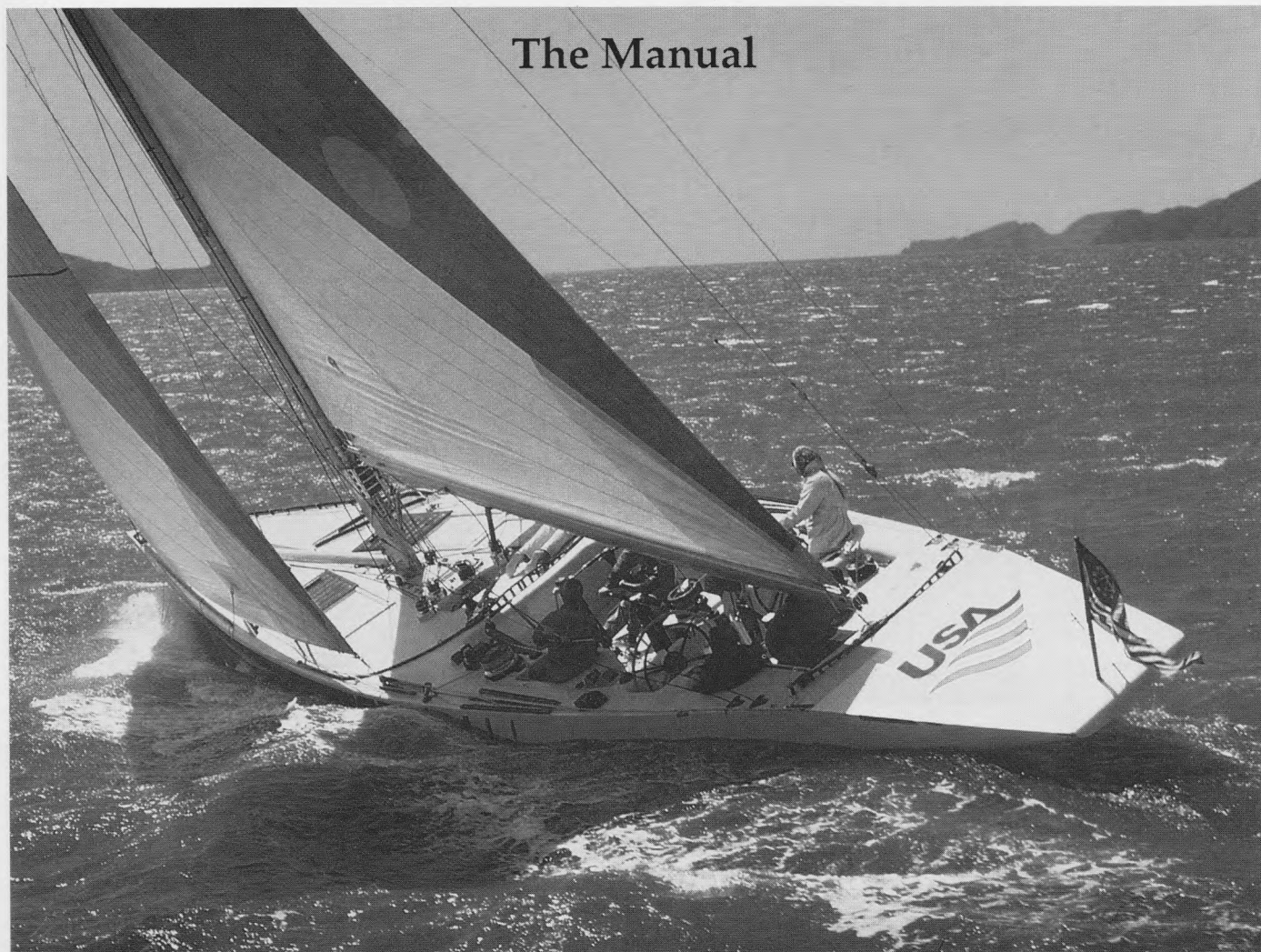

THE OFFICIAL
AMERICA'S CUP
SAILING SIMULATION

The Manual



America's Cup Course

24.3 Miles





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Welcome Aboard

You be asking about the race, lad? Aye, I'll tell you my story.

Westerly winds filled the canvoas of our small, sleek schooner, America, as she rounded the western tip of the Isle of Wight, off the south coast of England. We took a broad reach toward the finish mark on that great day — August 22, 1851, it was.

We'd crossed the Atlantic to take on the yachtsman from the invincible Royal Yacht Squadron. Their 53-mile race was the most prestigious on the seven seas. The British thought of themselves as lords of the sea, and were mighty serious about racing their spectacular yachts.

I turned from the helm, straining to see another sail on the horizon, but the 15 British yachts were nowhere in sight. As we reached the finish mark, we all stood proudly at attention and hoisted our salute to the Royal Yacht Victoria and Albert, from whose deck Queen Victoria watched.

The unthinkable had happened, son. We had won!

A Royal Navy signalman passed his famous message to the Queen: "America first, Your Majesty; there is no second." A tradition of British supremacy ended and an era of American yachting began that day.

My crew and I returned triumphantly to the United States with the silver trophy, presented to us by the commodore of the Royal Yacht Squadron. We now call the trophy the America's Cup.

Now I pass the helm to you, lad. The America's Cup is the greatest test of sailing skill, and to win is to reach the pinnacle of yachting. May the winds be at your back!

The *America* finished the race at 8:37 p.m. on Tuesday, August 22, 1851, eight minutes ahead of any other yacht. Six years later, the *America's* owners presented the Trophy to the New York Yacht Club, along with a Deed of Gift naming it the America's Cup — a "perpetual Challenge Cup for friendly competition between foreign countries."

This was a far-sighted step. The Deed of Gift has become a significant historical document, governing the 25 challenges made for the America's Cup since 1851. It created a yacht race that is an obsession with challengers, a matter of great national pride for the defender, and one of the world's greatest tests of technology and individual skill.

The Official 1987 America's Cup Sailing Simulation

You're the skipper of a 12-meter yacht in the America's Cup Match, slicing through the waves as you race another twelve in the world's premier sailing competition. Tack to starboard as the wind shifts to the southwest. Raise the colorful spinnaker and watch it billow open with a fresh gust. Round the last buoy and set your sails for the final leg. This is salt-spray action in a game that's constantly changing and challenging, from the starting cannon to the finish mark.

Expert sailors can apply the skills they've learned on the water, but even if you've never been sailing, you'll learn fast once the race is under way. **The Official America's Cup Sailing Simulation** is a challenging image of the real thing:

- ⚓ An eight-leg, three-buoy course with plenty of tight maneuvering while tacking and jibing.
- ⚓ Winds that unexpectedly change direction and strength, forcing a change in sails and tactics.
- ⚓ Three sails to trim: mainsail, genoa and spinnaker.

- ⚓ Drop and raise your genoas and spinnakers...and don't waste a single motion, because it costs you speed and seconds.
- ⚓ You race your 12-meter according to International Yacht Racing Union Blue Book rules.

The Official America's Cup Sailing Simulation is an invitation to join sailing's best. You'll become part of the proud tradition which began over a hundred years ago, and has grown more exciting due to some unexpected recent developments:

The 1983 America's Cup Match off Newport, Rhode Island, included challengers from Australia, Canada, France, Italy, the United Kingdom, and the defending United States. The New York Yacht Club's *Liberty* faced the Perth, Australia, Royal Yacht Club's *Australia II* in the final best-of-seven match.

In the first two races, *Liberty* won when *Australia II* was devastated by equipment failure. *Australia II* won the third race; *Liberty* won the fourth. One more victory by *Liberty*, and the Cup would stay in the U.S. But *Australia II* won the fifth and sixth to even the score at 3-3. Possession of the Cup would be decided in the seventh race.

To the amazement of millions watching on television and listening on radio, *Australia II* came from far behind in a thrilling finish to beat *Liberty*, winning the America's Cup Match and ending the New York Yacht Club's 132-year dynasty.

The Trophy: The Louis Vuitton Cup

The 1987 America's Cup Match will be a whole new race, new course, new winds, and new technology. The races will be run on a 24.1-nautical-mile course off Perth, Australia, new home of the Cup. Hundreds of elimination races between October 1986 and January 1987 will determine which country has the honor of challenging the cup — and which Australian has the honor of defending it. The seven races of the America's Cup Match begin January 31, 1987.

