



# WOODEN SHIPS & IRON MEN<sup>®</sup>

*Game Guide*



# WOODEN SHIPS IRON MEN

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## INTRODUCTION .....

Thank you for purchasing **WOODEN SHIPS & IRON MEN**. Please take a moment to complete and mail the game's registration card to ensure that you will receive timely updates and product information. If you have any problems or questions concerning this or any other Avalon Hill computer game, please use our Technical Support services detailed on the last page of this guide.

**WOODEN SHIPS & IRON MEN** is a strategy game for one or two players. It covers naval combat in the Revolutionary (1775-1783) and Napoleonic (1793-1815) eras when warships were made of wood and the men who fought in them had iron courage. You will command one ship or a squadron of ships in historical engagements or scenarios of your own design. Each game turn represents three minutes of real time.

## PACKAGE CONTENTS

Your **WOODEN SHIPS & IRON MEN** package should contain:

- **WSIM** CD ROM
- **WSIM** Game Guide
- **WSIM** Loading Instructions
- **WSIM** Registration card

## GETTING STARTED .....

To start the game, change to the directory containing **WSIM** and type "WSIM." After the opening credits, press the ESCAPE key and the game will start in the *Captain's Cabin*. For detailed instructions, skip to page 4. Otherwise, read the [Quick Start](#).



## QUICK START .....

In the *Captain's Cabin* (see p. 4), click on the *Scenario* figure to bring up the *Scenario* screen. In the *Scenario* screen (p. 5), double-click on "A Short but Gallant Combat." You will command USS *Wasp* in battle against HMS *Reindeer*.

When the *Battle* screen appears (p. 11), click on the bright button at the lower right corner to toggle between 3-D and 2-D views (p. 14). Choose the view you prefer.

To view all the ships at once, **right-click** on the telescope to get a "bird's-eye view" (p. 11). *Reindeer* is 970 yards southeast of your ship, heading in the same direction you are (northeast). Right-click on the telescope again to go back to a 1:1 view. You cannot issue movement orders while in bird's-eye view.

Click on the stern of the large ship in the *Orders* sidebar (p. 12) to bring up the *Status* screen (p. 18). *Wasp* has 125 crewmen, with 10.4% on sails and 89.6% on guns. She has two masts with nine rigging icons each, six carronades on each broadside, and six hull icons.

Click on the flag in the lower left corner of the *Status* screen (p. 18) to check the status of *Reindeer*. The enemy has the same number of crew (however, you cannot tell where they are assigned), but slightly fewer rigging, carronade and hull icons. Click on EXIT in the lower right corner when you are finished looking at the status.

If you were checking the status of *Reindeer*, she will be selected on the *Battle* screen because she was the last ship you selected in the *Status* screen. You cannot issue orders to the enemy, so **right-click** on the Next Ship button on the *Orders* sidebar (p. 14) to select *Wasp*.

Looking at the *Orders* sidebar (p. 12), you will see that the maximum range of your carronades is 600 yards. Click on the port load box to change its load to doubleshot (p. 16). Doubleshot has a maximum range of 200 yards but is more effective against the enemy. Doubleshot normally takes two turns to load, except you may freely choose your starting load for each broadside. Each broadside will automatically fire when the target ship moves within its Open Fire range and within 45° of your ship's beam.

To issue movement orders to your ship, you must **always** click first on the top spoke of the wheel in the *Orders* sidebar (p. 15). A blue dashed line appears behind the ship showing its course, and a white dashed line appears in front of the ship showing its projected course. After moving ahead a short distance, click on the Starboard Turn spoke to change course 45° to starboard (due east). You might wish to change course again before the end of your move, but avoid turning due south (into the wind) as your ship will then go dead in the water. To change your movement orders, click on the wheel hub (Cancel) or press the ESCAPE key.

After giving orders, click on the saluting sailor button (p. 14) to execute the game turn. Both ships move simultaneously. You may scroll the map by clicking on a compass direction (hold down for continuous scroll) or by moving your cursor to the edge of the screen.

Depending on how *Reindeer* moved, you may or may not have fired a broadside at her. If you fired, be sure to reload your guns (p. 16). Give new movement orders each game turn, or the computer will move you straight ahead.

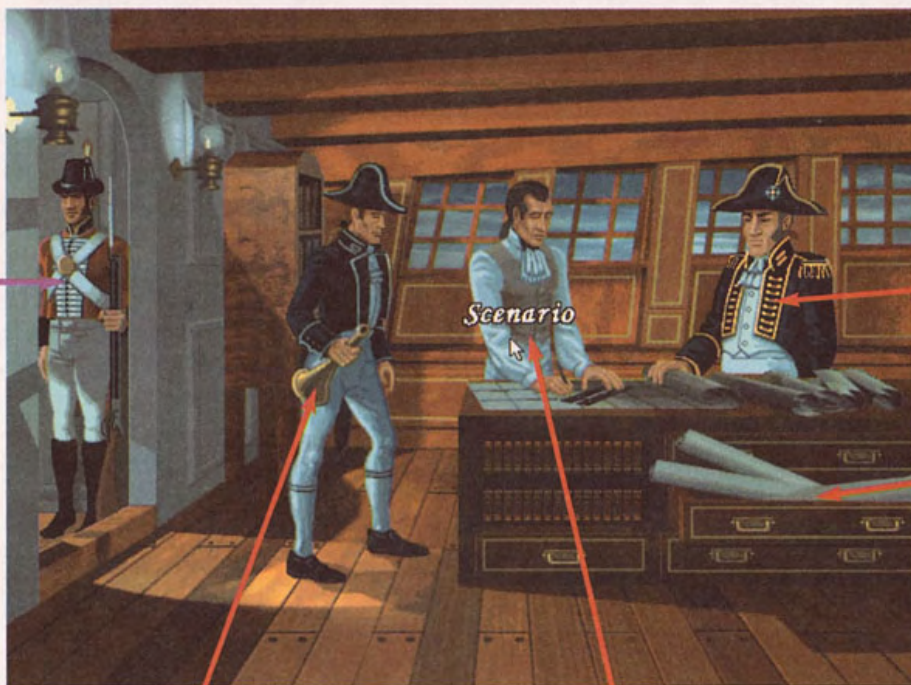
Good luck, Captain!



## CAPTAIN'S CABIN .....

In the *Captain's Cabin*, move the mouse cursor arrow over the four figures and the map drawer to bring up labels for the other game screens.

**DOS Exit:**  
Click on the marine sentry to exit to your operating system.



**E-Mail:**  
Click on the speaking trumpet to get the *E-Mail* screen.

**Scenario:**  
Click on this figure to get the *Scenario* screen.

**Campaign:**  
Click on this figure to get the *Campaign* screen.

**Resume Game:**  
Click on the map drawer to get the *Games in Progress* screen.



## SCENARIO SCREEN .....

From the *Captain's Cabin*, clicking on the Scenario figure brings up the *Scenario* screen.

After selecting a scenario, click on either **flag** to highlight the side you wish to play. Your opponent automatically takes control of the other side.

Click on the desired scenario to **highlight** it or use your ↑ and ↓ keys to move through the list.

There are more than 11 scenarios on the list. To see the others, click on the **arrow** boxes to scroll the list up or down one line at a time.

Click on **Create** to go to the *Scenario Creator* screen for making your own scenarios.



Click here to **edit** the highlighted scenario (the *Scenario Creator* screen will appear).

Click here to **delete** the highlighted scenario (a pop-up window appears allowing you to proceed or cancel).

Click on **Quit** to return to the *Captain's Cabin*.

Click on the type of **opponent** you will play against.









Click here for a pop-up window giving the **historical overview** of the highlighted scenario.

Double click on the scenario name, press the ENTER key or click here to **begin** the highlighted scenario.



## HISTORICAL SCENARIOS .....

Select from eighteen historical scenarios on the *Scenario* screen.

REVOLUTIONARY WAR PERIOD	DATE	# OF SHIPS	NATIONALITIES	DIFFICULTY
John Paul Jones's First Fight: <i>Ranger</i> vs. <i>Drake</i>	May 2, 1778	2 ships	 ↔ 	low
Flamborough Head: "I Have Not Yet Begun to Fight"	Sep. 23, 1779	5 ships	 ↔ 	low
Arbuthnot vs. Des Touches	Mar. 16, 1781	16 ships	 ↔ 	moderate
Action off Cuddalore: Hughes vs. Suffren	July 6, 1782	22 ships	 ↔ 	high






























After highlighting a scenario (in this example, *John Paul Jones's First Fight*), you may click on **Historical Overview** to open the Overview window describing the battle. Left-click on the **arrow** boxes to scroll the Overview text up or down one line. Right click to scroll the text up or down one page.

Click on OK or press the ENTER key to close the Overview window.







NAPOLEONIC PERIOD	DATE	# OF SHIPS	NATIONALITIES	DIFFICULTY
Vive la Nation!: <i>Nymphe</i> vs. <i>Cleopatre</i>	June 17, 1793	2 ships	 ↔ 	low
An Old Well-Practiced Ship: <i>Mars</i> vs. <i>Hercule</i>	Apr. 21, 1798	2 ships	 ↔ 	low
A Disgrace to British Arms: <i>Ambuscade</i> vs. <i>Baionnaise</i>	Dec. 14, 1798	2 ships	 ↔ 	low
Quasi-War: <i>Constellation</i> vs. <i>Insurgente</i>	Feb. 5, 1799	2 ships	 ↔ 	low
Yankee Racehorse: <i>Constellation</i> vs. <i>Vengeance</i>	Feb. 1, 1800	2 ships	 ↔ 	low
Every Man Will Do His Duty: The Battle of Trafalgar	Oct. 21, 1805	23 ships*	 ↔  	high
Duckworth's Triumph: The Battle of Santo Domingo	Feb. 6, 1806	16 ships	 ↔ 	moderate
Hull's Victory: <i>Constitution</i> vs. <i>Guerriere</i>	Aug. 19, 1812	2 ships	 ↔ 	low
Decatur's Triumph: <i>United States</i> vs. <i>Macedonian</i>	Oct. 25, 1812	2 ships	 ↔ 	low
Bainbridge's Conquest: <i>Constitution</i> vs. <i>Java</i>	Dec. 29, 1812	2 ships	 ↔ 	low
Broke's Revenge: <i>Chesapeake</i> vs. <i>Shannon</i>	June 1, 1813	2 ships	 ↔ 	low
We Have Met the Enemy: The Battle of Lake Erie	Sep. 10, 1813	15 ships	 ↔ 	moderate
A Short but Gallant Combat: <i>Wasp</i> vs. <i>Reindeer</i>	June 28, 1814	2 ships	 ↔ 	low
Old Ironsides' Last Fight: <i>Constitution</i> vs. <i>Cyane/Levant</i>	Feb. 20, 1815	3 ships	 ↔ 	low
* Represents half the actual battle. Only Admiral Nelson's column and the French and Spanish ships it engaged are included.				



## PLAY BY E-MAIL .....

Consult with your opponent and select a scenario. Choose sides and decide who will initiate the game. The initiating player should select *E-Mail Opponent* on the *Scenario* screen and begin the scenario normally.

When the initiating player finishes his battle orders and ends his turn, a pop-up window appears to save the game. He should name the file and press the ENTER key or click on OK.

At that point, the program automatically returns the player to the *Captain's Cabin*. He should click on the speaking trumpet to bring up the *E-Mail* screen if sending the game by direct modem connection to his opponent.

**TO SEND A GAME BY DIRECT CONNECTION:**

1. Select your Baud Rate (red indicates selection).
2. Select your Com Port (red indicates selection).
3. Enter the phone number of your opponent.
4. Click on *Send* (it will turn red).
5. Highlight the scenario you will send.
6. Click on *Connect*.

Alternatively, you may send a game file in your directory through an on-line service such as CompuServe, America Online, GEnie, etc. or a Bulletin Board System, or by a UUE encoded message on the Internet.

**Sequence:** You should use the following sequence when playing by e-mail:

1. First player gives orders for Turn 1, then **sends** file.
2. Second player **receives** file, gives orders for Turn 1 and observes results of Turn 1.
3. Second player gives orders for Turn 2, then **sends** file.
4. First player **receives** file and observes results of Turn 1.
5. First player gives orders for Turn 2 and observes results of Turn 2.
6. First player gives orders for Turn 3, then **sends** file.

**Repeat steps 4-6 as necessary for each player.**

**TO RECEIVE A GAME BY DIRECT CONNECTION:**

1. Select your Baud Rate (red indicates selection).
2. Select your Com Port (red indicates selection).
3. Click on *Receive* (it will turn red) and wait.

After receiving the game, quit the *E-Mail* screen to go to the *Captain's Cabin* and click on the Resume Game map drawer.





