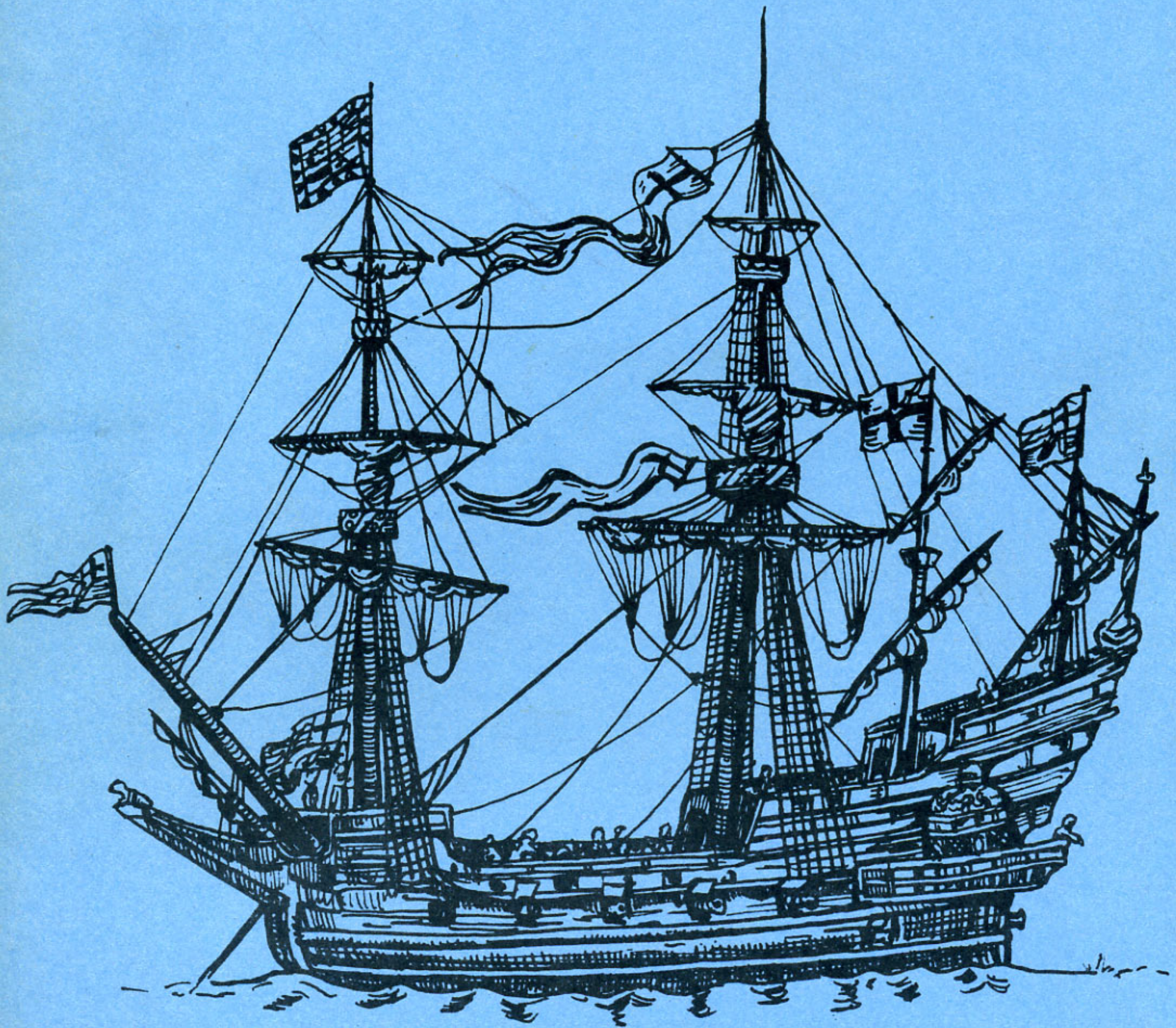


# *ARMADA*

**Renaissance Naval Warfare**

**Lapanto and the Spanish Armada**



**by S. Birnie & P. Morrison**

# INTRODUCTION

## THE SECOND BOOK IN THE SERIES "ACTION UNDER SAIL"

Even before the issue 'Action Under Sail' in 1976 the authors of these rules had considered an interrelated series of naval rules. It has taken twelve years to get around to this second book in the series.

The Wargamer who is enlightened enough to own a copy of both sets of rules will notice many similarities between the two sets. No apology is made for this. Extensive research has tended to confirm the joint authors original opinions as to the peculiar hazards and terrors of War at Sea. The skills remain the same in all ages of sail, but knowledge increases. The same is true with writing rules. Much that is different is contained within and some parts have been extensively rewritten, Gunnery and Melee to name just two. Some parts, ie. Wind and Weather, remain exactly the same.

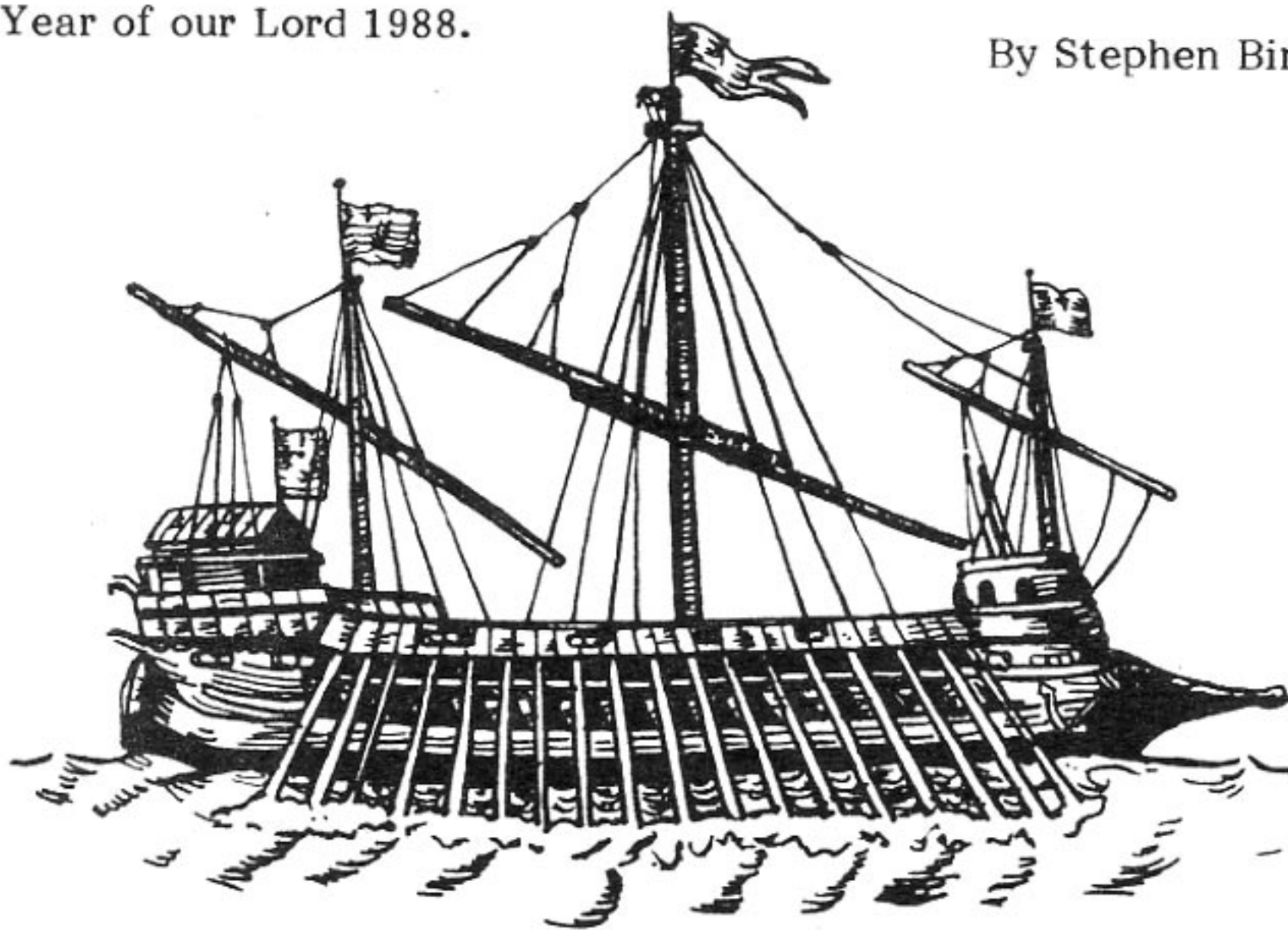
New concepts have also been introduced for this period. An example is the introduction of the Personality, this was the age of the leader. Indeed, Drake, Frobisher, Hawkins, Don John of Austria and of course Barbarossa still cast their spell down the centuries. The experienced wargamer will find the ships harder to control and harder to sail. The gunnery is less effective and the melees are much bloodier, as indeed was the case.

What then can be said of this period. The Oceans were the battle arena for great gentlemen warriors and powerful pirates. The cannon was beginning, in conjunction with the improved sailing vessels, to assert that awful ascendancy over war upon the sea that it would hold until the advent of iron ships. Soon the sailing ships would sally forth to dominate the oceans of the world and bring to a close the last glorious Indian Summer of the galley, but not quite yet.

These were the days of high adventure, a quick eye and a quicker sword. The Don is aboard and the games afoot. Will you hazard a ship in these deadly waters?

Written in the Year of our Lord 1988.

By Stephen Birnie & Peter Morrison



Quotes by contemporary Poet and Writer William Shakespeare. Drawings by John Spencer.

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Dedicated to Ian Beck a true swashbuckler and personality to the end: Sadly missed.

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# Game Sequence

- 1) Assess wind direction
- 2) Draw the initial dispositions for each fleet.
- 3) Lay out all ships that are visible to enemy ships (ships cannot be concealed by other ships)
- 4) Write Fleet orders.
- 5) Follow through the game move sequence for each subsequent move.

# Move Sequence

- 1) Write any fleet orders as required.
- 2) Write ship orders for that move, declare ships to be subject to fractional movement.
- 3) Fire any ranging shots and signals.
- 4) Move the ships according to their orders, including those under compulsory drift orders.
- 5) Assess the point at which each ship fires.
- 6) Follow through the gunnery sequence for the ships in the order of firing, and record any damage, or casualties.
- 7) Test for fires and explosions and holing.
- 8) Assess the effect of any small gun or musket fire.
- 9) Resolve any boarding melee stages in progress and record final casualty total.
- 10) Determine the morale of any ships/boats that have to test during the period.
- 11) Apply all results to the ships concerned.

# Orders

During this period the passing of orders from ship to ship was always a problem, with only the most rudimentary signals being used, and the co-operation between the different elements of fleets leaving something to be desired.

Two types of orders are written for any ship action involving more than one ship per side.

## FLEET ORDERS

The Commander-in-Chief (hereafter known as the C-in-C) of the fleet must issue orders at the commencement of an action. These orders must include the tactical formation to be taken up at the commencement of the action; and specific orders to squadron commanders, which may not be obeyed in certain instances (see Morale - Greed Test).

All subsequent orders must emanate from the C-in-C, using signals, as outlined in the Signalling Section.

Squadron orders shall be assumed to be the same as the Squadron Commanders unless the commanders orders have changed, and he has not been able to contact all his squadron.

Results of Morale Tests override fleet orders.

## MOVE ORDERS




The following orders must be written for each ship each move.

- i) **Sailing Orders** - Direction, speed, any turns, and means of propulsion for galleys and galleasses (when oars only are used).
- ii) **Gunnery Orders** - Type of projectile to be loaded (Ball or Hail), which broadside is to be loaded.
- iii) **Tactical Orders** - Assembly of Boarding and Counter boarding parties, number of soldiers in the same parties, whether or not to fight an intermediate round of a boarding melee, or withdraw, reinforcement of on-going melees etc.
- iii) **Situation Orders** - Anchor, lower boat etc.



## FOLLOW ORDER

When a number of ships are sailing in line ahead formation, ie. one behind the other, then sailing orders need not be written for each ship but only the leading ship. The ships behind will conform exactly to the movements of the ship immediately in front. This order may only be used by elite crews. Groups of upto five elite or average galleys sailing in the Mediterranean may use the follow order to sail in line abreast as above. The same applies to galleasses.

The following symbols may be used to save time and space:-

B - Load single ball		- Move straight ahead	ABP - Assemble boarding party.
H - Load Hail		- Turn to starboard.	ACBP - Assemble counter board-
OR - Oar Rake		- Turn to port	ing party
BW - Back Water	50	- Move distance in mm	STC - Small turning circle
R - Ram	TK	- Tack	SF - Sails furled
HP - Hold position	ST	- Starboard	LO - Lift Oars
F - Follow ship	PO	- Port	
immediately to front	MO	- Move under oars	
FAB - Follow in line abreast			
(galleys under oars)			

### Example

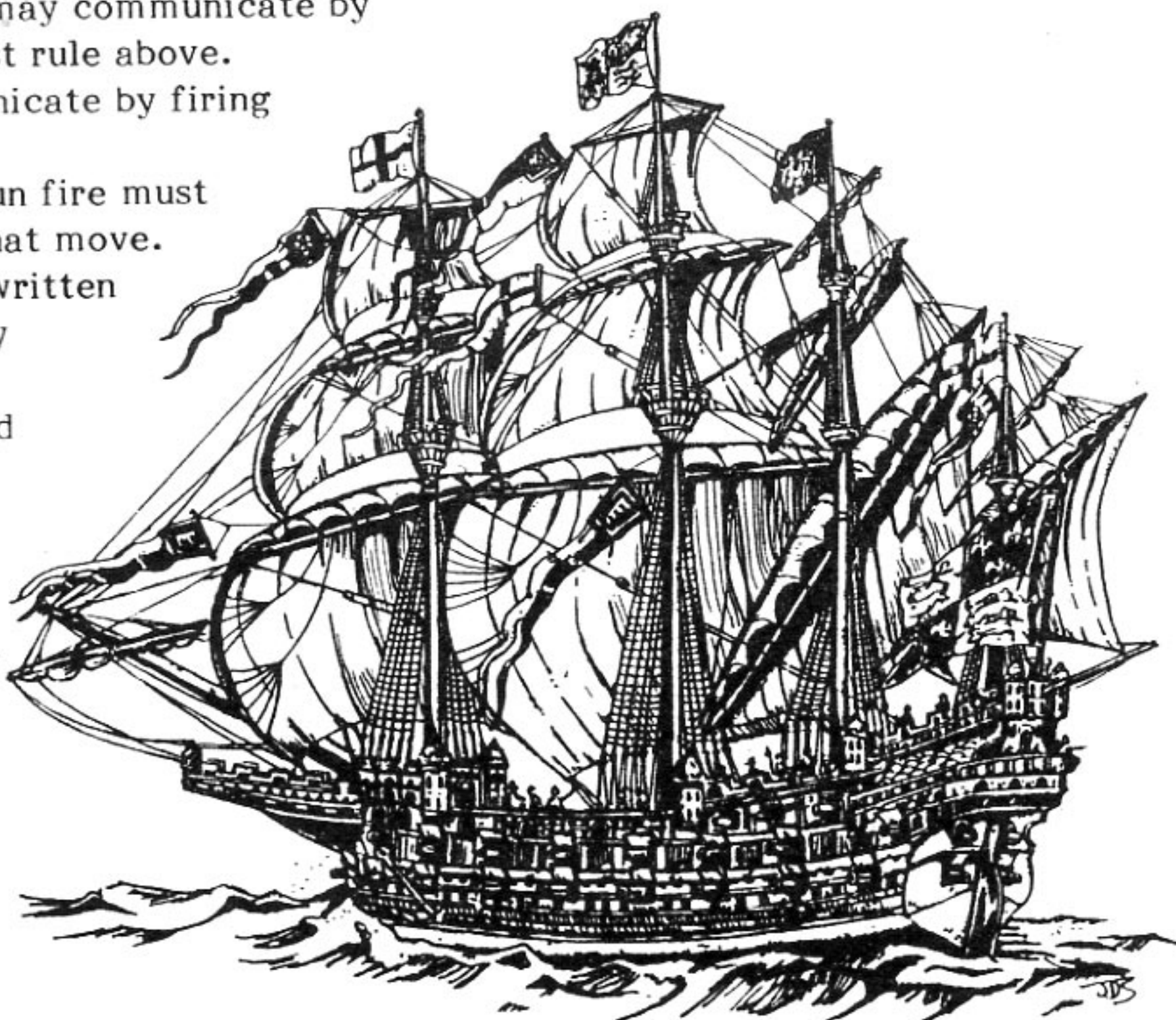
B.PO  50  20STC - load ball into portside, sail 50mm, turn to starboard 20mm around the small turning circle.

Unless the correct models are used vessels with furled sails must be declared.

## Signalling

"Men of few words are the best men"

1. A squadron of Galleys or Galleasses under oars and not more than five in number and in line abreast may pass orders down the line by shouting. All of these vessels may execute the orders the following move. The order must be written down at the beginning of the move in which it is passed.
2. Vessels within 50mm of each other may communicate by shouting, this also applies to the first rule above. Vessels within 1500mm may communicate by firing guns.
3. Any vessel transmitting orders by gun fire must not engage in any kind of gunnery that move. Only two messages, which must be written down in the initial game orders, may be used for signalling by gunnery.
4. Messages of any type may be carried by ship's boats which must spend one move in contact with the hull of the sender and recipient or one move within shouting distance of each. Pinnaces or other vessels may be used in a similar manner.
5. A maximum of ten words per move can be passed by shouting.
6. All signals must be written in the game orders before they are made and cannot be acted upon until the move after they are received.



# Ships & Ship's Crews

"Every subjects duty is the Kings; but every subjects soul is his own"

## 1. CREWS

Ships crews consist of rowers (where specified), soldiers and mariners.

Rowers are non-combatants. Rowers are removed in addition to and in proportion to crew casualties. Vessels with oars specified in the fleet lists but without rowers must use soldiers and mariners. the oars. Broadside guns cannot be fired or loaded on these vessels whilst moving under oars.

Mariners consist of gunners and sailors. The mariners morale class determines the vessel's sailing and gunnery class.

Soldiers also include some gunners for all non English vessels. Soldiers will take their proportional share of crew casualties from gun fire. The only exceptions being when a boarding party consisting of 75% and over of soldiers receives small arms or missile fire. All casualties are taken upon the soldiers in this instance. Where the soldiers make up a counter-boarding party which is concealed until a later stage of the boarding sequence, they will receive a proportionate share of the casualties from main battery fire only.

For the purpose of these rules ships crews are divided into three types; elite, average and raw (morale classes).

- Elite Well trained crews with highly experienced and determined officers. These ships are extremely efficient fighting units, with high standards of morale, sailing skill and gunnery capability.
- Average Crews have received adequate training to work the ship but suffer from deficiencies due to lack of experience or weakness in command. Elite Mediterranean crews sailing outside the Mediterranean.
- Raw Crews lack training. Deficiencies in experienced seamen and gunners. Average Mediterranean crews sailing outside the Mediterranean. No soldiers are raw. Shore battery gun crews are always raw.

## 2. NATIONALITIES

### i) Outside the Mediterranean:

- Elite English mariners, Spanish soldiers.
- Average Spanish mariners on flagships only, English soldiers, Dutch, English merchantmen for gunnery only (not sailing or morale which is elite). All non Spanish soldiers.
- Raw All not covered above.

### ii) In the Mediterranean

- Elite Knights of Saint John, flagships of squadron commanders and C-in-C, Jannassaries, Galleasses equipped as warships.
- Average The vast majority of mariners, gunners and soldiers.
- Raw Optional.

English use their 'outside the Mediterranean' ratings when inside the Mediterranean.

## 3. PERSONALITIES

Throughout this period the personality of a ships commander was crucial to its performance in battle. This was true of all nationalities and types of ship. It is only true to say that Drakes presence was worth a squadron of ships in a fight. Nor is it wrong to say that galleys, fighting ships of sail and other war vessels, tended to be commanded by men of important rank, or fighting men of outstandingly warlike reputation.

Generally this influence might be limited to the ship that these people stood upon, however, some commanders were able to extend their authority so that ships of a squadron would follow that commanders lead in a battle. This was the case with Galleasses, and all but the poorest quality galleys, as well as the Queens ships of the English fleet. Conversely, no such capability existed amongst the sailing ships of the Spanish Armadas.

Ships carrying one of these characters receive certain other advantages, mainly in melee, or during morale tests, although other disadvantages are incorporated in the rules.

These characters are referred to by one name for each nationality except the English who have two differing types of personality.

In the first category are the English Sea-Dogs (Drake, Frobisher, Hawkins) as well as the C-in-C of any given fleet.

The second grouping may contain:-

Spanish Nobles	English (elite) captains
Knights of St. John	Turkish Emirs
Dutch (elite) captains	Venetian (elite) captains.

Any of these may command squadrons in battle, but careful attention must be given as to which manouveres they may implement. Also Spanish Nobles, Knights of St. John and Emirs will always place themselves with boarding or counter boarding parties. The others may await a more suitable moment to take part in a melee. Barbarossa is classed as a Sea-Dog in these rules.

If a series of battles are contemplated, it is recommended that a record of the careers of the personalities is kept.

Where a personality is captured by an enemy ship, ie. he was not killed in action, and galleys are employed by the fleets of the captors, test each time an enemy galley or galleass is taken.

Throw one ordinary dice. A score of 6 indicates that a captured character is among the slaves at the oars. If there is more than one personality on the captured list, then a further dice is thrown to determine which prisoner is freed. Freed personalities may not take part in the battle in which they are liberated. Sea-Dogs are never used as slaves, and will be hung, or burnt at the earliest opportunity.

#### OPTIONAL RULE

Personalities may engage in single combat with enemy personalities, provided both sides agree (Spanish Nobles never refuse) and provided that the crew of one vessel has progressed to at least stage 2 of a boarding action. Both antagonists will have the same morale effect upon their respective crews whilst in combat, and will fight each other whilst the boarding melee rages around them.

Throw one normal dice per player:-

Even score	- Carry on next move.
1 difference	- The lower score is captured.
2+ difference	- The lower score is killed.

Spanish Nobles always add one to their dice score.

Captured personalities are only rescued if the enemy ship is taken. A captured personality may decide to order his own crew to surrender. A captured personality must throw one normal dice, Knights of St. John always add two to their dice score. With a dice score of 1, 2 or 3 their crew surrenders. However, a personality may chose to surrender his ship at any time. This may happen automatically, provided a personality of the same or higher class can be found to accept his sword.

#### THE USE OF PERSONALITIES (Peace shall go to sleep with Turks & Infidels)

It is recommended in an action that the use of personalities is restricted to:-

- 1 C-in-C per side.
- 1 Sea-Dog per ten English ships and 3 maximum.
- 1 Spanish Noble per Spanish ship.
- 2 Knights of St. John per Knights of St. John galley.
- 1 Captain per ship. Spanish captains do not fight in melee. No captains on board a Knights of St. John galley.
- 1 Emir per four moslem galleys.

Only elite captains and personalities may lead a boarding party.

#### 4. SHIPS (Here is my journeys end, here is my butt; and very sea mark of my utmost sail)

The following tables give the various types of vessels in action during this period. New players should use these tables until they have researched fleets of their own choice. As with the initial editions of 'Action Under Sail' no points values are included in the rules for different ship types and classes. The aim of the rules is playability rather than competition type wargames.

Vessel Type	Ton-nage	Mast Layout	Gun Decks	Oars Per Side	Move Table	Oar Move Table	Turn Circle	Base Size in mm	Crew Strengths			
									Soldiers	Mariners and Gunners	Total Rowers	
<b>ENGLISH</b>												
Race Built Galleon	800	A	2	0	C	-	Large	94 x 24	125	335	460	0
Race Built Galleon	500	A	2	0	A	-	Both	80 x 21	75	175	250	0
Race Built Galleon	400	A	2	0	A	-	Both	65 x 17	30	170	200	0
Race Built Galleon	200	C	1	0	A	-	Both	50 x 13	15	105	120	0
Galleon	1000	B	2	0	C	-	Large	90 x 30	150	350	500	0
Armed Merchant	400	B	1	0	C	-	Both	60 x 20	0	100	100	0
Armed Merchant	200	C	1	0	C	-	Both	45 x 14	0	65	65	0
Armed Merchant	150	E	1	15	F	I	Both	42 x 12	0	60	60	0
Pinnace	50	E	1	10	F	I	Both	30 x 10	0	40	40	0
<b>SPANISH ARMADA</b>												
Portugese Galleon	1000	B	2	0	D	-	Large	90 x 30	300	180	480	0
Portugese Galleon	800	B	2	0	D	-	Large	85 x 28	400	120	520	0
Portugese Galleon	750	B	2	0	D	-	Large	78 x 26	280	120	400	0
Portugese Galleon	350	C	2	0	C	-	Large	60 x 20	300	80	380	0
Castillian Galleon	530	C	2	0	C	-	Large	65 x 22	200	120	320	0
Greatship	1000	C	1	0	D	-	Large	90 x 30	300	120	420	0
Carrack	820	C	1	0	E	-	Large	85 x 30	220	80	300	0
Carrack	520	C	1	0	E	-	Large	65 x 24	150	60	210	0
Hulk	400	C	1	0	E	-	Large	55 x 21	75	25	100	0
Pinnace	150	C	1	20	F	I	Both	42 x 12	40	50	90	0
Caravel	70	E	1	15	F	I	Both	30 x 10	20	30	50	0
Galley	150	D	0	24	G	L	Both	95 x 42	100	100	200	200
Galleass	600	C	1	28	H	K	Both	107 x 40	250	120	370	300
<b>MEDITERRANEAN GALLEY WARFARE</b>												
Galleass	700	E	1	30	H	K	Both	110 x 42	260	80	340	280
Galley Flagship	180	D	0	30	G	L	Both	110 x 42	80	50	130	280
Galley	150	D	0	25	G	L	Both	95 x 42	50	40	90	200
Small Galley	130	F	0	22	G	M	Both	85 x 40	20	30	50	180
Galleass Merchant	500	E	1	28	H	K	Both	105 x 40	10	20	30	260
Galley Corsair	120	F	0	18	G	M	Both	90 x 40	50	30	80	165
Galliot	60	F	0	15	G	M	Both	60 x 40	20	10	30	90

#### Notes

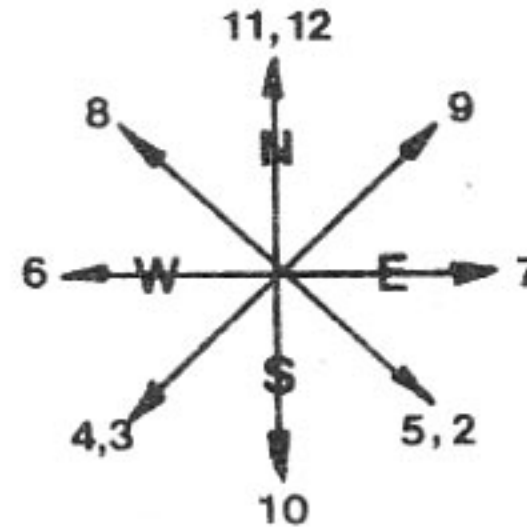
- 1) The base sizes indicated are optional sizes only. Where used they must be rectangular. Galleons and Galley base sizes include the oars. The base sizes for ships boats are 10 x 10mm.
- 2) Recently there has been a lot of information written about the ships of the Spanish Armada, therefore researching the compliments of these ships was not difficult. The ships of the Armada carried increased compliment of soldiers. It is therefore recommended that when not specifically fighting the Armada the number of Spanish soldiers carried in each ship is reduced by 50%.

# Wind, Weather & Visibility

"Blow winds and crack your cheeks Rage! Blow! you cataracts and hurricanes, spout till you have drenched our steeples" - King Lear.

## 1. Wind Direction

Before the start of the game, lay the wind direction indicator on the table and roll two normal dice to determine the wind direction for the first 12 moves.



Roll the two dice again after every 12 moves and consult the following table to determine the new wind direction.

2 to 9	No change in wind direction
10	Wind changes one point anticlockwise (backing)
11	Wind changes one point clockwise (veering)
12	Re-throw and consult wind direction indicator. If a change in wind direction is indicated, the wind changes one point per move along the shortest arc between the new direction and original direction until it reaches the new direction.

## 2. Weather

Roll two normal dice before the start of the game and thereafter every twenty four moves. Each time consult the following table to determine the weather and wind force.

Corresponding Beaufort Numbers for Wind Force	Weather Wind Force	Storm	Mist	Clear
		Score	Score	Score
7	Gale	12	-	-
6 - 4	Fresh to Mod	11	-	6 - 10
2 - 3	Light	-	4	5
0 - 1	Calm	-	2	3

Dice to indicate the exact Beaufort number for the appropriate wind force indicated with the initial dice throw.

