



GRAND FLEETS

by Daniel Kast & Kevin Smith

Game Design

Daniel Kast & Kevin Smith

Editing

Jim Callahan, Greg Schmittgens

Playtesters

Jim Callahan, Robert Flaharty, Eric Rennie, Eric Schultz, Cathy Watts, Scott Watts, Noel Weer

Layout & Graphic Design

Daniel Kast

Some images ©2003-2004 ClipArt.com

First Printing, March 2004
Printed in the United States of America by
Gorham Printing, Rochester, WA
www.gorhamprinting.com

Majestic Twelve Games

5335 S. Valentia Way #459
Greenwood Village, CO 80111-3129
www.mj12games.com
groups.yahoo.com/group/mj12games/



"Grand Fleets" and the Majestic Twelve Games logo are trademarks of Majestic Twelve Games.

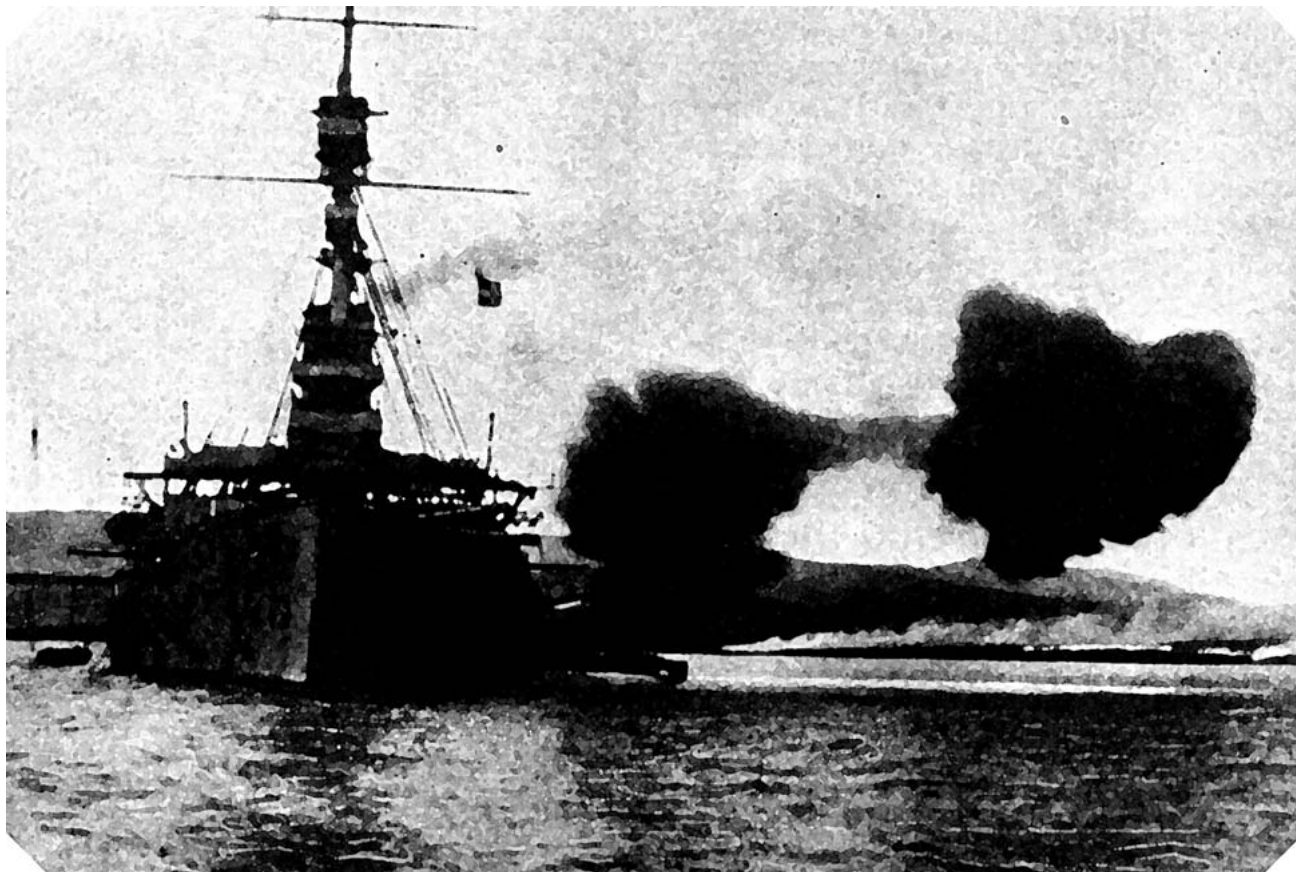
TABLE OF CONTENTS

1 INTRODUCTION	6	5 MOVEMENT	14
1.1 Players	6	5.1 Movement Points	14
1.1.1 Referee	7	5.2 Movement Orders	14
1.2 Scale	7	5.2.1 Maneuvers	15
1.2.1 Distance	7	5.2.2 Spending Movement Points	15
1.2.2 Time & Speed	7	5.3 Types of Squadron Movement	16
1.2.3 Altitude	7	5.3.1 Simultaneous Movement	16
1.3 Materials	7	5.3.2 Line-Ahead Movement	16
1.3.1 Playing Surface	7	5.4 Moving the Ships	16
1.3.2 Playing Pieces	7	5.4.1 Stacking	17
1.3.3 Dice	7	5.4.2 Exiting the Game Board	17
1.3.4 Other Materials	7	5.4.3 Floating the Game Board	17
2 PLAYING THE GAME	8	5.5 Collisions & Ramming	17
2.1 Preparations	8	5.5.1 Collisions	17
2.1.1 Starting Forces	8	5.5.2 Ramming	17
2.1.2 Ship Data Cards	8	5.5.3 Effects of Collisions	17
2.1.3 Initial Placement	8	6 GUNNERY COMBAT	18
2.2 Sequence of Play	8	6.1 Firing Orders	18
2.2.1 Game Length	8	6.1.1 Maximum Number of Targets	18
2.2.2 Winning the Game	8	6.1.2 Firing Arcs	18
3 THE SHIP DATA CARD	9	6.1.3 Range	19
3.1 Name & Class	9	6.1.4 Line of Fire	19
3.2 Hull	9	6.2 Gunfire Resolution	20
3.3 Speed	9	6.2.1 The To-Hit Roll	20
3.4 Armor	9	6.2.2 The Penetration Roll	20
3.5 Size	10	6.2.3 Damage	21
3.5.1 Modifier (Mod.)	10	7 TORPEDOES	21
3.5.2 Command & Control (C&C)	10	7.1 Launching Torpedoes	21
3.5.3 Command Radius (C.R.)	11	7.2 Resolving Attacks	21
3.6 Anti-Aircraft Rating	11	7.2.2 To-Hit	22
3.7 Guns	11	7.2.3 Damage	23
3.7.1 Rate of Fire Bonus	11	8 DAMAGE	23
3.7.2 Range	11	8.1 Hull Damage	23
3.7.3 Penetration	11	8.2 Damage Roll	23
3.7.4 Damage	12	8.3 Critical Hits	23
3.7.5 Quantity	12	8.3.1 Bridge	24
3.8 Torpedoes	12	8.3.2 Engine	24
3.8.1 Range	12	8.3.3 Fire	24
3.8.2 Damage	12	8.3.4 Fire Control	24
3.8.3 Quantity	12	8.3.5 Flooding	24
3.9 Damage Track	12	8.3.6 List	24
3.10 Hit Location	12	8.3.7 Magazine	24
4 COMMAND & CONTROL	13	8.3.8 Rudder	24
4.1 Command & Control Rating	13	9 AIRCRAFT	25
4.2 Squadron Leader	13	9.1 Game Values	25
4.2.1 Command Radius	13	9.1.1 Fuel	25
4.2.2 Transferring Command	13	9.1.2 Hits	25
4.3 Effects of Command	14	9.1.3 Speed	25

9.1.4	Altitude	25
9.1.5	Attack Rating	25
9.1.6	Bombs	25
9.1.7	Torpedoes	25
9.2	The Aircraft Phase	25
9.2.1	Fuel Consumption	26
9.3	Movement	26
9.3.1	Takeoff & Recovery	26
9.4	Combat	26
9.4.1	Dogfights	26
9.4.2	Bombing Attacks	27
9.4.3	Torpedo Runs	28
9.5	Anti-Aircraft Fire	28
10	SUBMARINES	29
10.1	Ship Data Cards	29
10.1.1	Armor	29
10.1.2	Speed	29
10.1.3	Command & Control/Command Radius	29
10.2	Movement	30
10.2.1	Depth	30
10.2.2	Collisions & Ramming	30
10.2.3	Detection	30
10.3	Combat	31
10.3.1	Gunfire	31
10.3.2	Torpedoes	31
10.3.3	Aircraft	31
10.3.4	Depth Charges	31
10.4	Damage	32
11	CONVERSIONS	32
11.1	Hits	32
11.2	Speed	32
11.3	Armor	32
11.4	Guns	33
11.4.1	Rate of Fire Bonus	33
11.4.2	Range	33
11.4.3	Penetration	33
11.4.4	Damage	33
11.4.5	Firing Arcs	34
11.4.6	Light Guns	34
11.5	Torpedoes	34
11.5.1	Range	34
11.5.2	Damage	34
11.6	Anti-Aircraft Rating	34
11.7	Damage Track	34
11.8	Hit Location Track	35
12	OPTIONAL RULES	36
12.1	Crew Quality	36
12.2	Smoke	36
12.2.1	Smoke Screens	36
12.2.2	Downwind Smoke	36

12.3	Night	36
12.4	Wind	36
12.4.1	Wind Direction	36
12.4.2	Effects of Wind	37
12.5	Spotting	37
13	FLOTILLAS	37
13.1	Basic Concept	37
13.2	Ship Data Card	37
13.2.1	Name	37
13.2.2	Class	37
13.2.3	Hits	37
13.2.4	Speed	38
13.2.5	Armor	38
13.2.6	Size	38
13.2.7	Anti-Aircraft Rating	38
13.2.8	Guns	39
13.2.9	Torpedoes	39
13.2.10	Damage Track	39
13.2.11	Hit Location Track	39
14	TABLETOP CONVERSIONS	40
14.1	Movement	40
14.1.1	Simultaneous Movement	40
14.1.2	Line-Ahead Movement	40
14.2	Firing Arcs	40
14.3	Gunfire & Torpedo Ranges	40
15	SCENARIOS	41
15.1	Victory Conditions	41
15.1.1	Victory Point Allocation	41
15.2	Force Deployment	41
15.2.1	Meeting Engagement	41
15.2.2	Stern Chase	41
15.3	Escape	41
15.4	Special Conditions	42
16	CAPE SARYCH	42
16.1	Introduction	42
16.2	Russian Forces	43
16.3	Turkish Forces	43
16.4	Victory Points	43
16.5	Victory Conditions	43
16.6	Deployment	43
16.7	Special Conditions	44
16.8	Historical Notes	44
17	CORONEL	44
17.1	Introduction	44
17.2	British Ships	44
17.3	German Ships	44
17.4	Victory Points	44
17.5	Victory Conditions	44
17.6	Deployment	45