Chapter 1: Quick Start

If you're an expert sailor — or an expert game player — this chapter can get you under full sail in a novice-level game against the computer in just a few minutes. If you want more information on the game's features, turn to Chapter 2. If you find that you suddenly need sailing lessons, see Chapter 3.

Before you begin, take a moment to look at the Command Summary card included in the program package. The card contains the specific computer commands you'll use to control your yacht, a course map, and other important race information.

When you're ready to shove off, just follow these steps:

1. Load the program according to the instructions on the enclosed Command Summary Card.
2. After about thirty seconds, the title screen appears. In a few moments, it is replaced by a screen offering the joystick control instructions. A diagram shows the different joystick positions you use to steer (Helmsman mode), select sails (Set Sail mode), and change sails (Winching mode). The information on this screen is also included on the Command Summary Card.
3. The joystick control screen disappears automatically after about twenty seconds, and you're offered a selection of countries. Type the number of the country you want to sail for, or type your name.
4. The menu of countries disappears, then reappears. Type the number that precedes COMPUTER (this is the same number you typed to select your country in step 3 above). You are now set to play the computer in a one-player match. (Refer to the next chapter to find out how to set up a two-player game.)

5. The next screen to appear gives you the choice of three levels of difficulty. Type 1 to indicate an Amateur-level game.
6. After you select the game level, the weather report appears. Compare the information in the center screen to your lower corner indicator panel. The weather conditions throughout the race will be reflected here. Press **Return**.
7. Choose your sail (the usual wind directions off Perth lend themselves best to a genoa) by pulling the joystick back and pressing the button once (for a light genoa), twice (for a medium genoa), or three times (for the heavy genoa used in high winds). Return the joystick to the upright position and press the button again to set the sail.
8. Once you've selected your sails, the view shifts to the starting line. Use your joystick to maneuver your yacht towards the line. Remember — don't cross the line until the 15-second countdown is completed. When the second cannon fires, the race is on!

Keep the Command Summary card in front of you for quick tips on changing sails and piloting your yacht. To find out more about the program and its features, just turn the page....

Chapter 2: The Official America's Cup Sailing Simulation

If you aren't crewing on any of the yachts, the **Official America's Cup Sailing Simulation** is the next best thing to being there! You pit your 12-meter yacht against another yacht in a seven-race series for the Cup. The yacht with the best time — usually the first to cross the finish line — wins each race.

Before play begins, the program prompts you to choose your yacht and set the level of play. Next, the weather report screen displays current and forecast conditions on the course. Based on the weather, you select the headsail best suited for the winds. The race begins with the roar of cannon fire from the anchored judges' boat. And may the best crew win!

1 The Race Course

The race course is modeled after the actual America's Cup course off Perth, Australia: triangular, with a buoy at each corner. Each race has 8 legs, or lengths between buoys. The race begins at the upper right buoy and ends at the upper left buoy.

2 Pre-Race Setup

The first screen in the pre-race setup is the Player Selection Screen. Type in a number for the country you wish to sail for. The *Challenger* is the first to select, followed by the *Defender*.

One Player — In a one-player game, you are the *Challenger* and the computer is the *Defender*. Type a number to select the *Challenger's* country, then identify the *Defender* by typing that number for **Computer**. This tells the program that it will sail the *Defender's* yacht.

Two Players — When there are two players, each player pilots one of the yachts. The challenger uses joystick 1; the defender, joystick 2. If two people are playing, the Defender may type any number except the number that selects **Computer**. The name of the country selected appears in the appropriate message corner.

You can also choose to sail under your own name, instead of selecting a country. When the program asks you select a country, just type in the name you want and press **Return**. The name you chose appears in the appropriate message corner.

Important: Become familiar with your boat when it is displayed in the Player Selection Screen, noting the colors of the hull, mainsail and headsail, so you can correctly identify it once the race begins.

The Official America's Cup Sailing Simulation has an automatic race demonstration that shows you the eight legs of the course, the starting line, the yachts jockeying to cross the line in the best position, the first portion of the first leg, and the results of the race.

If no selection is made after approximately 30 seconds at any screen during pre-race setup, the program automatically begins a demonstration race. To interrupt the demo, wait until the Starting Screen is displayed with the boats entering the screen from the right, then press the space bar. The Player Selection Screen reappears.

Selecting the level of play

The second screen in the pre-race setup is the Select Level screen. The three levels of difficulty, in ascending order, are: Amateur, Club Race and America's Cup Match. The principal differences are the amount of time available to complete the race, the difficulty posed by weather conditions, and the competitiveness of the computer. To select a level of play, type "1", "2" or "3".

Reading the Weather Conditions

After you select the level of play, the Weather Report Screen appears. Current conditions on the course include Wind Speed (in knots) and Wind Direction. A forecast gives you an idea of weather to expect during the race. Weather conditions change frequently during the race, and are updated on the Indicator Panel.

Press the space bar to continue the pre-game setup. If you don't press the space bar, the automatic demo begins.

Selecting your Starting Sails

The final step in the pre-race setup is selecting your starting headsail. The wind direction and speed determine which headsail you choose. If you are new to sailing or want a review, read the Sailing Basics section in the next chapter.

In the Indian Ocean off Perth, virtually all races start with a wind out of the west, which means your first leg of the race is heading into the wind. Therefore, you need a genoa. The wind strength determines the weight of the genoa. Here are some simple guidelines:

Wind speed (knots)

Light, 0-12

Medium, 10-20

Heavy, 18-30

Sail

Light genoa

Medium genoa

Heavy genoa

The Command Summary card tells you how to select a genoa for your computer. After you choose the genoa, you'll hear a beep, the message in the upper corner tells you you're **Done** ... and the race is on!

Warning: once you select your sails, the race begins immediately. Though you can't pause the race, you can quit and start a new race any time by pressing **Return**.

3 The Race

The **Official America' Cup Sailing Simulation** is a best-of-seven match. The first yacht to win four races wins the match, though a new match can be started at the end of any race. The race begins after you have completed the pre-race setup covered in the previous section.

The Starting Line

The Start Screen displays an imaginary starting line between the upper right corner buoy and the Start Boat anchored north of the buoy. The Indicator Panels display current weather conditions and race status.

The yachts enter the screen from the right and pause, waiting for the Start Boat to fire its foredeck cannon. Once the cannon is fired, you have approximately 30 seconds to maneuver behind the starting line before the cannon fires a second time, signaling the start of the race. You are penalized if you cross the starting line before the cannon fires a second time.

Keep in mind two racing rules:

- 1 Right of way belongs to the yacht on the *starboard* tack — that is, the yacht with the wind coming from the right of the boat as you face the bow.
- 2 At the starting mark, the *leeward* (downwind) yacht, does not have to give room to a *windward* yacht which is *barging*, or trying to squeeze between the leeward yacht and the buoy.

These are the two basic rules. For the rest of The Blue Book's twelve rules of racing, turn to Appendix A.

4 Piloting your yacht

In a one-player game, you are the skipper of the *Challenger*, and the computer pilots the *Defender*. Current game information for the *Challenger* is listed in the upper right corner of the screen, and for the *Defender* in the upper left corner. Keep your eye on your corner for confirmation of your commands.

Controlling a world-class yacht isn't easy. The manual you're reading is designed to show you the program's features, and make you a knowledgeable skipper. But, to make it easier for you to take quick action during the race, we've put all the specific commands for your computer — along with a course map — on one handy summary card, included with this package. Keep it nearby while reading this manual, and rely on it when you're ready to set sail.

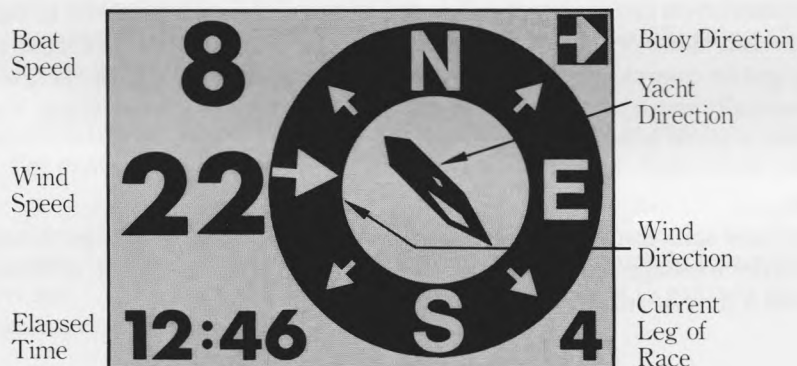
The Indicator Panel

The Indicator Panel appears at the lower corner of your side of the screen. It provides vital information about the weather, the position and direction of your yacht, and progress of the race.

