DREADNOUGHT
Surface Combat in the Battleship Era, 1906 - 45
RULES OF PLAY

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[1.0] INTRODUCTION
Dreadnought is a two-player simulation of surface naval warfare in the period 1906 to 1944 with the primary emphasis on the role of the all-big-gun battleship (Dreadnought) in fleet actions. Historical and non-historical battles and naval campaigns are presented. Essential elements of surface naval warfare are recreated, including gunnery, torpedoes, ranging, damage control, formation handling and fleet coordination.

[2.0] GENERAL COURSE OF PLAY
In Dreadnought, the Player is cast in the role of an admiral commanding a fleet of ships. Each game of Dreadnought may consist of one or more Scenarios, each consisting of a series of Game-Turns during which the Player maneuvers his ships attempting to damage or sink his opponent's ships while limiting the damage to his own with the overall objective of achieving a victory.

[3.0] GAME EQUIPMENT
[3.1] THE GAME MAP
The map consists of six (10" x 10.75") sheets, each delineated by a hexagonal numbered grid. They are designed so that they fit together, allowing the map to grow in any direction, creating, in effect, an endless map.

[3.2] THE PLAYING PIECES
The playing pieces are divided generally into two predominant color groups. These represent all of the various battle fleets (dreadnoughts) ever built, and their refits, divided into national groupings. Other pieces represent groups of cruisers and destroyers. The playing pieces are known as ships or units. They are distinguished by identification number, name and playing values.

[3.21] Sample Dreadnought Marker

[3.22] Sample Light Unit Marker

[3.23] Other Markers

[3.24] Definition of Terms
Attack Strength is the attacking power of a ship's guns quantified in terms of Attack Strength Points. This strength may be modified for range, and is used to determine the number of Damage Points which the ship can achieve.
Defense Strength is the quantification of a ship's ability to resist shellfire. The number of Damage Points achieved against a ship is divided by its Defense Strength to determine the odds column on the Combat Results Table.
Range Allowance is the maximum distance in hexes at which a ship's guns can have a measurable effect upon Enemy ships.
Movement Allowance is the basic movement ability of a ship quantified in terms of Movement Points. Movement Points are expended in forward motion at the rate of one Point per hex; radical turns require the expenditure of additional Movement Points.

[3.3] CHARTS AND TABLES
A separate sheet of Charts and Tables is provided, which includes the Damage Point Table, the Combat Results Table, the Damage Control Table, and the Range Effects Table. All of these tables have to do with the resolution of combat; detailed explanations of their use can be found in rules section 5.0.

[3.4] GAME SCALE
Each Game-Turn represents 15 minutes of real time. Each hex represents 1800 meters from side to parallel side. Each Movement Point represents 4 knots of speed.

[3.5] GAME EQUIPMENT INVENTORY
A complete game of Dreadnought should include the following parts:
Six map sections (each 10" x 10.75")
One Rules Folder
Two sheets of Charts and Tables
One Set of Die-Cut Counters (400 pieces)
Two Dice
One SiMove Pad
If any of these parts are missing or damaged, please write:
Customer Service, Simpuls Ltd.,
Oakfield House, 60 Oakfield Road, Altrincham, Cheshire, WA15 8EW.

[4.0] SEQUENCE OF PLAY
Dreadnought is played by Scenario. During a Scenario the actual Combat and Movement of the ships takes place in a series of Game-Turns according to a rigid Sequence of Play, which is repeated Game-Turn after Game-Turn until a conclusion is reached and the Scenario terminated.

[4.1] GAME-TURN SEQUENCE OUTLINE
1. Visibility Determination Phase: The outer limit of visibility is established.
2. Fire Plot Phase: Both Players mutually and simultaneously plot the fire of their own ships to attack enemy ships. Torpedo attacks are plotted.
3. Fire Execution Phase: Both Players simultaneously execute the attacks which they have plotted.
4. Movement Plot Phase: Both Players mutually and simultaneously plot the movement of their ship units.
5. Movement Execution Phase: Both Players simultaneously execute the plotted movement of their ship units. Torpedo movement and any resultant attacks are executed concurrently.
6. Damage Control Phase: Both Players mutually and simultaneously attempt to reduce damage incurred on their ship units.

[4.2] SIMULTANEITY
Opposing Fire and Movement is considered to occur simultaneously. Both Players will simultaneously plot their fire and movement during the appropriate Phases. The execution of fire and movement may be physically accomplished sequentially in any order the Players wish.

[5.0] COMBAT
GENERAL RULE:
Combat is the generic term used to describe the concept and method which simulates one ship firing on and damaging another ship. In other words, combat simulates ship-to-ship gunnery (torpedoes are covered separately). Every ship has a firepower rating, or Attack Strength, which is a numerical expression of the number of shells a ship can fire per unit of time, the accuracy of the ship's gunnery control system, and the destructiveness of the shells fired, assuming they hit another ship. Conversely, each ship has a Defense Strength, which numerically measures the ability of that ship to resist shellfire and expresses the ship's armor protection, compartmentation and general layout (magazines, boilers, engine rooms, turret imposition, etc.).

Every ship has a Range Allowance, which is the maximum number of hexes through which it can fire at an Enemy ship. Its Attack Strength is calculated on the basis of its maximum range, or twelve hexes, whichever is less. When a ship fires at much less than its maximum range its Attack Strength increases (see Range Effects). Conversely, when a ship fires at greater than twelve hexes, its Attack Strength decreases.

Combat takes place during the Mutual Fire Phase, according to the following procedures.

PROCEDURE:
Both Players allocate the Attack Strength of each of their ships against individual Enemy ships during the Fire Plot Phase. This allocation should
be mutual and simultaneous and requires a Player to note on the SimMove Pad which of his ships are firing at which Enemy ships (see Plotting Fire). After both Players have finished allocating their fire they proceed to resolve each individual attack. The order in which they resolve attacks is immaterial since all results are applied at the conclusion of the Fire Execution Phase. Resolution is executed as follows:

1. Assume a Friendly ship is firing at an Enemy ship. The Friendly Player states the Attack Strength of his firing ship. He then modifies this Attack Strength according to the range between his firing ship and the Enemy target ship. He then rolls the dice and cross-references the result with the modified Attack Strength as given on the Damage Point Table, which yields the number of Damage Points that his firing ship achieved.

2. This number of Damage Points is then divided by the numerical Defense Strength of the target ship to yield a ratio (called the Combat Ratio), which is rounded down to the nearest whole number (17 to 10 is rounded down to one, 21 to 10 equals two, etc.).

3. The dice are then rolled and the result compared with the Combat Ratio as given on the Combat Results Table to yield the actual damage inflicted on the target ship.

4. Markers representing this damage are then placed on the target ship. When all the attacks in the Fire Execution Phase have been executed, the markers are turned face-up, signifying that the damage now applies to the ships.

This procedure is repeated for each and every firing ship.

**CASES:**

**[5.1] Plotting Fire**

For a Player to plot fire from his ship to an Enemy ship, he writes down on the SimMove Pad the ID number of his ship and the hex number in which the target ship is located. If there is more than one Enemy ship in the target hex, he must identify which Enemy ship it is (use its ID nr.). Example: 514 — on 327(2713)

Ship nr. 514 is firing at Enemy ship nr. 327 in hex 2713. [The intent of the plotting procedure is to force Players to distribute the fire of their ships before they know what the Enemy is firing at or how effective any one of their individual attacks have been. When the forces engaged are small or if both Players agree, this written simultaneous plot can be dispensed with and both Players can simply verbally allocate the fire of their ships, so long as all fire is allocated before any attacks are resolved.]

**[5.2] Inhibitions and Restrictions on Firing**

**[5.21] Firing is voluntary and no ship is required to fire. However, there is no reason why a ship would not withhold fire assuming it were in range of any Enemy ship and its Attack Strength, after all modifications, is capable of inflicting damage.**

**[5.22] A ship may fire only once per Game-Turn and may only fire at one Enemy ship. In other words, a ship’s Attack Strength may not be divided against several targets in the same Turn.**

**[5.23] A ship may not fire at Enemy targets beyond its range or in excess of visibility.**

**[5.3] Multiple Ships Firing on the Same Target**

**[5.31] Several Friendly ships may fire at the same individual Enemy target ship. Each attack is resolved separately with any damage being cumulative. However, in the case of multiple attacks, the firing ships are penalized as follows: All firing ships, save one, have their Attack Strength halved (dropping any fractions) prior to modification. Only one ship is allowed to fire without this penalty; its designation, which must be noted on the Fire Plot, is chosen by the Firing Player.**

**[5.32] A ship may only fire at a target which it has been plotted to fire at. A Player may not change his fire allocations after they have been made.**

**[5.4] Damage and Damage Control**

Several things can happen to a ship when it suffers damage. It can lose half or all of its Attack Strength; it can lose half or all of its Movement Allowance; and it can blow up (be removed from the game, having sunk).

**[5.41] Explanation of Damage Results**

(See Combat Results Table, S9)

- Damage of 1G means the ship’s Attack Strength is halved (drop fractions).
- Damage of 2G means the ship’s Attack Strength is zero (can’t fire).
- Damage of 1S means the ship’s Movement Allowance is halved (drop fractions).
- Damage of 2S means the ship loses all Movement Allowance (can’t move). (Exception: See “creep” optional rule.)

When an E results, immediately roll the die again. If a seven or eleven come up, the ship sinks; otherwise it suffers 2G,1S damage.

**[5.42] Cumulative and Progressive Damage**

Damage is cumulative. If a ship has an existing 1G condition and suffers another 1G damage result, its condition progresses to 2G. Damage beyond 2G or 2S is superficial and ignores (except for blow ups) so that a ship which has a 2G condition and suffers another 1G or 2G result remains in a 2G condition. G- and S-type damages are unique to one another and are not convertible. Innumerable G damages have no effect on the ship’s S condition and vice versa.

**[5.43] Damage Control**

During the Damage Control Phase, each Player attempts to cure damage inflicted on his ships according to the Damage Control Table.

He then rolls the die (use one die only) once for G damage and once again for S damage, for each ship. If the die roll falls within the series shown on the table, he reduces damage by one step.

Example: Player has a ship in a 2G,1S condition. He rolls a 2, reducing his G damage to 1G and then rolls a 4 which has no effect on his S damage. A ship which reaches a 2G,2S damage state cannot be damage-controlled. It is permanently out of action. It may not fire, and may not move (once it has come to rest).

**[5.44] There is a numerical limit to the number of times a ship can reduce its damage state. That limit is expressed by the printed Defense Strength. For example, during the course of a Scenario a ship with a Defense Strength of ten would be limited to successfully removing ten steps of damage. Once a ship reaches its damage control limit, it may no longer attempt to control damage. This process requires keeping a record on scratch paper of the number of times a ship has reduced damage.**

**[5.5] Range Effects**

A ship’s Attack Strength is calculated on the basis of its effectiveness at 5 to 12 hexes. When the firing range drops, the Attack Strength increases according to the Range Effects Table.

Example: Ship has an Attack Strength of 17 and a range of 19. Firing at a range of 2 hexes, its Strength would be: 51: at 4 hexes its Strength would be 34; at 7 hexes, 17; at 13 hexes, 8.

Calculate firing range by counting the shortest path in hexes from the firing ship (exclusive) to the target ship (inclusive).

**[5.6] Effect of Fire on Ship’s Fire**

One of the effects of ship-to-ship naval combat is that it is easier to shoot at an Enemy ship when you are not being shot at. Therefore, when a ship is being fired at in the same Phase that it is firing, the die roll result is reduced by two, when calculating the number of Damage Points as a result of the firing ship’s attack on the Damage Point Table. For example, ship A fires at ship B, while ship B fires at ship A. Ship A has an Attack Strength of 36. While rolling on the 36 column of the Damage Point Table, suppose we find that the die result is 7. This is reduced by two, to 6. This results in 10 Damage Points.

**[5.7] Visibility**

**[5.71] No ship can fire at a ship which it cannot see. The Scenario instructions will always state what the minimum visibility is. Thereafter, on every Game-Turn, the Players roll the die and add the number of the die roll to the minimum visibility number. The result is the visibility during that Game-Turn. For example, the Scenario defines the basic visibility during that Game-Turn as 6. On a given Game-Turn, the Players roll a die. The die roll is a 2. That means that on that Game-Turn the visibility is 8 hexes. The following Game-Turn they roll the die again. This time the die roll is a 4. That means that on that Game-Turn the visibility is 10 hexes.**

**[5.72] Ships do not mask other ships from fire. That is, a ship does not interfere in any way with the line of fire of another ship. Ship A can fire at ship B even though the line of fire passes through a hex containing ship C.**

**[5.8] Damage Point Table**

(See separate sheet.)

**[5.9] Combat Results Table**

(See separate sheet.)

**[6.0] Movement**

**[6.0] Movement General Rule:**

Movement is first plotted and then executed so that, in effect, both Players are moving their units simultaneously. To plot movement, each Player simply writes down on the SimMove Plot Chart the course and speed of each of his ships. Execution then involves moving these ships according to the written plot. When a ship moves, it expends one Movement Point from its Movement Allowance for each hex that it enters. It also expends two more Movement Points when it makes a radical turn within a hex (see Facing, 7.3). The plotting of movement, and the execution of movement are restricted by several rules which simulate both physical realities and fleet handling doctrine. So
long as he observes the restrictions on movement, a Player is free to move his ships as he sees fit.

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**HUNIT**: 1. **FIRE** 2. **MOVE**

**J203**: 1. **FIRE** 2. **MOVE**

**K221**: 1. **FIRE** 2. **MOVE**

**L211**: 1. **FIRE** 2. **MOVE**

**M211**: 1. **FIRE** 2. **MOVE**

**N201**: 1. **FIRE** 2. **MOVE**

**PROCEDURE:**
There is a compass rose printed on each map section. This indicates the six possible directions a ship can move in when it exits one hex to enter another adjacent hex. Assume that a Player has a ship in hex 1108 (facing North) and that he desires this ship to enter hex 1207. This would necessitate the ship to have a movement (or course) NE, with a Movement Point expenditure of one Point. This would be plotted as (NE-1). Further, assume that the Player wished the ship to move from hex 1108 to hex 1506. This would involve plotting a course NE, expending four Movement Points (NE-4). Assume that a Player wished a ship located in hex 1108 to move to hex 1405. This would involve two successive course and speed notations since hex 1405 does not lie on a straight path from hex 1108. The ship would move N-1, NE-3; both "legs" of its path must be plotted. Movement Plotting occurs during the Movement Plot Phase. Plotting the movement of a Player's entire fleet involves plotting the movement of all the individual ships composing that fleet. If there are a lot of ships, this could be a lot of writing. Thus, the Formation Rules discuss the ways in which the entire movement of a formation (group of ships) can be briefly summarized and plotted.

Whether plotting the movement of an individual ship or entire formations, the plot must indicate direction and speed (Movement Points expended).

Movement Execution occurs during the Movement Execution Phase. Execution is the act of physically carrying out the plot of a ship's movement. That is, taking the unit counter representing the ship in hand displacing it hex by hex across the map from the hex it originates the Game-Turn in, to the hex that it ends the Game-Turn in. In so doing, a Player must follow the written plot for the ship.

**[6.1] RESTRICTIONS ON MOVEMENT**

[6.11] No ship may expend more Movement Points than there are in its Movement Allowance in a single Game-Turn.

[6.12] If a flagship or independently moving ship changes its course during the Movement Phase, its total path will resemble a dogleg (that is, it will be composed of two segments). A turn may not be made in the last hex it enters that Movement Phase. The final "leg" of movement must be larger than or equal to the preceding segment, so that its final position and facing at the termination of its move reflects the predominant overall direction in which it had moved during the Game-Turn. Each "leg" of its path must be plotted separately. Example: N-2, NE-4. A subordinate ship may always follow the flagship, regardless which "leg" of its movement turns out to be longer (see 6.22).

[6.13] A ship may not enter a hex containing an Enemy ship. If, at the conclusion of movement, ships of opposing sides are attempting to enter the same hex, the following resolution is used: Both Players roll the die. The Player with the lower die roll must displace his ships one hex, so that the collision does not take place. This displacement should be as close as possible to the ship's original course.

Ships of opposing sides may freely move through the same hex during the course of movement.

[6.2] FORMATIONS

Players are allowed to maneuver their ships in formations. All ships in a formation must be adjacent to one or two other ships in the formation. Each formation has a designated leader ship or flagship. The other ships in a formation are known as subordinate ships. Prior to the start of play, each Player may designate his formations and flagships. Thereafter he plots the movement of his units by plotting the movement of his flagships. In executing movement he will then guide the movement of subordinate ships according to the movement of the flagships.

[6.21] A formation may use the column or the line abreast formation, which differ in the form of guidance that the flagship exerts over subordinate units. To show which mode he has picked, the Player simply notes a "C" or an "L" subscript next to the Movement Plot of his flagship(s).

[6.22] Column

Moving in column means the ships are "following the leader." That is, each ship in the formation is lined up, one behind the other, with the flagship in front. The flagship moves and the subordinate ships follow, duplicating the flagship's course exactly, through the hexfield, just as if the flagship, in moving had cut a hypothetical path through the ocean.

The diagrams demonstrate the difference between column and line abreast. You will note in each case that the movement of the flagship is identical, but that the subordinate units move according to whether the formation is in column or line abreast.

[6.24] A formation which begins the Movement Phase in column may change to a line abreast formation in the same Movement Phase if all of the ships in formation are in a straight line (one directly behind the other). A formation which begins the Movement Phase in a line abreast may also change to column formation for the second "leg" of its movement. That is, ships moving in a line abreast may turn with their flagship, and complete their movement in column, behind the flagship. Each "leg" of movement must have a letter identifying the formation type to be used on that leg. Example: 2SE-L, 35-C (see 6.12).

[6.25] Given a column of sufficient length, it is probable that some maneuvers will result in the formation completing the Game-Turn with the rear units in the column not having "made the turn." The column then will be bent one (or more) times. All ships in the column must follow the flagship on the following Turn, completing all movement in the proper order. No formation may use the line abreast mode unless it begins that "leg" of movement oriented on the same axis (in a straight line).

[6.26] Formation flagships are designated at the start of play. The Players are not required to keep their original flagships. They may, at the beginning of any Movement Phase, change flagships in a formation citing a new flagship in the plot.

[6.27] A large formation may be divided on any Game-Turn into any number of smaller formations. Each of the formations meet the rules of the large formation and provide a separate plot for each of the new formations. In most cases, the break-up of the new formations will be obvious from the Movement Plot; in those cases where it is not obvious, the Player should note next to his plot the composition of the formations. If several small formations maneuver so that they end a Game-Turn combined into a larger formation, they may be treated as one large formation on the following Game-Turn.
[6.28] Players are not required to use formations; they may, on any Game-Turn, plot individual ship movements for some ships while using formation plots for their other ships. The proportion can vary from Turn to Turn at the Player's option. Formations can break up and operate as individual ships, rejoining later or joining with other ships in new formations.

[6.29] The formation rules are nothing more than a convenience to the Player. They allow him to operate large numbers of ships without recourse to burdensome paperwork. Historically, the large fleets of dreadnoughts were subdivided into squadrons and divisions for the very purpose of allowing complicated maneuvers to take place. The historical Scenarios will give the Players the actual divisions (“formations”) as they existed. They may be used or ignored.

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Game-Turn 1: Formation enters the map at hex 1815 and proceeds North at 4 MP, in column mode. Plot reads “4N-C.”

Game-Turn 2: Formation moves North, then Northwest at 4 MP, in column mode. Plot reads “2N, 2NW-C.” Note that the trailing ships in the column, 3 & 4, did not “make the turn.”

Game-Turn 3: Formation continues Northwest, increasing speed to 6 MP, still in column mode. Plot reads “6NW-C.” Note how ships 3 & 4 “make the turn” on this Game-Turn.

Game-Turn 4: The formation turns southwest, decelerates to 5 MP and changes to line abreast. The Plot reads “SSW-L.”

Game-Turn 5: Formation turns Northwest and then North at 5 MP returning to column mode. Plot reads “2NW, 2N-C.”

[6.33] Screen units may neither stack with battleship units nor with other screen units, except that during the course of movement execution they may move through hexes containing Friendly units.

[6.34] ACCELERATION AND DECELERATION DURING MOVEMENT

No ship may accelerate by more than 100% of its initial speed during a Game-Turn: That is, a ship which is moving during Game-Turn One at a rate of 3 Movement Points per Turn may not speed up to 7 Movement Points per Turn on the second Turn; it can only speed up to a maximum of 6. A ship may only decelerate by 50% (rounding
fractions up) during the course of a Game-Turn. That is, a ship which is moving at a rate of 6 Movement Points per Turn on Game-Turn Two, on Game-Turn Three it could decelerate to 1 Movement Point per Turn and on Game-Turn Four it could go dead in the water. This deceleration rate holds true even for ships which have lost all capability to make steam, i.e., have suffered two speed hits. This means they must continue to move for at least one, possibly two turns after they have lost their capability to make steam.

[7.0] FACING
GENERAL RULE:
A ship must always be faced (or pointed) in a definite direction corresponding to one of the six directions (N, NE, SW, S, SE, NW) printed on the compass rose. Every ship counter has a facing indicator printed on it, which points toward the hexside that the ship would cross if it maintained its direction of movement. When a ship changes course it also changes its facing. Ships move only in the direction of the indicator. When a ship changes its course of Movement it is said to turn. In doing so it changes its facing. Assume that a ship is in hex 1108 facing North. In order to proceed directly to hex 1207 it would first have to turn to a Northeast facing. When it does so it rotates one hexside from North to Northeast. Any ship may freely rotate one hexside within one hex at no additional Movement Point cost. This is called normal turning. If a ship was in hex 1108 facing North it could not proceed directly to hex 1208 without making a turn of two hexides. When a ship turns two or more hexides in a single hex it is said to be making a radical turn. Making a radical turn causes a ship to expend additional Movement Points over and above its cost for entering the hex.

[7.1] FACING EFFECTS ON COMBAT
The facing diagram below illustrates how the area surrounding a ship is divided into arcs of fire. The Attack Strength of a ship is calculated on broadside fire, the maximum number of guns it can bring to bear on a target. When a ship fires on (attacks) a ship which lies either in its bow arc or in its stern arc of fire, subtract one from the dice roll when calculating the number of Damage Points inflicted.

[7.2] FACING EFFECT ON MOVEMENT
A ship can only move into the hex in the direction its faces. If it is to change course it must change facing. A ship moving independently, or a flagship, may only change its facing twice during a Movement Phase; once at the start of its movement, before expending any Movement Points, and once again at a later point in its path of movement. Ships in column may always exactly duplicate the movement of their flagship, regardless of when in the course of their movement they are required to turn, or which "leg" of their movement is the longest. No ship may change facing in the last hex it enters (until the next Game-Turn).

[7.3] RADICAL TURNING COSTS
[7.31] When a ship turns two hexides within a hex, the cost to that ship unit is two Movement Points.
[7.32] When a ship unit turns three hexes (equivalent to a complete about face), it costs three Movement Points.

[8.0] TORPEDO COMBAT [Screening Forces]
GENERAL RULE:
Warships other than battleships are represented by screen units. These are cruisers and destroyers. A cruiser screen unit represents two cruisers; a destroyer screen unit represents five destroyers. They possess a printed Attack Strength, Defense Range, and Movement Allowance similar to a battleship unit. They may maneuver and fight in similar fashion. They may not, however, stack with any other unit. Additionally, some screen units identified with "1:1T or 2:1T" possess the ability to attack with torpedoes. A torpedo attack is a special procedure.

PROCEDURE:
During the Fire Plot Phase of the Game-Turn, the Attacking Player notes on his plot sheet, the ID number of his attacking screen unit and the exact track that he wishes the torpedoes to proceed in by picking one of the letter codes on the Torpedo Track Chart and indicating either the starboard or port arc of fire. At the beginning of the Movement Execution Phase, the Attacking Player takes a Torpedo Marker and places it in the same hex as the attacking screen unit. He then proceeds to execute the movement of this Torpedo Marker just as though it were a ship unit following the exact track he has plotted. The torpedo has a Movement Allowance of two, three or five Movement Points (see 8.6) and it expends these Movement Points simultaneously with the first two, three or five Movement Points expended by the ships. That is, torpedoes expend their first Movement Point at the same instant that ships expend their first Movement Point, and so on. If the Torpedo Marker, in the course of movement, enters a hex at the same instant (while expending the same Movement Point) as a ship unit, or if a Torpedo Marker and a ship cross the same hexside (in opposite directions) at the same instant, then the Torpedo Marker is considered to have hit the ship, and attacks the ship at 1:1 or 2:1 on the Combat Results Table (the odds are specified on the firing screen unit's counter). This attack takes place immediately, though any results are delayed until the ship unit completes its Movement Plot.

[8.1] MULTIPLE EFFECT
[8.11] The Torpedo Marker really represents a spread of several torpedoes and attacks any and all ship units with it "hits." Thus, if the Marker "hits" a stack of ship units, it would attack each ship unit in turn, each attack being a separate event.
[8.12] Torpedo Markers are not automatically removed as a result of hitting ships.

[8.2] RESTRICTIONS AND PERSISTENCE
[8.21] A screen unit may only make one torpedo attack per Game-Turn.
[8.22] A screen unit may make a maximum of two torpedo attacks per Scenario (necessitating a scratch paper record).
[8.23] The Torpedo Marker persists until it has completed moving. It is then removed. For example, a torpedo with a Movement Allowance of three would be in existence for the first three Movement Points of the Movement Phase; it then would be removed prior to the execution of the fourth Movement Point.

[8.3] EFFECT OF FACING
[8.31] A screen unit may only launch torpedoes through its starboard (righthand) or port (lefthand) arc of fire, and the fire plot should indicate which arc is being used.
[8.32] If the torpedo hits a ship unit so that the facing of the ship and the torpedo are parallel or directly opposite, then the ship is considered to be coming the torpedo wakes. The dice roll in the resulting torpedo attack is reduced by three.

[8.4] BATTLESHIP SECONDARY BATTERIES
Every battleship unit is considered to have secondary batteries of 4" to 6" guns. The firepower of these guns is not reflected as a separate printed strength on the ship counter. Part of their effect is calculated into the range attenuation effects.
[8.41] A battle unit may attack a screen unit within five hexes range at 1:1 on the CRT. This is plotted using an SB notation on the plot.
[8.42] This secondary battery attack is in addition to whatever the battleship attacks using its printed Attack Strength and is the only situation in which a battle unit can engage two targets on the same Game-Turn.

TORPEDO TRACK CHART
[8.5] EFFECT OF DAMAGE ON TORPEDO ATTACK EXECUTION

[8.5.1] A screen unit which has a 2W damage state may not execute a torpedo attack. A screen unit which has no W damage state or a 1W damage state may execute a torpedo attack.

[8.5.2] The execution of a torpedo attack takes place during the Movement Phase of the Game-Turn. Any damage acquired on the previous Fire Execution Phase would apply to rule 8.51.

[8.6] TORPEDO RANGE

During the years 1906-20, the range of all torpedoes is 2 hexes; during 1921-40, 3 hexes; during 1941-45, 5 hexes.

[9.0] HOW TO SET UP AND PLAY THE GAME

GENERAL RULE:
A Scenario follows this general outline:

1. An initial Movement Plot and Execution while opposing Task Force Markers sweep through the map area (Campaign Scenarios only).
2. Contact between the Task Forces occurs, followed by placement of the actual ship counters.
3. An extended indefinite number of Game-Turns while the ships move and fight, inflict damage, are wrecked and sunk, etc.
4. Finally, the movements of the opposing ship units cause them to separate to a distance that exceeds the visibility range for three consecutive Game-Turns, at which point the scenario is declared over, all movement and action ceases, the ships are removed from the map area and the winner of the Scenario is determined.

The historical Scenarios all have a set maximum number of Game-Turns which is the longest number of Turns the Scenario can last. They arbitrarily end on the final Turn if not before. The Campaign Scenarios persist indefinitely until the Players, by their movement and actions, bring about a conclusion.

[9.1] THE MAP

There are six map sections labeled A through F. Each section represents an area 16 nautical miles by 17.2 nautical miles. Each section has a compass rose. The map is assembled initially by butting the six sections together in the configuration shown; each section is oriented on the same N-S axis.

[9.11] The ship units will be introduced into the map area either by initial placement or by entering from one of the edges. Play will progress, units will move and probably at some point ships will move to the outer perimeter of the map area and beyond. At this point the perimeter of the map may be shifted by taking a map section which is not in use and repositioning it adjacent to the perimeter. Thus the six map sections are used to form an endless geomorphic map so that ships need never run off the map.

The map sections as they are initially placed define what is known as the initial Map Area. The Players should visualize this initial map area as being in the center of a larger disputed zone as shown in the accompanying diagram.

[9.12] In the Campaign Scenarios, there is an outer boundary beyond which a given Player's force may not proceed, so that a Friendly force could escape an Enemy force by moving in a given compass direction through several butted and rebutted map sections into a safe zone.

The historical Scenarios direct specific initial deployment, facing and speed, so that the opposing fleets must meet and an action ensue. The other Scenarios give each Player freedom to introduce his units onto the map area from his side of the map as he sees fit. Each Player must sit on the north side of the map and the other Player on the south side of the map (thereby establishing a North Player and a South Player). The North Player must always introduce his units onto the hexes forming the north edge of map sections A-B-C while the South Player must always introduce his units onto the hexes forming the south edge of map sections D-E-F. Each Player will now plot the movement of each of his Task Forces. This plot will note the Task Force number, speed (Movement Points expended per Game-Turn), and course. Each Player must introduce at least one Task Force onto the map on Game-Turn One, specifying the hex in which the Task Force enters the map. If he has more than one Task Force, he may stagger the arrival of his Task Forces, specifying what Game-Turns and entry hexes they will arrive on (9.26). In every case, each Task Force must have a course plotted which will take it through every section of the map area and specifically through the lettered hex in the center of each map section, and finally exit the Task Force from the map area on the Player's respective side. (The north Player's Task Force will exit on the north side, etc.)

[9.13] The initial map area as set up lies halfway between the North and South Players' safe zones. Map sections A, B and C lie on tier Zero North; D, E and F on Zero South. Players must make record each time a map section enters a new tier. The units of the South Player may not enter a map section in tier Three-North; similarly, the units of the North Player may not enter a map section in tier Three-South. The area in which both Players' units may move is called the disputed zone. The disputed zone is considered to extend indefinitely to the east and west.

[9.14] If play flows out of the initial map area in a northerly direction into a rebutted map and proceeds north again into another rebutted map section, this second rebutted map section is the last section that any of the South Player's units can enter and move through. His units never exit a map section in a northerly direction if that section lies so that it is on a tier two sections north of the initial map area. The opposite holds true for the North Player's units when proceeding in a southerly direction and flowing off the initial map area. Thus, the North Player may force a conclusion to the Scenario by moving his units in a northerly direction, flowing off the initial map area and through tiers One-North and Two-North. If the Southern units pursue seeking to maintain visibility, they will eventually reach the northern edge of tier Two-North. Since they may not cross this edge to the north while the North units can, the North units must inevitably be able to open the range past the visibility limit for three consecutive Game-Turns and thus conclude the Scenario.

[9.15] Whenever a Player moves his ships into his safe zone, he is deemed to have committed them to return to some hypothetical port. These ships may never return to the disputed zone. They may continue to be fired at and damaged by Enemy ships (and return fire in turn) so long as they remain in range of Enemy ships who presumably have followed to the limit of the disputed zone. Ultimately, Player A moves a ship into his safe zone and to definition the Player who abandons the end of the Scenario regardless of when the Scenario actually terminates. If neither Player moves a ship into his safe zone prior to the conclusion of the Scenario, then neither is considered to have caused the end of the Scenario.

[9.2] INITIAL COMPOSITION AND PLACEMENT OF OPPOSING FORCES

After setting up the map, the Players select a Scenario to play. Then they seat themselves on opposite sides of the map and compose their respective Task Forces and initial movement plots.

[9.21] Composition of Task Forces

Every Scenario will provide each Player with his fleet either by specifically listing the units (the Historical Scenarios), or providing a system for the Player to pick his units from an available pool (the Campaign Scenarios). In either case, the Player will establish one or more Task Forces from his given fleet. A Task Force will be composed of one or more ship units, and the Player will allocate all of the ship units in his fleet to one or more Task Forces as he sees fit (or as the Scenario instructions direct). On a piece of scratch paper, he will diagram the composition of each Task Force and its cruising formation which is presumed not to change until Enemy units are sighted) including the axis of the formation which will give the relative direction of movement.

Then he will place the actual die-cut ship unit counters to the side of the map.

[9.22] Initial Movement Plot

The Historical Scenarios direct specific initial deployment, facing and speed, so that the opposing fleets must meet and an action ensue. The other Scenarios give each Player freedom to introduce his units onto the map area from his side of the map as he sees fit. One Player must sit on the north side of the map and the other Player on the south side of the map (thereby establishing a North Player and a South Player). The North Player must always introduce his units onto the hexes forming the north edge of map sections A-B-C while the South Player must always introduce his units onto the hexes forming the south edge of map sections D-E-F. Each Player will now plot the movement of each of his Task Forces. This plot will note the Task Force number, speed (Movement Points expended per Game-Turn), and course. Each Player must introduce at least one Task Force onto the map on Game-Turn One, specifying the hex in which the Task Force enters the map. If he has more than one Task Force, he may stagger the arrival of his Task Forces, specifying what Game-Turns and entry hexes they will arrive on (9.26). In every case, each Task Force must have a course plotted which will take it through every section of the map area and specifically through the lettered hex in the center of each map section, and finally exit the Task Force from the map area on the Player's respective side. (The north Player's Task Force will exit on the north side, etc.)

[9.23] Use of Task Force Markers

In making the initial (pre-contact) movements on the map, each Player will physically display and move only the Task Force Marker representing the appropriate Task Force as composed in rule 9.21.

