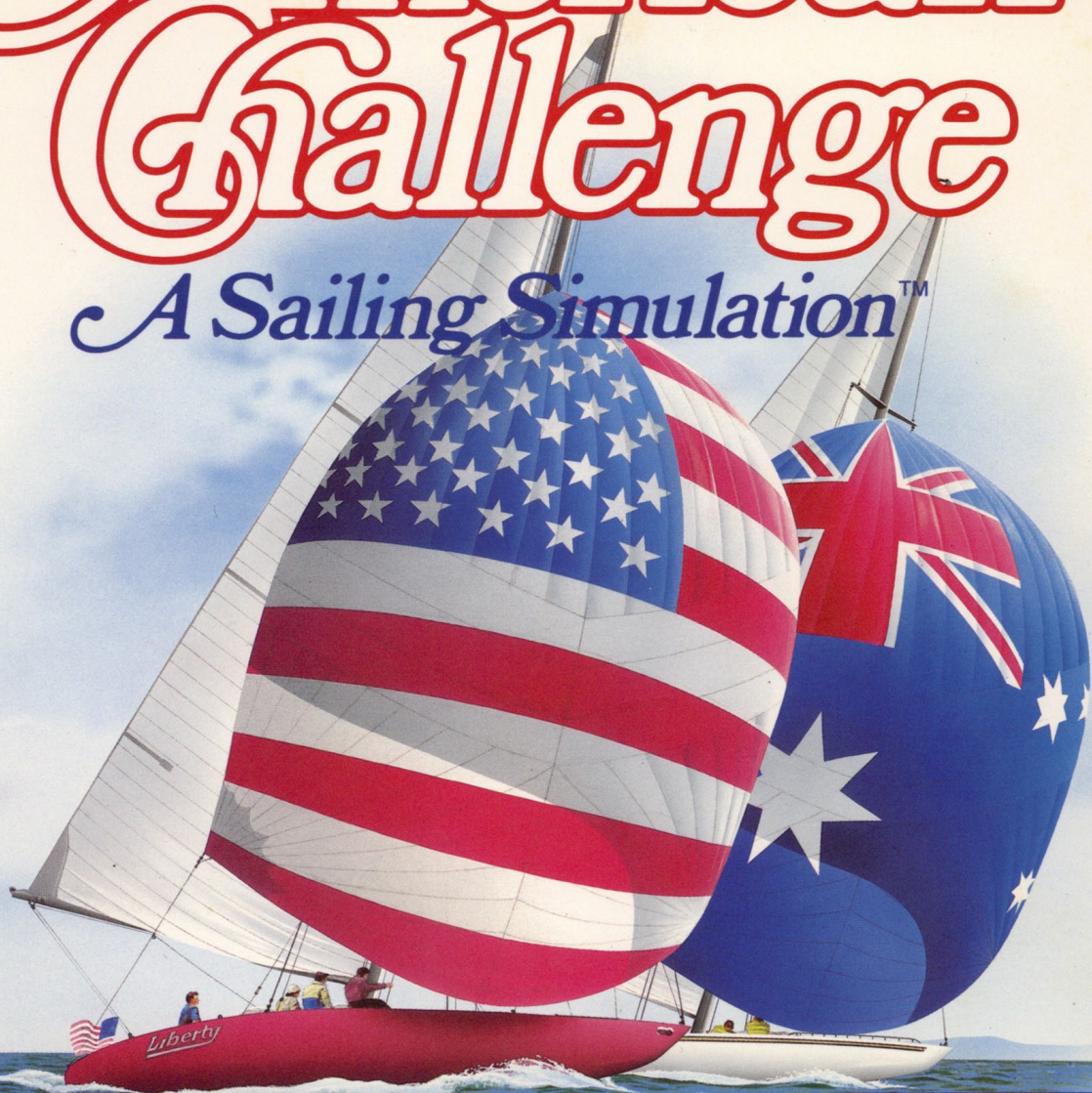


The American Challenge

A Sailing Simulation™



by Tom Snyder Productions



CONTENTS

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A Sailing Simulation

by Tom Snyder Productions



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The American Challenge A Sailing Simulation

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CONTENTS

Introduction	5
Start-Up	7
Operating the Sailboat	13
The Sail	
The Rudder	
The Centerboard	
The Chart	
Zooming In and Out	
Hiding/Showing the Other Boat	
Sending Messages	
Changing Your View of the Boat	
Your Instruments	
Troubleshooting	
Operating the Motorboat	25
Sailing Basics	27
Suggestions for Learning to Sail	
Conditions	
Starts	
Catching the Wind	
Adjusting the Sail: Points of Sailing	
Changing Course or Direction	
Racing Basics	39
Official Racing Rules	
Sailboat Collisions and Right-of-Way Rules	
Motorboat Collisions	
Racing Tips and Strategies	
Race Courses	
Map of the Bay	45
The America's Cup Tradition	46
Glossary	47
Bibliography	49
Transcript of Sailing Tutorial on 45-rpm Record	50

CONTENTS

3	..... Introduction
7	..... Start-Up
18	..... Operating the Sailboat
	The Sail
	The Rudder
	The Centerboard
	The Chart
	Zooming In and Out
	Hitting the Other Boat
	Sending Messages
	Changing Your View of the Boat
	Your Instruments
	Troubleshooting
25	..... Operating the Motorboat
37	..... Sailing Basics
	Suggestions for Learning to Sail
	Conditions
	Starts
	Catching the Wind
	Adjusting the Sail
	Changing Course
39	..... Racing Basics
	Off to the Races
	Sailing Rules
	Motorboat Collisions
	Racing Tips and Strategies
	Race Courses
42	..... Map of the Bay
46	..... The America's Cup Tradition
47	..... Glossary
49	..... Bibliography
50	..... Transcript of Sailing Tutorial on 45-Ton Record



The *American Challenge: A Sailing Simulation* captures the excitement and challenge of sailboat racing. You are in full control of your sailboat, operating the sail and rudder with precision through a variety of race courses. An instrument panel monitors the wind direction, wind speed, and boat direction as you race around Silicon Bay. Your boat responds to wind, currents, and your helmsmanship just as a real sailboat would. Experienced sailors will be challenged by the variety of race courses and the opportunity to compete with other record-breaking sailors. Novice sailors will have fun while learning the basic principles of sailing.

You can race your boat alone, competing against your best time or the current champion's, or race against another skipper. *The American Challenge* has the ability to link two computers for simultaneous head-to-head competition. You skipper your boat from one computer while your opponent sits at the helm at another computer. Race against other sailors in the same room by connecting two computers with a cable (available separately—an order form for an Apple cable is enclosed; see your dealer for an IBM cable). Or play against a distant opponent by connecting two computers via your telephone and a modem hook-up.

Your goal is to sail the first seven races until you've sharpened your sailing skills and compiled your **best time** for each race. Once you've done that, take the challenge: sail against the Australians on the most difficult course of all, the eighth race, or Cup Race. It's not enough to simply complete the course within the race's maximum time limit, although that won't be easy. The American challenge is to beat the Aussies' formidable winning time. Win back the Cup and America's pride.

For those of you who would rather cruise than sail, leave the sailboat onshore and take the motorboat out for a test drive around the bay. Or race it through any of the courses except the Practice Course and the Cup Race.

You'll note that this package contains a 45-rpm record. To get started, we suggest that you listen to the brief sailing tutorial on the record. To get motivated, flip the record and listen to Tom Snyder's original sailing song, "Win Back the Cup." Experienced sailors can then read the "Start Up"

instructions and start sailing. Novice sailors may also want to read the "Operating the Sailboat" and "Sailing Basics" sections in this manual and may want to try the "Practice" option on the race menu before starting an actual race.

This manual is organized into four main sections: Start Up; Operating the Sailboat/Motorboat; Sailing Basics; and Racing Basics. At the end of the guide you will also find a map of the bay where all races take place, a glossary of sailing terms, a bibliography of sailing books, a brief history of the America's Cup Races, and a transcript of the sailing tutorial that is on the record. Instructions for connecting two computers by modem or by direct cable are enclosed on a separate card.

See you at the starting line.



START-UP

Hardware Requirements

Apple® II family; 64K
Single disk drive
Monitor or TV (Color
recommended)

(or)

IBM® PC with graphics card or IBM
PCjr™; 128K
Single disk drive
Monitor or TV (Color
recommended)

Optional:
Apple, Hayes®, or Hayes-
compatible modem
Direct-connect cable

Optional:
Hayes, Hayes-compatible, or PCjr
modem
Direct-connect cable

Loading/Start-Up: One-Computer Version

IBM users only: Before using The American Challenge for the first time, follow the steps under "Installing DOS" (below). Then follow these loading instructions.

To help you get started, we recommend that you listen to the sailing tutorial on the enclosed 45-rpm record (or read the transcript of the tutorial in the manual). To use the tutorial, simply load *The American Challenge* disk into the computer, then turn on the record and follow along. Follow the steps below to load the program.

1. Turn off the computer and turn on your monitor or TV.
2. Insert the disk into the disk drive and turn on the computer.
3. The program will load into the computer's memory and an animated sailboat picture will appear on your monitor or TV. Press **ESC** when you are ready to go on. (The tutorial begins at this point.)
4. *Apple users only:* The next screen asks you to type in either **1** or **2**.
 1=Color Display
 2=Monochrome Display
5. Then the game selection menu will appear. Type **1** to select the one-computer version.
6. Enter a name for your boat. Use up to 11 characters. Press **RETURN** (**ENTER** on an IBM PC or PCjr).

7. Type **1** to race the sailboat or **2** to race the motorboat.
8. Select a course from the race menu. Use the space bar or the ↓ and ↑ keys to move up and down the list of race courses (the left-hand column). When the cursor is on the race of your choice, press **RETURN**.
9. Next you will see a preview, or chart, of the course. The chart shows the buoys you must round and the order in which you must round them. The black circles represent buoys, the horizontal black line shows the starting line, and the white line shows the course. (For more information, see "Chart" in the section called "Operating the Sailboat.")
10. The race will now begin. In the opening screen, you will see your boat in its starting position. You will also see the record-holding boat—the "ghost" boat—which will have a white stripe on the stern to distinguish it from yours.

Loading/Start-Up: Two-Computer Version

The two computers can be connected either directly by a cable or with a telephone modem hook-up. You will need an *American Challenge* disk for each computer. Refer to the "Two-Computer Races" booklet that comes with the package for complete set-up information.

Installing DOS—IBM Users:

To make the program load and run automatically when you turn on your computer, follow the steps listed below the first time you use *The American Challenge* disk. Each subsequent time you want to use *The American Challenge*, simply insert the disk into the drive and turn on the computer. The program will load automatically.

One Disk Drive or PC/XT Systems

1. Boot the system from a DOS disk (2.0 or higher) or hard disk drive.
2. Respond to the date and time prompts.
3. Remove the DOS disk. For XT systems, type **A:**.
4. Insert *The American Challenge* disk.
5. At the **A>** prompt, type **INSTALL1** and press the ← (ENTER) key.
6. Follow the instructions on the screen.