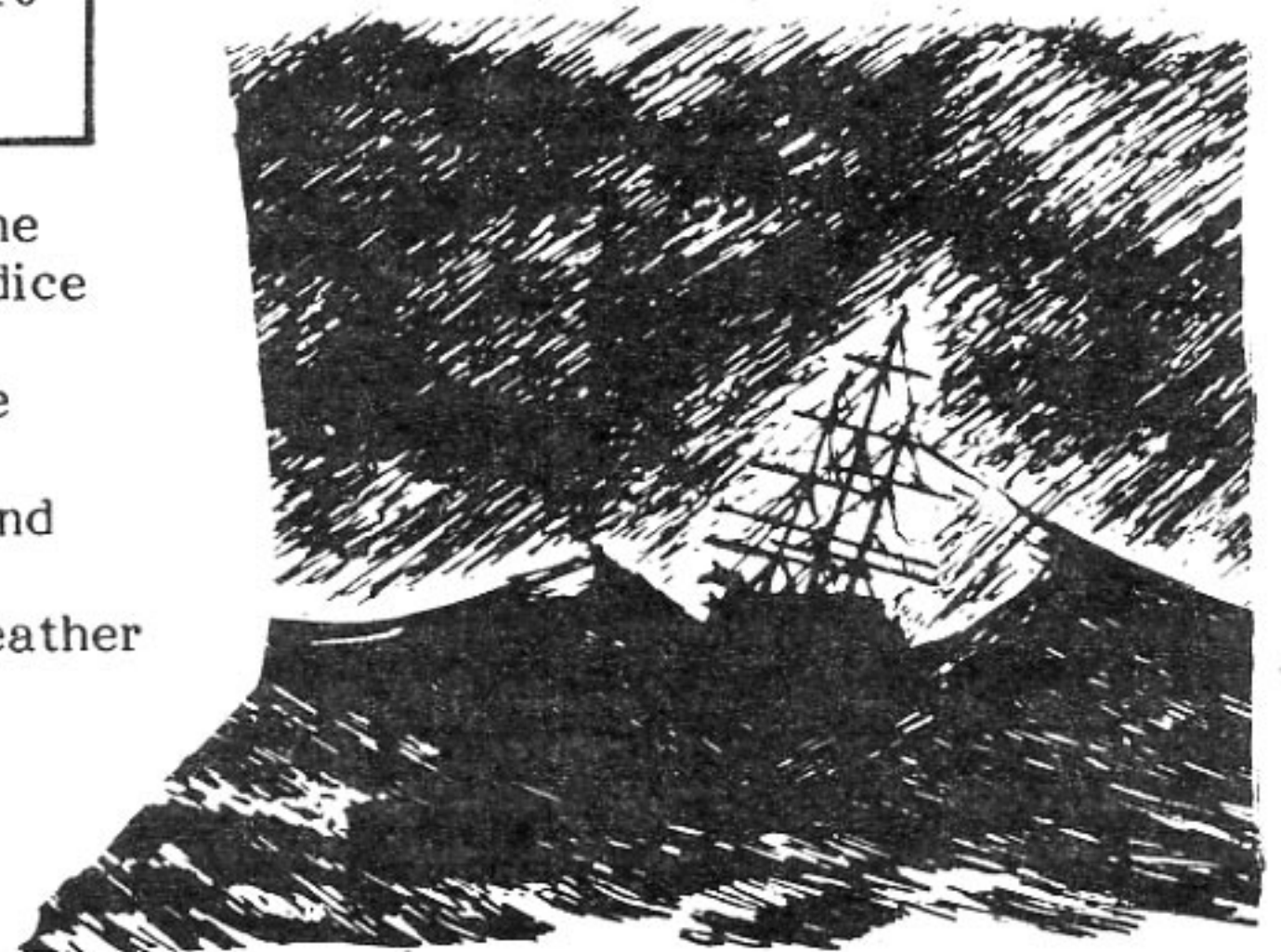
Whenever a change in wind force is indicated, the wind will rise or fall one point of the Beaufort scale at the beginning of each move until the wind reaches its indicated strength.

Whenever a change in weather is indicated the weather will change, as the wind rises or falls, at the point where the weather condition first becomes possible for the rising or falling wind forces.

### Example

Calm and fog changing to Gale and storm.

The weather remains foggy until the wind reaches Beaufort 4, where the weather becomes storm.



### 3. Visibility and Hidden Movement

Clear	- 12000 mm
Calm and fog	- 50 mm, gun flashes 150mm.
Light and fog	- 300mm, gun flashes 600mm.
Gale and storm	- 300mm.
Fresh and storm	- 3000mm.
Night, no moon	- 300mm (also storm).
Night, clear and moon	- 600mm, gun flashes 6000mm.

Hidden movement should be carried out on a map showing the exact position, course and formation of all hidden vessels. Vessels are laid on the table at the exact point in the current move that they come into sight. The vessels then move the remaining proportion of their move distance according to their ship orders.

Objects positioned behind the crest of a hill or hidden behind an obstruction cannot be seen unless the masts of the observer vessel and the masts of the observed vessel are higher than the hill or obstruction.

Vessels which are not visible to the enemy need not be placed on the wargames table until they become visible.

## Effects of Weather

### CALM

No movement under sail is allowed. Vessels must either be towed by ship's boats or propelled by oars where appropriate.

### GALE

The normal methods for riding out gales in the period were:-

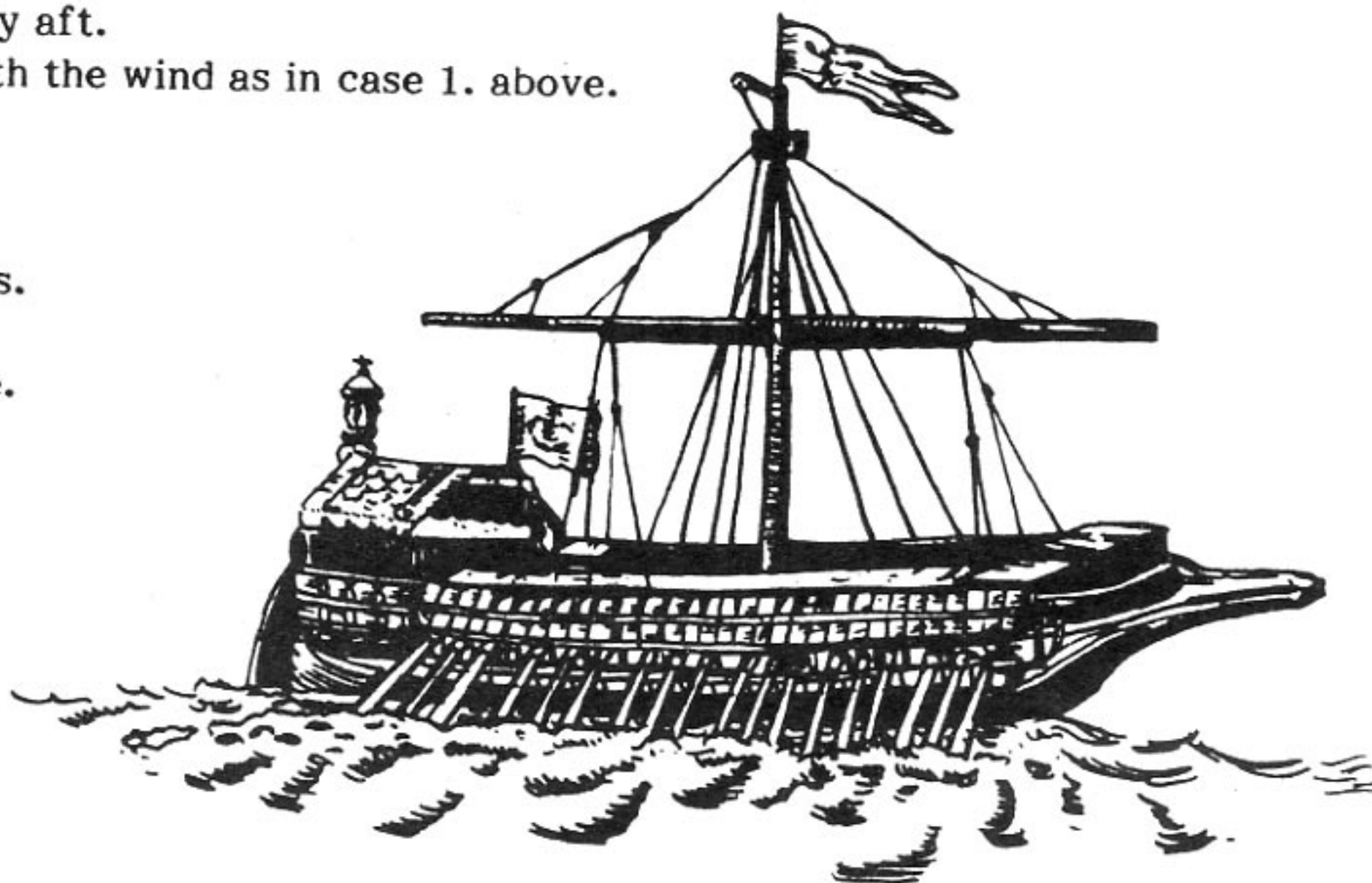
1. Running with the wind aft under fore lower sail only, vessel moves at half wind aft speed.
2. Drifting with the wind directly aft with no sails, vessel moves at one third wind aft speed.
3. Riding a sea anchor.
4. 'Lying a hull', ie. beam onto the wind with no sails set. Vessel moves forward 10mm per move.

The above are recommended and not compulsory.

Vessels without a rudder may not lie a hull or change course without sails. No alteration of course by tacking is allowed. Batteries cannot be fired without the vessel being subject to the Gale Damage Test. Boarding actions cannot take place.

When the weather condition is gale and any of the following apply, the Gale Damage Test must be taken for the vessel in question.

- a) Drifting with wind not directly aft.
- b) Under sail and not running with the wind as in case 1. above.
- c) Galley
- d) Riding a sea anchor.
- e) Vessel under tow.
- f) Vessel smaller than 100 tonnes.
- g) Vessel holed.
- h) Vessel fired battery this move.



## GALE DAMAGE TEST

Total the following factors:-

Per spot of two normal dice	+1
For each sail set	-1
Vessel has wind aft this move	+2
Vessel is riding a sea anchor	+4
Vessel is under tow	+3
Vessel holed	-4
For each battery eliminated	- $\frac{1}{2}$
Vessel under sail has damage to masts	-2
Vessel has no rudder	-2
Galley	-4
Firing main battery this move	-6
Raw crew	-2
Average crew	-1
Vessel smaller than 100 tons.	-3

### Results

Compare the final Gale Damage Factor total with the following results, read down the list stopping at the first situation which applies to the vessel in question.

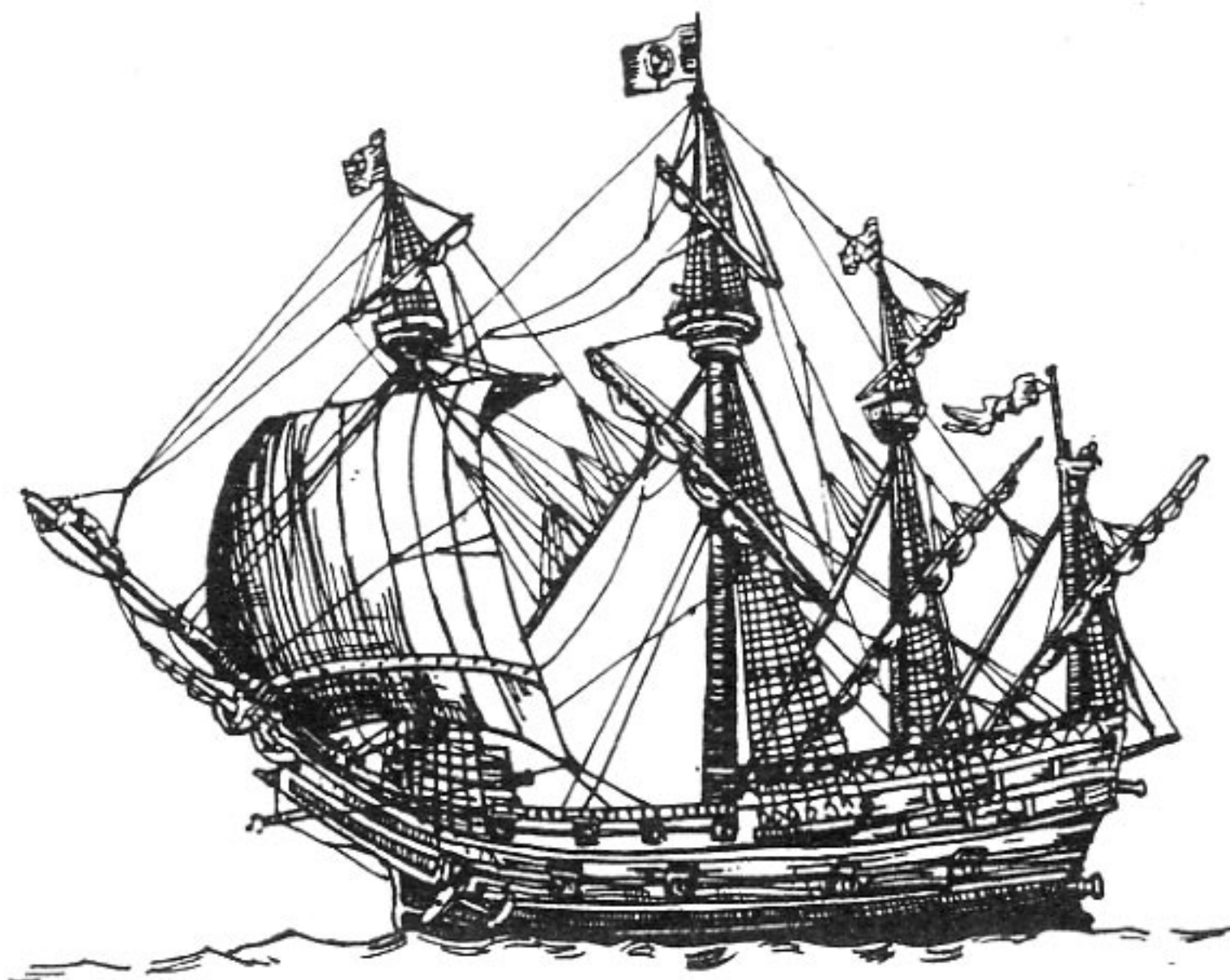
SITUATION	FACTOR TOTAL	RESULT
Ship firing battery or batteries	2 or less	The ship capsizes.
Vessel riding at a sea anchor	8 or less	Vessel loses anchor
Vessel under tow	8 or less	Tow line breaks
Vessel under sail	2 or less	Vessel dismasted
All other situations	2	Vessel is dismasted, capsizes if holed
	1 or less	Vessel capsizes

Note the maximum move distance for vessels under partial sail is:-

$$\text{Maximum distance} \quad \times \quad \frac{\text{Number of sails set}}{\text{Original number of mast sections}}$$

### FRESH AND STORM

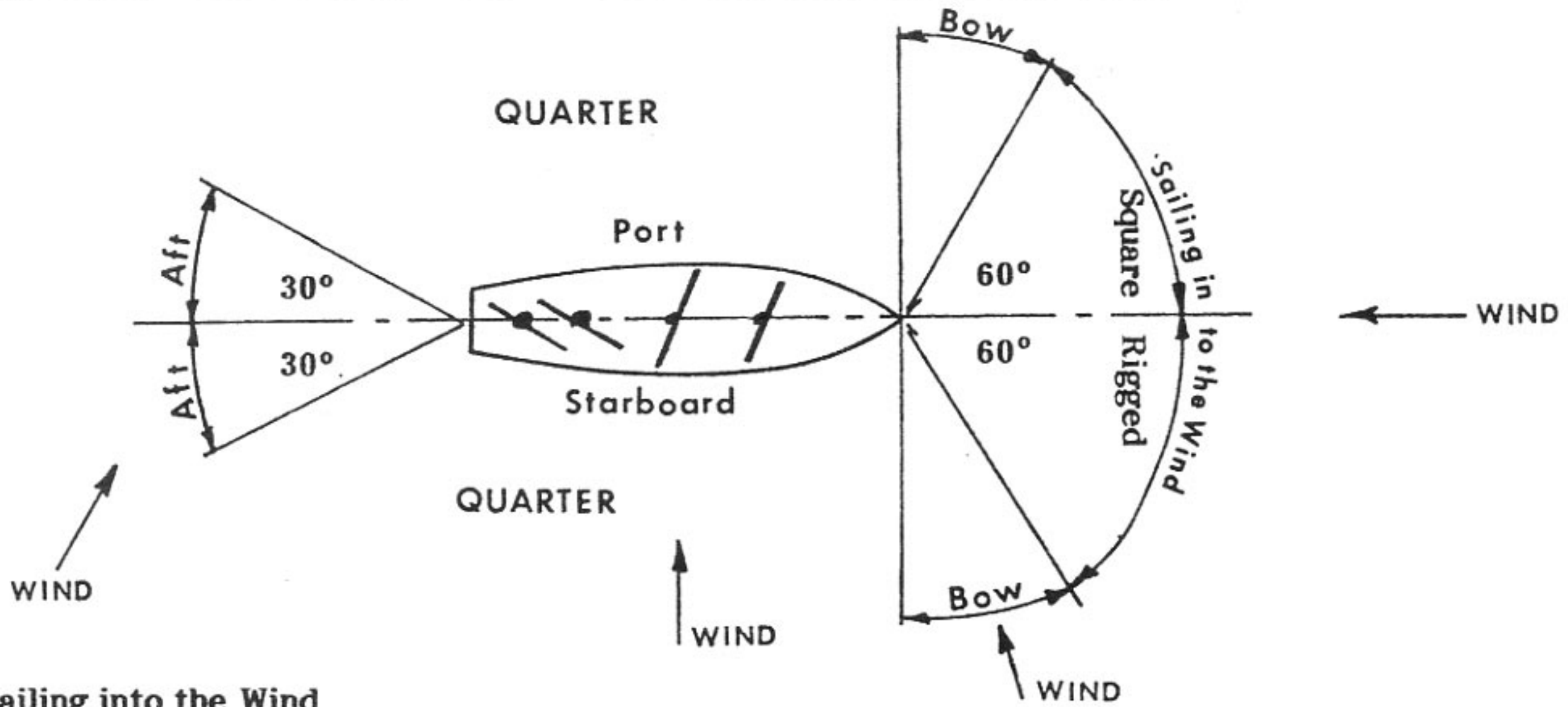
Vessels smaller than 100 tons may not fire their batteries. Only galleys and galleasses may move under oars.



# Movement

"Suit the action to the word, the word to the action; with this special observance, that you o'erstep not the modesty of nature" - Hamlet

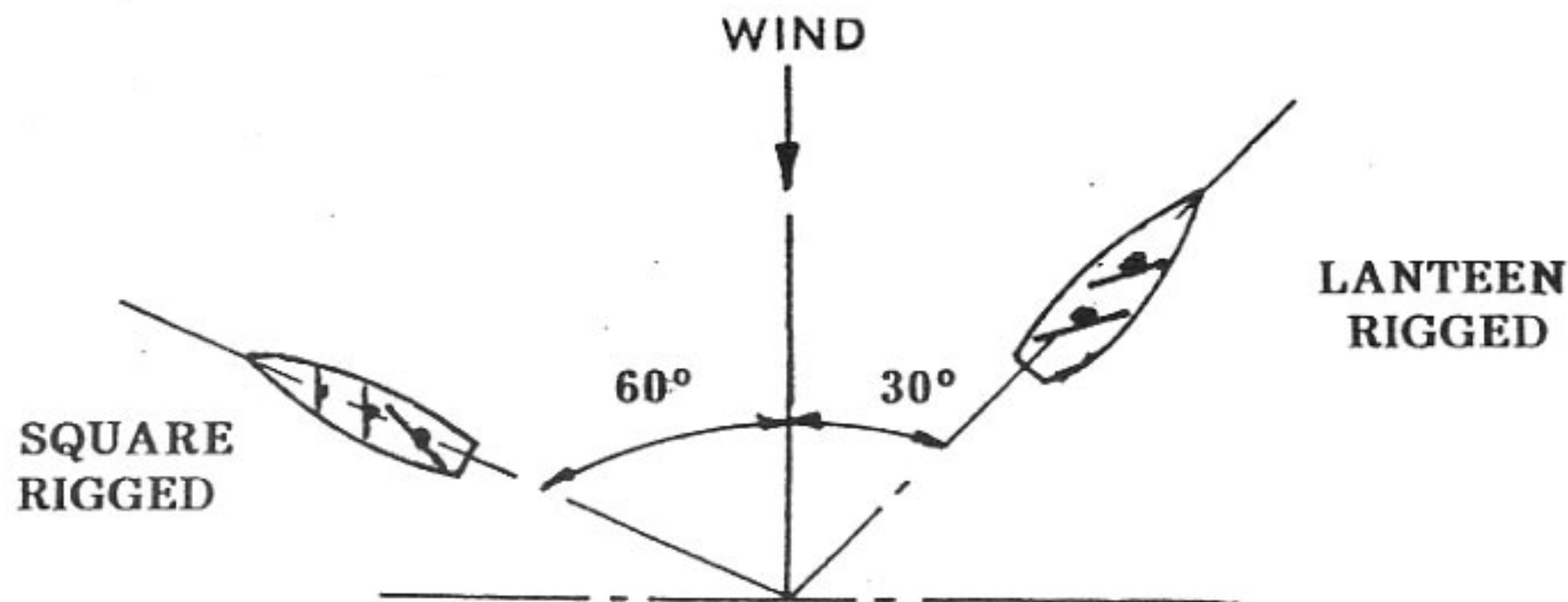
1. The diagram below indicates the different definitions of wind direction.



## 2. Sailing into the Wind

No square rigged sail driven vessel may sail into the wind without seriously risking damage to its masts, unless tacking. Crews of square rigged vessels cannot sail within  $60^\circ$  of the wind direction without penalty.

The diagram below indicates a ship sailing as close to the wind as possible. Crews of lanteen rigged vessels under sail cannot sail within  $30^\circ$  of the wind without penalty.



If a square rigged vessel, under sail, sails into the wind, the following test must be taken.

Throw two normal dice and add or subtract the following:-

- +7 Gale
- +2 Fresh wind
- +1 For each mast section lost
- 5 Between  $60^\circ$  and more than  $45^\circ$  of wind direction
- 2 Between  $45^\circ$  and  $30^\circ$  of wind direction
- +5 Galley or Galleass ramming under sail.

Compare the final result with the effects listed below:-

- 1 to 5 Drift down wind for two moves.
- 6 to 9 Lose fore top and top gallant.
- 10 to 12 Lose all top and top gallants.
- 13+ Lose all masts

(In all the above cases, the ship will drift down wind for two moves).

0 or less indicates the ship may turn out of the wind during the next move.

Ships which lose mast sections through sailing into the wind are subject to:-

**Casualties from falling masts** (page 20) and **Falling masts** (page 22)

If a Lanteen rigged vessel, under sail, sails into the wind throw two normal dice:-

2 to 7 Indicates vessel may turn out of the wind during the next move.

8 to 10 Vessel drifts down wind for two moves.

11 to 12 Vessel is dismasted.

### 3. BASIC MOVE DISTANCES

A ships speed will depend on the relationship between the direction of its course, the direction from which the wind is blowing and its size.

The tables below show the maximum distances for each type of ship in different wind strengths and directions. A 'D' indicates drift down wind.

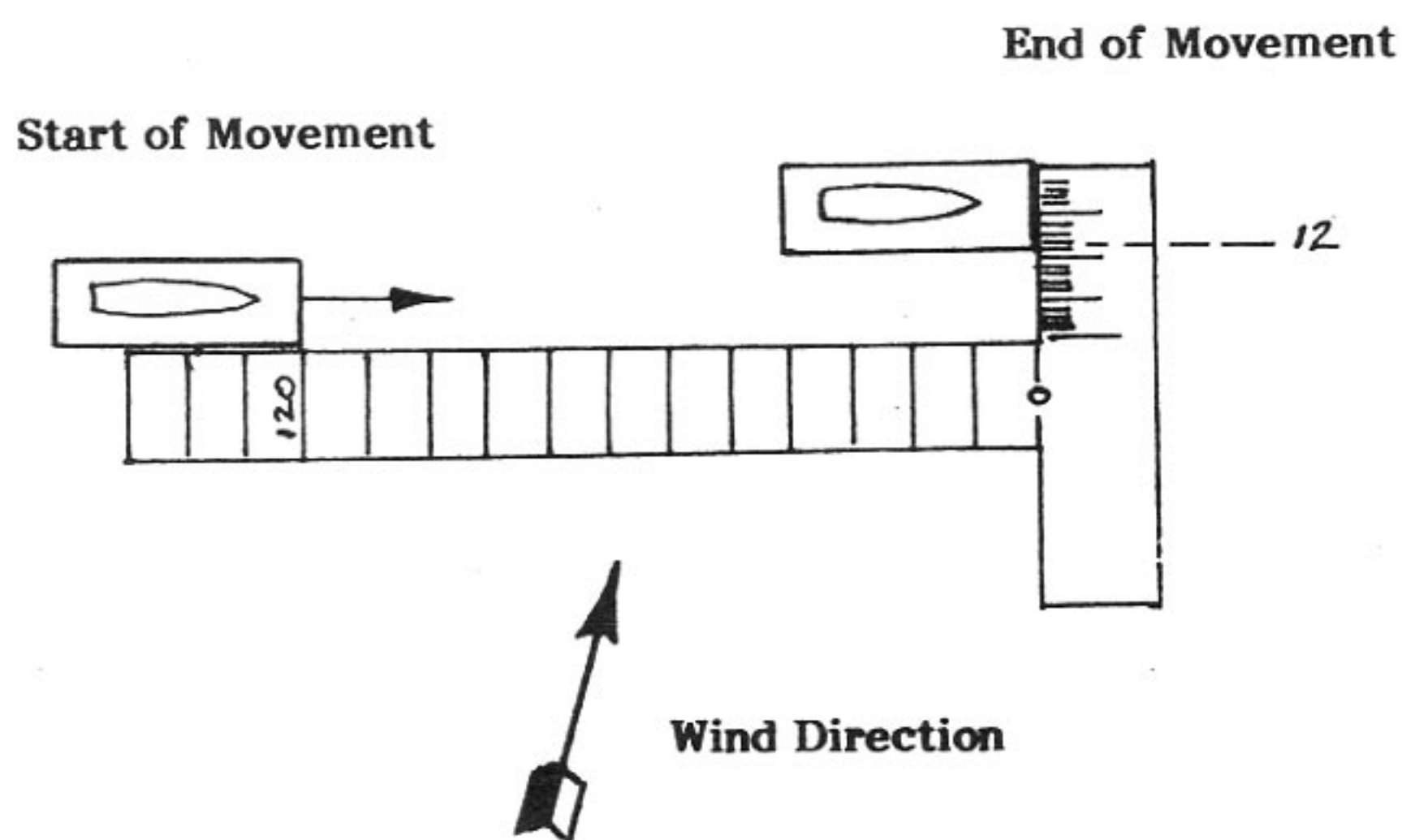
TABLE A			TABLE C			TABLE D			TABLE E		
Race built Galleon 500 tons and less but more than 150 tons.			All English Galleons over 500 tons. English Merchantman over 150 tons. Galleon 600 Spanish tons and less.			Galleon over 600 Spanish tons Greatship(Atlantic)			Carrack Hulk		
Light	Fresh	Gale	Light	Fresh	Gale	Light	Fresh	Gale	Light	Fresh	Gale
60	140	85	50	115	85	40	95	80	40	80	40
70	180	95	60	150	95	40	120	90	30	90	90
35	60	D	25	50	D	10	40	D	5	20	D

TABLE F			TABLE G			TABLE H			KEY	
Pinnacle English Galleon less than 151 tons Small vessel			Galley (oars and sail)			Galleass (oars and sail) Merchant Galley			Ship Type	
Light	Fresh	Gale	Light	Fresh	Gale	Light	Fresh	Gale	Wind Force	
70	130	40	100	130	40	80	95	80	Aft	Wind Direction
80	160	40	100	160	40	80	120	90	Quarter	
40	70	D	90	80	D	60	40	D	Bow	

All move distances are measured from the bow in millimetres (front edge of base if bases are used). Certain types of vessel subject to wind on quarter or wind on bow cannot move straight ahead. All non race built galleons over 150 tons, Carracks, Hulks, Greatships and Galleasses must move one millimetre to leeward for each full ten millimetres moved straight ahead. A movement template is included with these rules to assist.

Eg. A Spanish galleon moves 120mm with wind on its quarter as follows:-



#### 4. MOVEMENT UNDER OARS

Vessels equipped with both oars and sails must state in their movement orders which is being used that move to propel the vessel. It takes one full move to lower or raise a sail. The loss of speed due to destroyed oars and lost rowers is detailed in 'Effects of Damage'. Stationary oared vessels may turn in their own length. The maximum move distance and maximum angle that vessels can be turned through in one move are listed below. It takes one full move to turn in this manner whatever the angle.

