Adding Realism

This is a good game on the surface, a reasonable first generation system that is neither as cumbersome as Bismarck or advanced Jutland, and not so simple-minded as basic Jutland or the Midway surface combat rules. This is both its greatest strength and biggest weakness.

Once again, the game in the magazine has some significant discrepancies with the article supposedly supplementing it. The article goes to some pains to explain the tactical advantage accruing from "Crossing the T," but this is ignored totally in the game rules. I suggest that fire straight down the row of hexes directly ahead or astern of a ship be done at half gunnery strength, and that such fire not be allowed through the adjacent bow/stern hex if occupied by another ship. I also have my doubts about allowing torpedoes to pass through occupied hexes to a target hex, but not beyond, but this can get into some pretty hairy Line of Fire determinations à la PanzerBlitz.

The basic problem with the game is its combat resolution system. It works well with destroyers and cruisers, but the addition of capital ships, especially the super-dreadnoughts, badly distorts things. As an example, I'll recap the Battle of Scenario 10, as it occurred in my living room.

To start, the US DD in range of Yamato was quickly dead. As the capital ships came within range of each other, Iowa fired on Nagato rather than Yamato, because the odds here were 2-1 rather than 1-1. Similarly, Yamato concentrated on the Alaska. By chance, soon Nagato and both BC's had taken "W" hits, so that they could no longer get 1-1 odds on any enemy battle wagon. So they gleefully began to chew up the light ships, while the Iowa and Yamato continued to make their 2-1 attacks on the weaker capital ships, rather than most of each other. Due to fortuitous Japanese die rolls, after several more turns the BC's were sunk or weaponless and the US DD's reduced to impotence. When the Nagato was also weaponless, Iowa could finally turn her guns on Yamato. By another coincidence, these BB's had soon rendered each other powerless, and they were dead in the water a few hexes from each other. The Japanese DD's, most with "PW" hits, slowly drew towards Iowa (the US DD's left aloft were out of the action, totalling 6 gunnery and 10 torpedo Points). Thus Iowa and Yamato kept 1-1'ing each other, hoping for the coup de grace, while Iowa had the choice of shooting at Yamato, or making a 23-1 attack against a single Japanese DD before they could get into position for a massed torpedo attack. It ended when a 2-1 torpedo attack put Iowa out of her misery.

Thus we see a battleship with a "W" hit unable to do any damage to another BB, and BB with no secondary armament to defend itself from destroyers and yet unable to use its overwhelming main battery on more than one DD at a time. And finally, no matter how overwhelming the firepower, it is impossible in the game to sink a ship with a single attack, no fire control system that allowing manned and fact.

To summarize, there is no increase in firepower at close range, there is no provision for firing at more than one target (i.e., secondary batteries), and no way to overwhelm a target (say, allow a 23-1 be resolved as two 9-1 and a 5-1); no provision for odds less that 1-1 (could have 1-2 by rolling a 1, and then rolling again to get an even number, etc.). While there is no way of sinking a ship in one attack, I think 3 hits are too few in any event. I suggest 3 "P" hits or a total of 4 of any kind. When more than one ship fires at a target, rather than halving their firepower, add one to the die roll for each additional ship up to 3. By the same token, when firing at reduced ranges (either a set fraction of the printed range, or an absolute limit), subtract one from the die roll. Finally, as a "HIT" is 1/3 of damage to sink a ship, a hit on a BB is much greater than a hit on a DD.

The following are to be used as additional rules and modifications to rectify some of the problems of "CA":

Effect of Facing on Combat: A ship's gunnery strength is halved when firing at a target lying in the row of hexes directly ahead or astern of the ship counter. A ship's line of fire to such a target is considered blocked if there is another ship in the adjacent bow (or stern) hex. This will to some extent reflect the tactical disadvantage of having your "T" crossed.

Firing at more than one target: All ships except destroyers and the Japanese light cruisers had a fire control system that allowed them to engage multiple targets with central control. To partly reflect this, allow those ships to fire at two separate targets in each gunnery phase, applying up to half their gunnery strength to each target. Used in conjunction with the facing rule above, no more than one target in the bow/ stern rows could be engaged at the same time.

Secondary Armament: There really ought to be some provision for the power of the secondary batteries, especially battleships. On the smaller types, they were hardly of negligible power as well. For instance, you have made the Brooklyn class CL 22% more powerful than the Cleveland class because they carried 15-6" to the latter's 12. But the Clevelands could fire 8-5" to either side, versus 4 for the Brooklyn's, Eight 5" against 4 is a difference of two gunnery strength points. One problem in incorporating such a rule is that generally only half the secondary can fire to either side (which is a problem you neatly ignore for torpedo tubes).

The Effects of Range on Gunnery: Other than the halving of strength when firing at extended range, the distance to the target has no effect on gunnery (nor indeed do factors such as size and speed of target, smoke, illumination, etc.). To remedy this, and to give "small boys" a better chance against grown-ups, double the gunnery strength of ships firing at half-range or less, and triple strength for those firing at a range of 1 or 2 hexes. You could also consider subtracting from the die roll in such circumstances.

Effect of Range on Torpedo Attacks: Similar advantages should accrue to close range torpedo attacks, so for IJN ships attacking at a range of 1 or 2 hexes and USN ships at a range of one hex, double the torpedo strength. On the other side of the coin, it must be recognized that torpedos are not shells and travel nowhere near as fast. At 50 knots, the Long Lance would take two movement phases to reach its game-maximum range of 21 hexes, and nearly seven phases to reach its absolute limit of 43,000 yards at 32 knots. Similarly, for the US torpedo to reach its absolute range of 9 hexes it would have to travel at around 6 hexes per turn. To reflect this, add this rule to torpedo procedures: for IJN ships firing at a target more than ten hexes away, and for USN ships firing at a target over 5 hexes away, do not announce the torpedo attack. Instead, secretly write down the attack in terms of what ship is firing, and the hex in which you think the target ship will end its next movement phase in. If any ship ends up in that hex at the end of the enemy movement phase, announce the attack and resolve it; otherwise, only you and your note paper know the status of your torpedo tube. It should be noted that the target hex need not be beyond the 5 (or 10) hex limit (it could be closer); it must be within the maximum range of the firing ship.