Two Disk Drive Systems

1. Boot the system from a DOS disk (2.0 or higher) in Drive A.
2. Respond to the date and time prompts.
3. Remove the DOS disk from Drive A.
4. Insert *The American Challenge* disk into Drive A.
5. At the **A>** prompt, type **INSTALL2** and press the **↵ (ENTER)** key.
6. Follow the instructions on the screen.

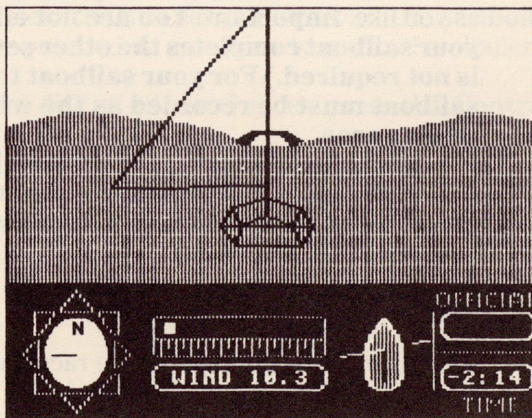
If you do not wish to install DOS on your *American Challenge* disk, you can load the program by following these steps:

1. Boot the system from a DOS disk (2.0 or higher) or hard disk drive.
2. Respond to the date and time prompts.
3. Remove the DOS disk. For XT systems, type **A:**.
4. Insert the *American Challenge* disk.
5. At the **A>** prompt, type: **SAIL** and press the **↵ (ENTER)** key.

Starting Position

Your starting position is the same for all the races:

- A) The wind is coming from the north.
- B) Your boat is facing west.
- C) Your sail is out all the way.
- D) You have no speed.
- E) The imaginary starting line, which stretches between the starting buoys, is to the north.



Opening view of a race

The timer will show a random negative number between two and three minutes. The race begins officially when the timer hits **0:00**. You don't want to cross the starting line until the timer reaches **0:00**.

For specific information on starts, see "Starts" in the "Sailing Basics" section. For general information on handling your boat and understanding the instruments, see "Operating the Sailboat" or "Operating the Motorboat." Good luck! We'll look for you at the finish line.

Understanding The Race Menu

The Apple race course menu looks something like this:

Choose a course for the sailboat
with the space bar.

Courses	Stat	Winners	Times
Practice			
Beginner	S2	Courageous	05:10
Triangle	S1	Courageous	09:45
H. Anderson	S0	Demo	10:19
Gold	S0	Demo	8:44
Needle	S0	Demo	4:51
Atlantic	S0	Demo	15:33
North South	S0	Demo	6:36
Cup Race	S0	Aussies	12:26

Press RETURN when ready.

Note: Times on other machine formats may vary slightly.

Courses

Sail the courses (except the Cup Race) in any order you wish and as often as you like. **Important: You are not eligible to sail the Cup Race until your sailboat completes the other seven races. (The Practice Course is not required.) For your sailboat to qualify for the Cup Race, your sailboat must be recorded as the winning time for each of the first seven races.**

In general, each course is a bit more challenging than the one preceding it. Later courses have stronger currents and often have more legs than earlier races. All the courses except the Needle are based on actual sailboat races.

Stat

The columns to the right of the race names show the status (STAT) of all races, the names of the winning boats, and the winning boat's time. For example, an "S2" and "Courageous" to the right of the Beginner's Race means that the fastest sailboat time recorded on the disk was turned in



by the boat named "Courageous." The "S2" signifies that "Courageous" is a sailboat (S) and that the race has been completed two (2) times. If a race has not yet been completed on your disk, you will see "S0" (defended 0 times) under the status column and "Demo" under boat name. Try to come in under the "demo" times; they can be beaten. Note that although the winners and times information for a particular course can remain unchanged, the status information will update each time a boat unsuccessfully challenges the record holder.

Winners and Times

The program records only the best time for each race on the disk. Once a course has been completed, the winner's name and time will continue to be displayed until a new record time is set in a one-computer race or until that course is completed again as a two-player race. After a one-player race, the winner's name and time will change only if a new record time was set. But after a two-player race, a new winner's name and time will always be displayed regardless of whether it sets a new speed record.

The list of motorboat races is the same as the sailboat list except that motorboats cannot go on the Practice Course or the Cup Race. If a motorboat has the fastest time for a race, you will see an M in the status column (e.g., M2).

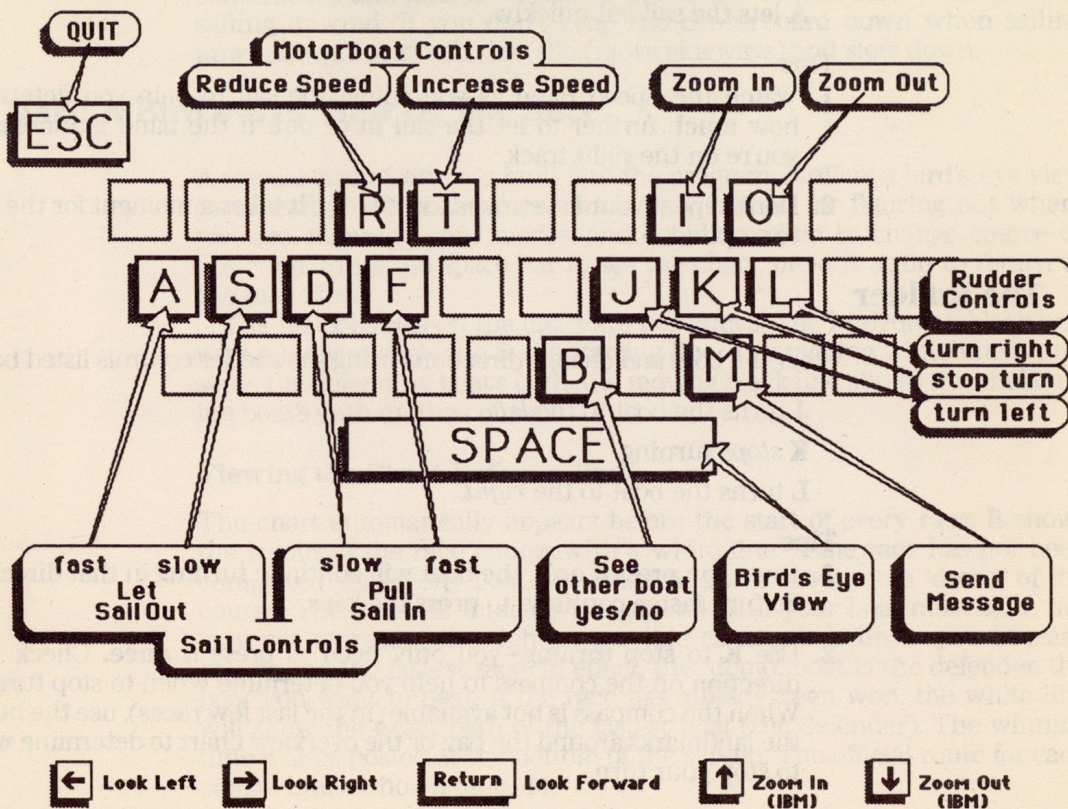
Be careful about switching back and forth between motorboat and sailboat races. Choosing to take a motorboat on a race course that was last completed by a sailboat automatically wipes out the sailboat record. Conversely, taking a sailboat on a course that was last completed by a motorboat wipes out the motorboat's record. When you are about to do this, a warning message appears: "Erase current race file? (Y or N)" Pressing **Y** will wipe out the record. Pressing **N** will leave the record intact. Remember that if you want to challenge the Aussies in the Cup Race, you will need to complete the first seven races with the **sailboat**, not the motorboat. So once you decide you want to go for the challenge, race only the sailboat.

To clear the disk of all saved races, press the **Control** and **N** keys at the same time.

OPERATING THE SAILBOAT

This section explains each of the keyboard commands. This information is also summarized on the diagram below.

KEYBOARD MAP



The Sail

Press the keys listed below to control the sail. Keep pressing the keys until the sail is in the desired position.

F pulls the sail in quickly.

D pulls the sail in slowly.

S lets the sail out slowly.

A lets the sail out quickly.

Tips

1. Watch the Speed Band as you adjust the sail to help you determine how much further to let the sail in or out. If the band is increasing, you're on the right track.
2. Don't repeat your keystrokes too rapidly; it takes a moment for the boat to respond.

The Rudder

Steer the boat and change directions using the rudder controls listed below.

J turns the boat to the *left*.

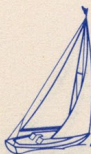
K stops turning.

L turns the boat to the *right*.

Tips

1. Once you press **J** or **L**, the boat will continue turning in that direction. To turn faster, continue to press the keys.
2. Use **K** to stop turning—you only need to press it **once**. Check your direction on the compass to help you determine when to stop turning. When the compass is not available (in the last few races), use the buoys, the landmarks around the bay, or the overview chart to determine when to stop your turn.

Note: Many small-boat sailors are used to steering with a tiller, a long stick attached to the rudder. When you use a tiller, you push the tiller in the *opposite* direction you want the rudder and boat to go. To simplify the simulation, the tiller has not been included in this program.



Centerboard

Press **C** to raise and lower the centerboard, a board extending vertically underneath the boat that gives it stability. The dark line that runs down the middle of the boat on the wind/sail indicator shows that the centerboard is down. Pressing **C** while the centerboard is down causes it to come up. The dark line on the wind/sail indicator disappears when the centerboard is up. When the wind is behind you (on a run), press **C** to raise the centerboard and gain more speed. Lower the centerboard when you are sailing upwind. If you don't keep the centerboard down when sailing upwind, your boat will side-slip (move sideways) and slow down.

Chart: A Bird's-Eye View Of The Race

A special chart feature is built into the program. It offers a bird's-eye view (overhead view) of the race and is very helpful for figuring out where you are, planning your moves, and deciding when to change course or direction. Press the space bar to see the chart; press it again to return to the race view.

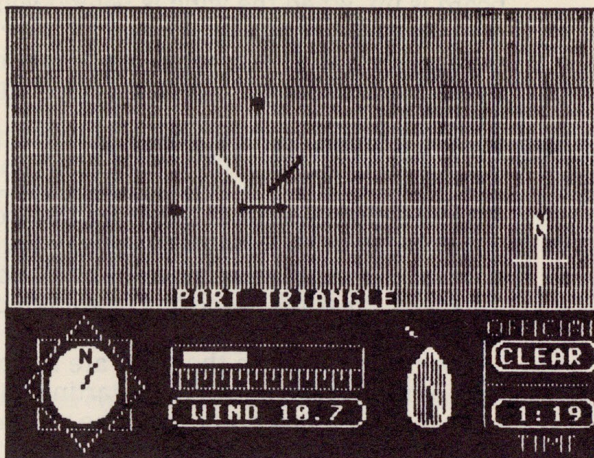
The black circles on the chart are the buoys. The horizontal, black line with a buoy at each end is the starting line. The moving white line represents the defending boat's path; the moving black line shows the challenging boat's path on the course.

