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IndyCar Driver Stefan Johansson

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BEST SIMULATION SOFTWARE PROGRAM

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INDYCAR® RACING II

from

Papyrus Design Group, Inc.

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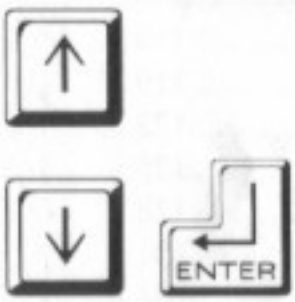
"Drivers, Start Your Engines!"

(But First, Calibrate And Set Up Your Joystick. Windows95/Mac Users Refer To Page 60)

Before you go IndyCar Racing, it's a good idea to calibrate and initialize your joystick or wheel device. It's like putting on a crash helmet; it doesn't take long, but it has to be done.



Until your joystick is set up, make menu selections with the up/down arrow keys. When you've highlighted the item you want, simply press the "ENTER" key.

Note: Wheel users may experience rapid scrolling of the menu selector when first starting the game. Press the "J" key once to stop the scrolling. Wheel users must make menu selections with the keyboard keys, as explained above.

To set your stick or wheel up, choose **Options** from the **Main Menu**. Choose **Controls**, and calibrate each joystick (wheel/pedal combo users need to align both joysticks). Once your joysticks are calibrated, choose **Set Controls**. IndyCar Racing II comes shipped with keyboard controls for driving, such as steering, braking, etc. You can change these items to be controlled by stick/wheel movements instead. Highlight each item on the **Set Controls Menu**, one at a time, and choose a method of control. For example, if you wish to steer left & right by moving the joystick/wheel left & right, choose **Steering**. Then simply move the stick/wheel left, then right. Start at the top of the menu with **Steering**, and work your way down.

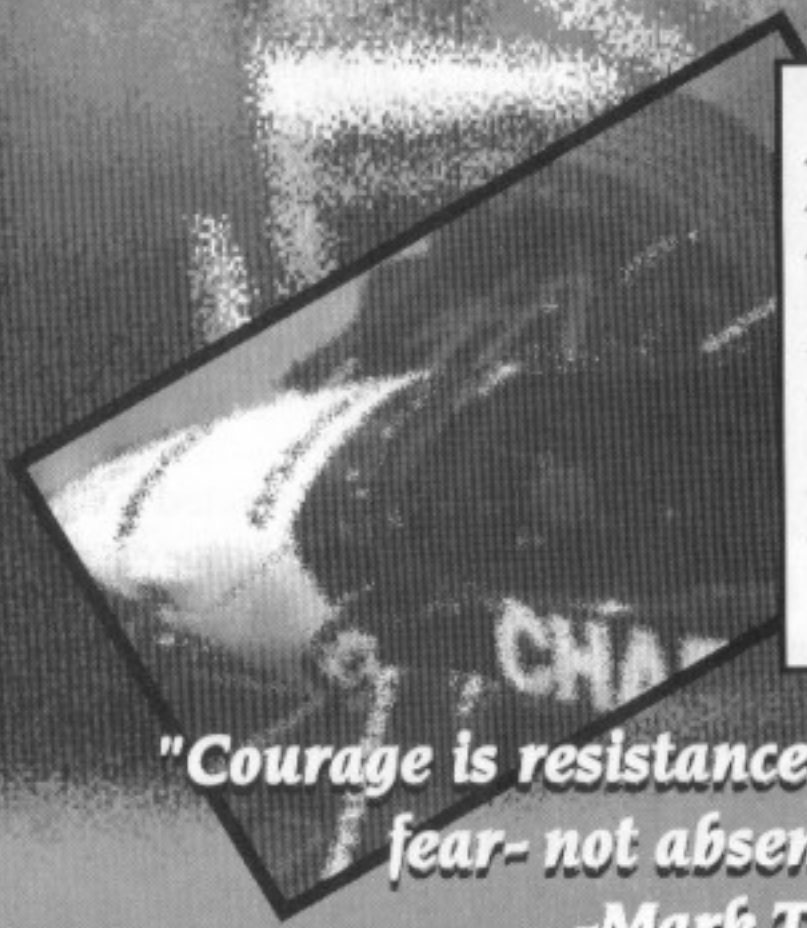
Calibrate your joystick or wheel by choosing Options from the Main Menu. Then, choose Controls and follow the on-screen prompts. If your joystick or wheel doesn't respond when you're trying to drive, it's probably because keyboard controls are chosen instead. From the Set Controls Menu, choose steering, then pull your joystick left/right. Choose acceleration and move your stick forward (or, push one of the joystick buttons to make that your accelerator). Continue on through each item until your controls are all selected and set. Now you're ready to race!

Taking A Quick Lap

From the **Main Menu**, choose **Single Race** or **Preseason Testing**. The **Track Selection Menu** will appear, giving you an opportunity to drive on the circuit of your choice.

After you've selected a track, choose **Practice** or **Testing** from the menu that appears on your screen. You'll then be in the cockpit of your IndyCar, resting on pit road. Use your joystick, wheel or the keyboard to accelerate out onto the track when ready. For more information on cockpit features and in-car controls, refer to the following section in this manual.

In The Cockpit: Getting To Know Your IndyCar



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"Courage is resistance to fear, mastery of fear- not absence of fear."
-Mark Twain

Your IndyCar Cockpit

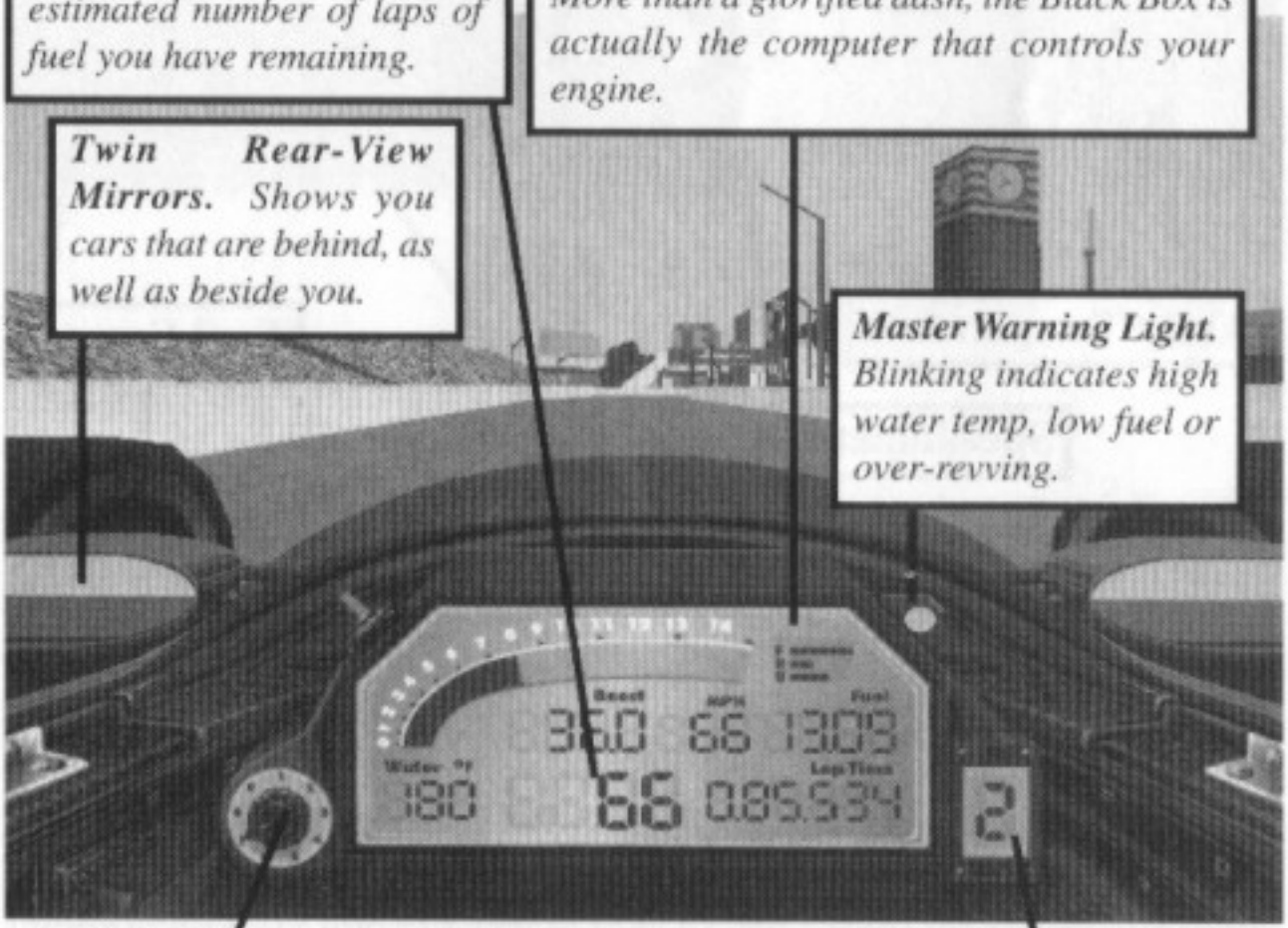
Your IndyCar is equipped with the latest instrumentation in auto racing technology. Before hitting the track, take a moment to familiarize yourself with the in-car controls so you'll be able to read them at a glance when driving.

*The default display here is speed (mph); press **"D"** to display rpms (x10) instead. Press **"D"** again to see the estimated number of laps of fuel you have remaining.*

The "Black Box" Display. *This sophisticated digital screen provides the driver with split-second feedback from the various systems that make up an IndyCar. More than a glorified dash, the Black Box is actually the computer that controls your engine.*

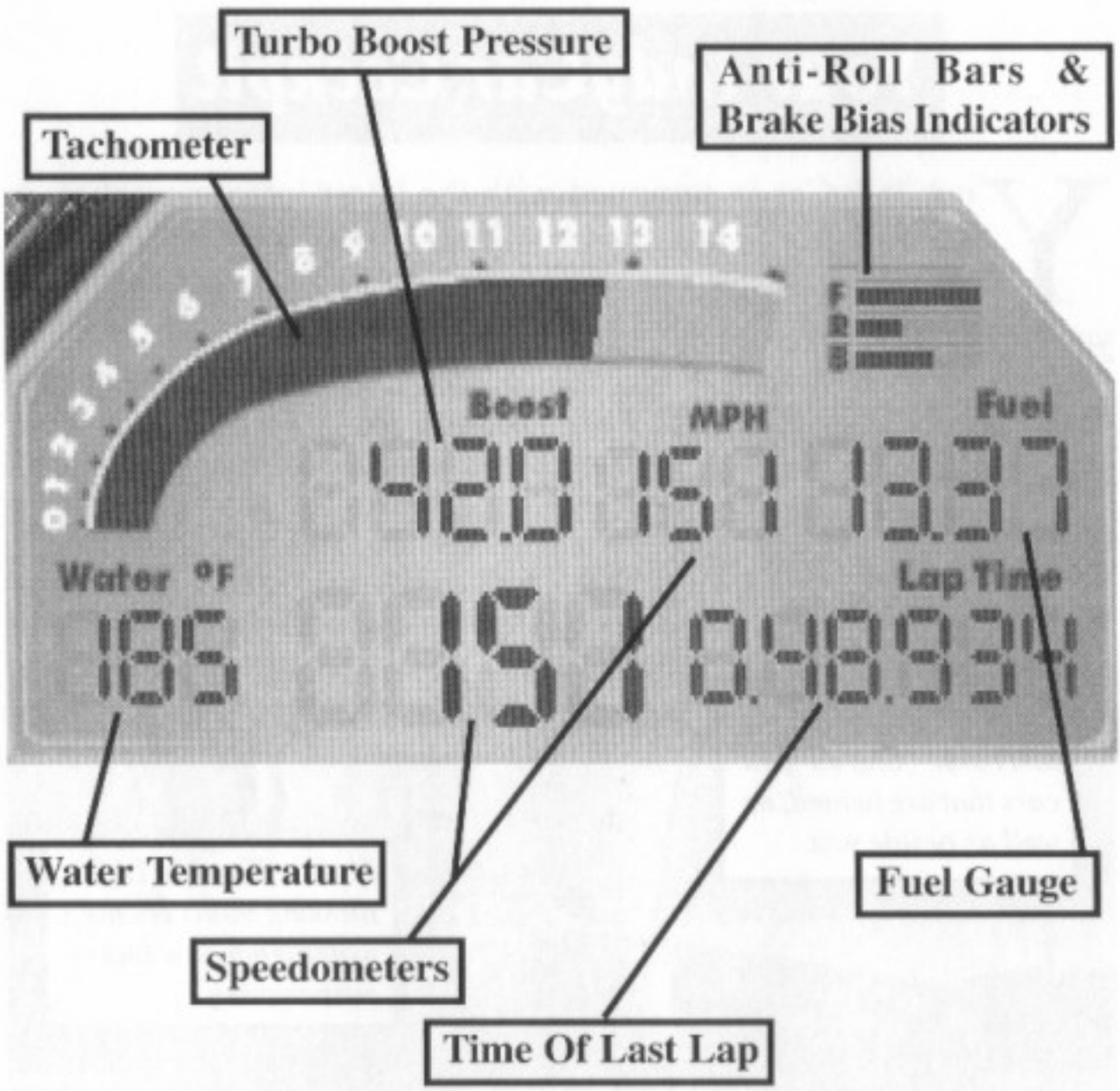
Twin Rear-View Mirrors. *Shows you cars that are behind, as well as beside you.*

Master Warning Light. *Blinking indicates high water temp, low fuel or over-revving.*



The Turbocharger Knob. *This dial changes to indicate the current boost setting.*

Transmission Status. *This digital readout displays the gear you are currently using.*



Tachometer: This "heads-up" bar displays the number of rpms your engine is currently producing. Ideal gear shifting should take place somewhere between 11,000 and 12,500 rpms, since horsepower generally tapers off above the 13,000 mark. Letting your tachometer climb above 14,000 rpms for an extended period of time will result in engine failure. Shifting up too early will lead to decreased performance and wasted fuel.

Turbo Boost Pressure: This gauge shows you how much boost pressure your turbocharger is currently generating. This value will rise and fall with acceleration; it may dip as low as 30.0 at a dead stop, topping out at around 45.0 in/Hg, or 22 psi, under full power and boost. *(See next page.)*

Water Temperature: Indicates the current temperature reading (in Fahrenheit) of the engine coolant. If the water temperature swells above 220 degrees, this is a sign that your engine is being over-worked.

Speedometers: These display the current speed in miles-per-hour (mph) that you are traveling. When you are reading the tachometer, you may find it easier to reference the small speedometer in the center of the display. If you are simply checking speed, the larger one at the bottom may prove more effective.

Time Of Last Lap: This counter resets at the conclusion of each lap to provide you with lap speed information.

Fuel Gauge: This instrument shows you the current fuel level onboard your race car. Maximum fuel capacity is 40 U.S. gallons. When you have five gallons or less remaining in the tank, the word "Fuel" will begin to blink, warning you of a low fuel condition.

Anti-Roll Bars & Brake Bias Indicators: This display shows you the current setting of each anti-roll bar, and the brake bias control. You can see these indicators change dynamically, whenever adjustments to these items are being made. The anti-roll bar gauges range from fully soft (indicator all the way to the left), to fully stiff (indicator all the way to the right). The brake bias indicator ranges from full rear-end brake bias (all the way to the left), to full front-end brake bias (all the way to the right). When this gauge is at the halfway point it indicates a neutral braking setting.

Managing Your Turbocharger

L = Increased Boost

K = Decreased Boost

Your IndyCar's engine is equipped with a factory prepared turbocharger that dramatically increases the amount of available horsepower. The driver has complete control over the turbocharger throughout the race, by way of a knob located on the dash. The current boost (another word for turbocharger) setting is indicated by the knob's direction. The L and K keyboard keys actually move the knob while you are in the car. The correct boost pressure is displayed on the black box. Maximum allowable boost pressure is 45 in/Hg, or 22 psi.

Choosing higher turbo settings provides the driver with more horsepower, but uses more fuel. It is a good idea to tune your car for a boost value of "7" or so (rather than "9"), so you'll have some room to increase boost pressure if you suddenly need the extra power. Keep an eye on that engine light, though- turning the boost up a couple of notches may be a handy short term solution for more speed, but in the long run this measure could wear your engine down.

Remember, running the turbo wide-open could make you quicker, but the decrease in fuel economy may add a pit stop or two to your race-day schedule.

Adjusting The Anti-Roll Bars

= Stiffen Front Anti-Roll

= Soften Front Anti-Roll

= Stiffen Rear Anti-Roll

= Soften Rear Anti-Roll

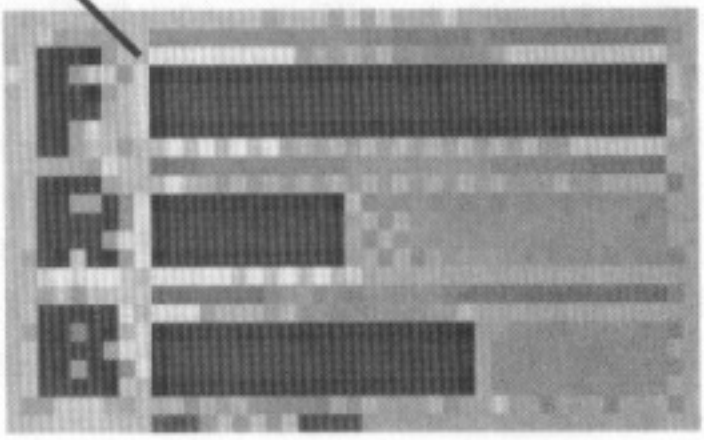
As you whip your IndyCar through several high speed laps, you'll notice the car's handling gradually begins to change. Most IndyCars tend to have some understeer in their feel through the early laps, and then later on they develop an oversteer. This variance in chassis feel is due to two factors: the depletion of fuel and the wearing of tires. Each gallon of methanol in your IndyCar's tank adds about six pounds of weight to your car. This gives you a total fuel payload of between 240-270 lbs., representing a significant change in your car's weight as the methanol is consumed.

In order to combat these changes in handling, your IndyCar is equipped with anti-roll bars (also called "sway bars"). One anti-roll bar is positioned between the front wheels, the other between the rear wheels. By adjusting these as you drive, you can counteract the subtle alterations in handling that occur from lap to lap.

Like shock absorbers, the anti-roll bar settings range from completely soft to fully stiff. And like shocks, stiffer anti-roll bar settings will make your car more responsive, but also create more weight transfer that produces less grip.

If your car has too much understeer, stiffen the rear anti-roll bar and/or soften the front. If your car has too much oversteer, stiffen the front anti-roll bar and/or soften the rear. Try beginning your setups in the garage with both roll bars set just above the mid-point.

Using the keyboard key combinations described on the previous page, adjustments to both anti-roll bars can be performed while you drive. The "bar graph" style gauge on your dash will move to reflect any adjustments made to your anti-roll bars or brake bias.



Note: Stiffening the anti-roll bars can usually lead to more responsive handling. However, this added response may make your IndyCar feel "twitchy" to drive, causing you to over-react. Try to strike a balance between the benefits of responsiveness and the necessity of control.

Adjusting The Brake Bias

 = Move Brake Bias Forward

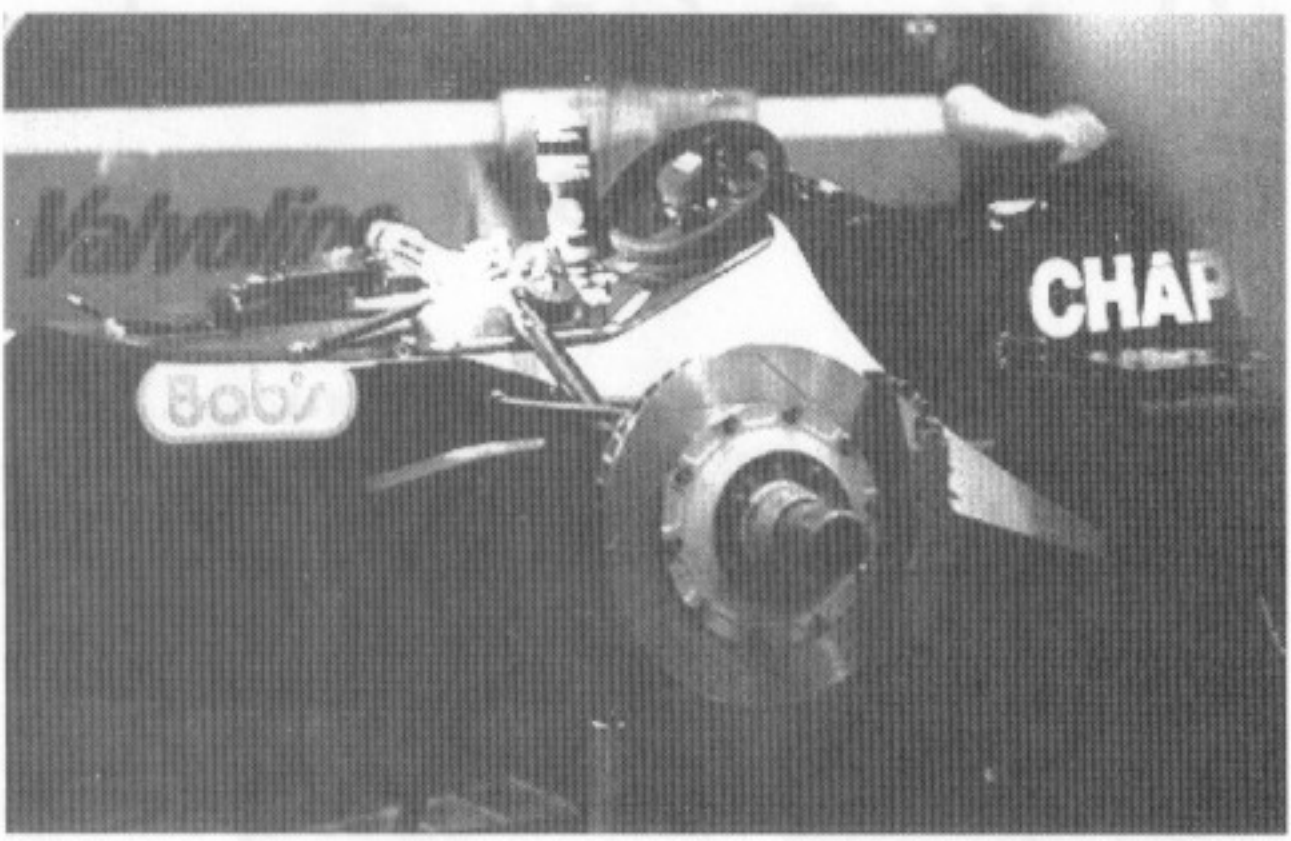
 = Move Brake Bias Rearward

Your IndyCar is equipped with ventilated disc brakes on all four wheels. With the Brake Bias indicator in the central position, all four wheels will brake evenly as the driver applies the pedal. This is sometimes inefficient, since weight transfers forward under braking. To improve braking performance, your IndyCar is outfitted with a brake bias control. Moving the brake bias forward causes the front brake pads to "bite harder" than the rear pads; Setting the brake bias rearward causes the rear brakes to work with more force than the front brakes do.

Generally, you'll need some extra bite in the brake system on street and road circuits. To achieve this, move the brake bias setting forward. Coupled with the forward shift of weight, this will offer you optimum stopping power.

Superspeedway racing is a different matter altogether. Braking normally occurs only to avoid trouble or head for the pits Having the brake bias too far forward could produce unpredictable results. So you'd probably want to use more rearward brake bias for added control over high speed braking.

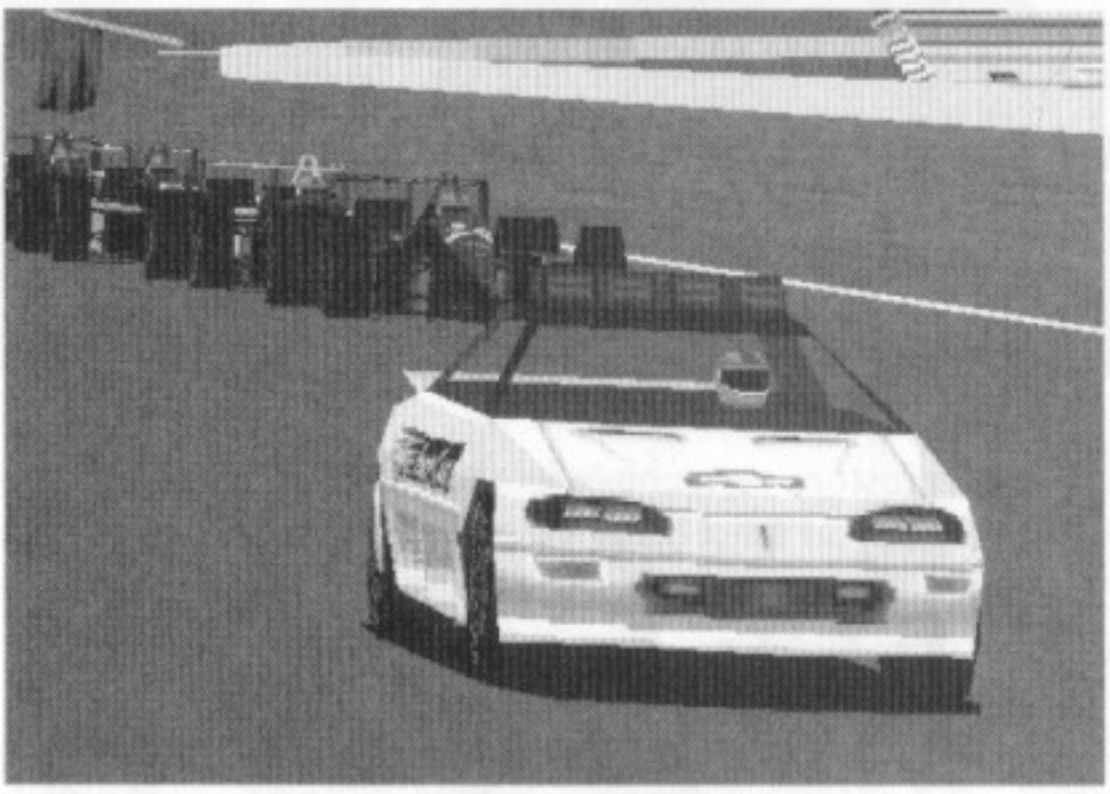
Although you can alter the brake bias setting as you drive, constant changes of this adjustment are not recommended. If the other drivers are out-braking you in the corners, or if you must drive on worn tires, a bias adjustment may help. Otherwise, you'll want to find a comfortable setting you can use for the entire race.



With the tires removed and the chassis resting on stands, this photo provides a good view of the front disc brake system. The nose cover that ordinarily conceals the front shocks has been displaced as well. The grooves in the wheel rotors are there to dissipate heat and debris. (Papyrus Photo)

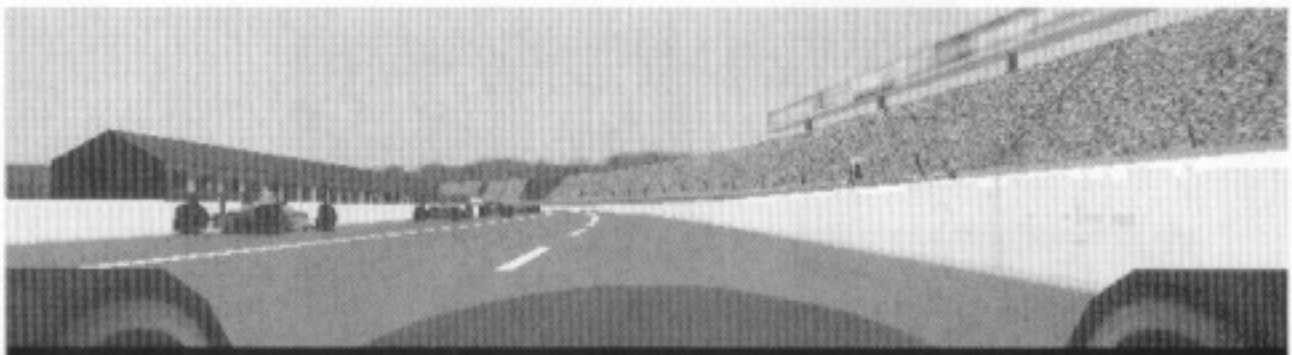
Note: As a rule of thumb, tracks that have you braking in "quick stabs" (such as road courses) are better suited for front brake bias settings. You'll most likely be on and off the brakes before the car loses control. On the other hand, tracks (such as speedways) that require more long, steady braking maneuvers demand more rearward brake bias settings. The car won't stop as sharply, but has more controlled gripping power under braking- something drivers prefer at high speeds.

Setting The Pace



The IndyCar Racing II pace car leads the field through the pre-race parade lap and caution flag periods (when enabled via the **Realism Menu**). *Passing the pace car while it is on the track is a serious violation of IndyCar rules, resulting in a black flag (stop & go penalty). It is also illegal for drivers to pass one another under yellow.*

While the green flag is out, the pace car remains parked at the far end of the pit lane. When an accident triggers the yellow flag, the pace car emerges from pit road and leads the field through a few laps at very slow speed. If you are in the lead when the yellow appears, expect to meet up with the pace car shortly after passing the pit lane exit. You will receive a warning notification on-screen if you pass the pace car or an opponent illegally. Avoid the black flag by heeding the warning!



Posted Pit Road Speed Limit- 80mph At All Tracks!

Getting good pit stops on a consistent basis takes practice. To begin the pit sequence, you must bring your IndyCar to a complete stop in your pit area. Try to stop your car as close to the wall as possible, within the stripes that denote your pit stall.

Your car will be raised by the jack (assuming you're getting a tire change), and all specified tasks will be carried out by your crew. These duties include the changing of tires, refueling the car, making minor setup changes, and repairing the car in the event of a crash.

Anytime your car is being serviced in the pits, an elapsed time counter will be displayed in the upper right-hand corner of your screen. This counter will appear red while your crew is still working, changing to green upon completion of service. Routine tire changes and fill-ups generally take less than 20 seconds to perform, while repairs and chassis adjustments can greatly extend your stay on pit road.

Note: If you stop in your pit stall and nothing happens, make sure your car is up against the wall and that you have brought the car to a stop between the lines that mark your pit area. Make sure you apply the brakes firmly. You must use the ***Brake****, not* ***Reverse Gear****, to stop the car. Use the Set Controls menu or dialog box to select your brake control.*

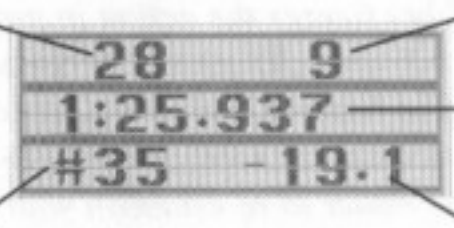
It is important to realize that each track features a different pit lane configuration. Some pit lanes (particularly those found on road courses) feature tight, twisty entrances and exits designed to regulate speeds. Some are narrow, some are short and compact, while others are straight and wide. Prior to racing, spend some time getting used to the pit road layout at each track. Make sure you're comfortable pulling off of the race track, down the pit lane to your spot, and back out again within a reasonable length of time.

Pitting- The Basic Package

Unless you use the in-car radio to specify otherwise, your crew will perform basic pit service at each stop. Regardless of the fuel level and tread life, your car will be refueled, the tires will all be changed, and any repairs that are necessary will be carried out. The next few pages will show you how to communicate with your pit crew prior to each pit stop, using your IndyCar's 2-way radio. Each pit stop can be organized to include only the services that you need. Advanced operations such as wing adjustments, tire pressure changes, or choosing to receive less than a full tank of fuel late in a race (called a "splash & go") can all be executed at your command.

Reading The Pit Board

Each time you cross the start/finish line, the pit board will momentarily appear on-screen in the upper left corner.



Your Current Position (28th place).

Laps Remaining (9).

Time Of Last Lap.

We currently trail car #35 by 19.1 seconds. If you are in the lead, the second-place car's number will be displayed here.

The Interval (how far ahead or behind you are).

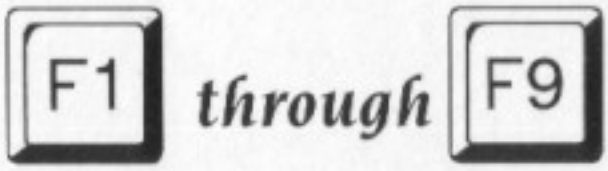
Pausing The Action

You can pause IndyCar Racing II at any time by simply pressing the **"P"** key on your keyboard. This will give you the opportunity to answer the phone, walk the dog, or simply take a break from the pressures of being a top IndyCar driver.

The pause key is also quite helpful when using your IndyCar's radio. After pressing **"P"** to pause the simulation, use the function keys as described on the following pages to display vital radio information. Use the radio to instruct your crew on the adjustments you want during the next pit stop. Press **"P"** a second time when you're ready to resume driving.

Note: The "P" key freezes the action in progress. Press "P" once to pause IndyCar Racing II; press "P" again when you're ready to continue. If you're pausing in the middle of a race, try to do so on long straightaways that are relatively clear of traffic. That way, when you resume it will be easier to re-establish your rhythm.

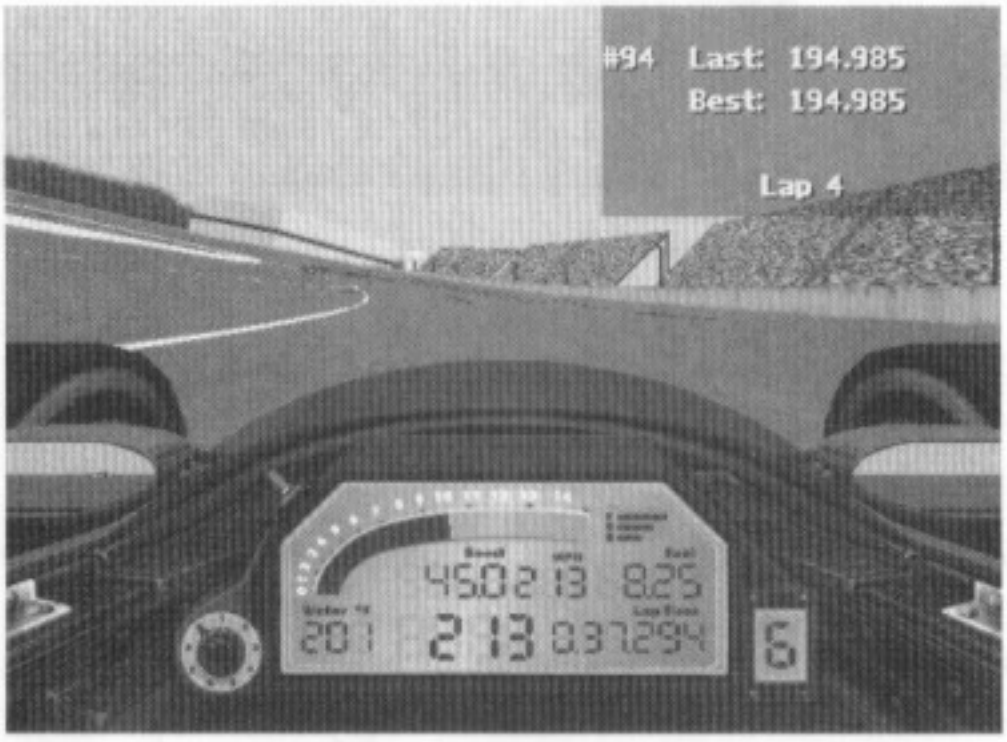
Using Your In-Car Radio



Your IndyCar is equipped with a 2-way radio system that allows you to receive information about the race and your car's current status. In addition, you must use the radio to inform your crew about any changes to the car that must be made during your next pit stop. Pulling into your pit stall without relaying specific instructions to your crew will always produce the same result: Your crew will completely refill the fuel tank and replace all four tires with new ones. This is not always desireable, however. Late in a race, you might only want a few gallons of fuel, instead of having to wait for the entire tank to be filled. Or, you may have a tire or two that doesn't need to be changed just yet. For this reason, you can communicate exact orders to your pit crew to carry out on the next stop.

To use the radio while driving, we recommend that you first pause the game, using the **"P"** key. Next, choose any function key from F1 through F9 to display radio information. This information will appear superimposed in the upper-right corner of the screen. MacIntosh users with the proper equipment may want to take advantage of voice recognition technology that is built-in to IndyCar Racing II. Details on the use of this feature can be found at the end of this section.

The next few pages show you how to use your in-car radio to gather information or give maintenance instructions to your pit crew.



F1

Lap Info

Anytime you are seated in the cockpit of your IndyCar, you can get a summary as of your last completed lap. Press "F1" to pop up the Lap Info box. In order from top to bottom, you'll see the car number of the opponent who you currently follow in the running order, as well as the interval (how far ahead of you that opponent is). If you are the race leader, this car number and interval will reflect the position of the second place car instead, so that you'll have an idea of the size of your lead.

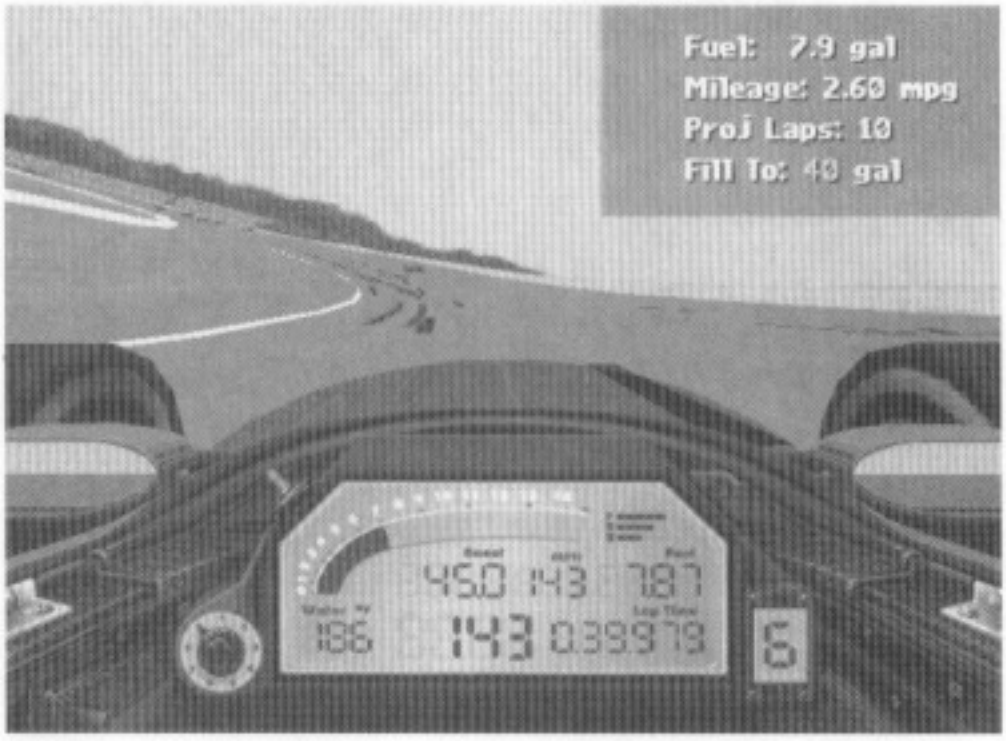
Beneath your opponent's statistics, you'll see your own car number, along with the average speed of your last lap. You will also see the total number of laps, as well as the number of laps completed so far.

This information will tell you a great deal about how your car is performing throughout an entire race. Watch your lap speeds here to measure consistency.

Standings

While in the cockpit, press "F2" to display up-to-the-minute race standings concerning the entire field. This box shows you the position, car number, name of each driver and interval, in the current running order.

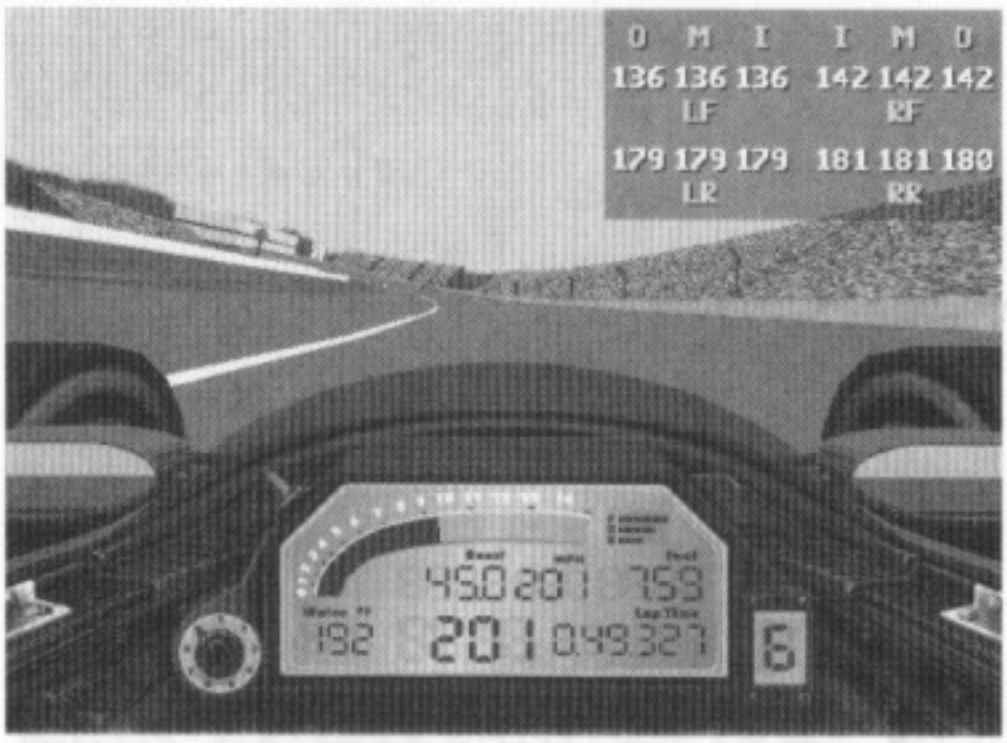
Use the **"Less Than"** or **"Greater Than"** key to cycle through the standings list, five drivers at a time. Scroll down the running order with the **Greater Than** key (">"). Scroll back up through the standings using the **Less Than** key ("<"). Generally, it's best to review the standings during yellow flags periods, or with the game paused. For easy viewing, your name and position will appear highlighted when displayed.



Fuel Management

From behind the wheel of your IndyCar, press "F3" to display or specify fuel information. This box will show you (to the tenth of a gallon) how much methanol remains in your IndyCar's tank. You are also provided important data as you drive, such as current fuel mileage, or projected laps before running out of fuel.

In addition, you can use this box to order the amount of fuel you'd like added at the next pit stop. To do this, press "F3" to reveal the fuel management box, then use the **"Greater Than"** or **"Less Than"** keys to adjust the **"Fill To"** level. If you do not change this amount between pit stops, your crew will automatically fill your tank each time. However, if you're just ducking in for a quick repair, or there are only a few laps remaining in the race, you may want to change the **"Fill To"** amount.



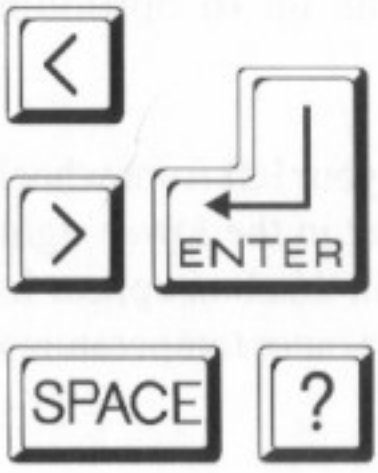
F4 Tire Temperatures

Perhaps one of the most important radio cues in your IndyCar, the "F4" key opens a box that displays the current temperature of each tire on the race car. Inner, middle and outer temperatures for each wheel are shown. This information is vital during testing and practice sessions, to help achieve the best tire setups possible. During races, this box can be handy in determining when and how often to pit for tires, and whether your tires are wearing evenly. You can also use this box to watch a new set of rubber come up to optimum temperatures.

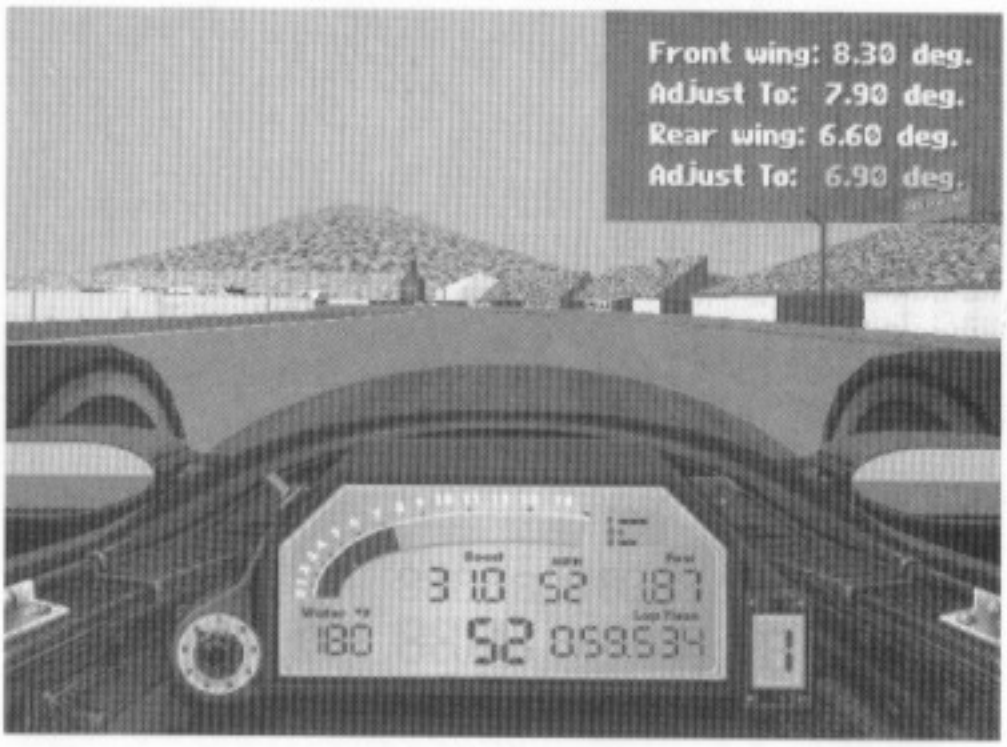
Visualizing a "top-down" view of your IndyCar, your left front wheel would be in the upper-left corner, your right rear in the lower-right corner, and so on. The temperatures displayed in this box appear in this same "top-down" layout; hence, each wheel's outer temperatures are located on the outer edges of the screen.

Tire Wear/Changes

Use the "F5" key to collaborate with your pit crew about tire changes. Remember, unless otherwise directed, your crew members will always replace all four tires on your IndyCar when you make a pit stop. But with the Tire Changes radio call, you can issue specific tire changing orders regarding that next pit stop. Keep an eye on the "wear gauge" associated with each tire. A green color indicates good rubber still exists on that tire. When the gauge turns yellow, it's time to start thinking about replacing that tire. When the gauge turns red, it's critical that you pit for fresh rubber as soon as possible.



To specify tire changes, begin by using the spacebar to select a tire. Use the "Greater Than" or "Less Than" key to raise or lower the amount of pressure you'll want put in that tire during the next pit stop. A "check mark" appears beneath each tire that will be changed at the next pit stop. You can remove the "check mark" by pressing the "Enter" key. This tells the crew not to change that tire. Use the "Question Mark" key to choose another compound for the selected tire. Move on to the next tire by pressing the spacebar once more.



F7

Wing Adjustments

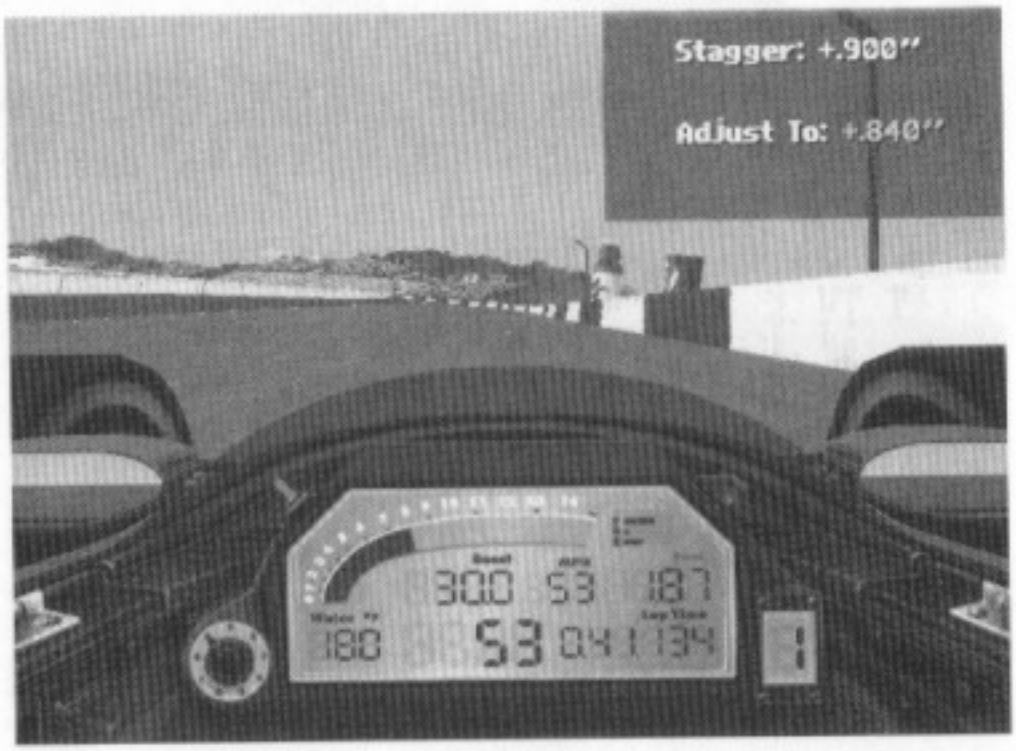
Call ahead to your pit for front and/or rear wing adjustments to be carried out at the next stop by using the "F7" key. Use the **"Spacebar"** to toggle back and forth between front or rear wing selections. Use the **"Greater Than"** and **"Less Than"** keys to enter the amount of correction needed to either wing. First, try correcting the suspension from inside the car, by adjusting the anti-roll bars. If need be, radio ahead that you'll want a wing adjustment during the next pit stop.