17.7	Special Conditions	45	21	ULSAN	55
17.8	Historical Notes	45	21.1	Introduction	55
17.9	Hypothetical Scenario 1	45	21.2	Japanese Ships	55
17.9.1	<i>Victory Conditions</i>	45	21.3	Russian Ships	56
17.10	Hypothetical Scenario 2	45	21.4	Victory Points	56
17.10.1	<i>Victory Conditions</i>	46	21.5	Victory Conditions	56
17.11	Crew Quality Option	46	21.6	Deployment	56
18	DOGGER BANK	46	21.7	Historical Notes	56
18.1	Introduction	46	21.8	Hypothetical Scenario 1	56
18.2	British Ships	47	21.9	Hypothetical Scenario 2	56
18.3	German Ships	47	21.9.1	<i>Victory Conditions</i>	56
18.4	Victory Points	47	22	YALU RIVER	57
18.5	Victory Conditions	47	22.1	Introduction	57
18.5.1	<i>Victory Condition Modifiers</i>	47	22.2	Chinese Ships	57
18.6	Deployment	47	22.3	Japanese Ships	58
18.7	Special Conditions	47	22.4	Victory Points	58
18.8	Historical Notes	47	22.5	Victory Conditions	58
18.9	Hypothetical Scenario	48	22.6	Deployment	58
18.10	Historical Variant	48	22.7	Historical Notes	58
18.10.1	<i>British Destroyers</i>	48	22.8	Hypothetical Scenario	58
18.10.2	<i>British Flotillas</i>	48	22.9	Crew Quality Option	58
18.10.3	<i>German Destroyers</i>	50	23	YELLOW SEA	59
18.10.4	<i>German Flotillas</i>	50	23.1	Introduction	59
19	FALKLANDS	52	23.2	Japanese Ships	59
19.1	Introduction	52	23.3	Russian Ships	59
19.2	British Ships	53	23.4	Victory Points	59
19.3	German Ships	53	23.5	Victory Conditions	59
19.4	Victory Points	53	23.6	Deployment	60
19.5	Victory Conditions	53	23.7	Historical Notes	60
19.6	Deployment	53	23.8	Hypothetical Scenario	60
19.7	Historical Notes	53	BRITISH SHIPS	61	
19.8	Hypothetical Scenario 1	53	CHINESE SHIPS	68	
19.8.1	<i>Victory Conditions</i>	53	GERMAN SHIPS	71	
19.8.2	<i>Deployment</i>	53	JAPANESE SHIPS	78	
19.9	Hypothetical Scenario 2	54	RUSSIAN SHIPS	85	
19.9.2	<i>Victory Conditions</i>	54	GUN DATA	91	
19.10	Crew Quality Option	54	TORPEDO DATA	97	
20	RIVER PLATE	54	AEROPLANE DATA	100	
20.1	Introduction	54	ZEPPELIN DATA	105	
20.2	British Ships	54	INDEX	106	
20.3	German Ship	54	INDEX OF SHIP DATA CARDS	107	
20.4	Victory Points	54	REFERENCES	109	
20.5	Victory Conditions	54			
20.6	Deployment	55			
20.7	Historical Notes	55			



1 INTRODUCTION

Grand Fleets is a game of *fin de siècle* naval combat. Covering the half-century roughly from 1889 through 1939, it encompasses some of the more intriguing developments in warfare at sea. Several scenarios are given in the back of this book, covering everything from the battle of Yalu River to Dogger Bank.

We hope you have as much fun playing *Grand Fleets* as we've had developing it. Throughout the rules, we have given some insights as to why we made particular decisions; if you don't agree with us, feel free to muck about with the system—it's your game, after all. We ask only that you keep us up-to-date with your progress; you can reach us via our web site at www.mj12games.com.

Anyway, enough talk. Happy gaming!

DSK
Denver, CO
February 2004

I must admit that, while I have always enjoyed naval wargaming, before we started this project I really knew very little of the history of naval warfare. Being a part of this project has been a real learning experience, with respect to both the ships which fought, and with the men who crewed them. In putting together the scenarios included in the game, I tried to cover a range of engagements which were representative of the era.

Hopefully I've been successful in doing this, and I also hope this game will present you with a few of the factors the ships and men which participated in these engagements had to endure to persevere.

KLS
Wichita, KS
February 2004

1.1 **Players.** *Grand Fleets* is intended as a two-player game, with each taking command of all the ships on one side of a battle. However, there is no reason why more players cannot be involved; simply divide the ships available among the players on a given side. It is also possible to

conduct a game in which there are more than two sides represented.

1.1.1 *Referee.* Another way to get more people involved is to include a “referee”, who instead of controlling part of the battle is responsible for the game itself—setting up the scenario to be played, making sure that everyone plays nice, arbitrating any rules disputes, and otherwise ensuring that fun is had by all. A referee is also essential for “blind” play, in which the positions and capabilities of ships are hidden from those on the opposing side until and unless they are in a position to know this information “realistically”. Of course, in such a game, it is a requirement that everyone trust and respect the referee’s judgment.

These rules assume that no referee is present.

1.2 **Scale.** Because this game is an historical simulation, the values used have a direct relationship to real-world measurements.

1.2.1 *Distance.* *Grand Fleets* is played on a hex-grid; each hex represents an area roughly one nautical mile (6080 ft) across. Assuming 1.5” hexes, this gives a “ground” scale of 1:48,640.

1.2.2 *Time & Speed.* Each game turn represents 10-15 minutes of real time; at this time scale, a speed of one hex per turn is equivalent to about five knots (a knot is one nautical mile per hour).

1.2.3 *Altitude.* In some situations, the altitude of a given model relative to the game board is important. Altitude is given as a number; each level of altitude is equal to a height of one nautical mile (6080 ft). An altitude of zero (0) indicates that the aircraft is just above the surface, typically in order to drop bombs or launch a torpedo.

1.3 **Materials.** In addition to this rulebook, several items are required in order to play *Grand Fleets*, which should be easily available from the shop where you purchased this book.

1.3.1 *Playing Surface.* *Grand Fleets* is played on a hex-grid, typically no less than 30 hexes wide and at least 20 hexes deep, in order to simplify movement and range-finding. A grid with numbers in each hex is very useful for hidden movement, such as with submarines.

This book does not include a hex-map; however, many different items are currently in production, and should be available at your local hobby or game shop. Additionally, *Grand Fleets* can be played on an open tabletop, without hexes, with only minimal changes to these rules (see p. 40).

1.3.2 *Playing Pieces.* Every ship in the game must be represented on the hex-grid by a playing piece of some kind, typically a miniature model. Some scales of naval miniatures commonly available are 1:2400, 1:3000, and 1:6000 (for reference purposes, model railroading N Scale is between 1:148 and 1:160, while HO Scale is 1:87). Any of these would be appropriate, keeping in mind ships might be too big for the hex-grid at 1:2400 scale (HMS *Dreadnought* would be over 2.5” long). Typically, there will only be one ship in a given hex at a time; however, stacking is possible (see p. 17), so keep this in mind when choosing your playing pieces.

1.3.3 *Dice.* You will need a number of ten-sided dice. This type of die can usually be found at any gaming or hobby store. Most rolls in *Grand Fleets* are made using a single die; however, you will occasionally be asked to roll “Xd”. This means you should roll “X” number of dice and add the results together.

1.3.4 *Other Materials.* In addition to the above, you will also need some paper and pencils to record pertinent information as the game progresses. Also, chips and soda are a welcome addition to any gaming session...

2 PLAYING THE GAME

2.1 Preparations. First, lay out the game board on a flat surface. Then assemble all the other pieces necessary for play, as described on p. 7.

2.1.1 Starting Forces. Next, you will have to determine the number and types of ships on each side. If you are playing a pre-designed scenario, such as those starting on p. 41, this has been done for you. However, it can be just as enjoyable (if not more so) for players to design their own battles, especially since historical engagements were rarely evenly balanced.

2.1.2 Ship Data Cards. After the sides have been determined, each player should fill out a data card for each ship under his/her command; instructions on how to do this are given on p. 9. At the end of these rules is a blank sheet of ship data cards; this page can be photocopied for your personal use.

2.1.3 Initial Placement. Finally, the ships are placed on the hex-grid. If playing a pre-designed scenario, these starting locations will have already been assigned.

All playing pieces must be placed on the game board so that they occupy one specific hex, and their front is pointing clearly at one of the six surrounding hex sides.

2.2 Sequence of Play. *Grand Fleets* is played in a series of turns. Each game turn consists of

several phases that regulate how and when players can perform specific actions. More detailed information on how to conduct each phase can be found later on in these rules; for now, you should keep in mind that the turn sequence cannot go backwards or skip around—e.g., movement can only take place during the Movement Phase, and so on.

2.2.1 Game Length. In pre-designed scenarios, the point at which the game ends will be indicated. Otherwise, players should simply continue until one side or the other is eliminated, or gives up (whichever comes first). Alternatively, you can play for a set period of game time, typically 6 to 10 turns.

2.2.2 Winning the Game. If you are playing a pre-designed scenario, the conditions under which one side or the other can claim victory will be specified. However, in “pick-up” games, you can use the amount of damage inflicted as a basis for determining a winner:

SEQUENCE OF PLAY

1. *Command Phase.*
 - a. Players declare if any squadron leaders will transfer command.
 - b. Players determine which of their ships and squadrons are “in command” or “out of command”.
2. *Movement Phase.*
 - a. Individual Ship Movement Segment.
 - i. All ships that are to move individually record movement orders for the turn.
 - ii. Ships are moved simultaneously according to their orders.
 - b. Squadron Movement Segment.
 - i. All squadrons currently in command record movement orders for the turn.
 - ii. Squadrons are moved simultaneously according to their orders.
 - c. Players check to see if any collisions have occurred and resolve any ramming attempts.
 - d. Ships and aircraft check to determine if they have detected enemy submarines.
3. *Aircraft Phase.*
 - a. Players alternate moving any aircraft they have on the board.
 - b. Dogfights are resolved.
 - c. Ships conduct anti-aircraft fire.
 - d. Aircraft perform bombing attacks and/or torpedo runs.
 - e. Aeroplanes record fuel consumption.
4. *Combat Phase.*
 - a. Players record targets for the guns of each ship under their command.
 - b. Torpedo attacks from the previous End Phase are resolved.
 - c. Ships conduct depth charge attacks.
 - d. Gunfire is conducted.
5. *End Phase.*
 - a. Certain critical hits have continuing effects.
 - b. Torpedo attacks for the upcoming turn are announced, and the targets for those attacks are plotted.
 - c. Aeroplanes to be launched in the upcoming turn are placed on the board.

