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0   INTRODUCTION

When I got to the ship's side, there seemed to be quite a fair crowd, and they didn't appear to be very anxious to take to the water. I called out to them, "Come on you chaps, who's coming for a swim?" Someone answered, "She will float for a long time yet," but something, I don't pretend to know what it was, seemed to be urging me to get away, so I clambered over the slimy bilge keel and fell off into the water, followed I should think by about five more men. I struck away from the ship as hard as I could and must have covered nearly fifty yards when there was a big smash, and stopping and looking round, the air seemed to be full of fragments and flying pieces.

A large piece seemed to be right above my head, and acting on impulse, I dipped under to avoid being struck, and stayed under as long as I could, and then came to the top again, and coming behind me I heard a rush of water, which looked very like surf breaking on a beach and I realized it was the suction or backwash from the ship which had just gone. I hardly had time to fill my lungs with air when it was on me. I felt it was no use struggling against it, so I let myself go for a moment or two, then I struck out, but I felt it was a losing game and remarked to myself, "What's the use of you struggling, you're done," and I actually ceased my efforts to reach the top, when a small voice seemed to say, "Dig out."

—P.O. Ernest Francis, HMS *Queen Mary*

Grand Fleets™ is a miniatures game of naval warfare during the age of the battleship. From the ironclads of the late 1800s to the super-dreadnoughts of World War II, players can take command of the ships that altered the course of history.

Great pains have been taken to accommodate a wide range of preferences: hexes or no hexes; any miniatures scale; simultaneous or sequential play—the choices are up to you!

In addition to the basic rules for surface actions between 1890 and 1940, *Grand Fleets* includes advanced rules for things like time of day, smokescreens, crew quality, and destroyer flotillas. Best of all, you'll never have to wait for "official" publication of your favorite ships: comprehensive, step-by-step guidelines are provided to generate data cards for any vessel that put to sea during the battleship era.

So, raise the battle ensign, sound general quarters, and damn the torpedoes—your destiny awaits!

0.1 PLAYERS

Grand Fleets is written 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.

0.11 Referee

A good way to get more than two 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.

Although players are encouraged to explore the use of a referee, as doing so can provide a unique experience, these rules assume no referee is present.

0.2 MATERIALS

In addition to the rulebook, several items are required to play.
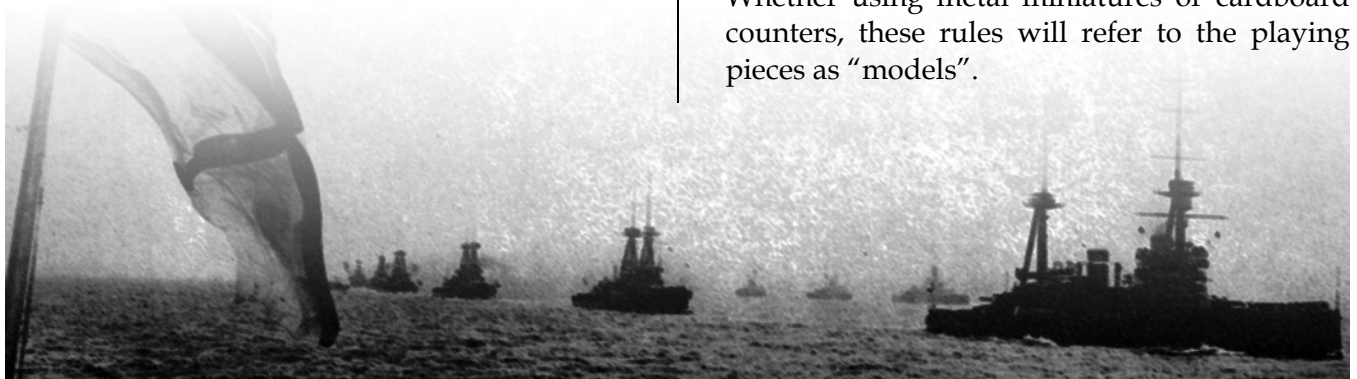
0.21 Playing Pieces

Each ship must be represented on the game board by a playing piece of some kind, typically a miniature model. Some scales of naval miniatures commonly used are 1:2400, 1:3000, and 1:6000. Several manufacturers produce miniatures in these scales that are ideal for *Grand Fleets*.

Although it is possible to use such models in their "natural" state, most players will wish to give their fleets an appropriate paint job. This is covered in detail elsewhere, and will not be repeated here. Paint has a way of rubbing off with repeated handling, so players may choose to mount their miniatures on a base of some sort.

Ultimately, as the ship itself is only considered to occupy the very center of its model, the size of base is largely irrelevant to game play. As a rule of thumb, the base should be long enough to fit the model, and be roughly one-third as wide as it is long. For example, a 1:2400 scale model of the battleship HMS *Iron Duke* (623') would be about 3⅛" long; therefore, an appropriate base size would be 30mm × 90mm.

Grand Fleets can also be played using cardboard counters. Although slightly less aesthetically-pleasing than metal miniatures, these have advantages of economy and storage—in other words, they are much cheaper than miniatures, and can be thrown into a plastic baggie when not in use. If using counters, the playing area and distance scales (see below) should be the same as for 1:6000 scale models.

Whether using metal miniatures or cardboard counters, these rules will refer to the playing pieces as "models".

0.22 Game Board

Grand Fleets can be played on any flat surface, like a tabletop or floor. The size of the playing area will vary with the scale of the models used, but should represent an area of at least 24 nautical miles across and 18 nautical miles wide. The approximate playing area required for each scale is shown below:

MODELS	PLAYING AREA
1:2400 scale	96" × 72"
1:3000 scale	72" × 54"
1:6000 scale	48" × 36"

The game can also be played on a hexgrid. Several manufacturers produce game boards with grids printed on them that are ideal for *Grand Fleets*.

Whether playing on an open surface or a hexgrid, these rules will refer to the playing area as the "game board".

0.23 Ship Data Cards

Each ship in a game of *Grand Fleets* will have its own data card, on which its capabilities are defined and damage is recorded. The various parts of the data card, and how each impacts game play, are defined in the following chapter.

Published scenarios, such as the introductory scenario at the back of this book, will include completed data cards for all of the ships involved—these can be photocopied as needed, or players can write the appropriate information onto blank data cards, a sheet of which can be found in the centerfold of this book. It can also be downloaded from the Majestic Twelve Games web site:

mj12games.com/grandfleets/stuff.zip

0.24 Markers & Templates

Certain game functions require the use of markers, such as speed markers, splash markers, and critical hit markers. A sheet of appropriate markers is included in the centerfold of this book. A full-color version of this sheet can also be downloaded from the Majestic Twelve Games web site:

mj12games.com/grandfleets/stuff.zip

For increased durability, the sheet of markers may be glued onto chipboard or cardstock prior to carefully separating them with scissors or a hobby knife.

The centerfold of this book also includes two sheets of firing arc templates that can be of assistance in determining valid targets for each of a ship's weapons. Simply place the template so that it is centered the ship's model, and align it with the ship's facing. These sheets can also be downloaded from the Majestic Twelve Games web site:

mj12games.com/grandfleets/stuff.zip

One useful option is to print or copy the templates onto a clear sheet of plastic, such as those used for overhead projectors. In so doing, the template can be placed over the top of a ship's model without obscuring it.

If playing on a hexgrid, the template is unnecessary.

0.25 Measuring Tape

In order to determine distances on an open playing area, a measuring tape or ruler is required.

If playing on a hexgrid, a measuring tape is unnecessary.

0.26   Dice

All dice used in *Grand Fleets* are 10-sided. These can usually be found at any gaming or hobby store. Many (if not most) have sides labeled "0" through "9"; whenever a "0" is rolled, treat this as a result of 10.

0.27   Scenario Book

While not strictly required to play, the separate scenario books published by Majestic Twelve Games include all of the information necessary to play a number of different battles—both historic and conjectural. Visit our web site for more details.

0.3   SCALE

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

0.31   Distance

All distances are given in nautical miles (nm). One nm equals 6,080 feet (roughly 2,000 yards). The length of a nautical mile in game terms depends upon the type of models in use:

MODELS	DISTANCE SCALE
1:2400 scale	1nm = 4"
1:3000 scale	1nm = 3"
1:6000 scale	1nm = 2"

For example, if playing with 1:3000 scale models, a distance of 6nm would be represented by 18", while the same distance for 1:2400 scale models would be represented by 24".

If playing *Grand Fleets* on a hexgrid, each hex represents a distance of 1nm. The size of each hex, measured side to side, should be roughly in keeping with the above values: *e.g.* if using 1:6000 miniatures, each hex should be approximately 2" across.

0.32   Time & Speed

Each game turn represents 10-15 minutes of real time; at this time scale, a speed of one nautical mile per turn is roughly equivalent to five knots (a "knot" is one nautical mile per hour).
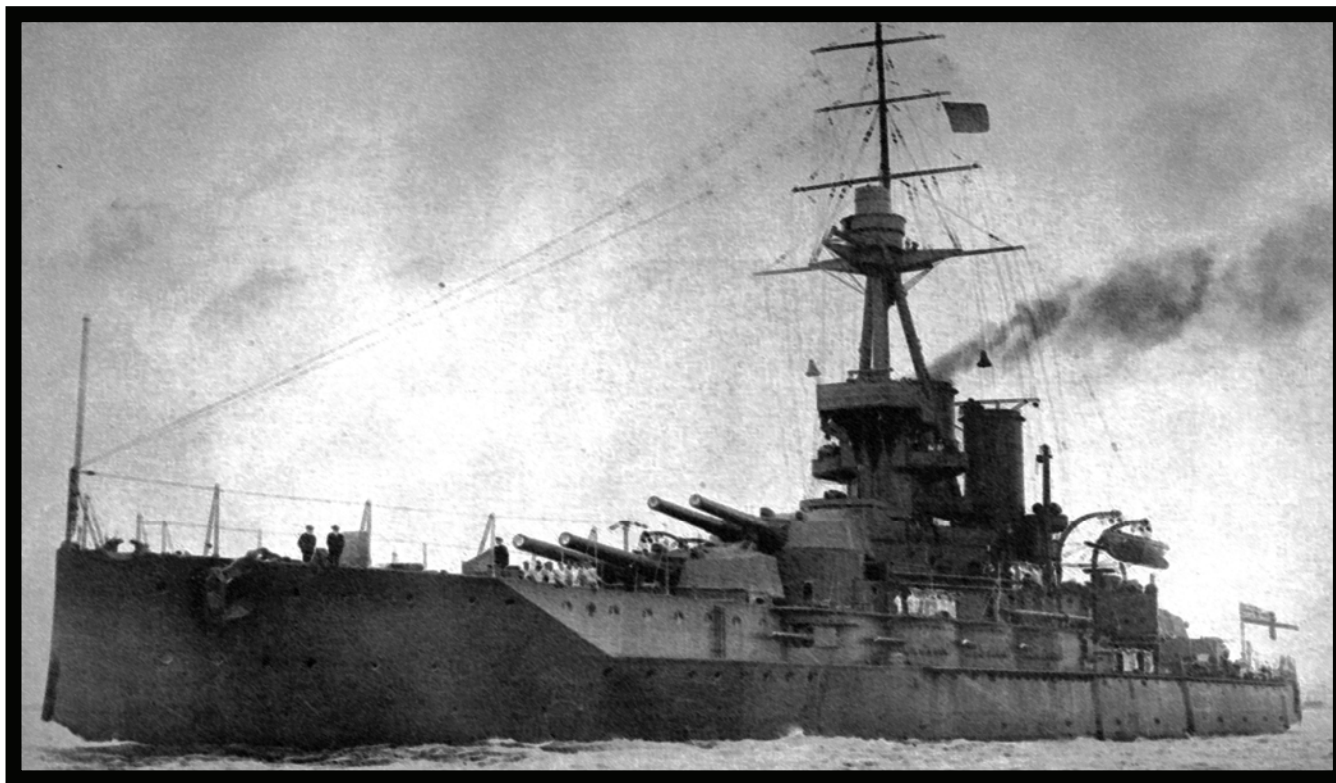
1 THE SHIPS

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 data card for HMS *Iron Duke* (pictured above) is shown on the following page.