<

>

SPACE

Note: Changing the wing settings can usually affect more than just the car's handling. Raising the wings may slow the car down because of an increase in drag (headwind). Lowering the wings may speed the car up, but make cornering more difficult because of the reduction in downforce. If your IndyCar tends to understeer, you can resolve this by adding front wing. If your race car is oversteering, try adding rear wing.



F8 Wheel Stagger

Press the "F8" key to call for a new stagger setting to be implemented at the next pit stop. Wheel stagger is a term that describes having larger-diameter tires on one side of the car than the other (See Garage section for more details). Use the **"Greater Than"** (more stagger) or **"Less Than"** (less stagger) key to select a new stagger value.

Stagger plays a more pivotal role on ovals than on road courses. Properly used, wheel stagger can help you get the car around corners a little faster, though the effects are subtle.

During races, try not to call for drastic changes in the stagger setting; a small miscalculation can be lived with, but a major error could throw the whole car off.

Pit Status/Repairs

While on the track, press "F9" to get an update on what's going to happen during your next pit stop. The number of tires to be changed, amount of fuel to receive, and any other adjustment that has been called for will be displayed. Once you've used the other function keys to specify changes you'd like made, those items will all be displayed here until they are completed.

In addition, this screen will show you the word **"Repair"** if the car currently has any correctable damage. Repairs will automatically be carried out during your next pit stop, unless you stipulate otherwise. Depending upon the severity of the damage, you could sit in the pits for a few laps while your crew fixes the car. This may not be acceptable, particularly if the car doesn't seem affected by the damage, or if it's late in the race. You can order the crew *not* to repair the damage by pressing the **"Enter"** key while viewing the **Pit Status** box. Press the **"Enter"** key again to turn **"Repair"** back on. In general, you should get the car repaired if the damage is affecting its performance; if not, you may opt to avoid repairs, but you'll need to turn **"Repair"** off before each pit stop.

Note: If you are entering the pit lane strictly for repairs, make sure you turn off all of the tire changes via the "F5" key, and the refueling by pressing "F3." Be aware that even if you toggle off the repair selection, your pit stops may take some extra time as your crew works around the damage.

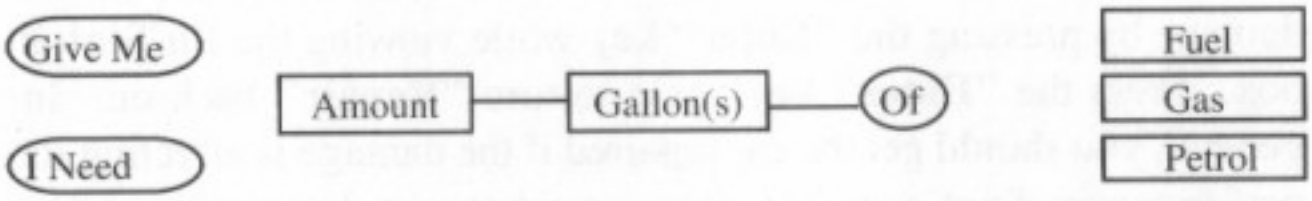
Voice Recognition For Macintosh Users

While driving your IndyCar, Macintosh owners can take advantage of voice recognition technology to radio your pit crew. The command parser for these actions is described below. Note that some commands require the user to state a Real number (values that have a decimal point, such as Wheel Stagger). Other commands require only Integers (values that do not contain decimal points, such as Tire Pressure). Your radio transmission will be voided if you state an incorrect type of value. Commands inside rounded rectangles are optional. Speak with natural inflection, rather than monotones.

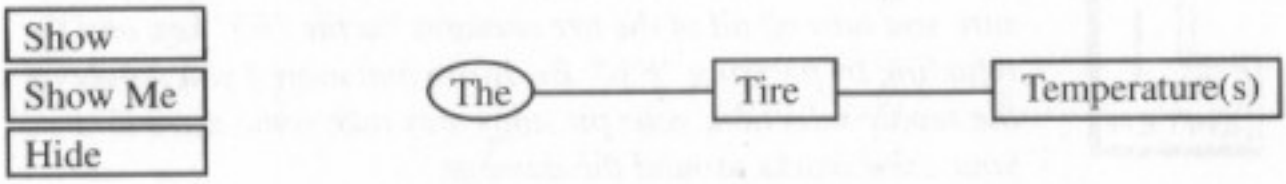
Standings Command:

While Standings are displayed, you may scroll higher or lower.

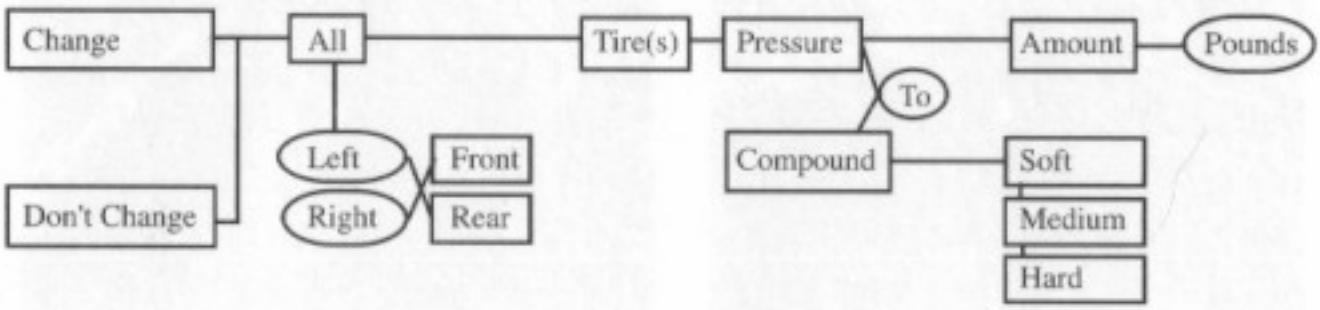
Fuel Command:



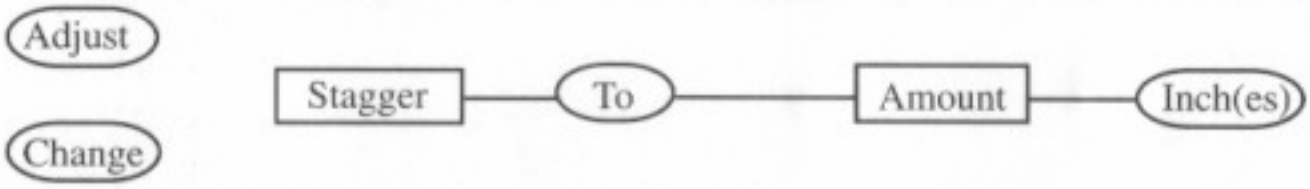
Tire Temperature Command:



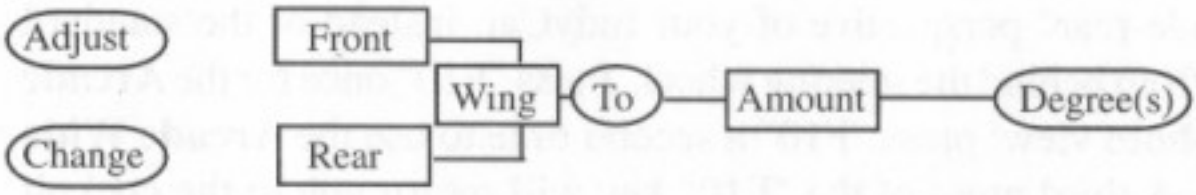
Tire Change Command:



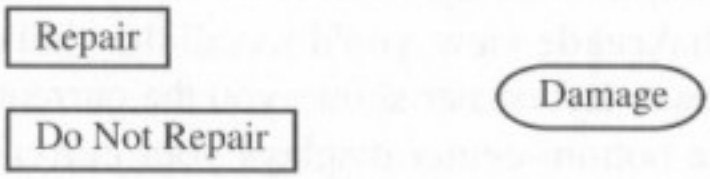
Stagger Command:

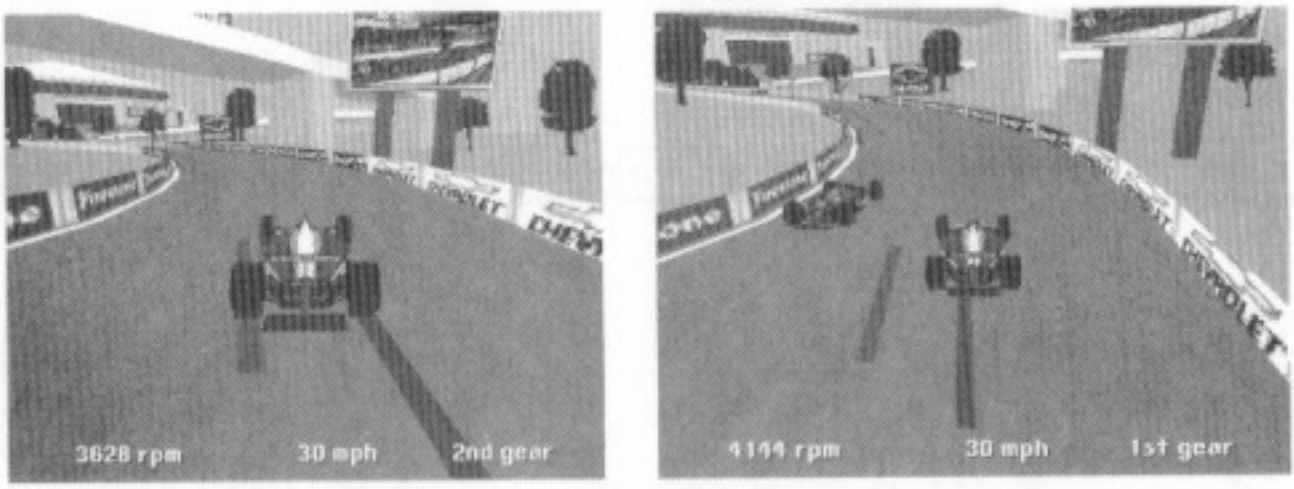


Wing Adjustment Command:



Repairs:





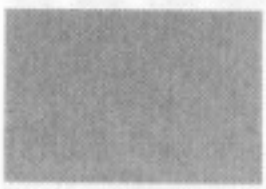
External Arcade Views: Above left, the telephoto view; above right, the wide view. The information at the bottom of the screen contains live telemetry from your IndyCar, including rpms, speed and current gear. Other dashboard data (such as water temperature, fuel level, etc.) cannot be seen from this view, though you need to remain aware of this information. To return to the cockpit, press "F10" again.

Using The Arcade Views

While driving, you may prefer to use one of the **Arcade** views by pressing the "F10" key. These two views provide you with an "outside-rear" perspective of your IndyCar, instead of the standard view from behind the steering wheel. Press "F10" once for the **Arcade Telephoto** view; press "F10" a second time to use the **Arcade Wide** view. A third press of the "F10" key will return you to the cockpit view.

Most game controls function identically, whether you are driving from within the cockpit, or using an **Arcade** view. At the bottom of your screen in each **Arcade** view, you'll see all the vital data relating to your car. The lower-left corner shows you the current tachometer reading (rpms), the bottom-center displays your current speed, and the lower-right corner shows the gear you are presently using.

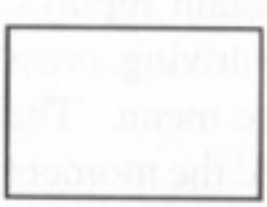
IndyCar Racing Flags



Green: Go Racing! *During qualifying rounds, the green flag will fly over each lap you drive that counts toward an official qualifying attempt. During races, the green flag indicates that the race is underway and drivers may proceed at full speed.*

Yellow: Caution. *An unsafe condition exists, or an accident has occurred somewhere on the track. All drivers must slow to pace car speed, and stay in single-file formation (the pace lap at the beginning of a race is the only time you're required to drive two-by-two). Penalties for passing illegally under yellow are strictly enforced.*

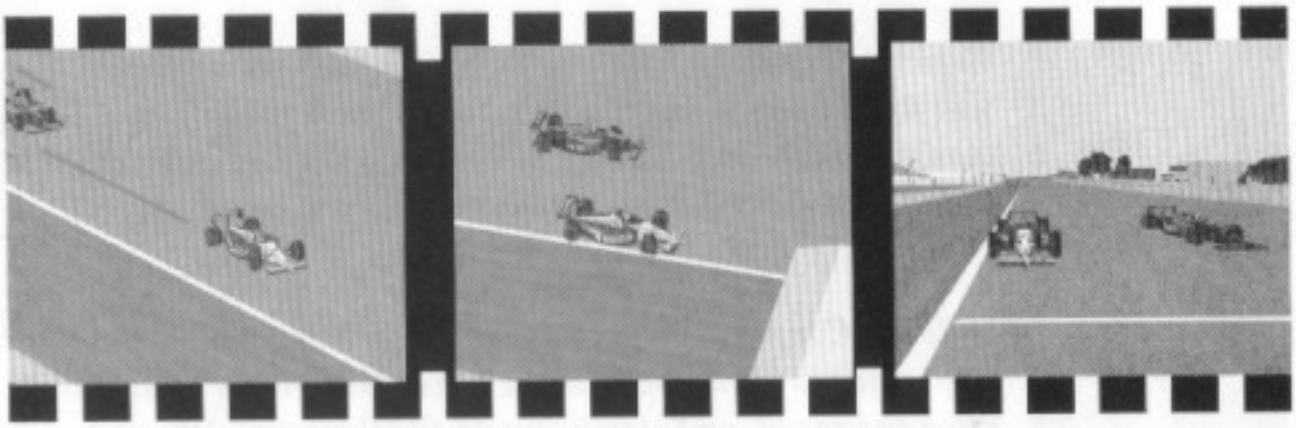
Black: Penalty. *Generally given to a specific driver who has committed a rules infraction, this flag flying over your car means you must come to a complete stop in your pit lane for one second (called a "stop and go" penalty). Once you have done so, you may resume racing. Penalties are given for exceeding the 80mph pit road speed limit, passing the pace car, or passing an opponent under yellow. If you ignore the black flag and refuse to stop, you will be disqualified from the race after three laps.*



White: One Lap To Go! *This flag means that there is only one lap remaining in the race or qualifying session. It first appears when the lead car crosses the start/finish line.*

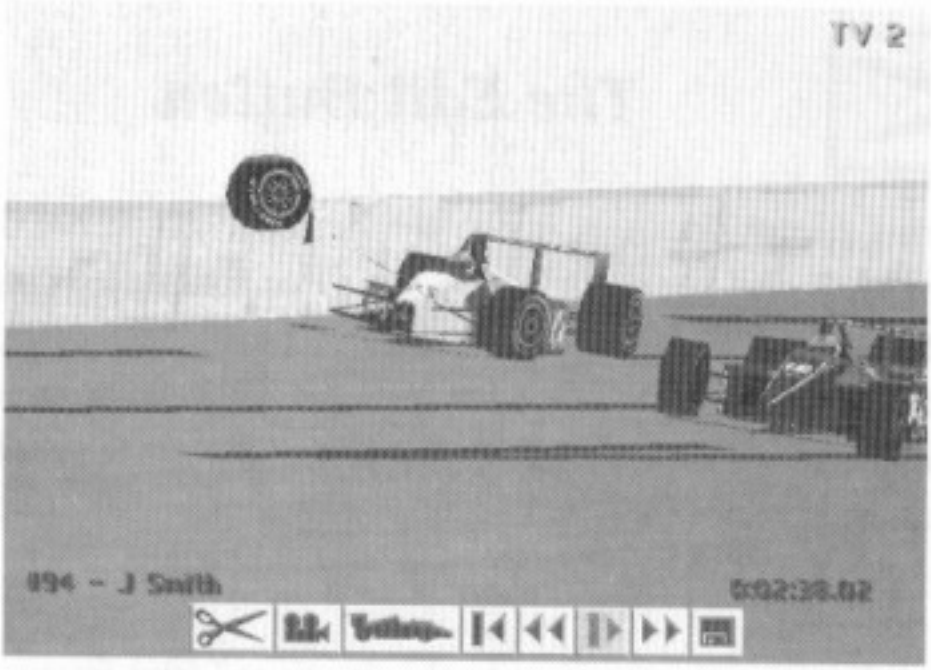
Checkered: End Of Race Or Qualifying Run. *The traditional checkered flag waves when the winning car crosses the start/finish line, or you successfully complete a qualifying run.*

Instant Replays



Replays consist of video "frames," up to thirty per second on the fastest computers. IndyCar Racing II contains a flexible replay system that brings you all the action in a VCR-like interface. Each race car is equipped with onboard cameras, and is also constantly monitored by other television cameras outside the car. Instant replays can be viewed from any car upon demand. This means that when thirty cars are on the track, you've got over two-hundred replay angles to choose from! Simply click to the car and camera you wish to review.

You must be at a track to view instant replays. To access the replay functions while driving, press "ESC," then select **Replay** from the menu. The action on the track will be suspended the moment "ESC" is pressed. "Heads up" when you return to the track! You will resume right where you left off. It's a good idea to pause the game before viewing replays; that way, you'll have time to "settle in" when you return to the cockpit. Replays can only be viewed at the track they were recorded on. For instance, to view a saved replay of a race at Long Beach, you must exit any other track you may be at and choose Long Beach.

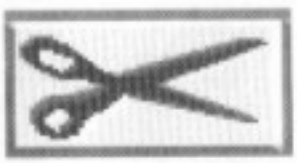


After selecting ***Replay*** *from the* ***Race*** *or* ***Preseason Testing Menu****, you'll see the most recent clip of footage, using the camera angle that was last chosen (TV1 is the default view). In the upper right corner, the selected camera angle is shown. In the lower right corner, you'll see a series of numbers. This is the footage counter. Each frame recorded is numbered for easy editing. In the lower left corner, the selected driver's car number and name are briefly displayed. The bottom center of the screen contains the VCR Command Bar, explained below.*

The VCR Command Bar

The heart of the replay system is the **VCR Command Bar** that appears at the bottom of the screen on any instant replay. This bar contains eight buttons that control the viewing, editing and saving of replay footage.

Simply move the joystick or left/right cursor keys from side-to-side to highlight the button you wish to use, then click on it or press "ENTER." Some of the buttons also can be punched using keyboard shortcut keys in lieu of a joystick or other device. Each button is described in detail on the following pages.



The Edit Button

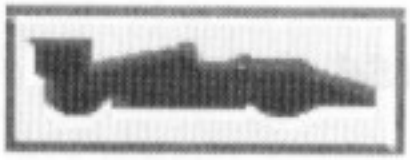
When saving replay footage, it is often better to conserve disk space by keeping only the segment you want. For example, you've got a replay that consists of ten laps. You want to save a spectacular crash that occurred on lap nine. You can use the **Edit Button** to remove laps one through eight, as well as lap ten. The final result: a nice, tight replay of the lap nine incident, consuming a mere one-tenth of the disk space that the unedited version would hog.

To edit a replay, cue the footage to the "in time" (the frame you wish the finished version to begin at) and press the edit button. A scissor icon appears onscreen to remind you that you are in the edit mode. Now, cue the footage to the "out time" (the last frame you want to keep) and press the edit button again. You will be prompted to save the edited version to disk.

Select Camera

When this button is highlighted, each press of the "A" button on your joystick (or lower-case **"c"** on your keyboard) selects the next possible camera angle. Press joystick button "B" (or upper-case **"C"** on the keyboard) to move back through the angles.

TV views simulate a racing telecast like viewers at home would see. Cameras follow your car around the track as the TV director cuts to the best angle. Some TV views also include stationary cameras, great for showing you just how fast it really is on the track. Each IndyCar in the simulation carries several cameras onboard, including one on each end of the chassis, one on top, and even inside the car.




Select Car

Not only does IndyCar Racing II offer you a multitude of camera angles, but you can view them from any car on the track. Each press of joystick button "A" (or lower-case **"v"** on the keyboard) when the **Select Car** button is highlighted advances forward to the next car on the track. Press joystick button "B" (or upper-case **"V"** on the keyboard) to step backward through the cars.

Was there a mishap out there you didn't see, or perhaps a dramatic pass? Use this button to zero in on the action.

Rewind To Beginning

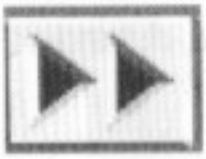
This button instantly rewinds the current replay footage to the very beginning with a single press. Highlight this button and press joystick button "A" (or **"ENTER"** on the keyboard) to view the replay from the earliest frame in memory.


Search/Rewind

To use the **Search/Rewind** key, highlight it and press joystick button "A" (or **"ENTER"** on the keyboard). Keyboard users should use the **Less Than** key as a shortcut. No matter what button is selected, pressing the **Less Than** key will automatically activate the **Search/ Rewind** function. The replay will continue to shuttle backwards as long as you depress the joystick button or **Less Than** key. Short, single clicks will step the footage back one frame at a time.

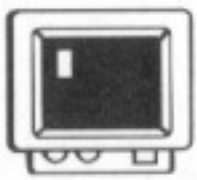

Play/Pause

If your replay tape is stopped, highlight this button and press joystick button "A" (or **"ENTER"** on the keyboard) for real-time playback. If your footage is already playing forward, pressing this button pauses the tape. You can also press the **Space** bar to start or stop the tape at any point.




Search/Forward

This button lets you zip right to the action. Highlight it and press button "A" on the joystick (or the **"ENTER"** key on the keyboard). As you hold your button down, the replay footage will rapidly spin forward until you release it. Quick bursts of this button will step the tape forward, one frame at a time. Keyboard users will find the **Greater Than** key provides a handy shortcut. No matter what button is highlighted, pressing the **Greater Than** key immediately activates the **Search/Forward** function. Continue to press the **Greater Than** key to rapidly search forward.



Replay Memory Management

The length of available replay footage for viewing or editing is dependent upon the amount of RAM your computer has. Some tracks consume more RAM than others. Also, adding more opponents to the field consumes more RAM. Preseason Testing replays will generally be longer, because the computer is calculating the movements of a single car. To maximize your RAM, use a boot disk and start the game by typing INDYCAR -F. The computer is always recording the most recent events that happen on the track. Footage recorded much earlier in the race will eventually be erased from memory unless you choose to save it to disk.

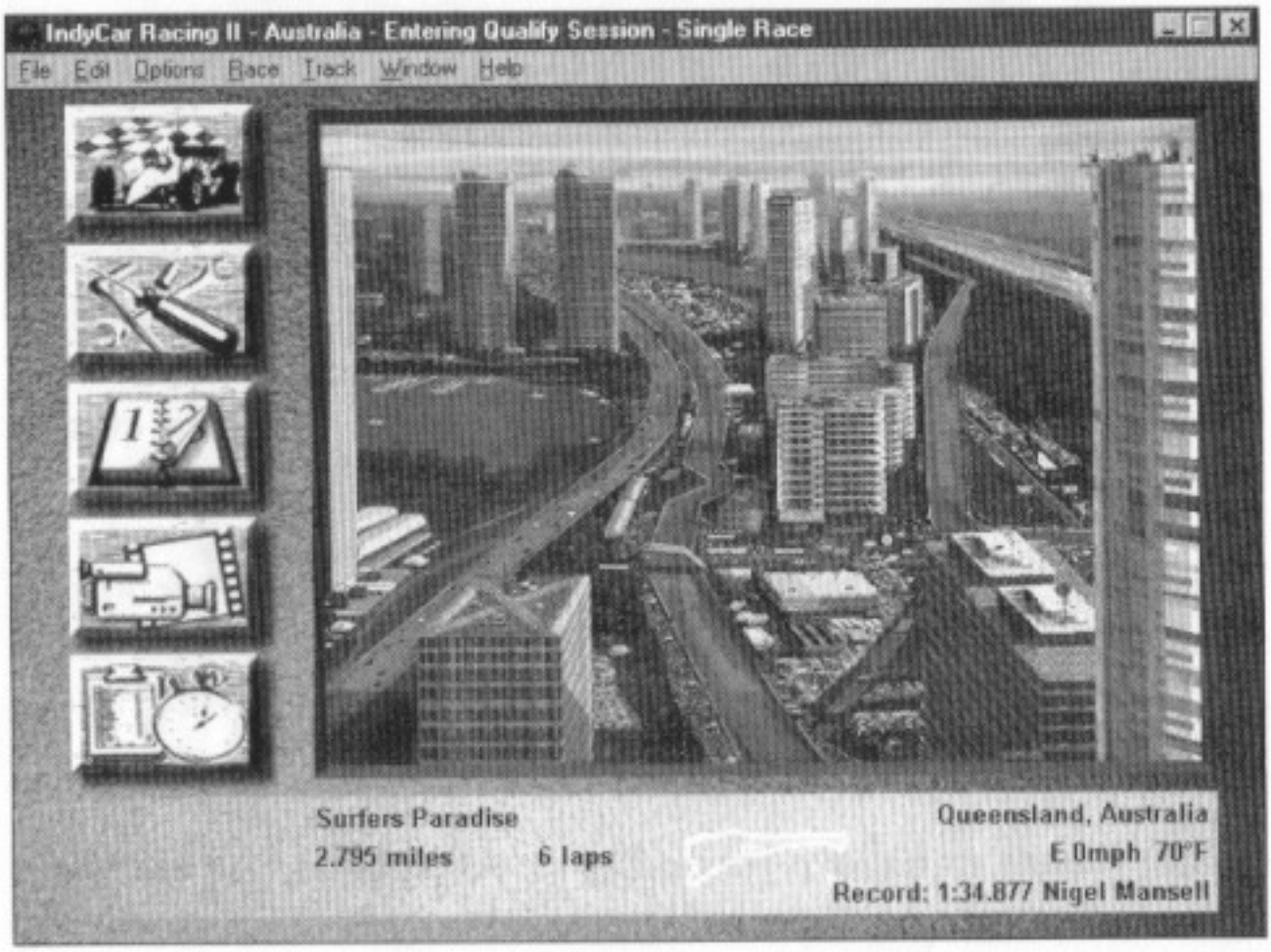
Disk Utilities Icon

Click on the **Disk Utilities** button to **Load, Save** or **Delete** replay footage. When you choose **Load**, a list of replays saved at that track will appear. Highlight the name of the replay you wish to load into memory, and press "Enter." Once loaded, you can use the **VCR Command Bar** to view the footage. This will not affect any current races or action in progress.

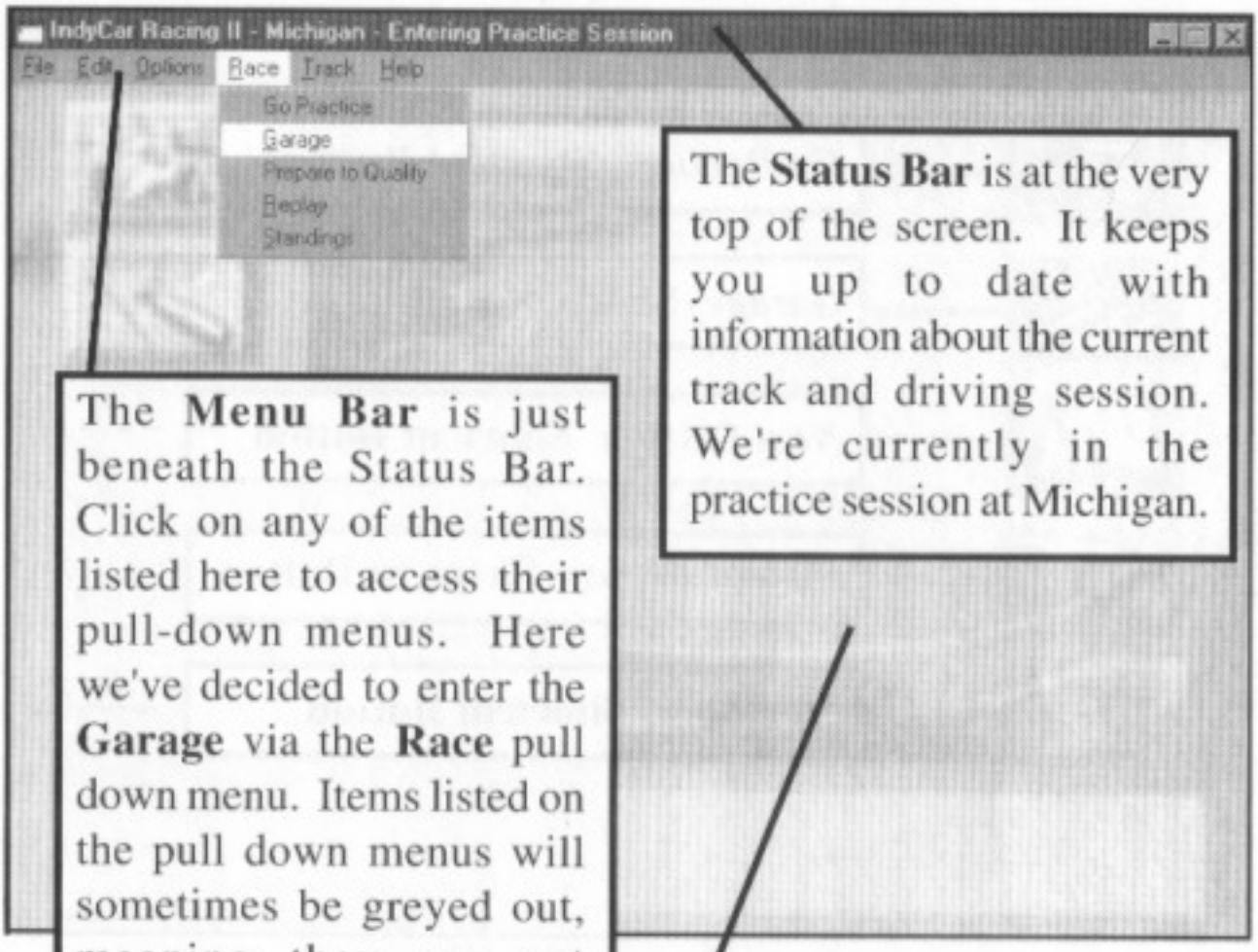
When you choose **Save**, you will be asked to give your footage a name (eight characters or less). If a replay with that same name already exists, the program will ask you if you wish to overwrite the older file.

Choose **Delete** to remove previously saved replays from your hard drive. Like the **Load** command, you will be shown a list of existing replay tapes stored on your hard drive. Highlight the name of the replay you want to erase, and press "Enter."

The Main Menu



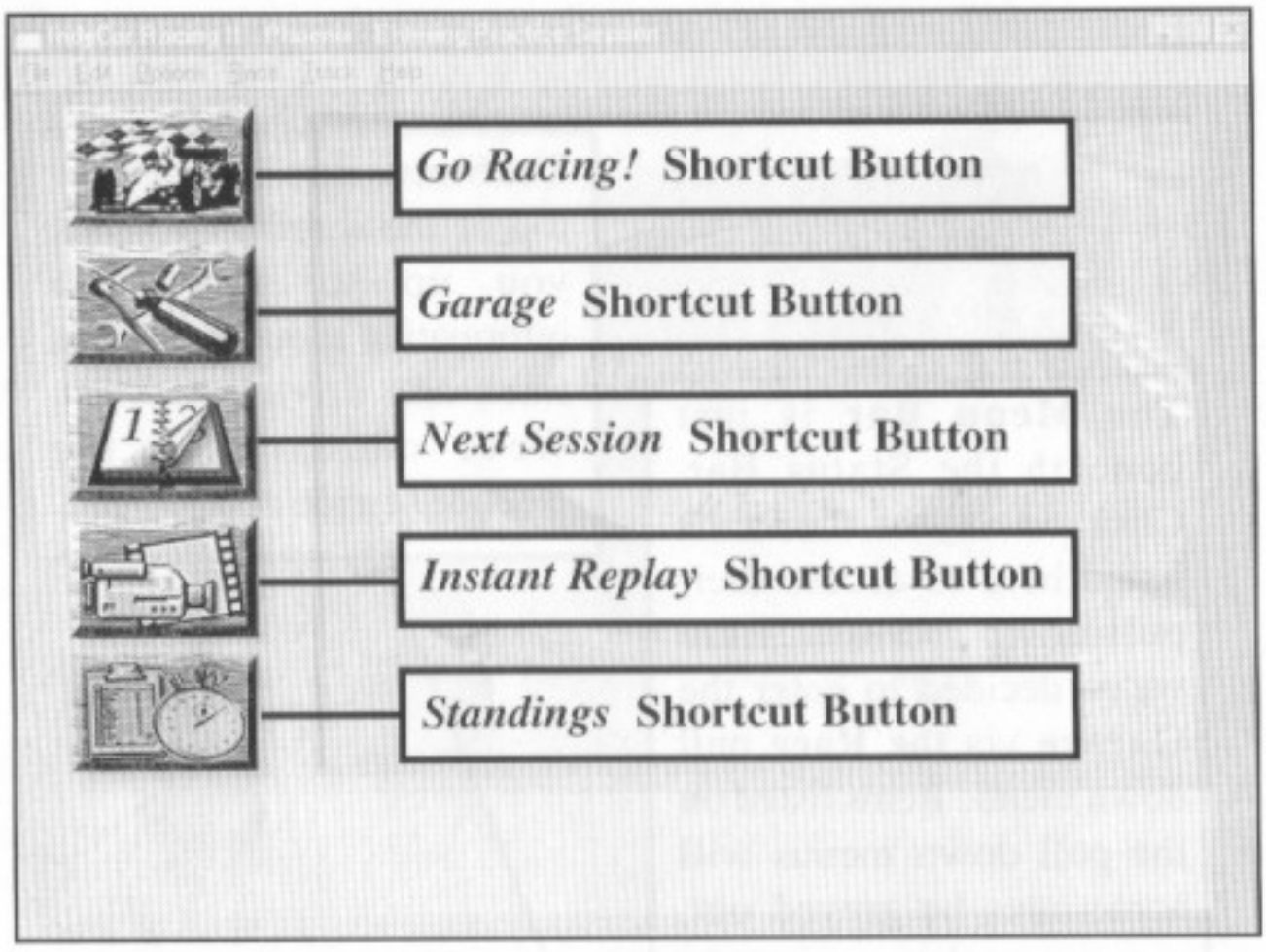
When you start IndyCar Racing II, the first thing Macintosh or Windows 95 users will see after the introductory screens is the **Main Menu.** *The DOS version of IndyCar Racing II features an entirely different looking Main Menu, detailed in the next chapter.* Most of the choices, game preferences and commands are accessible to Mac/Windows 95 users from the screen shown above. The **Main Menu** contains a Status Bar, Menu Bar, five Shortcut Buttons and a Replay/Current Track window. All of these items are explained on the following pages.



The **Status Bar** is at the very top of the screen. It keeps you up to date with information about the current track and driving session. We're currently in the practice session at Michigan.

The **Menu Bar** is just beneath the Status Bar. Click on any of the items listed here to access their pull-down menus. Here we've decided to enter the **Garage** via the **Race** pull down menu. Items listed on the pull down menus will sometimes be greyed out, meaning they are not currently accessible.

Before you enter the cockpit of your IndyCar, this window will show you an aerial view of the current track. Look these track shots over carefully to better understand the layout of each IndyCar circuit. If you return to this menu immediately after driving, this window will show you an instant replay of the last 20 seconds of IndyCar action instead of the track picture.



Go Racing! Shortcut Button: Clicking here immediately puts you behind the wheel of your IndyCar to drive in the current session.

Garage Shortcut Button: Click here to head straight for the team's garage, where you can tune your IndyCar for better performance. (For more information, see the garage section beginning on page 96.)

Next Session Shortcut Button: Each click of this button advances forward one session. When you arrive at a track, the first session is always **Practice**. When you're through practicing, or if you want to skip this session altogether, click to advance to the **Qualifying** round. Click again to enter the **Warm Up** period. Finally, click this button once more when you're ready to compete in an actual **Race**. Any session may be skipped by simply clicking this button, but be aware

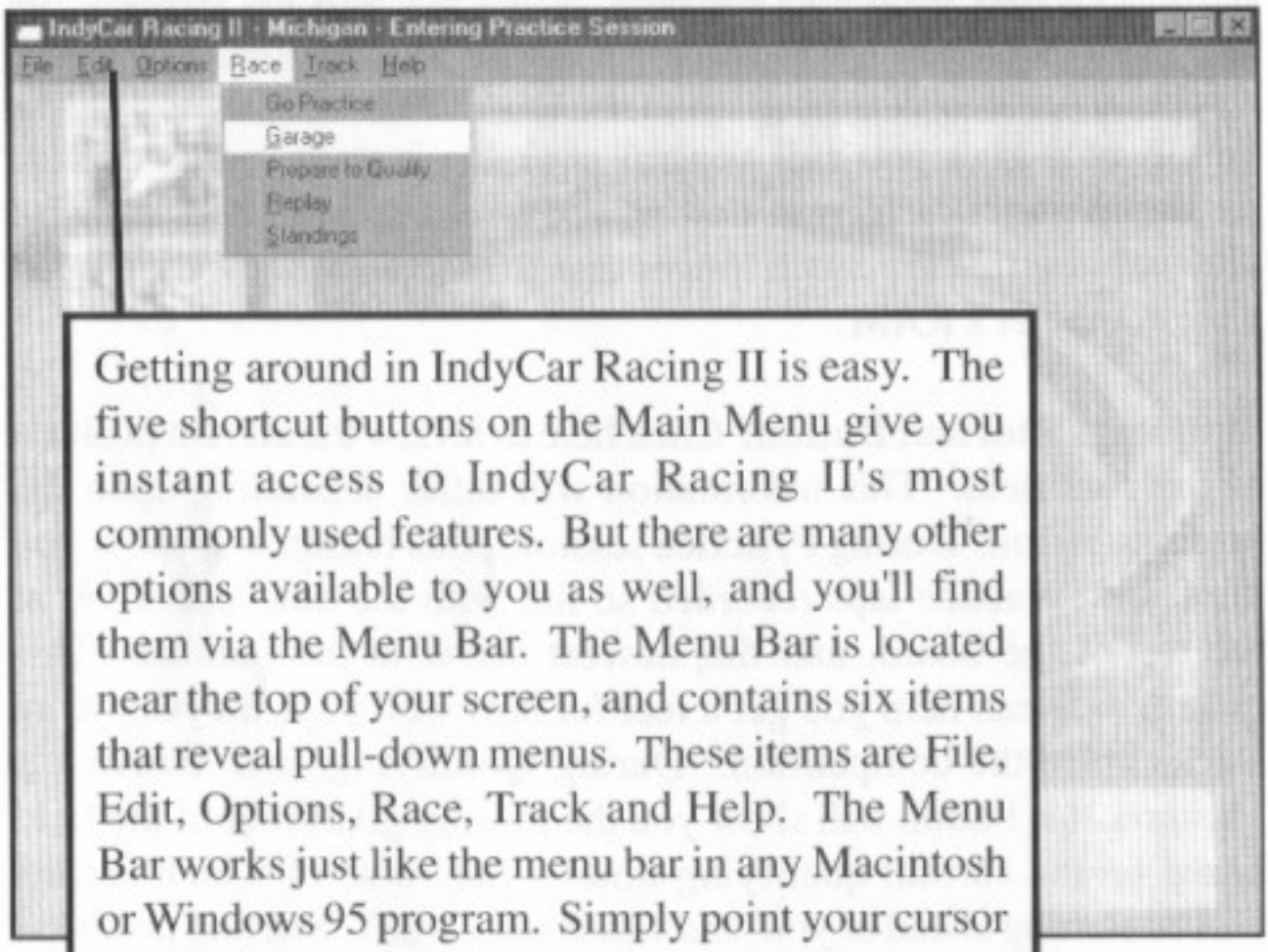
that if you skip the **Qualifying Session**, you'll begin the race in last position at the rear of the starting grid.

Instant Replay Shortcut Button: When you exit the cockpit, the large window on the **Main Menu** automatically displays the most recent 20 seconds of footage from the track. However, a click of this button will give you full control over the instant replay action, including camera selection, editing and other features. You may also view replays that are much longer than 20 seconds, depending upon your computer's RAM.

Standings Shortcut Button: Click here to review the current position of the race field. This information will differ depending upon the present session. During **Practice** sessions, this button will show you the fastest practice laps recorded so far, with the quickest driver at the top of the board, and the slowest driver at the bottom. This information can help you get a feel for how well your IndyCar team stacks up to the competition. During **Qualifying** and **Warm Up** sessions, this button will show you the starting grid order of the field based on the current qualifying times. Take note of which drivers will be starting ahead of you, and which ones won't. Starting positions are not final until the **Qualifying** session is over. During the actual **Race** session, this button will provide you with the current running order of the field, including the intervals (how much time each car trails the race leader by). If a car has retired from the race, the reason it dropped out will be displayed. During **Championship Season** play, click this button between races to display the current points standings (see **Championship Season**).

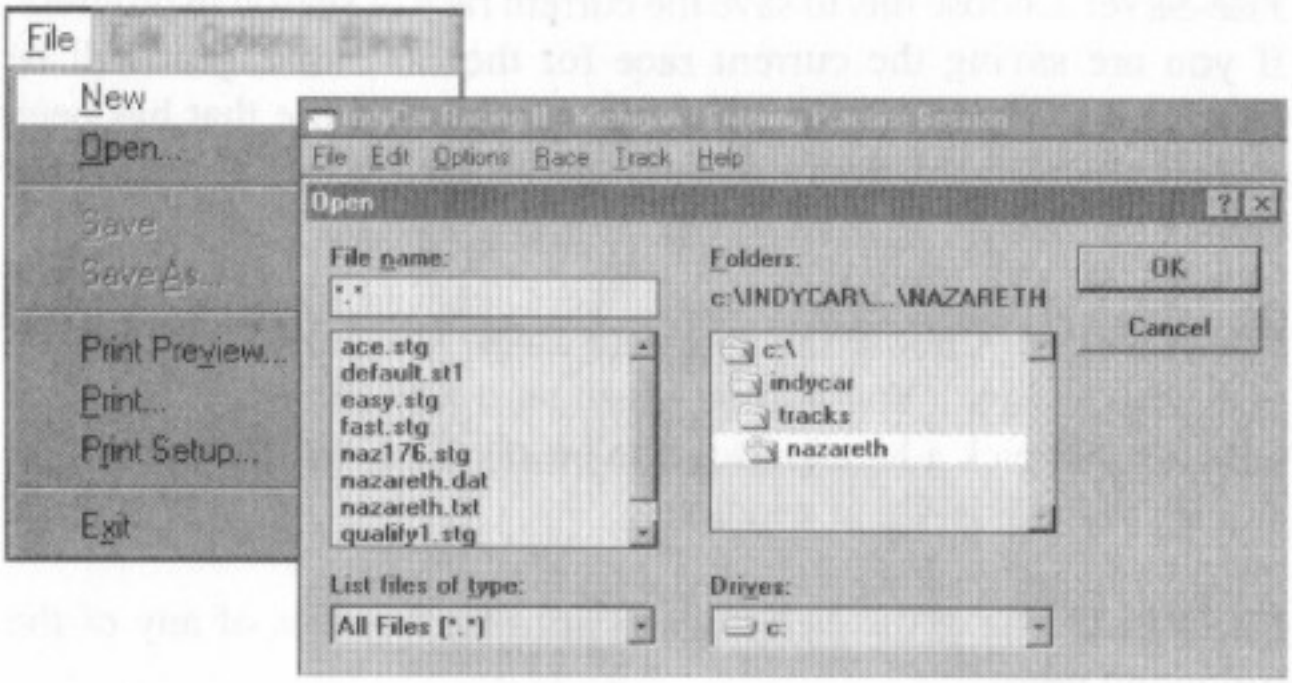
Note: The standings shortcut button will appear "greyed out" until you begin or load a race or season.

Using The Menu Bar



Getting around in IndyCar Racing II is easy. The five shortcut buttons on the Main Menu give you instant access to IndyCar Racing II's most commonly used features. But there are many other options available to you as well, and you'll find them via the Menu Bar. The Menu Bar is located near the top of your screen, and contains six items that reveal pull-down menus. These items are File, Edit, Options, Race, Track and Help. The Menu Bar works just like the menu bar in any Macintosh or Windows 95 program. Simply point your cursor to one of the six headings on it and click the mouse. The pull-down menu will appear, and then you can choose the items you want.

Note: As with other Windows and Macintosh software, you can use your keyboard in lieu of the mouse when performing certain operations. In Windows 95, characters that appear underlined, such as the "F" in File, may be used with the "Alt" key (Alt + F) to operate menu commands. In the Macintosh version, the shortcut keys are listed on the pull-down menus to the right of each command. Consult your Windows or Macintosh users guide for additional information.



When you select **File** from the Menu Bar, a pull-down menu appears, providing you access to the following items:

File-New: Choose this to initiate a new Single Race, or Championship Season. If you have a race or season presently underway, you will be given the opportunity to save your event in its current state before launching into a new competition.

Note: Using the File-New command isn't the only way to start a new race or season. You can also simply exit the event and track that you are currently at, instead. When you return to the Main Menu, you can choose another track for a single race, or click on Championship Season via the Options Menu.

File-Open: This command opens a dialog box like the one pictured above. Using standard Windows 95 or Macintosh procedures, you can easily locate and resume races or seasons that have previously been saved to disk.

File-Save: Choose this to save the current race or season in progress. If you are saving the current race for the first time, you will be prompted to name the file. If this is a reopened file that has been previously recorded, your race or season will be saved with the same name.

File-Save As: Choose this to create a new file of a race or season you wish to save. You will be given an opportunity to name your new file and pick a location for it to be saved in, via a dialogue box similar to the File-Open window.

File-Print: Make this selection to print hard copies of any of the following items:

Single Race standings from a saved race.
Championship Season standings from a saved season.
Car setups created in the Garage.
Control settings, either user-created or default.

File-Print Setup: Choose this to select your printer model and configure printer options. If you own a fax/modem, you can use this feature to share your favorite car setups and final results with your friends, via fax. (You must also have faxing software, such as that which is built in to many operating systems.)

File-Exit: Choose this to leave the world of high velocity IndyCar action and return to those slow paced spreadsheets, word processors, calculators, etc. If you are currently involved in a race or season, you will be given the opportunity to save the event before exiting.

Options-Preseason Testing: This is an essential part of your IndyCar team's development. Here, you can hit the track of your choice and fine tune your race car setup for that venue, without worrying about the hassles of traffic. On the track, memorize braking and turning points, and find the absolute adhesion limits of your IndyCar. Although you can drive an unlimited number of laps, fuel and tires must still be replenished as needed.

Replay and **Garage** functions work the same way in Preseason Testing as they do when racing. Use the replay feature to study your driving habits, and the car's behavior in corners.

Note: Preseason Testing is a great place to break track records, traffic-free. Any record broken during testing will stand!

Options-Single Race: Choosing **Single Race** from the Options pull-down menu provides you with a weekend's worth of racing action. All of the necessary ingredients are here- from tuning your IndyCar, to qualifying for a race, to playing back the breathtaking footage of your exploits on the track.

Options-Championship Season: The **Championship Season** consists of one race at each of the IndyCar tracks installed on your computer, contested in order of their actual occurrence in the 1995 season. To win the Driver's Championship you must master a variety of playing fields: road courses, street circuits, superspeedways and short ovals. At the conclusion of each race, top drivers are awarded points as follows:

1st place.....20
2nd place.....16
3rd place.....14
4th place.....12
5th place.....10
6th place.....8
7th place.....6
8th place.....5
9th place.....4
10th place.....3
11th place.....2
12th place.....1
Fastest Qualifier (pole).....1
Most Laps Led.....1

Note: Remember, you can return to the ***Main Menu*** *at anytime while driving, simply by pressing* ***"ESC."*** *This will hold the action in place for you, without quitting the race. When you want to pick up the driving session where you left off, just click the* Go Racing! *shortcut button.*

The maximum number of points any one driver can win for a single event is 22; 20 points for winning the race, 1 point for winning the pole, and 1 final point for leading the most laps. When the last event on the schedule has been staged, the driver who has the highest point total is declared IndyCar Racing II Champion.

All realism factors apply to each **Championship Season**, so you should set these preferences *before* the first race. For example, if you want each race to be shorter, choose **Realism** from the Options pull-down menu and set the **Race Length**. If, say, you choose 30% here, all races in the **Championship Season** will be that length.