The screenshot shows a game interface with a parchment scroll on the left and a background image of a ship on the right. The scroll contains the following text:

**E-Mail**

**Initialize Modem**  
ATQ0V1E1S0=1

**Baud Rate**  
1200 2400 4800 **9600** 14.4

**Com Port**  
**One** Two Three

**Phone**  
[Text Input Field]

**Mode**  
**Send** Receive

Connect Quit

**In Progress:**  
**Bainbridge's Conquest**

**Scroll**

Arrows point from the following text to the corresponding elements in the interface:

- Initialize your modem. → **Initialize Modem**
- Click on your Baud Rate. → **9600**
- Click on your Com Port. → **One**
- When sending (only), click here and enter your opponent's phone number. → **Phone**
- Click on your current mode (sending or receiving). → **Send**
- Click on the desired scenario to **highlight** it, or use your ↑ and ↓ keys to move through the list. → **Bainbridge's Conquest**
- If there are more than 11 games in progress, you can click on the **arrow** boxes to scroll the list up or down. → **Scroll**
- Click here to **connect** as your final step in sending a game. → **Connect**
- Click on **Quit** to return to the Captain's Cabin. → **Quit**



## GAMES IN PROGRESS .....

From the *Captain's Cabin*, clicking on the Resume Game map drawer brings up the *Games in Progress* screen.

The *Games in Progress* screen does not list saved campaign games. You must go to the *Campaign* screen to resume a campaign game.

Click on the desired game to *highlight* it or use your ↑ and ↓ keys to move through the list.

If there are more than 11 games in progress, you can left-click on the **arrow** boxes to scroll the list up or down one line at a time. Right click to scroll the list up or down four lines at a time.



Click here to *delete* the highlighted game (a pop-up window appears allowing you to proceed or cancel).

Click here or press the ENTER key to *resume* the highlighted game.

Click on *Quit* to return to the *Captain's Cabin*.

Click here to show the list of *saved* face-to-face and computer-opponent games.

Click here to show the list of saved *e-mail* games.





### BATTLE SCREEN .....

Scenarios are played on the *Battle* screen. Each time you begin a new scenario (or accept battle in the campaign) the *Battle* screen appears. Battles are fought in turns. Turns represent three minutes of real time. After both sides give orders to their ships, movement and combat is resolved simultaneously.

**Scrolling:** You can scroll the game map by moving your cursor to the edge of the screen in the direction you wish to scroll (there is a one-second delay). Hold down the right mouse button for faster scrolling. You can also scroll by left-clicking on any of the eight compass points on the compass display. Right-click for faster scrolling.

If no ships appear on the map screen, white arrows will be displayed near the compass. Click on an arrow to center the map on the nearest ship in that direction.

Orders sidebar of selected ship.

100-yard grid with 25-yard subgrid

#### Selecting a Ship:

To issue orders to a ship, you must select it. Move your cursor over the ship until the cursor changes from an arrow to a ship icon, then click. The ship's name and three concentric rings will appear around the selected ship. **Blue** rings indicate the ship belongs to the First Side. **Red** rings indicate the ship belongs to the Second Side.



Each ship points in one of eight compass directions. (E.g.: *Wasp* is heading northeast.)

The ship icon inside the compass display shows the heading of the selected ship. Click on this icon to center the map view on the selected ship.

The pointer on the compass ring indicates the current wind direction. Wind direction may change during a battle.

Left-click on the large end of the telescope to zoom in. Left-click on the small end to zoom out. Views range from 4:1 to 1:4.

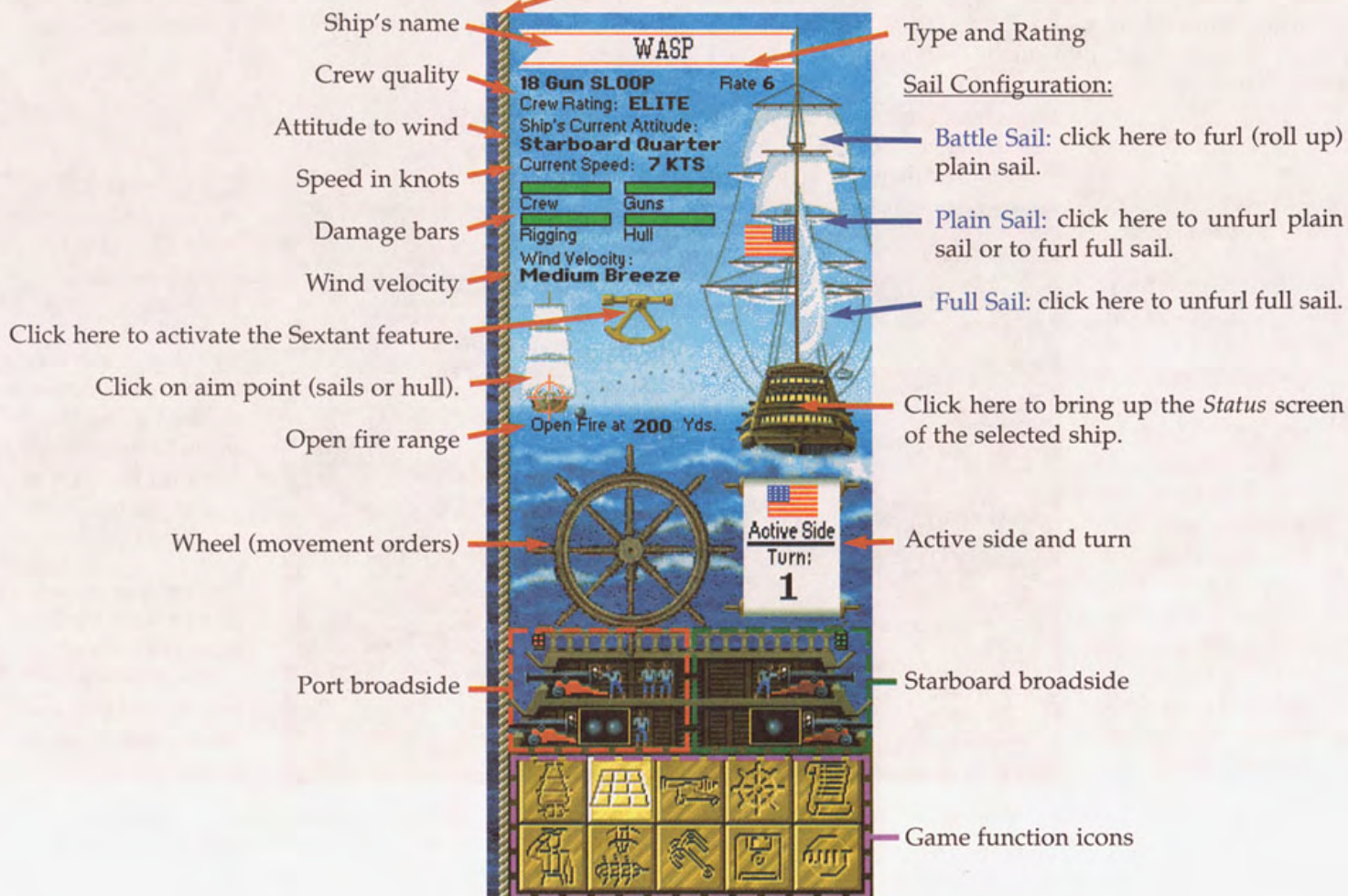
Right-click on the telescope to toggle to/from a "bird's-eye" view that zooms out to show all of the ships in play.



## ORDERS SIDEBAR .....

The *Orders* sidebar is part of the *Battle* screen and provides information about the selected ship.

Click anywhere on the rope to “hide” the *Orders* sidebar in the top right corner of the *Battle* screen. To make the *Orders* sidebar reappear, press the TAB key or click on the top right corner icon.







**Ship Rating:** The conventional means of categorizing men-of-war during the age of sail was by "rate." Rate classifications ranged from 1 (largest) to 6 (smallest). For game purposes we have created a 7th Rate ship category for ships smaller than sloops.

<u>RATE</u>	<u>GUNS</u>	<u>TYPE</u>
1st	100+	SOL (ship-of-the-line)
2nd	90-99	SOL
3rd	64-89	SOL
4th	45-63	SOL
5th	30-44	frigate
6th	15-29	small frigate, sloop, brig
7th	0-14	smallest ships

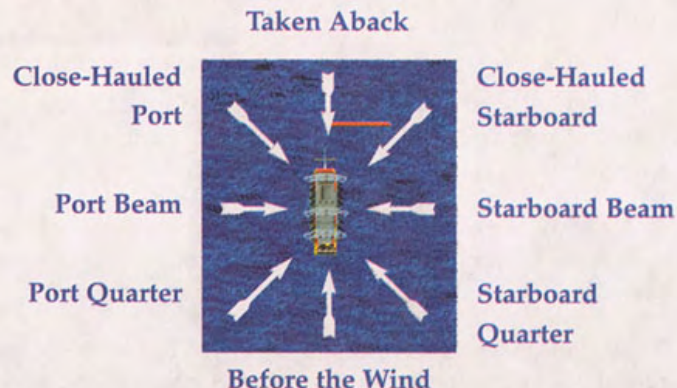
The larger the ship, the wider its turning radius in the game. For example, a 4th Rate ship makes wider turns than a 5th Rate ship.

**Crew Rating:** The quality of a ship's crew affects its performance in gunfire and melee. The possible crew ratings are Elite (best), Crack, Average, Green or Poor (worst). Your crew rating may fall during battle as the ship's officers are killed.

**Damage Bars:** The damage bars indicate the percent of damage in four areas. Each ship begins the scenario with green bars at 100% value. As a ship takes damage, the bars shorten and change color to yellow (warning) or red (critical). For example, if a ship loses 33% of its crew, the Crew bar will drop to 67% of its original length and turn to yellow. See also the damage icons on the *Status* screen.

**Speed:** Each ship in the game is assigned one of four speed categories: VF (very fast), F (fast), S (slow) and VS (very slow).

**Ship's Attitude to Wind:** The attitude of the ship relative to the wind's direction determines how fast the ship can sail given its speed category (VF, F, S, VS). There are eight possible attitudes to the wind:



**Port or Starboard Quarter:** This is the fastest attitude, with the sails catching the maximum amount of wind.

**Before the Wind:** This is the next fastest attitude. The windward sails block some of the wind from the leeward sails.

**Port or Starboard Beam:** This attitude is slower than Before the Wind but easily twice as fast as Close-Hauled.

**Close-Hauled, Port or Starboard:** This is the slowest attitude that still allows forward movement.

**Taken Aback:** The ship loses all headway (zero knots). However, the ship will drift, and eventually the wind will push its bow one way or the other so that its attitude will change to close-hauled.



## GAME FUNCTION ICONS .....

The icons at the bottom of the *Orders* sidebar control various game functions. Depending on the function, some icons will flash brightly when selected and others will stay bright to indicate the current state.



**1. Select Next Ship:** Left-click here to select the next ship (or press ALT-N). Right-click to change from one side's ships to the other's (or press ALT-P).

**2. Game View:** Clicking here toggles between a 3-D isometric view and a 2-D overhead view of the play area (or press ALT-D).

**3. Computer Controls Gunnery:** When this icon is bright, the computer will control the gunnery of the selected friendly ship. Click on it or press ALT-C to change.

**4. Computer Controls Movement:** When this icon is bright, the computer will control the movement of the selected friendly ship. Click or press ALT-M to change.

**5. Options:** Clicking here brings up an options window (or press ALT-O). Options include toggling the grid on/off, sound and music volumes, scrolling speed and assigning orders speed. Click OK or press ENTER to close the window.

**6. End Player's Turn:** Click here to end your turn (or press ALT-X). In face-to-face games, the next player will be prompted to confirm. Click or press any key to confirm.

**7. Attempt to Rake:** Clicking here will brighten the icon (or press ALT-R). While this icon is bright, your ship will hold its fire until a raking position on the target occurs. If a raking position does not occur, the ship will not fire that turn. Raking fire (shooting down the length of the target ship) causes increased damage to the target. See page 41, Hints on Play, for more details on raking.

**8. Attempt to Grapple:** Click on this icon to attempt to grapple an enemy ship (or press ALT-G). The icon will brighten and the cursor will become a grappling iron positioned over the nearest enemy ship. Click to order the grapple. See page 17 for more details on grappling.

**9. Save Game:** Click here to save the game (or press ALT-S). A pop-up window will appear allowing you to name the file or cancel.

**10. Quit Game:** Click here to quit the battle (or press ALT-Q). A pop-up window will appear prompting for confirmation.





### MOVEMENT . . . . .

To issue movement orders to the selected ship, click on the “Ahead” spoke of the ship’s wheel in the *Orders* sidebar. The selected ship will start to move, and a dashed leader line will indicate the projected movement of the ship.

You can double click on the Ahead spoke at any time to instantly carry out the rest of the movement in a straight line. You can click on the center of the wheel (Cancel) or press the ESCAPE key to cancel the movement order.

Any ship not given a movement order will automatically sail ahead in a straight line to the limit of its speed in relation to the wind.

