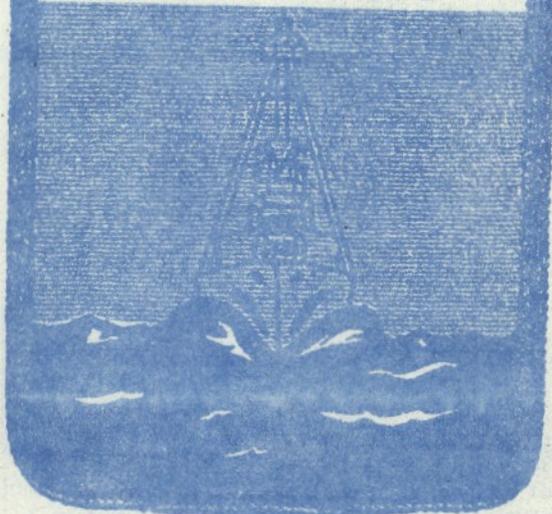


Feb 85

STUFF I GOT WHEN I JOINED THE CLUB.

R/C WARSHIP COMBATANT



HULL BUSTERS

INTERNATIONAL
R/C WARSHIP COMBAT CLUB

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R/C WARSHIP COMBAT CLUB

MEMBERSHIP & CARD NUMBER

00003

OBSERVATIONS OF THE FOUNDING FATHER

Greetings combatants! I regret that I must make this next announcement but it must be done. We are short one combatant today. Bob Spychalski called today to inform me that his son Brian was killed in a car wreck. All of us who knew Brian will sincerely miss him. He was the kind of young man anyone would be proud to call his son. He was the kind of young man that you would be proud to say this is an example of an American youth. Sadly, there aren't enough young men like Brian. Our country's (and our hobby's) future is a little less bright today because it

does not have Brian. I believe that God must have had greater need of Brian than we do. Bob we share your emptiness. You are in our prayers.

On to more pleasant matters. The "Ball Piston" gun. Bob Ammend suggested to Carl Camurati that a ball bearing should make a fine piston in a gun. Carl built one in about 2 hours and it worked fine. I heard about it from Fluegel and Schneider and Bob Ammend (if these all liked the idea it must be a good one.) It went along well with my idea of a gravity spring and sloppy fit piston. I now have my Salt Lake City converted to a ball piston single shot gun. Tweedy has one too. The smallest combatant is now single shot. No excuses of not enough room in your ship! My Oklahoma will soon be fitted with these and my O'Bannon (DD450) has already been fitted with cylindrical piston version. To see how it works just get your copy of the December issue of Hull Busters and look on page 232 in the upper right corner. Now replace the spring and piston with a ball bearing. The magazine and breach should be reversed and there you have it. You should drill out the compression Tee from the piston end 1/4 inch up to about the middle of the intersection of the side of the T intersection. This will allow the use of a ball bearing (use one that is slightly less than 1/4 inch in diameter these are available from bicycle shops). Be sure and do not drill the hole out too far up the Tee fitting. If you drill it too far up it will allow the ball to get above the magazine and a BB will fall in below the ball bearing. This will generally foul things up good. Also do not allow the ball bearing to go down so far as to allow 2 BBs to fall in to the cylinder. If you do this your single shot gun will be a double shot. Bob Ammend used 2 ball bearings to properly position the top ball. One of the things that I like about this gun is that it is easy to build. That's a very nice plus! If you mess up on drilling out the first Tee don't get discouraged. I messed up my first one but I had purchased some extras so I had enough to do the next one right. You may have to experiment with the ball travel to get it exactly right but it is not too difficult. So what are you waiting for go to the plumbing shop and get you some 1/4 inch compression Tees and some slightly smaller than 1/4 inch ball bearings and get shooting.

Let's Battle!

237 THE TURBO PUMP

by James C. Foster

Here in Springfield, many of us have switched to a curved blade impeller pump with a wood housing. With the Dumas 4.8v motor run at 8v, these pumps will deliver 1.5 gallons a minute through the 1/8" outlet. This efficiency is due primarily to the curved blade design of the impeller. The wood housing has the advantage of being easy to construct and maintenance in the field is simplified. A distinct superiority over a brass housing!

MATERIALS:

- 1/4", 1/16", and 1/64" Plywood
- Brass Sheet
- 5/8" Brass Tube
- Dumas 4.8v motor (or motor of your choice)
- 3/32" Lock Collar (to fit motor shaft)
- Misc. common tools and materials

THE IMPELLER:

Cut a disc about 1" in diameter (slightly oversize) from the brass sheet, being careful to keep the disc as flat as possible. Next drill a 3/32" hole (size to fit motor shaft) in the center of the disc, again being careful to keep the disc flat. Solder the 3/32" lock collar to the disc, using a piece of 3/32" music wire to keep the lock collar aligned to the hole in the disc. Clamp this assembly in a drill and while turning the disc grind the disc down to a true 1" diameter concentric with the shaft axis. Scribe the face of the disc opposite the lock collar with cross hairs and a 3/8" circle centered on the hole. Take the 5/8" brass tube and cut two circular sections off, each 3/16" to 1/4" high. It is critical that these sections be the same height, and that they be square! Cut the sections in half to give you four identical semi-circular blades. Solder the blades to the disc with one end resting on the scribed 3/8" circle and the other on the outer edge of the disc. It may be necessary to trim the blades to fit. Be sure you keep the blades evenly spaced (use the cross hairs!) and avoid large build ups of solder which will affect the balance of the assembly. Also, the inner ends of the blades should not point directly at the center of the disc, but slightly tangent to the center. After the assembly is cool, again install it in a drill and grind the outer edge down to a perfect circle in case any of the blades protrude. See FIG. 1 for a view of the assembly.

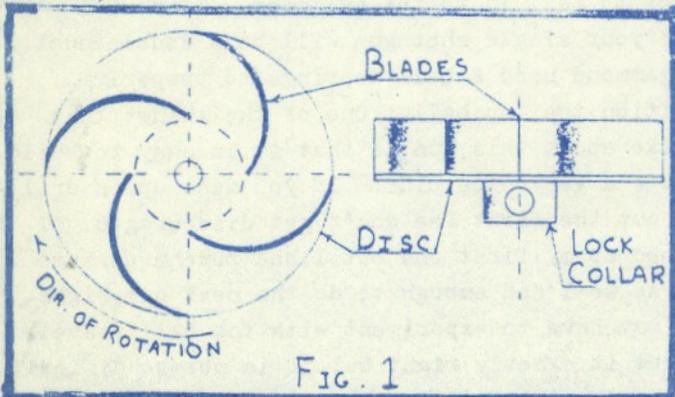


FIG. 1

THE HOUSING:

This is the fun part of the pump! Cut 3" squares of both the 1/4" and 1/16" plywood, then "tack" glue them together in two or three places. Draw the housing pattern on the wood

(see FIG. 2 for specifications). Drill out the central 3/8" hole taking care to make it centered! Using your jig saw, cut the housing from the wood, the two pieces glued together, insuring accuracy in duplication. Separate the two pieces of the housing carefully so you do not break them. Check and see if the bottom of the housing (the 1/4" plywood) will fit over