[9.24] Initial Movement Execution and Initial Game-Turn

Play now commences with Game-Turn One. Each Player brings his Task Force Marker onto the map and moves in accordance with its plot, hex by hex through the map. This movement must take the shortest path between the lettered hexes. Every Scenario will have a minimum visibility range stated (see 11.7) and on each Game-Turn the Players should establish the maximum visibility for
that Game-Turn (see 5.71). Movement will be executed simultaneously Game-Turn by Game-
Turn until the opposing Task Force Markers move within sight of one another, that is, move within the visibility range of one another. As soon as that happens movement of the opposing Task Force Markers immediately stops as contact has been achieved.

[9.25] Replacement of Task Force Markers With Ship Units

When contact between task Force Markers has been made, both Players immediately refer to their Task Force composition diagram (9.22). With reference to the Location of their Task Force Marker, they establish which units in their Task Force would be closest to the Enemy Task Force Marker. They then proceed to take the actual ship units composing the Task Force and place them on the map according to the Task Force composition diagram, placing the Friendly ship units closest to the Enemy Task Force Marker in the hex containing the Friendly Task Force Marker, and basing the placement of the remaining Friendly ships on that ship's position. In placing the ships, the Players will face them in the direction that the Task Force Marker was proceeding when contact was established. When all the ships of the opposing Task Forces have been placed, the Task Force Markers are removed from the map.

[9.26] Purpose of Initial Placement

The purpose of the initial placement and movement procedures is to bring the opposing forces into sight within a reasonable distance from each other so that the players will know at the beginning of a Scenario exactly where or how he will meet the Enemy force. Thus, the Task Force Marker does not necessarily represent the center units of a Task Force. In almost all cases, it will finally come to represent a ship or ships which are on the fringe of the Task Force formation nearest the nearest Enemy ships (assuming the Task Force is composed of several ships on different hexes).

In every Scenario in which opposing Task Forces are committed there must be contact made. If by chance the Task Forces fail to meet as a result of the circumstances dictated by visibility or vagaries in their initial Movement Plots, then Players compose new Movement Plots (instead of exiting) and continue this process until some contact is made. Thus there is no advantage to a Player in contriving obscure initial plots or an unusually slow speed since he would merely be putting off the inevitable and causing needless delay.

[9.27] Rule of Reason

When contact is made and the Players seek to determine the relative bearing and position of their opposing ships they must be guided by common sense. If the Task Force formation is such that two or more ships in the formation could each be considered to be nearest the Enemy Task Force, then a die can be rolled to establish which unit is considered to be nearest.

[9.28] Multiple Task Forces and Delayed Entry

If a Player has more than one TF he may delay the entry of TF2, TF3, etc., until some later Game-
Turn. (TF1 by definition is the only Task Force and must always enter the initial Map Area on Game-Turn One.) These delayed Task Forces must have a Movement Plot written for them specifying an arrival in the initial map area no later than Game-Turn Six. In the interim between the First Game-Turn and the Turn in which they are scheduled to arrive, they are arbitrarily located on the center hex of an imaginary map section butted against the map section they are plotted to enter. If ships move into this map section from off the initial map area, it is butted down and the delayed TF Marker placed in the center hex (lettered hex). When a delayed Task Force finally enters the map, its Marker is placed on the plotted entry hex. If this placement causes it to appear within the visibility range of some Enemy ship or TF Marker, then an unused map section is immediately butted against the map section that the delayed TF is entering into; the delayed TF Marker is retroactively moved back to the limit of visibility and the Owning Player proceeds to replace the TF Marker with actual ships composing the Task Force as in (9.25). A Player may never alter the plot of a delayed Task Force with reference to its entry onto the initial map area. Once a Task Force has entered the initial map area it must execute its initial Movement Plot until it achieves visibility contact with an Enemy ship or TF. If the delayed TF enters the map and earlier opposing Task Forces have achieved contact, then the Player is free to write a new plot Turn by Turn for the delayed Task Force. He may not change the cruising formation as set out in (9.21).

[9.3] PLAY AFTER CONTACT AND SHIP PLACEMENT

Once contact has been made and the actual ship units placed on the map, play immediately begins with full rigor. Each Player now knows the location of opposing units, and he may now move and fight as he sees fit in accordance with the rules as outlined in sections 4.0 through 8.0.

[9.31] Once contact is made the Player is no longer bound by the initial Task Force Movement Plot (except for delayed Task Forces, 9.28, with regard to the hex and Turn of entry).

[9.32] The instant of contact marks the end of the Game-Turn in which it occurs, even if the Task Force Markers concerned have not completed their full movement. Once the ship units are deployed a new Game-Turn begins with the Fire Plot Phase (visibility carries over for one Turn).

[9.33] For purposes of rule 6.4, ships are considered to have an initial speed equal to the speed of the Task Force on the Turn in which contact is achieved.

[9.4] CONCLUDING A SCENARIO

[9.41] No Player is ever required to cause an end to a Scenario. Players can maneuver within the boundary limits of the hypothetical ocean area indefinitely pounding away at each other until one side or both sides are totally wrecked or destroyed. However, it is assumed that a Player will be guided by rational objectives and that he will persist in maintaining an action only as long as it is to his possible benefit in terms of Victory Conditions; that is, if he perceives that a continued battle is to his disadvantage, he will maneuver to break off visibility contact.

[9.42] While running for his safe zone (see 9.12) is the only sure means by which a Player can eventually assure himself of breaking off contact and thus ending a Scenario, the vagaries of simultaneous movement plus the varying visibility Turn by Turn may combine to cause three consecutive Turns with no sight between opposing forces and thus end a Scenario. So long as at least one Friendly unit lies within visibility range of at least one Enemy unit, contact is not broken and all units remain on the map even though they may not fly any more plots and move with full knowledge of the Enemy forces positions even though it is presumed that the actual units themselves are not within visibility range of one another. Even after contact is broken the units remain on the map for another two Turns with the Players able to maneuver to reestablish contact (if they so desire). The Scenario is concluded and the units removed from the map only after three consecutive Turns with no sighting.

[9.43] A Scenario may be concluded by mutual agreement of the Players at any time. Most Scenarios will end by this mechanism when it becomes obvious that one Player or the other has succeeded in breaking contact and is obviously going to maintain the break, or if mutual exhaustion sets in with both sides so badly damaged that neither can inflict further injury on the other.

[9.5] VICTORY DETERMINATION AND THE VALUE OF SHIPS

Victory in any one Scenario or in a Campaign Game is determined by Victory Points. A Player is awarded Victory Points for damaging or sinking Enemy ships and then additional Points for winning a Scenario. In some Historical Scenarios specific Victory Conditions are mentioned regarding specific objectives. In the Campaign Scenarios there are gradations of victory that a Player can win ranging from a Marginal to a Decisive Victory.

[9.51] Every ship unit has a value in Victory Points. This value is defined for each ship as the numerical total of its Attack Strength, Defense Strength and Movement Allowance. Thus the HMS Iron Duke has a Victory Point Value of 29 Victory Points (18+6+5).

[9.52] Whenever a Friendly ship reduces damage by one step the Enemy Player is awarded one Victory Point. (Players should review section 5.4). If at the end of a Scenario the one Player has a ship in a Damage State and this ship has exceeded its numerical Damage Control limit (see 5.44) or if it is wrecked (2S, 2G) then the Enemy Player receives Victory Points according to the following schedule:

1 Damage State = 20% Ship Value
2 Damage States = 40% Ship Value
3 Damage States = 60% Ship Value
4 Damage States (2G, 2S) = 80% Ship Value

When a Friendly ship sinks, the Enemy Player receives 100% of the ship's value.

In computing partial Ship Value award, fractional Points are dropped.

[9.53] When a Scenario ends, each Player is assumed to have an indefinite time to remove damage states from ships which have not exceeded their Damage Control limit, awarding the Enemy Player one Victory Point for each damage state so removed. For example: The Scenario ends with the Iron Duke in a 1G damage state. In prior play during the Scenario, it had removed two damage states. Since its Defense Strength is six, it can remove up to six damage states before exceeding its limit. Thus it automatically removes the final 1G state and the Enemy Player would gain a total of three Victory Points for the damage inflicted on the Iron Duke. Assume, however, that the Iron Duke was suffering a 1G, 2S at the end of the Scenario and that it had already removed four prior damage states. It now could remove only two
of the three damage states it was suffering and would suffer a permanent damage of 1 damage state. Thus, the Enemy Player would receive 11 Victory Points from the Iron Duke — 6 Points for the six damage steps removed and (5.8 rounded down) 5 Points for the 1 damage state remaining (20% of 29 Points).

[9.54] A Player can never receive more than 100% of ship value from an Enemy ship. Assume that a Player during play receives several Victory Points for damage incurred and then removed from a certain Enemy ship and then he causes the ship to sink. He would only receive 100% of that ship’s value.

[9.55] In the Campaign Scenarios, a Player wins a Marginal Victory if he scores more Victory Points than his opponent. A Player wins a Substantial Victory if his Victory Point total is at least twice that of his opponent. A Player wins a Decisive Victory if his Victory Point total is at least twice that of his opponent and if he sinks or wrecks (2G, 2S) all of his opponents’ ships, or if his opponent causes the termination of the Scenario. The winning Player is awarded bonus Victory Points as follows:
- Marginal Victory: 10 Points
- Substantial Victory: 20 Points
- Decisive Victory: 30 Points

[10.0] HISTORICAL SCENARIOS

GENERAL RULE:
Each Historical Scenario gives each Player an exact Order of Battle and exact deployment on the map area, including facing and initial speed. The visibility base is given. A finite time limit in Game-Turns is given and exact Victory Conditions are stated. Each Scenario is a game in itself.

The map must be set up exactly as outlined in rule 9.1, every ship unit will then be deployed according to a hex number and map section letter. These Scenarios force a battle beginning with Game-Turn One, in that the opposing forces are placed close enough together that sighting between at least some opposing units is guaranteed.

[10.1] DOGGER BANK, 24 January 1915
ORDERS OF BATTLE AND DEPLOYMENT

**British Player:**
- **Lion** (211), **Tiger** (221), **Prin Royal** (212) — B0207/SE/6
- **N Zealand** (203), **Indomitable** (193) — B0206/SE/6
- **L11** — B0211/SE/6
- **D11** — B0212/SE/6
- **D12**, **D13**, **D14**, **D15**, **D16** — Map A/SE/6

**German Player:**
- **Blucher** (651), **Derfflingr** (711), **Moltke** (671), **Seydlitz** (681) — B1108/SE/6
- **LS1** — B1110/SE/6
- **DS1** — B1111/SE/6
- **DS2** — B1210/SE/6
- **DS3** — B1015/SE/6

GAME LENGTH
12 Game-Turns

BASE VISIBILITY
Nine hexes

VICTORY CONDITIONS
British must sink or wreck one of the four named German ships and score more Victory Points than the Germans or they lose.

[10.2] DENMARK STRAIT, 24 May 1941
ORDER OF BATTLE AND DEPLOYMENT

**British Player:**
- **Hood** (281), P of Wales (173) — C1912/NW/6
- **C21** — C2005/SW/6

**German Player:**
- Bismark (741) — C0907/SW/6
- C61 — C0908/SW/6

GAME LENGTH
20 Game-Turns

BASE VISIBILITY
Ten hexes

VICTORY CONDITIONS
British must sink or wreck the Bismark. The German Player must preserve the Bismark and break sighting contact by the end of the Scenario. If neither Player wins, it is a draw.

[10.3] NORTH CAPE, 26 December 1943
ORDER OF BATTLE AND DEPLOYMENT

**German Player:**
- Schenhorst (732) — D1108/SE/5

**British Player:**
- D of York (172) — B0611/SE/5
- C21 — B0612/SE/5
- C22 — B0504/SE/5
- C23 — B0504/SE/5
- D31 — B0715/SE/5

GAME LENGTH
20 Game-Turns

BASE VISIBILITY
Six hexes

VICTORY CONDITIONS
British must sink or wreck Scharnhorst.

[10.4] SINGORA, 10 December 1941
ORDER OF BATTLE AND DEPLOYMENT

**British Player:**
- P of Wales (173), Repulse (252) — B1116/SW/7
- D31 — B1315/SW/7

**Japanese Player:**
- Kongo (861), Haruna (882) — B1108/SW/7
- C71 — B0806/SW/7
- D81 — B1307/SW/7
- D82 — B0809/SW/7

GAME LENGTH
15 Game-Turns

VISIBILITY BASE
Nine hexes

VICTORY CONDITIONS
British win a Decisive Victory if they exit both battleships into tier One North (see 9.12) by Game-Turn Seven. Otherwise, victory is decided on Damage Points incurred.

[10.5] SURIGAO STRAIT, 25 October 1944
ORDER OF BATTLE AND DEPLOYMENT

**U.S. Player:**
- W Virginia (443), Tennessee (421) — B1108/SE/5
- California (422), Pennsylvania (381) — B1207/SE/5
- Mississippi (403), Maryland (442) — B1008/SE/5
- B0709/SE/5
- (C31) — B1309/SE/5
- (C32) — B1409/SE/5
- (L31) — B0816/S/7
- (D41) — B0813/S/7
- (D42) — B1414/S/7
- (D43) — B1415/S/7
- (D44) —

**Japanese Player:**
- Fuso (791), Yamashiro (792) — E1101/N/5
- C61 — E1102/N/5
- (C61) — B1116/N/5
- (C71) — E1116/N/5
- (D82) — E1015/N/5
- (D83) — E1215/N/5

GAME LENGTH
10 Game-Turns

VISIBILITY BASE
Seven hexes

SPECIAL RULES
1. Play is confined to map sections B and E only.

VICTORY CONDITIONS
Japanese receive full ship value in Victory Points for every ship they exit off the north edge of section B regardless of damage condition. Victory is based on damage accrued Victory Points, plus whatever Points the Japanese achieve by exiting ships.

[10.6] GUAM, 1935 [Hypothetical]
ORDER OF BATTLE AND DEPLOYMENT

**U.S. Player:**
- Tennessee (411), California (412), Colorado (431), Maryland (432) — B1108/S/5
- W Virginia (433), Oklahoma (351), Arizona (372), Nevada (352) — B1107/S/5
- (C21) — B1113/S/5
- (C22) — B1212/S/5
- (C23) — B1012/S/5
- (C21) — B0711/S/5
- (C22) — B1511/S/5
- (D31) — B0710/S/5
- (D32) — B0709/S/5
- (D33) — B1510/S/5
- (D21) — B1509/S/5

**Japanese Player:**
- Fuso (791), Yamashiro (792), Kongo (861), Haruna (882) — E1112/N/5
- Ise (801), Hyuga (602), Nagato (832), Mutsu (821) — E1113/N/5
- (C61) — E0908/N/5
- (C62) — E1308/N/5
- (L61) — E0708/N/5
- (L62) — E1508/N/5
- (D81) — E0909/N/5
- (D82) — E1309/N/5
- (D83) — E0709/N/5
- (D84) — E1509/N/5
- (D71) — E1108/N/5
- (D72) — E1109/N/5
GAME LENGTH
10 Game-Turns

BASE VISIBILITY
Ten hexes

VICTORY CONDITIONS
Victory is determined strictly by Damage Point count.

[10.7] JUTLAND, 31 May 1916
ORDER OF BATTLE AND DEPLOYMENT
British Player: hex/facing/speed
K. George (071), Ajax (073),
Centurion (072), Erin (101)  C0713/SE/5
Orion (061), Monarch (063),
Conqueror (064), Thunderer (062)
Iron Duke (081), Superb (023),
Royal Oak (142), Canada (102)  C0612/SE/5
Bellerophon (022), Benbow (082),
Temeraire (021), Vanguard (033)
Collados (051), Collingwood (032),
Neptune (041), S. Vincent (031)  C0512/SE/5
Marlborough (084), Revenge (144),
Agincourt (091), Hercules (052)
Barham (115), Vellant (112)
Malaya (113)  C0411/SE/5
Warspite (25) [114]
Prin Royal (212), Tiger (221),
N Zealand (203), Lion (211) C0111/NE/5
Invincible (191), Invincible (192),
Indomitable (193)  C0713/SE/5

German Player:
Lutzow [1G] (712), Derfflinger (711),
Seydlitz (681)  F0402/SE/5
Moltke (671), von der Tann [2G] (661)  F0302/SE/5
König (631), Gr Kurfurst (633),
Markgraf (632), Kr Wilhelm (634)  F0202/NE/5
Kaiser (621), Frichard Gr (622),
Pr Lützow (624), Kaiserin (623)  F0103/NE/5
Ostfriesland (613), Thorn (612),
Thuringen (611), Oldenburg (614)  E2003/NE/5
Posen (603), Rheinland (604),
Nassau (602), Westfalen (601)
Deutschland (691), Pommern (693),
Schlesien (694)  E1904/NE/5
Hannover (692), S Holstein (695),
Hesse (701)  E1705/NE/4

GAME LENGTH
12 Game-Turns

BASE VISIBILITY
Seven hexes

SPECIAL RULE
1. British battleships may not make 180° radical
turns.

VICTORY CONDITIONS
Victory is determined by Point count. German Player
already has 49 Victory Points for sinking
two British BC's. Note that three ships begin the
Scenario with damage.

[11.0] THE CAMPAIGN GAME

GENERAL RULE:
The Campaign Scenarios are four hypothetical
situations which together comprise the Campaign
Game. These situations are contrived by the
Players according to the following procedure:
First, the Players will decide upon a time period:
WWI, Interwar, WWII; then they will decide
between themselves which national navy they will
direct, picking from the listing given in 11.1. They
will select the appropriate units given by the listing
as their fleet. They will decide between themselves
who is to be the North Player and who is to be the
South Player. They will then secretly subdivide
their fleet and assign a different group of ships to
each of the four Scenarios listed in 11.2, 11.3, 11.4
and 11.5. With the forces then assigned, each
Scenario will be played to a conclusion, the Victory
Points awarded for each Scenario will be totalled
and a Campaign Game winner established. No ship
may participate in more than one Scenario in any
one Campaign Game. For example, if a ship is
assigned to participate in Scenario A, it may not
participate in Scenario B, C or D, but must partici-
ate in Scenario A. An assigned force may be
sub-divided into component Task Forces.

[11.1] NATIONAL FLEET LISTING
The following listing is broken down by country and
time period. Dreadnoughts are listed by class-code; thus 420 identifies the Tennessee (421)
and the California (422). The minor naval powers are only listed as of World War I. Players use these
listings as the basis for choosing their respective
forces. Players must consult their selections to a
single time period for any given Campaign Game.

[11.11] WORLD WAR I

SCREENING FORCES

ALPHA  BRAVO

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DREADNOUGHT CLASSES

Great Britain:
British:
Dreadnought:

[11.13] WORLD WAR II

SCREENING FORCES

ALPHA  BRAVO

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DREADNOUGHT CLASSES

Great Britain: 130, 150, 160, 170, 180, 250, 280.
France: 520, 530, 540.
Germany: 720, 730, 740.
Japan: 790, 810, 830, 860, 880.
Italy: 920, 930.


This Scenario supposes that the North and South assigned forces meet by chance while each is on patrol or "sweep." The objective of each force is simply to sink or damage the Enemy and win the Scenario as outlined in section 9.5.


This Scenario supposes that the North assigned forces are attempting to intercept and stop the South assigned forces from carrying out a bombardment of some hypothetical shore. The South assigned forces will attempt to defeat the North assigned forces while preserving enough capital-ship firepower to make a worthwhile bombardment. Victory Points will be awarded to the North Player solely on the bases of rule 9.5. Victory Points will be awarded to the South Player on the basis of rule 9.5, and, in addition, if the South Player wins the Scenario with at least a Substantial Victory (see 9.55) and he has not caused the conclusion of the Scenario by retreating to his "safe" zone (9.1), he receives additional Victory Points equivalent to the total Attack Strength Points of any of his capital ships which were not fired during the course of the Scenario. These Points are Bombardment Bonus Points.

In order to receive the Bombardment Bonus Points, the South Player must win the Scenario with a Substantial Victory, or he must sink or wreck all the North Player's ships (in case the North contests the Scenario with a weak force), or he must force the North Player to concede the Bombardment Bonus Points. The North Player concedes the Bombardment Bonus Points if he moves a ship off the initial Map Area before the South Player does. (This is to prevent the North Player from running away indefinitely, while staying in sight but possibly not in range, and thereby preventing any conclusion to the scenario.) If the North Player does move a ship off the initial Map Area first, then the South Player automatically has the right to his Bombardment Bonus Points, regardless of which Player eventually wins the Scenario.


This Scenario supposes that the North assigned forces are attempting to defeat the South assigned forces and then intercept a hypothetical convoy belonging to the South Player. In composing this Scenario, the South Player secretly assigns a Victory Point value (called the "Intercetion Bonus") to this hypothetical convoy, which must range between 25 and 100 Victory Points, noting the value on a piece of scratch paper and setting it aside until the Scenario's conclusion. Victory Points are awarded to both Players on the basis of section 9.5. In addition, the North Player receives Victory Points equal to the total Attack Strength of his undamaged ships, up to the Intercetion Bonus of the hypothetical convoy (the scratch paper is now revealed) so long as the North Player did not cause the conclusion of the Scenario by fleeing to his safe zone (9.1). Which North Player ships are undamaged is calculated after the final damage recovery outlined in section 9.53. The South Player receives additional Victory Points on the balance of the Intercetion Bonus; that is, whatever balance is left over after the undamaged Northern Attack Strengths are subtracted from the initial Intercetion Bonus. The North Player may not move a ship off the initial Map Area without penalty until the South Player does so. If he does, he loses any right to Intercetion Bonus Points.

[11.5] CAMPAIGN SCENARIO "D" The Sea Sweep

This Scenario is identical to Campaign Scenario "A."

[11.6] SCENARIO ORDER AND SHIP ASSIGNMENT

The Scenarios must be played in order: A, B, C and then D. In assigning forces initially to each Scenario, the Players are not required to assign any given ship unit to any given Scenarios. Nor are they required to assign any ship units at all to a given Scenario. A Player may decide not to contest a given Scenario, but if he does not contest, his opponent is assumed to win a Substantial Victory, garnering thereby the twenty Victory Points allowed in rule 9.55, plus whatever additional Victory Points he would receive for accomplishing his objective. For example, the South Player assigns three capital ships to Scenario "B." The North Player does not assign any ships, thereby conceding the Scenario. The South Player would receive twenty Points for a Substantial Victory in the Scenario, plus the total Attack Strength of his three capital ships (Bombardment Bonus).

[11.7] ESTABLISHING THE CAMPAIGN SCENARIO BASE VISIBILITY

At the beginning of every Scenario the dice are to be rolled. Whatever number is rolled is defined as the Base Visibility for that Scenario. Thus, any given Scenario will have a Base Visibility set somewhere between two and twelve hexes. This number will be constant for the entire Scenario and will be the number from which the Turn by Turn visibility is derived (see 5.7).

[11.8] PLAY BALANCE AND VICTORY CONDITIONS

It should be obvious that if, for example, one Player picks the Royal Navy (WWI) while the other chooses Italy (WWI) as their respective navies, the Italian Player will have little chance of winning the Campaign Game. Thus, those Players interested in playing an evenly balanced game should decree a fleet value limit within which each Player would be allowed to create his own fleet for purposes of playing a Campaign Game. Rule 9.51 establishes the value of each ship in Victory Points. Under the fleet value limit concept, the Player would be allowed to choose any ships from his national listing, so long as the total value did not exceed the fleet value limit. It is suggested that the following limits be observed: WWI 200 Points, INTERWAR 300 Points, WWII 400 Points. This is purely a suggestion. The way in which the Players compose their fleets is limited only by the counter mix and their imagination.

[11.9] SAMPLE CAMPAIGN GAME

The Players decide to play a France versus Italy WWI Campaign Game. A coin flip establishes Player 1 as the French Player. Player 2 (Italy) then chooses to become the South Player. Both Players then sort out their forces. The initial map area is assembled. Then each Player proceeds to assign his ships to the respective Scenarios. For each Scenario he composes a Task Force composition chart and an initial Movement Plot, as shown.

Note: Ships in Task Forces may be in any formation, with any number of columns.

The Players are now ready to begin Scenario A. The dice are rolled with a six giving the visibility base. Play begins, the TF Markers are entered onto the map and movement is executed Turn by Turn.
At the end of Game-Turn Five it becomes apparent that TF Markers are close enough together so that a possibility of sighting exists. (The Italian TF Marker is in F0102, the French TF Marker is in C0308.) The visibility die roll is a four, which, added to the base of six, gives a visibility range of ten on Game-Turn Six. On the first Movement point of Game-Turn Six, the TF Markers move within ten hexes of one another. Contact occurs. Both Players proceed to display their ships. The French Player places his D11 in hex C0408, C11 in hex C0308 and C12 in hex C0208. The Italian Player places his C51 in hex F0101 and D Alighieri in hex F0103. The Turn is declared over; the following Turn (Game-Turn Seven) begins immediately. The Italian L51 and the French forces can see one another, but do not possess the range to fire at each other. The D. Alighieri, which possesses the range to fire, cannot see the French ships and thus cannot fire. Both Players write their Movement Plots. The French Player plots a SNEI (speed five, course NE, line abreast formation). The Italian Player, anticipating this maneuver, plots the D. Alighieri to move NE also at speed six. The Turn ends with the D. Alighieri having closed the range to eleven hexes. The following Turn visibility increases to eleven; D. Alighieri begins firing. No result. Both Players maintain the same course and speed. Pursuit continues for three more Turns, with the D. Alighieri finally scoring a hit (1S1G) on the French C12. Then on the Twelfth Turn, the Italian, leery of closing the range to six and thus affording the French a shot at the D. Alighieri, turns SE, speed four. The French continue their retreat NE, opening the range. At this point, both Players agree to end the Scenario. Retiring their ship units. The final score is: French, 0 Victory Points; Italian, 22 Victory Points (2 Points for the two damage states inflicted on the French C12, plus 20 bonus Points for achieving a Substantial Victory).

Players then move to Scenario B. The Italian announces that he is not contesting the Scenario and the French win an automatic 20 Point victory. Moving to Scenario C, the Players become engaged in what is obviously the main battle of the Campaign Game. The French Player, reasoning that if the Italian Player has thrown the bulk of his battlefleet into protecting the convoy, it must be because he has given it a high Point value, decides to fight even though he is outnumbered and outgunned. The Italian, realizing that the French Player will not leave the initial Map Area, scents blood. He closes the range, and several Turns of battering take place. The French Player gets the better of this exchange, wrecking the L. DaVinci and scattering some five hits among the other Italian battleships, while taking some six hits on the J. Bart and three hits scattered among his other ships. The Italian decides to stop pressing the French fleet for fear of further bad luck. The French Player takes the opportunity to open the range for three Turns while still carefully remaining on the initial Map Area. The Scenario ends. The final accounting is: French, 72 Victory Points; Italian, 74 Points. That breaks down as follows: The French receive five Points for the damage states removed from the Italian ships, 18 Points for wrecking the L. DaVinci (80% of 26) which occurred as cumulative damage without the L. DaVinci being able to remove any hits, 10 Points for winning a Marginal Victory and 39 Points as the Intervention Bonus (the J. Bart being damaged and not counting toward interception). The Italian receives five Points for damage which had been removed from the J. Bart, five Points for the 20% permanent damage which couldn’t be removed, three Points for the damage removed from the other French ships (total of 13), thereby losing the Scenario marginally to the French, and finally 61 Points which was the convoy balance (100 minus the 39 awarded to the French).

Play then moves to Scenario D. The French Player, knowing he is slightly behind in the overall standings, tries a desperate move, closing the range with his one CA against the two Italian CA’s. The gamble almost succeeds; he manages to wreck one of the Italian CA’s, but his own CA becomes wrecked in the process. The French Player
concedes the Italian a Marginal Victory, reasoning that at some point in the future, the undamaged Italian CA will roll the proper combination of numbers to produce a sinking. Scenario score: French 9 (60% of the wrecked Italian CA), Italian, 22 (12 for the sunk French CA, plus 10 for a Marginal Victory). Final Campaign Score: French, 101; Italian 118.

### [12.0] OPTIONAL RULES

#### [12.1] SMOKE

12.11 A smoke screen may be created by any DD unit during the course of movement. The word "smoke" must be written next to the unit's Movement Plot. Then, during the Movement Execution Phase, the player places any game marker upside down in each hex that the unit vacates during its movement. The upside down marker serves as a Smoke Marker and, in effect, the unit leaves a trail of Smoke Markers in its path as it moves. These Smoke Markers remain on the map until the beginning of the next Movement Phase in the following Game-Turn when they are removed. While they are on the map, they affect the ability of ships to fire.

12.12 If the line of fire between two ships (defined as the line from the center of the hex containing the firing ship to the center of the hex containing the target ship) intersects a hex containing a Smoke Marker, then no fire or torpedo attack between the two ships is permitted.

12.13 A Smoke Marker only prohibits fire if it lies outside of and between the firing and target ships' hexes. It does not block fire if it lies in the same hex with either the target ship or the firing ship.

12.14 A DD unit may make smoke on every Game-Turn. There is no limit to the number of times it can do so.

12.15 Smoke has no effect on visibility as it applies to rule 9.4. A Player may not use smoke to break contact between opposing forces.

#### [12.2] RADAR AND SPOTTING PLANES

12.21 U.S. and British ship units in action in any post-1942 Scenario are presumed to have effective Fire Control Radar which allows them to ignore the visibility restrictions (including smoke), and fire at their maximum range. If they do so in excess of the visibility range, then their Damage Point dice roll is reduced by two in addition to any other adjustments. If they are firing within the visibility range, then radar has no effect.

12.22 All capital ships and CA screen units in use in a post-1930 Scenario are presumed to have spotting planes, which they have launched to help adjust their long range fire. This permits the ships to fire in excess of their normal visibility restrictions to the limit of their range, except at night or through smoke. The Damage Point dice roll is reduced by three when using this rule.

#### [12.3] CREEP

Under the CReep Rule, any ship which has a 25 damage status, but has less than 2G damage is permitted to move one Movement Point per Game-Turn. Ships with 2G damage may not use creep. They must remain motionless.

#### [12.4] TOWING

12.41 Any capital ship may be towed by any capital ship or cruiser unit. In order to tow, the towing ship must have the towed ship and remain motionless for two Game-Turns. On the third Game-Turn following, the towing ship may begin to move a maximum of two Movement Points per Game-Turn, taking the towed ship with it. A tow may be broken instantaneously at any Game-Turn following.

12.42 Screen units may not be towed, though a CA or CL screen unit may act as a towing unit.

12.43 Presumably a Player will use the tow rule to implement recovery of his wrecked units. Friendly units may not tow Enemy units.

#### [12.5] SUN POSITION

12.51 A rising or setting sun can serve to silhouette some ships while concealing others.

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This is a list of all Dreadnoughts, with their full, unabbreviated name. The first two digits of the Identification Number for each ship identify the class to which that ship belongs. The class name is shown in bold. Refits of a class receive a separate class number. The third digit, which identifies the individual ship within a class, remains unchanged if a class is refit. Thus, ships numbered 151, 152, 153, 154 and 155 all belong to the Royal Sovereign Class as refit; the Ramilies as originally launched is nr. 143, and as refit is nr. 153.

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</table>
Before beginning a Scenario, the Players will roll the dice. A two means the sun is rising on the east side of the map area, a twelve means it is setting on the west. Any other result means no sun condition.

[12.52] Whenever a ship is firing away from the setting or rising sun, the dice roll on the Damage Point Table is reduced by one to reflect its reduced firepower (it has difficulty ranging into the gloom). If it is firing toward the rising or setting sun, then its Damage Point dice roll is increased by one. These affect are in addition to any other adjustments to the Damage Point dice roll. For example: Trace a line along the horizon in the direction NW and one in the direction SW. If the target is on either line or between the lines, then the firing ship is firing toward the sun and its dice roll would be increased by one.

[12.53] A rising or setting sun condition exists and persists from Game-Turns Six through Eleven on any Scenario for which the situation is determined. On other Turns, either night or day (no sun condition) exists.

[12.6] THE EXTENDED CAMPAIGN

The extended campaign is an economic game requiring the Player to amass more ship value points than his opponent every ship has a value in points equal to the total of its printed attack, defense and movement values). Each Player is given an initial number of ship value points (his “treasury”) from which he purchases an initial fleet, expending in the process, points equal to the value of the ships he activates. Thereafter, play progresses through an indeterminate number of Extended Campaign Game-Turns from two to twelve Turns, depending on a random event. During each of these Turns, the Players plan and execute a Campaign Game (11.0), in the process augmenting and depleting their treasuries accordingly.

[12.61] Setting up the Extended Campaign

The Players decide among themselves what chronological period and national identity they wish to assume. Then, on a piece of scratch paper labeled “treasury,” they pay themselves between 700 and 900 Ship Value Points apiece. They then secretly choose from the national counter mix comprising their national fleet ship units totalling no more than 300 Ship Value Points. From within the proper mix, they can pick any number and type of ships as long as the limit is not exceeded. Then reveal to each other their respective initial fleets. They then secretly formulate a construction schedule detailing, Extended Campaign Game-Turn by Extended Campaign Game-Turn, exactly what ship units from the balance of their national fleet mix they will “build” on each Game-Turn. No Player may build more than 100 Points worth of ships per Turn. This schedule is not revealed immediately, but is revealed progressively. Turn by Turn, as the Players reveal new constructions.

[12.62] Extended Campaign

Sequence of Play Outline

1. Peace Resolution Phase: Two dice are rolled. If the number rolled is the same as the number of the Game-Turn, then peace is established, and the game is immediately over; otherwise, the game proceeds.

2. Campaign Game Phase: The Players plan and execute the four Scenarios of a Campaign Game, using their respective fleets according to the rules in Case 11.0.

3. Repair Phase: The Players repair their permanently damaged ships.

4. Build Phase: The Players augment their existing fleets with ship units picked from their national fleet mix according to their construction schedules (12.1).

[12.63] The Campaign Game In

The Extended Campaign Game-Turn

The rules for the conduct of the Campaign Game remain identical to those in Case 11.0, with the following exceptions and additions. 1. Victory Points awarded for winning a Marginal, Substantial or Decisive Victory are added immediately to the Winning Player’s treasury. Victory Points awarded to the South Player for the balance of the interception bonus in Scenario C are added to his treasury.

