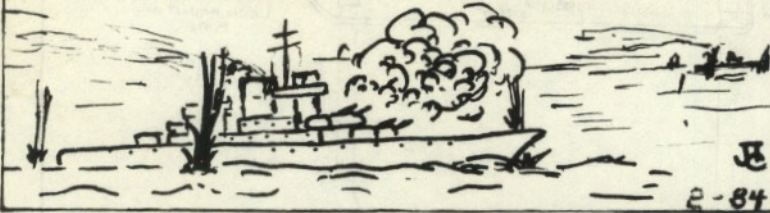


HULL BUSTERS

The Only Strictly R-C Warship Combat Publication



THE GUNS OF THE I.T.S. AUSTIN

by James Foster

The gun design of my ship, the Independent Texas Ship Austin, caused a lot of interest among the participants at the Southeastern Regionals. This interest was primarily from those that were shot by the guns, which is understandable in the light of the number of holes they received. Anyway, my gun design is in many ways similar to Stan's, but there are some very notable differences. The article in the August issue of HULL BUSTERS about the electro-pneumatic valves I use was only part of the story, even though I feel their use is much simpler and more reliable than the needle valves.

If you study the drawings of my gun system (where ever Fluegel has hidden them in this issue), the differences are readily apparent. The most visible and obvious difference is the pressure bypass that runs from the end of the magazine and into the body of the flare nut/barrel assembly. This is the key to the efficiency of my guns and why they were so deadly. Basically what this bypass does for you is allows a quick exhaust route for the pressure that has built up in the magazine during firing. It is this pressure that causes the gun to spurt many BBs at once, instead of the ideal burst of one to five BBs. The bypass also allows you to tweak your guns a little tighter as the higher magazine pressure is vented around the BBs. This gives you consistently greater power to your shots and thus greater effectiveness in battle.

As an example, at the NATS I did not have the bypass system on my guns and their performance was poor. My shots were very weak, bouncing off the sides of my targets more often than not. I could also only get five or six bursts per magazine, the spurling was so severe. However, at the regionals I had the bypass system in and as the other participants can tell you, my guns were terribly effective. My shots in many cases not only penetrated the one side that I shot directly, but in many cases exited the other side of the ship hit. I was also able to consistently obtain twenty to twenty-four bursts per magazine. Quite an improvement for the addition of a small pipe.

The brass tubing I used on my guns was 3/32 O.D. This gave an I.D. of about 1/16 inch. This diameter works fine for my guns with the electro-pneumatic valves. The guns fired with a needle valve may have to use the 1/16" O.D. tubing due to the lower gas flow through the needle valve. Also, when you drill the hole in the flare fitting for installation of the bypass tube, you want to make the orifice into the

Cont 159

"1st. Fleet" Greetings

159

On the 5th. day of Nov. 1983 at 20:11 (that's 8:11 PM for you non-military types) the Amarillo, Texas area combatants decided on a name (after 6 years of battles.) At the same time we also decided to become affiliated with the Only true National R/C Warship Combat Club Organization.

We realize that the Amarillo (1st Fleet) club may never be the largest combat club again. But you know and we know we were the first, so in accordance with this truth we have taken the name '1st. Fleet'.

Our first major effort for the last of 1983 will be to join the 'MUDDY BUDDERS' speedboat club in having a model boat & ship display at the newly remodeled Western Plaza Mall. The mall is located at I-40 & Western in Amarillo and has many new fountains suitable for floating our ships. (It was at such a display that the 'Awesome Martin Schnedier' first saw the ships R/C Warship Combat. So, beware?) 1 or 2 battles may also happen before the end of the year.

Our first sanction event in 1984 will be April 28 & 29 (the weekend after Easter) and will be called the Southwest (District 7) Combat Regionals. Everyone who attends and competes will need to be a current 1984 N.A.M.B.A. member. Eye protection with side shields will be required (side shields will be available for \$1.00 apair.) Entry fee will be \$2.00 per combatant with no ship limit. Medals and/or ribbons will be given.

Please let us know a week ahead of time if you are coming. If you need further information call me at 1-806-373-2566. **MY THE FLEET BE WITH YOU.** *Gaff Bunker*

Technology

BATTERIES AGAIN

In the April 1983 issue of Hull Busters I mentioned some D-cell batteries which were due to soon become available. Well, they didn't because the dealer said the deal fell through. But apparently he found some more because he has them now. In case you don't have the April issue, I'll describe them again.

They're made by Gates, the same people who make the X-cells which many of us use. In fact, they're just a smaller version of the X-cells.

Here's the pertinent info:

Gates sealed lead-acid rechargeable batteries

2 volt, 2.5 Amp Hour
length: 2.66 in. (including solder tabs)
diameter: 1.34 in.
weight: 6 1/2 oz.

For comparison, they are the same size as a standard D-cell, but weigh over twice as much (Regular D-cell-3 oz.) They weigh just half as much as an X-cell, have the same voltage but half the AH rating. These batteries would probably be ideal for destroyers and cruiser

They are used batteries but appear to be in very good condition and the date codes on them indicate the none are older than 1900. The price is \$1.50 each.

They are at a local electronic surplus dealer who is only open Fri.-Sat.-Sun. and I doubt if he does any mail-order business. If you are interested in these batteries, contact me. He has several hundred in stock

Dan Dees
11084 S.W. 61st
Tigard, OR 97223

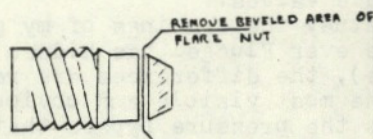
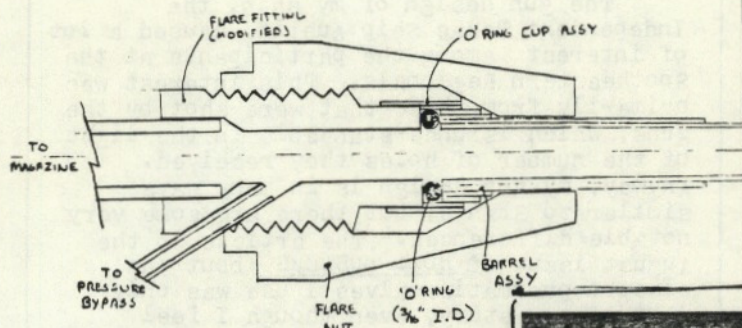
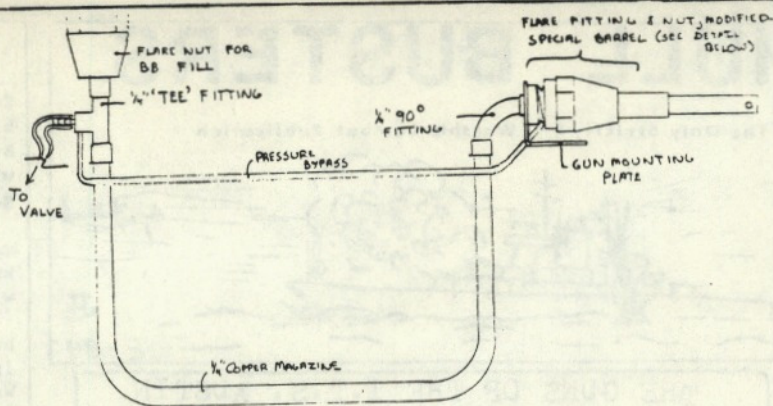


flare passage as close as possible to the 'O'ring. Ideally, it should lie just one BB diameter behind the 'O'ring, as this gives you the best results. It is possible to obtain single shots with the last ten or so BBs this way.

The other difference my gun has over Stan's is in the barrel. As you can see on my drawing, I do not use a standard flare fitting and flared barrel assembly. My fitting has a flat face with a cup on the end, and the barrel is flat at the back end. My 'O'ring is also a 3/16" I.D. 'O'ring, and does not require the use of a centering tool to set up and adjust.

To modify the flare fitting is fairly simple. The first step is to file or grind the beveled section of the fitting off to its shoulder. You must keep this flat area square to the passage and even. If you have some waviness the freon will leak around the 'O'ring. The second step is to cut a short (3/8") length of 3/8" O.D. brass tubing and slip this onto the end of the fitting (it should fit on the cylindrical area of the fitting in front of the threads). You then cut a 1/4" long piece of 11/32" tubing and slip it inside the 3/8" tubing so it rests on the flat area prepared in the first step. You now solder this assembly to the fitting. It is a good idea to have the bypass tube, mount, and any other item to be attached to the fitting ready at the same time to solder. After this assembly is cool, place an 'O'ring in the cup, and file the rim down until there is about 1/32" above the top of the 'O'ring. This must be done to insure the flare nut will seat the barrel properly on the fitting.

The barrel assembly is made of various segments of brass tubing. The inner tube, like in Stan's gun is 7/32" O.D. tubing about three inches long. The next segment is 1/4" tubing and is about 1" long. The next segment is 9/32" tubing about 3/16" long and the final segment is 5/16" tubing about 3/16" long. Assemble and solder all these segments together at one end of the assembly, making sure that the two outer segments are staggered as in the diagram to match the inner angle of the flare nut. After the assembly is cool file or grind the nested segments down to a square, flat surface, with the outer segment 3/32" to 1/8" high. That is all there is to it!



If you do not feel you can construct this design of gun, I will fabricate an assembly for you consisting of the barrel, modified fitting, mount, 90 degree copper elbow, and a 6" pigtail of 1/4" copper tubing to connect to your magazine with another elbow or a straight sleeve. The cost for this will be \$10.00, as the work is rather labor intensive. Remember you will still need a freon tank, valve, hose fittings and etcetera to have a working gun. I am sure Stan will happily supply you with these items.

I am also working on another gun design at the present time that promises to work pretty well. If it is a workable and effective design you will all see it in July at the NATS. Keep em' shooting!

JF

AT THE DOCK-YARDS

by Fluegel

Photo #1 is M.W. Deskin's Salt Lake City (from Norfolk, Virginia). She is shown undergoing her sea trials. Details will be added this winter. The Salt Lake City is controlled by an Airtronics Radio (72.960, interchangeable crystals!). Her offensive power is bunched in her B Turret where 2 guns aim over her bow (fire separately). Her defensive is one car windshield washer pump. The power is provided by 2 Dumas 12 volt motors which are fueled by 2 #64 batteries. Deskin notes that he hasn't had any problems with these batteries but he will!

Photo #2 is T.H. Lane's I.J.M. Nyoko (Alameda, California). She lacks only her speed controls of being operational. The radio is a Tower Silver 500 (75.830 frequencies, 6 channel). She shoots coming and going and is already equipped with running lights, as well as, 6 spot lights. The push is provided by 4 slot car motors (let us know how fast/slow she goes) which drains her 2 4AH 6 volt "tiger" batteries. These Tigers are really pussy cats with a fancy name. A #64 by any other name is still a #64. Good Luck Tom! and I hope Santa brings you a 35 millimeter camera.

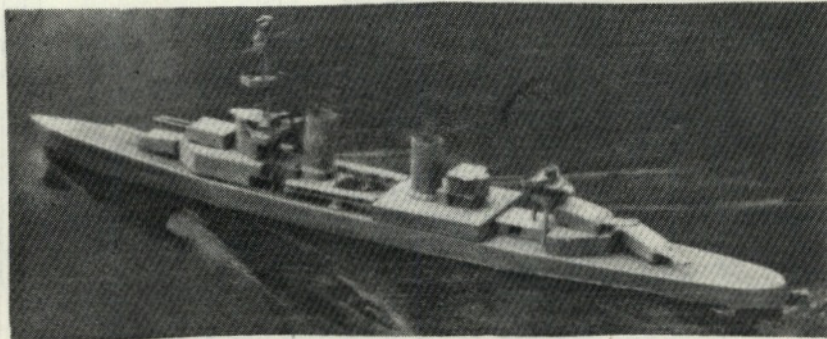


Photo #3 is a real ocean with a not so real H.M.S. Lions steaming across it. P. Von Fntschik's (Mt. Roskill, Auckland, New Zealand) H.M.S. Lions will battle at our 1984 Championships. I don't know any of the good stuff about the Lions but New Zealand has really pretty money, three or four colors, with flowers and birds and women. I can't accept foreign money for subscriptions, only Yankee dollars but I do enjoy looking at the stuff. Good luck you Newcomers, I know it is a real struggle.

WRITE ME A TAPE

Does it seem like forever between issues of HULLBUSTERS? Even after you've read your latest HB are there still questions you'd like to have answered?

The best way to expand your knowledge of R/C Warship Combat, deepen friendships you've formed, and establish new friendships, is to "WRITE A TAPE" to a fellow enthusiast. Grab a tape recorder a 60 minute tape cassette, and begin talking. It works!

I was thrilled when I received my first tape from Dan Dees) after we'd met at the 1983 Nationals. A tape from an R/C combat veteran -- the "best of scale" man, yet! That got the ball rolling for me. I now correspond with about five battlers and have enjoyed every tape I've received.