HMS <i>Tiger</i> (battlecruiser)									
Hull	Speed	Belt	Ends	Deck	Size	Mod.	C&C	C.R.	A.A.R.
24	6	11/9	8/8	7	Large	+1	4	6	6
Armament		ROF	Rng.	Pen.	Dam.	Quantity			
UK 14"/45 Mk.V		+0	3/5/8	10/5/3	x2	ABCD2[OO] CDEF2[OO]			
UK 6"/45 Mk.VII		+1	2/4/6	3/1/1	x2	AC[OOO] BD[OOO] CE[OOO] DF[OOO]			
Light Guns		+3	1/2/3	1/0/0*	x1	[OOO]			
UK 21" Torpedo		-	5	-	x5	[O][O][O][O]			
Damage Track									
Hull Hits		[OOOOO O]		[OOOOO O]		[OOOOO O]		[OOOOO O]	
Speed		6		5		4		2	
Hit Location									
1	2	3	4	5	6	7	8	9	
14"	14"	6"	6"	6"	6"	6"	6"	LG	-

- Per point of hull damage inflicted = 1 VP PLUS
- Per ship sunk = (Hull points) VPs

For example, if a ship with 12 hull points took 11 points of hull damage, the opposing side would receive 11 victory points (VPs). However, if that ship were sunk, the opposing side would receive 12 VPs for the damage inflicted, plus a bonus of 12 for sinking the ship, resulting in a total of 24 VPs.

As a general rule, a ratio of 3:1 in VPs will indicate a decisive victory, a ratio of 2:1 in victory points indicates a marginal victory, while anything less indicates a draw.

Enterprising players may choose to determine more specific victory conditions – this is just fine, as long as everyone is clear on what needs to be done in order to “win” before the game starts.

3 THE SHIP DATA CARD

Each ship in a game of *Grand Fleets* will have a separate ship data card filled out for it. This section discusses the information on the card and its relevance to the game. A sample card has been filled out for HMS *Tiger* above.

If you are curious how we arrived at these values, feel free to read the section on *Conversions*, beginning on p. 32.

3.1 Name & Class. At the very top of the card is written the name of the ship. In our example, this is “HMS *Tiger*”. Many ships in this time period had one or more sister ships; collectively, these were referred to as a “class”. Our sample ship is the first of its particular type, lending its name to the class: the *Tiger*-class battlecruiser.

3.2 Hull. Ships can only take so much punishment; once this threshold is reached, the ship sinks, explodes, or otherwise becomes unavailable for further combat action. In *Grand Fleets*, this is quantified by the concept of “hull hits”.

HMS *Tiger* can take 24 hull hits before sinking.

3.3 Speed. This is the number of movement points (MPs) the ship has available for use in the Movement Phase (see p. 14 for details). As the ship takes damage, it slows down; the current number of MPs is dependent upon the level of damage reached by the ship as shown in the Damage Track (see p. 12).

3.4 Armor. Most warships of cruiser size or larger were fitted with layers of metal, often backed with wooden timbers, in an effort to

prevent enemy shells from penetrating. In *Grand Fleets*, the various types and thicknesses of armor on a given ship have been whittled down to three sets of numbers; the belt armor (used to protect against attacks originating from the sides of the ship), the end armor (used against attacks from the fore and aft of the ship), and the deck armor (used against aerial attacks).

Players will note that the belt and end armor ratings are broken down into two values; e.g., "11/9". The number before the slash is the ship's normal armor value, while the value after the slash is used to defend against plunging fire (see p. 20).

HMS *Tiger* has belt armor 11/9, end armor 8/8, and deck armor 7.

3.5 Size. Ships in *Grand Fleets* are categorized according to their relative size, as indicated below:

<i>Hits</i>	<i>Size Class</i>	<i>Mod.</i>	<i>C&C</i>	<i>C.R.</i>
1-3	Very Small	-2	1	3
4-8	Small	-1	2	4
9-15	Medium	0	3	5
16-24	Large	+1	4	6
25-35	Very Large	+2	5	7
36+	Huge	+3	6	8

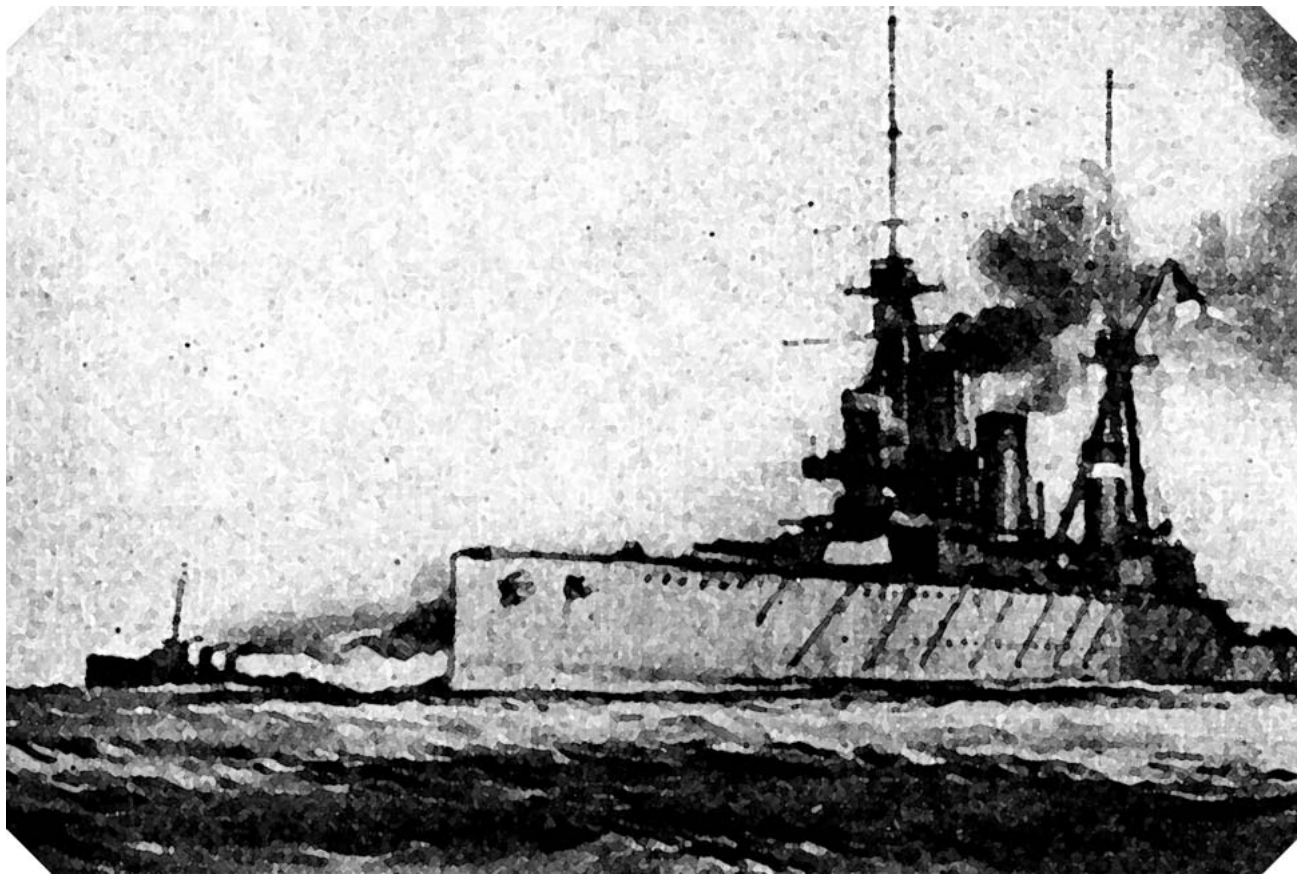
The size class has certain effects on the game; the derived values (Mod., C&C, and C.R.) are defined below.

HMS *Tiger* has 24 hull hits, and is therefore size class Large.

3.5.1 Modifier (Mod.). This number is applied to an opponent's die roll when attacking the ship. See p. 20 for more details.

Opponents may add +1 to the die roll when attacking HMS *Tiger*.

3.5.2 Command & Control (C&C). Ships in *Grand Fleets* are usually (but not always) grouped into squadrons. While the historical reasons for this are numerous and difficult to simulate in a wargame, a ship's command & control (C&C) rating helps reflect historical realities without cumbersome



rules. See the next chapter for more information on how the C&C rating is used.

HMS *Tiger* has a C&C rating of 4.

3.5.3 *Command Radius (C.R.)*. The command radius (C.R.) is only important to squadron leaders, as it indicates the maximum distance a member of the squadron can be from the leader and still be considered “in command”. See p. 13 for more details.

As a squadron leader, HMS *Tiger* would have a command radius of 6 hexes.

3.6 **Anti-Aircraft Rating**. The anti-aircraft rating (A.A.R.) indicates how effective the ship is at defending itself against aircraft. For details on anti-aircraft fire, see p. 28.

HMS *Tiger* has an A.A.R. of 6.

3.7 **Guns**. The guns carried on a ship are divided into two types: heavy and light. Heavy guns are listed individually, with unique rate of fire bonus, range, penetration, and damage values. They comprise all guns with a bore diameter (caliber) of 100mm (4”) or greater. Smaller guns (those with a caliber less than 100mm) are collected into a single gun type with set values;

these are referred to as “light guns”.

It should be noted that the number of “light guns” in *Grand Fleets* does not correspond exactly to the number of small-caliber guns on the ship in reality. For details on how this is handled, see p. 34.

3.7.1 *Rate of Fire Bonus*. A gun’s rate of fire bonus (ROF) is expressed as a modifier to the attack roll.