470 Iowa Class
471 Iowa
472 New Jersey
473 Missouri
474 Wisconsin
480 Alaska Class
481 Alaska
482 Guam

AUSTRIA
550 Viribus Unitis Class
551 Viribus Unitis
552 Tegetthof
553 Prinz Eugen
554 Szent Istvan.

FRANCE
500 Courbet Class
501 Courbet
502 Jean Bart
533 France
504 Paris

510 Provence Class
511 Provence
512 Bretagne
513 Lorraine

520 Provence refit
521 Provence
522 Bretagne
523 Lorraine

530 Dunkerque Class
531 Dunkerque
532 Strasbourg
540 Richelieu Class
541 Richelieu
542 Jean Bart

BRAZIL
560 Minas Gerais Class
561 Minas Gerais
562 Sao Paulo
571 Rio de Janeiro

RUSSIA
580 Gangut Class
581 Gangut

582 Sebastopol
583 Petropavlovsk
584 Poltava
590 Imperator Aleksandr III Class
591 Imperatriz Maria
592 Ekaterina
593 Imperator Aleksandr III
594 Imperator Nikolai II

GERMANY
600 Westfalen Class
601 Westfalen
602 Nassau
603 Posen
604 Rheinland
610 Helgoland Class
611 Thuringen
612 Helgoland
613 Ostfriesland
614 Oldenburg
620 Kaiser Class
621 Kaiser
622 Friedrich der Grosse
623 Kaiserin
624 Prinzregent Luitpold
625 Konig Albert
631 Konig Class
631 Konig
632 Markgraf
633 Grosser Kurfurst
634 Kronprinz Wilhelm
640 Baden Class
641 Baden
642 Bayern
651 Blucher
661 von der Taun
670 Moltke Class
671 Moltke
672 Goeben
681 Seydlitz
690 Deutschland Class
691 Deutschland
692 Hannover
693 Pommern
694 Schlesien
695 Schleswig Holstein
701 Hessen
710 Derrflinger Class
711 Derrflinger
712 Lutzow
713 Hindenburg
720 Lutzow Class
721 Lutzow (Deutschland)
722 Scheer
723 Graf Spee
730 Gneisenau Class
731 Gneisenau
732 Scharnhorst
740 Bismarck Class
741 Bismarck
742 Tirpitz

JAPAN
751 Settsu
760 Satsuma Class
761 Satsuma
762 Aki
771 Kawachi
780 Fuso Class
781 Fuso
782 Yamashiro
790 Fuso refit
791 Fuso
792 Yamashiro
800 Ise Class
801 Ise
802 Hyuga
810 Ise refit
811 Ise
812 Hyuga
820 Nagato Class
821 Mutsu
822 Nagato
830 Nagato refit
831 Mutsu
832 Nagato

840 Yamato Class
841 Yamato
842 Musashi
850 Kongo Class
851 Kongo
852 Hiei
860 Kongo refit
861 Kongo
862 Hiei

870 Kirishima Class
871 Kirishima
872 Haruna
880 Kirishima refit
881 Kirishima
882 Haruna

ITALY
901 Dante Alighieri
910 Conte de Cavour Class
911 Conte de Cavour
912 Giulio Cesare
913 Caio Duilio
914 Andrea Doria
915 Leonardo DaVinci
920 Conte de Cavour refit
921 Conte de Cavour
922 Giulio Cesare
923 Caio Duilio
924 Andrea Doria
930 Roma Class
931 Vittoria Veneto
932 Italia
933 Roma
934 Impero

SPAIN
950 Espana Class
951 Espana
952 Jaime I
953 Alfonso XIII

ARGENTINA
960 Rivadavia Class
961 Rivadavia
962 Moreno
2. Victory Points normally awarded for damage inflicted on Enemy ships are not added to the Player’s score. They merely form the basis for deciding which Player wins a Scenario.

3. Bombardment Bonus Points awarded to the South Player in Scenario B are not added to his treasury; they are instead deducted from the North Player’s treasury.

4. At the beginning of any Campaign Game, the Player flips a coin to decide which will be the North Player.

[12.64] Repairing Ships

The Extended Campaign Game

During the course of, and at the conclusion of any Campaign Scenario, a Player must attempt to cure any repairable damage to his ships, deducting in the process one Ship Value Point for every damaged state so cured. Ships which suffer permanent damage (e.g., those with 2G,2S, which exceed their Damage Control limit) are not repaired immediately, but are set aside until the Repair Phase of the Extended Campaign Game-Turn at which point the Players decide whether or not to repair the damaged units. Repairs cost a Player’s treasury 20% of the ship’s value per damaged state repaired. A Player can repair an unlimited amount of damaged ships per Turn in any state of damage, subject only to the balance in his treasury. The Repair Phase is sequential with the North Player announcing and repairing his ships first. A Player is never required to repair a permanently damaged ship, but no permanently damaged ship may be placed in the available ship pool.

Ships which are wrecked (2G,2S) must be “under tow” at the conclusion of a Scenario or they are automatically scuttled (removed permanently from play). In either case, scuttled or towed, the Enemy Player receives 80% of ship value for a wrecked ship.

[12.65] Construction

Once established, the Players must adhere to their construction schedules. Whether they want to or not, they must place scheduled ships into their fleet, deducting the value thereof from their treasury.

[12.66] Conclusion

The Extended Campaign Game ends whenever peace is established, Turn Twelve is concluded, or whenever a Player’s treasury balance is reduced to zero. At the end of the Game, the winner is the Player with the largest treasury balance. The respective fleet sizes, damaged ships, future construction, etc., do not affect Victory Conditions. When one of the three conditions for conclusion is achieved, only the number of Points a Player has in his treasury at that point is material for determining a winner. This means that a Player can refuse to build any ships whatsoever, conceding all Victory Points to his opponent, but preserving his initial treasury and hoping that the Extended Campaign will be ended on Game-Turn Two. By a lack actions between ships and lack of fire power to destroy a single enemy, either one of Points in the Campaign Game to compensate for the cost of building a fleet (see 12.63).

[13.0] DESIGNER’S NOTES

Any design is a compromise which requires that the designer make a choice. Dreadnoughts began with a survey of some existing naval games, both board and miniatures. These ran the gamut from Solomon Campaign and USN (which dealt with naval tactics on an abstract plane) to Frigate and “CA” which attempt to simulate purely tactical games with no strategic considerations. Jutland and the whole body of naval miniature games offered simulation on the tactical, operational and strategical level. All of these had their plusses and minuses. All of them appealed to different segments of the gaming public in different ways. One approach did not appeal to the designer and that was creating a super complex tactical system along the lines of Jutland or the naval miniatures. The game would have to have a tactical base, one that would allow Players to maneuver and fight, but one that would be playable (within the normal SPI context). The game was to be concerned with surface combat in the 20th Century between dreadnoughts (any 20th Century all big gun battleship); the basic unit then would represent one battleship. The map would contain an area large enough to display a battle between several of these units. The scale of the game, the unit values, and the system of play would be designed to illustrate the differing strengths and weaknesses of the various dreadnoughts with all other considerations abstracted from the basis.

Next, it was necessary to fix the role of the Player. On this scale of game he would have to be the fleet commander. What then would he do to affect the outcome of the game? This led to an analysis of the historic actions between dreadnoughts, principally those of World War I. The answer was, the fleet commander would decide, when confronted with hostile ships, to either engage in battle or run; to either close the range with the enemy, maintain the range, or open the range, maneuvering all the while to place his forces at an advantage via a vis the enemy. It was pretty cut and dried when he was inferior; he ran. When he was superior he closed. Only when one or both commanders was confused as to the actual situation would an extended engagement ensue. The startling fact that emerged was that battles between dreadnoughts were infrequent and indecisive. The frequency problem could be handled by constructing Scenarios that must occur. The decisiveness was more difficult. That had to be inculcated into the Players’ minds by a combination of limited intelligence and a viciously capricious game system which would unhinge the calculating Player.

As originally conceived, the game mechanics were a rather simple geographical movement system coupled with, essentially, the existing gunfire combat system. The designer originally wanted such things as secondary batteries and wing turrets included as separate ship values, but the developer would have none of that, insisting that the Attack Strength of a ship represent its average broadside strength at average range period. The developer did not want rules which permitted the HMS Impeasurable to double its Attack Strength when firing at a target bearing 27°, because it had some sort of weird turret arrangement that allowed it to fire cross-ship between the laundry lines and the captain’s potted palms. As far as the developer was concerned, the only consideration the Player should have to decide, was whether he would engage broadside-to (maximizing his firepower) or whether he would engage bow- or stern-on (thereby limiting his firepower to some degree or other). Admittedly, this led to an abstraction which distorted the capabilities of some ships, but so be it. The secondary batteries could be abstracted into range effects and torpedo attack rules, again with some distortion, but leaving the Player free to make essential decisions. Early playtesting revealed that sequential movement was too pat to be effective. One Player or the other could always calculate exactly the following Player’s possibilities and be guided accordingly, and there seemed no combination of sequential movement and combat phases which didn’t allow an inherent positional advantage. It was obvious that combat had to be simultaneous, since it was necessary that a Player allocate his fire without knowing which Enemy ships were firing at which of his ships.

Next came the provision for visibility. This was originally to be a set figure per Scenario, but, again, this proved to be too pat. At this point we had a game that played, one that could simulate many of the problems and options of a fleet commander in the presence of a hostile fleet, but one that was somewhat staid in its conclusions. It was then decided to provide ‘historical’ Scenarios of different sizes and lengths which would have directive Victory Conditions, which would tend to force the Players into obvious courses of action. These would serve two purposes: One, they would introduce Players to the mechanics of play; and two, would provide brief games for those who desired them. At best they could only be balanced artificially. Historically, there could be no truly balanced situations. That would require a hypothetical environment, such as we eventually constructed with the Campaign and Extended Campaign Games. This environment is artificial and imaginary. It suspends geographical, political and economic realities in the pursuit of creating an interesting game. The Campaign Game says, in effect, “Here we have two nations with roughly equal fleets, but some variation in composition.”

The Players can decide for themselves how to allocate their ships, creating four Scenarios. It would be rare that any one Scenario would present the spectacle of two even matched forces, yet the sum total of the four Scenarios is balanced (in terms of forces engaged) and, best of all, the Players have many opportunities to paralyze themselves with self-doubt and ignorance.

The Extended Campaign Game provides that rare opportunity for a Player to do nothing at all and still win.
Super Campaign Game plus Jutland Comparison
The number of nationally available board wargames dealing with steam powered battleships is surprisingly limited, considering the scores of games now in print. Neglecting the abstract ones, like Bismarck and Battleship, there are only three: in order of publication, Avalon Hill's Jutland, SPI's "CA" and Dreadnought. "CA" is primarily concerned with destroyer/cruiser combat, as the name suggests, and is a poor simulation when battleships are involved; the mechanics are too limited and the simulation breaks down. Moreover, "CA" is confined to WWII and cannot be compared directly to the others. "CA" and Jutland were both designed by Jim Dunnigan, who claims "CA" was heavily influenced by the earlier game. Dreadnought is clearly a derivative of "CA", but is the work of a different design team and shows several features not found in the others.

The heyday of dreadnought battleships (and battlecruisers) was before and during WWII. In this period, eleven nations built or bought 156 dreadnoughts, and three others ordered ships which were never delivered. In all the time since, six nations completed a total of only 38 new ships, while rebuilding or refitting 39 existing ones at least once. Yet, for all their power and prestige, dreadnoughts faced each other in combat perhaps a dozen times in the two world wars, and only one of those occasions could be called a fleet action: the Battle of Jutland, May 31, 1916. The German High Seas Fleet was minused and it was intended to operate mainly in the limited waters of the North Sea, and actually spent most of its time in port. This was due to the proximity of the British and German bases — a move by either side could draw a prompt reaction from the other and a bloody, if inconclusive battle was always possible. As the Germans were inferior to the British by a ratio of about 2:3, the Kaiser was loathe to risk his precious ships [he kept the job of commander-in-chief for himself] in open battle, not to mention the more invidious dangers of mines and submarines. The German strategy, shaped as a result, was intended to provoke a British reaction by a part of the Grand Fleet, which would be lured into an ambush by the high seas fleet. By destroying a portion of the British fleet, the German Admiral, Scheer, hoped to equalize forces to allow a more conventional battle to determine control of the North Sea.

The British, by use of radio direction-fixing, and aided by a captured code book and the Germans' lax wireless security, were generally aware of impending German activity. Before Jutland, Admiral Jellicoe sorted with all available forces to meet what he thought was a German battlecruiser raid; each side was at sea at full strength without knowing the other was as well. Each fleet was preceded by an advance battlecruiser force, and it was these which made first contact. The weaker Germans turned away to lead the British into the intended trap. In the running fight which ensued, two British battlecruisers were blown up. When they came under fire from the German main body, the British turned away and led Scheer into Jellicoe's ambush. The rest of the battle consisted of his attempts to escape and return to base. The results were a tactical victory for the Germans, who lost a battlecruiser and a pre-dreadnought to three battlecruisers and three armored cruisers by the British, but it was a strategic victory for the British, in that they successfully held their control of the seas.

The approach of the two games to this battle is completely different. Dreadnought is a tactical game system with scenarios; it provides a counter for every dreadnought ever built, and other ships as well. The scenarios cover actual and hypothetical battles spanning both world wars, and in this game Jutland is merely the single largest scenario. It begins with all ships in set positions, at the opening of the third phase of the battle. The battlecruiser actions are over, and Scheer is steaming full into the waiting jaws of Jellicoe. Victory is based on total points, earned by damaging ships. As the German Player is at this point far ahead, the scenario usually develops into a withdrawal as the German attempts to break contact with the faster British force without losing his point lead. It is a purely tactical scenario.

In addition to the single battle scenarios, the game provides for both a "Campaign Game" and an "Extended Campaign Game." The former consists of four consecutive scenarios played with severely limited forces, the latter a series of several Campaign Games, incorporating rules for building new ships and repairing damaged ones. Although guidelines to the actual strengths of various navies during three different time periods are given, these Campaign Games are heavily abstracted, serving mainly to allow the creation, almost at random, of a wide variety of possible battles. The main element of the game is the tactical/operational system for resolving a battle, no matter what its origin.

Jutland, on the other hand, is devoted to a single battle (though the second edition includes three "mini-games," which are just set piece scenarios, as in Dreadnought). Consequently, far more attention is paid to setting the scene, making this phase of the game nearly as complex as the tactical resolution of combat.

The main physical component of this phase is the Search Sheet. It is a map of the North Sea overlaid with a hex grid, each hex being 36,000 yards across. Each player divides his ships into a number of Task Forces, and secretly plots the movement of these forces on his search sheet. Players search for each other by calling out hexes their own forces pass through, and the German may also use subs and airships for searching. When enemy TF's are in the same hex at the same time, they sight each other, and play moves to the separate tactical battle procedure. Victory conditions vary according to the level (Basic, Advanced, Tournament) of the game being played and the edition of the rules in use, but, in general, the German must win an overwhelming tactical victory to satisfy game victory conditions. Because of the free-form search procedures proceeding the actual combat, the game will virtually never resemble the actual battle. This is in sharp contrast to the Dreadnought scenario, with its irrevocable starting positions and tactical victory conditions. The only drawback to this approach is that while the German plan counted on catching a small part of the British fleet unaware and unsupported, in the game both Players know the other is out for blood.

On the tactical level, the games are even more dissimilar. Jutland is a board game only by courtesy, there is no board, and the rules are basically simplified miniatures procedures. Each ship, or group of light cruisers or destroyers, is represented by a cardboard counter 1 7/8" x 1/2". Play requires a flat surface at least 3 x 4 feet, according to the rules, but more is better. When two TF's meet in a Search Sheet hex, a cardboard "Battle Area Marker" is placed on the playing surface to mark the center of that hex. Ship counters are placed at set distances (as measured with a cardboard Range Finder) from the B.A.M. in directions dictated by their course at time of entry. The Hit Record Sheet shows each ship as a number and a group of small "Hit Boxes." The number is the ship's Protection Factor, and the boxes represent its firepower. They are grouped to represent the main gun turrets, and have small arrows to denote the field of fire for each group. Roughly, a single box represents one British 12" or German 11" gun, with larger guns getting more boxes. To resolve combat, range to the target is checked with the Range Finder. The number of gunnery factors is equal to the number of Hit Boxes which can fire at the target, and this is cross-indexed with a die
roll on the Gunnery Damage Table. This gives the number of hits, and the number of Hit Boxes to be crossed off the target's Hit Record, thus reducing its firepower. When all the Hit Boxes are crossed off, further hits are counted as "torpedo hits" (as are those sustained by actual torpedo attacks). For each such hit, the ship loses a movement factor; when the total torpedo hits equals the Protection Factor, the ship sinks due to accumulated damage. In addition, if a ship receives in one turn a number of hits equal to its Protection Factor, it sinks due to the overwhelming of its damage control capacities. Finally, there are Critical Hits. When a "G" is rolled on the Gunny Damage Table, a Critical Hit occurs and another Table is consulted. The result of this can be catastrophic (e.g., magazine explosion) or disabling (loss of movement or firepower partially or completely, temporarily or permanently). A similar concept is used with torpedo attacks.

Play procedure is otherwise simple. Ships are moved freely, with distances and turns measured by means of a Maneuver Gauge. The Germans move first, then the British. Fire is then resolved simultaneously, and each turn represents ten minutes.

Dreadnought is very definitely a board game. The playing area consists of six hex-gridded sections, 16 x 20 hexes short grain, which can be butted together as ships move off the edge of the board. Each hex is 1800 meters, each turn is fifteen minutes, and a Movement Point roughly 4 knots. Ranges are measured by counting hexes and movement is, of course, hex by hex. In this regard, Dreadnought is far superior in playability.

Capital ships (and groups of smaller ships) are represented by 1/4" square counters containing, among other information, Attack and Defense Strengths, plus Range and Movement Allowances. (In Jutland, all ships of a given type have the same range, indicated on the Range Finder). Combat is accomplished by a slightly modified one-on-one stage procedure. The Attack Strength is cross-indexed with the roll of two dice on the Damage Table to get a number of Damage Points. This number is divided by the target's Defense Strength to yield a Combat Ratio, or odds. The two dice are rolled and the Combat Results Table is consulted. Two kinds of hits are possible — a G hit reduces a ship's firepower by half, and an S hit does the same for its speed. A ship can accumulate only two hits of each kind, further hits being ignored. Hits are recorded by placing the appropriate Hit Marker counter on the ship. The only way a ship can be sunk is to roll a 12 on the CRT (a 1 in 36 chance for odds below 4-1), which allows another roll. If the additional roll is 7 or 11, the ship is sunk. Otherwise, it suffers 2G and 1S hits. This combat procedure allows the weakest possible unit, a damaged destroyer group, to destroy by gunfire any WWI vintage dreadnought and not a few WWII ships as well; all that is required is to get the right sequence of die rolls, the probability of which is on the order of 1/10th of 1%, depending on the ships. This is exactly what happened to HMS Tiger in a game I played. Jutland, in contrast, won't allow destroyers to shoot at anything but other destroyers.

The play procedure of Dreadnought is split simultaneous: each Player plots his fire at the same time, and then resolves it. They then simultaneously plot movement and execute it. Thus, G hits have no effect until the following Game-Turn, while S hits take effect in the Turn they are received. Following movement is a Damage Control Phase; ships can attempt the removal of one hit of each type by means of a die roll, with some restrictions. A ship can remove a total number of hits equal to its Defense Strength only, and wrecked ships (those with two G and two S hits) cannot remove any. It is thus necessary to keep a written record of damage removal for each ship.

The main difference in the games at the tactical level is in the treatment of damage. Jutland involves many small increments, which individually have little effect, but which are irremediable, and which, when accumulated, will destroy the ship. Dreadnought inflicts major damage with each hit, but makes it hard to achieve a hit; moreover, within limits, the effects of the hits can be negated and the ship returned to full efficiency. In Jutland it takes a long time to wreck a ship, but it is then on the verge of sinking; in Dreadnought, it is comparatively easy to wreck a ship and nearly impossible to sink it, although for victory purposes, a wreck is nearly as good.

The games have few tactical features in common. In Dreadnought, below certain ranges, a ship's firepower can be doubled or tripled, while it is halved at long ranges. Jutland instead doubles, triples or halves the hits scored, depending on range. They both have rules for smoke screens, torpedo attacks, variable visibility and towing. Other rules do not have equivalents, however. Jutland alone has rules for night combat. Only Dreadnought takes into account the deleterious effects on fire control both of being shot at and of several ships firing on one target. Dreadnought has arbitrary restrictions on movement that Jutland's Maneuver Gauge makes unnecessary.

Jutland has two major drawbacks compared to Dreadnought. It takes much longer to play, employing a lot of paperwork. It is also badly inaccurate insofar as scale is concerned. The length of a ship counter works out to 2500 yards; it should be about 750 yards to accommodate the ship and sufficient clearance for the next ship in line. As a result, ships in line ahead are spaced about three times as far apart as they should be. The tactical results are something like having a football team's five interior linemen spread from sideline to sideline. There are two remedies suggested in the rules: make up new Maneuver Gauges and Range Finders to fit the larger scale (which would require ten times the playing area) or stack the ships three high. This second solution is not too satisfactory, either; it places three ships in the same location (one of the drawbacks of Dreadnought's hex system), and adds another physical inconvenience to play, because the counters don't stack very well.

There are two major design differences in these games. Since Jutland covers only one situation, two fleets finding and fighting each other in the limited area of the North Sea, it can develop a fairly complex procedure for pre-battle maneuver, so that Players can attempt to "divide and conquer." Dreadnought has only a sketchy, abstract procedure for this, but one which can be applied to a wide variety of situations. Because it has to be so all-encompassing, it cannot use a combat system requiring much bookkeeping. Jutland, with 72 individual ships, plus cruiser and destroyer counters, is bad enough — pre-printed hit records for 235 assorted dreadnoughts, plus cruisers and destroyers, would be a nightmare. So Dreadnought confines itself largely to the operational level. Jutland has a complementary approach; pre-battle maneuver is complicated and tactical resolution is very involved, while the sheer number of ship counters, spread out and movable only by a physical measuring device, tends to make the operational aspects, the maneuvering of an entire fleet in combat, obscure and difficult to grasp.

In this respect, Jutland is the more accurate game. Besides the accuracy allowed by increased detail at the tactical level, the command problems inherent in handling a large fleet under conditions of poor visibility are to some extent recreated by the numbering task of just moving the units. Dreadnought does not employ any version of SPI's command control rules, and, since the mechanics of movement are simple and straightforward, intricate maneuvers are quite feasible and can be considered the main point of the game. The parallel lines-ahead slugging match is pretty boring in this system, so Players tend to try to outmaneuver the enemy in order to crush a weak point. In Jutland, maneuvers are tedious to perform, while the slugfest can be interesting, if not enjoyable, as you watch both fleets pound each other to scrap, hopefully his going faster than yours.

The designers of Dreadnought felt only rare accidents, such as magazine explosions, actually sank dreadnoughts in battle; anything else left a floating hulk that could be saved, no matter how battered, weather and enemy permitting. Jutland's designers felt that cumulative damage was equally important and put it into their design. Apart from this, their design follows the same lines: both games are equally valid representations of battleship combat on the operational level. Dreadnought is far more convenient to play, while Jutland has more to offer the naval enthusiast. Anyone interested in naval warfare should have both games in his collection. • •
DREADNOUGHT SUPER EXTENSION
Additional Rules for the Extended Campaign Game

by Arnold Hendrick

**Dreadnought** was designed to provide nearly endless enjoyment in its campaign and extended campaign format. With just a touch of numerical manipulation, one can play games of almost any length and complexity. Wargamers closely involved with modern naval data will realize that the values for warships in the game are rather curious, to say the least. However, like history, wargames are just personal interpretations and opinions; but even if you question it, that doesn't reduce the pleasure of working with a well-compiled interpretation, just as one might enjoy a history book, even if its arguments seemed far-fetched.

Just the same, a number of variations can be added to *Dreadnought*, especially in the campaign or extended campaign. These don't really add realism so much as they add complexity, and therefore, more considerations for the player. Little details like weather conditions, the gradually-evolving radar technology, the frequent failure of air spotting, etc., can enliven games that may eventually become dull otherwise.

Meanwhile, a few simple modifications for some ships can take into account some of the most extreme characteristics of a few warships in this period.

The Nelson (160) Class had all turrets forward of the bridge, and therefore may not fire into the stern arc with primary armament. Secondary armament may still be used in that direction. These ships still suffer the "-1" damage dice penalty for firing into the bow arc, as not all turrets could bear forward either!

The French Dunkerque (530) and Richelieu (540) Class dreadnoughts may not fire into their stern arc, as their two quad-barrel turrets were forward of the superstructure. However, these ships do have full firepower into the bow arc; they ignore the normal penalty in this direction.

Japanese heavy cruisers during WWII carried a large number of 24" torpedo tubes, enough so that two cruisers could launch a formidable broadside. Therefore, Japanese C60 and C70 Class units are allowed 1:1 torpedo attack ability, like destroyer units.

There is no torpedo range modification for the Japanese 24" torpedoes because their longer range was mainly effective in terms of increased speed, and therefore increased effectiveness at standard torpedo firing ranges (10,000 yards and under).

One British L20 and one Japanese L60 Class unit in early WWII was armed as a "torpedo cruiser" and may be allowed 1:1 torpedo attack ability if desired, at a cost of 8 points extra for the modification. The Japanese ship may be raised to 2:1 torpedo attack ability at a cost of 12 points instead. [Historically, the British "E" Class and Japanese "O" Class.]

**CAMPAIGNS**

The following suggestions and rules are proposed to enliven your campaigns, and suggest some new ideas for campaigning with peculiar fleets, or in peculiar regions (such as the Antarctic). Procedurally, the rules below should be included in the campaign or extended campaign process in the following ways:

Initial radar technology should be determined with the selection of initial fleets in any WWII era campaign. Radar technology should only be available to the six listed major powers. The variable construction rules can then influence the building schedules used for fleets.

The weather, visibility and air spotting rules, in that order, should be determined at the start of each battle/scenario in each campaign (or extended campaign Game-Turn). Each extended campaign Game-Turn is considered a new season, with an appropriate effect on weather.

The weather, visibility and air spotting rules make mention of various oceanic regions around the world. It is important that the location of the campaign be determined, as illustrated in the following list of potential campaign and extended campaign scenarios. In the list below total treasury value and maximum spending on the initial fleet are represented by two figures, such as 900/300, which indicates a total treasury of 900 per player, of which 300 per player may be used for the initial fleet. Unless otherwise noted, it is assumed that extended campaigns would have a maximum time limit of 12 Game-Turns.

A few campaigns suggested are multi-ocean "grand" campaigns. In these, some fleets are restricted to operations in specific oceans, with extended campaign Game-Turns played separately in each ocean. For example, a grand WWII campaign, with French and British fighting German and Austrians, might limit the French and Austrians to the Mediterranean, Germans to the Atlantic (i.e., North Sea), and the British to either as they desire. Each Game-Turn would be composed of a set of four Mediterranean scenarios, using warships assigned to that ocean (including all French and Austrians), and a set of four Atlantic scenarios, using warships assigned to that ocean (including all Germans). The British could assign a warship into either ocean as desired, and change assignments on each subsequent Game-Turn.

**WORLD WAR I VINTAGE CAMPAIGNS**

**British vs. Germans in the Atlantic,** the classic North Sea duel. A limited 1914-16 scenario of 700/200, 10 Game-Turns, and without the use of Classes 150, 230, 260 or 640 is possible. A full-war scenario using all Classes should be 1500/600 and 17 Game-Turns.

**Americans vs. Germans in the Atlantic,** what if the British had lost a "Jutland" type engagement disastrously in 1916 or 1917? 900/300 is reasonable, but 900/600 with 6 Game-Turns is another possibility.

**French vs Austrians in the Mediterranean,** a limited 450/200 scenario of 5 Game-Turns. French may use British 190 and 200 Classes, but no more than four in Austrians. Austrians should have use of Goeben (672), a second L50 Class (Breslau and other German consorts in the area), and, for play balance, a Spanish alliance with full access to the Spanish WWII fleet. Austrian light forces should be one C50 and one L50, not C10 and L10.

**French vs. Italians in the Mediterranean,** 1915-16. Italians are presumably part of the Central Powers, swayed by the German Goeben (672), which has joined the Italian fleet. A limited 300/200 scenario of 4 Game-Turns is reasonable. As a late-war variation, give the Italians access to Austrian capital ships and the entire Spanish fleet, drop the Goeben, and give the French access to the Russian 590 Class, which, presumably, has broken out of the Black Sea after Turkish collapse. Also give the French access to the full 190 and 200 Classes of the British.

**Entente vs. Central Powers, Grand Campaign,** Entente of Britain and France versus the Central Powers of Germany and Austria. Double campaign in the Atlantic (Germany, Britain) and the Mediterranean (Britain, France, Austria and any one German capital ship, along with any one German light ship, which may join the Austrian fleet in the initial deployment), 1800/800 with 17 Game-Turns. For play balance and interest, Central Powers may build units of the Italian fleet for Mediterranean service starting Turn Five, and Entente Powers may build units of the American fleet for Atlantic service starting on Turn Ten. The initial fleets may not use Classes 110, 230, 260, 640 and 150. [Note: don't expect to do very well playing the Central Powers.]

**Japanese vs. Americans in the Pacific,** spoils of WWI campaign, 1919-1925. 800/300 with 9 Game-Turns, allow the Japanese to build...
800 and 820 Class dreadnoughts, although they may not be included in the initial fleet. Technically, the Americans should have similar access to the 410 and 430 Classes, but this can be ignored or restricted if you feel the Japanese will have a lot of trouble matching the larger American forces.

**British vs. Japanese & Americans Grand Campaign**, over the spoils of WWI, 1919-25. Either a modest 900/300, or a grand 1500/900 game may be played. Simultaneous campaigns in the South Pacific, Indian and Atlantic Oceans, but Americans may not operate in the Indian and Japanese may not operate in the Atlantic, while British, of course, may operate in all three. The Japanese-American alliance should use Bravo (yellow) light forces, with access to all ships in the C50, L50, L60, D50 and D60 Classes. In addition to WWII fleets, the following capital ships are also available: 150, 271, 410, 430, 800, 820. For extra color, Brazil may be allied with the British, Argentina to the Japanese-Americans, and the fleets of these minor nations only allowed in the Atlantic.

**INTERWAR VINTAGE CAMPAIGNS**
The interwar period represented by the fleets is really the 1930's, and three interesting scenarios are possible.

**Japanese vs. Americans in the Pacific in the 1930's.** An excellent 900/300, 12 Game-Turn game, more balanced than it looks, especially as American strength can offset Japanese speed once the Americans build past 700 points. Assume that Game-Turn Five is fought in the North Pacific, the rest in the South.

**France vs. Italy in the Mediterranean, 1925.** The war over Ethiopia becomes a real war between African colonial powers, while Britain remains neutral. 600/250 and 9 Game-Turns. Although initial fleets are limited to those available in the interwar period, both sides may build using both interwar and WWII availability, although the French Richelieu (S40) Class may not be built before Game-Turn Three, as it was significantly behind the Italian Littorio Class.

**Japanese vs. British in the Indian in the late 1930's.** Another excellent 900/300 standard campaign. Allow the Japanese to replace the 800 Class with the 810 starting on the First Game-Turn, the 820 with the 830 on the Second. If the earlier version of the ship already exists, the Japanese player simply pays the difference in point value. If the earlier version exists, but was sunk already, no “conversion” is possible, and no points may be spent. If the earlier version does not exist (i.e., was not already “bought” for the fleet), the new version is bought at its full value. For variation, assume that Game-Turns Four and Eight are British adventures into the South Pacific, the rest are in the Indian Ocean.

**WORLD WAR II VINTAGE CAMPAIGNS**

**Japanese vs. Americans in the Pacific, 1939-45.** What if the American carriers had been sunk at Pearl Harbor, and the Japanese ones either damaged or improperly used? What if the war had started a couple of years earlier? A 1000/400 campaign, with 470 and 480 Classes entirely prohibited, while 460 Class and 482 (the Musashi) may not be in the initial fleets, but may be built. Assume that all Tours are in the South Pacific, except Turn Four, with an option for Turn Seven also being North Pacific if the Americans desire. Optionaly, allow the Americans to build units of the 470 and 480 Classes starting on Game-Turn Five.

**Japanese vs. British in the Indian, 1939-42.** Another interesting “what if.” A 900/300 10-Turn campaign may be appropriate. The 171, 172, 174, 175, and 842 may not be in the initial fleets, 181 may not be used at all.

**Germans vs. British in the Atlantic & Arctic, 1939-43.** The historical campaign 1200/300, 13 Tours. The 181 (Vanguard) may not be used, British may not use 170 Class in their initial fleet. For realism, the Germans may not be permitted the 740 Class in their initial fleet, but ultimately play balance may suffer. Normally action is played in the Atlantic, but on Tours 3, 7, 8, 9, 10 and 11, the Germans may elect for action in the Arctic instead. However, no more than four Game-Turns may be played in the Arctic in the whole campaign.

**Italians vs. British in the Mediterranean, 1940-42.** The historical campaign 800/450, 10 Game-Turns. British may not use 170 Class or 181 at all, Italians may not have more than two units of the 930 Class in their initial fleet (although, for less realism and more playability, allow this restriction to be dropped). No matter what you do, the Italians will have to work to win this one.

**British vs. Axis in the West, 1939-45.** The grand historical campaign. 1500/700, 15 Game-Turns. Mediterranean and Atlantic operations, British may operate in either, German Axis in Atlantic, Italian Axis in Mediterranean. Germans may elect to change Atlantic to Arctic operations on Tours 3, 7-11, and 13, if they desire, but no more than four Game-Turns may be so changed. No Mediterranean operations are played until Turn Three, hence the Italians are not involved in the first two Game-Turns. If, on any Game-Turn, both the Italians and the Germans win a decisive victory over a British force including dreadnoughts, and the British do not win any decisive victories against either in that same Game-Turn, the Axis fleets are presumed to link up, and Germans may operate in the Mediterranean, Italians in the Atlantic, freely. However, Italians may never operate in the Arctic. Initial fleet in this scenario may not include 170, 181 or 740 Classes. These ships may be built.