Viewing the Chart Before a Race

The chart automatically appears before the start of every race. It shows the layout of the race course with a white line. If the race has not been completed yet by any boat, the white line will show you a "demo" of the course. The line will indicate the general path your boat must take, but may not represent the tightest possible course. It is up to you to learn how to sail the fastest race. In effect, the "demo" boat is the defender, the boat you want to beat. If the race has already been won, the white line will show the exact path of the fastest boat (the defender). The winning time will be posted at the bottom of the screen. The official route for each course is also shown on p. 44.

Viewing the Chart During the Race

You can see the chart at any time during a race by pressing the **space bar**. The white line indicates the last 40 seconds of the defender's boat's path. The black line shows the last 40 seconds of the challenger's boat's path.



The chart: during the race

In a one-computer race, the defender is the fastest boat on record; if no one has yet completed the race, the white line shows the path of the "demo" boat. In a two-computer race, you and your opponent determine at the outset who will race as the defender and who as the challenger.

If you have difficulty telling which boat is yours, you can always press **B** to remove your opponent's boat from view. Use the chart to help you figure out where you are and to help you decide when to change course.

In the one-computer version, when you view the chart, the race will be frozen. You will return to the exact position you left when you press the space bar again. Use the freeze option to help you plan your course, discuss strategies with the crew, or figure out how to get back on track.

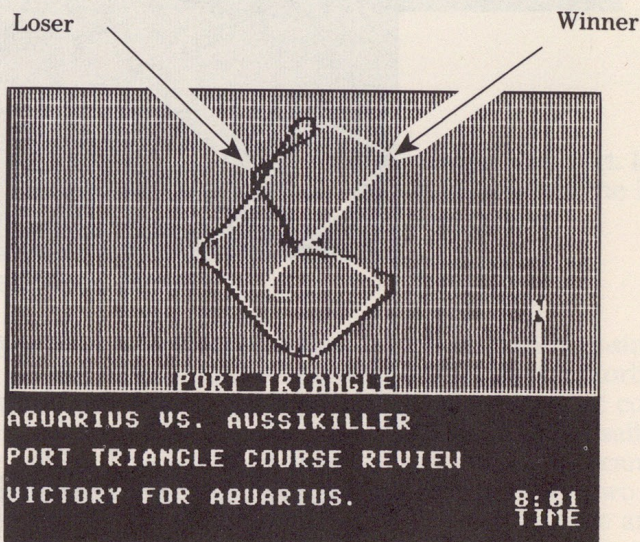
In the two-computer version, the race will **not** be frozen. You will continue to sail while looking at the overview. The chart will appear on your screen but not on your opponent's.



Viewing the Chart After the Race

The chart automatically appears at the end of each race, whether you complete the course or not. In the one-computer version, if you fail to complete the course within the maximum time allowed, the chart will show the path of your boat up to the time when the race ended. In a two-computer race, the chart will show the complete course of the winning boat and the course of the losing boat up to the time when the winning boat crossed the finish line.

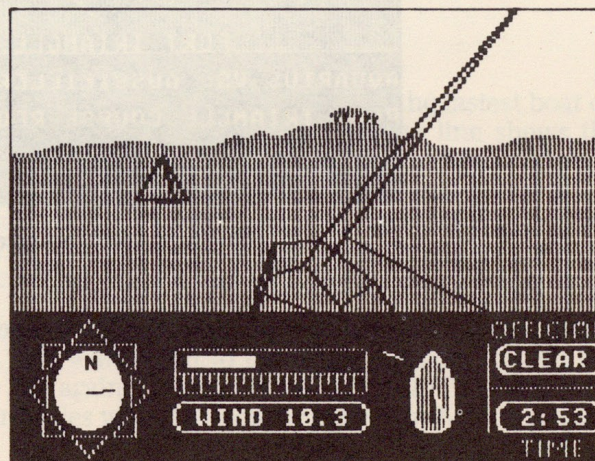
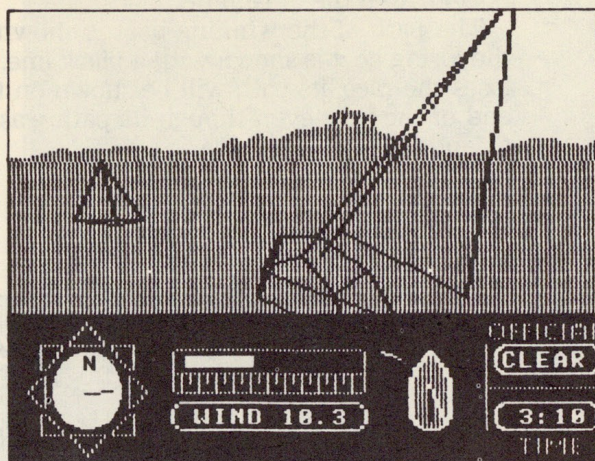
The path of the winning boat is shown with a white line; the path of the losing boat is shown with a black line. Note that if the defending boat loses the race, its path will be shown on the chart by a black line at the end of the race even though its path was shown by a white line (as the defender) during the race.



The chart: after the race

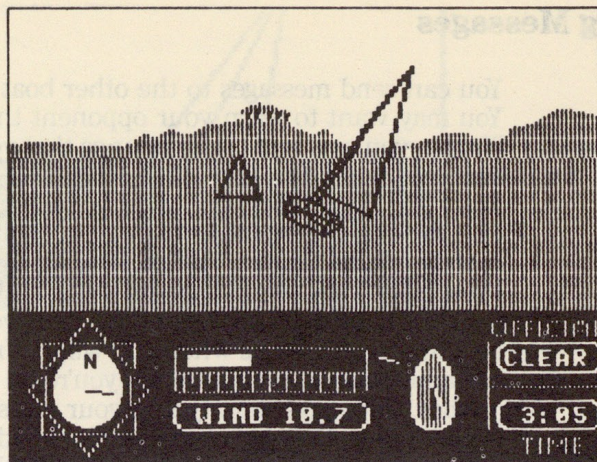
Zooming In And Out

The zoom-in and zoom-out features let you see a close-up or distant view of the race. Zooming in allows you to see the race as if you were sitting in your boat's cockpit. Zooming out puts you at a greater distance from your boat but gives you a broader perspective, which may let you see your opponent's boat even when your boat is not close to it.



Zooming in





Zooming out

You can also use zoom in and out when viewing the chart. If two boats are neck-and-neck, zoom in to find out which one has the lead. Zoom out on the chart to get an overall view of a large course.

Hiding/Showing The Other Boat

Whether you're in a one-player or two-player race, an opposing boat will be visible on the screen (unless you've switched from motorboat to sailboat or vice versa, thereby wiping out the record for that course). In a one-player race, this other boat represents the best race sailed on that particular course. This boat is, in effect, a "ghost" boat: you can sail into it with no consequences. But in a two-player race with the two computers connected either via direct cable hook-up or via telephone and modem, the other boat on the screen is actually your opponent's boat. It is not a "ghost"; if your two boats collide, you have a dispute to settle. (See the sections called "Sailboat Collisions" and "Motorboat Collisions" for additional information.)

Your opponent's boat is identified with a white stripe. The **B** key allows you to hide and show your opponent's boat. Press **B** once and the other boat will disappear from your screen. Press **B** again and it reappears on the course, although you may not always be able to see it from your boat's vantage point. For example, it might be at the other end of the race course; in that case, you might be able to see it by zooming out. You can remove the other boat from sight for the whole race or repeatedly turn it on and off during the course of the race.

Sending Messages

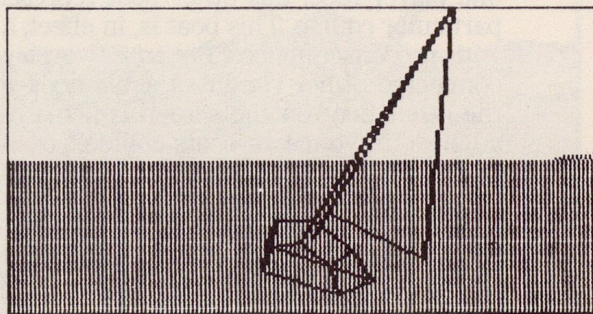
You can send messages to the other boat in the two-computer race only. You may want to warn your opponent that your boats are on a collision course, you may want to announce that you have right of way, or you may simply want to throw your opponent off balance with a distracting message. Press **M** and type your message—up to 19 characters may be used. Use the back arrow key to correct mistakes. Type slowly to ensure that each letter in your message is transmitted clearly to your opponent's screen. Press **RETURN** to send the message.

Pressing **M** does not freeze the race; your boat continues to move. It's best to send messages when you will not need to make any quick turns or sail adjustments, such as when you're on a run heading to the finish line.

Note: Once you start typing your message, you cannot use the sail or rudder control keys to change sail or rudder position again until you complete your message by pressing **RETURN**.

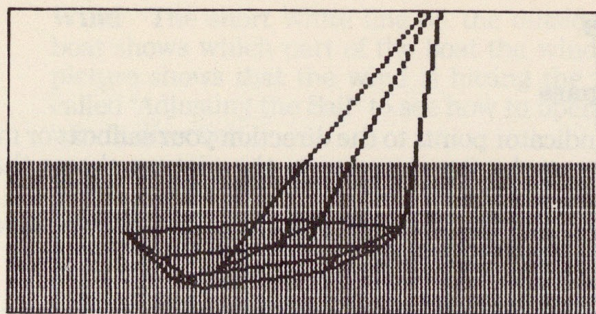
Changing Your View Of The Boat

At the start of each race, you are looking at your boat from behind. This vantage point gives you a good view of your sail and any buoys in front of you. You can change your viewing position by pressing the right or left arrow keys. Press the left arrow key to see the view as if you were standing outside the starboard (right) side of the boat looking left. Press the right arrow key to see the view as if you were standing outside the port (left) side of the boat, looking right. Press **RETURN** to resume looking straight ahead.

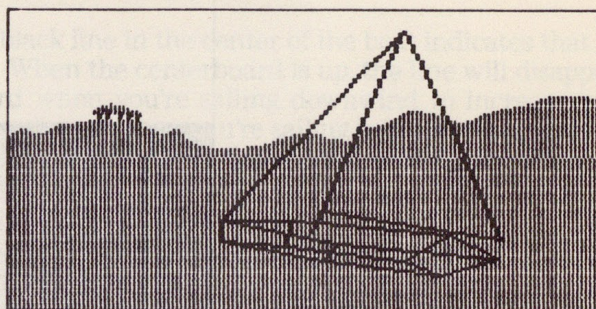


Normal view

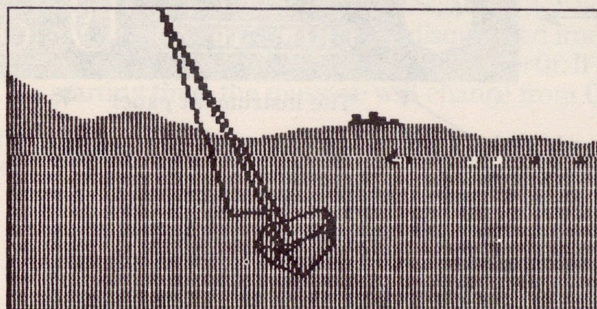




View from
starboard side



View from
port side



View from
bow

Remember that when you use the arrow keys to change perspective you are not turning your head around but are changing the position from which you are viewing the boat. Each time you press an arrow key, you change your viewing position by 45 degrees. After four keystrokes, you will be facing the bow looking back toward the stern.