Spotting and Night Effects: Let me state parenthetically that as the Japanese 5" did not significantly outrange the US 5", the difference in their ranges in the game is due to superior Japanese night optics and presumably in daylight the US destroyers would enjoy the same 12 hex range as the Atlanta class CL and the Japanese destroyers.
The main feature of nighttime is that it is dark. This, as we all know, makes things hard to see, and hard to shoot at. I think, therefore, that gunnery at either extended range or beyond some ordinary like 20 hexes limit be forbidden. Other effects: no player may inspect any enemy ships more than 8 hexes from any of his own until after he has allotted gun/torpedo factors firing at it. IJN and British vessels may not be spotted simply from firing their guns by ships over 12 hexes away (their flashless power were flashless, unlike the US's); a ship dead in the water is spotted by any ship within 3 hexes; ships can catch on fire, and a burning target attracts shells. When a ship receives a "W" hit, roll die; 1 or 2 means it is on fire; place an "On Fire" marker on top of stack. After moving a burning ship, roll die, 1 means fire out; remove maker but replace with Spotted maker. Burning ships are spotted from anywhere on board, and all ships which fire in a given phase must fire at a burning enemy ship unless there is another target closer or they fire on the same target they shot at the previous turn. It would also be entertaining to require ships to fire on friendly burning ships so far away (say 8 hexes) that their identity is uncertain.

Adding Simultaneity

"CA" represents a departure from other naval surface combat games. It has much less of the miniatures game in it than do most naval games. Partly because of this, and partly because it does build on existing systems, it plays much more smoothly and rapidly than do most naval tactical games, yet without losing interest and excitement.

It's greater simplicity lends itself to two things: 1. "CA" will be provocative of variants, because all of the essentials are presented in a remarkably simple, and easily built upon format. 2. The "CA" system can be integrated with land operations without introducing hopeless complexity.

The only aspect of the "CA" game-system which I feel could use some improvement is the Torpedo Combat Procedure. Here the abstraction in the CRT becomes a significant deviation from reality.

In "P" and "W" gunnery results, a broad range of possible outcomes, from one critical hit to many not-so-critical ones, is abstracted to give a net effect. The obvious premise is that one shell will not sink a ship, but that a range of combinations can have a sum effect on a ship's performance. When, say, two CA's slug it out, both will score some hits, but that does not say that these hits will or will not affect the combat performance of the ship hit. The "CA" Defense Strength, based on ship "protection," is thus a good gauge of a ship's relative resistance to gunfire (in the abstract sense).

In torpedo combat, however, such a broad range of results does not exist. Torpedo combat is an "either-or" situation, either a ship is hit, or it is missed. A ship's armor protection has no positive relation to that ship's chances of being hit with a torpedo (in fact it has a negative relation, since more armor means a larger and less maneuverable ship), and has relatively less relation to how a ship will survive a torpedo.

As an example, the Yamato has a Defense Strength of 36, the Kagero a Defense Strength of 2. While 1 torpedo would sink the Kagero, the Yamato obviously would not require 18 torpedo hits to be sunk (it actually took 12 hits, but several of these were probably "overkill"). The key parameter in torpedo combat then becomes whether or not the given ship will be hit by an attack. Factors affecting the chances of getting a torpedo hit on a ship were:

1. The torpedo crew's skill in setting torpedo solutions,
2. The relative speed of the torpedoes,
3. The number of torpedoes fired,
4. The range to the target,
5. The relative direction of the target's movement,
6. The velocity of the target's movement.

The "CA" Torpedo Strength already makes allowance for factors # 1, 2, and 3; also current "CA" rules already take # 4 into account. I considered # 5 as being included in the current rules for two reasons: 1. Ship facings relative to each other are ignored for gunnery combat, and would be impossible to add without introducing unacceptable complexity.

2. The Attack-Movement Phase order assures that a ship moving away from an attacker will have increased his distance from the attacker prior to the attack, thus lowering the attacker's Strength in many cases.

Accordingly, relative vulnerability to torpedo attack, as far as scoring torpedo hits is concerned, becomes dependent on velocity. This is reflect in a new...

TORPEDO COMBAT PROCEDURE:

1. Compare the sum of the attacking ships' torpedo strengths to the defending ships Torpedo Evasion Value — TEV (correcting for any range effect on the torpedo strength), to establish a basic odds; round this odds off downward to one of the simplified odds on the CRT.
2. A ship's Torpedo Evasion Value — TEV — is equal to its current speed, (taken from its movement, a ship dead in the water is spotted by any ship with a TEV of 1, a ship moving at speed 5 has a TEV of 6, etc.

Roll the die once for each battle against the target. The CRT results have the following meanings for torpedo combat:

a. A "P" or "W" result indicates one torpedo hit on the defending ship;

b. A "PW" result indicates two torpedo hits on the defending ship.

3. If a hit or hits are secured, the die is rolled again, for each battle in which a hit (or hits) was secured, against the Torpedo Hit Chart; indexing the die roll with the number of hits secured and defending ship Defense Strength (from the ship counter).

The Torpedo Hit Chart is the same as those given under the CRT, except for:

"2P" indicates that the defending ship receives 2 Power hits;

"S" indicates that the defending ship is sunk, and removed from play.

The data on which the Torpedo Hit Charts are based is found, partially, in the Torpedo Hit Results, 1942-43 table. This table was compiled from fifteen actions involving torpedoings, from the Java Sea battle, 2/22/43, to Empress Augusta Bay, 11/2/43; both Allied and Japanese results are shown. The results are expressed in terms of how many ships of each type received a given number of hits in one of the engagements, and what the impact of that number of hits was on the ship in terms of "CA" combat results. In many cases ships were also hit by gunfire, but it is impossible to accurately reflect relative damage contributions.