If you have (or are building) a battleship, tape with someone who has a BB. So much data and info can be gained by sharing common problems. If you're thinking of building a cruiser, talk with someone who has a successful cruiser already. You'll have the chance to ask specific, detailed questions and profit from another's experience. What motors/batteries are best? What should a cruiser weigh? What magazine system will work?

Besides gathering technical info from your tape correspondence, you'll really learn to personally know the person or people you exchange tapes with. It always seems at Nationals or Regionals we're just all too busy to really talk about many personal things--too busy patching, tweeking and battling. Tapes can correct this situation.

Write me a tape! We (John and I) have a BB and are building a cruiser (Allied of course).

Tom Jass
312 E. Circle Avenue
Lombard, IL 60148

BIG SHOOTOUT(?) IN PORTLAND OR HOW DID SALINI GET BOW DAMAGE?

The first R/C Combat Club event to be held west of Amarillo took place October 8-9, 1983, in Portland, Oregon. I was calling it the Western Regionals but Fluegel suggested that I call it the Northwest Regionals. I guess he's thinking toward the future - in case a similar event should be held by the Head Geek down in Little Italy (San Juan Capistrano, CA).

Friday afternoon Joe Salini and Dick Hargrave arrived from southern California and we promptly set up shop in my garage. Early that evening Ralph Gibbons pulled up in a state of near-paralysis, having just soloed from Salt Lake City, Utah. We all commenced work on our ships (after all, what else is an R/C combat event for?) And typical of R/C combat, we were all able to get to bed quite early that night (about 3:00 AM).

Next morning - Saturday - we began buttoning up our ships and doing all those last minute things in preparation for going to the lake. After several declarations of "just 10 more minutes" I began to suspect that we might not get to the lake until possibly as late as 11:00 AM.



I THINK I HAVE A SHORT CIRCUIT.

3:30 PM Saturday - having just arrived at the lake, we tweaked our guns and prepared for battle. However, in a shameful display of Axis cowardice, Dick Hargrave with the help of his Axis partner, managed to disable the (only) gun on his Japanese heavy cruiser, Nachi, by kinking the copper magazine. And then there were three!

So, in a further display of Axis cowardice, Joe Salini didn't like the odds in an Allied-Axis battle. Really, it wasn't that unfair - my U.S.S. Colorado with a bow gun and two side-mounted guns and Ralph's HES Exeter with a bow gun and a stern gun against Joe's Conte di Cavour with a bow gun and a stern gun and, most lethal of all, a bow which sits very low in the water and a speed of 21 seconds in 100 feet. What a devastating combination!

So we agreed to call it a Blue fleet and a Red fleet, or some such names, and I would battle Joe and Ralph. Not long after the battle began I realized that although my bow gun was working well (I heard cracking balsa a couple of times), I couldn't seem to get much response from my side guns. I suspected (correctly, as it turned out) that I had overtightened my O-rings and they were jammed. Desperately wanting to engage in some meaningful battling, as soon as my bow gun was empty I called 5 minutes and headed for the far side of the lake. I wanted to correct the problem and get back in action.

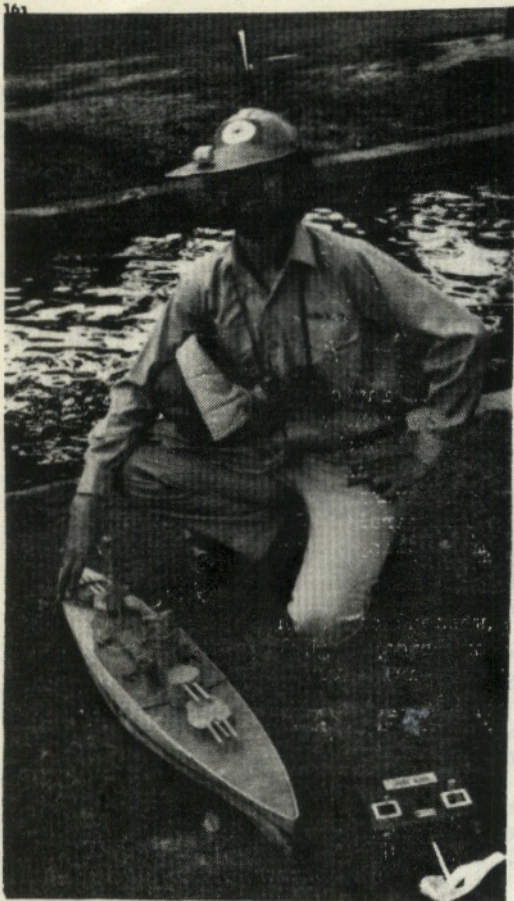
In WWII the Italians were probably best known for their ability to run away. So why is Salini so different? I figured that, since I could barely see my ship, no one would risk going after me. But NOOOO! Salini put the pedal to the metal (all 21 seconds worth) and took off in hot pursuit. Obviously the airwaves had been burning between Chilhowee and San Juan Capistrano with Axis communiques about the close encounter the previous week between Milholland's U.S.S. Alabama and Darby's Giulio Cesare and the Italians were determined to avenge their loss.

And even though we couldn't see what was going on out there, we heard a sharp CRACK! clear across the lake. Right away we figured that something had made a large hole in some balsa - either a very large projectile (which none of us carried) or a very pointy bow (which one of us did). Anyway, about 5 seconds later I saw the stern of the Colorado rise up at about an 80 degree angle and disappear in a pool of foam.

One of the most disappointing things about this sink was that it was so far away that we couldn't see it very well. It would have been a spectacular sight.

By now darkness was rapidly approaching and, while I dismantled my ship, Ralph and Joe engaged in a couple of inconclusive sorties.

As Ralph and I were examining his Exeter for battle damage after one of the sorties we noticed that one of his secondary guns was missing its barrel. It didn't seem likely that it had been shot away so we figured it had been knocked off when the Exeter and Cavour had passed close by one another. Sure enough, when Joe retrieved the Cavour, there was Ralph's gun barrel sticking out of the hull about 1/2 inch below the deck on the port side under "A" turret. If you can't shoot 'em, spear 'em.



In spite of the size of the hole in my hull, the damage was surprisingly easy to repair, and once again I was able to get to bed quite early (2:30 AM).

Sunday morning "just 10 more minutes" kept us in my garage till 1:00 PM. When we got to the lake the Nachi once more was forced to retire from battle early because of motor problems. U.S.S. Colorado had developed a nasty habit of draining receiver batteries in about 3 minutes flat. Try as I might to correct the problem, I never succeeded, and finally the Colorado got stuck in full reverse with hard starboard rudder in the middle of the lake. In a display of masterful seamanship Ralph Gibbons nudged his Exeter gently against the stern of the Colorado on the starboard side and held position perfectly as the two ships came to the side of the lake. That was quite a feat, requiring full power for the 7-pound Exeter to force the 25-pound Colorado into a straight path.

This event (the regionals) marked a high point in R/C combat for me, since it was the first time I had been able to battle close to home in my three years of participation in the hobby. But it also marked the low point, for as I went home from the lake Sunday night I felt so discouraged as to contemplate dropping out of the hobby. I had been looking forward to this event with such anticipation that having been rendered nearly ineffective with problems made me wonder if all the time, effort, and money spent was really worth it. But I soon realized that quitting was not a solution because I love this hobby and the people in it. The only solution is, once again, to learn from the experience and try again.

For those of you planning similar events in the future, here's a good piece of advice (from Fluegel, about three weeks too late to do me any good). Don't tell your friends about the big battle. You might have similar problems to ours and people will be standing around wondering where you are. There was a popular saying during the late 1960's - "What if they had a war and nobody came". A similar saying went through my mind several times that weekend - "What if everybody came and nobody had a war?"

And even when you get to the lake you don't need a lot of people looking over your shoulder asking a lot of questions while your head is down in your ship trying to get it ready to battle.

Dick Hargrave with Nachi.



Joe Salini with Conte di Cavour. Note Salini's R/C combat hat. Bill is about 1 foot long, plastic screen hanging below front of bill has gunsight reticle, gun turret sits on top of bill, Italian flag on top of hat, sign on front of hat says "Ragu Homestyle" - it's a spaghetti sauce label.

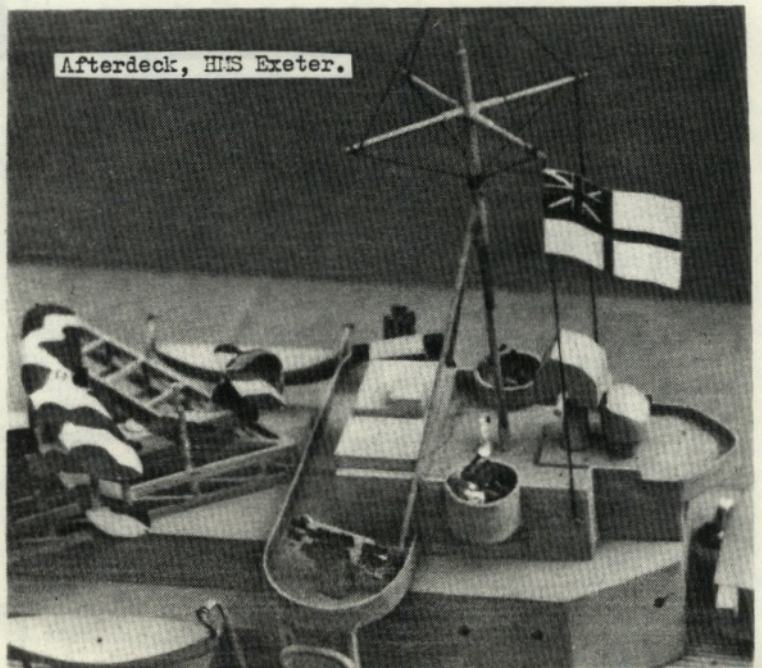
This advice applies doubly if, as in our case, half of you have no experience and the other half have very little. It's the nature of R/C combat that problems will occur. We all have homemade ships containing homemade systems. So give yourself a break and just go battle. You can invite people to watch when you are reasonably certain that all the bugs are ironed out.

Now a little about the participants. True to R/C combat tradition, they are superb people. Though the battling was disappointing, I'm sure we would all do it again because we had a great time.

Even though Joe Salini was probably the most experienced of the four of us, he was the last one ready to go to the lake both days. But there is a reason for this. He spent more time helping everyone else work on their ships than working on his own. Dan Hamilton recently referred to him on a tape as "the E.F. Hutton of R/C combat". That's a pretty good description. When you're having trouble with your ship he's a pretty good guy to have around.

Dick Hargrave didn't get much chance to battle due to his problems with Mr. Murphy. He also has the added handicap of having absolutely no place to get any stick time other than a swimming pool (he's now build-

Afterdeck, HMS Exeter.



ing a small destroyer solely for that purpose). But he is the best builder I have seen yet. The Nachi did not have a lot of detail but the workmanship was unsurpassed. Several spectators at the lake asked him if it was a plastic model! And the interior was just as immaculate. Everything was neat and in its own place. Saturday his ship appeared to be as fast as or faster than any other yet he was running four 12-volt Radio Shack motors on 8 volts (four X-cells). That night Joe Salini convinced him that he had the room and the displacement to add two more X-cells for a full 12 volts, which he did. The next day I timed him at 17 seconds for 100 feet from a running start. You can see this fine piece of craftsmanship in Springfield next summer, because Dick plans to be at the Nationals.

Ralph Gibbons also did a beautiful job on his HMS Exeter. It even has a Walrus floatplane with a string attached. If the ship sinks the Walrus will float off and the string will uncoil from inside the superstructure and mark the spot. The Exeter is also very fast and, fortunately, has a very good deck seal. Being a small displacement cruiser, with six X-cells installed it sits quite low in the water and, at full speed, the entire quarterdeck is awash. Even so it took very little water. Ralph is unusual for a rookie in that he was completely battle-ready when he arrived in Portland. And that's in spite of the fact that he didn't receive his guns until two weeks before the meet. He

stayed up til midnight for a week to get everything ready on time. He had even figured out how to tweak them properly.