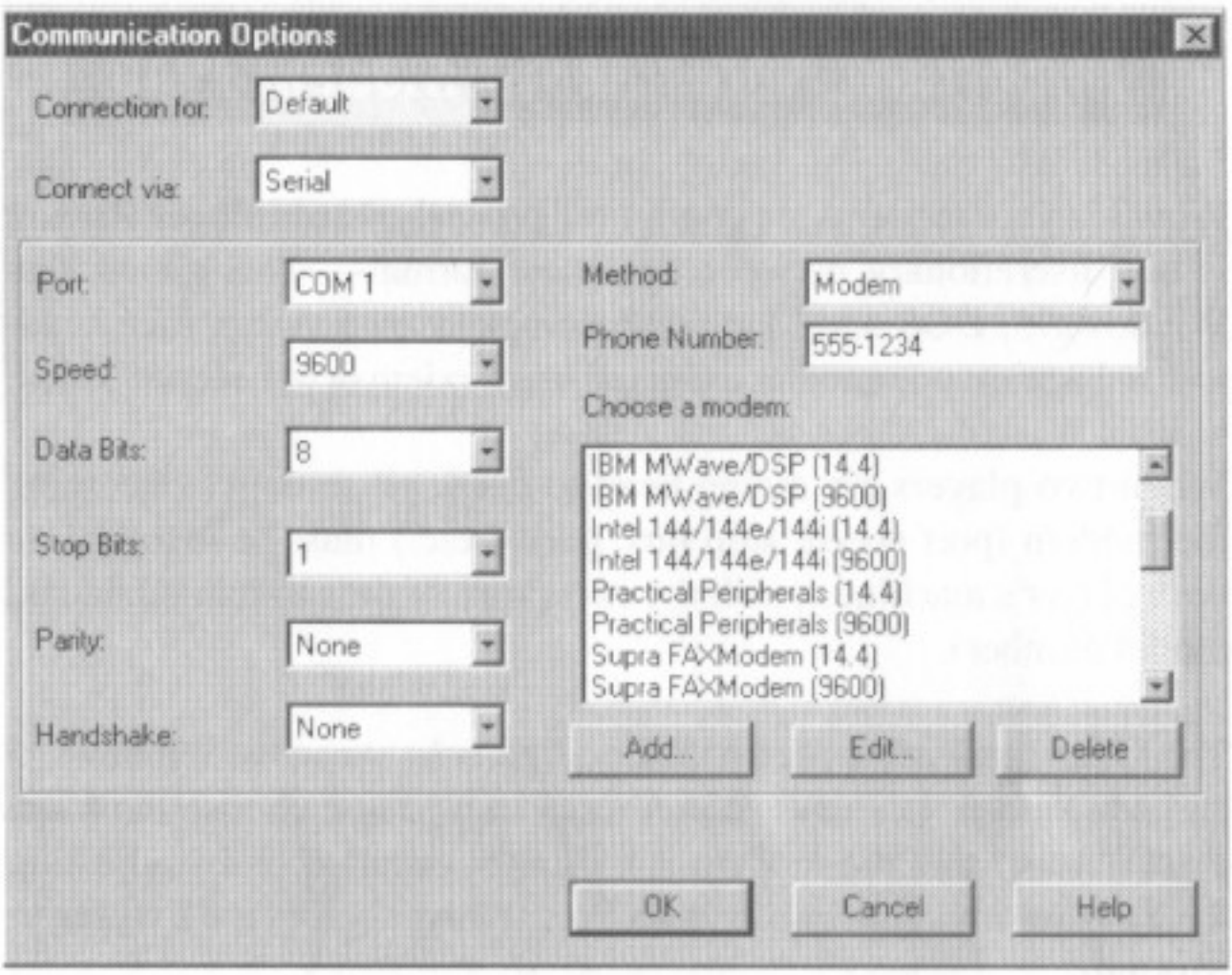
Driver Info, which includes engine/chassis combinations, may be updated at anytime during a **Championship Season**. This means you can begin a season using a Lola chassis, and abruptly switch to a Reynard at will.

When you exit a race before it's conclusion, IndyCar Racing II will give you an opportunity to save the race in progress. During a **Championship Season**, the program will also give you a chance to save the season in progress whenever you exit the current track.

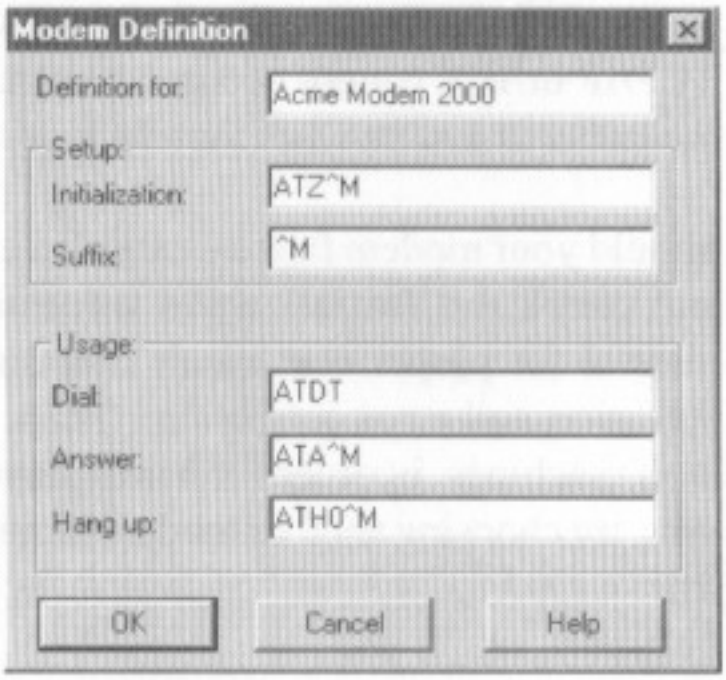
Multiplayer Racing

To set up your modem or direct connection for Multiplayer racing, click Options on the Menu Bar, then choose Communication.

When it comes to Multiplayer competition, IndyCar Racing II presents you with several options. Race a friend head-to-head by using the Direct Connect method. This enables two computers to be linked together in a side-by-side arrangement. Or, you may prefer to use your modem to establish a connection with another player situated at a remote location. IndyCar Racing II lets you do either.



Modem choices will appear "greyed out" if Direct Connect is selected in the Method drop-down window. Change the Method setting to Modem in order to activate your modem options. You may then choose a modem from the provided list; If your modem is not on the list, you can add it by choosing Add. A Modem Definition window will appear, where you'll enter all of the setup information needed to use your particular modem.



Important Notes About Modem Play

Provided your modems are configured properly, **Multiplayer Racing** is not discretionary between computer formats. This means that Windows95, DOS and Macintosh computer owners can race head-to-head against one another using either a modem or direct connection.

When two players are racing head-to-head, all settings concerning the modem (port speed, stop bits, parity, etc.) must be identical on *both* player's machines (with the exception of the modem brand and model number).

The **Communication Menu** differs slightly between the Windows95 and Macintosh versions. Windows95 users must choose the **Com Port** number that the modem is currently installed on by adjusting the **Port** setting. Macintosh users Port setting choices are **Printer** or **Modem.**

Network play is not present in the Windows95 version of IndyCar Racing II; however, Macintosh users can establish a network connection via **Appletalk**. Other network connection types, such as TCP/IP or IPX cannot accomodate IndyCar Racing II. *Appletalk is the only current network system supported.*

Should your modem fail to establish a connection, click on **Advanced** and check the **Initialization** information. Consult your modem manual for proper commands that disable data compression, error detection and error correction. These features must be disabled on both machines in order for **Multiplayer Racing** to work. If all else fails, try choosing another modem (similar to yours) from the provided list.

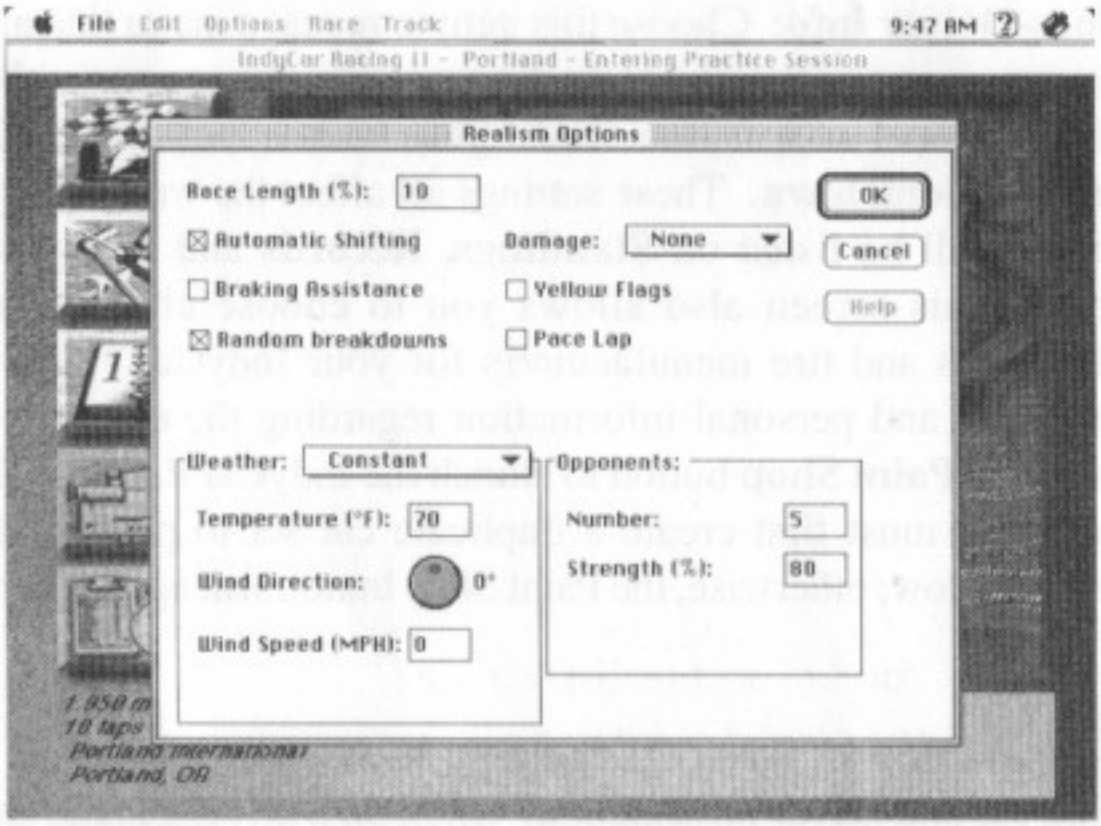
Driver Info And The Paint Shop

Options-Driver Info: Choose this item to reveal a menu that allows you to enter your personal information, or view your opponent's cars and biographical information. Enter your **Name, Nickname, Team Name** and **Hometown**. These settings all affect the way your name and team will be listed on **Standings, Records** and **Race Result** screens. This screen also allows you to choose chassis/engine combinations and tire manufacturers for your IndyCar. View and edit the cars and personal information regarding the other drivers. Click on the **Paint Shop** button to launch the IndyCar Racing II Paint Shop. (You must first create a duplicate car set to paint with, as explained below; otherwise, the Paint Shop button will appear "greyed out.")

The **Load Car** and **Save Car** buttons allow you to edit and save existing car and driver information. Click on a driver's name shown in the window, then choose Load Car. Once a car has been loaded, you can then change driver information, or paint the car by clicking on the Paint Shop button. Use the Save Car button to produce a file for the currently loaded car, saved in the *.CAR format. This file can then be swapped via floppy disk or modem with friends, or altered in the Paint Shop.

Options-Car Sets: This selection allows you to alternate between different car sets that you have saved on your computer. You may also use this menu to create duplicate car set files that you can customize, using the IndyCar Racing II Paint Shop. To do this, click on the **Duplicate** button, and enter a name for your new Car Set. Use the **Read Only** check box to protect your Car Set files from accidental alterations. If the **Read Only** box is checked, the current Car Set file becomes "write-protected," and cannot be accessed using the Paint Shop.

The Realism Menu



IndyCar Racing II is fully adjustable to suit your need for speed. You can set the game up to be a fully detailed simulation of a season's worth of IndyCar competition, including realistic weather and race lengths, or you can opt for more of an arcade level of play. Choose **Realism** from the **Options** pull-down menu to tailor IndyCar Racing II to your preferences.

Race Length: Choose any distance between 1 and 100% of actual length. Distances vary from track to track. Running 10% of a race at Michigan would be 50 miles, while 10% of a race at Long Beach would be less than 17 miles. For **Championship Season** play, all races are contested with the same **Race Length** setting. For example, if you choose 20% race length prior to the first race of the season, all races in that season will be run at 20% length.

Auto Shifting: This feature works much like an automatic transmission; the program does all of the shifting for you, based on your current speed and rpms. This makes driving a little easier for beginners who are learning to concentrate on the road.

Braking Assistance: With this item enabled, the computer will automatically make a reasonable attempt to slow the car for you as it approaches corners. You must still perform some measure of braking, however.

Spin Recovery: Turn this **On** to have your IndyCar automatically right itself following a spin-out. With Spin Recovery enabled, even minor spins that leave you against the wall will be corrected. If you find yourself driving in the wrong direction, simply apply the brakes until the car takes over and faces in the proper direction. Turn Spin Recovery **Off** for the most realistic setting.

Car Damage: Cars driven by your opponents are always subject to damage, but you may choose to be indestructible if you wish. Choosing **Realistic Damage** will give you a true-to-life setting, but rookie drivers may prefer to drive with damage **None** while polishing their skills. Select **Arcade Damage** to make it more difficult to inflict punishment on your IndyCar. Collisions may still take their toll, but you'll be able to strike things a bit harder in this mode before any damage to your IndyCar occurs.

Note: Your IndyCar is always subject to damage caused by abuse, such as over-revving the engine or neglecting tires until they blow. The Car Damage selection only deals with results stemming from collisions.

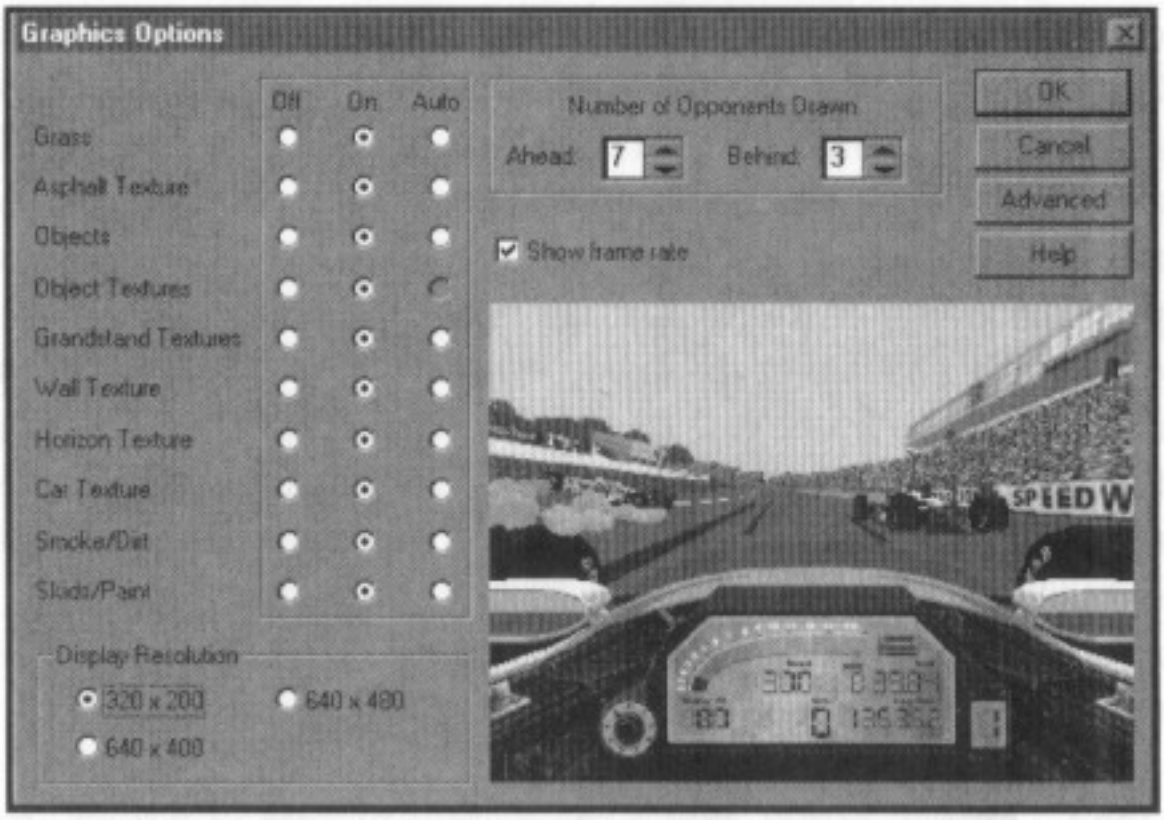
Yellow Flags: Toggles caution flags on or off. Turning them on will bring out the yellow for a few laps while the track is being cleared of wreckage and debris, while switching caution flags off will allow you to drive flat out despite the carnage.

Pace Lap: This is the first lap taken just before the start of a race. It does not count toward the number of laps raced, it's strictly a warm up lap. Pace laps may be helpful if you need time to settle in on the track while warming up your racecar. If you elect to bypass the pace lap, the field will begin with a standing start, in proper formation. Be prepared as soon as you enter the race track; your opponents will start moving!

Random Breakdowns: If you really want to know how an IndyCar driver feels when a faulty ten dollar part ends a race day prematurely, turn Random Breakdowns **On**. Based on actual IndyCar statistics, your car will be subject to the possibility of race-ending mechanical failures. Turning this item **Off** means that the only engine failure your car can suffer would be due to over-revving or severe collisions. Computer opponents will randomly experience breakdowns regardless of this setting.

Weather: Choose **Random Weather** if you want realistic, variant conditions. Choose **Constant Weather** if you want to pick the race weather yourself. Choose the **Temperature, Wind Direction** and **Wind Speed**. The **Wind Direction Dial** indicates the direction the wind is blowing. This dial follows the standard compass design: The top is North, the bottom is South, the left is West and the right is East. Cooler weather should yield faster laps because the cars can generate more downforce. As the mercury climbs, air becomes less dense, putting less air on the wings of your IndyCar. Hotter conditions can also add more stress to your racing tires.

Opponents: Choose **Number** to change the maximum number of cars you wish to compete against (using fewer cars can increase the frame rate on slower machines). Choose **Strength** to adjust the skill level of the other drivers (100%=realistic). This setting affects the speeds other cars are capable of. If you're having trouble keeping up with the pack, reduce the opponents' strength level.



Options-Graphics: Choose **Graphics** from the Options pull-down menu to adjust the amount of animation detail that your machine can comfortably handle. While the fastest computers may be able to maintain an adequate frame rate with every detail turned on, other users may find it necessary to switch certain details off to achieve a smoother frame rate. If the frame rate on your computer appears "choppy," try turning one or more of the textured items off. This will take some of the stress off of your computer, allowing it to display a faster frame rate. By toggling on or off with the **"Alt" + "F"** keys, the current frame rate may be displayed in the lower left corner of the screen as you drive. The higher the frame rate, the smoother the animation.

---

*Note: If you need to increase the frame rate, try turning grass, asphalt and wall textures off first, since they use the most CPU power. You can also improve the frame rate by viewing fewer opposing cars (decrease the values in the **Number Of Opponents Drawn Ahead & Behind** boxes), and by reducing the number of other cars heard (from the Options-Sound menu).*

Choose **On** if you always want to see a certain type of texture, such as the car logos. Turn **Off** those textures that you don't wish to see. In addition to toggling game textures on or off, you can also select **Auto** mode. Choose **Auto** if you want the computer to adjust these items as you drive, based on how much detail your computer can display smoothly. Textures that are using the **Auto** setting will be automatically enabled or disabled periodically by your computer to achieve a smooth frame rate (see the **Advanced** button explanation on the next page for more details). For example, the **Asphalt** texture using **Auto** mode may switch off as you drive along a road course straightaway crowded with office buildings and other race cars. As you leave the congested straight and enter a corner devoid of other cars and objects, the **Asphalt** texture may switch back on.

On the **Graphics Menu**, you'll see a color picture of a track, from the cockpit point of view. This is called the **Detail Window**. Any number of graphic items in this window may be blinking on and off repeatedly; if you see an item blinking, that means it is set to "**Auto**." As you turn texture items on, they stop blinking. Textures that are turned off disappear from the Detail Window.

Other items of note found on the **Graphics Menu** are the **"Show Frame Rate"** option, which allows you to toggle the frame rate display on or off, and the **"Display Resolution"** option, which allows you to choose one of three picture quality settings. When it is turned on, the frame rate display is shown in the lower left corner of the screen. This indicator shows you how many frames of video per second your computer is currently displaying. ***The higher the frame rate number, the smoother the animation graphics.*** Frame rates that drop below 10 fps are generally too choppy to provide you with a quick reaction time while driving. If your frame rate drops below 10 fps consistently, try turning some of the textures off, or select a lower display resolution. The three resolution settings are as follows: 640 x 480 (best), 640 x 400 (good), 320 x 200 (lowest resolution, but faster frame rate).

By clicking on the **Advanced** button, you can adjust frame rate thresholds (these affect only those textures that are set to **Auto**). The minimum setting tells your computer at what frame rate to begin omitting textures. The maximum setting tells your computer at what frame rate to begin turning Auto textures back on. For example, a minimum setting of 10 fps will tell your computer to begin turning Auto textures off should your frame rate fall below 10. A maximum setting of 17 fps will tell your computer to begin turning Auto textures back on when you achieve a frame rate of 17. Use the **Detail Priority** box to change the order that textures set to Auto will be turned off. Windows95 users may want to use the **Direct Draw** option, assuming your video card will support this feature; this can speed up frame rates and automatically scale the picture for you.

Use the **Replay Memory Size** control to assign the amount of memory you wish to allocate toward replays. Allocating greater amounts of replay memory yields longer replays, while smaller amounts of replay memory free up more room for system resources (ideal for machines with only 8 megs of RAM).

Improving Your Frame Rate

Below, you'll see a handy list of the various ways you can customize the frame rate to suit your needs:

1. Textures: Turn some or all of them off to increase the frame rate. From the **Main Menu**, choose **Options**. Choose **Graphics** and turn on/off textures as desired.
2. Number Of Opponents: Racing against fewer cars increases the frame rate. From the **Main Menu**, choose **Options**. Choose **Opponents** and reduce the number of other cars as needed.
3. Number Of Cars Drawn On The Screen: The fewer the number of cars your computer must draw at one time, the faster your frame rate. From the **Main Menu**, choose **Options**. Choose **Opponents**, and adjust the number of cars **Ahead** or **Behind** to improve frame rate.
4. Number Of Cars Heard: The fewer number of engines your computer must audibly recreate at one time, the faster your frame rate. From the **Main Menu**, choose **Options**. Choose **Sound**, and adjust the number of cars **Heard** as desired.
5. Audio: Windows95 users can make sure that Direct Sound is selected.
6. Video: Use the Direct Draw option and a lower Display Resolution (320 x 200 instead of 640 x 480).

While you can adjust the **Graphics** detail from the **Options** pull-down menu, you can also fine tune the quality of your graphics from within the cockpit of your IndyCar as you drive. The keyboard shortcuts that control graphics quality are listed below.

Grass Texture: Press the number one key to remove trackside grass textures. Grass will appear solid green instead. Press this key again to restore textured grass.

Asphalt Texture: Press the number two key to remove asphalt texture, forcing solid gray pavement instead (Skid marks are unaffected by this selection). A second press restores the asphalt texture to the track surface.

Object Textures: A three-way toggle. Press the number three key once to remove billboard, building and some grandstand textures. Press again to completely remove the objects themselves. Press a third time to restore all objects and their textures.

Grandstand Textures: Press the number four key to remove the crowd textures from grandstands. The seats will appear empty. Press once more to restore crowd to the grandstands.

Wall Texture: Press the number five key to remove texture and signs from race track barrier walls. Solid colors will appear along the walls instead. Press again to restore wall textures and signs.

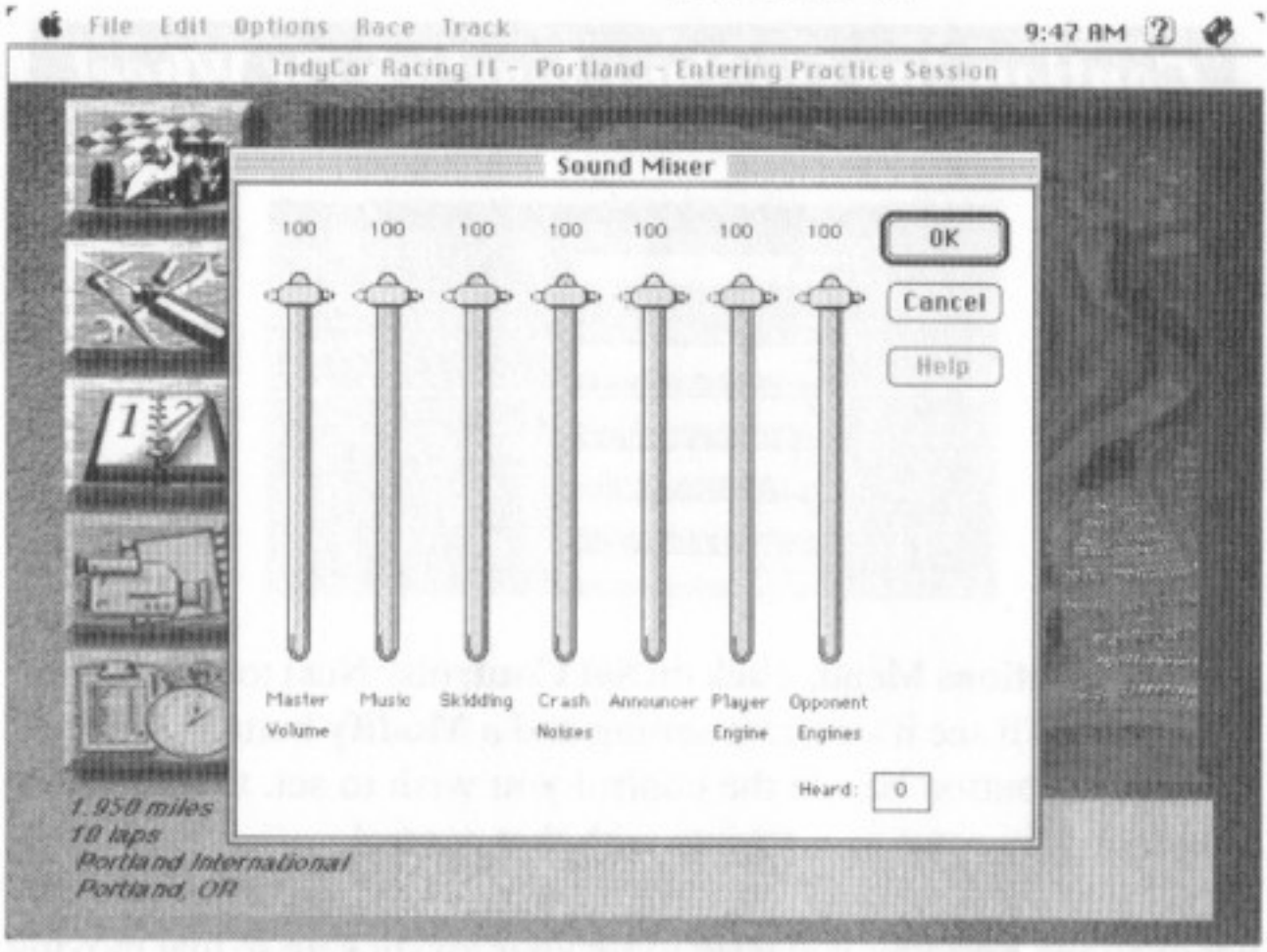
Horizon Texture: Press the number six key to remove trees and skylines from the picture. Press once more to restore the horizon.

Car Texture: Press the number seven key to remove logos and decals from all race cars. This also removes the tire sponsor logos from your front wheels. Press again to restore textured sponsor graphics to the race cars.

Smoke/Dirt: Press the number eight key once to turn smoke and dirt effects off. Press again to restore smoke and dirt effects to cars that are skidding or traveling on grass.

Skids/Paint: Removes some of the safety striping from the track surface, as well as the skid marks that define the groove.

Windshield: Each press of the **"W"** key toggles the windshield of your IndyCar on or off.

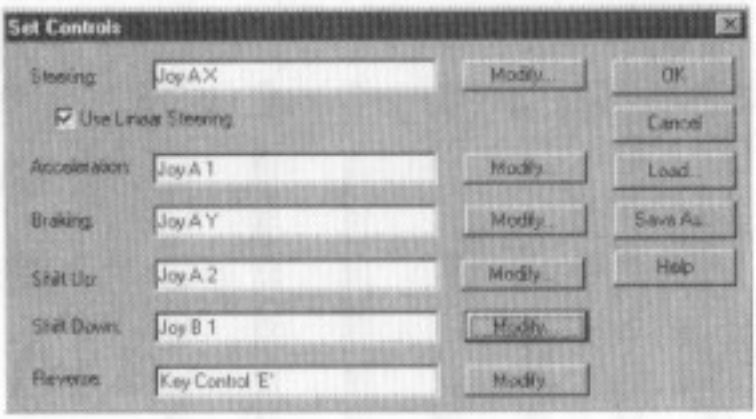


Options-Sound: Choose **Sound** from the Options pull-down menu to "mix" the various audio components to your personal liking. Each item is represented by a slider; move the slider to 100% (all the way up) for maximum sound on that item. Move the slider to zero (all the way down) if you want to eliminate that sound completely. Each item can be adjusted anywhere throughout the range to provide you with the right mix of in-game audio.

Note: The Announcer audio is only heard during the game introduction, while music is only heard during the introduction and race victory sequences.

Windows95 users can also take advantage of Direct Sound, a feature which may help speed up animation. Simply fill the checkbox next to the Direct Sound option to use this feature.

Configuring Up Your Joystick Or Wheel

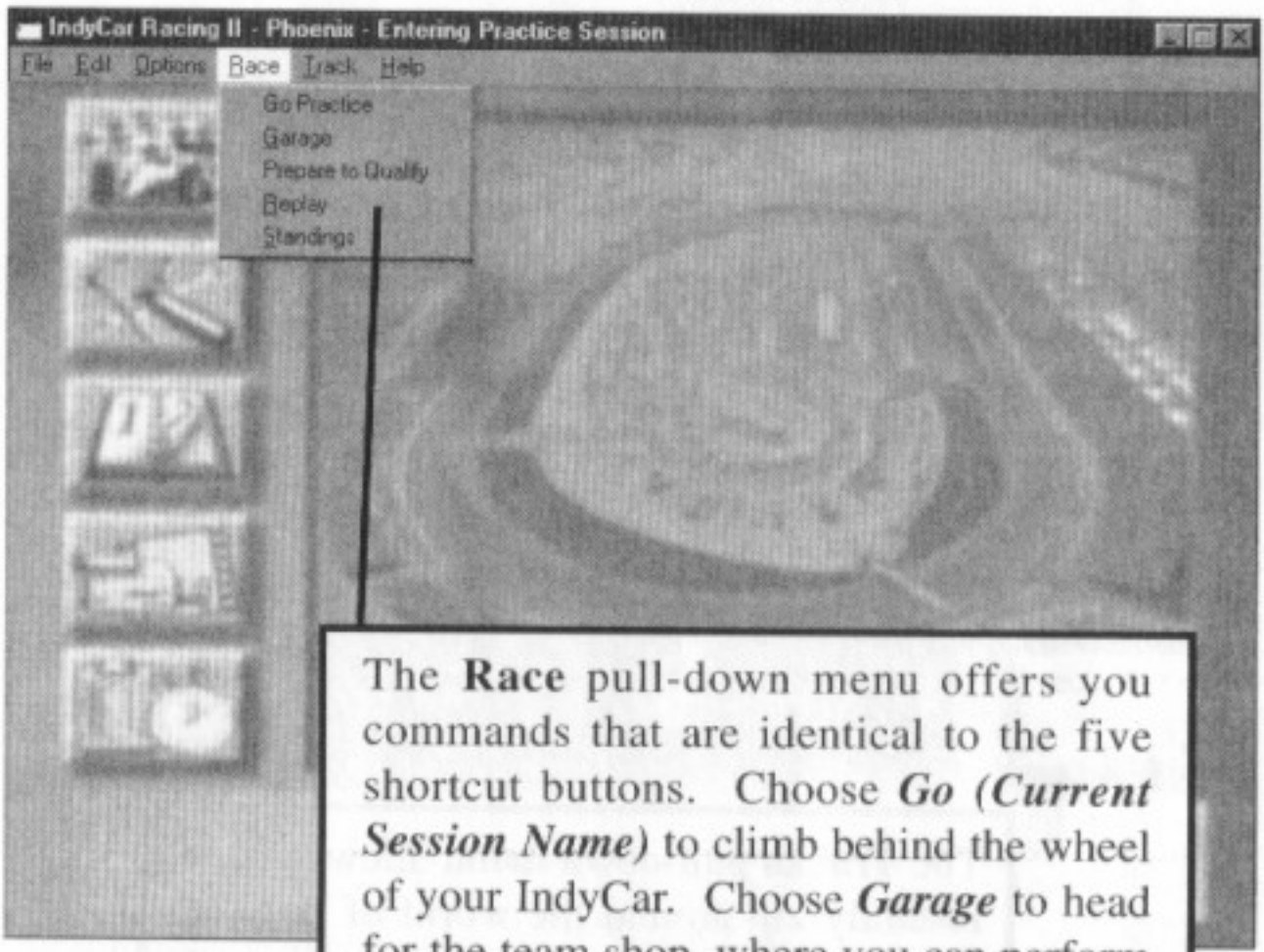


From the **Options** Menu, click on **Set Controls**. Next to each control method, you'll see it's current setting and a **Modify** button. Click on the Modify button beside the control you wish to set, then perform the action you want to associate with that control.

For example, suppose you want to set your joystick up so that moving it left or right controls your IndyCar's steering. Click on the Modify button located next to the Steering selection, then move your joystick left and right. The new control setting will automatically appear in the steering window. You may also select controls using a second joystick, or choose keyboard keys that are not in use by the game. Wheel/Yoke users should also check the **Use Linear Steering** box, while owners of conventional joysticks should leave this box empty.

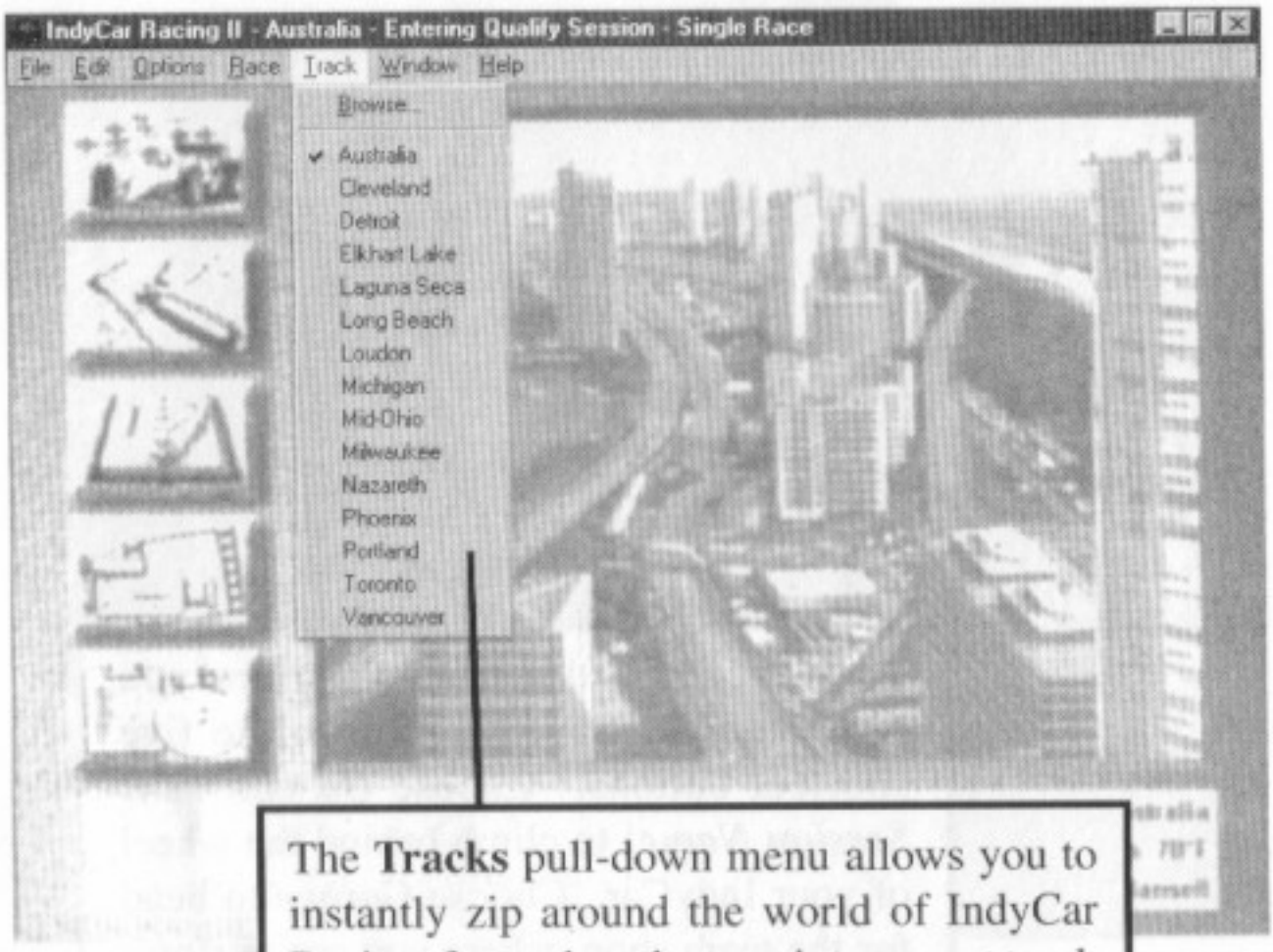
You cannot use an action to perform multiple functions. For instance, you cannot use joystick button "A" to both accelerate and shift up; it must be one or the other.

Once you have completely set all of the control options, choose the **Save** button to record your choices to disk. The Save and Load buttons provide you with the capability to keep several control setups on hand, to accomodate a variety of joysticks and devices.

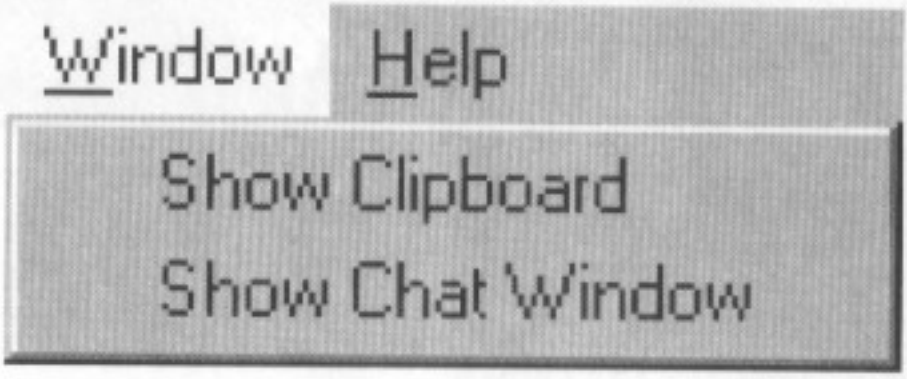


The **Race** pull-down menu offers you commands that are identical to the five shortcut buttons. Choose ***Go (Current Session Name)*** to climb behind the wheel of your IndyCar. Choose ***Garage*** to head for the team shop, where you can perform adjustments to your IndyCar. (See the garage section beginning on page 96 for more details.) By choosing ***Prepare To (Next Session Name)***, you can advance to the next appropriate session within the race weekend. Choose ***Replay*** to view the latest footage from the track, or to recall a replay clip from your archives. Click on ***Standings*** to get a complete rundown of the current leaderboard.

Note: The Standings selection on the Race pull-down menu will appear "greyed out" until you enter a competitive session (qualify, warm up or race).



The **Tracks** pull-down menu allows you to instantly zip around the world of IndyCar Racing, faster than the team's transport truck could get you there. Simply click on **Tracks** and select the race venue of your choice. Only those tracks that are installed on your computer will be available for selection. As you make track selections, the aerial picture of the current track will appear. Track information, such as weather and record speeds for the current track will also appear in the lower right corner. During **Championship Season** play, the **Tracks** option appears "greyed out," since you'll be racing the circuits in order of actual occurrence. The **Browse** option offers you a shortcut to view each track's picture, information and records.



Choose **Window** from the Menu Bar, then select **Show Clipboard** to view the most recent item you've copied to the clipboard, or to reveal a **Chat Window** that allows you to communicate live with the other player during on-line sessions. The clipboard can contain text or graphics; selecting decals from within the Paint Shop, or highlighting text such as car setup descriptions, then choosing Copy from the Edit menu will temporarily paste these items to the clipboard. These items are purged from the clipboard whenever you select a new item to Copy or turn off your computer.

Choose **Help** from the Main Menu bar to access online information about a particular aspect or feature of IndyCar Racing II. Online help is also available throughout the game, anywhere you see a designated **Help** button.

DOS Version Menus & Features

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"The untented Kosmos my abode,
I pass, a willful stranger;
My mistress still the open road
And the bright eyes of danger."
-Robert Louis Stevenson

The Main Menu

The **Main Menu** presents you with all of the primary options available to you in IndyCar Racing II. You'll see the **Main Menu** immediately following the game introduction.

You may use the **"ESC"** key to back out of the menus, one screen at a time. Repeatedly pressing the **"ESC"** key will eventually bring you back to the **Main Menu**.

Note: You can hit the "ESCape" key at any time while driving, without permanently stopping a race or test session. After hitting the "ESC" key, you can resume whatever driving session you are currently in right where you left off, by choosing "Resume." The "ESC" key is a handy way to pause the action and take a breather, review the current standings, or catch an instant replay.

The **Main Menu** contains the following choices:

Single Race: Choose any track installed with IndyCar Racing II, then practice, qualify and race without counting toward the driver's championship. No points are awarded for single races. You can vary the length of the race, opponent's strength, weather and other conditions by using the "Options Menu," described below.

Championship Season: Race the IndyCar circuit on each of the tracks installed with IndyCar Racing II, in order of their actual occurrence during the 1995 season. Top drivers are awarded points at the conclusion of every race, with the overall champion being crowned at season's end. Might this be you?

Preseason Testing: This is where champions are made. Hone your skills on the track of your choice, or work on car setup. Don't worry about that annoying traffic, you've got the track all to yourself!

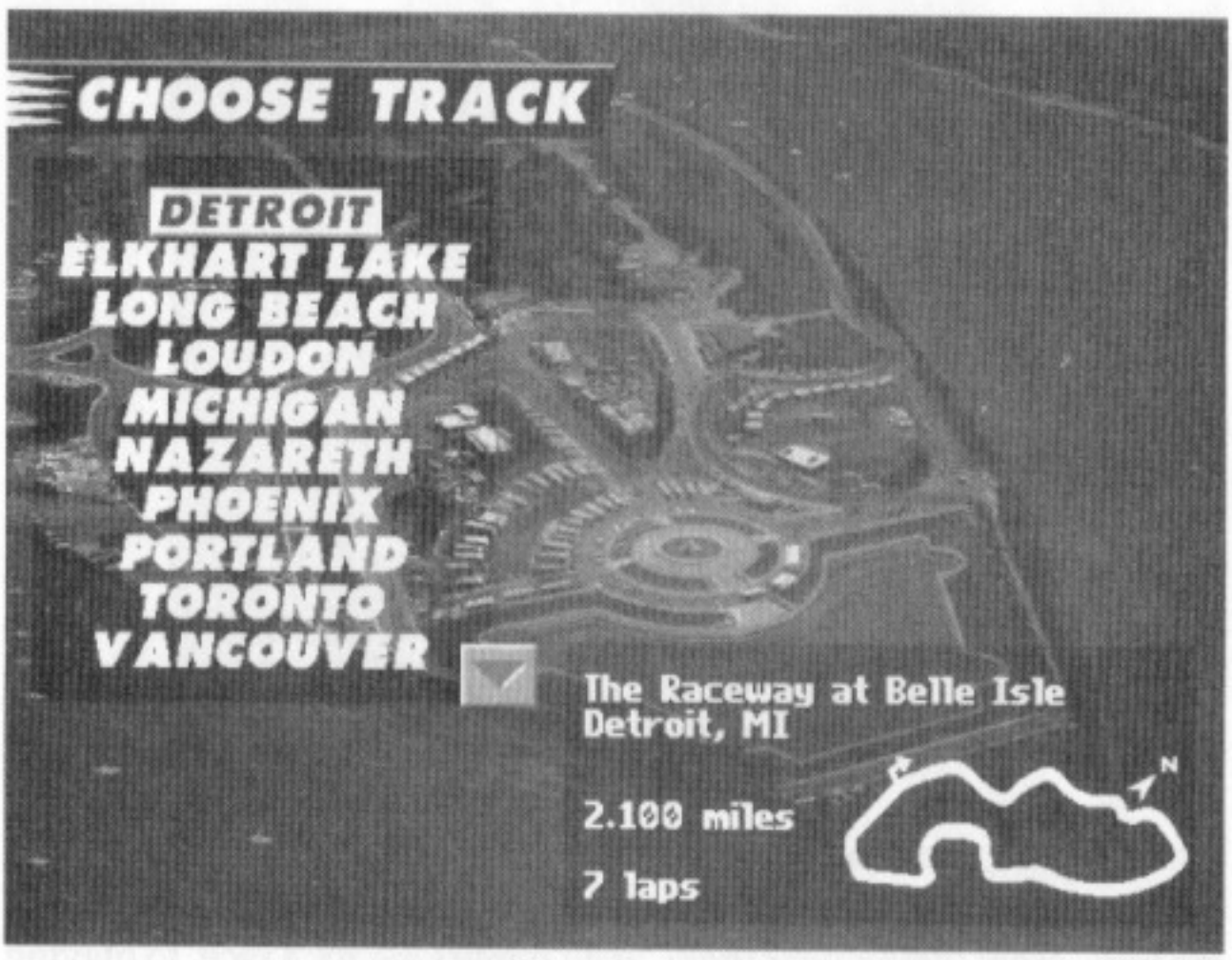
Multiplayer Race: This option allows you to go head-to-head against other human drivers, using a modem or a direct connect cable between two computers.

Driver Info: Enter your name as the official driver of an IndyCar, choose your chassis and engine combination, and get a good look at your opponents. Choose to race with other car sets- ones you've downloaded or created with the **Paint Kit.**

Options: Customize a number of game variables to suit your needs. Adjust graphics detail levels, realism options, set up and calibrate your joystick or steering wheel, and more.

Exit: Quits the game and lets you catch some shuteye before the next race.

The Tracks Menu



Each time you choose **Single Race** or **Preseason Testing** from the **Main Menu**, you'll stop by the **Track Selection** screen to select the track you'd like to drive on. This menu contains all of the IndyCar tracks currently installed on your computer. As you move the highlighter over each track, its length and number of laps (based on the Race Length chosen from the Realism Menu) will be displayed.

Joystick users can scroll the highlighter by pulling the stick up or down, and pressing button **"A"** to make the selection. Wheel and other users should use the up/down cursor keys on the keyboard, and press the **"Enter"** key to make the selection.

The Single Race Menu

Choosing **Single Race** from the **Main Menu** provides you with a weekend's worth of racing action. All of the necessary ingredients are here- from tuning your IndyCar, to qualifying for a race, to playing back the breathtaking footage of your exploits on the track.

Remember, you can return to the **Single Race Menu** at anytime while driving, simply by pressing **"ESC."** This will hold the action in place for you, without quitting the race. When you want to pick up the driving session where you left off, just choose **"Resume."** Other items found on the **Single Race Menu** are described below:

Replay: Gives you an opportunity to view highlights from the track. You can also save, load or edit replays using this selection (See **Replay** section for more details).

Garage: Activates the **Garage Menu**, where you'll perform all of the adjustments needed to bring your IndyCar up to speed. Save, load or overhaul the setup, or simply fine tune here or there (See Garage section in this manual for more details).

Practice: Unlike **Preseason Testing,** which provides you with a closed course to play with, this mode allows you to drive an unlimited number of laps (provided you refuel and change tires, as needed) while battling traffic. Take this opportunity to follow other drivers around the track and work on drafting.

Qualify: Think you're ready to lay it on the line? If so, load your fastest setup, put on the soft tires, unload all that extra fuel in the tank and choose **Qualify.**

Note: Qualifying formats vary from track to track. In order for your qualifying attempt to be valid, you must complete the prescribed number of laps for that track. Each track's qualifying rules are described later in this manual. See Tracks section for more information.

Warm-up: After you've secured a spot on the starting grid, load your racing setup back on your IndyCar and take it for a brief spin to make sure you're comfortable with the car, track and weather conditions.

Race: This is it, showtime! Race distance and other variables are determined by choices made while at the **Realism Menu**. Remember, those tires will be cold early; take it easy until they warm up.

Next Session: Pressing this selection advances you to the next session of a race weekend. For example, when you're ready to leave practice and head for qualifying, choose **Next Session**. When you are through qualifying, choose **Next Session** again to drive in the pre-race warm-up. Choose **Next Session** once more to advance to the race. You can

skip any session prior to a race by simply using the **Next Session** button to step ahead. If you bypass the qualifying session, however, you'll automatically be assigned the last starting position.

Standings: Check the current running order of the race. This button becomes active at the start of qualifying, and remains available through the conclusion of a race. Choose **Standings,** then **View** to scan the present standings from top to bottom. Choose **Print** to obtain a hardcopy of the race standings, or select **Save** if you want to archive the standings in a file for later review.

Saving A Race: Once you have qualified for, or completed at least three laps of a race, you may choose to save that race in progress. By exiting the track before the last lap has been completed, IndyCar Racing II will ask you if you'd like to save the race for later resumption. Choose **Yes** to save the race, **No** to abandon the race, or **Cancel** to return to the **Single Race Menu.** After saving a race, you can resume it immediately, or at a later time. The next time you select that track, you will be given an opportunity to restore the saved race. If you choose **Yes**, the most recently saved race will be resumed.

Note: When you restore a saved race, the field of cars may be rearranged. For example, you are leading a race by thirty seconds, with a few lapped cars between you and the second place driver. When you restore a saved race, the second place driver will be directly behind you. This is because the field is placed in running order upon resumption.

Accelerated Time Feature: While inside the cockpit, you can press the **"A"** key to accelerate time. This is especially useful if you've crashed out early and want to see the conclusion of the race. Your car will be listed with a "DNF" (Did not finish) designation. ***Once you accelerate time, your car cannot get back into the race.***

Exit: Exits the current track and returns you to the **Track Selection Menu**.

Championship Season

The IndyCar circuit: grueling, glamorous, and sometimes glorious. The **Championship Season** consists of one race at each of the IndyCar tracks installed on your computer, arranged in order of their actual occurrence in the 1995 season. To win the Driver's Championship you must master a variety of playing fields: road courses, street circuits, superspeedways and short ovals.