TORPEDO HIT RESULTS, 1942-43

<table>
<thead>
<tr>
<th>Ship Type (Typical)</th>
<th>Nr. of Hits Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;CA&quot; Strength</td>
<td>1        2        3+</td>
</tr>
<tr>
<td>DD</td>
<td>1-2S     2-3S     3+2</td>
</tr>
<tr>
<td>CL</td>
<td>1-2S     2-3S     3+2</td>
</tr>
<tr>
<td>CA</td>
<td>1-2S     2-3S     3+2</td>
</tr>
</tbody>
</table>

*Torpedo probably didn't contribute greatly to sinking, ship heavily shelled.

The table is explained as follows: In the engagements covered, for example, 15 DD's received one torpedo hit, of these, 13 sank in the engagement hit. 1 was DIW, and one suffered damage equal in "CA" terms to a "PW" hit. The table makes several things apparent which are not reflected clearly in the game or article. First, one torpedo hit had a much better than even chance of sinking a DD (80%). The only two exceptions, Selfridge and Foote, were both hit on the extreme ends. Foote was hit on the stern, lost it's stern section and screws, and was DIW; Selfridge was hit on the bow, and lost its bow section with two turrets, and could make only about 10 knots. Contrary to the article, Chevalier sank after a single torpedo hit which removed her bow section somewhat further back than in the case of Selfridge.
This brings up another aspect of torpedo hits which I have attempted to incorporate. In a significant percentage of these hits, the bow sections of ships up to and including CA’s would be blown off, removing the bow turrets and drastically slowing the ship if it was not sunk. The “CA” equivalent of this would be “PW,” but this is impossible under the present system. The “PW” results on the Hit Chart also reflect the fact that a ship’s fighting power was intimately linked to its motive power — the boilers that turned the screws also turned the turrets.

SCENARIOS AND SPECIAL RULES
Another area of “CA” which can be improved is its reflection of the great changes in American doctrine, training, and technology in the period 1941-45. Also, improvement can be made in reflecting significant, unusual conditions which existed in individual scenarios. Accordingly, the following special rules are proposed: (for scenarios after 8/1/43): 1. USN ships have a primary torpedo range of 4. 2. USN can use FCR (fire control radar) on ships at 10 hex range which are not “spotted.” All firing ships must fire at the nearest, or the larger if two are equally close, enemy ship — all firing ships are spotted as per “CA” rules.

Scenario Special Rules
Scenario 2 — Savo Island
1. U.S. Cruisers, once hit, are permanently spotted (this reflects the presence of unpro- tected fabric spotter planes and guns on deck). 2. Unless IJN ships come within 4 hexes on turn 1, U.S. ships may neither attack nor change course or speed. [Note: even these additional rules cannot fully simulate the extent of American unpreparedness at this point; the actual battle was a 43-0 Japanese Victory.
3. The CA-2 (IJN) has a Torpedo Strength of only 20, but may reload twice.

Scenario 4 — Guadalcanal
1. USN ships are moving at speed 3 to start. 2. If IJN score over 10 bombardment points, they may extend the scenario to 20 turns; if they score over 30 bombardment points, only IJN ships actually sunk are considered sunk.

Scenario 6 — Tassafaronga
1. The IJN Player may score the special rule points only once for each (s) DO unit. 2. DD units marked with an (S) have no torpedo reloads.

Scenario 7 — Kolombangara (corrections only)
1. The IJN ships are moving at speed 5. 2. The USN ships are moving at speed 6.

Scenario 8 — Empress Augusta Bay
1. Movement visibility is 10 hexes this scenario only. 2. USN ships are moving at speed 4, IJN at speed 5.

NEW SCENARIOS
Below are two new scenarios; one an inconclusive DD action, and the other a “Tokyo express” situation.

Scenario 11, Kula Gulf, 7/6/43
LAND — Configuration “C” (Guadalcanal portion only)
IJN Player
Hex  
Ship Speed/Course
2828 2 Kagero DD-4 5/n
2827

2829 2 Fubuki DD-2 5/n
2830

2831 2 Mutsuki DD-1 5/n
2832

USN Player
Hex  
Ship Speed/Course
3718 2 Fletcher DD-6 5/nw
3818

3919 3 Brooklyn CL-3 5/nw
4019

4120

4220 2 Fletcher DD-6 5/nw
4321

Game Length — 20 Game-Turns or optionally 30 Game-Turns with Reinforcement — IJN Player
3 Mutsuki DD-1s! on south edge within 5 hexes of land, speed 5, course n, enter turn 20. Use Tassafaronga special torpedo rule.

Victory Conditions — victory is awarded on a points basis; points are obtained in accordance with the following schedule:
CL sunk = 6 pts. DD sunk = 3 pts.
CL DIW = 4 pts. DD DIW = 2 pts.
CL P hit = 2 pts. DD P hit = 1 pt.

Japanese ships DIW at game end are considered sunk. The IJN player begins the game with 6 points, as the supply ship has unloaded. Each (I) DD has 1 point worth of troops on deck; if the DD leaves the map unit, the IJN player receives this point if the DD is hit, neither player gets this point; if the DD is sunk, the USN Player receives this extra point.

The level of victory is determined by the ratio of victory points, IJN/USN as follows:
Level of Victory Ratio IJN/USN
IJN Major = 5.00 up
IJN Minor = 3.00-4.99
Draw = 1.50-2.99
USN Minor = .75-1.49
USN Major = .74 or less

Scenario 12 — DD Action off Horaniu 8/18/43 (Vella LaVella)
NO LAND
IJN Player
Hex  
Ship Speed/Course
4612 2 Kagero DD-4 3n
4514 1 Kagero DD-4 3/ne
4316 1 Fubuki DD-2 3/n
4317 1 Kagero DD-4 3/n

USN Player
Hex  
Ship Speed/Course
3726 4 Fletcher DD-6 7/nw
3826

3927

4027

Game Length — 15 Game-Turns.
Victory according to point schedule on Scenario 11; point ratios as per table on Scenario 3.

