know, freon is believed to be responsible for destroying the ozone layer and its production and sale will be soon be limited. On the positive side, for us battlers anyways, Freon 22 is less damaging than other freons and from what I've read will be exempt from regulations. For more information on freons, there was a good article in the Jan. '89 Popular Science, p60.

However, in some countries, freon isn't available. Anders Lundgren in Sweden says he can't get it there (Futschik, can you get it "down under"?). Another reason is that an off-the-shelf system for CO<sub>2</sub> is available and should be more reliable. No more testing freon tanks in toilets!

### THE CO<sub>2</sub> SYSTEM

The CO<sub>2</sub> system would be a modified constant air (sic) system for Paint/Splatball guns. The system consists of 3 components: Storage tank, High-pressure hose, and Regulator. The regulator is necessary because CO<sub>2</sub> is stored between 600 to 1800 psi and our rules regulate the guns to the "ambient pressure of freon". I don't know what that is, but I measured a tank and that was at 135 psi. For those of you thinking the higher pressure for an "unfair advantage", most poppet and solenoid valves are usually limited to a maximum working pressure of 150 psi.

### DISADVANTAGES/ADVANTAGES

There are of course disadvantages and advantages. The disadvantages are size, weight, and initial cost. Due to size and weight, the CO<sub>2</sub> system is limited to larger ships. I think the system would just fit a Lutzow or slightly smaller cruiser. Cost: \$75-\$90.

One advantage that would help offset the cost is that the system could be transferred from ship to ship, reducing cost per ship. Water-bathing (of tanks) should not be required. The tank would hold enough CO<sub>2</sub> to last a year's worth of battling (estimated) and can be filled by shop that refills fire extinguishers for about \$2-\$5. The weight of the system may not be a problem since most larger ships require ballast to float on waterline. I would think that the system with its manufactured components would be less prone to leaks and thus more reliable.

Included with this article are some drawings of components showing sizes. I currently have parts for a system on order and hope to have one working by spring.

Keep your CO<sub>2</sub> dry!  
Steven J. Smith  
8850 Goodrich Ave. S.  
#103  
Bloomington, MN  
55437-1630



By Stan Watkins

Greetings Combatants!

It is time that I provided you with the Motel name and particulars for the 89 Nats. It was my opinion that most combatants were more interested in saving a buck than in really nice accommodations. So I have located a place that is not very nice but is pretty reasonably priced.

The 1989 Nats motel is:

KNIGHTS INN, located at I-40 and Lovell Rd (402 Lovell Road), Knoxville, TN 37922

The phone number is (615) 675-7200 and the special deal was made with Charlie Williams, the "Innkeeper".

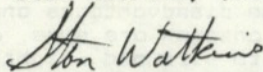
The special 7 day rate is \$23.57 + tax (about \$3) per day for from 1 to 4 persons. If you want to pay more you can stay only 6 days and pay \$26.55 + tax per day for 1 to 2 people or \$29.25 + tax per day for 3 to 4 people. So if you stay Saturday night July 8 through Friday night July 14 the 7 days will be perfect.

I regret that I could not find a better deal but with the Smoky Mountains, Dollywood, Model Warship Products Co., and the Knoxville Christian Center so close, the summer months are in demand here.

The Motel is about 12 miles from the World's Fair Site (site of the 1989 Nationals of R/C Warship Combat) that's the bad news but it is pretty easy to go those miles on I-40. Also it is close to my house and we may want to get together here on several nights. It is also very convenient to Kingston Pike (Knoxville's Resturant Row). I still have not received my map of the lake but it is basically a slim rectangle about 600 feet long and 50 feet wide. In Campaign battle, the forward bases could be at one end of the lake and the home bases could be at the other end. Well I'd better get this to Fluegel so he can loose it fast! GOD bless you all,

Let's Battle!