At the conclusion of each race, top drivers are awarded points as follows:

1st place	**20**
2nd place	**16**
3rd place	**14**
4th place	**12**
5th place	**10**
6th place	**8**
7th place	**6**
8th place	**5**
9th place	**4**
10th place	**3**
11th place	**2**
12th place	**1**
Fastest Qualifier (pole)	**1**
Most Laps Led	**1**

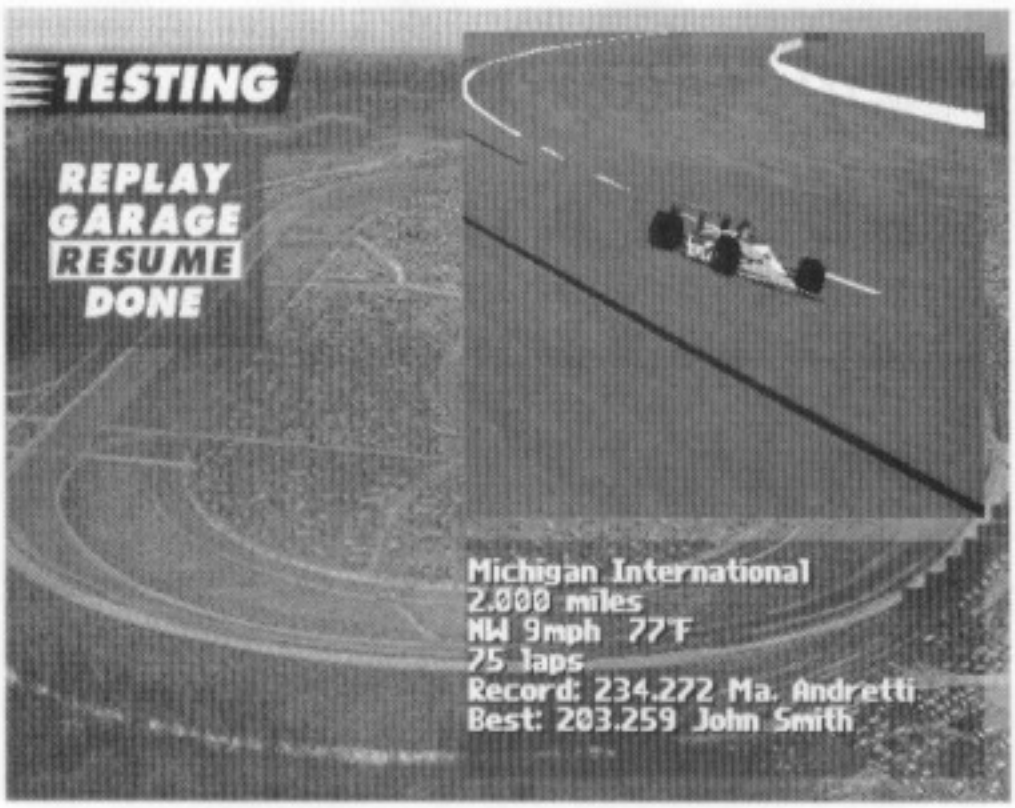
The maximum number of points any one driver can win for a single event is 22; 20 points for winning the race, 1 point for winning the pole, and 1 final point for leading the most laps. When the last event on the schedule has been staged, the driver who has the highest point total is declared IndyCar Racing II Champion.

All realism factors apply to each **Championship Season** race, so you should set these preferences before the first race. For example, if you want each race to be shorter, choose **Realism** from the **Options Menu** and set the **Race Length**. If you were to choose 30% here, all races in the **Championship Season** would be that length.

Driver Info, which includes engine/chassis combinations, may be updated at anytime during a **Championship Season**. This means you can begin a season using a Lola chassis, and abruptly switch to a Reynard at will.

When you exit a race before its conclusion, IndyCar Racing II will give you an opportunity to save the race in progress. During a **Championship Season**, the program will also give you a chance to save the season in progress whenever you exit the current track.

Preseason Testing



Preseason Testing is an essential part of your IndyCar team's development. Here, you can hit the track of your choice and fine tune your racecar setup for that venue. On the track, memorize braking and turning points, and find the absolute limits of your IndyCar. Although you can drive an unlimited number of laps, fuel and tires must still be replenished as needed.

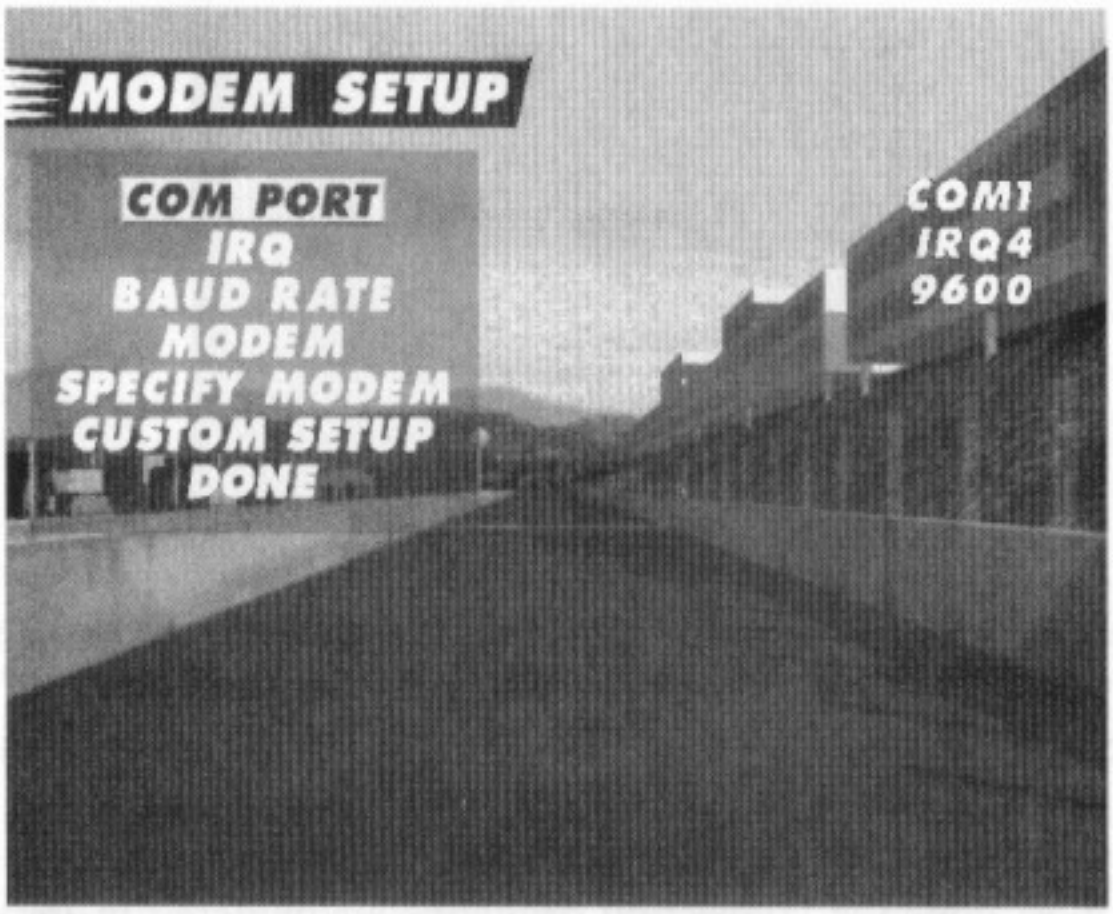
Replay and **Garage** functions work the same way here as they do when racing. Use the replay feature to study your driving habits, and the car's behavior in corners (See Replay and Garage sections for more details).

Note: Preseason Testing is a great place to break track records, traffic-free. Any record broken in testing will stand!

Multiplayer Racing

IndyCar Racing II allows two players to compete against one another by choosing **Multiplayer Race** from the **Main Menu**. Each player will need a computer, with an official copy of IndyCar Racing II installed on each machine. They must be connected using a null-modem cable, or between two modems running at least 9600 baud.

First, choose **Setup** from the **Multiplayer Race Menu**. This will allow you to specify or change various communication settings to suit your equipment. Set **COM Port, IRQ** and **Baud Rate** information that corresponds with your system. The **COM Port** is the serial port that your computer uses to communicate with either the modem or other player's computer. The **IRQ** is the interrupt the computer uses to communicate with the **COM Port.** It should not be used by anything other than your modem. The **Baud Rate** is the speed at which your

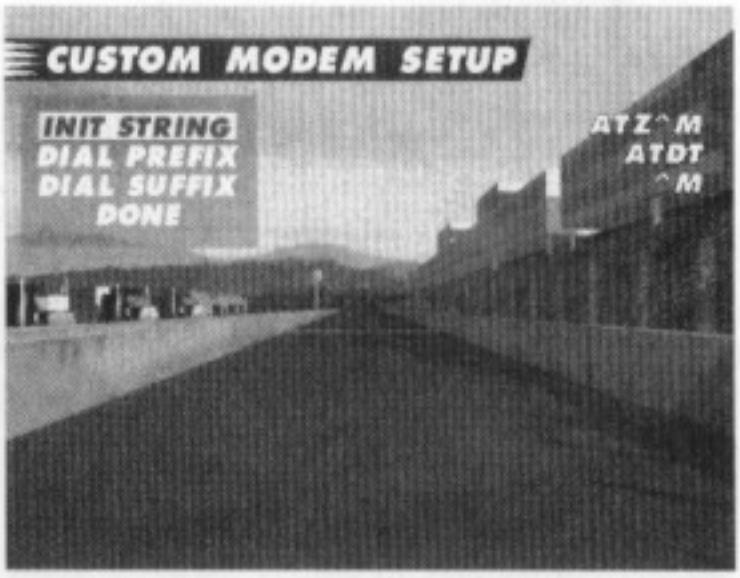


modem will operate. **Your modem must be capable of at least 9600 Baud. When modem opponents specify two different Baud Rates, IndyCar Racing II will automatically use the slower Baud Rate.**

Choose the **Modem** button to toggle between the two connection methods. If you are using a null-modem cable, **"Direct Connect"** must appear instead of the word **"Modem."**

The **Specify Modem** button opens a list of popular modems. When you choose a modem from the list, its basic setup information is loaded for you automatically.

If you don't see your modem on the provided list, you can manually input its setup information by choosing **Custom Setup**. You can also choose a modem from the **Specify Modem** list, then alter the predefined settings with **Custom Setup.**



When you choose **Custom Setup**, you have the opportunity to enter your own **Initialization String, Dial Prefix** and **Dial Suffix.** If you **Specify Modem** from the provided list, this information is taken care of for you by the program.

The most common connection problems encountered in IndyCar Racing II are caused by an incorrect **Initialization String. The following features must be disabled in order to race over modems: Data Compression, Error Detection and Error Correction.** You must be sure these items are turned off, otherwise you may not be able to connect or you may experience erratic car movement. Use the **Initialization String** to disable these features. Consult your modem operator's manual to find the required modem commands. If you cannot find a listing of these commands and your modem is not on the **Specify Modem** list, please call the modem manufacturer for further assistance.

Sample Initialization String:

AT&F^M~~~AT ——— ^M

Enter commands to disable error detection, error correction and data compression in this space

Getting Connected

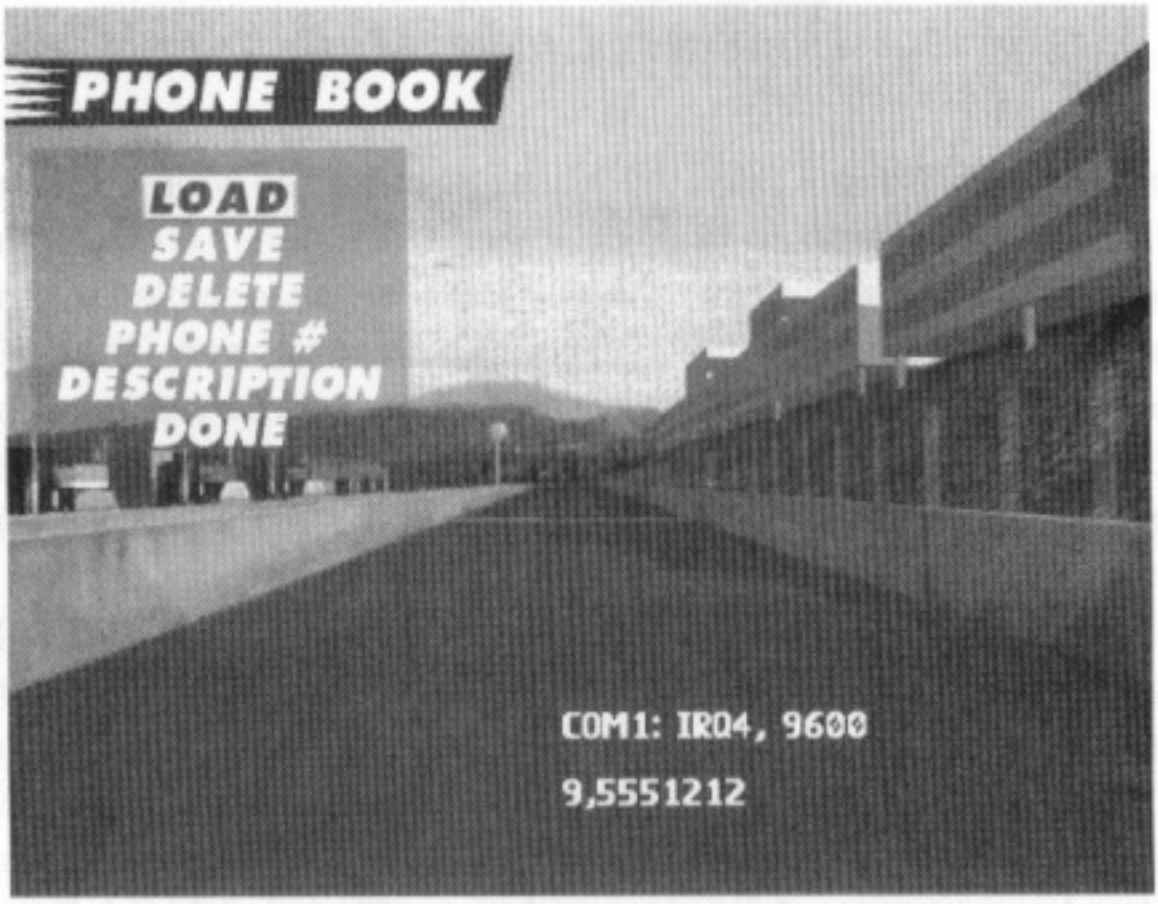
First, choose **Phone #** from the **Multiplayer Race Menu** and enter the number you wish to dial, or select a number from the **Phone Book** option. From the **Multiplayer Race Menu**, one player should choose **Dial** while the other player should select **Answer**. The dialer's machine will dial, allowing two minutes for the answerer's machine to connect with it. When the two modems connect, a phone icon will appear in the upper right corner of the screen. If the phone icon is blinking, the connection is not perfect. If the icon disappears for more than five seconds, the connection will be broken. The transmission delay indicates the one-way transmission time from computer to computer. A good connection will have a delay between 0.07 or 0.13 seconds. The longer this delay, the poorer gameplay will be (car's movements will be more erratic). The delay is caused by the phone system or by an incomplete (and incorrect) initialization string. The problem might be solved by redialing.

Hints: *You can race against the other player without any computer drivers by setting your* ***Number*** *of* ***Opponents*** *in the* ***Driver Info Menu*** *to 1. Additionally, the player with the faster computer should select* ***Answer*** *for best results.*

Using The Phonebook

If you are the **Dialer**, choose **Phonebook** from the **Multiplayer Race Menu** to enter the number you'll be calling. Choose **Load** to call a previously saved number. Use the **Save** command to store the current name and phone number to your hard drive. **Delete** allows you to eliminate phone numbers that are no longer wanted.

Use the **Description** command to name or describe your current opponent. This description will appear each time this player's phone number is loaded.



You don't have to use the description command, but it is highly recommended. You must input a new phone number, or load a previously saved phone number before dialing. The name and phone number selected will appear in the dialogue box in the lower right corner of the screen.

Talk Mode

When connected to another computer, you may attempt to converse with the other player by pressing the **"T"** key. You should be at the **Race Weekend Menu** (which has **Replay/Garage/Next Session/ Etc.** on it), driving, or watching the replay. If the other player presses **"T"** to talk, both player's names will appear in the middle of the screen, with areas above and below provided for typing. When you are finished talking, either player can press **"ESC"** to end the chat. If your opponent chooses to talk, you will see one line of that player's dialogue onscreen, to alert you of a chat.

Troubleshooting Multiplayer Races

1. If you select **Dial** and the computer responds with "Make sure your modem is on," check to make sure the **COM Port** setting is the correct one and that your modem is turned on (internal modems will always be on).

2. If you select **Dial** and the computer responds with "Unable to initialize modem," your **Initialization String** is incorrect for your modem. Consult your modem manual or modem manufacturer for the appropriate initialization string. Make sure you have "^M" at the end of the initialization string. Also, be sure you have included three tildes ("~~~") between each command ending with "^M".

3. If when the modems connect, the transmission delay is large, this probably means that the initialization string on the dialer's modem is incorrect.

4. If you are still unable to connect, a sanity check of the modem communications is possible using a regular communications package such as Telix, Procomm or the Windows Terminal program. Connecting via one of these packages does not guarantee that communications will work in IndyCar Racing II, but if you are unable to connect in this fashion, you will be unable to connect in IndyCar Racing II.

5. If both players have a DOS communications package such as Telix, it should be possible to connect using that package first; next, exit the communications program without hanging up, then run IndyCar Racing II and connect using the Direct Connect option. You must still disable advanced modem features such as data compression and error correction. This is recommended only for users who are having trouble connecting within IndyCar Racing II.

Driver Info

From the **Main Menu**, choose **Driver Info**. Select **Player** to enter your **Name, Nickname, Team Name** and **Hometown**. These settings all affect the way your name and team will be listed on **Standings, Records** and **Race Results** screens.

This screen also allows you to choose chassis/engine combinations and tire manufacturers for your IndyCar.

Choose **Opponents** to view the cars and personal information of the other drivers.

The **Car Sets** selection allows you to alternate between different car sets that you have saved on your computer. This selection will not be visible until you have made or saved your first additional car set using the **Paint Kit.**

The Options Menu

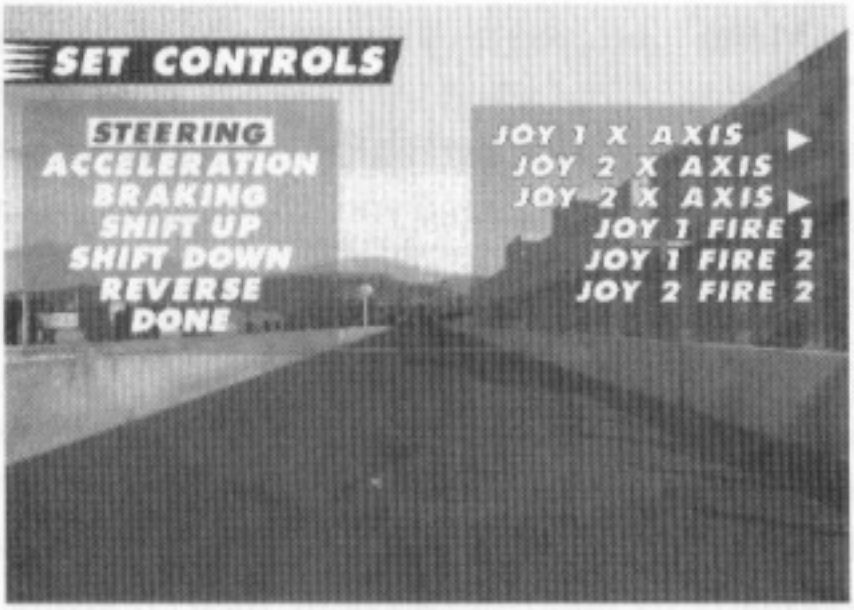
The **Options Menu** gives you total control over how you use IndyCar Racing II. You may calibrate and set up joysticks or steering wheels, adjust sound levels, customize graphics or vary the realism. Choose **Options** from the **Main Menu**, and you'll have access to the following selections:

Controls: One of the first menus you should visit in IndyCar Racing II is the **Controls Menu.** Here, you can calibrate joystick/wheel devices and decide how you wish to use them. From the **Main Menu**, choose **Options**, then **Controls**, and then **Set Controls**. Assign each control individually by choosing an item, then choosing the method of control. For example, if you wish to steer left & right by moving the joystick/wheel left & right, choose **Steering**. Then simply move the stick/wheel left, then right. To accelerate by holding down the tab key, choose **Accelerate**, then press the tab key once.

Setting Controls

If your joystick is not controlling your car while on the track, you probably need to visit the **Set Controls Menu**. To get there from the **Main Menu**, choose **Options**, then **Controls**, and then select **Set Controls**. This will allow you to decide how you want the joystick to work. If you are setting your joystick up for the first time, or using a new joystick or wheel device, you should select every item on the **Set Controls Menu**, one-by-one. Start at the top of the menu by selecting **Steering**. Then, move your joystick or wheel in the directions for steering left, then right. The menu will then automatically reappear. Having done this, move on to **Acceleration**, and so on, until you've set up every item on the list.

Note: Certain keyboard keys, such as the function keys are in use by the game and cannot be selected to drive with. If you are using keyboard keys for some of the items on the Set Controls Menu, you must choose keys that do not have a permanent assignment within IndyCar Racing II.

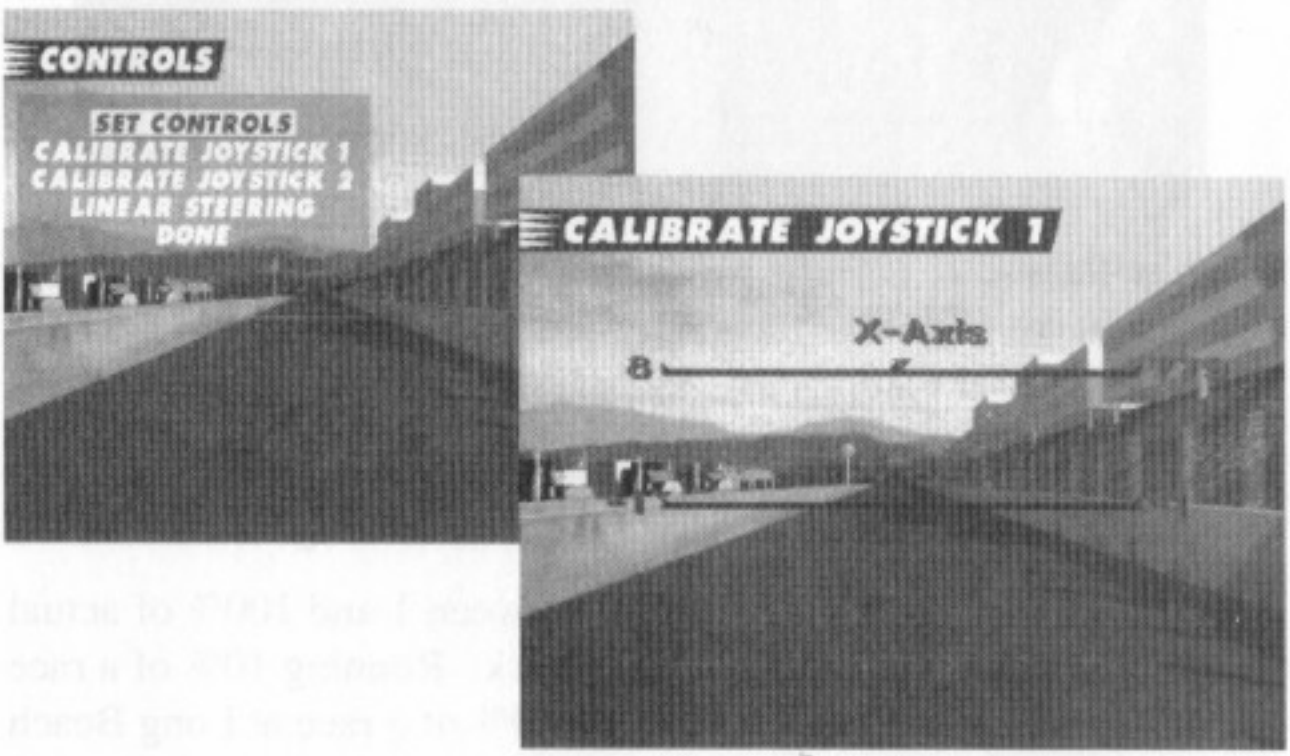


Note: Wheel/Yoke users should choose Linear Steering, while users of conventional joysticks should select Non-Linear Steering from the Controls Menu.

Calibrating Joysticks

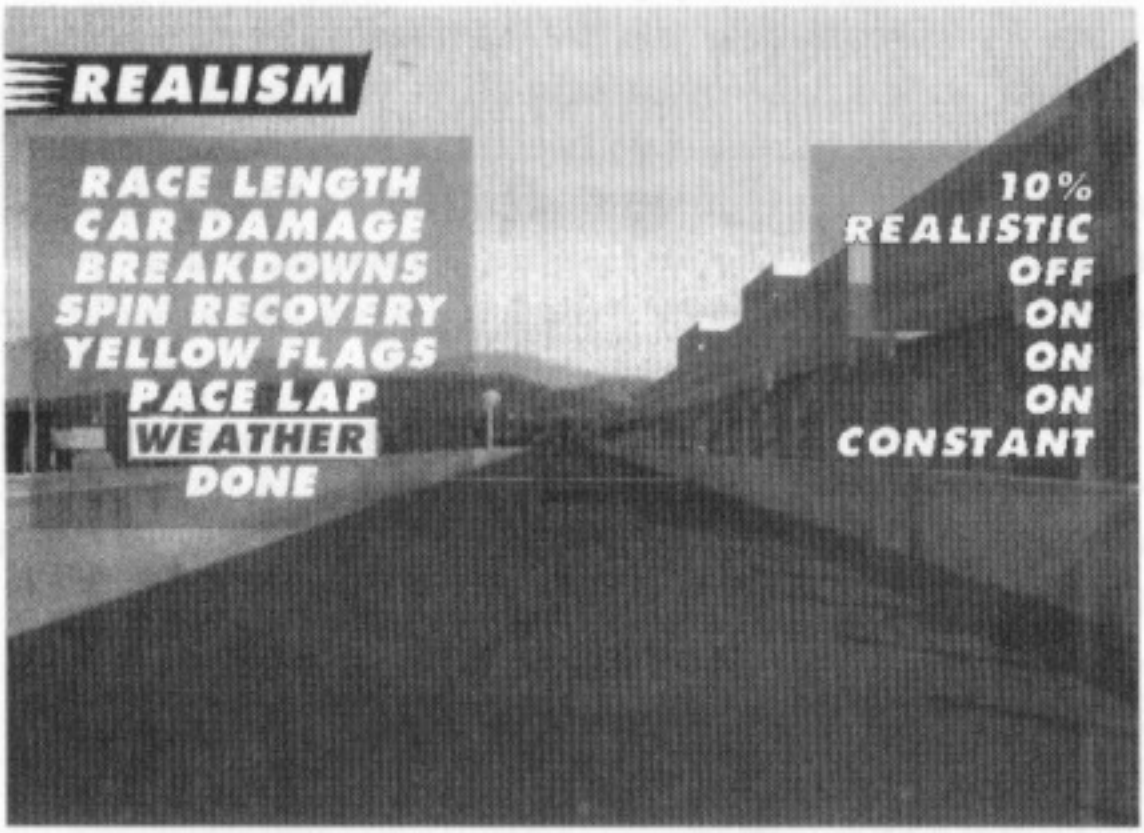
The first time you load IndyCar Racing II, the program will attempt to detect the presence of a joystick or two on your system. If you have joystick(s) installed, you will automatically see the joystick calibration screen, where you can align your stick or wheel for IndyCar Racing II. Later, if you need to re-calibrate your joystick/wheel device, choose **Options** from the **Main Menu**, then choose **Controls**, and finally, choose **Calibrate Joystick 1** or **2**. Note that joystick 2 might not produce a reading unless you actually have a second joystick or a wheel/pedal combo.

Move your joystick or wheel to the extremes of the x or y axis: forward, backward, left and right, then press **"Enter." Calibration Menus** may vary between joystick and wheel versions.



Note: Wheel/Yoke users may experience rapidly scrolling menus. To stop the scrolling, press the "J" key. This will allow you to use the keyboard cursor keys to scroll up and down manually. Make selections by pressing the "ENTER" key.

The Realism Menu



IndyCar Racing II is fully adjustable to suit your need for speed. You can set the game up to be a fully detailed simulation of a season's worth of IndyCar competition, including realistic weather and race lengths, or you can opt for more of an arcade level of play. Use the **Realism Menu** to tailor IndyCar Racing II to your preferences.

Race Length: Choose any distance between 1 and 100% of actual length. Distances vary from track to track. Running 10% of a race at Michigan would be 50 miles, while 10% of a race at Long Beach would be less than 17 miles. For **Championship Season** play, all races are contested with the same **Race Length** setting. For example, if you choose 20% race length prior to the first race of the season, all races in that season will be run at 20% length.

Car Damage: Cars driven by your opponents are always subject to damage, but you may choose to be indestructible if you wish. Choosing **Realistic Damage** will give you a true-to-life setting, but rookie drivers may prefer to drive with damage **None** while polishing their skills. Select **Arcade Damage** to make it more difficult to inflict punishment on your IndyCar. Collisions may still take their toll, but you'll be able to strike things a bit harder in this mode before any damage to your IndyCar occurs.

Note: Your IndyCar is always subject to damage caused by abuse, such as over-revving the engine or neglecting tires until they blow. The Car Damage selection only deals with results stemming from collisions.

Random Breakdowns: If you really want to know how an IndyCar driver feels when a faulty ten dollar part ends a race day prematurely, turn Random Breakdowns **On**. Based on actual IndyCar statistics, your car will be subject to the possibility of race-ending mechanical failures. Turning this item **Off** means that the only engine failure your car can suffer would be due to over-revving. Computer opponents will randomly experience breakdowns regardless of this setting.

Spin Recovery: Turn this **On** to have your IndyCar automatically right itself following a spin-out. With Spin Recovery enabled, even minor spins that leave you against the wall will be corrected. If you find yourself driving in the wrong direction, simply apply the brakes until the car takes over and faces in the proper direction. Turn Spin Recovery **Off** for the most realistic setting.

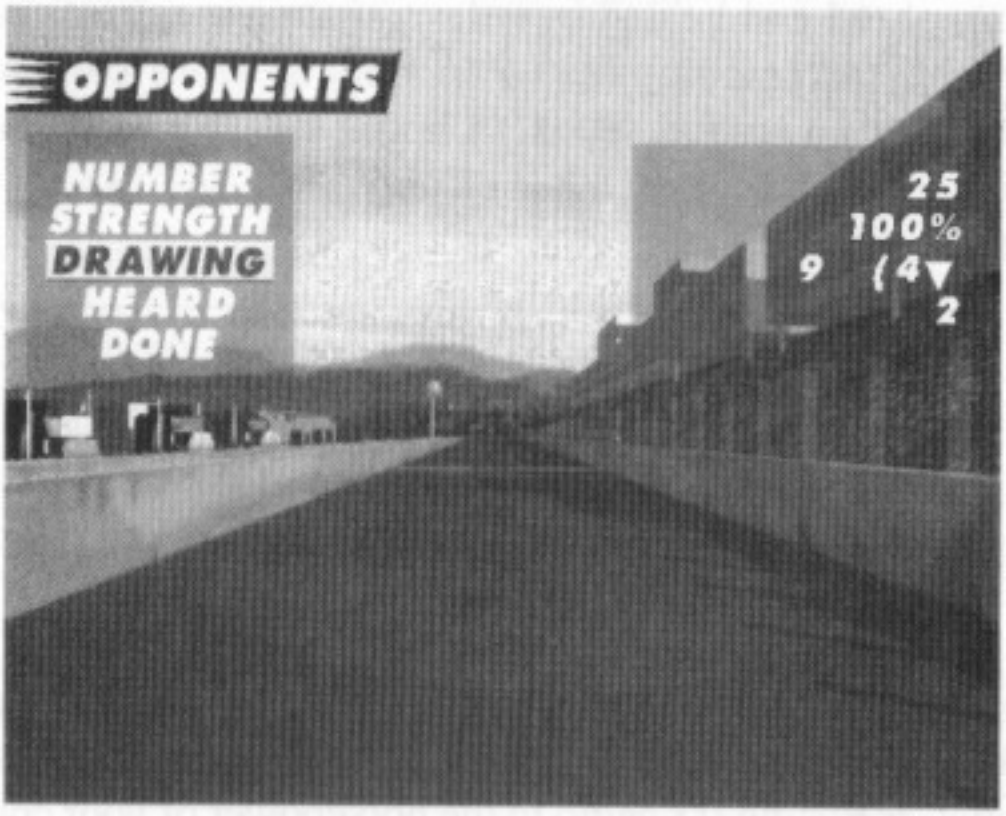
Yellow Flags: Toggles caution flags on or off. Turning them on will bring out the yellow for a few laps while the track is cleaned up, while switching them off will allow you to drive flat out despite the carnage.

Pace Lap: This is the first lap taken just before the start of a race. It does not count toward the number of laps raced, it's strictly a warm up lap. Pace laps may be helpful if you need time to settle in on the track while warming up your racecar. If you elect to bypass the pace lap, the field will begin with a standing start, in proper formation. Be prepared as soon as you enter the race track, your opponents will start moving!

Weather: Choose **Random Weather** if you want realistic, variant conditions. Choose **Constant Weather** if you want to pick the race weather yourself. Choose the **Temperature, Wind Direction** and **Speed**. Cooler weather should yield faster laps because the cars can generate more downforce. As the mercury climbs, air becomes less dense, putting less air on the wings of your IndyCar. Hotter conditions can also add more stress to your racing tires.

*Choose **Sound** from the **Options Menu** to adjust the volume of each audio element to your liking.*

The Opponents Menu



This menu provides you with control over two areas- the overall speed of your opponents, and how many opponents appear at a given time.

To change the maximum number of cars allowed in a given race, choose **Number** from the **Opponents Menu**. Raising this number gives you more opponents, while lowering this number increases animation speed on slower machines.

Choose **Strength** to adjust the skill level of your opposition. This setting affects the overall speeds that the other cars are capable of. A setting of 100% is considered the most realistic. If you're having trouble keeping up with the pack, lower this value to slow the field down a bit. If you're a real hotshoe you may want to up the challenge by increasing the **Strength** (speed) of the other cars.

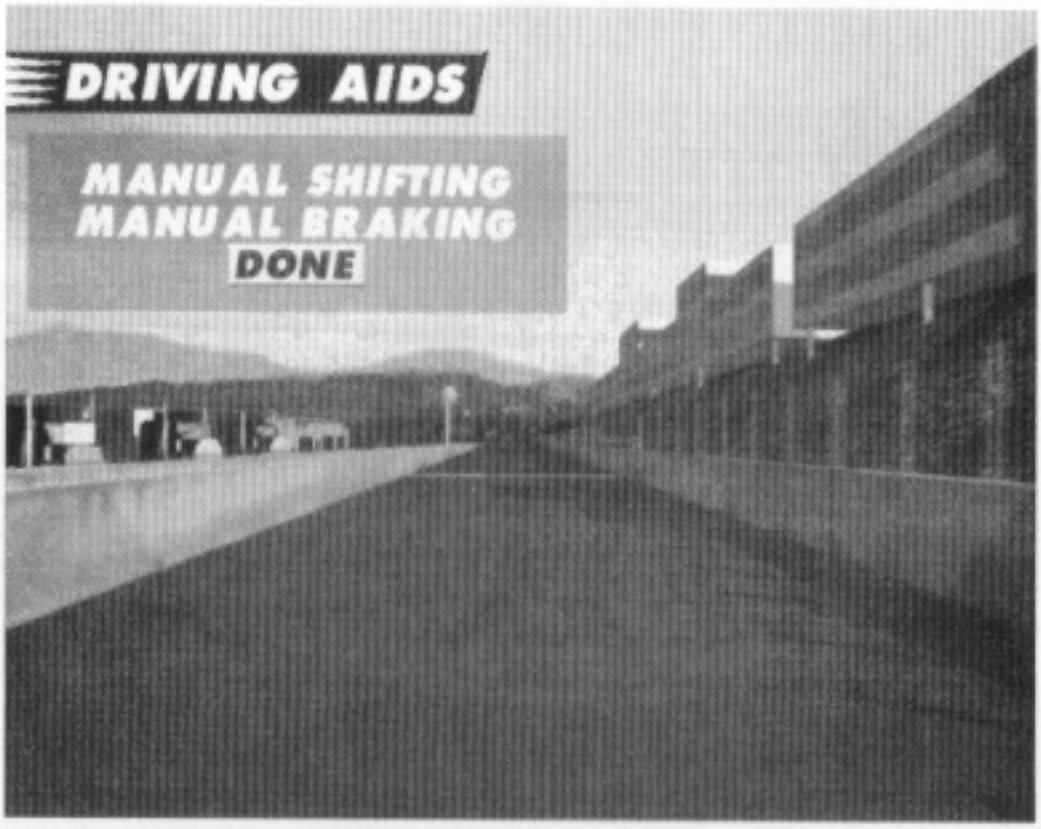
The **Drawing** and **Heard** selections both relate to animation speed. Owners of slower computers should have the computer draw fewer opponents ahead and behind in order to increase animation speed. Conversely, faster computers can handle more cars without compromising animation speed. Choose the **Drawing** button to determine the maximum number of opponents you can see on the screen at any given time.

Note: The Drawing Menu controls how many cars can be seen from within the cockpit of your IndyCar at one time. The Drawing Ahead options affect how many cars can be seen in front of you. The Drawing Behind options affect how many cars can be seen in your rear view mirrors.

Choose **Heard** to decide how many other cars can be heard at a single time. As with the **Drawing** choices, the **Heard** button allows you to tailor IndyCar Racing II's audio to the horsepower of your computer. If the animation on your system appears "choppy," try reducing the number of cars that can be heard at once.

Note: The cars that you hear will be those that are closest to you. For instance, if you choose a Heard value of three and there are seven around you, you'll hear the three closest cars to you.

Driving Aids



Choose **Driving Aids** from the **Options Menu** to determine how much help you want while inside the cockpit of your IndyCar.

Rookie drivers may opt to have the computer handle the chores of shifting gears and braking while they concentrate on learning each track. Later, these **Driving Aids** may be turned off to provide a more realistic simulation.

Automatic Shifting works just like an automatic transmission, choosing the appropriate gear based on current rpms.

Automatic Braking causes the computer to make a reasonable attempt to slow the car as it approaches corners.

The Graphics Menu

From the **Options Menu**, choose **Graphics** to customize texture details for the best frame rate performance. If the program animation seems "jumpy" when you're driving, you may need to turn some of the textures off so they will not be displayed. This will free up some of your CPU's resources to better run the game. Turn off the graphic items that are least important to you, until a desirable frame rate is obtained. You may want to turn **Grass** or **Asphalt** textures off first, since they consume the most memory.

With the exception of **Minimum/Maximum Frame Rates**, your choices for each graphic texture are **On, Off** and **Auto**. Choose **On** if you always want to see a certain type of texture, such as the car logos.

Choose **Auto** if you want the computer to adjust these items as you drive, based upon how much detail your computer can manage. In **Auto** modes, textures may disappear and reappear from time to time (depending upon **Minimum** and **Maximum Frame Rate settings**), as your computer attempts to produce the smoothest frame rate possible.

Solving The Frame Rate Puzzle

Every single second of live video is comprised of 30 "frames," or snapshots. Each frame differs slightly from the next to create motion. At full speed, your IndyCar may only need 3-4 frames to cross the start/finish line (a tenth of a second). When your computer is producing 30 fps (frames-per-second), your animation will be very smooth. But if your computer can't keep up with the processor demands, and only produces 10 fps, your animation will appear choppy, making it hard for you to react with split-second reflexes when driving.

By choosing a **Minimum Frame Rate**, you're telling your computer when to begin turning off textures in order to maintain smooth animation. For instance, if you set the **Minimum Frame Rate** to 13 fps, your computer will begin turning off textures that are set to **Auto** if the frame rate dips below 13. Textures that are turned **On** or **Off** are not affected by this setting.

The **Maximum Frame Rate** setting tells your computer at what animation speed to begin turning on textures that were previously switched off. For example, if you set the **Maximum Frame Rate** to 22 fps, your computer will begin turning back on textures that are set to **Auto** when your computer achieves this frame rate.

*Note: The **Minimum** and **Maximum Frame Rates** do not guarantee any specific frame rate when driving. They simply serve as guidelines for your computer to use when handling textures that are set to **Auto**. Textures that are set to **Off** will be turned off regardless of frame rate.*

Improving Your Frame Rate

IndyCar Racing II is designed to be extremely flexible, so that you can enjoy the best frame rate possible on your machine. Below, you'll see a handy list of the various ways you can customize the frame rate to suit your needs:

1. Textures: Turn some or all of them off to increase the frame rate. From the **Main Menu**, choose **Options**. Choose **Graphics** and turn on/off textures as desired.

2. Number Of Opponents: Racing against fewer cars increases the frame rate. From the **Main Menu**, choose **Options**. Choose **Opponents** and reduce the number of other cars as needed.

3. Number Of Cars Drawn On The Screen: The fewer the number of cars your computer must draw at one time, the faster your frame rate. From the **Main Menu**, choose **Options**. Choose **Opponents**, and adjust the number of cars **Ahead** or **Behind** to improve frame rate.

4. Number Of Cars Heard: The fewer number of engines your computer must audibly recreate at one time, the faster your frame rate. From the **Main Menu**, choose **Options**. Choose **Opponents**, and adjust the number of cars **Heard** as desired.

5. Audio: You may choose to substitute FM sounds in place of digital audio when you load the game. This will improve frame rate. From the C:\INDYCAR> prompt, type INDYCAR -F <ENTER> to load the game (type INDYCAR -F -H to load in SVGA mode).

6. Video: Load the game in low resolution mode instead of using a VESA driver. From the C:\INDYCAR2> prompt, type INDYCAR to load the game.

While you can adjust the **Graphics** detail from the **Options Menu,** you can also fine tune the quality of your graphics from within the cockpit of your IndyCar as you drive. The keyboard shortcuts that control graphics quality are listed below.

Grass Texture: Press the number one key to remove trackside grass textures. Grass will appear solid green instead. Press this key again to restore textured grass.

Asphalt Texture: Press the number two key to remove asphalt texture, forcing solid gray pavement instead (Skid marks are unaffected by this selection). A second press restores the asphalt texture to the track surface.

Object Textures: A three-way toggle. Press the number three key once to remove billboard, building and some grandstand textures. Press again to completely remove the objects themselves. Press a third time to restore all objects and their textures.

Grandstand Textures: Press the number four key to remove the crowd textures from grandstands. The seats will appear empty. Press once more to restore crowd to the grandstands.

Wall Texture: Press the number five key to remove texture and signs from race track barrier walls. Solid colors will appear along the walls instead. Press again to restore wall textures and signs.

Horizon Texture: Press the number six key to remove trees and skylines from the picture. Press once more to restore the horizon.

Car Texture: Press the number seven key to remove logos and decals from all race cars. This also removes the tire sponsor logos from your front wheels. Press again to restore textured sponsor graphics to the race cars.

Smoke/Dirt: Press the number eight key once to turn smoke and dirt effects off. Press again to restore smoke and dirt effects to cars that are skidding or traveling on grass.

Skids/Paint: Removes some of the safety striping from the track surface, as well as the skid marks that define the groove.

Windshield: Each press of the **"W"** key toggles the windshield of your IndyCar on or off.

Tuning Your IndyCar In The Garage

"They laugh that win."
-William Shakespeare

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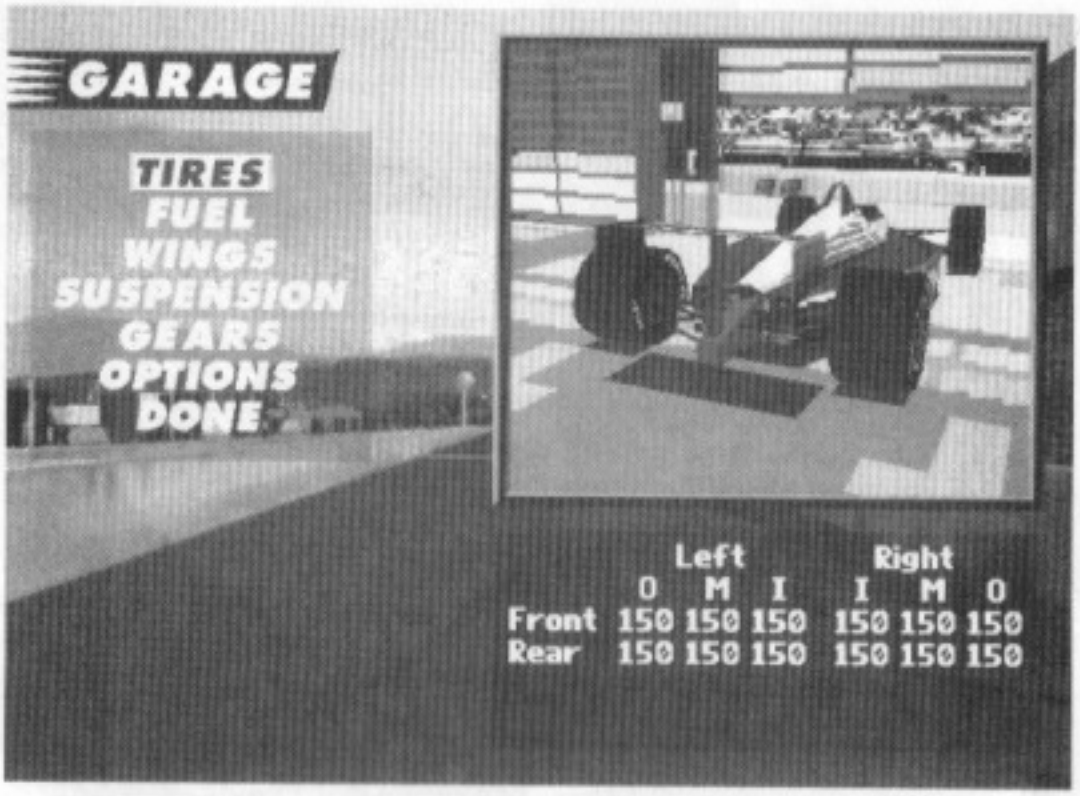
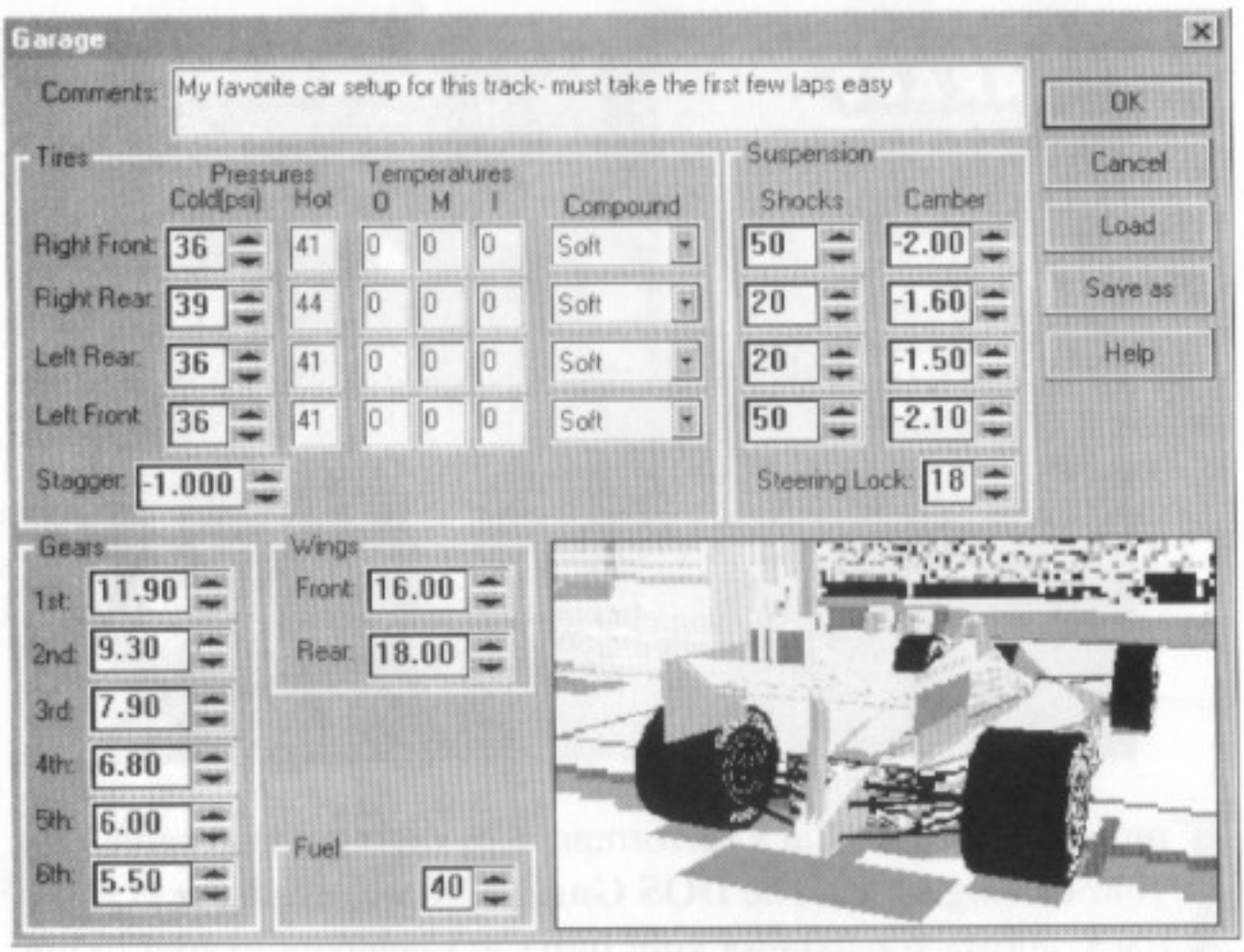
The DOS Garage Menu



Improve your IndyCar's performance by tuning it to complement your driving style. The **DOS Garage Menu**, available at each track, allows you to tailor your IndyCar's behavior to your liking. From this menu, you can:

Adjust Each Tire: Compound, Pressure and Stagger.
Fuel: Choose the amount, to the tenth of a gallon.
Wings: Change your IndyCar's aerodynamics by raising or lowering its wings.
Suspension: Tune each shock absorber, and set the camber for each wheel. Select a steering gear that best handles the corners.
Gear Ratios: Set each gear individually, for maximum speed, acceleration and efficiency.
Options: Use your hard drive to save, load and manage your favorite setups.