**France vs. Italy in the Mediterranean, 1940-41.** Presuming France retreated to Africa and continued the war with the Allies from its colonies. A small 650/300 game of 6 or 7 Game-Turns. For balance, 542 may not be in the initial French fleet, but may be built.

**France vs. Germany in the Atlantic, 1939-41.** What if Britain had remained neutral at the outbreak of WWII. A short 600/300 6 Turn game, or 700/350 with Brazil (WWII fleet) allied with the French, Argentina (WWII fleet) allied with the Germans. For realism, 540 and 740 Classes may not be in initial fleets, but may be built. Finally, make two “peace” dice rolls every Turn, not one, to represent the war-ending powers of the German Blitzkrieg.

**RADAR TECHNOLOGY**
This rule replaces the simple 12.21 rule in favor of a more variable system for an extended campaign. Radar is only used in WWII campaigns, never WWI or Interwar. Radar technology is represented by four different levels.

**Level 1:** Early search radar only, inexperienced officers do not make significant use of available radar.

**Level 2:** Early fire control radars available, allow firing up to 3 hexes beyond normal visibility, at penalty of minus four (-4) from damage table dice roll when resolving the attack. A level 2 radar may be installed on any capital ship or heavy cruiser (C00) for 4 points per unit.

**Level 3:** Improved fire control radars available. Allows firing up to printed maximum range regardless of visibility, penalty is minus three (-3) from damage table dice roll. May be installed on any capital ship or heavy cruiser (C00) for 4 points per unit, existing level 2 radars may be upgraded to level 3 for 2 points per unit.

**Level 4:** Excellent fire control radars available. Allows firing up to the printed maximum range regardless of visibility, penalty is minus two (-2) from damage table dice roll. May be installed on any ship, regardless of size, for 5 points per unit. Existing level 2 radars may be upgraded to level 4 for 2 points per unit, existing level 3 upgraded for 1 point per unit.

Players should note on a piece of scratch paper which units have which radars.

**Basic Campaign Technology Level:** In a basic campaign (not an extended campaign), each player rolls one die, and the number on that die indicates his level of radar technology. A result of 5 or 6 indicates no effective radar technology. However, if either player rolled a “4,” the other is automatically awarded at least a level 2 technology, even if he rolled less.

**Extended Campaign Technology Development:** The use of radar in extended campaigns is more complex, because it is assumed radar is being developed during the campaign. Radar technology levels should be kept secret, only being revealed when it is actually used. To facilitate this, a deck of
playing cards is used instead of dice, with players revealing the cards drawn only in-so-far as is necessary to prove the existence of radar they are using.

When initial fleets are chosen, each player should draw one card to determine his initial radar technology. A king, queen or jack of spades indicates level 2 technology, some other spade a level 1 technology, and any other suit, no radar technology.

During each build phase, in each extended campaign Game-Turn, players draw one card to determine improvements (if any) in their technology. If the drawing player’s current technology level is known to be less than the enemy’s, due to enemy radar use in battle already, an Ace, King or deuce (2) of any suit indicates an improvement of one level (if the player had no radar, it would indicate a level one technology). If the enemy’s radar is equal or inferior or unknown, only an Ace or deuce (2) of any suit allows an improvement of one level (or receiving a level one technology, if without radar at the moment).

**WEATHER**

At the start of each battle, in each campaign or extended campaign, a player rolls a die to determine weather (good or bad). To use the table, the season must be known. Normally, each extended campaign Game-Turn is a new season, with the first Turn being fall (thus, 2-winter, 3-spring, 4-summer, 5-fall, 6-winter, etc.). By mutual agreement, players may start in any other season they desire. In a simple campaign, just roll a die at the start of the campaign to determine the season, 1,2-spring, 3,4-summer, 5-fall, and 6-winter.

Good weather has no special effect on the battle.

Bad weather grounds all aircraft, preventing any aircraft spotting. It also renders any level 2 radars useless. It modifies the visibility table die roll.

Bad weather also reduces the Movement Allowance of all destroyer units in that battle by two. As soon as bad weather is known, but before visibility is determined or force markers placed on the map, players may secretly write on their force composition sheet that destroyers in the force suffering bad weather are “sent home.” Destroyers sent home do not participate in the battle, and may not be transferred to some other scenario in the same season (extended campaign Game-Turn). This “send home” is only allowed to destroyers, and only if bad weather is encountered.

See the weather table for oceanic regions, seasons and weather results.

**VISIBILITY**

Instead of simply rolling two dice and using the total as the base (minimum) visibility, roll two dice, modify as appropriate, and consult the visibility table. The table takes into account predominant weather conditions in various regions, tactical doctrine and, most importantly, is keyed around actual initial engagement ranges, which in good weather in daytime tended to be around 11-13 nautical miles, at night, 1-4 nautical miles. If the visibility table calls for a night battle, all normal combat and visibility rules are used, but air spotting is never available, and sun position has no effect, as there is no sun.

**AER SPOTTING**

In Interwar and WWII scenarios, air spotting for naval gunnery is possible, as per rule 12.22, but is not automatic (historically such spotting was extremely rare, the aircraft were more commonly used as scouts, and only rarely as ‘artillery observers’ in the classic sense). Instead, at the start of a battle scenario, a pair of dice are rolled, and the air spotting table consulted. The table will indicate whether none, one or both sides are allowed air spotting. Of course, in bad weather and/or night, air spotting is prohibited regardless of the table result.

**EXTENDED CAMPAIGN RADAR TECHNOLOGY CHART**

<table>
<thead>
<tr>
<th>Initial technology level is...</th>
<th>Initial technology level is...</th>
</tr>
</thead>
<tbody>
<tr>
<td>...K, Q, J Spades</td>
<td>...level two</td>
</tr>
<tr>
<td>...A, 2 - 10 Spades</td>
<td>...level one</td>
</tr>
<tr>
<td>...other suit</td>
<td>...level zero</td>
</tr>
</tbody>
</table>

To improve technology one level, when... draw must be...

| Enemy level is not known superior | A, 2 any suit |
| Enemy level known superior       | A, K, 2 any suit |

**WEATHER CHART**

<table>
<thead>
<tr>
<th>Region</th>
<th>Winter</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic, Antarctic</td>
<td>1</td>
<td>1-3</td>
<td>1-3</td>
<td>1-3</td>
</tr>
<tr>
<td>Atlantic, N. Pacific, Baltic</td>
<td>1-2</td>
<td>1-3</td>
<td>1-4</td>
<td>1-3</td>
</tr>
<tr>
<td>S. Pacific, Indian, Caribbean</td>
<td>1-4</td>
<td>1-5</td>
<td>1-5</td>
<td>1-3</td>
</tr>
<tr>
<td>Mediterranean, Black</td>
<td>1-4</td>
<td>1-5</td>
<td>1-5</td>
<td>1-5</td>
</tr>
</tbody>
</table>

Find the line for the region and cross-reference this with the column for the season. Then roll the die; if the result falls within the range indicated at the intersection of line and column, the weather is good. Any other result indicates bad weather.

**VISIBILITY**

<table>
<thead>
<tr>
<th>Region</th>
<th>Dice Total (two dice):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic, Antarctic</td>
<td>4n 1n 2n 2n 3n 7 7 8 8 9 10 9</td>
</tr>
<tr>
<td>N. Pacific, Atlantic, Baltic</td>
<td>1n 1n 4n 2n 6 7 7 9 8 9 10 9</td>
</tr>
<tr>
<td>S. Pacific, Indian</td>
<td>2n 1n 4n 3n 7 9 9 8 8 10 11 12 9</td>
</tr>
<tr>
<td>Mediterranean, Black, Caribbean</td>
<td>1n 2n 5n 3n 7 8 9 10 11 6 11</td>
</tr>
</tbody>
</table>

Number indicates the base (minimum) visibility in hexes, to which the usual single die roll is added each Turn to determine visibility that Turn. Modified die rolls less than “1” are considered “1,” over “13” are considered “13.” An “n” result indicates a night battle.

**Die Roll Modifications (add or subtract all applicable modifications):**

-2 bad weather (see Weather Table results)

+1 battle in 1914-1925 period (ignore if Arctic or Antarctic in summer)

+3 battle in 1942-1945 period (ignore if Arctic or Antarctic in winter)

+3 Arctic or Antarctic in summer (midnight sun effects)

+5 Arctic or Antarctic in winter (no sun)

-1 islands or other nearby land masses (may be considered a “standing modification,” or Players may roll to see if this is in effect; roll one die; “1” indicates it is in effect in most oceanic regions, but in Mediterranean, Black or Caribbean, and South Pacific, a “1,” “2” or “3” indicates it is in effect).
In campaign scenario “B,” the shore raid, south is prohibited air spotting regardless of the table result, unless it is British, American or Japanese from 1935 on, or Italian or German from 1942 on. This is because north would certainly have air protection for sensitive coastal installations, and only aircraft carrier support could overcome these measures, with the nationality-based rule representing those with sufficient carrier strength to include such in a shore raid operation.

In campaign scenario “C,” the convoy situation, north may only have air spotting if south also has air spotting. South may still have air spotting, regardless of north’s situation. This is because air spotting for one side only represents an air superiority situation, and it is presumed that south would avoid routing a convoy through an area where north would have air superiority. This particular rule may be waived under certain circumstances, mutually agreeable to both players, such as German-British Arctic operations in WWII, where British convoys were forced through an area of German air superiority, and for a short period, no carriers were available to balance the situation.

**DAY/ NIGHT OPERATIONS OPTION**

When planning force operations in a campaign (or extended campaign Game-Turn), in any, each and/or all of the scenarios, a player may specify “day only” or “night only” operations. However, in the WWII (1914-25) period, “night only” operations are prohibited (however, he may choose not to specify either day or night, and leave open the possibility of a night battle).

If one Player specifies day or night, and the other specifies the same choice, or no choice, the battle automatically occurs as specified. Therefore, if a player specifies day, he ignores any “night” visibility results and continues until a night result is achieved, and vice versa if “day” is specified.

If players specify opposing choices in a Sea Sweep (A,D) scenario, the action is presumed to occur at dawn or dusk, with players rolling a die, the high roller selecting dawn or dusk. Visibility is automatically “6” (do not use the visibility table), although the normal single die is added each turn for actual turn by turn visibility range. Furthermore, the Sun Position rule (12.5) is automatically in effect for the entire battle.

If players specify opposing (day-night) choices in scenario B, the shore raid, the south or raiding player automatically receives a substantial victory and is awarded full bombarding ability by all his capital ships. There is no battle, as the bombardment presumably occurred during the period when north refused to patrol.

If players specify opposing choices in scenario C, the convoy, the north or intercepting player automatically receives a substantial victory, the whole convoy is considered intercepted and sunk, and there is no battle, as the interception occurred while the escort was off station.

**VARIABLE SHIP CONSTRUCTION SCHEDULE**

Normally, all warship construction is planned before the start of an extended campaign. Using this rule, only some construction must be so planned, the rest can be planned as you “go along.”

Following the normal rules, all construction for the first five extended campaign Game-Turns must be planned before the start of the First Game-Turn. Construction for the Sixth or later Turn may also be planned if desired.

During the build phase of each extended campaign Game-Turn, additional ships not yet slated for construction may be planned. Destroyers cannot be planned for a time earlier than two turns beyond the current one (add 2 to the current Game-Turn, and that is the earliest time when new destroyers may be planned). Light cruisers require three turns beyond the present, heavy cruisers, four turns, and dreadnoughts, seven turns. (Note these times, based on one Game-Turn equals three months, are about half the actual time required).

All construction due in a given extended campaign Game-Turn building phase, both initially planned and later planning, may still not exceed 100 points. If more than 100 is planned, then some units must be “postponed” until the next Turn, so that units actually built don’t exceed 100. Units may continue to be postponed Turn to Turn, even indefinitely. However, units still under postponed status when the game ends have their full value deducted from the final treasury, and therefore, do cost the points in the end. There is no financial advantage in postponement.

**SHIP DESIGN**

Using these rules, players are considered the chief naval officer in a mythical state, where they must design ships, rather than select them from available types. Generally, this type of variable ship design best fits an extended campaign, where the initial fleet value is doubled (with an overall increase in treasury points, as a result, for example, a typical campaign would be 1200/600), and before the initial fleet is built, the player must establish designs for all the types of warship weaponry, hulls, and light forces he wishes to use.

Procedurally, players should take turns designing new hulls, weaponry or light ship classes, with the results public, not secret. For example, one player designs a battlecruiser hull with high speed and little armor, so the other decides he needs one, and also designs one. When both players are satisfied they have all the designs they need, play proceeds to the choice of initial fleets. Optionally, players may use a “secret design” process, but this is not recommended.

It is important to understand the differences between design and actual ships. To pay points for a design allows you to build ships composed of certain elements (weapons of

**AIR SPOTTING AVAILABILITY**

<table>
<thead>
<tr>
<th>Time</th>
<th>Region</th>
<th>Modified Dice Total (two dice)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929</td>
<td>mpcb</td>
<td>N</td>
</tr>
<tr>
<td>1934</td>
<td>other</td>
<td>N</td>
</tr>
<tr>
<td>1939</td>
<td>mpcb</td>
<td>N</td>
</tr>
<tr>
<td>1940</td>
<td>mpcb</td>
<td>N*</td>
</tr>
<tr>
<td>1941</td>
<td>other</td>
<td>N*</td>
</tr>
<tr>
<td>1942</td>
<td>mpcb</td>
<td>N*</td>
</tr>
<tr>
<td>1945</td>
<td>other</td>
<td>N*</td>
</tr>
</tbody>
</table>

mpcb = in Mediterranean, S. Pacific, Indian, Black or Caribbean regions; other = any other oceanic region. N = North Player only allowed air spotting, S = South Player only, B = both Players. * = Player only allowed air spotting if his force includes cruisers (C and/or L type units).

**Die Roll Modifications:**

—1 South Player is outside friendly waters, but North Player is not.
+1 North Player is outside friendly waters, but South Player is not.

Friendly waters for British include Atlantic and Indian; Americans, the S. Pacific and (in WWII) N. Pacific & Atlantic; French, the Mediterranean; Russians, the Baltic & Black; Germans, the Atlantic & Baltic, and (in WWII) the Arctic; Italians, the Mediterranean; Japanese, the S. Pacific. All other states are considered without any friendly waters. Ignore die roll modifications for friendly waters in contests between mythical states, unless a special definition is made.
A player may design up to eight different weapons systems, two in each class. However, no light or heavy class weapons may be designed unless at least one medium or medium-heavy design already exists. Secondly, a player may not make a second design in any class until all classes have at least one design.

To use the table below, roll the die or dice and add the value shown to determine attack value, then roll again and add the value shown to determine range. "d" indicates that one die is rolled, "dd" that two are rolled.

**BUILDING DREADNOUGHTS**

To build a design, a player simply combines any one hull design, and any one weapons system. A player may reduce the defense value of the hull design by one, two or three if he desires, to "save" points. The attack, range and movement values in designs may never be altered. Note, however, that two different hull designs and two different weaponry designs allows four different ship classes.

In the WWII period, players may wish to limit "4" Movement Allowance hulls to just light and medium weapons, and prohibit the mounting of heavy weapons on "8" movement hulls.

The cost of the design has no effect on the cost of individual ships. Point value for a unit is still the total of the attack, defense and movement values.

**DESIGNING AND BUILDING LIGHT FORCES**

Players select at random whether or not they will use the Alpha (blue) or Bravo (yellow) light forces. To compensate the brave player for poorer quality material, the entire C60 class is presumed to have 1:1 torpedo attack ability, at no extra point cost.

To design a light ship type, a player simply pays a point value equal to one ship of that type. Then, to build units, a normal point value is paid for each unit built. However, a certain continuity in light ship design is necessary: within the general category of destroyers, light cruisers or heavy cruisers, classes of higher level (higher 10's digit) may only be designed if all lower classes have been designed. Thus D40 cannot be designed until D10, 20 and 30 have been designed. C60 cannot be designed until C50 has been designed. In WWII games, the only "designable" classes for alpha are C10, L10, L20, D10, D20. The only "designable" classes for bravo are C50, L50, L60, D50, D60.

In the Intervar period, classes C10 and C50 are considered already designed, but outmoded, and therefore no ships of these classes may be built. All other classes may be designed and built at normal cost. In WWII, classes C10, L10, D10 and C50, L50, D50 are all considered already designed, but outmoded. All other classes may be designed and built at normal cost.

**WARSIP NAMES**

One small pleasure in dreadnought design is thinking up names for your ships, as well as the mythical nation they serve. Ferocious animals, famous men and descriptive adjectives, often relating to power or strength, are the most common words used. However, often ships are named after cities, provinces and states in your nation. A political atlas of the world can do wonders in this department, as the English transliterations of other languages, especially those outside the Indo-European family, always seem to have a romantic sound, such as Shiraz, Tucuman, Rimbaba, Krivy Rog, Atbasar, M’tla, Colomb-Bechar, Almansa, Altun Kopru, Zagora, Anshan, Yarkland, Chita, Chenkang, Mogok and thousands more.
WAKE
by Bryan Madsen

Using JagdPanther's game MARINE, you can recreate
the Japanese invasion of Wake Island.

Wake was defended by a hodgepodge of units that
included Marines, a few 5 inch naval guns, some 3 inch AA
guns, and a large number of 30 and 50 cal. machine guns.
Helping the Marines were armed civilians. These civilians
were conscripted for labor, building the airstrip
and were caught when the Japanese attacked.

The Marines set up first anywhere on the map, forces
are: 10 Marine, 5 Security (civilians), 2 MG nests, 2
Howitzers (direct fire only) and 2 AA units.

The Japanese attackers consist of: 37 Army, 4 MG u-
its and 5 Mortar, 3 destroyers are available for sup-
port starting on turn 3. Four airstrikes are also available
on turn 5. To carry the units to shore use 17 LST units
except lower the defense factor to 3. You may, as
did the Japanese, have problems getting all your troops
to shore if too many of your landing craft are sunk in the
first wave. The game lasts 15 turns. Victory condi-
tions are: To win the Japanese Player must destroy all
but one Marine and two Security units by the end of the
game. The Marine Player wins by avoiding this.

You may also want to add a "Marine ferocity rule".
The Marines on Wake had taken 18 straight days of bombing
after beating off the first Japanese attack. To put it
bluntly, in a morass they went out after not try-
ing to retaliate. After five turns the Marines have
one attack point added in a normal attack and 3 added
when attacking hand-to-hand. The Japanese will really
have to work to take the island and will probably suffer
casualties similar to those in the real campaign.

UNBALANCED
NAVAL SCENARIOS
by Clifford L. Sayre, Jr.

Balanced scenarios provide a good way to learn rules
and have a good game without favoring one side or the
other. However, as both players become skillful, the use
of balanced engagements tends to produce either a stale-
mate or mutual elimination. The rules to DREADNOUGHT, by
SPI, suggest a point system to provide balance. (A vessel
' s points is the sum of its offensive strength, defen-
sive strength and movement allowance.) This method works
well, but tends to produce rather homogeneous results if
both players use similar types of ships. This article con-
tains some suggestions for trying Unbalanced scenarios in
DREADNOUGHT, CA or navel miniatures with the proviso
for compensating for the apparent unbalance. A certain
amount of experimentation may be necessary to quantify
the amount of compensation necessary for a particular
game or type of tactical situation, but the expanded var-
ety of possible actions is worth the experimentation.

A very simple way to provide a balance between
several small ships (such as DDs and CLs) in action with
a smaller number of heavy ships (such as CA, BBs or BSs)
is to hold the engagement with limited visibility. Fog,
weather or night can be used as a reason to limit the
range capability. Although the smaller ship's guns may
not be very effective, they will have some opportunity to
use their torpedoes without getting blown out of the wa-
ter or having the ship blown up by a suicide mission. Another
method is to handicap a large ship with some initial hull
and or ammunition handling. An adverse die roll corre-
cction (to represent fire control limitations) or limiting
fire to every other or every third turn (to represent
handling difficulties) will tend to moderate the strength
of one or the powerful opponents.

One very effective limitation is to permit large ves-
sels a very restricted number of turns in the game. Thus,
the more powerful elements must be employed skillfully
while they are available. For example, a convoy scenario
might involve a sequence of attacks by aircraft, pocket
battleships, a cruiser force, etc. Any one of these
forces might easily overwhelm the convoy if permitted on
the board for a whole game. However, if they are permitted
only four or five turns to "do their thing" and must
exit the board, the situation will be much more equitable.
The same rule for which an action could be lack of fuel or am-
munition, impending air attack or the presence of larger
friendly forces in the area.

The use of a campaign game can provide the basis for
having unbalanced engagements with the possibility for
shifting the balance of forces in another encounter.
Thus, a side which commits heavy forces in the initial
stages of a campaign may wind up short-handed in the
later phases. In addition, the use of a campaign game to
link a succession of tactical games also tends to lessen
the unrealistic tendency toward suicidal missions which
often occurs in a single game near the final turns be-
cause the weaker side has nothing to lose. If both sides
have to look forward to future battles (with only limited
repairs or replacements) they will be much more conserva-
tive in their tactics and less prone to Kamikaze tactics.

What we have tried to illustrate is the principle of
unbalanced, but compensated, scenarios. These engagements
are interesting and challenging because they call for dif-
ficult playing tactics by the opponents. If the compens-
ating features are chosen carefully, both sides will have
a chance of winning.

PANZERARMEE
AMPHIB
by Phil Kosnett

Though no amphibious operations were ever launched
during the North African campaigns, (not counting Torch,
which was a rather special case) the British did, from
time to time, toy with the idea. They were discouraged
for several reasons. There was a world wide shortage of
landing craft, it would have diverted troops and supplies
from the main front, and the Regia Marina (not to men-
tion the U-Boats) could be counted on to interfere. Nev-
evertheless, the possibility of such an invasion, launched
to cut the coast road behind the PanzerArmee, was kept in
mind by both sides during the campaigns. This can be illus-
trated in the SPI game, PANZERARMEE AFRICA.

The possibility of invasion would have depended on
several factors: who held Malta; who held Tobruk (a good
U-Boat base); the availability of Allied troops, supplies
and landing craft; and the weather. The chart below shows
the probability of invasion under varied circumstances.

<table>
<thead>
<tr>
<th>EASTERNMOST AVAILABLE</th>
<th>REQUIRED ROLL FOR INVASION</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Agheila</td>
<td>1-5</td>
</tr>
<tr>
<td>Bengasi</td>
<td>1-5</td>
</tr>
<tr>
<td>Derna</td>
<td>1-4</td>
</tr>
<tr>
<td>Tobruk</td>
<td>1-2</td>
</tr>
<tr>
<td>Bardia</td>
<td>1</td>
</tr>
</tbody>
</table>

If the Axis hold Malta, add three to the Allied die
roll. If in November, December, or January add one. Ad-
ditions are cumulative. Also, for invasion to be allowed,
two supply units must be present in Alexandria. If an
invasion is deemed to be possible, up to three infantry bri-
gades and one supply unit (which must have been in Alex-
dria) can be landed on any clear terrain hex, within fif-
teen hexes of the westernmost supplied Allied unit. For
example, if the westernmost Allied unit is in Tobruk,
the invasion could take place as far west as hex 2313. The
invading units may move no further, and may not attack,
on that turn. The invasion cannot be launched against an
enemy occupied hex. Supply can be traced to the invasion
hex as to a port, but only a maximum of two divisions can
be supplied through it. Sea movement is impossible the
turn of the invasion. One infantry regiment per turn may
be shifted in as follow-up troops. If the invasion axis
is occupied by the Germans, the units are out of supply
and lose command control for that turn. In short, they
are wiped out.
SOLDIERS Morale

by Clifford L. Suyre, Jr.

The following rule module introduces some of the aspects of morale into the play of the game. The capabilities of a successful attacking unit are enhanced and the combat strength of a losing unit is degraded. Similar rule modifications could be employed in other games as well as SOLDIERS, for which it was developed. The rules are formulated in terms of die roll modifications. There are two improved morale states and two diminished morale states plus the normal state.

Record-keeping is greatly simplified by using square pieces of colored paper slightly larger than the units. In this way, their morale state can be seen at a glance. Although the rule module appears lengthy, the application is quickly and easily learned. Most of the rule module deals with clarifications of special situations and explanations of the intent of the rules. The following colors are used: Gold, Blue, Pink, Green. Additionally, another color can be used to indicate the horses of dismounted cavalry units.

Morale Rule Module

1. When a friendly unit participates in an attack which produces the disruption or elimination of an enemy unit, the unit is awarded a morale bonus.
   a) First success = blue award (not effective until the next Combat Phase).
   b) Second success = gold award. Units with gold award receive 1 extra movement point.
   c) The gold award replaces the blue and is the highest state of morale. Additional awards have no additional effect and may not be accumulated to offset future loss.

2. When an unit is disrupted as a result of combat each receives a morale penalty.
   a) First disruption = pink penalty.
   b) Second disruption = green penalty and loss of one movement point.
   c) Green is the lowest state of morale and future disruptions have no effect on it.

3. Record keeping is by small pieces of paper and does not take effect until the next mutual fire phase.

4. Awards offset penalties and vice-versa.
   a) A unit which disrupts an enemy unit and is itself disrupted in the same phase is not affected for morale but is still disrupted.
   b) A gold morale state which is disrupted reverts to a blue state. A unit of the green level which successfully disrupts an enemy unit is upgraded to a pink level.

5. Morale is not affected by attacks resulting in no effect.

6. The effects of combat on one state of morale or another are as follows:
   - Gold State = add 1 to the die roll
   - Blue State = add 1/2 to the die roll
   - Normal = no effect on die roll
   - Pink State = subtract 1/2 from the die roll
   - Green State = subtract 1 from the die roll
   - The effect is cumulative. If a gold unit is attacking a green one, the die roll is shifted by two. If a blue unit is attacking a pink one, the roll is shifted by one. Drop fractions of die roll shifts.

7. When a group of units attacks, it is assumed to have the morale of the unit with the highest state. When a stack defends, it is assumed to have the lowest morale in the stack. Attacking artillery has special considerations covered later.

8. The change in movement factor applies only to the unit affected, not to other units in the stack. Machine gun and artillery units and Infantry which lose

9. Artillery:
   a) When firing at a range of 10 or less artillery accumulates bonuses.
   b) Artillery firing at a range beyond 10 hexes does not receive awards, nor may any bonus it has affected on an attack in which it is participating with other units.
   c) An artillery unit with a morale penalty firing at any range feels the effect of that penalty, and is if applicable considered the lowest unit.
   d) Artillery suffers when disrupted regardless of the range of the attacking unit.

10. Units in the gold state which do not conduct an attack, even if NE, for two turns are lowered to the Blue state.

11. Units in the gold state which successfully attack run a 1/6th chance of becoming overzealous. If this occurs, the unit is marked with a red marker and must, on all subsequent moves until reduced or destroyed, move toward the nearest enemy unit and attack it. It is considered to be a gold unit for this attack and if reduced becomes a blue unit. The unit gains two movement points and must expend them all or end its movement adjacent to an enemy unit. If there is an enemy artillery or machinegun unit within reach, the overzealous unit must move adjacent to it.

12. Upon capturing the scenario main objective all units of the scenario player gain a morale step except gold units which run a double risk of becoming overzealous and charging something.

13. If 25% of a players units are lost, all lose one step in morale.

14. Green units which are further disrupted run a 3/6ths chance of destruction.

15. If a player loses 40% of his units (green state units count as half destroyed in this case) all units lose a morale step.

Flight of the DREADNOUGHT

by Scott Rusch

The classic chase of the German Battleship Goeben in the first days of WWI has been represented in many games including at least one specifically on the subject. The Goeben is included in the game DREADNOUGHT, you can use your own judgement in selecting a light cruiser as a consort. In the actual case this was Breslau, but the duty was rotated occasionally and a different ship could have been present. Additionally, the Goeben could have been in the company of Italian or Austrian ships. The British almost managed to intercept the Goeben in the Aegean, but she slipped away. To reflect this, put Goeben on DI 108, at a speed of NE 5. Indomitable, Inflexible, and Indefatigable should be at DZ 001 at SE 5. Visibility is as in 11.7. Goeben must reach the North Safe Zone to win.

If Goeben had, instead, attempted to join the Australian fleet, she would have encountered four old British cruisers (which at Jutland proved highly susceptible to heavy caliber fire) the Defence, Black Prince, Warrior, and Duke of Edinburgh. Use D 11, L13, L16, and 64. Their strength is tripled at range of 3, doubled at range of 2. For a more involved scenario, add the three British BCs and some Austrian ships.

If Goeben had gone for the French Convoy bringing Colonial Corps to France, all British are presumed to be charging the wrong shadow, and Goeben and consort face the French. Use D 105, and 500 series BO of their choice and D 11,L 11. The convoy is worth 50 points, and victory is as outlined in 11.4.
MERCHANT RAIDER
by Jim Bumpas

One aspect of the game DREADNOUGHT which was overlooked by the publishers was the Merchant Raider, such as von Spee's East Asia Cruiser Squadron, the Emden, or the Goehren. This situation has now been presented as a scenario for the Campaign game of DREADNOUGHT. As the British are the only people trying to keep up an active Merchant Marine, the Germans are the only ones allowed to have raiders. The British only ones to have hunters. Raiding may be single or paired Capital ships, or Screeners, but only two countries may be assigned to this duty, the less available for other scenarios.

Before Play begins, the British Player announces how many dice he will roll to search the area in question. He may roll up to one die for each hunter group. A roll of six is required to find the Raider, and if more than one raider is present, only one is found by each group. If two groups find a single raider, then fight it successively, not together. The German receives one victory point for each turn that the British spent searching, including the turn the raider was located.

If there are other raider groups assigned to the scenario, the German Player also receives one victory pt. for each turn until they are found. All encounters between raiders and hunters are played out separately. No other raider or hunter may join the action.

To begin the scenario, the German player places his ships on hex E 1101. The British Player rolls a scatter pattern (one die for direction, two for distance) placing his ships on the hex designated. Enemy ships are then placed facing each other bow on, at any speed desired. The distance determined is used in the die roll also the base visibility for the scenario. Next, the German player publicly rolls another scatter pattern, with distance x10 to tell both players the distance and direction to a neutral port, in which the German can hole up. Obviously it would be preferable to escape to the open sea. If the German ships escape, twenty victory points are scored, if they reach the port, ten. Victory points are scored as in rule 9.5. A Raider is assumed to have escaped to sea if he can stay outside of base visibility range of any British ship for four turns.

CAMPAIGN DREADNOUGHT
by Jim Bumpas

SPI's recent game DREADNOUGHT includes an abstract campaign game which is rather obviously patterned around the first World War. This is necessary for those who wish to try the South American Dreadnoughts or the Russians vs the Japanese, but for those wishing a more accurate simulation of the main event, the following modifications to the extended campaign game should prove worthwhile.

First, one must divide the world into the following theaters: North Sea/North Atlantic; Baltic; Mediterranean; South Atlantic; Indian; Far East; and Pacific.

The Central Powers have the use of the German and Austrian fleets, the Allies have the British, French, and Russian fleet. The American fleet can be added on turn 8, but tends to ruin the game and can be left out. The Japanese fleet patrols the areas around their possessions and the home islands. It can be assumed that the various actions take place outside of their patrol areas. The Germans may deploy ships on shore patrol duty, and may deploy one or two capital ships and one Screener, but only on the Med. The Turks and the Russian Black sea fleet are assumed to be keeping each other at bay.

The Italian fleet can join either side or just sit out the war. At the start of each turn, roll two dice for the Italians. On a roll of 2-7 they join Germany, on a roll of 8 they remain neutral one more turn, on a roll of 9-12 they join the Allies. Each turn that they remain neutral, decrease the chance of them joining Germany by 1 and add this to the chance of neutrality. For example, on the second turn the chance of neutrality would be 7-8, of joining Germany 2-6.

Fleets are now deployed. The Germans can deploy in the Baltic or North Sea/North Atlantic, Austrians and Italians in the Med/French in the Med (according to the treaty they were to leave the North to the Brits), the British can deploy just about anywhere, the Russians in the Baltic (the Black sea fleet is not used). The British, by the by, can't deploy in the Baltic.

The game consists of 12 megaturns, each representing six months. Historically, the ground campaign forced the central to give up on turn 10. Each Scenario begins by the British deciding where to transfer their units. With the exception of the British and the British can send their fleet anywhere. This will mainly be used to track down the German Merchant Raiders. Next, the French may transfer more than 10% of their victory point value to the North Sea/North Atlantic to reinforce the British. Next a die roll determines where the major action will be in this megaturn. This replaces complicated rules to show who was at sea where and fought whom. The roll is as follows: 2-3 Baltic, 4-5 Merchant Raider Scenarios only, 6-8 North, 9-12 Med. After this, the Germans can transfer ships up to 25% of their victory point totals from the Baltic to the North or vice versa.

When the players have determined the location of the major action this turn, they apportion their ships among the four scenarios. The Mediterranean Scenario will take place every megaturn even if nothing else does. Roll one die for this. The theaters are: 1-2 South Atlantic, 3 Indian Ocean, 4 Far East, 5-6 Pacific. Play then proceeds in accordance with the standard rules and the modification for Merchant Raiders presented elsewhere in this issue.

The 6th Army at KURSK
by John Burns

If Hitler had not waited a week to allow Stalingrad to be relieved, Hoith's Panzergruppe may have been able to break in, saving at least the cadre units from the Sixth Army. These forces, presumably, would have been used in halting the Russian drive, then yanked out of the line to rest and be rebuilt into their usual strength. If such a force had been available to reinforce the German forces at Kursk, the battle may have become the finally decisive one of the war rather than sharing the honor with Stalingrad, the battle itself may have come out somewhat differently. Use SPI's game KURSK.

The Sixth Army, with its attached Panzer Corps, can be reasonably approximated as two 10-8 Pz Divs, one 8-8 Mechanized Division and seven 4-8 Infantry Divisions. It might also be realistic to increase the German Air power by adding an air ground attack unit or two.