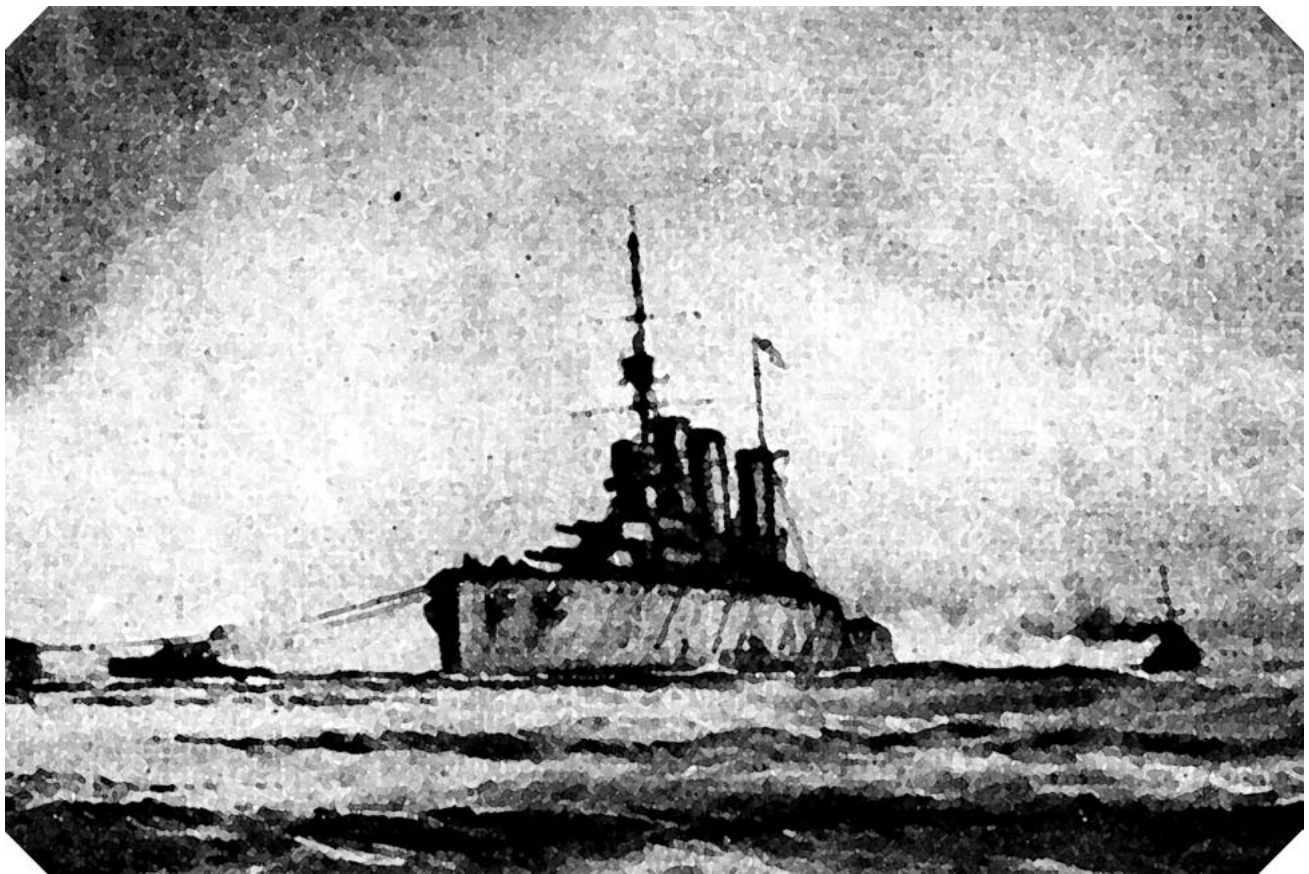
HMS *Tiger*’s main guns have a +0 ROF, which means they get no bonus to the die roll when attacking.

3.7.2 *Range*. Gun ranges are divided into three sections: short, medium, and long. Each is expressed in hexes.

HMS *Tiger*’s 14” guns have a short range of 3 hexes, a medium range of 5 hexes, and a long (maximum) range of 8 hexes.

3.7.3 *Penetration*. This reflects the gun’s ability to get through an enemy’s armor plating. There are three different penetration values; the first is used at short range, the second at medium range, and the third at long range.

Many guns will have an asterisk (*) after



their long-range penetration value; this indicates the gun is capable of “plunging fire”. Details on how this affects the game are given on p. 20.

HMS *Tiger*'s 14" guns have a penetration of 10 at short range, 5 at medium range, and 3 at long range. In addition, the asterisk (*) after the guns' long range penetration value indicates that they are capable of plunging fire.

3.7.4 **Damage.** The capability of a gun's shells to cause damage to an enemy ship is given here. More information on damage and its effects can be found on p. 23.

HMS *Tiger*'s 14" guns inflict two points of damage if they penetrate the armor of the target.

3.7.5 **Quantity.** This section indicates the number of each gun on the ship as well as the arcs into which each can fire (see p. 18). There are six firing arcs in *Grand Fleets*; each gun will be able to fire into one or more of these. A sample firing arc entry might look like this: “ABCD3[OO]” This means there are two turrets that can fire into the A, B, C, and D arcs, with three barrels per turret. Note that light guns do not have arc designations; they are able to fire in any direction, subject to the limitations given on p. 18.

HMS *Tiger* has four 14" turrets—two of them can fire into the [ABCD] arc, two into the [CDEF] arc—and all four turrets have two barrels, for a total of eight 13" guns.

3.8 **Torpedoes.** Most (but not all) ships in *Grand Fleets* will carry torpedoes. These weapons are handled differently than guns. Note that torpedoes do not have rate of fire bonuses or penetration values.

3.8.1 **Range.** The range of a torpedo indicates the maximum distance at which an enemy ship can be attacked.

The 21" torpedoes carried by HMS *Tiger* can attack a ship up to five hexes away.

3.8.2 **Damage.** This is the number of hits that are inflicted if the torpedo hits its target.

HMS *Tiger*'s torpedoes do five points of damage if they hit.

3.8.3 **Quantity.** This indicates how many torpedoes are carried by the ship, as well as the number of torpedo tubes. On the ship data card, each torpedo tube is designated by a set of

brackets, with the number of torpedoes available to that tube indicated by the number of circles in between. For example, “[OO]” indicates one torpedo tube with two torpedoes.

Torpedoes are “one-shot” weapons; once used, they should be crossed off the data card. A ship may only launch one torpedo per tube per turn.

HMS *Tiger* has four torpedo tubes with one torpedo each.

3.9 **Damage Track.** The damage track consists of two lines; one for hull hits, and the other for the ship's current speed. As the ship takes hull damage, circles are crossed off the hull hit line from left to right. Once all of the circles in the first box are crossed off, the ship's speed is reduced to the number given in the second box of the speed line. When all the hull hits in the second box are crossed off, the speed drops to the number in the third box, and so on.

HMS *Tiger* has a starting speed of 6 hexes per turn. This drops to speed 5 after 6 hull hits, speed 4 after 12 hits, and speed 2 after 18 hull hits. Once 24 hull hits have been taken, the ship is sunk.

3.10 **Hit Location.** Whenever a ship takes damage, it automatically takes one hull hit per damage point. Then, a die is rolled for each damage point taken, and the Hit Location line is consulted to see whether any additional damage is applied.

For the HMS *Tiger*, a die roll of 1 or 2 indicates the loss of one of the 14" turrets, a die roll of 3 through 7 indicates the loss of one 6" gun, while a die roll of 8 indicates the loss of one light gun. A die roll of 9 indicates that no additional losses occur.

For all ships, any damage roll of 10 indicates that a critical hit has occurred (see p. 23).

4 COMMAND & CONTROL

Ships in *Grand Fleets* typically operate in groups, or “squadrons”. This arrangement is necessary to allow for easy transmission of orders from the overall commander to the various ships under his command.

This game will not attempt to reflect all the various aspects of ship-to-ship communication, nor will it simulate the errors in command control that historically caused ships to turn the wrong way, attack the wrong targets, or break off an engagement just as final victory was assured. While intriguing, such breakdowns are extremely difficult to model, and would anyway be terribly frustrating to players.

Instead, command & control in this game has a subtle but important effect. Ships and squadrons that are “in command” conduct their movement after those ships that have fallen “out of command”, thus giving the tactical advantage to the side whose ships remain in good order. This has the desirable effect of encouraging players to group their ships into squadrons that tend to mirror historical reality without bogging the game down with extra rules.

4.1 Command & Control Rating. Each ship in the game has a command & control (C&C) rating, which is based on its size class (see the chart on p. 10). The C&C rating of a squadron is equal to the sum of the C&C ratings of its component ships.

For example, the British First Cruiser Squadron consists of HMS *Southampton*, HMS *Birmingham*, HMS *Nottingham*, and HMS *Lowestoft*. Each of these ships is size class Small, with a C&C rating of 2. Thus, the squadron C&C rating is 8 (4 x 2).

Before the game begins, players must arrange their ships into squadrons whose C&C ratings each total 8 or more. This simulates the minimum level of organization necessary to relay orders quickly and effectively. Ships not so arranged will spend the entire game “out of command”.

There are two exceptions to this rule:

- If all the ships on a given side are grouped into a single squadron, but their C&C rating is below the minimum of 8, they are still considered a viable squadron.
- If the total of all the C&C ratings of the ships on a given side is between 12 and 15, the ships may be divided into two squadrons with a minimum C&C rating of 6 each.

Squadrons will never fall out of command due to battle losses; as long as a squadron began the game with a C&C rating of at least 8, falling below that level will have no effect.

Ships cannot be transferred between squadrons during the game.

4.2 Squadron Leader. One ship in each squadron should be designated as the squadron leader. This can be any ship the player desires; however, it is typically better to have a larger ship serve in this capacity—having a destroyer as leader for a battleship squadron is probably not a great idea (it certainly wouldn’t sit well with the battleship captains).