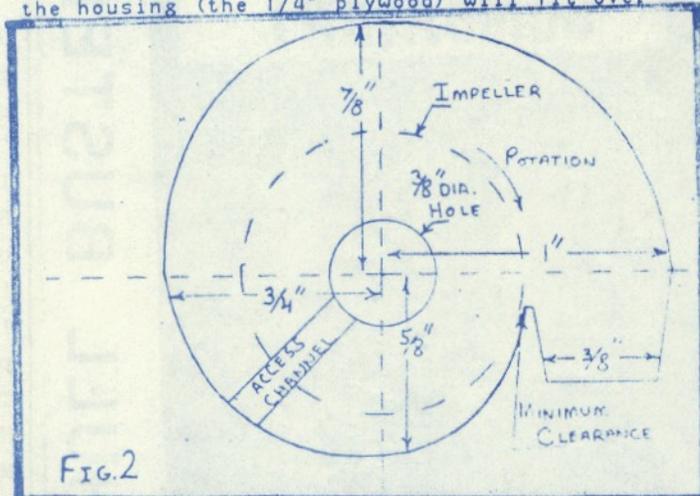


FIG. 2

the raised bearing cup on your motor. It is likely that you will need to enlarge the 3/8" hole slightly to achieve this fit. Rout a channel in the 1/4" plywood from the center to the outer edge for later access to the set screw on the lock collar. Attach the 1/4" piece to the motor, with super glue like we do here or with screws if you wish. Just be sure you counter sink the heads of the screws so they do not protrude above the plywood. Attach the impeller assembly to the shaft of the motor and measure the height above the plywood. Clearances above and below the impeller should be kept in the 1/64" to 1/32" range. Cut strips of the 1/64" plywood 5/16" + impeller height + clearance wide. Glue these strips to the 1/4" plywood only at this time, using the 1/16" plywood piece to help form the housing walls. After the strips are glued in place,

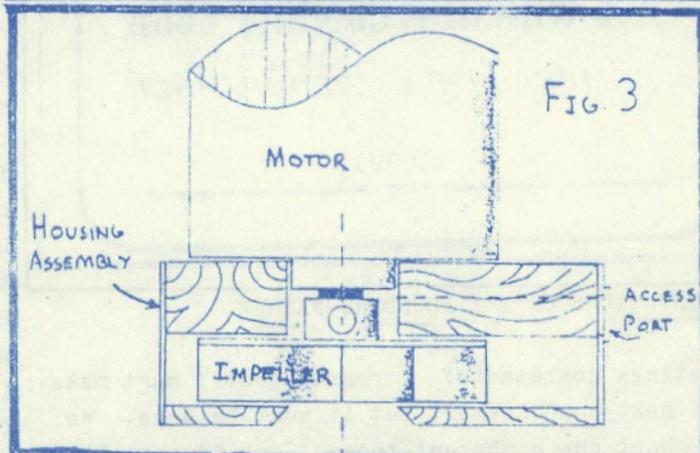


FIG. 3

cut a small access hole in the wall so you can remove the impeller. Remove the 1/16" plywood piece and the impeller, afterwards painting all the wood parts to waterproof them. We use Pactra Dope but any thing you like would be just as good. Use several coats to be sure. After the waterproofing is dry, reinstall the impeller permanently. Glue a small piece of 1/64" plywood over the access hole in the housing wall when finished. Next take the 1/16" plywood piece and position it within the walls of the housing to achieve minimum clearance with the impeller blades without any

continued on next page

continued from previous page

rubbing. Take your time at this, testing the configuration with the pump running to obtain the best positioning. When the best location has been determined, superglue the piece in place. To complete the pump, install a 1/4" copper ell in the outlet of the housing (we use

hot glue) and put a screen over the intake. See FIG. 3 for a view of the complete pump. For field repair you just remove the 1/16" plywood piece with a sharp knife along the joint, and reglue after the repair is made. Simple!

JE

NATS TO YOU

Well, its winter in Chicago and the pond water is all frozen solid -- even the BISMARCK wouldn't sink today. But Nats is only five months away and planning goes on. This month I'll describe the awards categories that will be used at the 1985 Nats. There are some changes from the traditional awards in the past Nats, so read this carefully. (For the illiterate Axis I have a tape available. But if they can't read this how will they even know to ask?)

VON FLUEGEL TROPHY

As is traditional, this award will be given to the battler who has the highest 1985 point total regardless of category, ship type, or gun type. All sanctioned battles will be included in the champion's grand total. Nats battling points will count double as is customary.

ROOKIE OF THE YEAR

This award will be given to the outstanding Rookie at the 1985 Nats. However, the award will be given based on the vote at Nats of a selected (by me) group of veterans, rather than necessarily to the rookie battler who has amassed the greatest number of Nats points. The exec board felt that this method would be fairer than just relying on the point total.

BEST OF SCALE AWARD

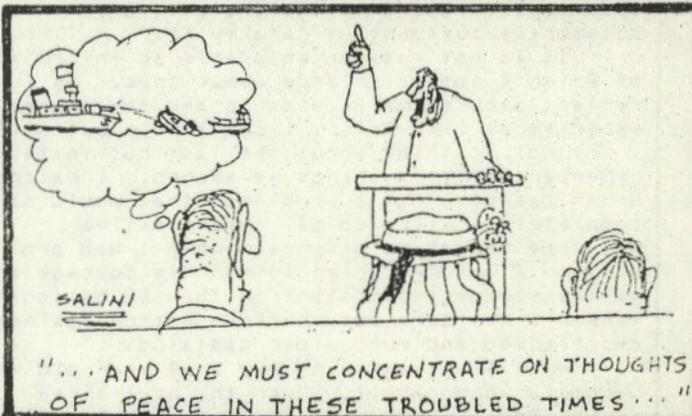
Given; as in past years, to the ship with the best scale appearance as voted by those present at Nats. Insure that you are familiar with the battling requirements that are prerequisite for this award.

The awards listed below will be given to the high scoring captains in both the unlimited fleet and the singleshot fleet. Separate awards will be provided for each fleet. They will be awarded to those battlers with the highest SORTIE AVERAGE during the Nats. I feel that sortie average is a better indicator of skill than total points garnered at Nats. The minimum number of sorties required to be eligible will be determined at Nats by vote of all captains at the Monday meeting. The range will probably be in the neighborhood of 8-12 sorties.

BATTLESHIPS & BATTLECRUISERS

Awarded to the BB or BC captain with the highest sortie average in the unlimited fleet and the singleshot fleet. Guns of any design may be used in the unlimited fleet. Singleshot guns must be used in the singleshot fleet.

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HEAVY CRUISERS

Awarded to the CH captain with the highest sortie average in the unlimited fleet and the singleshot fleet.

SMALL SHIPS

Awarded to the captain of the CL, DD, submarine, etc. with the highest sortie average in the unlimited fleet and the singleshot fleet. This class is for ships of two or less units.

I will have a survey published in the April HULLBUSTER to allow all of you to let me know what categories you will be participating in at 1985 Nats. We can also see if frequency conflicts will be a problem and begin to work to solve any. The best solution (short and long term) is to leave the 72 band and move to the 75 band. I've had my Futaba gear recrystaled to the 75 band for about \$15 each. One advantage of the 75 band is that you can change crystals anywhere in the band (not just in adjacent frequencies as in the 72 band).

The winter months are also a good time to pay your 1985 NAMBA dues. Send the money to Dan Hamilton. Don't come to Nats without a 1985 NAMBA membership -- you won't be battling without it.

Keep building -- the battling is about to begin.

Tom Jass

Tom Jass
Contest Director

LOSS OF A FRIEND

By T. Darby.

Through R.C. combat I have met some extraordinary people. Some of these folks have become more like family. Through these people my life has been enriched. It was with shock and grief that I learned that one of these special friends, Brian Spychalski, died in an automobile accident on January 11.

It is not easy or enjoyable to inform all of Brian's combat friends about this. As I reflect back on my friendship and the shared experiences with Brian, I can't help but smile. I try not to think about the last but instead remember the good things we shared. I watched Brian overcome "ship problems" that would have completely frustrated me. His positive attitude helped me stay calm when I had problems. I watched Brian summon his courage and, as the youngest combatant in the '82 Nationals, take his new ship out in fleet action against experienced and much older captains.

What I was watching was a 14 year old kid become a young adult. Over the next three years, Brian and I met at several combat meets. His positive attitude, perseverance and courage always impressed me. The thing that impressed me the most was Brian's inhibitions in showing enthusiasm and love for his father. I hope one day that I will be able to share the trust, love and respect with my children that Brian demonstrated.