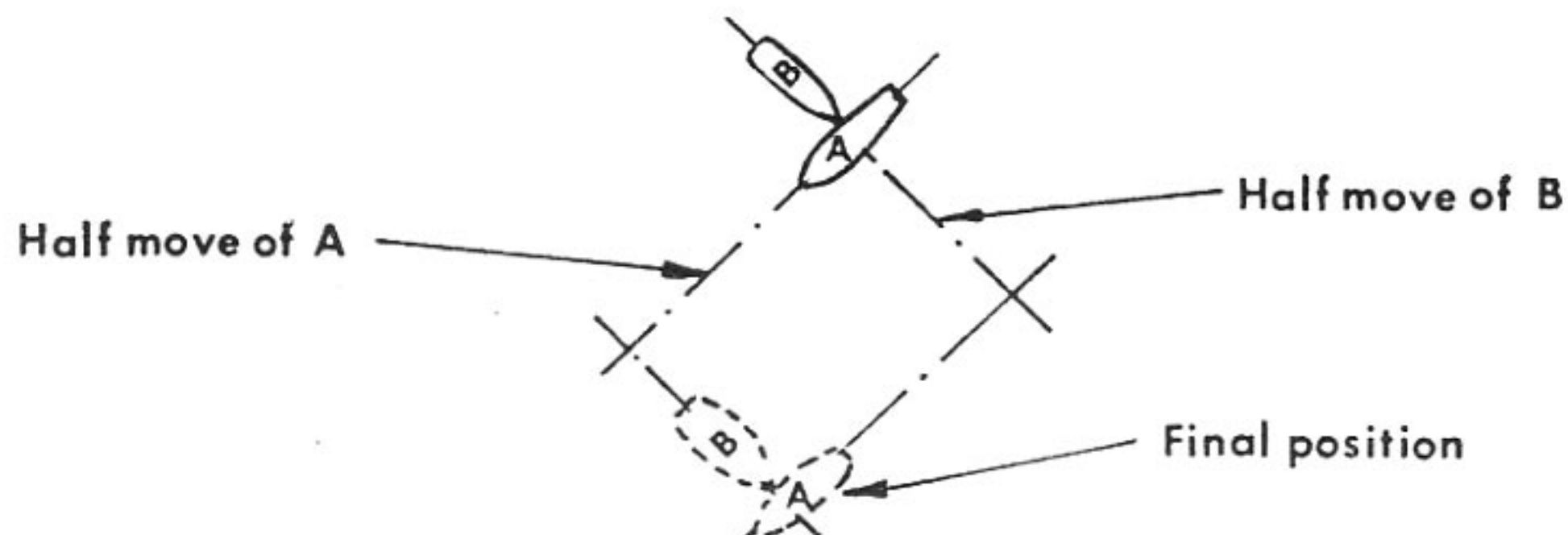
Table	TABLE I			TABLE J			TABLE K			TABLE L			TABLE M		
	Pinnacle Small Vessel			Ships Boats			Galleass			Galley			Galley		
Wind	Calm	Light	Fresh	Calm	Light	Fresh	Calm	Light	Fresh	Calm	Light	Fresh	Calm	Light	Fresh
Aft	50	50	0	70	70	50	70	80	120	110	110	120	100	100	110
Quarter	50	50	0	70	70	50	70	70	120	110	110	120	100	100	110
Bow	50	40	0	70	70	50	70	50	40	110	90	60	100	90	60
Max turn Angle	90°			720°			270°			360°			360°		
Attack Speed*	0			0			190			210			200		

\* Warships only.

Vessels may move at attack speed for only one move in five. When moving at attack speed vessels may not change course.

#### 5. COLLISION (see Ships Running Foul)

In the event of two ships colliding and becoming locked together during the next move, they will move to a point which is the resultant of half the speed of each ship on its previous course.



They will move at the relevant drifting speed for all subsequent moves that they remain locked together. All ships colliding must take the test as detailed under Ships Running Foul, even for friendly ships.

#### 6. LOSS OF SPEED (due to:

- Running aground; altering course; tacking; sailing into wind; change in wind force; striking; catching fire; colliding; takes effect immediately the cause occurs.
- Loss of mast sections, oars and rowers takes effect in the next move.

Except for the cases mentioned above in 5 and 6 ships can slow down or speed up at the following rates. The distance being added (or subtracted) from the distance moved in the previous move.

Ship Type	Slow Down	Speed Up
501 tons and over	20	50
Less than 501 tons	40	70
Less than 151 tons, Galleass	60	70
Galley	100	80

## 7. DRIFTING

Drifting ships will drift at the following speeds:-

Drift with sails 1/3rd. maximum move distance, with wind aft.

Drift without sails 1/10th. maximum move distance with wind aft.

Drift, 2 ships locked together, with or without sails, drifting speed of slowest ship.

Drift, 2 ships locked together, one with and one without sails, 1/6th. maximum move distance of ship with sails.

## 8. FRACTIONAL MOVEMENT

Movement may be broken down into fractions of a move if necessary to determine time of firing etc. In competition games this must be decided before any movement takes place. No back-tracking is allowed unless specified by the umpire. (ie. in the case of unexpected collisions).

## 9. SPECIAL GALLEY/GALLEASS MOVES

- i) **Hold Position:** Vessel remains stationary. In wind strength fresh, wind must be on bow or stern to hold position. Not allowed in a gale. Only galleys can hold position.
- ii) **Back Water:** Galley 60mm per move. Galleass 30mm per move. Vessels must slow down to stop between forward and backward movement and visa-versa. Not allowed in gales.
- iii) **Ram:** Vessel moves at attack speed. The intention must be to ram an enemy vessel with a forward movement. Rams are not permitted in gales.  
Vessels ramming undersail are subject to the test for sailing into the wind. A vessel subject to the test for sailing into the wind must make a collision move before drifting. Note that the test taken is the one for square rigged vessels.

# Alteration of Course

Unless turning through the wind (tacking) ships must use the turning circle (wearing).

## 1. WEARING

Ships under sail which face into the wind whilst proceeding around the turning circle are subject to the rules laid down under sailing into the wind. Ships sailing around the turning circle must proceed at the same speed as for the wind direction on the ship prior to wearing ship. Ships wearing and then sailing straight in the same move, move proportionally at the wearing speed around the circle and then the appropriate speed for the wind direction whilst sailing straight ahead.

Ships sail around the outside of the circle, always starting with their bow on zero and the circle's straight section in line with the hull. The turning circle is marked in millimetres.

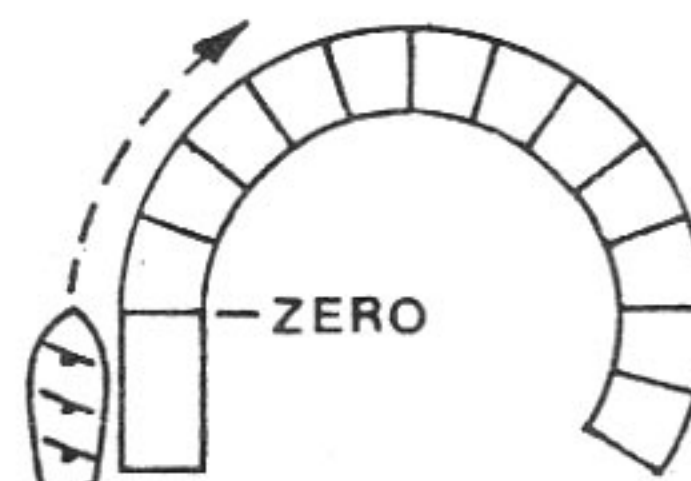
There are two turning circles included with these rules. The large diameter turning circle can be used by all vessels. The smaller diameter circle may only be used by vessels under 501 tons (except hulks), all galleys and galleasses.

However, galleasses may not move more than 80mm in any move they use the small circle.

Vessels using the small circle must have 'STC' in their move orders.

When bases are used the long edge of the ship's

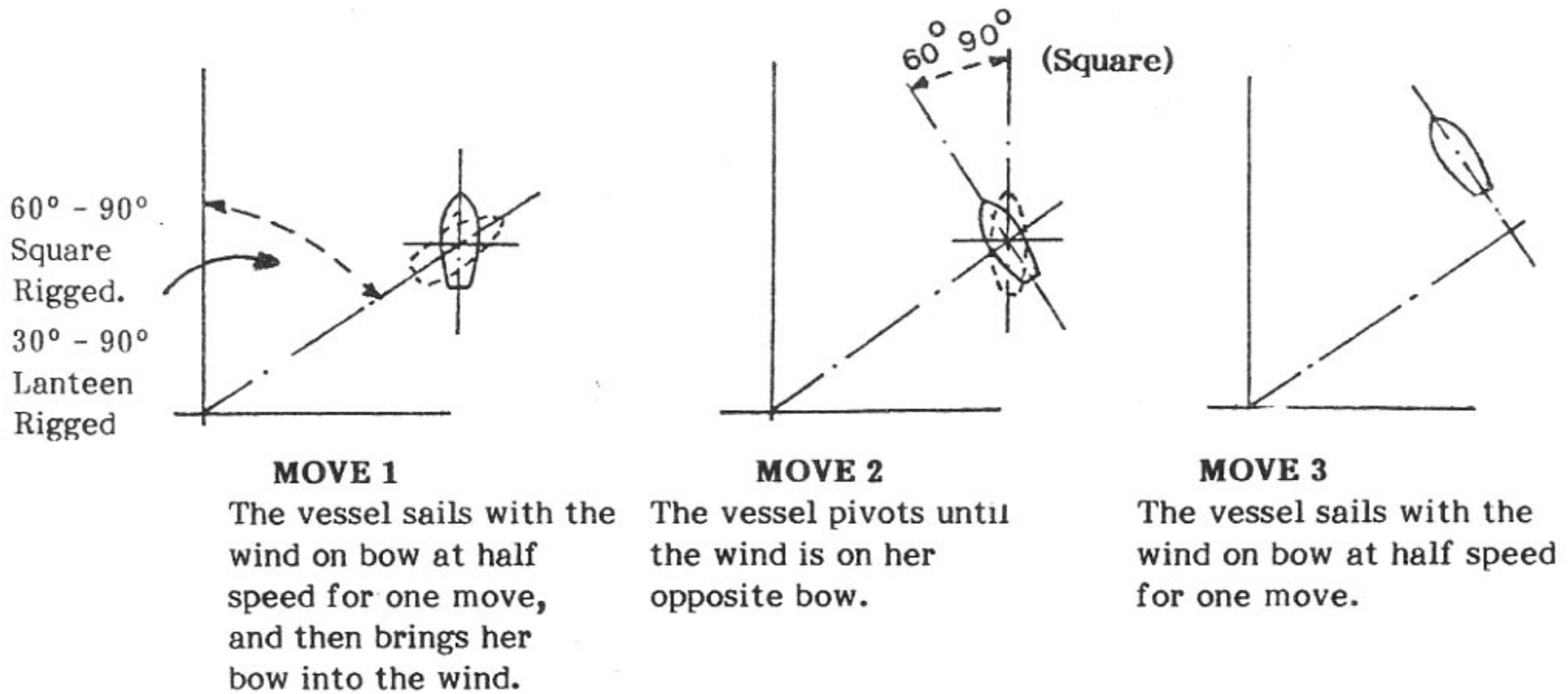
base will be positioned so as to form a tangent to the turning circle, the point of contact being the front corner of the base. Vessels cannot turn to port and starboard during the same move.



## 2. TACKING

Vessels which tack, cannot tack again until two further moves have been completed after move three of the following tacking sequence.

Tacking sequence; this consists of three moves;-



## Towing & Ship's Boats

### 1. TOWING

Vessels may be towed by either other vessels, or when the wind strength is calm or light, they may be towed by ship's boats. It requires two moves to pass a tow rope from vessel to vessel or vessel to ship's boat and one move to cast off a tow. Tow ropes are 20mm long.

The maximum move distance for a vessel under tow is as follows:-

- a) Towed by another vessel.
- $$= \frac{(2 \times \text{towed vessels move distance}) - \text{towing vessels move distance}}{2}$$

The distance above being the maximum distance for each vessel, with the wind in the same direction for each vessel under full sail. No towing ship may exceed its maximum allowable move distance.

- b) Towed by ship's boats in calm wind strength.
- |                                     |                  |
|-------------------------------------|------------------|
| = Towing a vessel over 499 tons     | - 5mm per boat   |
| Towing a vessel 499 to 150 tons     | - 15mm per boat  |
| Towing a vessel less than 150 tons. | - 20mm per boat. |
- c) Towed by ship's boats in light wind strength directly with the wind.
- = Maximum move distance calm + 5mm.
- d) Towed by ship's boats in light wind strength when c) above does not apply.
- = Half maximum move distance calm.

When towed by ship's boats no vessel may exceed a move distance of 40mm per move. Vessels can be turned in their own length when towed by ship's boats. The maximum arc the bow or stern may be turned through each move being equal to the relevant vessel's maximum move distance when towed by one boat. A boat must be fully crewed to tow or transport.

### 2. SHIP'S BOATS

Ships over 499 tons carry four ship's boats. Ships 150 to 499 tons carry two ship's boats. Vessels smaller than 150 tons carry only one boat.

The number of boats destroyed by cannon fire on parent vessel is proportional to the elimination of the batteries on the parent vessel plus one boat for each three mast sections lost (excluding the bowsprit).

It requires three moves to launch or stow away a ship's boat and one move for the crew to climb from vessel to boat or vice versa. Each boat requires a crew of twenty and may carry twenty passengers. Smaller boats can be used but these cannot be used to tow or transport.

## Gunnery ~ General

"Food for powder, food for powder, they'll fill a pit as well as better" - Henry IV Part 1.

Ships may fire some or all of their guns during the move provided these guns are loaded.

### 1. GUNNERY SEQUENCE

- 1) Determine which broadsides are loaded.
- 2) The player states he is firing and declares his intended target, ie. masts or hull.  
In some cases a test must be taken to decide which target has actually been hit. For average crews firing over medium range and raw crews firing over close range, throw one normal dice:-  
1, 2 or 3 they must fire at the rigging  
4, 5 or 6 they must fire at the hull.

Other than the above players automatically fire at their chosen target. The above test is not taken in calm weather conditions nor by shore batteries.

- 3) Measure the range and angle of fire. If the target is out of range or out of the vessel's arc of fire (see angle of fire later), the broadside falls short and does not inflict damage points.
- 4) Determine the total damage points inflicted on the target; (Gunnery factor + Tactical factors + Chance factor) multiply by the number of batteries firing.
- 5) Assess the damage to the target vessel caused by the total damage points inflicted upon it and record the foresaid on the appropriate vessel's damage sheet along with the crew casualties.
- 6) Damage points inflicted on the hull cannot be transferred to the rigging and vice versa.

### 2. RANGING SHOTS

One gun battery may be fired as a ranging shot at the beginning of a move. The full broadside may then be fired at the end of the move. Ranging shots are not classified as a ship's initial broadside. The battery fired as a ranging shot may be included in the full broadside.

### 3. LOADING

It requires one full move minimum to load any type of gun.

Ships who fire a particular broadside at any point during a particular move may not fire that broadside again until the end of the next move. This also applies to small guns. All small guns may be loaded and fired together.

Both broadsides may not be loaded together, but may be fired together.

The following projectiles may be loaded;-

- |                 |                               |
|-----------------|-------------------------------|
| Battery guns    | - ball or hail                |
| Small guns      | - hail only                   |
| Shore Batteries | - ball, hail or red hot shot. |

Once fired, small guns cannot be reloaded whilst a vessel is under small arms fire. It requires two full moves to unload any type of gun.

Hail causes casualties on the crew only.

### OPTIONAL RULE

Raw crews may only fire a vessel's batteries at any point during every third move. It also requires four moves to unload a gun.

### 4. RANGES

The tables below state the range categories of each type of projectile.

Ball				Maxium Effective	Hail (battery guns only)		
Point Blank	Close	Medium	Long		Point blank	Close	Medium
0 - 20	21 - 75	76 - 150	151-650	651 - 950	0 - 20	21 - 50	51 - 75

Hail cannot be fired further than medium range. The range of small guns is detailed in the section for small arms fire. All ranges are in millimetres.

All ranges are measured from the centre of the broadside (stern for stern chasers, bow for bow chasers) of the firing ship along the line of flight of the shot to the target ship's hull.

**5. ANGLE OF FIRE**

**Broadside**

In order for a target to be classed as within a ship's arc of fire, a line drawn not more than 15° of either side of the main mast shall cross the target's hull.

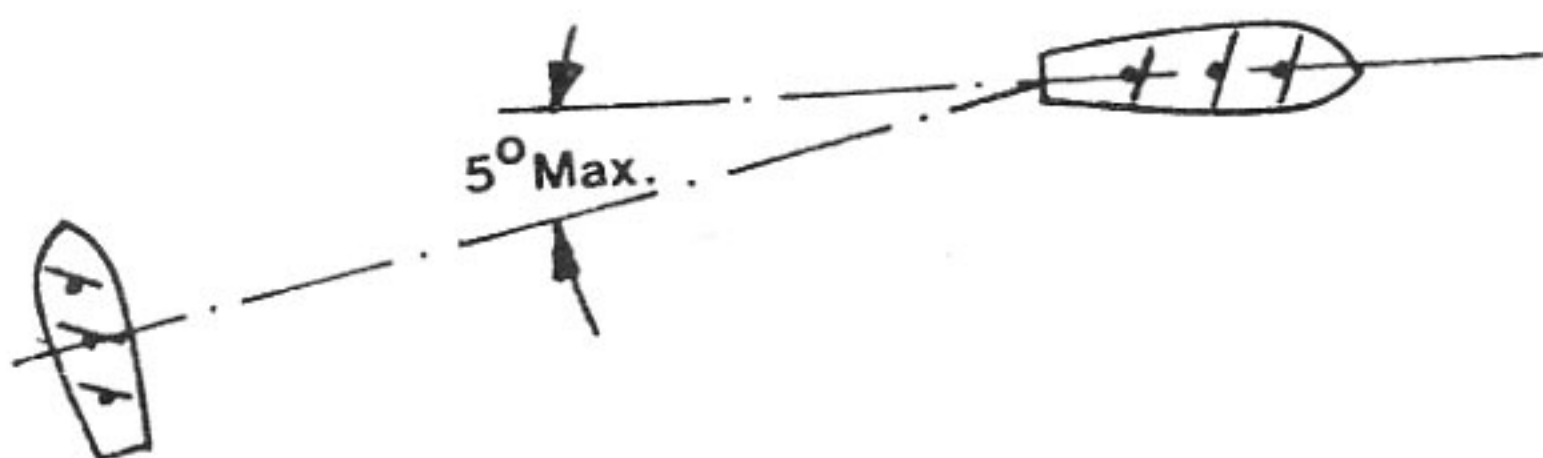
If the above does not apply, the proportion of the batteries whose line of flight to the target does not exceed 15°, measured from a perpendicular to the centre line of the hull, may fire. The rest are classed as misses.

**Stern and Bow Chasers**

As for broadsides with the exception that the 15° angle is measured from the centre line of the hull at the rudder for stern chasers and measured from the centre line of the bow for bow chasers. Bow and stern chasers are only allowed when specified in the fleet lists.

**6. RAKING**

In order for a target to be claimed as raked, the angle measured from a line drawn from the ship's main mast to a line drawn along the centre line of the target's hull shall not exceed 5°.



**7. STERN CHASERS**

When the stern chasers of a vessel are eliminated a battery may be manhandled from the beam to the stern ports. This requires seven moves to carry out.

**Note:** In 4. 5. and 6 above where bases are used, substitute:- 'centre of base edge' for broadside and main mast; 'base' for hull; and 'rear base edge' for rudder.

**8. LANE OF FIRE**

To fire a broadside at a target, there must be a clear lane of fire equal in width to the length of the hull of the firing vessel. If part of the lane is obstructed, only part of the broadside may be fired at that target. If bases are used the lane of fire must equal the length of the ship's base.

**9. INITIAL BROADSIDE**

An initial broadside is defined as the first salvo from a particular broadside during an action. Vessels which suffer over 30 crew casualties during any move, before their initial broadsides are fired, lose their addition for initial broadside listed under tactical factors. If a partial broadside is fired, the initial broadside is lost to those guns which do not fire. This does not apply in the case of one battery firing a ranging or signal shot. If a gun bursts the initial broadside is also lost.

**10. OVERHEAD FIRE**

No vessel may deliberately fire any projectile over any other vessel or at targets behind the crest of a hill or at targets hidden by obstructions.

**11. HIT OR MISS TEST (This test is optional)**

Throw one normal dice. The score shown below must be equalled or exceeded to score a hit.

Crew \ Range	Point Blank	Close	Medium	Long	Maximum Effective
Elite	2	3	3	4	5
Average	3	3	4	5	6
Raw	4	4	4	5	6

The hit or miss test is added for realism, but tends to slow down the game hence is optional.

# Factors

## 1. GUNNERY FACTORS ENGLISH

Type of Vessel	Tonnage	Batteries/ Broadside	BATTERY GUNS				Small Guns	Hull Defence Value	
			Gunnery Factor	Chasers					
				Stern/Factor	Bow/Factor				
Race Built Galleon	800	6	6	1	6	1	1	8	30
Race Built Galleon	500	5	5.5	1	4	-	-	4	30
Race Built Galleon	400	4	4	1	4	-	-	4	20
Race Built Galleon	200	3	3	1	3	-	-	4	20
Galleon	1000	5	7.5	1	6	1	1	4	30
Armed Merchant	400	4	3	1	3	-	-	4	20
Armed Merchant	200	3	3	-	-	-	-	2	20
Armed Merchant	150	2	2	-	-	-	-	2	15
Pinnace	50	1	2	-	-	-	-	4	10
<b>GUNNERY FACTORS SPANISH ARMADA</b>									
Portugese Galleon	1000	6	5	1	4	1	1	12	30
Portugese Galleon	800	6	4	1	4	1	1	12	30
Portugese Galleon	750	5	5	1	4	-	-	12	30
Portugese Galleon	350	3	5.5	1	2	-	-	4	20
Castillian Galleon	530	4	3	1	2	1	2.5	8	30
Greatship	1000	6	5	1	4	1	2	12	30
Carrack	820	4	7.5	1	4	1	1	8	30
Carrack	520	3	5.5	1	2	-	-	8	20
Hulk	400	3	2	-	-	-	-	2	20
Pinnace	150	1	2	-	-	-	-	4	15
Caravel	70	1	1.5	-	-	-	-	2	10
Galley	150	-	-	-	-	1	12	4	10
Galleass	600	3	3	1	7.5	2	9.2	26	20
<b>GUNNERY FACTORS - MEDITERRANEAN GALLEY WARFARE</b>									
Galleass	700	3	6	1	4	1	16	30	20
Flagship Galley	180	-	-	1	4	2	8	8	10
Galley	150	-	-	-	-	1	12	4	10
Galley	130	-	-	-	-	6	4	4	10
Merchant Galleass	500	-	-	1	4	1	4	4	20
Corsair	120	-	-	-	-	1	10	4	10
Galliot	60	-	-	-	-	-	-	4	10

### Notes

- a) All small guns are located half in each of the bow and stern castles of sailing ships. Half may fire over either beam, except ships with only 2 small guns who may fire them both over either beam. The exceptions to the above are;-
  - 1) Pinnace where two are located along each broadside.
  - 2) Galleass where eleven are located along each broadside and the remainder in the bow and stern castles.
  - 3) Galley and merchant Galleass where two are located either side of the fore deck. A flag galley also has two either side of the stern castle.
- b) The Mediterranean galleass must lift its oars for the full move during any move the broadside batteries are fired. A Galleass therefore deducts 40mm from its movement for that move (ie. the galleass slows down).
- c) When not specifically fighting in the Spanish Armada the broadside gunnery factor of both Carracks should be reduced to 2 and that of the Greatship to 3.

## 2. CHANCE FACTORS

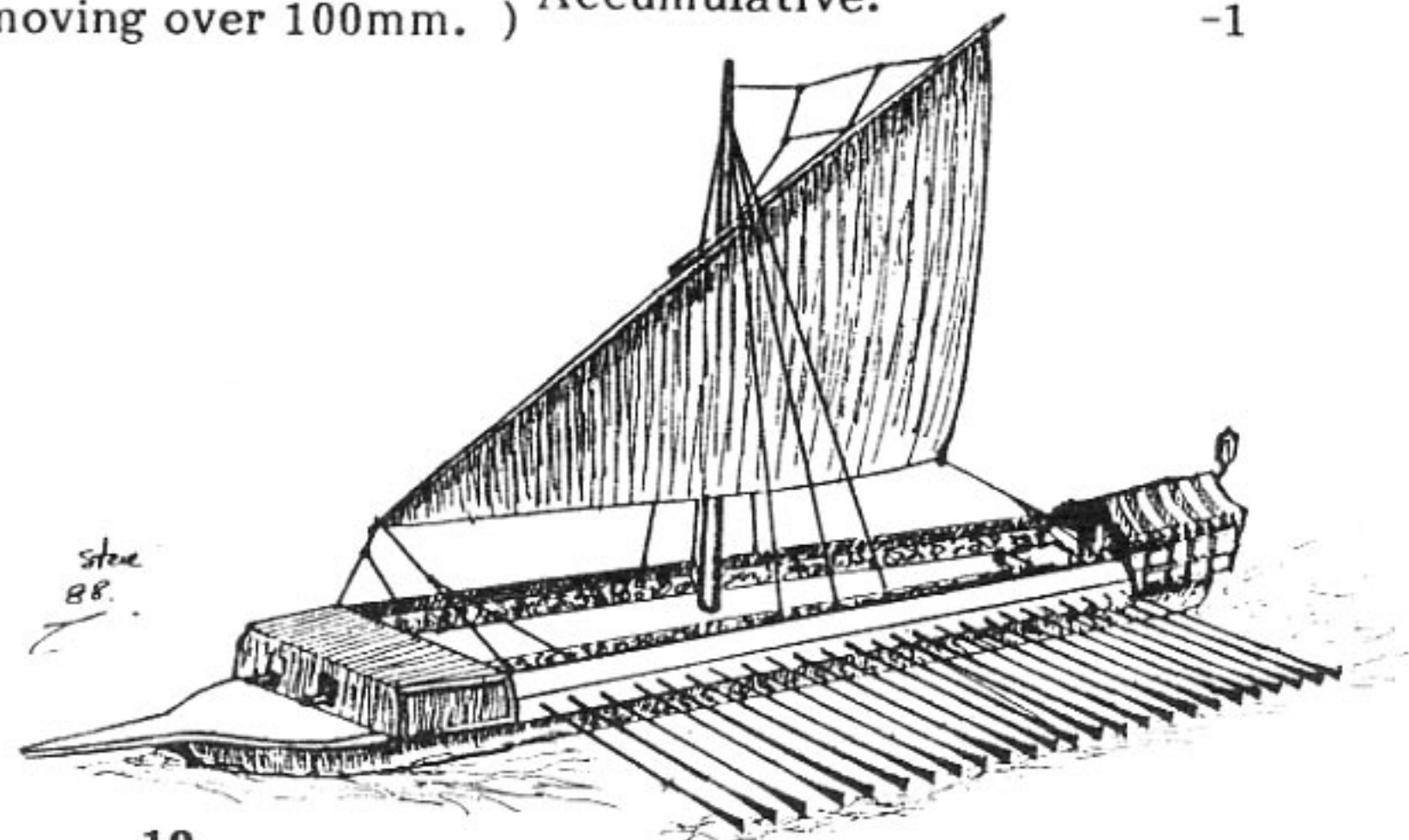
Crew	Range		Point Blank		Close		Medium		Long		Maximum Effective	
	Dice	Factor	Dice	Factor	Dice	Factor	Dice	Factor	Dice	Factor	Dice	Factor
Elite	Minus	0	Minus	-1	Minus	-2	Minus	-4	Minus	-5	Minus	-5
	Even	+1	Even	0	Even	-1	Even	-4	Even	-5	Even	-5
	+1,+2,+3	+2	Plus	+1	Plus	0	Plus	-3	Plus	-4	Plus	-4
	+4	+3										
Average	+5	+4										
	Minus	-1	Minus	-1	Minus	-3	Minus	-5	Minus	-8	Minus	-8
	Even	0	Even	-1	Even	-2	Even	-5	Even	-8	Even	-8
Raw	Plus	+1	Plus	0	Plus	0	Plus	-3	Plus	-4	Plus	-4
	-5	-5	Minus	-2	Minus	-3	Minus	-5	Minus	-8	Minus	-8
	-4	-4	Even	-1	Even	-2	Even	-5	Even	-8	Even	-8
	-1,-2,-3	-2	Plus	0	Plus	0	Plus	-4	Plus	-5	Plus	-5
	Even	0										
	Plus	+2										

Throw two normal dice (one plus and one minus) and note the score on the above table.