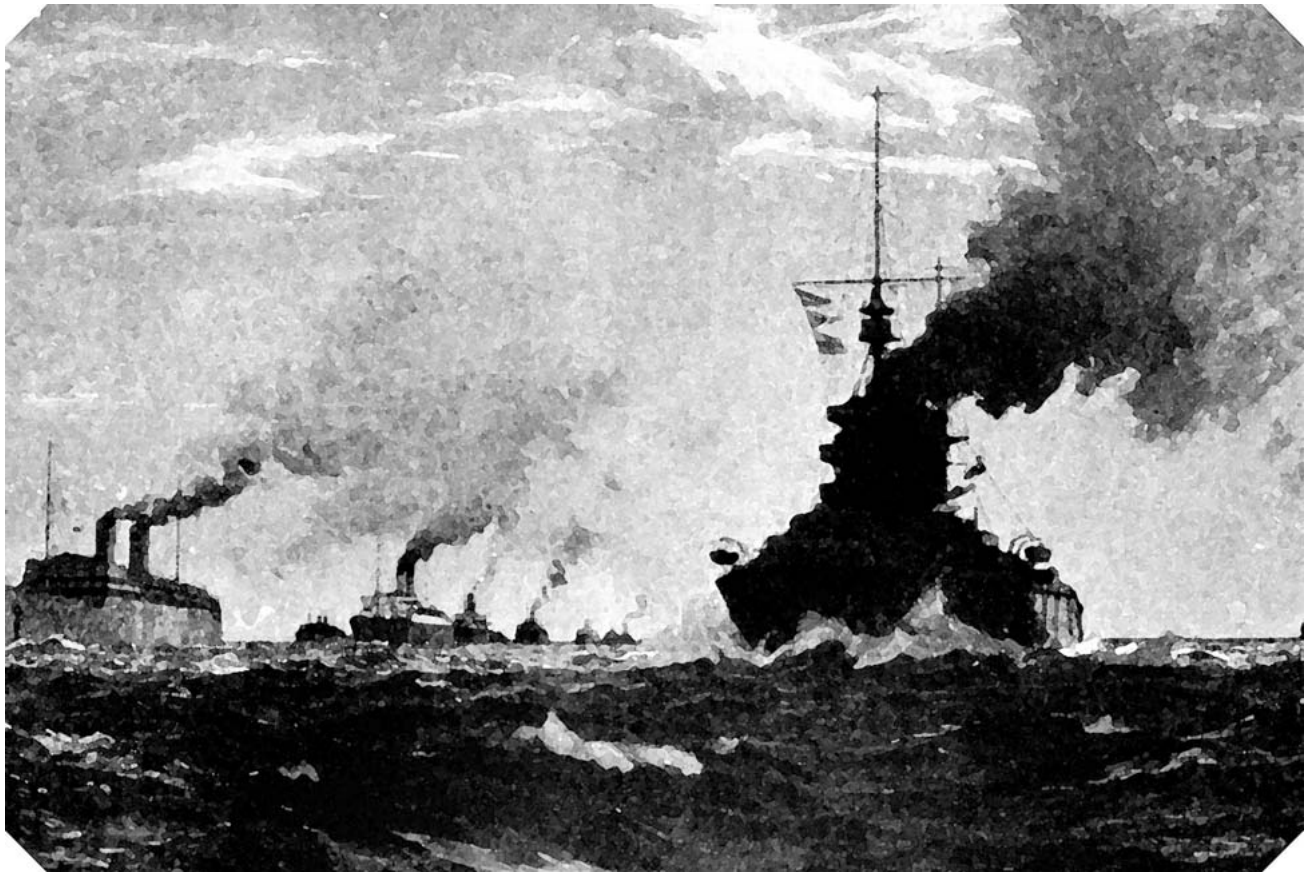
It should be noted that the identity of the squadron leader is not a secret; your opponent has a right to know which ship is leading each squadron.

4.2.1 Command Radius. In order to be considered “in command”, a ship must be within the appropriate command radius of its squadron leader. Again, the command radius depends upon the size class of the leader, as per the chart on p. 10. Any ship not within the command radius of its squadron leader is out of command.

The British First Cruiser Squadron’s leader is HMS *Southampton*. In order to be in command, HMS *Birmingham*, HMS *Nottingham*, and HMS *Lowestoft* must each be within 4 hexes of HMS *Southampton*’s position.

4.2.2 Transferring Command. During the Command Phase of each turn, players may choose to transfer command to another ship in the squadron; this is typically done due to battle damage or the sinking of the initial squadron leader.

When transferring command, roll a die, and consult the following chart:



<i>Roll</i>	<i>Effect</i>
1	Squadron is out of command for the current turn <i>plus</i> the next three turns.
2-3	Squadron is out of command for the current turn <i>plus</i> the next two turns.
4-6	Squadron is out of command for the current turn <i>plus</i> the next turn.
7-10	Squadron is out of command for the current turn <i>only</i> .

After the indicated period of time, the new squadron leader takes control, and the squadron is back in command.

4.3 Effects of Command. Any ships or squadrons not in command must move as individual ships—i.e., they will move during the “Individual Ship Movement Segment”.

5 MOVEMENT

As indicated in the sequence of play (p. 8), the Movement Phase is divided into two parts: during the “Individual Ship Movement Segment”, ships that are out of command conduct their movement; during the “Squadron Movement Segment”, all squadrons that are currently in command take their moves. Note that any ship wishing to perform movement separate from its squadron must move in the individual ships segment, even though it may currently be in command.

5.1 Movement Points. The movement of all ships is governed by the concept of movement points (MPs), which indicate how far a particular ship can move in a single turn. The number of MPs a ship has at its disposal is shown on the Damage Track of the ship data card, which is described on p. 12.

5.2 Movement Orders. During the individual ships segment, players will record separate movement orders for each ship that will move in that segment; during the squadron segment, only one set of movement orders is written for each

squadron—all ships to be moved in the squadron segment must follow those orders.

5.2.1 *Maneuvers.* Movement orders consist of a series of maneuvers and/or forward movement. For example, the orders “1SS2” mean that the ship is to move one hex forward, turn two hex sides to starboard (clockwise), and then move another two hexes forward. A ship may perform any combination of maneuvers or forward movement desired, as long as the number of available MPs is not exceeded. The various possible maneuvers are:

- *Turn to Port (P).* The ship is turned one hex side to the left (counter-clockwise). A turn to port costs one MP.
- *Turn to Starboard (S).* The ship is turned one hex side to the right (clockwise). A turn to starboard costs one MP.
- *Evasive Maneuver (E).* The ship conducts a series of “zigzags” in an attempt to evade opposing gunfire and/or torpedoes. However, at the scale of the game board, this is still basically forward movement; thus, the ship is moved one hex forward. Evasive maneuvers may only be performed during the individual ships segment of the Movement Phase. An evasive maneuver costs two MPs.

5.2.2 *Spending Movement Points.* Each maneuver has a corresponding MP cost, as given above. Forward movement costs one MP per hex. Thus, movement orders of “1SS2” would cost $1 + 1 + 1 + 2 = 5$ MPs.

Designers' Notes: Movement

One of the questions we were asked over and over again in the development of this game was, “Why can't I move my ships *this way*?”

Since an answer of “Because we said so!” didn't seem to satisfy our intrepid playtesters, we thought it might be useful to provide a brief rationale for the restrictions placed on ship and squadron maneuvering.

First and foremost, players should remember that in the time period covered by *Grand Fleets*, admirals didn't have the luxury of instant and continuous communication with the captains under their command. Orders were relayed via flag hoists, signal lamps, and on occasion, semaphore. However, these orders were severely limited in what information they could convey, and individual ship captains were likewise limited in the amount of initiative they could exercise. No matter how vague or unwise an order seemed, it was expected that captains would carry it out to the best of their ability.

There were two primary ways in which commanders exerted command control: the first was to send out an order which was intended for an entire squadron; while it was possible to relay orders to individual ships, this was inefficient and time-consuming (consider that under combat conditions, it could take up to 20-30 minutes to relay one order!). Squadrons in “line-abreast” formation were making use of this type of command control.

The second method was use of the “line-ahead” formation, in which ships steamed one after the other, each ship following the moves made by the ship in front of it. This was useful in that it was only necessary for one ship (the leader) to know where it was supposed to go: the others simply tagged along.

In *Grand Fleets*, we have attempted to simulate this by using two different types of squadron movement: simultaneous and line-ahead. The restrictions placed upon each type are intentional and meant to simulate the fact that admirals were simply not able to dictate the moves of individual ships. While it may occasionally be tempting to claim that a ship captain would “naturally” do *this*, or “logically” understand that he was meant to do *that*, such comments are not consistent with historical reality. Captains did what they were told (or what they *thought* they had been told), no less and no more; this, more than any other fact, was responsible for most of the infamous breakdowns in command control that plagued fleets of this period. The inclusion of the Individual Ships Movement Segment, in which ships are allowed to move independently of their squadron's orders at the price of giving away their position, is intended to provide players some of the control they may be used to in other games, while still remaining somewhat faithful to the time period.

Of course, this is only a simulation, and as such cannot possibly reflect every nuance of the way things “really” were — we have tried to strike a compromise between the desire for an appropriate historical “feel” and the need for a fun game. We think we have succeeded, and hope you agree.

No ship may spend more MPs than it currently has available. A ship does not have to spend all of its MPs, but any unused are lost; i.e., MPs cannot be saved from turn to turn.

5.3 Types of Squadron Movement. It is an important aspect of *Grand Fleets* that squadrons must move together if they are to stay in command. Each turn, a squadron may only make use of one set of movement orders, involving only one of the two available types of movement—e.g., a squadron that begins using line-ahead movement cannot use simultaneous movement in the same turn.

Any ship that wishes to move on its own must do so during the individual ships segment.

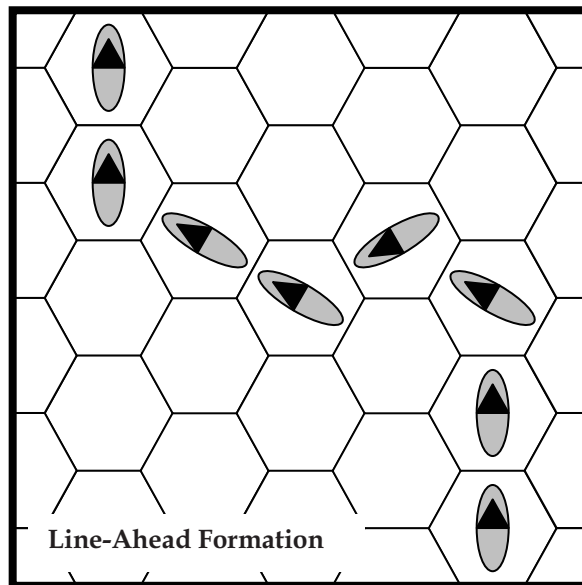
For purposes of gunfire, the speed of each ship in the squadron will be considered to be that of the order written (see p. 20).

5.3.1 Simultaneous Movement. When using simultaneous movement, one set of movement orders is recorded for the entire squadron; all the ships in the squadron must then follow these movement orders.

If a ship does not have enough MPs to complete the squadron's orders, it must perform as much of those orders as it can. For example, HMS *Tiger's* squadron orders are "1S3", which would require 5 MPs; however, *Tiger* has only four MPs available. Therefore, *Tiger* will only move "1S2".

5.3.2 Line-Ahead Movement. The second type of movement is for ships that are in "line-ahead" formation. A group of ships is considered to be in line-ahead if all of the ships are in a continuous chain of adjacent hexes, with each ship facing the one directly ahead of it. There may be more than one ship per hex in a line-ahead formation, but all ships in a single hex must be facing the same direction.

Ships in line-ahead may choose to "follow the leader" rather than execute simultaneous movement orders. When following the leader, the first ship in the line is moved according to the written movement orders; the ship directly behind it is then moved so that it follows the exact path taken by the first ship; the third ship follows the path taken by the second; and so on.



If you find this distinction difficult to visualize, consider two ships, one directly in front of the other. If they both move one hex forward, turn to port, and then move forward another hex, they will no longer be in line-ahead, as the second ship is no longer facing the first. If the ships are to remain in line-ahead formation, the second ship must move forward two hexes and then turn to port, which is a different set of movement orders than those executed by the first ship.

Note that in line-ahead formation, the first ship in the line does not need to be the squadron leader.

It is sometimes necessary for ships further down the line to use more MPs than the lead ship(s) in order to maintain the line-ahead formation. This is fine, as long as no ship uses more MPs than it has available.