I hope that Brian's family will be able to look back on their 17 years with him and remember the good times and the help that Brian gave. The 3 years I knew Brian weren't enough but in that time, he touched my life and made it better. That's something I can smile about forever. To Bob and the rest of his family, I can only say that we too feel the grief, but we also felt the joy that Brian gave.

AXIS ARMS PRODUCTION

As in most wars, the aftermath was a bitter one. We were shown a lesson in the 84 Championships that numbers of well equipt ships can overwhelm a small and obsolete equipped fleet. (No matter how good the Admirals are). Our quantity of battle units may not change that much, but the quality should. Martin Schneider, Bill Hahn and myself have perfected a piston gun and this should be in full production by the time you read this.

Fluegel complains that there are very few things you can buy for your ship "off the shelf". Most of the equipment you have to make yourself. This is so true.

Production of single shot assembly's (similar to Foster's hand built), has started and anyone can benefit; (Italians don't care who they sell to). Machined gun barrels and piston gun assemblys will be shipped promptly in plenty of time to install in your ships for the spring battling.

Full scale production will begin in Southern Italy (Schneider's shop), in a few months. Northern Italian arms production is unhampered by Allied Air strikes; (Schneider's shop is being rebuilt by Allied POW's). and current piston gun inventory is between 50 and 75 completed assembly's.

- Captive "O" Ring Breech & Barrel\$8.00
- Single Shot Piston Assembly.....\$12.00
- Shipping per order.....\$2.00

Complete instructions provided. Some tubing and hardware needed to make a working gun. A complete gun kit is in the works. These are introductory prices and probably will change. Full refund or replacement if not satisfied. Send to:

Carl Camurati
69-52 181 Street
Fresh Meadows, New York 11365

(1) I have battled; Yes 16 No 9. (2) I am building a ship; Yes 25 No 1. (3) There is a realistic (80%) probability that I will participate in this years Championships; Yes 15 No 9. (4) I plan on participating in the following events, Single Shot; Yes 16 No 2, (5) Unlimited, Yes 10 No 4, (6) Small Ship, Yes 9 No 5, (7) Night Action, Yes 13 No 4, (8) Convoy, Yes 12 No 4. (9) I will battle on The Axis 9, Allies 8, side with a (10) BB 9, BC 3, HC 8, LC 3, Smaller. (11) My primary frequency is _____. (12) I can plug in an optional frequency of _____. (13) I am a club member; Yes 18 No 5. I would battle single shot if somebody would show me how to build the gun; Yes 13 No 3. (15) I would pay \$50 for a reliable single shot gun; Yes 9 No 9. (16) NAMS Insurance is a good deal; Yes 13 No 6. (17) I voted on last years rule changes; Yes 9 No 14. (18) My preferred Speed Rule would be; No Speed Rule 2, A Maximum Speed Rule 2, A Speed Rule by 3 Classes 2, 6 Classes 1, Scale Speeds 11, Other 2. (19) I feel the battles would be more fun if they were; More Scale 18, Less Scale 1. (20) I want to legalize, Rotating Turrets; Yes 22 No 2. (21) Thicker Bala Wood; Yes 11 No 14, (22) A Maximum Gun Power; Yes 11 No 8, (23) A Larger than Bee Bee Caliber; Yes 6 No 14. (24) I feel the hobby is controlled by a "Click"; Yes 7 No 11. (25) I feel the hobby is fairly governed; Yes 16 No 3. (26) Nothing works like a Chevy Truck; Yes 13 No 6.

From the Secretary of the Navy

These are the point standings as of Jan. 20th 1985 as reported to me.

1. Carl Camurati	7791
2. Steve Milholland	3871
3. John Jass	3046
4. David Haynes	2933
5. Mike Deskins	2516
6. Joe Vilar	2469
7. Bob Amend	2178
8. James Foster	1629
9. Dan Hamilton	1569
10. Terry Darby	1504
11. Bill Hahn	1360
12. Robert Shultz	1141
13. Martin Schnieder	995
14. Tom Jass	993
15. David Garrett	920
16. Dwyer Wedvick	902
17. D.W. Fluegel	880
18. Jim Lisher	610
19. Robert Russell	596

20. Marty Hayes	473
21. Jeff West	430
22. Gerald Roberts	140
23. James West	135
24. Loy Rasmussen	71
25. Billy Gainer	20

Well I guess this is it until the ice thaws friends.

Dan

Ribs

The executive has been asked to clarify the rule stating the number of ribs a ship can have. The board feels that rule means exactly what it reads... "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." It doesn't matter whether you use 1/32" balsa or 3/8" plywood ribs the rule stays the same

Jeff Poindexter

THE NORTHEAST SUMMER REGIONALS

By Mike Deskin

The Northeast Summer Regionals held Aug. 4-5 was something that I will remember for a long time. All tolled, nine of the true weekend warriors showed up to do battle. A couple of new ships and of course those beloved die hards whom without this hobby wouldn't exist.

The axis fleet was made up of Carl Camurati's Andrea Doria, Bill Hahn's Furataka, Bob Amend's Lutzow, and Dwyer Wedwick's Julius Caesar, all short, fast, and manouverable. These aspects make a ship deadly.

The allies also made a big show and I do mean big. Rick Schultz's Montana measured in at around 78 in long, with a beam you could hide a small sub in. I had my partially completed Hood at 72 inches, Joe Vilar had the monarch, a California class BB, Marty Hayes had his CA, Quincy, and Rob Russel's Pensacola which was also a heavy cruiser.

Battle commenced Saturday with a fleet battle.

Fleet #1

On the axis side was the Doria and Lutzow, pitted against Caesar, Hood and Pensacola. I for the most part was worried about the Doria. Was I in for a big surprise? War was declared and the allied fleet set out to engage the enemy with an overly anxious Caesar out in front. Caesar and Doria slid past one another guns blazing away. Caesar was a little off target so Doria gave her a quick lesson in sharp shooting with hits on her starboard quarter. Carl applied rudder and was on Hood registering hits all along a once impressive armor belt. Hood's stern gun sent the reply, via airmail into Doria's superstructure. Now the Pensacola entered the fray against both axis ships and gave almost as well as she received before emptying her magazines and withdrawing from the area. Hood and Doria now closed each other and exchanged a couple salvos and now Doria was on five. Then it happened, that which every ship captain fears, the ramsink. Lutzow closing Hood for a setup, put over her her rudder too late, so Hood seeing the axis ship getting ever closer also applied opposite rudder. So it was that with both of the ships under hard rudder the Lutzow hit Hood's starboard side near the bridge.

The toe of Lutzow's bow hit one of the ribs which gave way under the impact and the result was a hole below the Hood's waterline about the size of a small coin purse. In twelve seconds the Hood was gone. This left Lutzow to concentrate on Caesar obtaining numerous hits on her until the Italian ship was on her way to the bottom also.

WINNER AXIS

Ship to Ship #1

This battle Furataka against a very fast Monarch. Monarch closed the Jap with a little stern gun action in mind, and Furataka with one of her twin bow gun bursts put an end to Monarch's rearward thinking. so with Furataka heading off for safer waters to gain another stance the Monarch fell into hot pursuit. In came the water, on came the pumps, and down went the Montana

WINNER AXIS

S to S #2

In this battle Lutzow took on Pensacola. It all started with the Pensacola losing her motors so the

Lutzow closed in to dispatch the hapless cruiser to the bottom and found that her own guns refused to fire. She also went on five minutes and low and behold, they began to work. In the second sortie Lutzow experienced a brief grounding due to battle fatigue but was able to back off in time to escape the damage the American was looking forward to dish out to her. So it was with both ships low in the water from damage that Lutzow sank due to faulty pump activator.