The Ride Into INDIA
by Bryan Madsen

Presented along with the game MARCH ON INDIA 1944 were a set of interesting rules for the employment of a Horse Cavalry Division available to the north of the campaign area. What is missing from these rules are the supply units of the Cavairy. Two such units, each 0-2-6, represent the pack horses available. These include 20 factors of supplies each, but these are reserved for use by the Cavalry Division only. Additionally, a 3-6 Horse drawn light artillery unit should have been included.
THE MARCH ON INDIA, 1944
DREADNOUGHT

by Clifford L. Sayre, Jr.

DREADNOUGHT, SPI's new tactical naval game, is an excellent companion game to CA. It is not exactly a replacement since there are some features of CA some players will prefer to retain. The concept of damage control repairing a limited amount of damage is very good. The campaign rules and scoring ideas are also useful. However, the lumping of two or more CA's, CL's or DD's into screen size makes it possible for the player to lose the battle of medium and small size units as individuals. I suggest using DREADNOUGHT's movement and damage control with CA units or CA variant units such as SEEKKRIEG in JagdPanther No. 8.

As a tinkerer, I have found some situations not covered or propose alternatives to the given rules. The visibility rule idea is great. However, instead of always adding the die roll to the base value to get the number of hexes of visibility, ...ADD an even die roll to the base, or SUBSTITUTE an odd die roll from the base number. If the base visibility for North Sea scenarios is set at ten hexes, the proposed change produces some interesting effects. As a replacement for Rule 6.13 (two ships attempting to enter the same hex), let the ship with the larger defensive value have the hex rather than roll a die. Screening units are unlikely to dispute a piece of ocean with a capital ship.

No screen unit should benefit from range effects at a range increment which includes its maximum range. For example, a screen unit with a maximum range of 3 or 4 would not double at 3+ hex range. The unit would double (not triple) at 1+ hex range. If a screening unit gets too close to a capital ship, it may not be able to conduct a viable attack, but the fire of the screen unit can be used to produce a -2 on the capital ship's die roll in what otherwise might be an unhindered attack.

Here are some additions to the brief rules for secondary fire (Section 8.4). If the capital ship has 1D damage, subtract 2 from the die roll on the 1:1 secondary battery attack. If the capital ship has 2G damage, subtract 4 from the die roll on the 1:1 secondary battery attack. If the capital ship is under fire, subtract 1 from the die roll in executing the 1:1 attack. The die roll corrections for under fire and 1G or 2G damage are additive. In section 8.5 substitute G for W in the discussion of the effects of damage on torpedo attacks.

The following combinations of units can be used to produce several interesting scenarios. The sides are balanced in the sense that the total point values are very close.

German:
Div 1 - Goeben, Wolke, Seydlitz
Div 2 - Thuringen, Helgoland, Westfalen
Screen - CS1 (or CS1), 2 X DD60

British:
Div A - Queen Mary, Princess Royal, Lion
Div B - Benbow, Iron Duke, Emperor of India
Screen - C11, 2 X DD20

Div 1 vs Div B, plus screens is a contest of BB's versus BB's as is Div A versus Div 2, Div 1 versus Div A is a battlecruiser contest, whereas Div 2 versus Div B (plus screens) is a battleship engagement. The use of both divisions on each side provides for a scouting force plus line of battle. The possible scenarios are interesting because the speed and range differences make for some interesting situations. Use an A+B over C+D initial board setup. Have the British enter from A, the Germans from D and maintain initial course and speed until initial visual contact is made. Use ten hexes for base visibility and the rule for changes suggested above. Run the battle for 15 turns and determine victory by points (Section 9.5).

X 2 =

by Richard L. Nataka

Below are listed some additional rules and a Modified Sequence of Play that is needed for this Dreadnought Scenario. This Scenario will help you to get an understanding of the game system that is used in Dreadnought while at the same time creating a challenging situation to play. The Japanese units movement system is strictly mechanical and you are never sure of its path from turn to turn. You do have to let your units get too close to them. The American units are moved by you the Player in an attempt to keep the Japanese units from exiting the other side of the map. The American units are hard pressed to keep the Japanese units from winning this game and only by skill can they hope to win.

Initial Forces:
Japanese: Yamato, Nagato, D-51 and D-52
American: Wisconsin, Texas, Utah, D-16, D-17 and D-18

Map Location:

A B C
D E F


Victory Conditions:
The Japanese side wins by exiting any one unit off of either Map A or B or by destroying 3 American units. The American side wins by preventing the Japanese Victory.

Special Rules:
Modified Sequence of Play:
1) Damage Evaluation Phase: Turn markers right side up that received hits during the preceding phase and try to recover hits.
2) Combat Phase: Each side conducts attacks on units that are within range and consults charts for damage that is inflicted. Place counters for damage face down at this time to be turned up during the next Damage Evaluation Phase.
3) American Movement Phase: The American units are now moved in accordance with the Standard and Special Rules dealing with Movement.
4) Japanese Unit Movement: The Japanese units are now moved in accordance with the Special Rules dealing with Movement.

Combat: Japanese:
Japanese Dreadnought units may split their attack strength in half and fire at a maximum of two units if they are within range during a turn. Each of these attacks are handled just like a normal attack. Torpedoes: If any American unit comes within the range of a Torpedo attack from a Japanese unit at any time during the game turn that Japanese unit automatically executes a Torpedo attack on the American unit that is within its range.

All Japanese units attack the American unit that is closest to them and if there are two units the same distance away then the unit with the weakest defense strength is attacked. If both have the same defense strength roll a die and high roll wins and receives the attack.

Movement: Japanese:
Japanese movement is mandatory in this game and is determined by rolling a die. Rolling a 1, 3, or 5 and the ship turns one hex counter clockwise at the end of its move. Rolling a 2, 4, or 6 and the unit in question turns clock-
wise at the end of its movement. All die rolling for the Japanese units is done before moving that unit and a die is rolled for every Japanese unit that is presently on the board. Turning is done in the last turn that is entered so that the first hex that is traversed on the next game turn will be chosen during this game turn. All Japanese units move at a constant speed of 6 unless damaged by Combat during that phase. If it so happens that a Japanese unit enters a hex with an American unit the Japanese unit will automatically fire a Torpedo at the American unit if it can and if it not it attacks normally during the Combat portion of the turn.

Well, this is the Solitaire Scenario for Drosnought and after getting the feel of it you can try your own ship mixture creating your own Scenarios some of which will be able to win and others you may not. The one thing to try and remember is that you cannot make it too easy to win otherwise you will soon lose interest in it.

**Once More into Third Reich**

By Andrew J. McElwaine

The following is a scenario for Third Reich. It starts in Spring 1941 and ends in Spring 1943. This scenario encompasses the Nazi attack on Russia, the North African campaign, the Balkans campaign and the possible Operation Sealion. Germany and Italy are at war with England. The U.S. enters this game in the same fashion as in the Campaign game.

**BRP's are as follows:**
- **Germany:** 268
- **Italy:** 75
- **Great Britain:** 132
- **U.S.S.R.:** 120

**Initial Setup:**
- **Germany:** At Start: 20 3-3's, 8 4-6's, 3 9 factor fleets, 4 5-4 air, 1 3-3 prcht.
- **Restrictions:** Fleets must be in either Baltic, North Sea, or Atlantic.

**Force Pool:**
- **1941:** 4 4-6's, 8 3-5's, 1 9 factor fleet, 2 5-4 air, 8 replacement.
- **1942:** 2 5-5's.

**Control:**
- **Norway:** Netherlands, Denmark, Belgium, Luxembourg, France, Poland.
- **Italy:** At Start: 2 2-5's, 2 3-5's, 3 2-5's, 6 1-3's, 5 9 factor fleets, 2 5-4 air.

**Force Pool:**
- **1941:** 1 2-5, 1 9 factor fleet, 1 2-3 prcht, 6 Replacement.
- **1942:** At least one 1-3 in Albania, at least two 1-3's in Libya, all fleets in Mediterranean.

**Control:**
- **Sardinia:** Corfica, Albania, Sicily, Libya, Rhodes.
- **Britain:** At Start: 4 3-4's, 3 1-3's, 2 4-5's, 7 9 factor fleets, 2 5-4 air, 2 2-3's (free French).

**Force Pool:**
- **1942:** 3 3-4's, 1 2-5, 2 3-9's, 5 9 factor fleets, 5 Replacements, 2 5-4 air.

**Limits:**
- **1942:** 1 3-3 prcht.

**1975 SINA**

By George T. Havak

The recent peace talks between Israel and Egypt will cause some slight changes in SPI's SINA. The new SINA Neutral Zone will consist of 0722, 0723, 0724, 0725, 0726, 0727, 0827, 0926, 1028, 1129, 1229, 1320, 1231, 1132, 1133, 1033, 0934, 0935, 0936, 0937, 1037, 1038, 1139, 1229, 1240, 1341, 1342, 1343, 1344, 1444, 1445 and 1446. The following hexes are Israeli forts and have defense strengths of four (0822, 0823, 0824, 0825, 0826, 0927 and 1027). All other hexes on the Israeli side that border the Neutral Zone have a defense factor of 1. The Egyptians have no such bonus on their side of the Neutral Zone.

**Schutztruppe**

Simulates the WW2 German East African campaign. 2 scenarios: 1915 and 1916. Monthly turns. Large, 20x24" hex grid map of NE Tanzania (Kilimanjaro to the Kuli River). Attractive, easy to read rules folder and separate play accessory charts. Some unit differentiation among the various mounted counters -- especially of Allied units. Full or modified zones for Allied units only; see 4 rail movement; amphibious assault; supply rules; German infiltration and retreat before combat; game victory conditions based upon drawing Allied units to Africa, cutting the UGanda railway, and German survival. But units eliminated usually return after 2 months of N & K in South Africa, or somewhere (off-board). Optional hidden movement rule.

Consumer Warning: Not for beginners. Game can be fairly long with a skillful German player. Usually a decision by mid-1917, though, even in the 1916 scenario. Available for $5.00 postpaid (US) from: Jim Pumpa, 988 Lorraine Avenue, Los Altos, California 94022.
Battle for Germany
The Destruction of the Reich, Dec. 1944 - May 1945
The dreadnought sailed the world's seas for less than seventy years, its heyday lasted less than two decades. Yet it still represents an ideal, the fusion of beauty and power into one weapon, deciding the course of war or peace. The battleship was the original weapon of deterrence, before that function was usurped by nuclear-tipped missiles.

It was not intended to annihilate entire populations, but to engage others of its kind in straight-forward combat. Yet these moments of battle, long awaited, proved fleeting and the dreadnought never fought its great decisive actions, the inexorable march of Twentieth Century technology rendered it obsolete.

BY DAVID C. ISBY
THE RISE OF THE DREADNOUGHT

The invention of explosive artillery shells (as opposed to the earlier solid shot) in 1822 mandated the appearance of armor on warships. Ships without armor were easy prey to the shell-firing guns; those with armor were almost immune. These changes gave rise to a new breed of ship, the Ironclad. Ironclads took many forms, with steam and sail propulsion, muzzle loaders, and armor plating ranging from very small and a few large weapons mixed indeterminately in many fleets. Yet out of this plethora of warship types a new design began to emerge, starting in the mid-1870’s and blossoming by the early 1890’s. This was the Battleship. By the time the Battleships were ready to enter the Twentieth Century, the years of painful evolution were well in the past. These Battleships were the dumpy, pugnacious vessels later known as pre-Dreadnought Battleships. Such ships had defeated the Spanish Fleet off Santiago in 1898 and would fight against sections of the Russo-Japanese War in 1904-05. The pre-Dreadnought displaced between 10,000 and 16,000 tons. Although as much as 24% of this displacement might be devoted to armor, one torpedo would usually suffice to sink such a vessel.

The pre-Dreadnought’s weakness was its armament. The main battery, usually four 12” guns, was intended for long-range sniping, with the real damage supposedly being done at close range by the dozen or more secondary guns of between 5” and 8” in size. The emphasis on close-range fighting was caused by the range-finding equipment of 1900, which was so poor that the naval guns were simply sighted by supposition. Generations of the contemporary non-telescopic rifle sight. Each gunner did his own aiming, which made it difficult to correct fire, for no one knew which of the shell splashes around an enemy ship was from his gun. Therefore, fire at ranges over 3,000 yards was considered difficult, and impossible over 6,000 yards. It was thought in some navies, notably the Royal Navy, that the answer was to increase the size of the Battleship’s secondary guns. Thus, British secondary armament was increased from 6” in 1890-1902 to 7.5” in 1903, and the next year saw the introduction of 12”-caliber secondaries. The difference between main and secondary batteries was becoming smaller. The battles of the Russo-Japanese War had shown that it could become necessary to fight at over 6,000 yards range, and that only the 12” projectile could do sufficient damage to another Battleship, despite the fire control problems involved. The answer to these problems became obvious to many foresighted men simultaneously — the all-big-gun Battleship. The secondary battery would be expanded to use the same as the main battery, thus doubling the heavy gun firepower which, the Russo-Japanese War was to show, was all that mattered. Such an increase in armament, of course, required a larger ship (much to the chagrin of the Germans, who found it difficult to fit even their broad-loading guns through the Kiel Canal). Thus the Dreadnought was conceived.

Vittorio Cuniberti, an Italian Naval architect, was the first and foremost proponent of large Battleships armed with large numbers of heavy guns. The Americans, Japanese and British, finding these ideas supported by the results of the Russo-Japanese War, began to work on the ships which became the first Dreadnoughts. It was in Great Britain, however, that the Dreadnought was first born. There, the idea of the all-big-gun Battleship had fired the imagination of both navies and was committed to innovation and reform in their respective fields: Admiral Sir John “Jacky” Fisher, First Lord of the Admiralty, and Sir Philip Watts, Chief of Naval Construction. During the years he led the Royal Navy, Fisher was in charge of the “away the cobwebes of Nineteenth Century complacency and reform the Royal Navy to make it a competent, professional force in time for the First World War.”

Working with Watts, Fisher designed a ship that was in every way revolutionary. It mounted ten 12” guns, of which eight could bear on the broadside (double the power of a pre-Dreadnought), and six could be trained forward for pursuit firing (triple that of a pre-Dreadnought). To move this ship, the new turbine engine was to be used. Protection was increased — such a ship could not be allowed to fall victim to a single torpedo. In sixteen months, the fruit of Fisher’s idea joined the Royal Navy as H.M.S. Dreadnought. In that instant, all the world’s Battleships became obsolete.

With this new weapons system revolutionizing naval warfare, every navy in the world realized it needed Dreadnoughts, and quickly. The result was not one arms race, but several. Not only did the British and the Germans try to outbuild each other in Dreadnoughts, but so did the Americans and Japanese, Italians, French and Austro-Hungarians, and even the Brazilians, Argentinians, and Chileans joined the race in the years before 1914.

The success of H.M.S. Dreadnought resulted in the Royal Navy’s building, in the years between Dreadnought’s launch in 1906 and 1908, six similar vessels. Other navies were not far behind, and the ships built in this opening stage of the Dreadnought era, which lasted until 1914, may be termed the first generation of Dreadnoughts.

The Dreadnought, in assuming the mantle of power from the pre-Dreadnought, also assumed its enemies. Foremost amongst these was the torpedo. Throughout the age of the Dreadnought, the torpedo was the bane of the Dreadnought’s existence. All that changed over the decades were the methods by which this threat was delivered. For the first decade of the Dreadnought’s existence, 1905-15, it was the torpedo boat they feared. To counter this, most Dreadnoughts mounted heavy and effective torpedo nets and bristled with dozens of secondary and tertiary guns, ranging from 6” down to 2.5” in caliber. Unlike the pre-Dreadnought, whose secondary guns were intended to do the real damage, the Dreadnought’s secondary guns were almost purely used against torpedo boats. The Torpedo Boat Destroyer, a class of warship invented to screen Battleships from this menace, eventually assumed the Torpedo Boat’s function as well.

Not long after the first Dreadnoughts began to enter the navies of the great powers, a new variation of this theme appeared on the scene. This was the Dreadnought Battlecruiser. No type of ship so captured the public imagination as the dashing Battlecruisers yet no type of ship proved so unsuccessful in action, although this was usually due to the misuse of the ships rather than their own failings. Even more than the Dreadnought Battleship, the Dreadnought Battlecruiser was Fisher’s attempt to combine a ship with the armament of a Dreadnought and the speed of a cruiser. Such a vessel, Fisher postulated, would be invaluable for scouting, for running down enemy commerce raiders, for acting as a fast wing of the battle fleet to “strike a more fearsome terror than the stronger.” In 1908, H.M.S. Invincible, the world’s first Dreadnought Battlecruiser, joined the Grand Fleet, soon to be followed by two sisters and three near-sisters. The first German attempt at a Battlecruiser, S.M.S. Blücher, proved a total failure, but by 1910, S.M.S. Von der Tann broke Britain’s Battlecruiser monopoly. Only the British, Germans and Japanese (who built to a British design) actually launched Battlecruisers. Many other navies considered them “eggshells armed with hammers,” unable to take the punishment inflicted by similar ships. The events of two world wars were to prove this view correct.

Just before the First World War, the British had introduced oil fuel with their Queen Elizabeth class (Battleships previously having been coal powered), which enabled these magnificent ships to reach speeds previously accessible to Battlecruisers. As a result, all non-German Dreadnoughts, with the exception of those built after 1914, were oil-fired. This made possible the emergence of the “fast Battleship,” which logically should have made the Battlecruiser obsolete. Despite this, Fisher felt great affection for his brainchild and the British completed six Battlecruisers during the First World War. Five of these were very lightly armored and were designed towards Fisher’s pet project of operations in the Baltic, which required shallow draft, obtainable only by sacrificing heavy armor plate. Four of the six were sunk in the Second World War, after they had been converted to aircraft carriers. Even in the First World War, however, “Fisher’s Follies” proved inadequate, of them coming off second best in a gunnery duel with a light cruiser.

The most important Naval Race was that between Britain and Germany. It assumed the same implications for Armageddon that the U.S.-Soviet “Balance of Terror” has in recent years. The Germans, devoting most of their defense expenditures to their army, could not overtake the British head-start in warships. Never would the Germans have a ratio greater than 2 to 3 in terms of Dreadnoughts built, although they enjoyed better odds at times during the First World War.

THE DREADNOUGHTS AT WAR, 1914-16

There is much more to any ship, especially one as complex as a Dreadnought, than meets the eye. There is also much more than can be gleaned from brief lists of statistics that affect its ability to function as a warship. These factors, difficult to quantify, greatly affected the Anglo-German Naval situation throughout the First World War.

The British and German fleets were built for different purposes. The German High Seas Fleet was intended as a deterrent to the British, to hopefully threaten the Royal Navy’s superiority enough to deter the British from a war in
The Tactics of the Dreadnoughts

THE LINEAR BATTLE
Here is the “ideal” Dreadnought action. Battles on a model similar to this were postulated by the British throughout the First World War, and by the Japanese and some Americans until well into the second World War. Here the left-hand column of ships have come parallel to the enemy out of range, but turn in to close range to 15,000 yards. This was generally considered the closest range possible without exposing the ships to torpedo attack and extremely destructive short-range gunfire. The ships closing the range ahead of the enemy line are a “fast squadron” of Battleships such as the British Queen Elizabeth, Japanese Kongō and American Iowa classes. These ships are trying to “cap the T” on the enemy. The column of ships on the right is executing the Gefechtskehrtwendung, the simultaneous turn away from an enemy that was the specialty of the High Seas Fleet. Scheer used it twice at Jutland when confronted with superior forces. Most navies could perform a similar maneuver, but the Germans were able to do it properly due to much practice.

CAPPING THE T
Capping the T is a naval tactic as old as firearms. It involves putting one’s ship in front of the enemy, as the light colored ships have done in the diagram. This position has many advantages. The dark ships can only fire with the forward guns of the foremost ship, while the capping vessels can use all their weapons. At short range, there is little deflection on the capped ships, making them easier to hit. The “capped” ships also have their weaker bow and deck armor exposed, and shells plunging through the decks will hole the ship’s lateral bulkheads, damaging watertight integrity. The fact that the bow-on view presented by the target ship is narrow is of little matter. This is more than made up for by the target being “broader,” since shells that would have missed by going over a ship turned broadside to the firing ship will instead hit the stern of the “capped” ship. In the Battle of Sutigao Strait, the last battle between Dreadnoughts, the Japanese had their T capped in a manner similar to that shown.

COMBING
The most usual method for a warship to avoid torpedo attack was by combing. In the example, a destroyer has popped out of a smoke cloud within torpedo range (generally under 10,000 yards) of a Battleship, and fires a torpedo. If the torpedo was aimed correctly and the Battleship maintains its course, the torpedo will hit. To avoid being hit, however, the Battleship turns as tightly as possible away from the torpedo, hoping to turn inside it or at least present it only with the stern of the Battleship as a target, which is much more difficult to hit than the whole broadside of the ship. By turning away the target ship can also lengthen the range, and possibly outrun the torpedo, which usually has a speed of only 30 to 45 knots. Jellicoe, by ordering the Grand Fleet to comb the German torpedo attack at Jutland, saved his ships from several torpedo hits. It also made it easier for him to lose the Germans.

CRUISING AND BATTLE FORMATIONS
Ships do not fight in the same formation they sail in. Ships normally fight in one long line, each ship following another. There are many advantages to the line astern formation. Each ship has its broadside unimpeded by any other ship, and command problems were made easier, in that ships could “follow their leader” and more easily see the flag signals (vital before the Second World War). In the Second World War, improvements in radios and the smaller number of ships involved allowed them to act more flexibly.

Ships generally cruised in one or more parallel columns, with destroyers and cruisers screening the Dreadnoughts from submarine, torpedo boat, or air attacks. The different columns had to be well spaced, as a Dreadnought Battleship at speed had a turning circle of at least 500 yards.

Columns were separated by at least 2,000 yards and ships in a column by at least half that amount. Despite this spacing, collisions were distressingly frequent throughout the Dreadnought era. Many Dreadnoughts had the distinction of sinking friendly ships.

In the diagram, the ships are changing into battle formation from cruising formation by turning in succession. This maneuver was used by the British at Jutland, and as a result, took a long time to deploy.
which both would suffer heavy losses, even though the British would probably prevail.

The German fleet was aimed at disrupting a British "close blockade." They imagined that in time of war, British Battleships would be sitting off German ports trying to block trade, becoming prime targets for quick sorties. The British, however, were aware of this, and in the years before 1914, Winston Churchill and Lord Battenberg, leaders of the Royal Navy, insisted on a change of strategy to the "distant blockade," in which the British would close the North Sea at its northern end. The real patrolling would be done by light ships, leaving the Dreadnoughts free to respond at short notice to German sorties. To implement this policy, Churchill prepared the naval bases of Rosyth, Cromarty, and, most important, Scapa Flow to receive the British Grand Fleet of Dreadnoughts when war broke out.

The German Dreadnoughts were designed against one enemy - Great Britain. They were intended to operate only in the waters of the North Sea. The British ships were designed to operate anywhere in the world, and cruise long distances. The different conceptions of strategy were among the strongest of the many influences upon the differing British and German conceptions of Dreadnought design. It is an old adage amongst naval architects that you cannot get something for nothing. Every Dreadnought is a compromise, a tradeoff of different elements to make the best ship possible. Within a set displacement, a ship must be "budgeted" to emphasize the differing elements of ship construction. As a result, the British found themselves emphasizing armament and speed at the expense of protection. The Germans had the opposite emphasis. Thus, we find in the First World War that British ships were generally at least a knot or two faster than their German counterparts, and carried larger guns (12" vs. 11" and 13.5" vs. 12"), while the Germans were superior in protection.

**Duel of Dreadnoughts, 1915-44**

The following are all the occasions in which Dreadnoughts fought each other. The winning side is shown first (although the action in the Black Sea and the Second Battle of Heligoland Bight is of interest to the indecisive draws). The commanding Admiral's name is shown in parentheses, with the names of the Battleship commanders as well in the case of Jutland. All Dreadnoughts which participated are listed by name. Details of them may be found in the Dreadnought chart. Other types of ships are listed by abbreviation. OBB-Pre-Dreadnought Battleship, CA - Heavy Cruiser, CL - Light Cruiser, CV - Aircraft Carrier, AVS - seaplane tender, DD - Destroyer, ML - Minelayer, MC - Minehunter, PT - Motor Torpedo Boats, (FF) - Fleet flagship, (BCF) - Flagship of Battleship force at Jutland, (kia) - indicates Admiral killed in that action, (sk) - ship sunk in that action, (hd) heavily damaged, (mdm) - moderately damaged, (sd) - slightly damaged, SS - Submarine, (sk) - sunk, later raised.

**DOGGER BANK, (24 January, 1915)**

**BRITISH:** (Beatty): Lion (FF) (md), Tiger (sd), Princess Royal, New Zealand, Indomitable. 5 CL, 35 DD (1 md).

**Germans:** (Hipper): Seydlitz (FF) (hd), Derfflinger (sd), Moltke. 1 CA (sk), 19 DD.

**ACTION IN THE BLACK SEA**


**GERMAN:** (Souchon): Goeben.

**RUSSIAN:** Imperatrice Ekaterina II.

**JUTLAND** (31 May, 1916)

**BRITISH:** (Jellicoe, Beatty commands Battleships): Iron Duke (FF), Benbow, Bellorophon, Temeraire, Vanguard, Superb.

Royal Oak, Canada, Marlborough (hd), Revenge, Hercules, Agincourt, Colossus (sd), Collingwood, Neptune, St. Vincent, King, Queen Victoria, Cape Heligoland, Erin, Orion, Monarch, Conquerer, Thunderer, Invincible (sk), Indomitable, Inflexible, Lion (BCF) (md), Princess Royal (md), Queen Mary (sk), Tiger (md), New Zealand, Indefatigable (sk), Barham, Warspite, Valiant, Malaya. 8 CA (3 sk), 26 CL (4 hd, 1 md, 3 sd), 1 ML, 1 AVS, 76 DD (8 sk, 7 hd, 1 md, 3 sd).

**GERMAN:** (Sheer, Hipper commands Battleships): Friedrich der Grosse (FF), Konig (md), Grosser Kurfurst (md), Markgraf (md), Kronprinz Wilhelm, Kaiser (sd), Prinz Regent Luitpold, Kaiserin, Ostfriesland (hd), Thuringen, Helgoland, Oldenburg, Posen, Rhineland, Nassau.

**The Elements of the Dreadnought**

A Dreadnought was a balance of many different elements. The ship shown in this illustration is the H.M.S. Warspite. Warspite was begun in 1912 and joined the Grand Fleet in March, 1915. She was in the thick of the action at Jutland, receiving thirteen 12" shell hits and inflicting a large number as well. She served with the Grand Fleet for the rest of the war. During the inter-war years, she served in the Atlantic and Mediterranean and was modified to the condition shown here. She helped wipe out a German destroyer flotilla at Narvik in 1940, then returned to the Mediterranean to defeat the Italians at Calabria. Warspite helped sink three Italian cruisers at Matapan, and also bombarded Axis positions in North Africa. While supporting the evacuation from Crete, in 1941, she suffered bomb damages and was repaired in the U.S. From there, she went to the Eastern Fleet in Ceylon until 1943. She returned to the Mediterranean for more bombardment of Sicily and Italy, where she was hit by a glider bomb and returned to Britain. After repairs, she bombarded the Normandy Beaches on D-Day, and after being repaired of damages incurred when she struck a mine, bombarded Brest, Le Havre and Walcheren in support of the Allied Armies. In 1947, she was wrecked on the way to the scrapyard.

Warspite's career is an example of the wide variety of duties Dreadnoughts were called upon to perform in both World Wars. Her exploits are typical of many other ships. The main battery turrets (A) contained 15" guns. They were protected by 13" of armor. A shell hit there, at Jutland, might have started a fire and the resultant cordite fash. Below the turrets are the circular barbettes with 10" of armor. Further below the barbettes are the four magazines. These were protected, before Jutland, by their own 2" of armor, but are defended against plunging fire by the armored decks (B). The main armored deck ran just above the waterline. When built, the lower armored deck was between 1" and 3" thick, while the upper armored deck had 1.3" to 1.8" of armor. The top deck had 1" of armor in places. This was increased after Jutland and between the wars, and, by 1939, the lower armored deck had 1.3" to 4" of armor, and the upper deck had 1.3" to 3" of armor. The magazines now had 6" of protection. The use of two armored decks was not a good idea. One thick deck is more effective. If the armored deck was penetrated and the magazine hit, the ship could explode, as with Hood and the French at Oran. A hit in the magazine, even if it did not explode, would often result in ammunition supply being disrupted or the magazine being flooded. A hit in the engine room (C) will not only flood the ship, because it is below the waterline, but it will reduce speed, often leaving the ship without power to load and train the guns. Any hit under the waterline is dangerous, because it allows water into the ship. Such hits are protected against by the armor belt (M), 13" at its thickest amidships, thinning down to 2" at the ends. Between this belt and the top deck was the 6" of side armor. This would not have appeared on a ship with "all or nothing" protection, as it did not protect a vital area.

The ship was divided into watertight compartments by bulkheads of 2" to 6" thickness. The screws and rudder (D) under water are vulnerable, and a hit there would leave the ship either immobile, unable to steer, or forced to go off course. The Bridge (E) was the ship's nerve center and was protected by 6" of armor. Warspite's secondary armament (F) is single-purpose. It cannot be used against
German Dreadnoughts also had superior compartmentalization. Their insides were divided into a larger number of compartments than the British, ensuring that one shell hit would not cause too much of the ship to flood. The British needed sizable living and refrigeration spaces for the voyage, as well as large coal bunkers for the fuel for overseas operations.

The Germans, on the other hand, had smaller amounts of coal bunkers, as they intended to operate in the North Sea. They also devoted little space to crew accommodations and refrigeration, as the crews lived in barracks ashore and slept at their battle stations at sea.

Therefore, a German Battlecruiser might have only 7% of its area below the armor deck subdivided into compartments larger than 1100 cubic yards, while a contemporary British Battlecruiser would have 44% of its area in such large compartments.

Battleships were better divided, though the Germans still retained an advantage, with a typical German Battleship having no large compartments, to its British opposite number's 23%. This was possible because German Dreadnoughts were wider than British ones, which were limited in width by narrow docks. This also limited the protection that could be placed on the vital areas of British ships.

Yet there was one failure of protection the Germans shared along with the British, and which was eventually to have dire consequences for both. As well as having heavier armor, the Germans had given more thought to the problems of damage control. Unlike the Royal Navy who relied on the ship's Executive Officer and regular seamen to deal with damage, each German warship had a specially trained Damage Control Officer who commanded working parties formed especially to contain and minimize damage. They were aided in this by the large pump capacity of German warships, which helped limit flooding if they were hit. The “second generation” German Dreadnought Bayern could pump out 5400

**SECOND BATTLE OF GUADALCANAL**
(14/15 November, 1942)
AMERICANS: (Lee): Washington (FF), South Dakota (sd). 4 DD (2 sk, 2 sd).
JAPANESE: (Kondo): Kirishima (sk). 2 CA (1 FF), 2 CL, 11 DD (1 sk).

**NORTH CAPE**
(26 December, 1943)
BRITISH: (Fraser): Duke of York (FF). 1 CA (sd), 3 CL, 4 DD.
GERMANS: (Bey) (kiya): Scharnhorst (sk).

**SURIGO STRAIT**
(25 October, 1944)
AMERICAN: (Oldendorf): Maryland, West Virginia, Pennsylvania, Tennessee, Mississippi, California. 4 CA, 4 CL, 16 DD (1 md), 39 PT.
JAPANESE: (Nishimura) (kiya): Fuso (sk), Yamashiro (FF), (sk). 1 CA (hd), 4 DD (3 sk, 1 md).

**WARSpite** was built with 8,600 tons of armor, 1,163 more were added after building. Despite all these defenses, Warspite was generally considered to be under-protected. She was, however, fast for her era — her four turbines produced 75,000 horsepower (80,000 after refit). Each driving a screw, Warspite managed 25 knots before her refit, 24 afterwards, the decrease due to the fitting of the bulge and the weight of the extra armor.
tons of water an hour, almost six times as much as its British contemporaries. British fire control was more highly developed than the German. The British had centralized fire control using coincidence rangefinders. This enabled the different turrets on the ship to be coordinated better and with less interference. The Germans used stereoscopic rangefinders and relied on individual turrets to do their own spotting. Although the British were forced to resort to local control on more than one occasion themselves. The methods of ranging in on enemy ships differed as well. The British favored the use of single spotting rounds. The Germans used their full battery and made it difficult to sustain fire soon after the range was found, but it enabled the Germans to frequently obtain the range, straddle the target ship (drop shells on both sides and hopefully on top of it) and start doing damage before the British had the range. To an extent this reduced the noticed an angle of 15 degrees, and at 30 degrees at long range (increasing to 45 degrees in the Second World War). Therefore, it was obvious that the deck of a ship needs almost as much protection as its sides. Yet it was only after the Battle of Jutland and the rise of aerial bombing that the horizontal armor was strengthened.

This was the state the two navies found themselves. The well-structured, progressive world of the Twentieth Century came apart in the chaos of July and August, 1914.

The first naval actions took place, surprisingly, not in the vital areas of the English Channel or the North Sea, but in the Mediterranean.

In early August, 1914, the German Battlecruiser Goeben, escaped interception by two British Battlecruisers by ordering “Double schnapps for the black gang and cap the safety valve.” Although three of the “black gang’s” stokers died of exhaustion and boiler explosions, Goeben outran her erstwhile pursuers. (Goeben was given to the Turks, who used her on various duties in the Black Sea.)