If a ship using line-ahead movement does not have enough MPs to "catch up" to the ship directly ahead of it, the ship should be moved through the appropriate path as far as possible; remember that each ship follows the one directly ahead of it, so a fast ship will *not* overtake a slower ship ahead of it in the line. If a ship *does* have enough MPs to enter the hex last occupied by the ship ahead of it, but does *not* have enough to turn to face it, the ship may execute such a turn for free—i.e., at no MP cost. This is simply to ensure that the line-ahead formation is maintained.

5.4 Moving the Ships. After movement orders have been recorded, the ships are moved on the game board. It doesn't matter in what order

they are moved; all ships may be moved simultaneously if desired.

Remember that individual ships should be moved on the board before in-command squadrons record their movement orders.

5.4.1 *Stacking.* Even though the scale of *Grand Fleets* is fairly large at one nautical mile per hex, it is impractical to think that any number of ships could effectively occupy the same hex. The risk of collision, especially while under fire, was great enough that ships had to maintain a certain degree of separation from each other.

Each ship has a size class, which yields a number of "size points" equal to the C&C rating (e.g., a Very Large ship would have 5 size points). Up to 10 size points of ships may be in the same hex at any one time without incident. This limit may be exceeded during the Movement Phase, but once all movement is finished, if more than 10 size points' worth of ships are in the same hex, there is a risk of collision.

See below for details on how to resolve collisions and/or ramming attempts.

5.4.2 *Exiting the Game Board.* Ships wishing to disengage from battle may voluntarily leave the game board. However, any ships that do this may not re-enter the game and are considered destroyed for victory purposes.

5.4.3 *Floating the Game Board.* A ship may find itself close to the game board edge without wishing to disengage. In this case, players may "float" the game board; i.e., move all of the ships a number of hexes in the same direction, maintaining their current facings and relative positions. If it is not possible to do this without moving another ship off the opposite edge of the game board then this cannot be done, and the ship on the edge of the board will have to maneuver in such a way as to stay in the game (or else that player will have to spring for the purchase of a bigger table...).

5.5 **Collisions & Ramming.** While rare, it is quite possible that ships will run in to one another. As stated above, if 10 or more size points' worth of ships are in a single hex at the end of the Movement Phase, there is a possibility for collision. Even if this stacking limit is not exceeded, ships from opposite sides that are in the

same hex may elect to intentionally ram each other.

Players should check for collisions before resolving any potential ramming attempts.

5.5.1 *Collisions.* If there are 10 or more size points of ships in the same hex, roll a die for each ship, noting which ship got which result. Any ships that have identical rolls have collided with each other.

For example, four size class Large ships (3 size points) are in the same hex; this is a total of 12, so they must check for collision. A die is rolled for each ship, coming up 6, 3, 8, and 3. Therefore, the two ships that rolled a 3 have collided. The other two are unaffected.

5.5.2 *Ramming.* Whenever ships from opposing sides end the Movement Phase in the same hex, players should check to see if any ramming will occur. Roll a die for each ship, and add the number of MPs currently available to that ship. Then, in descending order of these results, players declare whether or not they will ram a ship with a lower result.

For example, HMS *Tiger* and SMS *Moltke* are in the same hex at the end of the Movement Phase. *Tiger* rolls a die and adds 6 (its current MPs), while *Moltke*, which has suffered some damage already and had its speed reduced, only adds 3 to its roll. *Tiger's* total is 12, while *Moltke's* is just 7. Therefore, *Tiger* may choose to ram *Moltke*; however, *Moltke* cannot choose to ram *Tiger*.

5.5.3 *Effects of Collisions.* Whenever two ships collide, either unintentionally or due to ramming, follow this procedure to determine the damage inflicted on each ship:

Each ship will inflict damage to a ship with which it has collided based upon its total number of hull points. Divide its hull size by 5 (rounding up); this is the number of damage points inflicted on the other ship. See p. 23 for details on the effects of damage.

For example, HMS *Tiger* is involved in a collision with HMS *Southampton*. *Tiger* has 24 hull points ($24 / 5 = 4.8$, rounded up to 5); *Southampton* has 6 ($6 / 5 = 1.2$, rounded up to 2). Thus, *Tiger* would suffer 2 points of damage, while *Southampton* would take 5 hits.

6 GUNNERY COMBAT

The Combat Phase is divided into several segments: first, players write down firing orders for their ships' guns; second, any torpedoes launched in the previous turn resolve their attacks; and finally, gunfire is carried out.

This chapter is concerned solely with gunfire; torpedo attacks are described on p. 21.

6.1 Firing Orders. As with movement, ships will pre-record their actions in the Combat Phase; this is done to avoid things like "Me too!" fire, and to add a bit of uncertainty to the process. Since torpedoes conduct their attacks after firing orders are recorded, but before gunfire is resolved, it is possible that some targets will no longer be afloat by the time gunnery occurs.

Firing orders consist of the targets to be engaged, and the guns to be fired at each. For example, if HMS *Tiger* were to fire her 14" guns at SMS *Moltke* and her 6" guns at SMS *Blücher*, the firing orders might look like this:

Moltke 14"; Blücher 6"

6.1.1 Maximum Number of Targets. Ships of this time period were limited in the number of targets they could engage at the same time. In *Grand Fleets*, a ship may only fire each set of guns at a single target per turn. For example, HMS *Tiger* could pick one target for her 14" guns and another for her 6" guns; however, she could not fire some 14" guns at one target and others at another target.

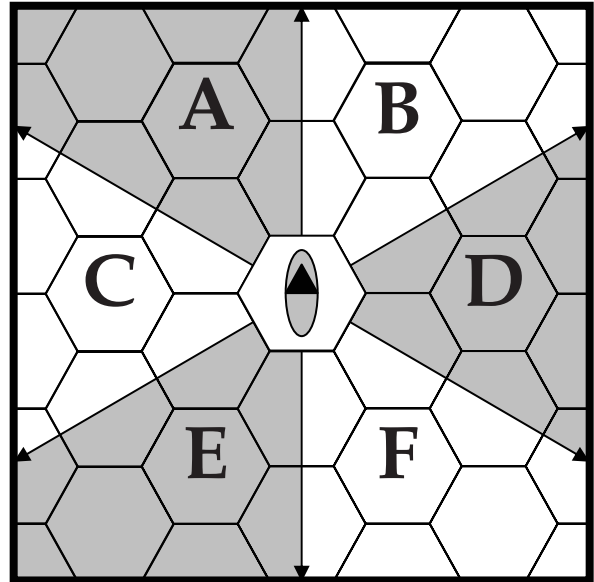
The exception to this rule is light guns, which may attack up to two different targets each turn. The number of light guns that can fire at each target depends upon the arc:

- A, B, E, or F: One-fourth of the light gun total (rounded up)
- C or D: One-half of the light gun total (rounded up)

For example, HMS *Tiger* has three light guns. This means that up to two guns ($3 \times \frac{1}{2} = 1\frac{1}{2}$, rounded up to 2) can be fired at a target in the C or D arc, while only one ($3 \times \frac{1}{4} = \frac{3}{4}$, rounded up to 1) could be fired at a target in the A, B, E, or F arc.

The two targets engaged by the light guns cannot be in the same firing arc. The number of light guns fired cannot exceed the light gun total on the ship.

6.1.2 Firing Arcs. There are six basic firing arcs in *Grand Fleets*; each arc covers 60°, as shown in the diagram below:



If a hex is bisected by the line between two arcs, then *both* arcs are valid for that hex.

The armament section of the ship data card details the arcs into which each gun can fire. Obviously, only those weapons that are mounted in the appropriate arcs are able to fire at a target. Remember that light guns have no firing arc restrictions, and may be used against targets in any direction, subject to the restrictions above.

Ships from the same squadron that are in the same hex must be all facing in the same direction in order for any of them to fire out of the hex. When this happens, one ship must be assigned the "front" position in the hex, while another is assigned the "rear" position. The front ship is able to fire into the A, B, C, and D arcs, while the rear ship is able to fire into the C, D, E, and F arcs. All other ships are restricted to firing into the C and D arcs only.

When ships from opposing sides are in the same hex, use the following procedure to determine the positions of these ships in relation to each other:

Each ship rolls a die, and adds its current speed; re-roll any ties. The ship with the lowest total remains in place (the "center hex"); then, in ascending order, the remaining ships are placed into the center hex or one of the six adjacent hexes, maintaining their same facing. Ships from opposing sides may not be placed into the same hex during this process.

Remember that all of these ships are still located in the center hex; their models have been moved simply to illustrate their relative positions within that hex. When the Combat Phase is over, the models should all be moved back into the center hex, again retaining their same facing.

6.1.3 *Range.* The distance from a firing ship to its target is referred to as the *range*, and is determined by counting the number of hexes along the shortest path between the two. When determining the range, you should count the hex containing the target, but not that of the firing ship.

Each weapon's range is divided into three bands: short, medium, and long. A weapon may not attack any target outside its long range band.