Mac/Windows95 Garage Menu



Mac and Windows95 users will choose all car settings from a single menu. Clicking on the up/down arrows beside each item makes incremental changes to car adjustments. You can also type desired values directly into each setting, simply by clicking inside each box containing a setup value; However, manually-entered values that exceed allowed ranges will automatically revert to the original setting.

In addition, you can enter extensive notes about each car setup, making it easy to recall specific characteristics about each setup you have saved.

Tire Compounds

IndyCar tires come in a variety of compounds made for different effects. Softer tires provide the best grip, but at a price of longevity. Tires made from harder compounds will offer less grip but be longer wearing.

In most cases, you'll probably want to mount different compounds on each wheel of your IndyCar. On a speedway for example, you'll only be turning left; therefore your left front tire will undergo very little stress and can probably be a soft compound. Your right front tire would need to withstand the most extreme punishment, and so you'd likely install a hard compound there.

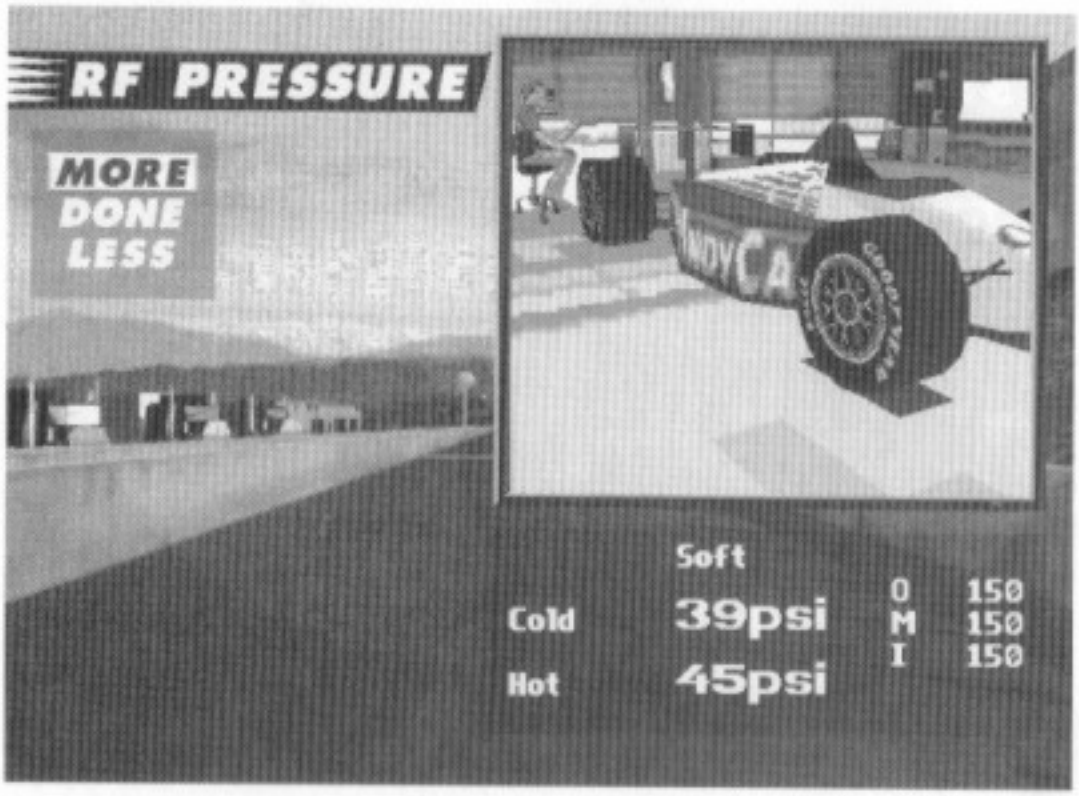
To pick the right compounds for a track, drive some laps and check the tire temperatures of each wheel. If you notice that a tire has become significantly overheated, try replacing it with a harder

compound. Replace tires that are too cold with softer compounds. Keep in mind that your race session compounds need to be long lasting in order to minimize pit stops. On the other hand, your qualifying compounds can afford to be softer, since they only need to last a few laps.

Note: If a tire is too hot and you're already using the hardest compound, you'll have to make other adjustments in the car setup or your driving style to correct the situation.

Remember: Each wheel can have a different compound mounted on it. Drive several practice laps to learn what temperature range each tire is operating in. Choose as soft a compound as possible, while keeping the tire temps in the "safe" range. During races, you can change compounds in the pits if necessary.

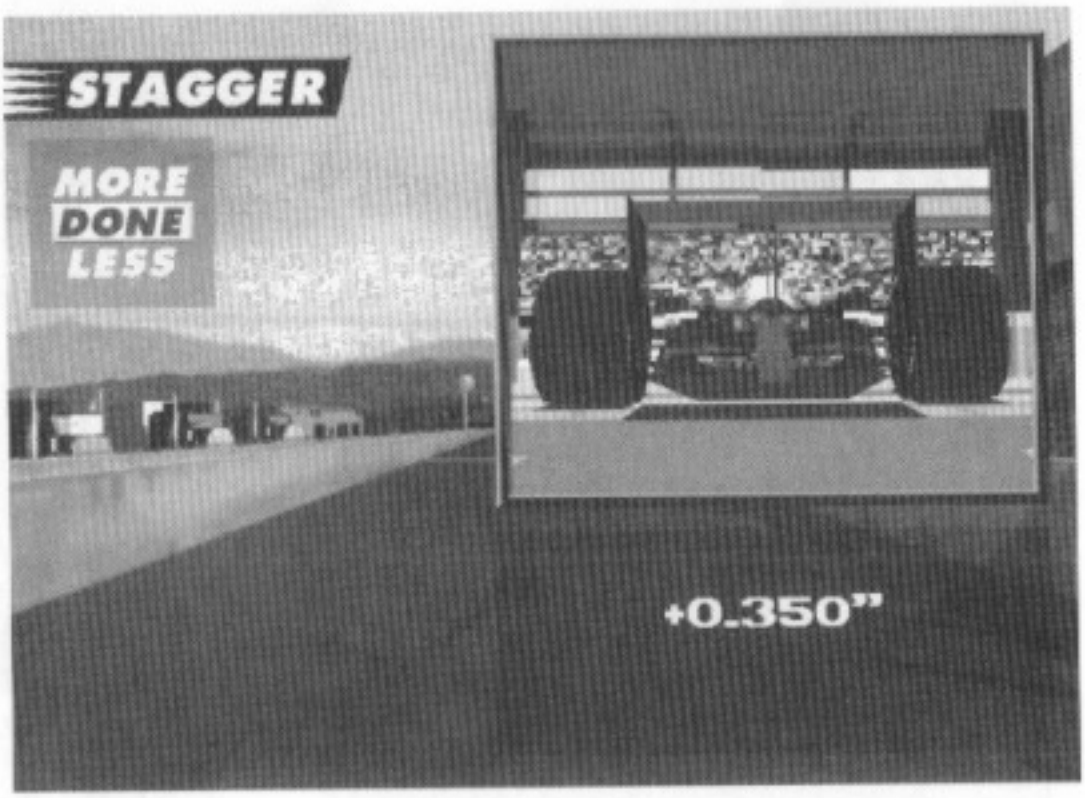
Tire Pressures



IndyCar teams fill their racing tires with nitrogen gas, rather than air. Air is 78% nitrogen gas by volume, but air itself is very inconsistent inside a racing tire. The humidity levels found in compressed air are unreliable. Nitrogen, on the other hand, is very stable and delivers much more accurate readings, whether cold or hot.

As a general rule of thumb, you should adjust the pressure in each wheel to achieve identical temperature readings across the surface of that tire. A tire that yields even temperatures will usually provide maximum grip, because more of the tire is always touching the track. Tires that are overinflated will be hotter in the center, while underinflated tires will tend to be hotter on the edges. Softer compounds that are constantly running too cold can sometimes be warmed by underinflation. Harder compounds that are overheated can sometimes be cooled by overinflation.

Wheel Stagger



On oval tracks, your IndyCar is constantly turning left. As you take each corner, your left side (inside) wheels will turn less revolutions than the right side (outside) wheels. A differential is a gear-driven assembly that allows the inside wheels to rotate at a slower rate than the outside wheels, so both sides of the car work equally. On a race track, however, it is often impractical to have a differential of this type. In the simulation, the differential your IndyCar uses is called a "spool." It is basically a locked differential, providing no assistance in turns.

In order to resolve this issue, IndyCar teams will adjust the "Wheel Stagger." This means that the tires used on the right side of the race car have a bigger diameter than those used on the left side. Increasing the stagger will often help your car in the corners, particularly on the

oval circuits that feature nothing but left-handers. By increasing positive stagger your IndyCar may be easier to drive in the turns. The positive stagger may also cause the car to pull slightly left on straightaways though.

Tire Summary

Tire Compounds: *Softer tires offer more grip, harder tires offer more durability.*

Temperatures: *Even temps all across each tire generally provide the best grip.*

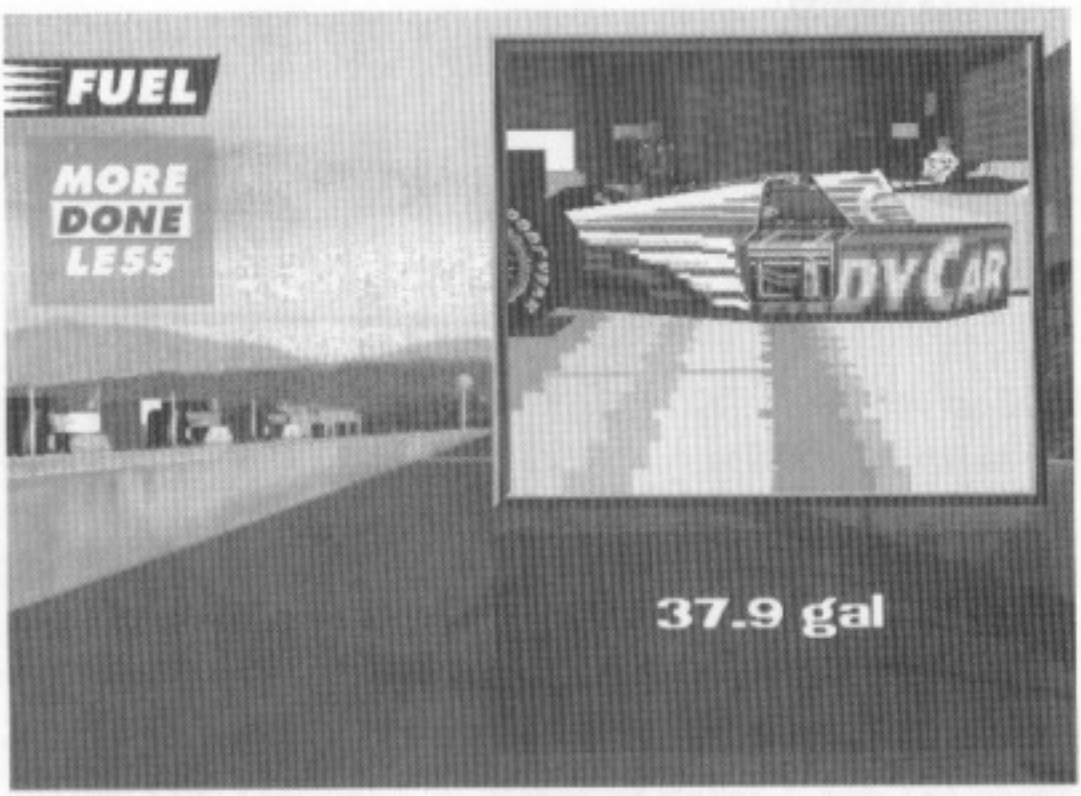
Lower Pressure (Middle Temp Too Low): *Causes the tire surface to "sag," creating more rolling drag and making the tire run hotter. This can be desirable if you're looking for more grip.*

Higher Pressure (Middle Temp Too High): *Causes the tire surface to "crown," slightly increasing the shock rates and making the tire run cooler. This may be desirable if you want a firm, fast tire with less grip.*

Stagger Pros: *Can improve your IndyCar's grip and speed in corners.*

Stagger Cons: *Can pull the car to the left on straights.*

Fueling



Your IndyCar engine consumes methanol fuel rather than gasoline. Methanol is refined methyl, or "wood alcohol." As a racing fuel, methanol provides certain advantages over traditional gasoline. It has a very high flashpoint, so it's less likely to ignite when spilled on a hot engine; and if it does burn, the fire can be extinguished with ordinary water. Methanol fires also produce invisible flames and very little smoke.

The insulated fuel cell is located directly behind the driver's seat, and has a capacity of 40 U.S. gallons. When the tank is full, your IndyCar will tend to "push" and feel sluggish in the corners. As methanol is consumed and the tank empties, your IndyCar will gradually become lighter and faster. Therefore, you should plan to drive conservatively early in races and just after pit stops. Later, as

your IndyCar gets lighter you'll be able to take more risks.

For maximum performance, try to establish the habit of carrying only the amount of fuel needed for certain conditions. Qualifying sessions should be carried out with as little fuel as possible in the tank. Also, when making your final pit stop during races, refuel your IndyCar with only the amount of methanol needed to complete the race.

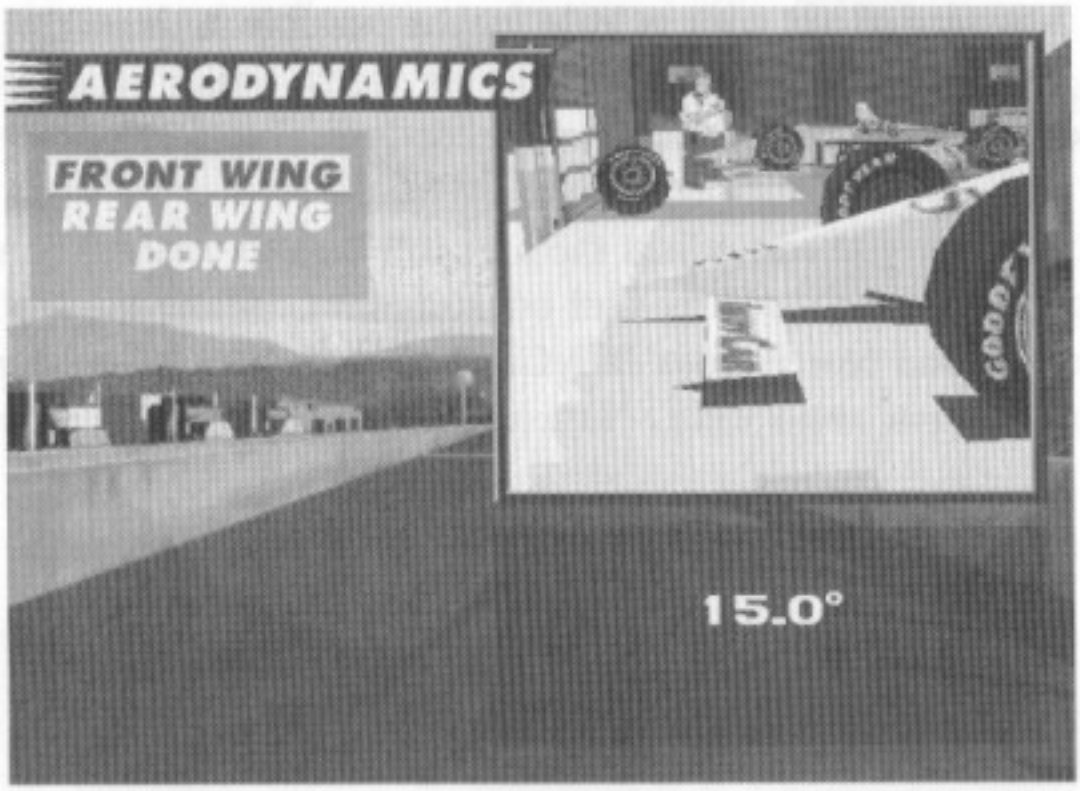
As you drive, you can adjust the anti-roll bars to counter handling changes that are caused by fuel consumption. Make the front bar stiffer than the rear if your IndyCar seems to start "oversteering." Soften the front anti-roll bar if the car gains too much "understeer."

Fuel Summary

Full Tank: Car is heavier. The car will have less top speed and feel sluggish when maneuvering.

Emptier Tank: Top speed increases as the car gets lighter. Be careful not to over-react.

Wing Adjustments



Your IndyCar is equipped with a large rear wing mounted above the rear axle assembly, and a smaller front wing affixed to the nose of the car. These wings work much like the those found on airplanes, except that they are inverted. Instead of generating lift, they produce downforce. The faster your IndyCar goes, the more downforce that results from the wings. As downforce increases, so does something else that slows your IndyCar- drag.

You can adjust the "angle of attack" of the wings on your IndyCar to strike a balance between speed and downforce. This adjustment is performed by raising or lowering the rear edge of either wing, while the front edge remains fixed. By raising the wings, your IndyCar's cornering ability will improve because of the additional downforce. By lowering the wings, your car can drive faster on the straights because there is less drag.

Wings are one of the first places to look when correcting handling problems. If your IndyCar "fishtails," or oversteers in the corners, try raising the rear wing. If your car understeers (doesn't turn sharp enough) in the corners, try adding more front wing.

IndyCar teams employ two different types of wing sets throughout a season. On road courses and short ovals, a bigger, "boxier type" of wing is used to generate maximum downforce. On speedways, smaller, flat wings are used to create less drag.

Wing Adjustment Summary

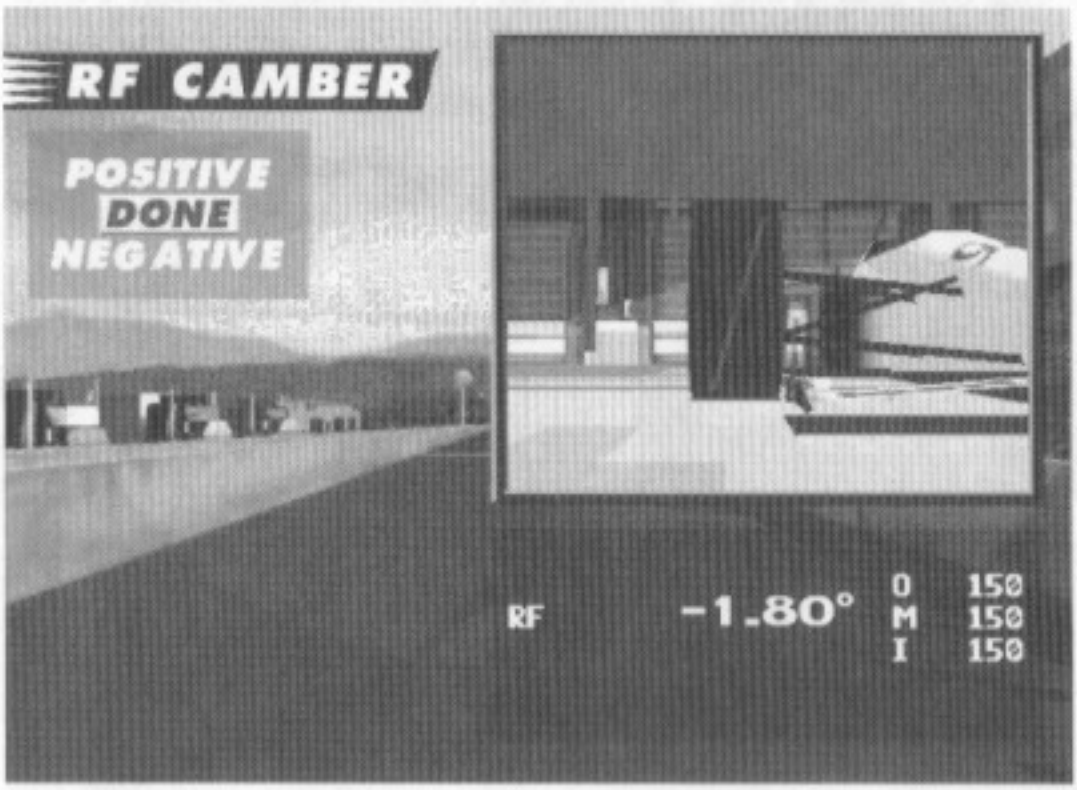
More Front Wing (Raise): Used to correct understeer. Helps the car corner better, but creates more drag.

Less Front Wing (Lower): Reduces drag/downforce up front. The car will have more top speed, but may understeer.

More Rear Wing (Raise): Used to correct oversteer. Keeps the car from "fishtailing" in the turns, but adds drag.

Less Rear Wing (Lower): Reduces drag/downforce at the rear. The car will have more top speed, but may oversteer.

Wheel Camber



Camber is a term that describes the relationship of your wheels with the pavement. A wheel that is zero camber will be perpendicular to the roadway, or in other words, pointing straight up at 90 degrees to the track. When the top of a wheel is tilted closer to the car it is said to be negatively cambered, while tilting the wheel away from the car (outward) is said to be positively cambered.

As you drive your IndyCar around the race track, downforce, track banking and other factors can change the relationship of your wheels with the asphalt. You can counter these changes by individually adjusting the camber of each wheel.

Concentrate on adjusting cambers a wheel at a time. To do so, start by driving some laps at race speed around the chosen track to warm

the tires up. Check for even temperatures across the wheel you are going to adjust; if the outer edge of the tire is significantly hotter than the inner, adjust the wheel's camber in a negative direction. If the inner edge is much hotter than the outer, adjust the wheel's camber in a positive direction. Drive some more laps and continue to check for identical temperatures across each tire; make more camber adjustments as needed.

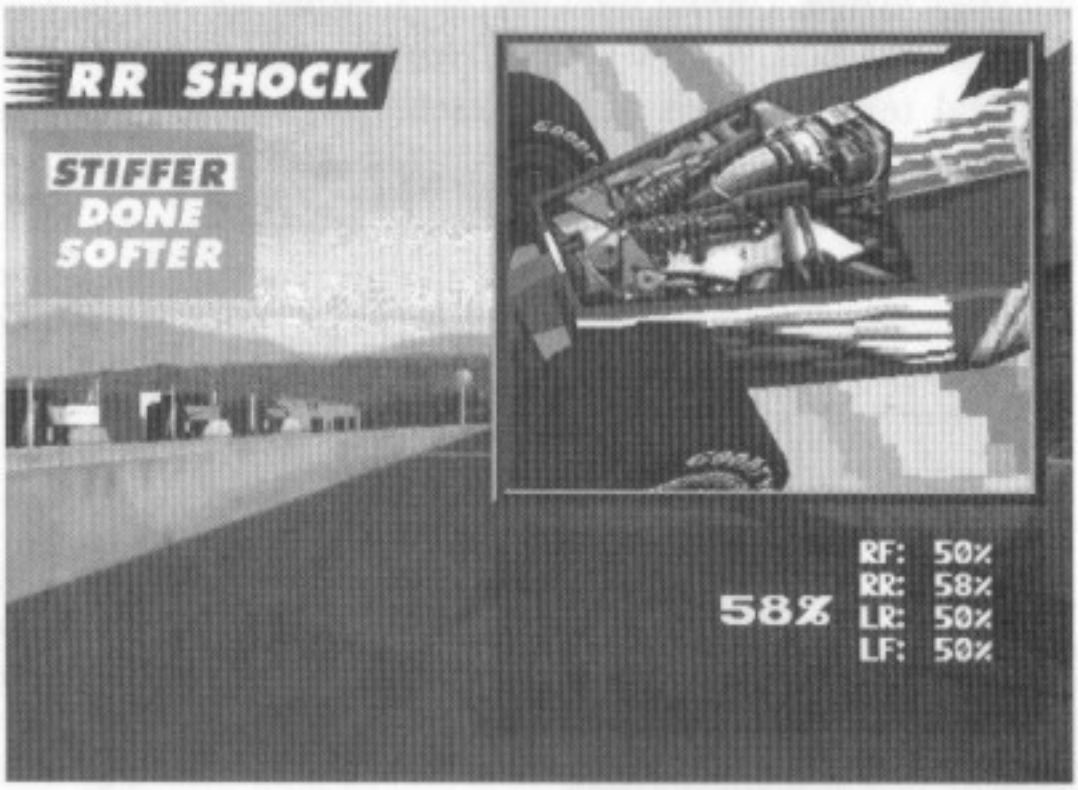
Note: If the inner and outer edges of a tire are relatively close in operating temperature, but the middle temperature varies, adjust the pressure in that tire for correction.

Camber adjustments are made by "shimming" the front wheel uprights. Shims are spacers that are made at different thicknesses. Rear wheel cambers are adjusted by shortening or lengthening the rear-wheel uprights. This is performed by simply rotating the uprights until the desired angle is achieved. These adjustments are somewhat time consuming for an IndyCar team to make; therefore, you cannot have camber adjustments made once a race is begun.

Camber Summary

When properly set, helps each tire heat and wear evenly. This gives the tires better grip.

Shock Absorbers



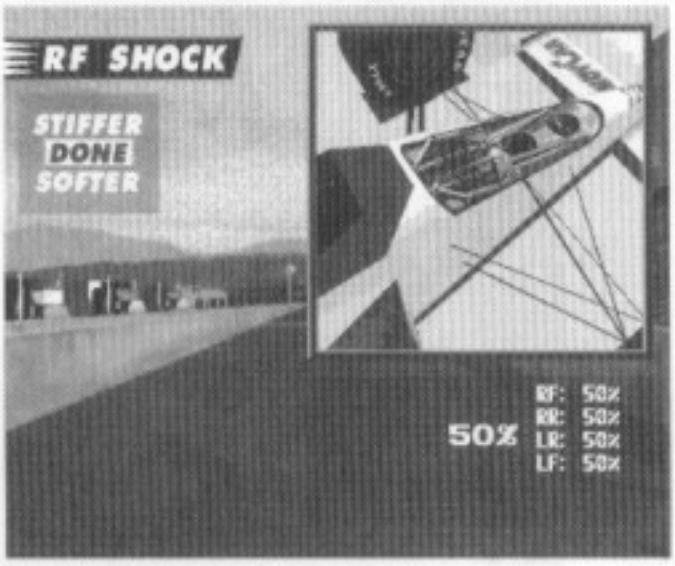
At a complete standstill, the dry weight of your IndyCar is 1,550 lbs. As you drive your car around the track at high speeds, that weight shifts in different directions. Your IndyCar's handling is affected by each of these shifts of weight, also known as "load transfer." As you accelerate, more weight transfers toward the rear of your car. As you brake, more weight transfers toward the front of your car, pressing the nose down. Braking and turning into a right-hand hairpin would shift the load forward and left, while flying around a banked speedway corner (left) would transfer more weight to the right side of your IndyCar.

You can individually adjust the stiffness of each shock absorber on your IndyCar to help cope with these changes in weight. Stiffening one of the shocks on your IndyCar will cause more weight to be transferred at that wheel. Softening one of the shocks can relieve a

heavily loaded wheel, and perhaps help cool down a tire that's getting too hot throughout.

Begin shock adjustments by setting the front shocks up stiffer than the rear. This will make the car understeer, or "push," and initially feel easier to drive. Each shock may be adjusted from 0% (fully soft) to 100% (fully stiff).

Choose **Shocks** from the **Suspension** section of the **Garage Menu**. Select the shock you wish to adjust, and stiffen/soften accordingly. Load some of the other setups (Ace, Fast, Easy, Etc.) and look at the different shock configurations for additional reference.

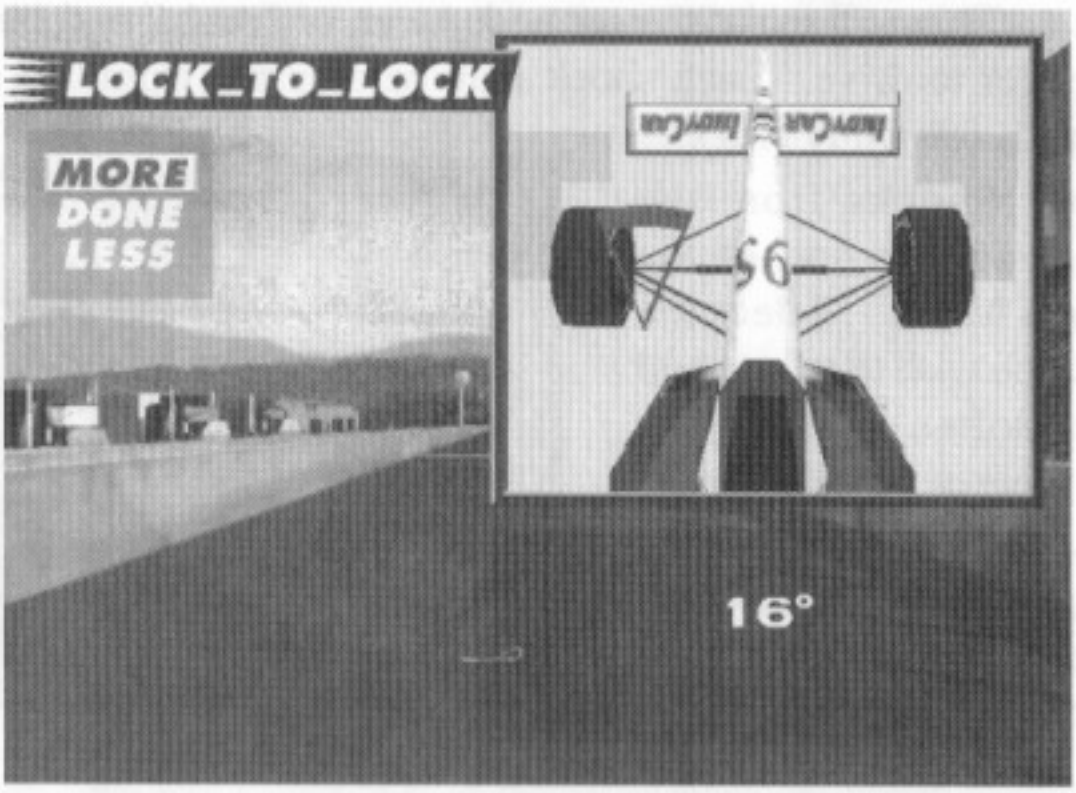


Shock Summary

Stiffer Shock: ***Increases weight transfer at that wheel. Handling becomes more responsive, car can feel a little "slippery" as chassis resets quickly after turns.***

Softer Shock: ***Reduces weight transfer at that wheel. Car becomes less responsive as chassis takes longer to reset after turns. Car may lose some cornering speed while becoming more "forgiving to drive.***

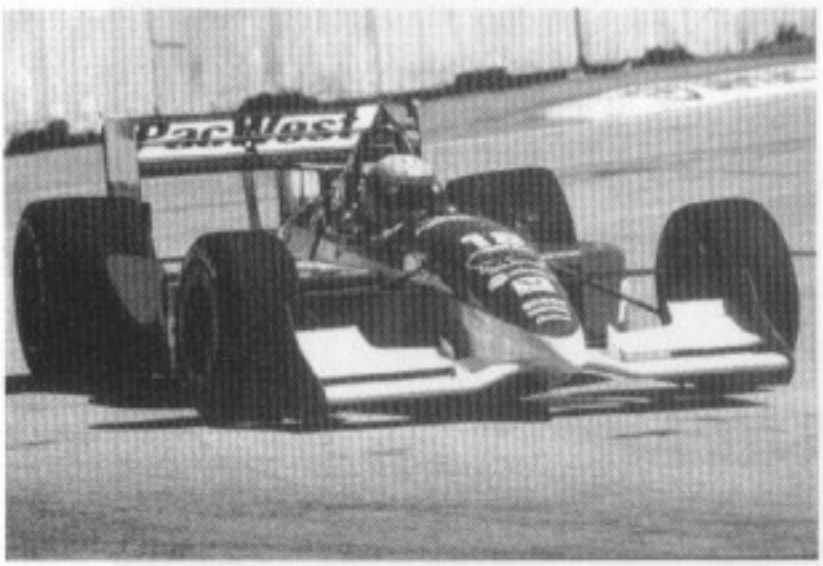
Wheel Lock



Using a higher Wheel Lock (Steering Ratio), your IndyCar will turn sharper. This is very effective for road courses that feature a lot of tight cornering. However, speedways have much shallower turns, and a slight twitch of the wheel could send you off course in the blink of an eye. So, for more control on the ovals you'd probably choose lower Wheel Lock values.

Take the time to choose a Wheel Lock value that's appropriate for the current track. Take the car through the tightest corner on the circuit at below racing speed, and note how much steering it takes to make the turn. If you use every bit of turning radius to barely clear the corner, you're going to need to revisit the garage to increase Wheel Lock.

You might be tempted to correct an oversteer or understeer condition with a wheel lock adjustment, but don't do it! Solve these problems by improving tire, shock, wing or anti-roll bar settings instead. The Wheel Lock (or steering gear) adjustment should only be performed on the basis of giving the driver a comfortable range of steering power to work with.



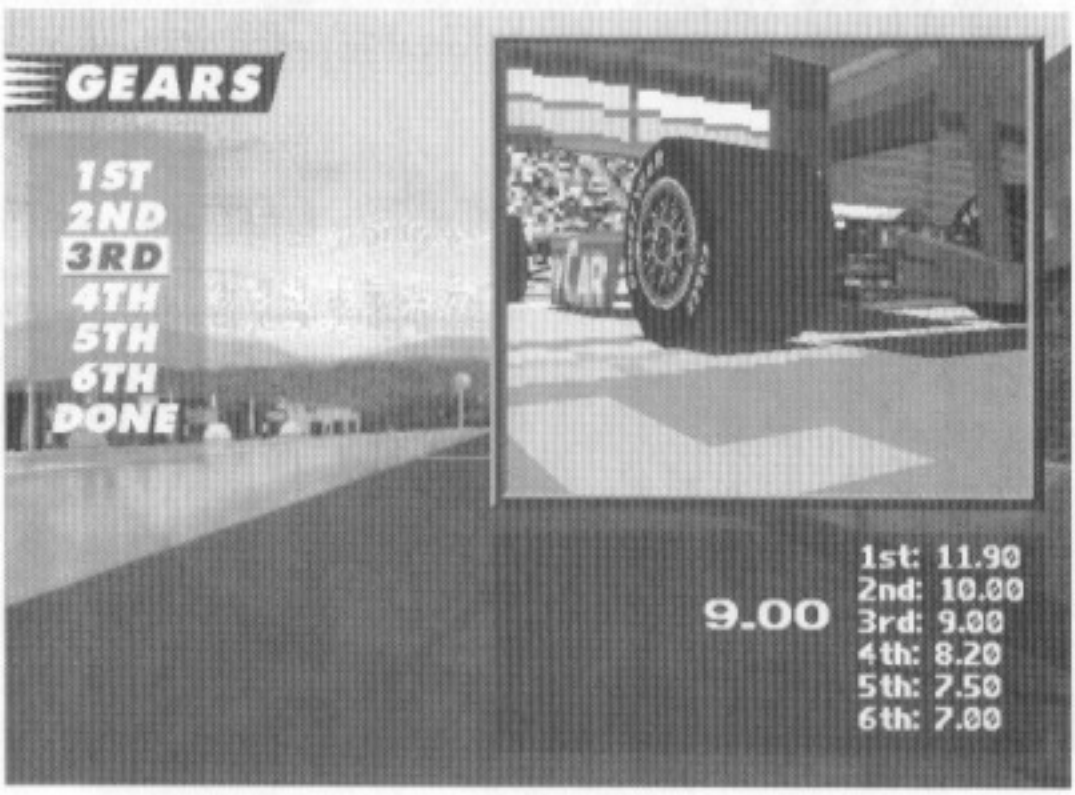
The right wheel lock setting will give you maximum control, but still allow enough range in the steering to get you around the track's tightest corner.

Wheel Lock Summary

More Wheel Lock: Increases turning radius of your IndyCar. Too much wheel lock can cause the driver to over-react, resulting in excessive tire wear.

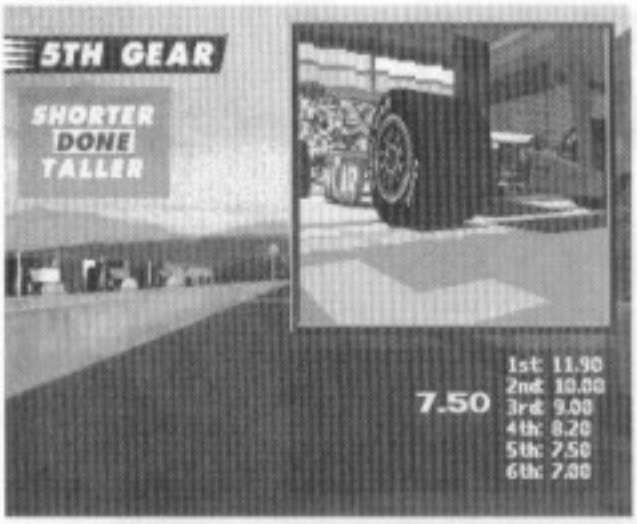
Less Wheel Lock: Decreases your IndyCar's turning radius. Lower wheel lock settings give you more control, but driving with too little wheel lock can be very dangerous.

Gear Ratios



Each race track encountered on the IndyCar circuit places different demands on your car's engine. Successful IndyCar teams must accurately blend acceleration, top speed and fuel economy into their engine program, week in and week out. That's where gear ratios come in. By utilizing different gear combinations in your transmission, you can create a variety of effects to suit the current track and your driving style.

Shorter gears have more teeth and are smaller. This creates more rpm's and better acceleration. Shorter gears can prove very effective on tight, twisty circuits. Taller gears have fewer teeth and a larger diameter. This creates faster top speeds with less acceleration. Taller gears are invaluable on big, high speed ovals like Michigan International Speedway.



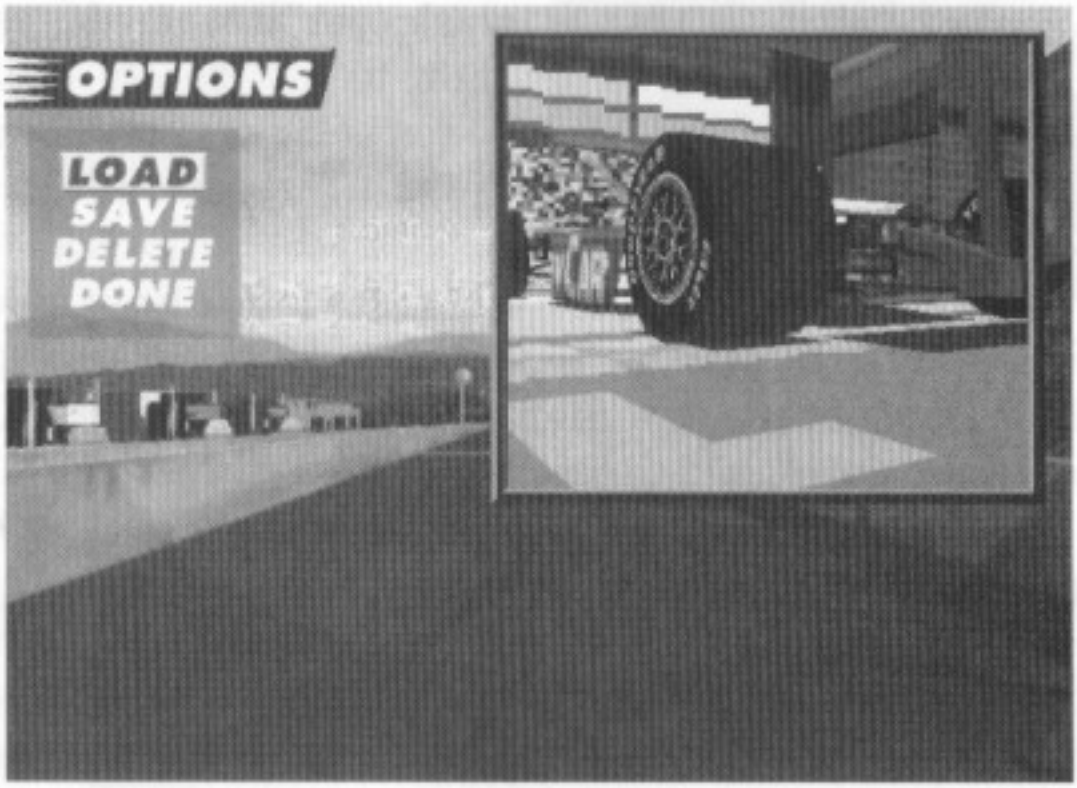
Start by setting up top gear (sixth). Run some test laps to find the longest straight on the track; you'll want the engine light to just barely begin to flicker at the end of this straight. If the light stays on for long periods, you need to choose taller gears. If the light doesn't illuminate at all, try shortening sixth gear until it does. Once you've established top gear, you can choose the other ratios based on your raceday goals. For example, speedways are primarily driven in sixth gear, so you might want to set the other ratios up in 1,000 rpm increments. Some tracks may feature a number of second gear corners, so you may want to pick a ratio for this gear that allows you to get through each of these bends comfortably. Curvy circuits may call for tight gear ratios that allow you to shift up and down throughout the gearbox quickly, without ever building much top speed.

Gear Ratios Summary

Shorter Gear: More rpms/acceleration. Shorter, tighter gearing gets you up to speed quicker. Ideal for tracks that feature a lot of tight turns.

Taller Gear: Slower acceleration, possibly more top speed. If your engine warning light blinks excessively, lengthen the gear ratios.

Garage Options



From the **Garage Menu**, choose **Options** to load, save or delete car setups. Save as many setups to your hard drive as you wish. Each track included with IndyCar Racing II has some predefined setups, ready for use. These are: **Ace** (fastest), **Easy** (slowest), **Fast** (intermediate), and **Qual** (qualifying setup). Choose **Load** from the garage **Options** menu to view the setups that already exist on your hard drive.

All setting files are stored in the subdirectory of the track they belong to. For instance, a setting you create at Michigan, called **MICH233** will not appear in the **Garage/Options/Load Menu** at Mid-Ohio. Setting files are denoted by the .STG extension.

The IndyCar Circuit

"Ride on! Rough-shod if need be, smooth-shod if that will do, but ride on! Ride on over all obstacles, and win the race!"
-Charles Dickens

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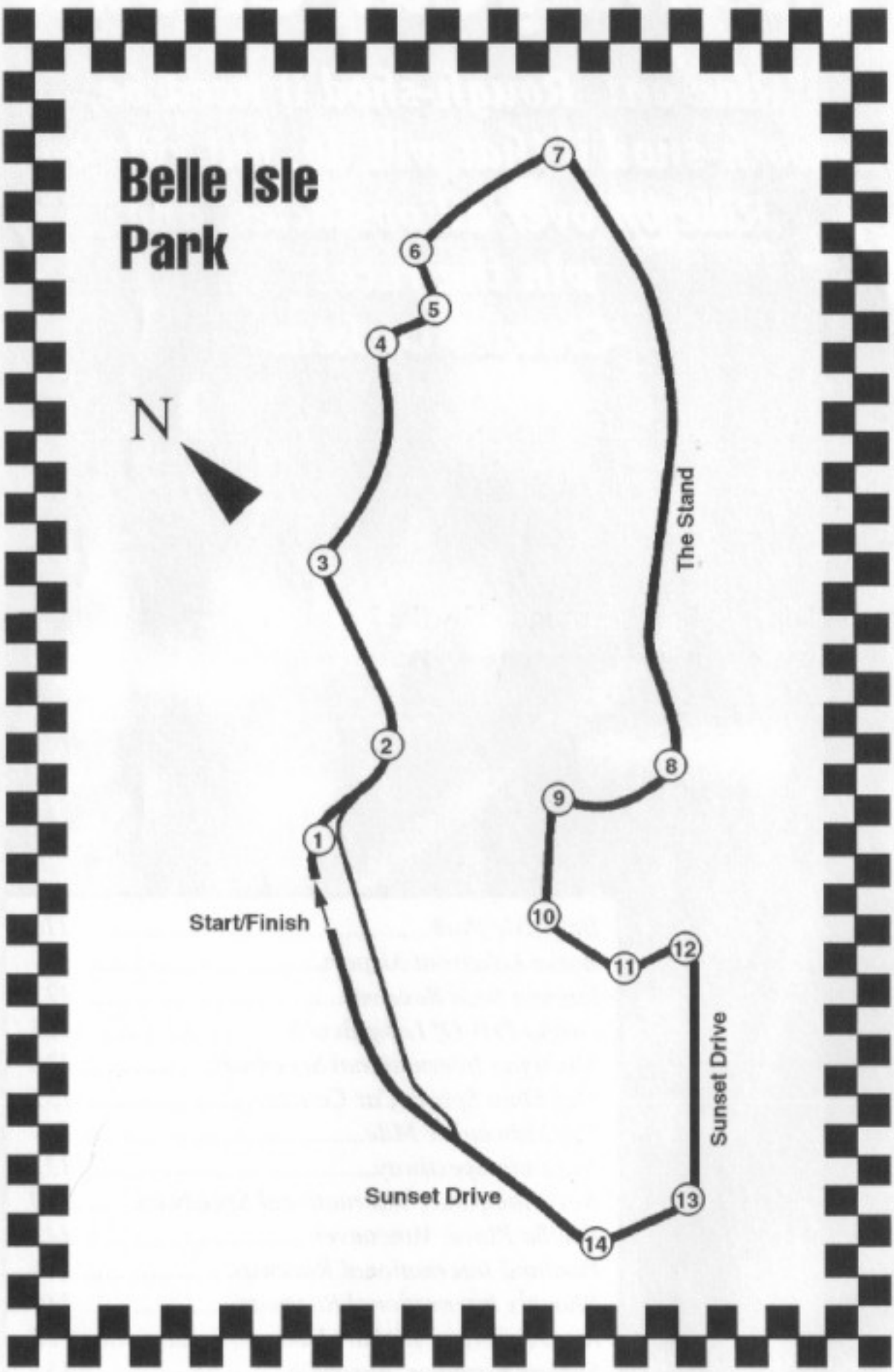
Belle Isle
Park
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8
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12
13
14
The Stand
Start/Finish
Sunset Drive
Sunset Drive

Belle Isle Park
Detroit, Michigan

Circuit Type:	**Temporary Street**
Circuit Length:	**2.1 Miles**
100% Race Length:	**161.7 Miles (77 Laps)**
1995 Race Winner:	**Robby Gordon**

Located on an island surrounded by the Detroit River, Belle Isle Park is a twisty, claustrophobic course. A win on this track will require superb driving skill, and a little bit of racing luck along the way.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: This track is narrow and difficult to overtake on...Cornering speed is the key here, so concentrate on a high downforce setup that allows you to tame the turns...The middle gear ratios should be fairly tight...Choose softer tires for maximum grip...Most of the tighter corners point to the right...The pit lane exit features a tricky right hander, check it out before you race...This is a finesse track, you may want to back the turbocharger down a notch or two...Some of the corners don't have brake markers, so you'll have to use bridges, buildings or track signage for reference...If the weather's too hot, slow down an extra gear in the turns...

From the start/finish line, turn one tends to sneak up quickly thanks to a fast entrance point. This tight right-hander must be taken in first or second gear; as you leave the apex go hard on the accelerator to the entrance of turn two. This corner makes a sweep left and can usually be taken in third gear with little or no braking.

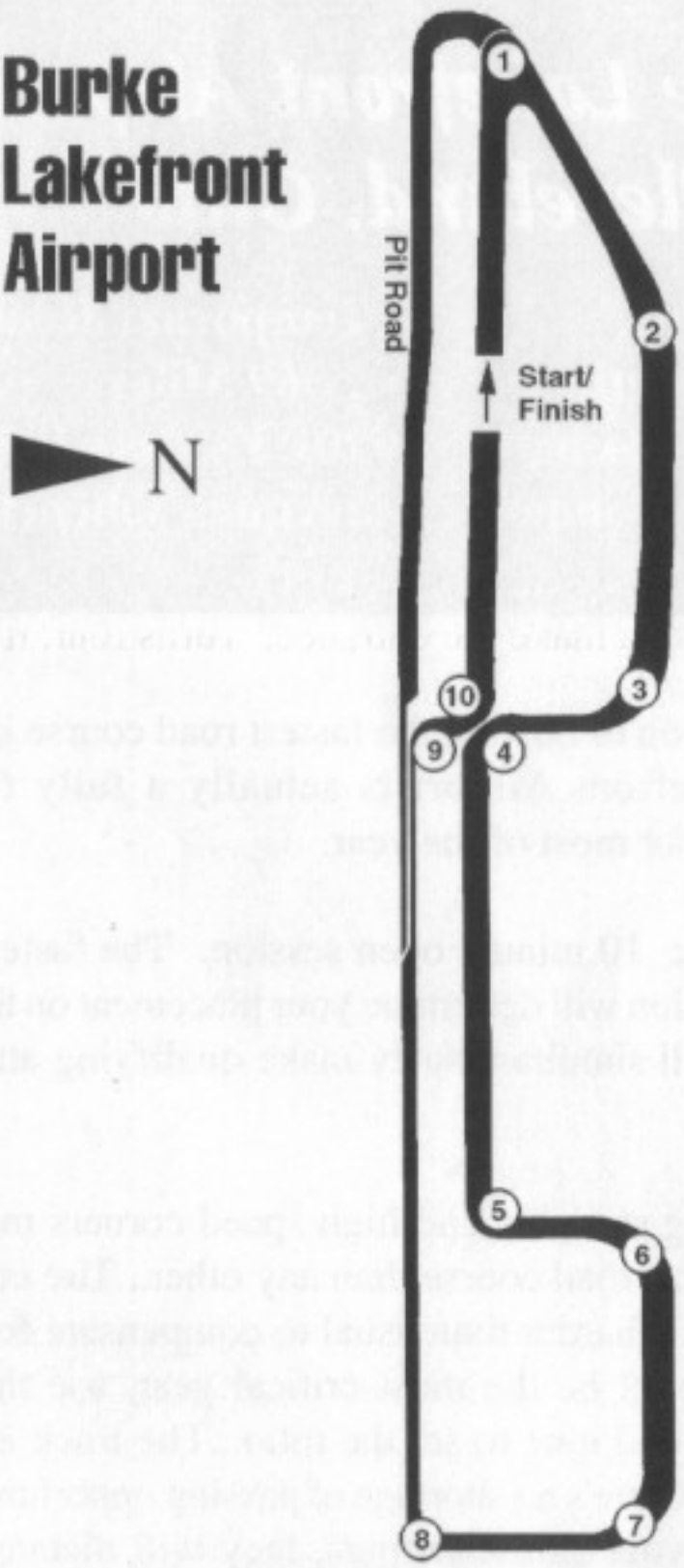
Step up one additional gear out of two before braking for turn three, a sharp right. Using the bridge as a reference point, brake and downshift into first as you enter the turn, but try to maintain high rpms in order to set up for the four-five-six combination.