Stan Watkins, (615) 675-7747



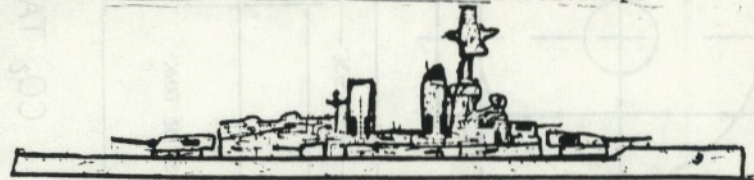
#### Naval Review

This Naval Review carries us further north into to the Baltic Sea to the land of the midnight sun, Sweden. It s hard for us to think of the hardworking Staunchly neutral people of Sweden as being militaristic. But in their history from the 10th century to the 19th century they fought a large number of wars, once holding the predominant position of military strenght in the entire Baltic region. They fought wars with Norway, Russia, Poland, Finland, Denmark, Germany, and England. In 1810 the Riksdag (the Swedish assembly) invited the Crown Prince of Pontecorvo who was also a Marshall in Napoleon's army to assume the throne of Sweden and become their King. The Prince Jean Baptiste Jules Bernadotte accepted and became King Charles XIII of Sweden founding the Beradotte Dynasty in 1810 which rules Sweden to this day. The new King forced the union of Sweden and Norway in 1814 which lasted until 1905 when it was peacefully disbanded after Norweign resistance to it built up. So the Swedes had a military history as well as a Sailor tradition that could be traced back to Viking days. The Swedish felt that the best way to avoid war was thru a position of strenght and as they had a long coast line to defend a large amount of this strenght had to be of a naval nature. The navies job was therefore to deter aggression and war. But if war came to

fight. Sweden thru this policy maintained her neutrality in the First World War. The Navy carried most of the burden of this well enforced neutrality by prohibiting violation of Sweden's neutral waters during the war. In spite of her best efforts however trade still suffered and the economy declined during the war. However after the war and the Russian Revolution the Swedish navy was the strongest navy in the Baltic by 1922. After 1930 faced by the rise of Nazi Germany and resurrection of the Russian navy, Sweden once again had to began building up her fleet. The navy began to built warships in increasing numbers. After the Russian invasion of Finland in 1939 and the German invasion of Denmark and Norway in 1940 the Swedes redoubled their efforts to create strong armed forces to deter foreign aggression. During the Second World war Sweden once again endeavored to remain neutral. The valuable iron ore trade with Germany continued while Sweden kept a watchful eye on the war situation. By 1943 the Swedes had a strong naval force of Predreadnought Battleships and Destroyers with Light Cruisers in the building yards. With the strongest armed forces she could build Sweden once again was able to remain neutral thru a World wide conflict. By the end of the Second World War the Swedish navy was once again the strongest navy on the Baltic Sea. The Swedes unlike other foreign powers did not reduce the size of their naval forces, however they were overtaken by the Russian postwar building programs. Now that we have a little insight in some Swedish history lets discuss the ships of our period of study (1905 to 1946) affected by this history.

#### The Ships and Facilities

The main Swedish naval bases were located at Karlskrona Stockholm, and Goteborg. Smaller naval bases were operated at Farosund, Hemsol, and Haarsfjarden. The Sverige (Sweden) class Battleships were some of the largest ships in the Swedish navy and were classified by the Swedes as simply armoured ships. These ships were really Predreadnought type Battleships. That they were built after the Dreadnought entered service was not at all unusual as this occurred in many navies who had such ships already under construction and they provided the Swedes with a powerful punch for their Kroners spent. The Swedish naval authorities had recommended Battleships of the Espana type but Sweden simply could not afford the expense of the larger ships. The navy felt that a minimum of 3 of these ships supported by Light Cruisers and Destroyers were needed to give Sweden a balanced and powerful fleet capable of dealing with aggression in the Baltic Sea. The Battleships

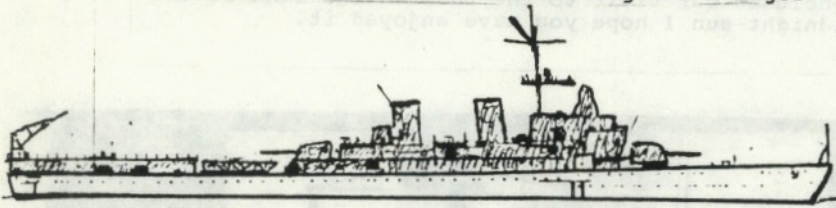


SVERIGE BATTLESHIPS

remained in service with the Swedish fleet until the 1950's. The Fylgia was a small armoured cruiser and she was nick named the White Swan of Sweden for her World travels and paint scheme. She was seen on Cruises the World over. She was refitted in 1939-1940 with 2 funnels instead of her orginal 3, oil fired boilers, new engines, fire control, and Anti aircraft guns. She also received a new clipper bow which replaced her old ram bow and a new style tower bridge. She remained in service for 50 years from 1907 to 1957. Her main armament was 6 inch guns carried in armoured turrents. The Clas Fleming was another Light Cruiser fitted for minelaying. She was refitted in 1939 being lengthened amidships, fitted with the World's first gas turbine engines for high speed with desiels for cruising, new fire control, anti aircraft guns, and superstructure. The Desiels not only provided good range at cruising speed but the compressed heated air for the turbines. She served