WINNER ALLIED

S/S #3

This battle between the Monarch and Caesar. After a few salvos the Caesar's only gun went spastic and expanded it's ammo, but not to be worried about though for Monarch's guns wouldn't fire either.

WINNER ALLIED

So that ended Saturday's battle of the east coast types. The major problem was moss on the water. It was a real pain to the ships. Some more than others. I had a lot of problems myself even without that scummy stuff. After drying out my Hood and patching the ram hole and a large hole on the port side where the hull turns upwards which she got from landing on a large rock on the lake bed I gave the radio a short test which proved positive.

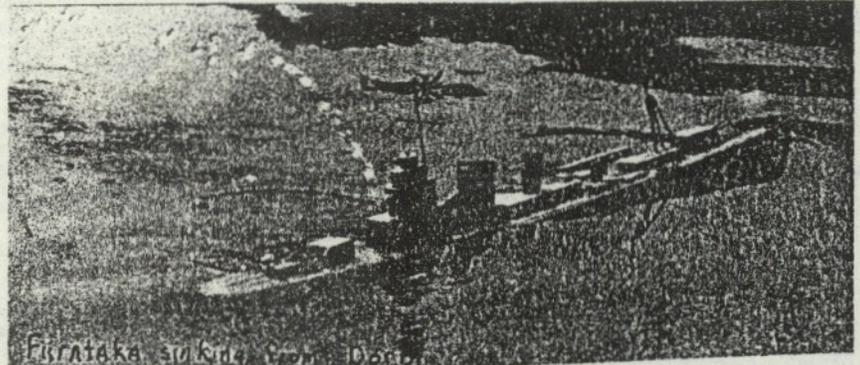
good long range hit on Monarch that sounded great but turned out to be not so great. Damage to Hood was heavy, during one attack by one of the axis ships, I believe the Monarch, Hood's Y turret was blown over the side of the ship into the water. Both allied ships received a good deal of damage so Hood was forced to refuse battle in the next sortie, with Montana following suit. This allowed them to fight in a later battle that day.

WINNER AXIS

S to S #1

This battle began with Lutzow out of control with a bad rudder that had overtraveled into a prop, and Quincy standing off at long range taking pot shots at her. This made for a slow first sortie but in the second they put up what I thought was the most exciting battle of all

It all started with both ships doing a zig zag tactic trying not to give the other ship a shot at themselves. Finally they broke away from the defensive stuff and began a series of unorthodox passes with



Furataka sinking from Doria

Sunday started off with Fleet Battle # 2 in which the axis fleet was made up of Doria, Monarch, and Caesar VS Hood, Montana, and the Pensacola. The battle was long and full of excitement.

Battle commenced with Pensacola out in front running afoul of the Caesar while trying to get a shot at Monarch. The price was paid in full. So with Pensacola sunk, and Montana and Hood running slow due to fouled props the three axis battleships had full control of the situation. Doria sent a couple bursts into Hood before setting off in pursuit of Montana. After a short run Montana went dead in the water with her props fouled to the point that they refused to turn. Doria taking complete advantage of the situation took her good old time emptying her magazines in the cripple and then sought safety to wait out her five minutes. All the while on the other side of the lake Monarch and Caesar were running circles around Hood, letting go an occasional burst at every available opportunity. Hood now running on her inboard shafts only due to the ram-sinking she experienced Saturday and the loss of her electronic speed control, had gotten into some moss also and was even slower than before was in no shape to protect herself from two such deadly opponents. To top it off she was suffering from gunnery problems also and could only get off an occasional burst at her adversaries, however she did manage one

each captain totally committing his ship to whatever damage might have been received, for the benefit of doing all damage possible to the enemy. So after a few exchanges in which the Lutzow was apparently getting the shorter end of the deal she went out of control again. Now with his opponent at a disadvantage Quincy took the initiative and made a couple passes before withdrawing with empty magazines. Lutzow with partial control tried to chase the now fleeing Yank and passed under a low hanging branch and lost her forward control tower. In the words of a former sub captain, it was a true running gun battle, Lutzow gunning Quincy running.

WINNER ALLIED

S/S #2

This battle pitted the Doria as the allied ship against the Caesar. The Doria carried only a stern gun due to the Caesar having only one gun on the bow. After a few quick passes the Doria performed a move that Bob dubbed the windshield-wiper tactic, which is basically a glorified S turn in which you fire on your target through both times he is under your guns. It looked great, but more importantly it did work exceptionally well. Shortly there-after the Doria scored the

only below-the-waterline hit on the Montana of the whole weekend. Had she been in the water they might have given her credit for it. She was in fact on her box between.

sorties in another battle. Not far into the second sortie Caesar rammed the Doria in the bow and put a hole in her that had to be patched before she could resume the fight. Shortly after battle was resumed Caesar was on her way to the bottom.

WINNER ALLIED

S/S #3

Then everyone asked for the war of the Leviathans. A battle between Hood and Montana. Montana had speed guns, range, and ammunition on her side, Hood had only every possible problem you could possibly imagine. None the less Hood scored the only well placed salvo in the first of

two sorties with a long range salvo that landed in Montana's upperworks amidships. I must have been overjoyous because I then passed close astern of Montana and the salvo was replied in kind by her stern battery which ended the first exchange. So Hood now tried to withdraw from the Montana's range of fire but as she began to pull away her stern seemed to dig in and she took a hard roll to port. Now dead in the water she righted herself and began to pick up headway. There was undoubtedly something wrong, she wouldn't run up to full speed and her rudder was almost nonexistent. Montana quick to take advantage of a good situation closed in for the kill. After a seemingly hour, five minutes to be exact I lifted Hood out of the lake and to everyones astonishment Hood had caught the first live fish to be captured by a warship since Orca. Seriously her starboard outboard prop had a fishing line entwined around it with a small live fish of unknown origin. It is believed to have been an attendant of the Mussolini's aquatic school of demolitions experts sent to attach mines to the hulls of the allied ships present on the lake. The second and last sortie saw both ships exchanging occasional long range salvos and Hood getting lower in the water. As she sank by the bow the pumps came on. Better late than never.

WINNER MONTANA

S/S #4

This battle had the Pensacola VS Monarch. In the first and only sortie Pensacola ran into the moss and went dead in the water and Monarch managed two bursts into her before following suit.

WINNER MONARCH

S/S #5

In this battle between Quincy and Montana they did the zig-zag routine until Quincy broke off so Montana went around the large bush and sat waiting. Quincy slowly got closer until all of a sudden she dashed right up to point blank range and cut loose with three good bursts into Montana's side and then just as quickly ran off to start another pass. Once again the two ships closed but this time both got in a few hits. Quincy now went on five minutes.

Montana now had to rely on long range gunnery to hit the fleeing cruiser. She managed only two hits before the sortie ended. In the second sortie both ships received a few hits but the Quincy emerged victorious.

WINNER QUINCY

S/S #6

This battle pitted Monarch up against the Doria in a true shoot-em-up match. Both ships took a lot of damage. The two ships were in a close scrap when it looked like the Doria had Monarch in a jam, but as luck would have it the Doria put her stern to the enemy for a stern shot and started to back in for a closer shot. Joe walked in front of Carl and the Doria rammed the Monarch in the side opening a large hole in her. This had to be fixed before they could be resumed, and it was only a short time before the Doria went on five and the battle ended. So started the second sortie. After a few good exchanges the Doria went out of control. Yes folks that one situation that we are all waiting for. In slow reverse, with hard port rudder it looked like it was going to be a game of sub search. Monarch also was having troubles of her own, in the way of drained out batteries. She was moving pretty slow. She managed only a few bursts into the cripple before Doria was off five minutes, but the Doria did in fact sink before reaching shore. Yes for all you folks who think the Doria is unsinkable, Carl put both hands on his ship and forced her under water. She popped up and he did it again for pictures and it was this time that she began to go down by the stern.