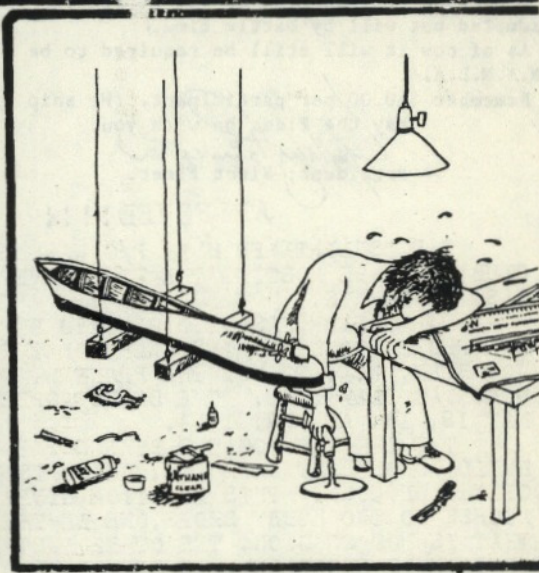
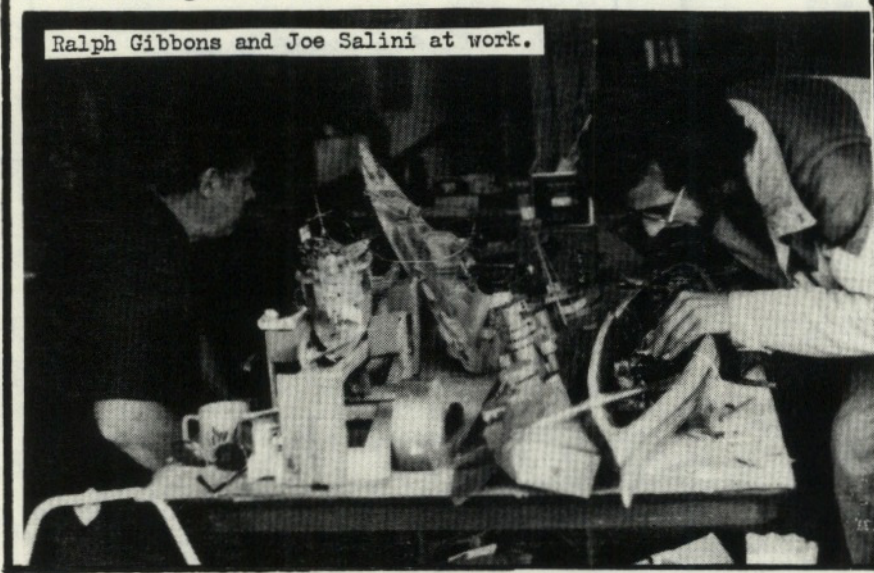
But there's more to Ralph Gibbons. Having several years of competition R/C aircraft flying, he is right at home at the controls and is very savvy in his maneuvering. If he had had the competition at this regionals, I feel he would have placed himself in the same class as such "rookies" as Larry Manofsky and James Foster. Ralph Gibbons is now building HMS Vanguard, the last and largest British battleship, and plans to be at the next Nationals. Watch out, Axis!

Lastly, I feel I must mention someone who helped make this a most enjoyable weekend for all involved - my wife, Shirley. It was at her suggestion that ever one stayed at our home instead of renting motel rooms making it possible to spend more time together. She also devoted her entire weekend (and she is a working woman - she values her weekends) to this event, allowing us to spend every waking minute on R/C combat. We ate like kings (or admirals?) I'm sure everyone who was here shares my feelings - thank you, Shirley.

Dan Dees

Postscript- The weekend after the regionals Joe Salini showed up again on Friday night. He helped me find the problem with my ship and Saturday afternoon we had a full 3-sortie battle.

Ralph Gibbons and Joe Salini at work.



OBSERVATIONS OF THE FOUNDING FATHER

Greetings Combatants! I am excited about the new developments in the area of hull skin penetrability testing. We have needed a standard which will enable combatants to test their ships prior to battling and especially prior to traveling to a regionals or nationals.

No individual should be given an incentive to make his hull skin illegally tough. It is simply unfair to his opponents. There seem to be two main systems currently under test; 1.) the drop test and 2.) the pendulum test. One really nice thing about the different testing methods is that the results can be correlated fairly well. Initial results also seem to correlate well with battle damage suffered "under the gun". As mentioned by Jeff Poindexter, the Amarillo Regionals (April 28 and 29) will feature the use of the hull toughness test for qualification of ships prior to battling. As an initial guess assure that the drop test penetrates at 12 inches or less, or that the pendulum penetrates at 35° or less. These numbers have not been set yet but it will be of some help to know these "ball park" figures. Now if Fluegel and Darby will show drawings of the test systems in Hull Buster you can do your own testing and know how much "impact" it will have on your spring ship refit program. Good Luck. I haven't tested mine yet either.!!!

Now on to the NAMBA/Insurance Issue. Several people are pursuing the "independent" insurance approach. Since NAMBA has certain requirements that would cause most

combatants a lot of expense and inconvenience with questionable safety improvement it is hoped that another insurance underwriter will be able to insure us for about NAMBA is costing us now. It looks feasible for a policy insuring about 100 members. In this way our club could control our own safety requirements and pay for only the coverage we need. It appears that it will be 6 months or a year or so until any such policy is secured. So if you want to battle in 1984, you should probably go ahead and send Darby your \$18.50 for NAMBA and while you are blowing money send in your club dues too. HA!

Now it's apology time. I am apologizing for being tard on the announcement of the new Regional Coordinator for the Northeastern United States. He's Bob Amend. Sorry again Bob. His address is Forrest Creek Apt., 3302 Club House Drive, West Deptford, New Jersey 08066.

He, Jose Vilar and Carl Comurati have formed the first Combat Club in the Northeast. So if you're by yourself in that area, contact Bob. Their club is planning to host a Regionals this year.

Welcome Aboard! I look forward to putting a BB or two into your Lutzaw, Bob. You'll get a chance to zap my Salt Lake City as revenge for my late announcement.

One last announcement. Stuart Russel, President, of NAMBA is shortening my title to National NAMBA Chairman for R/C Battleships. He's found a good man, Gary Johnson, of California to take over Scale and Semiscale Duties. Thanks, Stuart. I guess I'd better send in my NAMBA dues, Terry. Let's Battle! Stan

CALENDAR

Easter Battle- Amarillo, Texas

Greetings from First Fleet. At our second meeting it was decided that due to the cost of ribbons we are going to adjust the \$5.00 entry fee we were going to charge for the "Weekend After Easter" battle to \$10.00. This will be a "2 sortie ship to ship challenge" meet only. This was decided in order to allow combatants to have a chance at really increasing their personal scores. Since the lake is large enough we should be able to have 2, 3, or 4 challenges at the same time (barring frequency conflicts.) If enough of the combatants wish to have a fleet battle or two, it will be arranged; however no awards will be given, only points.

The event will be held April 28th. and 29th on Gene Howe Lake at the hub of R/C Warship Combat in the great Amarillo, Texas. Hostilities will start at 10:00 A.M. Saturday the 28th. and end at dark or until no ship is left able to do combat. Sunday the 29th. will start at 12:30 P.M. and end 4:30 sharp. (The contest director has to be at work at 7:00 P.M. and would like to have time to present awards and scores.)

There will be an event ribbon awarded to all participants and a separate ribbon awarded if a combatant wins a challenge. Bronze, silver, and gold stars will be added to "challenge" ribbons after 1st win.

Also there will be a hull penetrable test given to each ship entered. (As of yet no figures have been adopted but will by battle time.)

As of now it will still be required to be a member of N.A.M.B.A.

Remember \$10.00 per participant. (No ship limit.)
May the Fleet be with you.

James Foster
President, First Fleet.

APPROVED!!!!

THE "SPILINTERED HULL R/C WARSHIP COMBAT CLUB" WILL BE HOSTING THE FIRST EVER NORTH-EAST REGIONALS.

PERMISSION HAS BEEN GRANTED BY THE PARK AND RECREATIONS COMMISSIONER FOR THE CITY OF WOODBURY, N.J. TO USE THE FRANK H. STEWART MEMORIAL PARK LAKE. THE DATES AGREED ON ARE MAY 18, 19, AND 20, 1984.

THE LAKE IS LOCATED BEHIND THE YMCA BUILDING ON EAST BANK AVE, WHICH IS IN THE CENTER OF TOWN. THIS LOCATION GIVES EASY ACCESS TO TWO HOBBY SHOPS, ONE IN THE MALL THAT IS NOT SO GOOD, THE OTHER JUST NORTH OF TOWN IS EXCELLENT. WE STOCK MOTORS, PROPS, BATTERIES, AND JUST ABOUT ANYTHING ELSE YOU MIGHT NEED. BB'S ARE 10 MIN. AWAY AT THE LOCAL MART. ACCORDING TO THE PARK AND RECREATIONS COMMISSIONER, WILLIAM SNYDER, THE LAKE IS NOT OVER 4' DEEP ANYWHERE. (WE WILL HAVE TO TAKE HIS WORD ON IT, AT THE TIME I TALKED WITH HIM THE LAKE WAS FROZEN OVER.) HE ALSO SAID HE WOULD HELP WITH PUBLICITY, (HE HAS CONTACT WITH 3 AREA TV NEWS STATIONS.)

IF YOU ARE INTERESTED IN ATTENDING PLEASE LET ME KNOW, EITHER WITH A LETTER OR A TAPE.

INCLUDE THE FOLLOWING INFO.

DATE OF YOUR ARRIVAL.

NUMBER OF PEOPLE YOU WILL BE BRINGING? I LIVE IN AN APARTMENT, FLOOR SPACE IS AVAILABLE, ITS JUST NOT MUCH OF IT.

SHIPS NAME, NATIONALITY AND RADIO FREQ.

B. J. Arnold

RULE RECOMMENDATIONS

7.) All ships must use the stock (unmodified) 4.8 Dumas motors for propulsion at a voltage of no more than 6 v. No other motors will be allowed.

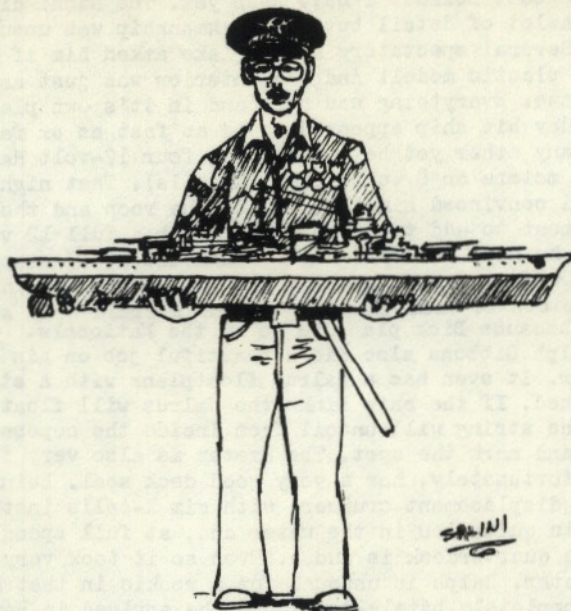
James Foster

8.) Battleships and Battlecruisers may cover all quadrants with gun fire.

James Foster & D.W. Fluegel

9.) Ships with ram bows must either have the ram removable for combat or use a rubber (sponge or latrix mold) ram.

James Foster



YOU MAY NOT KNOW ME, BUT WHEN I'M AT THE LAKE I HAVE TO FIGHT ALLIED SHIPS AND DODGE ENEMY GUNFIRE. THAT'S WHY I CARRY THIS: "THE BISMARCK"... DON'T LEAVE HOME WITHOUT IT.



THE VICE PRESIDENT'S COLUMN Fluegel

If you're going to mess up, then do it royally! I lost an article that should have been in this issue.... I lost The President's Column! Sorry boss, and I'm also sorry to the readers. Well, I remember some of it, he said he would like to see the sport evolve into a single shot-gun event. He doesn't want us to rush into it, but he wants us to discuss it (should reliability and durability with the gun continue to perform well). You New Comers may not understand the term "Single Shot Gun". We are currently using machine guns, the new gun fires one bee bee at a time and reloads itself.

The other issue the President disclosed was in response to confused people's letters. They were upset about the new rules and felt the executive board made the rules. He explained that, that wasn't the case. Excuse me Schnider, I can't remember how you said it so I will say it my way.

All new rules are made by the publisher of Hull Busters. If he likes them he publishes them, if he dislikes them then he solicits a bribe and then reconsiders the rule proposal. There, that's how the rules are made, its simple!

Now, there is a misconception that they are done another way. The voters have about 93% of the power. They propose the rules and if 51% vote yes, they are rules, that's how its done. All the crummie rules are you voters (Allied) fault!

The other 7% of the power is divided by: 1.) NAMBA (represented by only person I know who is steady enough for that position..... Stan Watkins.... except of course, I could do a much better job!) which insures us, 2.) The contest director of the Championships, 3.) The Executive Board who interprets the intent of the rules (should there be any gray areas), 4.) and of course, the typist of the rules, who with a single mind-drift can make our sport into a combination warship-battle meat-loaf-cook-off event.



R/C WARSHIP COMBAT RULES

1983-1984 COMBAT SEASON

GOALS OF MODEL WARSHIP MINIGUN COMBAT

- A. The goal of this hobby is to enable participants to enjoy most of the interesting aspects of surface ship Naval battles safely.
- B. To be a registered voter one must have participated in an N.A.M.B.A.-sanctioned battle within the prior 24 months.
- C. Registered voters who have participated in one of the two most recent championships will have their votes count twice.
- D. Rules may not be changed but once a year. The time and place of the annual voting shall be announced at least 30 days prior to the event.