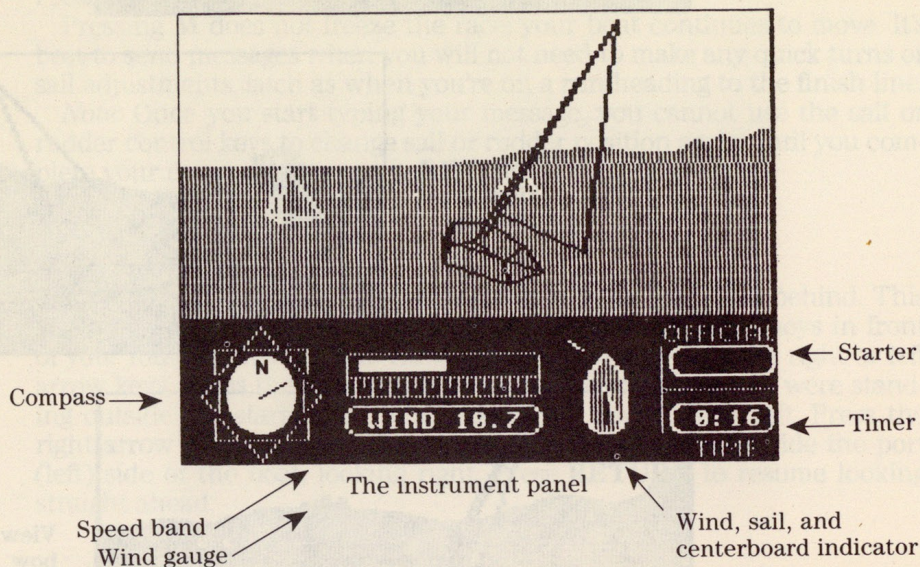
Side views can be particularly exciting when you are crossing the finish line; you'll see the buoys fly by. They are also helpful for adjusting your sail, since you can see where the sail is in relation to the stern. However, looking right and left can be confusing for beginning sailors. We suggest that you don't use these keys until you are familiar with the simulation.

Your Instruments

Compass

The indicator points to the direction your sailboat or motorboat is headed. For example, the compass in the picture shows that you are headed northeast.

Note: the compass is not present in the last few races to make the simulation more challenging.



Speed Band

The speed band is only visible when your sailboat or motorboat is moving. The longer the band, the faster your boat is moving. When the Speed Band begins to decrease, it's a good time to adjust your sail and/or direction.

Wind Gauge

This digital instrument monitors wind speed. A "Gust" indicates a sudden surge of wind. A "Lull" message indicates a sudden loss of wind.

Wind, Sail and Centerboard Indicator

Your sailboat is equipped with a wind, sail, and centerboard indicator. Your motorboat is equipped only with a wind indicator.



Wind The short white line on the outside of the small picture of the boat shows which part of the boat the wind is hitting. For example, the picture shows that the wind is hitting the bow (front). See the section called "Adjusting the Sail" to see how to operate the boat according to the wind's direction.

Sail The longer white line which begins on the inside of the boat represents the boom of your sail. (On a sailboat the mainsail is attached to the mast, the vertical pole, and to the boom, the pole that extends horizontally from the mast.) It shows the position of the sail.

Note: The compass, not the wind/sail indicator, shows which direction your boat is going.

Centerboard The black line in the center of the boat indicates that the centerboard is down. When the centerboard is up, the line will disappear. Raise the centerboard when you're sailing downwind to increase your speed. Lower the centerboard when you're sailing into the wind; with the centerboard down, the boat will not be pushed sideways by the wind.

Starter

The Starter is positioned above the timer and monitors whether you cross the starting line at the appropriate time. It reads **CLEAR** when you cross the starting line at or after the starting time, **0:00**. If you cross too early (when the digital number is negative, not positive), the Starter will read **OVER**, which means you are disqualified from winning unless you recross the starting line going from south to north. If you recross the line after the starting time, the message will change from **Over** to **Clear**.

Timer

The digital timer keeps track of the amount of race time that has elapsed both before and after the official start of the race. Before the race begins, the timer will show a negative number between two and three minutes (e.g., -2:12). This number indicates the time remaining until the start of the race. Once the race starts (when the timer reads 0:00), the timer goes up to 16 minutes. If you are not finished by then, you will receive a "**Time Violation**" message.

Note: Game time is faster than real time.

Troubleshooting

Where Am I?

It's easy to get lost. The following hints can help you figure out where you are.

1. *Check the compass* to see the direction you are heading in. (Remember, though, that the compass does not operate in the last several races. You'll have to rely on the overhead chart in those races.)
2. Press the space bar to *see the chart (overhead view)* of the course. You can see where you are in relation to the target buoys. In a one-computer race, the black line shows the last 40 seconds of your path. If you are sailing a two-computer race, the last 40 seconds of the challenger's path is shown in black; the last 40 seconds of the defender's path, in white. In a one-computer race, you are the challenger; the defender is the boat with the fastest time for that course.
3. In the one-computer version, press the space bar to *freeze the race*. Now you have the time to figure out your course and how to get back on track.
4. Use the *buoys, landmarks, and the other boat* to help you orient yourself.
5. *Find your position on the map of the bay (at the back of this manual)*. You can plot your course on the map.

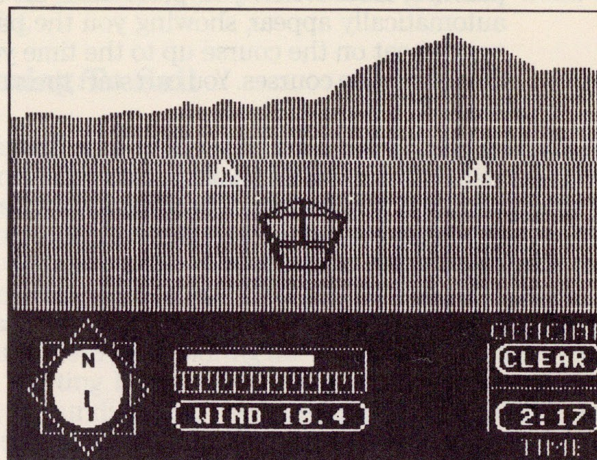
I Can't Move!

Your boat may be **"in irons,"** which means that it is facing directly into the wind, with the sail out too far. Check the wind indicator to see if the wind is directly hitting the bow (front) of the boat. When the sailboat is pointing into the wind and luffing, it will slowly move backwards. When you are moving backwards, your rudder works in the opposite way, just as your steering wheel would if you were driving a car in reverse. For example, if your sailboat is facing into the wind (north), you would turn the rudder to the left to go to the right (in a northeasterly direction). Keep turning the boat until the sail can catch the wind. The sailboat should be at a 45-degree angle or more to the wind direction. The speed band will increase as the boat starts to move forward.



Operating The Motorboat

Running the motorboat is a good way to familiarize yourself with the bay and the race courses. You'll complete race courses faster with the motorboat because you don't have to worry about the wind direction. Instead of taking a zig-zag course to reach an upwind buoy as you would with a sailboat, you can motor right for it in the motorboat.



The motorboat

To operate the motorboat, you use some of the same keys you use for the sailboat. There is no sail, of course, on your motorboat, so you don't use the A, S, D, and F keys.

To *steer* the boat, use the **J**, **K**, and **L** keys.

- J** turns the boat left
- K** stops the boat from turning
- L** turns the boat right

You control the *speed* by using the R and T keys.

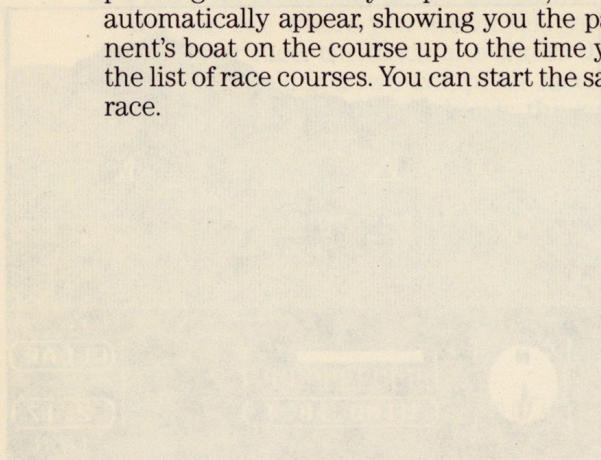
- T** increases the boat's speed.
- R** reduces the boat's speed.

Press the keys repeatedly until you achieve the desired speed.

When you race the motorboat in the one-computer version, you will never have a "Demo" boat to guide you as you would in a sailboat race. But you will see a "ghost" boat (a defender) if the last-completed race for that course was done by a motorboat. If the race was last completed by a sailboat, there will be no "ghost" boat during the race.

Quitting

Whether you're motoring or sailing, you can quit the race at any time by pressing **Esc**. When you press **Esc**, an overhead chart of the race will automatically appear, showing you the path of your boat and your opponent's boat on the course up to the time you quit. Then you will return to the list of race courses. You can start the same race again or choose another race.



SAILING BASICS

If you've never sailed and have never used *The American Challenge: A Sailing Simulation*, we recommend that you read this section before doing any serious computer sailing. Under "Suggestions for Learning to Sail," you'll find simple steps for getting started with the program. Under "Catching the Wind," "Adjusting the Sail," and "Changing Course," you'll find a crash course on sailing fundamentals. Pretty easy stuff, once you get the hang of it.

Suggestions For Learning To Sail

1. If you haven't done so already, listen to the sailing tutorial on the record that comes with this package. (If you don't have a record player, read the transcript of the tutorial printed in this manual.) The tutorial offers simple instructions for getting to the starting line on the Practice Course, the first option on the racing menu. After you listen to the tutorial, continue your practice sail. This will give you the opportunity to learn how to sail without worrying about the timer or another boat. You can sail around the area, exploring the bay, or you can attempt to sail around the two starting buoys. By the way, you don't need to worry about running aground; the bay extends infinitely in all directions.

After sailing for 16 minutes, the chart will appear and you will see an overview of your path. If you wish to stop before the 16 minutes are up, press **Esc**.

2. Some suggestions for using the Practice Course:
 - a) Explore the bay. Try to orient yourself using the landmarks.
 - b) Experiment with adjusting the sail.
 - c) Practice turning around a buoy. Try to turn as close as you can without colliding. (If you hit a buoy during a race, you will be disqualified.)
 - d) Practice crossing the starting line.
3. *Ignore the timer.* Relax; take your time sailing around the course.
4. *Get to know the keyboard commands.*
5. *Be a member of the crew.* There's room for two on the keyboard. You may want to control the sail while your friend controls the rudder.
6. *Take orders from an experienced skipper.* Consider sharing the keyboard with a pro who can demonstrate what to do.