Become familiar with the panel so you can gather the information you need at a glance. Your Indicator Panel is your sailing guide — like sailing through fog or flying by instruments. The Yacht Direction indicates your course. The Buoy Direction points toward the next buoy. As you sail, use these indicators to stay on course.

The program displays race messages at the bottom of the screen between the Indicator Panels. The lead held by the first yacht is displayed in minutes. If a foul occurs, a message flashes across the bottom of the screen and a penalty is attributed to the yacht at fault.

INDICATOR PANEL



During the race, three control modes allow you to pilot your yacht: Helmsman Mode, Set Sail Mode, and Winching Mode. The current mode appears in your upper corner message area. Learn to operate skillfully in these modes, and you'll be a winning sailor.

Helmsman Mode

You use Helmsman Mode to control the yacht's direction. It's the mode you'll use most often during the race. When you are in Helmsman Mode, the word "Helmsman" appears in your upper corner message area — the upper right corner for the *Challenger* and the upper left corner for the *Defender*.

Steering — Each *port* (left) or *starboard* (right) command turns your yacht 45 degrees. Every direction change is noted in the message corner for your yacht.

Overview — Once the race is underway, you can request an overview of the entire race course. The Overview lets you see where the other boat is when the boats become separated. To let you keep track of where you are during the race, the entire screen briefly shifts to the Overview Screen whenever the wind shifts or the wind direction changes. If the winds are steady, you'll automatically get an overview every half minute or so, unless some other action interferes. To find out how to manually request an overview, see the Command Summary Card. You can't request an Overview when a yacht is near a buoy.

Set Sail Mode

You can select new sails during the race by entering Set Sail Mode. When this mode is selected, your upper corner message reads **Set Sail**. In this mode, you can adjust, or *trim*, the mainsail, or prepare to hoist a new headsail.

Trimming the Mainsail — The angle of the boom to the wind is critical to the speed of the yacht. If you have the right trim, your speed and efficiency increase; the wrong trim slows you down. Refer to the Command Summary card to find out how to move the mainsail's main boom in towards the center line, and out away from it.

Changing the Headsail — You can choose from six headsails:

Light genoa
Medium genoa
Heavy genoa

Light spinnaker
Medium spinnaker
Heavy spinnaker

Choosing the right headsail for the weather is covered in Chapter 3. Specific instructions for choosing a sail are on the Command Summary card.

The corner message area tells you which sail is selected. Once a new genoa or spinnaker has been selected, you'll need to return to the Helmsman Mode and then enter the Winching Mode (discussed below) to lower the current headsail and raise the new one.

To check which headsail is in use, move through the genoa and spinnaker choices. The current sail won't be displayed. For example, if **Genoa 2** is not displayed as a choice, then it's in use.

Winching Mode

Once you've chosen a new headsail in the Set Sail Mode, you need a winch to lower the current sail and hoist the new sail. The Command Summary card tells you how to get into the Winching Mode, and how to raise and lower your sails.

Winch down until you hear a beep to lower the sail; then reverse direction and winch up until you see the word "Helmsman" in your yacht's upper message corner. As you winch down, the message

corner states **Winch down** and the top of the headsail moves down the forestay. (Make sure it's all the way down.) As you winch up, the message corner states **Winch up** and the new sail is hoisted. When the sail is completely up, the program automatically returns you to Helmsman Mode.

Changing Weather, Changing Sails

Weather conditions change during the race. Wind direction shifts; wind speed varies. A helmsman's challenge is to know how to read these changes as early as possible, and adjust his sailing tactics to get maximum use of the wind. To learn about which sails go with what kind of wind, see Chapter 3.

Look for shifting winds in two ways. First, the Indicator Panel indicates wind direction and speed. Second, the water reflects the velocity of the wind. Light winds appear as moving grey waves. Medium winds create a few small whitecaps. Heavy winds produce a rough sea with many whitecaps. Changes in wind speed can best be seen in the Overview screen of the entire course; the change appears as a different patterned section that moves across the course.

Swinging the mainsail — When you see a change in the winds, consider changing your sail. You can swing your mainsail in or out by moving the boom. Watch your boat speed on the Indicator Panel to see the effect of the boom swing.

Changing the headsail — You can also bring down the headsail and hoist another. If you are heading into the wind, use a genoa. As the wind increases, change to a heavier genoa. As the wind lightens, use a lighter genoa.

If you are running with the wind at your *stern*, or back, use a spinnaker. A lighter wind takes a lighter spinnaker; a heavier wind needs a heavier spinnaker.

Rounding a Buoy

As a yacht nears a marker buoy, the screen shifts to the Buoy Screen for a close view of the rounding. This maneuver is tactically important, and a sail change is usually required. This screen takes precedence over all others when a yacht is rounding the buoy, so if the other yacht is rounding, your yacht may not be displayed on the screen. During this period, keep your eyes on the Yacht Direction and Buoy Direction indicators to guide you. Here's a time-saving procedure to use when you need to change a sail while rounding a buoy:

1. As you approach the buoy, enter the Set Sail Mode and select the new headsail.
2. Round the buoy as close as possible without hitting it, saving time.
3. Swing the mainsail boom in or out, if needed, and set your new course for the next leg.
4. Lower the current headsail and raise the new headsail.

Yacht racers practice this complex maneuver hour after hour to improve their skill and keep as much boat speed as possible. You'll gain a real advantage over your opponent by becoming an expert at this.

Once the leading yacht has rounded a buoy, the timing of its lead appears at the bottom of the screen between the Indicator Panels.

Splitting the Screen

The Split Screen appears automatically if the yachts are too far apart to appear together on one screen. The *Defender* is on the left and the *Challenger* is on the right. While the screen is split, either skipper can call for a mini-overview screen of the course to identify his relative position to the other yacht. Use the Overview command described under "Helmsman Mode" above.

About Fouls

The program acts as the race judge, flashing a foul message at the bottom of the screen between the Indicator Panels if either yacht transgresses the rules. The penalty for a foul is four boat lengths. Any foul during starting maneuvers and prior to the actual start is paid after crossing the start line. To stay out of trouble, familiarize yourself with the yachting rules in Appendix A.

Finishing the Race

At the race's end, after the victor crosses the imaginary finish line between the Finish Boat and the upper left buoy, the loser has a chance to complete the race within a preset number of minutes before screen freezes and declares that the race is over. (The amount of time allowed varies with each level.) The Race Results Screen automatically appears, announcing the race number, the winning yacht, and her time.

The Screen offers three options:

- 1 Race Data** See the complete results, leg by leg, and final standings.
- 2 Next Race** Begin the next race of the series
- 3 New Series** Start a new series by clearing out the current series and beginning with the first race

Type in the number of the option you want. If no selection is made, the automatic demonstration begins and a new series will start when you begin the next game.

Starting a New Race

A new race can be started at the end of a race. Select the Next Race option or New Series option from the Race Results or Race Data Screens.

Chapter 3: Racing 12-Meter Yachts

America's Cup skippers piloted schooners in the mid-1800s, and changed to sloops and cutters before the turn of the century. In 1930 the huge J-Class yachts were introduced, but these 40-meter racers soon proved prohibitively expensive. The 12-meter class was developed in the early 1950s, and has been used exclusively since the 1958 America's Cup.

Sailing a 12-meter Yacht

What is a 12-meter yacht? A 12-meter yacht is not a 40-footer, as the name suggests. The term 12-meter describes the class, just like Formula One describes a class of race cars.