**Fouling:** Ships may collide and become fouled during movement. They will attempt to unfoul in subsequent turns unless *both* have their Grapple icons bright. Fouled ships may not receive movement orders and will drift.

**Turning:** If the selected ship has less than 10% of its crew assigned to the sails, it may turn no more than 45° to port and 45° to starboard. Otherwise, a ship may make successive turns in either direction (this is called “wear” in the game). A blue or red circle appears under the ship and shrinks as the ship moves. When the circle disappears, you may give the ship another command.

**Tacking:** Tacking allows you to turn into the wind without being taken aback. To tack, you need to assign 20% of your crew to Sails. A ship that is close-hauled may not tack. A ship with 30% or more of its rigging damaged may not tack. Otherwise, choose one of the three Tack spokes: 135, 180 or 225. The ship will turn through the wind and head in a direction that is 135°, 180° or 225° (respectively) from its original heading. If you tack 180° from Before the Wind attitude, left-click to tack left and right-click to tack right.

**Back Sails:** Backing sails allows a ship to slow its speed in any direction. To back sails, you need at least 5% of your crew assigned to sails. Each time you click on the Back spoke, the ship will reduce its speed by 1 knot. You may back more than once—the number in parenthesis shows the current number of backs. Click on the UnBack spoke to undo a back. A shrinking yellow circle appears under the ship when backing or unbacking. You may not issue another back or unback order until the circle disappears.

**Change Sails:** A ship may be in one of three sail configurations: battle, plain or full sail. Ships always begin a battle in battle sail. Changing sails requires one full game turn to take effect. A minimum of 20% of the crew must be assigned to sails to do so. To change sails, move your cursor over the ship’s sails in the *Orders* sidebar and click when the cursor arrow changes to a ship icon.

The more sail deployed, the faster the ship will move. Battle sail is the slowest but offers the steadiest gun platform and minimizes damage to rigging. Plain sail allows for faster movement but penalizes the ship’s gunfire and causes increased damage to its rigging if hit. Full sail allows for the fastest movement but gives the highest penalty to the ship’s gunfire and causes the most damage to rigging if hit.



## GUNNERY .....

Each ship carries a battery of guns on its port side and a battery of guns on its starboard side. You issue orders separately to each broadside. A broadside automatically fires during the turn if the *targeted* ship comes within the Open Fire range of the broadside and is within 45° of the beam. There are two exceptions:

**Exception 1:** A ship will not fire if another ship is closer than the target in the same field of fire.

**Exception 2:** If the Attempt to Rake button is bright, a ship will hold its fire until it is 30° or less off the bow or stern of the target ship, allowing the firing ship to fire down the length of the target.

You may change the Open Fire range of the selected broadside in one of two ways:

1. Move the cursor along the horizon line between the two ships. When the cursor arrow becomes a **cannon ball**, click or click and drag until the desired range is shown in the text line underneath.
2. Click on the **number** shown (it will turn red). Use your → and backspace keys to delete the current number, then type in the range you desire.

Click here first to give orders to the port broadside (the three crew figures will move to the port side).

Left- or right-click on the port load box to change the load of the port guns.



**Sextant:** To use the sextant feature, click on its icon. A white line will appear from the center of the selected ship to the cursor point. The distance of the line is given in yards. Move the cursor as desired to measure ranges to other ships. Clicking on another ship transfers the sextant to it. Click anywhere in the water to deactivate the sextant.

To choose the aim point of the selected broadside, click on the sails or the hull of this target icon. The **cross-hair** shows the chosen aim point.

Click here first to give orders to the starboard broadside (the three crew figures will move to the starboard side).

Left- or right-click on the starboard load box to change the load of the starboard guns.





**Load:** Each load box will display one of five loads. At the start of the game, both the port and starboard load boxes carry roundshot. You may change either or both sides during your first turn. Thereafter, you may load only one side per turn.

**No Load:** The guns on that side may not fire.

**Roundshot:** Maximum range 2,000 yards. Effective against hull, rigging, guns and crew.

**Doubleshot:** Maximum range 200 yards. Twice as effective as roundshot, but takes two turns to load.

**Chainshot:** Maximum range 600 yards. Very effective against rigging. No effect against hull and guns.

**Grapeshot:** Maximum range 200 yards. Very effective against crew but no effect against other areas.

**Target Ship:** The computer will automatically choose the closest enemy ship as its target. To choose your own target move the cursor over an enemy ship on the *Battle* screen until the arrow changes to a ship icon, then right click. A red cross-hair will appear over the targeted ship. Each broadside may be targeted against the same or different ships.

**Aim Point:** You may fire at an enemy ship's hull or rigging. Aiming at the hull increases the chance of hull and gun hits and lessens the chance of rigging hits. Aiming at the rigging greatly increases the chance of rigging hits but reduces the chance of hull and gun hits. Both aim points can cause crew casualties.

**Range:** Each type of shot has a maximum range. In addition, all shot fired at 200 yards or less will automatically target the enemy's hull area. Roundshot fired at a range of 1,200 yards or more will automatically target the enemy's rigging.

## GRAPPLING & MELEE .....

Grappling an enemy ship allows you to engage it in melee combat. To order grappling, click on the Attempt to Grapple icon in the *Orders* sidebar. The cursor will change to a grappling iron and automatically position itself over the nearest enemy ship. If this is the desired target, click the mouse button. If not, move the cursor over the desired target ship and click. A red grappling iron will appear over the target, and the Attempt to Grapple icon will remain bright to indicate that a grappling order has been given for your ship.

If your ship comes within 50 yards of the targeted enemy ship during movement, it will attempt to grapple. If successful, the ships will appear to collide and will become fouled.

You may attempt to disengage from a grapple on subsequent turns by clicking the Attempt to Grapple icon off so it is no longer bright.

Ships that are fouled together at the start of a turn will fight melee before the computer executes any movement or fire orders. It is therefore wise to assign crew to a boarding party if your ship begins its turn fouled with the enemy. All crew will fight in a melee, but crew assigned to a boarding party will fight twice as effectively as other crew.

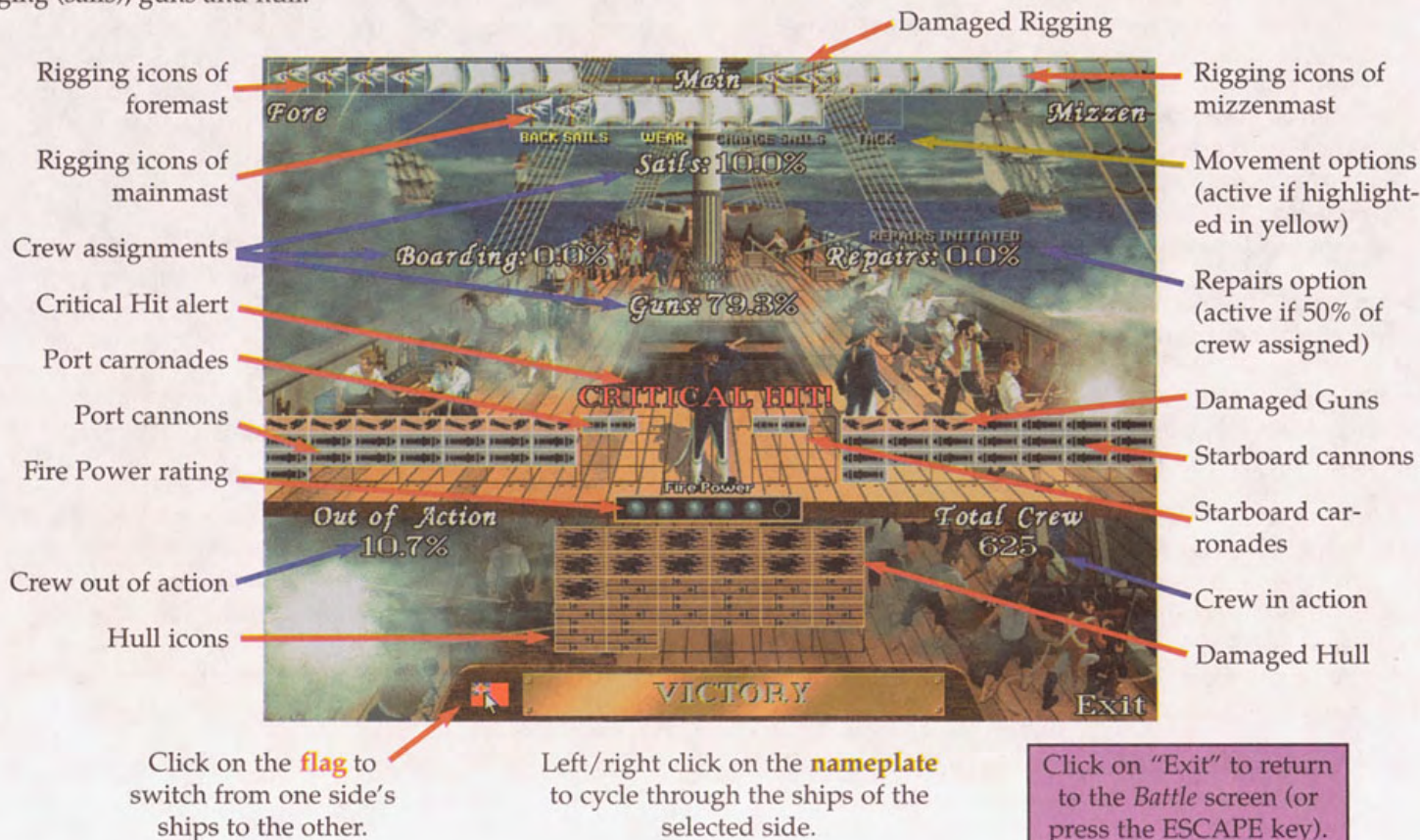
The quality of your crew will significantly affect the outcome. For example, an elite crew will fight five times more effectively in melee than a poor crew.



## STATUS SCREEN .....

The *Status* screen appears when you click on the hull of the large ship in the *Orders* sidebar. The *Status* screen shows the current status of the selected ship's crew, rigging (sails), guns and hull.

Crew assignments are expressed in percentages or exact numbers. Press your spacebar to toggle between the two modes.







### DAMAGE .....

**Damage to Rigging:** Damage to the rigging reduces the ship's speed. Each ship has one to three masts (fore, main and mizzen). If all of the rigging icons on a given mast are damaged, that mast is destroyed and cannot be repaired. A ship that is completely dismasted may not move, although it drifts.

**Damage to Guns:** Damage to cannons and carronades reduces the strength of the affected broadside. The two types of guns are identical except cannons have a maximum range of 2,000 yards and carronades have a maximum range of 600 yards.

**Damage to Hull:** When all of the hull icons are damaged, the ship immediately strikes its colors (surrenders).

**Casualties to Crew:** Crew casualties reduce the crew's ability to perform its tasks. Each "hit" to the crew puts 25 men Out of Action. If all of the crew are out of action, the ship immediately strikes its colors.

A ship that strikes its colors is out of play for the rest of the game. It neither moves nor fires, although it drifts. The ship will display a white flag inside a red circle on the *Battle* screen.

**Critical Hit:** If the ship suffers a critical hit, the message **CRITICAL HIT!** will appear on the *Status* screen. Click on the message to get a pop-up window describing the hit. Click on OK or press the ENTER key to close the window.





## ASSIGNING CREW .....

A ship's crew is expressed in percentages or exact numbers. Press the spacebar to toggle between the two modes. You can assign your crew to Sails, Guns, Boarding and/or Repairs. There are two ways to assign crewmen from one area (the source area) to another (the destination area):

1. Click on the source area from where you wish to move crew (the text will turn red), then left or right click on the area where you wish to increase crew. Each time you click on the destination area, a portion of the crew moves from the source area as follows:

	<u>Left-click</u>	<u>Right-click</u>
Percentage mode:	1% crew	10% crew
Exact Numbers mode:	1 man	25 men

2. Click on the source area from where you wish to move crew, type in the number you wish to move (the number will appear on the screen), then click on the destination area.

To end a crew assignment in both cases, click on the source area, and the red text will revert to white. You may change your crew assignments as often as desired.

**Sails:** A ship can sail straight ahead and turn 45° to port and/or starboard with no crew assigned to Sails. However, you need to assign the following percentage of crew to Sails to perform the tasks indicated below:

Back or Unback Sails	5%
Wear	10%
Change Sails	20%
Tack	20%

"Wear" means the ship can make successive 45° turns to port and/or starboard in a single game turn.

**Guns:** The more crew you assign to Guns, the greater your firepower as indicated by the number of cannon balls shown on the Fire Power scale. You must keep at least 6% of your original crew assigned to guns.

<u>FIRE POWER</u>	<u>CREW ON GUNS</u>
•••••	96-100%
•••••	76-95.9%
•••••	56-75.9%
•••••	36-55.9%
•••••	16-35.9%
•••••	6-15.9%
No fire possible	0-5.9%

**Boarding Party:** Assigning crew to Boarding is advisable if your ship is fouled with an enemy ship. Crew assigned to Boarding are twice as effective in melee combat as crew assigned to other tasks, although all crew will participate.