IJN ships DIW at game end are considered sunk. If either side leaves map before Game-Turn 10, the opposing side wins. Spotting Range is 16hexes, this scenario only.

“CA” IN SMS
Because “CA” already incorporates the two essentials for SMS — 1. Few (generally less than 20) units per player at any one time, and... 2. the standard coordinate grid, it is comparatively easy to shift “CA” into an SMS format without changing the rules substantially for those who are not familiar with “CA.” SMS is SPI’s new Simultaneous Movement System, which uses a pad that is the same for all SMS games.

The following are the rules changes necessary to use SMS with “CA.”

SEQUENCE OF PLAYER (4.0) When using SMS, the sequence of play is changed as follows: the basic change is that there are no longer any Player-Turns; both players perform the same actions at the same time.

A. Sight Determination Phase — Players determine which ships, if any, are “spotted” by opposing forces, firing ranges are determined for gunnery and torpedo combat.

B. Operation Plot Phase — Both players secretly plot the operations of all of their units in accordance with section (10.0), indicating all movement, gunnery and torpedo attacks. Spotting and firing range is established for any previously unsptotted ship that elects to use its Gunnery Attack Strength.

C. Board Movement Phase — Both players maneuver their units on the map in accordance with the instructions written on their SMS Plot Charts. Units not visible to the enemy are maneuvered with both the ship counter and the speed/facing marker inverted; the opposing player may not examine these counters.

D. Combat Resolution Phase — Both players, in any order, resolve all gunnery and torpedo attacks. All combat is considered to be simultaneous. Result counters are placed, but results do not take effect.

E. Combat Results Application Phase — All combat results take effect simultaneously. Ships accumulating three (3) hits of any type(s) are considered sunk, and are removed from play at this point.

F. Game-Turn Indication Phase — Players indicate the passage of one Game-Turn; availability of reinforcements (if any) is determined; victory point records are adjusted.

Play then reverts to Phase A for the next Game-Turn.

[10.0] OPERATION PLOTTING

General Rule:
In order to create the lack of intelligence of enemy intentions, players initially plot (write down) their intended movements and attacks in secret from their opponent, who is thus unaware of what is planned until it takes place.

Procedure:
During the Operation Plot Phase, players plot, on the SMS Plot Chart, the movement of all their units, and indicate which units are making gunnery and/or torpedo attacks, and the target of each attack.

[10.1] MOVEMENT PLOTTING

[10.11] Place each ship’s Unit I.D. (composed of the ship type and Class Name codes from the ship counter) in one block in the “UNIT” column of the SMS Plot Chart. The row of numbered blocks following each ship’s unit
I.D. will be used to plot the movement and combat for that ship that turn.

[10.12] In the next block(s), place one attack code (if the ship is to attack in that turn) and indicate the Unit I.D. of the target ship. If a ship is to make both gunnery and torpedo attacks in a given turn, then two attack blocks will be required.

[10.13] Following the blocks in which attacks have been recorded (if any) plot the movement of each unit, recording each hex to be entered by the unit in this turn. If the unit will expend movement points turning in a particular hex, place a circled number in the block with the hex number to indicate how many movement points were expended in turning. See (6.0) Movement for details on how to move.

[10.14] After all of the movement points of the unit have been expended, in the next block, place the final speed/facing of the unit, i.e., the speed facing after completion of all turning, acceleration, deceleration, etc.; this becomes the initial speed/facing for the next turn.

[10.2] ATTACK CODES

[10.21] An attack code written in a block with a Unit I.D. commits the given ship to make the indicated type of attack on the indicated target. The attack codes are "G" for gunnery attacks and "T" for torpedo attacks. Attacks are made subject to the limitations of section (7.1).

[10.22] Decisions regarding combat are final. No changes in attacking units or target units can be made after the end of the Operation Plot Phase.

[10.3] SECRECY AND HONESTY

Each player's Simultaneous Movement Plot Chart is to be hidden from the other player until the end of the game. If there is any question about the other player's orders, the Player is advised to write them down and compare them with the SMS Plot Chart at the end of the game. A player who secretly violates the rule gains an advantage in the game, forfeits that game.

[10.4] SIMULTANEITY OF COMBAT

[10.41] All combat is considered simultaneous. For this reason Combat Results are not subject to review in the Combat Results Application Phase. Then they are applied to all units that suffered them.

[10.42] A ship that suffers a Combat Result in a given Combat Resolution Phase must engage in combat in that phase if ordered to do so by the SMS Plot Chart without any consideration of the Combat Result. The Combat Result does not affect the ship's combat ability in any way until the Combat Results Application Phase of that turn.

[10.5] SIMULTANEITY OF MOVEMENT

All movement is also considered simultaneous. Both players execute all plotted movement during the Board Movement Phase. All plotted movement must be executed; ships may never alter their movement in response to enemy actions.

[7.6] SMS NIGHT TIME SPOTTING

[7.61] Most scenarios in "CA" take place at night. There are special restrictions upon firing at night. Ships may only fire guns or torpedos at target ships that are "spotted."

[7.62] Spotting occurs in three manners:

(a) Whenever a ship uses its Gunnery Strength in a turn, place a spotted marker on it. Torpedo attacks do not cause spotting. 
(b) Whenever a ship is within eight (8) hexes of an enemy ship, place a spotted marker on it.
(c) Whenever a ship has been the target of a gunnery attack in a turn, and fulfilled the conditions (a) or (b) above, it remains spotted for the following Game-Turn only, if it is again under gunnery attack, even though it does not fulfill the requirements of (a) or (b).