WINNER MONARCH

And so that ended the Northeast Summer Regionals. I will remember it for a long time to come. Even though my Hood got really shot up I enjoyed myself to the fullest. All I have to say is LOOK OUT AXIS I'LL BE BACK AGAIN.

M.W. Foster



Monarch, sunk by Frank.



THE AMEND INTERRUPTER:
AN IMPROVEMENT

by James Foster

Most of you are by now no doubt aware of the ball bearing type of interrupter mechanism Bob Amend suggested for the single shot guns. While it is true that it can be constructed with simple hand tools and is very forgiving of misalignment, there is one somewhat critical adjustment. This adjustment is the at rest position of the ball bearing. Ideally, it should come to rest with the top of the ball even with the bottom wall of the magazine feed port. If the ball drops to low, multiple BB shots will result due to the fact that more than one BB is required to fill the space vacated by the ball. It has been suggested that inserting two of the 1/4" ball bearings will solve the problem, but in many cases this will still allow the ball to drop 1/8" or more below the ideal position, with the result being the firing of two BBs. This situation would make the gun unacceptable under the current standards we set for an allowable system of

or - 10% variance. A solution to this problem is as follows:

Cut a piece of 1/4" copper about 1/2" long. Solder this into the hole on the 1/4" compression nut when you attach the Clippard coupling and the brass sheet cover over the hole in the nut. Naturally the 1/4" copper will be on the INSIDE of the nut, not the outside. It will help if you drill through the copper tube at the same time you drill the gas feed hole in the nut. Also, the 1/4" copper tube should extend 1/16" above the edge of the nut. If it is too long, just grind it down. As you can see, this assembly will allow you to adjust the at rest position of the ball bearing by simply screwing the cap in and out until the ideal position is reached. It is also a dynamic adjustment as it can be made while the gun is operational for precise fine tuning. Hope this helps with some problems you may be having as I feel the Amend Interrupter system is the way to go with the single shot guns.

JF

"In Memory Of A Sailor"

By Kay Poindexter

"Come set sail with me.
 Sail for a while
 And see where my winds
 will take us."
 We have sailed and fought
 on waters before.
 Not these I now see,
 But waters dark and'tossed.
 The ship I sailed was gray
 and now lies lost to sight
 beneath the dark, tossed sea;
 Vessel and sea both so unlike
 These I now sail.
 Those of you I have left behind
 On waters dark and tossed,
 Should you remember me and
 Feel great loss;
 Look out to see
 For I am there
 Sailing among the gentle light caped waves
 In a vessel golden and clear.
 You may only catch a gleam
 Of the sea that I now sail.
 For I heard a voice say
 "Come set sail with me."
 An eternal vessel
 I now sail.

The above is presented in memory of
Brian Spychalski

Treasurer's Report

Greetings from the guy to whom everyone has been sending his hard-earned money. Now I suppose you want me to tell you where all that money went. Well I'm not going to tell you until the next issue of this fine outstanding publication. After having bought patches, waterproof membership cards, printed material, etc. the club has about \$150.00. When the 40 or so members that have not paid their dues yet do so we will have about \$300.00. An itemized list will appear in the next issue as I have already stated.

It looks like the club will have to go with N.A.M.B.A. again this year as all other leads have not yielded fruit as of yet. The new NAMBA dues are now \$20.00 if paid through the R/C Warship Combat Club.

The new International R/C Warship Combat Club dues are now \$14.00 (but only \$8.00 if you have already subscribed to 'Hull Busters'.) If it would be more convenient for some of you I will accept Vista or Mastercard (through Amarillo Scale Warship.) However it would cost \$15.00 for the club membership and \$21.00 for NAMBA membership. Be sure to tell me your card number and expiration date.

An interesting note is that the first person to pay club dues is aboard the CV-64 CONSTELLATION and is a newcomer to the hobby. His name is D.D. Newcomer. (Sounds like a destroyer don't it.) Well I think its kind of funny!

Please send dues to
 Jeff Poindexter
 P.O.Box 9860
 Amarillo, Texas 79105

SINGLE SHOT WARFARE unknown Author

It's purely amazing how our minds work in unison. Back in July of 84, I was developing a piston gun to be used at the Summer Regional here in the Northeast. This version was very similiar to James Forster's article on his single shot gun. The second generation, (used at Fall regional) , for all intents and purposes, was identical to Foster's design. My latest version is not a hand built, but a machined gun. (Lathe & drill press). It still has the same basic components as Foster's single shot gun, but they are machined for close tolerances. Piston to cylinder clearance is very critical. Too much blow-by can cause multiple shots.

After using a piston gun in two regionals, I have a few simple hints for those who want to try one:

1. Jammed springs: home made or make shift springs will be one area that everyone will have problems in. If you can't find one "off the shelf", then you can make springs by winding steel guitar string (.010or .012) with a reversible variable speed drill and a short steel rod (.125")

2. Jammed pistons: when the bore and the piston is not matched, the piston can then get cocked in the bore, causing a jam. While you can get a good fit by making these parts by hand, machinery is the only way to guarantee a good fit.

3. Freon use: This is what I feel is the major problem with a piston gun, the amount of freon that this gun uses is amazing. Very inefficent. The only person who benefits is your refrigeration dealer. After the first thirty or so shots, standard tanks cool off to the point of not giving you enough pressure to reliably shoot the gun. Water bath tanks may be the only way out. (The rules say you can't heat the tank, but you can temper it with pond water).



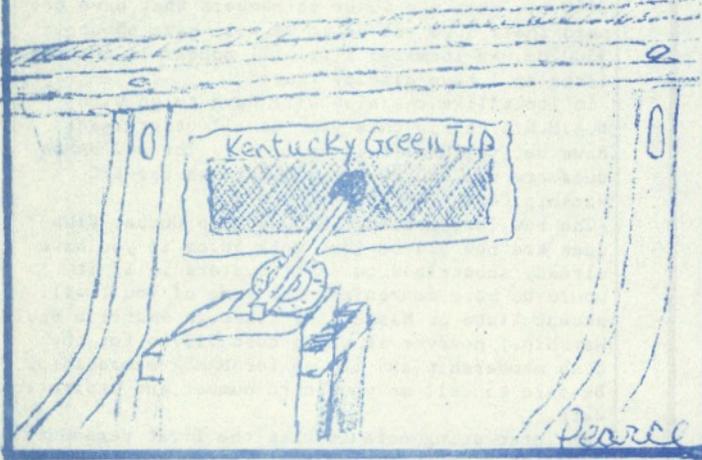
4. Power: It is awesome. The twelve inch drop test is a joke when you assess the power of single shot guns. However, maximum power is a drawback because it limits your rate of fire. (Also tends to cause double shots). Tweeking for maximum power can also waste alot of freon and that will hurt you more. Moderation is the goal. When the gun is de-tuned, it tends to fire more reliably.

The maximum power of this gun will probably damage radio gear and will probably go through a flimsy water tight box, so some type of protection should be employed.

5. Double shots: when two BB's get past the piston then the resultant shot will be inaccurate. I don't know exactly why, but they tend to splay and neither will hit on target. Double shots are the next worst thing to jamming. The necessity to be within 10% on gun actuations makes double shots a very serious problem.

6. Length of sorties: Design your ship for the long battle. I mean LONG. A sortie could last twenty to thirty minutes. A three sortie battle could last an hour and a half, way beyond most ships battery capacity.

243¹ How Not to Make a Smoke Screen"



PRESIDENT'S COLUMN

by James C. Foster

My fellow enthusiasts, as there is nothing specific to tell you about this month, I would like to share with you a few of my ideas on how the club runs.