## 3. TACTICAL FACTORS

Rake hull from stern at less than long range with gunnery factor of greater than 4	+3
Rake hull from stern at less than long range with gunnery factor of 4 or less.	+2
Rake hull from stern at greater than medium range.	+1
Rake hull from bow with gunnery factor greater than 4	+1
Rake rigging from stern or bow	+2
Initial Broadside at point blank range	+2
Initial Broadside fired at close range.	+1
Raw crew initial broadside at less than medium range if raw crew optional rule is used.	+3
Firing Hail against hull at close range	-1
Firing Hail against hull at medium range.	-2
Firing from a fixed position on land.	+1
Firing from a fixed position at same target for more than two consecutive moves	+1
Firing through rigging laid over the side of firing ship.	-3
Firing the same broadside for more than two consecutive moves in wind strength calm	-1
Firing in gale	-3
Firing at above point blank range in weather conditions of mist	-1
Dismasted vessel firing in wind strength greater than Beaufort 2 at over point blank range (not when under oars)	-2
Gun burst last move	-2
Gun burst move before last	-1
Firing at over point blank range whilst moving over 70mm. )	-1
Firing at over point blank range whilst moving over 100mm. )	-1

Accumulative.



# Crew Casualties

Crew casualties inflicted by each type of projectile are as follows:-

- Firing ball at the hull - total damage points divided by 5.
- Firing ball at the rigging - total damage points divided by 20 plus casualties from falling masts
- Casualties from falling masts - Chance dice digits added together and multiplied by the number of falling sections.
- Firing hail at the hull - total damage points divided by 2
- Firing hail at the rigging - total damage points divided by 20.

All decimals of 0.5 and above are rounded up.

## Firing on the Rigging

"Wilt thou upon the high and giddy mast seal up the ship boys eyes and rock his brains".

Definition - firing on the up-roll of the ship.

The gunnery sequence must be followed through when firing at the rigging. Rigging cannot be fired upon from point blank range.

### 1. TOTAL DAMAGE POINTS INFLICTED

To determine the total damage points inflicted (TDPI), assess the ship's gunnery factor and add the tactical and chance factors, noting the chance dice score. Multiply the factor total by the number of batteries firing. This gives the TDPI.

In order to bring down a mast section, the damage points inflicted on that section must equal or exceed the defence value of that section. A hit must also be scored with the hit or miss test if this option is used.

The two dice thrown to establish the chance factor also indicates the mast section hit, as shown on the 'Mast Damage Indication Diagram'. If enough excessive points remain to damage further mast sections, after the defence value of the section hit has been subtracted from the TDPI, throw the dice again to indicate further damaged sections. This procedure continues until all TDPI have been accounted for, or have fallen below the lowest defence value for the masts.

The hit or miss test is taken for each section, if used.

### 2. MISSES

The following cases are classed as misses. However, they still inflict crew casualties and accumulate damage points.

- i) Shots hitting sections already shot away.
- ii) Damage points scored are less than the hit sections defence value.
- iii) Damage points remaining are not enough to bring down further sections.
- iv) A miss is scored with the hit or miss test.

### 3. MAST DEFENCE VALUES

Ship Section	500 tons and over	Less than 500 tons to over 200 English(349 Spanish) tons and all Galleasses	Galley and Remainder
Lower	30	25	15
Sprit, Top	20	15	10
Top Gallant	15	15	10
Miss	20	15	10

#### 4. MAST DAMAGE INDICATION DIAGRAM COMBINED WITH MAST LAYOUT DIAGRAM

In the cases where the target has more than four mast sections add the scores of the chance dice together and consult the appropriate diagram. In the case where the target has less than five mast sections and when raking, use only the plus chance dice to indicate which section has been hit.

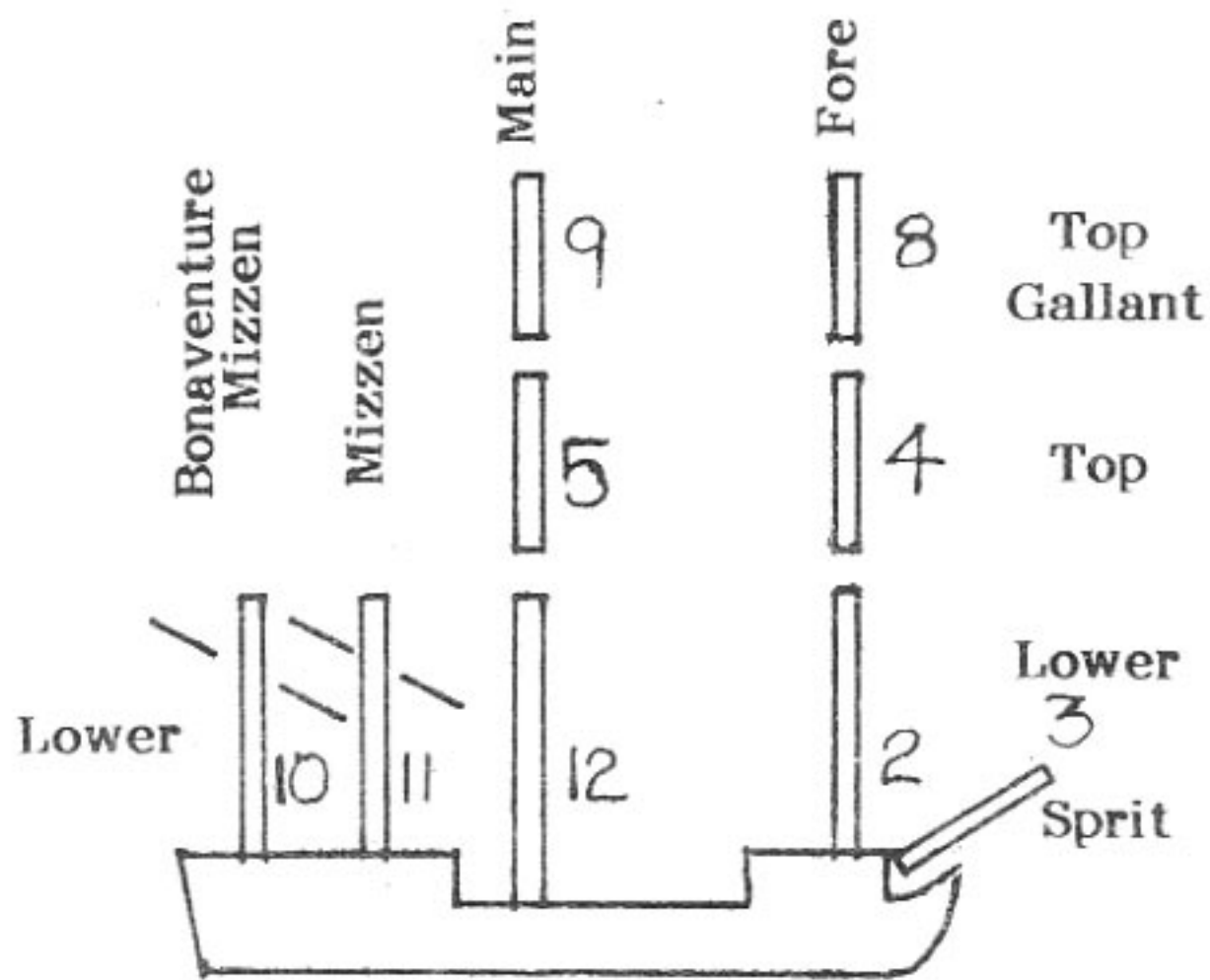


DIAGRAM A

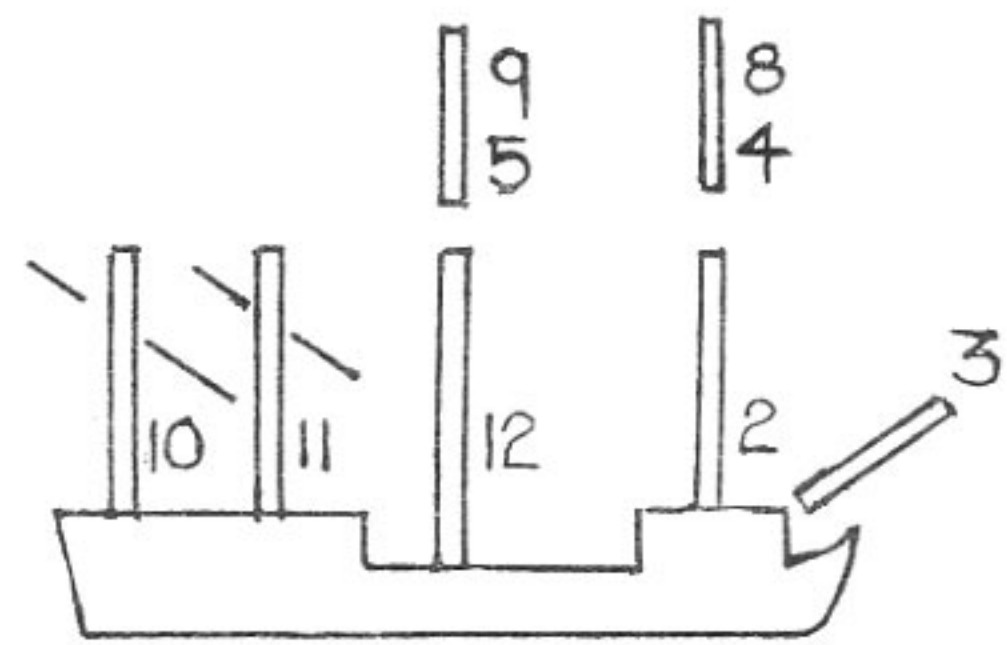


DIAGRAM B

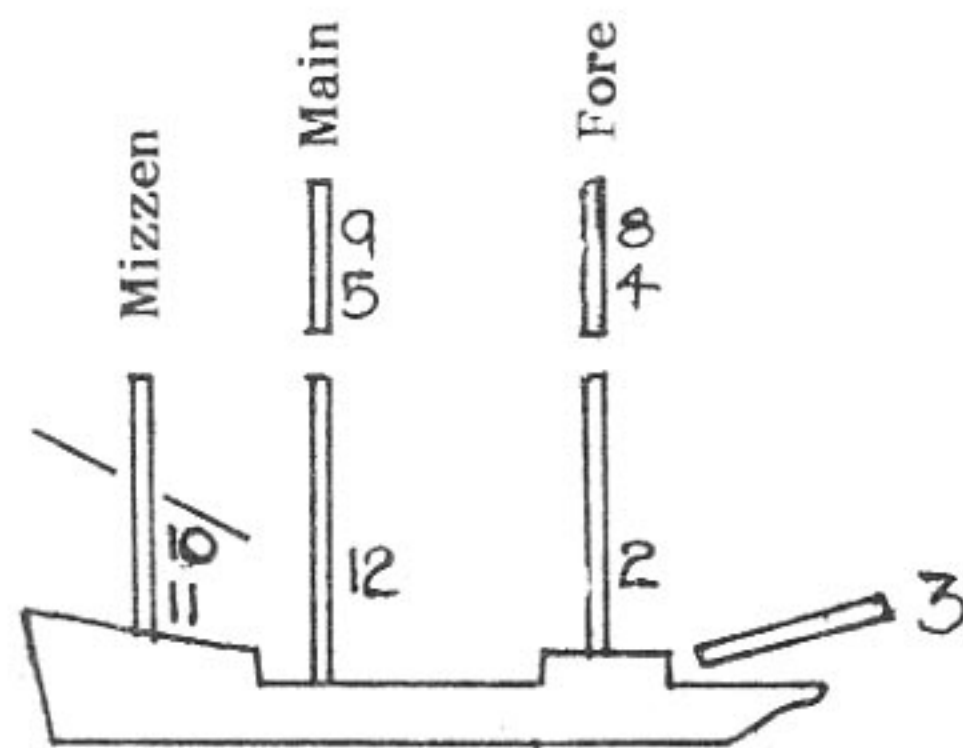


DIAGRAM C

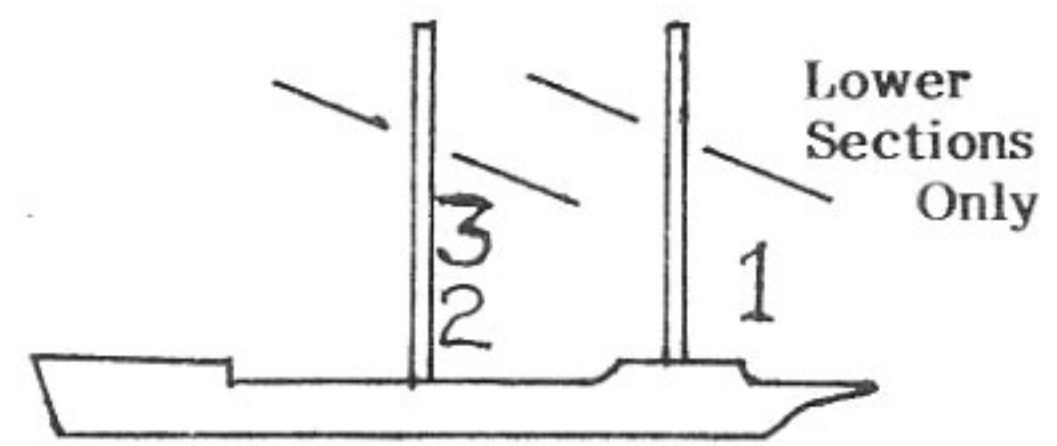


DIAGRAM D

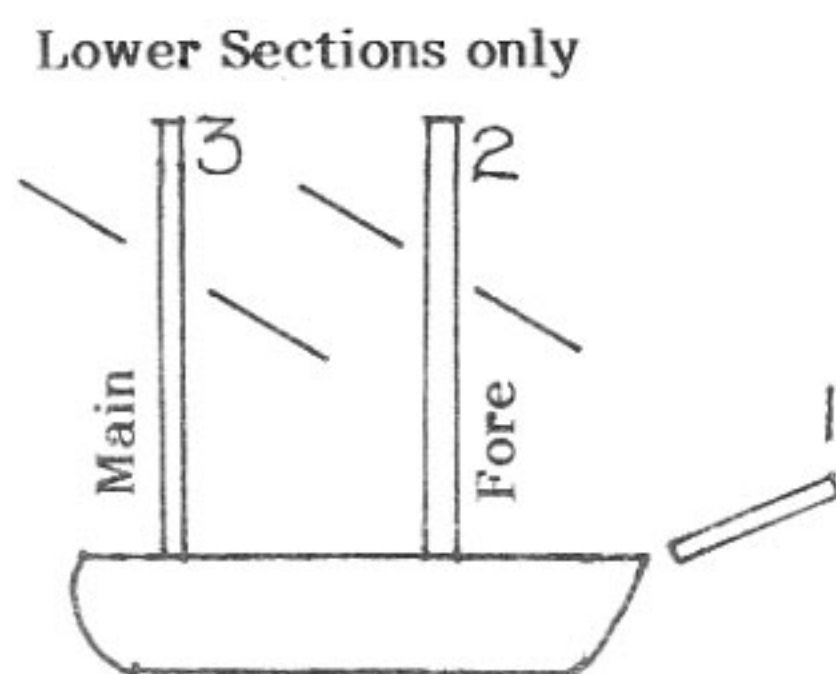
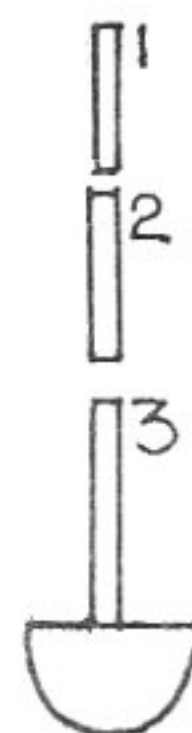
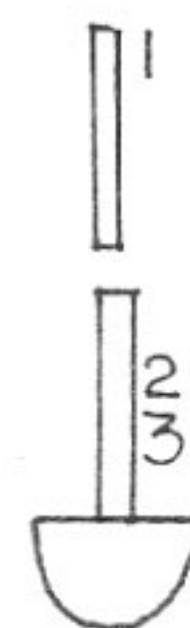


DIAGRAM E



RAKE  
A



RAKE  
B or D

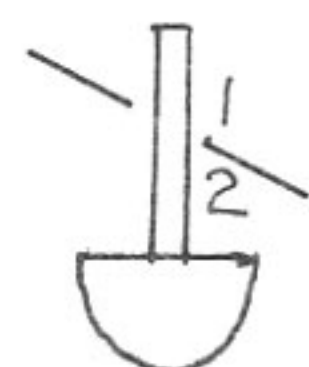
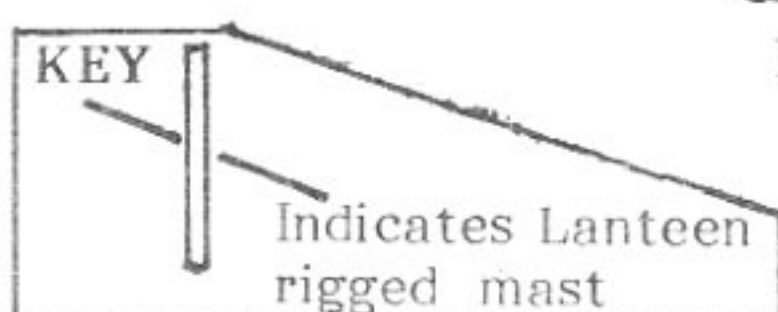


DIAGRAM F  
RAKE  
D or E  
(also single masted  
vessel)



If a score not shown above is achieved throw again if using the optional hit or miss test. If not, the score is classed as a miss and accumulates damage points.

When a lower section falls the sections above it also fall.

When a top section falls the top gallant also falls (provided the vessel has top gallants).

The only damage points expended are for the actual sections hit.

## 5. RAKING THE RIGGING

When raking the rigging of any ship the mast indication diagram for a single masted vessel is used. Shots hit the first standing mast section along the line of fire.

Note;- When raking the bow the sprit is the first lower section (provided the vessel has a sprit).

## 6. FALLING MASTS

Whenever a ship either faces directly into the wind, has the wind directly astern, or the wind strength is calm or light, a mast section which is shot away will fall over the side and remain there until it is cut away.

In these situations, throw one normal dice, a result of 1, 2 or 3 and the section falls to port, 4, 5 or 6 and the section falls to starboard.

The bowsprit always falls clear.

Whenever the above situation does not apply a mast section which is shot away will fall to leeward, (with the wind) and remain there until cut away. For oared vessels throw two normal dice to indicate how many oars are destroyed due to falling mast sections.

## 7. GALLEY WARFARE

In galley warfare galleys and galleasses did not usually fight under sail. When firing on the rigging of such ships, furled sails present a much smaller target. It should be noted that these rules use the loss of mast sections as a mechanism to represent reduction in speed caused by damage to masts, sails and rigging.

In galley warfare when firing on vessels with furled sails the normal rules for 'firing on the rigging' must be followed, without taking the 'hit or miss' test. When the chance dice indicates a particular mast section has been hit, rethrow one normal dice. Only a 6 indicates a hit. Misses still inflict crew casualties however.

When firing at the hull of a galley the 'hit or miss' test is compulsory to determine the elimination of small guns and batteries.

# Firing on the Hull

Definition - firing on the down roll of the ship.

The gunnery sequence must be followed through when firing into the hull.

### 1. TOTAL DAMAGE POINTS INFLICTED

(See firing at the rigging previous).

In order to eliminate a proportion of the target ship's gunfire the total damage points inflicted (TDPI) on the target's hull must equal or exceed the defence value of the target's hull.

The number of batteries eliminated is determined by dividing the ship's hull defence value into the TDPI. All remainders, or TDPI less than the hull's defence value, are classed as misses causing crew casualties only.

See effects of damage for oared vessels.

### 2. BATTERIES ELIMINATED

The batteries which are to be removed through elimination by fire power are determined as follows;-

- 1) Firing on target's broadside which has some batteries still in action - subject broadside.
- 2) Firing on target's broadside which has no batteries still in action - other broadside.
- 3) Raking stern with stern chasers in action - stern chasers.



- 4) Raking stern where stern chasers are not in action - batteries on both broadsides, throw dice for any odd numbers.
- 5) In 3) and 4) above, substitute bow in place of stern when raking the bow.
- 6) Small guns are removed only after all battery guns have been removed.
- 7) See also 'Galley Warfare' earlier.

### 3. HULL DEFENCE VALUES

The hull defence value for each type of vessel is shown in the gunnery factor tables.

### 4. EFFECTS OF CHANCE DICE

The two dice thrown to establish the chance factor also indicates certain types of damage as follows:-

**The chance dice added together** - Indicate the mast section hit when firing at the rigging. (see firing at the rigging section).

A chance dice score of 1 and 1 when firing at the hull indicates a lower mast section hit below decks. If the TDPI equals or exceeds the lower mast section defence value, re-throw one normal dice and compare the score with the following:-

- |      |                           |
|------|---------------------------|
| 1    | Mizzen mast falls.        |
| 2    | Bonaventure mizzen falls. |
| 3, 4 | Fore mast falls.          |
| 5, 6 | Main mast falls.          |

The mast hit must be within range and angle of fire, otherwise the shot misses. This does not accumulate damage points.

**A chance dice score of 2 and 2** - when firing at the hull indicates possible damage to the ship's manoeuvrability. Re-throw one normal dice and compare the score with the following:-

- |      |   |
|------|---|
| 1    | treat as a 1 and 1 above.                                     |
| 2    | bowsprit falls.   |
| 3    | rudder destroyed, except when raking bow.                     |
| 4    | Steering gear destroyed.                                      |
| 5, 6 | No effect, unless stern rake whereby the rudder is destroyed. |

**A chance dice score of 3 and 3** - a gun bursts on the firing ship:-

Eliminate a battery and remove crew casualties equal to:-  
The score of a normal dice + ship's gunnery factor.

**A chance dice score of 4 and 4** - when firing at the hull from less than medium range indicates the hull has been holed.

**A chance dice score of 5 and 5** - when firing at the hull indicates a fire has started in which case the fire test under 'Fires and Explosions' must be taken.

**A chance dice score of 6 and 6** - when firing at the hull indicates an officer has been hit. Re-throw one normal dice and compare the score with the following:-

- |          |   |
|----------|---|
| 1,2 or 3 | Captain   |
| 4, 5     | C-in-C (if no C-in-C on board - miss, or cabin boy killed). |
| 6        | Personality hit (other than the C-in-C).                    |

**A chance dice score of any double** - when firing at the hull of an oared vessel indicates some oars have been damaged. Remove one oar per battery firing.

The oars which are to be removed through elimination by fire power are determined as follows:-

- 1) Broadside under fire until all the oars are lost in that broadside when oars are then removed from the other broadside.
- 2) When being raked remove oars from both sides, throwing a dice for any odd numbers.

## 5. FIRING ON SHIP'S BOATS

The gunnery sequence must be followed through when firing on ship's boats. The total damage points inflicted (TDPI) are determined as in the 'firing at the rigging' section previous.

In order to destroy a small boat:-

- 1) TDPI on the boat must be equal or exceed the boat's defence value.
- 2) A hit must be scored with the 'hit or miss' test. The number of times the test can be taken is equal to:-

$$\frac{\text{TDPI}}{\text{Boats Defence Value}}$$

If a boat is destroyed, all its occupants are casualties. Misses do not cause casualties. The defence value of a small boat is 5.

## Small Arms & Small Gun Fire

Small arms are fired in groups of 20, odd numbers rounded up if over 10. The maximum range for small arms and small gun fire is 20mm. To assess casualties throw one normal dice and consult the following table. Note, only one dice throw per ship per move is allowed.

Score	Casualties
1	No casualties
2,3,4	1 casualty per 20 men firing and per small gun firing.
5,6	2 casualties per 20 men firing and 2 casualties per small gun firing.

Small arms and small guns may only fire once per move, at any time.

Unless others are nominated only soldiers are allowed to carry muskets for assessing small arms fire. All the 'so armed' on board ship are allowed to fire over either broadside and twenty maximum over bow or stern.

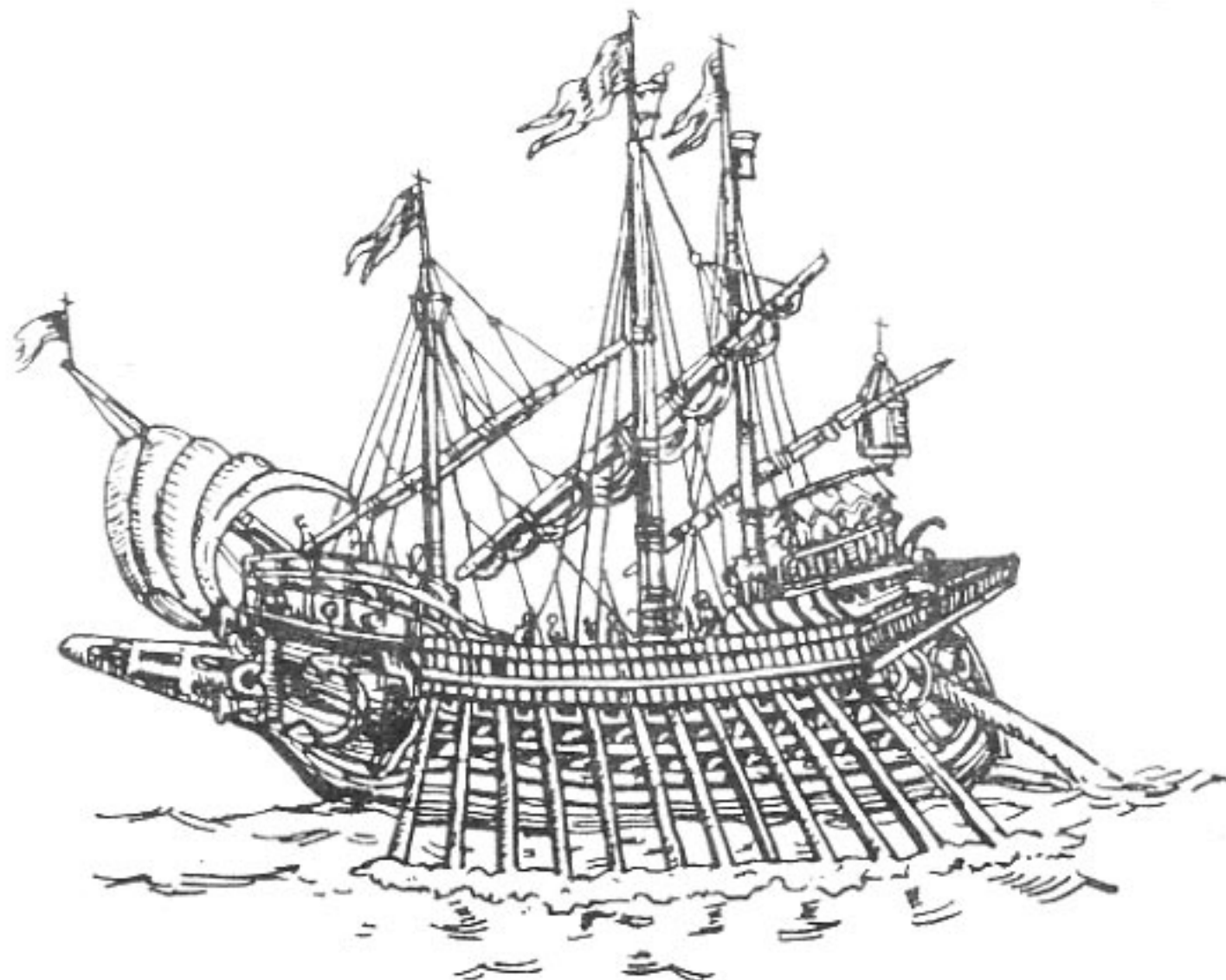
A dice score of 6 indicates an officer has been hit. In this case, re-throw the dice, a further score of 6 indicates the most senior officer on board, who is not already a casualty, has been hit. (If a living C-in-C is on board, a score of 5 indicates the next senior officer on board is hit). The order of seniority is:- C-in-C, Sea Dog, Other Personality, Captain.

Small arms and small gun fire is allowed earlier in a move when stage 1 of a boarding action is fought.

The firers of small arms who fire during stage 1 of a boarding action can choose to inflict casualties solely on the enemy's boarding/counter-boarding party if they so wish. See boarding actions section later. Other small arms fire in boarding actions is also covered later in that section.

Small arms and small gun fire during other stages is not allowed.

Small arms fired solely on boarding and counter-boarding parties can only kill the most senior officer on board if he is leading the party. Small guns can also be used in stage 1 in the same way as small arms provided the point of contact between the vessels is within their angle of fire and range.



# Fires and Explosions

When any of the following causes apply, a fire test must be taken;-

- 1) Double 5 chance dice score when firing ball at the hull.
- 2) Surrendered Barbary Corsair.
- 3) Receiving damage points from red hot shot (test for each gun firing).
- 4) Firing through mast sections laid over the side of the firing ship.
- 5) Firing at point blank range through mast sections laid over the side of a target ship. Target ship tests.
- 6) Entangled with a ship on which fire burns out of control.
- 7) Ship exploded within 50mm last move.
- 8) Ship explodes in contact, this move.