[7.63] Spotting is determined only in the Sight Determination Phase. Ships which fulfill the sighting requirements in that phase, and ships which make gunnery attacks (see 10.31) are spotted for that turn. Because spotting is only determined in the sight determination phase, the initial contact between two ships may be made at less than eight hexes.

[7.64] Spotted markers are removed at the end of each Game-Turn.

Those are all the rule changes necessary to play "CA" in Simultaneous Movement. For those players willing to put up with some slight additional complexity, the Simultaneous Movement System can be used to add a crucial factor to the game - the simulation of preparedness/alertness, which is crucial in all naval combat, but is particularly important at night. The method for doing this will be discussed in a later article if feedback response warrants it.

Shown, is an example of how to fill out the SMS Plot Chart as indicated in the rules.

[SPI SIMULTANEOUS MOVEMENT PLOTTING CHART]

**ERRATA:**

A. MAIN ARTICLE

1. Pg. 12. Although IJN training exercises were conducted under much more rigorous and realistic conditions, their quartermasters were no less parsimonious about lost torpedoes than were ours. Cmdr. Haru, Japan's leading torpedo expert, states that due to the cost and security considerations, units would spend many hours searching for just one stray torpedo and that practices were often called off due to bad weather and fear of losing an errant torpedo.

2. In the same paragraph, mention is made of sinking obsolete warships. The USN also conducted exhaustive tests, sinking the uncompleted 4th unit of the Maryland Class (USS WASHINGTON BB47) off Virginia Capes 25/11/24 as well as OSTFRIESLAND and numerous other warships. These tests were quite meaningful and aided considerably in the design development of subsequent vessels.

3. In numerous discussions of the Japanese and their cruiser development, critics parrot Morrison's sentiments that IJN heavies exceeded treaty limits by astronomical amounts thus producing such superior ships. In fact, the first 4 CA's, Hirago's Aoba Class were well below treaty limits, the Myokos displaced 10,940 tons while the Atogos were only 410 tons heavier. Now these figures certainly do not indicate any gross attempt to circumvent treaty obligations. Now after the treaty expired in 1936 all four Myokos and two of the Atogos were extensively rebuilt bringing them up to 13,380 and 13,400 tons respectively, but this was only after the treaty expired. Noting that after all these many years the facade of our 35,000 ton "treaty" battleships has been finally lifted, it would not surprise many people if exhaustive research into US treaty cruisers' actual displacements might also reveal some eye opening information.

4. Pg. 18. Another mistaken notion which has been perpetuated by numerous writers is in crediting Imperial Navy Headquarters with the first widespread acceptance of the carrier as the capital ship of World War II, which is really not true. In 1924, an unknown weapon system whereas Sankan SanTai were the acclaimed Queens of the Sea. In fact the carriers were considered more expendable than battleships early in the war. It was not really until after Midway that Rengo Kantai was willing to begin to accept the precept that the "decisive battle" would be fought in the air over the ships and not by the battle line. In fact a special paper entitled, Research On Striking Force Tactics, written by Yokosuka Naval Air Group in May 1943, makes considerable mention of this as if they were trying to persuade higher headquarters as to the death of the battleship as a capital ship. At any rate the objective of Pearl Harbor was to remove the Pacific Fleet as an obstacle to the conquest of the Greater East Asia Co-Prosperity Sphere... an objective which in EVERY way was fulfilled. The original strategic plan was to occupy the necessary territories, consolidate an outer defensive perimeter and then sit back and wait for the US to spend itself on the outer portions of that perimeter. As our good fortune would have it, "victory fever" set in causing the Japanese to overextend themselves and as a result being defeated at Coral Sea and Midway. Had they stuck to their original plan...
the chances of obtaining a negotiated peace would have been greatly enhanced, as is evidenced by the Solomon Island Campaign which took better than 1½ years to advance a mere 400 miles toward Tokyo. (Note: the successful high-speed “leap frog” techniques used later on was only possible due to complete air and naval superiority, which we would not have been able to mount nearly so readily had it not been for Midway, etc.).

5. Pg 16. Java Sea was a battle of several phases which took place over a seven hour period, not three as is stated, from 1615 when the first broadsides were exchanged to 2350 when DE RUYTER and JAVA were torpedoed by NACHI and HAGURO. The Japanese did not use their torpedoes or torpedoes to their full, often firing long lances at impossible ranges and improbable angles. It was only the chance lucky hit on EXETER which threw the allied battle line into the path of Tanaka’s torpedoes. The two heavies did not redeem the fleet that night with their attack on the allied cruisers though.

6. Pg 16 (again): What carrier attack on the Marianas?? The extent of the early war raids were Kwajelien (ENTERPRISE 1 Feb 42), Rabaul (LEXINGTON 20 Feb 42), and Lae-Salamau (YORKTOWN 10 Mar 42). Any raid into the Marianas would have been met by Mihoro Air Group (36 G3M & G4M) and 2nd Air Group (48 A6M2) plus some assorted search units of Yokohama Air Group.

7. Pg. 16 once more. People have a tendency to attribute human qualities to inanimate objects. The US CVs were not fearful of air attacks, Admiral Frank Jack Fletcher was very much so. The strain of constant combat for nine months was showing very much, and having had two carriers sunk from underneath him in as many months certainly did not help things along. No, if you must put the blame for that little piece of lunacy, which cost 1024 lives, put it on F.J.F.