Most Twelves in the 1987 America's Cup will be close to 60' long and weigh about 24 tons. In contrast, *America*, winner of the 1851 America's Cup, weighed 170 tons, although how it was weighed remains a mystery. This is the complex formula used to measure a 12-meter yacht:

$$R = \frac{L + 2d + \sqrt{SA - F}}{2.37}$$

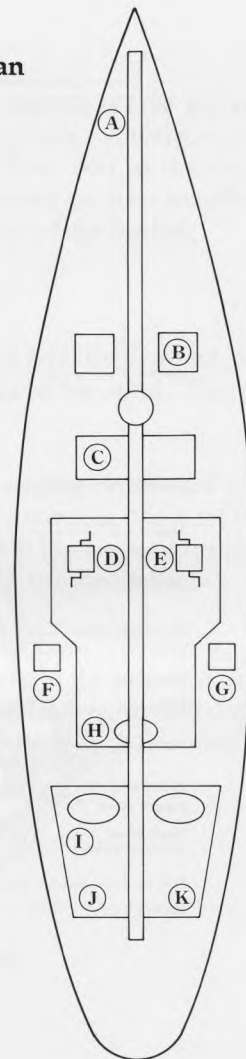
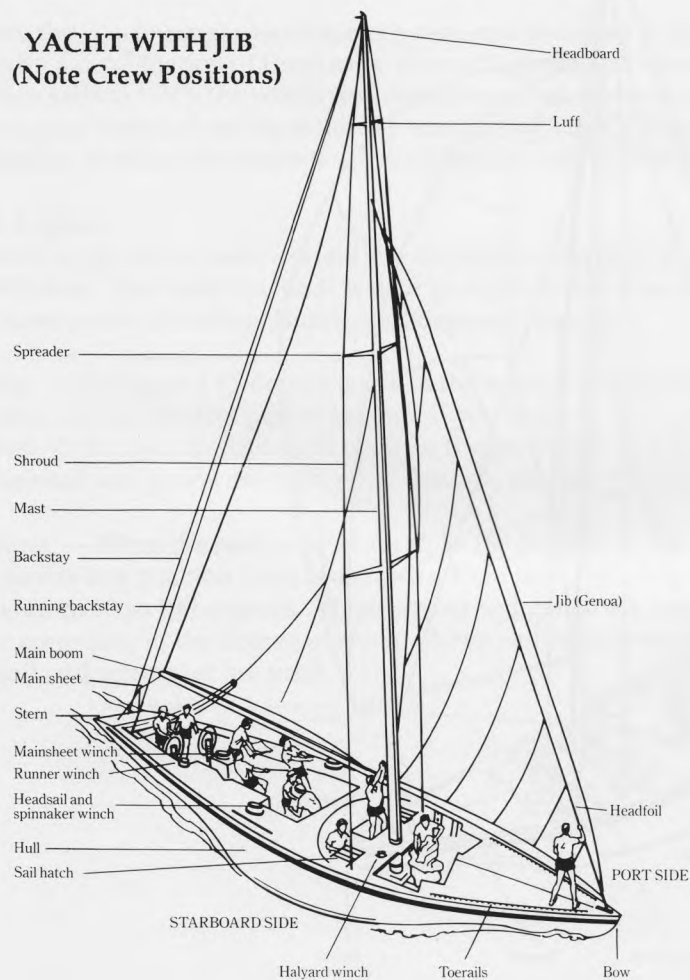
In English, the formula says, "The Rating is equal to the Length plus twice the Skin Girth plus the square root of the Sail Area minus the Freeboard, divided by 2.37." The variables are defined as follows:

- R Rating (12 meters in this class)
- L Length of the hull measured approximately seven inches above the load waterline. Corrections for girth are applied to this measurement.
- d The skin girth is measured on the surface of the hull from sheer to keel about midships. The chain girth measured at the same place is the length of line stretched taut from the sheer to the keel and is deducted from the skin girth to give the d component.
- SA Sail area includes the mainsail and the fore triangle bounded by the mast, forestay and deck.
- F Freeboard, or height of hull above waterline.
- 2.37 A mathematical constant.

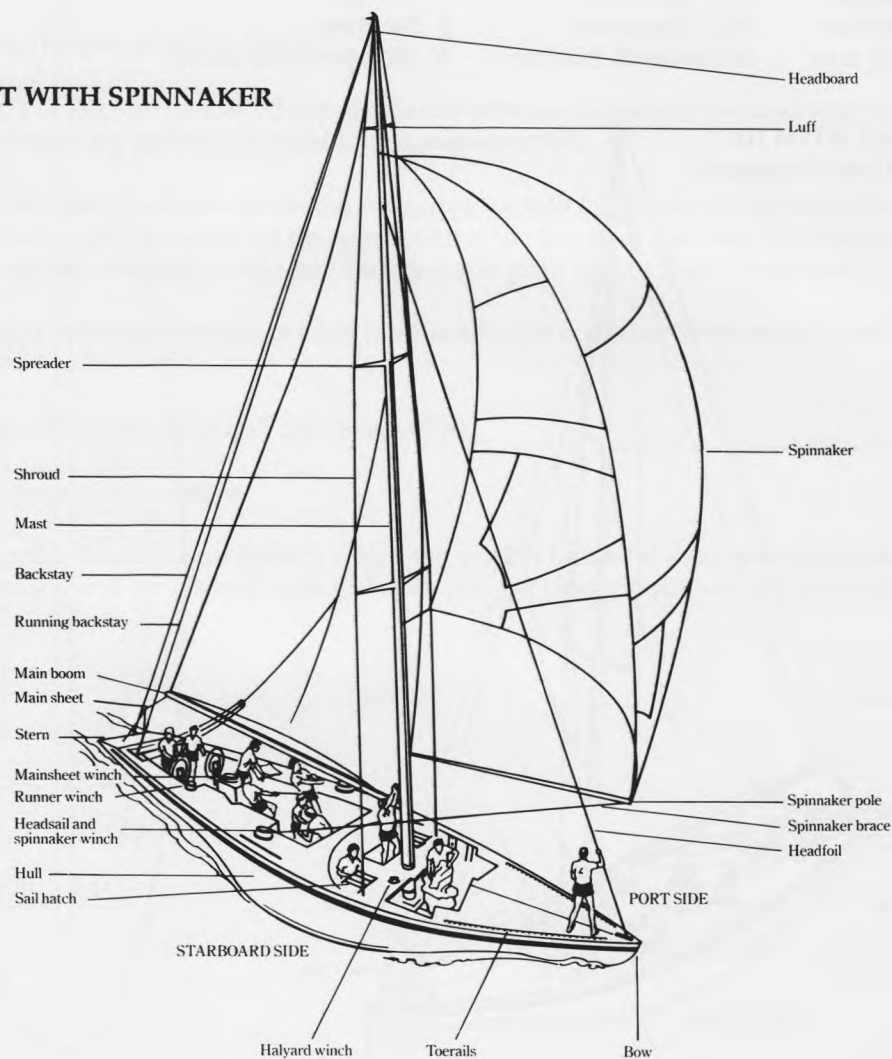
The 12-meter is a development class in which the world's best boat designers apply advanced technology to expand the edge of sailing. When you sail twelves, you sail the state of the art.

A Bowman	D/E Grinders	I Navigator
B Mast man	F/G Trimmers	J Tactician
C Hoist man	H Mainsail trimmer	K Skipper/Helmsman

YACHT WITH JIB (Note Crew Positions)



YACHT WITH SPINNAKER



The Basics of Sailing

Sails are the power plant of a 12-meter yacht, and the wind is the driving force. A sailboat is driven by a combination of three sails: mainsail, genoa and spinnaker. How you, as the skipper, use these sails to catch the winds determines how many winner's cups stand on your mantle. Knowing the basics of sailing is the key to enjoying **The Official America's Cup Sailing Simulation**, so take a few minutes to read through this section.

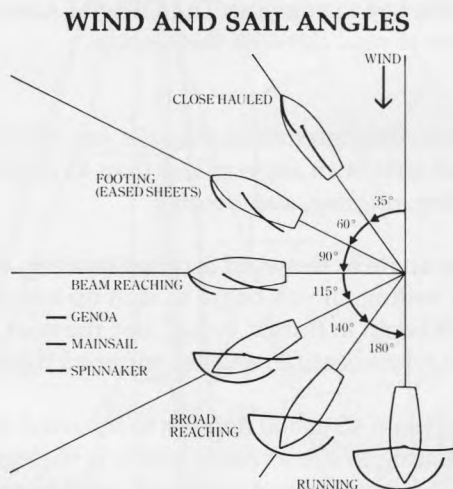
Wind Angles

The wind angle to the yacht's centerline determines the sails you use and how they are set, as shown below. Sailboats don't sail well at an angle of less than 45 degrees to the wind. There are three basic points of sailing: *beating*, *reaching*, and *running*.

Beating — Sailing at a 45-degree angle to the wind is called beating, or sailing *closehaunched* to the wind. It's the hardest part of sailing. If you begin to turn up into the wind, so the boat is at a less than 45 degrees, the sails will begin to flutter, or *luff*, and the boat will lose speed quickly. The mainsail and genoa are used when beating, and are trimmed tight to the center line.

Reaching —When the boat is between 45 to 180 degrees to the wind direction, it is *reaching*. A *close reach* is any position from beating to a *beam reach*, which is 90 degrees to the wind. A *broad reach* is from 90 to 180 degrees. The mainsail and genoa are used from 45 to roughly 130 degrees, but let out according to the degree of reach. When sailing at more than 130 degrees to the wind, the mainsail and spinnaker are used.