## FIRE TEST

Total the following factors:-

- +1 Per spot of two normal dice.
- +1 Over 50% of the crew are casualties.
- +1 Over 75% of the crew are casualties.
- +2 50% of the batteries are destroyed (not counting small guns).
- 2 Dismasted with wreckage cleared.
- +1 Suffering damage points on the hull from red hot shot from 18pdrs. or above this move.
- +3 Barbary Corsair attempting to fire own ship.
- +2 Firing from a broadside obscured by mast sections.
- +1 Per move (accumulative) entangled with a ship, on which a fire is out of control.
- 2 Up wind and entangled with a ship on which a fire is out of control, in wind strength greater than 3.
- +2 Ship explodes within 50mm last move.
- +4 Ship in contact explodes this move.
- +1 (accumulative) fire still burns after two moves.
- 3 Weather condition is storm.
- 2 Enemy boarders attempt to extinguish fire aboard a Corsair vessel.

Compare the total factor with the following results:-

## RESULTS

- 12 Fire is out of control.
- 11 Fire still burns. Until the fire is extinguished the ship reduces speed by the relevant slowing rate each move and then drifts. All batteries fire at quarter effect. Test again next move.
- 10 As above, but all batteries fire at half effect.
- 9 Fire still burns, test again next move.
- 8 or less Fire extinguished (Corsair has failed to ignite)

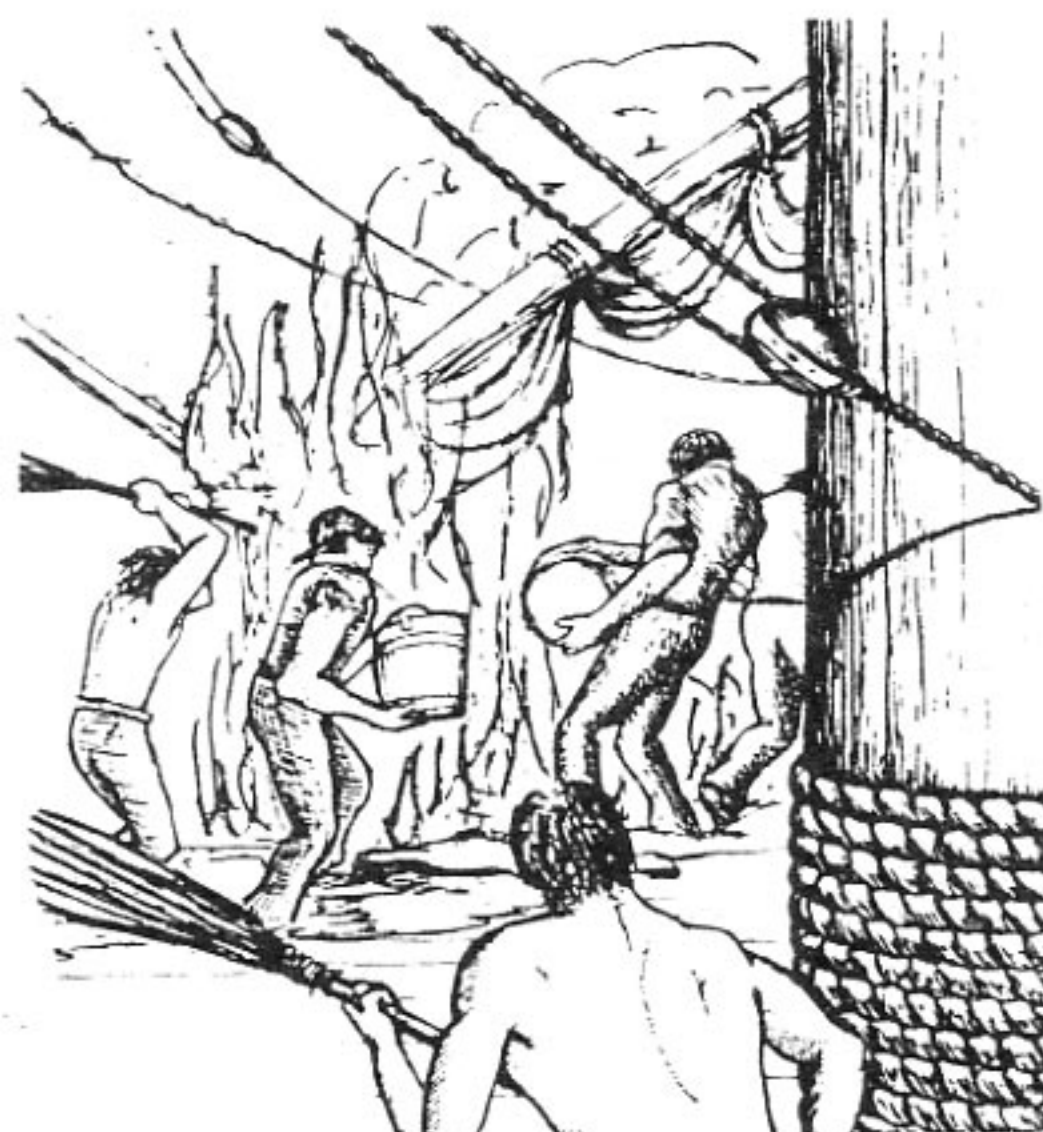
### 1. FIRE OUT OF CONTROL

A ship on which a fire burns out of control, drifts down wind until it explodes. Two normal dice are thrown each move, +1, accumulative, being added to the dice each move. On a score of 12 or more being achieved, the ship explodes.

### 2. FIRE SHIPS

It requires one move to set alight a fire ship and a further move to abandon ship. Once alight they are treated as ships on which a fire burns out of control.

Where a boarding action is taking place, a fire ship cannot be set alight whilst enemy boarders



remain on her deck. Fire ships carry one tenth of their normal crew strength.

Fire ships nominated as explosive vessels are also treated as ships on which a fire burns out of control. However, players may specify in their orders how many moves it takes until the ship explodes. Ships which have not already exploded due to the above test will explode as ordered.

## Effects of Damage

### 1. LOSS OF BATTERIES

As batteries are eliminated, the number of batteries used to assess damage points is reduced accordingly. This reduction in fire power takes effect immediately the batteries are lost.

### 2. LOSS OF RUDDER

Count double distance for all moves around the turning circle.

### 3. LOSS OF THE STEERING GEAR

The vessel sails on its current course for two full moves whilst the emergency steering is manned. This also includes oar driven vessels.

### 4. LOSS OF CREW

Crew casualties take effect immediately they are incurred.

### 5. LOSS OF MAST SECTIONS (applies to vessels moving under sail)

Vessels which are completely dismasted will drift down wind until either a tow is attached or a jury mast is rigged. The maximum move distance following each mast section lost is determined from:-

Maximum move distance x the percentage of the remaining standing mast sections.

Although this sounds complicated the maths are simple.

eg. A ship with seven mast sections as in diagram B (see earlier) would incur loss in maximum move distance due to the lost mast section as follows:-

One section lost	$\frac{1}{7} = 14.3\% = 20\%$	$MMD = MMD \times \frac{80}{100}$
Two sections lost	$\frac{2}{7} = 28.6\% = 30\%$	$MMD = MMD \times \frac{70}{100}$

Please note the percentages are all rounded **UP** to the nearest 10%.

Tacking cannot be undertaken when either the fore top mast or bowsprit is lost. Count double distance for all moves around the turning circle when three sections are lost, and quadruple distance when all top masts are lost.

### 6. MAST SECTIONS LAYING OVER THE SIDE

It requires one move per section to cut away mast sections laying over the side of a vessel.

Vessels cannot turn in the opposite direction when three or more mast sections are laying over the same side.

Mast sections laid over the side of a vessel cover 2 undamaged batteries per section. This does not apply to bow and stern chasers or when mast sections with furled sails fall.

### 7. HOLES

Vessels which have been holed must test each move the hole exists to determine if the hull is seriously damaged. Throw one normal dice per hole:-

A score of 12 indicates the hull is seriously damaged. Throw an additional dice to indicate how many moves it takes for the vessel to sink. The vessel reduces its move distance by half each move until it sinks.

### 8. OARED VESSELS

Galleys and Galleasses lose rowers in proportion to crew casualties. Each 10% loss of rowers corresponds to a 10% loss in speed under oars, as does each 10% loss in oars. The two are not added together. When calculating the loss in speed due to destroyed oars or lost rowers the higher percentage of the two is used (lowest speed), always in whole 10% steps. Oars are destroyed in addition to batteries, not instead of. It takes 4 moves stationary to transfer oars between broadsides. The loss of movement due to destroyed oars is taken for each broadside separately, the lowest resultant speed being the one taken.

When half the rowers or oars are lost then all movement under sail in light wind is halved. The above rules apply to all vessels moving under oars.

## 9. REPAIRS

Only the following repairs can be carried out during an action. **Jury Masts:** a dismantled ship can rig a jury mast to the stump of a lost mast. It requires six moves to rig a jury mast. The work cannot be carried out whilst enemy boarders remain on her decks.

The defence value of a jury mast is equal to the defence value of a top mast for the vessel in question. When firing ball at the rigging a hit on the jury mast is indicated by a chance dice score equal to that which indicates a hit on any of the mast sections which the jury mast has replaced.

Each jury mast increases the vessel's maximum distance by:-

$$\frac{\text{Maximum move distance}}{\text{Original number of mast sections}}$$

To repair a hole a ship must remain stationary (drift) for twelve moves. This only applies to ships holed through gunfire.

No repairs can be carried out during a gale. Raw crews cannot rig a jury mast whilst under fire.

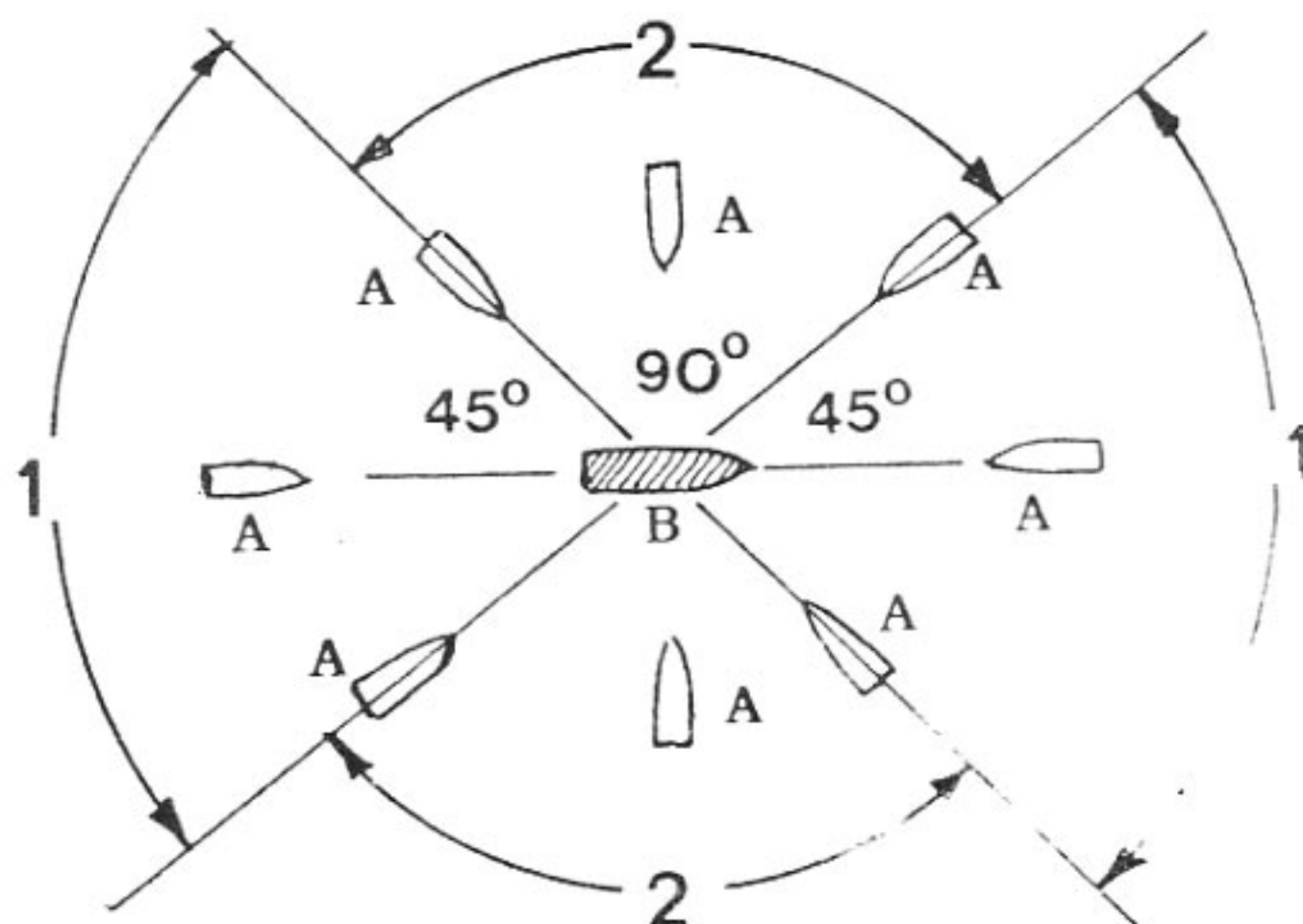
## Ships Running Foul

1. Ships may run foul either voluntarily, in the case of boarding actions, or by accident. In order to run foul, two or more ships are moved in such a way that their hulls (or bases) come into contact. All ships coming into contact must test to determine if they become locked together by totalling the following factors in a joint test for all ships involved:-

- +1 Per spot on one normal dice throw.
- +3 If both ships are drifting together in contact for the whole move and at least one crew intends to become locked together.
- +1 If either vessel intends to become locked together. )
- +3 If both vessels intend to become locked together. ) either/or
- 2 If one vessel has an elite crew who intend to avoid becoming locked together.
- +2 If one vessel has elite crew who intend becoming locked together.
- +1 Per vessel which has average crew who intend becoming locked together.
- +1 If elite crew intend to become locked together with elite crew and angle of contact is in area 1.
- +1 Raw crew on both vessels.
- +2 Galley crew who intend to become locked together.
- +1 If one vessel has an English crew who intend to avoid becoming locked together.
- +3 If angle of contact is in area 2.
- 1 If both vessels intend to move less than 100mm this move.

### Definition

Ship A - the vessel whose intended course points (bow if sailing forward) at the hull of another ship (B) at the point of contact. For head on collisions, both vessels are classed as Ship A.



## RESULT

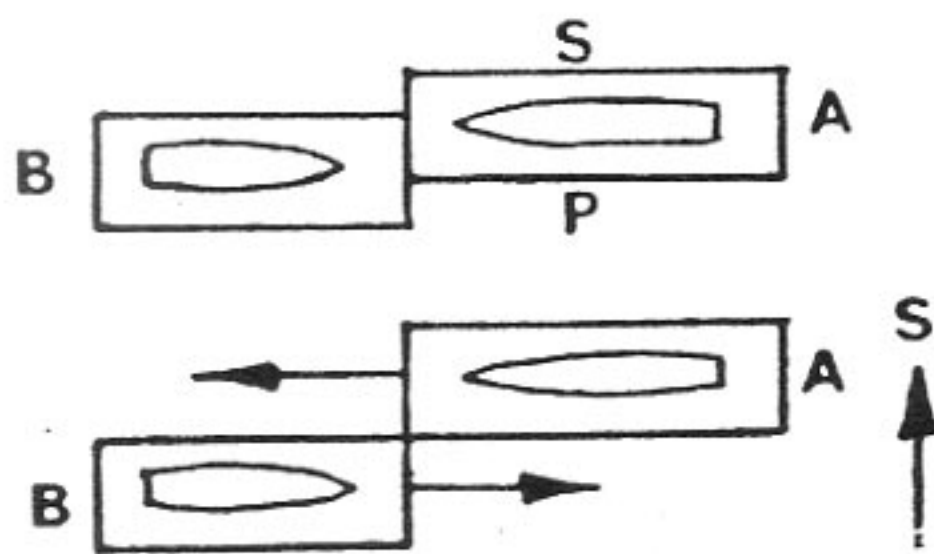
Vessels become locked together with a score of six or more. Vessels becoming locked together must cut loose of each other before they can proceed independently again.

- i) If the angle of approach was within angle 2 and the vessels become locked together they will remain in the same relative position to each other as they were at the time of contact. They will make an appropriate proportion of the collision move as detailed under 5) in movement. If they collide after the half move stage, they repeat half the collision move distance next move. After completing the collision move the vessels will drift as detailed under 4) in the movement section. If the vessels are not locked together they will be 20mm apart at the end of the collision move. They may then increase speed (starting at zero) by the appropriate amount.
- ii) If the angle of approach was outside angle 2 ship A will swing about a point of contact, along the shortest arc, until the two vessels' hulls (bases) are parallel to each other and in contact. If locked together, depending on the score, the vessels will make the appropriate proportion of the collision move as in i) above. They will then drift.

If they are not locked together they will swing together as above and glance past. Glancing past consists of each vessel sailing 60mm or one move, whichever is less, in a straight line after they have swung together. They may then move independently again.

Glancing past effects speed. The maximum possible speed of a vessel is reduced to half of the intended move distance of the move in which the ships ran foul. This limitation applies for the remainder of the move. The ships may increase speed the move after, as normal.

If glancing past after a head-on collision or bow to stern collision, dice to decide which side, ship A will glance past ship B. When bases are used, move the base of ship A until it is corner to corner with ship B, as shown below.



Approx. 1/3rd overlap, therefore dice:-

1, 2, 3, or 4 to starboard

5 or 6 to port

Assume the score is 3.

Move bases as shown and glance past.

**Note:-** No move distance is deducted for swinging ships together or moving bases sideways.

## 2. DAMAGE

In the case where ship B is a vessel under 200 tons or a galley or galleass and ship A is over 499 tons or a galley, ship B may be holed provided the following apply:-

- i) Ship A intended to move at least 80mm this move.
- ii) The angle of approach was within angle 2.

In each case the following test must be taken:-

- 1 Per spot on a normal dice throw.
- +1 Per full 200 tons ship A is heavier than ship B.
- +2 If ship A is a galley.
- +1 If ship A is a galleass.
- +1 If ship A has a 'ram' in its move orders.

The score above zero indicates the number (size) of holes ship A has inflicted on ship B, ie. a score of 2 indicates 2 holes. Holed ships are subject to 'effects of damage' section 7, under the gunnery rules.

When the difference in tonnage is 4 to 1 in favour of ship A, ship B sinks during the collision move no matter what the score. As in all other cases Ship A will complete a collision move.

### 3. OAR RAKE

A vessel is moved in such a way that its base contacts the oars (base) of another vessel. Galleys and Galleasses may attempt to oar rake other oared vessels. If the angle of approach was outside angle 2 and ship A had 'OR' in its move orders, ship B is considered oar raked. In such cases ship B may attempt to become locked together with ship A. Ship A may attempt to avoid becoming locked together. If both vessels had 'OR' in their move orders then no oar rake takes place and on contact the test for becoming locked together by accident is taken.

When an oar rake takes place add together the intended movement of ships A and B. Throw one normal dice:-

$$\text{Oars lost on ship B} = \frac{\text{Dice score} \times \text{Total intended movement}}{50}$$

If the vessels are sailing in the same direction deduct (not add) the move distances.

If an oared vessel is contacted inside angle 2 then throw 2 normal dice to indicate how many oars are lost on ship B. This is always the case, irrespective of orders, provided ship A or B intended to move at least 80mm that move.

### 4. SHIPS IN CONTACT

As long as the hulls (bases) of two ships are in contact, a crew may attempt to grapple the other ship by taking the test for running foul once per move the ships are in contact. If successful the vessels are classed as locked together. The appropriate proportion of the collision move is taken. The speeds and directions taken are those at the time when the test was successful.

The vessels then drift.

#### Cutting Loose

Ships which wish to cut loose must follow the following sequence:-

- i) The ships drift together for one move whilst the entangled rigging is cut away.
- ii) The ships drift for a further two moves if either the bowsprit of one is over the bulwarks of the other or one is a fire ship.
- iii) The ships drift for a further move but are separated by 20mm at the end of this period.
- iv) The ships proceed on their respective courses.

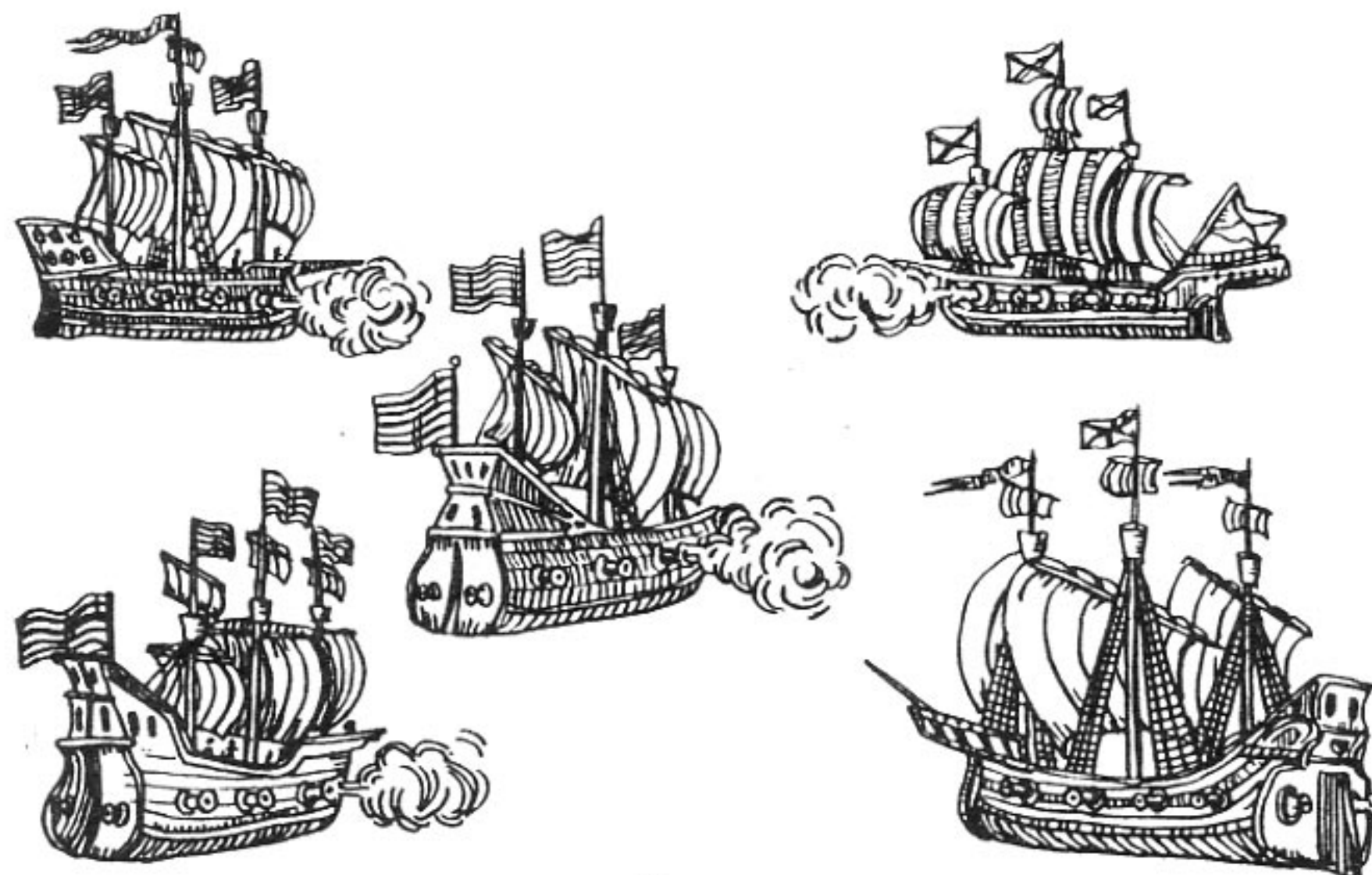
If the crew of one ship wishes to prevent the crew of the other from cutting loose the test under 'Initial Contact in Boarding Actions' must be taken.

### 5. FIRING ON SHIPS IN CONTACT

Passing ships may fire into the hull of a ship in contact with another, from less than medium range, without inflicting any damage or casualties on the other ship.

Ships firing into the hull from a longer range inflict 2/3rds. of the total damage points inflicted on the target ship and 1/3rd. of the damage points on the ship(s) in contact with the target ship provided it (they) are within range and arc of fire.

Ships firing into the rigging inflict the full damage points inflicted on each ship provided the ship is in the arc of fire and within range.



# Boarding Actions

"Full bravely hast thou fleshed thy maiden sword"

Definitions - Crew who attempt to capture an enemy ship by boarding - ATTACKER

Crew who resist an attempt to capture their ship by boarding - DEFENDER

## 1. INITIAL CONTACT

A boarding action can only take place when one ship is moved so that a part of its hull contacts a part of the hull of an enemy ship. Defenders may attempt to cut their ship loose before a boarding action can take place. One attempt can be made per move, provided there are no attackers on the defenders decks. In order to cut loose the defenders must score more than 9 on two normal dice. Ships who succeed in cutting loose must perform the cutting loose sequence starting at point i), the move after the successful dice score is achieved.

The act of boarding from either ship to ship or ship's boat to ship requires one full move.

## 2. FIRING THE MAIN BATTERIES IN A BOARDING ACTION

The main batteries of a ship involved in a boarding action can continue to fire, until the ship is captured, even though a boarding melee is taking place on the upper deck. A ship incurs reductions in fire power as a large proportion of her crew become involved in the melee. To determine the reductions in fire power consult the table below.

Number of English crew or Non English soldiers involved in the melee or killed	Reduction of the fire power of the main batteries
Less than 40% involved in the melee	No reduction
At least 40% involved in the melee	25% reduction
At least 60% involved in the melee	50% reduction
At least 80% involved in the melee	75% reduction
All involved in the melee	100% reduction

## 3. BOARDING AND COUNTER-BOARDING PARTIES

The assembly of boarding and counter-boarding parties must be recorded in a player's ships orders. The player must state how many soldiers and/or mariners he intends to use to make up the party, or as reinforcements to a continued melee. Non English boarding parties or reinforcements must always be in soldiers, where they are available.

## 4. PARTICIPANTS

The following proportions of the crew can take part in a boarding melee:-

### Attacker

i) The attacker may assemble up to 10% of the total surviving mariners plus 10% of the total surviving soldiers on an English ship, or 20% of the crew in mariners of an English ship.

or

ii) 20% of the remaining crew strength in soldiers.

In subsequent rounds an attacker's boarding party may be reinforced by up to 10% of the remaining crew in number. See section 3) earlier.

### Defender

iii) 10% of the total surviving crew of an English ship.

or

iv) 10% of the total surviving crew in soldiers of a non-English ship.

Thus counter-boarding parties of English ships may or may not contain soldiers. A non-English defender will always be all soldiers, unless all the soldiers are accounted for, in which case mariners may be used. In subsequent rounds the defender's counter-boarding party may be reinforced by up to 20% of the remaining crew, subject to the conditions above. ie. Spanish reinforce by 20% of their crew in soldiers.

v) Defenders who have not formed a counter-boarding party may only fight at half the above totals during the first round of melee, but may reinforce following rounds at the normal rate.

vi) The entire crew of a ship's boat may take part in melee.

vii) If more than one ship and/or boat is involved in the boarding action the attackers must combine, where ever possible, to form one boarding party, Where this is not possible the defender may split his counter-boarding party.

viii) The entire prize crew or boarding party of a captured ship may act as defenders and 3/4 as attackers in all rounds of melee.

The captured ship's crew cannot take part.

A counter-boarding party may be assembled under the stern castle and sally forth to repel boarders. they may either:-

i) Sally forth as the ship is being boarded and start the melee at stage 1. in which case both attackers and defenders are subject to small arms and small gun fire.

or

ii) Wait until the attackers reach the defenders' deck and start the melee at stage 2., in which case only the attackers are subject to small arms and small gun fire.

iii) Withdraw from a stage of melee and re-engage at a later stage. Attackers automatically capture undefended stages in this case, however, both sides are subject to small arms and small gun fire.

It requires one full move to reassemble boarding and counter-boarding parties after they have been involved in a melee. When more than two ships are involved in a boarding action, the melee factors are totalled for all the attackers or defenders, only one chance factor being used per side. If both sides intend to board the first round of melee takes place over the bulwarks, both sides counting as attackers in stage 1. In stage 2 the winners of stage 1 are attackers and the losers are defenders.