1.1 NAME

The very top of the data card provides a space for players to write in the name of the ship. While not strictly required, naming the ships does add historical flavor to the game, and makes it easier to keep track of which data card belongs to which model on the game board.

1.2 SHIP CLASS DATA

The first section of the data card contains basic identifying information.

1.21 Class & Type

Most ships in this time period had one or more sister ships; collectively, these were referred to as a "class". After the class name is a two-letter designation indicating the type of ship:

TYPE	ABBR.
Battleship	BB
Battlecruiser	BC
Armored/Heavy Cruiser	CA
Protected/Light Cruiser	CL
Destroyer	DD
Torpedo Boat	TB

HMS Iron Duke is an Iron Duke-class battleship (BB).

Some other abbreviations may occasionally surface; for example, "AMC" for armed merchant cruiser or "BCL" for light battlecruiser.

HMS Iron Duke							Notes/Orders/&c.:	

IRON DUKE-class BB					**GBR**
245 pts.		Very Large			1914
HMS *Benbow*, *Emperor of India*, *Iron Duke*, *Marlborough*					

ARMOR	**HITS**		**SPEED**	**L.G.**	**A.A.**
Belt 13	□□□□□□□		4-5-4	1	2
End 9	□□□□□□□		3-3-3	1	2
Deck 10	□□□□□□□		2-1-2	0	1

GUNS	**RNG**	**ROF**	**PEN**	**DMG**	**FIRING ARCS**	**HIT ON:**
13.5"/45 (34.3cm)	4/8/12	+0	11/7/4	3	ABCD [2] □□	1
					CD [2] □	
					CDEF [2] □□	
6"/45 (15.2cm)	2/4/7	+1	4/1/0	1	Port [1] □□□□□□	2-4
					Stbd [1] □□□□□□	

TORPEDOES	**RANGE**	**DAMAGE**	**FIRING ARCS**
21" (533mm)	5	5	Port □□
			Stbd □□

1.22 Nationality

To the right of the ship class and type is a three-letter designation indicating the nation who operated it:

NATION	**ABBR.**
Austria-Hungary	OST
France	FRA
Germany	DEU
Great Britain	GBR
Italy	ITA
Japan	JAP
Russia/Soviet Union	RUS
United States	USA

HMS Iron Duke belongs to the Royal Navy of Great Britain (GBR).

1.23 Point Value

The point value is a quantification of a ship's combat effectiveness—in short, it represents the amount of damage the ship can be expected to inflict upon the enemy before it is sunk. The higher this number, the more powerful the ship.

Point values are used both for balancing forces when playing a "pick-up" game and in determining victory.

HMS Iron Duke is worth 245 points.

1.24 Size Class

Ships in *Grand Fleets* are divided into five categories, or size classes, determined by the ship's displacement: very small, small, medium, large, or very large.

HMS Iron Duke displaces 25,000 tons; this places her in the "very large" (VL) size class.
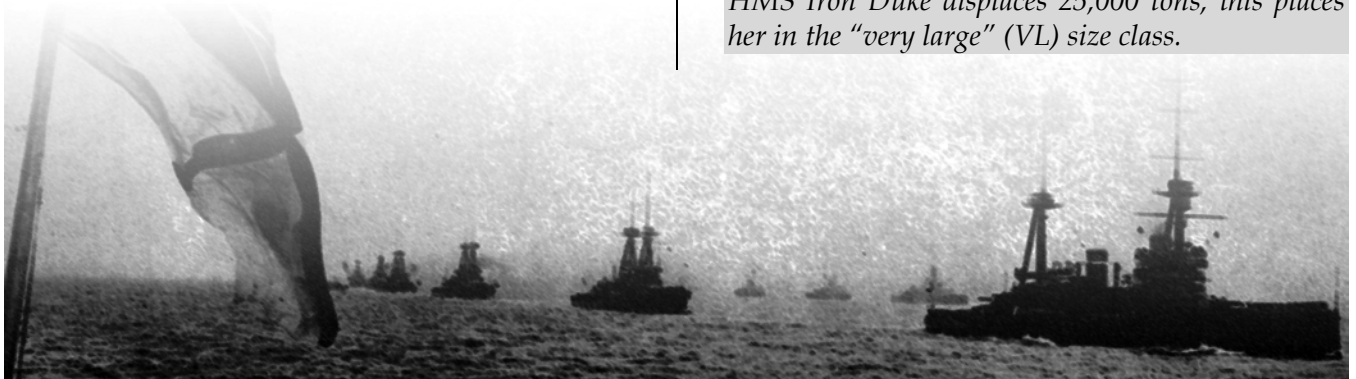
1.25 Date in Service

The year listed on the data card is the date on which the first ship in the class was commissioned (placed into active service).

HMS Iron Duke, the first ship of her class, was commissioned in October of 1914.

1.26 Ships in Class

Below the point value, size class, and date in service is a list of all the ships that comprise the class.

HMS Iron Duke is part of a four-ship class, along with HMS Benbow, Emperor of India, and Marlborough.

1.3 ARMOR

Most warships of cruiser size or larger were fitted with layers of metal, sometimes 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 numbers.

1.31 Belt

The Belt armor value indicates the thickness and strength of the armor along the sides of the ship.

HMS Iron Duke has a Belt armor value of 13.

1.32 End

The End armor value is used against attacks originating from the ship's bow or stern. This value is reduced because most ships' armor belts taper off near the ends.

HMS Iron Duke's End armor value is 9.

1.33 Deck

A ship's Deck armor value is used against attacks made by some enemy gunfire at long range. Despite the name, this value is actually an average of the ship's belt and deck armor, as shells fired from longer ranges have a random chance of either hitting the side of the ship or "plunging" down from above.

HMS Iron Duke has a Deck armor value of 10.

1.4 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. Prior to this point, a ship progresses through three levels of damage: normal, damaged, and crippled.

These damage levels are represented by three rows of hull boxes on the data card. When a ship takes damage, the boxes in the top row are checked off first; once these have all been checked, the ship is damaged. Once all of the boxes in the second row have been checked, the ship is crippled. When all of the boxes in the third row have been checked, the ship has been sunk and its model is immediately removed from the game.

A ship's damage level has a direct impact upon three different values: the ship's speed, light gun rating, and anti-aircraft rating. The numbers in the first row of each column indicate the ship's starting values. When the ship is damaged, these values are reduced to 70%; when the ship is crippled, these values are reduced to 40%.

1.41 Speed

This is the maximum distance the ship can travel in a single game turn. Players may notice there are three numbers in each row; these are used in an optional rule (see rule 3.11, p.18). For now, only the first value in each row is relevant.

HMS Iron Duke begins with a speed of four nautical miles per turn. When damaged, she is reduced to a speed of three; when crippled, her speed drops to two.

1.42 Light Gun Rating

The light gun (L.G.) rating indicates the combined strength of all small-caliber weapons on the ship (those with a bore of less than 100mm).

HMS Iron Duke begins with a light gun rating of 1. When crippled, this rating drops to 0.

### 1.43 Anti-Aircraft Rating

The anti-aircraft (A.A.) rating shows how well the ship can defend itself against enemy aircraft.

(Aircraft are not part of the basic *Grand Fleets* game; however, an A.A. rating is included on the data cards for easy integration with forthcoming rules.)

HMS Iron Duke begins with an anti-aircraft rating of 2. When crippled, this rating drops to 1.

1.5 GUNS

All guns (with a bore of 100mm or greater) on each ship are listed on the data card. Each type is defined by its range, rate of fire bonus, penetration, and damage values.
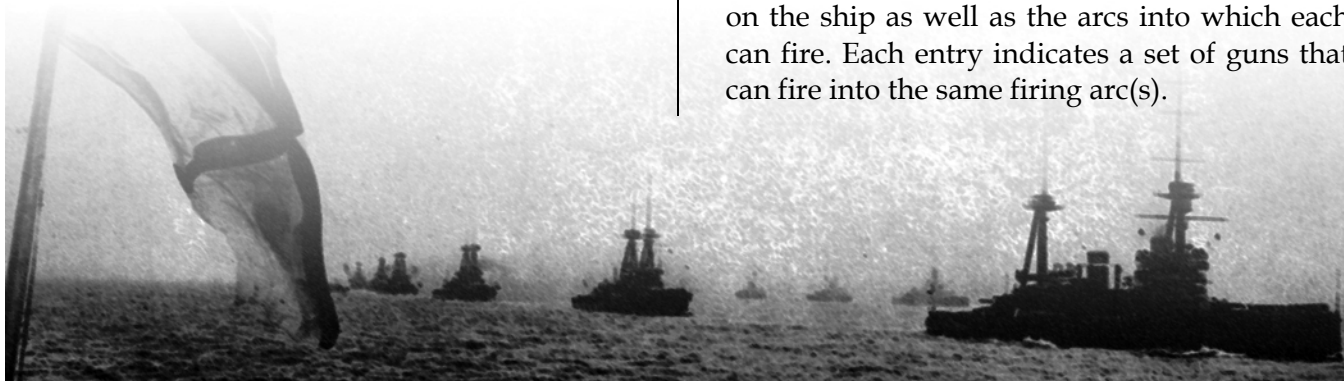
1.51 Range

Gun ranges are divided into three "bands": short, medium, and long. Each is expressed in nautical miles.

HMS Iron Duke's 13.5" guns have a short range of 4nm, a medium range of 8nm, and a long (maximum) range of 12nm.

1.52 Rate of Fire Bonus

A gun's rate of fire bonus (ROF) is expressed as a modifier to the attack roll.

HMS Iron Duke's 13.5" guns have a ROF of +0, which means they receive no bonus to the die roll when making an attack.

1.53 Penetration

Penetration reflects the gun's ability to pierce 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.

HMS Iron Duke's 13.5" guns have a penetration of 11 at short range, 7 at medium range, and 4 at long range.