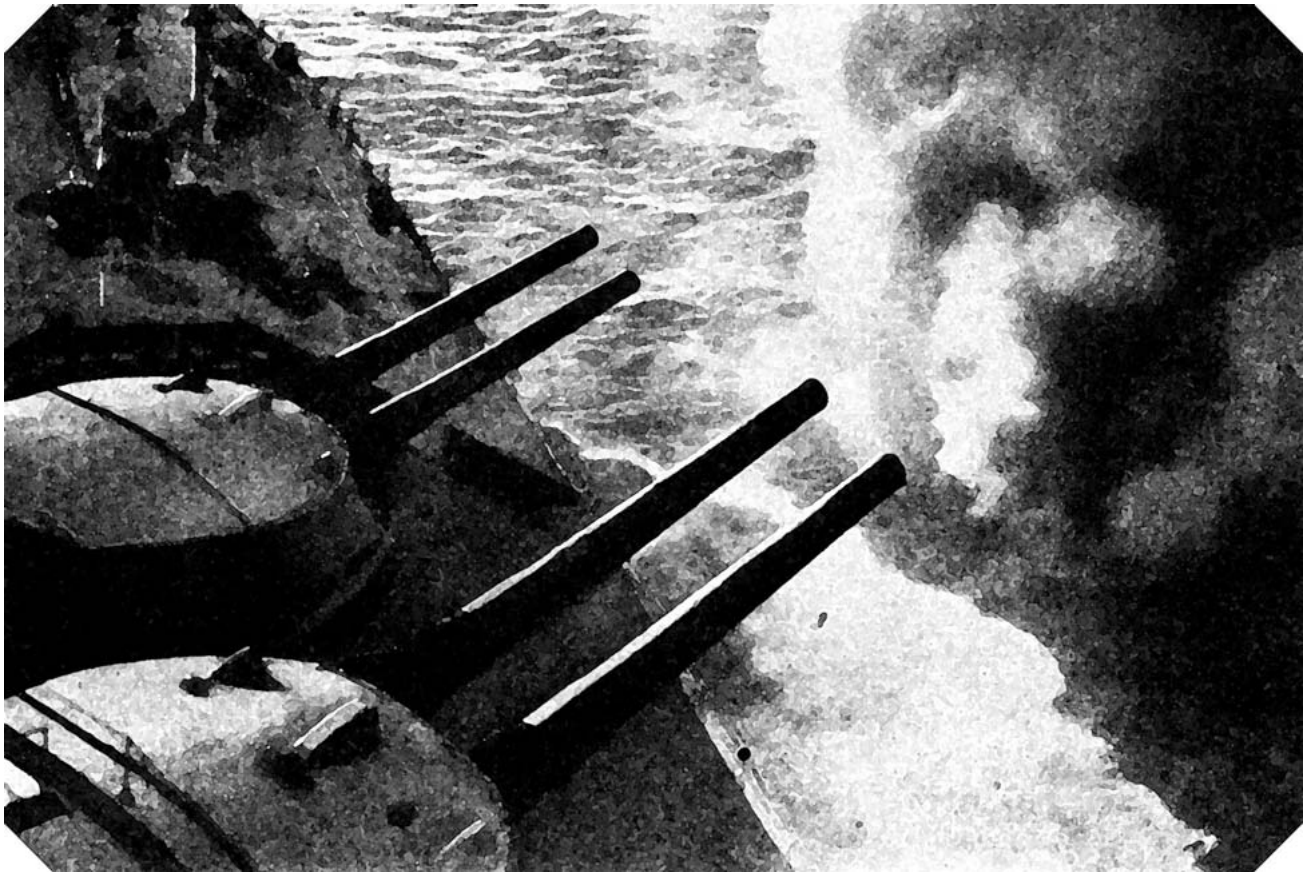
6.1.4 *Line of Fire.* In order to attack a target, a ship must be able to trace a line of fire (LoF) to that target. This means that an imaginary line, drawn from the center of the firing ship's hex to the center of the target ship's hex, must not cross any part of a hex that blocks LoF.

If the line passes between two hexes, LoF is not blocked unless hexes on both sides of the line block LoF.

LoF is subject to the following restrictions:

- LoF is *never* blocked between ships in the same hex. This condition overrides all those that follow.
- The firing ship's hex blocks LoF if it contains any other friendly ship or ships from a different squadron, or if it contains ships from the same squadron that are facing in a different direction than the firing ship.
- The firing ship's hex blocks LoF if it contains an enemy ship of the same size class or larger than the firing ship or the target.
- The target's hex blocks LoF if it contains a ship friendly to the firing ship.
- Hexes between those occupied by the firing ship and the target will block LoF if they contain any ship—friend or foe—of the same size class or larger than either the firing ship or the target.
- Any hex containing land blocks LoF.

Note that these rules do not imply that ships cannot "see" each other in these



circumstances, only that they cannot fire at each other; thus, it is "line of fire" rather than "line of sight". Ships could normally see past one another, but it is unreasonable to think that a ship would shoot directly over an enemy ship in order to attack a more distant target of the same size or smaller, or that a ship would fire at any target when there is a more than probable chance of hitting a friendly vessel.

6.2 Gunfire Resolution. Once it comes time for attacks to be resolved, two separate die rolls are needed for each gun that is firing: the to-hit roll and the penetration roll.

The order in which gunfire is conducted is unimportant; any damage will take effect after all attacks have been resolved.

6.2.1 The To-Hit Roll. One die is rolled for each gun attacking the target; each die that comes up 8 or higher scores a hit on the target.

There are numerous modifiers which affect the to-hit roll; these are listed below:

- **Evasive Maneuvers:** -1 per "E" plotted by either the firing ship or target
- **Over-concentration¹:** -1 per additional ship firing at the same target (light guns do not contribute to this penalty, nor do they incur it themselves; it applies only to those guns firing at long range, but *all* ships firing at the target contribute to the penalty)
- **Range:**
 - Short range: +1
 - Medium range: 0
 - Long range: -1

¹ The over-concentration penalty represents the confusion that can be caused when more than one ship is firing at the same target.

For example, HMS *Tiger* and HMS *Princess Royal* are both firing at SMS *Moltke*. *Tiger* is at long range, while *Princess Royal* is at medium range. Since there are two ships firing at the same target, the overconcentration penalty is -1; however, only *Tiger* will suffer this penalty, as *Princess Royal* is close enough to discern which splashes are from her shells and which are from *Tiger*'s.

- **Rate of Fire Bonus:** +ROF
- **Speed** (refers to the number of MPs actually expended, not the total number available; target and firer modifiers are cumulative²):
 - Target/firer speed 0-1: +1
 - Target/firer speed 2-3: 0
 - Target/firer speed 4-5: -1
 - Target/firer speed 6-7: -2
 - Target/firer speed 8+: -3
- **Target Size:**
 - Very Small: -2
 - Small: -1
 - Medium: 0
 - Large: +1
 - Very Large: +2
 - Huge: +3

Players will note that any cumulative modifier of -3 or more will effectively make it impossible for a gun to hit its target (i.e., the highest possible roll with a -3 modifier is 7, less than the required 8). In these cases, it may still be possible (however unlikely) to score a hit; consult the following chart:

<i>Modifier</i>	<i>Unmodified Rolls Needed To Hit</i>
-3	10, plus a second roll of 3 or better
-4	10, plus a second roll of 7 or better
-5	10, plus a second roll of 9 or better
-6	10, plus a second roll of 10
-7 or worse	No chance of hitting

For example, HMS *Tiger* is firing her 6" guns (ROF +1) at a German destroyer (size class Very Small, -2) at long range (-1). *Tiger* is moving at speed 3 (no modifier), while the destroyer is speed 6 (-2). The overall modifier is -4; consulting the above chart, this means *Tiger*'s guns will need to roll an unmodified 10 on the die and then roll again, scoring a 7-10 on this second roll in order to hit the destroyer.

6.2.2 The Penetration Roll. Once a shot has been determined to have successfully hit the target, a second die roll, the penetration roll, is made.

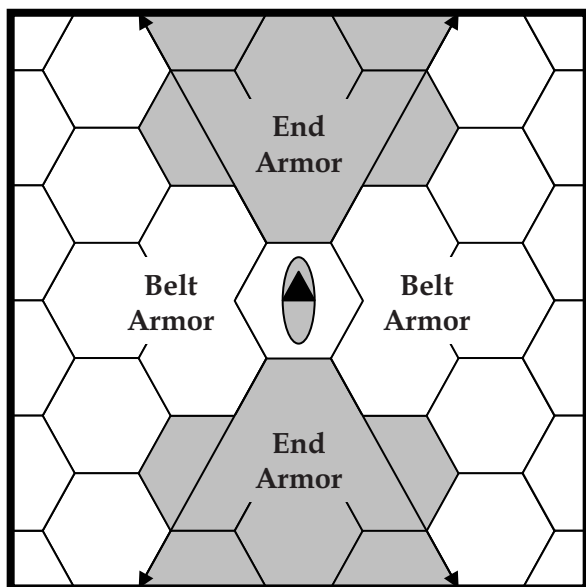
Each gun has a penetration value for each of the three range bands. Roll a die and add the

² For example, if the firing ship is moving at a speed of 4, and the target ship is moving at a speed of 6, then the overall speed modifier would be a -3 (-1 for the movement of 4, and -2 for the movement of 6).

appropriate penetration value. If the total *exceeds* the relevant armor value of the target, the shot has penetrated.

To determine which of the target's armor values to use, draw a line from the center of the firing ship's hex to the center of the target hex. If this line travels through any part of the hexside directly in front of, or directly behind, the target ship, the first end armor value (before the slash) is used. Otherwise, use the first belt armor value (before the slash).

If the firing guns are capable of plunging fire (i.e., there is an asterisk after the guns' long-range penetration value) *and* the target is at long range, then use the number after the slash when attempting to penetrate a target's belt or end armor.



6.2.3 Damage. Shots that penetrate the armor inflict a number of hits on the target equal to the damage value of the gun. The effects of damage are described starting on p. 23.

7 TORPEDOES

Early in the period covered by this game, torpedoes were not much of a threat; the Russian torpedoes used during the Russo-Japanese War, for example, were particularly worthless. However, the psychological value was significant, and as time passed and technology improved, the torpedo became a feared weapon—it allowed the smallest of vessels to cripple the mightiest dreadnought.

As indicated in the Sequence of Play (see p. 8), torpedoes have their effects spread out over two different phases: their intended targets are recorded in the End Phase, while their attacks are resolved in the subsequent Combat Phase.

7.1 Launching Torpedoes. During the End Phase of each turn, any ship with torpedoes on board may choose to launch one or more of them at enemy ships. An announcement is made of which ships are launching torpedoes, but not which ships are the target(s) of the torpedo run. The target for each torpedo being fired is recorded on paper, along with one of the six firing arcs (A through F). This indicates in which gunfire arc you believe the target will be at the end of the following Movement Phase, and therefore the direction in which you are firing your torpedo.