If a ship wishes to change course after the assembly of its boarding party or counter boarding party, it must either:-

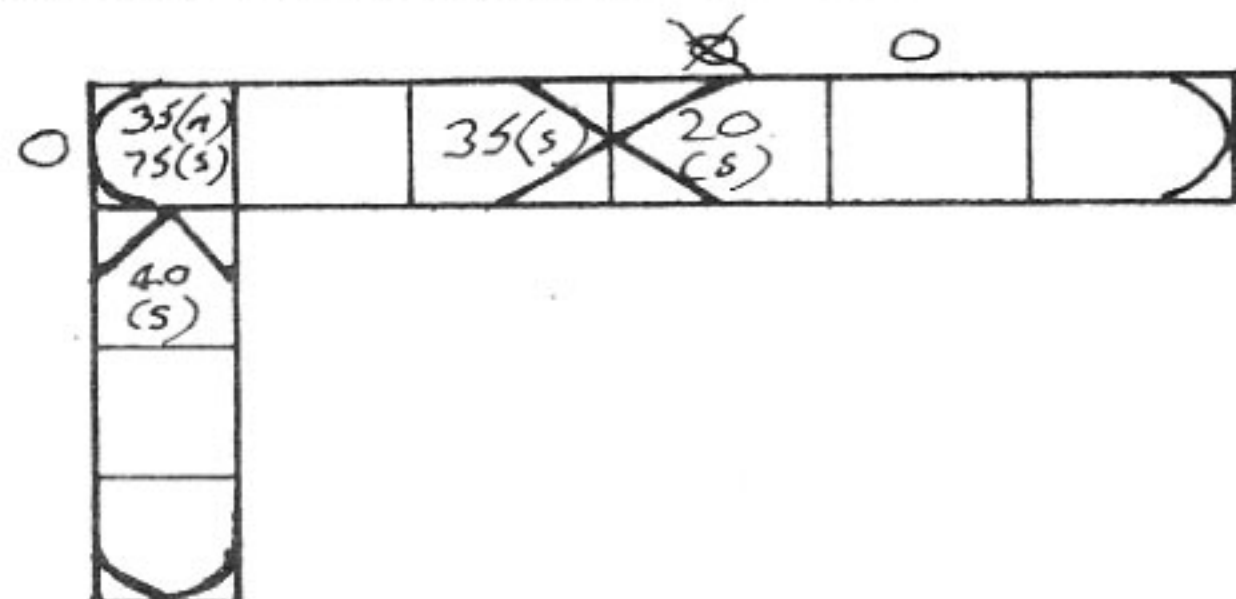
i) Disperse all the mariners in the boarding or counter boarding party.

ii) Use 3/10ths. of its gun crews to man the rigging.

**Note:** After the first round, parties are calculated from survivors of previous melee rounds plus 1/10 (or 1/5) of remaining crew etc.

Where more than one situation applies due to combining boarding or counter boarding parties, the worst case applies to the attackers and the most favourable case applies to the defenders.

It is suggested that a layout similar to the one below be used for multiple boarding actions.



(M) Mariners  
(S) Soldiers  
0 Position of melee

## 5. BOARDING MELEE

To decide the winner of a boarding melee first consult the factors below to establish the basic melee factor (BMF) for the attacker and the defender separately.

- +2 C-in-C or English Sea Dog involved in the melee.
- +1 Any other personality involved in the melee.
- +1 Boarding a ship with a lower freeboard.
- +1 Attacking waist from bow or stern of same vessel.
- 1 Boarding a ship with higher freeboard.
- 1 Attacking the fore castle.
- 2 Attacking the stern castle.
- 1 Attacking the bow or stern from the waist of another ship.
- +2 Boarding a galley that has been struck in the beam by the bow of the attacking ship this move.
- +1 Won the last round of melee fought.
- 1 Lost the round of melee last move.
- +1 Defender in stage 1 of the melee.
- +1 Elite mariners or soldiers involved in the melee.
- +1 Janisarry involved in the melee.

- 2 Raw mariners involved in the melee.
- 2 C-in-C or Sea Dog killed or captured last move.
- 1 Any other personality killed or captured last move.
- +1 Per whole 20 mariners involved in the melee.
- +1 Per whole 15 soldiers involved in the melee.

Add or subtract the relevant factors, then multiply the total by the score of one normal dice (chance dice). This score is the total melee factor.

Where the basic melee factor is zero or less, instead of multiplying the BMF by the dice score, consult the following table. Locate the column for the BMF and cross reference the score on the dice column. This will give the Total Melee Factor.

Basic Melee Factor	Chance Dice Score					
	1	2	3	4	5	6
0	0	1	2	3	4	5
-1	0	1	1	2	3	4
-2	0	0	1	2	3	4
-3	0	0	1	1	2	2
-4	0	0	0	1	2	2
-5	0	0	0	1	1	2
-6	0	0	0	1	1	1

The side with the highest total melee factor is the winner. However, where the total melee factors are the same the side with the highest BMF will be the winner but if both BMF's are the same the result is a draw.

#### 6. CREW CASUALTIES

The loser's crew casualties incurred in a boarding melee are equal to the winners total melee factor score. The winner's crew casualties are equal to half the losers total melee score. Casualties are always removed from the soldiers involved in the melee until there are no soldiers left in the melee. Casualties are then taken from any mariners involved in the melee. Round down half casualties.

#### 7. CASUALTIES ON PERSONALITIES

If a personality is involved in a boarding action and the opponents dice score is a six, when determining the melee result, the personality is deemed to have been killed or captured in the melee. Higher ranking personalities are always removed first when more than one personality is involved on the same side. Only one personality will be removed per dice score of six. On a dice score of 6 your opponent re-throws a second dice, a result of 1 or 2 and the personality is captured, 3 to 6 and he is killed.

#### 8. THE CAPTURE OF AN ENEMY SHIP BY BOARDING

In order to capture an enemy ship an attacker must complete one of the following sequences of action until he wins the final stage of melee or the ship capitulates due to morale.

**Note;** Galleys are assumed to lack a foredeck, thus any reference to a foredeck is for the sake of clarity only, thus a foredeck conveys no advantage in melee.

	Stage 1	Stage 2	Stage 3	Stage 4
i) Sailing ship boarded on the beam*	Board	Capture waist	Capture Forecastle	Capture stern castle
ii) Sailing ship boarded from bow	Board	Capture Forecastle	Capture Waist	Capture stern castle
iii) Galley boarded from bow	Board	Capture Foredeck	Capture Waist	Capture stern castle
iv) Galley boarded from the beam	Board	Capture Waist	Capture Sterncastle	
v) Any ship boarded from the stern	Board	Capture Stern castle	Capture Waist	

\* In the first example only. An attacker may elect to go from stage 2 to stage 4 without attempting to take the enemy forecastle. In this case capture of the enemies stern castle will result in the capture of the ship.

If an attacker wins a round of melee he goes on to the next stage.

If the attacker loses a round of melee he goes back one stage.

If the result is a draw then combat continues at that stage next move.

Defenders may fire from a forecastle or stern castle into enemy boarding parties in the waist of the ship, provided the firers are not themselves engaged in the melee. This applies even if the attackers are engaging the other castle.

A Barbary Corsair may attempt to destroy his own ship (see Morale).

In the boarding sequence a Galleass is always assumed to be a sailing ship and a Pinnace and Caravel are both treated as a galley.

Where a ship is boarded from the bow and stern, follow the relevant sections until both boarding parties meet. Only one chance dice is thrown per side.

## Morale

### "Stiffen the sinews, summon up the blood, disguise fair nature with hard favoured rage"

A vessel's crew will test for morale when the following first applies and each time they are fired upon from less than 300mm range thereafter.

i) 40% of the crew are casualties (2/5th).

A vessel's crew will test for morale when any of the following apply:-

i) Receiving over 30 crew casualties in any one move.

ii) 25% of the crew are casualties and a ship at least equal in size attempts to board.

iii) Suffering 20 damage points in one move without being able to reply.

iv) Retiring to recover morale, retiring from action, and fired upon from less than 300mm range.

v) Ceased fire or fired at reduced effect last move due to morale test.

vi) When a personality originally onboard vessel in question, is killed or captured.

A vessel's crew will test for morale when the following first apply:-

i) 10% of the crew are casualties (1/10th).

ii) 20% of the crew are casualties (1/5th).

iii) 30% of the crew are casualties (3/10th).

### MORALE TEST

Total the following factors and compare with the results of morale test.

**Crew Factors** (only one category can be counted)

Elite mariners or elite soldiers on board	+4	) Use the highest factor only.
Average mariners on board.	+2	

**Manoeuvrability Factor** (only one category can be counted)

All mast sections lost (not vessel under oars)	-2
All oars lost	-2

**Crew Casualty Factor**

Having lost 30 men this move, for each extra 10 casualties -1

**Crew Strength Factors**

Compare the vessel's crew casualties with the following list and read off the relevant factor.

-2	Between 10% and less than 20% are casualties.
-4	Between 20% and less than 30% are casualties.
-5	Between 30% and less than 40% are casualties.
-8	Between 40% and less than 50% are casualties.
-10	Between 50% and less than 60% are casualties.
-14	Between 60% and less than 70% are casualties.
-18	70% or more are casualties.

### Tactical Factors

- 2 Enemy within 100mm and inflicting 30 damage points this move )
- 1 Enemy within 100mm and inflicting 20 damage points this move ) Either
- 1 Enemy within 200mm and inflicting 30 damage points this move ) Or
- 1 Enemy raking from bow or stern
- 1 per move after first(acc.) Enemy ship firing broadside at less than 300mm range from a position where the ship cannot reply with its own broadsides or bow guns for galleys/galleasses.
- 1 Enemy troops on board (not prisoners) per move accumulative(acc.).
- 1 Fighting a boarding action over both beams
- 1 per 5 TDPI Retiring from action and receiving damage points from fire at less than 151mm.
- 1 per 10 TDPI Retiring to recover morale and receiving damage points from fire at less than 151mm range.
- 2 Gun burst this move.
- 1 All soldiers on board have been killed.

### Command Factors

- +2 Ship is in personal command of the C-in-C or English Sea Dog.
- +1 Ship is in personal command of a personality figure (other than above)
- 2 Most senior officer on board killed this move.
- 1 Flagship or own squadron commander's ship retiring.
- 2 Captured flag ship in sight.
- 2 C-in-C or Sea Dog on board killed this move.
- 1 Personality on board killed this move (not C-in-C or Sea Dog)
- 4 C-in-c or Sea Dog on board captured this move.
- 2 Personality on board captured this move (not C-in-C or Sea Dog).

### Chance Factor

- Per spot on a normal dice throw. +1

## Morale Test Result

SITUATION - Fired upon by an enemy vessel within 151mm range this move and not involved in a boarding action or locked together with an enemy ship.

Total	Result
0 and above	Crew morale holds
-1 or -2	All guns fire at half effect next move.
-3	All guns cease fire for one move.
-4	Retire until morale recovered.
-5 or -6	Retire from action.
-7 or less	Retire from action. Surrender if ship is disabled or enemy personality is within 151mm.
SITUATION - Fighting a boarding action or locked together with an enemy ship.	
0 and above	Crew morale holds.
-1, -2 or -3	All guns fire at half effect next move.
-4	All guns cease fire. Attempt to cut loose and retire until morale recovered. Crew can still resist boarders.
-5 or -6	All guns cease fire. Attempt to cut loose and retire from action. Crew can still resist boarders.
-7	Surrender. Personalities surrender to enemy of highest rank present.
SITUATION - All not covered above.	
0 and above	Crew morale holds
-1 or -2	All guns fire at 3/4 effect next move.
-3	All guns fire at half effect next move.
-4	Retire out of range until morale is recovered.
-5 or less	Retire from action.

# Definitions of Morale Test Result

## Retire Until Morale Recovered

The ship must head directly away from the enemy at its best speed. The crew may only return fire, this being at half effect. The ship's crew will test for morale each move until their morale is recovered with a morale factor of 0 or above. Once a crew's morale has recovered, their ship may join the battle again.

## Retire From Action

The ship must head directly away from the nearest enemy at its best speed. The crew cannot fire, and will surrender to any enemy ship that comes within point blank range. Vessels will only yield to vessels of at least 1/3rd. their tonnage under this morale state. A vessel locked together will attempt to cut loose and retire from action. The vessel will surrender to any other vessel that comes within point blank range as above. If more than one enemy vessel comes within point blank range the vessel will surrender to the highest ranking personality.

Should they be required to take any further morale tests, all results which indicate a morale level better than retire from action are ignored, until no enemy ship has been within 300mm and able to fire its broadside on the retiring ship, within the past four moves. In this case, the crew will recover their morale with a morale factor total of 0 or above.

## Guns Cease Fire

Crews may not load or fire batteries as long as this morale state applies.

## Guns Fire at Reduced Effect

This also applies to batteries which fire shot loaded in a move when this morale condition applied, even though they were not fired during that move.

## Notes:-

1. The above restrictions on reduction of firepower apply to small guns as well as battery guns. Small arms can be fired at full effect on enemy boarders even though the guns are fired at reduced effect. For all other targets, small arms effects are reduced as for guns.
2. For morale purposes the forward firing guns on a galley and galleass are treated as main batteries.

# Surrendered Ships and Prizes

Ships which have surrendered drift down wind at the appropriate speed, they must however, slow down at the appropriate rate before they drift.

## 1. REHOISTING THE COLOURS

Ships which have surrendered and not boarded may rehoist their colours if either i) or ii) below applies.

- i) The ship can sail with its original masts, a jury mast or is in tow by a friendly ship. No enemy ship has been within 151mm and able to fire its broadside on the struck ship for the last 6 moves and a friendly ship is within 151mm.

For Christians fighting Moslems and vice versa, the above is reduced to the last 2 moves.

- ii) **Reboarded by Friendly Boarders**

Ships that have been retaken and then rehoisted their colours cannot deliberately take any further part in the battle. On rehoisting their colours they become subject to the retire from action morale result.

## 2 PRIZE CREWS

Ships which have surrendered must be boarded by either a prize crew, consisting of at least 10% of the ship's nominal crew strength, or a boarding party of 5 men or more. A prize crew can sail the prize and fire one battery per 20 men per move. A boarding party can neither sail the prize or fire its batteries.



When a ship surrenders during a boarding melee it requires three further moves for the prize crew to secure the ship, before they can sail her or fire the batteries. The crew of a captured ship may not take part in any boarding melees.

Ships firing into prizes inflict proportional casualties on prize crew/boarders and the captured crew.

### 3. BARBARY CORSAIRS

Barbary Corsairs always attempt to destroy their vessel when subject to a morale result of surrender. The test under 'Fires and Explosions' must be taken. On a score of 9, 10 or 11 only the enemy boarders/prize crew will attempt to put the fire out. The test is taken for every move a surrendered Corsair is not boarded. A Corsair may also take the fire test during stage 3 of a melee onboard his own vessel. Enemy boarders may only attempt to put out any fires that have been started when they have captured the Corsair vessel.

## Greed Test

"Mad in pursuit and in possession so; had having, and in quest to have, extreme;"

1. During this period certain people were noted for their excess of greed and piratical outlook. Therefore, when an English Sea Dog, or a Barbary Corsair come within 200mm of any enemy ship covered by any factors in the greed list, they must take a 'greed test'.

### 2. THE GREED TEST

The Sea Dog or Corsair must take this test separately for each enemy ship within 200mm of him that fulfills any of the conditions of this list.

- +1 Sailing ship with at least three mast sections missing.
- +2 Galley of at least 1/3rd. testers tonnage, with no oars left.
- +2 Any vessel of at least 1/3rd. testers tonnage attempting to retire from action.
- +3 Disabled vessel of at least 1/3rd. testers tonnage.
- +4 Enemy flagship or squadron leader wishing to surrender.
- +3 Enemy ship already engaged in melee with a friendly ship.
- +1 Ship satisfies any of the conditions listed and is a largest ship.

**Note:** These factors are cumulative, ie. ships may fulfill two or more conditions, which must be added together to give the final greed list factor.

Throw one normal dice and deduct the total from the greed list factor. If the result is more than zero the personality concerned is considered to have let his greed overcome him. Note; see section five.

3. In the event of the character failing a test, compare the greed list factor of all enemy ships within range. The ship with the highest total is the character's intended victim (Dice for victim in the event of a tie).

4. From that moment the personality will bend all his efforts to securing the enemy ship for himself and will ignore any Fleet orders or signals from his C-in-C.

If the personality commands a squadron he will take it with him on this enterprise, from which he will not be deflected by any actions by his C-in-C, nor will any other ships he commands. In the event of the death of the rogue, command of any ship(s) under his command at the time of his death will return to the C-in-C.

5. Generally, the wily reprobate will not allow himself to be entrapped by the enemy fleet in his efforts to secure a prize, but there is an exception to this.

If the personality fails a test on the greed list (section 2) with a throw of 1. Throw the normal dice again. If another score of 1 is made then the Sea Dog or Corsair has lost control of himself, with dramatic results:-

- i) The Barbary Corsair will immediately set about boarding the nominated enemy vessel and will continue in his efforts to secure it until he is victorious, killed or captured.
- ii) The Sea Dog will bring his vessel down to close range and engage the enemy in close range gunfire until an adverse morale effect of at least 'fire batteries at 3/4 effect' is obtained on the victim. The Sea Dog must then endeavor to board the enemy vessel as soon as possible at the head of his boarding party. The fight will continue until the enemy ship is taken or the Sea Dog

is killed, whilst this state continues and only the securing of the enemy ship will effect a "cure". Any other ships in the leaders squadron will assist the character, but will not be under the effect of this morale state.

## Shallows ^ Running Aground

Shallow areas are nominated before the game commences and are classed by the largest type of ship which can pass over them without running aground.

### 1. Classification of Shallows

- Class 0 - Above 700 tons.
- Class 1 - 700 tons.
- Class 2 - 500 tons and galleasses under oars.
- Class 3 - 100 tons and galleys
- Class 4 - Small vessel (less than 100 tons)
- Class 5 - Ship's boats.

### 2. Running Aground

Any vessel which sails into shallow areas, which are of a higher class than allowed, is deemed to have run aground. Calculate the initial grounding factor as follows:-

- +1 Per spot of a normal dice throw.
- +1 Per 25mm of intended move distance.
- + Class of shallow area.
- Class of shallowest area vessel can sail over without running aground.
- +6 Gale.
- 2 Sounding.

Any vessel with a grounding factor of less than 5 refloats next move.

Any vessel with a grounding factor over 4 is aground.

Any vessel with a grounding factor over 9 loses her masts, which fall in the direction of the wind.

A 6 thrown on the dice indicates the vessel is wrecked.

The grounding factor must be recorded.

### 3. Vessels Aground

Each move the vessel is aground, the grounding factor is re-calculated as follows:-

- + The grounding factor of last move.
- + The score of a normal dice throw.
- The score of a second normal dice throw.
- +1 If under fire.
- +1 If light wind is blowing vessel on to shallow area.
- +2 If fresh wind is blowing vessel on to shallow area.
- +5 If gale.
- 1 If attempting to tow off with ship's boats.
- 2 If vessel under sail is attempting to tow off (not galley or galleass).
- 1 For each battery jettisoned.
- 3 Galley or Galleass attempting to tow off.

When the grounding factor is reduced to zero the vessel refloats.

When the grounding factor exceeds fifteen the vessel is wrecked.

One battery may be jettisoned into the water in one move, these are lost. One battery per three moves may be jettisoned into or restored from a ship's boat (or other vessel). Ship's boats may carry one battery only. Other vessels cannot carry more batteries than their nominal rating.

### 4. Sounding

Vessels can proceed at 1/3rd. full speed using line and lead to measure the depth (class of shallow) at the end of the move at the vessel's bow.

In weather condition calm, ships may move 20mm per move, in shallow areas, by kedging. This is accomplished by positioning a ship's boat 10mm in front of the ship's bow. The boat drops the kedging anchor over the side and the ship moves as the anchor cable is drawn in on the capstain.

## 5. Estuaries and Rivers

The current of a non tidal navigable river flows towards the sea. The currents of estuaries must be decided before the commencement of the action. They may either flow away from or towards the sea. Vessels sailing against the current proceed at wind on bow speed, no matter what the wind direction. Drifting vessels drift with the current.

## 6. Shaded Areas

When a vessel lies within 100mm of a land mass which consists of large hills or mountains and the land mass is directly interposed between the vessel and the wind direction, the wind force on the vessel will be classed as two Beaufort numbers less than the actual wind force.

## 7. Barriers

Barriers of logs or chains may be stretched across narrow water passages. No vessel may pass through an unbroken barrier. Barriers can be broken by:-

- i) A ship's boat or small vessel stationed at the barrier for three full moves.
- ii) A shore party holding one end of the barrier for two full moves.
- iii) Ramming the barrier.

In order to break a barrier by ramming a vessel must be moving at a speed of at least 50mm per move, when it contacts the barrier. Barriers may be given a defence value of 1 to 5 depending upon the mutual agreement of the players. In order to break a barrier, the vessel's ramming factor plus a normal dice score must exceed the barrier's defence value.

<b>Ramming Factor</b>	Small vessel	-1
	Above 100 tons	0
	Above 499 tons	1
	Above 700 tons	3

Vessels which ram and fail to break a barrier are classed as vessels under sail, sailing into the wind. Galleys and Galleasses always count as over 700 tons when ramming barriers.

# Mooring

In order to anchor or moor, a vessel must progressively reduce its speed by the appropriate slowing down rate until its speed is reduced to zero. A vessel making way after being anchored or moored must progressively increase its speed by the appropriate speeding up rate.

To drop anchor requires one full move.

To raise an anchor requires ten full moves.

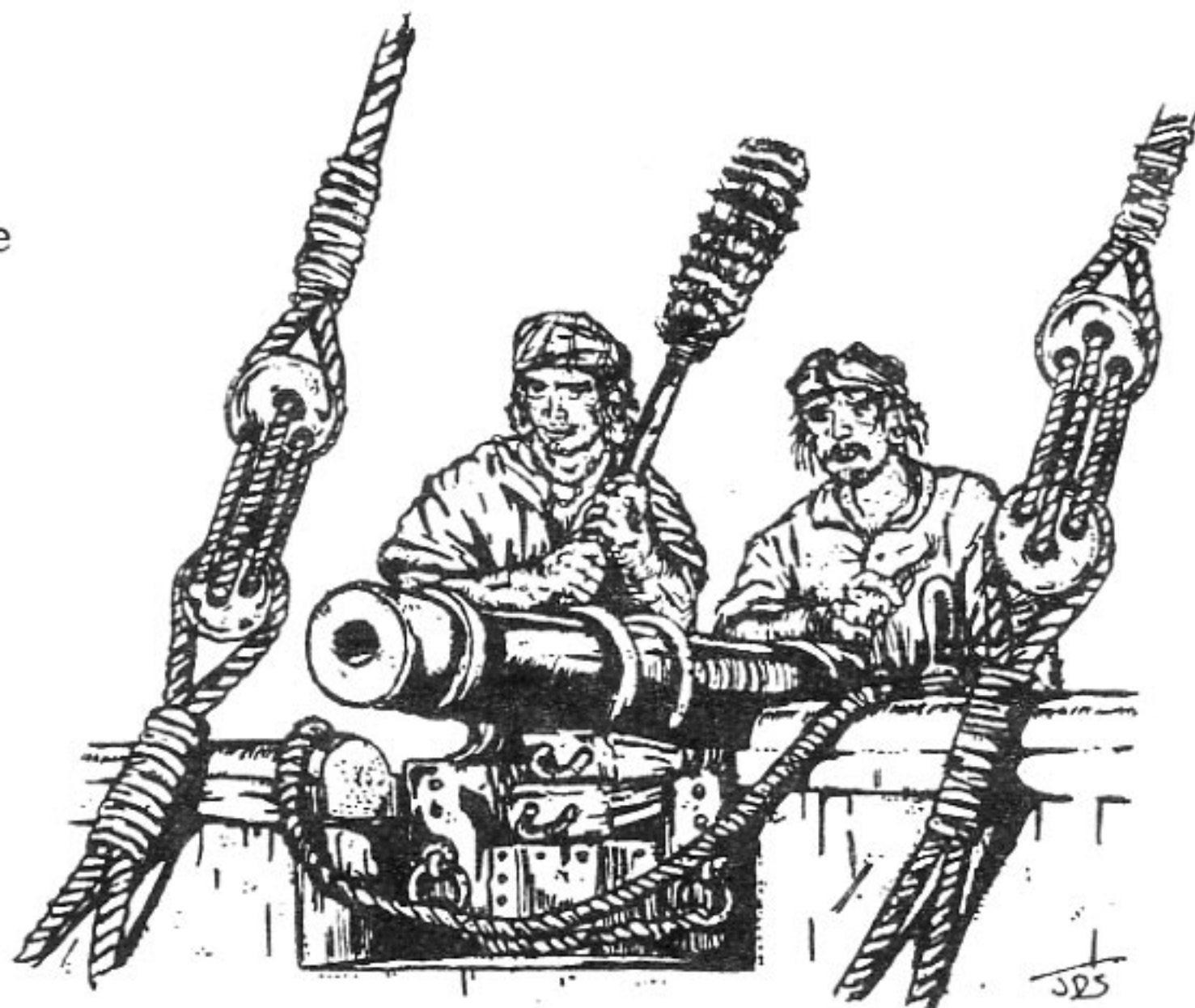
To cut the anchor cable requires one full move.

To moor requires three full moves.

To cast off mooring lines requires one full move.

Vessels anchored by bow or stern or using a sea anchor, swing on their bow or stern 20mm per move, until parallel to the wind direction with the anchored end towards the wind.

Vessels anchored by bow and stern may be turned in their own length by swinging the bow or stern 10mm per move. Vessels riding a sea anchor lay parallel to the wind firection with the wind aft. Vessels cutting their anchor cables will lose their anchors. Vessels may only anchor, with anchors other than sea anchors, in shallow areas.



# Fortifications ~ Shore Batteries

Fortifications and shore batteries can be either: open, earth or stone; placed in any position; equipped with whatever guns; garrisoned by naval or military personnel depending upon the mutual agreement of the players involved.

## 1. Types of Fortifications

- Open - Cover defence value 10
- Earth - Cover defence value 60
- Stone - Cover defence value 100

Guns can be positioned a minimum of 1 millimetre apart.

## 2. Garrison

The garrison must consist of at least ten men per gun plus at least as many troops to guard the fortification. Gunners and troops can be either naval, regular or militia. Separate casualty lists must be kept for gunners and troops, the casualties inflicted always being shared proportionally. Five gunners are required to keep each gun firing at its normal rate. Further losses in gunners increase the loading times by half move/gunner, until all the gunners are casualties, when firing is not possible.

The storming of shore batteries is not covered in these rules.

## 3. Gunnery

### i) Long Guns

$$\text{Gunnery factor} = \frac{\text{total weight of shot}}{\text{number of guns firing}} \times 3$$

ie. A battery of 3 x 32 pounders (Demi-Cannon) would have a gunnery factor of:-

$$\frac{3 \times 32}{3 \times 3} = 10.7$$

$$\text{Total damage points inflicted} = (\text{Gunnery factor} + \text{Tactical factor} + \text{Chance factor}) \times \text{number of guns firing.}$$

Gunnery General, firing at the hull, firing at the rigging, crew casualties etc. are as in the normal gunnery rules.

Overhead Fire, is only permissible if the battery is on higher ground than the masts of any vessel directly interposed between the battery and the target, and the interposed vessel and target are over 100 millimetres apart.