I. SAFETY PRECAUTIONS

The low power of the R/C minigun provides a basic safety factor that is equivalent to a normal "daisy" air rifle.

The use in conjunction with a radio control unit, however, introduces the normal uncertainties associated with a radio control unit.

A. Barrel Safety Pin

To prevent injuries while ships are ashore, a pin must be inserted in each firing barrel prior to lifting the boat from the water. Safety penalty points will be assigned for failure to insert pins. See Section II. D. for points assigned per violation.

B. Elevation Limit

Typically, the BB will strike the water before arriving ashore. To help assure that BB's cannot rise to levels that could injure spectators at eye level, the maximum allowable elevation of a gun barrel is 10 degrees with respect to the actual waterline of the ship. This elevation is at maximum servo travel.

C. Spectator Considerations

In spite of normal safety precautions, a conscious effort should be made to consider spectator and participant safety at all times. Example: (1) Keep children from sitting near the water's edge, as this can negate the maximum elevation safety precautions. (2) Do not fire guns while participants are retrieving sunken or damaged ships, as the participant's eyes are considerably lower in altitude when they are wading to recover ships, which also negates the elevation limits.

D. Wear Safety Glasses

Safety glasses are required whenever participating in or watching R/C minigun combat events. Times when safety glasses are even more important are: (1) when retrieving a ship while other ships are in the water, (2) for small children near the water's edge, (3) when inserting barrel safety pins and (4) when spectators or participants are sitting or lying on shore.

II. BATTLE DAMAGE POINTS

Battle damage points are accrued by shooting holes in the opponent's ship. In battles, a points system is provided to enable a victory decision to be made. Totals should also be kept for annual championship awards and ratings.

The following is a list of battle damage and penalty points.

A. Superstructure Damage Points

- 1. Superstructure entry holes made by BB's count for 5 points each. Items blown off or broken loose also count for 5 points.
- 2. When a ship battles with an illegally thick skin or solid area, a dent will count as 5 points. (Except in those areas where harder, thicker wood is legal, i.e., ribs, decks, etc.)

B. Hull Hole Damage Points

- 1. The entry hole in the hull above the water will count for 20 points.
- 2. Hull holes either entry or exit below the waterline, count for 100 points. If a BB enters above the waterline and exits below the waterline, the entry hole is thrown out and only the exit hole is counted.
- 3. Holes in black boundary area or within 1/8 inch of the junction of gray and red waterline, count 50 points. These are entry holes only.
- 4. Sinking from a Hull Hole.
 - a. If a ship sinks and any part of the hull has a BB hole in it, a "sink" is awarded with the 500 points score going to the victor.
- 5. Intentional Beaching
 - a. If an individual prematurely brings a ship to shore to avoid a sinking from a below the waterline hit, the individual will be penalized 2,000 points.

C. Optional Turret Damage/Disable

At the option of the participants by unanimous agreement, the turret disable rule may be incorporated for a prearranged series of battles. If so agreed, a turret that is gun equipped will be considered disabled (and 75 points awarded) for one complete sortie (magazine load) if the turret had been damaged by gunfire. Disablement will occur in the next sortie (magazine load) immediately following the damage occurrence. The turret/gun will not be allowed to be loaded during this sortie.

D. Safety Penalty Damage Points

- 1. Safety penalty damage points will be subtracted from the rule violator's total for not installing the barrel safety pins, prior to removing the ship or gun from the water or ship, respectively.
- 2. Safety penalty damage points may also be subtracted when 4 or more participants vote to assign them and the violator is the only "no" vote.
- 3. Contest Director shall set safety penalty point values prior to the contest.

III. CONSTRUCTION CLASSES & SPECIFICATIONS

A. Rib and Keel Balsa Class

- 1. The ribs and keel can be no thicker than 3/8" plywood and must not be so numerous as to significantly thicken the average skin strength of the hull. (The number of ribs shall not exceed an average of one rib for every 3". Dividing the hull length in inches by 3 will give the maximum number of ribs allowable.) The hull skin and superstructure skin must be
- 2. The main deck(s) may be 3/8" (maximum thickness of any single or multiple deck assembly) plywood to help strengthen the hull assembly.
- 3. The top and bottom surfaces of the super-structure "buildings" may be no thicker than 1/16".
- 4. The very bottom of the hull and areas immediately around the prop shafts may be thicker material; it must not however, interfere with the inherent penetration vulnerability of the hull to the R/C minigun.
- 5. Opponents may refuse or accept combat with minor violations of the rules.
- 6. No "water belts," double hull areas, watertight compartments, or other construction advantages may be taken that are attempts to defeat the scope of construction intent. NOTE: For all classes, no damage points will be allowed for ramming and a sink as a result of ramming will not count. See Section XI for standard ram penalties.
- 7. Solid balsa in the hull at or near the waterline cannot extend more than 1 inch behind the bow and 1 inch in front of the stern. Solid balsa wood must not extend more than 1 inch at any point along the radius curve of the bow or stern.
- 8. There shall be no stringer used within 1/2 inch of the top or bottom of the waterline unless the shape of the hull dictates it.

B. Vacuum-Formed Plastic Class

- 1. It is legal to use vacuum-formed plastic ships or portions of ships in R/C Warship Combat. Handicap factors acceptable to the majority of the combatants engaged in the contests will be incorporated to compensate for any advantage that the vacuum-formed parts have over balsa parts
- 2. Handicap factors shall be determined by the majority of the contest participants.

IV. GUNS & FEATURES ALLOWABLE FOR TYPE SHIP

A. A gun shall be defined as an offensive unit and shall not fire any projectiles other than standard BBs.

B. A pump shall be defined as a defensive unit and shall not be of a positive displacement design (intent was only centrifugal type designs).

- 1. A pump will have one round 1/8" I.D. discharge on the outside of hull, superstructure, or deck, where it can be easily measured.
- 2. A pump may have only one inlet.
- 3. A pump's motor is to be no larger than one propulsion motor in physical size.

C. A Gunboat

- 1. A gunboat may have one gun with no more than a 10-BB magazine and no pump; it may have one pump and no gun.

D. A Submarine

A submarine shall have one gun with a 20-BB magazine. They must comply with surface ship rules which include 1/32" balsa, safety pins, and proper scale. Their torpedo tubes may not be used as housings for the guns. The gun must be mounted in the deck gun location. (One exception is Surcouf, whose 8" guns were in the superstructure). No pumps or watertight compartments are allowed for any reason. (CAUTION: a watertight radio box may act as flotation and cause the sub to be illegal.)

E. A Destroyer

1. A Destroyer may have one gun with no more than a 20-BB magazine and no pump, or it may have one pump and no gun.

F. A Light Cruiser Under 9000 Tons Standard

1. A Light Cruiser under 9000 tons standard may have only two offensive/defensive units.

EXAMPLES:

- a. It may have two guns with 100-BB magazine each and no pump.
- b. Or it may have one gun with a 100-BB magazine and 1 pump.
- c. Or no guns and two pumps.

G. Heavy Cruisers and Light Cruisers Over 9000 Tons Standard

1. Such Cruisers shall have only three offensive/defensive units. (Guns shall only have 100-BB magazines).

*** SPECIAL NOTE ***

- H. Any ship smaller than a Battle Cruiser shall not have guns pointing directly off the side of the ship.

I. Battle Cruisers and Battleships.

1. May each have 5 offensive/defensive units.
2. Side-mounted guns shall be limited to a 50-BB magazine each and count 1/2 unit each. (NOTE: only one side mounted gun per side and a maximum of two side-mounted guns per ship.)
One quadrant of ship must be left unprotected.
3. Side-mounted guns must be horizontal to the water.
4. Battle Cruisers full unit guns shall have 100-BB magazines. Battleships full unit guns shall have unlimited BB magazines.
5. Turrets with operational guns may not rotate while participating in battle.
6. Ratio of guns and/or pumps is captain's choice.

J. Gun Placement in the Ship

1. Guns must be placed in turrets or casemates occupied by the main battery of the ship modeled. No guns may be mounted near the waterline or below the waterline. These guns would make for the "easy kill" and as such are not allowed. This would be unrealistic.
2. Guns may be mounted in the superstructure if the main turret is physically too small to house the gun. No tactical advantage may be gained, such as peculiar trajectories due to the flexibility this rule allows.

K. Maximum Gun Pressure

1. Maximum gun pressure shall not exceed the ambient pressure of freon 22.

L. Additional Weapons

1. Since the goal of the hobby is to conduct reasonably safe, surface gun battles, other weapons such as mines, torpedos, ram bow usage, depth charge, fire, acids, bases, etc., are not allowed. Special combat classes might be started for these type weapons outside the realm of R/C minigun combat.

V. GENERAL OPERABLE FEATURES

1. Generally, any extra features (ringing bell, Klaxon horn, operable anchor, lights, etc.) that will not affect the survival of the ship or give it a vastly unfair advantage over the other ships is allowable. The determination of legality will be made by a majority vote, should a question arise.
2. Turrets with operational guns may not rotate while participating in battle.

VI. MOTOR POWER & RUDER SPECIFICATIONS

It is understood that finding motors that have the proper torque might be difficult. Voting of participants to disconnect a motor, if overpowered, or throttle down or refuse competition is again to be used to settle disputes. A faster ship cannot refuse battle.

A. Scale Rudders

1. Scale rudders shall be used. A normal allowable deviation from scale shall be 25% of surface area.

B. Number of Screws

1. The number of screws used shall be scale.

C. Reverse

1. All ships must have a reverse.

VII. SCALE WATERLINE DISPLACEMENT & DRAUGHT

Hulls shall be relatively scale with a scale draught and displacement.

A. The Waterline

1. The scale full load waterline shall be maintained using weights. (No water-filled spaces are allowed.)

B. Hull Below Waterline

1. The hull must extend below the waterline and displace a proper scale quantity of water.

VIII. SCALE

1. Any ship started after January 1, 1984 shall be 1/144 to 1/150 scale with a 2% error allowance.

IX. BATTLE CONDUCT**A. Magazine Regulations and Time Limits**

1. A sortie will consist of a trip to sea involving the expenditure of on-board ammunition in the magazines. A battle is a series of 2 or more sorties. (Agreed on prior to battle.)
- a. Upon the announcement of one participant that his magazines are empty, the opponents shall have a maximum of 5 minutes in which to fire on him. After 5 minutes, his sortie will be declared "over" and he must declare this fact and leave the battle. Any damage done after the declaration will be awarded to favor the ship damaged. This shall be called "Empty Magazine Rule" or "5-Minute Rule".

B. Shifting Weights

1. No weights may be shifted inside a hull to help improve seaworthiness during a sortie or battle. (This rule especially applies to shifting weights to avoid hull leakage caused by battle damage.)

C. Out-of-Control Rules

1. The "Empty Magazine Rule" applies from the time that an individual announces that he is 'out of control.'
2. If a ship is 'out of control' and beaches (beach sunk) the combatant can elect to call for a sink or leave it beached for "5-Minute Rule." This applies on y to beached ships and only for the purpose of minimizing non-sinkable damage. A majority of combatants, who are competing in that sortie, must agree that the ship was truly out of control when it beached.
3. "Out of Control on Water Rule" can be called if rudder hangs, motors quit (for any reason other than batteries losing normal charge), ship hangs on any object, or props get fouled, the ship may shoot at enemy ships, if it is capable of doing so for the duration of the "5-Minute Rule."

D. Water Removal Rule

1. Between sorties, water may be removed from a ship's hull, but battle damage may not be repaired! If a ship refuses to battle in following sorties of that battle, 250 points will be awarded to the opposing ship or fleet. Battle damage may then be repaired and the ship may rejoin the battle.

E. Firing from Shore

1. There shall be no firing at another ship from shore or firing from shore to water during a battle.

F. Firing from Sunk Ship

1. If a ship has sunk (not beached sunk) and if the guns will still work, the ship may continue to shoot at any enemy ships if the combatant has not declared "Empty Magazine Rule"; ship is still declared sunk.

G. Launching Coordination

1. Ships shall be launched in an orderly manner. No ship may be fired on for at least 30 seconds following a launch.
2. A ship must not be launched in an attempt to ram or damage another ship.

H. Non-Damaged Sinkings

1. A ship that has accrued no damage during a battle or sortie may be recovered in a sinking condition, but will be declared the loser and penalized 100 points for unseaworthiness and bad seamanship. The ship may also sink with only a 50-point penalty.

I. Batteries

1. A ship must finish a battle (2 or more sorties) with the same set of propulsion and pump batteries it started with. The exception to this rule is the radio receiver batteries. A 250-point penalty will be charged to the ship violating this rule.

J. The Target for Target Gunnery

The target for "target gunnery" should be an object that can be hit from any angle (360 degrees).

K. Pit Time

To shorten pit (dock) time, points will be awarded to those ships who are ready to battle at the appointed time during the first fleet battle of the day. 100 points per ship assigned to the purposed fleets.