**Repairs:** You can repair one damaged rigging, gun or hull icon per turn by assigning 50% of your crew to Repairs. (There is a one-turn delay.) However, repairs are limited to 15% of your total rigging, hull and gun icons.



### CAMPAIGN .....

From the *Captain's Cabin*, clicking on the Campaign figure brings up the *Campaign* screen. The campaign game may only be played against the computer opponent.

**Resume Cruise:** Click here to bring up your list of saved campaign games, from which you may delete or resume a cruise.

**New Captain:**  
When starting a new campaign, you may choose from 16 different American ships.

Click on the desired ship name to **highlight** it, or use your ↑ and ↓ keys to move through the list.

Click on the **arrow** keys to scroll the list up or down one line.

After selecting a ship, enter your captain's name.



After selecting a ship and typing your captain's name, press ENTER or click here to **begin** the cruise.

The Famous Captains plaque shows your top ten completed campaign scores.

Click on **QUIT** to return to the *Captain's Cabin*.



You will leave port on May 31, 1812. Each campaign turn encompasses a two-day period. Occurrences during that period are indicated by log entries. Your cruise will last until you are captured or your supplies run out after about two or three months.

<u>AVAILABLE SHIPS</u>	<u>TYPE</u>	<u>SPEED</u>	<u>CREW</u>
<i>Adams</i>	28 gun sloop	VF	225
<i>Argus</i>	16 gun brig	VF	125
<i>Chesapeake</i>	38 gun frigate	VF	400
<i>Congress</i>	38 gun frigate	VF	400
<i>Constellation</i>	38 gun frigate	VF	400
<i>Constitution</i>	44 gun frigate	VF	500
<i>Enterprise</i>	14 gun brig	F	100
<i>Essex</i>	32 gun frigate	VF	350
<i>Hornet</i>	18 gun sloop	VF	150
<i>Nautilus</i>	14 gun brig	F	100
<i>President</i>	44 gun frigate	VF	500
<i>Syren</i>	16 gun brig	VF	125
<i>United States</i>	44 gun frigate	VF	500
<i>Viper</i>	14 gun brig	F	100
<i>Vixen</i>	14 gun brig	F	100
<i>Wasp</i>	18 gun sloop	VF	125

Initially, you must break through the British blockade. If you do so without being sighted by enemy ships, a log entry to that effect will be made. If not, you must fight and defeat the ship you encounter.

Assuming you defeat the blockade, your voyage will begin. Every turn, there is a chance of sighting a ship or group of ships. If no sighting occurs, click "OK" to continue to the next log entry. If a sighting occurs, you may "approach" to investigate or "sail away." Once you have identified the ships, you still have the opportunity to "flee" or "offer battle."

Battles are conducted using the normal *Battle* screen procedures. After a battle, part of the damage to your rigging, guns and hull is automatically repaired, and approximately two-thirds of your crew casualties return to action. If you defeat an enemy ship, the program will automatically transfer a small prize crew from your ship to take the enemy ship to port.

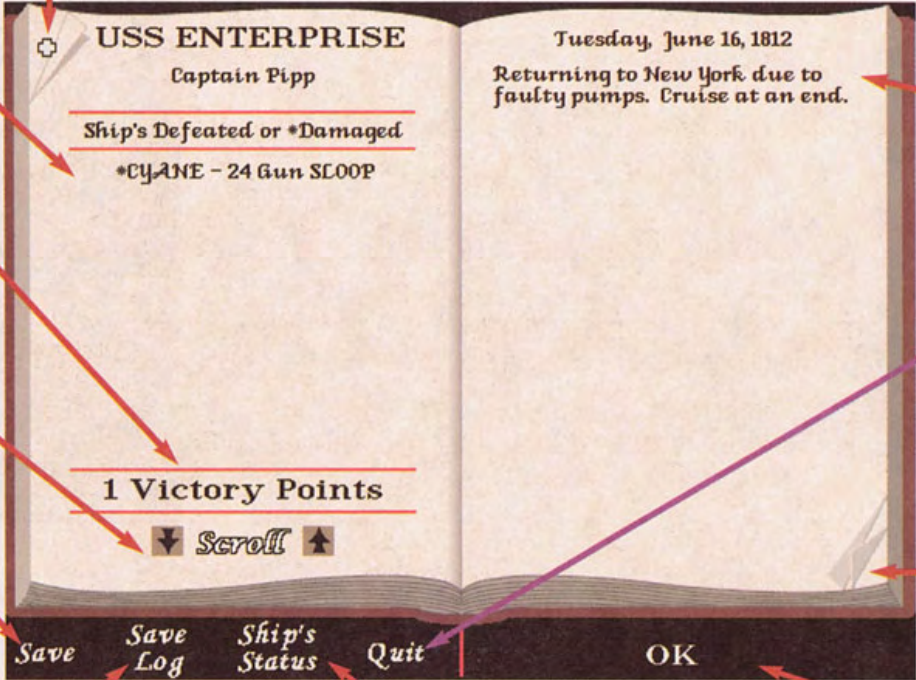
In battle you can lose contact with the enemy if the opposing ships become too far apart (several thousand yards), thus ending the battle with undefeated ships.



### LOG BOOK .....

The *Log Book* is part of the campaign game. Each entry in the log book represents a two-day turn in the campaign.

The log book closes when you click on OK at the end of your cruise. You may click on the closed book to reopen it and leaf through the pages.



Click in this corner to review your log book. Each click takes you back one page.

Lists enemy *ships* defeated or damaged, in chronological order.

Current *victory points* based on enemy ships defeated.

Click on the **arrow** keys to scroll the list up or down one line.

Click here to *save* the campaign. A pop-up window appears allowing you to name the file or cancel.

Click on *Save Log* to get a pop-up window from which you can save the log as a text file that can be printed. Use a valid DOS file name.

Click here to check the ship's *Status* screen. You can assign crew, but no repairs can take place.

Click on desired choice when it is highlighted in green.

Click in this corner to flip the pages ahead.

Click on *Quit* to return to the Campaign screen. A pop-up window appears allowing you to save first or cancel.

Log entry

**USS ENTERPRISE**  
Captain Pipp

Ship's Defeated or \*Damaged  
\*CYANE - 24 Gun SLOOP

1 Victory Points  
↓ Scroll ↑

Tuesday, June 16, 1812  
Returning to New York due to faulty pumps. Cruise at an end.

Save Save Log Ship's Status Quit OK



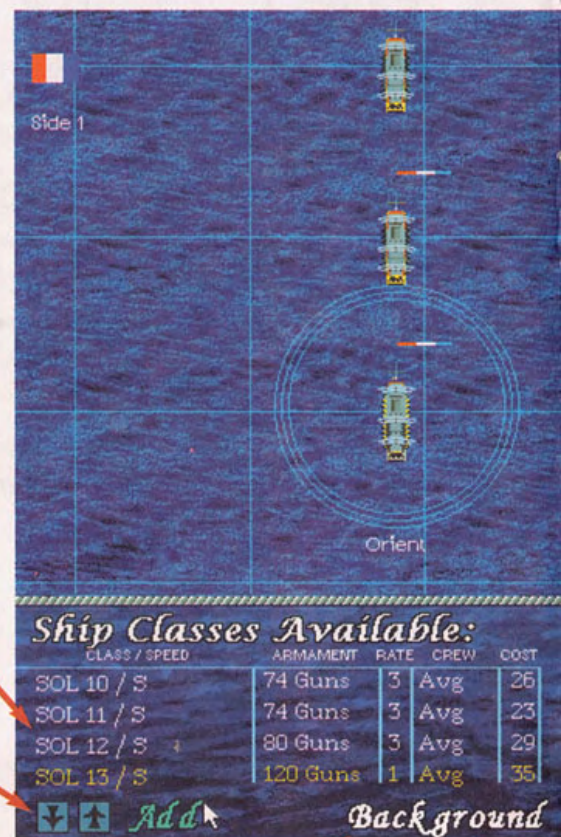
## SCENARIO CREATOR .....

You can design your own scenarios or edit existing ones using the *Scenario Creator*. The *Scenario Creator* screen is accessed from the *Scenario* screen by clicking on *Create* (to design your own scenario) or *Edit* (to edit the selected scenario).

**Ship Classes Available:** Click on the desired ship class to *highlight* it or use your ↑ and ↓ keys to move through the list.

Left-click on the **arrow** boxes to scroll the Ship Classes Available list up or down one line at a time. Right-click to scroll the list up or down four lines at a time.

Click on *Add* or click on the highlighted class itself to add the highlighted ship to your Force Selection.



Click on *Background* to write or edit the Historical Overview. A pop-up window will appear.

**Force Selection:** ship class to *highlight* and ↓ keys to m

Left-click on the the Force Selection line at a time. Right-click to scroll the list up or down





Click here to toggle between Revolutionary and Napoleonic eras.

Left- or right-click on the brightened **flag** to cycle through the nationalities for the first side.

Click on this **flag** to select the second side, then left- or right-click to choose the nationality.

The numbers represent the total **cost** of that side's force.

Left/right-click here to cycle through the starting Wind Velocities.

Left/right-click here to select the starting Wind Direction.

Left/right-click here to select a Wind Changes number from 1 to 6. **The lower the number, the more frequently the velocity and direction will change during the battle.**

To change the quality of the highlighted ship's crew, move your cursor over **CREW**. When the cursor becomes a sailor icon, click once and a crew quality window will pop up.

To change the highlighted ship's name, move your cursor over **SHIP'S NAME**. When the cursor becomes a ship icon, click once and a window will pop up allowing you to enter the new name.

Click on the desired **light** it or use your ↑ arrow to move through the list.

arrow boxes to scroll in list up or down one light-click to scroll the four lines at a time.

Click here to **delete** the highlighted ship from the Force Selection.

Click here to **save** the scenario. A pop-up window will appear allowing you to name the scenario.

Click on **Quit** or press **ESCAPE** to return to the *Scenario* screen.



**Ship Classes Available:** The ship classes are divided into two periods: Revolutionary and Napoleonic. In each period there are four nationalities. When adding ship classes to your force selection, you may mix periods and nationalities as desired.

If you add the same ship class one or more times to your force, each new name will include a suffix number to

differentiate that ship from its sisters. However, the same ship class can also be on both sides. In this case, the opposing ships would have the same name. You may keep a ship's original name or use the SHIP'S NAME feature to change the names of any ships in your force.

There are 133 different ship classes available:

### *REVOLUTIONARY PERIOD, 1775-1783*

NATIONALITY	SHIP CLASSES AVAILABLE					
	SOL	Frigate	Sloop	Privateer	Brig	Schooner
American	1	4	2	—	—	—
British	14	4	1	—	—	—
French	9	3	—	—	—	—
Spanish	6	2	—	—	—	—

### *NAPOLEONIC PERIOD, 1793-1815*

NATIONALITY	SHIP CLASSES AVAILABLE					
	SOL	Frigate	Sloop	Privateer	Brig	Schooner
American	—	6	4	—	4	1
British	17	12	3	4	6	2
French	7	7	1	—	—	—
Spanish	10	3	—	—	—	—



**Cost:** Each ship class has a cost value based on relative ship effectiveness. Use the cost values to balance your scenarios. For example, you and your opponent could agree to use no more than 100 points each in your forces. A ship's cost will change if its crew quality is altered in the Force Selection area.

**Crew Quality:** To change the crew quality of a ship in your force, follow these four steps:

**Step 1:** Click on the ship in the Force Selection area whose crew quality you wish to change. The selected ship will be highlighted in yellow.

The screenshot shows the 'Force Selection' area of the Iron Men Scenario Creator. A central recruitment poster for 'The Navy' is displayed, featuring a sailor and the text 'VOLUNTEERS. The Navy, When every Thing that swims the Seas is a PRIZE! CRACK Where they will be allowed to Enter for any Ship of WAR, AND THE FOLLOWING BOUNTIES will be GIVEN in Addition to Two Months Advance! ENLIST NOW!'. To the right, a panel titled 'Napoleonic' shows a 'French' ship (SOL 10) and a 'British' ship (SOL 13) in a 'VS.' matchup. Below this, a 'Wind Conditions' section shows 'Velocity: Moderate Breeze', 'Direction: East', and 'Changes:'. At the bottom, a table lists ship classes and their costs, with a 'Crew' column showing '3 Avg' and '1 Avg'. A legend on the right lists crew types: ELITE, CRACK, AVERAGE, GREEN, and POOR. Arrows indicate the steps for changing crew quality: Step 1 points to the ship in the VS. matchup, Step 2 points to the 'CREW' column, Step 3 points to the 'Wind Conditions' section, and Step 4 points to the 'ENLIST NOW!' button.