Running — A running position is when the wind and boat are going in the same general direction, roughly 170 to 190 degrees. When you are running, the wind is from the rear, or stern, of the boat. The mainsail should be let out 90 degrees to the wind, with the spinnaker billowing out in front. In very strong winds, the genoa is used instead of the spinnaker, regardless of the wind angle.



Wind Strength

The wind strength also determines which sails are used. For sailors, wind strength is measured in knots. The wind strength chart below shows which genoas and spinnakers are used for the three general wind ranges.

Keep alert when the wind is strong. As the wind nears the top of the range for each sail combination, a skipper who is slow to adjust or trim his sails or boat direction when wind angle changes loses time and distance. Very slow reaction (or no reaction) in the strong wind region of 20-35 knots may result in loss of control and the greatest loss of time and distance.

Wind Strength Chart

Wind Strength (knots)	Wind Angle (degrees to the centerline)		
	45-80 degrees	70-110 degrees	100-180 degrees
0-12	Mainsail Light genoa	Mainsail Light spinnaker	Mainsail Light spinnaker
10-20	Mainsail Medium genoa	Mainsail Heavy spinnaker	Mainsail Medium spinnaker
18-30	Mainsail Heavy genoa	Mainsail Medium genoa	Mainsail Heavy spinnaker

The Sails

Select your sails carefully before the start of each race. Watch for changes in wind strength. You can use a sail for a short time slightly over its wind range with only a small penalty in speed loss. This lets you decide to either change to the next sail or gamble on the wind strength lessening again. A sail change, if done quickly, results in a slight loss of distance, so the gamble to hang onto

the current sail can pay off, especially towards the end of the leg of the course or during a tactical move. Note that recommended wind ranges for sails have a safety factor of 20 percent. Slight loss of speed occurs up to this point, beyond which the sail will be damaged. You have seven sails available to you on your yacht:

Mainsail — Chosen prior to the start and not changed during a race. In the **Official America's Cup Sailing Simulation**, only one all-purpose mainsail is used.

Light genoa — A lightweight sail for light winds only. Use of this sail outside of its wind range results in a damaged or split sail, forcing you to make an emergency genoa change and lose a lot of time. When you change voluntarily because of increasing wind, your yacht loses only one boat length in very light winds, up to three in very heavy conditions.

Medium genoa — A full-size sail built to withstand higher winds of 10-20 knots. Using this sail in light winds slows down the boat, so you'll want to change to the lighter genoa when winds decrease. On the other hand, if you use this sail in winds that are too heavy, the yacht leans, or *heels*, excessively, reducing speed and causing sideways sliding, or *leeway*. Change to the heavy genoa to return boat speed.

Heavy genoa — Used in 18-30 knot winds. This strong sail won't break in the maximum wind you'll face during the game. If you use it in winds that are too light, you can lose a lot of speed. Change to a lighter genoa to return boat speed.

Light Spinnaker — This lightweight sail is designed for sailing downwind in very light winds of 12 knots or less. Damage to the sail occurs when it is used beyond its wind range, particularly at the narrower wind angles in the 90-110 degree range.

Medium Spinnaker — Used in higher winds. However, if you use it at narrow wind angles in stronger winds, the results are loss of control, excessive heel and reduced speed, and possible damage to the sail.

Heavy Spinnaker — A very strong, special-use sail. Built smaller and flatter to carry effectively at narrow angles of 90-110 degrees. Not effective in the 0-6 knot range, with loss of speed.

Mechanical failures

Two things can break on your yacht during a race. But consider yourself lucky: the things that can go wrong during a real race can't be counted on the hands of the entire crew!

Torn Headsail — You can tear the spinnaker or genoa when:

A) You use it in a wind range over the 20% safe load.

B) It gets tangled or fouled an opposing yacht during a collision.

Solution: Replace the sail with the nearest alternative from the remaining sails.

Effect: Speed halved until replacement is completed. Slight loss of speed may continue if the replacement is not correct for the particular wind.

Broken Halyard on Mainsail or genoa — The *halyard* is the rope used to raise and lower the sail. When the line breaks, the sail falls down. You want to avoid this one at nearly any cost.

Cause: Carrying too much sail in a strong wind.

Solution: Repair or replace the halyard.

Effect: Speed halved until sail that fell down has been rehoisted.

Net Loss: genoa, 6 lengths. Mainsail, 30 lengths.

Crew Failures

You are the captain and crew of your yacht, so be mindful of mistakes that can cost you the race. Here are the most common, in order of probability:

Sheet Overwind —The *sheets* are the pair of lines used to control the headsail, one sheet on each side of the yacht.

Cause: Sheets are wound around the winches with several turns. When one snags, it causes the rope to lock on to the winch. You cannot maneuver or trim the headsail while the sheet is jammed.

Solution: Untangle or cut the sheet and replace it.

Effect: Speed halved until repair completed (usually within 10 boat lengths).

Spinnaker Bad Set —A *bad set* is when the spinnaker is being raised and does not quickly open up and fill with wind.

Cause: The spinnaker is hoisted too slowly, or tangles when hoisting too early.

Solution: Turn smoothly at the buoy and hoist when half the yacht is past the mark.

Effect: Slow hoist loses 30 percent of boat speed; tangled spinnaker loses 40 percent of boat speed until cleared, usually within one minute.

Spinnaker Bad Jibe —A *bad jibe* is a bad turn when the wind is at your back.

Cause: Skipper turns too slowly and sails extra distance, or too quickly leaving the crew insufficient time to reset the sails for a new course.

Solution: Turn the yacht in a nice smooth arc so that you pass close to the buoy, then sail straight downwind for a couple of lengths prior to assuming the new course.

Effect: Net loss of extra distance sailing for a wide turn, or two boat lengths for a rapid turn causing the spinnaker to collapse temporarily.

Spinnaker Bad Drop —A *bad drop* is when the spinnaker is lowered and becomes fouled or drops into the water.

Cause: Too late or too early with the takedown.

Solution: Accurately gauge time required for a smooth efficient takedown, dependent on the wind strength. The optimum distance from the buoy turn for a drop: strong wind, seven lengths; medium wind, five lengths; light wind, three lengths.

Effect: Late takedown: loss of four lengths. An early takedown is only a slight loss, increasing with the distance from turn or amount too early.

Man Overboard — Racing rules require each yacht to finish with all of its crew on board.

Cause: It's most likely to happen during a rushed spinnaker maneuver.

Solution: Don't make unexpected maneuvers or decisions that catch your crew off guard or pressure them unreasonably.

Effect: Net loss of 20 lengths, plus one very wet (and possibly injured) crew member.

Weather conditions

Light Winds — Winds at 0-12 knots, easterly. The water's flat, and wind gust shadows are very obvious on the surface. The greatest variation in wind direction occurs in these conditions. Maintaining boat speed is vital, since any loss of speed can take a long time to build up again.

The yacht should be sailed at wider wind angles when "on the wind" at 80-90 degrees; 80 degrees at about eight knots, out to 90 degrees as the wind lightens towards two knots. Long-term tactical decisions are more critical, since frequent maneuvering reduces boat speed.

Light Moderate Winds — Winds at 10-20 knots, southeast to southwest. The water has small wind waves. Gusts or increases in wind speed are still fairly clear — not as distinct cats' paws, but more as a line of approaching shadow.

Maintaining boat speed is less of a battle, and more maneuvering is possible. The yacht can be sailed at optimum angles of 70-80 degrees: 70 at 10-18 knots, increasing to 80 degrees as the wind decreases. Closer tactical racing is possible, keeping in mind that a fairly large increase or decrease in wind speed and direction is still possible, and can mean a big gain or loss, depending on how it's handled.

Moderate Fresh Winds —Winds at 18-30 knots, southwesterly. In Perth, it's called a *Fremantle Doctor*. Large choppy wind waves, with very steady wind direction. The usual variation is only 5-8 degrees either side of the average wind.

Gusts or increases in wind are sudden and fairly heavy, as it's a cold, heavy wind. The rough water makes gusts and direction changes hard to predict. It's usually best to temporarily sail at a closer angle to the wind (*feathering*), inside 70 degrees. As the gust eases, the yacht should be sailed at 70 degrees (or slightly more) for best drive. Prolonged feathering slows the yacht. Tactics are paramount, since both yachts maintain a similar speed.