1.54 Damage

The gun's damage value indicates the number of dice rolled for penetration when a hit is scored.

HMS Iron Duke's 13.5" guns have a damage value of 3. This means three dice are rolled for penetration each time one of these guns hits the target.

1.55 Firing Arcs

This section indicates the number of weapons on the ship as well as the arcs into which each can fire. Each entry indicates a set of guns that can fire into the same firing arc(s).

There is one box on the data card per weapon mount, while the value in brackets indicates the number of gun barrels per mount. A sample firing arc entry might look like this: "ABCD [3] □□", indicating the ship has two turrets, with three barrels each, that can fire into the A, B, C, and D arcs.

HMS Iron Duke has five 13.5" turrets, each with two gun barrels. Two of the turrets can fire into the ABCD arc; one can fire into the CD arc; and the remaining two can fire into the CDEF arc.

Firing arcs are illustrated in rule 4.12 (p.22).

1.56   Hit On

The last column of the gun data section is used when making damage rolls, as described in rule 4.32 (p.28). The range of numbers indicates the likelihood of a gun of that type being damaged.

HMS Iron Duke will lose one of its 13.5" gun turrets on a roll of 1 or 2.

1.6   TORPEDOES

Torpedoes are listed below the ship's gun data. In nearly all cases, a ship will carry no more than one type of torpedo.

1.61   Range

Torpedoes have only one range "band", which indicates the maximum distance at which a target can be attacked. As with guns, range is expressed in nautical miles.

HMS Iron Duke's torpedoes have a maximum range of 5nm.

1.62   Damage

The torpedo's damage value indicates the number of dice rolled for damage when a hit is scored.

HMS Iron Duke's torpedoes have a damage value of 5. This means five dice are rolled for damage each time one of these torpedoes hits the target.

1.63   Firing Arcs

The firing arc display for torpedoes is slightly different than for guns. Each row represents a group of torpedo tubes that can fire into the same arc (or arcs), while each box represents a single torpedo tube.

In most cases, torpedo tubes could not be re-loaded during battle—however, interested players should consult rule 9.8 (p.45).

HMS Iron Duke has four torpedo tubes: two can fire into the port arc, and two into the starboard arc.

1.7   NOTES/ORDERS/&c.

The upper right of the data card contains a section that players can use for whatever purpose seems appropriate. For example, if the use of markers to track critical hits seems too cumbersome, the necessary information can be recorded here instead.
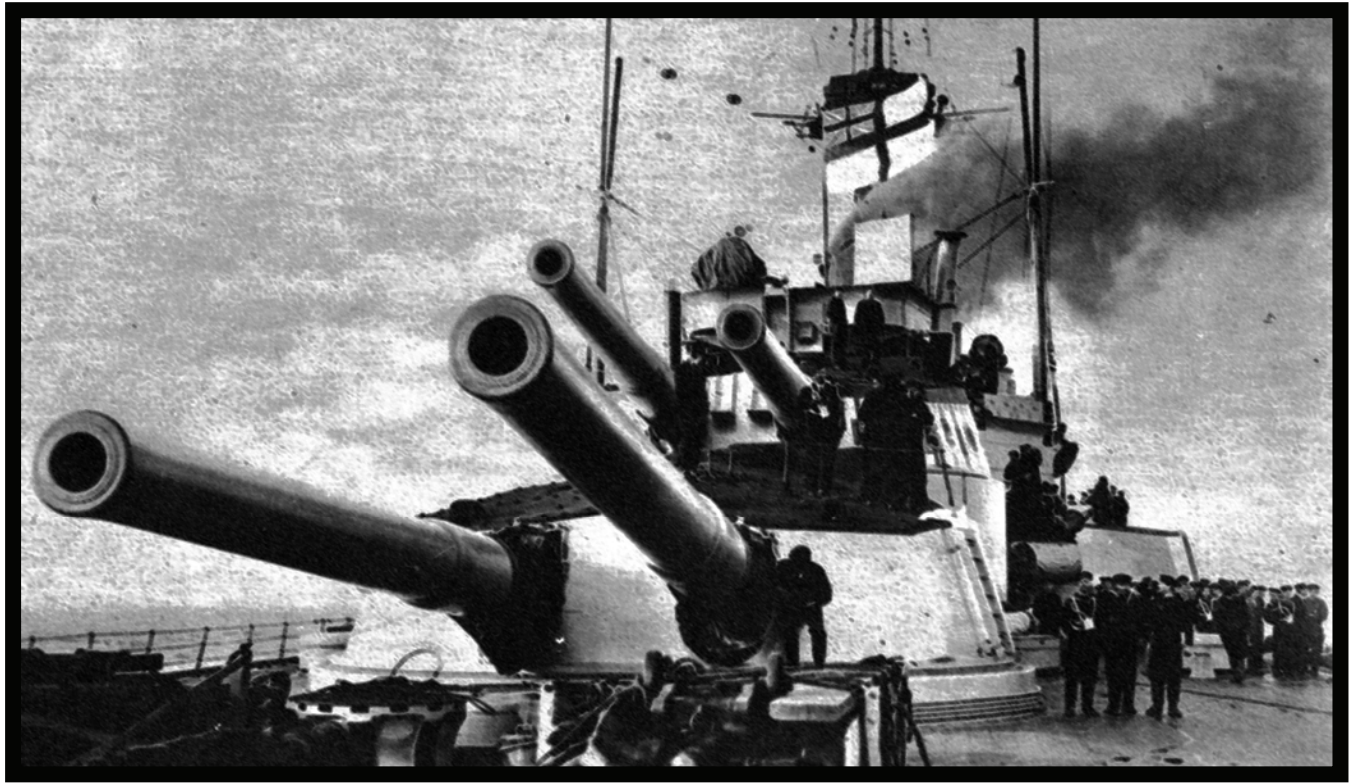
2   PLAYING THE GAME

This chapter provides an overview of how a game of *Grand Fleets* is conducted. Details are given in following chapters.

2.1   PREPARATIONS

To begin, find an appropriately-sized flat surface to serve as the game board. Then assemble all the other materials necessary for play, as described in rule 0.2 (p.5).

2.11   Selecting Forces

The first task for players is to determine the forces available to either side. If playing a published scenario, the opposing fleets are predetermined. However, players may wish to set up their own evenly-matched "pick-up" battles. This can easily be done using the ships' point values.

First, determine a points total; this can be any value upon which the players can agree. The higher this value, the larger the battle, and the longer it will take to resolve. Next, each side selects ships whose point values add up to no more than this total.

Generally, the ships on each side should all be of the same nationality, although alliances are allowed (for example, a joint Anglo-French fleet, or German battlecruisers supporting an Austro-Hungarian task force). It is also possible to have ships of the same nationality on opposing sides—this can either be explained as a "training exercise" or part of a civil war, like that experienced by Russia after the Great War or the "two Frances" of World War II (although, in neither case did naval forces from opposing sides actually fight each other).

Jim and Kevin are playing a 500-point battle. Jim has decided to play the Kaiserliche Marine (German Imperial Navy), and has selected the following ships:

SMS Derfflinger..265 pts.
SMS Blücher...126 pts.
SMS Graudenz...43 pts.
SMS Rostock...41 pts.

As the point values of these ships add up to less than the allowed point total (475), Jim's force is ready.

2.12 Completing the Data Cards

After the sides have been determined, each player must complete a data card for each ship in the fleet. If playing a published scenario, the necessary data cards have already been filled out; these may be photocopied for personal use. Otherwise, a sheet of blank data cards is provided at the back of this book.

Some players may find it useful to laminate copies of the data cards, and mark damage with a grease pencil or dry-erase marker. In this way, data cards can be reused from game to game.

2.13 Deploying the Fleet

Finally, the ship models are placed on the game board. If playing a published scenario, these starting locations will have already been assigned. In a "pick-up" game, each side should be placed within three nautical miles of either short edge of the game board.

The simplest way to do this is for each side to roll a die; the side with the higher roll decides whether to deploy its force first or second. Alternatively, players can set a barrier in the center of the game board, allowing them to deploy in secret.
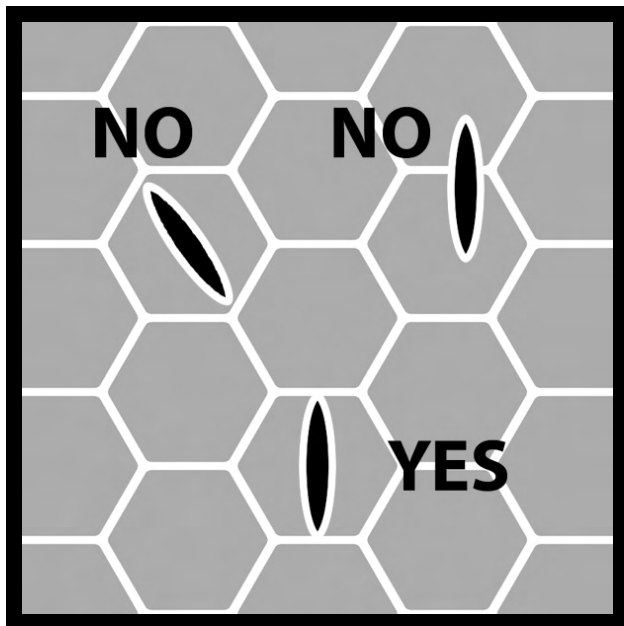
SETUP AREA

SETUP AREA

If playing on a hexgrid, the hexes should be aligned so that the "grain" runs left to right when players are seated behind their setup areas.

Also, each model must be placed on the game board so that it occupies one specific hex, and its 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 game 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, 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.

SEQUENCE OF PLAY
Movement Phase
Gunfire Phase
Torpedo Phase
End Phase

Once all of the phases have been completed, one game turn is over, and the next begins with the first phase in the sequence of play.

In published scenarios, the point at which the game ends will be indicated. Otherwise, players should simply continue until one side is eliminated or gives up (whichever comes first). Alternatively, the game can last for a set period of time, typically six to ten game turns.

2.21   Movement Phase

The first step in each game turn is for ships to be moved on the game board. Players alternate moving one ship at a time. Movement is described in rule 3 (p.17).

2.22   Gunfire Phase

Once all ships have been moved, gunfire is resolved. Again, players alternate resolving the attacks of one ship at a time. Gunfire is explained in rule 4 (p.21).

2.23   Torpedo Phase

Following gunfire resolution, players alternate resolving torpedo attacks. Torpedo attacks are outlined in rule 5 (p.29).

2.24   End Phase

Generally, the End Phase serves to mark the end of the game turn; however, certain actions will also need to be performed at this time. For example, speed markers placed during the Movement Phase are removed (rule 3.24, p.20). In addition, certain critical hits will have effects that must be resolved during the End Phase (rule 6, p.31).

2.3   WINNING THE GAME

If playing a published scenario, the conditions under which one side or the other can claim victory will be specified. In most cases, these conditions will involve "victory points" (VPs). When a ship is sunk, the opposing player receives a number of VPs equal to its point value— *e.g.* if HMS *Iron Duke* is sunk, the opposing player receives 245 VPs. Some scenarios may include additional methods for players to earn VPs.