**Ship Classes Available**

CLASS / SPEED	ARMAMENT
SOL 10 / S	74 Guns
SOL 11 / S	74 Guns
SOL 12 / S	80 Guns
SOL 13 / S	120 Guns

**Force Selection**

CLASS	RATE	CREW	COST
SOL 12	3	Avg	29
SOL 10	3	Avg	26
SOL 13	1	Avg	33

**Legend:**  
 ELITE  
 CRACK  
 AVERAGE  
 GREEN  
 POOR

**Buttons:** Add, Background, Delete, Save, Quit

**Step 2:** Move the cursor over CREW in the Force Selection area until it becomes a sailor icon, then click. A pop-up window will appear.

**Step 3:** Left/right-click here to cycle through the five crew types:

**Step 4:** Click here or press the ESCAPE key to enlist the crew type shown and close the window.



## POSITIONING YOUR FORCES .....

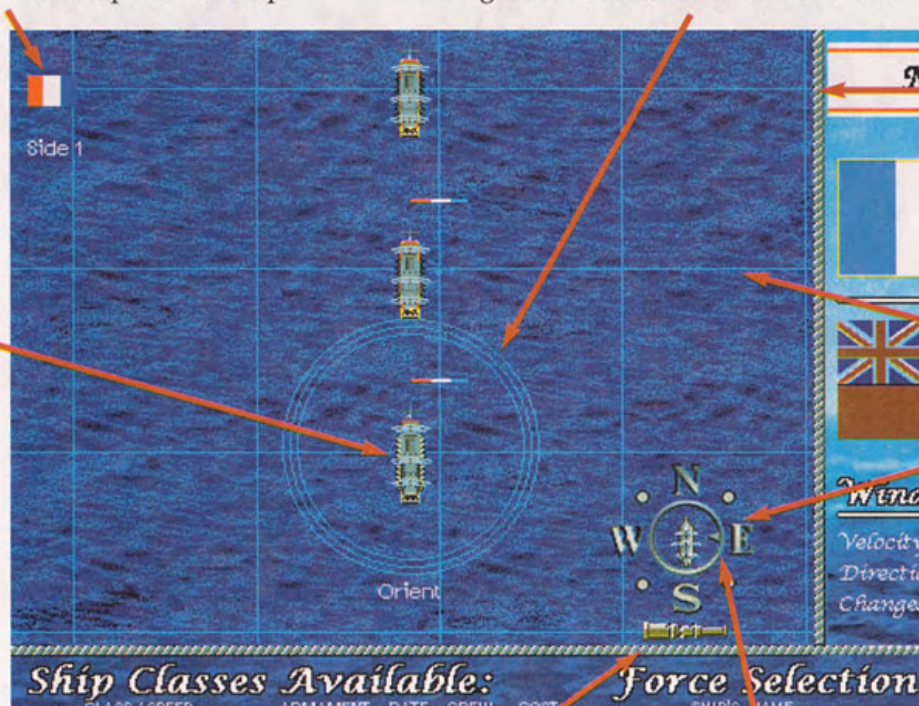
After selecting forces for a scenario, you should position the ships in their starting locations.

The *Scenario Creator* screen provides a 2-D overhead view of the map area. (It does not provide a 3-D view.)

Shows selected ship's nationality and side. Left/right-click on the **flag** to cycle through all of the ships on the map.

The ship's name and three concentric rings appear when the ship is selected (**blue** rings if First Side; **red** if Second Side).

To change the selected ship's starting direction, move the cursor arrow over the ship until it changes to a ship icon. Then left-click to change the ship's current heading by 45° counter-clockwise or right-click to change its current heading by 45° clockwise.



Click on the rope to "hide" the sidebar in the top right corner of the screen. Press TAB or click on the sidebar icon to make it reappear.

100-yard grid

The ship icon inside the compass display shows the heading of the selected ship. Click on this icon to center the map view on the selected ship.

Left-click on the large end of the telescope to zoom in. Left-click on the small end to zoom out. Views range from 4:1 to 1:4.

The pointer on the compass ring shows the current wind direction.





**Scrolling:** The map will automatically scroll when you move the cursor to the screen edge in the direction you wish to scroll (there is a one-second delay). Hold down the right mouse button for faster scrolling. You can also scroll the map by left-clicking on any of the eight compass points on the compass display. Right-click for faster scrolling.

**Drag and Drop:** As new ships are added to your force, the computer will place each new ship 100 yards south of the previous ship. You can change the starting location of a ship by moving the cursor over the ship until the arrow changes to a ship icon. Then hold down the left mouse button. The cursor will change to a white cross and the ship will disappear. Now drag the cross to the desired position and release the button.

## WIND DIRECTION & VELOCITY .....

There are eight possible wind directions and eight possible wind velocities. The initial wind direction and wind velocity in a battle may change as the battle progresses. The wind velocities (in increasing order of intensity) are:

- Becalmed
- Light Breeze
- Moderate Breeze
- Normal Breeze
- Heavy Breeze
- Gale
- Storm
- Hurricane

All ships sail at their maximum ability in a Normal Breeze. As the wind velocity increases above Normal

Breeze, all ships lose speed due to heavy seas and dangerous winds. However, the higher a ship's rating, the less it is affected. Thus, a 1st Rate SOL is not adversely affected by a Heavy Breeze, but a 7th Rate Schooner is.

In contrast, as the wind velocity decreases below Normal Breeze, the higher ratings (e.g., SOLs) lose more speed than the lower ratings. However, no ships may move in a Becalmed condition (although they drift).

Storm winds may cause a mast to fall if a ship is in plain sail or full sail. The smaller the ship, the greater the risk. Gale winds may cause a mast to fall if a ship is in plain sail (rates 6 and 7 only) or full sail (any rates). Rates 6 and 7 with full sail also have a chance of losing a mast in a Heavy Breeze.

A scenario immediately ends if the wind velocity reaches Hurricane level.



## BATTLE SUMMARY .....

A scenario ends when one side's ships have all been defeated or the opposing ships have lost contact. The *Battle Summary* screen appears when the scenario ends.

For each enemy ship that strikes its colors, you receive victory points (VPs) equal to 1.5 times the cost of the ship.



*"We have met the enemy  
and they are ours."*

—Captain Oliver Hazard Perry

For each enemy ship you damage, you receive VPs equal to the cost of the ship times the percent of damage. For example, if you damaged half of the enemy ship's hull, sail, gun and crew icons (counting 25 crewmen as one icon), you would earn victory points equal to half the cost of the ship.

## Battle Summary

*The British have won a decisive victory.*

Flag	DAMAGED/DEFEATED	POINTS
	HERCULE	37
TOTAL		37
↓ Scroll ↑		
	MARS	9
TOTAL		9
↓ Scroll ↑		
Done		

In multi-ship battles, click on the **arrow** boxes to scroll the list of damaged/defeated ships up or down one line.

Click on **Done** or press ENTER to go to the Captain's Cabin.





### DESIGN NOTES .....

by Joseph M. Balkoski

In a world of space shuttles and interplanetary space probes, we sometimes forget how far and how fast we have come in two centuries. As recently as the early 1800's, the human race had not fully learned how to harness energy derived from steam, coal, oil, or other natural resources. It is difficult to conceive that only a few generations ago, the fundamental means of global travel was the sailing ship. Relying only on the wind for power, sailing vessels were the first connectors between the outposts of humankind.

In a world of nuclear submarines, aircraft carriers, and guided missiles, it is also difficult to conceive how dramatically naval warfare has changed in the past two centuries. The extraordinary complexities of modern naval tactics would astonish Admiral Nelson, who based his highly successful career on the dictum that "no captain can do very wrong if he places his ship alongside that of the enemy." Indeed, in the not too distant past, naval battles raged at pointblank range amid deafening noise and horrific carnage, with cannons and cutlasses as the weapons of choice. Naval tactics were hardly subtle, and sailors valued a brave captain far more than a smart one. Later, historians termed this era "The Age of Fighting Sail," proclaiming that the "ships were made of wood and the men of iron."

Although today the oceans are still conduits of commerce, we in the modern world have lost sense of the per-

ils of the sea. Today we know exactly where we are, where we're going, what the weather will be—and we always have enough fuel to reach our destinations and communicate with shore if we encounter trouble. But put yourselves in Anson's or Cook's shoes and round Cape Horn in the 18th century when you didn't know who or what awaited you on the far side. Like Captain Cook, many never returned home.

The modern observer has also forgotten that some of the human race's most fundamental knowledge—navigation, global positioning, astronomy, weather, and time, for example—was greatly enhanced by our ever-increasing desire to better understand the sea. Those who forged new paths on the sea helped us to better understand the earth as a whole.

However, some features of sea life in the age of fighting sail are probably best forgotten. By modern standards sailors lived in appalling conditions, stifled in the cramped reaches of the lower deck, sickened by rancid food and bad air, and deafened—if not horribly maimed or killed—by cannon fire. Even in an urban sweatshop at the peak of the Industrial Revolution people did not live under the extraordinarily confined conditions of a warship in the pre-steam era. A standard Royal Navy ship-of-the-line of the Napoleonic period, for example, would cram more than 800 sailors into a vessel that was one-third the length of a modern U.S. Navy destroyer of only 300 men.

The man-of-war of the Revolutionary and Napoleonic periods was the product of more than 200 years of

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*"No captain can do very  
wrong if he places his ship  
alongside that of the enemy."*

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—Admiral Horatio Nelson

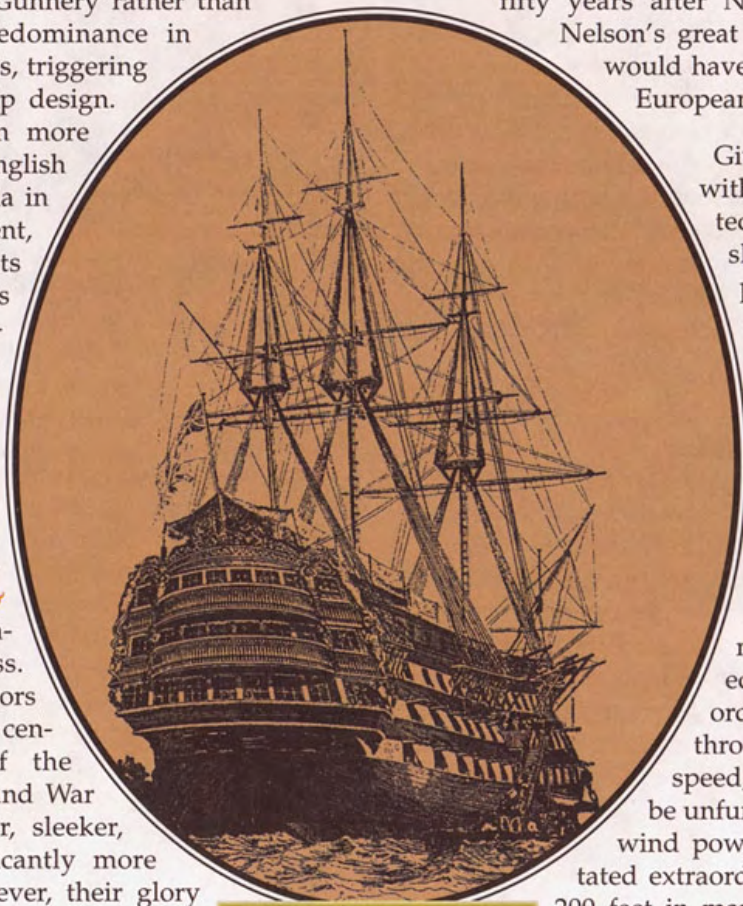


European warship design experience. Indeed, ever since the galley era had come to a close in the 16th century after a reign of more than two millennium, European shipbuilders had been wrestling with the problem of how to best deploy cannon at sea. Gunnery rather than boarding had assumed predominance in naval tactics in the mid-1500's, triggering profound changes in warship design. These changes became even more pronounced following the English defeat of the Spanish Armada in July 1588. From that moment, European naval architects gradually altered their designs in order to meet the ever-increasing appetite of sailors who demanded heavier firepower.

### Age of Fighting Sail

The ships-of-the-line, frigates, sloops, and brigs portrayed in *WOODEN SHIPS & IRON MEN* were the culmination of this design process. Compared to their predecessors of the 17th and early 18th centuries, the men-of-war of the Revolutionary, Napoleonic, and War of 1812 periods were faster, sleeker, taller, and stronger—significantly more efficient ships overall. However, their glory days were numbered. The development of steam power, rifled cannon, and armor plating

after the close of the Napoleonic Wars sharply reduced the usefulness of the conventional sailing ship in naval operations and eventually signalled the end of the great age of fighting sail. By the close of the American Civil War, only fifty years after Napoleon's downfall, one of Nelson's great ships-of-the-line at Trafalgar would have been an anachronism in any European navy.