X. BATTLE WINNER DECISION**A. Draw**

1. In non-fleet actions, a draw will be declared if no battle damage points are awarded to either participant of a battle. A draw will also be declared if battle participants receive equal numbers of points.
2. In fleet actions, fleet battles will be deemed a draw unless there is at least a 100-point spread between the two fleet totals. To be classified as a fleet action there must be at least two ships in each fleet.

B. Decision

1. A victory decision will be awarded (in individual non-fleet combat) based on the accumulation of a superior number of battle damage points. This total also includes penalty points.
2. A victory decision will be awarded in a fleet action (battle) when the total battle damage and penalty points of one fleet are at least 100 greater than the opposing fleet total.

C. Sink

1. A sink shall be declared when a ship is resting on the bottom of the lake, pond, river, etc., due to battle damage.

D. Beach

1. A beach will be designated to a ship that beaches to avoid sinking. Two thousand battle damage points will be subtracted from the individual who owns the ship and awarded to the opposing fleet's total.

E. Fleet Points

1. After a battle, a fleet's points will be divided among the fleet participants using the following weighed system:

Gunboat	1
Destroyer	2
Light Cruiser (under 9000 tons standard)	3
Heavy Cruiser & Light Cruiser (over 9000 tons)	4
Battle Cruiser	5
Battleship	8

The weighing points shall be totaled and the fleet total battle damages will be divided by this number. To determine a specific ship points awarded, the ship type weighing number shall be multiplied by the above fleet battle damage units.

EXAMPLE:

A fleet of 3 DE, 1 CL, 2 CA, 2 CB and 1 BB acquires 2,500 battle damage and penalty points. To get fleet battle damage units, the weighing factors must be totaled. $3 DE = 6 + 1 CL = 3 + 2 CA = 8 + 2 CB = 10 + 1 BB = 8$. The total is $6 + 3 + 8 + 10 + 8 = 35$.

Divide 2,500 battle damage points/35 total weighing units equals 71.428. (Round down if less than .5) = 71 fleet damage units.

The weighing factor of the individual ship may now be multiplied by the fleet damage units to determine each ship's share of the total points. Example: the battleship (BB) is worth 8 weighing factor units \times 71 fleet damage units or $8 \times 71 = 568$ battle damage points.

F. Disqualification

1. Battle Disqualification
 - a. If a ship is disqualified before a battle, it will not compete until the disqualifying factor is corrected or until the other ship battle participants overwhelmingly agree that the ship can compete. If during the battle, the advantages of the illegal ship prove a noncompetitive advantage, the ship may then be disqualified before future battles of sorties. He will, however, maintain the battle damage points accrued during the sortie prior to disqualification.

XI. STANDARD RAM PENALTIES**A. Ramming Definition**

Any contact between ships shall result in a "ram penalty." These penalties may not be cancelled.

B. Non-Damaging Ram

1. The penalty for a non-damaging ram will be 20 points deducted from the ramming ship's battle damage point. NOTE: As with the other penalty points, if the offending party has insufficient points accrued to cover the penalty points, he will be assigned negative points.

C. Ramming Causing Damage

1. For any and all ramming damage (scratch to hole) a 50-point penalty (for each ram) will be assessed the rammer.

D. Ramming Causing Sinking

1. If a ship is sunk by a hole below the waterline caused by a ram a penalty of 500 points will be assessed the rammer or rammer's fleet.

XII. CHAMPIONSHIPS (NATIONALS)**A. All points at championships count twice.****B. Main Turrets**

All ships at a Championship battle must have a full set of main turrets to legally enter any sortie.

C. Best of Scale

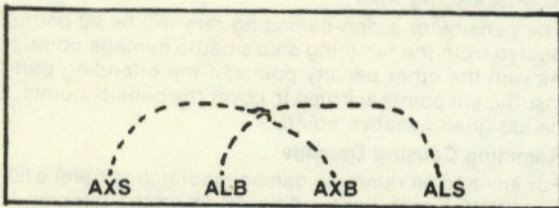
1. All superstructure on a ship during "Best of Scale" judging shall be left on board for the duration of the event.
2. To win "Best of Scale" at Championships a ship must have scored at least 100 points and have competed in all categories. Penalty points will not be counted against the score for the "Best of Scale" but will for battle scores.

XIII. CONVOY

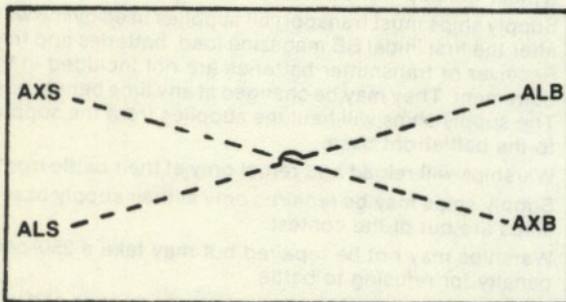
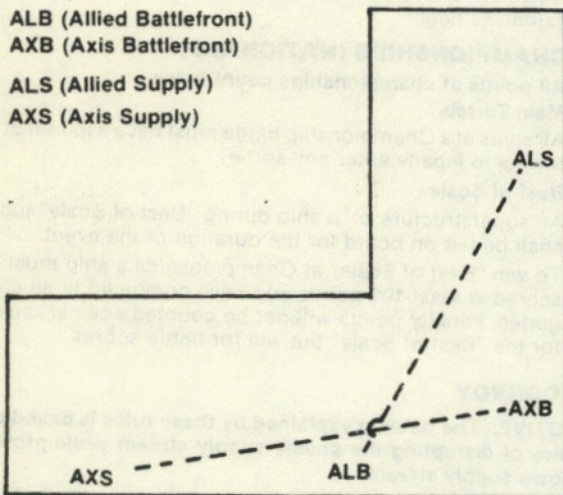
OBJECTIVE: The battling explained by these rules is based on the objective of disrupting the enemy supply stream while protecting one's own supply stream.

1. Supply ships will have a maximum speed only 1/3 that of warships regardless of the actual speed of the modeled ship. Actual speed of supply ships will be about 1 mile per hour (a typical warship makes about 3 miles per hour).
2. Supply ships must transport all supplies used by the warships after the first initial BB magazine load, batteries and freon 22 Receiver or transmitter batteries are not included in this requirement. They may be changed at any time between sorties. The supply ships will haul the supplies from the supply base to the battlefront base.
3. Warships will reload and refuel only at their battle front base.
4. Supply ships may be repaired only at their supply base. Sunk ships are out of the contest.
5. Warships may not be repaired but may take a 250-point penalty for refusing to battle.
6. Supply ships will not be allowed pumps or guns and will have the other construction limitations of a warship.
7. Maximum displacement of a supply ship will be 15,000 tons.
8. Supply ships will be 1/144 scale and will be reasonable models of actual WWII supply ships.
9. Supply ships will have all areas of the hull that shall be penetrable covered with 1/32 balsa. It should be remembered that a supply ship empty of supplies will normally ride higher than when loaded. It will therefore be necessary to allow for the additional penetrable depth of the hull when thinking of using solid bottoms or thicker wood for the hull skin. There should be penetrable hull skin at least 1/2 inch below the light load waterline.
10. Supply ships may turn back when they encounter dangerous enemy forces. They may return to port after five minutes at sea; however, they are fair game until they reach the port boundary.
11. Ports, both battlefront and supply, are protected. No battling will occur once a warship or supply ship reaches port. Port boundary limits are approximately 6 feet from the shore along a 15-foot short length. Ships aground outside these limits are fair game. All warships currently sortie-ing may expend their on-board ammunition into the grounded ship.
12. A supply ship may not reach its port for at least 5 minutes after it leaves its supply base. (This rule is made to ensure that badly damaged supply ship has adequate time to sink before reaches port.)

13. Convoy lines shall cross. Below are shown 3 examples of possible course layouts. Considerable variation shall be allowed.



ALB (Allied Battlefront)
 AXB (Axis Battlefront)
 ALS (Allied Supply)
 AXS (Axis Supply)



14. Warships do not have a time limit.
15. There may be no more than one supply ship per three warships of each fleet participating in the overall convoy battle.
16. Frequency allocations must be agreed on prior to the battle.
17. Notice of an impending sortie does **NOT** have to be given to the enemy. (Surprise convoy missions are probably desirable).
18. The battle is over when one fleet successfully delivers five loaded supply ships from their supply base to their battlefront base or when all of the convoy ships are sunk.
19. The score will be determined by adding warship damage points and mission completion points. For each successful supply ship delivery the successful fleet will be awarded 200 points. Damage points to supply ships will count double. Ram penalty points will be standard except ram sinkings of warships will cost double points.
20. The winning fleet must have at least 250 more points than their opponent. Otherwise the contest is a draw.

XIV. CONCLUSION

These rules were written following a considerable number of actual battles and are not ideal but have proved operable and for the most part are fair to all participants. Undoubtedly, some changes will be needed and will be incorporated with additional experience.

UPSIDE DOWN SHIP

Tom Jass

How to

Recently, at the Southeastern Regionals, several of us were talking (at 2:00 a.m.) about hull construction. Some builders stated that it was very difficult to build a ship's hull and keep it true and straight when building from the keel up. By "keel up" I mean tacking the keel to a jig board, fastening the ribs (formers for us old model airplane builders) to the keel, and lastly fastening the gunwale stringers to the top of the rib edges.

I stated that this whole "keel up" technique was 180 degrees out of phase from my method: I always build from the "gunwales up." I begin by tacking the gunwales to a jig board, fastening the ribs to the gunwales, and lastly fastening the keel (if any) to the ribs. A "gunwales up" model is built upside down, but I believe it has several advantages. My method allows two widely separated gluing surfaces when gluing the ribs, rather than just initially gluing to the keel. You are assured that the gunwales are in the same plane and unwarped. (The gunwales can be co-planar and warp free when using the "keel up" method, but it's much more difficult to insure.) "Aha," you say, "your method won't work if the ship's deck isn't flat, but has sheer or a stepped deck." I can care for sheer or a step in several ways; I'll cover that later. With a few diagrams, I'll explain my "gunwale up" method on a ship with a flat fore and aft deck.

Begin by building a jig; I usually use a 1"x8" or 1"x10" piece of pine about 6" longer than the model. I draw the ship's centerline down the middle of the pine board (lay the board flat, Flüegel, not on the 1" edge). Perpendicular to this CL I locate and draw in the rib locations and widths. The outer edge of each rib forms the gunwale profile. Now put a piece of waxed paper over the board. (The model is too heavy when you glue the ship's frame to the jig and use the jig for the deck.)

I usually use 1/4" x 1/4" hardwood for the gunwales. Why use thinner wood--- we all have ballast in our models, why not use some of that weight in the ship's framing? In this method, the gunwales provide a major amount of support. Don't chintz!! Curve the hardwood gunwales to their correct shape on the jig. Don't nail through the gunwales to fasten them, nail right alongside them (on both sides); it's just like building a model airplane fuselage frame. If the hardwood gunwales won't bend enough in the bow and stern area without cracking, use 1/16" x 1/4" balsa strips laminated to form the correct gunwale profile. Here again ZAP proves the answer. You can add hardwood cross pieces between the gunwales if you desire. If they'll be permanent, screw them to the gunwales for added strength.

Cut the ribs from the plywood thickness you desire. A 1/4" x 1/4" (or appropriate) notch should be removed from the gunwale locations on each rib. Be sure to drill holes in each rib to allow the electrical wiring to pass through. Now glue (ZAP) each rib to the gunwales in its correct location; use a triangle or square to insure that each rib is perpendicular to the gunwales (and the jig).