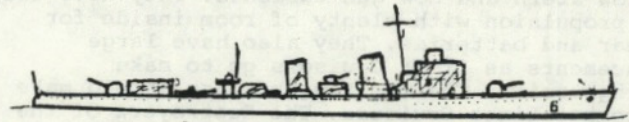
the Swedish navy from 1914 to 1961. The Gotland class Light Cruiser was a combination Light Cruiser and Seaplane Carrier. She was first conceived as a small 4 500 ton pure Light Aircraft Carrier which was modified into the final design. She was greatly studied by foreign powers when completed. She was the first foreign warship to report the sorti of the German Battleship Bismarck and Heavy Cruiser Prinz Eugen on operation Rheinbung in 1941. The Gotland was given a major



**GOTLAND** cruiser

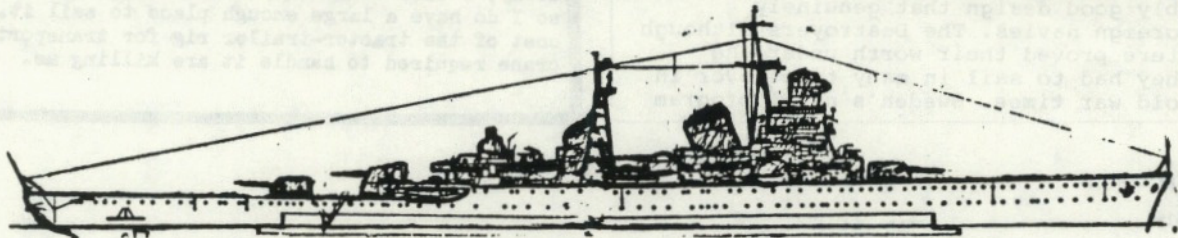
refit in 1943 and converted to a Anti Aircraft Cruiser with considerably added light anti aircraft guns and associated fire controls. She had originally been armed with 4 X 6 inch guns in 2 twin turrents and 2 single 6 inch guns in superstructure not hull mounted casemated postions. The refit removed the seaplane hanger and the antiquated casemated guns giving her a very pleasing profile. She remained on active duty until 1961. The Tre Kroner class Light Cruisers were built to support the 3 Battleships. This Cruiser design originally called for 3 triple turrents one forward of the bridge and 2 aft the superstructure. The Swedish Government was able to purchase the gun turrents from the 2 Dutch Light Cruisers (Eendracht and De Zeven Provincien) building in the Netherlands for the Dutch navy after the German invasion of Holland prevented the completion of the Dutch ships. The 2 Dutch ships were to have been completed with 10 X 6 inch guns apiece mounted in 2 triple lower turrents and 2 twin upper superimposed turrents. Thus the Swedes gained 4 twin turrents and 4 triple turrents. This considerably speeded up the completion of the Tre Kroner class. But it did change the design slightly. The Tre Kroner's were orginally to mount 3 triple turrents, one forward the bridge, and 2 aft the superstructure mounted superimposed. The Forward Triple mount remained unchanged but the

aft mounts were changed from triple turrents to twin turrents. This changed the over all armament from 9 X 6 inch guns to 7 X 6 inch guns. There had been 3 Light Cruisers of this class planned but since all of the twin turrents were used up the third ship was cancelled. They were completed in 1946 but trials revealed problems, among these were weak bow scantlings and turbine vibrations. They returned to dockyard hands and reappeared in 1947 complete and cured of all ills. These ships were very powerful well armed and well armoured Light Cruisers. The 6 inch guns were completely automatic with 70 degrees of elevation for anti aircraft use. Both ships were refitted 1950-1953 and Gota Lejon refitted again in 1957-1958 adding a new tower bridge, additional anti aircraft guns, and improved fire control. In 1964 the unrefitted Tre Kroner had her superstructure scrapped and was sold as a floating bridge. Gota Lejon remained in service with the Swedish navy until 1971 when she was sold to the Chilian navy. She was refitted by the Chilian navy where she remains in service to this day as the Admirante Latorre, certainly one of the longest lived Light Cruisers in history. The Swedish Destroyers were logical developments of the basic Ehrenskold class. Each one of the five classes an improvement over the last. These ships also served as basis for further post war designs. They were considered light gunned by some naval authorities but were very stable good sea boats. Swedish built Destroyers had flush decks to provide strong hulls. The Swedes also purchased 2 Italian Destroyers to increase their naval forces quickly during the war. The purchased Destroyers