During the First World War, the Battlecruiser found itself with few opportunities for proper tactical employment. Aside from work with the battle fleets in the North Sea, there was no place its superior speed could be of use. One of the exceptions to this was at the Battle of the Falklands. A German squadron of armored and light cruisers had sunk two British armored cruisers at the Battle of Coronel off the coast of Chile on November 1, 1914. The British, stung to action, dispatched two Battlecruisers to the Falkland Islands. On December 8, the Germans appeared on the scene, attempting to attack the British base there. The superior armament and speed of the Battlecruisers ensured that the battle would reach its inevitable result, with the crews of two armored and two light cruisers singing Deutschland Uber Alles as the frigid waters closed over them. One light cruiser escaped, only to scuttle herself soon afterwards. Here the Battlecruiser found itself doing what it was designed for, using its speed to sink opponents weaker than itself, yet faster than a Battleship. The British Battlecruisers had a similar success at the Battle of Helgoland Bight on August 28, 1914, when they aided British light forces in the sinking of three German light cruisers without losses. So far, the Battlecruiser had proven effective.

In late 1914, the German Battlecruiser squadron, under the impetuous Admiral Hipper, found itself rather bored, and so twice visited the British’s resort spots, which they bombarded. When attempting to repeat this pleasant outing for a third time on January 23, 1915, they ran into the British Battlecruiser squadron under the equally impetuous Admiral David Beatty off the Dogger Bank. Hipper’s pride was hurt, and discretion was the better part of valor and took off for Kiel at flank speed, with the British in hot pursuit. A running gunnery duel developed, with both sides displaying poor accuracy. At long range, Lio, Beatty’s flagship, scored a direct hit on an after armament of the Seydlitz. The explosion in the turret created a cordite flash which communicated itself down the ship hoist to the magazines of that and the adjoining turret. Were it not for the bravery of a German Petty Officer, Seydlitz would have blown up. As it was, it limped into port. Meanwhile, Lion had itself been hit, and fell out of formation. Blucher, a heavy cruiser masquerading as a Battlecruiser, found that it could not keep up with the flight of its squadron and fell behind, soon riddled by British shells. Beatty wanted to finish off the rest of the German squadron and sink the flagship Leopold. Here, however, the problems of command control came in. Lion’s radio, unreliable under the best of circumstances, had been destroyed, and so Beatty was forced to communicate by signal flags. The North Sea is a habitually misty place, especially in January. The smoke from the ship’s guns and funnels aggravated this condition so much that it was remarkable that the men on the bridge, peering through the view slits in the armor plate, saw anything at all. Beatty’s signals were misinterpreted. The British fired on the wrong part of the rest of the German squadron and sank the already doomed Blucher. This, of course, let the rest of the German squadron escape.

What can be seen then from the first real duel of Dreadnoughts? One thing was the importance of the command system. The finest ships are useless if they cannot be used properly. Beatty found this out at Dogger Bank. It also became evident that gunnery, at a moving target in a mist at ranges over ten miles, was a difficult undertaking. Yet the main beneficiaries of Dogger Bank were the Germans, who found out the weakness of their ships to magazine explosions following cordite flash resulting from a turret hit. All their ships were modified to prevent a recurrence of the explosion aboard the Seydlitz. The British, who had not suffered any such hits, were ignorant of this flaw, which existed in their own ships as well.

One thing the Germans did not learn from Dogger Bank is how the British spoiled their outing to begin with. They had been intercepting German radio messages with the aid of a captured code book, and thus were able to negate any chance of the surprise sortie in which the Germans had put so much faith in pre-war.

One thing which surprised many people was that there was no catastrophic naval battle in the months before or after Dogger Bank. One reason was that both the commanders of the Grand Fleet and the High Seas Fleet, Admiral Sir John Jellicoe and Admirals Von Ingenohl and later Von Scheer realized the gravity of their command. Never before had one man had the entire naval power of a great nation under his command. Yet what could be gained by hazard a decisive battle? If the Germans won, the blockade would be raised and the crippling food shortage would have been averted, as well as opening up the possibilities of an attack on England directly. If the British won, however, they could do less. Germany would still be blockaded, as before, and operations directly against Germany or the Flanders coast would be blocked by light craft, mines and submarines.

The submarine had become the prime enemy of the Dreadnought by 1915. As before the war, the torpedo still worried the Dreadnought, though it was now delivered by submarine. The submarine was more difficult to defend against than the Torpedo Boat. Destroyers were necessary to screen the Dreadnoughts from submarine attack, although Dreadnought herself rammed and sunk a U-Boat.

The North Sea was full of both sides’ submarines, making commanders on both sides fearful of ambush. Minefields were another constant hazard. Both sides lost many ships to them, including the Dreadnought Audacious. Slowly, but surely, the Dreadnought found its mastery of the sea challenged by those underwater weapons. They went to sea for training a hazard, and for that reason the British had little opportunity to go to sea for gunnery practice, which was to later handicap their performance.

In the months after Dogger Bank, however, a new type of Dreadnought began to appear, first in Britain, but later in all the Dreadnought-building nations. These were the Second Generation Dreadnoughts. The first of these ships had been laid down in 1912. They all featured (eventually) turbo-electric engines, power for the future. Their armament was, in many cases, revolutionary. The British introduced the 15” gun on the splendid Queen Elizabeth class and their poor relations, the Royal Sovereigns. The Germans promptly imitated them with the two Badens. The Americans stayed in artists’ galleries until members of smaller guns until the Japanese did the British one better and introduced the 16” gun on their huge Nagato class. This prompted the Americans to build 16” Battleships of their own, but these were not ready until after the war.

These ships were faster than their oil-burning predecessors, and, as such, made the Battleship obsolete. The Americans, while conservative with their guns, made a bold innovation with the protection of their Second
Generation ships, soon to be adopted world-wide. This was the "all or nothing" principle of armor placement. Quite simply, instead of spreading armor throughout the hull of a ship, the Americans concentrated it in great thickness over the ship's most vital areas, its engine room, magazines, and to a lesser degree, its propellers and rudder.

The Second Generation Dreadnoughts represented the high watermark of the Dreadnought's power and design. Until 1914, the Dreadnought ruled the waves and had no acknowledged challenger. Many think the Queen Elizabeths the finest Dreadnoughts ever. Though other ships surpassed them in fighting power, they were the ne plus ultra of their brief moment in the sun.

In May, 1916, after another bombardment of a British town, the German High Seas Fleet decided that there was only one way to ease the blockade of Germany. That was by weakening the British fleet, hopefully by destroying part of it. At the same time, the British were preparing an offensive operation against the Kiel Canal to drive the Germans out for just such a battle. Both sides positioned submarines in support of their operations, but the Germans got the first move. In the pre-dawn darkness of May 31, the High Seas Fleet left its bases. Waiting for them, already at sea, was the Grand Fleet, alerted by decoded radio messages. The stage was set for the greatest clash of Dreadnoughts: The Battle of Jutland.

At 1428 on May 31, 1916, light cruisers, engaged in scouting for both sides' Battlecruiser forces, clashed. On both sides, the Battlecruisers rushed towards the scene of the action. The British were partially optimistic as they were told by their Radio Intercepts that only the five German Battlecruisers were at sea, rather than the whole High Seas Fleet. At 1531, the two forces joined action. In addition to light cruisers of both sides, the British had six Battlecruisers reinforced by four fast Queen Elizabeth class Battleships to meet with five German Battlecruisers. With the battle joined at some 16,000 yards range, the British were hindered by the wind blowing the smoke from the German gun directors for the next hour, a gunnery duel raged. Both sides were taking considerable punishment. Then, one after another, three British Battlecruisers were hit on their turrets. Like Seydlitz at Dogger Bank, the flash communicated itself down to the magazine. Only Lion was saved by a heroic officer. The other two Battlecruisers blew up. But the British were undeterred. They closed the range, and the Germans were beginning to feel the 15" shells of the Battleships. At this moment, the Battleships of the High Seas Fleet appeared over the horizon. Beatty knew he could not defeat the whole German fleet. He disengaged, starting at 1640, and by 1730, the superior British speed had left the Germans pursuing out of range.

The Battlecruiser action had been the clash of rival ship design theories. The German advantages in protection enabled their Battlecruisers to sustain much punishment. Were it not for the moderating influence of Gneisenau after Dogger Bank to prevent cordite flash, German Battlecruisers would probably have blown up from turret hits as well. The superior British speed enabled them to withdraw once they were outmatched, although this withdrawal was hampered by the four Queen Elizabeths turning away one after another rather than all together, which exposed them to the fire of the full High Seas Fleet. Similarly, superior German accuracy and shell quality negated much of the British advantage in gunnery, despite their larger guns and better system of fire control. Beatty himself said, "There is something wrong with our bloody ships today, and there is something wrong with your system." He placed the emphasis on the second part, despite the fact that had the German Battlecruisers been unsupported, they might have been victorious.

Yet the hopes of a British victory were increasing as Scheer's High Seas Fleet pursued Beatty's Battlecruisers northwards, right into the path of Jellicoe's advancing Grand Fleet. If Scheer could be brought to battle by Jellicoe, the Germans would surely crumble under the superior British numbers and firepower.

By 1800, the destroyers and cruisers screening the two fleets were hotly engaged. At 1815, Jellicoe gave the order for the Grand Fleet to form a line of battle. This maneuver had not been completed two minutes later when Scheer arrived on the scene. Scheer was in trouble, but the situation was unfolding in unfamiliar ways. His ships were not deployed in battle formation, but it was just as a while before he could find out who his opponents were. Visibility had closed in, and the wind was now blowing the German smoke into their faces. Soon another British Battlecruiser was hit and blew up, but the real duel was between the Battleships. Jellicoe had the position of advantage and the German Battlecruisers leading Scheer's column were among the ships suffering heavily. After eighteen minutes, Scheer ordered a simultaneous turn away from the British, to withdraw southwards from the unequal action.

The bad visibility aided Scheer's escape, as did the cumbersome British command system. No one told Jellicoe that Scheer had turned away, and it was only eleven minutes afterward that Jellicoe saw this for himself.

At this point, however, Scheer thought better of his flight and at 1855, he turned around again. He headed straight for Jellicoe. Nothing could have pleased the British more. At 1912, the two fleets re-engaged, with the British still in position as the time before, to "cap the T" of the Germans. Scheer was only in action for six minutes when he realized his ships were being badly damaged by the British, without much chance to reply. He ordered another turn away, and to cover his withdrawal, he ordered his destroyers to make smoke and close in for a torpedo attack. Hipper's Battlecruisers were also ordered to make a suicidal close-range attack on the British.

Jellicoe was now confronted with a torpedo attack, the great fear of all Dreadnought commanders. He "combed" the torpedoes, turning away from the Germans. All the torpedoes were missed, but Scheer was able to open the range. Had Jellicoe turned towards the torpedo attack, he would have suffered more hits, but had a greater chance of maintaining contact with the now-fleeing Germans. Three times during the evening, the British encountered pockets of German fleet, but the British command system was that inflexible that nothing was done.

To slow down the Germans Jellicoe ordered his cruisers and destroyers to attack with torpedoes during the night. In a confused action, a German pre-Dreadnought, among other ships, was sunk, but the German withdrawal was not impeded, although they did scuttle a dying Battlecruiser. On the morning of June 1, Jellicoe had realized that, due to his cautious pursuit, the Germans had outrun him. Fearful of U-Boats and with his destroyers low on fuel, he returned home.

Jutland failed to produce a decisive result. Instead, another battle was fought with Tsu-Shima, all that resulted were a few minutes of long-range battle. Of the three main Dreadnought-to-Dreadnought actions that made up the Battle of Jutland, the two involving the Battleships lasted only twenty-eight minutes. A decisive action would have required longer and more sustained action. There were many factors mitigating against this.

The visibility in the North Sea was poor, and opposing ships slipped in and out of the mist. Both commanders feared enemy submarines and minefields. The fear of having part of their fleet cut off and overwhelmed was also a powerful deterrent against unorthodox actions. The commanders also had less than complete control. With the complex business of radio communications, it was cumbersome to use and flags limited to the range at which they could be seen, the commanders found it difficult to either receive situation reports or transmit orders. The difficulty of receiving signals from other ships frequently led to both commanders not knowing anything more of what was going on than they could see through their telescopes.

In the British case, this was compounded by an overcentralized and inflexible command system. Several times British subordinates were presented with opportunities that, if acted upon immediately, could have resulted in advantages. Yet none of the time was acted. The British command system was based upon peace-time theory rather than actual combat conditions. For two years before the war, the British had experimented with a more flexible system, but it was not used at Jutland. As Beatty saw, both the system and the ships were flawed.

One element which clouded the judgments on the Battle of Jutland was the "spectre of Nelson." Too many people were looking for a decisive battle on the model of Trafalgar or Tsu-Shima to realize that such victories were few and far between. This was due to the very nature of a Dreadnought Battlefleets. Unless it blew up, as the three British Battlecruisers did, or was slowly pounded to pieces, the way the German Lützow was, it was very difficult to sink a Dreadnought, especially as most ships carried more than an hour's supply of ammunition.

Both commanders were very much aware that their fleets were irreplaceable. Jellicoe was "the only man on either side who could lose the war in an afternoon." The battle had shown that the British command system was too rigid and the danger of the cordite flash too real. The British soon took steps to correct these failings. As for these fleets of the battle, the British had lost three Dreadnoughts to the German one, but nothing was changed. The British blockade tightened. Yet the Royal Navy was still powerless to break the deadlock on the Western Front. Jutland was important because nothing changed. It insured that the British would continue to starve Germany.
Designing Dreadnoughts

One hobby which has gained little recognition over the years has been amateur warship design. Many notable names, such as Woodrow Wilson, Kaiser Wilhelm, Franklin Roosevelt and the writer have amused themselves by sketching out designs for imaginary warships. Such people are generally surprised when much better and bigger vessels are the ultimate limit of imagination; a naval architect has many more complex problems to resolve.

A successful Dreadnought was the result of a careful and delicate balance between speed, armament, and protection on a displacement large enough to carry them and absorb damage. The dimensions and displacement of a ship are important in determining its characteristics. A ship's structural strength is inversely proportional to its length and directly proportional to its beam (or width) and the square of the depth of the hull. Given these limits, the bigger a Dreadnought is, the better a fighting ship it will be. There were, however, many limitations to this. Dreadnoughts could have their size limited by political limitations, as with British and French Third Generation ships. They could have their weight reduced by the need to lower existing anchor and dock loads. This makes protection more difficult, as the ships are narrower and the vital magazines and engines cannot be placed far enough inboard. Another limiting factor was cost; Dreadnoughts were expensive to build and operate. Large ships were also unwieldy to sail and resulted in "putting all the eggs in one basket." The prime example of this was the Japanese Yamato class. Although these were the biggest and most heavily armed Dreadnoughts ever built, as fighting ships they were not as good as the smaller classes that went before them.

Once a ship's tonnage is established, it can be seen just how the different elements of the ship are to be balanced. For example, the British Battlecruiser H.M.S. Furious had 28% of its displacement devoted to its hull, while having 17% devoted to armor, 11.5% to the engines, 15.5% to armament, 3.5% to equipment, and 14.5% to fuel. The German König had 31.4% devoted to the hull, 40.5% to armor, 8.4% to engines, 12.1% to armament, 3.8% to equipment, and 3.3% to fuel. These two ships reflect differing philosophies in ship design. The Battlecruiser has larger engines for its greater speed, and also has more tonnage devoted to its hull; for larger engines demand a proportionately larger hull to put them in, and hull length also helps increase speed. The emphasis on armament and speed shows Furious to be an offensively oriented ship, with lots of fuel to enable it to travel worldwide and keep up its high speed. König, on the other hand, is defensively oriented as is seen by the emphasis on armor. Its short range, as is evidenced by the reduced emphasis on fuel, and not as fast. Yet König is a better balanced ship. It shows an awareness that the advantage of a few extra knots is not worth the large price in tonnage that must be paid for it, and that any Dreadnought must have sufficient protection for it to fight effectively.

The British emphasis on getting a little extra speed out of a ship at the expense of armor was not wise. Such speed is very "expensive" in tonnage. The Iowas were five knots faster than the North Carolina; a twenty-four gun 10,000 tons had been devoted to armament, and the extra hull and armor needed to protect them. It is thought that even if Iowa had only 100,000 horsepower on board instead of 200,000, it would only have meant a reduction in speed from 33 to 27 knots.

The protection of a Dreadnought generally means armor, but it includes compartmentation, bulkheads, and bulkheads. Armor is especially vital. The need for armor increased throughout the Dreadnought era as weapons became larger. The effectiveness of armor increases geometrically, so four inches of armor is four times as effective as two inches of armor.

Bulges were introduced at the start of the Second Generation. They are spaces, originally empty, but later filled with water and oil; they cushion the effect of shell or torpedo hits. The use of such compartments enabled most ships armored on "all or nothing" principles to have their armor belts inward, protecting the ship's vital areas directly, rather than on the ship's skin. Sometimes a bulkhead is placed behind the bulges and the compartments used as a cushion. These are torpedo bulkheads and are used to contain damage, as are all longitudinal bulkheads. Internal subdivisions not only impose a weight penalty, but reduce living space and limit the area of the ship that can be used for engine rooms, which are, of necessity, large spaces.

Despite this, there was a limit to what protection could do. Passive defense could only reduce the effect, not negate it. No Dreadnought could survive aircraft bombs and torpedoes, for they would eventually wear down even the strongest defenses, flooding compartments and saturating the capacities of the ship's damage control. The "unsinkable" Dreadnought of the era seems to have been a pious wish, but not a reality. Protection, like speed and power, had its point of diminishing returns. The Dreadnoughts were vulnerable, despite their protection, to torpedoes, mines and bombs throughout their career, even if they were relatively "invulnerable" to other Dreadnoughts.

One of the less effective compromises was the hybrid. This was a ship which was half Dreadnought and half aircraft carrier. It could do neither job well, for its turrets and superstructure hindered its role as an aircraft carrier, and the reduction in armament and the inflammable gasoline and airplanes it carried made it a poor Dreadnought. The three hybrids, Furious, Inflexible and Hyuga only lasted for a few years in this state.

Penetration of Armor

One of the prime attributes of a Battleship's gun is its ability to penetrate the armor on enemy ships. Guns with a larger caliber and barrel length were better able to do this, as were guns with a higher muzzle velocity. The chart shows the penetration in inches for each gun at ranges of 8,000 to 24,000 yards. The figures are quite precise, as they are actually approximate. The quality of armor is important, of course. The chart assumes it is Krupp cemented, the standard form of Dreadnought armor, but some early American ships used an inferior type (Midvale Cemented) and Third Generation German vessels used a superior compound. If the shell strikes a glancing blow, its penetration power can be reduced up to 50%.

Penetration in Inches

| Gun Type | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Jpn 18"/45 |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| US 16'/50  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Br 18'/40  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| US 16'/45  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ger 15'/47  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Br 15'/42  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Br 14'/45  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| US 12'/50  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| US 14'/45  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Br 13.5'/45 |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ger 11'/50  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| US 12'/45  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ger 11'/45  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Range in Yards

24,000 | 16,000 | 8,000
The Teeth of the Dreadnought

A Dreadnought, or any other warship, is a difficult target to hit. A ship some 16,000 yards away may be a speck against the horizon. This is where good fire control is mandatory. Although the exact procedure varies, depending on whether a stereoscopic or a coincidence rangefinder is used (both are similar), visual rangefinding is basically a trigonometric function. The distance between the eyepieces of the rangefinder is known, as is the adjacent angle, by keeping crosshairs on the enemy ship. With this data, the range can be found. The Germans throughout the First World War and the British at the Falklands Islands relied on the individual turrets to do the rangefinding, while the fire observers watched to see whether the salvo was under, over, or a straddle, and so corrected fire.

In Director control, which was more normally used, the Fire Control Officer would compute the range and bearing and pass this data to the turrets. When the data had been checked, he signalled all the guns to fire. As the shells took many seconds to reach their target, which was usually moving and changing course, it further complicated things. It was difficult to see the shell splashes to adjust fire, and the vibration of the ship’s guns as well as the shock of enemy hits could throw rangefinders off.

This explains the relatively low amount of hits with visual control. At Coronel, a German squadron, including the two best gunnery ships in the German Navy, firing at cruisers silhouetted by the setting sun at 12,000 to 5,000 yards range, scored 3% hits. At the Falklands, two British Battlecruisers, firing under local control at German heavy cruisers, who were trying their best to take evasive action, scored 2% hits at ranges of 12,000 to 16,000 yards in good visibility.

The Germans, firing at the attacking Battlecruisers, managed 3% hits.

At Dogger Bank, the Germans fired at the British Battlecruisers at ranges of 16,000 to 20,000 yards. They scored 1.5% hits, despite good conditions. In return, the British only scored 1% hits despite their Director control. When they finished off the dying cruiser Blucher at 6,000 yards range, the British accuracy increased to 7.5%. Here, the need for training became apparent. H.M.S. Tiger, a “green” ship, fired well over a hundred rounds without a hit.

By this time, both navies realized that their peacetime training procedures had been sadly inaccurate. Before the war, the British had scored 50% to 70% hits on a target twenty feet by ninety feet, and a parallel course at 8,000 yards. Those who expected to do the same in wartime were sadly mistaken. At Jutland, where visibility was not good, except in the Battlecruiser action, and most firing was done at ranges of 15,000 yards, the British Battlecruisers scored 3.1% hits, the German Battlecruisers and Battlecruisers scored 3.2% hits, but the British Battlecruisers only scored 2.2% hits. This was due to their lack of practice.

During the inter-war years, fire control systems were improved. The coincidence rangefinder became the standard, and the Japanese made great deal of interest in using their optics at night. Yet accuracy had not greatly improved. In a battle between a German “pocket Battleship” and three British cruisers off the River Plate in 1939, the German 11” guns scored 1.48% hits, while their 5.9” guns scored no hits. The British 8” guns scored 2.5% hits and their 6” guns had .82% hits. This was in good weather at an average range of 11,000 yards. Similarly, the French Dunkerque at Oran fired 40 rounds at H.M.S. Hood under visual direction. All missed.

A new fire control device, radar, had arrived on the scene. Its first use was at Denmark Strait where the Bismarck scored 10% hits on Hood with radar-directed fire, despite ranges of 25,000 to 16,500 yards and bad visibility. Yet the primitive state of this radar (it could not detect shell splashes and thus could not be used to correct fire) did not preclude visual fire. The British fired visually when they sank the slowly moving Bismarck at a range of 3,000 yards. Almost 50% of the shells hit. Similarly, firing with searchlights at night, the British scored 70% hits on slowly moving Italian cruisers at Matapan.

The Americans found 6G radar enabled the Washington to score a creditable 12% hits on Kirishima at 5,000 to 14,000 yards range at night. Duke of York used radar and starshells (pyrotechnic shells that illuminate the target like a firework — introduced by the Germans in 1916) to attain 3% hits on the Scharnhorst. This was at 10,000 yards range in bad weather. U.S.S. Massachusetts used radar to find the bearing and angle, but used visual correction, when it engaged the French Jean Bart acting as a floating battery off Casablanca. Despite the fact that there was an untired crew, the fire and control and a stationary target resulted in 8% hits, regardless of the 24,000-29,000 yard range.

Clearly, radar was a great improvement in fire control.

Fire control is not everything. The British had superior fire control equipment in the First World War, but the Germans had consistently better shooting, due, in large, to their superior means of finding the range. Nevertheless, it remains that a Dreadnought’s guns are useless unless it has fire control available. By 1943, Fire Control (FC) radar had appeared on American and British ships. This allowed the fall of shell to be spotted on radar and was used by Duke of York to sink the German battleship Scharnhorst. The Germans also used a comparable device, but the Japanese failed to come up in the radar race, relying heavily on their excellent optics, which were, until 1943, often more effective than Allied radar. Despite this, the Dreadnought’s relatively low accuracy with its guns and its great invulnerability to shell damage helped make it a basically “indescive” weapon, more capable of resisting damage than inflicting it.

A much more decisive weapon was the torpedo. Not only did the torpedo do more damage than a shell, it was more accurate. The following shows the percentage of bomber-launched torpedoes that would hit each type of ship at anchor, underway, and evading:

<table>
<thead>
<tr>
<th>Type</th>
<th>BB</th>
<th>CV</th>
<th>CVL</th>
<th>CL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV</td>
<td>45%</td>
<td>30%</td>
<td>25%</td>
<td>40%/25%/20%</td>
</tr>
<tr>
<td>CVL</td>
<td>35%</td>
<td>25%</td>
<td>15%</td>
<td>30%/15%/10%</td>
</tr>
</tbody>
</table>

Under certain conditions these percentages varied. Every torpedo launched by the Japanese at Pearl Harbor that did not bury itself in the harbor mud hit its target.

Even ships could do good damage with torpedoes. At Jutland, the British scored 7% hits with torpedoes, fired at an average of 4,000 yards. Germans, firing at an average of 6,000 yards, scored but 3%. At Suggested Straits, U.S. PT Boats fired 3% hits at the Japanese Battleships at 10,000 yards. The U.S. destroyers did better, some 11% hits, at the same range. British destroyers got 20% hits on the Scharnhorst in heavy seas at night, but the range averaged 2,727 yards. All of these World War Two actions took place at night and with radar.

Radar, however, was not a necessity for effective torpedo operations. The Japanese were the most effective practitioners of torpedo warfare. While they only once hit an American Dreadnought (from a submarine), they gave other Allied ships a very bad time, as at when 30% of the torpedoes hit non-evading American cruisers at 9,000 or so yards. The British destroyers which attacked the Bismarck at night without radar scored some 13% hits at a range of 5,700 yards, but when the cruisers and Battlecruisers tried their hand at it in daylight, they could do no better, although the average range was 6,780 yards. This was the only occasion where Dreadnoughts torpe doed each other, with H.M.S. Rodney scoring one hit.

Torpedoes could have their limitations, however. The Americans in the early days of World War Two and, to a lesser extent, the British throughout the First World War were plagued by defective torpedoes. Nor were hits always easy. Of the many dozens of torpedoes fired by American surface ships in the Guadalcanal Campaign, only one hit. Fourteen torpedoes fired at 9,000 yards River Plate scored no hits. Yet it still remained that, by day or night, the torpedo was the weapon the Dreadnoughts had to fear most.

The other great enemy of the Dreadnought was air bombing. While high altitude bombing would seldom hit a moving ship, low altitude or dive bombing could claim up to 20% hits on a Battleship or Carrier, 12% on a cruiser, and 4% on a destroyer, although these figures could be reduced by 20% if the target was steaming more than 12 knots, and by 40% if the target was steaming over 25 knots. This was another frequently used method of destroying Dreadnoughts, and the Japanese lost many of their ships to American bombers.
Dreadnoughts met only one more time in the North Sea during the First World War. The Germans made several other sorties, but fear of interception and the submarine and mine threat soon drove them back. The British, eventually reinforced by six excellent American Dreadnoughts, finally swept the North Sea, but never succeeded in catching the Germans. On November 17, 1917, however, British Radio Intercepts revealed the presence of a German minesweeping force, escorted by light cruisers and destroyers, off Heligoland. The British met them with a force including three of Fisher’s light Battlecruisers. Again, command control problems and poor visibility stopped the British from annihilating the German light forces. The light Battlecruisers found themselves under-gunned and armored so lightly as to be damaged by the light cruisers. Still the British had the upper hand until two German Battleships arrived on the scene, followed by two Battlecruisers. The British, after a brief gunnery duel, turned north hoping to lead the four German Dreadnoughts towards the Grand Fleet, over the horizon, but the Germans refused to fall for the bait and withdrew, ending an indecisive action.

Elsewhere in the First World War, Dreadnoughts played a secondary role. In the Adriatic, French and Italian Dreadnoughts blockaded the Austro-Hungarians in much the same way the British did. When the Austro-Hungarians tried their equivalent of Jutland, an Italian Motor Torpedo Boat broke through their flagship’s screen and sank it, the only Dreadnought to fall victim to a torpedo in the First World War. The Russians did not have their Dreadnoughts fully operational at the start of the war, and, although their pre-Dreadnoughts were beaten by the High Seas Fleet off Riga in 1917, their Dreadnoughts did little until swallowed by the revolution.

The First World War has been described as a struggle between land power and sea power. This is an oversimplification, but the British naval leadership of Jutland was obviously a vital strategic consideration. It sapped the German will and means to resist. By the winter of 1915, there were already food riots. By 1918, the High Seas Fleet’s crew was so demoralized.
by its sticking to harbor and the diet of a few turnips a day per sailor, that when ordered to make the forthcoming attack on a decisive victory at the last moment, they mutinied and hoisted the Red Flag of revolution. Within days, Germany had surrendered.

The end of the First World War saw a new weapons system based around the torpedo superceding the submarine menace as the chief threat to the Dreadnought. This was the Torpedo Bomber, which had evolved during the war to the point where the British were planning a “Pearl Harbor”-style strike on the High Seas Fleet, in the spring of 1919, utilizing almost two hundred torpedo planes. As anti-aircraft protection was minimal at that time, it became obvious that the airplane would become more of a threat to the Dreadnought than ever the submarine. This was reinforced by American tests in 1920-22 which resulted in the sinking of a German Dreadnought and some obsolete American pre-Dreadnoughts by aerial bombardment. Already threatened from below the sea, the Dreadnought now had a new enemy above it.

Despite the rise of aircraft, the Dreadnought still ruled the seas. During the war, the Americans, suspicious of the Japanese, began a mammoth naval building program. The Japanese replied by laying down more Dreadnoughts. The British, although weakened by the effects of the war, joined in the new arms race as well. Yet before the majority of these new ships were launched, an international conference was held at Washington to try and limit the expensive arms race. After much wheeling and dealing, it was agreed that the British and the Americans each could have no more than fifteen Dreadnoughts, the Japanese nine, and the French and Italians five each. No Dreadnoughts were to be built with a few stipulated exceptions until 1934.

The Washington Treaty aborted the entire tail end of the Second Generation of Dreadnoughts. The ships which were cancelled had been designed to be larger and better protected than the earlier Second Generation ships. Curiously, there were many Battlescruisers among them, as their successes seemed to overcome, in many eyes, their failures.

What can be seen from all this? First, near misses are important, as they cause shock vibrations which open up the hull, which is also what happened with the Atomic tests. It should also be noted that accidents claimed a fair number of Dreadnoughts, some 17%. Of the Dreadnoughts’ great energy, 44% were destroyed by torpedoes, 19% by air, and 5% by gunfire. Of the more prominent weapons, torpedoes accounted for 36% of the Dreadnoughts sunk, while bombs added another 20%.

Few Dreadnoughts succumbed to gunfire directly. Some, such as Lutzow, the Bismarck and Kirishima were shot to pieces by gunfire. Yet the strength of these ships was such that even though their guns were out of action, and they were motionless, they still retained enough water tight integrity to keep them afloat. Thus, such ships had to be scuttled, for to stay with a dead ship only meant losing the highly-trained crew as well. Not only were few Dreadnoughts sunk outright by shells, but few of any sort of armored ship. They would, like the Dreadnoughts, only sink if rammed or exploded, or if they were subjected to violent overkill, as were the British heavy cruisers at Jutland and the Italian ones at Matapan.

The speed and violence of the shell hits is important for they overwhelmed the damage control parties. Though another leading cause of ships sinking under gunfire, the explosion of the magazine either through cordite flash or direct penetration of the magazine was removed, the importance of damage control is seen in the relative ease with which ships were sunk at target practice. Some 25% of the Dreadnoughts lost in action were the result of detonation of the magazines.

It is difficult to quantify the ability of a ship to withstand damage. Probably the best indicator is the number of tons of its displacement devoted to its hull (to determine its ability to float) and that devoted to protection, especially compartmentalization. Armor in itself is a measure of the ability to ward off damage rather than absorb it.

AVERAGE DISTRIBUTION OF HITS HULL:
3% hit below waterline causing moderate flooding, on the order of 500 tons of water.
The Washington Conference marked the beginning of the end of the Dreadnought. Most of the First Generation ships were prematurely scrapped. There were now so few Dreadnoughts that emphasis had to be given to the new breed of cruisers that were evolving, ships that were in effect "mini-Dreadnoughts," able to fulfill the functions of a Dreadnought if there were no Dreadnoughts to oppose them. These cruisers were to bear the brunt of the naval fighting of the Second World War. Dreadnoughts had also become more expensive to run and build, especially in an era of small defense appropriations. The challenge presented by the submarine and the mine still existed, and was compounded by the aircraft carriers that soon entered the Royal, American and Japanese Navies. The future of the Dreadnought was argued, pro and con, for many years until, with the end of the Washington Treaty, rearmament began.

**Compendium of Dreadnoughts**

The table shows the vital statistics of every Dreadnought launched. The first column shows the name of the class, followed by the nationality of the ship's operation (not construction). GB = Great Britain, GR = Germany, BZ = Brazil, JP = Japan, RU = Russia, IT = Italy, FR = France, AH = Austro-Hungary, AR = Argentina, CH = Chile, SP = Spain.

<table>
<thead>
<tr>
<th>Class</th>
<th>Built</th>
<th>Dep.</th>
<th>Speed</th>
<th>Bht.</th>
<th>Deck</th>
<th>Arm.</th>
<th>Others</th>
<th>Ship</th>
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<tr>
<td>Dreadnought (GB)</td>
<td>06-06</td>
<td>17.90</td>
<td>21.00</td>
<td>11.00</td>
<td>3.00</td>
<td>10x12&quot;/45-183-19</td>
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<tr>
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<td>06-08</td>
<td>17.25</td>
<td>25.00</td>
<td>6.00</td>
<td>2.50</td>
<td>8x12&quot;/45-385-19</td>
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<td>South Carolina (US)</td>
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<td>11.00</td>
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REARMAMENT AND WAR, 1935-45

When the Washington Treaty ended in 1935, the international situation was grim. The Germans, although not putting emphasis on naval matters, had built three "Pocket Battleships," which were simply upgunned cruisers. These were followed, however, by two Battle-cruisers launched in 1934. In 1935, the Anglo-German Naval Agreement cleared the way for the Germans to begin two new Dreadnoughts of the Bismarck class. In a last attempt to save disarmament, the Americans, British and French signed the London Agreement in 1936, which limited the size of their Battleships. All it did was to hamstring British naval architects trying to reconcile the needs of a warship with the limits dictated by political expediency. During this talk of disarmament, all nations were modifying their surviving Second

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Generation Dreadnoughts. This usually entailed strengthening the armor and anti-
torpedo protection, for shells and torpedoes had gotten larger since these vessels were 
built. However, armor was heavy. Since the first dreadnoughts had been designed 
against plunging fire and the Dreadnought's greatest threat, the airplane, some ships, like 
the Japanese Kongō's and the Italian Dreadnoughts, were completely rebuilt. Others 
were only slightly modified.