8. Pg. 18. The discussion of Cape Esperance shows a singular lack of understanding of that action. Scott strictly forbade the use of radar by those ships that had it. Intelligence reports had indicated that the Japanese had a radar detection capability (a device similar to the German Naxos) which could sense metric wavelength radar. He had planned to use aircraft (4) but those that finally got airborne were forgotten about in the heat of the battle. Only HELENA had SG radar which picked up Goto at 28,000 yards...the only problem was that this was not reported to Scott until the range was down to 12,000 yards, at which point in time the US column was in the process of making a 180° turn. It was only pure luck that LAFFFEY continued through the turn rather than following DUNCAN after Goto, for had she and the remainder of the force done so, it would have been almost a mirror image of the 13 Nov action with both lines ramming each other head on. As it was, Scott was so confused that he thought he was firing at friendly ships (as did Goto) and ordered cease fire repeatedly after HELENA opened up. It was lucky more than anything else that carried Scott through that action. As far as Japanese torpedos not being very effective, both AOBA and FURUTAKA were knocked out very early, YUBARI was smashed as she was turning to unmask her tubes (sinking in three minutes). KINUGASA and HATSUYUKI had turned to port which gave them a trailing shot through water occupied by their own flagship, although torpedoes from KINUGASA passed ahead of BOISE at midnight. On top of that the force commander was killed and there was no direction or control for coordinated torpedo attacks. At any rate, the main point is that radar played little part in Cape Esperance except to help HELENA to be more aware of what was going on than anyone else, including Scott. Also, your map of Cape Esperance shows the lead CA making the port turn, KINUGASA, the trailing CA actually made that turn. AOBA leading FURUTAKA turned starboard.

B. DESCRIPTIVE MODULES

1. Ships of Guadalcanal.

BBS. If as claimed, the Japanese fast battleships were unsuccessful in their night bombardment role, then 14 Oct 42 must have been the work of some very strange force. Actually KONGO and HARUNA conducted a 1½ hour long shoot, placing 918 projectiles into the Henderson field area with what can only be considered devastating effect. Some difference of opinion exists as to whether the ammo used was type 0 high capacity or type 3 incendiary, but the fact remains that Henderson lost nearly 90% of its aircraft that night and six transports unloaded three battalions off Tassafaronga. The myth of our PT’s driving off the bombardment group is perpetuated (although not by your article). For both bombardment missions (14 Oct and 13 Nov) the Kongos carried 60 rounds per gun for that purpose making a total of 960 shells. Simple mathematics indicated that by the end of the second pass by Henderson there were only four broadsides of these rounds left so the shoot was ended.

CLS. All Japanese destroyer squadrons had a light cruiser attached as flotilla flagship. This is the reason for the size of Japanese light cruisers, ships large enough to pack a comparable punch which backed up a destructor flotilla and yet not so large as to become an expensive liability that commanders would not be willing to expose to danger. Probably one of the best examples of this type was the Dutch TROMP class which were relatively cheap and expendable, as cruisers go, and yet which was nimble enough asset to any destructor flotilla which she served.

Other Warships. Morrison credits a torpedo hit on FURUTAKA by either DUNCAN or FARENHOLT during Cape Esperance, which helps to save face for our DDs in that campaign, albeit only slightly. Tabulation. South Dakota carried a 12-inch main belt, hot 18! This was a myth perpetrated by war propaganda which was not dispelled until 1970 when Breyers Schlachtschiff und Schlachtkreuzer published the accurate figures. Note also that Junes for the year that NEW JERSEY operated off Viet Nam rated her at her proper belt thickness, i.e., 310mm (121/2”). The same data can be found in the revised edition of the Lenton series pocketbook.

Only two of the Takao class CAs were rebuilt along lines shown (ATAGO and TAKAO). MAYA was rearmed in 1942 with twin 5”/40 cal AA replacing the single 4.7”s but still carried only 8 tubes. Chokai was never rebuilt and carried 4x4.7” and 8x24” TT to the day she was sunk. This can be referenced in Watts & Gordon’s The Imperial Japanese Navy.

Tenryu class were never armed with 24” tubes, carried 8x21” (Type 81 torpedo) with no reloads. YUBARI also did not carry any reloads.

2. Naval Ordinance

Somewhere someone has his wires crossed. AP shells pass through unarmored ships without exploding... (Coggins is wrong). HC shells have contact fuses (as do incendiary shells) which explode instantaneously to damage thin skinned vessels. AARON WARD survived only because she was hit by AP which passed right through her without exploding, much the same as FANSHAW BAY at Leyte when she took a 16” AP hit from NAGATO which passed right through the engine room without detonating. During the 13 Nov battle, Adm Abe had eight minutes from first sighting of the US van to the time he opened fire, during which time he was able to change over from bombardment to AP, although they did use some during the action.

No Japanese CLs carried a 6” gun. Only OYODO carried 6.1” artillery, and those were the 5th and 10th turrets removed from the first two Mogamas. The Aganos carried a hand loaded 5.9” weapon.

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<table>
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<tr>
<th>TYPE</th>
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3. Torpedoes
A relatively good discussion of the difficulties we faced with our torpedoes, the only problem is that both the Mk 10 and Mk 14 types listed were submarine torpedoes. The standard destroyer torpedo was the Mk 15 which was a Bliss-Leavitt model using the same M1C pistol of the Mk 14, making it equally as unreliable as the Mk 14. Also, the standard rack mounted torpedo for the Higgins type PT boats was the 22” Mk 13 aircraft torpedo, although the Eico boats carried the Mk 15 in tubes. The Mk 15 was a fairly good weapon once the bugs of 1942 were ironed out. At any rate it was replaced in 1944 by the Mk 18, an electric torpedo copied from the German G7e-FAT electric. The accompanying table may help to place them in perspective.

While looking at torpedoes, the main Japanese surface ship torpedo was the Type 93, but many of the older DDs and CLs as well as all submarines carried the Type 81, a 21” steam job (YUNAGI and TENRYU did at Savo). Japanese aircraft and MTBs carried a 1760 lb. 18” type with a 440 lb. warhead which may explain why it took five to sink CHICAGO although fewer would have probably been sufficient had they been in rapid succession rather than two followed by three more some 20 hours later. This carries over to the Hit and Hit Hard area and may explain some of the differences in warship resistance to torpedo as well as other damage.