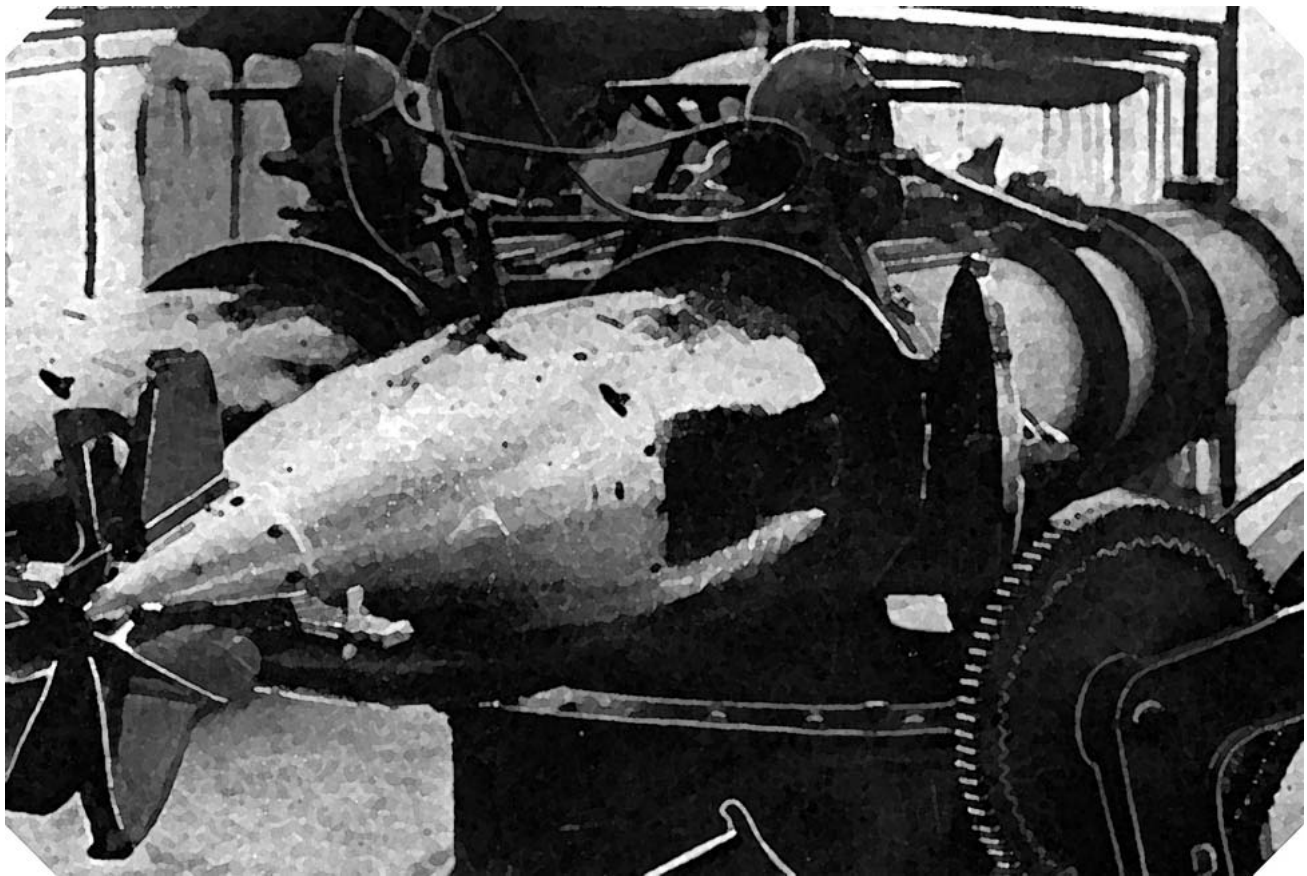
For example, HMS *Tiger* wishes to fire a torpedo at SMS *Moltke*. *Tiger* believes *Moltke* will be off her port bow (firing arc "A") after the upcoming Movement Phase, and therefore writes down "*Moltke* [A]". Note that there are no arc restrictions; any torpedo may be launched into any of the six firing arcs.

A ship may only launch one torpedo per tube in a single turn; each torpedo may target a different ship.

Remember that torpedoes are single-use weapons; once a torpedo has been launched, it should be crossed off the ship data card.

7.2 Resolving Attacks. After gunnery firing orders have been written in the Combat Phase, but before any of those orders are carried out, torpedoes launched in the previous End Phase will resolve their attacks.

Note that torpedoes are considered to be "in the water" by the end of a ship's movement; thus, damage suffered by the firing ship before torpedo attacks are resolved will not stop the torpedoes.



7.2.1 *Range & Arc.* In order for a torpedo to have any chance of hitting, the intended target must now be within the recorded arc and the torpedo's range of the firing ship. In addition, the firing ship must have a line of fire (LoF) to the target. For example, HMS *Tiger's* 21" torpedoes have a range of 5; *Tiger* had recorded "Moltke [A]" in the previous End Phase. This means that during the Combat Phase, *Moltke* must be in the [A] firing arc, within 5 hexes of *Tiger*, and *Tiger* must have LoF to *Moltke*, in order for the torpedo to have a chance of hitting.

If the intended target is not within the necessary range and arc, or if the firing ship does not have LoF to the target, at the time torpedo attacks are resolved, the torpedo has no chance of hitting, and it has no effect.

If the target is in the same hex as the firing ship, the torpedo will make its attack, regardless of firing arc. Note that the line of fire (LoF) restriction only applies when the torpedo attack is resolved, not when the target is recorded.

7.2.2 *To-Hit.* If the intended target is within the necessary arc and range, a die roll is made to see if the torpedo hits its target. This to-hit roll is similar to that for gunfire (see p. 20); the roll needs to be 8

or higher in order to succeed. Modifiers to this roll are as follows:

- **Evasive Maneuvers:** -1 per "E" plotted by either the firing ship or target
- **Range:**
 - Same hex +1
 - 1-2 hexes 0
 - 3-5 hexes -1
 - 6-9 hexes -2
 - 10-14 hexes -3
 - 15+ -4
- **Speed** (refers to the number of MPs actually expended, not the total number available; target and firer modifiers are cumulative¹):
 - Target speed 0-1: +1
 - Target speed 2-3: 0
 - Target speed 4-5: -1
 - Target speed 6-7: -2
 - Target speed 8+: -3

¹ For example, if the firing ship is moving at a speed of 4, and the target ship is moving at a speed of 6, then the overall speed modifier would be a -3 (-1 for the movement of 4, and -2 for the movement of 6).

- **Target Size:**
 - Very Small: -2
 - Small: -1
 - Medium: 0
 - Large: +1
 - Very Large: +2
 - Huge: +3
- **Under Gunfire¹:** -1

As with gunfire, there is a chance that torpedoes with a cumulative -3 modifier or worse may still hit. Consult the following chart:

<i>Modifier</i>	<i>Unmodified Rolls Needed To Hit</i>
-3	10, plus a second roll of 3 or better
-4	10, plus a second roll of 7 or better
-5	10, plus a second roll of 9 or better
-6	10, plus a second roll of 10
-7 or worse	No chance of hitting

7.2.3 *Damage.* When a torpedo hits its target, there is no need for a penetration roll; armor has no effect on torpedo hits. Each torpedo inflicts a number of hits on the target equal to its damage rating. In addition, every torpedo hit causes a critical hit (see p. 23).

The effects of damage are described in the next section.

8 DAMAGE

There are several ways in which ships may incur damage during the course of the game; this section describes how this damage is applied, and what effects it has on ships.

8.1 **Hull Damage.** Whenever a ship takes damage, it automatically takes one hull hit per damage point. Simply cross off one circle in the left-most box of the hull hits portion of the damage track. If all the circles in that box have been crossed off, then move to the second box, then the third, and then the fourth. Once all the circles in the fourth box have been crossed off, the ship has been sunk, and should be removed from the board.

8.2 **Damage Roll.** Next, a die is rolled for each damage point taken, and the Hit Location line is consulted to see whether any additional damage is applied.

For the HMS *Tiger*, a die roll of 1 or 2 indicates the loss of one of the 14" turrets, a die roll of 3 through 7 indicates the loss of one 6" gun, while a die roll of 8 indicates the loss of one light gun. A die roll of 9 indicates that no additional losses occur.

If the die roll results in gun damage, one gun mount of the appropriate type is destroyed. If possible, the affected gun must be one that could be brought to bear on the firing ship; i.e., if being attacked from the rear, the target cannot lose a forward-firing gun unless that is the only option available. If the damage is from a torpedo hit, any gun can be lost, regardless of firing arc.

If no guns of the indicated type remain, then no additional damage is suffered.

Any damage roll of 10 causes a critical hit (see below).

8.3 **Critical Hits.** Any damage roll of 10 results in a critical hit. In addition, each torpedo that hits its target automatically causes one critical hit.

For each critical hit, roll 2d on the following table; the effects of the various types of hit are described in the following sections. Note that there are separate columns for "normal" critical hits (due to gun damage, collisions, etc.) and for those due to torpedo hits.

¹ A ship is considered to be "under gunfire" if it has been targeted by enemy guns in the current Combat Phase. This modifier only applies once, regardless of the number of ships firing at the launching ship.

<i>Roll</i>	<i>Critical Hit</i>	<i>Torpedo Critical Hit</i>
2	Magazine	Magazine
3	Engine	Engine
4	Engine	Engine
5	Rudder	Engine
6	List	Rudder
7	Fire Control	List
8	Flooding	Flooding
9	Fire	Flooding
10	Flooding	Flooding
11	Bridge	Fire
12	Fire	Flooding
13	Flooding	Flooding
14	Fire	Flooding
15	Fire Control	List
16	List	Rudder
17	Rudder	Engine
18	Engine	Engine
19	Engine	Engine
20	Magazine	Magazine

8.3.1 *Bridge*. A shot has hit, or nearly hit, the bridge. The ship must move in the individual ships segment of the following Movement Phase. If the ship takes a second bridge critical hit, it has to move in the individual ships segment of the next two Movement Phases, and so on.

Note that, if a squadron leader suffers from a bridge hit, its entire squadron must move in the individual ships segment of the following Movement Phase.

8.3.2 *Engine*. The ship's engine has been damaged. The ship's speed is permanently reduced by one.

8.3.3 *Fire*. A hit has started a fire. A fire marker is placed on the ship. While a ship is on fire, it suffers a -1 to-hit penalty to all gunfire attacks.

During the End Phase, roll a die for each fire marker on a ship:

<i>Roll</i>	<i>Effect</i>
1	The ship suffers 3 additional points of damage.
2-3	The ship suffers 2 additional points of damage.
4-6	The ship suffers 1 additional point of damage.
7-10	The fire has been extinguished. Remove one fire marker from the ship.

Damage rolls are made as normal for hits taken due to a fire.

8.3.4 *Fire Control*. The ship's fire control system has been disrupted. The ship cannot conduct gunfire in the next Combat Phase. If the ship takes a second fire control critical hit, it cannot conduct gunfire for the next two Combat Phases, and so on.

8.3.5 *Flooding*. The ship has started to take on water. Place a flood marker on the ship. While a ship is flooding, its available MPs are reduced by one.

During the End Phase, roll a die for each flood marker on a ship:

<i>Roll</i>	<i>Effect</i>
1	The ship suffers 3 additional hull hits.
2-3	The ship suffers 2 additional hull hits.
4-6	The ship suffers 1 additional hull hit.
7-10	The flooding has been contained. Remove one flood marker from the ship.

Damage rolls are *not* made for hits taken due to flooding; only the hull damage applies.

8.3.6 *List*. An excessive list has caused movement and fire control problems. For the remainder of the game, the ship's speed is reduced by one, all gunfire incurs a -1 to-hit penalty, and no torpedoes can be launched. If the ship suffers a second "List" critical hit, roll a die: on an even result, the ship has righted itself and the earlier list is cancelled out; on an odd result, the ship has capsized and is removed from the game.

8.3.7 *Magazine*. One of the ship's magazines has been hit and explodes. The ship disappears in a ball of flame.

8.3.8 *Rudder*. The ship's rudder has been jammed. Until this damage has been repaired, all turns ("P" or "S" maneuvers) cost two MPs each, and evasive maneuvers ("E") cannot be performed. If the rudder is already jammed, further rudder critical hits have no effect.

To repair this damage, roll a die during each End Phase; on a 6 or more, the rudder has been freed.