Many of you are probably aware of the fact that the club now has a constitution. In simple terms, the constitution stated the goals of the hobby, established the duties and selection of the club officers, and established the method of proposing and voting for constitutional and rule changes. The Executive Board (E.B. for short) is composed of the five club officers, the President, Vice President, Secretary, Treasurer, and the National Championship Contest Director. As far as the authority (power) the E.B. has, there are three basic areas within which the E.B. may act. The first is the setting of club dues and the allocation of club funds. The E.B. can do this without subsequent membership approval during the annual rule meeting and club wide vote. This is really the only case the E.B. is not subject to being overruled by the club membership. The second area that the E.B. can act upon is situations of an emergency nature. We have had two good examples of this so far, one being the matter of House Rules and the other the Single Shot category of combat for the up-coming National Championship. Remember though, that the E.B. decisions in these cases are interim measures, and are subject to revision, repeal and/or acceptance by the club membership during the annual rule meeting and vote! So you see, if we make a decision that you don't agree with, you can change it by the mechanism the club has established to pass and repeal rules. The third sphere of authority within the E.B. is that of interpretation/clarification of existing rules. Again, this is subject to subsequent club wide approval. Any other changes the E.B. wants to institute exclusive of the above situations must go through the same process a proposal of yours is subjected to. This limit to the authority of the E.B. is a very good idea, as it will help prevent the forming of the "Clique" Fluegel asked about in his survey.

In case you are curious as to what the E.B. is working on at this time, we are primarily involved in writing Bylaws to the constitution. Basically these bylaws will be concerned with the establishment of a club structure to formalize the administration of the club's responsibilities. Some specific areas we are attempting to deal with cover such topics as the standardization of ribbons and awards, formalizing the regions within the U.S., establishing the mechanics of selecting the regional directors and defining their duties. We are also discussing various scoring systems (not point values but how the club handles a person's points), the Allied/Axis frequency scale, and other matters of an administrative nature. The criteria we are using to evaluate these proposals are varied but will lead to a better set of proposals. Foremost in this evaluation is the requirement that the proposal be the fairest system for the majority of the club's members. Other factors are such things as, is it simple enough to be understood and yet comprehensive enough to cover all possible cases? Will it make the central club organization too strong at the expense of the local clubs? Will it violate the goals of the hobby as stated in the constitution? Lastly, is the proposal really necessary for the well being of the club, now and in the future? As you can see, we are working hard to present a package of proposals which will finalize the process started with the passage of the constitution in establishing a viable and enjoyable club!

Fluegel hinted at something in the Dec. HULLBUSTERS which I feel deserves expansion. This is the lobbying of the E.B. with/for your ideas on rules and similar matters. I can not agree more with this. It is not only your right to do this, but your DUTY to do this. It is very hard for the officers of any club to make intelligent decisions on matters if the members of a club do not let their desires be known to these officers. Fluegel mentioned talking a tape to the E.B. members. While I acknowledge the benefits of a tape, primarily in the realm of the detail one can achieve in discussing one's ideas, there are disadvantages. If you do not possess a dual drive recorder to make exact copies of a tape, the tapes (five in all) you send out may contain significant differences due to the passage of time, the maturation of your ideas, and perhaps an oversight in not mentioning some key fact. For this reason, I feel the best way to lobby the E.B. is by writing or typing a letter and sending copies to each officer. If you feel this is too much work, let me tell that this is the system I instituted in the present E.B. The rationale for doing this is that each officer will receive the same information that every other officer has, and thus we can arrive at a decision based on the same information. It is really the only practical way for us to conduct business, separated as we are by large geographical distances. So, write a letter and send copies to all the officers, let us know your ideas.

Considering the fact that it is not the E.B. which enacts rules, but the club membership, the best way for you to influence the hobby and help insure that your ideas are fully considered is to write an article for HULLBUSTERS. Let me digress a moment here to say something about HULLBUSTERS. We are very fortunate to have the services of Fluegel and

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the pages of HULLBUSTERS to express our ideas. I feel very strongly that the club may well have died young had it not been for the publicity the hobby has received through the, in my opinion, excellent newsletter Fluegel publishes. I know the work Fluegel does is not easy, especially when there is a ship to be built or repaired. We are all very much in his debt. Anyway, don't let Fluegel's efforts be wasted. If you really feel strongly on some issue, if you want some particular rule to be passed, write it down and send it to HULLBUSTERS. Tell us all why we need this new rule, inform us as to the logic you used to develop the rule, and why the current system is not the best. Explain the advantages your system has, not only now, but also in the future. Delve into why the club must adopt your ideas to insure fairness. In other words, sell us and convince us to adopt your point of view! It really isn't work if you believe in yourself to type out an article or two for the rest of us to share.

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One last thing, even though you are allowed to present rule proposals from the floor during the rule meeting, it would be best to present your specific proposal to the club secretary ahead of time, in this case Dan Hamilton. So, let me hear from you, let me and your other officers know your ideas, wants, and desires. Send your E.B. members letters and write articles for HULLBUSTERS. It is not only your privilege to do so, but you duty to do so. A democracy is only as strong as it's members make it by participating. If YOU don't let your club down, it won't let you down!

James C. Fort

P. S. NEWSFLASH: Bob Amend of New Jersey has developed a Single Shot interrupter which utilizes a 1/4" ball bearing and gravity instead of a piston and spring. This system is simple, requires NO special tools to construct, has no critical tolerances or alignments to maintain, and is exactly what the hobby needs! Hopefully we will see an in depth article on this system in the near future so all can share in this knowlege. Good going Bob!



THE GUNS OF THE FLEET

By Marty Hayes.

The rules of gun allowances per ship are easy to apply but unrealistic in our hobby. Presently they are based upon the tonnage of the vessel and it's type, making it necessary to come up with additional rules to further limit "rule breaker ships". Rules such as the new 1905-1946 rule and the old battleship side gun and secondary gun rule are examples of this. It is my contention that a better way would be to base our allowances on the size and age of the guns which were on the actual ship.

The magazines of guns should reflect the offensive power of the guns involved, for example: under the present rules the IOWA, 44,560 tons, 9x16", 20x5" guns would be equal to the ERZHERZOG KARL, 10,472 tons, 4x9.45", 12x7.5" guns. Obviously this is not the case, however in our hobby the Austria-Hungary ship would be much stronger than the IOWA.

What I suggest is that the size and age of the guns be taken into account through the use of a set of tables. The 18" guns of the YAMATO should carry the largest B-B load in the hobby and 5 and 6 inch guns the smallest. In this way all ships can be accommodated with a realistic gun load. I include the age of the guns in the formula because the 14" and 15" guns of WWI were not as efficient as the guns of WWII ships,

their targeting ability and reloading speed were not as great and in the case of the British at Jutland the shells themselves were not as reliable.

Displacement is it's own rule of nature, as Dirty Dave Haynes indicated in his article in Dec. Hull Busters, and will limit smaller ships to smaller amounts of gun mounts and larger ones to more. Perhaps displacement should be only the rule for the number of pumps that can be carried.

What I suggest is a formula which takes into account the aforementioned items to calculate the number of B-Bs available to the ship as a whole and each side of a ship in detail. The size of the guns times the number would equal the number of B-Bs available. In the case of the older ships this number should be the number of B-Bs available, WWII ships should carry that number times a constant (suggested 2). The number of guns which shoot these B-Bs should be limited to the number of guns available on the ship.

An example of the application of the above suggestions would be the arming of the KING EDWARD VII built in 1905 and displacing 15,630 tons. Assuming the NEW ORLEANS is representative of the hobby with two 50 B-B single shot guns and one pump, we will assume the one pump per 15,000 tons (displacement rounded off). The KING EDWARD VII would therefore be allowed one pump. The NEW ORLEANS carried 9x8" guns which are now equal to 100 B-Bs (under the proposed changes in this article, she would be allowed 144 B-Bs, positioned 96 B-Bs forward and 48 aft (9 times 8 times 2 for modern guns)). The British ship with 4x12", 4x9.2", and 10x6" should be allowed 4 times 12 plus 4 times 9 plus 10 times 6 or 144 B-Bs. (could be positioned 72 fore and aft or 42 fore and aft and 30 to each side.) In this example the many 6" guns carry perhaps too much power but this could be further diluted by multiplying all 5-6" guns by some constant such as 0.75.