4. Hit and Hit Hard
What ship is the BENTON? Please pass this information on as apparently you have discovered a destroyer even the USN did not know existed.

Morrison credits WASHINGTON only with nine 16” hits out of 75 rounds fired at KIRISHIMA. They were all that were necessary to save SOUTH DAKOTA’s bacon for, in spite of the fact that her engineering spaces were still intact, she had lost one 16” turret and was a blazing pyre that was attracting 14” shells like moths. It would not have been too much longer before her luck would have run out and she, too, would have suffered a critical injury.

5. Who Won?
Again, in the discussion of Cape Esperance it should be noted that the Japanese achieved their objective, Sumiyoshi landed with his men, and there is no indication that either the Americans or Japanese had any idea the other is in the vicinity, and quite possibly the others too, but I feel you could not get the kind of armament and protection of ships such as the ATAGO on 10,000 tons. Your comments about the U.S. Treaty cruisers is interesting.

6. “Marianas” should read “Marshalls” — referring to the “Big E’s” strike on Kwajalein. The abortive relief of Wake Island — which was unsuccessful partially because of the miscalculations of Jack Fletcher, could also be considered in this category.

C. “CA” GAME RULES
A fair number of errors are in section 12.0, Ship Characteristics.

1. So Dakota/N Carolina 38,000 tons
2. Iowa 48,500 tons

3. Maryland only 3 units (4th, WASHINGTON, sunk 1924)
4. Baltimore 13,800 tons
5. Omaha 5 units CL-1, 5 type CL-2
6. Atlanta 4 units 16”x5” 8x21”TT
7. Sims DD 12 units 4x5” 8x21”TT (extra mounts removed 1941)
8. Craven 22 units
9. Benson DD-5 should be Bristol Class
10. Benson 2 1620 tons

The following is a response to Mr. Harting’s comments by David Isby, author of “CA.”

A. MAIN ARTICLE
KEYED TO HARTING’S COMMENTS
1. Pg. 12. Agreed that the Japanese did not run over the Pacific firing off expansive ordnance, but their torpedo training techniques were still more realistic than the Americans, as I’m sure you would agree

2. While the U.S. also disposed of some obsolete warships by sinking them, these were mainly by air (OSTERFRIEDLAND, VIRGINIA, and others) or by other means, including gunfire (WASHINGTON). My comment was, however, in relation to torpedo use. It should be noted that the Americans stopped this practice once the immediate surplus of ships resulting from the Naval Treaties had been exhausted.

3. All ships tend to be designed “underweight” and gradually flesh out, through building and reconstruction, to a much larger displacement. That the ACOA’s were designed to stay within the treaty limits is obvious, and quite possibly the others too, but I feel you could not get the kind of armament and protection of ships such as the ATAGO on 10,000 tons. Your comments about the U.S. Treaty cruisers is interesting.

4. As should have been clear from the article, the Japanese had their battleship Admirals, who remained unconvinced, in some cases, until YAMATO went down. However, there were enough of the “Carrier Admirals” in the right position at the right time to have shaped Japanese opening strategy. The Japanese were definitely disappointed in not having picked the carriers at Pearl, but I feel the ideas expressed in the article find ample grounds in the Japanese use and deployment of their battlewagons (squadrons of battleships being Senkai Sentai) in the first six months of the Pacific War. Also, from the writings and interviews with Japanese Naval officers in the U.S. Naval Institute’s The Imperial Japanese Navy in World War II and in the Strategic Bombing Survey’s Japanese volumes, especially those with Admirals Toyodo and Fukudome and Capt. Fuchida.

5. The fighting at Java Sea lasted some three hours, the result of which is usually cited as the battle of ABDAFLOT and Japanese to sort themselves out. These “wild” torpedo shots were probably deliberate and kept the ABDAFLOT forces from moving in closer, where their 6” and 5.9” guns would be more effective.

6. “Marianas” should read “Marshalls” — referring to the “Big E’s” strike on Kwajalein. The abortive relief of Wake Island — which was unsuccessful partially because of the miscalculations of Jack Fletcher, could also be considered in this category.

7. If the American carriers could have emotions, I’m sure that they would have been fearful too. The “mistake” was Fletcher’s, but I could hardly term it “lunacy.” Fletcher was quite capable of making big mistakes, but I fear at Savo only hindsight makes him wrong. What would you have done if you were Jack Fletcher on that night? If I were in his shoes, I’m afraid I might very well have done the same thing.

8. Your account of Cape Esperance differs in one point from Morrison’s official history, from which many account is largely drawn. I believe SILENA informed Scott of its sighting by using TBS (Talk-Between-Ships Radio Telephone) soon after 2325, while you have this action taking place some five minutes later. When one deals with such fine tolerances in something such as a night naval battle, something is sure to get lost in the translation. The logs of the ships involved would often not mesh by as least as much time. Scott had intended to countermarch when he did,
sighting or no sighting. The SC was eventually coupled with the facts that "Goto was sighting or no sighting. The SC was eventually the bombardment role, as they only really had stupid bastards") deserves to be one of the shows that radar was important at Cape two battleships (1,552 8-inch and 500 + 5-inch shells). As for all Japanese destroyer squadrons having leaders, I would have to commit myself to such a geometrical statement, especially after Guadalcanal. But if not all had them, then almost all. Your example of TROMP as a good destroyer leader is somewhat unusual, as TROMP could barely make 32 knots, thus making it difficult for it to keep up with cruisers in a calm sea. It was designed not to lead destroyers, but to sink destroyers, especially the FUBUKI class ones whose appearance caused TROMP's construction. The first time TROMP ran up against one of these destroyers, however, it was torpedoed and had to limp off for repairs, thus ending its career as a destroyer-destroyer before it started. What made the Japanese CL's so good as destroyer leaders was (among other things) their high speed, which they could sustain. I doubt that DUNCAN or FAHRENHOLT hit anything at Cape Esperance. They who toss up big things saving their own skins and claimed FUBUKI as a cruiser, so naturally their ideas would be a wee bit inflated. As for the belt on American battleships, you are correct, although I have heard it said that the 12" belt was so constructed to give the protection of 18". In my files I find the HENTI, TATSU, and YUBARI were retitled Type 93 torpedoes. Neither, as you said, carried reloads.