In most of the world’s navies, sailors and 
airmen argued whether the Dreadnought was 
made obsolete by the airplane. In most navies, the 
Battleship men held the upper hand, 
adding antiaircraft guns at a grudging 
concession to reality. But the American, Royal 
and Japanese Navies had enough dedicated 
aviators and aircraft carriers to maintain those 
Navies’ air power.

The modified ships were soon to be joined by 
the Third Generation of Dreadnoughts. In 
1937, fifteen were under construction. All of 
the navies emphasized different points with 
their ships. They were all essentially fast ships, 
from 28 to 33 knots. They were all, except 
for the German and American Battleships, well 
armored, with the smallest guns being the 14” 
of the King George V and the largest the 18” 
of Yamato. All were well armored and compart-
ments were made that were better than 
other ships. The Italians and French put the least 
emphasis on protection. The defense-minded 
Italians put the emphasis in their Littorio 
class on speed. The French could never build 
Dreadnoughts as well, as their Dunkerque class 
Battleships and some were done by the British 
shipyard. The British King George V class 
was hampered by the treaty restrictions. It 
had a good range and speed, but its protection 
was inadequate, as was that of the Bismarck 
class; ships which were primarily commerce-
destroyers. The Japanese concentrated on 
two super-ships. Bigger than any other 
Dreadnought, the Yamato class, were to 
supplement the Japanese Battline and 
weaken the Americans before range could 
close enough to penetrate their thick armor. 
Less imposing were the American ships of the 
similar Alabama, Arizona, South Dakota, 
and Iowa classes. These were probably the best fighting 
Dreadnoughts ever built, an excellent blend of the 
American “all or nothing” protection, large 
guns, including much anti-aircraft, and only a 
little less speed. The Iowa class did five knots 
faster than its contemporaries, but this required extra 
10,000 tons displacement devoted to speed.

Another change was that Dreadnoughts no 
longer operated together in squadrons or 
flotillas. They were used instead in task 
forces, integrated groups of Dreadnoughts, lighter 
ships and, in some cases, aircraft carriers. 
Although the British and the French used the 
massed battle-line, this was the best way to 
utilize the Dreadnoughts since their decimation 
with the Washington Treaty.

Aside from the French and German Battle-
cruisers, none of the Dreadnoughts under 
construction were ready when war again broke 
out on September 1, 1939. For the first 
few months of the war, although British 
and French Dreadnoughts searched for 
German raiders.

The naval war began in earnest with the 
German invasion of Norway in April, 1940. On 
April 9, the two German Battleships encountered 
the British Renown, one of 
“Fisher’s Follies,” and four destroyers, off 
Norway. Even though the German ships were 
superior to the British, they promptly turned 
and fled after a brief gunnery duel. Renown, 
almost thirty years old, tried hard, but the 
German’s escape was with light damage. It was 
the first Dreadnought-to-Dreadnought action of 
the war. Elsewhere, Warspite helped 
destroy a German destroyer flotilla while other 
Battleships did coast bombardment, a role they 
were frequently to fulfill throughout the 
Second World War. Yet they began to suffer 
damage from the German aircraft that 
controlled the skies over Norway. For the first 
time, the Dreadnought was helpless in the face 
of air opposition, its freedom to operate in 
range of enemy aircraft gone. This was one of 
the reasons General Cerfontain flew from 
Norway during which the two German Battleships 
intercepted and sank a British aircraft carrier. 
The next time Dreadnought fought Dread-
ought, it was in unusual circumstances, 
after the fall of France. The French had failed to take 
steps to guarantee that their fleet would not be 
used against the British. Faced with this threat, 
the German’s second line, the German 
Almirante Reis base at, in Algeria, hit the gunfire 
of three British Dreadnoughts, the French 
Dreadnoughts were found to be poorly 
protected. The first generation Battleships 
and a new (Hood) were sunk, although all but one 
Battleship (herculean Hood) were later raised, 
but never repaired. Another 
Battleship escaped, due to British combat 
problems. The fate of the Battleship which 
Hood blew up was due not to corvette, but to 
plunging fire penetrating the deck armor 
and exploding in the magazine. The ship which 
claimed credit for this H.M.S. Hood. 

The entry of Italy into the war opened up a 
new front for the Italians, between 
Dreadnoughts. The Italian and British 
concepts of how Dreadnoughts might be 
employed were quite different. The British 
believed in an offensive strategy. The Italians 
believed in the more defensive “fleet in being” 
strategy, which was composed by their 
chronic fuel shortages. As a result, the Italians 
held to the same sort of caution that was seen 
in the North Sea in the First World War, 
and with good reason. The Italian ships were built 
to fight the fast, yet poorly protected, French 
Dreadnoughts, and so they emphasized speed 
at the expense of armor. The Mediterranea 
Dreadnought was also full of submarines and mines 
as the North Sea had been in the First World War. 

Both the British and Italian fleets were 
escorting troop convoys at sea when they 
encountered each other off Calabria on July 9, 
1940. Three British Dreadnoughts engaged 
two Italian Dreadnoughts in a long range 
gun-battle. After two hours, the 
Italians used their superior speed to 
withdraw. Since the Italians were not going to be easy 
to destroy at sea, the British decided to attempt 
to destroy them in port. On the night of 
November 11-12, 1940, twenty-one British 
biplane torpedo bombers attacked the Italian 
Battleship at anchor in Taranto harbor. At 
dawn, three Italian Battleships were on the 
bottom. Although two were soon repaired, the 
third never sailed again.

The consequences of this act were 
far-reaching. A few airplanes had done what 
all the Royal Navy’s Dreadnoughts had been 
unable to do, deal a crippling blow to the 
Italian Battle Fleet. The naval balance of power 
had been redressed in the British favor by their 
innovative use of aircraft. In the Pacific, the 
Japanese were faced with the threat of a 
superior U.S. Battle Fleet. They were very 
interested in the results of the Taranto Raid. 

In the months after Taranto, there was an 
inconclusive skirmish at Cape Spirtzenvino, 
where the opposing Dreadnoughts did not fire 
at each other. On March 28, 1941, off Cape 
Matapan, an Italian sortie resulted in an 
Italian Dreadnought being torpedoed by 
British bombers at sea, while three Queen Elizabeth 
Dreadnoughts massed an equal number of 
Italian cruisers in a night action. 
This was because the British had, for the first 
time, used radar. Radar not only helped warn 
of enemy ships and aircraft, and give their 
range and bearing, but by 1941 radar was 
also used for fire control.

Meanwhile, in the Atlantic, the Germans 
had been engaging in some relatively 
ineffective commerce raiding. In May, 1941, 
however, the first German battleship 
Dreadnought, Bismarck, accompanied by a 
heavy cruiser, left Norway hoping to disrupt 
the British convoys. On May 24, 1941, the 
Bismarck was intercepted in the Denmark 
Strait by the Battleship Hood and the 
Cruiser Prince of Wales. In a ten-minute action, 
Hood blew up, 
Prince of Wales and the Bismarck were both 
damaged. Again, the poor protection of the 
British Battleships had been the culprit, 
until now it was the magazine that was hit, 
as with the French at Oran, rather than the 
cordite flash at Cape Matapan.

The Bismarck, like the Italian Dreadnoughts, 
soon ran afoul of British torpedo bombers. One of 
the torpedoes hit destroyed Bismarck’s 
rudder, making it impossible for her to steer. 
This enabled the British to intercept her. On 
May 27, King George V and Rodney, with the 
aid of some cruisers, methodically pounded 
the Bismarck to pieces at point-blank range. 
Again, the air superiority of the British 
flotilla was decisive in the action, rather than the 
Dreadnoughts.

The fighting off Crete in May, 1941 underlined 
the fact that the airplane now controlled all of 
the seas within its range during the hours of 
daylight. The Royal Navy found it only 
possible to use in air superiority by suffering 
unreasonable losses. Here, again, was the lesson of 
Norway and Dunkirk, that the Dreadnought could not 
control the seas unless supported by control of 
the air.

That the Japanese had learned the lessons 
about the supremacy of aircraft was seen on 
December 7, 1941. On that day the air groups 
carrying the Second Generation Dreadnoughts of the U.S. 
Pacific Fleet at Pearl Harbor. Two of them were sunk, 
with six more damaged. It was a crippling blow 
on the order of Taranto, but the ships had been 
old and slow and were as vulnerable at sea as 
in port. A group of shockingly new components of 
the Dreadnought were shown when Prince of Wales 
and Repulse were sunk by Japanese bombers 
off Malaya on December 11, 1941. They 
were at sea, able to maneuver, and equipped 
with the best anti-aircraft armament in the world 
at time, but still their planes were sunk for the 
loss of few airplanes, the Japanese swept the 
Pacific of all Dreadnoughts except their own, 
which were confined to escorting the carriers 
and troop transports or waiting in reserve in 
Japan. The airplane had replaced the
Dreadnought as the prime weapons system of naval strategy. It had begun to lose its value when ships such as the American Pacific Fleet or the British Battleships no longer could deter the Japanese from war.

The Dreadnought was being displaced because it was no longer decisive enough as a weapon system. The airplane had the flexibility and the hitting power to suspend the Dreadnought. Aircraft were not exposed to torpedoes and mines, the Dreadnought’s other great enemies. When they were based on aircraft carriers, the carriers could stay out of danger to do damage, while the Dreadnought had to confront its enemy directly.

Yet the Dreadnought was not finished by the rise of airpower, and the aircraft carrier which brought this power in striking range of enemy ships, if defended by friendly aircraft, Dreadnoughts could operate as before. At night, or when out of range of aircraft, Dreadnoughts could also operate and regain something of their own supremacy, but the aircraft carrier was now the capital ship by which naval strength was measured.

In response, all Dreadnoughts had their anti-aircraft armament increased. The American Iowa, for example, increased 148 (11 anti-aircraft guns ranging from 5" to 20mm in size. Also improved were the fire control devices, which made Battleship mounted anti-aircraft guns more effective than those on smaller ships, since Battleships could carry more elaborate equipment.

Dreadnoughts were also better adapted than aircraft to shore bombardment. Each heavy shell was as effective as one plane’s entire bombload.

Throughout most of 1942, the Dreadnoughts on both sides in the Pacific played a supporting role as the opposing aircraft carrier fought the decisive battles without ever seeing enemy ships. A new role emerged for the Dreadnoughts. Those that could keep up with the fast, 30-knot carriers provided anti-aircraft protection, as the Dreadnought anti-aircraft armament was increased at every opportunity. Slower ships provided coast bombardment.

When the Guadalcanal Campaign began in August, 1942, the need for Dreadnoughts became apparent. The Japanese found that a Dreadnought could be a devastating weapon for coast bombardment. It was on the way to such a bombardment that two Japanese Dreadnoughts encountered a force of American cruisers in the First Battle of Guadalcanal, on the night of September 12-13, 1942. In a bloody, brief, close quarters brawl, Hiei was left damaged enough to be in range of American airplanes the next day, and was sunk.

Two nights later, the surviving Japanese Battleship, Kirishima came down to Guadalcanal supported by cruisers. This time, the Americans met them with two of the Third Generation Dreadnoughts, the South Dakota and the Washington. The Americans had the numbers and radar fire control. The result of the Second Battle of Guadalcanal was that Kirishima was badly damaged and had to be scuttled. The long-awaited clash of U.S. and Japanese Dreadnoughts had occurred. It was not the decisive duel of battle lines, but rather a night-time skirmish, as the aircraft preceded anything else.

In the European Theatre, the Dreadnoughts were faced with similar problems. British Dreadnoughts helped maintain the control of the Mediterranean, but with considerable loss from submarines. They never met the Italian Dreadnoughts again, although they had sortied often, until they surrendered in 1943, at which time the Roma was sunk by a German guided bomb.

The surviving French ships did not do so well either. Their Jean Bart, acting as a floating battery, was sunk by a U.S.S. Massachusetts off Casablanca in September, 1942. The surviving French Dreadnoughts, whose only real action had been against the Allies, finally joined the Free French for the rest of the war.

The German Dreadnoughts did not fare well either. The Gneisenau hit a mine in 1942 and was finished off by bombing. The Hipper played the role of flag-in-being and tied down British ships that might have been sent to the East, but she never saw action and was repeatedly damaged by submarines and aircraft before being sunk by bombers in November, 1944. The Scharnhorst went to sea to meet a convoy on December 31, 1943, but found Dutch submarines and destroyers. In the Battle of North Cape, the Scharnhorst was battered to pieces by the big guns and finally sunk by torpedoes. The British Dreadnoughts finished the war in Europe doing coast bombardment.

In the Pacific, the Americans used their fast Third Generation ships as escorts for the carriers, while the rebuilt Second Generation ships, raised off the mud of Pearl Harbor, did invaluable work bombarding Japanese positions in amphibious operations. After Guadalcanal, however, the opposing Dreadnoughts did not see any real action until the Battle of Leyte Gulf in 1944. A complex series of maneuvers resulted in two battles involving Dreadnoughts on October 25, that of Samar and Surigao Strait. The Japanese force off Samar had been subjected to air attack, which sank the mighty Musashi, proving that even that ship was not invulnerable. But the surviving force of Dreadnoughts and Cruisers fell on the American escort carriers. They did some damage, but withdrew in the face of American airstrikes.

The Surigao Strait action, however, was a duel of Battlewagons such as might have occurred in the Golden Age of the Dreadnought. The Japanese had two rebuilt First Generation ships. The Americans had a battleship line of six heavily modified Second Generation ships, victims of Pearl Harbor, out to settle old scores. The Americans also had an overwhelming superiority in light forces, which was seen as they opened the battle with a destroyer attack. Fusō, one of the Japanese Battleships, was hit and blew up. This left only one damaged Battleship to face the American Dreadnoughts, who capped the Japanese T. Soon, the last Japanese Battleship was ripped apart by the American shells, and limped away to sink. The last duel of Dreadnoughts was over.

It was a pale imitation of the projected battles of an earlier age, the Trafalgar that might have been, but it was close enough.

For what was left of the war, the American and British Dreadnoughts continued with bombardment and escort. All but one of the Japanese Dreadnoughts were mopped up by submarines and airplanes, and the Yamato went down in a last, futile sortie.

**EPILOG. 1946-69**

The Atomic Bombs ended the war and, so it seemed, the Dreadnought. But tests at Bikini Atoll, in 1946, showed that Dreadnoughts were surprisingly difficult to sink by Atomic blast.

Nevertheless, the world’s remaining Dreadnoughts, sadly decimated by war, were diminished even more by the Second Generation ships, their jobs done, were scrapped, except for those of the Russians which survived German bombers. These soldiered on into the 50’s, as did the South American ships. The Japanese, German, and Italian ships were all sunk or disposed of. The Americans and British mothballed some of their Third Generation ships and operated others.

The four American Iowa class ships were recalled to service during the Korean War, when they did excellent work on shore bombardment. The Turks were even threatening to bombard Cyprus with the Yavuz (ex-Gneisenau) in 1946. New Jersey operated off Vietnam in 1968-69. It was greatly loved by the Marines it supported, and did excellent work until the Air Force, feeling it usurped “their” targets, had it sent home. Today, only eight Dreadnoughts remain, all American, although four are simply museums. The other four are “mothballed.”

Despite its use since 1945, that year effectively marked the end of the Dreadnought era. The Golden Age of the Dreadnought lasted only until 1922. By then the Washington Treaty and the rise of the airplanes cut into the superiority of the previous fifteen years. Despite this, they accomplished a great deal in the Second World War, but took heavy losses.

The Dreadnought was not a decisive weapon. It was never intended to exercise the “quick kill” of an ICBM of even of torpedo bombers. Even the biggest and best Dreadnoughts were, in the end, brought down by submarines and airplanes. Despite these failings in concept, the Dreadnought remains a memorable part of an era when majestic ships ruled the waves.

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**DATE:** JULY 25, 26, 27, 1975

**PLACE:** JOHN HOPKINS UNIV., BALTIMORE, MD.

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Co-sponsored by Interest Group Baltimore and the JHU Historical Simulation Society in co-operation with The Avalon Hill Game Company.
SCENARIOS AND VARIANTS:

NEW SCENARIOS FOR DREADNOUGHT
A Mediterranean Excursion
by George Lyon

A close review of any extended period of military operations will usually reveal a number of conflict situations too insignificant in implication to be extensively dealt with by historians. These events could have turned out differently. Their possibilities may take on unusual significance to players of Dreadnought who seek historically-based scenarios only to find that the admirals of 1906-1945 failed to take the needs of today's wargamer into account in planning and executing their operations.

The following scenarios take a step toward changing that. Now, Cunningham's elusive Genoa Bombardment Force will be intercepted by the superior Italian reaction force that failed to locate it in 1941. The often irresolute Italians will summon the determination (and the fuel oil) for a last glorious throw of the dice in an attempt to break up the invasion of Sicily.

As you will see, all scenarios are taken from the Mediterranean theater, one of the bloodiest of all areas of naval operations in World War II. (See S&T 26, p. 17). The historical notes supplied with each scenario provide a brief summary of the situation as it developed and of the assumptions that have been made to make the scenario possible.

Of necessity, some liberties have been taken in the OB regarding cruisers and destroyers, and where aircraft carriers were actually present they are assumed to have managed to avoid surface combat. Any effect they may have through the launching of air strikes is provided for in each scenario's special rules.

---

CAPE TEBULADA, 27 November 1940
ORDERS OF BATTLE AND DEPLOYMENT

<table>
<thead>
<tr>
<th>British Player:</th>
<th>hex/facing/speed</th>
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<tbody>
<tr>
<td>Gibraltar Force Renown (241)</td>
<td>E 1810/NE/6</td>
</tr>
<tr>
<td>C21</td>
<td>E 1910/NE/6</td>
</tr>
<tr>
<td>D21</td>
<td>E 1711/NE/6</td>
</tr>
<tr>
<td>D22</td>
<td>E 2009/NE/6</td>
</tr>
<tr>
<td>Alexandria Force (Enters per special rules)</td>
<td></td>
</tr>
<tr>
<td>Ramilles (153)</td>
<td></td>
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<tr>
<td>C22</td>
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<tr>
<td>L21</td>
<td></td>
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<tr>
<td>D23</td>
<td></td>
</tr>
<tr>
<td>Italian Player:</td>
<td></td>
</tr>
<tr>
<td>Vittorio Veneto (931)</td>
<td>F 0809/NW/6</td>
</tr>
<tr>
<td>Giulio Cesare (922)</td>
<td>F 0910/NW/6</td>
</tr>
<tr>
<td>C61</td>
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<tr>
<td>D62</td>
<td>F 0708/NW/6</td>
</tr>
<tr>
<td>D63</td>
<td>F 0908/NW/6</td>
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</tbody>
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GAME LENGTH
16 Game-Turns
BASE VISIBILITY
Eight hexes

SPECIAL RULES
Alexandria Force arrives on game turn six from the North at the British Player's discretion, but not less than 20 hexes from the nearest Italian unit. British must specify board section of entry on Turn 5.

VICTORY CONDITIONS
Italians must score more victory points than the British and exit both Italian capital ships from the west edge of the original map set up with equal or fewer total unrepaired hits than those inflicted on the two British capital ships or they lose.

HISTORICAL NOTES
The British attempted to pass a convoy eastward through the Mediterranean from Gibraltar. Their Gibraltar force was to be relieved by the Alexandria force with both forces providing strategic support during the most dangerous part of the convoy's passage. In actuality the Italian attack on the convoy was made by light forces, submarines and aircraft. The Italian battleship force never encountered either the convoy or either British capital ship escort. This scenario assumes that a capital ship encounter did take place.

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BOMBARDMENT OF GENOA, 9 February 1941
ORDERS OF BATTLE AND DEPLOYMENT

<table>
<thead>
<tr>
<th>British Player:</th>
<th>hex/facing/speed</th>
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<tr>
<td>Renown (241)</td>
<td>C 0611/NW/6</td>
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<tr>
<td>Malaya (133)</td>
<td>C 0712/NW/6</td>
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<td>C31</td>
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<td>D31</td>
<td>C 0710/NW/6</td>
</tr>
<tr>
<td>D32</td>
<td>C 0513/NW/6</td>
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<tr>
<td>Italian Player:</td>
<td></td>
</tr>
<tr>
<td>Vittorio Veneto (931)</td>
<td>E 1905/NW/6</td>
</tr>
<tr>
<td>Giulio Cesare (922)</td>
<td>E 1804/NW/6</td>
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<tr>
<td>Andrea Doria (924)</td>
<td>E 2005/NW/6</td>
</tr>
<tr>
<td>C71</td>
<td>F 0106/NW/6</td>
</tr>
<tr>
<td>L61</td>
<td>E 1603/NW/6</td>
</tr>
<tr>
<td>D71</td>
<td>E 2003/NW/6</td>
</tr>
<tr>
<td>D72</td>
<td>E 1806/NW/6</td>
</tr>
</tbody>
</table>

GAME LENGTH
20 Game-Turns
BASE VISIBILITY
Twelve hexes

SPECIAL RULES
1. British may not move North or East of lines formed by the North and East edge of the original map section deployment.
2. Due to the presence in the vicinity of the British aircraft carrier Ark Royal, the British Player uses the following procedure to simulate air attacks made by the Ark Royal's aircraft. On each turn the British Player rolls two dice. On each turn on which the result of the roll equals six the British player is allowed to make a separate I-1 attack against any one ship unit of the Italian force which is not otherwise being attacked on that turn. This attack is resolved at the same point at which gunnery combat is resolved.

VICTORY CONDITIONS
Italians must sink or wreck either Renown or Malaya and score more victory points than the British player to win. Achieving one of these conditions means a draw. Achieving neither means a British victory.

HISTORICAL NOTES
After the British had successfully carried out a naval bombardment of Genoa (although failing to do any further damage to the Cato Dullio which was docked in the harbor for repairs) the Italians sent out a force in order to cut off the British withdrawal. Although the Italians were in a good position to intercept the withdrawing British, the British escaped with the aid of bad weather. This scenario assumes good weather and a successful Italian interception.

[continued on page 30]
months, and are published at the request of the convention sponsors. These "cons" will
deal in substantial part with board wargaming, with the occasional touch of
miniatures and Science Fiction. When writing to the organizations listed, please mention
that you read of their convention in MOVES.

United States Army Recreation Center,
Landstuhl, West Germany

February 12, 13 and 14, 1977

There will be no entrance or games fees. The
games will run from 10:30 AM to 10:30 PM
each day. There are BOQ rooms available at
Ramstein AFB and Landstuhl Army Base for
those U.S. military personnel attending the
convention. There are several moderately
priced hotels in the area. For those planning
to attend, call or write: SFC Paul A. Fuessel,
or SFC David Rolfe at 2222-8244; Box 14, 2nd
General Hospital, APO N.Y. 09180 or
Director, USA Recreation Center, Landstuhl
Box 43, 2nd General Hospital, APO 09180.
Phone # 2224-7278.

Orccon 1
January 7, 8, and 9, 1977

The Armchair Strategists Club is hosting a
Wargame Convention at the spacious and
scenic campus of California State University,
Fullerton. Scheduled events will include boardgame tournaments, miniatures, D&D,
diplomacy and an auction. Prizes will be
awarded to the victors of the tournaments.

Dealers will be present for your convenience.
There will be plenty of room for open gaming
and there will be going games of Terrible
Swift Sword, Drang Nach Osten, War in
Europe and possibly Wellington's Victory.
All those pre-registering will receive, by mail, a
convention schedule of starting times. CSU
Fullerton is located about 20 miles southeast
of Los Angeles in Orange County. Cost is $2
per person to pre-register or $3 per person at
the door. Make all checks payable to Mark
Snowdon C/O The Armchair Strategists
Club, University Activities Center, California
State University, Fullerton, Ca. 92634.

Winter War IV
January 14, 15 and 16, 1977

You are invited to attend the fourth annual
convention of the University of Illinois
Conflict Simulations Society, Foreign
Language Building, 700 S. Mathews Ave.,
Urbana, Ill. 61801.
Tournaments, exhibits, seminars, auctions,
demonstrations and free gaming. Winter War remains one of the most
inexpensive conventions going: $1/day, $2/weekend and $1/tournament. Dealer fee
this year will be $25. If you have any questions please write: Alan B. Conrad, 911 S. Locust
#101, Champaign, Ill. 61820.

"WarCon III"
January 28, 29 and 30, 1977

Tournaments will be for the following games:
Dungeons & Dragons, Panzer Leader,
Empire of the Petal Throne, Kingmaker,
Patrol, Nuclear War, and miniatures
(probably). For further information write:
Steve Hageman, 435 Aston, College Station,
Texas 77840.

Dreadnought
[continued from page 24]
DEATH RIDE OF THE ITALIAN NAVY,
12 July 1943

ORDERS OF BATTLE AND DEPLOYMENT

Allied Player: hex/facing/speed
Massachusetts (463) E 0607/NE/5
Texas (342) E 0405/NE/5
New York (341) E 0306/NE/5
Wasp (134) E 0908/NE/5
Maylaya (133) E 0808/NE/5
Renown (241) E 0709/NE/5
C31 E 0505/NE/5
C32 E 0707/NE/5
L31 E 0806/NE/5
D41 E 0206/NE/5
D42 E 0508/NE/5
D43 E 0609/NE/5

Italian Player:
Littorio (932) B 0412/SE/5
Roma (933) B 0312/SE/5
Andrea Doria (924) B 0511/SE/5
Caio Duilio (923) B 0410/SE/5
L61 B 0513/SE/5
L62 B 0611/SE/5
L71 B 0211/SE/5
D71 B 0609/SE/5
D72 B 0213/SE/5

GAME LENGTH
16 Game-Turns

BASE VISIBILITY
Seven hexes

SPECIAL RULES
Neither side may leave original map area.
(Exception: See Victory Conditions.)

VICTORY CONDITIONS
Italian Player must sink or wreck one Allied capital
other than BB's Texas or New York or exit two or
more capital ships having no unrepaired damage
from the south edge of the original map area or
score more victory points than the Allied Player or
they lose.

HISTORICAL NOTES
The Italian OB represents what was available to
repel an invasion of Sicily. (Vittorio Veneto was re-
pairing bomb damage). This scenario assumes the
Italians possessed adequate luck and resolve to take
advantage of night and bad weather conditions that
restrict the use of Allied air power.

The Allies respond by assembling a scratch force of
their own capital ships (including New York and
Texas, far better suited to bombardment missions)
to prevent the Italians from interfering with landing
and supply operations. The Italian player has the
option of trying to sink at least one more Allied
capital ship for the sake of la gloire or of doing
damage among the Allied troop and cargo trans-
ports by exiting the map. At the end of sixteen
turns, the first of a series of Allied airstrikes,
launched when the weather cleared a bit, begins the
obliviation of the Italian force.
another to complete mopping up. Following this, the Allied Player is left only with the French forces in Africa and Syria and the British Navy. Rather than being lost to a Vichy government, these forces can be saved for use by the Allies.

During the Naval Stage of the Second Game-Turn, before the Vichy government is declared, move all French combat and merchant ships to New Caledonia. This may seem somewhat unorthodox, but, according to rule 20.17, "The French possession of New Caledonia (hex E116) and the French Army units based there have become Free French when France falls, regardless of the declaration of a Vichy government." Then, after the Vichy government is declared, the Allied Player can return these forces to the Atlantic for his own use.

The Allied Player could do the same with the three French Land Strength Points in Africa and Syria, but a simpler solution is at hand. Locate the 21 in Africa at hex 2619. The 21 in Syria might also be shifted to the same hex during Game-Turn One for added strength. A strong French force located at 2619 will delay an Axis drive on Gibraltar (hex 2617). According to rule 20.14, "Should any Axis or Allied unit (other than U.S.) enter Vichy territory, the Vichy French will ally themselves with the non-attacking side." But, don't forget to establish supply with these units once they come over to the Allies.

Following the above procedure, the Allied Player will be able to keep the French Navy and Merchant Marine on his side and be able to use the French Army in North Africa as a blocking force.

—Allyn R. Vannoy

* 

DREADNOUGHT: ADJUST FIRE

Dreadnought is an exciting and easily playable simulation of surface combat, but several design errors may influence play to a degree not seen in actual naval combat. Foremost of these minor faults are Range Allowances for several types of British and Japanese capital ships. It is with the Japanese BB's and BC's that I begin. The game allows the 780 *Fuso*, 780 *Ise*, 820 *Nagato*, 850 *Kongo* and 870 *Kirishima* Classes to fire to ranges (21-23 hexes) that these vessels were not able to attain until their reconstructions in the mid-1930's. Corrected values and hex equivalents follow:

Kongo, Kirishima (850, 870) as built... 25,800m (28,200 yds) = 14 hexes.
Fuso, Ise (780, 800) as built, 850, 870 in 1925... 29,000m (31,700 yds) = 16 hexes.
Nagato (820) as built... 32,000m (35,000 yds) = 18 hexes.
Kongo, Ise... 30,800m (33,700 yds) = 21 hexes.
Kongó, Ise, 780, 800, 880 in 1936... 38,000m (41,500 yds) = 21 hexes.

830 in 1936... 42,000m (45,600 yds) = 23 hexes.

These differences are caused by the increase in elevation (generally from 33° to 43°) of the main batteries of these ships in their rebuilds. The same case is made for the British capital ships, *Queen Elizabeth* (110-120), *Royal Sovereign* (140-150), *Renown* (230-250), and *Courageous* (260), armed with the 15"42 MK.1 rifle. When built, the elevations of the 15" aboard these ships was 20°, giving a maximum range with the 1920 lbf AP shell of 22,500m (24,600 yds) or 13 hexes. When the *Queen Elizabeth* (131), *Valiant* (132), *Warspite* (134), and *Renown* (251) were extensively rebuilt prior to World War II, elevation increased to 30°, allowing fire to 32,000m (35,000 yds) or 18 hexes. All other ships armed with the 15"42, except *Hood* (271-281) retain the lesser range, including Malaya (133) and *Repulse* (252), which were not as extensively modified as their sisters.

Another bone of contention is the base visibility in the Campaign Scenario. It is possible to have a maximum visibility of 18 hexes on individual turns. Fine, you say, as most ships' ranges fall short of 18 hexes, allowing visual fire to maximum distance. But, few ships, if any, had observation or fire-control sights good enough (about 230 feet) to see this far. The magnificent Yamato, with her tremendous bridge structure, had only a single searchlight, giving her the ability to see 13.1 miles (26,200 yds or 24,000m or 13 hexes) to the relative horizon. Firing at a target beyond this range would be extremely difficult or impossible as the target would be hulldown. Then, again, few bodies of water in the world are calm enough or untouched by foul weather to allow this kind of visibility yearround. Opening fire at 25,000 yards in the North Sea or Denmark Strait in winter? Unlike, without radar, which was not generally in use for 34 of the battleship's 39-year existence. Therefore, I suggest that maximum visibility for initial contact be no more than 14 hexes, and that maximum V-H boxes be no more than 20 hexes or the result of the die roll (see 5.7, Visibility), whichever is less.

Information cited is from Breyer's Battleships and Battle Cruisers, 1905-1970, Warship Profile #17 *IJN Kongo*, Warship Profile #30 *IJN Yamato and Musashi*, and Nave's Strategy III Surface Action Rules (for the visibility data).

—Dave Newman

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VICTORY IN WORLD WAR THREE

Victory in World War Three is based on the number of Industrial Hexes held at the end of the game. Now, I have counted the number of Industrial Hexes in the game and I find seven in Europe, three in Japan, two in China, five in Russia, and eleven in the US, for a total of twenty-eight. Hence, to win the game one must have fifteen Industrial Hexes. As I found in the game, England will usually not fall to the Russians since they have only one or two amphibious units with which to invade; likewise with the US. Thus, they simply cannot touch twelve hexes, assuming that you have a competent US Player. In Japan, if the Russian Player gets lucky he may be able to seize the northern Industrial Hex, but unless he is fantastically lucky, the US Player can reinforce the rest of the remaining two hexes, thus giving him fourteen hexes, assuring a draw. In fact, if the US plays its cards right it will command the seas by Game-Turn Seven, make an amphibious landing in the hex above the Russian Industrial Hex in Japan and isolate the Russian units there; then, through a major effort, the US could regain the hex, thus giving him fifteen hexes and the game, without having to set foot in Europe. At best, the Russian might be able to capture the oil in Iran and Singapore, thus giving the US Player only thirteen hexes, but that only salvages a draw, and usually the US Player can reinforce Singapore after the Chinese invade Southeast Asia, but before they reach the oil wells. Hence, a victory for the Russians is highly improbable, and the game loses some of its flavor. After all, the idea is of a return to Europe, not isolation.

To circumvent this problem, either deplete one Industrial Hex from the US and give it to the Russians, institute variable degrees of victory and different victory conditions, or and this is the approach I prefer, do not assign all hexes the same value. Assume that industry in Russia is basically heavy, while that in the US is consumer, hence Russian industry is geared for war and, factory for factory, they are probably more valuable in time of war (although the US still enjoys a preponderance of industrial strength) and, hence, they should be accorded a higher weight in terms of victory. This method may balance the game as far as victory goes. For Victory Point purposes, assign the Russian hexes a value of three Points each, assign the rest a value of two Points each and a value of only one Point if they don't have oil to function. Hence, the Russian Player with his thirteen hexes will have 31 Points, the US Player with his fifteen hexes will have 30 Points — a Russian marginal victory. Even if the Russian controls the oil, if the US Player holds onto Japan and liberates Western Europe, he will have 31 Points to 25 for the Russians, a substantive victory. If he only liberates on hex, the Russian will have twenty-nine Points to the US total of twenty-nine Points without the oil. This method will encourage a liberation of Europe attempt, where the other system fails to do so.