In "pick-up" games, victory points are earned only for sinking enemy ships. The player with the most VPs at the end of the game is the winner.

Enterprising players may determine more specific victory conditions—this fine, so long as all players understand what is required in order to win before the game starts.

2.31   Partial Victory Points (Optional)

Historically, it was not essential that enemy ships be completely destroyed—even "superficial" damage could result in extended repair times, achieving much the same strategic result, at least in the short term. To reflect this, players may elect to award victory points for partially-destroyed ships, as follows:

- A ship that is damaged (*i.e.* all hull boxes in the first row have been checked off) awards the opposing side 25% normal VPs.

- A ship that is crippled (*i.e.* all hull boxes in the first two rows have been checked off) awards the opposing side 50% normal VPs.

HMS Iron Duke has a point value of 245. If she is damaged, the opposing player receives 61 VPs; if she is crippled, the opposing player receives 123 VPs.
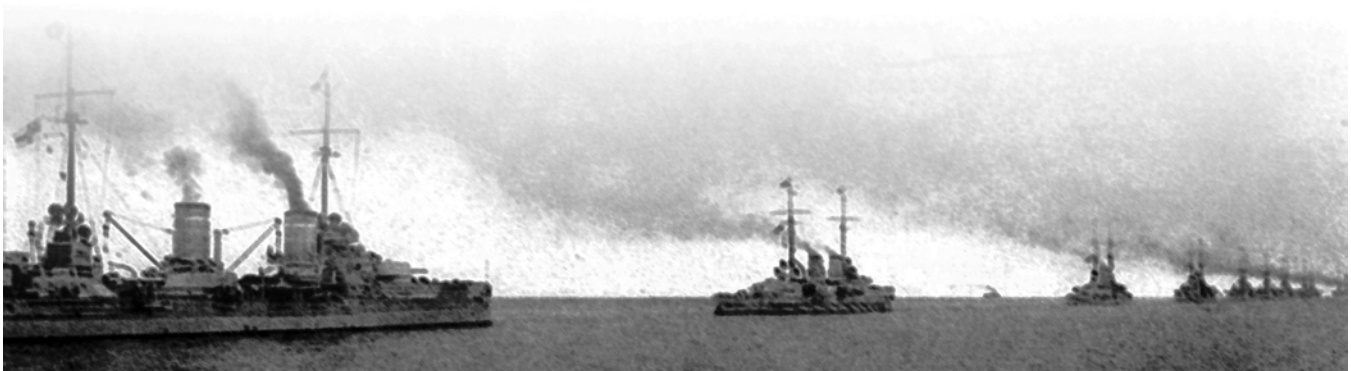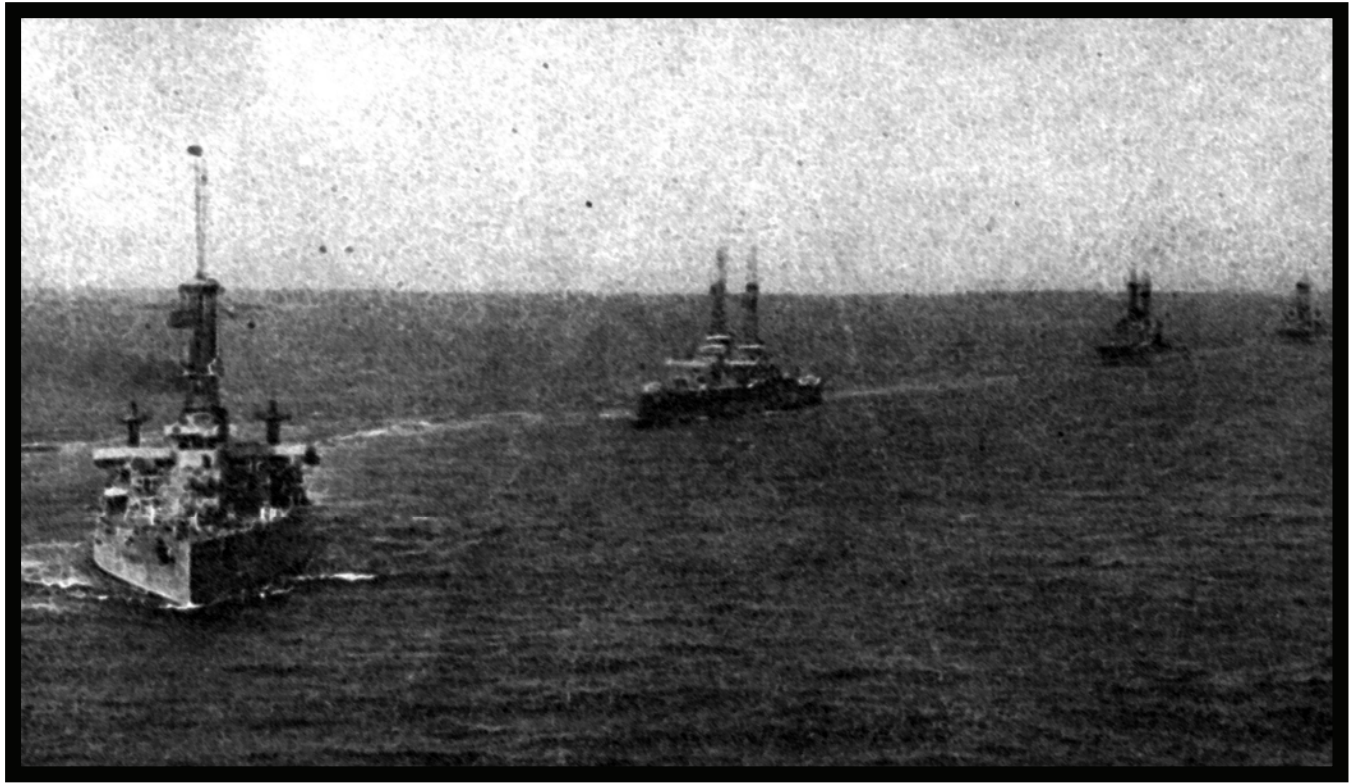
3   MOVEMENT

During the Movement Phase, ships are moved across the game board in an attempt to gain an advantageous position (and, perhaps just as importantly, deny it to the enemy).

To begin, determine the total number of ships on each side. The side with more ships conducts movement for one of its ships, followed by one ship from the opposing side. Play then alternates between sides until all ships have been moved.

The Germans have three ships, while the British have five. Therefore, the British will first conduct movement for one of their ships, followed by the Germans. The sides will alternate until the Germans have moved all of their ships, at which time the British will move their remaining two ships; this is illustrated by the following pattern: B-G-B-G-B-G-B-B.

If one side has more than twice as many ships, it conducts movement for two ships at a time; if one side has more than three times as many ships, it conducts movement for three at a time; and so on.

If both sides have the same number of ships, roll a die to determine which side goes first.

A side may not pass its opportunity to move a ship (or ships). If a side fails to move a ship during its opportunity to do so, it may not move any more ships in the current Movement Phase.

3.1   MOVEMENT POINTS

Each ship's current speed (shown by the first number in the appropriate row of the "Speed" column on its data card) indicates the number of movement points (MPs) available to it during the current Movement Phase. A ship does not have to use all (or any) of these MPs; however, any MPs not used are lost. In other words, a ship cannot "save" MPs from one Movement Phase to be used in the next.

HMS Iron Duke begins with a speed of 4. She therefore has four MPs to use in the Movement Phase.

3.11 Expanded MPs (Optional)

One of the realities of naval warfare, often lost in wargaming, is that a difference of one or two knots of speed could easily mean the difference between life and death. However, in *Grand Fleets*, a game speed of 5 may indicate a real-world speed of anywhere from 23 to 27 knots. To retain some granularity, players may elect to use this optional rule.

Each ship's speed is divided into three values; *e.g.* 5-4-5. During the first turn of the game, ships use the first number to determine the number of MPs available; during the second turn, use the middle number; during the third turn, use the last number. In the fourth game turn, "reset" to the first number, and so on.

HMS Iron Duke's speed is 4-5-4. Therefore, assuming she is not slowed due to the effects of damage, the number of MPs she has available in each game turn will be as follows:

Turn 1: 4 MPs
Turn 2: 5 MPs
Turn 3: 4 MPs
Turn 4: 4 MPs
Turn 5: 5 MPs
&c.

3.2 MOVING THE MODEL

Once the ship's speed has been determined, the model can be moved across the game board. Ships may only move directly ahead. For each nautical mile moved on the game board (or fraction thereof), the ship expends one MP.

HMS Iron Duke has a speed of 4. As the game is being played with 1:2400 scale models, every 4" represents one nautical mile. Iron Duke is moved ahead 7", or 1¾ nm. She has therefore used two of her four available MPs.

If playing on a hexgrid, remember that each model must always be clearly occupying a single hex—therefore, ships are only able to move in increments of whole nautical miles (*e.g.* a ship cannot move forward 3½ nm, as this would leave its model halfway between the third and fourth hex).

3.21 Turning

A ship must turn in order to alter its direction of travel. When making a turn, the ship's model is pivoted about its center-point. For each 60° turned (or fraction thereof), one MP is expended. A ship may turn as much as desired without moving forward.

To assist in measuring the angle of a turn, the center of each firing arc template contains a circle with hash marks in 15° increments. Thus, for example, a ship that pivots across three hash marks would have turned 45°.

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* Players should take care to remember that pillbugs may not wheel.
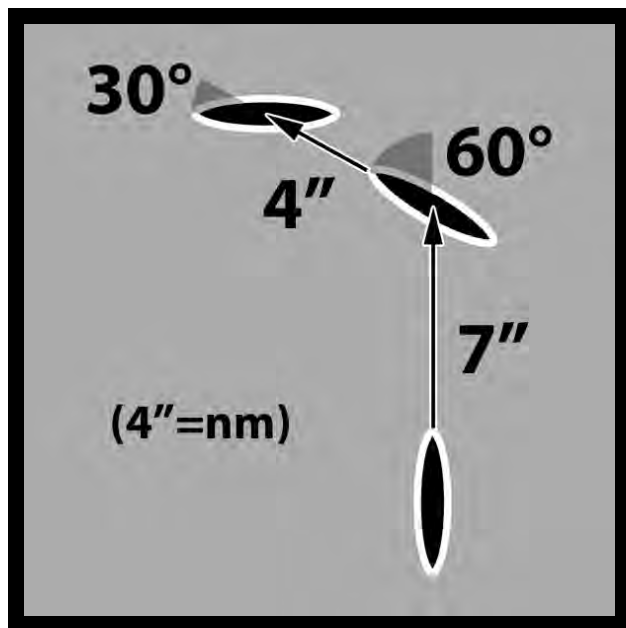
HMS Iron Duke moves forward 1¾ nm and turns 60° to port. She then moves another 1nm and turns an additional 30°. The total MP cost for this move is 5 (2 + 1 + 1 + 1).