7. *Watch experts sail.* Take note of their strategies for adjusting the sail and tacking.
8. When you feel comfortable with the sailboat, try the Beginner's Race or the Port Triangle Race. *Follow the path of the winning boat.* Whenever you're sailing a one-computer race and that course has been completed by at least one sailor, the path of the winning sailor's boat will be shown on the screen as you race. Keep the winning boat on the screen and try to line your boat up with it. Turn when it turns. If you don't see the winning boat, press **B** to make it appear. If no one has completed the race yet on your disk, a "demo" boat will be shown on your screen; follow the path of the "demo" boat.

Conditions

The Wind

The wind always comes from the **north** in *The American Challenge: A Sailing Simulation*. This direction is consistent for all the races. But the strength of the wind changes, surprising you with gusts and lulls. When the wind changes, a message will appear on the instrument panel.

Gust—a sudden, brief rush of wind.

Lull—a temporary drop in wind.

Note: A **gust** will turn the boat into the wind. This is called a **weather helm**. You can overcome a weather helm by turning away from the wind.

Currents

All the races except for the Beginner's have currents. The currents range from weak to strong and flow in different directions. The currents are shown on the course diagram for each race, on p. 44. As you operate your boat, you will feel the current pushing you. You must learn to maneuver the boat in order to take full advantage of the direction of the current and to prevent it from deterring you in the race.

Starts

This section provides step-by-step instructions for beginning each race. If you haven't done so already, load the program and select a race from the race menu. At the start of every race:

- Your boat is facing **west**.
- The wind is coming from the **north**.
- The wind is hitting the starboard (right) side of your boat.
- The sail is all the way out.
- You have no speed.



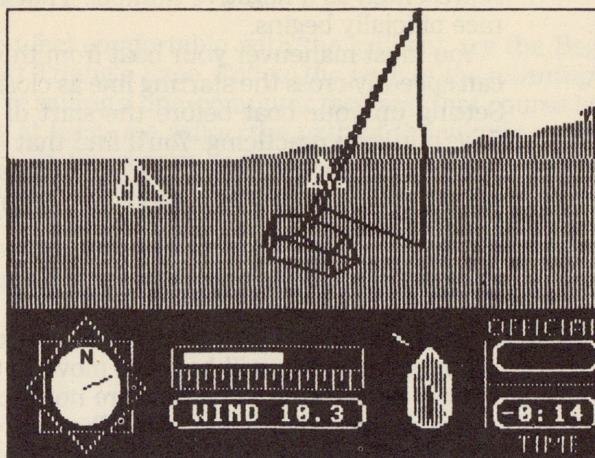
The timer shows a random number between two and three minutes, represented as a negative number. That is the time remaining before the race officially begins.

You must maneuver your boat from this position into one in which you can speedily cross the starting line as close to the starting time as possible. Setting up your boat before the start of any race may seem difficult at first, but keep practicing. You'll find that it becomes easy after awhile. We suggest that you practice by following these step-by-step directions, which we have divided into 2 sections: 1) Getting into a Good Starting Position and 2) Timing.

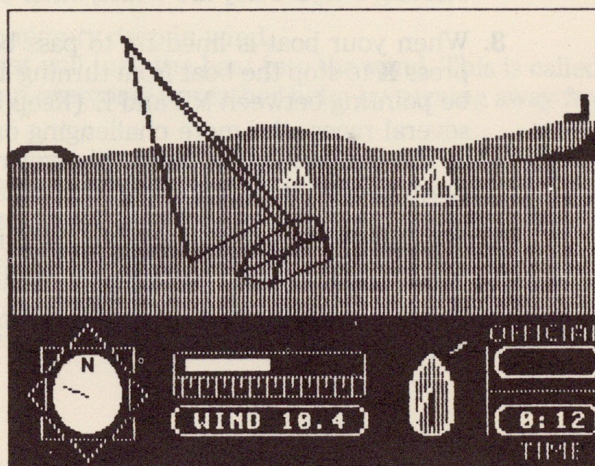
Getting into a Good Starting Position

- 1.** Pull the sail in a little with the **F** or **D** keys until the Speed Band begins to increase. You will begin to move to the west and will see two white dots in the water. The dots are not race buoys or warning buoys; they are there to help orient you. They are especially helpful when you are trying to steer a steady course and none of the bay's landmarks or none of the buoys is visible.
- 2.** Before you reach the dots, turn right by pressing the **L** key. First you will see one of the target buoys. Keep turning until you see the two starting buoys. They are white; other buoys are black.
- 3.** When your boat is lined up to pass between the two starting buoys, press **K** to stop the boat from turning any further. The compass should be pointing between NE and E. (Keep in mind, though, that in the last several races—the more challenging ones—you don't have the benefit of the compass.) If it seems like you're going to collide with a buoy, move the boat a little to the right or left.
- 4.** If you are unsure where you are, press the space bar to see an overview of the course. Press the space bar again to return to the race.
- 5.** You are on port tack. You might also start on starboard tack, as shown in the following pictures.

Racing starts



Port tack



Starboard tack



Experiment to find the way that works best for you.

Timing

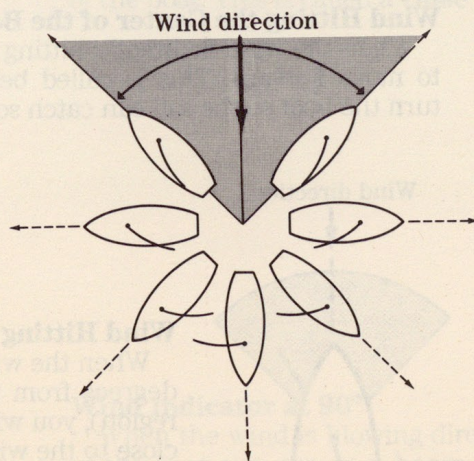
Your aim is to cross the starting line with a lot of speed at the starting time, that is, just after the timer reads **0:00**. It's tricky to get the timing right. You may find that you pick up so much speed that you fly through the starting line too early. On the other hand, you may lose time getting in the proper position or by facing straight into the wind and losing speed. With practice you'll be able to figure out a timing that works well for you. You may want the full two to three minutes to set up, or you may prefer waiting until the last 30 seconds.

Tips

1. If you are in danger of crossing the starting line before the starting time, let the sail out and the boat will lose speed. This is called **luffing**. Start pulling the sail in again 10-20 seconds before the starting time.
2. If the luffing strategy doesn't work, start setting up the boat earlier and practice getting into a good position.

Catching The Wind

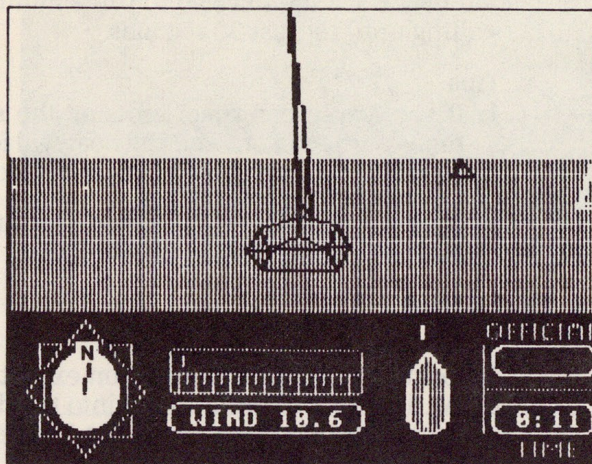
Sailboats can sail in any direction except into the wind (the shaded area in the diagram). In order to sail into the direction from which the wind is blowing, you must "tack" or zig-zag. This enables the sail to catch the wind from the side.



Possible sailing directions; boat cannot sail in shaded area

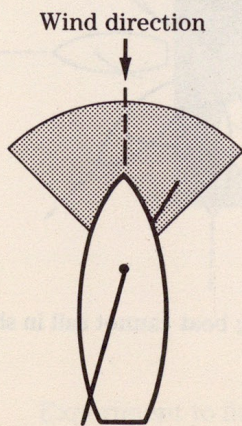
Adjusting The Sail: The Points Of Sailing

This section describes how to adjust your sail according to the direction of the wind and shows the different directions your boat can sail in relation to the wind (the points of sailing). Use the Wind/Sail Indicator to determine where the wind is hitting the sailboat and to adjust the sail position.



Wind Hitting the Center of the Bow

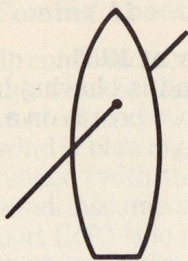
When the wind is directly hitting the bow (front), you will not be able to move forward. This is called being "in irons." Bring the sail in and turn the boat so the sail can catch some wind from the rear or sides.



Wind Hitting the Bow at Less than 45 degrees

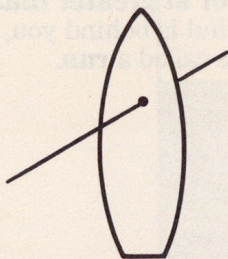
When the wind indicator is pointing less than 45 degrees from the center of the bow (the shaded region), you will have difficulty moving. Sailing too close to the wind is called **pinching**. Bring the sail in and turn your boat so that your boat's angle to the wind is at least 45 degrees.





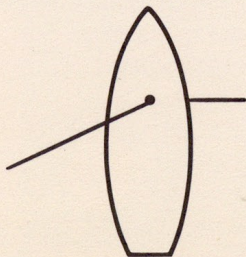
Wind Indicator at 45°

When the wind is blowing half on the bow and half on the side, bring the sail in, as shown, so that it extends a little beyond the stern. This is called sailing **close-hauled** or **beating**. Try to make the wind and sail indicators be almost on a straight line (about a 170-degree angle).



Wind Indicator at 60°

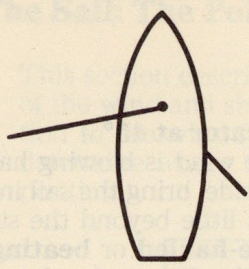
When the wind is coming from a 60-degree angle, let the sail out a bit so that it extends over the side of the boat. This is called a **close reach**.



Wind Indicator at 90°

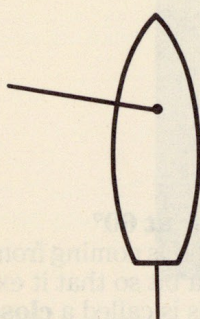
When the wind is blowing directly over the side of the boat, you are on a **beam reach**. A sailboat will usually sail faster on a reach than when close-hauled. Let the sail out as long as your speed continues to increase.

Adjusting The Sail To Points Of Sailing



Wind Indicator at 135°

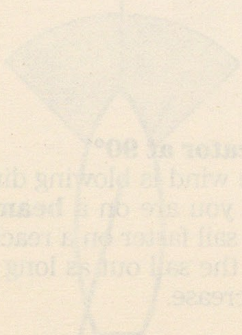
When the wind is blowing half on the side and half on the stern, a boat is on a **broad reach**.



Wind Indicator at greater than 135°

When the wind is behind you, let the sail out all the way. This is called a **run**.