HMS Prince, 1st Rate

Given the sailors' preoccupation with gunnery, the naval architect's overriding concern was ship weight. A typical 32-pounder long gun of the Napoleonic period weighed more than two tons and required fourteen men for efficient operation. A ship armed with more than one hundred long guns—and all their associated accoutrements and ammunition—amounted to an overwhelmingly heavier vessel than merchantmen of roughly equal length and breadth. In order to propel such a behemoth through the water at a reasonable speed, a great deal of canvas had to be unfurled from the masts to capture wind power. This requirement necessitated extraordinarily tall masts (more than 200 feet in many cases), lengthy yards (the wooden spars from which sails were unfurled), and a great deal of rope-rigging to



hold everything together aloft. Even under the best of sailing conditions, however, the heavy line-of-battle ships in Nelson's navy could not make more than nine or ten knots.

The masts, yards, canvas, and rigging above decks may have provided the means to catch wind power and propel the ship, but their cumulative weight well above the ship's center of gravity tended to make men-of-war top-heavy. Capsizing—the worst disaster that could befall a ship—could occur in extreme weather conditions if naval architects did not compensate for top-heaviness by keeping much of any warship's weight as low as possible. (Witness the sad fate of Henry VIII's prized flagship *Mary Rose*, which capsized off Spithead in the mid-16th century with great loss of life.) The heaviest cannon, for example, tended to be placed on the lowest gun decks. Furthermore, the stowage of heavy stores in the hold—the lowest portion of the ship—such as cannonballs and barrels of food and water, helped keep the ship's center of gravity low.

Naval architects in the age of sail maintained a fine balance between power and speed. Those men-of-war which were expected to participate in a set-piece, large-scale naval battle were known as "ships-of-the-line" because they took places in a rigid line-of-battle during a fleet action. Although these ships were heavy, broad, and slow, they were sturdy, powerfully armed, and very difficult to sink. On the other hand, ships which performed reconnaissance and commerce-raiding were sleek, light, and very fast. These frigates, sloops, and brigs (sometimes collectively known as "cruisers") were relatively lightly armed, but they generally possessed enough speed to run away from any significantly larger man-of-war.

We are fortunate today that examples of both the classic ship-of-the-line and cruiser from the age of sail still survive. HMS *Victory*, drydocked in Portsmouth harbor in England, and USS *Constitution*, still floating in Boston, are indeed probably the only authentic and intact survivors from that period. *Victory* was the quintessential line-of-battle ship, sturdy and well-built enough to have remained in active commission for more than half a century, and sufficiently powerful to have engaged any antagonist in the world in a one-on-one fight and emerge victorious. It was Nelson's flagship at Trafalgar, and the place of his death in the orlop is a national shrine. *Constitution* is the most famous warship in US naval history. During the War of 1812, it was fast enough to evade larger British men-of-war, and well-armed and well-manned enough to defeat any British vessel of comparable size.

To see an example of a smaller man-of-war, visit Erie, Pennsylvania, where the reconstructed United States Brig *Niagara*, docks. *Niagara* served with Captain Oliver Hazard Perry at the Battle of Lake Erie in 1813. The reconstructed ship incorporates some of the original timbers and has an active sailing program.

RATE	GUNS
1st	100 or more
2nd	90-99
3rd	64-89
4th	50-63
5th	30-49
6th	18-29

The conventional means of categorizing men-of-war during the age of sail was by "rate." Rate classifications ranged from 1 (largest) to 6 (smallest).

Rates 1 to 4 were referred to collectively as "ships-of-the-line," although 4th Rates



had almost disappeared by the time of the Napoleonic Wars. 5th Rates were termed “frigates”; 6th Rates were small frigates and sometimes designated “sloops” (“ship sloops” if they had three masts, “brig sloops” if they had only two). By far the most common men-of-war in European navies were 3rd and 5th Rates. The U.S. Navy, however, did not possess anything larger than a 5th Rate until the end of the War of 1812. In

**WOODEN SHIPS & IRON MEN** we have created our own “7th Rate” ship category for schooners and other ships smaller than 6th Rates.

Sailors informally labeled 1st and 2nd Rate ships “three-deckers” because their main guns were deployed on three decks. In the same vein, 3rd and 4th Rates were termed “two-deckers,” while everything else was a “one-decker.” Neither the orlop deck (at or just below the waterline) nor the upper forecabin/quarterdeck (known as the “spar deck” in the US Navy) were included in this count, even though guns were usually placed on the uppermost deck.

### Driven by the Wind

A good sailing ship was a sensitive and fragile machine. With too many sails set, high winds could bring a mast or yard crashing onto the deck. Too little canvas in light winds would not provide sufficient energy for the ship to gain momentum or “steerage way.” All of the nearly infinite combinations of wind direction and velocity required special sail configurations. Especially under changing weather conditions, sailing called for constant adjustments to the sails and yards. Each ship’s lines and trim were unique, and efficient sailing could only be

achieved by an alert captain who possessed a strong familiarity with his ship and the weather.

In breezes of up to 15 or 16 knots, men-of-war could carry virtually all their sails (known as “all sails set” or “full sail”) with little fear of damage to the rigging and spars. In more forceful winds, captains would take in their

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*In the age of sail, the captain’s dominating concern was the wind.*

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highest sails (known as “royals”) and would partially furl or “reef” the next lowest sails (known as “topgallants” and “topsails”). This sail state was referred to as “plain sail.” In gale conditions, with winds

as high as 30 knots or more, sails were reduced to a significantly greater degree. When action with the enemy was imminent, captains would generally implement “battle sail” (also known as “fighting sail”). In this greatly reduced sail state, usually only the fore, main, and mizzen topsails were set. Battle sail sacrificed speed for enhanced maneuverability, less vulnerability to enemy fire, and—most important—a more stable gunnery platform. In the game, a commitment of at least 20 percent of the ship’s original crew to the Sails function on the ship’s *Status* screen is required in order to change the ship’s sails configuration.

In the age of sail, the captain’s dominating concern was the wind. No sailing ship could sail directly into—or even close to—the direction from which the wind was blowing. For heavy, broad “square-rigged” vessels, which included virtually all rated men-of-war in European navies, this problem was acute—much more so than small, sleek “fore-and-aft rigged” vessels, such as cutters and schooners.





A warship's sailing quality varied depending on its orientation in relation to the wind. Generally the best and fastest point of sailing for a square-rigged man-of-war was when the wind blew directly upon the ship's "quarter"—the rear corners of the ship, where the port and starboard sides met the stern. In this orientation, the wind blew at a close angle to the ship's heading and thereby effectively filled most or all of the ship's sails. No sails blocked other sails from filling; therefore the sails imparted a large amount of energy to the hull, which in turn moved through the water relatively fast. On the other hand if the wind was blowing directly against the stern of the ship, the sternmost sails would tend to block sails further forward and prevent them from filling. A ship in this orientation, known as "having a following wind" or "running," generally could not achieve speeds as high as when the wind was on its quarter.

A square-rigger could generally sail no closer than six "points" (about 68 degrees) to the direction the wind blew. For example, if the wind blew directly from the north, the vessel could maintain headway no closer to the wind than roughly a west-northwest or east-northeast direction. Any course closer to the wind would cause the sails to shiver and the ship to be "taken aback." Under such circumstances, a ship was said to be "in irons," and would drift

backwards in the direction the wind blew. When a ship made headway as close to the wind as possible, it was referred to as "close-hauled" or "on a bowline." (In the game there is a small degree of abstraction here, as close-hauled ships can sail up to four points, or 45 degrees, to the wind.) If the wind blew roughly perpendicular to the heading of a ship, the wind was said to be "abeam," and the ship heading was referred to as "going free."

The side of the ship the wind blew towards was known as the "windward" side; the opposite side was referred to as the "leeward" side. If the wind blew against the port side, the ship was said to be sailing on the "port tack." If the wind blew against the starboard side, the ship sailed on the "starboard tack." If the wind came from directly ahead, the ship was "in the eye of the wind," and if the wind came from directly astern the ship was "before the wind."

In order to capture as much of the wind's force as possible, the crew would "trim" or adjust the yardarms depending on the relationship of ship heading to wind direction. Proper trimming of the yards would maintain optimum speed and prevent damage to the masts and sails. For example, if the wind blew from directly astern, the yardarms would be "squared"—that is, positioned perfectly perpendicular





to the ship's hull. On the other hand, if the ship was sailing close-hauled or with the wind on the beam, the yards would be "braced up" or "braced about"—that is, swung around at a sharp angle to the ship's hull.

Yards and sails could be purposefully swung round and "backed" to put a brake on a ship's headway. This tactic was useful under several circumstances, such as picking up a pilot from a small boat, hailing a nearby ship, lowering the ship's boats, and maintaining station in a line of battle with slower ships. In battle, backing sail was frequently used as a means of outmaneuvering the enemy. The whole practice of slowing a ship's momentum by backing sail was usually referred to as "heaving to." In the game, a commitment of at least 5 percent of the original crew to the Sails function on the *Status* screen is required in order to back sail. Each ship is also rated in terms of its momentum: the bigger the ship the longer it takes to slow down when it backs sail.

Every directional change ordered by the captain would require adjustments to the yards so as to catch as much of the wind's force as possible in the ship's new heading. Major directional changes, such as tacking or wearing, necessitated more dramatic adjustments to the yards and called for the participation of a fairly substantial portion of the crew. In the game, a ship can make up to a 45 degree turn in a port or starboard direction in a single turn even if no crew members are assigned to Sails on the ship's *Status* screen. If at least 10 percent of the ship's original crew is aloft, the ship is permitted to make an unlimited number of 45-degree turns to port or starboard per turn, but may not turn into and through the wind. If at least 20

percent of the ship's original crew is aloft, the ship may make unlimited 45-degree turns and may also "tack."

Each ship in the game is rated in terms of its turning ability: the bigger the ship the larger its turning radius. In the game, turning restrictions are applied by requiring ships to sail straight ahead a minimum distance before implementing a turn or tack. For example, a 1st Rate ship-of-the-line must sail ahead 70 yards before initiating any turns; a 5th Rate frigate, on the other hand, must sail straight ahead for only 40 yards before implementing a turn.

Major directional changes were achieved in sailing ships by "tacking" or "wearing." A maneuver in which a ship turned sharply by bringing its head into and across the wind was known as a "tack." If, on the other hand, a ship turned its head sharply to leeward (away from the wind)

and thereby swung its stern into and across the wind, the maneuver was known as a "wear." In the game, tacking is a specific maneuver that may be chosen on the ship's wheel. Wearing is simulated in the game by making two or three consecutive 45-degree turns away from the wind. Tacking enabled a ship to turn in a much tighter circle than wearing, but it was a more complex, difficult and labor-intensive maneuver. For example, a typical US Navy 5th Rate frigate from the War of 1812 period in the game requires about 100 men aloft for tacking (as opposed to about 50 for wearing), but can make a 180-degree turn in an 80-yard radius (as opposed to about a 120-yard radius for wearing). Furthermore, tacking is less time-consuming than wearing.

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*Naval guns were brutishly simple.*

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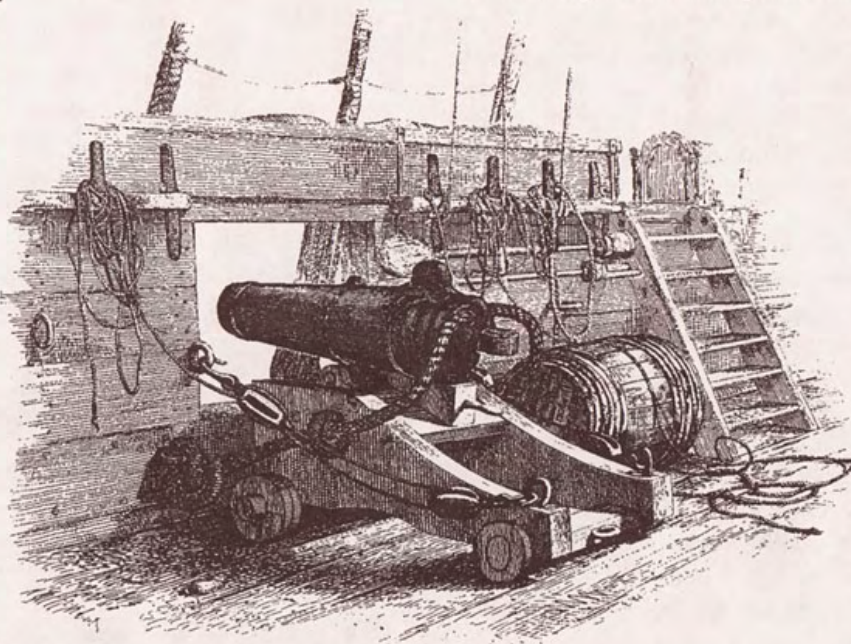




### Naval Gunnery

The essential reason for the existence of men-of-war was to capture or destroy enemy vessels. Gunnery was the primary means of accomplishing this goal. Among the larger classes of sailing warships (Rates 1 through 4), the naval architect's overwhelming design consideration was to pack as much firepower as possible into the ship. Indeed, even the faster and more nimble frigates and sloops were heavily burdened with ordnance.