If playing on a hexgrid, remember that each ship's model must always be clearly facing one side of the hex in which it is located—therefore, ships are only able to turn in increments of 60° (*e.g.* a ship cannot turn 30°, as this would leave the model facing the point between two hexsides).

Where are the turning circles?

Players of other naval games may be surprised at the lack of restrictions on the turning of ships, either through the use of turning circles or "turn modes". The reason for this is simple: even the largest ships of the period had a turning radius of only a few hundred yards; thus, any ship could come about within a space of less than a single nautical mile.

This, combined with a relatively long game turn (10-15 minutes), means we felt there was little reason to limit the maneuverability of ships in this way.

3.22   Stacking

At the scale of *Grand Fleets*, a ship only "really" occupies a fraction of the space taken by the model used to represent it. For example, at 1:2400 scale, HMS *Iron Duke's* model is 3" long; however, at the associated sea scale (4"=nm), *Iron Duke* occupies a space roughly ⅜" across (*i.e.* the model is eight times as big as it "should" be). Because of this, ships are allowed to move through each other without penalty or risk of collision.

However, for purposes of clarity (and to protect players' investment in metal miniatures), no model may end its movement so that it overlaps another. If playing on a hexgrid, this means that no ship may end its movement in a hex occupied by another ship.

3.23   Leaving the Game Board

Ships wishing to disengage from battle may voluntarily leave the game board. However, any ships that do may not re-enter the game.

Unless otherwise specified by a scenario's special rules, ships that leave the game board are considered destroyed, awarding half the normal number of VPs to the opposing player.

If using partial victory points (rule 2.31, p.16), the opposing player receives the number of VPs appropriate to the ship's level of damage.

3.24 Speed Markers

Once a ship's move has been completed, total the number of MPs used for forward movement, and consult the following chart to determine what color of speed marker should be placed next to the ship's model:

FORWARD MOVEMENT	MARKER
0-1 MPs (0-5 knots)	Green (+1)
2-3 MPs (10-15 knots)	None
4-5 MPs (20-25 knots)	Yellow (-1)
6 MPs or more (30+ knots)	Red (-2)

The marker placed (if any) indicates the to-hit modifier incurred by the ship's speed (see rule 4.2, p.26, and rule 5.2, p.30).

HMS Iron Duke moved forward 2nm, turned 45°, and moved a further 1nm. She therefore used a total of four MPs (2 + 1 + 1). However, only three of these were used for forward movement; therefore, no speed marker is placed next to her model.

Speed markers remain on the game board until the subsequent End Phase.
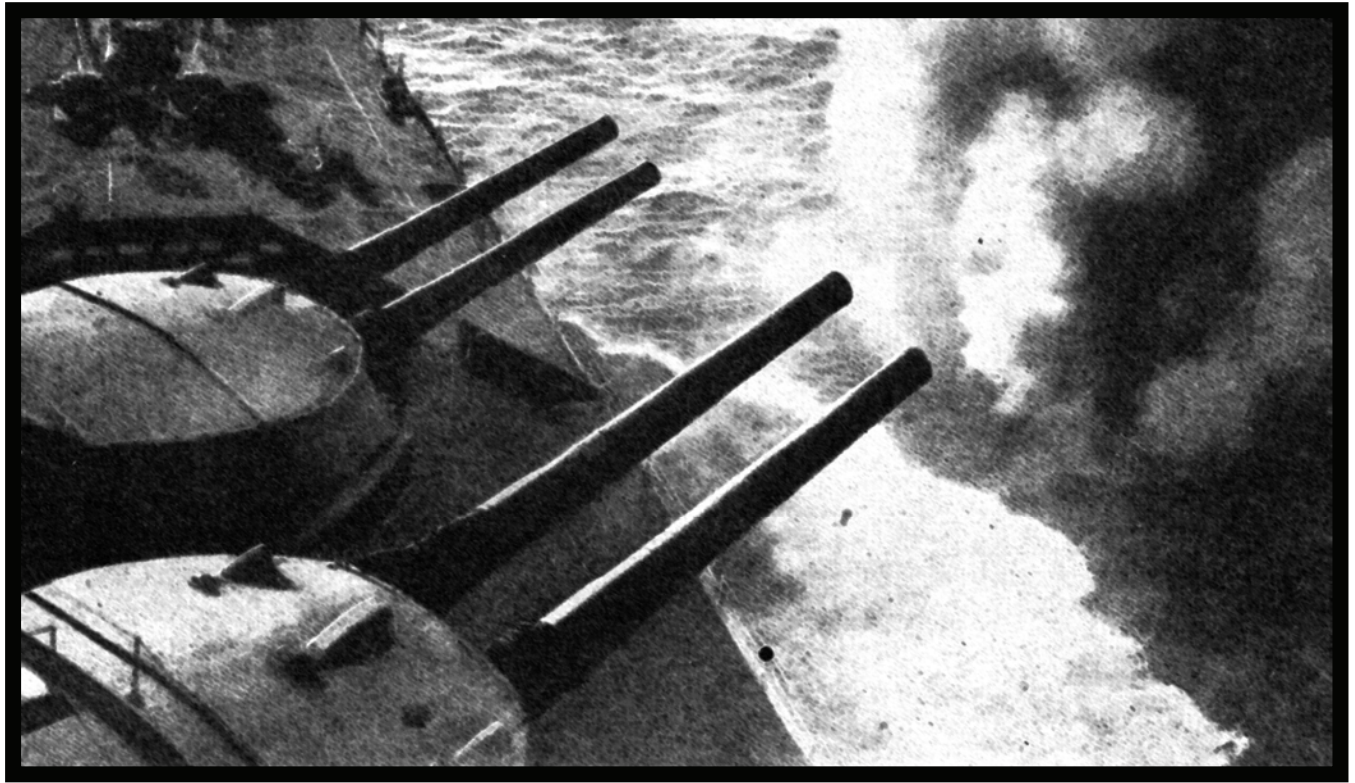
4   GUNFIRE

This chapter is concerned solely with gunnery combat: torpedoes are discussed in the following chapter.

As with movement, players alternate resolving the gunfire of one ship at a time. To begin, determine the total number of ships on each side. The side with more ships conducts gunfire with one of its ships, followed by one ship from the opposing side. Play then alternates between sides until all ships have made their attacks.

The Germans have seven ships, while the British have four. Therefore, the Germans will first conduct gunfire for one of their ships, followed by the British. The sides will alternate until the British have attacked with all of their ships, at which time the Germans will attack with their remaining three ships; this is illustrated by the following pattern: G-B-G-B-G-B-G-B-G-G-G.

If one side has more than twice as many ships, it conducts gunfire with two ships at a time; if one side has more than three times as many ships, it conducts gunfire with three at a time; and so on.

If both sides have the same number of ships, roll a die to determine which side goes first.

A side may not pass its opportunity to fire a ship's guns. If a side fails to fire during its opportunity to do so, it may not fire any more guns in the current Gunfire Phase.

4.1   GUNFIRE LIMITATIONS

There are several factors that must be accounted for prior to making any gunfire attacks.

### 4.11   Maximum Number of Targets

Ships of this period were limited in the number of targets they could engage at the same time, due to the need for observing the effects of each salvo and correcting the guns' aim accordingly. In **Grand Fleets**, a ship may only fire each set of guns at a single target per turn. For example, HMS *Iron Duke* may pick one target for her 13.5" guns and another target (or the same target) for her 6" guns; however, she could not fire some 13.5" guns at one target and other 13.5" guns at separate target.

As an optional rule, casemated guns—those divided evenly into port and starboard batteries—may be allowed to fire at two separate targets; one in the port arc and one in the starboard arc (see below).
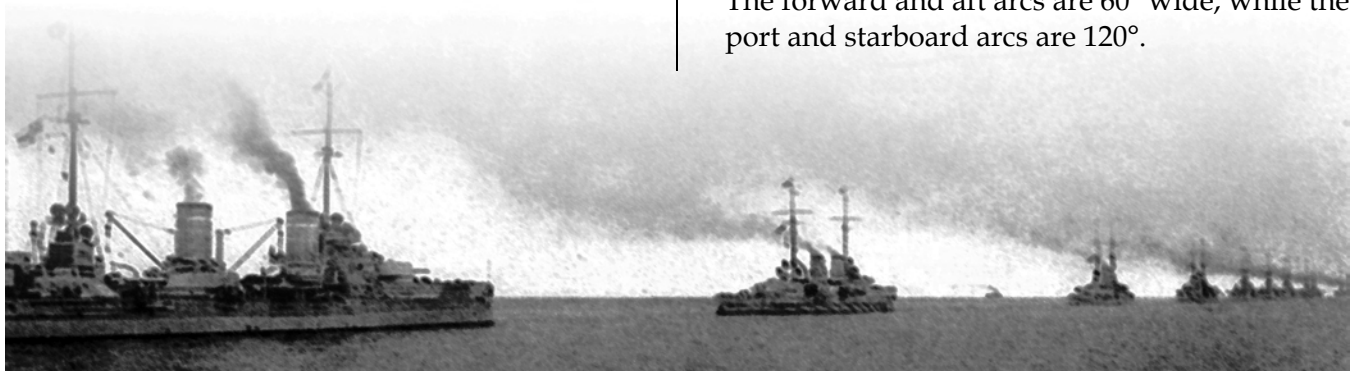
When resolving a ship's gunfire, all targets must be declared before any dice are rolled.

4.12   Firing Arcs

There are six primary firing arcs in *Grand Fleets*, used to define the fields of fire for turreted weapons. These are labeled A through F, as illustrated below:
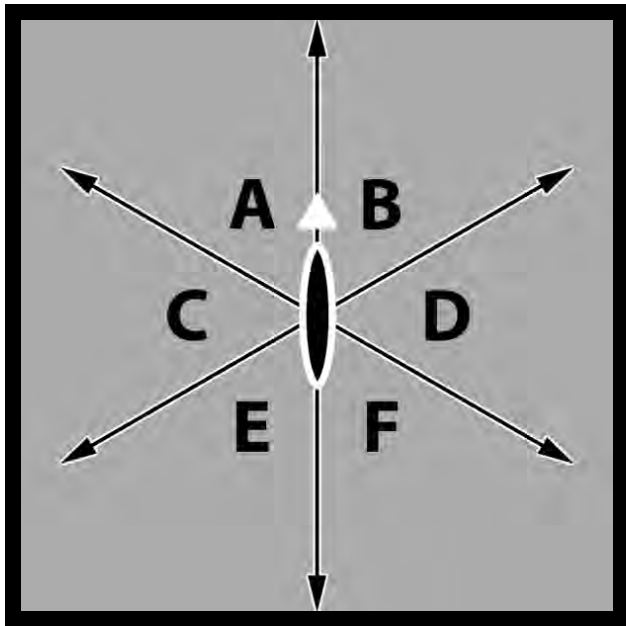

Each of the primary arcs is 60° wide.