**GÖTEBORG** class destroyers

were former members of the Italian Quintino Sella class renamed the Psilander class in Swedish service. The 2 ships were stopped and detained by the English Royal Navy in Great Britain for a time while in route to their new owners in Sweden. Upon arrival in Sweden they were given major refits to adapt them to northern service conditions. Although they were never as highly thought in



**TRE KRONOR** class cruisers

CLASS	NAME	# SHIPS	LOA (FEET)	BEAM (FEET)	STANDR DISP (TONS)	FULL DISP (TONS)	HEAVY MODEL		GUNS # DIA	SPEED (KNOTS)	BUILT	OFF/DEF CLASS	SPEED (SEC/100 FT)
							DISP (LBS)	ARMOUR (INCHES)					
PREDREADNAUGHT	SVERIGE	3	399	61	7,200	8,500	6.377	7.9	4 11.0	23.00	1917-22	4	28
HEAVY CRUISER BEFORE 1922	FYLGIA	1	378	49	4,300	5,200	3.901	4.0	8 6.0	22.00	1907	5	28
LIGHT CRUISER BEFORE 1922	FLEHING	1	270	34	1,600	2,500	1.875	1.0	4 4.7	25.00	1914	6	24
LIGHT CRUISER AFTER 1922	GOTLAND	1	442	51	4,700	5,900	4.426	2.0	6 6.0	28.00	1935	5	26
	TRE KRONOR	2	597	55	8,200	10,000	7.502	4.9	7 6.0	33.00	1946-47	5	24
DESTROYER	PSILANDER	2	279	28	1,200	1,600	1.200	NA	4 4.7	34.00	1927	7	24
	EHRENSKOLD	2	298	29	1,000	1,500	1.125	NA	3 4.7	36.00	1927	7	22
	KLASHORN	2	305	29	1,100	1,600	1.200	NA	3 4.7	36.00	1932	7	22
	GÖTEBORG	6	310	32	1,200	1,800	1.350	NA	3 4.7	37.00	1936-41	7	22
	VISBY	4	322	31	1,300	2,000	1.500	NA	3 4.7	37.00	1942-44	7	22
	ORLAND	2	368	37	1,900	3,000	2.251	NA	4 4.7	36.00	1946-47	7	22



609 Sweden as the home built Swedish Destroyers they did fill a gap in a time of need. Three Swedish Destroyers were sunk in a Mysterious explosion at Haarsfjarden naval base in 1942. Two of the three ships were raised and repaired, but the source of the explosion was never discovered. The 2 Italian built Destroyers were scrapped in 1950 but all of the Swedish Destroyers served into the 1960's with 2 of the Visby class still in reserve. So the Swedish Destroyers from the Ehrenskold class to the Oland class were all of the same basic sound design with minor improvements in each class and able to operate together as an intergrated team. Destroyers of the Goteborg and Visby classes were taken in hand for major extensive refits. The refits added greater beam, stability, displacement, anti aircraft guns, and fire control. The refits slightly decreased speed due to the increased weight and beam. The ship list figures reflect these refits added displacements, lenght, and beam.