FIGURE 1: UPSIDEDOWN METHOD
(SHIP HAS FLAT FORE & AFT DECK)

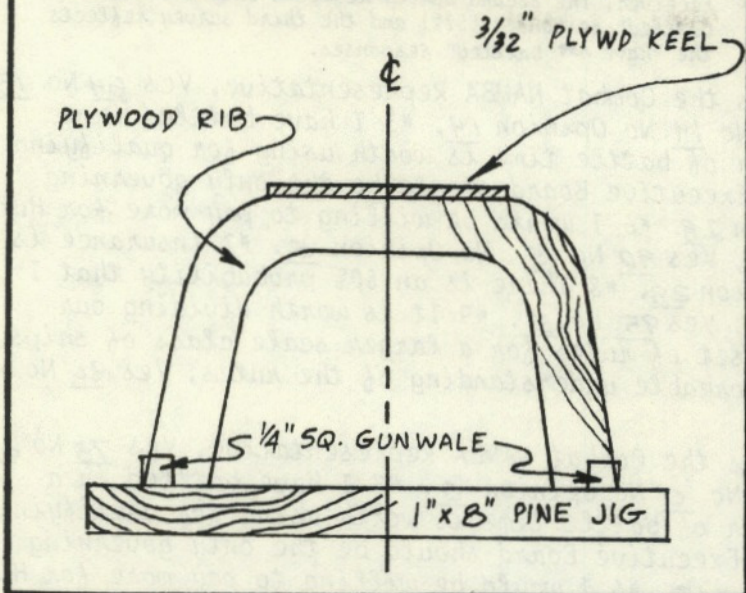
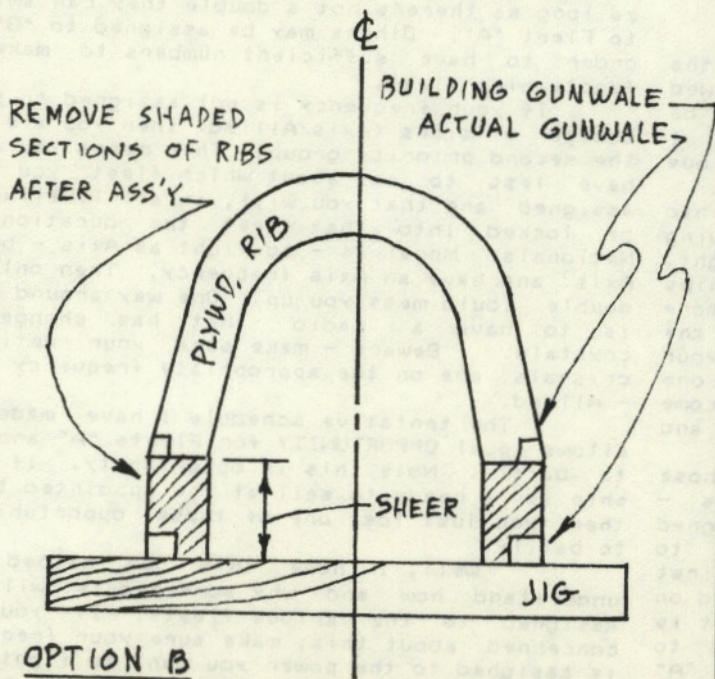
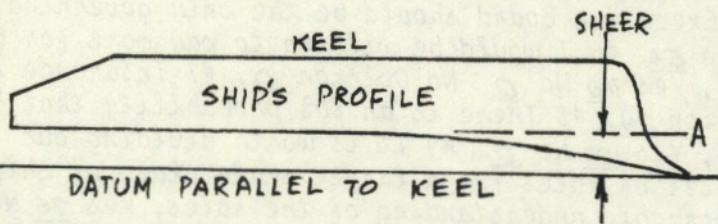


FIGURE 2: UPSIDEDOWN METHOD
(SHIP HAS SHEER OR STEPPED DECK)

OPTION A = IGNORE SHEER. PLACE JIG ON LINE A. ADD SHEERED PORTION LATER

OPTION B = PLACE JIG ON DATUM, SEE BELOW.



When the glue between the ribs and gunwale is dry, attach the "keel." I've never used a plywood stringer keel (ala Mr. Walkins); I prefer to cover the keel area of the ship with 1/16" or 3/32" aircraft plywood. I usually extend the plywood "keel" to the bilge curve on each side of each rib. The combination of the hardwood gunwales, plywood ribs and plywood "keel" has formed an untwisted, sturdy frame.

One last step. After the frame has dried, remove it all from the jig (save the waxpaper, Flüegel, for packing lunches) and fasten each rib to the gunwales with small brass screws. Drill holes first to avoid splitting the gunwales. You're now ready to skin the ship with good old 1/32" balsa. Shown in Diagram 2 are two methods to build from the "gunwales up" when your ship has deck sheer or a step. If the sheer is small in magnitude or is only present at the bow, the method is easy. Draw a line parallel to the keel on the side view of the plan and at the height of the flat, unsheered portion of the deck. Exclude the portion of the ribs that lie above this new "flat deck" line and build the modified frame without the sheer (as I've described above). When the frame is complete, remove it from the jig, flip it over, and add the portions of the ribs above the flat deck. You have the best of both worlds: a frame built "gunwales up" (without sheer); the sheer is added later to give the correct ship profile.

If your ship has severe sheer (like most DD's and Light Cruisers), the method still works, but must be adapted. On the full size side view of your ship draw a line parallel to the keel; this line should pass through the highest point of sheer on your profile whether at the bow or stern. This line will form the "gunwale" reference line you will build to. You must modify each rib by extending its (the rib) height to this flat gunwale reference line. This will extend all the ribs to the reference line which is parallel to the keel line and allow you to build a frame "gunwales up" with no sheer. Four gunwale notches must be cut into each rib: two "real" ones where the actual sheered gunwales will be glued; two "building" gunwale notches which will be glued to the gunwales constructed on the jig. In this case I would make the "real" gunwale of lighter stock (perhaps 1/8"x1/8") because these real gunwales must bend in two planes. Build as before; glue the ribs to the "building" gunwales which are flat on the jig. When dry, glue in the "real" gunwales in the rib notches provided. When the whole mess is dry, remove the frame, flip it, and saw off the portion of each rib that is above the real gunwales. We have successfully fooled the ship!

I firmly believe that this upside down, "gunwales up", method is easier to use and provides stronger, truer hulls. Even if it takes longer with sheered hulls or hulls with stepped decks, a true straight hull frame is the necessary beginning of a successful R/C Combat Warship.

Good luck! See you at Springfield in 1984!

SURVEY RESULTS

I received 32 Survey Forms as of 2-1-84, at which time, I tallied them. Some forms did not respond to some questions even if there was a "no opinion" space. This made the results slightly screwy in some cases. The

accuracy of this highly scientific survey has a *50 to-50 margin of error. The numbers on the surveys are percents, not votes. The first survey reflects all responses received. The second survey reflects only the "have battled" responses (52%) and the third survey reflects the "have ~~not~~ battled" responses.

SURVEY: #1 I want Stan Watkins to remain as the Combat NAMBA Representative, Yes 64 No 18. #2 I want some type of speed rule, Yes 72 No 14 No Opinion 14. #3 I have battled in a sanctioned battle, Yes 48 No 52. #4 One hour of battle time is worth using for qualifying ships, Yes 38 No 5 No Opinion 57. #5 The Executive Board should be the only governing power in the hobby, Yes 48 No 24 No Opinion 28. #6 I would be willing to pay more for Hull Busters if it would make it better quality, Yes 90 No 5 No Opinion 5. #7 Insurance is worth the NAMBA dues, Yes 61 No 11 No Opinion 28. #8 There is an 80% probability that I will battle in a sanctioned battle in 1984, Yes 95 No 5. #9 It is worth dividing our total numbers in order to establish a 2nd set of rules for a larger scale class of ships, Yes 10 No 52 No Opinion 48. #10 I have a workable understanding of the rules, Yes 86 No 10 No Opinion 4.

SURVEY: #1 I want Stan Watkins to remain as the Combat NAMBA Representative, Yes 73 No 27. #2 I want some type of speed rule, Yes 100 No 0 No Opinion 0. #3 I have battled in a sanctioned battle, Yes 100 No 0. #4 One hour of battle time is worth using for qualifying ships, Yes 38 No 10 No Opinion 52. #5 The Executive Board should be the only governing power in the hobby, Yes 57 No 38 No Opinion 15. #6 I would be willing to pay more for Hull Busters if it would make it better quality, Yes 90 No 10 No Opinion 0. #7 Insurance is worth the NAMBA dues, Yes 48 No 29 No Opinion 33. #8 There is an 80% probability that I will battle in a sanctioned battle in 1984, Yes 100 No 0. #9 It is worth dividing our total numbers in order to establish a 2nd set of rules for a larger scale class of ships, Yes 0 No 57 No Opinion 43. #10 I have a workable understanding of the rules, Yes 100 No 0 No Opinion 0.

SURVEY: #1 I want Stan Watkins to remain as the Combat NAMBA Representative, Yes 57 No 0. #2 I want some type of speed rule, Yes 49 No 29 No Opinion 33. #3 I have battled in a sanctioned battle, Yes 0 No 100. #4 One hour of battle time is worth using for qualifying ships, Yes 38 No 0 No Opinion 52. #5 The Executive Board should be the only governing power in the hobby, Yes 38 No 10 No Opinion 52. #6 I would be willing to pay more for Hull Busters if it would make it better quality, Yes 100 No 0 No Opinion 0. #7 Insurance is worth the NAMBA dues, Yes 76 No 0 No Opinion 24. #8 There is an 80% probability that I will battle in a sanctioned battle in 1984, Yes 100 No 0. #9 It is worth dividing our total numbers in order to establish a 2nd set of rules for a larger scale class of ships, Yes 19 No 48 No Opinion 48. #10 I have a workable understanding of the rules, Yes 76 No 19 No Opinion 10.

"NATS To You"

Jerry

Well, here it is -Feb.- only 4 more months till the 1984 Nationals. As I have reviewed whats been done and what is yet to be accomplished in preparation for the Nats, I have a growing respect for the previous Nationals Contest Directors.

So much for the past - let's charge into the present and future. One of the growing concerns and conflicts is who gets to fight. That is - what happens when two people/ships have the same radio frequency? The more captains/ships that show up the greater the probability that you will "double" on your frequency. If by chance you are the only one on a particular frequency, then you are welcome to be in each and every sortie - if you and your ship have that kind of endurance.

Here's what will happen to those "doubles". Fleets will be formed Axis - Allied. If your radio frequency is assigned Allied, your ship is Allied and you want to fight as an Allied, then you are in the first priority group. If you are the only Allied on that frequency, then have at it. But if it is "doubled" then one of you will be assigned to Fleet "A", the other to Fleet "B". Fleet "A" will give priority to the most experienced captain. Even if there isn't a "double", some

captains will be assigned to Fleet "B". First priority will be those new warriors that don't want to be with the experienced fleets. Later, as long as there's not a double they can switch to Fleet "A". Others may be assigned to "B" in order to have sufficient numbers to make a functioning fleet.

If your frequency is not assigned to your choice of sides (Axis/Allied) then you are in the second priority group. This means you will have less to say about which fleet you are assigned and that you will, in all likelihood, be locked into that fleet the duration of Nationals. Moral is - to fight as Axis - build Axis and have an Axis frequency. Then only a double could mess you up. One way around that is to have a radio that has changeable crystals. Beware - make sure your optional crystals are on the appropriate frequency Axis - Allied.

The tentative schedule I have made up allows equal OPPORTUNITY for Fleets "A" and "B" to battle. Note this is opportunity. If your ship isn't ready to sail at the appointed time, then you just lost one of those opportunities to battle.

Well, I hope this has helped you understand how and why some people will be assigned to the various fleets. If you are concerned about this, make sure your frequency is assigned to the power you want to fight with and get a radio that allows you to change frequencies. See you at the lake,

YONOTO FOR SALE

Dimensions: 72 inches overall, 11 inch beam, 4 MK guns, 44 amp hours of batteries. Four penny pumps, 7 channel Cirrus Radio, 4 Wah Mins motors w/2 spares, speed 33 sec/100. Weight 70 lbs. Asking \$400.00 and will consider selling the parts individually. Contact Dennis Murphy, 3440 Greenlawn Drive, Lexington, Kentucky 40503. Dennis Murphy.



A tale of the sea Bismark vs Austin by J. Foster

On October 23, 1983 the battle of the best took place in Dallas Texas. On one side was the infamous Fluegel with his well known Bismark and as opposition to this formidable combo the recent terror of the Southeast regionals, the Pensacola class cruiser I.T.S. Austin under command by J. Foster. This particular battle had been planned way back in July during the Championships but due to one thing or another had to wait until Oct. to occur. The battle was further significant in that it was the first conflict of a new club (a division of the R/C Warship Combat Club) called Dallas Fighting Warships, or DFW for short. This club was founded the night before and has 9 charter members.

Anyway, one of the goals of the battle, other than having fun, was to see how the new rules about battleships would affect them in battle. Unfortunately, due to difficulties both ships were suffering, this aspect was not conclusive. One of these difficulties was that Fluegel went into battle shy one battery. This meant he had to be very judicious with his high speed so as not to run the battery that remained into chemical paralysis. Another result of this loss was that the Austin was faster than the Bismark, at least at the start of the battle.

The first sortie started and both Captains began the typical jockeying for position. Fluegel also discovered that his superstructure had pushed his two front guns so they were elevated for anti-aircraft fire. He lost most of his fire power right there.

The first blood was drawn when the Austin ran down the side of the larger German ship and flared out for a stern gun shot. Fluegel had forgotten that all the new allied ships carry a sting in their tail. In fact, due to the curious fact that the Bismark could actually turn inside the Austin, The stern gun was the only truly effective gun on the Austin. Very few opportunities were given the front gun. The Bismark was able to fire one of her side guns to effect and blew a catapult off the Austin. Pieces rained down all over the decks of the Bismark, no doubt causing some injuries to rubbernecking axis sailors. The sortie ended with an adjusted score of Austin 175, Bismark 90.