In addition, there are four secondary arcs, used for casemated guns and torpedoes. These are labeled forward (fwd), port, starboard (stbd), and aft, as illustrated below:
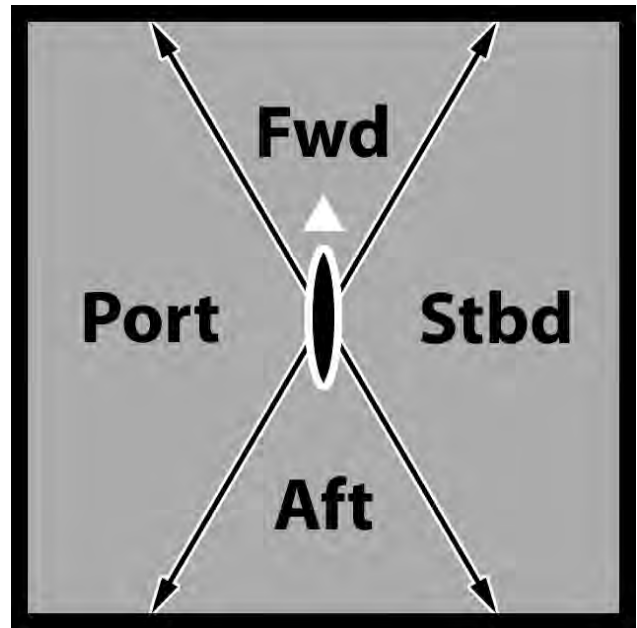

The forward and aft arcs are 60° wide, while the port and starboard arcs are 120°.

Players should be careful to remember the distinction between the "F" and "forward" arcs, as well as between "A" and "aft".

If the line between two adjacent firing arcs (*e.g.* forward & port, C & F) passes over a target's model, the target is considered to be within the arc in which the center-point of the model lies.
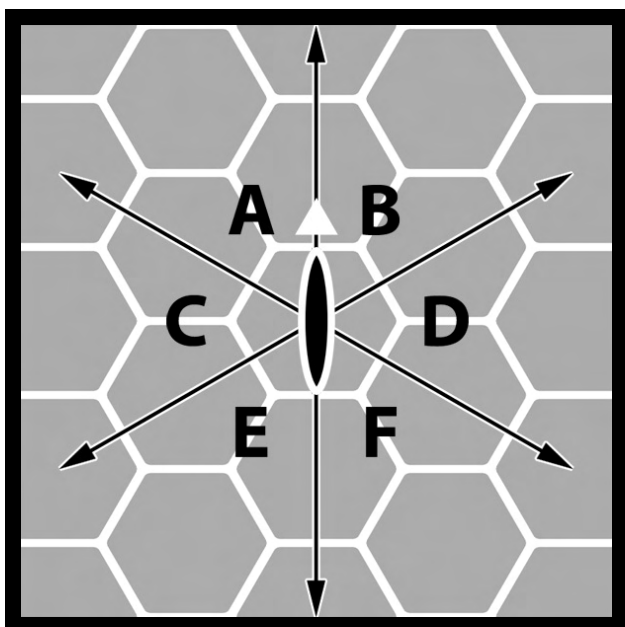
If playing on a hexgrid, a target may occupy a hex bisected by the line dividing two adjacent firing arcs (see above and below). In such cases, the target is considered to occupy both arcs.
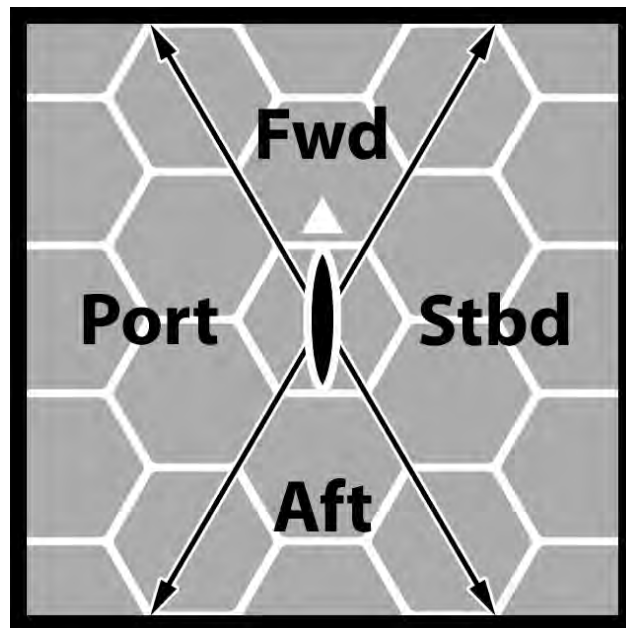

The weapons section of the ship data card details the arcs into which each gun mount can fire. Obviously, only those guns that are designated with the appropriate arc are able to fire at a target.

4.13   Range

The distance from a firing ship to its target is referred to as the range, and is determined by measuring the distance between the center-point of the firing ship's model and that of the target.
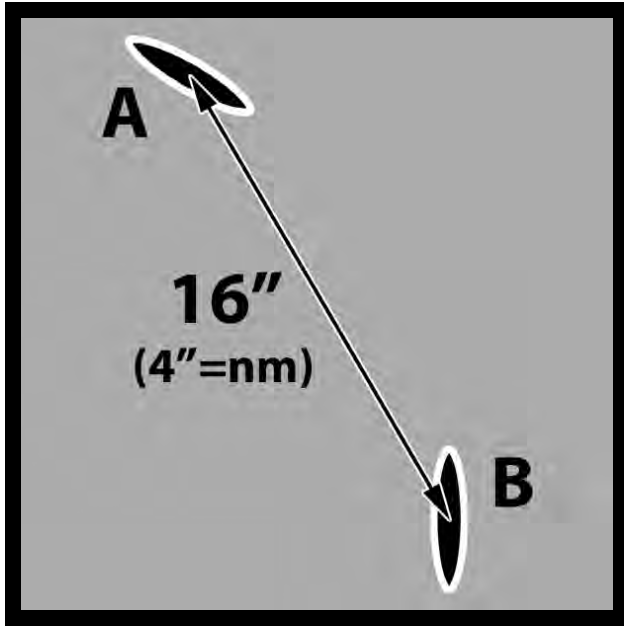
A line drawn from the center of HMS Iron Duke's model (A) and the center of SMS Moltke's model (B) is 16" long; the sea scale is 4"=1nm. Therefore, the two ships are 4nm apart.

If playing on a hexgrid, range is determined by counting the number of hexes along the shortest path between the hexes occupied by the two ships:
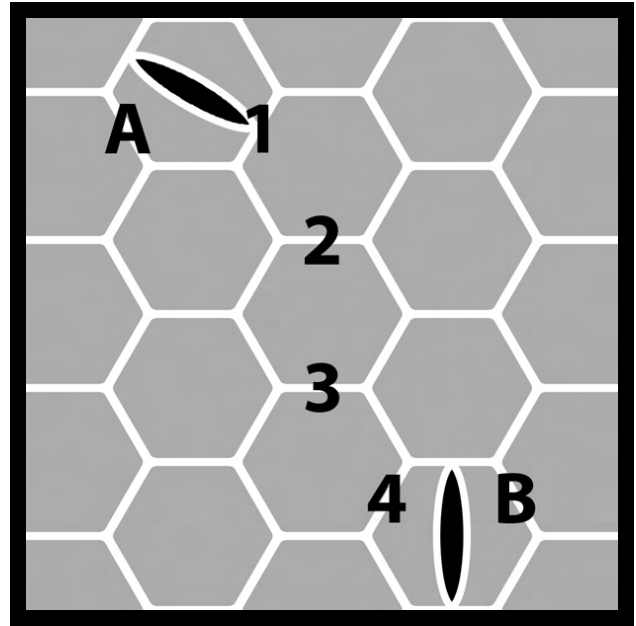
The shortest path between HMS Iron Duke's hex (A) and SMS Moltke's hex (B) is four hexes; therefore, the two ships are 4nm apart.

Each gun's range value is divided into three bands: short, medium, and long, expressed in nautical miles. The distance to the target is compared to these values to determine the range band within which the target lies. For example, HMS *Tiger*'s 13.5" guns have range bands of short 4nm, medium 8nm, and long 12nm. Therefore, a target 10nm away would fall within the guns' long range band.

A gun may not be used to attack any target outside its long range band.
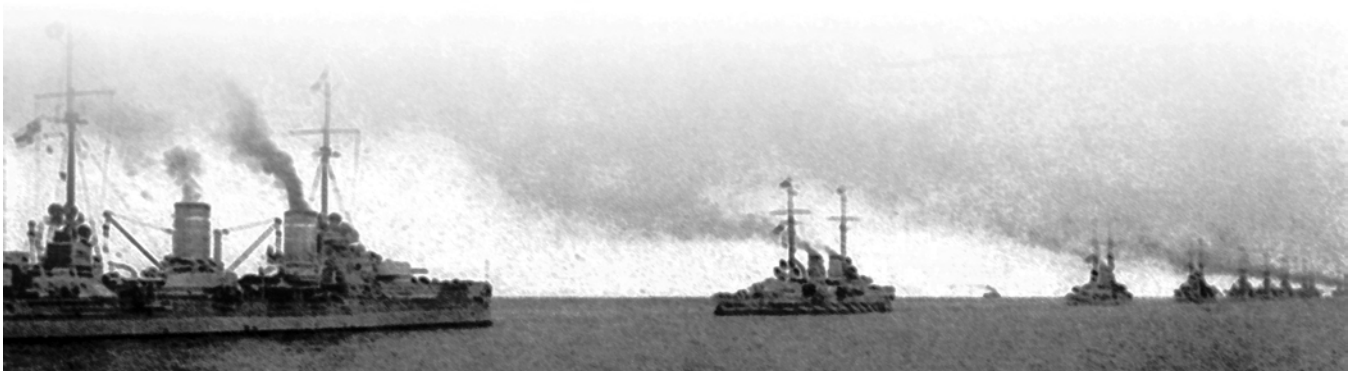
4.14 Line of Fire

In order to attack a target, a ship must be able to trace a line of fire (LOF) to that target. This means an imaginary line, drawn from the center-point of the firing ship's model to the center-point of the target's model, must not cross the model of any ship of the same size class or larger than either the firing ship or the target. If it does, LOF is blocked, and the attack cannot continue.
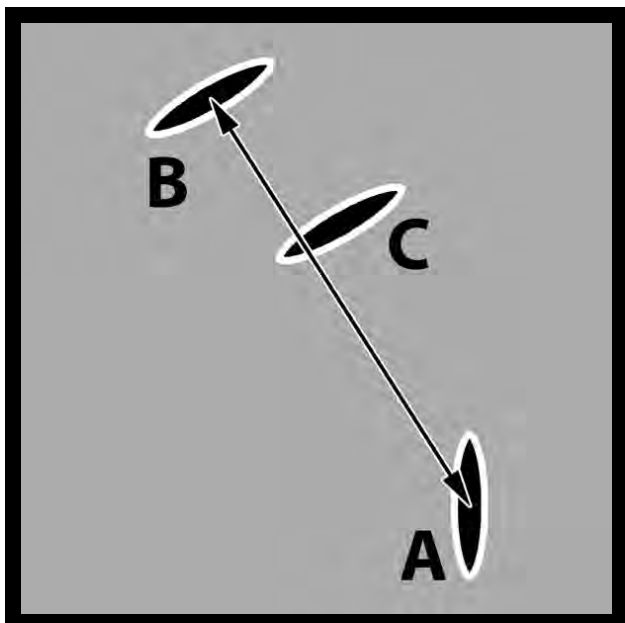
HMS Iron Duke (A) intends to fire at SMS Moltke (B). However, a line traced from the center of Iron Duke's model to the center of Moltke's model crosses the model of a third ship (C). Iron Duke is very large, while Moltke is large. Therefore, LOF is blocked if the third ship is large or very large.