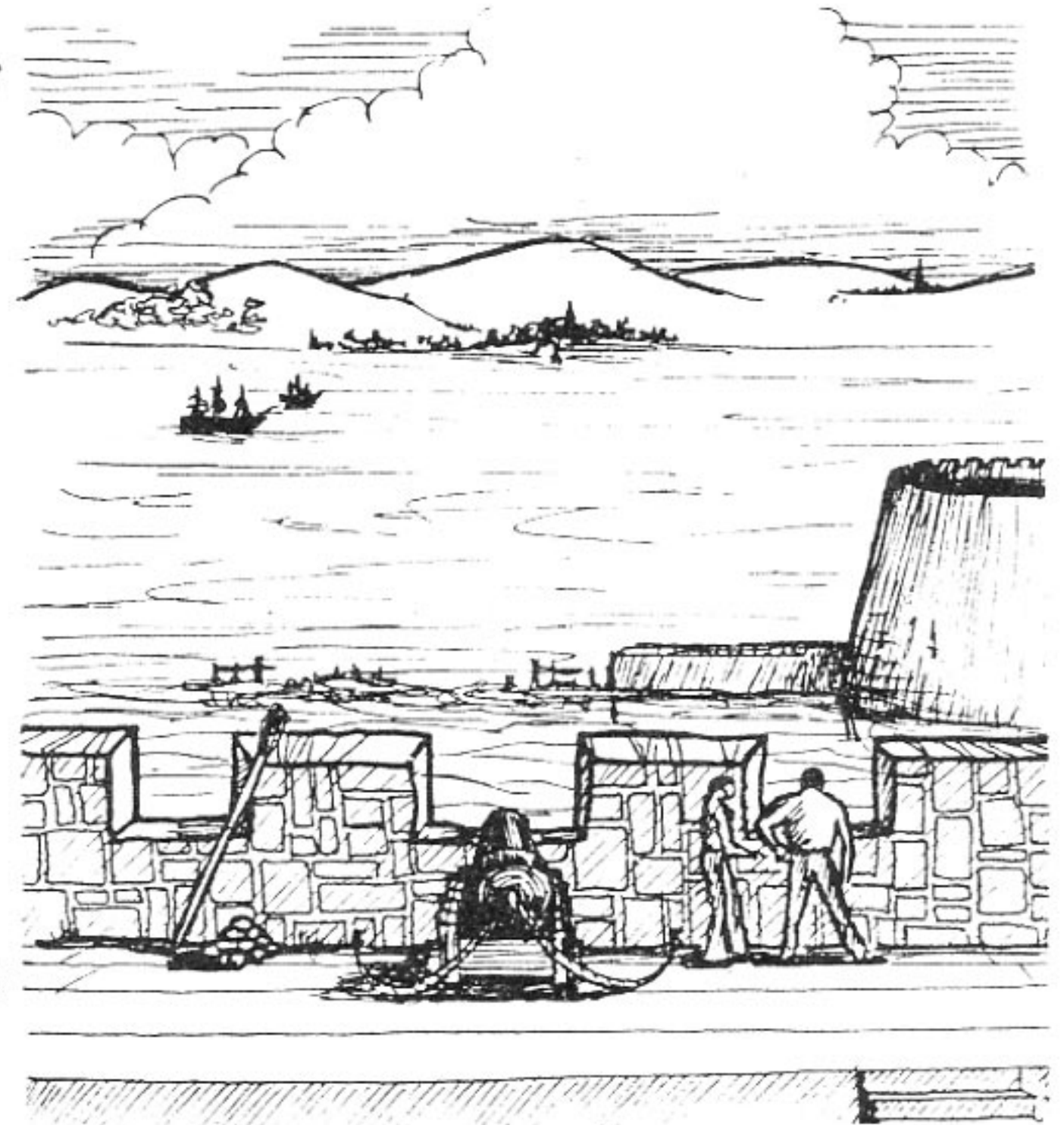
The Permissible Arc of Fire of a shore battery is 30° measured from the centre of the battery.

## 4. Fire on Shore Batteries and Fortifications

Fire on shore batteries and fortifications eliminate fire power, cause casualties and fires. (Damage to masonry is not covered).

### i) Elimination of Fire Power

The number of guns eliminated is equal to the total damage points inflicted on the battery divided by its cover defence value.



ii) Casualties are determined from:-

Total damage points inflicted x 4 divided by the cover defence value.

iii) A chance dice score of 5 and 5, indicates a fire has started in which case the fire test under 'Fires and Explosions' must be taken. Once fire has started the gunners can still serve their guns until two moves after the fire has become out of control.

#### 5. Red Hot Shot

Red hot shot (ball) can only be fired from shore battery guns. It takes ten moves to prepare the shot and two moves to load each shot. Any vessel suffering damage points from red hot shot must take the fire test under 'Fires and Explosions'.

#### 6. Target Priority

Shore batteries have a target priority of any ship which is directly engaging the battery within its arc of fire and range.

## Specified Target System (optional)

For single gun batteries, galleys, bow chasers or gun boats, both players may elect to fire using the specified target system as follows:-

i) Specify the target - A particular mast section.  
or line of flight when raking.  
or the hull.

ii) Damage points are accumulated from one move to the next provided that:-

The gun does not change target.

The target remains within range and angle of fire.

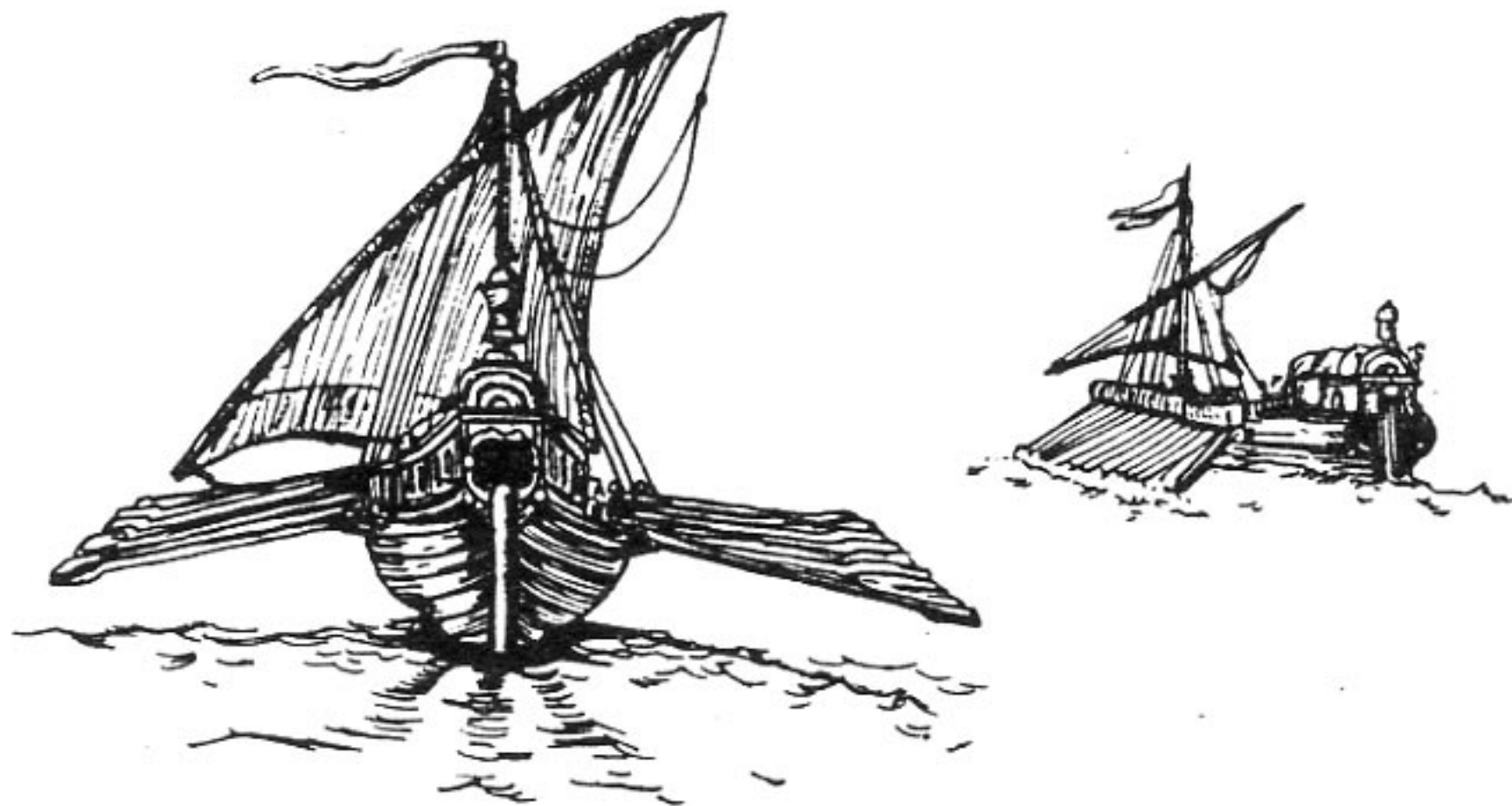
The gunnery factor for the gun is at least 1/14th. of the target's defence value.

The hit or miss test is taken each move. If a hit is scored, the DPI are calculated in the normal manner.

When the accumulated TDPI exceeds the target defence value, and additional hit or miss test is taken. If a hit is scored, the mast section falls or a gun battery is eliminated on the target's hull (depending on specified target). If a miss is scored, crew casualties only are taken. Crew casualties are only calculated using the accumulated TDPI. After the final hit or miss is taken using the TDPI the process may be started again from 0.

This procedure may be used to eliminate any specified target on the mutual agreement of the players.

In the case of a number of small vessels where individual gunnery factor x number of batteries is less than a target vessel's defence values, the TDPI in any one move may be accumulated for all the small vessels. Each vessel's individual TDPI is subject to the hit or miss test before it can be added to the total. The small vessels must fire at the same target. The process starts from 0 each move. This procedure may be used for galleys, particularly for galleys fighting against galleons.



# APPENDIX 1

## Equipment Required

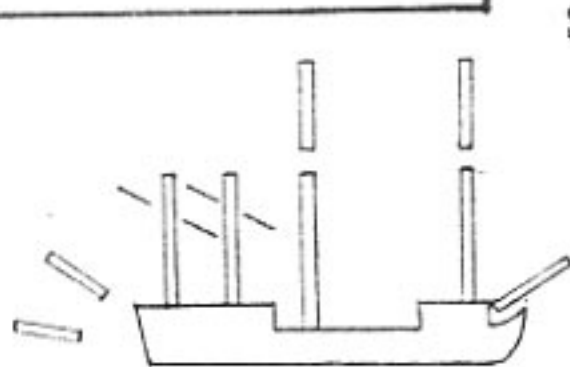
- A tape measure marked in millimetres and capable of measuring up to 1000 millimetres.
- Two normal dice, one plus, one minus. (ie. dice with 1,2,3,4,5,6)
- Damage control sheet as printed below.
- Order pad.
- Turning circles as printed with the rules.
- Wind direction indicator as printed with the rules.
- Model ships.

## Damage Sheet

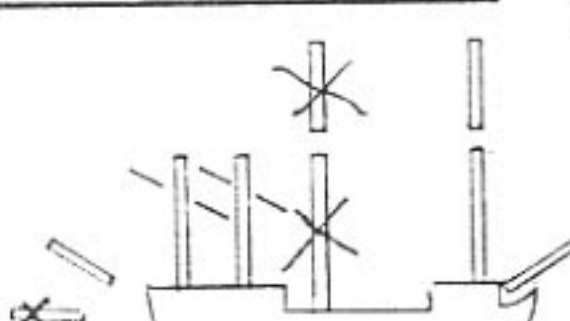
All damage inflicted on a ship must be recorded, as well as:-

- The move in which mast sections were lost.
- The reduction in speed.
- Any fires/move fire becomes out of control.
- Crew casualties (Captain or Personality).
- Move ship runs aground and grounding factor.
- Move ship sinks.
- Any repairs carried out.
- The side any mast sections falls over.

It is suggested the above be represented in diagrammatic form as shown below.

	NAME	P	PORT	1, 2, 3, 4, 5	Small Guns	1, 2, 3, 4
		S	STARBOARD	1, 2, 3, 4, 5	Small Guns	1, 2, 3, 4
	CREW			FIRE	REPAIRS	SPEED
	S	M	T	R	AGROUND	
	50	80	130	0	FACTOR	
					SINKS	

ie. Neptune has lost her main mast in move 7, her rudder in move 12 and 1 starboard and 1 port battery. A jury mast was rigged in move 16.

	NAME	P	PORT	1, 2, 3, 4, <del>X</del>	Small Guns	1, 2, 3, 4
	NEPTUNE	S	STARBOARD	1, 2, 3, 4, <del>X</del>	Small Guns	1, 2, 3, 4
	CREW			FIRE	REPAIRS	SPEED
	S	M	T	R	AGROUND	
	50	80	130	0	FACTOR	
	47	77	124		SINKS	
	40	77	117			
	35	72	107			
						JM-16
						7/10

### MODELS AVAILABLE

All the initial play testing for these rules was carried out at 1/1200 scale. The models used were **Navwar** and **Triton** conversions. However when **Skytrex** produced their Triton 1/600 Armada range the scale was changed accordingly.

1/600 and 1/1200 models available are as follows:-

1/600th. Ships by **SKYTREX**

- |   |                             |                       |
|---|-----------------------------|-----------------------|
| Elizabeth Jones, 900t Race built galleon. | San Salvador, 950t Galleon. | Turkish Medium Galley |
| Revenge, 500t Race built galleon          | Venetian Galleass           |                       |
| Golden Hind, 200t Armed merchant          | Flagship Galley             |                       |
| Achates, Small vessel.                    | Large Galley                |                       |
| San Martin, 1000t Spanish galleon         | Medium Galley               |                       |
| San Christobel, 700t Great Ship.          | Turkish Flagship Galley     |                       |
| San Lorenzo, Galleass.                    | Turkish Large Galley        |                       |

1/1200th. ships by **Navwar**

Bargantina (without sails)

Galleass

Carrack

Small Galley

Large Galley

Lanterna

Galley.

## ***APPENDIX 2***

### TACTICS

For those who are new to this era of Naval Warfare and its attendant problems, a section covering tactics employed by the various fleets has been included in the rules.

No guarantee of success is given however: If a ploy does not work this is often due to the nimble mind, or low cunning, of the enemy C-in-C. Surprise will always be the handmaiden of Victory!

#### **1. ENGLISH FLEETS**

An English flotilla will generally enjoy the advantages of speed, good ship handling, good gunnery and elite crews. This advantage should be used to wear down an opponent using gunfire. An excellent tactical result is where two or more vessels can 'mob' an enemy ship, of particular use in this instance is the 'Follow Me' order, which allows English ships to fire in succession upon one target.

Generally boarding actions should be approached with reluctance, but should not be completely ruled out as an option.

#### **2. SPANISH FLEETS**

In most games the Spaniard will be outclassed in speed and perhaps in longer range gunfire. Every effort should be made by a Spanish Admiral to keep his ships within supporting distance of each other. At close range Spanish broadsides are worthy of respect from any fleet, whilst the high proportion of soldiery carried on most ships make boarding actions an attractive consideration. Indeed, a Spaniard in combat with an English, or other sailing fleet, should strive to carry the enemy by storm as a matter of honour.

#### **3. TURKISH FLEETS**

Galleys are vulnerable, but plentiful. They possess an attractive level of manouvability and a pleasing independence from reliance on the fitful vagaries of the wind. Every effort should be made to protect a fleet's flank, usually by operating in line abreast; but galleys really come into their own if they can isolate an opponent, and gain a position where they can fire on the enemy without his being able to reply, thus incurring dire results on enemy morale. If they are available, Jannaisaries led by an Emir are a formidable proposition in a boarding action, especially if two or more galleys can board at once.

#### **6. KNIGHTS OF ST. JOHN**

Most of the points outlined in the section on Turkish fleets apply here, with the additional advantage of a higher morale level in the fleet. Any morale advantage should be sought, as should any advantage to be gained from greater flexibility.

#### **5. BARBARY CORSAIRS**

Again the comments on the Turkish fleets are applicable, except that the Barbary pirates will tend to have more elite crews. However, this advantage is offset by a lack of Jannaissaries and a surfeit of personalities subject to a 'greed test'.

In addition to the tactical advice given concerning fleets, the authors suggest the use of scenarios to enliven a game. Instead of an allocated points value, have a battle that is weighted towards one side or the other. eg:-

- |                   |   |
|-------------------|---|
| The Bear Pit      | - Several galleys versus one large Spanish Galleon.   |
| Coursing the Bull | - Two of the Queens ships against one of Philips treasure ships.  |
| The Dog Fight     | - Three Turkish galleys in combat with two galleys of the Knights of St.John.                               |
| The Lion & Bull   | - An English Sea Dog on the biggest ship he can get against a Spanish Noble in the best Spain has to offer. |

# APPENDIX 3

## RULES FOR 1/1200 SCALE GAMES

Half all ranges and move distances and base sizes.

A new small diameter turning circle is required of 50mm outside diameter. The original small turning circle becomes the normal turning circle.

With only minor modifications to these rules and 'Action Under Sail' it is possible for Renaissance vessels to jump 220 years to engage Napoleonic vessels. 220 years being a small time difference compared to some other rules.

# APPENDIX 4

## DETERMINATION OF GUNNERY FACTORS AND BASE SIZES

Players wishing to use their own individual ships may work out the gunnery factors for their ships from the following formula:-

$$\text{Gunnery Factor} = \frac{\text{Total Weight of Shot for each type of Gun}}{\text{Number of each type of gun} \times 3}$$

Gun batteries consist of three guns.

eg. LA' CORONADA armed with 2 x 50lb. cannon, 2 x 32lb. Demi-cannon, 4 x 24lb. Perier, 8 x 12lb. Perier and 2 x 9lb. Culverin.

$$\text{Gunnery Factor} = \frac{(2 \times 50) + (2 \times 32) + (4 \times 24) + (8 \times 12) + (2 \times 9)}{(2 + 2 + 4 + 8 + 2) \times 3} = 6.9$$

Base sizes are in proportion to a vessel's size. This also includes the oars for oared vessels.

Base Depth in mm = Length in feet divided by 1.5

Base width in mm = Beam in feet divided by 1.5.

# APPENDIX 5

## SUGGESTED READING

A bibliography of the 'easier to obtain' books read by the author during his research for the rules.

### The Spanish Armada

The Spanish Campaign	J. Tincey
The Spanish Armada	C. Martin
Armada	P. Padfield
Armada	D. Hart-Davis
Armada	National Maritime Museum exhibition catalogue.
From Merciless Invaders	A. McKee
The Campaign of the Spanish Armada	P. Kemp
Armada Guns	M. Lewin
The Spanish Armada	M. Lewin
The Enterprise of England.	(Collected contemporary letters)
The Spanish Armada	Winston Graham
The Defeat of the Spanish Armada	G.H. Mattingly
Letters of the Duke of Medina Sidonia	
Letters of Lord Howard of Effingham	
Miniature Warfare Vol 4 Nos 3, 4 and 6.	

### Other Books

Oared Fighting Ships	R.C. Anderson	Sailing Ship	B. Landstrom
Warfleets of Antiquity	R.B. Nelson	The Ship	B. Landstrom
Sea Battle Games	P. Dunn	The Wooden Fighting Ship	E.E. Archibald.

# APPENDIX 6

## EASY CALCULATOR

For the people who get bored with arithmetic or who are not arithmetically inclined, the following table should be of benefit:

For decimals, eg. 18 at 7.5, work out as -

$$\begin{array}{r} 18 \times 7 = 126 \\ 18 \times 5 = \quad 9 \\ \hline 10 \quad \quad 135 \end{array}$$


**1**

1	2			
2	4	3		
3	6	9	4	
4	8	12	16	5
5	10	15	20	25

6	12	18	24	30
7	14	21	28	35
8	16	24	32	40
9	18	27	36	45
10	20	30	40	50

**6**

36	7			
45	49	8		
48	56	64	9	
54	63	72	81	10
60	70	80	90	100

11	22	33	44	55
12	24	36	48	60
13	26	39	52	65
14	28	42	56	70
15	30	45	60	75

66	77	88	99	110
72	84	96	108	120
78	91	104	117	130
84	98	112	126	140
90	105	120	135	150

**11**

121	12			
132	144	13		
143	156	169	14	
154	168	182	196	15
165	180	195	210	225

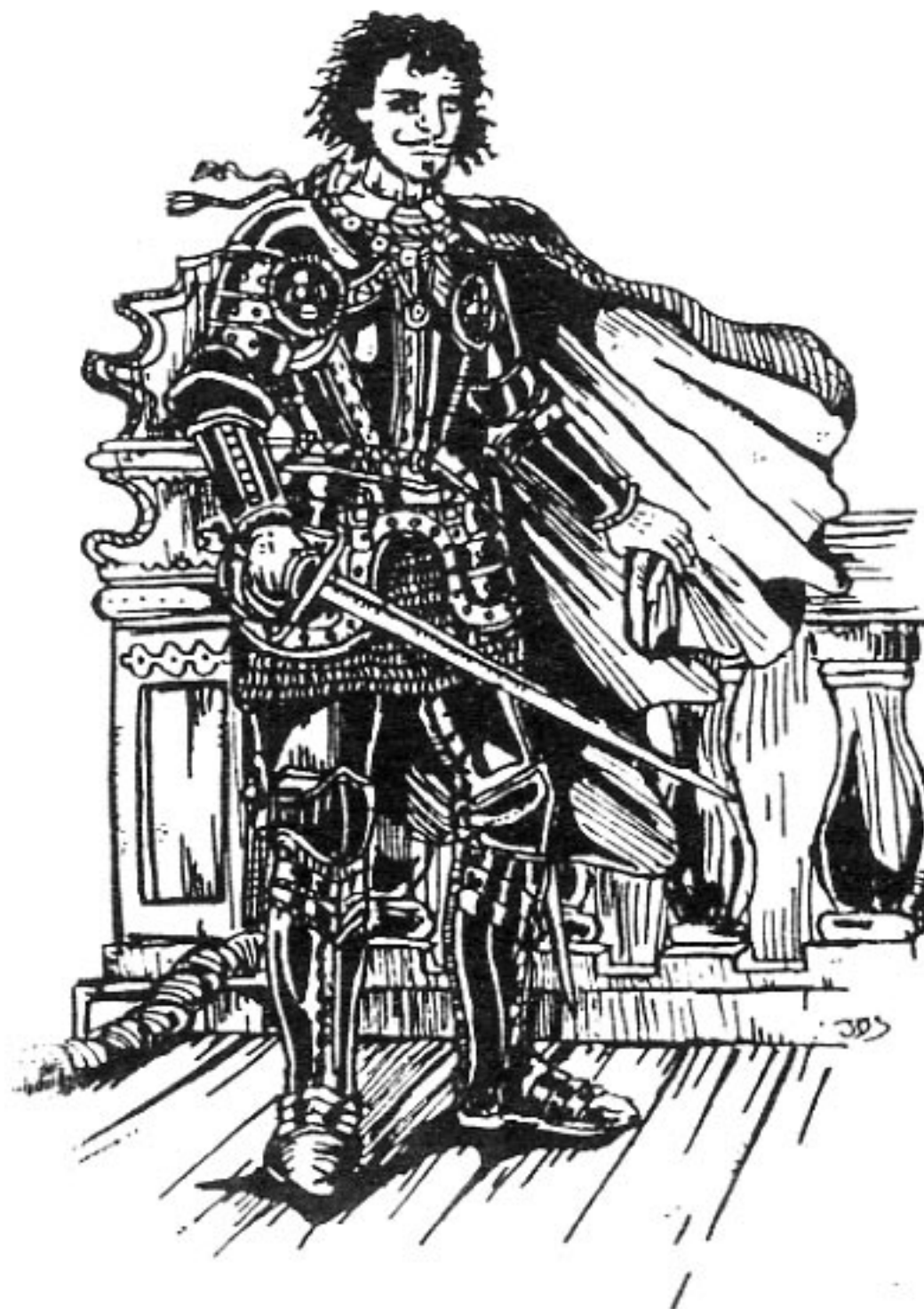
16	32	48	64	80
17	34	51	68	85
18	36	54	72	90
19	38	57	76	95
20	40	60	80	100

96	112	128	144	160
102	119	136	153	170
108	126	144	162	180
114	133	152	171	190
120	140	160	180	200

176	192	208	224	240
187	204	221	238	255
198	216	234	252	270
209	228	247	266	285
220	240	260	280	300

**16**

256	17			
272	289	18		
288	306	324	19	
304	323	342	361	20
320	340	360	380	400



TDPI=(Gunnery Factor + Chance Factor + Tactical Factor) x Number of Batteries.

Point Blank	Close	Medium	Long	Max Effective	Ammunition	Crew Casualties			Rake Angle
0 - 20	21-75	76-150	151-650	651 - 950	Battery Guns - Ball	Ball at the Hull = TDPI/5	Ball at the Rigging = TDPI/20		5°
0 - 20	21-50	51-75	-	-	Batty Guns - Hail Shot	Hail at the Hull = TDPI/2	Hail at the Rigging = TDPI/20		

Gunnery Factors - ENGLISH (B in B = Batteries in Broadside)										
Type of Vessel	Tonnage	B-in-B	Gunnery Factor	Chasers			Small Guns	Hull Def Value		
				Stern/Factor	Bow/Factor					
Race Built Gall.	800	6	6	1	6	1	1	8	30	
Race built Gall.	500	5	5.5	1	4	-	-	4	30	
Race built Gall.	400	4	4	1	4	-	-	4	20	
Race built Gall.	200	3	3	1	3	-	-	4	20	
Galleon	1000	5	7.5	1	6	1	1	4	30	
Armd Merchant	400	4	3	1	3	-	-	4	20	
Armd Merchant	200	3	3	-	-	-	-	2	20	
Armd Merchant	150	2	2	-	-	-	-	2	15	
Pinnacle	50	1	2	-	-	-	-	4	10	

Gunnery Factors - SPANISH										
Portugese Gall.	1000	6	5	1	4	1	1	12	30	
Portugese Gall.	800	6	4	1	4	1	1	12	30	
Portugese Gall.	750	5	5	1	4	-	-	12	30	
Portugese Gall.	350	3	5.5	1	2	-	-	4	20	
Castilian Gall.	530	4	3	1	2	1	2.5	8	30	
Greatship	1000	6	5	1	4	1	2	12	30	
Carrack	820	4	7.5	1	4	1	1	8	30	
Carrack	520	3	5.5	1	2	-	-	8	20	
Hulk	400	3	2	-	-	-	-	2	20	
Pinnacle	150	1	2	-	-	-	-	4	15	
Caravel	70	1	1.5	-	-	-	-	2	10	
Galley	150	-	-	-	-	1	12	4	10	
Galleass	600	3	3	1	7.5	2	9.5	26	20	

Gunnery Factors - MEDITERRANEAN GALLEY WARFARE										
Galleass	700	3	6	1	4	1	16	30	20	
Flagship	180	-	-	1	4	2	8	8	10	
Galley	150	-	-	-	-	1	12	4	10	
Galley	130	-	-	-	-	1	6	4	10	
Merchant	500	-	-	1	4	1	4	4	20	
Corsair	120	-	-	-	-	1	10	4	10	

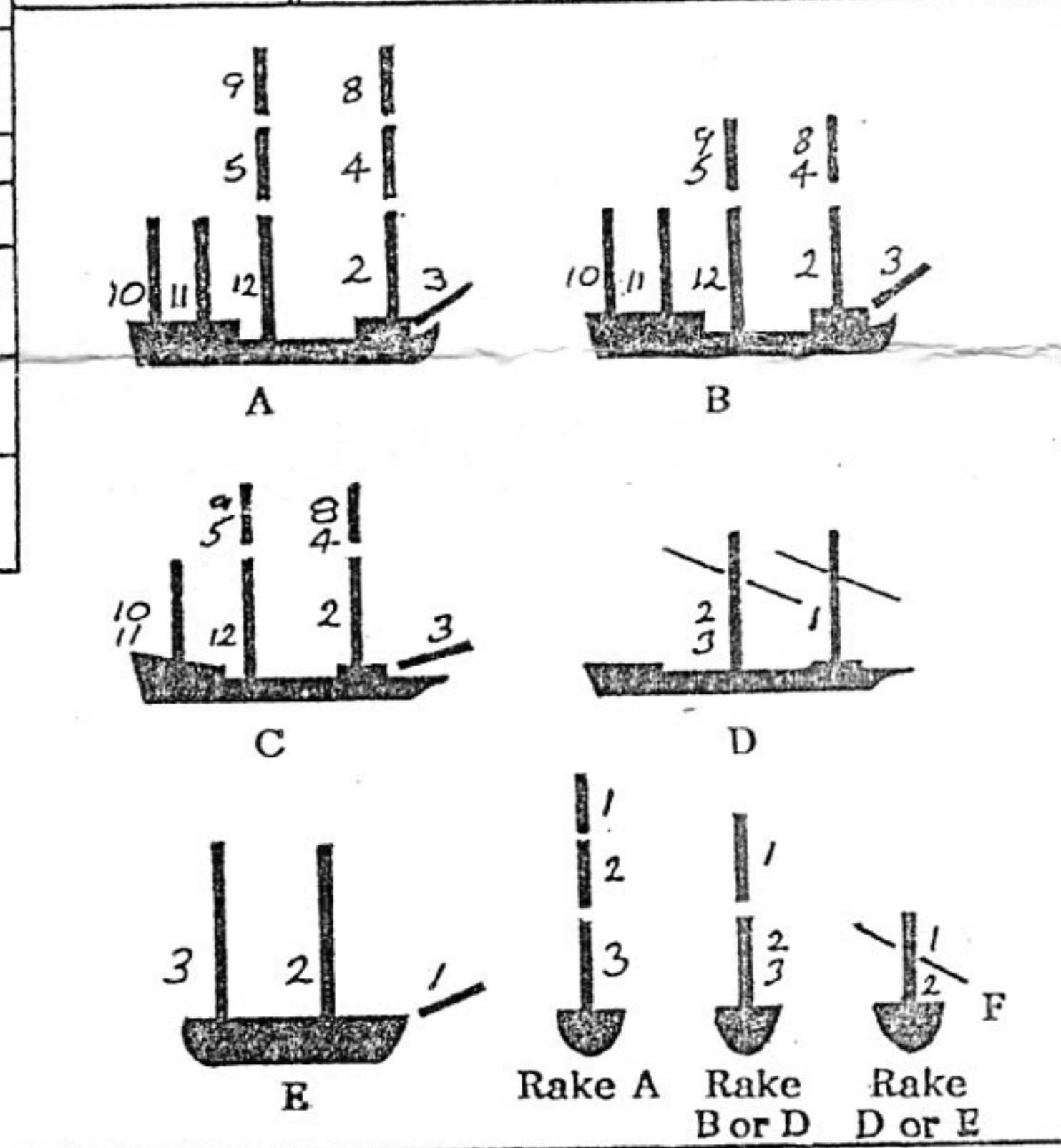
GUNNERY - CHANCE FACTORS										
Range	Point Blank		Close		Medium		Long		Max Effective	
	Dice	Factor	Dice	Factor	Dice	Factor	Dice	Factor	Dice	Factor
Elite	Minus	0	Minus	-1	Minus	-2	Minus	-4	Minus	-5
	Even	+1	Even	0	Even	-1	Even	-4	Even	-5
	+1 to 3	+2								
	+4	+3	Plus	+1	Plus	0	Plus	-3	Plus	-4
+5	+4									
Average	Minus	-1	Minus	-1	Minus	-3	Minus	-5	Minus	-8
	Even	0	Even	-1	Even	-2	Even	-5	Even	-8
	Plus	+1	Plus	0	Plus	0	Plus	-3	Plus	-4
Raw	-5	-5	Minus	-2	Minus	-3	Minus	-5	Minus	-8
	-4	-4								
	-1 to 3	-2	Even	-1	Even	-2	Even	-5	Even	-8
	Even	0								
Plus	+2	Plus	0	Plus	0	Plus	-4	Plus	-5	

GUNNERY TACTICAL FACTORS		
* Stern Rake, less than long range, gunnery factor more than +4 )		+3
* Stern Rake, less than long range, gunnery factor or 4 or less ) All		+2
* Stern Rake more than medium range ) on		+1
* Bow Rake with gunnery factor greater than +4 ) Hull		+1
Rake Rigging from Stern or Bow		+2
Initial Broadside at point blank range		+2
Initial Broadside at close range		+1
Raw initial broadside at less than medium range (If optional loading time used)		+3
Firing hail shot against hull at close range		-1
Firing hail shot against hull at medium range		-2
Firing from fixed position on land		+1
Firing from a fixed position at same target for more than 2 moves (calm sea)		+1
Firing through rigging laid over the side of a ship		-3
Firing the same broadside for more than 2 consecutive moves in clam sea.		-1
Firing in a Gale		-3
Firing at above point blank range in mist		-1
Dismasted vessel firing in wind strength over 2, over point blank range.		-2
Gun burst lastmove/move before last		-2/-1
Firing at more than point blank and moved over 70mm/100mm(accumulative)		-1/-1

Small Guns & Small Arms Fire		
Dice	Small Arms	Small Guns
1	0 casualties	0 casualties
2 to 4	1 Cas. per 20 firing	1 cas/small gun firing.
5 or 6	2 Cas. per 20 firing	2 cas/small gun firing.
6 = Officer hit - throw again, another 6 = senior officer killed. If C-in-C aboard, killed on a 5.		