Wind direction



Wind Indicator at 90°

When the wind is blowing directly over the side of the boat, you are on a **beam reach**. A sailboat will usually sail faster on a reach than when close-hauled. Let the sail out as long as your speed continues to increase.

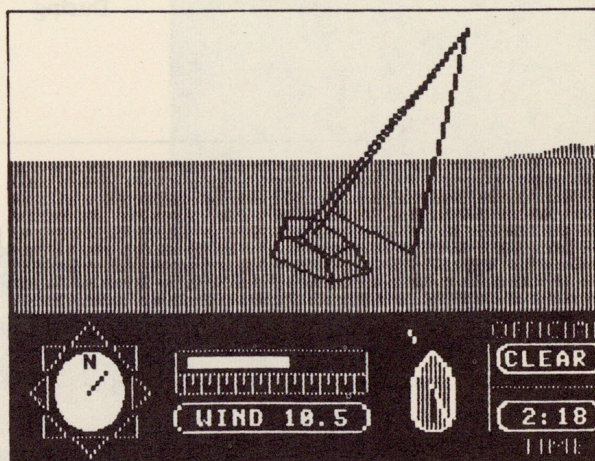


Changing Course Or Direction

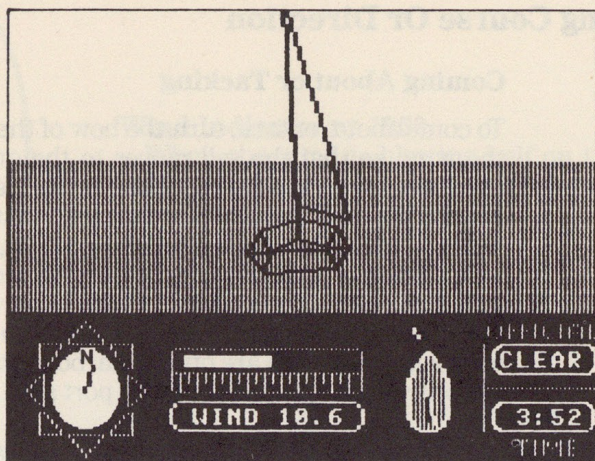
Coming About or Tacking

To come about, or tack, turn the bow of the boat into the wind and through the wind so that the sail moves to the other side of the boat. Tacking is used when you are trying to sail in the general direction from which the wind is blowing. Assume, for example, that you are sailing your boat close-hauled (with the sails hauled in close) at about a 45-degree angle to the wind. Assume that the boat is on port tack: the wind is coming over the port (left) side of the boat, the sail is on the starboard (right) side. Turn the boat to the left until the sail shifts to the other side and the sail fills with wind. Now you are on the starboard tack: the wind is coming over the starboard side, the sail is on the port side.

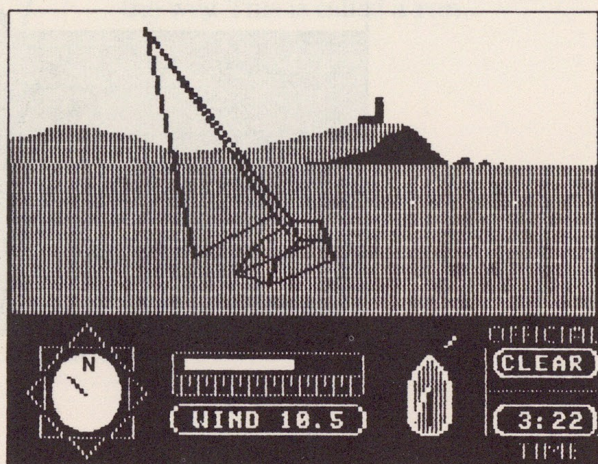
Coming about (tacking)



Before: on port tack



During

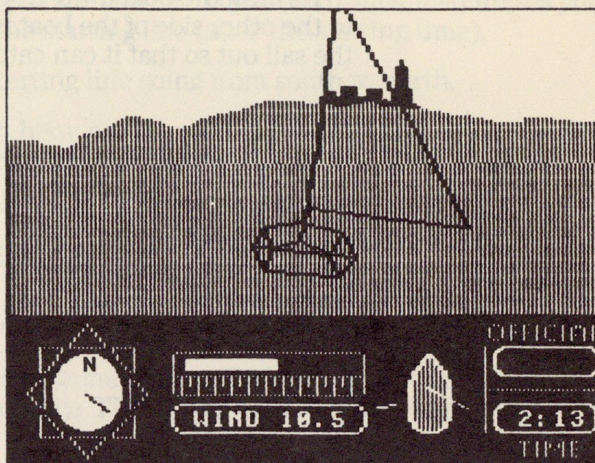


After: on starboard tack

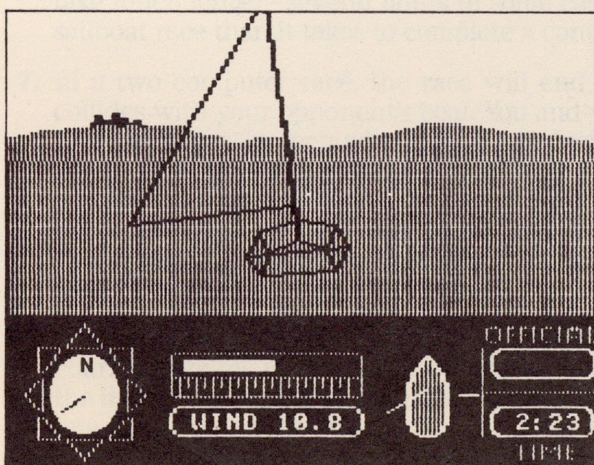


Jibing

To jibe, turn the stern (rather than the bow) of the boat into and through the wind until the sail moves to the other side of the boat. Jibing is often used to change directions when you are sailing downwind—that is, when the wind is coming over the side or stern (back) of the boat rather than over the bow. For example, assume that you are sailing on port tack on a broad reach: the wind is coming over the port (left) side of the boat near the stern; the sail is on the starboard side. Turn the rudder to the starboard side until the sail shifts to the other side.



Before: on port tack



After: on starboard tack

Use caution when jibing. If you turn too rapidly, you may lose control of the boat. The boom may whip over to the other side of the boat, the boat may turn beyond the point you wanted it to, and you may have trouble pulling the sails back in.

You can also alter your boat's direction without causing the sail to shift to the other side of the boat. Turning the boat toward the wind but not so far that the sail moves to the other side is called **heading up**. For example, assume that you are on a reach, sailing at about a 90-degree angle to the wind. You head up by turning the boat until it is pointing at a 45-degree angle to the wind. You pull the sail in so that it can catch the most wind, but the sail stays on the same side of the boat.

Turning the boat away from the wind but not so far that the sail moves to the other side of the boat is called **falling off**. When you fall off, you let the sail out so that it can catch the most wind on your new course.



RACING BASICS

Official Racing Rules

1. You may not cross the starting line until the timer reads **0:00**. A beep will signal the start of the race. Once you cross the starting line, the message **CLEAR** will appear above the timer.
2. If you cross **before** the starting time, the message **OVER** will appear on the screen when the race begins. You will be disqualified unless you go back and recross the starting line (after the starting time).
3. You must cross the starting line going from south to north.
4. You must round each buoy on a certain side, and you must round the buoys in the proper sequence. Follow the race course diagrams on pp. 44 .
5. Watch out for the buoys. If you **collide** with a buoy, you will be disqualified, and the race will automatically end. Your opponent will win the race, but the course and time will not be recorded because the race was not completed.
6. You have **16** minutes of game time to finish each race. If you do not finish in time, the message **TIME VIOLATION** will appear, and the race will end.

Note: Game time is faster than real time. And although the computer race courses are modeled after actual sailboat race courses, it would take much longer—several hours in some cases—to complete an actual sailboat race than it takes to complete a computer sailboat race.
7. In a two-computer race, the race will end immediately if your boat collides with your opponent's boat. You and your opponent will go to a "hotline protest" screen where you must decide who was at fault. Once you resolve the dispute, the sailor with the right of way is declared the winner. (In a one-computer race, you can't actually collide with your opponent's boat, since it is a "ghost" boat. Thus, one-computer races will continue even when it appears that you have collided with the "ghost" boat.)
8. The finish line is in the same place as the starting line. Check the race course diagrams to find out the direction from which you must cross the line. For example, in the Beginner's Race, you must cross the finish line from North to South.

Sailboat Collisions And Right-of-Way Rules

One of the biggest challenges of sailboat racing is avoiding collisions with other sailboats. We have simulated this challenge in the two-computer version. In the one-computer version, no collisions can occur, even if your boat seems to cross the path of the other boat (the "ghost" boat that runs the course of the boat with the fastest time on record). The "ghost" boat in the one-computer version is just there to give you something to measure your performance against.

When two boats collide in the two-computer version, the message "COLLISION" will appear on the screen. The race immediately ends, and the Hot Line Protest screen appears. This gives the players an opportunity to communicate with each other to decide who was at fault. **The decision is made by the players, not by the computer, and should be based on official Right-of-Way Rules.** You will find a summary of the basic right-of-way rules at the end of this section.

On the Hot-Line Protest screen, you type a message to the other sailor and then indicate who you think had right-of-way. Here is a sample Hot Line Protest Screen between two mythical sailors named Speedo and Chris:

HOT LINE PROTEST

1=My boat had rights.

2=Your boat had rights.

"Speedo was sailing on starboard tack."

"Evil Chris was sailing on port tack."

Type **1** or **2**.

Steps for Settling the Collision

1. Read the Hot Line Protest screen to find out the positions of both boats.
For example:

"Speedo was on starboard tack."

"Evil Chris was on port tack."

Refer to the Right-of-Way Rules in this section to help you determine who was at fault. In the example, Speedo had the right of way because she was on starboard tack.

2. Type a short protest (message) to your opponent. The message can contain up to 19 characters. For example, "You were overtaking." To send a message, press the **M** key, then type the message.

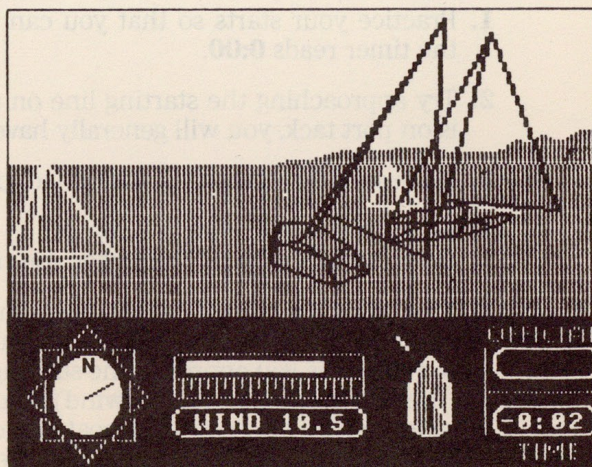


3. Type **1** if you believe that your boat had rights, or **2** if your opponent's boat had rights.
4. While you are waiting for your opponent's protest, you will receive this message: "DELIBERATING." Your opponent's message will appear across the middle of the screen.
5. If you and your opponent disagree (both players type in the same number), then you will receive the message PROTEST UNRESOLVED.
6. Type another protest message and **1** or **2**. This procedure will continue until both of you agree on who had the right of way. You will not be able to start a new race until the collision is resolved. The player who was at fault loses the race.
7. Once both players agree, you will see a message confirming the race winner. Then you will return to the race selection screen to choose a new race. Note: the winner's time and path are not saved because the race was not finished.