If playing on a hexgrid, LOF is blocked if an imaginary line drawn from the center of the firing ship's hex to the center of the target's hex crosses any part of an intervening hex containing a ship of the same size class or larger than either the firing ship or the target. If the line runs along the edge between two hexes, LOF is blocked only if there are large enough ships on either side of the line.
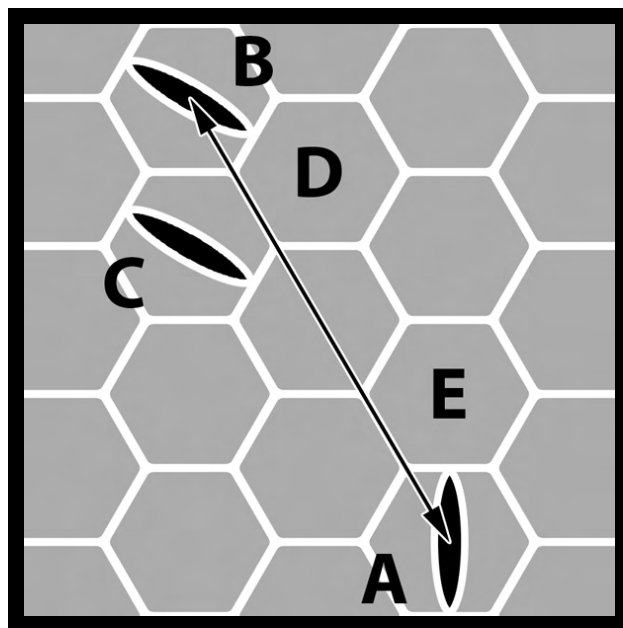
HMS Iron Duke (A) intends to fire at SMS Moltke (B). A line traced from the center of Iron Duke's hex to the center of Moltke's hex crosses between the hex occupied by a third ship (C) and an empty hex. Therefore, LOF is unaffected. If hexes D and/or E were also occupied, then LOF might be blocked, depending on the sizes of the intervening ships.

4.2   THE TO-HIT ROLL

Once targets have been established, gunfire can commence. This is resolved by rolling one die per gun. A result of 8 or more indicates the gun has hit its target.

There are several modifiers that can affect the to-hit roll; these are listed below:

CONDITION	MODIFIER
Rate of Fire Bonus	+ROF
Target is at Short Range	+2
Target is at Long Range	-1
Firing Ship's Speed Marker	+1, -1, or -2
Target's Speed Marker	+1, -1, or -2
Target is Very Small	-1
Target is Small & Firing Ship is Ahead or Astern	-1
Target is Large & Firing Ship is Abeam	+1
Target is Very Large	+1
Over-Concentration (≥10")	-1 or more

4.21   Aspect

It is sometimes necessary to determine the position of a firing ship relative to its target—for example, when firing at a large ship, there is a +1 bonus to the to-hit roll if the firing ship is abeam of the target.

Depending on its relative position, a ship can be in one of three aspects to another:

- A ship that lies within another ship's forward arc is said to be "ahead" of that ship.

- A ship that lies within another ship's port or starboard arc is said to be "abeam" of that ship.

- A ship that lies within another ship's aft arc is said to be "astern" of that ship.

If playing on a hexgrid, it is possible for a ship to be in two aspects at once—*e.g.* if the firing ship lies in a hex bisected by the line dividing the target's forward and port arcs, it is both ahead of and abeam of the target. In such cases, the firing ship is always considered to be abeam of the target.

4.22   Over-Concentration

One of the primary jobs of gunnery officers was to track the splashes made by their ship's guns and correct their aim accordingly. Unfortunately, this task became much more difficult when multiple ships fired at the same target—at longer ranges, it was tough to discern which splashes resulted from whose shells.

To reflect this, whenever a ship fires 10" or larger guns, place a "SPLASH" marker next to the target's model. Any ship firing 10" or larger guns at long range will suffer a -1 penalty to the to-hit rolls for each splash marker next to the target (not including the one placed by the firing ship itself). Due to the sequential nature of the Gunnery Phase, ships attacking early on will not have to worry about over-concentration; however, as the phase progresses, it will become more of an issue.

Note that splash markers are placed by all ships that fire 10" or larger guns, regardless of range, but they only affect the to-hit rolls of ships attacking from long range.

Splash markers are removed at the conclusion of the Gunfire Phase.

4.23   Open-Ended Rolls

Astute players will have noted that any cumulative modifier of -3 or more effectively makes it impossible for a gun to hit its target—*i.e.* the highest possible result with a -3 modifier is 7, less than the required 8. In these cases, it is still possible (however unlikely) to score a hit:

MODIFIER	UNMODIFIED ROLLS REQUIRED
-3	10, plus a second roll of 6-10
-4	10, plus a second roll of 8-10
-5	10, plus a second roll of 10
-6 or less	No chance of hitting

HMS Iron Duke fires her 6" guns (ROF +1) at a German destroyer. The DD is very small (-1) and at long range (-1). It moved 6nm in the preceding Movement Phase (-2). The overall modifier is -3; consulting the above chart, this means each of Iron Duke's guns will need to roll an unmodified 10 and then roll again, scoring an unmodified 6 or more on this second roll, in order to hit the destroyer.

4.3   ARMOR & DAMAGE

Once a gun has scored a hit, the next step is to determine whether it was able to penetrate the target's armor. Finally, the effect of any damage inflicted must be determined.

4.31   Penetration

Each gun has a separate penetration value for short, medium, and long range. Subtract the appropriate value from the relevant armor value of the target:

- If the firing ship is abeam of the target, and the target is at short or medium range, use the target's Belt armor.

- If the firing ship is ahead or astern of the target, and the target is at short or medium range, use the target's End armor.

- If the target is at long range, and the guns being fired are 10" or larger, use the target's Deck armor. Otherwise, use the Belt or End armor as above.

The result of this subtraction is the target number for the penetration roll. For example, if the target's armor is 9 and the gun penetration is 5, the target number would be 4 (9 – 5).

Roll a number of dice equal to the gun's damage value: each die that equals or exceeds the target number inflicts one point of damage.

HMS Iron Duke has scored hits on SMS Moltke with two of her 13.5" guns, with a damage value of 3. At medium range, Iron Duke's guns have a penetration of 7, while Moltke's belt armor is 12. Therefore, the target number for the penetration roll is 5 (12 – 7). Six dice are rolled (three for each 13.5" hit), coming up 1, 2, 4, 4, 6, and 9. As a result, two points of damage are inflicted on Moltke.

Regardless of armor and penetration values, any die that comes up 1 automatically fails, while any roll of 10 automatically succeeds.

4.32 Damage Effects

Damage affects the target in two ways. First, fill in a number of hull boxes equal to the number of points of damage inflicted. If all of the boxes on the ship card have been checked off, the ship is destroyed; remove its model from the game board.

Next, roll a die for each hull box lost and consult the "Hit On:" column in the gun section of the ship's data card. The result indicates what type of gun (if any) has been destroyed; check off one of the boxes associated with that gun type on the data card.

The specific mount lost is up to the defending player, provided the mount chosen is able to fire on the firing ship (*e.g.* if the firing ship is directly to the port of the target, then the chosen mount must be able to fire into either the port or the "C" firing arc). If no such weapons remain on the ship, the player may choose any mount, regardless of arc.

If a hit location roll indicates the loss of a gun type that has already been completely eliminated, there is no further effect.

Any hit location roll of 10 results in a critical hit (rule 6, p.31).

As gunfire is resolved sequentially, it is possible for a ship to have some of its guns destroyed (or even be sunk) before it gets the chance to return fire. Players who dislike this should consider using simultaneous play (rule 8, p.37).

4.4 LIGHT GUNS

As mentioned in rule 1.42 (p.11), all of a ship's guns less than 100mm in diameter are collected into a single light gun (L.G.) rating. Also referred to as "boat guns", these are intended for use against small, unarmored targets—in most cases, they will have very little to do with the outcome of a battle.

Each ship's current L.G. rating indicates the number of light gunfire dice that can be rolled. A ship may divide its light gunfire between two targets; one in the port arc, and the other in the starboard arc. No more than half of the available dice (rounded up) may be used against a single target.

HMS Iron Duke has a starting L.G. rating of 1; as a result, although the rules allow light guns to attack two separate targets, Iron Duke may only attack one target in either the port or starboard arc with a single die. If Iron Duke's L.G. rating were 3, she could attack one target with two dice in one arc, and use the remaining die to attack a second target in the opposing arc.

All light gunfire has the following characteristics: Range 1/2/3; ROF +3; Penetration 0/0/0; Damage 1. The attack process is the same as that used for larger guns.
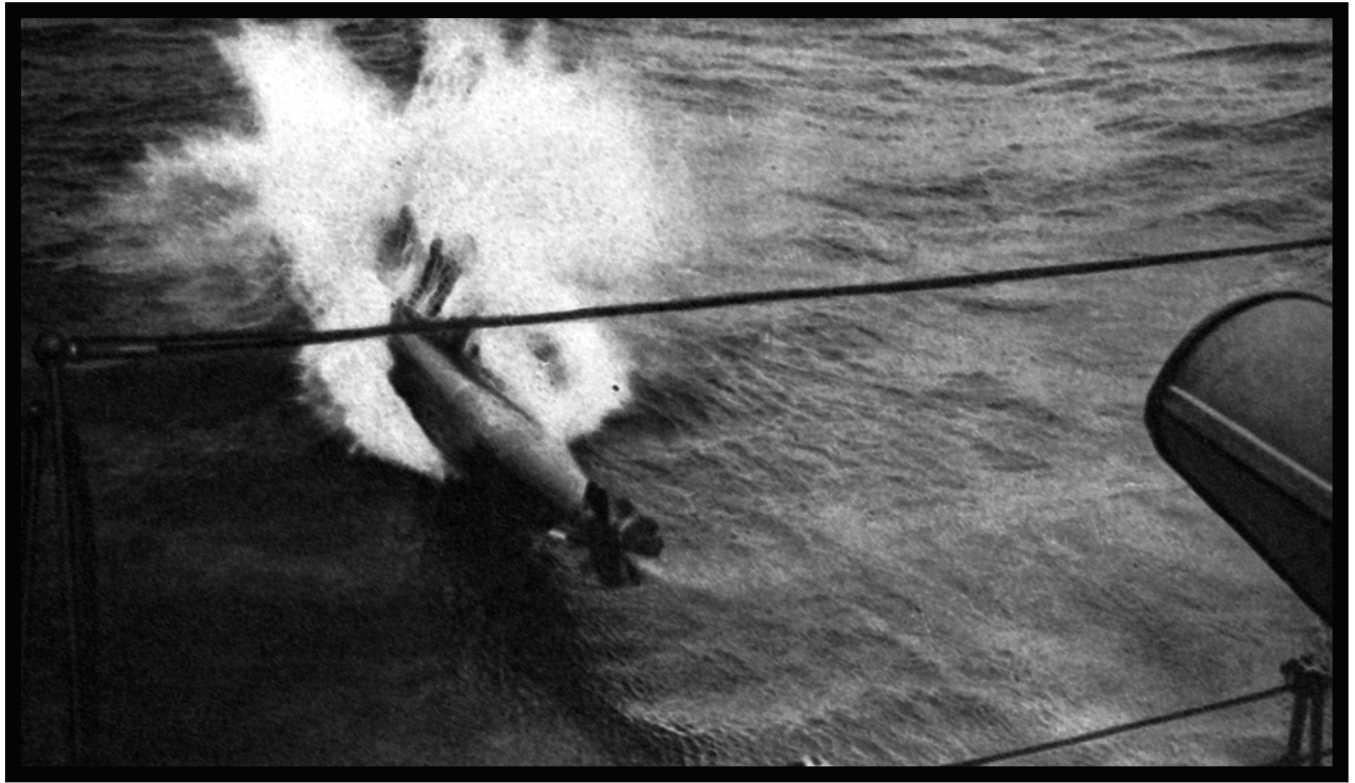
5   TORPEDOES