Out of three, build all the speed you can through the dogleg left leading into turn four. Watch for the brake markers coming up on your left that will guide you into the turn four right-hander. Brake hard and downshift to first as you make the entrance. Turns four, five and six are closely weaved together, and the entire segment can be driven in first gear; work the accelerator between each corner.

As you leave turn six, climb back up the gearbox until you reach turn seven, a harrowing, blind right corner that will severely test your IndyCar's braking power. There are no markers on this turn, so you'll have to develop a feel for how fast you can drive off of six before hitting seven. The seventh corner will force you down to first gear just before hitting the fastest stretch of the course, a couple of long bends into the eighth turn.

The eighth corner is a third-gear right at the casino, while turns nine through eleven take you on a circuitous journey around the corporate suites. All of these corners are of the second or third gear variety, each one gradually getting sharper until you get to twelve, a first-gear hairpin to the right. Begin accelerating hard off of twelve, pausing briefly through turns thirteen and fourteen, two moderate right-handers. Out of fourteen on the main front straight, stay alert! Drivers just ahead may be braking to enter the pits to the right.

Burke Lakefront Airport



Burke Lakefront Airport
Cleveland, Ohio

Circuit Type:	**Temporary Road**
Circuit Length:	**2.369 Miles**
100% Race Length:	**201.37 Miles (85 Laps)**
1995 Race Winner:	**Jacques Villeneuve**

Owning the distinction of hosting the fastest road course in IndyCar racing, Burke Lakefront Airport is actually a fully functional aeronautics facility for most of the year.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: The long straights and high speed corners mean you'll need less wing for this road course than any other...Tire compounds may need to be a little harder than usual to compensate for the high speeds...Sixth gear will be the most critical gear, use the straight between turns eight and nine to set the ratio...The track is virtually flat, and very wide...There's no shortage of passing opportunities...Pay special attention to your shock settings, they will dictate how fast you can get out of the corners and back on the gas...

Cleared and ready for takeoff down runway 24L! Crossing the start/finish line, carry all the speed you can down the front straight into turn one, a very tight right hander. Because the track is so wide, you can downshift to third and still make it around with enough rpms on the tach to have a good run at turn two. The second corner is a shallow right bend that leads you onto runway 6L.

You should be able to continue full acceleration until you reach turn three, a wide ninety-degree right turn. Shift down to second and keep the engine revving high as you steer to the right around three, then to the left around four. Out of the fourth turn, get back on the accelerator.

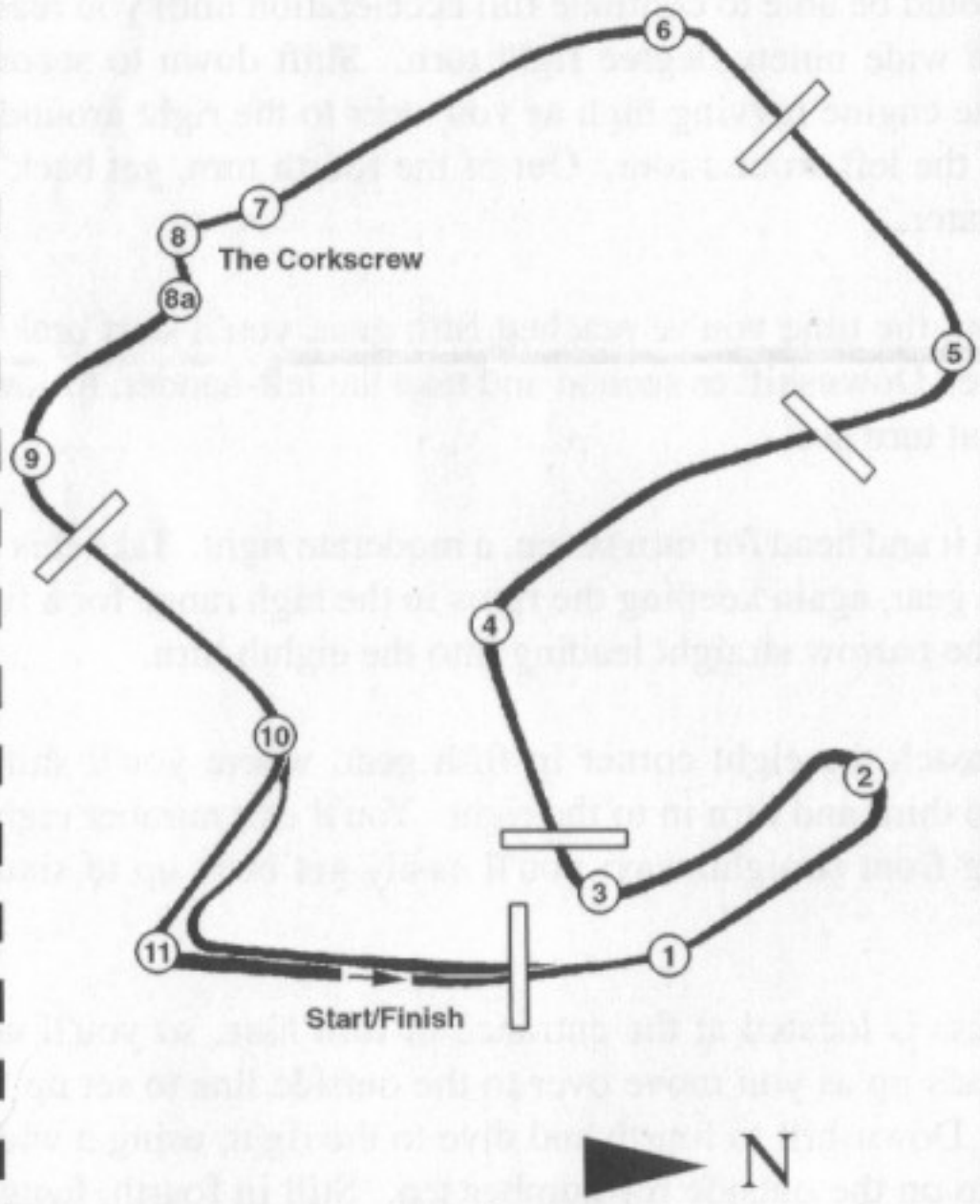
By about the time you've reached fifth gear, you'll start braking for turn five. Downshift to second and take the left-hander, followed by a right at turn six.

Step on it and head for turn seven, a moderate right. Take this corner in third gear, again keeping the rpms in the high range for a fast exit down the narrow straight leading into the eighth turn.

You'll reach the eight corner in fifth gear, where you'll shift back down to third and turn in to the right. You'll exit number eight onto the long front straightaway; you'll easily get back up to sixth gear here.

Pit access is located at the entrance of turn nine, so you'll need to stay heads up as you move over to the outside line to set up for the corner. Downshift to fourth and dive to the right, using a wide turn to set up on the outside for number ten. Still in fourth, hang a left into ten and stab the gas hard to cross the start/finish line.

Laguna Seca Raceway



Laguna Seca Raceway
Monterey, California

Circuit Type:	**Road Course**
Circuit Length:	**2.214 Miles**
100% Race Length:	**185.98 Miles (84 Laps)**
1995 Race Winner:	**Gil de Ferran**

Laguna Seca Raceway is a dedicated racing facility that annually hosts IndyCar, sports car and motorcycle events. The track itself features sudden variances in elevation, high speed corners and hairpins, surrounded by plenty of runoff area.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: This actually tends to be a low downforce track because so much of it is driven at higher speeds...Increase the front wing setting slightly more than the rear to improve cornering performance...Use the front main straight to adjust sixth gear...Most of the tighter corners point left...This track generally requires a mixture of tire compounds, rather than an even set...Try to avoid passing into the Corkscrew, there are plenty of better locations for overtaking at Laguna...

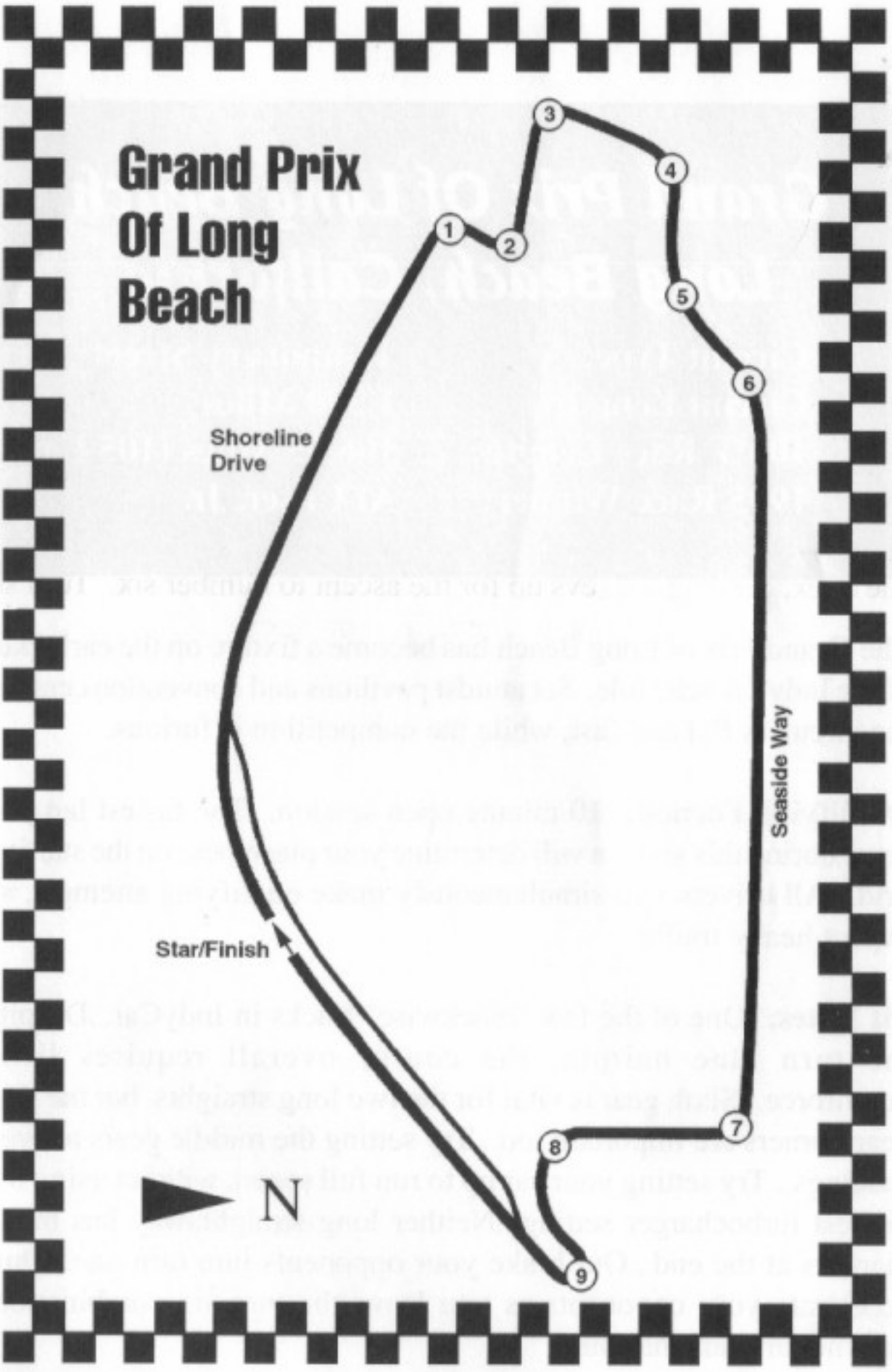
From the start/finish line, the pavement will crest and bend left through turn one, a slight left-hand kink. Exit the corner flat out and move to the right, watching for the turn two brake markers. Downshift to second and work your way around two, a 180 degree hairpin.

You should be able to climb back up to fourth gear before hitting turn three, a sharp right hander that will drop you back into second gear. When you clear the exit, get the car back up to fourth gear before hitting turn four. This corner is a fast bend to the right that only requires a quick lift off the throttle.

Back on the power full out of four, shift up to top gear as the roadway angles to the right, where you'll soon find the next set of brake markers indicating turn five. Downshift to fourth and swing the car left across the apex, keeping the revs up for the ascent to number six. Turn six is similar to five, but not as sharp. Speeding toward six, release the throttle as you go under the bridge, and reapply power only when the corner snaps by. Now you'll begin a high speed ascent, bobbing over two hills. At the peak of the second rise, turn seven blindly veers right, wrapping around a hillside. At the apex of turn seven, you'll need to brake hard and downshift to first or second as you prepare to engage the infamous Corkscrew (turns 8 and 8A).

The Corkscrew is a neurotic 25-foot plunge that demands the utmost care. Using a low gear, you'll dart left then right as you gain momentum on the exit. Fresh out of the Corkscrew, you'll tackle turn nine, a fast left. You'll still be shifting back up as you steer along the outside line, eventually making it back into sixth gear.

Turn ten drives much like turn four: a process of lifting and steering right, letting the car do the work. Just after ten, note the markers on your right and hit the brakes, downshifting quickly to first as you approach the final corner, a hairpin left.


Grand Prix
Of Long
Beach
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Shoreline
Drive
Seaside Way
Star/Finish
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Grand Prix Of Long Beach
Long Beach, California

Circuit Type:	**Temporary Street**
Circuit Length:	**1.590 Miles**
100% Race Length:	**166.95 Miles (105 Laps)**
1995 Race Winner:	**Al Unser, Jr.**

The Grand Prix of Long Beach has become a fixture on the early part of the IndyCar schedule. Set amidst pavilions and convention centers, the circuit is flat and fast, while the competition is furious.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: One of the few "clockwise" tracks in IndyCar...Despite the turn nine hairpin, the course overall requires little downforce...Sixth gear is vital for the two long straights, but the first gear corners are important too...Try setting the middle gears at even spacings...Try setting your car up to run full speed, without using the highest turbocharger setting...Neither long straightaway has brake markers at the end...Out-brake your opponents into turn one...Out-accelerate your opponents as you leave the turn six combination, and the turn nine hairpin...

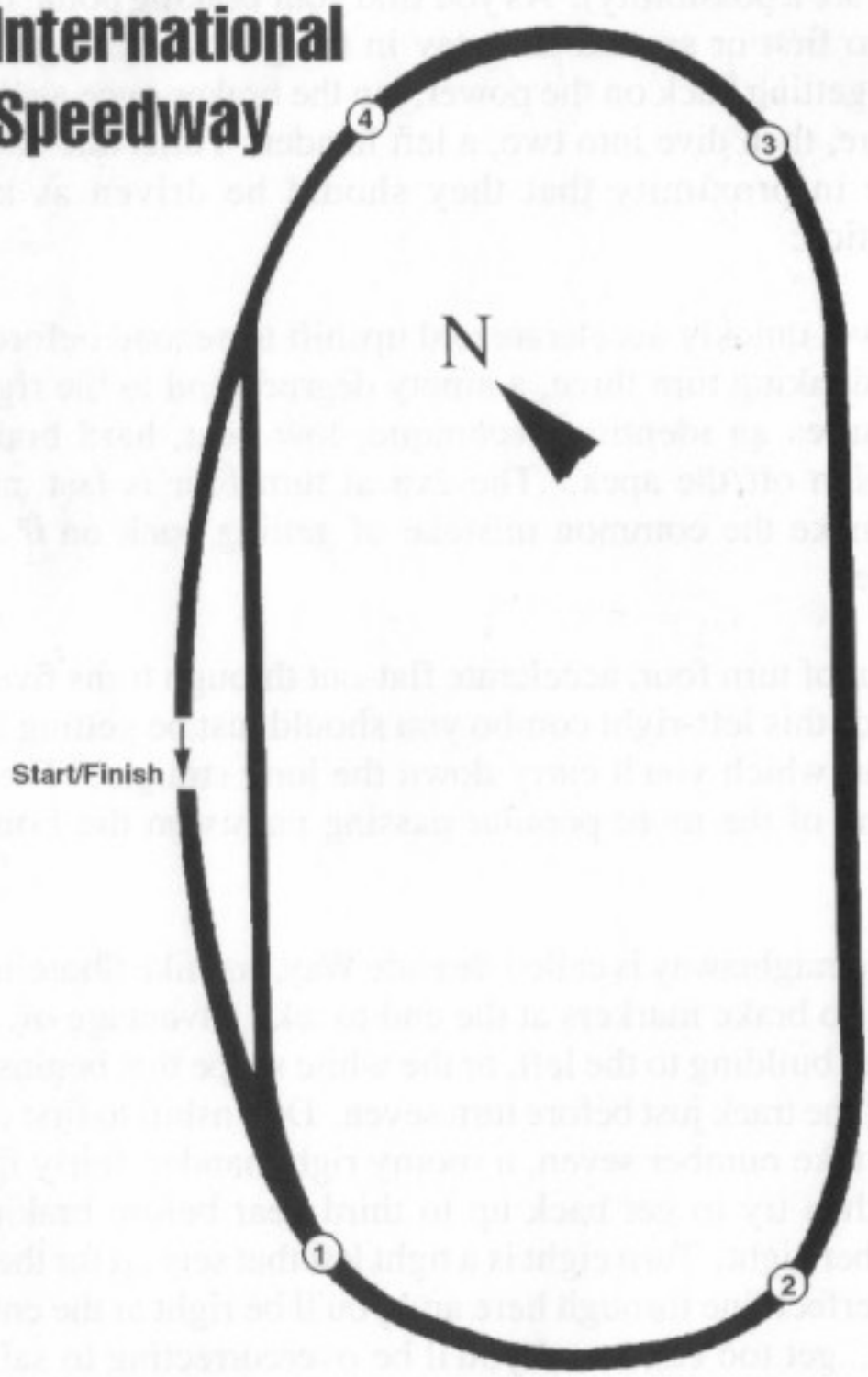
You'll cross the start/finish line at the top of the gearbox on the front straight, known as Shoreline Drive. Near the end of this straight, there are no brake markers so you'll have to find a reference point that will tell you when to begin stopping the car (the grandstands to your left are a possibility). As you find your braking point, downshift rapidly to first or second and stay in the groove through turn one. Without getting back on the power, tap the brakes once again to slow even more, then dive into two, a left hander. Turns one and two are so close in proximity that they should be driven as a smooth combination.

Out of two, quickly accelerate and upshift to second before braking again and taking turn three, a ninety degree bend to the right. Turn four requires an identical technique, low gear, hard braking and acceleration off the apex. The exit at turn four is fast, and many drivers make the common mistake of getting back on the gas too soon here.

Safely out of turn four, accelerate flat-out through turns five and six; as you exit this left-right combo you should just be getting back into sixth gear, which you'll carry down the long straight. The turn six exit is one of the more popular passing points on the Long Beach circuit.

The long straightaway is called Seaside Way, and like Shoreline Drive, there are no brake markers at the end to take advantage of. Instead, use the tall building to the left, or the white stripe that begins near the middle of the track just before turn seven. Downshift to first or second gear and take number seven, a roomy right hander, fairly fast. Exit cleanly, then try to get back up to third gear before braking again into number eight. Turn eight is a tight left that sets up for the hairpin; carve a perfect line through here and you'll be right at the entrance to turn nine...get too eager and you'll be overcorrecting to salvage the lap. Take turn eight in first gear, then slow further around the hairpin. Be patient in turn nine, waiting until you've safely cleared the apex before stepping back on the accelerator to rush down Seaside Way.

Michigan International Speedway



Michigan International Speedway
Brooklyn, Michigan

Circuit Type:	**Super Speedway**
Circuit Length:	**2 Miles**
100% Race Length:	**500 Miles (250 Laps)**
1995 Race Winner:	**Scott Pruett**

Michigan International Speedway owns the distinction of being the fastest race track in North America. The corners feature 18 degree banking, and the surface itself is very wide.

Qualifying Format: 2 Laps. Each qualifying attempt consists of two warm-up laps, followed by two timed laps. The faster of the two timed laps will determine your placement on the starting grid.

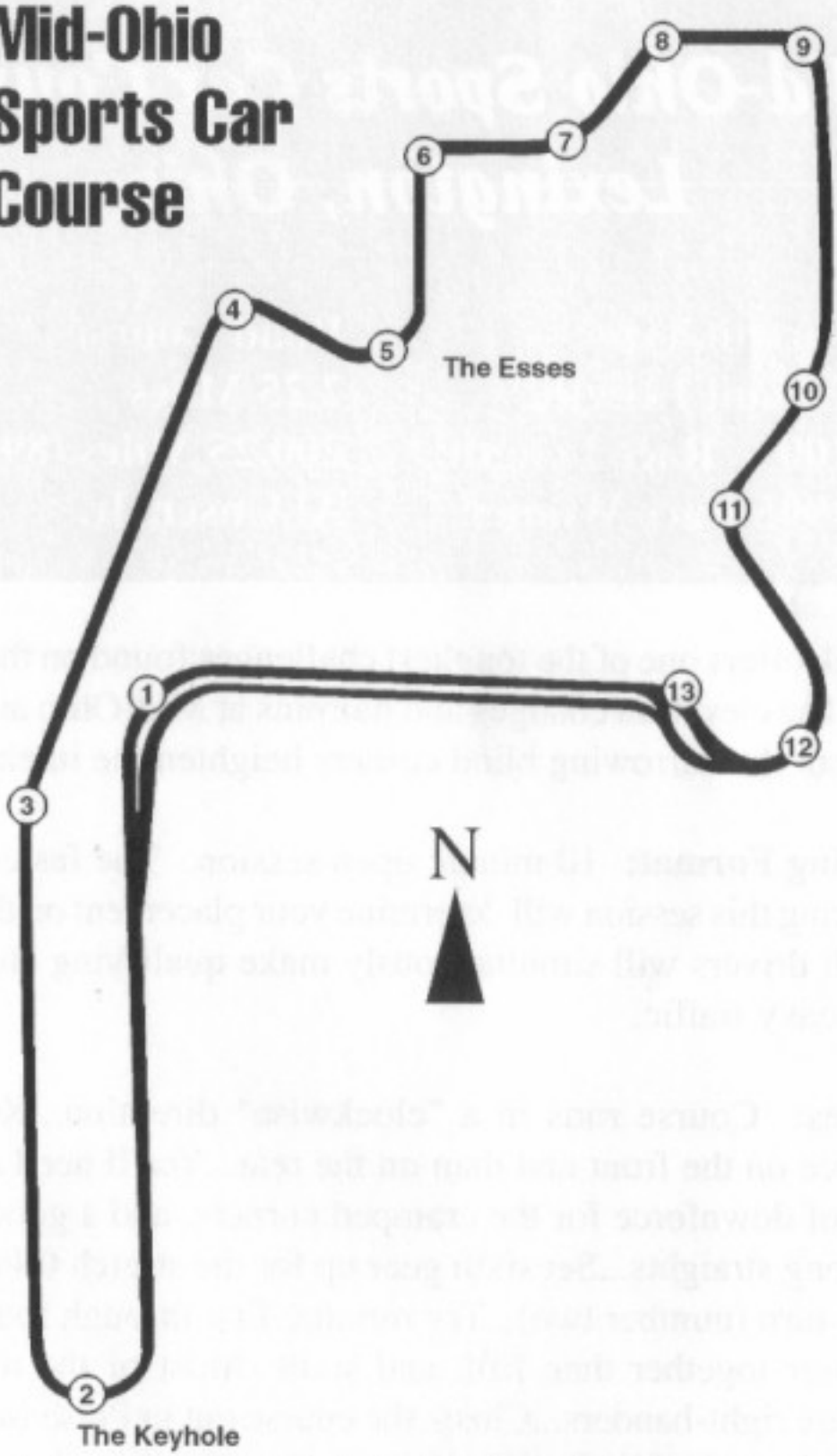
Pit Notes: Very little downforce is needed, thanks to the steep banking...Once up to speed, you'll remain in sixth gear exclusively...Tighten the other gear ratios to stay quick on the restarts...Stiffen the suspension on the left side of the car...Your left front tire will undergo much less stress than the other tires, and you may be able to save time in the pits by not changing it as often...A great drafting track...Coming off the track to enter the pits can be very tricky here, because of the high speeds...Remember the pit road speed limit...

Michigan is a "D" shaped oval, featuring a curved front straight. With a proper setup, the entire track can easily be driven flat out. Beginning at the start/finish line, stay near the middle of the track as you enter turn one. The curvature of the track may cause rookie drivers to enter this turn too early, so try and avoid this mistake. Drive a single, smooth line through turns one and two. If you have to pass slower traffic, stay to the inside and take the lower line through.

Unlike the front straightaway which is curved, the back stretch is straight. This is a good opportunity to execute a passing maneuver or look over your instruments. Turns three and four can be handled in the same fashion as turns one and two, with one major exception- the pit lane. Traffic in front here can often be unpredictable, so it's a good idea to work the middle or outside lanes of the track through this area. Colliding with an opponent who has slowed to enter the pit will most assuredly bring an immediate end to your race day.

Along the arcing front straight, keep the car in the center to drive the cleanest line back to the flagstand.

Mid-Ohio Sports Car Course



Mid-Ohio Sports Car Course
Lexington, Ohio

Circuit Type:	**Road Course**
Circuit Length:	**2.25 Miles**
100% Race Length:	**200.25 Miles (89 Laps)**
1995 Race Winner:	**Al Unser, Jr.**

This track offers one of the toughest challenges found on the IndyCar circuit. The elevation changes and hairpins at Mid-Ohio are difficult at best, but the harrowing blind corners heighten the intensity.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: Course runs in a "clockwise" direction...Keep more downforce on the front end than on the rear...You'll need a medium amount of downforce for the cramped corners, and a good top gear for the long straights...Set sixth gear up for the stretch following the Keyhole turn (number two)...Try running first through fourth gear a little closer together than fifth and sixth...Most of the really tight corners are right-handers...Check the course out in Preseason Testing to learn where the blind corners are...

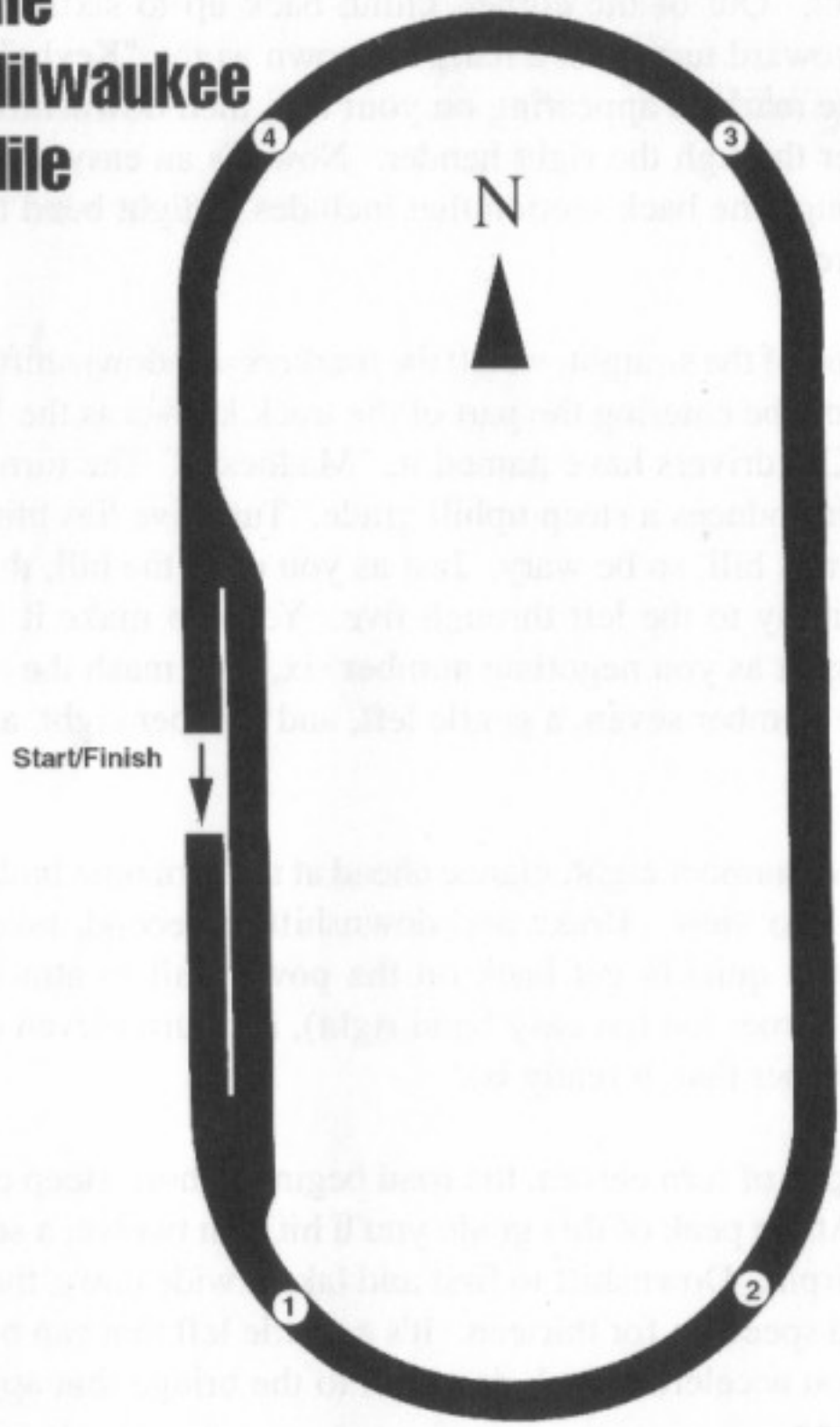
From the start/finish line, brake and downshift to second as you cross under the bridge and arrive at turn one, a left-hander that leads onto a straight. Out of the corner, climb back up to sixth gear as you ascend toward turn two, a hairpin known as the "Keyhole." Watch for brake markers appearing on your left, then downshift to second and steer through the right hander. Now it's an easy, fast downhill run through the back section that includes a slight bend to the right (turn three).

At the end of the straight, watch the markers and downshift to second. You'll now be entering the part of the track known as the "Esses," or as IndyCar drivers have named it, "Madness!" The turn four right hander introduces a steep uphill grade. Turn five lies blindly at the peak of this hill, so be wary. Just as you crest the hill, the roadway jerks sharply to the left through five. You can make it back up to second gear as you negotiate number six, then mash the accelerator and take number seven, a gentle left, and number eight, a soft right, full out.

Just out of number eight, glance ahead at the turn nine brake markers coming into view. Brake and downshift to second, take the right hander and quickly get back on the power full to attack the next section, corner ten (an easy bend right), and turn eleven (a left that looks sharper than it really is).

At the apex of turn eleven, the road begins a short, steep climb once again. At the peak of this grade you'll hit turn twelve, a severe right hand hairpin. Downshift to first and take a wide entry, then clip the apex and speed on for thirteen. It's a gentle left that can be taken all out as you accelerate back downhill to the bridge that apprises you of turn one.

The Milwaukee Mile



The Milwaukee Mile
Milwaukee, Wisconsin

Circuit Type:	**Short Oval**
Circuit Length:	**1 Mile**
100% Race Length:	**200 Miles (200 Laps)**
1995 Race Winner:	**Paul Tracy**

The Milwaukee Mile was originally constructed as a dirt track for horse racing. Now sporting a concrete surface, the four turns are slightly banked at 9 degrees. IndyCar races have been hosted by this venue now for seven decades.

Qualifying Format: 2 Laps. Each qualifying attempt consists of two warm-up laps, followed by two timed laps. The faster of the two timed laps will determine your placement on the starting grid.

Pit Notes: Downforce and gear ratios must coincide in order to have the "car to beat" here...Make sure the engine light stays off until you reach the end of each straight...Cars tend to understeer through turns three and four early; you can combat this by reducing the turbocharger and stiffening the rear anti-roll bar until the tires warm up...Once the car is up to race speed, avoid screeching the tires in the corners...Entering the pits requires a very tricky move to the inside...It's very easy to go a lap down while sitting on pit road here; try to stay in pitting sequence with the other drivers.

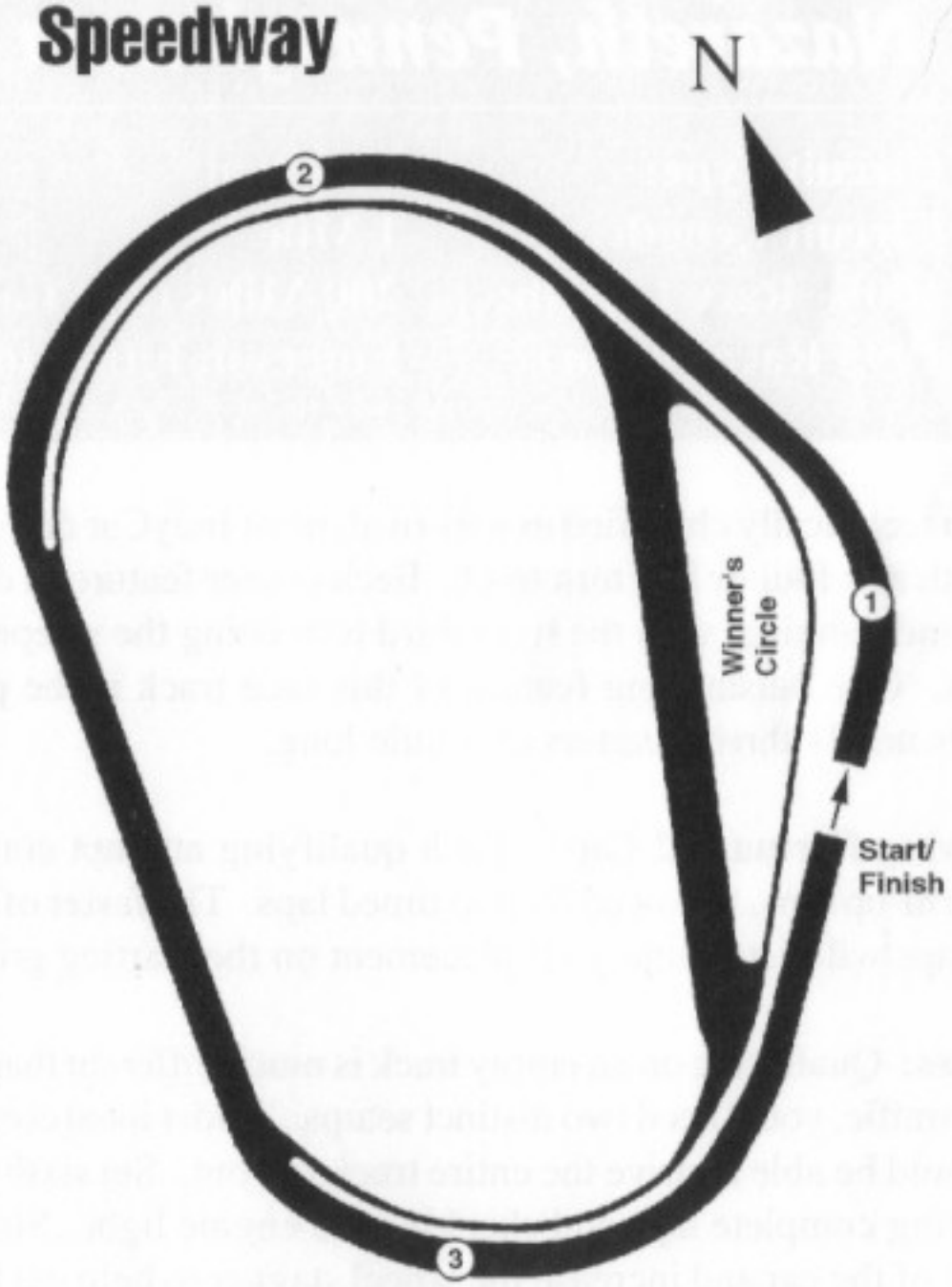
The key to a fast lap at Milwaukee is in developing a car setup that will allow you to run flat out while staying low in the corners. The wider line is the slower line here and should only be used to avoid traffic ahead.

From the start/finish stripe, try to command the centerline of the track as you setup for turn one. Assuming no cars are leaving the pit lane to your left, dip low just when the track begins curving. Cut sharply across the inside, and stay low all the way around the corner until you exit on the back stretch.

Along the straight, set the car up wide again and prepare to enter turns three and four. Once again, make a late entry and dive to the inside lane. Watch for cars ducking into the pit lane here just ahead. If traffic permits, hug the inside line all the way around the turn until you exit off of four.

The turn four exit will really show you what kind of car you've got. A car that still needs some tweaking will understeer through this corner and get very close to the outside wall at the exit. A properly dialed in race car will easily stay low until the turn is safely completed.

Nazareth Speedway



Nazareth Speedway
Nazareth, Pennsylvania

Circuit Type:	**Tri-Oval**
Circuit Length:	**1 Mile**
100% Race Length:	**200 Miles (200 Laps)**
1995 Race Winner:	**Emerson Fittipaldi**

Though technically classified as a tri-oval, most IndyCar drivers view Nazareth as a four or five turn track. Each corner features a different radius and banking, with the tight third turn being the steepest at 10 degrees. One outstanding feature of this race track is the pit lane, which is nearly three-quarters of a mile long.

Qualifying Format: 2 Laps. Each qualifying attempt consists of two warm-up laps, followed by two timed laps. The faster of the two timed laps will determine your placement on the starting grid.

Pit Notes: Qualifying on an empty track is much different than racing against traffic, you'll need two distinct setups...Under ideal conditions, you should be able to drive the entire track flat out...Set sixth gear up by running complete laps and checking the engine light...Stiffen the left side of the car and increase the wheel stagger to help get through the corners...The most difficult area of the track to overtake on is the entrance to turn three...Don't overcook it on the pit lane, the turns are narrow on each end...The pit entrance and exit are nearly side-by-side, so watch for traffic coming in as you leave the pits on the back straight...

Just after you cross the start/finish stripe, you'll enter turn one. It is the shallowest bend at Nazareth, and requires very little movement of the steering wheel to get through. This area of the track experiences quite a lot of passing, so keeping your car low in turn one may be wise.

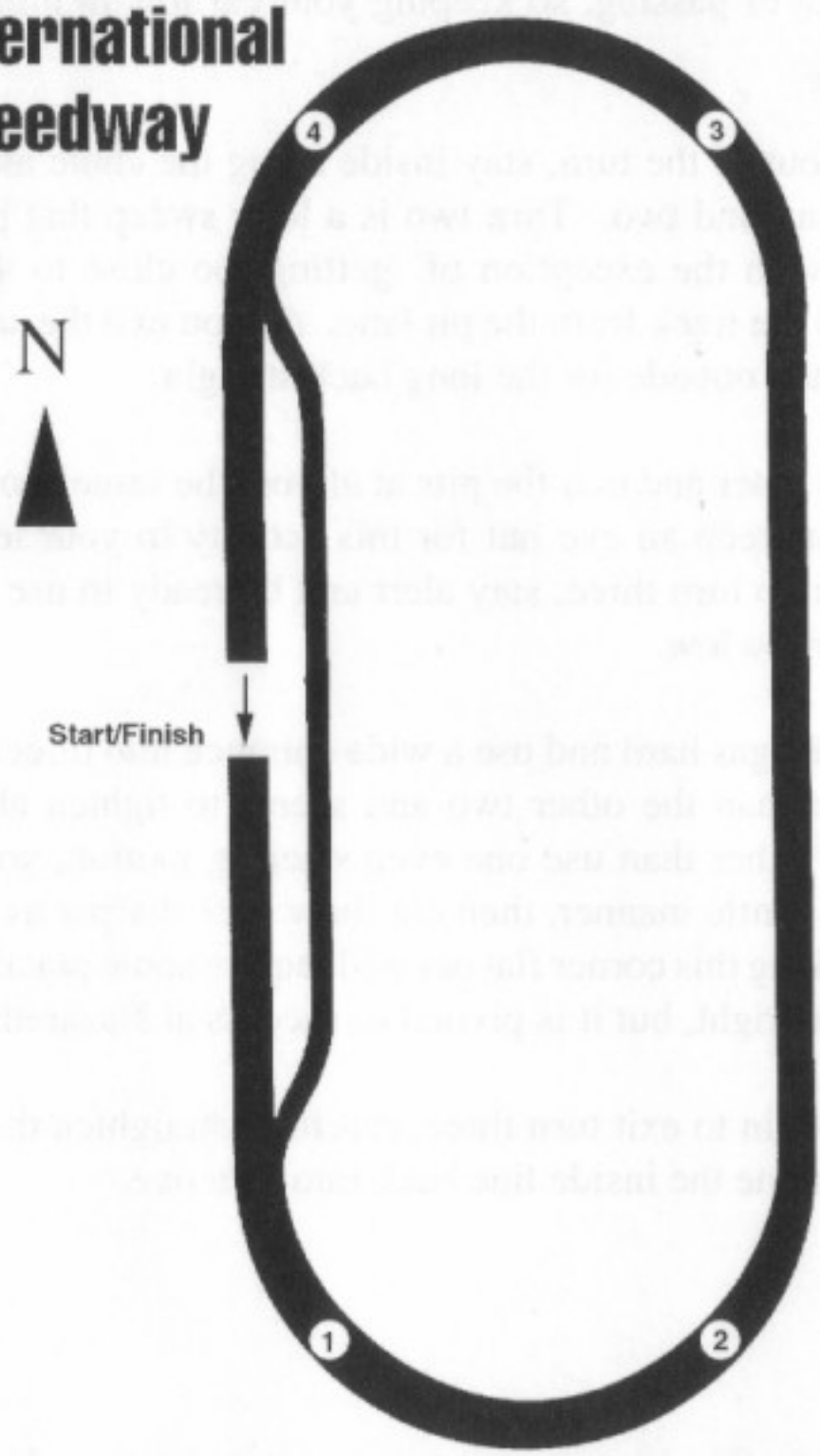
Coming out of the turn, stay inside along the chute and maintain a low line around two. Turn two is a long sweep that presents little trouble, with the exception of getting too close to the grass that separates the track from the pit lane. As you exit the second corner, move to the outside for the long back straight.

Cars will enter and exit the pits at almost the same spot on the back stretch, so keep an eye out for this activity to your left. If you're drafting into turn three, stay alert and be ready to use the brakes if you enter too low.

Stay on the gas hard and use a wide entrance into three. This corner is steeper than the other two and seems to tighten about halfway through; rather than use one even steering motion, you'll enter the turn in a gentle manner, then cut the wheel sharper as you near the apex. Taking this corner flat out will require some practice and warm tires to get right, but it is pivotal to success at Nazareth.

As you begin to exit turn three, carefully straighten the wheel back out to assume the inside line back into turn one.

New Hampshire International Speedway



New Hampshire International Speedway
Loudon, New Hampshire

Circuit Type:	**Short Oval**
Circuit Length:	**1.058 Miles**
100% Race Length:	**211.6 Miles (200 Laps)**
1995 Race Winner:	**Andre Ribeiro**

Located in Loudon, New Hampshire, this raceway is one of the newer facilities on the IndyCar schedule. The narrow corners are banked at 12 degrees, but the oval itself features plenty of "three-wide" racing.

Qualifying Format: 2 Laps. Each qualifying attempt consists of two warm-up laps, followed by two timed laps. The faster of the two timed laps will determine your placement on the starting grid.

Pit Notes: Try medium wing settings, with a bit more downforce at the front of the car...Another track that can be driven flat out with the proper setup...Set sixth gear up so that the engine light just begins to flicker at the end of each straight...Stiffen the left side suspension...Your left front tire will suffer the least amount of wear; avoid changing it until necessary...Once the car is warmed up, don't let the tires screech through the corners; if they do, head back to the garage for an adjustment...Try to control the inside groove of the track as often as possible; the wide line is less efficient...

Going flat out across the start/finish line, move to the outside of the track. This not only positions you for a good run into turn one, it will also help avoid conflicts with cars coming out of the pit lane.

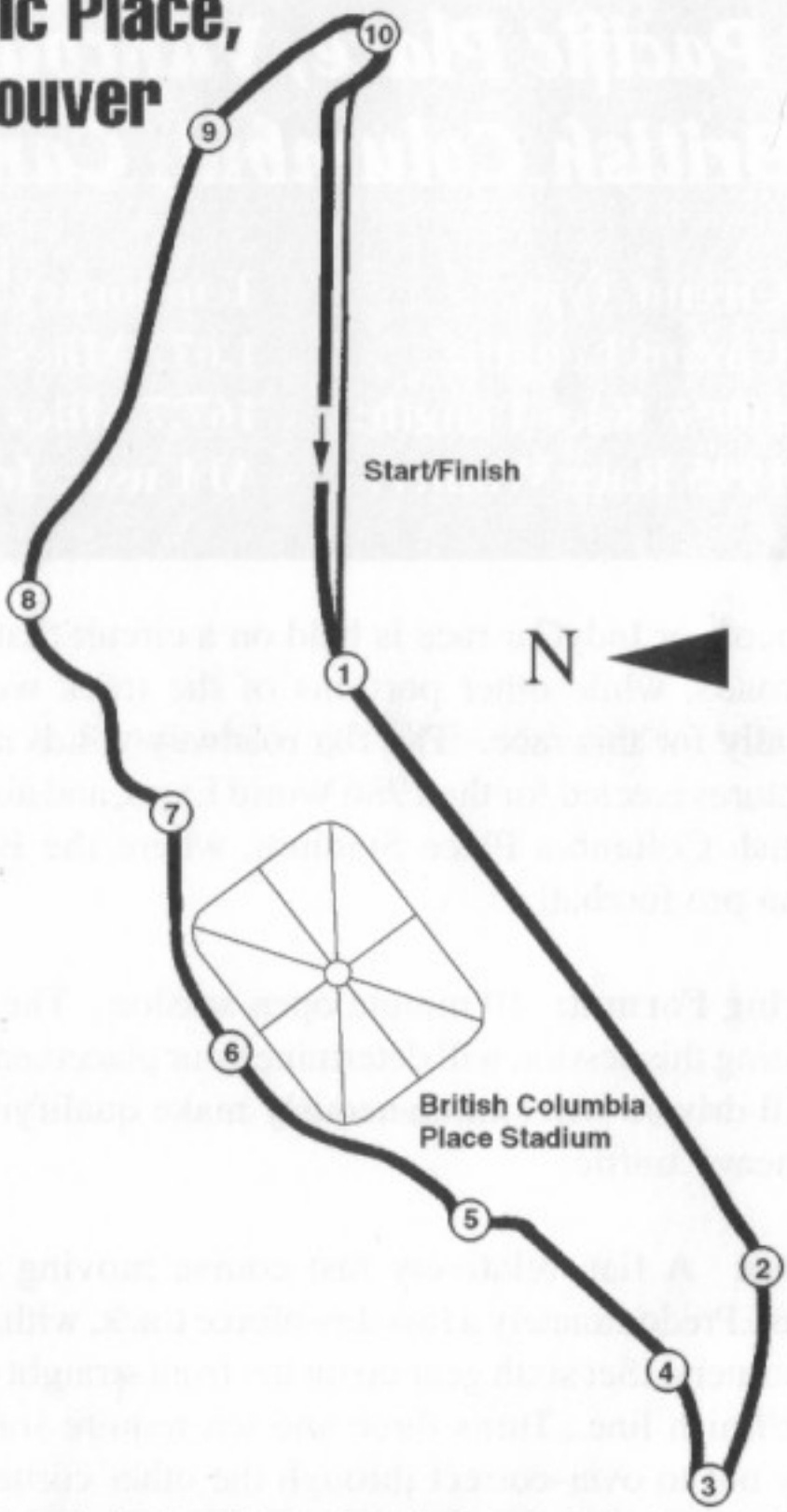
With warm tires and a good setup, almost any line through the corners can be driven, but the inside path generally yields the quickest times. Just remember to try and "round out" the corners as much as possible. Keeping your foot firmly on the gas, knife down low into the groove as you enter turn one. Your left front tire should be just along the safety stripe.

In the early laps, your car may tend to "push" (understeer) wide through turn two, but when the tires begin to build some heat you'll easily be able to stay low.

As you exit off of the second corner, check your car's vital signs and move back to the outside, traffic permitting. Entering turn three too low could spell trouble, since pitting cars will use that line and there's not much room down there already. Enter wide instead, then clip the apex low if you've got a clear shot.

Perhaps the most common error made at New Hampshire involves the turn four exit. This area tends to be congested with traffic, and the wall at the exit is closer than it looks. This is the worst place on the track to bang a wheel into the barrier, since you'd have to limp a full lap around to access the pit lane. Avoid a brush with the outside wall here by using a narrow angle off the turn. When you're safely out on the front straight, gently bring the car back to the outside.

Pacific Place, Vancouver



Pacific Place, Vancouver British Columbia, Canada

Circuit Type:	**Temporary Street**
Circuit Length:	**1.677 Miles**
100% Race Length:	**167.7 Miles (100 Laps)**
1995 Race Winner:	**Al Unser, Jr.**

The Vancouver IndyCar race is held on a circuit that contains some public roads, while other portions of the track were constructed specifically for this race. The flat roadway winds around many of the structures erected for the 1986 World Expo, and also encompasses the British Columbia Place Stadium, where the B.C. Lions play Canadian pro football.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: A flat, relatively fast course moving in a clockwise direction...Predominately a low downforce track, with tight gear ratios for the corners...Set sixth gear up on the front straight extending from the start/finish line...Turns three and ten require some extra wheel lock; try not to over-correct through the other corners...The tighter corners bend to the right...Use some forward brake bias here, and try to run the turbocharger at six or seven...