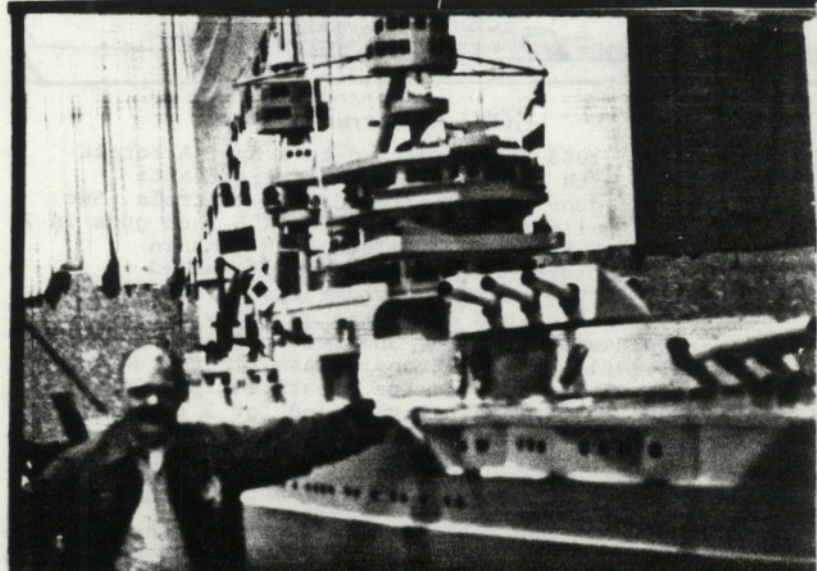
**Combat Use**

The Battlships are small 3 unit Battleships that would be very small targets. They should be found to be manueverable but slow. The Fylgia is a small 2 unit Armoured Cruiser, she is just as slow as the Battleships but with one less unit. The Clas Flemming is also a small ship. She is a small Protected Light Cruiser, she has only 1 unit but better speed. The Gotland is a small 2 unit Light Cruiser with medium speed and provides a unique silhouette to combat not yet seen. The real stars of this show are the Tre Kroner Light Cruisers. They are fast (24 second) ships that look good with low stern and bow gun turrents. They have two shaft propulsion with plenty of room inside for R/C gear and batteries. They also have large displacements as Light Cruisers go to make building easier. The Tre Kroner class should make fine combat Light Cruisers. The Destroyers of the Swedish navy are all of the same basic simple design. Of course for R/C warship combat purposes the larger Destroyer is the best for weight and room reasons. These are all flush decked Destroyers other than the 2 Italian ships, with simple, small, and compact superstructures. They are fast (22 second) ships.

**Conclulsion**

The Swedish navy is a small efficient navy which developed its own designs and fully tailored them to meet their needs. The Light Cruisers proved to be a remarkably good design that genuinely interested foreign navies. The Destroyers although somewhat austere proved their worth under the conditions they had to sail in many times over in war and in cold war times. Sweden's naval program

turned out to be all that was asked of it and that was a credible naval deterrent to war for other maritime countries. By 1946 Sweden had 3 Battleships, 5 Light Cruisers (2 running trials), and 16 large modern Destroyers. These were larger numbers than any navy on the Baltic Sea in that year. This was a fine achievement for Sweden. In addition Sweden pioneered in many areas including propulsion and automation. This concludes our visit to the navy in the land of the midnight sun I hope you have enjoyed it.



**NEW ALLIED SUPER WEAPON**

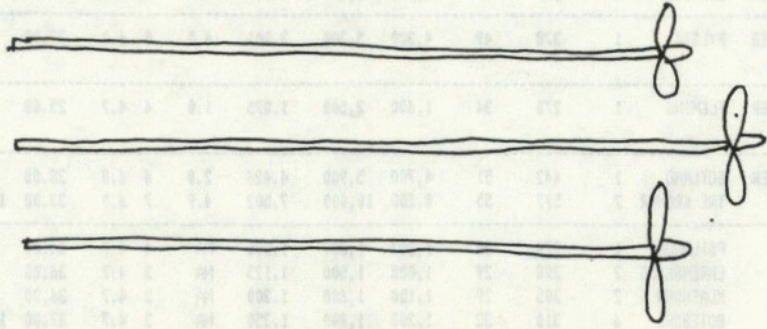
By Dan Dees

Well, folks, I think this is my year to win it all at Nats. I discovered that by some creative interpretation of the construction rules, I could divide the displacement of a ship by 1/144 and come up with some pretty impressive figures - and still be 1/144 scale. So I got busy on my new battleship, U.S.S. Arizona. The picture shows me posing next to the finished model. So far it has presented a few problems. Fortunately, I live reasonably close to the Pacific ocean, so I do have a large enough place to sail it. But the cost of the tractor-trailer rig for transport and the crane required to handle it are killing me.

HULL BUSTERS VERY LIMITED  
3524 GRAY DRIVE  
MESQUITE, TX 75150

I know it feels too wide, but trust me....?

Column width should be 4 3/4" and single spaced  
Thanks Authors!



**HULL BUSTERS** 4 3/4"