The VITTORIO VENETO (1940) would have 414 B-Bs available, The BISMARCK (384), and the ANDREA DORIA (a weak 252 as built) or (250 in WWII). As you can see there would be some changes prompted by this manner of calculating the loading of ships and some ships would gain and others would suffer. I believe the overall

continued on next page

change would be for the better as the fleets makeup could vary more and still be competitive.

Please to notice that nowhere in this article is any notes on how many guns a ship may have nor a limit on how many can be placed on any end or side of a ship. This allows the ship with only a limited number of B-Bs to cover those areas which were covered by her secondary turrets (although weakly). This would also allow rotating turrets to return to the hobby on the larger ships. Also the older ships such as Kay's old WEST VIRGINIA and the four stackers MEMPHIS, MILWAUKEE, etc. would not be cut out of the hobby.

I believe that the above represents a

suggested rule change that can be used for growth rather than limits. Many of our recent rules represent limiting (such as laws almost always do) and few represent growth. I would like to see more growth types while maintaining the playability of our hobby.

Marty Hayes
Marty Hayes

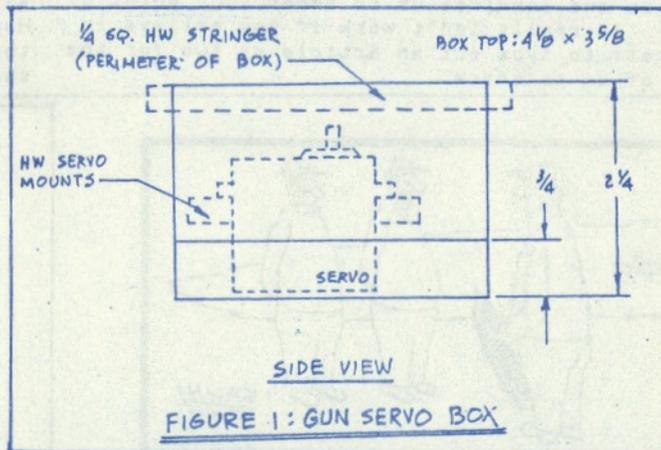
Ref.: The Complete encyclopedia of Battleships - Tony Gibbons
The Encyclopedia of the World's Warships - Hugh Lyon
Catalog of Warship Drawings - Edward H Wiswesser

How to... build a Watertight Box-Jass.

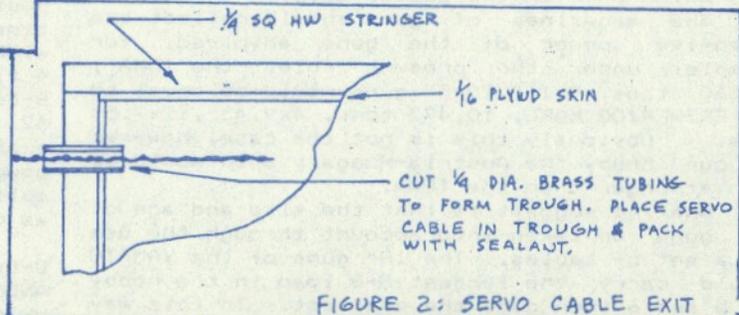
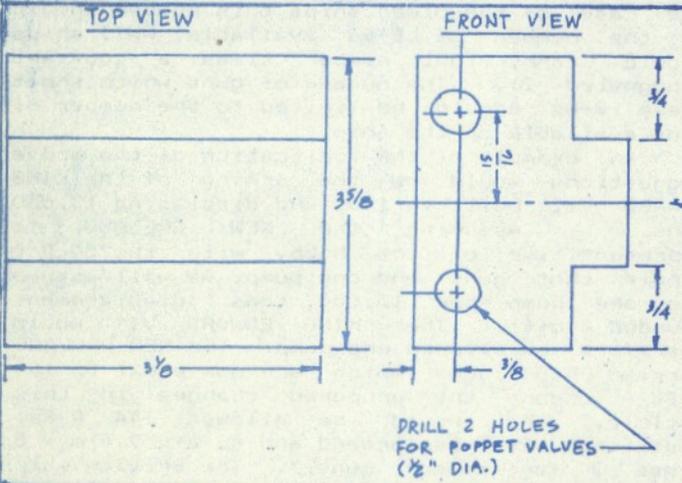
A watertight box has become a necessary piece of equipment in a R/C Combat Warship. Why drive several hundred miles to an event, get sunk in the first sortie, and lose the rest of the day while you dry out servos and radio equipment? I have built two generations of watertight boxes and the second version is much improved (isn't that always the case?). The Jass Mark I watertight box contained all the R/C components within one box. The rudder servo, throttle servo, gun servo, receiver, receiver battery and switch were all located in the single watertight box. This design was serviceable, but it caused the control linkages to the throttle, the poppet valves and the rudder to be long, complex and full of slop.

Version II has been repackaged to eliminate these long control linkages. It is successful to the point where I offer it as a generic design for heavy cruisers. The Mark II has two watertight boxes. A separate watertight box houses the gun servo and the plunger end of the poppet valves, while another watertight box contains the rudder servo, throttle servo, throttle itself, receiver, receiver battery and the pump switch.

can also locate the pump switch within the watertight box --- another advantage of the Mark II. The pump activator is the throttle bellcrank; the bellcrank length is adjusted so that full reverse, full trim activates the pump switch.



The dimensions of a typical watertight box for the gun servo, poppet valves and roller arms are shown in Figure 1. The box is built from 1/16" plywood. Cut the sides, ends and bottom to size and tack them all together with ZAP. ZAP the 1/4" square hardwood stringers around the top of the box; these stringers will serve as a lip to provide a seating surface for the box top. Apply two coats of epoxy to the inside and outside of the box. Cut the top from 1/16" plywood and epoxy it also. Holes (1/2" diameter) for the poppet valves are Dremeled into the end of the box using the dimensions in Figure 1. Note that the 1/4" square hardwood may have to be removed in the area around the poppet valve holes. Buy some 1/4" wide sealing tape at the hobby shop and fasten it around the perimeter of the box to the top of the 1/4" square hardwood. The detail for insuring a watertight entry for the servo control wires is shown in Figure



2. The brass tubing trough is ZAPPED to the 1/4" square hardwood just below the sealing tape level. A sealant (bubble gum?) is used to fill the trough and render it watertight. The gun servo

I have been extremely satisfied with the 6 position rotary switch throttle (Radio Shack # 275-1386) that I have been using (see HULLBUSTERS August 1984 issue for details of construction). The use of this switch lends itself to installation within the watertight box; this method keeps the servo to switch linkage very short and gives a positive response when the transmitter calls for different speeds. It also allows all the throttle wiring to be on the exterior of the watertight box. I have always switched my pump(s) on with full reverse, full trim on the transmitter. This gives a positive on/off action to the pump; there is no other activation system that might fail. Consequently, I

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itself is mounted on a plywood tray that is screwed to the interior of the watertight box; this allows the servo to be removed for servicing. The dimensions for the main watertight box are shown in Figure 3. These dimensions are based on Futaba equipment and may have to be modified if you're using another vendor's equipment (although I can't understand why you would). Double check that the height of the main watertight box will fit within your ship! This height can be reduced somewhat, but not much. The main box is also built from 1/16" plywood with a 1/4" square hardwood stringer around the top. Epoxy (two coats) the inside and outside of the box. Dremel the necessary holes into the box to accept the rotary

