



*The Leader in Event Critical Timing Electronics*

*Model 3205  
Racebox  
RT Practice &  
Demo Tree System*



*Owner's Manual*

Rev K

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# RACEAMERICA

*T i m i n g   S y s t e m s*

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## LIMITED WARRANTY

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To the original purchaser of this RaceAmerica product, RaceAmerica warrants it to be in good working order for a period of ninety (90) days from the date of purchase from RaceAmerica or an authorized RaceAmerica distributor. Should this product malfunction during the warranty period, RaceAmerica will, at its option, repair or replace it at no charge, provided the product has not been subjected to misuse, abuse, or alterations, modifications, and/or repairs not authorized by RaceAmerica.

Any product requiring Limited Warranty service during the warranty period should be returned to RaceAmerica with proof of purchase. If return of merchandise is by mail, the customer agrees to insure the product, prepay shipping charges, and ship the product to RaceAmerica, Inc., 280 Martin Avenue, Unit #1, Santa Clara, CA 95050, USA.

ALL EXPRESSED AND IMPLIED WARRANTIES FOR THIS PRODUCT ARE LIMITED IN DURATION TO THE ABOVE NINETY DAY PERIOD.

UNDER NO CIRCUMSTANCES WILL RACEAMERICA BE LIABLE TO THE USER FOR DAMAGES, INCLUDING ANY LOST PROFITS, LOST SAVINGS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE, SUCH PRODUCT.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

## PACKAGE COMPONENTS

This manual covers setup and operation of the Racebox RT Practice & Demo Tree Controller with one of the RaceAmerica drag trees. The required components can be acquired through the following packages:

3205C - Controller/cables operate with one of the

following RaceAmerica trees:

02-2503 - 12 VDC with stage/pre-stage

02-2504 - 110 VAC with stage/pre-stage

02-2502 - 110VAC stage/pre-stage/

rear facing lights (RFL)

3205C1 - Controller/Tree (110VAC/Stg/P-Stg)

3205C2 - Controller/Tree (110/Stg/P-Stg/RFL)

3205C3 - Controller/Tree (12VDC/Staging)

3205C4 - Controller/Tree (230VAC/Stg/P-Stg)

3205C5 - Controller/Tree (230/Stg/P-Stg/RFL)

Additionally, each package includes

1 - Interconnect Cable Assembly to Tree - 40'

2 - 15' Player Cables with Push-buttons

1 - Owners Manual

## LOCAL REQUIREMENTS

Additional items required to operate your 3205:

7580D2 - 110V Floodlamp kit (3205C2)

7580D5 - 230V Floodlamp kit (3205C5)

3205C1 - 110VAC 1440 Watts Power

3205C2 - 110VAC 2200 Watts Power

3205C3 - 12VDC 277 Watts Power

1 - 110VAC Surge Suppression Strip

## AVAILABLE OPTIONS

7608F Foot Pedals to replace push-buttons

6012A Vehicle Launch Kit

Scoreboards - 4528/4428/6528/6828/6628

## PRODUCT DESCRIPTION

Racebox RT Practice & Demo Tree system provides a realistic track drag race starting experience utilizing a full size 'Christmas' Tree, actual light timing configurations, vehicle roll-

outs, and dial-ins. The system incorporates single and two player RT Practice as well as 'Best of 7' competition game for more competitive players. 'Best of 7' options also feature one player playing against the Racebox (computer) with selectable skill levels to match the players skill. The system also includes a free standing Demo mode as a static show or window display running simulated races as well as a Manual mode to manually start the tree for use when starting an event.

Options including foot pedals and vehicle launch kit make a more realistic experience.

The 3205 Racebox system is designed as a professional practice device by improving a person's reaction time by incorporating a complete set of **Full** and **Pro** starting light sequences, individual dial-ins, vehicle rollout times, and random tree start delay to simulate real track conditions. The Tree itself utilizes the same electronics used in professional starting Trees.

Operation is simple. Power on the system, configure the mode to be utilized, select the light sequence, dial-ins, vehicle rollouts and button simulation (gas pedal or trans-brake) desired. Stage by pressing and holding the push-button, then releasing to indicate a racer is ready. Press the push-button again when the Tree starts measure your reaction time. Winning lane for the best RT is indicated on the Tree.

## PRODUCT SPECIFICATIONS

The following listing provides the designed performance specifications for the 3205 Racebox system:

RT Timer Capacity	up to 9.999 sec
Time Accuracy	0.001 seconds
Dial-ins	up to 90.000 sec
Rollout	up to 0.999 sec
TREE height	81"/206cm
TREE Width	20"/51cm
TREE Weight w/base	54 lbs/26 Kg
Base Dimensions	20" X 20"
Floodlamps (3205C2)	20 - 100W

## DRAG RACING BASICS

Drag racing is the ultimate timing challenge for man and machine. To win a drag race, a driver must have a consistent vehicle (Elapsed Time - ET) and a good Reaction Time (RT). The RT component actually is the difference in many victories. The RaceAmerica Racebox system provides the racer the ability to watch the lights repeatedly and hone their reaction time skills in a near real world environment. The RT timer begins when the last yellow light illuminates but the racer cannot start until the green light is on. A perfect RT in Pro starting sequence is 0.400 seconds and 0.500 seconds in Full start sequence.