There was little subtlety to naval gunnery during the Revolutionary, Napoleonic, and War of 1812 periods. Generally the side that emerged victorious in battle was the side which worked its guns most quickly and accurately. Naval guns were brutally simple. They threw a round cast-iron ball up to ranges a little more than one mile, but were accurate only at one-third that range. The cannon balls ranged in weight and size from six pounds (roughly the size of a softball) up to 32 pounds (slightly smaller than a modern bowling ball). The guns themselves were heavy and unwieldy, requiring up to fourteen men for large-caliber guns for most efficient operation.



Aside from growing somewhat larger in size, naval guns had not changed appreciably since the 17th century. Gun barrels were not grooved (hence the inaccurate fire) and the cannon balls did not explode—they inflicted damage by smashing anything that got in their way. Crews aimed their guns simply by tugging on ropes and pushing or heaving with handspikes. Elevation or depression of

the gun barrel was achieved by inserting simple pieces of wood called “quoins” under the breech. Guns generally lacked aiming sights, but this hardly made a difference since balls did not fly true at anything greater than pointblank range.

Even with these shortcomings, naval guns during the age of sail were deadly. Especially at short ranges, the carnage inflicted by cannonballs to man and ship was terrible. Even thick oak

planking of greater than two-foot thickness was easily pierced by a well-directed shot at short range. It is said that HMS *Victory*'s first broadside at the Battle of Trafalgar, delivered at less than 100 yards against the stern of the French ship-of-the-line *Bucentaure*, killed or wounded 200 French sailors (almost one-quarter of its crew) and put more than twenty of its cannon out of action.



As a rule, the larger the ship, the heavier guns it deployed. During the Napoleonic period, European ships-of-the-line usually carried 32-pounder long guns on their lower decks and 18- or 24-pounder guns on their middle and upper gun decks. Frigates were generally armed with 12- or 18-pounders, although heavy US Navy frigates rated at 44 guns (*Constitution*, *United States*, *President*) were armed with 24-pounders for the most part—which in large measure explains their startling successes against British frigates in ship-versus-ship actions during the War of 1812. Sloops and brigs usually carried 9- or 12-pounder guns, although later in the Napoleonic wars they were predominantly armed with “carronades.”

In the 1770's a new type of gun called the carronade was first placed in naval service. A carronade, which was sometimes referred to as a “smasher” in the Royal Navy, was essentially a cut-down version of a conventional naval gun. Its gun barrel was only about half the length of a normal “long” gun, and it weighed less than one-third as much. (A 32-pounder long gun, for example, weighed 6,160 pounds; a 32-pounder carronade weighed only 1,900 pounds.) The carronade's relatively light weight enabled captains to position them on the forecastle-quarterdeck (the uppermost deck of a warship), where heavy large-caliber guns could not be placed before due to their overwhelming weight. The carronade's major drawback was its extremely limited range. It had little chance of hitting targets more than 600 yards away.

When carronades first came into widespread use in the early years of the Napoleonic wars, the firepower of men-of-war—particularly frigates and sloops—increased dramatically. For the first time in the gunpowder era, relatively small ships could carry large-caliber guns such as

32-pounders. (The US Navy frigate *United States* deployed 42-pounder carronades, a ball weight that was usually not even used by ships-of-the-line.) By the War of 1812 most small frigates and sloops in all navies were predominantly armed with carronades. The USS *Essex*, nominally a “32-gun” frigate, actually deployed with forty 32-pounder carronades and six 12-pounder long guns. (A gun mix that incidentally led to the ship's demise in 1814.)

In the game a ship's firepower is quantified by giving it a “gun value” and a “carronade” value for both its port and starboard sides. This is displayed on the ship's *Status* screen with a number of gun and carronade boxes equal to its values. The heavier the caliber of the ship's guns, the greater its values. For those of you who are interested in such matters, the following chart lists the types of guns and carronades and their approximate values in the game:

Type of Gun/Carronade	1 Point Equals...
64-pounder carronade	1 carronade
42-pounder carronade	1.25 carronades
32-pounder gun/carronade	1.5 guns/carronades
24-pounder gun	2 guns
18-pounder gun/carronade	2.5 guns/carronades
12-pounder gun	3 guns
9-pounder gun (or less)	4 guns

By far the most common type of shot for long guns and carronades was “round shot” (also known as “ball”), a simple solid cast-iron ball of a weight equal to the “pound” classification of the gun. Crews occasionally loaded two (or even three) round shot into the barrel, which increased the destructive power of the shot but dramatically reduced its accuracy and range. At very close





ranges—200 yards or less—captains regularly ordered their crews to load “grape shot,” a canvas bag filled with a dozen or more mini-round shot. Grape was highly effective against enemy personnel, but of little use against the enemy’s hull, rigging, or ordnance. “Chain shot” (rarely used by the Royal Navy) consisted of two round shot (or half-shot) connected by a chain. Although it had a limited range (about 600 yards), the whipping and whirling chain was very destructive when fired against the enemy’s rigging and sails.

As the capture or destruction of the enemy was the prime objective for any man-of-war, it is not surprising that the battle station for the vast majority of crew members was at the guns. All other crew functions were secondary to the ship’s firepower. (The only exception to this rule occurred when opposing vessels closed to boarding range, at which point gun crews would generally leave their guns at the behest of the captain, arm themselves with cutlasses and pikes, and form a boarding party.) In battle, close to ninety percent of a ship’s crew worked the guns (or directed the fire of the guns in the case of officers). Relatively complex maneuvers, such as tacking and wearing, required men to leave their positions at the guns to work the sails, yards and ropes, which obviously caused the rate of fire and effectiveness of the ship’s guns to suffer.

For efficient operation, naval guns needed large crews. Even a relatively small 18-pounder long gun required a minimum crew of five—and, more realistically, a crew of ten. (Carronades, however, could be operated by three or four men due to their light weight.) Large 1st Rate ships-of-the-line carried over 100 long guns, many of the huge 32-pounder variety, so it takes only simple multiplication

to figure out that nearly one thousand men were required to operate the ship’s guns under optimum conditions.

### Computer Version vs. Boardgame

Devotees of the original *WOODEN SHIPS & IRON MEN* boardgame will note several significant changes in the computer version. First and foremost, six-sided hexagons are no longer used to regulate movement and gunfire. Given the design freedom allowed by the computer format, one of our first decisions was to scrap hexes by using the simple logic that there was no longer any particular reason to keep them. By opening up the axes of ship movement from six arcs of 60 degrees apiece to eight arcs of 45 degrees apiece, we believe we have not only improved the realism of the game but also enhanced the player’s sense of real tactics during the age of sail.

Another major change in the computer version of the game is the player’s control of crew assignments. In the boardgame, crew members were assumed to be assigned to the guns unless functioning on a boarding party. In the computer game, starting with 90 percent of their crew on the guns and 10 percent aloft, the player can make any adjustments to crew assignments as he sees fit during the course of the game. Most important, a completely new crew function—Sails—has been added. This function simulates crew members assigned to work the sails, yards and ropes—the more crew members aloft the greater the maneuverability of the ship (although the ship’s ability to fire will suffer).

Combined with the new eight axes of movement, the Sails function allowed us to introduce to the computer game a far greater degree of realism in ship maneuvering than in the board version. Assuming they have the requi-



site crew members aloft, warships can now tack—a very useful maneuver in many circumstances.

In the boardgame, ships can operate in one of two sail configurations: “battle” sail and “full” sail. We have expanded this to three sail configurations in the computer version by adding “plain” sail (a status halfway between battle and full sail). It takes at least 20 percent of your crew aloft to change sail status. The more sail placed on the yards, the faster you will travel—but you will be far more susceptible to enemy rigging fire and, due to the more unstable platform, the accuracy of your own gunfire will deteriorate. Furthermore, ships in plain sail and full sail are likely to suffer rigging damage in gales and storms.

Ships in the computer version of the game are judged to be in one of four speed categories: Very Fast, Fast, Slow, and Very Slow. The speeds in knots for each of the four

speed categories in the various attitudes to the wind are given below. The speeds are for battle sail in a normal breeze; plain and full sail speeds are somewhat faster.

Another addition to the computer version is the campaign game, in which the player takes command of a U.S. Navy man-of-war during the War of 1812 and carries out a cruise in the Atlantic in search of British prizes, be they merchantmen or men-of-war. When undertaking the campaign game, players must think strategically rather than tactically: you never know what you’ll run into during the cruise, and you must balance your desire for prizes with a healthy instinct for survival. The U.S. Navy is small (only 16 ships in 1812), and it cannot afford to lose you! We had fun working on this part of the game and feel that it adds a new dimension to the player’s understanding of the age of sail.⚓

### BATTLE SAIL SPEED IN NORMAL BREEZE

ATTITUDE TO WIND	SHIP SPEED CATEGORY			
	Very Fast	Fast	Slow	Very Slow
Taken Aback*	0 knots	0 knots	0 knots	0 knots
Close-hauled Port/Starboard	2 knots	2 knots	2 knots	2 knots
Port/Starboard Beam	6 knots	5 knots	4 knots	3 knots
Port/Starboard Quarter	8 knots	8 knots	6 knots	5 knots
Before the Wind	7 knots	6 knots	5 knots	4 knots

\* Ships cannot move forward when facing directly into the wind. They must drift backwards in the direction the wind is blowing.



## HINTS ON PLAY .....

**T**hose with little knowledge of old sailing ships may feel somewhat intimidated by the game. Don't be! Sure, there are a lot of things to learn about how ships perform under different wind conditions and in the various attitudes to the wind, but this knowledge will come fast. Besides, always keep in mind Nelson's rule (already quoted earlier) that "no captain can do very wrong if he places his ship alongside that of the enemy."

So how do you defeat your opponent?

First and foremost, you must fully understand the capabilities of not only your ship, but that of the enemy. Compare crew sizes and qualities, numbers of guns and carronades, and sailing qualities. Then decide upon one of two strategies:

- 1) Attempt to out-maneuver the enemy and overcome him by gunfire; or
- 2) Capture the opponent by grappling with him and boarding.

As circumstances change during the battle, it is possible—even likely—that you will switch from one strategy to the other.

### Boarding the Enemy

Unless your ship is as fast and nimble as the opponent's and you have a significant advantage in crew size and quality, it is generally inadvisable to attempt to win the battle by boarding. Boarding is a very decisive act: the side with a manpower and crew quality advantage will generally win the game in a turn, or at most a few turns. If you outnumber the enemy's crew by a large margin and you have a near-equal or higher crew quality value, then

by all means attempt to bring the game to a quick end by boarding. In the same vein, if you're significantly out-matched in crew size and quality, always attempt to avoid grappling; but if you do by some chance still end up fouled with the enemy, attempt to unfoul as quickly as possible and get away. There is one exception to the above rule: If you're getting beaten badly and have little chance of overcoming the enemy by gunfire, you might as well make a final desperate attempt to board the enemy. By doing so you will have only a small chance of winning, but that small chance is better than no chance at all.

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*"I have not yet begun to fight."*

—Captain John Paul Jones

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With relatively evenly-matched crews it does not make much sense to board at the start of the game: the ensuing melee combat will be nothing more than an even game of chance in

which both sides have a roughly equal chance of winning. You can have a better chance of emerging victorious by intelligent maneuvering, and that is the course you should probably take in evenly-matched contests—at least until a later point in the game in which circumstances have changed.

### Raking the Enemy

If you engage the enemy in a battle of maneuver, always remember that the primary object of maneuver is to bring your guns to bear advantageously against the enemy while preventing the enemy from doing the same to you. Unlike modern warships, men-of-war in the age of sail had highly restricted fields of fire. Any target within 45 degrees to port or starboard of the direction the ship pointed (or within 45 degrees to port or starboard of a direction dead astern) could not be effectively engaged.



Thus it was entirely possible to blast the enemy with a full broadside and receive no fire in return. This accomplishment, known as a “rake” (or “crossing the enemy’s T”), was the goal of any ship captain in a battle of maneuver. Furthermore, raking fire was doubly effective because the round shot hurtled down the length of the target’s hull rather than perpendicular to it, shattering everything and everybody in their paths.



In the battle between USS *Constitution* and HMS *Guerriere* on 19 August 1812, the American frigate raked its British opponent twice within five minutes at under 100 yards, inflicting blows from which the British ship could not recover. *Guerriere* struck its colors fifteen minutes later. As it was in history, so it is in the game: If you can succeed in raking the enemy a couple of times at close range while avoiding enemy rakes, you will inevitably win the game.

Rakes are difficult to achieve because no matter how deftly you maneuver your ship, you can never make more than an educated guess about what the enemy is going to do. Above all, he is generally going to try to avoid being raked by you. Nevertheless, the more mobile and maneuverable you are than the enemy, the easier you will cross his “T”. If you have more speed and momentum than your opponent, you can sail a greater distance and make more turns than he can, and as a result more raking opportunities will present themselves. There is nothing more frustrating than sailing close-hauled at only two knots while your opponent is doing four times your speed with the wind on his quarter. In this event, he can literally sail circles around you and blast you without receiving effective return fire.