The second sortie saw the front guns of the Bismark repaired, only to expose another problem. Fluegel had replaced his tanks for the bow and stern guns, and had inadvertently crossed the hoses so the stick action on his transmitter was backwards. The battle was fairly unremarkable even though both ships were taking on water by the end of this second sortie. The score was also tied at 100 points each.

The third sortie was the only sortie where both ships could be said to have no overt problems. Both Captains maneuvered well, the Austin passing close down the side of the Bismark and attempting to fire the stern battery, and the Bismark attempting to turn inside the Austin. Most salvos were mutual, as the set ups were such that if one could fire, the other normally could also. This sortie was also very clean with no ram penalties, eventhough there were some very close calls. The sortie ended with Austin gaining 125 points and the Bismark scoring 115 points. The total for the battle as a whole was Austin 400, Bismark 305. This was Fluegel's first defeat for a very long time.

The batteries on the Austin were getting pretty low by the end of the battle, but it was thought they would last two more sorties so another battle was scheduled. The damage was patched and the ships launched again. After just a few seconds in the water, however, the Austin slowed to a crawl. To make matters worse, the guns would not fire. Apparently one of the batteries that had had a previous problem with a shorted cell again died. This battery was also the one that the guns were fired with. In a flash the Austin dropped from a 12v system to a 6v system. Slow as molasses. Five minutes was called and the Bismark closed in for the coup-de-gras on the crippled cruiser. Fluegel got a perfect line up on the port side of the Austin and emptied the Bismark's forward magazines into her side. The pump of the Austin was soon shooting a stream of water over the side. The five minutes ended with the Austin still afloat but low. During a picture taking session just after, the Austin sank just as she reached shore. This probably would not have happened if all the batteries had been good, as the pump was only working at about 1/4 it's full capacity. The water would normally be pumped about four feet out from the side, but it was only being pumped about a foot then. The sortie and battle ended with the Austin scoring 5 points and the Bismark scoring 500 points (250 points for the Austin withdrawing due to battle damage). The Austin would have withdrawn due to batteries anyway.

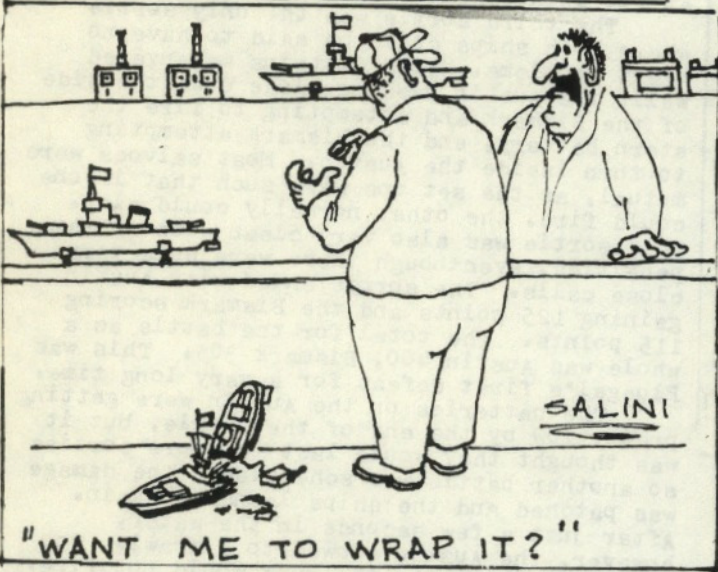
Fluegel won the day with the Bismark scoring 805 points to the Austin's 405. A very good battle. Cruisers do have a chance against battleships now.

JF

171 Put Your Money Where Your Heart Is

As this year's official fund raiser for the 1984 Annual Championship Battle and chainsaw massacre, I appeal to all you combat type weirdos. I naturally will be asking all those manufacturers and distributors we keep in business for a few alms, but I would also like a few personal contributions. There will probably be an entry fee if you fight, so keep that in mind if you want to send me, and therefore your club any funds. The more money we receive, the better the event will be and the awards will be that much better. So come on and send a buck or two and get your name in the program as a contributor. You may even hit the local hobby shop for a contribution!

Send all donations to:
James C. Poster
6702 Capriola Drive
Austin, Texas
78745



"WANT ME TO WRAP IT?"

* RULE CLARIFICATION - 84 NATS *

One of the most important and difficult responsibilities of the Contest Director is to interpret the combat rules and make decisions based on these rules. I firmly believe that each officer of our club should carefully guard our combat rules - never change the intent of a rule and only make interpretations / clarifications of rules that seem to have wide spread misunderstanding and or confusion. Such is the case that we are faced with now.

Currently our rules state that a ship is to be constructed of 1/32 balsa. It also states that hardened areas should not interfere with the inherent penetrability of the 1/32 balsa. When the club was small we could communicate with each and every combatant. That allowed us to reach an agreement and understanding of vague wordings in the rules. Those days are gone. Just look at all those names in the last issue of Hull Busters. Our rules must be clear and precise in order to gain uniformity. Some people are building the only combat ship in their state. There is no "Old Salt" to give them the benefit of their experience. These new captains often bring with them skills and techniques from other hobbies which work hand and hand with combat or directly against it. That doesn't mean that these are intentional deviations from combat rules or intent - they

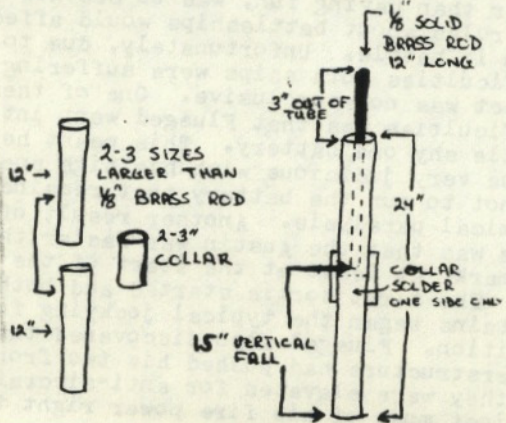
could be from lack of knowledge or understanding of combat rules and their intent.

Hull hardness has always been an area of discussion. However, as the hobby has grown, greater and harder variations occur with increasing frequency. It's time to go back to basics! The OLD rules stated that a ship was to be finished with 2 coats of polyurethane inside - 2 outside and then painted. This old rule also referred to the inherent penetrability of the 1/32 balsa. This old rule was never voted out. It was omitted, faulty editing, sometime after 1980. However, the "inherent penetrability" remained. This clearly implies that a hull is to be soft enough to be penetrated. If you were Contest Director and someone asked for a ruling as to whether or not someones' hull was too hard, how would you rule and what would you use as a standard?

A number of us have devised a standard. This standard is the result of efforts from James Foster, Fluegel, Milholland, Poindexter, Schneider, Jass and myself. The method utilizes a stock brass rod and tubes. If you are to build a ship, you have to have access to these supplies anyway. You need one 12" long 1/8" diameter solid brass rod, two 12" long hollow brass tubes, that's 2 or 3 sizes larger than the 1/8" rod and a collar at least 2" long that mates with the tubes. By soldering 1" of the collar to one of the tubes, you can join the tubes together making a 24" long hollow tube. If you have access to a 24" long tube, that's fine; but the two shorter sections are easier to store and carry. Now that you've got this scientific measuring tool in your hand, let's walk through a test. With the tubes joined so that they are 24" long, hold it vertical - bottom resting on something solid. Insert the 1/8" brass rod into the tube so that only 3" of the rod remains outside the top of the tube. That means that from the bottom of the rod to the end of the tube is 15". This is the key - 12" long 1/8" brass rod held 15" above the surface. I used a file and put a small tic mark on each end of the rod - 3" from the end. Now simply drop the rod. Gravity fall is 15", then it strikes the surface. That's it. Now try it on your ship. It does mean that you'll have to turn your ship on its side but at least the standard was easy to make. I'd suggest putting a towel inside your ship. This should keep the rod from going through both sides of your ship. Go through the procedures outlined earlier. If the rod PENETRATES then you are legal - non-penetrating cracks don't count; the rod must enter your ship.

Well, now you know how to build it, how to test it and what the standard is. I'll try to give you a little insight as to this magical number of 15" vertical drop. Approximately 15 combat ships have been tested with this method. Some of these ships were thought to be hard -

continued on next page



in fact, too hard - others were considered very soft. Results ranged from 100% penetration with 6" vertical drop to +24" vertical drop required. It was found that ships that complied with the old rules, 4 coats total of polyurethane, would often penetrate with a 4" vertical drop. Astoria, Houston (port side only) and Alabama fell into this group. Now we know why these ships take damage. If the space between ribs was 4" or so, and the test was made exactly between the ribs, or the test hull was prone to horizontal splits and had been patched, the balsa had a little more spring action thus absorbing the energy and requiring a 12" vertical drop to guarantee penetration. Houston's star-board side (missing ribs) and the battle worn and patched Cesare were in this group. Some of the other ships tested at or below this level; others were well above.

I have tried to pick a standard "15" vertical fall" that is 1) practical from the standpoint of patching a ship and still being legal, 2) reasonable to expect an "average" shot to penetrate and 3) safe in that it doesn't require a hard, thus dangerous, shot in order to penetrate.

Some of the test group feel this is too liberal a standard - they prefer 6" to 12" range. I'll admit that I fall into this group. Other test members feel that 15" vertical fall was not enough. I've tried to take a middle ground that is safe for spectators and those around the gun, yet keep with the intent of the rule - inherent penetrability of the balsa.

Well, you've got 4 months to make these tests on your own ship, recover your ship if necessary and/or impeach the Contest Director; I vote for the last option.

At the Nationals, you can voluntarily submit to the penetration test - I hope most will the Sunday before Nationals - or wait and see if someone challenges your hull during the week. To successfully pass a test or challenge, 3 out of 5, 15" vertical drops must penetrate - if they don't - start sanding. One last caution. I suggest you don't try to build to the limit. If you construct your hull so that it takes 13 - 14" to penetrate it, after a few patches, you could be illegal and if challenged, out of the battle. I'd shoot for something around a 10" drop or better yet, stay with the old way - good old polyurethane.

I wish this had been resolved at last year's club meeting, rather than as a Contest Director's mandate; but due to the confusion and variations, this rule had to be clarified. Four months should give you time to gain compliance.

See you at the lake,

Henry

Rule Recommendation # 10

During several months of exchanging tapes with a circle of R/C Combat devotees (Fluegel, Darby, Dees, Hamilton, Hargrave, Amend), we seem to be expending a great deal of time talking about speed. We have evolved toward the position that some form of speed limit is necessary if our hobby is to retain its scale-like characteristic.

Let me give a few examples of where we're headed (or already are) in the current quest for speed. My heavy English cruiser HMS SHROPSHIRE is powered by 4 stock Dumas 4.8 v motors driving 1 1/2" Dumas plastic screws; I am using 6 v X-cells. She travels 100' in 17 seconds (scale speed = 42 knots). The HMS RODNEY is now powered by 12 v batteries and motors; in her present configuration she runs 100' in 20

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seconds (scale speed = 36 knots). There is no resemblance between the RODNEY as powered at the 1983 Nationals and at the Southeastern Regionals; the additional non-scale speed has enhanced her combat ability by about 500%. The English light cruiser ARETHUSA that I am presently building is powered with the same propulsion plant as the SHROPSHIRE. She will weigh about 50% of the SHROPSHIRE--will the ARETHUSA plane? Our rules do not exclude gasoline motors; is that the ultimate powerplant?

What are some of the "pro" reasons for passing speed limitations? Listed below are some of the reasons.

1. Maintain a semblance of scale-like battling.

2. Promote safety--the momentum of a 25# battleship increases proportionally as the square of the speed. Ram sinks will become more frequent and devastating as moreships become faster and faster.

3. Model warships should retain the advantages/disadvantages of their full-sized counterparts. For example, the RODNEY was a 26 knot battleship; without speed rules she can be built to outrun the true 32 knot MISSOURI.

4. The quest for speed costs money. With no speed rules are we insuring that it will cost big bucks to remain competitive?

Conversely there are several reasons advocated by people who are opposed to speed limits. Some of these "con" reasons are presented below:

1. Speed limits will stifle originality and limit individual initiative.

2. They will become an administrative nightmare and be impossible to monitor.

3. According to our present rules a slower ship can always refuse combat. So what is the problem?

As speed limit proposals have flown back and forth on our tapes several rule philosophies have surfaced. They are described below and discussed in detail.

NO SPEED LIMITS

This is our present status. It is easy to administer and it promotes progress in design and engineering. Some disadvantages are: it is not scale; it causes increased safety problems; it imparts an unfair advantage to slow designs; it can result in more and more money being spent to remain in the race.