Right-of-Way Rules

In the real world, official racing rules are numerous and complex. We are presenting a shortened version for novice racers. You and your opponent can decide the level of complexity you want to use to determine who was at fault.

1. The boat on the starboard tack has right of way over a boat on port tack.



Starboard tack

Starboard tack boat has right of way

2. If both boats are on the same tack, then the leeward boat (the one farthest from the wind) has the right of way.
3. An overtaking boat must keep clear of the other boat if both are on the same tack. In a collision, the overtaking boat is generally at fault.
4. A boat rounding a buoy must leave room inside for the other boat to round it if the other boat is within two boat lengths of the mark (buoy). This rule is not in effect at the start of the race when both boats are clearing the starting buoys.
5. In general, a boat that is tacking (changing course) must stay out of the way of other boats.

..If you want to have the official yacht racing rules, you can order a copy for \$5 from the United States Yacht Racing Union, P.O. Box 209, Newport, RI 02840..

Motorboat Collisions

When two motorboats collide, both players must agree as to who was at fault by using the Hot Line Protest screen. The process is similar to settling sailboat collisions except that the positions (tacks) of the boats are not relevant and thus are not posted on the screen. Follow the steps for sailboat collisions on p. 40.

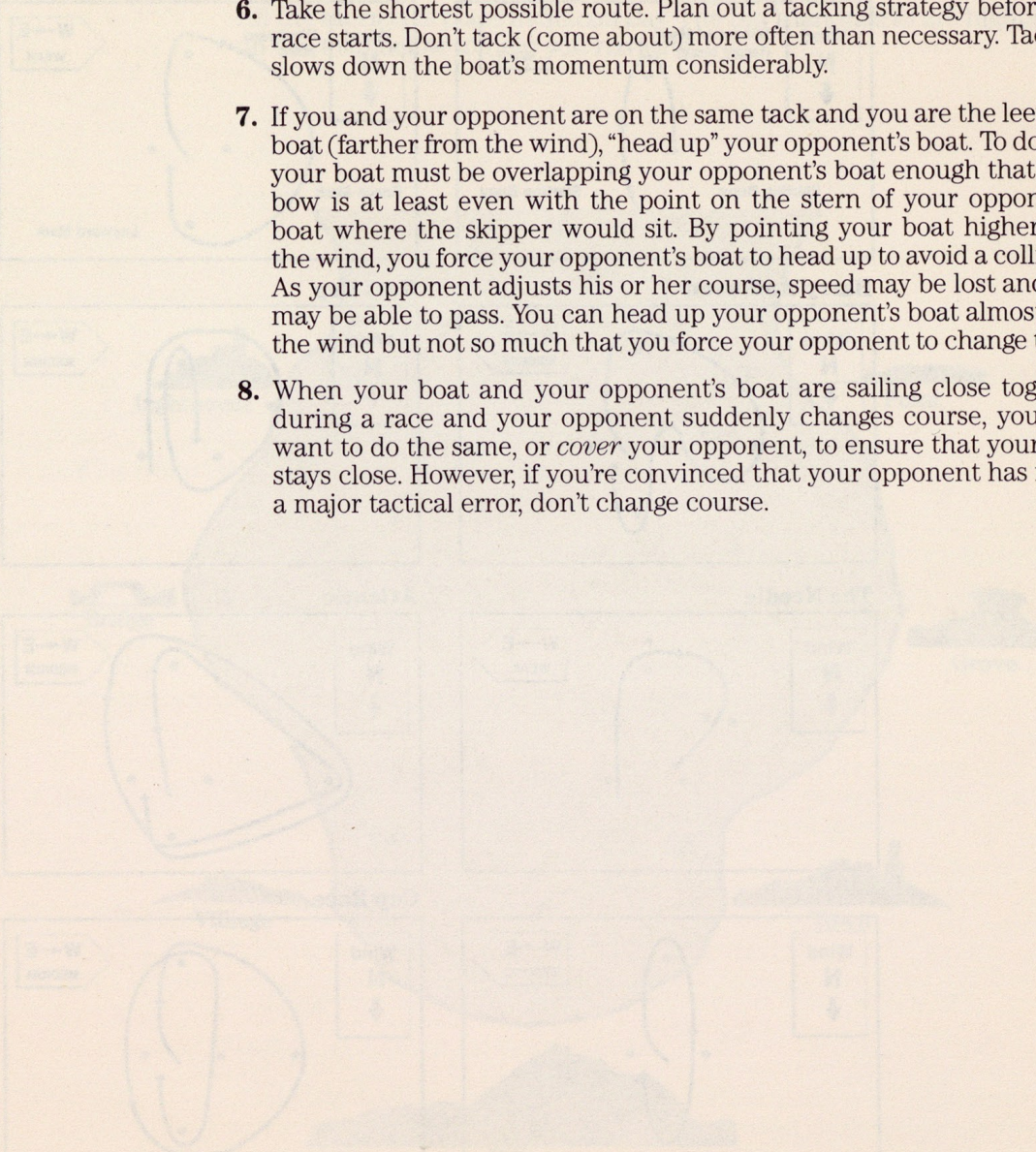
Racing Tips And Strategies

1. Practice your starts so that you can cross the starting line just after the timer reads **0:00**.
2. Try approaching the starting line on starboard tack. If your opponent is on port tack, you will generally have the right of way.
3. Make sure that the sail is positioned to catch as much wind as possible.
4. When you're rounding a buoy, get as close as you can, but be careful not to collide with it. The closer you turn, the more time you will save.
5. The "buoy room" rule listed above under Right-of-Way Rules does not apply at the start of a race. So, if you and your opponent are on the same tack as you approach the starting line, if you are the leeward boat (the one farther from the wind), and if your opponent doesn't have room to pass between your boat and one of the starting buoys, you do not have to make room for him or her to clear the starting line. Your opponent may be forced to alter course to avoid a collision and thus lose advantageous starting position. In this situation, if your opponent



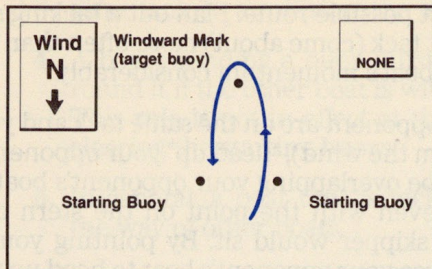
MAPON

does force you to alter course so that he or she can squeeze between your boat and one of the starting buoys, this is said to be **barging**. Barging is illegal.

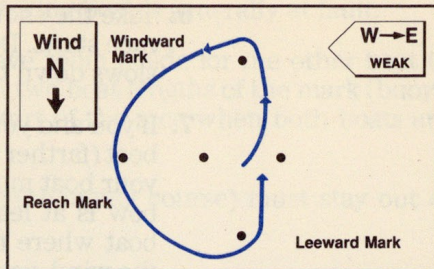
- 
6. Take the shortest possible route. Plan out a tacking strategy before the race starts. Don't tack (come about) more often than necessary. Tacking slows down the boat's momentum considerably.
7. If you and your opponent are on the same tack and you are the leeward boat (farther from the wind), "head up" your opponent's boat. To do this, your boat must be overlapping your opponent's boat enough that your bow is at least even with the point on the stern of your opponent's boat where the skipper would sit. By pointing your boat higher into the wind, you force your opponent's boat to head up to avoid a collision. As your opponent adjusts his or her course, speed may be lost and you may be able to pass. You can head up your opponent's boat almost into the wind but not so much that you force your opponent to change tacks.
8. When your boat and your opponent's boat are sailing close together during a race and your opponent suddenly changes course, you may want to do the same, or *cover* your opponent, to ensure that your boat stays close. However, if you're convinced that your opponent has made a major tactical error, don't change course.