Wind shifts

Wind doesn't blow from a constant direction. There are three basic categories of wind: *oscillating*, *persistent*, and combined *oscillating persistent*. The majority of races off Perth, Australia, are sailed in oscillating winds of 12-25 knots, though there is a tendency for the lighter easterly winds to be persistent. Since oscillating persistent wind is not very common, the game only uses oscillating and persistent wind shifts.

Oscillating Winds — The wind direction changes, right then left, around an average/mean direction. For example, an average wind at 210 degrees varies to the left and right by 10 degrees. These oscillations are fairly even, and predictable to a large degree. The time span and amount of variance change as the wind strength alters.

In a fresh, strong wind there is less tendency for the wind to wander or oscillate. As it lightens, it wanders about more. A typical *Fremantle Doctor* (the typical wind off of Perth) oscillates as little as 5 degrees off the average direction with a total time span of up to 10 minutes. A light easterly land breeze at around five knots may oscillate by as much as 15-20 degrees either side of the average over a time space of 3-5 minutes.

The rule of thumb for sailing into the wind is: Tack onto a wind shift that takes you on your best angle to the buoy.

Persistent Shifts The wind direction slowly continues to change, either to the right or to the left. For example, an early morning wind of 120 degrees changes slowly to the right as the day goes on, becoming 125 degrees, 130 degrees, etc.

Oscillating Persistent Shift This wind is a complicated combination of the two winds. While changing slowly in one direction, it also goes left and right in small oscillations on the way.

Obstacles

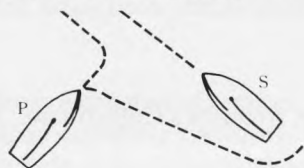
Spectator craft would be the only obstacle likely on an America's Cup course. There are no obstacles on the game course.

Appendix A: The Blue Book Rules

The Official America's Cup Sailing Simulation conducts races under the International Yacht Racing Union Blue Book rules that govern 12-meter competition. The basic rules, which are summarized below, are enforced by the program: if either the *Challenger* or the *Defender* violates a rule during the race, it is indicated on the screen as a foul, and the offender is penalized four boat lengths. Any foul prior to the actual start is paid after crossing the start line.

- 1 Starboard-tack right of way. A yacht on a *port tack* (wind hitting the left side of the boat) shall keep clear of a yacht on a *starboard tack* (wind hitting the right side of the boat) by either baring away behind her or tacking a safe distance away. (Rule 36)

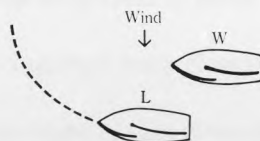
1. PORT AND STARBOARD



Yacht P must alter course to avoid yacht S either by *bearing away* behind her or tacking a safe distance away.

- 2 Leeward right of way
 - A A *windward* yacht (the one upwind) shall keep clear of a *leeward* yacht (the one downwind) (Rule 37.1)
 - B A leeward yacht may *luff* (turn into the wind) as she pleases to hamper a windward yacht. (Rule 38.1)

2. WINDWARD & LEEWARD

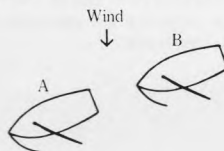


Yacht W must not sail too close to Yacht L.

2b. Yacht L may *luff*; alter course to windward, as sharply as she pleases to stop W from overtaking.

- 3** Clear ahead right of way. A yacht clear *astern* (off the rear of the boat), shall keep clear of a yacht clear ahead. Meaning: don't tailgate or ram the boat from behind. (Rule 37.2)

3. CLEAR ASTERN. CLEAR AHEAD

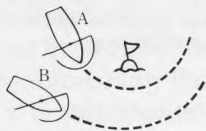


Yacht B must keep clear of Yacht A. If Yacht B is overtaking she must attempt to go *around* yacht A.

- 4** A right-of-way yacht shall not alter course to prevent the other yacht from keeping clear. The exception is Rule 2b. (Rule 35)
- 5** A yacht that is turning, *tacking* or *jibing*, shall keep clear of a yacht on a tack.
- 6** The outside yacht shall give an inside overlapping yacht room to round a mark. (Don't cut another boat off at the corner.)

6. ROOM TO ROUND MARKS AND OBSTRUCTIONS

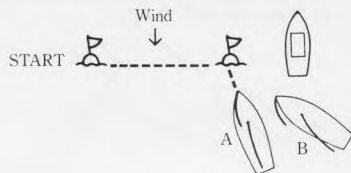
Yacht A is overlapping Yacht B.
Yacht B must give A room to round.



- 7 At the starting mark, the leeward yacht does not need to give room to the windward yacht that is *barging*, or trying to squeeze between the leeward yacht and the starting buoy. Yacht A can maintain a close hauled cover and force yacht B to sail around her.

7. BARGING AT THE START

Yacht B is said to be *barging*. Yacht A can maintain a close hauled cover and exclude yacht B who is not entitled to *roam* at a starting mark.



- 8 When both yachts tack or jibe at the same time, the one on the other's starboard has right of way, and the one on the other's port shall keep clear. The port yacht must not sail too close to the starboard yacht.
- 9 A yacht that touches a mark/buoy must complete the rounding, then re-round the mark without touching it, keeping clear of the other yachts.

- 10 A premature starter must return to the pre-race side of the line and start again. While returning, she must keep clear of other yachts.
- 11 A yacht that is racing shall keep clear of a yacht recovering a man overboard.
- 12 The yacht with the right of way does not have to hit the other yacht to win a protest. If the right-of-way yacht has to change course to avoid a collision, the other yacht is in the wrong. If no attempt is made to avoid a collision, both the right-of-way yacht and the infringer are penalized.

Appendix B: A Yachting Glossary

To be a sailor is to know the language of sailors. Knowing these sailing terms can improve your sailing savvy as well as your enjoyment of the America's Cup:

Abeam Anything abeam is straight out from either side of the yacht

Aft At the rear

Backstay Wire that runs from the top of the mast to a point on the stern. Used to bend the mast slightly backwards.

Beam The widest part of the boat

Beam Reach Sailing with the wind coming directly from the side of the yacht

Bear away Alter course away from wind

Blanketing Sailing between your opponent and the wind, giving him dirty (disturbed) air from your sails

Boom Aluminum spar attached to the bottom edge of the mainsail

Bow Front section of the yacht

Broad reach Sailing with the wind coming from the behind or to the side of the yacht

Clew Corner of sail on which the sheets (ropes) are tied

Close hauled Sailing as close as possible to the direction of the wind

Coffee Grinder or pedastal winch A powerful winch with pedal-type handles that control the headsail and spinnaker sheets

Coming about Steering the bow across the direction of the wind until the sails fill on the other side. Also known as tacking.

Coming up To steer the bow of the yacht "up" towards the direction of the wind. Going "up" is into the wind. Going "down" is away from the wind.

Covering Getting in front of and staying between your opponent and the direction of the wind, creating a wind shadow. No matter which way he tacks, you cover him. He cannot sail past you through this wind shadow.

Cross-trees Supports on the mast to keep the wire rigging steady.

Dead square Sailing with the wind right behind, with the mainsail out to one side

Dirty air Disturbed air from the leading yacht hitting the sails of the following yacht, causing a dramatic loss of speed for the following yacht

Downwind Same direction as downhill; away from the wind

Ease sheets Slacken off the lines that adjust the sails

Falling Off Heading slightly away from the wind to pick up speed for tactical reasons

Foot The bottom edge of a sail

Footing Sailing slightly below the optimum angle of the wind

Foredeck Section of deck between the mast and the bow

Forestay Tensioning wire running from bow to masthead

Genoa Large front sail that overlaps the mainsail, also known as a jib

Gooseneck Fitting attaching mainsail boom to mast

Grinder The big winch operators, commonly called "gorillas" because of the strength needed in this crew position

Guy Line or wire that controls the angle of the spinnaker pole to the wind

Halyard Wire or rope used to hoist the sail up the mast

Harden up Pull the sails in tighter and change direction towards the wind

Header or knock A wind shift that forces the yacht to tack in order to reach the next mark

Heeling Way in which yacht leans to one side in the wind

Helm The steering wheel, or tiller

Hourglass A bad twist in the center of the spinnaker that spells real trouble because of the loss of speed and time required to untwist the sail. The resulting shape is like an hourglass. See also Wrap.

Jibe Changing direction when the wind is behind. The sails swing from one side of the yacht to the other.