In high gear as you leave the start/finish line, continue accelerating through turn one, a gentle left, and the long straight that follows. After crossing under the Cambie Bridge the pavement winds to the right in turn two. Start braking as soon as you complete turn two, before the markers that appear ahead. Downshift to first and take the turn three hairpin to the right. When you've safely crossed the apex, get back on the gas and gradually climb to fifth gear as you duck beneath the Nelson Street overpass.

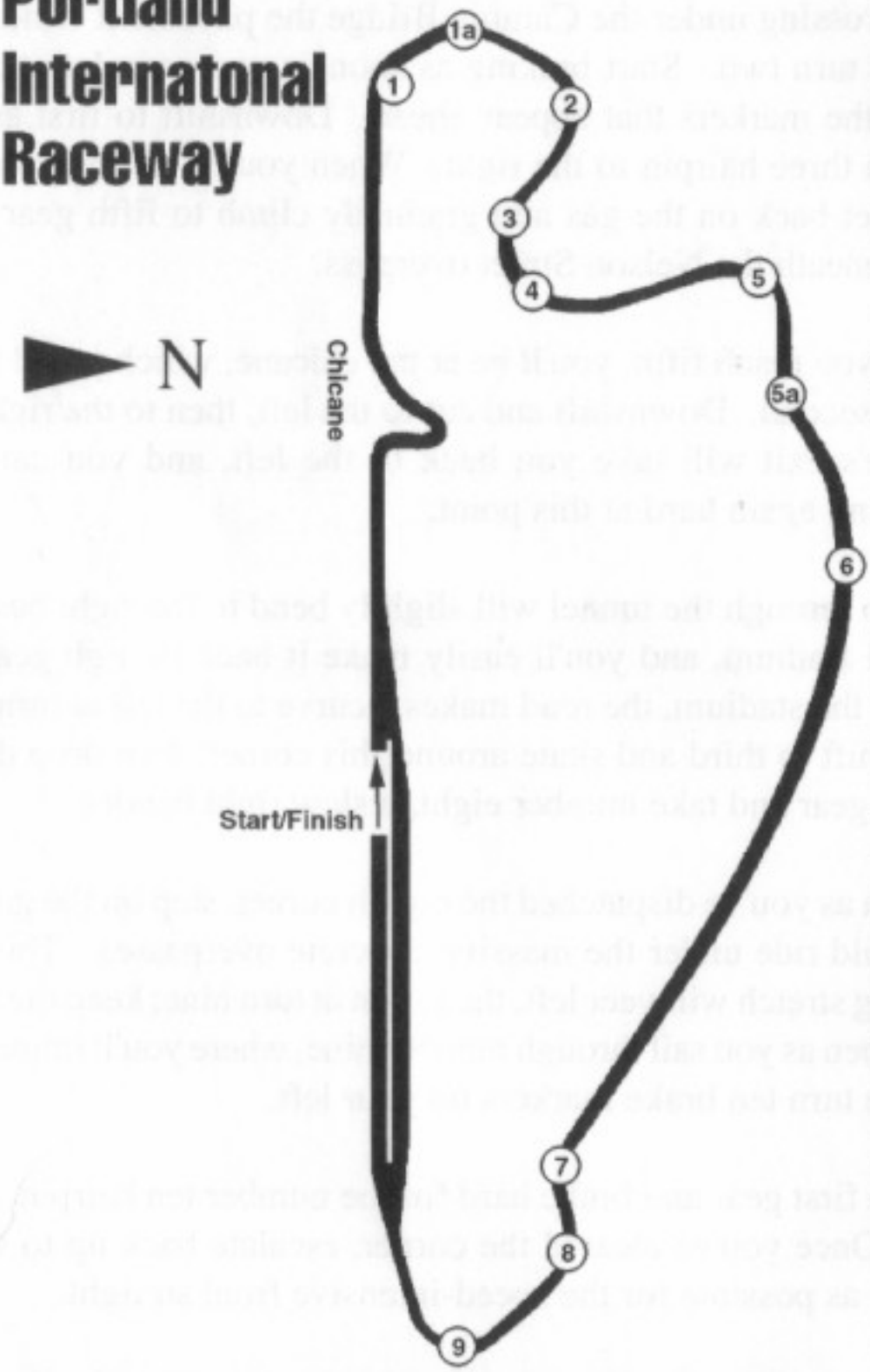
Just as you reach fifth, you'll be at the chicane, which you'll need to take in second. Downshift and cut to the left, then to the right. The chicane's exit will take you back to the left, and you can begin upshifting again hard at this point.

The trip through the tunnel will slightly bend to the right beside the football stadium, and you'll easily make it back to high gear. Just beyond the stadium, the road makes a curve to the left at turn seven. Downshift to third and skate around this corner, then drop down to second gear and take number eight, a slow right hander.

As soon as you've dispatched the eighth corner, step on the gas again for a wild ride under the massive concrete overpasses. This heart-stopping stretch will veer left, then right at turn nine; keep the throttle wide-open as you sail through number nine, where you'll immediately spot the turn ten brake markers on your left.

Drop to first gear and brake hard for the number ten hairpin, a sharp right. Once you've cleared the corner, escalate back up to sixth as quickly as possible for the speed-intensive front straight.

Portland Internatonal Raceway



Portland International Raceway
Portland, Oregon

Circuit Type:	**Road Course**
Circuit Length:	**1.95 Miles**
100% Race Length:	**198.9 Miles (102 Laps)**
1995 Race Winner:	**Al Unser, Jr.**

Portland, Oregon hosts this event, situated amidst a typical Pacific Northwestern backdrop. There used to be a lake near turn nine, and during races divers were stationed there in case any of the cars overcooked it approaching the hairpin.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

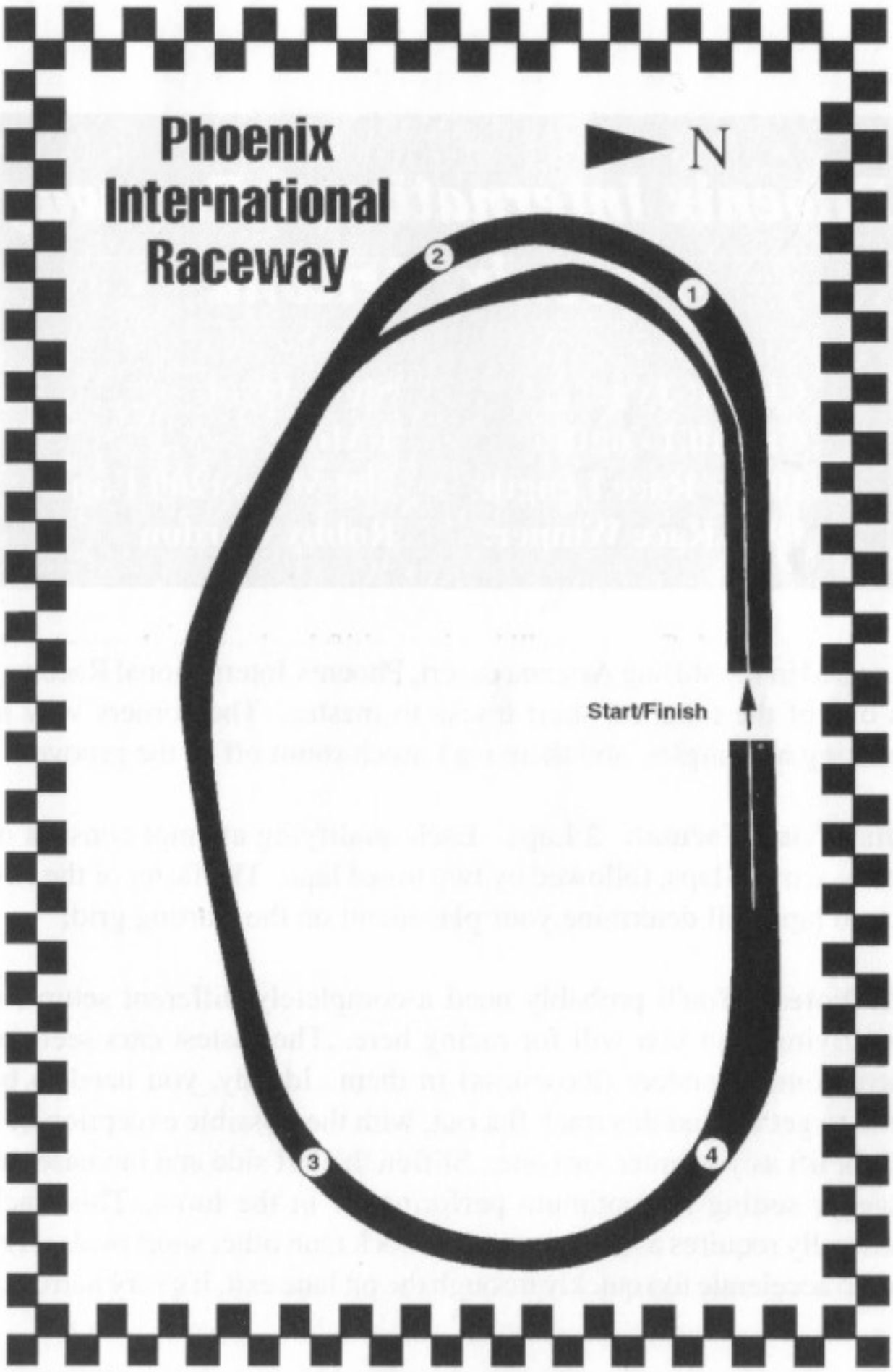
Pit Notes: Races are run in clockwise direction here...Cornering speed is extremely important on this race track...Start with as much downforce as possible, and gradually get used to using less wing...Soften the tires for maximum grip...Tighten the gear ratios for maximum acceleration, more important than top speed on this track...Set sixth gear up so that the engine light just begins to blink at the end of the front straight, before the chicane...

On the wide front straight, you'll be in high gear as you cross the start/finish line. Keep an eye out for the brake markers appearing on your left. When you reach the outer marker, downshift to second and brake for the chicane. Using an early move, dart to the right across the apex, then quickly back to the left as you clip the second half of the chicane.

Shift back up to sixth as you head for turns one, one-a and two, three corners that join together to form a long fourth gear ride. Down to fourth as you round the outside of the turn, add some power back as you exit number two. Before you're able to shift up, however, you'll drop down to third and negotiate turn four, a looping left hander. Four is directly adjoined to turn five, a second gear corner that takes you back to the right.

When you reach five-a, you'll begin to shift back up hard, eventually reaching sixth gear on the back stretch. The roadway is a bit narrow through here because the asphalt bends slightly right. At the end of this segment, you'll approach the turn seven brake markers to your left.

This is one of the best locations on the IndyCar circuit to attempt an out-braking maneuver, downshifting to fourth and ducking to the left. Stay in fourth around turn eight, then shift down to second and brake for the turn nine hairpin. Avoid the temptation of getting back on the gas too early out of nine, or you'll be spinning toward the pit entrance. Patiently reapply the power until you feel the tires gripping again, then get back up to sixth and head for the start/finish stripe.


Phoenix
International
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Start/Finish

Phoenix International Raceway
Phoenix, Arizona

Circuit Type:	**Short Oval**
Circuit Length:	**1 Mile**
100% Race Length:	**200 Miles (200 Laps)**
1995 Race Winner:	**Robby Gordon**

Located in the stifling Arizona desert, Phoenix International Raceway is one of the toughest short tracks to master. The corners vary in banking and angles, and there isn't much room off of the groove.

Qualifying Format: 2 Laps. Each qualifying attempt consists of two warm-up laps, followed by two timed laps. The faster of the two timed laps will determine your placement on the starting grid.

Pit Notes: You'll probably need a completely different setup for qualifying than you will for racing here...The fastest cars seem to have some oversteer (looseness) in them...Ideally, you need to be able to get around this track flat out, with the possible exception of a slight lift as you enter turn one...Stiffen the left side and increase the stagger setting for optimum performance in the turns...This track generally requires a little more wheel lock than other short ovals...Try not to accelerate too quickly through the pit lane exit, it's very narrow...

Phoenix is probably one of the toughest ovals on the IndyCar circuit, and it will quickly expose a poorly tuned race car. As you careen down the front straight at full power, try to ease over to the outside line. A good car will allow you to lift momentarily without braking as you steer down into turn one, the sharpest corner on the track.

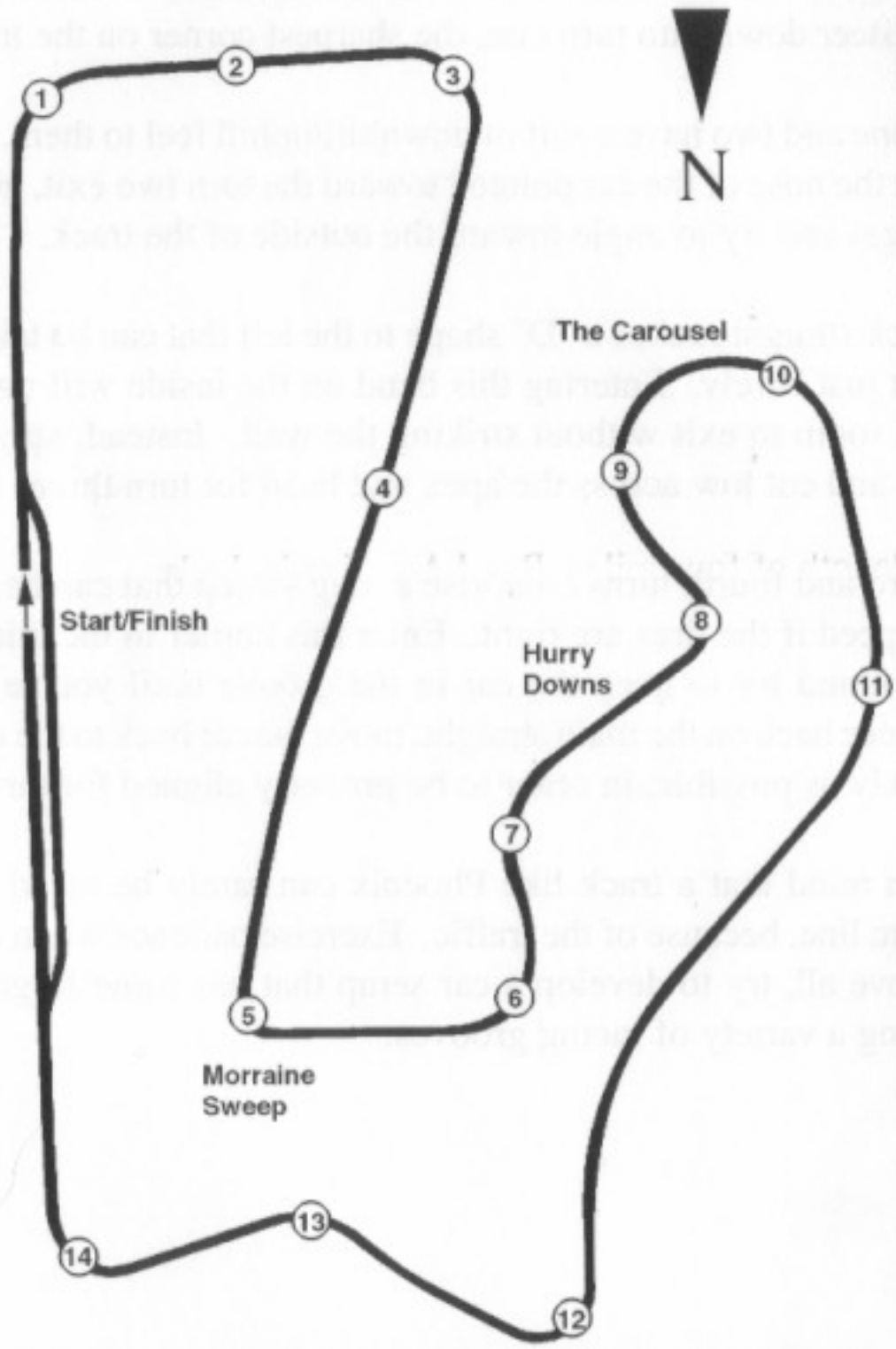
Turns one and two have a sort of downhill/uphill feel to them. When you get the nose of the car pointed toward the turn two exit, get back on the gas and try to angle toward the outside of the track.

The back straight makes a "D" shape to the left that can be taken flat out, but just barely. Entering this bend on the inside will not leave enough room to exit without striking the wall. Instead, stay to the outside and cut low across the apex and head for turn three.

The third and fourth turns comprise a long sweep that can be driven at top speed if the tires are right. Enter this corner in the middle of the track and try to keep the car in the groove until you've exited four. Once back on the main straight, move the car back to the outside as quickly as possible, in order to be properly aligned for turn one.

Keep in mind that a track like Phoenix can rarely be raced on the optimum line, because of the traffic. Exercise patience when racing, and above all, try to develop a car setup that has some forgiveness for taking a variety of racing grooves.

Road America



Road America
Elkhart Lake, Wisconsin

Circuit Type:	**Road Course**
Circuit Length:	**4 Miles**
100% Race Length:	**200 Miles (50 Laps)**
1995 Race Winner:	**Jacques Villeneuve**

With a length of four miles, Road America is the longest course on the IndyCar circuit. The track features a variety of elevations and is relatively fast. In addition to the unique layout, this race site has also gained a formidable reputation for its bratwurst and corn on the cob.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: This circuit runs in a clockwise direction...Use less downforce and taller gears to manufacture the top speed this track demands...Set sixth gear up on the long uphill front straight...Try to develop a setup that runs strong while using a turbocharger setting of six or seven, to improve fuel economy...Do not gamble with the fuel; running out of methanol on the back side of the track will leave you too far away to coast in...Try to keep your rpm's in the 12-13,000 range for best speeds...

Speeding away from the start/finish line, it's a long straight shot into turn one, a third gear right hander. When you clear the corner, there's barely enough time to reach sixth gear again before braking for the next turn. It is a tight right hander that will drop you into second gear. Wait an extra beat before stepping back on the gas as you exit, so as to avoid spinning off into the grass. Now get back on the power full, and although the pavement as some slight bends in it, you should easily be able to maintain top speed until you reach five.

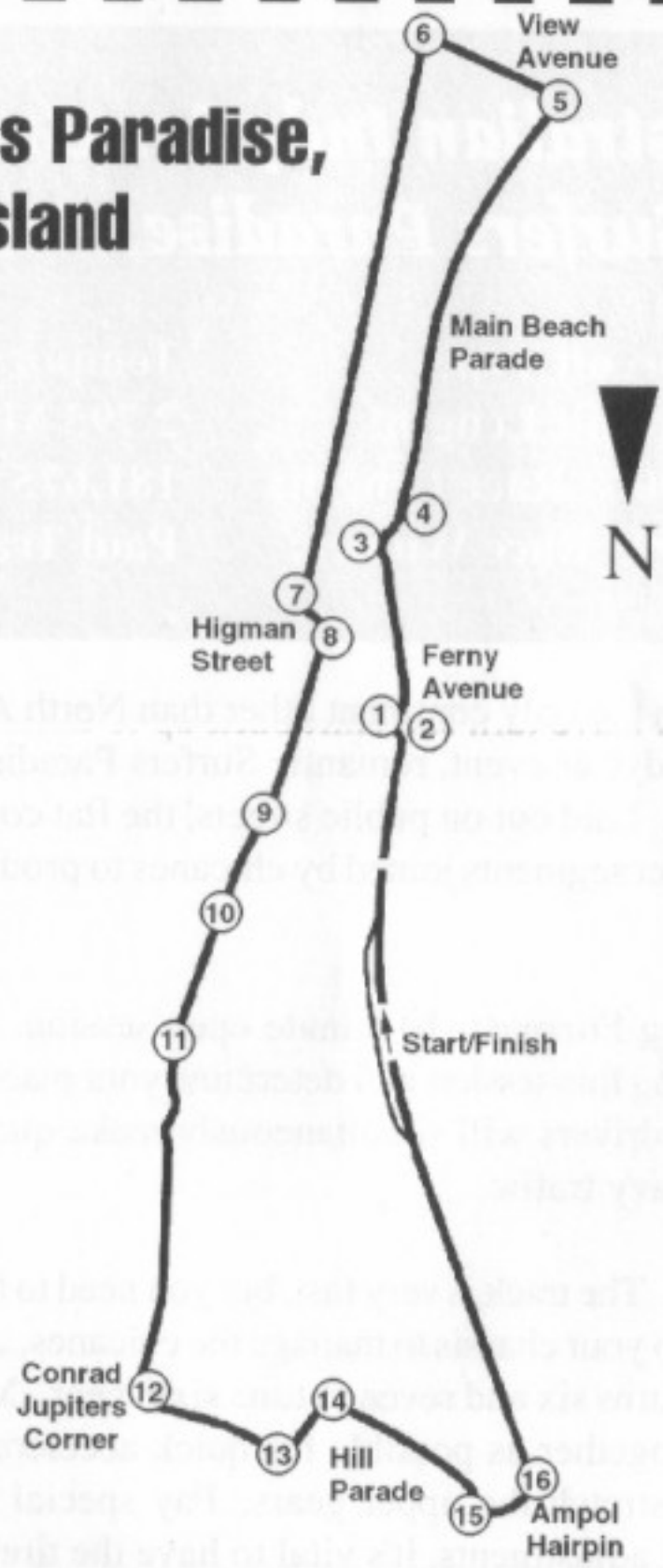
Turn five is known as the Morraine Sweep, a nauseating ninety degree left. Brake hard at the markers and quickly bring the car down to first gear, and pace yourself through. After you exit number five, you'll briefly accelerate to turn six, where you must again slow and employ first gear.

When you leave turn six, shift back up to third and pause briefly as you round turn seven, a lazy right. Get back on the gas and shift up to fifth as you dip downhill toward number eight. At the brake markers, shift down to second and veer to the left through turn eight.

Turns nine and ten circle around to the right, forming the Carousel. This is a long, sweeping corner that is tough to hold. Let your speed build very gradually through here, until you begin to drive right between the two large hills. At that point you can shift all the way back up to sixth and vault through turn eleven, a shallow right. The roadway will bend to the left before twelve, and you should still be going all out. As you approach twelve's brake markers, shift down to second and brake into the right hander. As soon as you're clear, shift back up to fourth and release the gas briefly as you cross under the turn thirteen bridge.

Throttle up all the way until you see the markers for fourteen, a stiff bend to the right. Downshift to second, dive into the turn and reapply the gas as you launch uphill toward the start/finish line.

Surfers Paradise, Queensland



Australian IndyCar Grand Prix
Surfers Paradise, Australia

Circuit Type:	**Temporary Street**
Circuit Length:	**2.795 Miles**
100% Race Length:	**181.675 Miles (65 Laps)**
1995 Race Winner:	**Paul Tracy**

Nestled on the only continent other than North America to currently host an IndyCar event, romantic Surfers Paradise presents a unique challenge. Laid out on public streets, the flat course is comprised of five distinct segments joined by chicanes to produce a total of sixteen turns.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: The track is very fast, but you need to build some cornering ability into your chassis to manage the chicanes...Use the long straight between turns six and seven to tune sixth gear...Move the lower gears as close together as possible for quick acceleration, while you can afford to stretch the upper gears...Pay special attention to camber and shock adjustments, it's vital to have the tires gripping as evenly as possible...if the chicanes are causing you to overreact, soften the suspension to take the edge off...

As you leave the start/finish line in high gear, the road makes a gentle arc to the left. At Ferny Avenue, you'll encounter the first chicane, a severe left-right-left combination. Drop to third gear and coast through the entire chicane, then back on the accelerator full. The next chicane is just ahead at Main Beach Parade. This zig-zag is not as pronounced as Ferny Avenue, but again you'll need to coast through the early half of the chicane in third gear. At the center point, get back on the throttle and shift up to sixth.

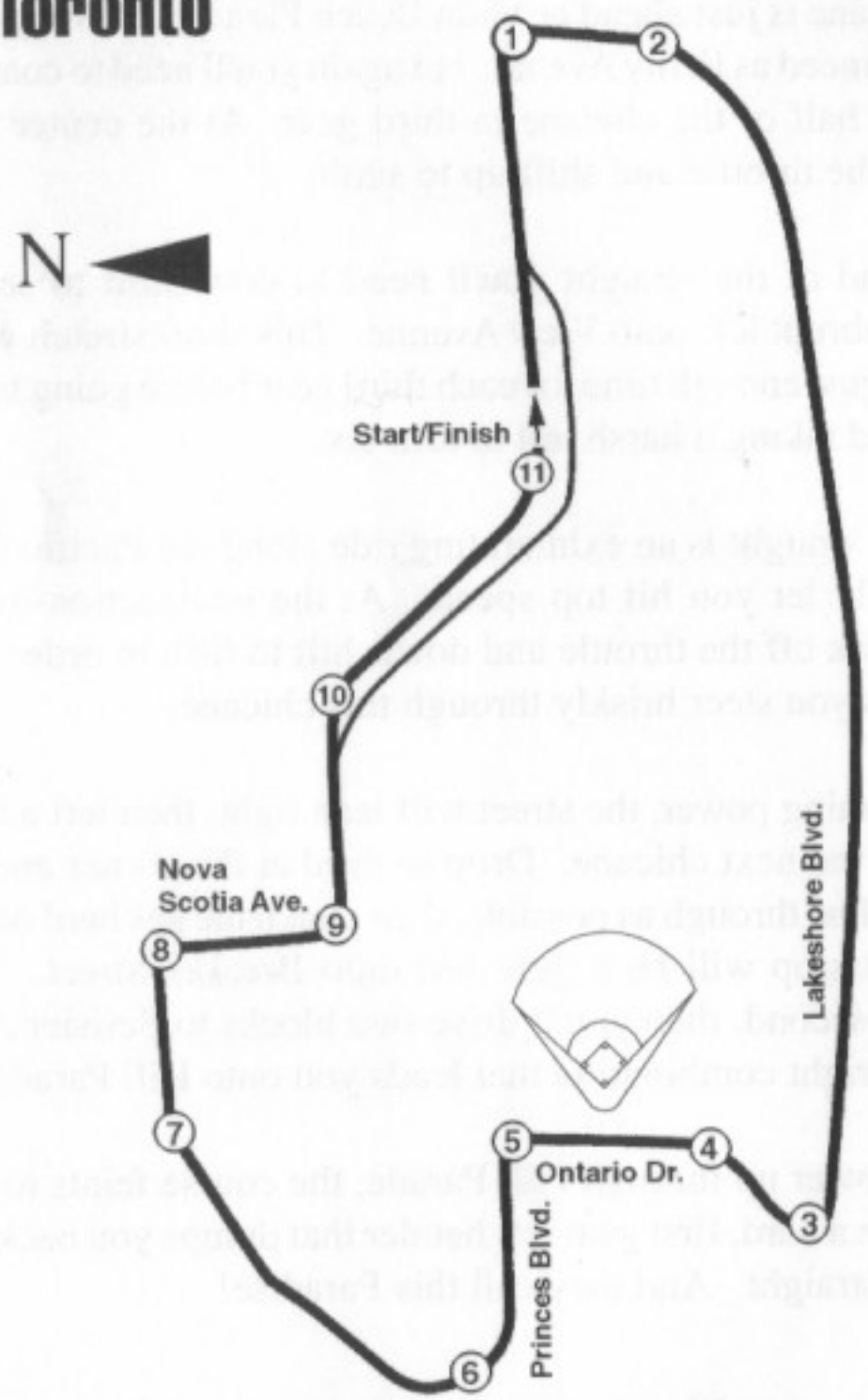
At the end of the straight you'll need to downshift to second and hang an abrupt left onto View Avenue. This short stretch will afford you with just enough time to reach third gear before going back down to one and taking a harsh left at turn six.

The back straight is an exhilarating ride along the Pacific Coast that will finally let you hit top speed. At the intersection of Higman Street, back off the throttle and downshift to fifth in order to stay in control as you steer briskly through this chicane.

Again running power, the street will lean right, then left a bit as you approach the next chicane. Drop to third at the corner and drive as straight a line through as possible, then punch the gas hard once again. Your next stop will be a tight left onto Breaker Street. Take this corner in second, then you'll drive two blocks to Serisier Avenue, a slow left-right combination that leads you onto Hill Parade.

As you power up through Hill Parade, the course feints to the right just before a hard, first gear left hander that dumps you back out onto the front straight. And they call this Paradise!

Exhibition Place, Toronto



Exhibition Place, Toronto
Toronto, Canada

Circuit Type:	**Temporary Street**
Circuit Length:	**1.780 Miles**
100% Race Length:	**183 Miles (103 Laps)**
1995 Race Winner:	**Michael Andretti**

This relatively fast course consists of a scenic race through the beautiful Canadian Exhibition Fairgrounds. Race course sites include the Hockey Hall of Fame and the baseball stadium. The circuit itself is a blend of high-velocity straights, power curves and hairpins.

Qualifying Format: 10 minute open session. The fastest lap you drive during this session will determine your placement on the starting grid. All drivers will simultaneously make qualifying attempts, so expect heavy traffic.

Pit Notes: The track runs in a "clockwise" direction...Downforce needs to be a little less than you'd think, the driver doing more of the work through the tight corners...Set sixth gear up on the long straight between turns two and three...Keep the other gear ratios relatively close...Most of the tight corners point to the right...Use softer tires for maximum grip...Stiffen the front shocks a bit more than the rear, so you'll lose less speed in the corners...

In high gear as you leave the start/finish line, you can already see the first corner up ahead. Move to the outside and downshift to second, then cut low across the apex. This will lead you into a long, fast ride through the Exhibition field. You'll easily make it back up to sixth gear as you roar through turn two.

As you cross under the second pedestrian bridge you'll see the brake markers on the left side for turn three. Brake and downshift to first, begin turning in to the right, then brake some more. This corner is very tricky because it gradually tightens. As you exit, the baseball stadium lies dead ahead. Step on the gas, shift up to fourth and round turn four flat out.

Shift down to second and turn left into five; if you were too late on the brakes, there's some runoff here you can use to get back on course. You'll probably reach turn six before you can shift up a gear. Try and maintain peak rpms in second gear as you drive around to the right. Immediately off the corner, accelerate and shift gears back up to sixth as you take turn seven flat out.

Just after seven, use the brake markers on the left to brake hard and downshift to first for turn eight, a tight right hander. Once again, you'll be looking at the baseball stadium straight ahead as you leave this corner and head for nine.

Nine is a first or second gear bend to the left, and then you'll be able to step on the gas and head for turn ten. You'll be in fourth gear by the time you reach ten, where you'll only need to lift briefly as the corner bends right. Continue to work your way back up to sixth gear as you steer left through eleven, a gentle left hander that dumps you back out onto the front straight.

Driver's Workshop: Honing Your Skills

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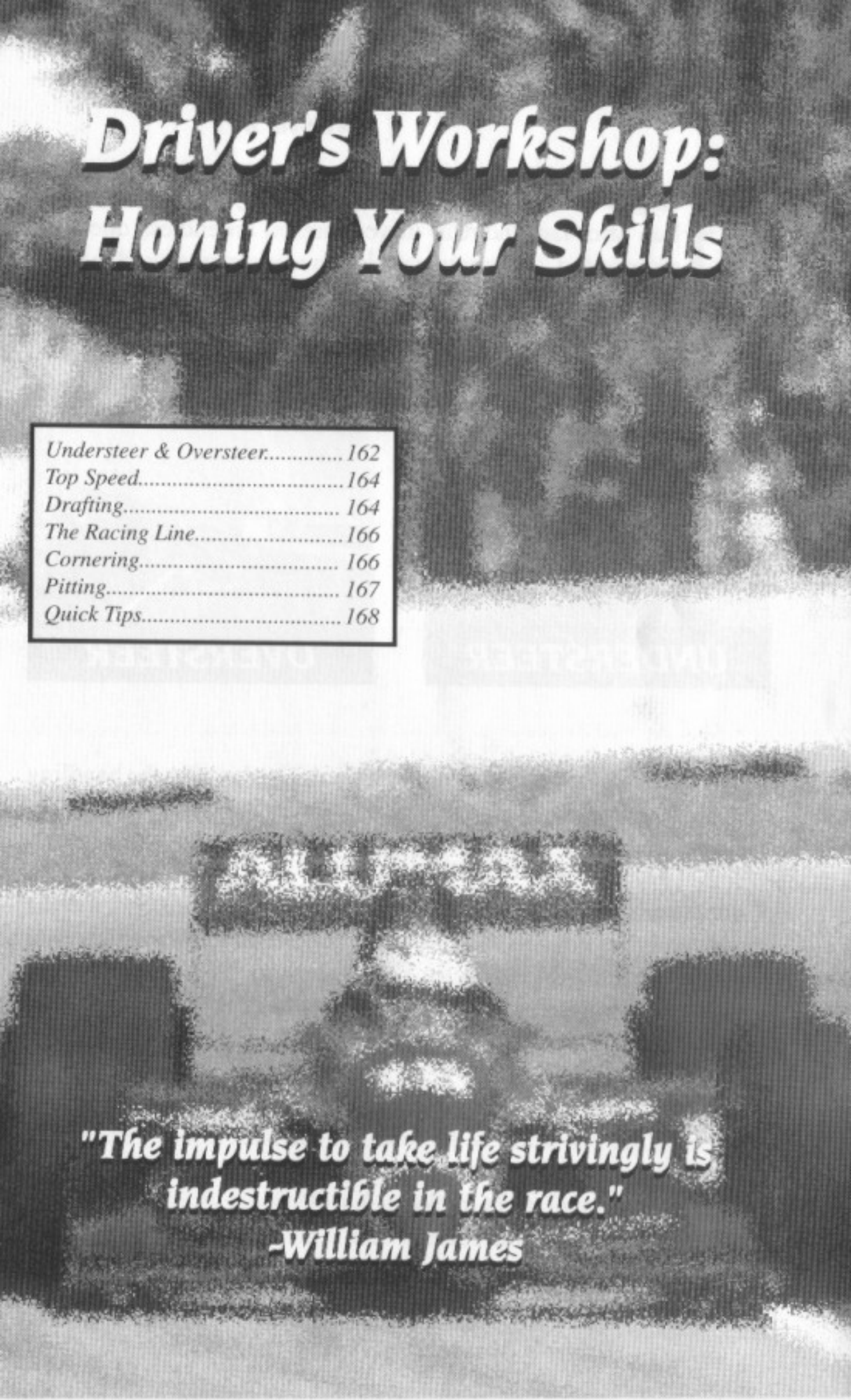
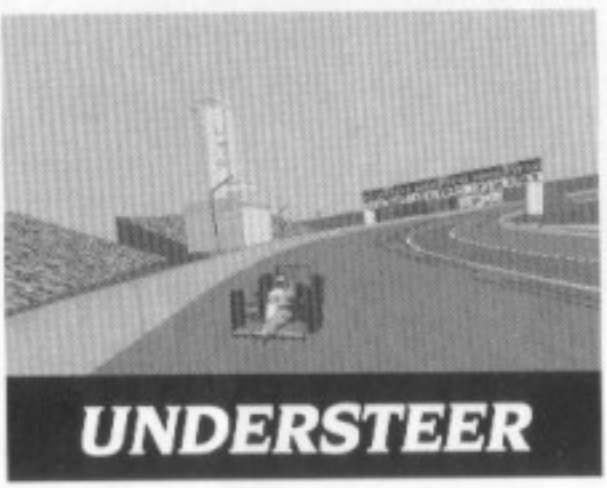


"The impulse to take life strivingly is indestructible in the race."
-William James

Going fast is one thing, going faster than anyone else is another. Lap after lap, IndyCar drivers are on an endless quest for more speed, a journey in which success is measured in mere hundreths of seconds. Over the next few pages, we'll present some of the techniques you can use to whittle your lap times down into the competitive range.



There are two terms that are commonly used to describe the handling of a race car chassis: *Understeer* (also called a "push") and *Oversteer* (also referred to as "loose").

Understeer: The car can't quite turn sharply enough; instead, it drifts out toward the wall. This condition occurs when the front wheels of the race car lose grip before the rear wheels do. A small amount of understeer is sometimes desirable, particularly on speedways (the driver has better control this way).

Oversteer: The car tends to "fishtail" and feel unpredictable around corners. This condition is the result of the rear wheels losing grip with the pavement before the front wheels do. Slight oversteer can be an asset on small, tight tracks such as Phoenix, but overall, it can make a race car very difficult to commandeer.

Compensating for either one of these conditions while in the cockpit can sometimes come from adjustments in driving style, or repositioning one or both of the anti-roll bars. Other methods are listed below:

Correcting Understeer

In Car: Soften front anti-roll bar, or stiffen rear anti-roll bar. Try slowing down a little (you may be going too fast). Brake earlier and longer for corners.

In The Garage: Add downforce to the front of the car (raise the front wing). Soften one or both of the front shocks. More subtle corrections can be made by increasing the stagger, lowering the front tire air pressures, or adjusting front wheel camber settings for better grip. (See Garage section.)

Correcting Oversteer

In Car: Soften the rear anti-roll bar, or stiffen front anti-roll bar. Accelerate out of turns using a long, smooth application of the throttle, rather than quick bursts.

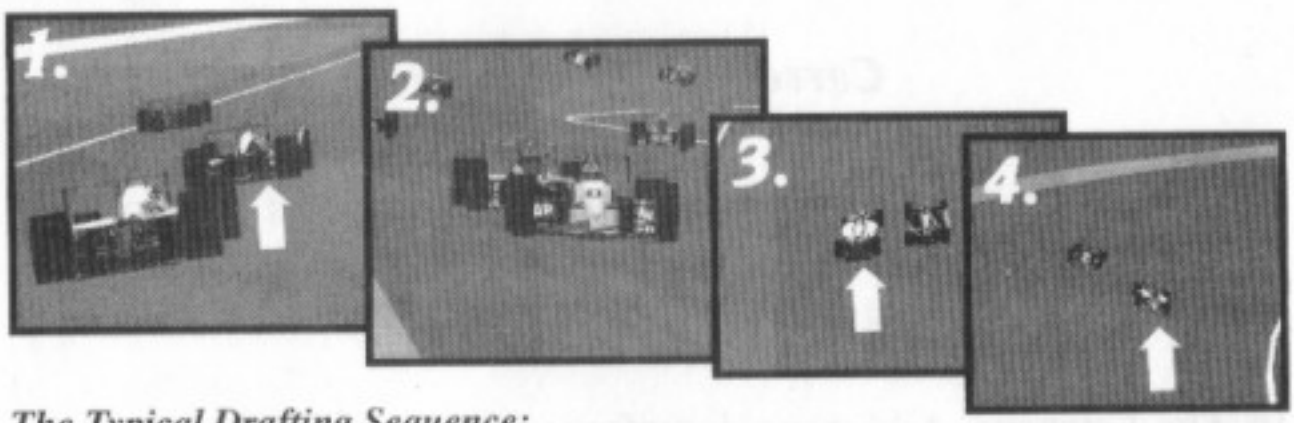
In The Garage: Add more downforce to the rear of your IndyCar (raise the rear wing angle). Soften one or both of the rear shocks. For finer adjustments, check the rear-wheel cambers for continuity, remove some air pressure from the rear tires, or reduce the stagger setting. Try using taller cogs from first through fourth gear in order tame the urge to over-accelerate out of the corners.

Improving Your Top Speed

True unaided top speed is largely the product of setup work in the team garage, but there are a few methods that you, as the driver, can utilize to improve your top speed while on the track. Chief among these is *drafting*.

Drafting- When, Where And How

Drafting (or "slipstreaming" as it is sometimes called) is a phenomenon that occurs at speeds of 70 mph or greater. It is the art of using opponent's cars directly in front of you to temporarily block the oncoming air, allowing you to drive a bit faster. If you watch an actual race on television long enough, you'll see some drivers dive directly behind the opposition, follow closely for a few laps, and eventually overtake the car(s) in front.



The Typical Drafting Sequence:

In frame #1, the opposition is closing fast on the rear end of the car (indicated by arrow) that will be drafted. Frame #2 shows the two cars coming right at the camera, with the drafting car now directly behind the prey. The overhead behind view of frame #3 shows the drafting car(indicated by arrow) "slingshotting" by the opposition, thanks to some extra speed the drafting maneuver created. Notice that the pass itself was made to the inside. Frame #4, coming toward the camera, shows the drafting car pulling ahead and successfully completing the pass just in time for the speedway corner. "Wonder if the trailing car will strike back..."

Certain tracks, such as ovals, lend themselves to wide-open, constant drafting attacks throughout the field. This is due to the fact that there aren't any tight corners to slow the pack down. It is important to know where you are on each circuit before attempting a drafting maneuver. Weaving your way through a series of tight chicanes doesn't afford much of an opportunity to draft, because the track narrows and the overall speeds slow down. Speedways and long straightaways, on the other hand, provide the necessary speed and space to pull off such exploits.

On road courses, drive patiently and set up drafting maneuvers only when the situation dictates it. Try to learn ahead of time where the best passing opportunities lie within each circuit. Shadow the traffic ahead until you reach such locations, and then try your move. Be ready to back off the throttle, reload and try again on the next lap if things don't go smoothly.

Defensively, you may find it necessary to break contact with an opponent that is attempting to draft past you. To do this, check your mirrors often, and block the opposition in the turns. When you reach a long straight, bring the car away from the conventional racing line. If your opponent wants to draft, it will have to be done outside of the track's "groove."

Be mindful of the fact that heavy drafting can exact a toll on your IndyCar's fuel load. After all, that extra speed isn't free. And your engine could suffer if your gear ratios don't leave enough room for the sudden burst of rpms drafting can cause. Drafting also presents unique risks. You may find yourself traveling much too fast into a tight corner just after successfully slingshotting past an opponent. And some drivers are just plain unpredictable, making drafting an unsettling proposition.

The Racing Line

You see it on every track- the blackened lane of pavement that usually runs along the outside of straights, cutting across the apex of turns. Skid marks and tire tracks...hundreds of them! This area of the track is known as the *"Groove,"* or *"Racing Line."* It is generally the fastest path around each circuit, therefore it welcomes the largest amount of traffic.

You can drive anywhere on the pavement you wish (as long as it's in the proper direction) but the groove is almost always the quickest way around. It's a good idea to follow the groove as you familiarize yourself with each track, only straying from the racing line once you have a good command of the circuit. The skid marks can also serve as a visual cue, warning you of an approaching corner.

Taming The Turns

Everyone is impressed with raw straightaway speed, but cornering speed, often overlooked, is probably more vital. At the highest level of racing, top speeds are nearly identical throughout the field; the drivers are truly separated by quickness in the turns.

On road courses, the object is to enter the turns on the outside. Try to bring the car down low across the apex (the part of the turn that is the slowest; most drivers *begin* acceleration at the apex of a corner). Once back on the power, exit the turn in a wide fashion to maximize acceleration and minimize tire wear.

The most important piece of information you can take into any corner is the knowledge of what gear you'll need to use to get through that turn. Try to select the gear that best allows you to maintain rpms while holding a grip on the track.

On road courses, learn where the brake markers are. They always appear on the opposite side of the roadway from the corners themselves (brake markers on the left indicate a right-hand turn). Enter each corner from the outside, near the brake markers; finish the turn by clipping the apex and exiting wide.

Use the **Instant Replay Blimp** view to study your driving habits and how they relate to the "groove." This camera angle is also useful for examining your efforts in traffic to improve your skills around the other cars. Following other drivers around the circuits is also a great way to learn each race track. Find out where they're braking, and how they're aligning themselves for each corner.

Finally, every IndyCar driver tries to improve speeds by braking a beat later into each turn, and accelerating a beat sooner on the exit. Sometimes, there's no better weapon than simply out-braking your opponent into a corner.

Secrets From Beyond The Pit Wall

There you are, streaking to the head of the field; dominating lap upon lap as you burst to the forefront of IndyCar notoriety. Eventually, it's time to pit for fresh tires and more fuel, but- lo and behold, you've never driven in and out of the pits at this track before! What a pity.

Practice entering and leaving the pit lane at each track. Some pit road entrances veer sharply this way and that, in order to slow traffic down. These twisty bends are usually unmarked; like your little brother, you just "kind of have to know where they are." Take the time to learn your way around the pit lane, including the location of your pit stall. Check the pit lane for width; some tracks feature a wide oasis, while others offer nothing more than a narrow strip of asphalt to zoom in on.

Remember, the pit road speed limit is 80 mph at all tracks. Make sure you are clear of the pit area before accelerating back up to race speed. If you receive a black flag for speeding in the pits, it's better to honor it right away. If the yellow flag flies right after you've received a penalty, you'll still be black-flagged when the race resumes green flag racing. And if the yellow comes out just after you've honored the stop & go penalty, chances are you can make up the lost time anyway.

To save time in the pits, remember to use the pause key (**"P"**) and radio your requests ahead. If you don't, your crew will fill the tank, change all four tires and make any necessary repairs to the car. This may be acceptable early in the race, but it's not the kind of stop you want to make while battling for the lead in the race's later stages. Check your tire temperatures and wear prior to each pit stop; don't allow your crew to un-necessarily change tires that still have plenty of life in them. This will only prolong your stay on pit road. Try to calculate how much fuel you'll need during the last pit stop of a race. Take only that amount plus a few safety gallons, so your car will be lighter and quicker for the finish.

Five Quick Sparks

1. Drive shorter races until you're comfortable with the car, the track, traffic and your setup.

2. You don't have to lead every lap of the race to win, just the last one. Be patient.

3. For best results, qualify with soft tire compounds and a near-empty tank. Subtle changes to gear ratios and wing heights may provide additional speed.

4. Try to qualify for an "odd" position on the starting grid. This will place you on the inside. Things can get pretty congested at the start, and this will give you a better vantage point.

5. Mom always knew how to prepare you for changes in the weather. Don't forget her wisdom. A car setup that works great on a cool day may not cut the mustard in the heat. Like Mom would say, "Dress your IndyCar accordingly."

Painting Your IndyCar:

Macintosh/Windows95 Users

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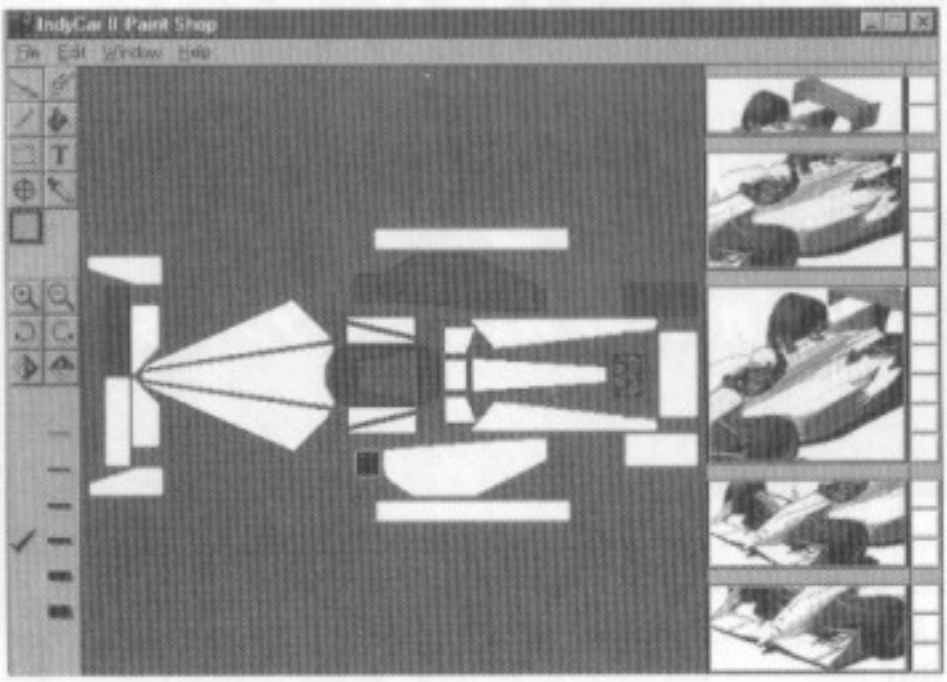
"It's pretty, but is it art?"
-Rudyard Kipling



The IndyCar Racing II Paint Shop gives you the power to create many different sets of cars, saving each set under any name you wish. These **Car Sets** can then be loaded from within IndyCar Racing II. Car Sets can store various collections of opponent cars, or contain several different paint schemes for your own car.

The original **Car Set** shipped with IndyCar Racing II is called "CARS95." ***It is highly recommended that a new Car Set be created rather than painting the cars contained in the CARS95 Car Set.*** Therefore, you must first create a new car set by choosing **Options** from the **Main Menu** bar; next, choose **Car Sets**. Click on the **Duplicate** button in order to create a new car set to work with. When you choose **Duplicate**, you're given the opportunity to name the new car set anything you wish. Once you've created a new car set to customize, you're ready to head for the Paint Shop.

Start the Paint Shop by choosing Options from the Main Menu bar, then selecting Driver Info. Click on the Paint Shop button to begin painting. ***Remember: the Paint Shop button will appear inoperable until you've created at least one duplicate car set, using the Options/ Car Sets/Duplicate procedure described above.***

Starting The Paint Shop

There are different ways to start the Paint Shop and begin creating:

Using The Driver Info Menu

Choose Options from the Main Menu Bar, then click Driver Info. If you have already created at least one duplicate Car Set (see the previous page on how to do this) the Paint Shop button will appear active. Click on this button, or choose another Car Set first by using the Options/Car Sets menu.

Using Direct Start Up

Before starting IndyCar Racing II, you can click on the Paint Shop icon to lauch the Paint Shop. This icon is located in the same folder as the startup icon for IndyCar Racing II. When you lauch the Paint Shop using this method, no Car Set is loaded; thus, the car you will be painting appears as all-white, with no decals. You can then import decals, paint designs and customize this car to your liking. Save your finished product, to be imported into a complete Car Set when you've launched the Paint Shop from within IndyCar Racing II.