Race Courses

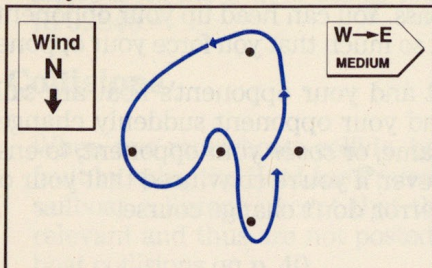
Beginner



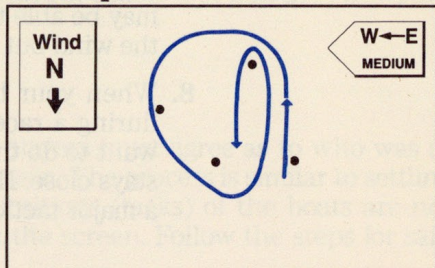
Port Triangle



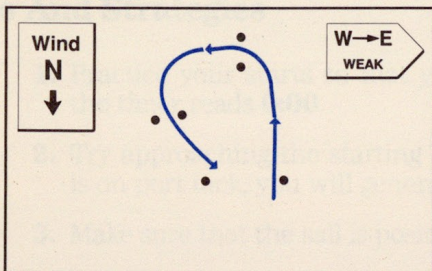
Harry Anderson



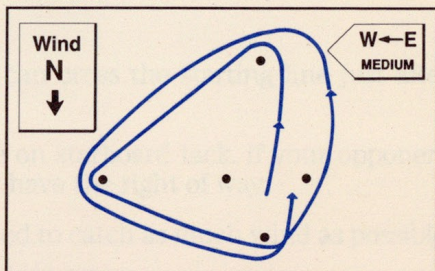
Gold Cup



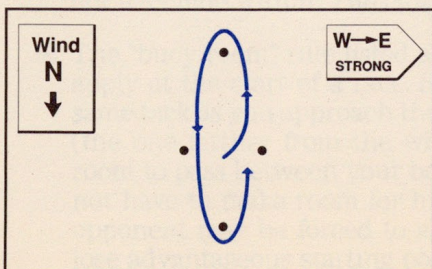
The Needle



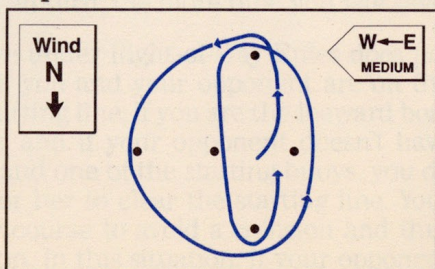
Atlantic



North/South

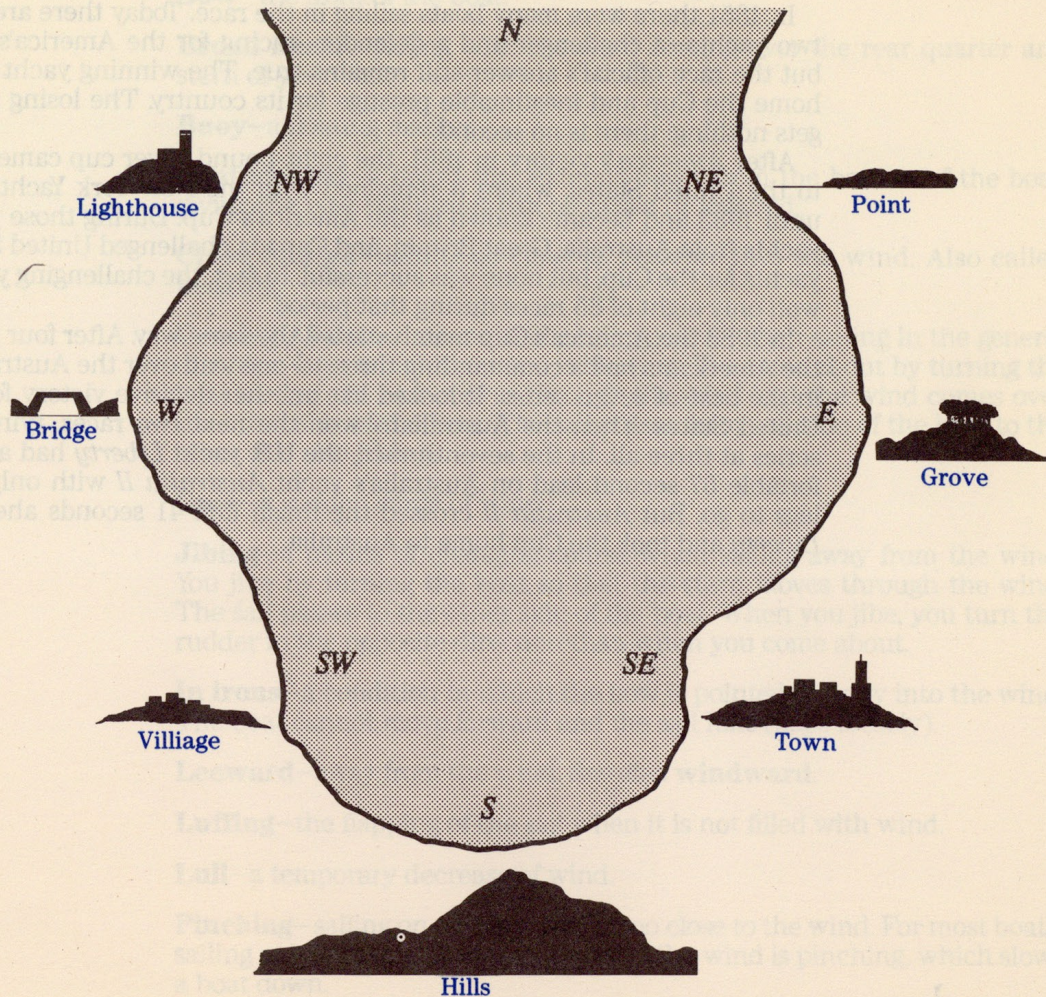


Cup Race



MAP OF THE BAY

All the races take place in Silicon Bay. The Bay's landmarks are highlighted on the map below to help you navigate.



THE AMERICA'S CUP TRADITION

The silver cup now known as the America's Cup was originally commissioned by Great Britain's Royal Yacht Squadron in 1848. It was the trophy given to the winner of the Squadron's sailing race around the Isle of Wight. In 1851 the U.S. schooner *America* won the race. After seeing the U.S. boat finish first, Queen Victoria, who was watching the race from a yacht, asked one of the race officials which boat would finish second. "There is no second," she was told.

In 1851 there were many boats sailing in the race. Today there are only two yachts—a challenger and a defender—racing for the America's Cup, but the race official's answer still remains true. The winning yacht takes home the Cup and inestimable prestige for its country. The losing yacht gets nothing: there is no second.

After *America's* victory in 1851, the eight-pound silver cup came back to the United States, where it remained with the New York Yacht Club until 1983 and became known as the America's Cup. During those years, yachts from Australia, Great Britain, and Canada challenged United States yachts for the Cup, but none was successful. In fact, the challenging yachts won only eight of 85 races during that period.

In 1983 the America's Cup match started the same way. After four races, the Americans had a commanding three-to-one lead over the Australians in the best-of-seven series. It looked like another decisive victory for the United States. Then the Australians won the next two races, tying the series at three all. In the seventh race, the U.S. yacht *Liberty* had a comfortable 57-second lead on Australia's yacht *Australia II* with only two legs to go. But *Australia II* crossed the finish line 41 seconds ahead of *Liberty* and took the Cup home to Australia.



GLOSSARY

Beating—sailing as close as possible toward the direction from which the wind is coming. Also called sailing **close-hauled**. Most boats cannot sail at less than a 45-degree angle to the wind.

Boom—a pole attached to the mast to which the lower edge of the sail is fastened.

Bow—the front of the boat.

Broad Reach—sailing with the wind coming over the rear quarter and stern of your boat.

Buoy—a floating marker.

Centerboard—a board that extends down from the bottom of the boat, giving the boat stability. It can be raised or lowered.

Close hauled—sailing as close as possible into the wind. Also called **beating**.

Coming About—a means of changing course when sailing in the general direction from which the wind is blowing. You come about by turning the boat so that the bow moves through the wind and the wind comes over the other side of the boat. The sail passes from one side of the boat to the other. See also **jibing**.

Gust—a sudden surge of wind.

Jibing—a means of changing course when sailing away from the wind. You jibe by turning the boat so that the stern moves through the wind. The sail passes to the other side of the boat. When you jibe, you turn the rudder in the opposite direction than when you come about.

In irons—a condition in which the bow is pointed directly into the wind. The boat cannot move forward and the sail luffs (flaps loosely).

Leeward—away from the wind. See also **windward**.

Luffing—the flapping of the sail when it is not filled with wind.

Lull—a temporary decrease of wind.

Pinching—sailing on a course that is too close to the wind. For most boats, sailing at less than a 45-degree angle to the wind is pinching, which slows a boat down.

Port—the left side of the boat. See also **starboard**.

Reach—sailing with the wind coming directly over the side of the boat.

Regatta—a meeting for boat races; also a series of boat races.

Rudder—a movable, flat board at the stern used for steering.

Run—sailing with the wind coming over the stern. The boat is being pushed from behind by the wind.

Sheet—a line (rope) which controls the sail.

Starboard—the right side of the boat. See also **port**.

Stern—the back of the boat.

Tacking—a zig-zag path for sailing upwind. The boat zigs and zags by coming about.

Weather helm—the tendency of a wind gust to turn the boat into the wind.

Windward—in the direction of the wind. See also **leeward**.



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TRANSCRIPT OF SAILING TUTORIAL

Beautiful day for sailing, isn't it? Hi there, I'm Ed. It looks like a fine afternoon to head out into the harbor for a cruise. When you're ready, just press the Escape key to start the game. Now, if you have an Apple computer, hit the number 1 or number 2 dependin' on whether you've got a color or black-and-white television set. Now press 1 to choose the one-computer version of the game.

Now type in the name you'd like to call your boat. If you're havin' a hard time comin' up with somethin' creative, just name it after yourself, then press Return.

Now hit 1 to choose the sailboat rather than the motorboat. If you ever want to return to a previous screen, if you feel like changin' your mind, you can just backup by pressin' the Escape key.

Now you'll see a list of race courses that you will be able to select later. But for now, just press Return to do some practice sailin'.

There's our boat; it's gently rockin' side to side. We're not movin'; the sail is too far out to catch any wind. First thing we've got to do is to get your boat movin'. Let's have a look at a couple of things before you do anything. See your compass on the bottom left of your screen? It's pointin' west, it's showin' where you're headed. Have a look at that small boat down there on the control panel. That shows you the angle of your sail, and the direction of the wind. In case you're curious, it's showin' you that the wind's blowin' over the right side of your boat, so of course the sail is out to the left.

Now have a look for those two little bobbbers floatin' out in front of you. They look like two dots on the water. They'll help you to tell how fast your boat is movin'. Press the space bar to see the bird's-eye view. You're that little black dot just south of the startin' line.

Now we're going to try to get your boat movin'. Hit the space bar again. Ready? Now just hit the F key slowly 12 times to pull your sail in. Notice the speed bar going up? Also see how your boat's tippin' over to the left; that's a good sign. Don't worry. You won't capsize. The compass still says you're going west. Press the space bar again. Notice how the dot has turned into a line showin' you where you have just traveled. Now that we've got some speed, we're going to turn the boat around to sail back towards the startin' line.

Not right now, but in a moment, press L and hold it down until your boat is headed towards the startin' buoys. Once you're headed right for those pyramid-shaped startin' buoys, you'll press the K key to straighten out the boat. Press your space bar again. Ready? Hit L four or five times. There goes the lighthouse. Hear that warning clicker? That tells you you're facing right into the wind. Get ready to stop with the K key when you're



aimed right between those buoys. If you see the city, hit K right away 'cause you've gone too far already. If you didn't end up facin' right between those buoys, try adjustin' your direction by using the J, K, and L keys.

Hit the space bar to see the bird's-eye view. Hopefully the overhead will show you headin' towards the startin' line. Hit the space bar again to continue sailin'. Once you're through them buoys, why don't you sail around on your own for a while.

One problem you'll probably run into is when your boat is headed right up into the wind. You'll see the wind indicator at the bottom of the screen pointin' straight at the front of your boat, and your speed will drop down to nothing. That's called being "stuck in irons," and it's not an easy spot to get out of. If you're really having trouble, remember that you can always press the Escape key and try all over again.

Once you've figured out how to move around, you'll want to experiment with the sail to find out just where it should be to keep your boat movin' as fast as it can. Pretty easy stuff, once you get the hang of it. When you're done, hit the Escape key and you'll see the path you took during the practice sail. In the meantime, I think I'm gonna throw this net over side and catch me a bit of dinner...

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Once you've figured out how to move around, you'll want to experiment with the sail to find out just where it should be to keep your boat moving as fast as it can. Press the key that once you set the sail to the left, done in the Escape key and you'll see the sail on the right side of the practice sail. In the meantime, I think you should know this: the net over side and catch me a bit of dinner.

Now have a look for those two little buoys floating out in front of you. They look like two dots on the water. They'll help you to see how fast your boat is moving. Press the space bar to see the bird-eye view. You'll see that little black dot just south of the starting line.

Now we're going to try to get your boat moving. Hit the space bar again. Ready? Now just hit the F key slowly 12 times to pull your sail in. Notice the speed bar going up? Also see how your boat's tilted over to the left; that's a good sign. Don't worry. You won't capsize. The compass still says you're going east. Press the space bar again. Notice how the boat's tilted over to the right; that shows you where you have just traveled. Now that we've got some speed, we're going to turn the boat around to sail back through the starting line.

Now hit the right arrow a few times. Press J and hold it down until your boat is headed towards the starting line. Once you're headed right for the starting line, you'll see the starting line. Press the space bar again. Ready? Hit J four or five times. There goes the lighthouse. Now that you've got the lighthouse, you're ready to sail.

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