## The Weather Gauge

You can try to achieve a speed and maneuverability advantage over your opponent by obtaining the “weather gauge.” This means that you are positioned to windward of the enemy, who is deemed to be on the “lee gauge.” By holding the weather gauge you can approach the enemy with the wind at your back or on your quarter, while the lee gauge vessel moves more slowly—close-hauled or with the wind on its beam—to approach you. By moving significantly faster than your opponent, you can generally decide when to initiate—or avoid—close action or boarding. However, the weather gauge is not a panacea. Even a slow-moving ship can deliver devastating broadsides when properly maneuvered. In the great set-piece naval battles of the age of sail, such as Trafalgar and the Saintes, it was usually the Royal Navy that aggressively sought the weather gauge and the French Navy that purposefully refused or failed to possess it.

## Long Guns vs. Carronades

In scenarios from the Napoleonic wars, all navies’ warships are armed in part with short-ranged carronades. As a rule, the smaller the ship the greater its percentage of carronades. When you begin a scenario, check your ship’s armament: If you are heavily armed with carronades, you must close to a range of 600 yards or less (effective carronade range) with the enemy as quickly as possible to have any chance at all of winning, especially if your opponent is equipped primarily with long guns. In the opposite vein, if you are carrying primarily long guns and are engaged with a ship armed mostly with carronades, you should strive to remain beyond 600 yards range so that you can fire upon the enemy without receiving effective return fire. This is precisely the tactic employed by the





British frigate *Phoebe* (30 long guns, 16 carronades), which on 28 March 1814 overwhelmed and captured the American frigate *Essex* (6 long guns, 34 carronades) off the coast of Chile.

### Choosing Your Shot

When engaging in a gun duel with the enemy, recall that the four types of ammunition loads available in the game have vastly different characteristics. You will probably use **Roundshot** most of the time because of its long range (2,000 yards) relative to the three other ammunition types.

**Doubleshot** is not very useful because of its limited range (200 yards) and its lengthy load time (six minutes, or two turns). However, doubleshot is extraordinarily effective against the target's hull and crew. One tactic that was often used in reality was to load the guns before the start of battle with double (or even triple) shot. This tactic can also be used in the game, as the computer allows you to freely load any shot type before the start of the scenario with no loading delays. If you choose to do this, your ship will hold fire until it reaches a position less than 200 yards distant from the target—so sail as quickly as possible straight for the enemy and let 'er rip!

**Grapeshot** is effective only against the enemy's crew. It has no effect against his hull, rigging, or guns. You may wish to use grape for several reasons. If you are expecting to grapple and board the enemy fairly soon, you probably will want to reduce his crew size so that you have a better chance of winning when the boarding melee takes place. Similarly, if you are close to reducing the target to a crew complement of zero, it is advisable to use grape because the enemy vessel automatically strikes (surrenders) when

100 percent of its crew is Out of Action as shown on its *Status* screen. (On the other hand, you will want to use roundshot when the target is close to having all its hull boxes destroyed on its *Status* screen. The ship automatically strikes when all its hull boxes are gone—but you will never achieve this goal with grape because it has no effect against the hull.) Like doubleshot, you will find grape useful only in close action due to its 200-yard range.

Although **Chainshot** may be used against either the target's rigging or hull, it is much more effective when used against rigging. Although chainshot is somewhat limited by its 600-yard range, it is highly effective against not only the target's rigging but also its crew. However, it has no effect whatsoever on the enemy's guns, carronades, and hull. It is best to choose chainshot when you are seeking to slow the enemy down, perhaps when you are chasing him or are being chased. It doesn't take much rigging damage to slow a ship down. For example, a ship which has lost only thirty percent of its rigging boxes on its *Status* screen is slowed by two knots—a significant loss of speed in an era when eight or nine knots was considered fast.



In the age of sail, French men-of-war, whose primary objective was to cripple the enemy's ability to maneuver and chase, commonly used chainshot. The British, on the other hand, almost never used chainshot since their main goal was to smash the enemy's hull to pieces and demoralize or kill his crew. This objective could only be achieved by firing conventional roundshot directly into the target's hull as quickly and accurately as possible.



### Where to Aim

When engaging the enemy with gunfire in the game, you may choose to shoot at the enemy's hull or rigging. (However, sometimes you will have no choice: at ranges of 1,200 yards or more, fire must be directed at the rigging; at ranges of 200 yards or less, fire must be directed at the hull.) As a rule, hull fire is more decisive: it is much more likely than rigging fire to knock out or reduce the two most threatening elements possessed by the enemy ship—its guns and its crew. Unremitting hull fire may cause the enemy to strike due to loss of crew members or destruction of the hull, whereas rigging fire is extremely unlikely to force capitulation. On the other hand, rigging fire at ranges between 200 and 1,200 yards can quickly and effectively reduce the enemy's mobility, and if you are one who comes to believe after playing the game a few times that the side with superior mobility is the side that generally wins, you may want to give rigging fire a try. It is a risky tactic in that you will not dramatically reduce the enemy's ability to fire at you or capture you by boarding, but if you are committed to a battle of maneuver the risk may be worth it.

### Firepower

Recall that the more crew members you assign to the Guns function of your ship's *Status* screen, the more effective your fire will be. Your guns and carronades will be most deadly when at least 96 percent of your original crew complement is working the guns. Since the game always begins with 90 percent of the crew on Guns and 10 percent on Sails, you will have to go to your *Status* screen and change crew assignments if you wish to achieve your optimum fire capability, but your maneuverability will suffer

if you reduce your crew members aloft to less than 10 percent. However, if you are certain that you wish only to sail dead ahead or make a facing change of no more than 45 degrees in the upcoming turn, it makes sense to put as many crew members as possible on the guns. If you are losing crew members due to enemy fire, keep in mind that your gunfire begins to lose effectiveness when you have less than 76 percent of the original crew complement working the guns. If you have only less than 56 percent (or even worse, less than 36 percent) of the original crew on the guns, your fire will be dramatically less effective.

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*"Don't give up the ship!"*

—Captain James Lawrence

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A useful tactic that was occasionally used in reality was to maneuver the ship so that both port and starboard broadsides could be fired at the enemy in quick succession. This can be achieved by moving ahead for a short distance, opening fire with one side, then turning sharply or tacking so as to bring the other broadside to bear. This tactic, of course, is only useful if both broadsides are loaded—which is always the case at the start of the game. After that you can only load one broadside per turn, so if you keep up a constant fire against the enemy it may be difficult to have both broadsides loaded at the same time.

There are many more little secrets about naval tactics in the age of sail, but it is best that you, the players, boot up the game and learn them for yourselves. We hope you will have as much fun learning these secrets by playing the game as we did by researching, designing, and programming it.—Joseph M. Balkoski ♣





### ACKNOWLEDGEMENTS .....

From the very start of this project we at Stanley worked under the assumption that we were creating a sort of hybrid computer game: half conventional wargame, half sailing simulator. Sure, the game uses a grid and is not “real-time,” but we let you control the movement of your men-of-war roughly as they would have been maneuvered in reality. We are not dealing with fighter jets flying at Mach 2, so jerky movements of a joystick or frenetic jabs on the keyboard or on a mouse button are not in order. In an era when naval maneuver practically occurred in slow-motion—moving at eight knots (nine miles per hour) was considered fast—captains had plenty of time to observe and evaluate the enemy and to formulate battle strategies. Above all, we desired to give the players a feel for the slow-paced nature of naval tactics in the age of sail. We wanted them to know that they could ponder their moves carefully, but we also wanted them to realize that the consequences of each and every move are decisive.

For me the age of sail has always been of special interest. What is it about sailing ships that fascinates? I grew up with Forester’s Hornblower sea stories and later became irresistibly attracted—long before it was fashionable—with Patrick O’Brian’s series of Aubrey/Maturin novels set in the Napoleonic wars. Needless to say I jumped at the opportunity to work on *WOODEN SHIPS & IRON MEN* when I got the chance. Having played and designed strategy boardgames for over thirty years, I had always been used to seeing my ships and military units as tiny rectangular cardboard pieces on a hexfield and my terrain as a conventional two-dimensional flat map, leav-

ing one only to imagine what these things and places really looked like. There is, however, an overpowering sense of realism when one actually sees an accurate rendition of a man-of-war executing maneuvers of your own creation on a “3-D” ocean.

I suppose that is why computer games are so popular. I also suppose that is why they are so extraordinarily difficult to create. A good computer game is the product of long-term teamwork between several diverse groups: managers, designers, researchers, programmers, artists, musicians, sound effects specialists, testers, and marketers. An enjoyable product reflects good teamwork.

At the core of our team were several key people who made my complex, occasionally confusing design fit together smoothly. Mike Innella, Stanley’s vice president in charge of software development and a *WOODEN SHIPS & IRON MEN* boardgame player from way back, diligently watched over the product from start to finish. Project leader and lead programmer Mike Gercken expertly formed the programming and art staff into a cohesive team. Those programmers (Dean Pianta, Mike Peremsky, Kemper Davis) and artists (Scott Stinnett, Kent McAvoy, Christy McCabe) are of course responsible for all the neat features you see on the screen. If you enjoy the game, for the most part you have the aforementioned people to thank for it.

We would finally like to express to you our sincere gratitude for your purchase of *WOODEN SHIPS & IRON MEN*. By enjoying and learning from our games, we hope to earn your trust now and in the future. Thanks again and keep in touch.—Joseph M. Balkoski ⚓



## GLOSSARY .....

**Aft:** Toward the rear of the ship. Opposite of fore.

**Back Sail:** To change orientation of a sail so that the wind blows against it, thereby slowing the ship down.

**Battle Sail:** A configuration of a ship's sails (generally top-sails only) used in battle and in above-average winds. (Also known as "fighting sail.")

**Beam:** The widest part of the ship (its middle).

**Before the Wind:** A ship's orientation when the wind is coming from directly astern.

**Bow:** The front section of a ship. (Also called the "pointy end.")

**Brig:** A small man-of-war with two masts. (Sometimes called a "brig-sloop.")

**Carronade:** A short-barreled naval gun with a relatively high caliber but very limited range.

**Chainshot:** A type of ammunition which was effective against the enemy's rigging, consisting of two balls connected by a chain.

**Close-hauled:** A ship's orientation when the wind is coming from somewhere ahead of the port or starboard beam.

**Doubleshot:** An ammunition load in which two roundshot are placed in a gun.

**Fore:** Toward the front of the ship. Opposite of aft.

**Fouled:** A situation in which two or more ships have collided with each other.

**Frigate:** A 5th or 6th Rate vessel used for commerce-raiding or reconnaissance.

**Foremast:** The forward mast of a three-masted, square-rigged vessel.

**Full Sail:** A configuration of a ship's sails in which all normal sails were set, usually in light or average winds. Generally not used in battle.

**Grapeshot:** An anti-personnel ammunition consisting of dozens of small cast-iron balls encased in a cloth bag.

**Knot:** One *nautical* mile per hour (a little over 2,000 yards in distance). For example, a ship sailing at 5 knots would travel just over 10,000 yards per hour.

**Leeward Side:** The side of the ship the wind is not blowing on.

**Long Gun:** A conventional naval gun (as differentiated from a carronade).

**Mainmast:** The middle (and tallest) mast of a three-masted, square-rigged vessel.

**Mizzenmast:** The aft-most mast of a three-masted, square-rigged vessel.

**Plain Sail:** A ship's normal sail configuration in non-battle conditions, in which most sails were set. Usually employed in average and slightly above-average winds.

**Port:** Left when facing forward. Opposite of starboard. (Also known as "larboard.")

**Quarter:** The stern-most sides of a ship.

**Rake:** A situation in which a ship can fire at an enemy vessel but cannot receive effective return fire. (Also known as "crossing the 'T.'")

**Rate:** A classification of a ship's size from 1 (largest) to 6 (smallest).

**Rigging:** The ropes, chains and tackle that support and maneuver the sails.

**Roundshot:** A solid cast-iron ball, the most common ammunition type carried by a man-of-war.





**Schooner:** A small, fast and highly maneuverable fore-and-aft rigged vessel.

**Ship-of-the-Line:** (SOL) A 1st, 2nd, 3rd or 4th Rate ship, so-called because it held a place in a "line of battle."

**Sloop:** A small man-of-war with three masts, sometimes called a "ship-sloop" to differentiate it from a "brig-sloop."

**Starboard:** Right when facing forward. Opposite of port.

**Stern:** The rear section of a ship.

**Tack:** To turn into and across the wind and bring the wind from one side of the ship to the other.

**Taken Aback:** A ship's orientation in which it is facing directly into the wind.

**Wear:** To turn away from the wind so as to bring the wind from one side of the ship to the other.

**Windward Side:** The side of the ship the wind is blowing on.

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