B. DESCRIPTIVE MODULES

1. I consider the Japanese BB's successful in the bombardment role, as they only really had one good night (the 14th of October). Yet the CHOKAI and KINGUSA and then MYOKO and MAYA, which bombarded on subsequent nights, threw almost as much explosive as the rest of your example of Japanese aircraft torpedoes. As for "Hit and Hard Hit," contrary to wartime propaganda, I don't think SOUTH DAKOTA was in that much danger. With WASHINGTON hitting KIRISHIMA, she had little to worry about from that quarter, but if one of the cruisers or even destroyers had gotten a few torpedoes off at that hailed, burning target... These are not the only errors in the article, some of them due to typographical error and omission due to lack of space.

In the text, on page 8, the Japanese who proposed a "battleship solution" relied on a strategy of "attenuation," having come up with the dubious formula that a fleet loses 10% of its effectiveness for every 1,000 miles advanced from its bases. The Japanese also hoped to whittle away American strength by submarine attacks, but as the Japanese would also divide their fleet, the success of this plan was also dubious. So the use of airpower, both land and ship based, became more attractive. The module "Hit and Hard" is itself a type typo; its correct title should be "Hit and Hard Hit," a quotation from Kipling's The Destroyers. In this module, "BENTON" should be "BENSON" and in the chart at the end, 12" shells should read 16"-12" shells. The unexceptioned photograph heading of the Naval Ordnance Module is the 18" guns of a Nagato class BB.

Other casualties to editing were the following pieces of information, indexed to the "CA" article:

"The Strategic Overview" - p. 8. While the base at Pearl Harbor was established in the 1920's, much of the American Pacific Fleet remained at San Diego and Seattle until 1940, but Pearl Harbor was always envisioned as their wartime base.

"Evolution of the Naval Battle" - p. 17. The first and last paragraph of the comments on the Battle of Cape St. George are edited versions of "The War Goes On," a module on the Naval fighting after 1943 that we could not fit in.

"Hit and Hard Hit..." - p. 12. The following examples were cut: The CL Sendai was sunk after being hit by two torpedoes and six 6" shells. The destroyer TERUZUKI was sunk by one torpedo, while the destroyer FUBUKI took four 8" and 6" shells. The Helena, an American CL, sank after being hit by three Long Lances amidships and the destroyer Kearny survived a 21" torpedo hit amidships.

Main text, p. 19. One of the most obvious of the stereotyped "textbook" maneuvers used by the Japanese was the "Neptune's Trident" formation of three parallel columns. Although it had proved unsuccessful at Cape Esperance, it was retained and proved disastrous for the Japanese at the 2nd Battle of Guadalcanal and the Battle of Empress Augusta Bay, and it was one of the things for the Japanese defeats in these two battles.

In reading the letters by the learned gentlemen who wish to add further detail to the information appearing in the "CA" article, I realized that these were people who were well versed in the subjects I covered and thus could offer detail from their own knowledge. This material is welcome — that is why we are publishing it in MOVES, but I should like to point out that the "CA" article, like the game, was not aimed at the naval enthusiast. It was aimed at the average player of Strategy & Tactics who, as the Feedback and personal contact shows us, has no great or deep previous knowledge of naval matters, especially in the myriad technical details that make modern fleets specialists rather than seamen. So I wrote an article stressing the main currents, instead of details. I worked the details and examples in as well as they could be integrated, but it remains that "CA" is not a nit-picking article. I can pick nits with the best of them, as some may say this article illustrates. Yet this is not to denigrate those with a deep interest in naval warfare, for whose benefit the preceding comments have appeared, along with fulfilling our duty towards our readers for complete, correct material!

Designer's Notes (continued from page 3)

least one game-in-development each issue. This one will have a lot of unique features. Not the least of which is the general ignorance outside of Manchuria about just what is going on over there. It wasn't too difficult doing the terrain analysis of the area (which results in the game map). Physically, Manchuria is not well connected to the rest of China. Most observers and "experts" agree that Manchuria would be the major, and decisive, battleground in a Russo-Chinese war in the 1970's. Manchuria possesses only about 8% of China's population but, more importantly, nearly a third of her industry. In addition, Manchuria contains many irreplaceable raw materials. China is therefore forced to defend Manchuria. It is commonly felt that the Russians would quickly "blitz" the Chinese right out of Manchuria. This is one possibility. There are many others. This will be one game wherein strategies will be infinitely varied. And then be free to chose the one that seems most likely. It will be largely a matter of taste. Or what YOU think will happen. For the Russians it is not exactly a "cakewalk." They can converge from three sides. But wherever they come from they will have to first deal with formidable physical obstacles. If they come from Outer Mongolia they will have to cross the Greater Khingan Mountains. Using tactical nuclear weapons they could blast their way towards Peking and thus cut off all of Manchuria. But this would gain them little in the short run as the numerous industrialized areas of Manchuria (along with their militia and regular armed) would have to be reduced. A blitz across the Manchurian plain from the east would take them across the Lesser Khingan Mountains (which are "lesser" in name only from a military point of view). And, just to complete the ring, along the Yalu (the North Korean border) are the Chan-Shan Pai Mountains. Real messy stuff. The Yalu is 55 kilometers to a hex. The map covers an area of 1.3 million square miles. In other words, about the same area as the United States east of the Mississippi. Not a very tactical game. Units represent corps or "armies" of two to four divisions. Also represented are Soviet air armies and amphibious forces (Marines and