**Firing On The Rigging**  
 Misses - Shots hit section already shot away:  
 Damage Points available are less than section defence.  
 Damage points remaining not enough to bring section down  
 A miss is scored with a hit or miss test.

Mast Defence Values			
Ship Section	500 tons and over	Over 200 tons (349) and Galleass	Galley and Remainder
Lower	30	25	15
Sprit, Top	20	15	10
Top Gallant	15	15	10
Mizzen	20	15	10



**Effect of Chance Dice (Hull)**  
 Two chance dice added together = Mast hit.  
 Double 1 - Mast hit below deck - TDPI inflicted.  
 More than defence value-Throw one dice:-  
 1 = Mizzen mast falls  
 2 = Bonaventure mizzen falls  
 3 or 4 = Fore mast falls  
 5 or 6 = Main mast falls.  
 Double 2 - Throw 1 dice:-  
 1 = As in 1 above.  
 2 = Bowsprit falls.  
 3 = Rudder destroyed (not in bow rake)  
 4 = Steering Gear destroyed  
 5 or 6 = No effect (Stern rake=Rudder Des.)  
 Double 3 - Gun bursts, eliminate 1 gun on firers ship.  
 Crew cas. = Dices score + Ships Guny Factor  
 Double 4 - Hull holed when firing at close range.  
 Double 5 - Fire has been started.  
 Double 6 - Officer hit - Rethrow dice:-  
 1 to 3 = Captain, 4 or 5 = C-in-C  
 6 = Personality other than C-in-C.

HIT OR MISS TEST	Crew	PB	C	M	L	ME	ARMADA RULES
	Elite	2	3	3	4	5	
	Average	3	3	4	5	6	
	Raw	4	4	4	5	6	

FIRES AND ESPLOSIONS (Score of normal dice throw + or - the following)			
50% of crew are casualties	+1	Entangled with burning ship (accum)	+1
75% of crew are casualties	+1	Ship exploded within 50mm(last move)	+2
50% of batteries destroyed	+2	Barbary Corsair attempting to set fire	+3
Damage from red hot shot	+1	Ship in contact explodes this move	+4
Firing Broadside thru fallen rigging	+2	Fire burning after 2 moves (accum)	+1
		Storm	-3
		Boarders attempt to douse fire on Corsair	-2
		Dismasted, all wreckage cleared	-2
		Up wind, entangled with ship on fire out of control, wind strength 3 or more.	-2

**Results of Fire Test**  
 12 = Fire out of control 11 = Fire still burns - ship slows then drifts. Batteries fire at 1/4 effect.(slowing at normal rates)  
 10 = As for 11 but batteries fire at half effect. 9 = Fire still burns, test again next move. 8 or less = Fire extinguished.

A		C			D			E			F			G			H			I			J			K			L			M			TABLE	
Race built Gall. 500t or less but more than 150 tons		All English Galls. over 500t. English Merchants. Spanish Gall. 600t or less.			Galleon over 600 Spanish tons Greatship in Atlantic			Carrack Hulk			Pinnace. English Gall less than 151t. Small vessel			Galley - Oars and Sail			Galleass - Oars and Sail			Pinnace under oars Small vessel under Oars.			Ships boats under oars			Galleass under oars.			Galley under oars.			Galley under oars.			Ship Type	
L	F	G	L	F	G	L	F	G	L	F	G	L	F	G	L	F	G	L	F	G	C	L	F	C	L	F	C	L	F	C	L	F	WIND STRENGTH	WIND DIRECTION		
60	140	85	50	115	85	40	95	80	40	80	80	70	130	40	100	130	40	80	95	80	50	50	0	70	70	50	70	80	120	110	110	120	100	100	110	Aft
70	180	95	60	150	95	40	120	90	30	90	90	80	160	40	100	160	40	80	120	90	50	50	0	70	70	50	70	70	120	110	110	120	100	100	110	Quarter
35	60	D	25	50	D	10	40	D	5	20	D	40	70	D	90	80	D	60	40	D	50	40	0	70	70	50	70	50	40	110	90	60	100	90	60	Bow

L = Light F = Fresh C = Calm D = drift down wind. G = Gale

**Slow down/Speed up**  
 510 tons and above: 20 50  
 500 tons or less: 40 70  
 151t or less & Galleass: 60 70  
 Galley: 100 80

**Slow D Speed U**  
 90° 120° 270° 360° 360°

**WIND CHANGES**  
 2 to 9: No change  
 10: Clockwise  
 11: Anti-Clock  
 12: Rethrow  
 Every 12 moves

**WEATHER**  
 Storm: 12  
 Mist: 4  
 Clear: 5  
 Every 24 moves.

**Sailing Into The Wind (all cases drift downwind 2 moves)**

Gale	+7	Two normal dice :-
Fresh	+2	1 to 5 Drift two moves
Each lost section	+1	6 to 9 Fore Top & Top Gallant
60° - 45° of wind	-5	10 to 12 Lose all Tops/Top Gallants
45° - 30° of wind	-2	13+ Lose all masts.

**MORALE - Causes**  
 Retiring & fired on within 300mm.  
 40% Casualties on crew. 30 crew casualties in 1 move.  
 25% crew casualties and equal/bigger ship is boarding.  
 20 Damage points and unable to reply.  
 Firing at reduced effect or ceased fire.  
 Personality on board is killed/captured.  
 10% of crew casualties ) Test each time the level is  
 20% of crew casualties ) reached. Once only per level.  
 30% of crew casualties )

**Morale - Factors**

Elite Mariners or Soldiers in crew.	+4
Average Mariners on board (not cumulative)	+2
All mast sections/oars lost	-2
Crew casualties between 10% & 19%	-2
Crew Casualties between 20% & 29%	-4
Crew casualties between 30% & 39%	-5
Crew casualties between 40% & 49%	-8
Crew casualties between 50% & 59%	-10
Crew casualties between 60% & 69%	-14
Crew casualties between 70% & 100%	-18
Lost 30 men this move, for each extra 10 lost	-1
(30 damage points (100mm)	-1
either (20 damage points (100mm)	-2
or (30 damage points (200mm)	-1
Raked from bow or stern	-1
Fired on & not able to reply, after 1st. move.	-1(acc)
Retire from action, per 5TDP (within 151mm)	-1
Retire to recover morale, per 10TDP (within 151mm)	-1
Gun burst this move	-2
Ship commanded by C-in-C or Sea Dog	+2
Ship commanded by other Personality	+1
Most senior officer killed this move.	-2
Flag Ship or own Squadron leader retiring	-1
Captured Flag Ship in sight.	-2

**Boarding Parties (BP) = 10% Mariners + 10% Soldiers, or 20% of Crew survivors in soldiers Counter Boarding Parties (CP) = 10% English Crew or 10% of Crew in soldiers for none English Crew - All crew of ships boats can form a Boarding Party.**

**BOARDING MELEE**  
**Basic Melee Factors (BMF)**

C-in-C or Sea Dog engaged in melee	+2
Other personality engaged in melee	+1
Boarding ship with lower freeboard	+1
Attacking waist from bow or stern	+1
Elite soldiers/Mariners involved	+1
Janissary fighting	+1
Won last round of melee	+1
Per 20 Mariners engaged in melee	+1
Per 15 soldiers engaged in melee	+1
Boarding a Galley which was struck in beam by bow of attacker this move	+2
Own C-in-C/Sea Dog killed/Captured	-2
Other personality killed/captured	-1
Boarding ship with higher freeboard	-1
Attacking a forecastle	-1
Attacking a stern castle	-2
Defender in stage 1	+1
Lost melee last period	-1
Attacking bow from waist(other ship)	-1
Raw Mariners in any party	-2
BMF x Score of 1 normal dice = TMF.	

**Crew Casualties**  
 Losers casualties = Total Melee Factor  
 Winners = half Total Melee Factor.

**Casualties on Personalities**  
 If 6 thrown when finding TMF:-  
 1 or 2 - Personality killed  
 3 to 6 - Personality captured.

**BMF is 0 or less consult following(TMf)**

BMF	Dice Score					
	1	2	3	4	5	6
0	0	1	2	3	4	5
-1	0	1	1	2	3	4
-2	0	0	1	2	2	3
-3	0	0	1	1	2	2
-4	0	0	0	1	2	2
-5	0	0	0	1	1	2
-6	0	0	0	1	1	1

Chart gives TMF. If both TMF are same highest BMF wins. If TMF & BMF are the same it is a draw.  
 Round half casualties down.

**Enemy within 151mm range**

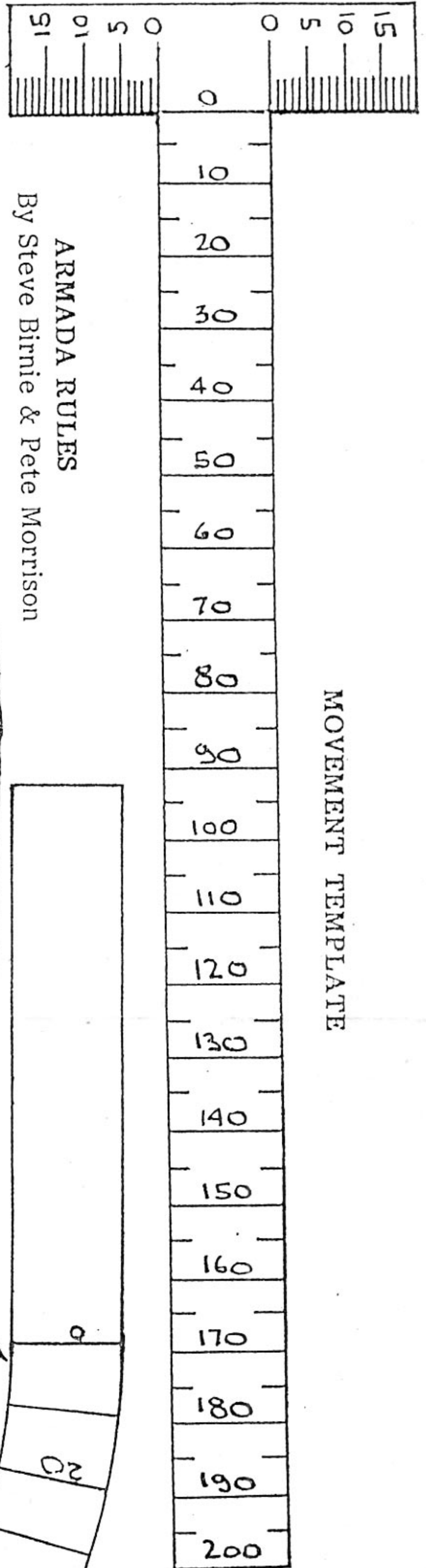
0	Morale holds
-1,-2	Fire at 1/2 effect next move.
-3	Cease fire for 1 move.
-4	Retire to recover morale
-5,-6	Retire from action
-7	Retire from action, Surrender if disabled or enemy personality within 151mm.

**Boarding**

0	Crew morale holds.
-1 to -3	Guns fire at 1/2 effect
-4	Cease fire, cut loose & retire to recover morale.
-5,-6	Cease fire, cut loose & retire from action
-7	Surrender

**Others**

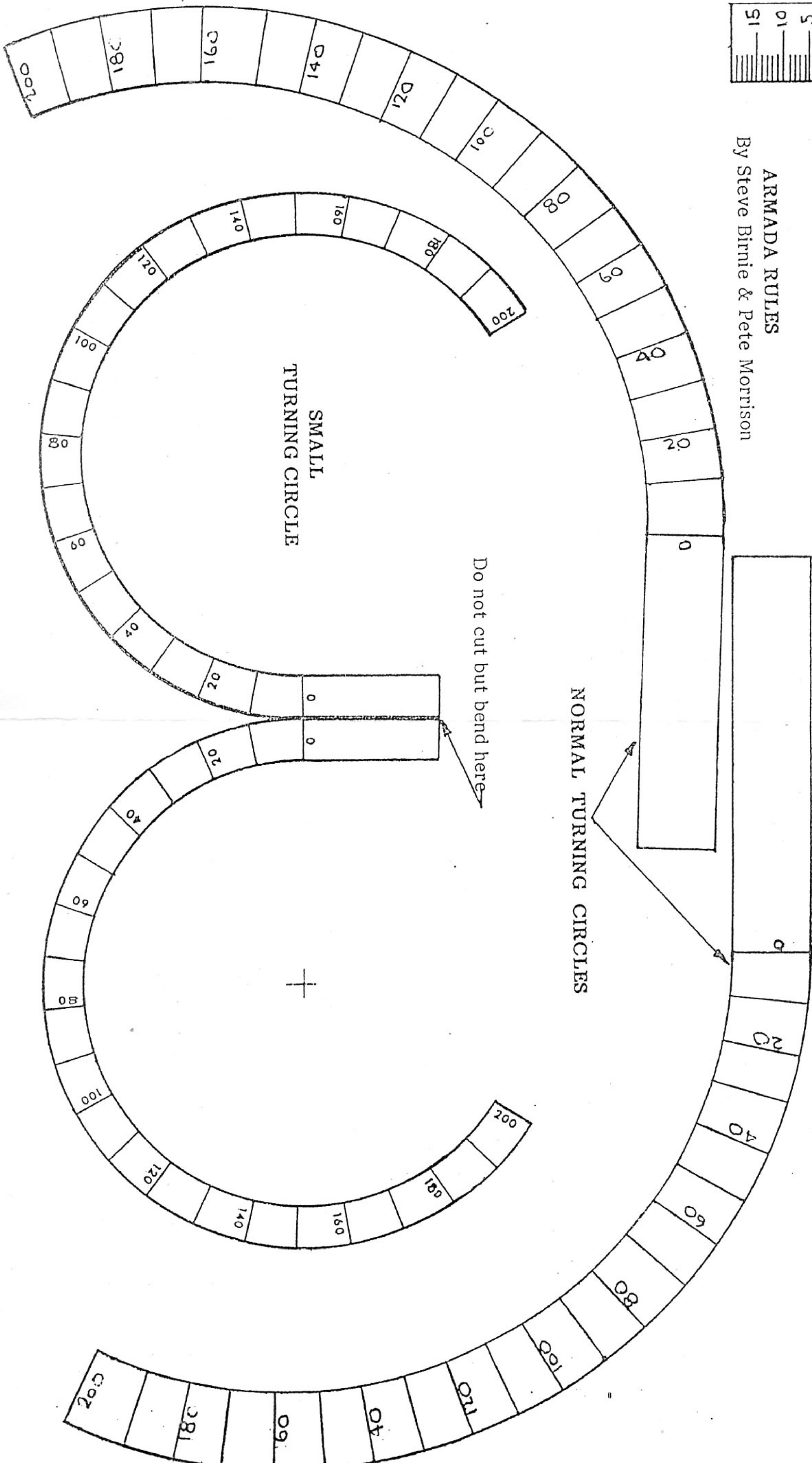
0	Morale holds
-1,-2	Fire at 3/4 effect
-3	Fire at 1/2 effect
-4	Retire out of range until morale recovered
-5 or less	Retire from action



MOVEMENT TEMPLATE

CUT OUT ALL ITEMS ON THIS SHEET AND GLUE TO STIFF CARD. Each pair of turning arcs should be glued to the card when glued to the card.

ARMADA RULES  
By Steve Birnie & Pete Morrison

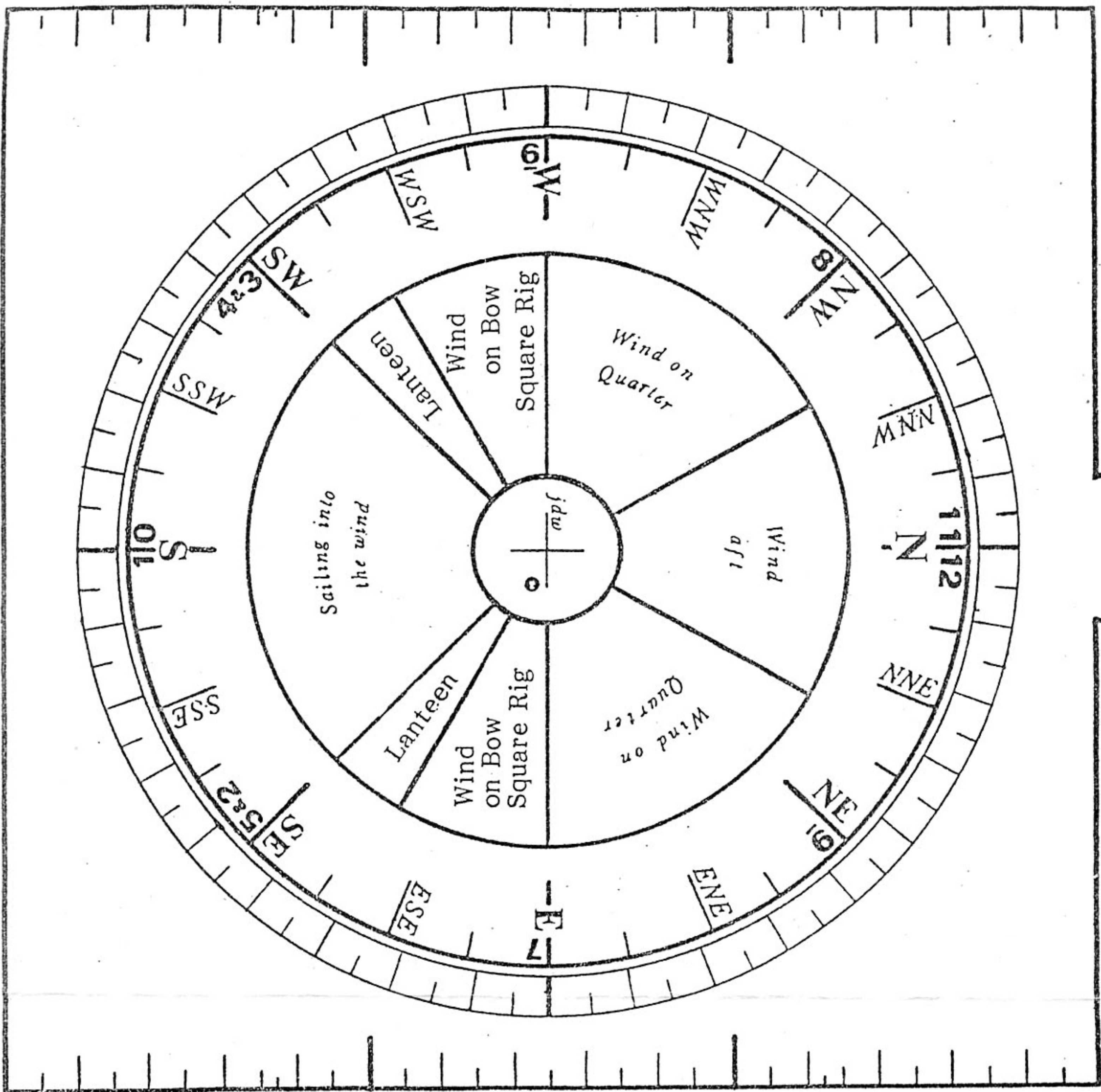


NORMAL TURNING CIRCLES

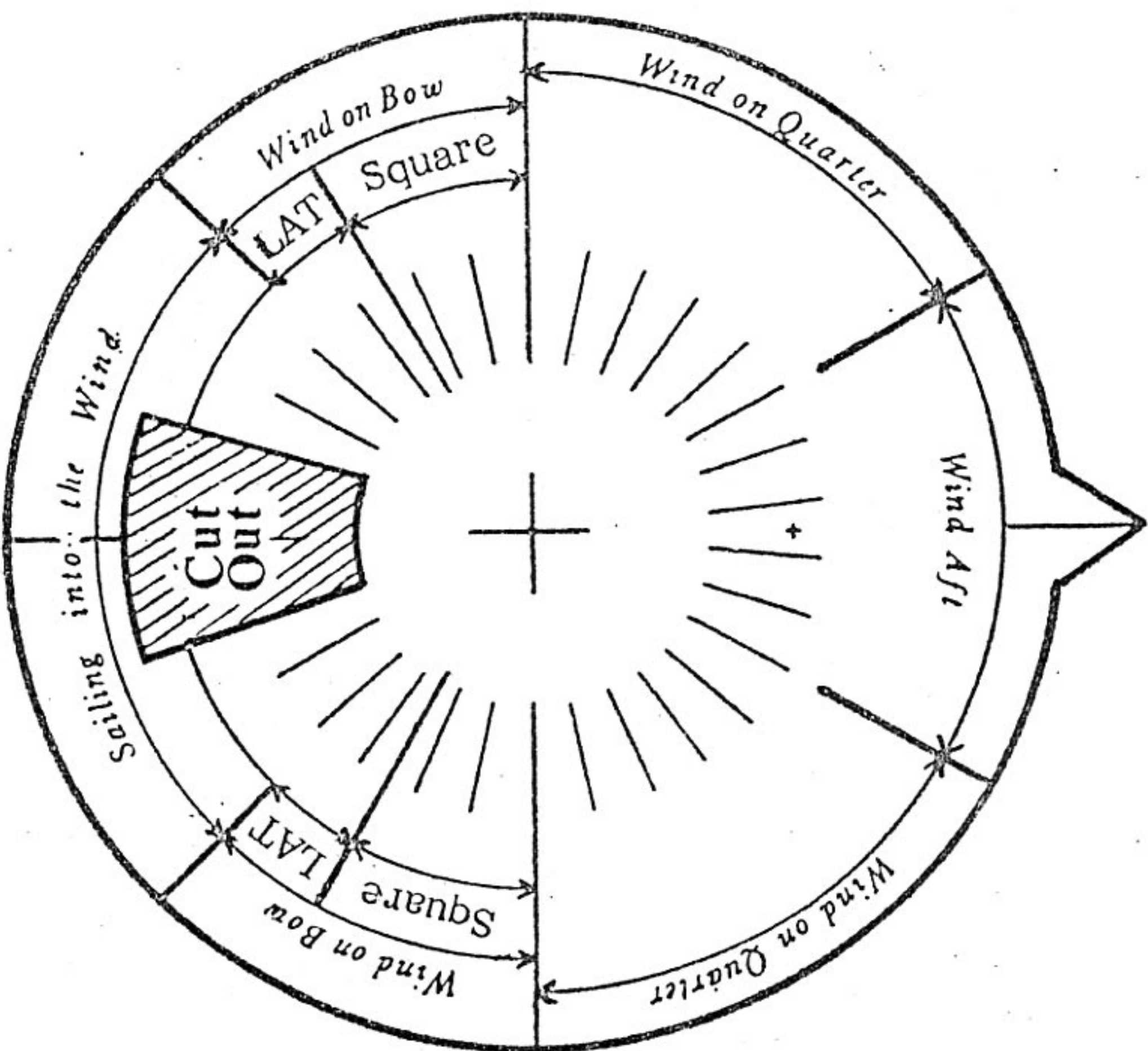
SMALL TURNING CIRCLE

Do not cut but bend here

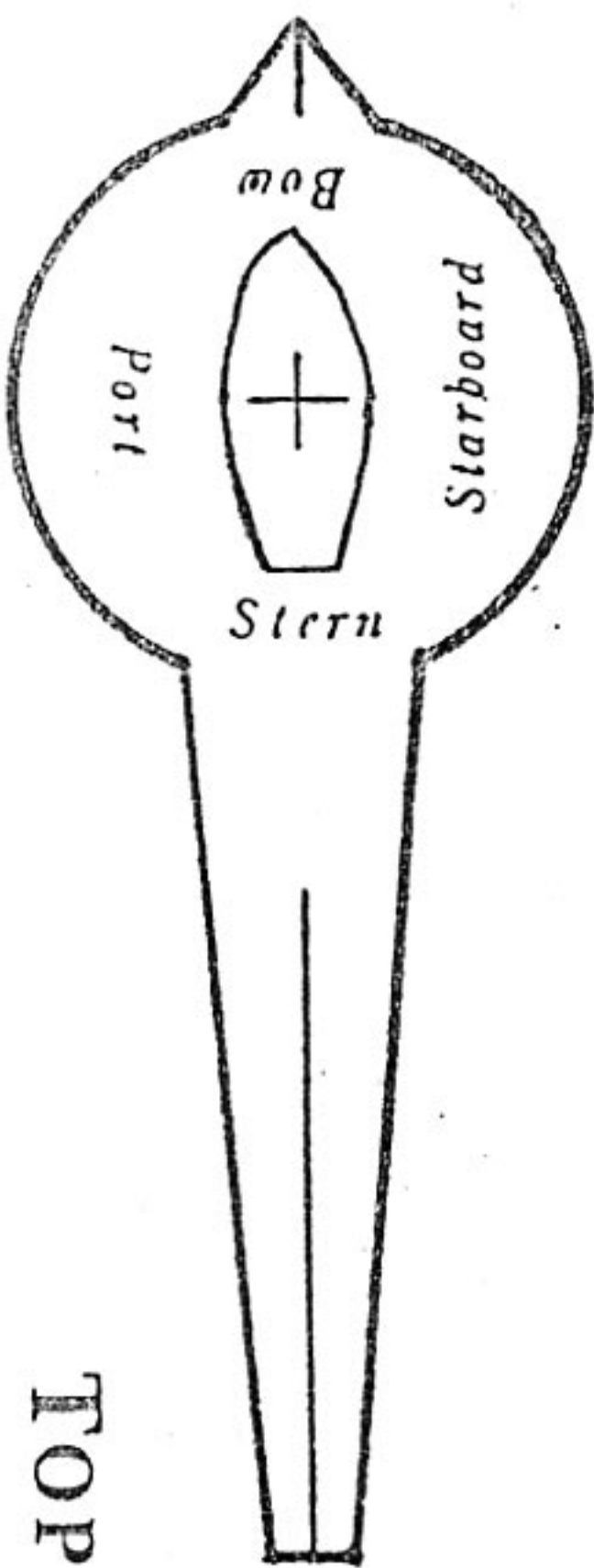
BASE



**DIRECTION INDICATOR & WIND WHEEL.** Cut out and glue to stiff card



CENTER



TOP

A PRODUCT OF  
TABLETOP GAMES  
PRINTED IN ENGLAND