Early in the battleship period, torpedoes were not much of a threat; Russian torpedoes used during the Russo-Japanese War, for example, were particularly worthless. As time passed and technology improved, the torpedo became a feared weapon—it leveled the playing field, allowing the smallest of vessels to cripple the mightiest dreadnought.

In keeping with movement and gunfire, players alternate resolving the torpedo attacks of one ship at a time. To begin, determine the total number of ships on each side. The side with more ships conducts torpedo attacks with one of its ships, followed by one ship from the opposing side. Play then alternates between sides until all ships have made their attacks.

The Germans have eight ships, while the British have six. Therefore, the Germans will first conduct torpedo attacks with one of their ships, followed by the British. The sides will alternate until the British have attacked with all of their ships, at which time the Germans will attack with their remaining two ships; this is illustrated by the following pattern: G-B-G-B-G-B-G-B-G-B-G-B-G-G.

If one side has more than twice as many ships, it conducts torpedo attacks with two ships at a time; if one side has more than three times as many ships, it conducts torpedo attacks with three at a time; and so on.

If both sides have the same number of ships, roll a die to determine which side goes first.

A side may not pass its opportunity to launch a ship's torpedoes. If a side fails to launch torpedoes during its opportunity to do so, it may not launch any more torpedoes in the current Torpedo Phase.

Except as otherwise noted in this chapter, torpedo attacks are resolved in the same manner as gunfire.

5.1 TORPEDO LIMITATIONS

There are several factors that must be accounted for prior to launching any torpedoes.

5.11 Maximum Number of Targets

A ship may only attack a single target with torpedoes in each Torpedo Phase.

5.12 Range

Torpedoes do not have short, medium, and long range bands. Instead, they have a single value, indicating the maximum distance at which a target can be attacked.

5.13 Line of Fire

For torpedo attacks, LOF is blocked by an intervening ship of any size class, not just of the same size class or larger as either the firing ship or the target.

5.2 THE TO-HIT ROLL

Torpedo attacks are resolved by rolling one die per torpedo. As with gunfire, success is indicated by a result of 8 or more.

Modifiers to torpedo to-hit rolls are as follows:

CONDITION	MODIFIER
Range to Target is 0-1nm	+1
Range to Target is 4-6nm	-1
Range to Target is 7-10nm	-2
Range to Target is 11nm or further	-3
Firing Ship's Speed Marker	+1, -1, or -2
Target's Speed Marker	+1, -1, or -2
Target is Very Small	-1
Target is Small & Firing Ship is Ahead or Astern	-1
Target is Large & Firing Ship is Abeam	+1
Target is Very Large	+1

Torpedoes are "one shot" weapons. Once a torpedo has been launched, one box should be checked off on the ship's data card. When all of the boxes have been checked, the ship cannot fire any more torpedoes.

5.3 DAMAGE

Damage from torpedoes is handled in the same way as that from gunfire, with two exceptions:

1) Armor has no effect on torpedo damage; thus, no penetration roll is necessary.

2) Each torpedo that strikes its target automatically causes one critical hit, in addition to those resulting from hit location rolls of 10.
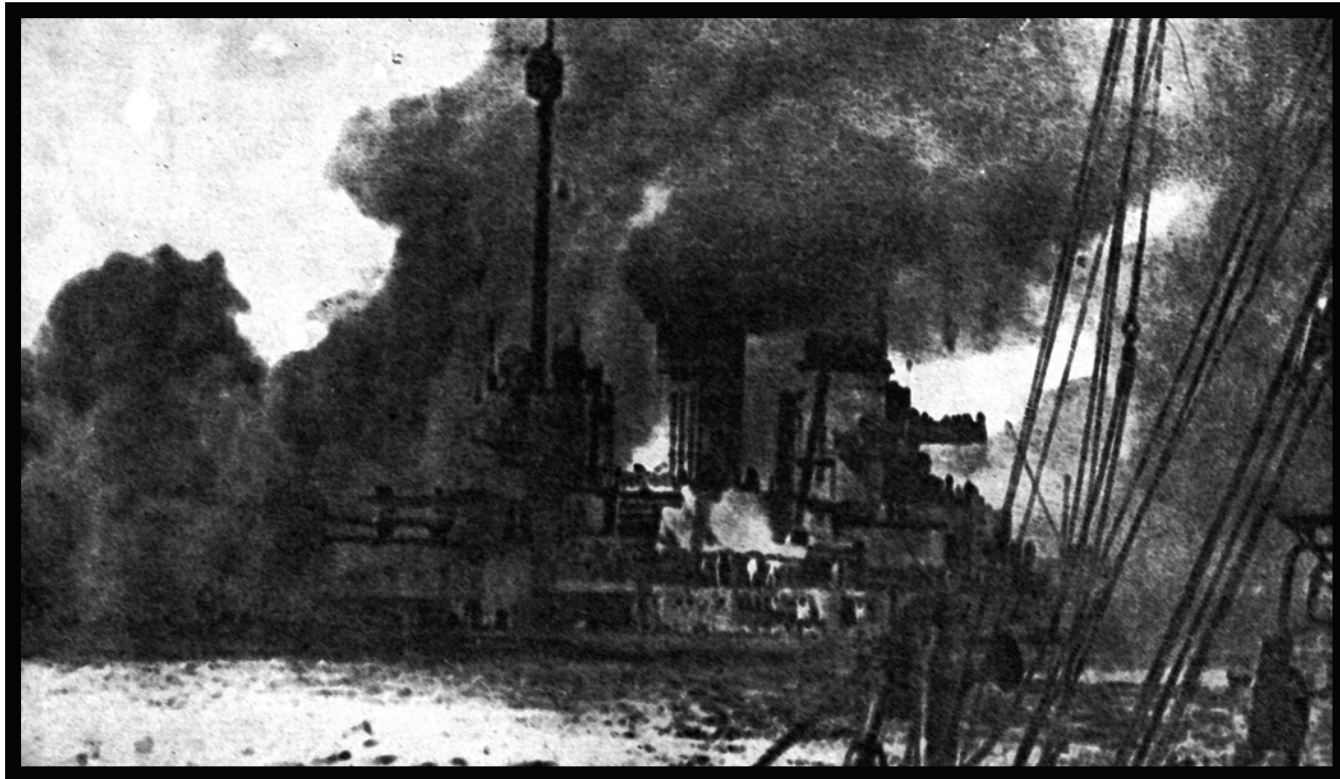
6   CRITICAL HITS

As noted in rule 4.32 (p.28), any result of 10 on a hit location roll results in a critical hit. These hits reflect the myriad things that can go wrong when sophisticated machines are repeatedly struck by high-velocity chunks of metal.

New players—or those playing larger battles—may elect to dispense with the critical hits rule for the sake of simplicity. In such cases, merely disregard any hit location result of 10.

6.1   CRITICAL HIT RESOLUTION

For each critical hit inflicted, the attacking player rolls two dice and adds the results together. The total is then compared to the following chart to determine the type of critical hit caused.

Note that there are separate columns for critical hits due to gunfire and those from torpedo hits.

ROLL	GUNFIRE	TORPEDO
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

6.2   TYPES OF CRITICAL HIT

The different types of critical hit are described below.

6.21   Bridge

A shot has hit, or nearly hit, the bridge. Place a "BRIDGE" marker next to the ship's model. The ship can do nothing but move forward, using no more than one-half its current speed (rounded up). If this would cause the ship to end its movement on top of another, the moving ship should be backed up just far enough to avoid the overlap. In addition, the ship cannot make any gunfire or torpedo attacks.

At the conclusion of the Torpedo Phase, remove the marker from the game board.

A ship will only suffer from the effects of one bridge critical hit at a time.

6.22   Engine

The ship's engine has been damaged. Place an "ENGINE" marker next to the ship's model. The effect is to increase the cost of moving forward 1nm by 1 MP; *e.g.* moving 2nm would cost 4 MPs. The cost of turning is unaffected.

During the End Phase, roll a die; on a result of 6 or better, the damage has been repaired. Remove the marker from the game board.

A ship will only suffer from the effects of one engine critical hit at a time.

6.23   Fire

A fire has been started on the ship. Place a "FIRE" marker next to the ship's model. Each marker incurs a -1 to-hit penalty to the ship's gunfire and torpedo attacks.

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

ROLL	EFFECT
1	The ship takes three damage points.
2-3	The ship takes two damage points.
4-6	The ship takes one damage point.
7-10	The fire has been extinguished. Remove one fire marker.

Hit location rolls are made as normal for damage due to a fire.

6.24   Fire Control

The ship's fire control system has been disrupted. Place a "FIRE CTRL" marker next to the ship's model. The ship cannot fire its guns in the next Gunfire Phase.

At the conclusion of the Gunfire Phase, remove the marker from the game board.

A ship will only suffer from the effects of one fire control critical hit at a time.

6.25   Flooding

The ship has started to take on water. Place a "FLOOD" marker next the ship's model. Each marker increases the cost of moving forward 1nm by 1 MP; *e.g.* a ship with two markers would spend 3 MPs per nautical mile. The cost of turning is unaffected.

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

ROLL	EFFECT
1	The ship takes three damage points.
2-3	The ship takes two damage points.
4-6	The ship takes one damage point.
7-10	The flooding has been contained. Remove one flood marker.