—Ernie K. Demanells

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Footnotes

FACING IN
PANZER '44/MECH WAR '77

One fault of the Panzer '44/Mech War '77 game system is the lack of emphasis on flanking maneuvers as an effective tactic in engagements on the platoon/company level. With no advantage accruing to the Player who maneuvers to lay flanking fire on his opponent, the game takes on some of the flavor of an aerial engagement, where the primary use of maneuver is to bring units within spotting and firing range of the enemy and the primary device of subtlety is the timing with which this is accomplished.

In the period of the Panzer '44 game, particularly, the importance of maneuver and flanking fire should not be ignored, as this was often the only viable tactic for Allied commanders whose tanks were severely outgunned. For instance, the 75mm gun of the M4 could not penetrate the frontal armor of the Panther at the killing range of the Panther’s gun, as the strengths in Panzer '44 readily show. But this same gun was quite capable of penetrating the thin side and rear plates of the Panther—try it in Tank!—even at 1000 meters and you’ll see.

A platoon of AFV’s deployed in combat will usually have a front orientation as the commanders strive to keep their frontal armor presented to the enemy. When fire is received from all directions, this effort is compromised, and some of the incoming fire is sure to impact on the more vulnerable aspects of the vehicles.

The lack of field-of-fire restrictions on towed artillery is another unrealistic element, which decreases the value of maneuver. There are severe limitations on the effectiveness of towed guns in a fluid situation, but the Panzer '44 rules give such units the same flexibility and offensive value as turret AFV’s, though vulnerability to fire is, if anything, overstated.

It is possible to correct these omissions and restore maneuver to its proper value without adding a lot of detail to the mechanics of the game. Neither is it necessary to depart from the spirit of abstraction and pliability, which makes this system work. The following rules are, admittedly, rather abstract, if not arbitrary, in their specifics, but the principles are sound and they work without seriously altering the balance of the scenarios.

1. When any Hard target is fired upon by more than one M-Class unit in a given Phase, determine the Line of Fire from each firing unit. If any two LOF’s enter the target hex through non-adjacent hexes, then all attacks are upgraded by adding one (+1)

**Footnotes**

Attack Strength Point before Range Attenuation.

2. The primary facing of a towed artillery unit is indicated by the orientation of the weapons symbol on the counter, which must be directed unambiguously toward a single hexside. The Field of Fire encompasses a 120° arc centered on the orientation of the weapon symbol and projected to the limits of range through the three adjacent hexes so indicated. Fire on any target within the Field of Fire is executed normally. Fire on any targets outside the Field of Fire may be executed, but three (-3) is subtracted from the die roll. This restriction should not apply to mortars, anti-aircraft guns, or any other guns with all-around traverse or which are light enough to be manhandled by a fear-crazed gun crew. Non-turreted AFV’s have their Field of Fire limitations factored into their Attack Strength, so they are excluded from this rule.

3. This is unrelated to the “maneuver” issue, but I’ll throw it in anyway as it cries for attention. M-Class Attack Strengths are computed on the basis of armor-piercing capability. The resulting range of values for weapons whose high-explosive capabilities are very similar is unfair to Soft Targets. An infantryman would be unlikely to appreciate or experience any difference between the incoming high-explosive shells from the 75mm of an M4 and, say, the 17-lb. gun of the Firefly. Therefore, when M-Class units attack Soft Targets, use Attack Strengths from this table:

<table>
<thead>
<tr>
<th>Caliber of Firing Weapon</th>
<th>Attack Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>57mm or less</td>
<td>Basic</td>
</tr>
<tr>
<td>75mm to 85mm (incl 17-lb.)</td>
<td>7</td>
</tr>
<tr>
<td>87mm or greater</td>
<td>9</td>
</tr>
</tbody>
</table>

The mental switch should not be hard to make in the course of play and it will bring the effectiveness of primarily armor-piercing weapons against Soft targets back into line.

The suggested rules modifications have limited applicability to Mech War '77. Flanking fire is of less significance with the common use of HEAT projectiles as opposed to kinetic rounds. The only units subject to Field of Fire restrictions are the Soviet and PLA towed artillery and anti-tank batteries. However, with the greatly increased strength of M-Class units, rule #3 is even more important. A new class, including 105mm and greater calibers, should be added to the table, with an Attack Strength of "10."

William Tallen

DREADNAUGHT

The game allows the U.S. battleships armed with 14" rifles to fire to ranges these weapons were unable to attain until angles of elevation were raised, generally from 15° to 30°. These modifications were a part of the extensive reconstructions conducted in the late 1920’s through late 1930’s. The only exceptions were the 410-420 Tennessee Class BB’s, the last of the 14" U.S. BB’s, which were built with 30° elevation for the main battery.

The 340 Texas, 350 Oklahoma, and 370 Pennsylvania, all armed with the 1911 Mark II 14"/45 should have a range of approximately ten hexes, instead of the 17-hex Range Allowance on the counters. The 360 Oklahoma and 380 Pennsylvania Classes, after their respective 1927-28 and 1929-31 rebuilds, have printed the range table. Since there is no “refit” Texas counter, the 341 New York and 342 Texas should have a ten hex range until after their 1940-41 modifications, when the printed range is valid.

The 390 New Mexico Class, armed with the longer 1915 Mark IV 14"/50 should have a range of approximately eleven hexes. After their modifications in the early 1930’s, the printed 18-hex allowance is valid.

The C60 and C70 screen units should be allowed to use torpedo attacks when used as Japanese CA’s, as this was a vital aspect of Japanese naval doctrine (remember Savo Island?). The C60’s, as they approximate the Furutaka/Aoba Classes, and the C70’s, which represent the Myoko/Takao/Mogami types, should be given a 1:1T capability.

Further, all DD types which did not carry re-loads (generally, all non-Japanese ships) should be limited to only one torpedo attack per scenario, not two per scenario, as in Case 8.22.

The rules allow a BB to blast away at a wrecked screen unit all day, and not sink it unless first rolling an “E” Result on the CRT and then rolling a 7 or 11. This rule is very valuable for damage on capital ships at the resilience of the capital ship was amply documented in the S&T “Dreadnought” article. But lightly- or non-armored screen units are a different story. To allow for more sinkings, and a more realistic touch, amend Case 5.42, as follows:

[5.42] Screen units are sunk whenever damage exceeds the 2G2S condition as follows: when the tanker is the capital ship, an additional ‘G’ or ‘S’ hits sinks the unit. If the attacker is a screen unit, only an additional ‘S’ hit will sink the unit. And, regardless of the nature of the attacker, an ‘E’ hit assessed against a wrecked screen unit will sink the unit.

Also, the rules allow for screens armed with 8", 6", 5" and smaller weapons to inflict damage on heavily protected capital ships from the extreme limits of a screen’s range. Certainly, at ranges of 5-10 miles (5 to 10 hexes) light artillery like 5" or 8" will not penetrate a BB’s vitals, protected by 12"-16” of armor. But light weapons (and, after all, a 250 lb. 8" AP is a feather compared to a 2000
Use of this rule creates a new dimension to board games. If, for example, your opponent has all of his armored units off-map, you have no idea where his attack will come. Thus, there is more pressure to prepare a good defense, and there is a real need to keep a reasonably sized force in reserve.

Beginning with the idea that a unit can be temporarily removed from the map, there are many variables which will apply differently to various games. Among these are:

1. The number of pieces which can be off-map on a given Turn. This would depend on the reconnaissance and intelligence gathering capabilities of the opposing armies; but, in any case, the number should be kept fairly low to prevent too much paper work from accumulating.

2. Which pieces can be removed from the map: There should be restrictions on which units can be removed. For example, to be removed from the map, a unit must be out of contact with all Enemy units and their Zones of Control; to be removed, a unit must be a certain number of hexes from the nearest Enemy unit, etc.

3. Restrictions which apply to off-map pieces. Some examples of restrictions are: the unit may not attack and has no ZOC; the act of moving off-map consumes its entire Movement Allowance for that Turn; off-map units which move adjacent to Enemy units must be returned to the map, which expends their Movement Allowance for that Turn, and they may not attack immediately after being brought back onto the map.

The above are intended as general suggestions. Players could adopt the idea to specific games as they see fit. To incorporate this idea does require a bit of paperwork and a fair amount of honesty.

—John & David Tate

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BRIDGE LAYING VEHICLES IN TANK!

The anti-tank ditch markers in Tank! are an absolutely impassable obstacle. But in reality, every defensive measure ultimately produces offensive gimmick to counteract it. The remedy for the anti-tank ditch is the bridge-laying tank.

As early as the First World War, armored units went into action carrying “fascines,” huge round bundles of brushwood that could be dropped into trenches ahead of the advancing tank to facilitate crossing. By the Second World War, several types of assault bridging vehicles had been developed for the purpose of crossing streams, canals, trenches, ditches and other minor obstacles. Such vehicles would normally be concentrated in brigade or division engineer units, but for a planned attack on a prepared position, they could be attached to individual tank companies. The simplest type was represented by the British “ARK” or a Soviet modification of the T-34. This was simply a tank chassis, minus turret, with a platform atop the hull and drawbridge extensions at bow and stern. It would be driven bodily into the ditch, the drawbridges would be lowered onto either bank of the obstacle and the following tanks would cross directly over it. More sophisticated bridging vehicles carried a rigid steel girder bridge up to 40 feet long that could be launched out over an obstacle on rollers mounted on the front of the tank hull. The final development was the “scissors bridge” (as mounted on the British Valentine, and on modified Main Battle Tank chassis in most armies since WWII). This type of bridge is raised, unfolded and extended over a gap by hydraulic rams, then dropped and uncoupled without the crew dismounting.

A few simple, somewhat abstracted rules for Tank! can readily reproduce this capability:

[37.0] Bridge-Laying Vehicles

At the discretion of the Players, and within the limits of the various historical periods and national weapons inventories, the Alpha Force may include up to one section (four vehicles) of assault bridging vehicles in scenarios involving anti-tank ditch defenses.

[37.1] Ark-type Bridging Vehicles: This is an unarmored tank chassis, with Defense Strength characteristics corresponding to the battle tank employed by Alpha Force (or an “obsolete” vehicle of the same army). They may be attached to each separate platoon, or moved together as an “engineer” platoon. To use its bridging capability, the unit must be moved adjacent to the ditch, where it must stop and move no further in that Turn. On the following Turn, it may be driven into the ditch, and other vehicles may cross “over” it. The “bridge” vehicle is considered to be abandoned, it may not leave the ditch or move at all for the remainder of the scenario. The bridge itself may be destroyed by HE Fire, defending with a strength of “15.”

[37.2] Steel Girder and Scissors Bridge Laying Vehicles: These are unarmored tank chassis which carry a “bridge” unit as a “passenger” (“bridge” counters may be made up from blanks or borrowed from games that use bridge units). The “bridge” is emplaced by moving the vehicle adjacent to the ditch. On the following Turn, the bridge may be unloaded, and vehicles may cross. The bridge may be taken up again by reversing the process. The bridge itself defends against HE attacks with a strength of “12.”

Players should research the special characteristics of the various types of gap-crossing vehicles they wish to simulate. Some vehicles, for example, retained main or secondary armament. Others could lay a bridge, but could not take it up again. In practice, special purpose vehicles tend to attract a disproportionate volume of enemy fire. But this takes some of the heat off the MBT’s. So let’s hear it for the engineers!

—Mike Markowitz
14.0 ADDITIONAL SCENARIOS

14.1 Falkland Islands 8th December 1914
ORDERS OF BATTLE & DEPLOYMENT
British Player: hex/facing/speed
Invincible (191) D0608/E/6
Inflexible (192) D0609/E/6
C11 D0410/E/6
L21 D0966/E/6
German Player:
G51 D1668/E/5
L51 D1708/E/5
L51 D1678/E/6
GAME LENGTH: 16 game turns
SPECIAL RULES: The British C11 cruiser unit has a top speed of '5'.
BASE VISIBILITY: 12 hexes
VICTORY CONDITIONS: At least 2 German units must break sight with the British before the end of the game. The British player must sink the Hessen (or sink it!). If neither condition is met, the game is a draw.

14.2 Dogger Bank 24th January 1906
ORDERS OF BATTLE & DEPLOYMENT
British Player: hex/facing/speed
Dreadnought (011) D1602/N/5
L11 D1601/N/5
German Player:
Hessen (701) A1686/SE/4
C51 A1687/SE/4
D51 A1689/SE/4
GAME LENGTH: 20 game turns
BASE VISIBILITY: 8 hexes
VICTORY CONDITIONS: German player must exit the south or east sides of map F with the Hessen by the end of this game. The British player must sink the Hessen (or sink it). If neither condition is met the game is a draw.
HISTORICAL NOTES: After the First World War broke out by late 1905 two small squadrons of ships met off Dogger Bank. The Germans, believing that their new pre-Dreadnought Hessen was unsinkable, sent it out into the North Sea for trials. But to their horror, which was cruising in the area (I know, but I have to think of something!!)

14.3 Trafalgar 12th November 1914
ORDERS OF BATTLE & DEPLOYMENT
French Player: hex/facing/speed
France (504) E0812/NW/5
Paris (504) E0813/NW/5
C11 E0713/NW/5
C12 E0811/NW/5
D11 E0712/NW/5
D11 E0103/NW/5
Spanish Player:
España (951) D1306/NE/5
Bélgica (956) D1307/NE/5
Alfonso (953) D1107/NE/5
C51 D1405/NE/5
D51 D1307/NE/5
BASE VISIBILITY: 10 hexes
GAME LENGTH: 12 game-turns
VICTORY CONDITIONS: Victory is based on point count, with the Spanish Player getting 10 victory points for each French dreadnought wrecked or sunk at the end of the scenario.
HISTORICAL NOTES (1): Let me see .... Oh, yes. Soon after Austria–Hungary's declaration of war, Spain entered them on the Central Powers' side. Because of the lack of troops any major conflict between Spain and France was likely to take place at sea. And so it happened.

14.4 The Falkland Campaign October-November 1914
Campaign Game
British Player:
Force 1: Austrilia (202) C11
C11 L11
C11 L21
Force 2: C11
C11 L21
C11 L22
Force 3: C11
C11 L11
C11 L12
C11 L13

Continued on page 26

WALLGAMING
C. MACLACHAN

For those of you without a spare room, board games would be easier to play and keep on playing, if we could have them on the wall. The board itself, of course, presents no problems; you can suspend an S.F.I. map-sheet using plastic poster hangers. The trouble is to stick the counters to a vertical surface. I have heard of people who use Blu-tack, which ruins both counters and board eventually, and S.F.I. have been advertising magnetic strips, although not the sheet metal to put behind the map-sheet nor advice on how to fix such a sheet to your wall. Neither of these methods seems to suit back wall counters. What is wanted is something which does not alter the appearance of either board or counters, and the cheaper and lighter the better.

With pleasure, then, and pride, I have to announce that this problem has been solved. Yes, solved! Now you can hang your games up, and leave them up, out of reach of children, small dogs, house cleaners, rats and other vermin. First, you need a sheet of clear plastic to cover your board (Furnham Traders, 3 Church Lane, Market Square, Wantage, Oxon., sell it by the yard—send them a S.A.E.). Second, to make the counters adhere to this smooth surface, wrap them in freezer film (also known as cling film and available at most supermarkets).

Wrapping the counters is a tedious and fiddly job, best done by cutting a quantity of film from the roll, smoothing it out on a chopping board and then, with a sharp knife, cutting out a piece about 1½ inches square for each counter. Lay the counter in the centre of this piece of film, fold in two opposite sides and smooth them together, then fold in the remaining ends. The smoother the folded surface, the better the adhesion on that side. You may have to rewrap a few counters which just will not stick at first, but once these teething troubles are over all the counters will stick themselves to the plastic overlay if pressed firmly, which means you need to hang the board against a flat, unyielding surface. Like a wall.

You can stack counters, because they will stick to each other, and because the film is transparent you can see both sides of a back-printed counter. I have had games hanging up literally for months, without mishap, and a friend of mine has also tried this with success. I verily believe that it will prove a boon to boardgamers everywhere, especially those who play solo or by mail. All I ask in return is that commercial organisations, when they recommend this method, acknowledge its inventor, and that gamers when they cast dice or pick chips invoke my name with honour as a friend to mankind!

SIMPUBS BRIEFING
MALCOLM WATSON

WRITTEN JANUARY 4th 1980

Welcome to 1980, the start of a new decade and 'The Year Of The Chip' . . . . . or so we are led to believe. In our own case I hope most sincerely that it becomes just as nice with the lovable 'Superchip' swinging in a back pocket. As far as play issues of Movies, Phoenix and S&T were the first to go into the post courtesy of our various working programmes. An explanation of the codes and indicators to be found on the boxes will be sent out with these issues and we are now waiting for details of any corrections to be made on individuals subscriptions and or names/addresses. The main mail order programmes have been put through their initial tests and the errors that were detected have been corrected on their expiry notes. The second change affects orders that are underpaid. In the past it has been our practice to issue an invoice for the balance of an underpaid order, in future we will send as much of the order as is covered by the remittance received. The balance of your payment, if any, will be put into credit against your account. It is quite possible that this procedure will affect the subscriber discount given on an underpaid order since discounts will be worked out on the final invoice value. In all cases where we are obliged to implement this procedure we will use our discretion to ensure that the maximum number of items will be sent out with the minimum adverse effect on subscriber discounts. Of course if sufficient payment is made then none of this need concern you. As a postscript to this section, when we get the mail off the ground we will no longer issue credit notes per se, rather we will maintain a credit balance (assuming there is one of course) against individual accounts. The current state of your balance will be shown on the delivery note that comes to you with each order.

The briefing feature in issue 22 contained a certain amount of gloom with regard to the situation at SPI, happily it looks like they are getting themselves back together at last. There has been a marked improvement in the service and co-operation that we are now getting from their shipping department. The last shipment received was almost
SIMPUSS BRIEFING CONTINUED

flawless although it was late which can be put down to a hangover from the pre-shakeup days. The SU77 shipment got out on time which is particularly encouraging because one sees bears in the snow as the 1977 ship leaves just prior to Christmas, SPU’s busiest time. In the past we have found that the Xmas order always falls behind schedule and the SU77 is the sort of a new feature which certainly hopes so, another year like 1979 and I’ll be a candidate for ulcers. Not only will SPU be on schedule but for it... there will be five new games in there. Commando, medieval Guadgets, City Fight, Demons and Deathmace are shown on the packing list. The following shipment should contain the new games and our next Expansion Kit, Bully, Leningrad and John Carter Of Mars. Yes I did say John Carter, the copyright problems have been cleared up at long last much to the relief and delight of yours truly. Having been starved of new titles for so long the sudden influx is a most delightful experience.

The good news does not finish there, stocks of Yaquinto Games are also on route to us after a considerable delay and it looks like we will be able to offer subscriber discounted prices as well as setting prices considerably lower than those currently being asked. If you can hold off your desire for a few weeks then do so, I am sure we can save you a bob or two.

It would be very pleasant to continue this feature in the above obfuscatary manner however there are two sobering facts hanging over our heads at present, both of which are the price increases mentioned in my last column and it is definitely going up in price to us, or rather has now gone up in price. The same is true of the boxwraps. The effects of the former will not be felt by subscribers immediately, we are absorbing the increase temporarily while we look into the feasibility of producing SPU over here. If it proves to be a viable proposition you may never feel the pinch, if however we cannot get this off the ground then you can expect to be hit by a price increase of about 50p per issue. Not a pleasant thought.

You will note on the current price list that we have now dropped the unboxed versions of SPI games. Fewer and fewer people have been going for this style over the past 12 months, combine this with the problems of stock control caused by operating the dual format and you have yourself every justification for taking this measure.

Finally we have an Irish problem. Since the recent monetary developments with the EEC, Irish cheques and postal orders have been treated by British banks as if they were French. This means that bank charges of £1.00 to £1.50 have been levied on each transaction, obviously we cannot absorb this shortfall therefore we have been obliged to hold up and invoice most Irish orders. Anyone one of you from Eire is advised to go along to their bank to ascertain the best way to get payments to us. Yet another case of governments messing with our recreational activities.

Since sending off this column for inclusion in Phoenix 23 I am delighted to report that our mail order service is now ready to go on steam. Until we take delivery of regular stationary we will be creating temporary invoices with each order, these will carry an explanation of the comments to be found on our normal headed invoice. Of course they do not contain all the information to be included on the regular invoices which should be to hand in 3 months. If you are not sure about any part of your order please contact us giving details of your query along with your new A/C Code, the date and the invoice number. All of which will be found at the bottom right of your invoice. It is possible that we will still come up against some problems during this initial period, any alterations you might find on the printed invoice will be there as a result of the manual checks that we intend to carry out.

(21) Non-board games, using miniatures, that simulate conflict or struggle of any kind.

(22) Role-playing games that simulate personal combat and adventure in a military or paramilitary setting.

(23) Role-playing games that simulate personal adventure not involving personal combat or violence.

(24) Role-playing games that simulate personal combat in a political, social, economic or psychological context.

(25) Role-playing games that simulate personal combat in a political, social, economic or psychological context.

(26) Games which do use boards, miniatures or role playing techniques but which simulate real or imaginary conflict in a military or paramilitary setting.

(27) Games which don’t use board, miniatures or role playing techniques but which simulate real or imaginary conflict in a military or paramilitary setting.

(28) Any game, using any type of equipment or techniques, that simulates an historical military or paramilitary-conflict

(29) Any game, using any type of equipment or techniques, that simulates an historic economic, political or sociological conflict or setting.

(30) Any game, using any type of equipment or techniques, that simulates any real world process (not necessarily involving conflict or struggle).

(31) Any game, using any type of equipment or techniques, that simulates any imaginary (i.e. Fantasy) conflict or struggle.

(32) Any game, using any type of equipment or techniques that give the appearance of simulating or modelling any process or event, real or imaginary.

(33) Rate this issue of Phoenix on a scale of 1-9 where 9 is excellent and 1 being poor. Please rate zero if you did not read the article.

(34) Fulda Gap – O.Mack

(35) Army Group South – P.King

(36) Fear God & Dreadnought – D.Davies

(37) Game Days 5 – J.Lambhead

(38) History and the Horse Soldier – R. Musson

(39) Great War in the East – A.McGaa

(40) Wallgaming – C.Maclachlan

(41) Arnhem – D.Cuim

(42) Dreadnought scenarios – G.Wheatley

(43) Objective Moscow Review – A.Sarker

(44) Simpsons Briefing

(45) Grapevine

(46) Book Review

(47) Mail Call

(48) The idea of a Combat Contact

(49) The idea of using any type of occasional cartoons

(50) The published cartoon

DREADNOUGHT SCENARIOS: CONT

Force 5: German Player: C51

Invisible (191) C51

Inflexible (192) L61

L21

L21

At the beginning of each scenario the British Player rolls a die (secretly) to show him which force he uses (a roll of 1-2 means Force 1 etc.). If he rolls a 3 or a number already rolled, he rolls again.

* = take 2 from speed of unit and add one to attack and defence (represents pre-dreadnought Triumph and Canopus).

BASE VISIBILITY: in all scenarios is 10 hexes.

VICTORY POINTS: German Player: 20 victory points if German force (all of it) breaks sightings. Normal points for inflicting damage. British Player: double points for inflicting damage.
Fear God & Dreadnought

A REVIEW BY DOUG DAVIES

There can be little doubt that the 'state of art' in boardgamimg design has advanced considerably over the last decade in the area of 'simulation', but that the 'playability' aspect of most games has in contrast deteriorated. This is one reason in my estimation why recent games have such a short life span; they are no sooner produced, often with labyrinthine rules to try and simulate every detail of a situation, than a barrage of criticism descends revealing the impossibility of adequately playing such a situation, often cast contemptuously aside by the advocates of historical accuracy who now tend to dominate the critical horizons of the hobby. This can be lost opportunity, seeking a good, exciting and balanced struggle of wills and to hell with history.

Such a game is Dreadnought produced by SPI in 1975. If you want to sit on the edge of your chair for a couple of hours, nerves tense, your brain whirling with plans, schemes and doubts, the excitement building up to its peak minute by minute, but able to enjoy yourself, then give this, the final design of the late John Young, a try. If on the other hand the facts that the Invincible had 6" armour tapering to 4" on the bow, that the director firing mechanism was designed by Vickers, and that the Captain's coxswain was called Campbell, is more important to you, then stay well away from Dreadnought, it would drive you crazy.

The subject of Dreadnought, as the name suggests, are those huge leviathans which for a brief span of years controlled the seas and then passed on in the space of a generation to the fire of air and the power of steam. Dreadnought design was often associated with the steam locomotive. The game is on a tactical level and includes counters for every one of those mighty battleships, plus all the various boats made to sink some of them (yes, Gladys, they were plagued with errata even then) and allows you to fight all the battles which were fought on the seas of Jenkins or Jutland. As actual battles were in fact rare (Admirals were notoriously inconsiderate about losing ships to provide scenarios for boardgamers) there exists a simple procedure for making your own, so that you can find out if the Austro Hungarian-Italian Spanish Navy could have beaten the Brazilian-Argentinian-American Navy in 1917.

The action takes place on one of those chopped up game maps which come in six separate pieces so that you can move bits of it around should any of your ships threaten to sail off the edge of the board. The rules are simple to master, making it a good game for introducing a new recruit to the hobby into the pleasures of boardgaming, with a sequence of play which is basically fire, move and repair. Firing and movement are simultaneous with plotting taking place secretly, which is where the tension comes in as is usual with si-move games. With no terrain to worry about movement is fairly straightforward in that ships may move up to the limit of their movement allowance, with certain restrictions on acceleration and deceleration, and the number and placement of turns which can be made in the course of a move. Battleship counters representing single ships are allowed to stack four high, but screen units which represent groups of cruisers and destroyers are limited to one counter per hex.

Being able to fire depends on the visibility, which can fluctuate from turn to turn, and the range of your guns, and combat is resolved using two 2-12 tables - the Damage Point Table (DPT) and the Combat Result Table (CRT). The attack strength of a firing ship, which may be modified by the range and other considerations, is calculated then two dice are rolled with the result being cross- referenced with the modified attack strength on the DPT. This yields the number of damage points obtained which are then compared with the target ship's defense strength to produce the combat ratio used on the CRT. The dice are then rolled again and the result is compared with the target ship's defense strength to determine the damage inflicted on the target. Firing strength is affected by such considerations as facing, previously accrued damage, other ships firing at the same target, and if the firing ship is itself under attack.

Damage comes in the usual SPI fashion for naval games - one can suffer 'G' (gun) damage which either halves or eliminates your ability to fire, or 'S' (speed) damage which has similar effects on your movement capabilities. In the damage control phase ships have a 50% chance of repairing 'G' damage, and a 33 1/3% chance of removing 'S' damage. This ability is limited however to the defense strength of the ship, e.g. a ship with a defense strength of 5 could remove five separate increments of damage, but if at any time the damage is allowed to accumulate to a state of 2G2S the ship is deemed to be a wreck with the damage control parties overwhelmed. It is also possible for a ship to explode, but this is a rare event reflecting the designer's view that in general boardgaming could sustain tremendous amounts of damage and still stay afloat.

Other rules cover such things as torpedo attacks, secondary battery fire, smoke screens, radar, the position of the sun, and other highly exotic factors which might affect a naval battle. As previously mentioned a considerable portion of the rules deal with the creation of the scenarios, as well as listing some seven historical scenarios.

Victory is based mainly on a point system in which you obtain points each time you inflict damage on the enemy, the rewards rising steeply once a ship's damage control level is reached. A couple of scenarios are designed to be completed in two moves with the objective of moving, or preventing a force escaping off a designated map edge. Generally it is a good system which accurately gauges each player's performance. However the game system can be wildly dependent on luck (as big gun naval battles were often), and it is therefore better suited to large fleet actions than to individual ship to ship duels, for the luck element will then, in all probability, even itself out. The drawback to such things as the Jutland scenario, was over 20 units in play, will be the amount of bookkeeping required, and this is probably best played by mail where more time is available, or as a multi-player game, which can be great fun if only for the confusion it produces. For normal face to face encounters a force of between six to ten battleships per side gives a better game.

What are the tactics to remember as you sail into battle? Well of course each scenario presents its own problems but certain guidelines can be recom- mended. First and foremost, do not split up your fleet into separate squadrons however tempting it might appear. It is rare that the tactical considerations of separate squadrons coincide allowing the enemy to act in conjunction, and one will invariably find itself confronted by the whole enemy force. This concentration usually takes the form of the attacker sending out detached squadrons so that the attack factor of each firing ship is either doubled or trebled with a corresponding increase in the possibility of inflicting heavy damage. Of course this effects both sides equally, but a player who has all his ships attack strengths so enhanced will naturally gain a distinct advantage over an opponent who divided his fleet as only half his ships are at close range.

If you outnumber the enemy make sure you engage every one of his vessels, for a ship under fire suffers adverse adjustments on the DPT, and concentrates your best ships and the extra ones against his weaker units. These are easier and quicker to get rid of and it allows you to bring larger concentrations of fire on the enemy. If danger threatens have your battleships fight on later on with more chance of hurting them. A useful tactic to use in conjunction with this is the use of a second line of defense, such as the older German battle ships at Jutland to fire against the strongest enemy units. The idea being not particularly to hit them, although of course you might be lucky, but to give the other ships a chance of capturing some of the enemy's most powerful units against a single target, hoping to overwhelm it in the space of a single fire phase, giving the enemy no chance of carrying out any damage control.

If on the other hand you are outnumbered try to use your destroyers to shield your battleships from part of the enemy strength by employing a smoke screen, thus reverting the situation through to a battle, and losing a portion of your fleet suffer the disadvantages of the inferior side, if only for a turn. Clever use of such smoke screens will frequently split the enemy into two - in effect making them into separate squadrons with it's opportunity to close for a killing. Also a player who finds he is outnumbered will usually discover a compensating advantage - he may be fortunate enough to out-range the enemy in which case he should endeavour to keep the action at long distance, hoping on the odd turn to be able to hit without any chance of reply. Alternatively he might hold a distinct speed advantage over his opponent, which, with careful play...
manoeuvring, can result in a concentration being made against part of the enemy battle fleet.

When you succeed in hitting an enemy ship continue to fire at it in preference to fresh targets, endeavouring to push its damage level up to 2G2S before a dearth of accuracy, remove the hit. This particularly applies to vessels with speed damage, which is harder to remove, and which will tend to become detached from the main body of the enemy fleet, giving you an excellent all-round view of the nifty tactics. Naturally keep a check on targets which are approaching the limit of their damage control capability because once this is exceeded, and damage starts mounting, so too, do the victory points you gain with each hit.

Protect your own damaged ships by turning them away from the enemy line, blanketing them behind a smoke screen while you attempt to carry out repairs. Try to keep battlefleet against enemy battle line which will rarely succeed in the face of masked secondary battle fire. Torpedo attacks are difficult to execute in this game system and virtually the only time they are profitable is when your opponent is behind on points and is desperately trying to close so that you can predict his course with some confidence. Cruisers can be used as ‘soak off’ units if absolutely necessary but this can lead to trouble for their defense strengths are naturally weak and the enemy may well knock them out. If it is possible, it is best to run them out of danger at the very beginning of the battle rather than risk losing the victory points on their demise.

Of course, when you actually get embroiled in action, you soon discover that many of the tactics and considerations discussed above are diametrically opposite to each other, and that you are continually having to make compromises between them. It is not always possible to satisfy all the interests which provide the game with its entertainment factor, and as every playing of each scenario is different, even a standard played situation will often provide a different set of problems to be solved.

Finally, mention must be made of the difficulty of actually sinking a ship. It is virtually impossible, as the rules stand, to have more than a 3% chance of sending a dreadnought to the bottom - which reflects, as I've mentioned before, the designer's contention that they were capable of sustaining tremendous degrees of damage. This is all very well, but I've seen so called wrecked ships stand several turns of fire, at minimum range, from eight to ten battleships and still be firing. I suggest that once a ship reaches a state of '2G2S' it's defensive factor is halved and any 'E' result on the CRT is treated as a sinking - normally one roll again with an over 75% chance that the target won't explode.

The above are all design problems and, to it's credit, the game has few rules problems and none of these is of great import. Nowhere does it state what happens to secondary batteries when a ship sustains 'G' damage. The actual order in which one removes damage from a ship can have an effect, yet it does not state in the rules if 'G' damage must be removed before 'S' damage, or vice versa, or indeed if the player has a choice (this being the method I prefer).

Following such a catalogue of simulation type faults why do I enjoy the game so much that I urge you to find a copy and give it a try? I think it's so you can experience the sensation of feeling that wonderful air of calm assurance you had, as you planned the utter destruction of the enemy fleet, slowly evaporating to absolute horror as you realise that fool of an opponent hasn't sailed north, as all logic said he must, but instead, has gone south, and is in fact about to lap you. It is the sense of waiting between completing your plot, which frequently becomes so intense that you can scarcely bear to wait any longer, to see where he's gone and how you can clobber him. Then the nightmare realisation that your biggest battleship has failed to obtain a hit at point blank range. Don't despair however, just as you are about to hurl the dice into the fire and take up Ludo or Monopoly, a unnamed destroyer, against all the odds, succumbs to torpedoing a whole bunch of the enemy's battlehips. It's that marvellous feeling of elation when your longer ranged guns give the enemy a couple of broadsides without reply and your frantic opponent is forced to come charging onto your waiting gun. Above everything else it's because the game is so bloody exciting even when your ships are blowing up and you can't see the enemy for smoke.

Yes, in spite of its limitations, it does show you how Jellicoe could have lost the war in an afternoon, and it does so in a highly entertaining manner, so never mind what its critics say - Foul God and Dreadnought!

The following sources are acknowledged:

From The Dreadnought To Scapa Flow (five vols) by A.M. Wigram
The Battleship Era by Peter Padfield
Naval Battles Of The First World War by Geoffrey Dobson
Dreadnought by Richard Hough
The Strategy Of Sea Power by S.W Roskill
Moves N023 and N026 by SPI
### [5.8] DAMAGE POINT TABLE

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When an "E" result, immediately roll the dice again. If a seven or eleven come up, the ship sinks; otherwise it suffers 2G,1S damage.

### [5.43] DAMAGE CONTROL TABLE

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### [5.51] RANGE DISTANCE TABLE

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Copyright © 1975, Simulations Publications, Inc., New York, N.Y.
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