Using The Drag & Drop Method

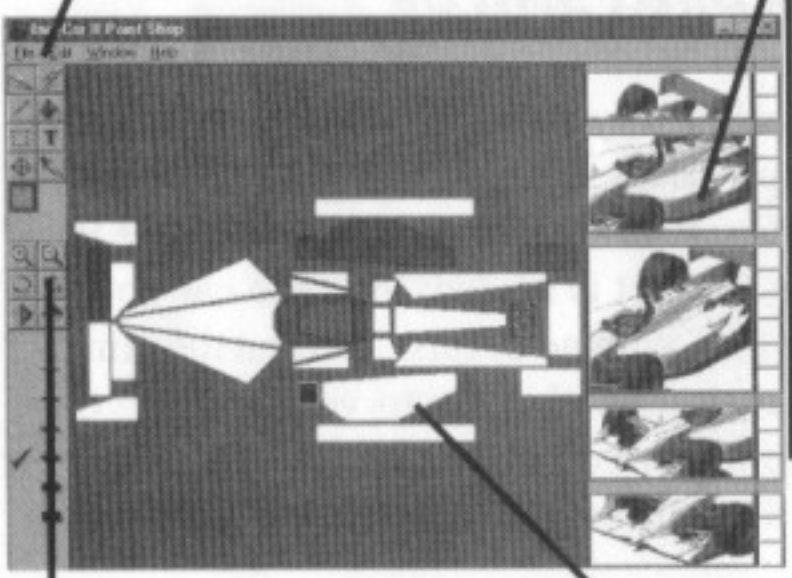
Before launching the IndyCar Racing II Paint Shop, click open the Cars folder, then open the Car Sets folder. Click on any "car file" that exists in this location (files using the *.CAR format), and hold the mouse button down; drag the car file icon on top of the Paint Shop icon, and release the mouse button. The IndyCar Racing II Paint Shop will open with the car file you selected. If there are no car files contained in this folder, you'll have to make them by using the **Options/Driver Info/Save Car** button.

The Paint Shop Main Menu

The **Main Menu** of the **Paint Shop** program is divided into four distinct areas, as described below:

The Menu Bar. Click on these items to load other car files into the **Paint Shop**, import decals or get a 3D preview of your finished work.

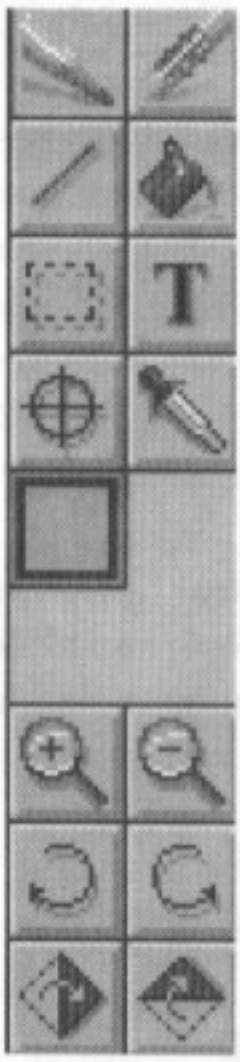
Autoshade Windows: Choose a color from the paint palette and click on a window to automatically add appropriate shading to that section of bodywork. You can also click on any of the buttons located to the right of each Autoshade Window to change part colors individually.



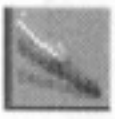
Special Painting Tools: Click on these items to choose different brush types, zoom in closer for a better look or place text on your IndyCar.

Parts Window: Choose a color from the paint palette and click on a part to paint it the selected color. Draw your designs or place decals directly onto each part in the window.

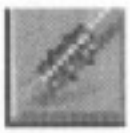
Using The Tool Box



Using the mouse, point to and click on the tool you wish to use. The mouse cursor will change to reflect the shape of the tool currently in use.



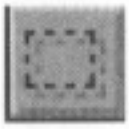
Brush Type: For freehand drawing, choose the **Brush Type** tool, and adjust its thickness by clicking on one of the brush widths located beneath the Tool Box. Begin drawing on any part of the car by moving the cursor over the spot you want to start painting on, and clicking the mouse.



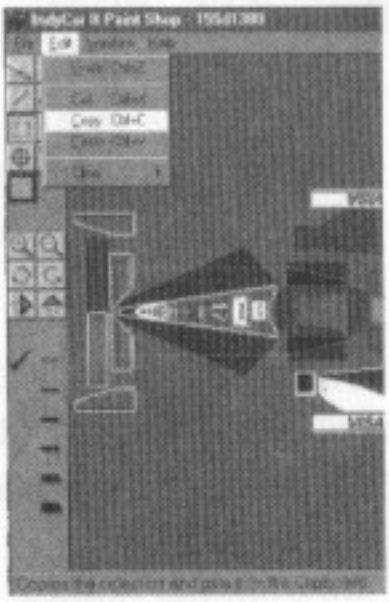
Texture Eraser: This tool allows you to remove unwanted decals and textures without affecting the base color of the car. Simply choose the Texture Eraser, select an eraser size by choosing a brush width, and "scrub" the Texture Eraser tool back and forth across the area you wish to remove.

Line Tool: Use this tool to easily draw straight lines that follow any angle. Click and hold the mouse button where the line should start; drag the mouse along the path the line will follow, and release the mouse button. Your lines can be a variety of thicknesses, depending upon the brush width chosen. You can start a line and drag it across several parts at once to create a continuous effect.

Fill Tool: Paint large areas quickly by choosing a color, selecting the Fill Tool, and clicking it on the part you wish to paint. A single mouse click over any part will fill every area bounded by a common color.

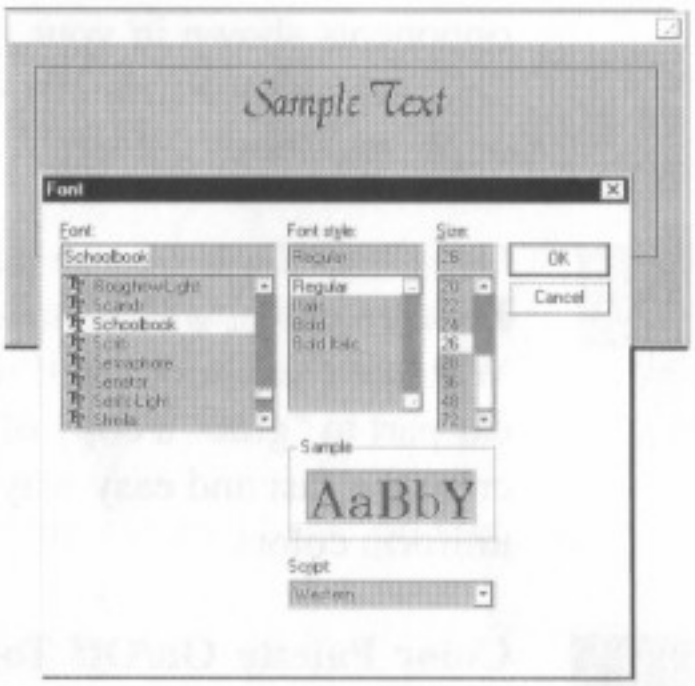


Select/Cut Out: Want to grab a decal off of another car? Or perhaps you'd like to "capture" the artwork you've created on one side of the car, rotate it, then paste it on the other side of your IndyCar so that both sides match. Use the Select/Cut Out Tool to highlight the desired area, then release the mouse button. Choose Edit from the Paint Shop Menu Bar, then select Copy; this copies the selected area to the Clipboard. Now, select Paste from the Edit Menu (or choose another car from the Driver Info list). The copied image will appear in the parts



window; click and hold the mouse button down directly on the image, and drag the copied image onto the part you wish to stamp it on. Choose one of the Rotate or Flip buttons to adjust the image's orientation.

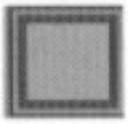
Text Tool: A powerful feature that allows you to quickly create text-based graphics on your IndyCar's bodywork. Click on the Text Tool to open up a window where you'll create the text. Click on the Font button located on the Text window to select a typeface. You can use any TrueType font installed on your computer; choose the font's size and attributes as well. After you have typed the desired text in the window and achieved the typeface qualities you want, click the OK button. The text will appear in the parts window, with a selection highlight around it. You may still change its color by simply choosing another hue from the color palette. Finally, click and hold the mouse button down on the text, and drag it to the location where you'd like to place it. Use the Rotate and Flip buttons to adjust the orientation of your text.



Body Stamp: The Body Stamp allows you to change the base color of the car, beneath the decals & textures. To use,

simply choose a color from the palette, then click on the Body Stamp tool. Now, move the Body Stamp cursor over the part you want to paint, and click the mouse. If the part is completely covered with decals, you may not see the color change beneath these textures. On the track, when you view other cars in your rear view mirror you'll see the body colors only; Therefore, it's important to stamp the proper colors underneath all of the decals so that you can easily identify opponents shown in your mirror. Additionally, if the Car Textures are not currently displayed, you'll see only your opponent's body colors.

Get Color Tool: You've painted a sidepod purple, but you don't remember which shade. How do you find out quickly? With the Get Color Tool! Choose this tool and click on a car part to "grab" a copy of the color you clicked on. This creates a fast and easy way to match up your designs with uniform colors.

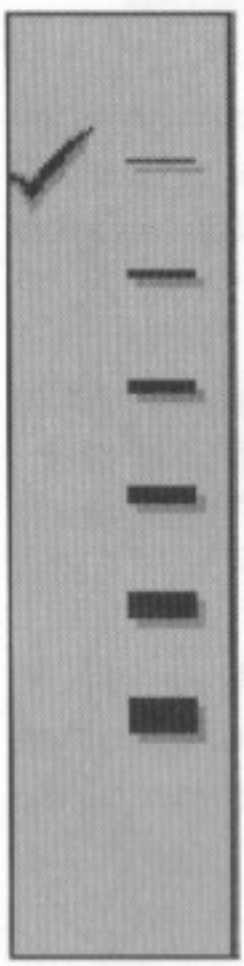


Color Palette On/Off Toggle: Click on this button to display or hide the Color Palette. You can also toggle the Color Palette on or off by choosing Window from the Menu Bar, and clicking on Colors.

Zoom In/Zoom Out: These buttons help you get as close to your design work as necessary. Zoom in close for fine, pixel-to-pixel editing, or zoom out wider (default) to see all of your IndyCar's parts at once. When zoomed in, use the scroll bars that appear to position horizontally and/or vertically about the parts window.

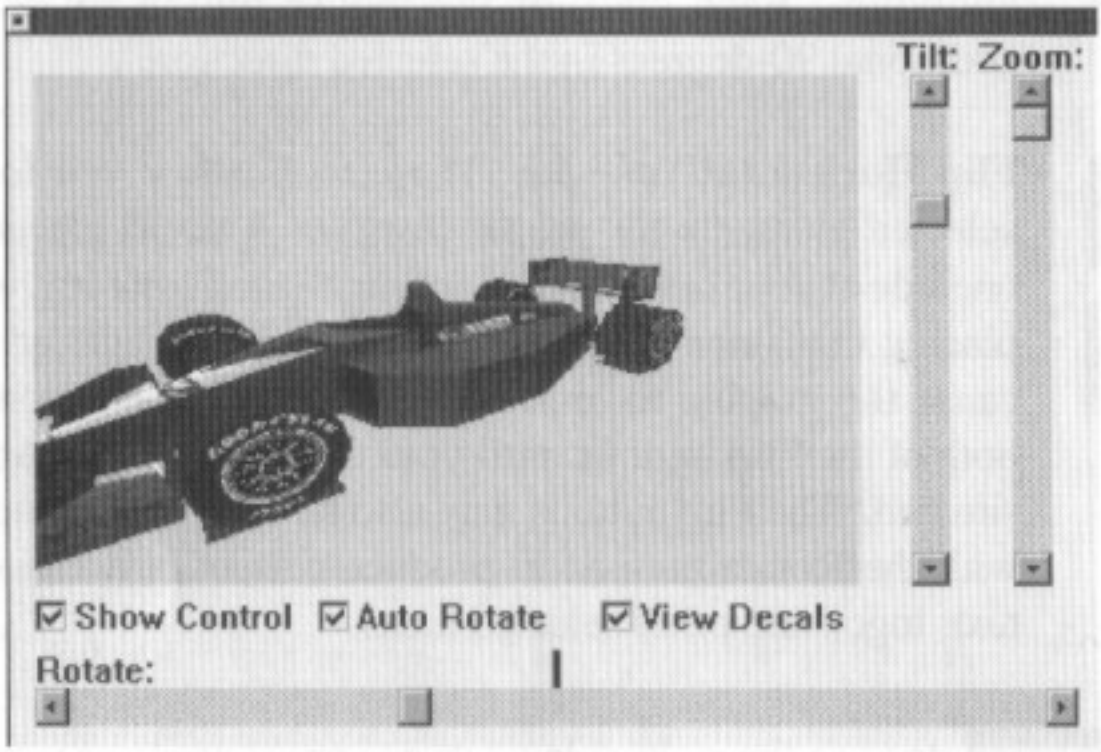
Rotate Clockwise/Counter-Clockwise: Use these buttons to spin selected graphics in 90-degree increments. Use the Selection Tool to highlight a graphic, car part or text; then use the rotation buttons to achieve the desired angle before applying. Each click of the mouse button rotates an additional 90-degrees in the selected direction.

Flip Horizontal/Verticle: These tools allow you to flip selected elements for proper display. A decal placed on one side of your IndyCar may appear aligned correctly, while placing that same decal on the other side of your car may cause the graphic to appear "upside-down." Use one or both of the Flip buttons until your decal becomes properly situated. The Flip buttons may also be used in conjunction with the Rotate buttons to produce correct orientation of text, logos and other selected areas.



Choosing A Brush Width: Click on one of the available brush widths to broaden or condense your stroke. Keep in mind that these brush widths apply even when you are zoomed in on the parts window. These brush widths also change the width of the Line Tool and the Texture Eraser Tool. Create fantastic racing strip effects by choosing a wide brush width, selecting the line tool, and drawing a line (on any angle) across several pieces of bodywork at once. Then, change to a thinner brush width and draw another line alongside the first one.

Previewing Your Design

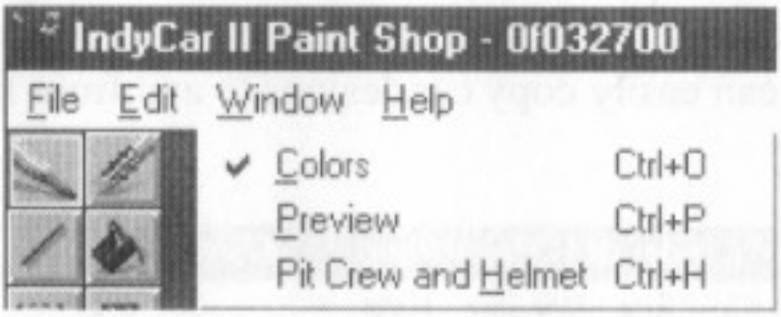


From the Paint Shop's main menu, choose **Window** from the menu bar, then click on **Preview.** A 3-D model of your present design will appear in a preview window. Adjust the Tilt, Zoom and Rotate sliders to achieve the best angle for viewing.

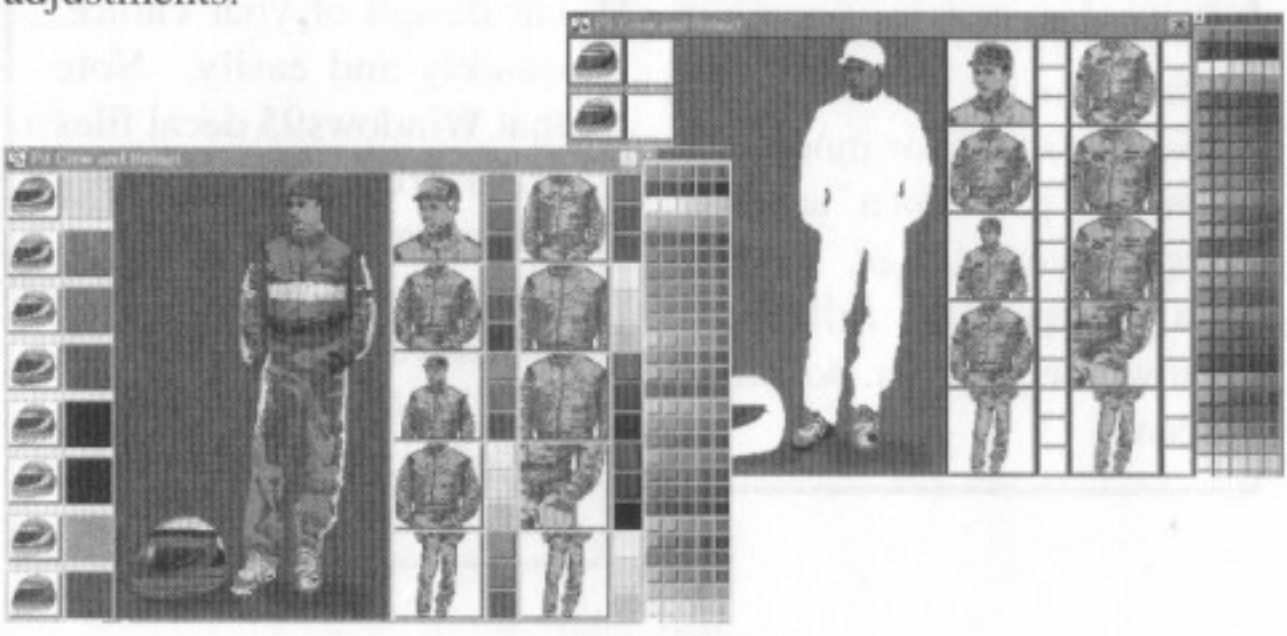
Choose **Auto Rotate** to start the camera spinning around your IndyCar for constant evaluation. While rotating, you may still make adjustments to the Tilt and Zoom sliders to "fine tune" the camera angle.

Toggle the decals on and off by clicking the **View Decals** checkbox. When you want to return to the Paint Shop to save or continue editing your work, click on the close button in the upper left corner of the preview window.

Designing Your Uniforms

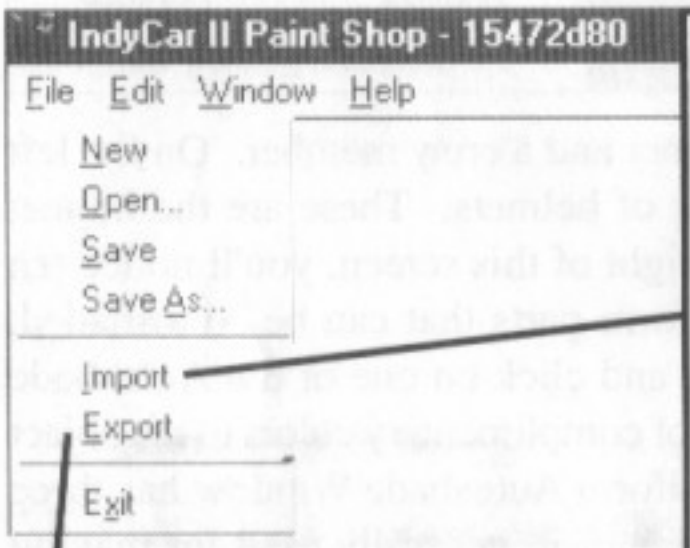


From the Paint Shop's Main menu, choose Window from the menu bar, then click on **Pit Crew and Helmet.** Your parts window will change to reveal your crash helmet and a crew member. On the left of this screen, you'll see a stack of helmets. These are the helmet **Autoshade Windows**. On the right of this screen, you'll notice ten windows depicting various uniform parts that can be Autoshaded. Choose a color from the palette and click on one of the Autoshade Windows to apply an even blend of complimentary colors to the object shown in that window. Each uniform Autoshade Window has three additional buttons to the right side of it, generally used for making subtle changes. Grab a color and click on one of these buttons to apply a single shade to that area. Additionally, you can click directly on the helmet and uniform shown in the parts window for single adjustments.



Importing And Exporting Your Designs

Using the Import and Export features found in the Paint Shop, you can easily copy car designs to and from files.



Use the Export feature to save your design in a file. This file can then be shared with a friend via disk or modem, or you may just want a "back-up" copy of your design. You may only Export the full decals shown on your car, not single decals.

The Import feature allows you to bring an entire decal set from another car into the window. You can also bring in a single decal. The Imported decal(s) can then be pasted on the car currently loaded in the Paint Shop. This feature is handy when making cars of the same matching team designs. Use the Import feature to duplicate a single car design of your choice, quickly and easily. Note that Windows95 decal files are stored in the widely recognized "PCX" format, while Macintosh decal files are stored in the popular "PICT" format, as well as the aforementioned "PCX" format.

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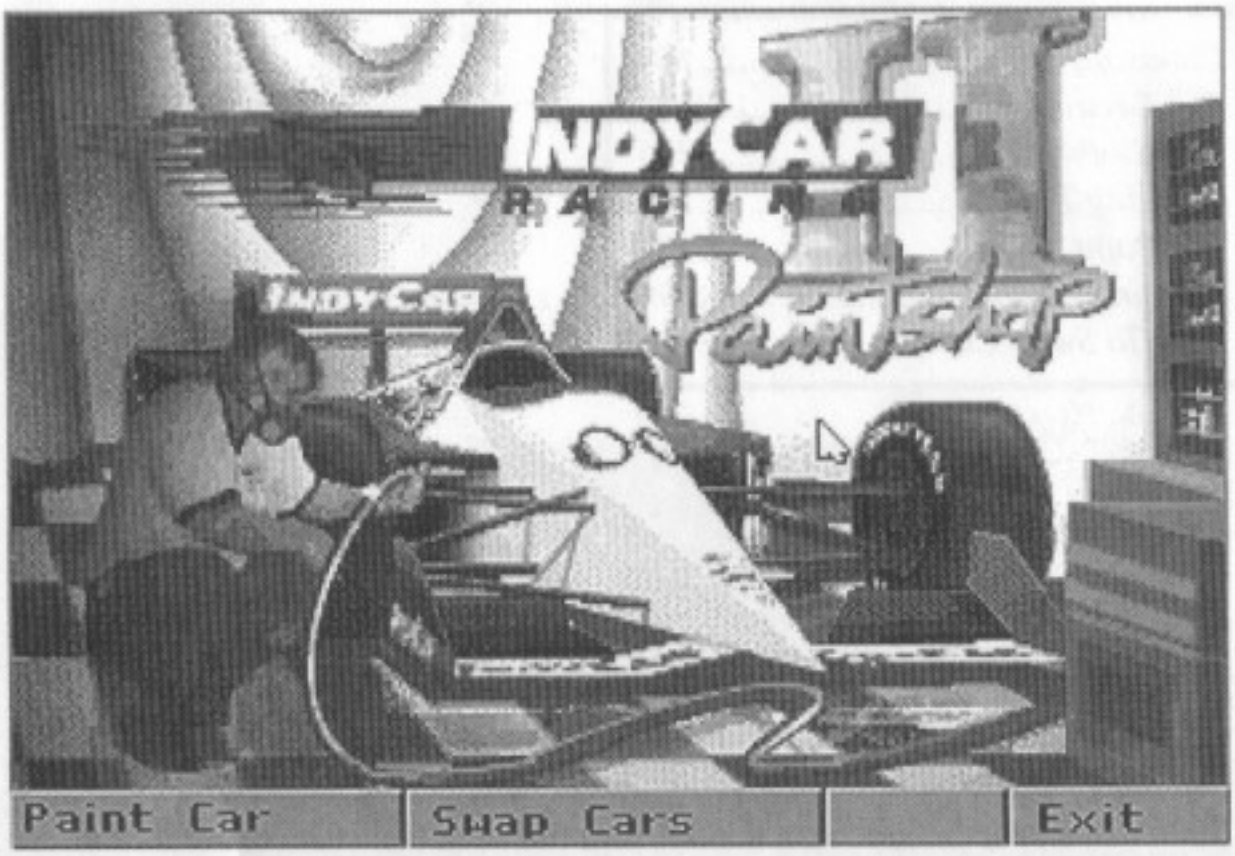
Painting Your IndyCar: DOS Users

"There are six essentials in painting. The first is called spirit; the second, rhythm; the third, thought; the fourth, scenery; the fifth, the brush; and the last is the ink."
-Ching Hao



Important! Read Before Painting

You must have a mouse with its driver installed in order to use the Paint Kit.

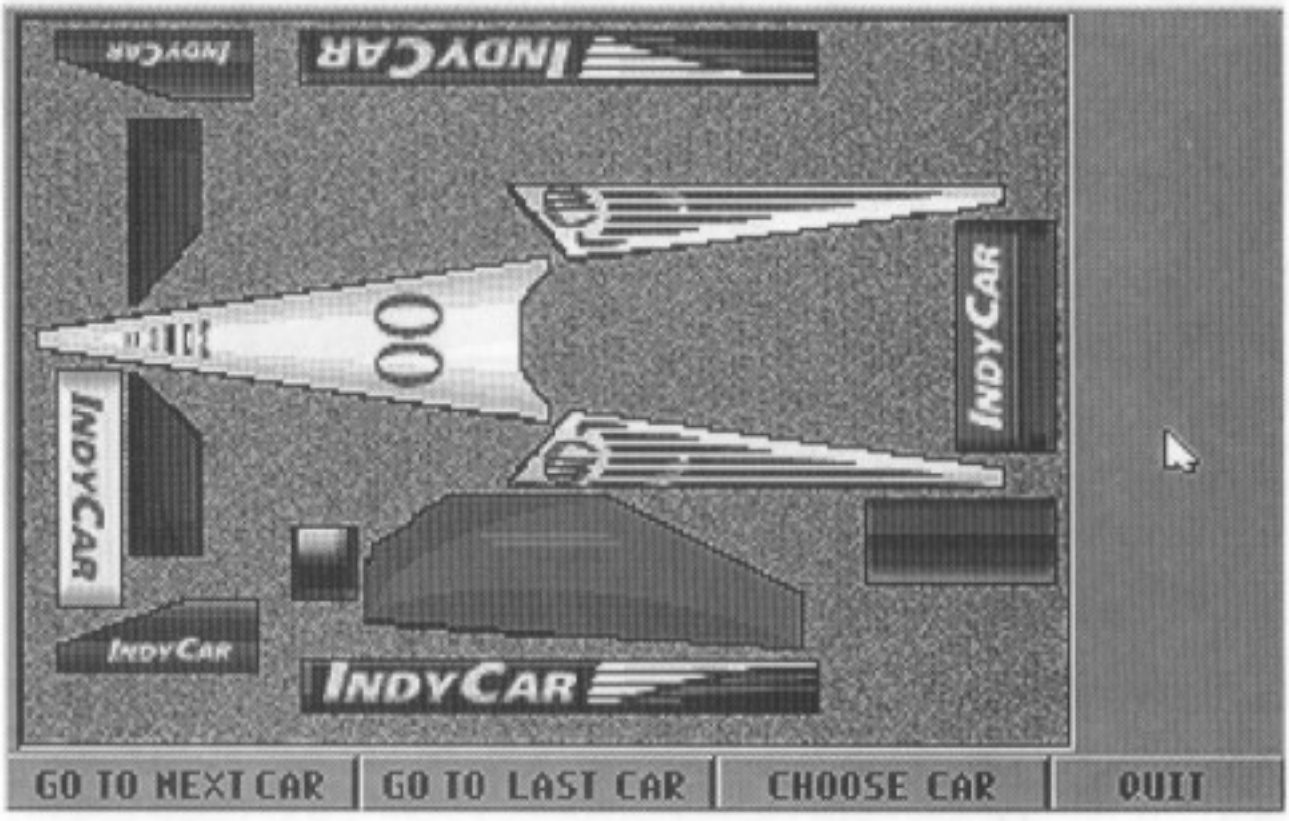
The IndyCar Racing II **Paint Kit** allows you to create many different sets of cars, saving them under any name you wish. These **Car Sets** can then be loaded from within IndyCar Racing II. **Car Sets** can store different collections of opponent cars, or contain several different paint schemes for your own car.

The original **Car Set** shipped with IndyCar Racing II is called "CARS95.DAT." This file can be found in the INDYCAR\CARS\CARS95 directory. It is highly recommended that a new Car Set be created rather than painting the cars contained in the CARS95.DAT file.

To make a new car set, type **PAINTKIT** *filename*. For example, let's make a new **Car Set** called "CARSTEST." Be sure you are in DOS, and in the INDYCAR directory before proceeding. Type PAINTKIT CARSTEST. The program will now search for a subdirectory called "CARSTEST." If it does not find one, it will ask you if you'd like to create one. Respond "**Yes**" to continue. Next, the program asks if you'd like to create the file called "CARSTEST.DAT." Once again, choose **"Yes."**

Note: The INDYCAR\CARS\CARS95\CARS95.DAT path and filename must exist in order for the game to run; therefore, they should not be altered. If this path is corrupted, you must go back and re-install the game.

Now that you've created a new car set to work with, you're ready to start painting. From the **Main Menu** of the **Paint Kit**, use your mouse to point to the **Paint Car** button in the lower left corner. Click the left mouse button once to choose **Paint Car**.

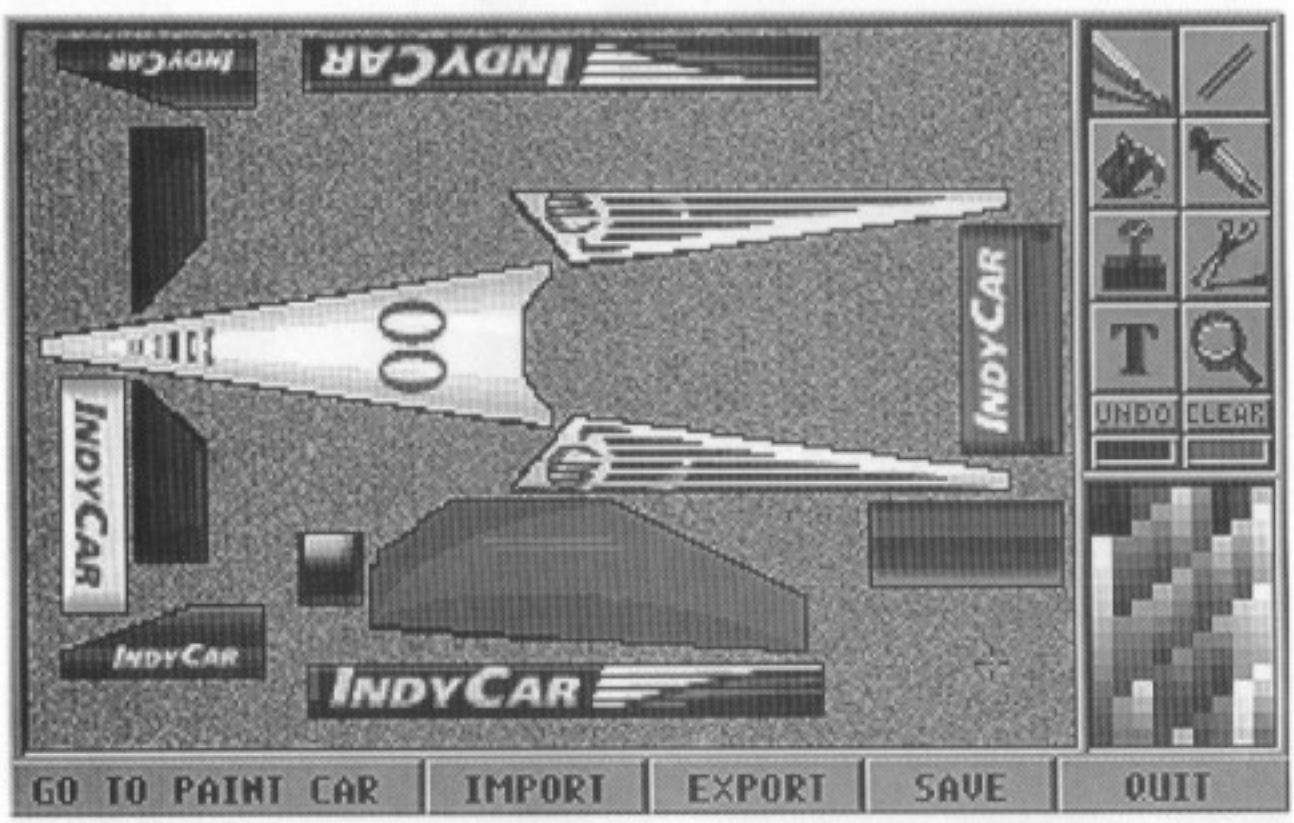


Choosing A Car To Paint

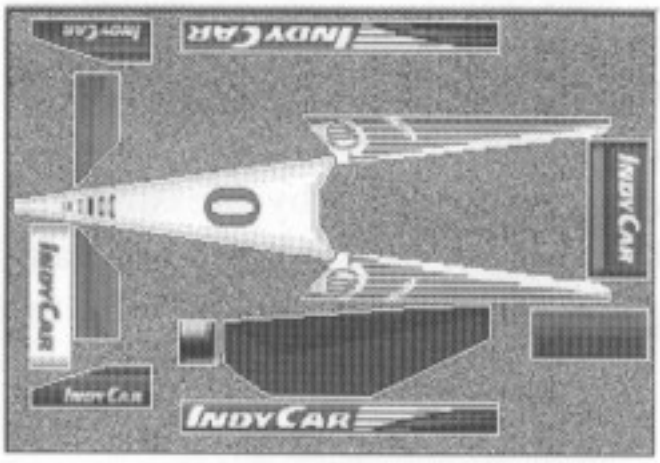
The first car you see will be your own car. You can choose it, or you can paint any other car in the game. Use the left mouse button to click on **Go To Next Car** or **Go To Last Car** to cycle through the list of available cars to paint. When you see the car onscreen that you want to paint, click on **Choose Car**.

The Decal Shop

Whether you've got a high-buck sponsor, or "Bill's Office Equipment" backing your team, your car can be adorned with a variety of logos and styles. Use the Decal and Icon Libraries provided, or draw your own logos from scratch with the tool box. The Decal Shop contains special tools to facilitate placing and/or drawing graphics on your IndyCar's prepainted bodywork.



The Decal Shop consists of a parts window, tool box, color palette and command bar.



The Parts Window: Allows you to draw or apply existing logos, numbers, or other designs directly onto the body panels. Add bodywork details, such as fuel caps, for a finishing touch.

The Tool Box

Brush Type

Line Tool

Fill Tool

Get Color Tool

Stamp Tool

Cut Out Tool

Text Tool

Zoom In

Undo Button

Clear Button

Primary Color

Secondary Color

Using The Tool Box

Using the left mouse button, point to and click on the tool you wish to use. The mouse cursor will change to reflect the shape of the tool currently active.

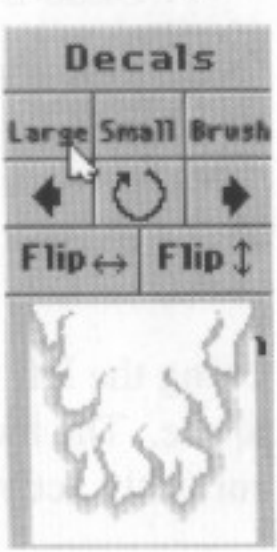
Brush Type: Grab the paintbrush tool for some freehand drawing. Click the right mouse button on the **Brush Type** toolbox icon to open a window with different brushes inside. Choose the brush width you wish to use, and begin drawing on any part by pressing and holding the left mouse button. Use the left mouse button to paint with the **Main Color**; use the right mouse button to paint with the **Secondary Color**.

Line Tool: Handy for drawing straight lines, this tool is selected with the left mouse button. Your lines can be a variety of thicknesses, depending upon the **Brush Type** chosen. Again, use the left/right buttons to choose colors.

Fill Tool: This tool makes painting large areas easy. Grab it by clicking the left mouse button on the **Fill Tool** icon in the toolbox. A single click over any part will fill every area bounded by a common color.

Get Color Tool: Use this icon to grab any color from a part inside the parts window. Point at a color in the **Parts Window** and click the left mouse button to load as the **Main Color**, or the right mouse button to load as the **Secondary Color**.

Stamp Tool: Use this to stamp provided logos and decals on your IndyCar. Click the right mouse button on it to open up the **Decal Library**. Choose between **Large** and **Small** decal sizes. Click on the left or right arrow icons to see additional decals. Click on either **Flip** button to invert the decal horizontally or vertically. The **Rotate** button spins the decal in 90 degree increments for use at different angles. Drag the decal over the body panel you wish to stamp it on, and click the left mouse button to place it. The **Brush** button recalls the decal that was most recently grabbed via the **Cut Out Tool.**



Cut Out Tool: This tool is a timesaver that makes recreating existing designs easy. Suppose you've drawn a design on the left side pod, and you want that same design on the right side pod. Use the **Cut Out Tool** to grab the original design. Press and hold the left mouse button as you drag it across the existing design. Now, click the right mouse button on the **Decal Tool** icon, then choose **Brush** to manipulate the cut out image.

Text Tool: Click the right mouse button on the **Text Tool** to open the **Font Library**. Click the left mouse button on the left and right arrows to scroll through the different fonts included. The **Rotate** button will spin the font in 90 degree increments. After choosing a font and its orientation, left click on the body panel where you want to stamp it, then type the characters right onto the bodywork. The color of the text is based on the color chosen in the **Main Color** box.

Zoom In: Click the left button over the magnifying glass to open a zoom window. Drag the window over the bodywork you wish to zoom in on, and left click. You can now edit the selected bodywork, pixel-by-pixel. Click the **Zoom In** tool again to return to the parts window.

Undo: Left click once to undo the most recent action.

Clear: Want to start with a clean slate? Left click once to clear all body panels of any paint or logo work.

Main Color: Use the left mouse button to draw or paint with this color. Select colors by positioning the cursor over the color palette and clicking the left mouse button.

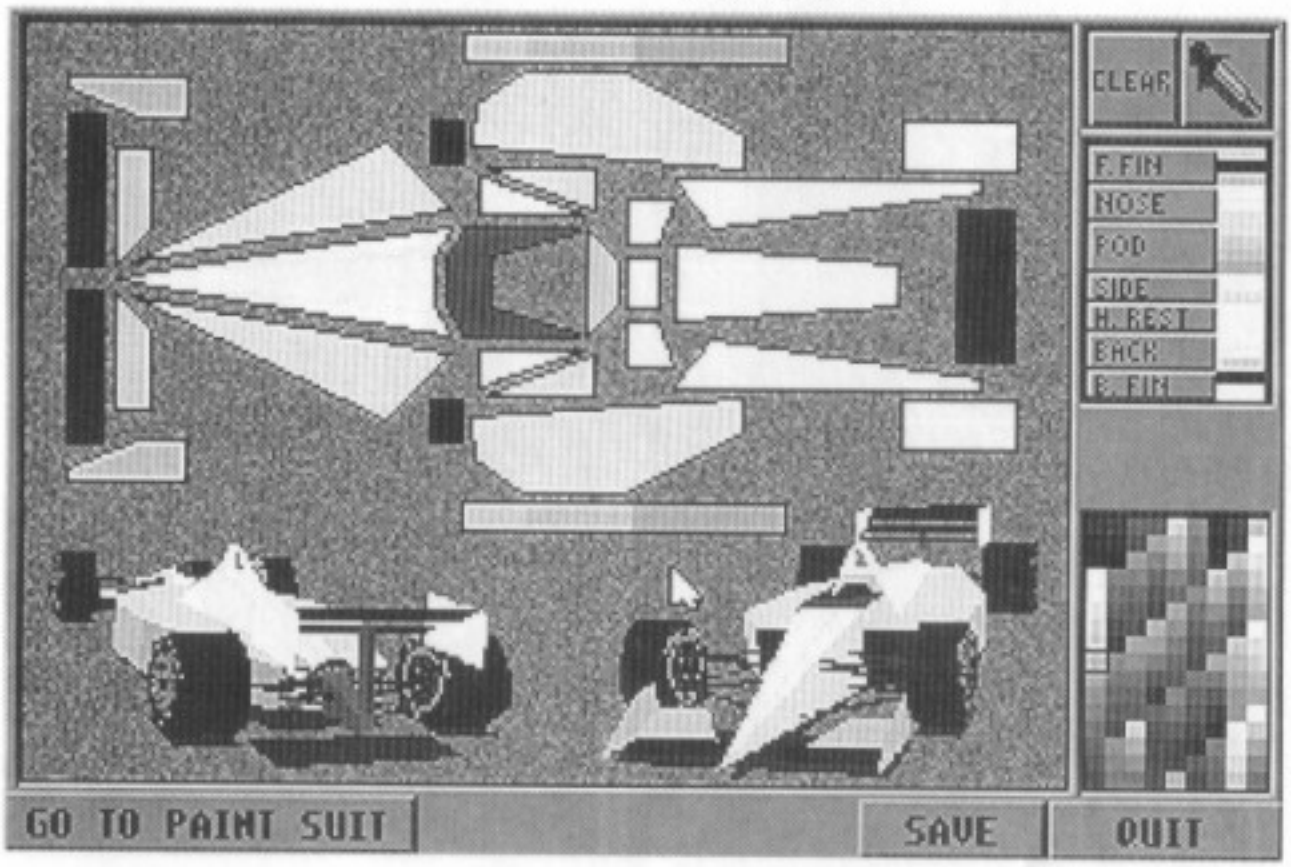
Secondary Color: Use the right mouse button to draw or paint with this color. Select colors by positioning the cursor over the color palette and clicking the right mouse button.

Drawing Tips

You can easily draw matching or continuous lines that extend from one side of the car to the other. For example, using the **Line Tool,** left click on the lower left side pod. Holding the mouse button down, draw the line across the cowling and to the matching spot on the right side pod. You can draw thicker lines or racing stripes by creating parallel lines of different widths and spacings. Come back later with the **Fill Tool** to change the colors of the stripes. Use the **Decal Shop** to draw body features on your car, such as gas caps, vent ducts and fasteners.

The Command Bar

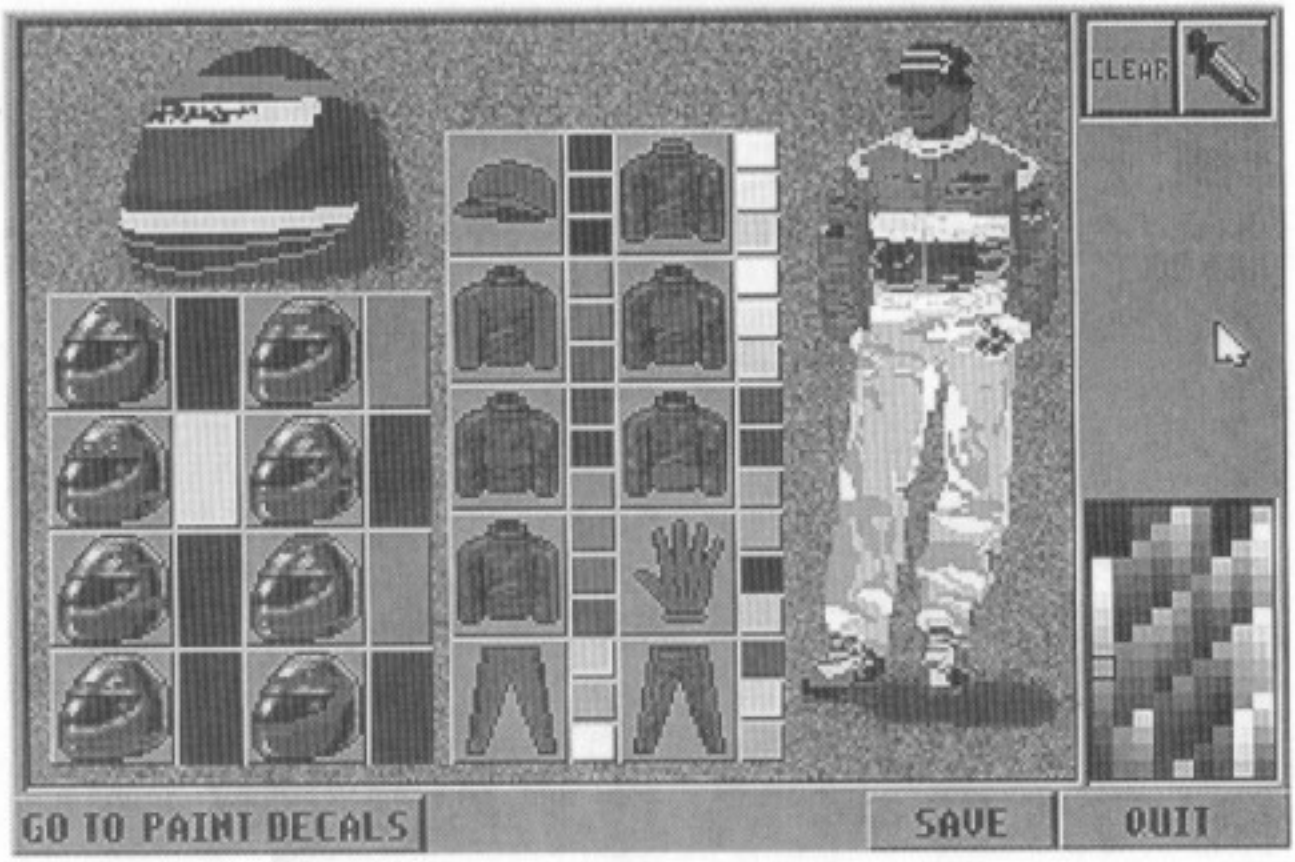
Click on **Go To Paint Car** to add base colors to the race car's body. Choose **Go To Paint Decals** or **Go To Paint Suit** the same way. Use the **Import** button to bring previously exported car designs into the Paint Kit. The **Import** button works in conjunction with the **Export** feature to provide a means of saving individual designs outside of the CARS95.DAT file. This is handy when saving a work in progress. By **Exporting** your work, you can continue to drive the existing car until you finish your new design later. If the car you are working on is your own car, it will be saved with the filename "IND95.PCX." If it was the Alumax car, it will be saved as "ALUM16.PCX." The car number is always included in the exported filename. To import a new design over the Alumax car, the file containing the new design must be named "ALUM16.PCX." Choose **Save** when you are ready to keep your final design. Choose **Quit** to return to the main **Paint Kit** menu.



The Paint Shop

The Paint Shop features a collection of tools that allow you to choose the color schemes of the various panels that make up your IndyCar's bodywork. While most of the panels can be painted individually, some parts are painted in pairs. For example, if you paint the nose side panel white, the opposite side automatically receives the same color. This helps ensure that both sides of your IndyCar will sport identical paint schemes.

The **Parts Window** displays a panel-by-panel depiction of the bodywork, as well as front and rear 3D profiles of the car. The window in the top right corner shows a color swatch beside each part's corresponding number. Beneath the swatch window you'll find the color palette, containing 139 hues. **Choose a color, then click the left mouse button on any piece of bodywork or in the swatch window to paint that part.**



Painting Uniforms

Click on **Go To Paint Suit** to custom design your crew members' uniforms. Painting suits is just like painting the car. Click on the swatch window, or directly on the part of the suit you wish to paint. Change uniform decal colors, stripes and hat colors to make your crew easier to spot when you're roarin' down pit road. Each crew member will sport the same uniform design that you create here.

Cut Out Tool Hint: *Use the* ***Cut Out Tool*** *to create multiple cars of the same design, such as teammates. For example, cut out the rear wing of the #16 Alumax car. Now, exit that car and select another car. Click the right mouse button on the* ***Stamp Tool****, and choose* ***Brush****. You can now paste the Alumax wing on the selected car. You can also use this technique to grab small clusters of incidental decals from other cars, and paste them on your car. This will give you a head start on "obtaining sponsorship."*

The Swap Cars Button

INDYCAR Racing II allows you to choose the number of opponents to race against, via the **Realism/Opponents Menu.** You could choose to race against fifteen opponents, but how do you pick the fifteen drivers you want to compete against? That's when the **Swap Cars** button is necessary. The **Swap Cars** button is located on the **Command Bar** of the **Paint Kit's Main Menu**.

The **Paint Kit** always opens the **Car Set** with the first car- your car. Using the **Go To Next Car/Go To Last Car** buttons, you can move down the car list, in order. Since the pace car is at the top of the list, the last car you come to would be at the bottom. Let's take an example: Suppose you want to race against twelve cars, and your favorite driver is Scott Pruett. Before using the **Swap Cars** function, each time you enter a race Scott's #20 Lola/Ford is omitted. To include his car, click on **Swap Cars**, then continue to click **Go To Next Car** until you see Scott Pruett's car. Now, click **Choose Car**, then use the **Go To Last Car** button to move back up the car list, looking for an opponent you'd rather move down the list. When you find one, click **Choose Car** again, and the two vehicles are swapped on the priority list.

Note: The **Swap Cars** function does not swap driver's names, only car graphics. Using the **Driver Info Menu** in INDYCAR Racing II, or a word processor/text editor, you can change the driver's names by editing the file **"DRIVERS2.TXT,"** found in the INDYCAR/CARS/CARS95 directory. It may be helpful to jot down the car order you create within the **Paint Kit**, so you'll be easily able to match names with cars by creating this same order in the **DRIVERS2.TXT** file.

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Technical Support Information

If you are having difficulty installing the software, please consult the installation instructions. If you have a modem, you may also call our bulletin board service, 24-hours a day, seven days a week. The BBS provides a forum for players to swap car setup tips, discuss pit notes, or download new files and utilities as they become available.

Please try our bulletin board, fax or other online sources for the fastest customer service. For a free CompuServe membership and a $15.00 usage credit, call CompuServe at 1-800-524-3388, or 1-614-457-0802, and ask for operator 539. If you need further assistance with this product, you may call our technical support hotline, **Monday through Friday, 9am to 5pm Eastern Time.** Please be at your computer when you call, and be ready to describe your system's configuration in detail.

Papyrus Tech Support:	**(617) 868-3103**
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CompuServe Address:	**72662, 2150**
America Online:	**Keyword PAPYRUS**
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