SPEED LIMITS BY INDIVIDUAL SHIP MODEL

This proposal would limit the ship model to the scale speed of the original. Some advantages are: more scale-like battling conditions; true distinctions within a class (for example between the MISSOURI and the RODNEY); increased safety because momentum is decreased; limiting costs to a degree. Some disadvantages are: speed trials would be required; an "official" list of ship's speeds would have to be developed, documented, and agreed to.

continued on next page

SUGGESTED SHIP'S SPEED (KNOTS)

TIME TO TRAVEL 100 FEET
SCALE FACTOR: 1/144

COUNTRY	CLASS OF BATTLESHIP	SPEED	CLASS OF CRUISER	SPEED	TIME (SECONDS)	SPEED (KNOTS)
ENGLAND	RODNEY	24	C CLASS	30		
	KING GEORGE	29	D CLASS	30		
	QUEEN ELIZ	23	TOWN	32	10	71.1
	HOOD	32	COUNTY	31	11	64.6
			DIDO	32	12	59.2
		FIJI	32	13	54.7	
		EXETER	32	14	50.8	
				15	47.4	
				16	44.4	
USA	TEXAS	21	INDIANAPOLIS	32	17	41.8
	N CAROLINA	28	BALTIMORE	33	18	39.5
	S DAKOTA	27	BROOKLYN	32	19	37.4
	IOWA	33	CLEVELAND	33	20	35.5
	TENNESSEE	21	PENSACOLA	30	21	33.9
					22	32.3
				23	30.9	
GERMANY	BISMARCK	30	EMDEN		24	29.6
	GRAF SPEE	28	PRINZ EUGEN	33	25	28.4
	SCHARNHORST	32			26	27.3
					27	26.3
					28	25.4
FRANCE	DUNKERQUE	29	SUFFERN	31	29	24.5
	RICHELIEU	31	LA FANTASQUE	37	30	23.7
					31	22.9
				32	22.2	
ITALY	CAIO DUILIO	27	CONDOTTIERI	37	33	21.5
	V. VENETO	31	ZARA	32	34	20.9
					35	20.3
JAPAN	YAMATO	27	MOGAMI	34		
	KONGO	30	NACHI	33		
	NAGATO	25				



SOURCES: "THE ENCYCLOPEDIA OF THE WORLD'S WARSHIPS"
HUGH LYON (1979)

"BRITISH CRUISERS OF WWII"
ALAN RAVENS & JOHN ROBERTS (1980)

"BATTLESHIPS: U.S. BATTLESHIPS IN WWII"
R.O. DULIN & W.H. GARZKE (1976)

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SPEED LIMITS BY CLASS

This proposal would limit speed by class rather than by individual ship; for example, the limit for battleships might be 30 seconds for 100'. The limit for heavy cruisers 25 seconds and the limit for light cruisers 22 seconds. The advantages are similar to the preceding proposal except that the speed difference between the RODNEY and the MISSOURI would be eliminated. Speed trials would still be required, but they would (perhaps) be easier to conduct. An official speed per class must be established. This would involve compromise and might be more difficult to accomplish than the previous proposal.

Both speed limit proposals examined so far require that some "easy" method be devised to slow ships that are determined to be too fast during trials. Ships that use rheostat throttles can be slowed by adjusting the servo arm throw or by placing a stop on the transmitter throttle joystick. Ships which use a 6 v/12 v system are more difficult to adjust; additional resistors placed in the throttle circuit would limit their speed. Changing screw sizes could also slow a ship which was too fast. Each of us would be responsible for meeting the speed limit assigned to his ship.

SPEED LIMITS BY PROPULSION PLANT

This proposal would limit speed by "standardizing" the propulsion plant. The simplest such version might require that all ships use 4.8 v Dumas motors, 6 v of battery, with 1 1/4" screws for cruisers or 1 1/2" screws for battleships. This proposal eliminates the need for speed trials and monitoring becomes simple. However, it also erases any speed differentials within classes and might very well result in a BISMARCK model (a 3 shaft 30 knot ship) being substantially slower than a model of the TEXAS (a 4 shaft 21 knot ship). This proposal favors 4 screwed ships at the expense of all others. We are also left at the mercy of a supplier when he is specified in the rules.

Well, as seen from the above discussion, speed limits are filled with problems and controversies. Each proposal mentioned has pluses and minuses; a spirit of compromise must exist to overcome them. In my estimation the present situation of no speed limits provides room for even more controversy and eventual harm to the hobby. Let's get the whole subject out to our membership via HULL BUSTERS.

Give us your opinions, solutions, gripes, etc. Great minds exist in our hobby; let's use them to solve this problem.

I feel that speed is a much more important factor in R/C Combat than in actual ship combat. In actual combat speed's importance is reduced by the tremendous ranges that battling occurred at. We battle at extremely reduced ranges (much more akin to dogfighting airplanes), and the faster ship can always break off combat at her own choosing. Speed can mask the effects of weak guns, poor

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seamanship, and inefficient design. To a great degree raw speed is the one characteristic that can be purchased across the hobbyshop counter.

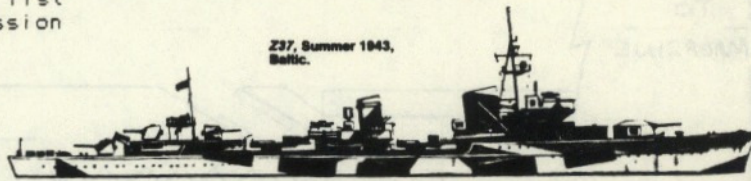
To get the topic off dead center (status quo) I'll propose that we adopt a SPEED LIMIT BY INDIVIDUAL SHIP. I propose that the executive committee nominate 3 or 4 people to draw up a proposed list of ships and their authorized speeds. This list could be published and then the discussion (fighting) can begin.

I think that speed limit by individual ship offers the best compromise weighing all the pros and cons. It is more difficult to administer but it offers the most scale-like results and maintains the true speed differences between ships and classes of ships.

Let the discussion begin. Write HULL BUSTERS with your ideas.

RULE RECOMMENDATIONS

- 10) Rule change secessions will only take place once every (2 years),(3 years),(etc.) Jeff Poindexter
- 11) Only 4 rules per 'Rule Change Secession' can be changed, omitted, or added. Jeff P. & Stan Watkins
- 12) To get rule suggestions on docket, just to be voted on, at least eight (8) of the active (participated in most recent Championships) R/C Warship Combat Club members must sign a petition and send it to the Club Secretary. (But if '4 Rules per Rule Change Secession' is in affect, only 4 rules can be changed, omitted or added.) Jeff & Kay Poindexter



Hull penetrating test-Amarillo Regionals: By Jeff Poindexter C.D.

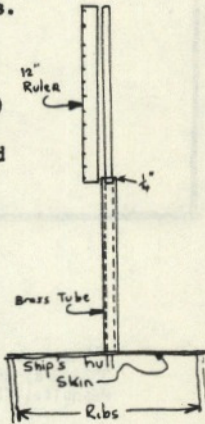
On Saturday, April 28 th., all ships entered will be required to take a hull penetration test. A simple test at home can be done to find out if your ship will be eligible. You should do this test because, any ship whose hull does not penetrate will not battle (NO EXCEPTIONS. Material needed to do the test are;

- (1) One 12"x 3/16" K&S Brass tube (O-ring seating tool size.) Do not spray any lubricant in tube or on rod !!
- (2) One 12"x 1/8" K&S Brass rod.
- (3) One 12" or longer ruler.

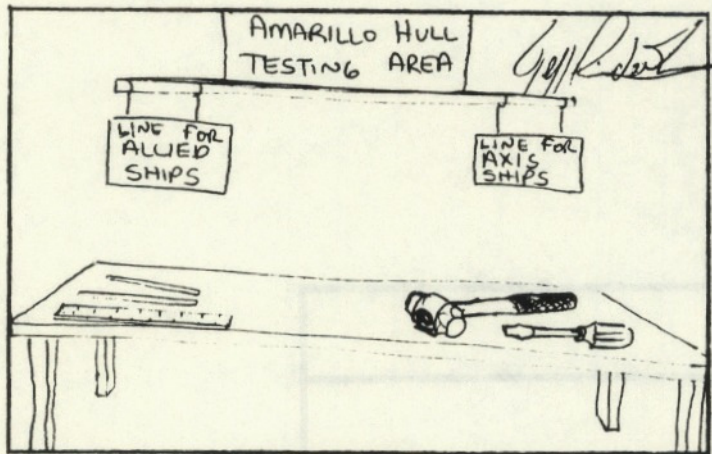
Now roll your ship on its side and place one end of the brass tube against the hull an equal distance between two ribs. Insert the brass rod the appropriate number of inches inside the brass rod, in this case 1/2 of an inch. (We are allowing no more than 12" of Hardness.) Letting the rod slide through the tube and strike the hull (the end of the rod must hit the hull skin perpendicular) you can find if your ship will past the test.

Stan Watkin's, Martin Schnedier's, James West's and LaDonna Poindexter's ships all penetrated on both sides at 8". Kay Poindexter's ship holed at 10" on one side and 11' on the other. My ship holed at 4" on one side and 24" on the other. The hard side will be sanded or replaced to make it legal. This is an attempt to get hull hardnesses standardized (And also for the Allies to at least to get a few holes in the Axis Fleet.)

Thank you ; Good Hunting; & May the Fleet be With You.



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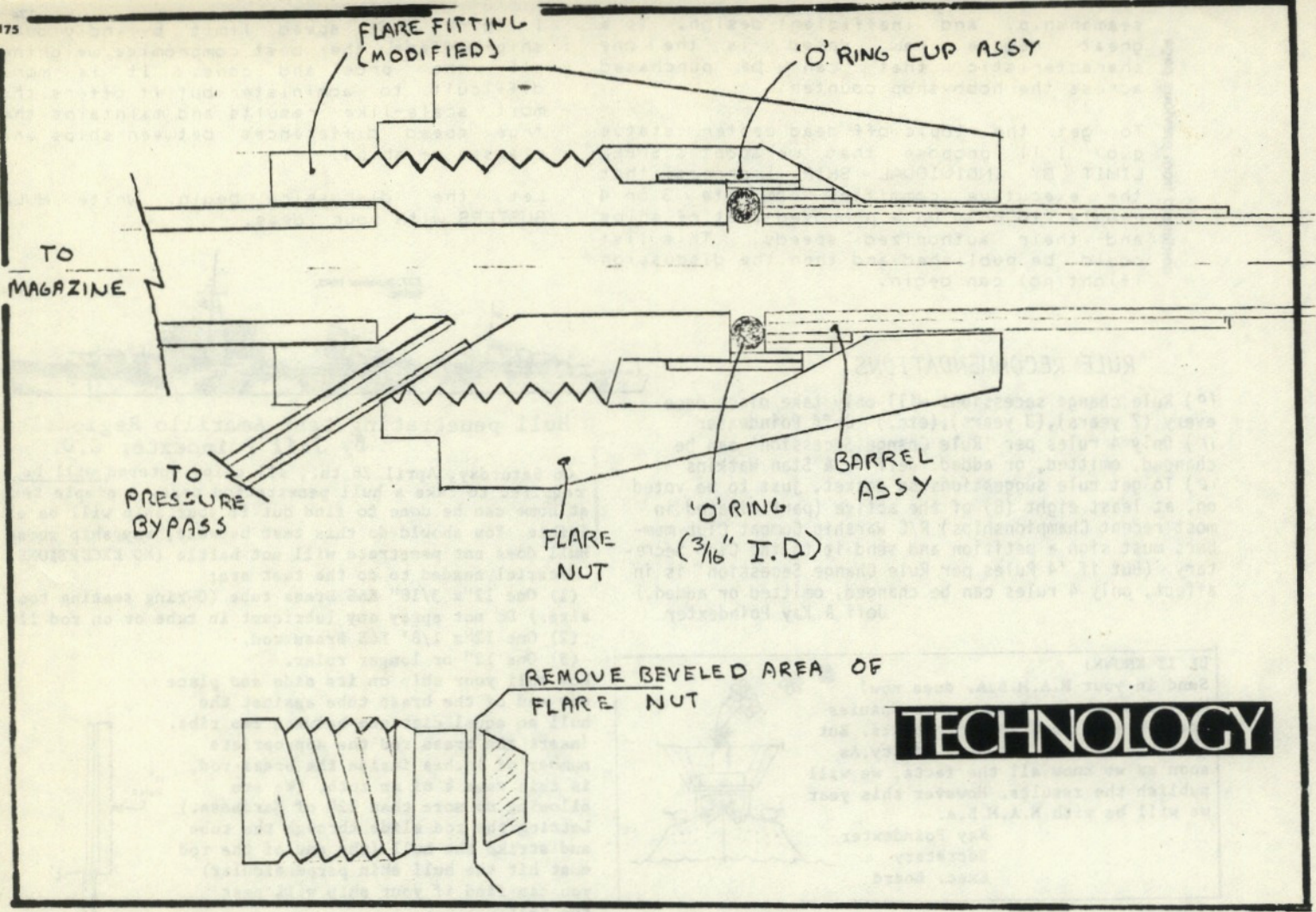
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