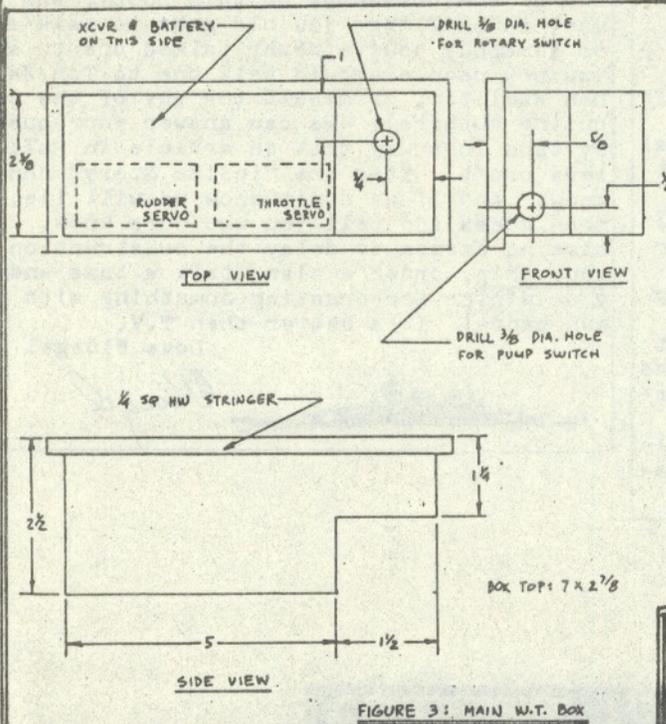


FIGURE 3: MAIN W.T. BOX

switch (throttle) and the pump switch (Radio Shack # 275-1565 Soft Touch). Locate these two holes as per Figure 3. Install the rotary switch and the pump switch; their collars will provide a watertight connection when tightened. Construct the servo trays for the rudder servo and the throttle servo from 1/16" plywood and 1/4" square hardwood. Attach the servos to the trays, locate the servos in the right (starboard) side of the box and ZAP the trays to the side of the box, insuring that the servos don't get ZAPPED to the trays. I always use ball linkages between the throttle servo and the rotary switch. They provide maximum throw with little friction. The linkage from the rudder servo to the rudder must exit the watertight box so a watertight fitting must be used. The bellows-type fitting (Best Models Inc. Cat. No. 100, \$1.95 for set of two) works well. Drill the appropriate sized hole in the back of the box at the correct location to install the bellows. Attach the rudder linkage to the servo and through the bellows. The top of the box is

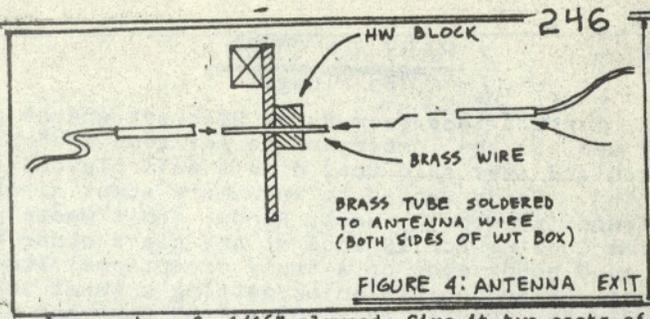


FIGURE 4: ANTENNA EXIT

also made of 1/16" plywood. Give it two coats of epoxy. Cut a hole in the top to allow operation of the receiver/battery switch. This hole is covered with tape when battling. Attach 1/4" wide sealing tape to the 1/4" square stringers to form a watertight gasket. The receiver and receiver battery are located in the port side of the box. The receiver antenna watertight leadout is detailed in Figure 4. It is essentially a short length of brass rod that pierces the box at the rear. The antenna lead is severed and brass tubing collars are soldered to the lead ends to form a connection. When the collars are slid onto the brass rod the antenna is connected and yet the antenna can be disconnected to will.

The watertight boxes should be removable from the ship itself. Don't glue the boxes to the ship. Hull repairs will be much easier if everything isn't nailed down. Good luck with this project; if you have any questions, drop me a tape.

Sink Axis in 1985!!

Tom Jass
Tom Jass

Tentative CALENDAR

1. S.E. Spring Regionals May 4-5, Decatur Alabama.
2. 1985 Championships July 14-19, Springfield Missouri.
3. S.E. Fall Regionals October 18-19, Decatur, Alabama.



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BABY BATTLER

by Fluegel

I got a tape from Randy Sickbert and he said "I went to the lumberyard to get some 1/8" plywood and they said they didn't sell plywood that thin". Randy wanted to know more about Aircraft plywood (AP wood). Well, Randy, don't waste your time looking for AP wood at any place other than a good hobby shop or a truly exceptional lumberyard. Also don't plan on getting a sheet longer than 48". Buy a 12" x 48" x 1/8" for your deck and a 12" x 24" x 1/4" for your ribs. By using AP wood you can make your ribs 1/2 as thick as is shown on Jeff Poindexter's plan sets which will create useful space.

Midwest and Bud Nelson are two popular manufacturers of the wood and it should have about 5 plys whether it's 1/64" or 1/4". It's expensive - about \$11.00/sheet but I feel it's a good investment if you plan to use the ship for several years. It's called Aircraft Plywood because it was used as the "skin" for aircraft years ago and was covered with a canvas like material. I will not build a ship without it, but I can understand a rookie not using it if he was going to build a quick, sloppy, temporary, cheap ship to learn with, you know like the Rodney!

In conclusion I am pleased to announce that the 1983 Annual Hull Busters is available. These Old Issues have the Axes, Allies Radio Frequencies, etc, etc, that are handy to refer to so send me \$8.00 for the '83 Annual Issue. I really believe you will treasure your '83 Annual Issue. I know I will enjoy your \$8.00!

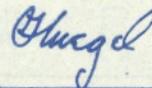
CONCLUSION

Allow me to chime in with Terry Darby, Kay Poindexter Stan Watkins and all the rest of the early hobbists in sending our love, prayers and condolences to the Bob Spycalski family. Bryan was a very kind and personable young man and we all do mourn the loss, still, it is our loss, not Bryan's.

Thanks to all the contributing authors and I hope that everybody is using this winter to create a good looking and reliable ship.

The warmth of your fellowship shared on a cassette tape to another combatant is truly one of the treasures of this hobby, and I want to challenge you old gabs to talk a tape to somebody you've never talked one to and you new people should talk one to Tom Jass, Dan Hamilton, or myself (or any of the contributing authors). We can answer your question by tape in a way that an article in Hull Busters can't. It's the "inside Story" don't ya know. And if we don't know we will lie, I mean guess and tell you who does know. You have no excuse to delay the construction of your Ship, order a plan, talk a tape and use your winter for creating something with your own hands! It's better than T.V.

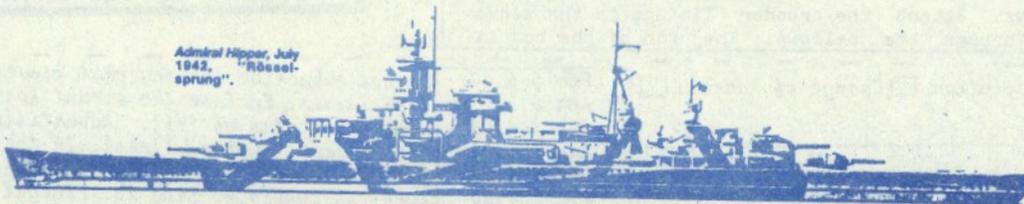
Love Fluegel




HULL BUSTERS VERY LIMITED
3524 GRAY DRIVE
MESQUITE, TX 75150

NEWSLETTER

Admiral Hipper, July 1942, "Rössel-sprung".



This line is 4 3/4" long.

Type Articles with your lines this long! The deadline is March 25. This is the bottom line.