Lay line Imaginary straight line a yacht follows to each mark

Leech Trailing edge of a sail

Lee-bow To tack into a position slightly ahead and slightly to leeward of your opponent. An advantageous but risky maneuver.

Leeward Side away from the wind

Luff The leading edge of sails. The luff flaps when the bow goes too close to the wind direction.

Luffing When the entire sail flaps because the yacht is heading directly into the wind

Mainsail The rear sail that is attached to a track up the mast and to the mainsail boom

Mainsheet Line that controls the trim of the mainsail

Masthead Top of the mast

Pinching Sailing slightly closer to the wind than the optimum angle

Pointing Aiming the bow as far as possible into the wind

Port Left side

Port tack When the wind comes from the left, with sails leaning to the right

Reaching When the sails are eased, with the wind coming from one side

Reach mark The widest mark on the course after the first reach. The mark is out wide, like a wing.

Running Sailing with the wind behind

Sheets Lines that tighten (trim) and loosen (ease) the sails

Shooting A tactic to use when you can't quite get around a mark. Temporarily head the yacht into the wind and luff (sails flapping), relying on the boat's momentum to glide around a mark. This avoids making a short tack at the mark — but it must be done skillfully, as the yacht rapidly loses speed.

Shrouds Wires on each side of the yacht holding the mast up

Spinnaker Big, full sail that billows out the front when the wind is from behind

Spinnaker pole Also called the spinnaker boom. A pole attached to the mast and spinnaker, to hold the spinnaker at the correct angle to the wind.

Spreaders Supports on the mast to keep the wire supports steady. Also known as cross-trees.

Starboard tack When the wind is coming from the right, with the yacht and sails leaning to the left

Stays Wires running from top of the mast to bow are the forestay, and from the top of the mast to stern are the backstay. They prevent the mast falling forward or backwards. The backstay also controls the degree of bend in the mast.

Stern Rear end

Tack Front bottom corner of a sail

Tacking When the yacht swings through the direction of the wind, and the sails swing from one side to the other

Tactician He works out the racing tactics and constantly advises the skipper as to what's happening

Tender Fast powerboat carrying syndicate managers, advisers, computers and some spare parts and sails

Transom Absolute stern section of the yacht

Under way The yacht is moving forward

Weather helm The natural tendency of a gust to push the yacht up into the wind

Weather side Side of the yacht toward the wind

Winches Mechanical drums that tighten sheets and halyards

Windward The side from which the wind is blowing

Wrap When the spinnaker is twisted around the forestay. Like an hourglass, a real problem.

Appendix C: An America's Cup History

Originally known as the One Hundred Guinea Trophy, the America's Cup was the prize for a very prestigious Royal Yacht Squadron 53-mile race around the Isle of Wight, off the south coast of England.

The First Race

In 1851, a syndicate headed by John Cox Stevens, first commodore of the New York Yacht Club, sent the schooner *America* across the Atlantic to challenge the British for the trophy. In those days, nobody dared to challenge British yachtsmen. So from the moment the *America* arrived, a British victory became a matter of national pride.

At 8:37 p.m. on August 22, *America* crossed the finish line eight minutes ahead of the next yacht, stunning thousands of onlookers in an armada of steamers and pleasure craft on hand for the race of the century.

Winners of The Cup, 1851-1983

Since the 1851 race, which led to the establishment of the America's Cup, there have been 17 British, seven Australian and two Canadian challenges. In 86 races sailed and completed between 1870 and 1980, defenders representing the New York Yacht Club lost only eight races — and never lost the Cup.

Year	Winning Yacht	Country	Yacht Club
1851	<i>America</i>	USA	New York Yacht Club
1870	<i>Magic</i>	USA	New York Yacht Club
1871	<i>Sappho</i>	USA	New York Yacht Club
1876	<i>Madeleine</i>	USA	New York Yacht Club
1881	<i>Mischief</i>	USA	New York Yacht Club
1885	<i>Puritan</i>	USA	New York Yacht Club
1886	<i>Mayflower</i>	USA	New York Yacht Club
1887	<i>Volunteer</i>	USA	New York Yacht Club
1893	<i>Vigilant</i>	USA	New York Yacht Club
1895	<i>Defender</i>	USA	New York Yacht Club
1899	<i>Columbia</i>	USA	New York Yacht Club
1901	<i>Columbia</i>	USA	New York Yacht Club
1903	<i>Reliance</i>	USA	New York Yacht Club
1920	<i>Resolute</i>	USA	New York Yacht Club
1930	<i>Enterprise</i>	USA	New York Yacht Club
1934	<i>Rainbow</i>	USA	New York Yacht Club
1937	<i>Ranger</i>	USA	New York Yacht Club
1958	<i>Columbia</i>	USA	New York Yacht Club
1962	<i>Weatherly</i>	USA	New York Yacht Club
1964	<i>Constellation</i>	USA	New York Yacht Club
1967	<i>Intrepid</i>	USA	New York Yacht Club
1970	<i>Intrepid</i>	USA	New York Yacht Club
1974	<i>Courageous</i>	USA	New York Yacht Club
1977	<i>Courageous</i>	USA	New York Yacht Club
1980	<i>Freedom</i>	USA	New York Yacht Club
1983	<i>Australia II</i>	Australia	Royal Perth Yacht Club

The 1987 America's Cup Match

The 1987 America's Cup Match begins on January 31, 1987, the day of the first race over the 24.1 nautical mile course located off Perth, Australia.

As in all America's Cups, the number of days taken to conclude the best-of-seven series depends on the closeness of the competitors, the number of lay days — days off the water between races — and, of course, weather conditions.

Lay days are vital to repair gear and bring the crew up to scratch. Lay days are also tactically important. At Newport in 1983, the Australia II crew made superb use of lay days to apply psychological pressure on the New York Yacht Club at crucial stages of the Match.

Weather has always been a big factor in the America's Cup. But given the reliably strong breeze that blows along the West Australian coast in summer (remember, the Southern Hemisphere's seasons are opposite of the North Hemisphere's), it is unlikely that races will be abandoned, or fail to finish, due to lack of wind.

New Waters, New Technology in 1987

Twelve-meter yachts are constantly developing, requiring a serious commitment of new technology, design and materials. All this makes the America's Cup much more than a battle of skill, tactics and speed.

With on-board computers, ultra-lightweight metals for hull and spar construction, and space age materials for sails and fittings, the America's Cup has become the ultimate test of crew and boat. Since the first challenge in American waters off New York in 1870, every yacht design and modification has been geared for the sailing conditions in Rhode Island Sound. But the events of

September 1983 changed that perspective, and now syndicates in seven countries are seeking another design revolution — the one that will give them the technical advantage for sailing conditions in Western Australia.

The key factor is the wind. Almost every day in summer, a strong, prevailing southwesterly breeze (called the *Fremantle Doctor* by the locals) sweeps the coast. This breeze is much more reliable and far stronger than the typical summer breezes experienced at Newport. According to leading meteorologists, the pre-race tactics and strategy planning could center around the time the breeze arrives and the strength to which it develops.

The Course off Perth, Western Australia

The 1987 America's Cup course offers different sailing conditions and a modified course that emphasizes maneuvering in close quarters.

The traditional 24.3-nautical-mile course used at Newport, Rhode Island, had 4.5-nautical-mile legs. To increase the competitive aspect of the America's Cup, the Royal Perth Yacht Club shortened these legs to 3.25 nautical miles, creating more mark roundings. This makes a tougher test for yachts and crews, and provides more close-quarters action at the buoys for spectators.

This course really tests the maneuverability of the modern 12-meter yachts. It also puts greater emphasis on precision crew work, which is essential to shave those vital seconds in tacks, jibes, sail trimming and spinnaker work.

One advantage Perth has over Newport is excellent summer visibility. Low-lying clouds and fog are unknown in summer. This means viewing conditions for the spectator fleet — and for those watching on television — will be unparalleled in the history of the event. A Perth summer is sunny and hot, with over 90 percent of summer breezes coming from the southwest. Wind strength over the course area during the America's Cup Match is forecast at 16 to 20 knots.



Course location —The America's Cup course is located within 3-1/4 nautical miles of the Fairway Landfall Buoy. The buoy's coordinates are:

Latitude: 31 degrees 57.26 minutes south
 Longitude: 115 degrees 38.83 minutes east
 327 degrees (T) from North Mole Distance 7.12 miles

Course setting — The course is laid with the first leg sailed directly into the wind. The course can be changed during a race due to changes in the wind direction.

The Yachts and Sponsors

Fourteen yacht clubs from seven countries have developed yachts to compete in the 1987 Challenger Elimination Series. This shows the development of the America's Cup since 1983, when seven yacht clubs from four nation took the challenge. There were three challengers in 1980 and 1977, and two in 1974 and 1970.

From Australia, four syndicates from three States will compete for the right to defend the America's Cup:

Defending Yacht	Country	Club or Syndicate
<i>Australia III</i>	Australia	Royal Perth Yacht Club
<i>Eastern Australia</i>	Australia	America's Cup Defense 1987
<i>South Australia</i>	Australia	Eastern Australia Defense Syndicate
<i>Kookaburra</i>	Australia	Taskforce 87 Defense

Challenging Yacht	Country	Club or Syndicate
<i>True North</i>	Canada	Royal Nova Scotia Yacht Squadron
<i>Canada</i>	Canada	Secret Cove Yacht Club
<i>Marseilles Challenge</i>	France	Societe Nautique de Marseilles
<i>French Kiss</i>	France	Societe de Regates Rochelaises
<i>Azzurra</i>	Italy	Yacht Club Costa Emeralds
<i>Italia</i>	Italy	Yacht Club Italiano
<i>New Zealand</i>	New Zealand	Royal New Zealand Yacht Squadron
<i>Crusader</i>	United Kingdom	Royal Thames Yacht Club
<i>Heart of America</i>	USA	Chicago Yacht Club
<i>America II</i>	USA	New York Yacht Club
<i>Eagle</i>	USA	Newport Harbor Yacht Club
<i>St. Francis</i>	USA	St. Francis Yacht Club
<i>Sail America</i>	USA	San Diego Yacht Club
<i>Courageous</i>	USA	Yale Corinthian Yacht Club

These 18 yachts come together at Perth, Australia, in October for one of the most demanding racing schedules ever seen in the America's Cup.

The Racing Calendar

The final 1987 America's Cup Match race between an Australian defender and a challenger is the result of four months of competition, and hundreds of races.

The Defender Selection Trials

The Defender Trials occur between October 18, 1986 and January 26, 1987. The races consist of four Round Robins and a Final:

Series A	October 18-29
Series B	November 10-23
Series C	December 5-19
Series D	Dec. 29 - Jan. 10
Final	January 16-26

Each defender will have eight races in the first Round Robin, 12 races in the second and third, and six races in the fourth. The Final is a best of seven series run on exactly the same lines as the America's Cup Match.

The Challenger Elimination Series

The Challenger Series is being held between October 5, 1986 and January 23, 1987. It consists of a preliminary series and two round robins in which the challengers all race each other, followed by semifinals and a Final:

Preliminary Series	October 5-20
1st Round Robin	November 10-23
2nd Round Robin	December 2-19
Semi Finals	Dec. 28 - Jan. 23
Final	January 13-23

The preliminary series is an addition since the 1983 America's Cup. At the end of the preliminary series, challengers can change their yachts if they are unhappy with their performance. However, any club taking this step forfeits any points scored in the preliminary series.

After the round robins, the top four challengers go into the semifinals, with the two winners competing in the final. Up to 300 races may be necessary for the Challenger Elimination Series.

The Match Race

The America's Cup Match pits the winning Defender from Australia against the winning challenger beginning January 31, 1987. The Match is best-of-seven, with the Cup going to the yacht that wins four races. For an explanation of scoring, refer to Appendix D.

Appendix D: Scoring the 1987 America's Cup

During the last week of January, 1987, millions of sailing enthusiasts will huddle close to television sets all over the world, following the progress of the last seven America's Cup races. To make the suspense bearable, and the watching more fun, the next few pages contain seven scorecards that you can use to keep track of events as they occur.

The top part of the scorecards is fairly self-explanatory: just enter the day, date, the time the race started, the names of the competing boats, and the prevailing wind direction. Keep a careful eye and ear open to find out who was first across the start line, and note this on the card in the START WON BY space. In the LEAD space, write down how much of a lead this first boat had over the second boat at the start.

As the race progresses, write in the name of the boat that leads at the first mark (where the boats round the first buoy), and the number of minutes or seconds between the first boat and the second. Do this with each subsequent mark, and at the finish. You're encouraged to use the margins to make notes of spectacular maneuvers, sudden wind changes, and other events that change the course of each race. When completed, the seven scorecards give you a mark-by-mark record of the 1987 America's Cup Match.

RACE ONE

DAY	DATE	START TIME
CHALLENGER		
DEFENDER		
WIND AT THE START		
DIRECTION	SPEED	
START WON BY	LEAD	
1ST MARK	LEAD	
2ND MARK	LEAD	
3RD MARK	LEAD	
4TH MARK	LEAD	
5TH MARK	LEAD	
6TH MARK	LEAD	
7TH MARK	LEAD	
FINISH	LEAD	
WIND AT THE FINISH		
DIRECTION	SPEED	
WINNER		
WIN MARGIN	MIN.	SEC.
MATCH SCORE		

RACE TWO

DAY	DATE	START TIME
CHALLENGER		
DEFENDER		
WIND AT THE START		
DIRECTION	SPEED	
START WON BY	LEAD	
1ST MARK	LEAD	
2ND MARK	LEAD	
3RD MARK	LEAD	
4TH MARK	LEAD	
5TH MARK	LEAD	
6TH MARK	LEAD	
7TH MARK	LEAD	
FINISH	LEAD	
WIND AT THE FINISH		
DIRECTION	SPEED	
WINNER		
WIN MARGIN	MIN.	SEC.
MATCH SCORE		

RACE THREE

DAY	DATE	START TIME
CHALLENGER		
DEFENDER		
WIND AT THE START		
DIRECTION		SPEED
START WON BY		LEAD
1ST MARK		LEAD
2ND MARK		LEAD
3RD MARK		LEAD
4TH MARK		LEAD
5TH MARK		LEAD
6TH MARK		LEAD
7TH MARK		LEAD
FINISH		LEAD
WIND AT THE FINISH		
DIRECTION		SPEED
WINNER		
WIN MARGIN	MIN.	SEC.
MATCH SCORE		

RACE FOUR

DAY	DATE	START TIME
CHALLENGER		
DEFENDER		
WIND AT THE START		
DIRECTION		SPEED
START WON BY		LEAD
1ST MARK		LEAD
2ND MARK		LEAD
3RD MARK		LEAD
4TH MARK		LEAD
5TH MARK		LEAD
6TH MARK		LEAD
7TH MARK		LEAD
FINISH		LEAD
WIND AT THE FINISH		
DIRECTION		SPEED
WINNER		
WIN MARGIN	MIN.	SEC.
MATCH SCORE		

RACE FIVE

DAY	DATE	START TIME
CHALLENGER		
DEFENDER		
WIND AT THE START		
DIRECTION	SPEED	
START WON BY		LEAD
1ST MARK		LEAD
2ND MARK		LEAD
3RD MARK		LEAD
4TH MARK		LEAD
5TH MARK		LEAD
6TH MARK		LEAD
7TH MARK		LEAD
FINISH		LEAD
WIND AT THE FINISH		
DIRECTION	SPEED	
WINNER		
WIN MARGIN		MIN. SEC.
MATCH SCORE		

RACE SIX

DAY	DATE	START TIME
CHALLENGER		
DEFENDER		
WIND AT THE START		
DIRECTION	SPEED	
START WON BY	LEAD	
1ST MARK	LEAD	
2ND MARK	LEAD	
3RD MARK	LEAD	
4TH MARK	LEAD	
5TH MARK	LEAD	
6TH MARK	LEAD	
7TH MARK	LEAD	
FINISH	LEAD	
WIND AT THE FINISH		
DIRECTION	SPEED	
WINNER		
WIN MARGIN	MIN.	SEC.
MATCH SCORE		

RACE SEVEN

DAY	DATE	START TIME
CHALLENGER		
DEFENDER		
WIND AT THE START		
DIRECTION	SPEED	
START WON BY	LEAD	
1ST MARK	LEAD	
2ND MARK	LEAD	
3RD MARK	LEAD	
4TH MARK	LEAD	
5TH MARK	LEAD	
6TH MARK	LEAD	
7TH MARK	LEAD	
FINISH	LEAD	
WIND AT THE FINISH		
DIRECTION	SPEED	
WINNER		
WIN MARGIN	MIN.	SEC.
MATCH SCORE		

THE RESULT

DEFEATED
_____ MATCHES TO _____
FINAL WINNING MARGIN
_____Min. _____Sec.

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