## ASSEMBLY & SET-UP

### STEP 1 - Familiarization

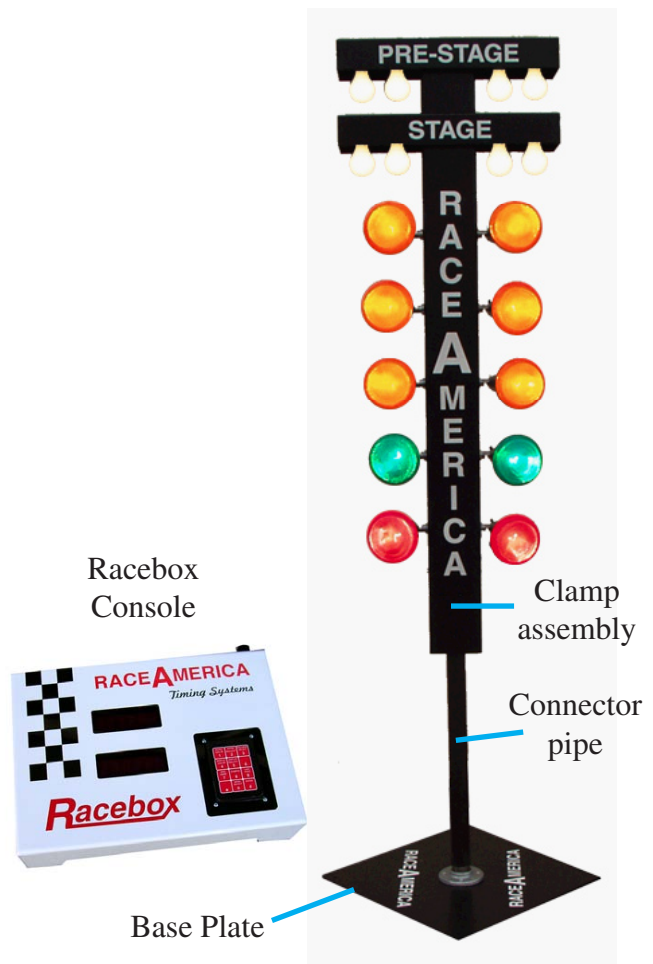
Familiarize yourself with the components pictured in this manual and how they interconnect.

The Tree contains a module referred to in this manual as the Tree Electronics. The enclosure containing the timing and control electronics is the console.

The system ships with three cables, the 25 ft



The iron pipe is held in place by two clamps at the base of the tree. Assembly is easy if the pipe is inserted into the base of the tree with the tree sitting face up horizontally. Push up the clamp from the bottom to allow the pipe to go through each of the two clamps; a Stop bolt is in place to limit the pipe travel.

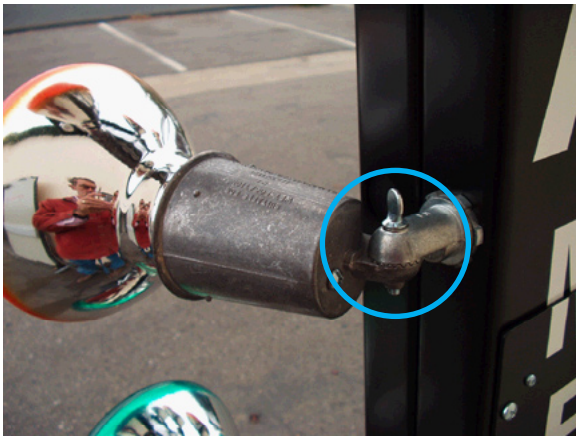


### Assembled Tree and Console

The assembled Tree - note the base orientation is at a 45 degree angle to the tree for increased stability.

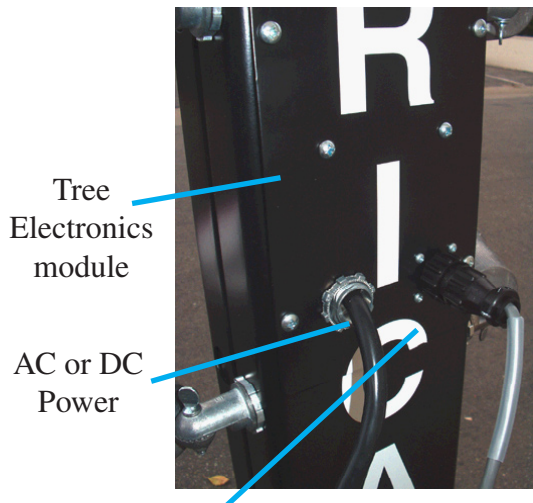


The iron pipe clamps from the back side - the nuts should be tightened to a little more than finger tight to hold the tree adequately in the vertical orientation.



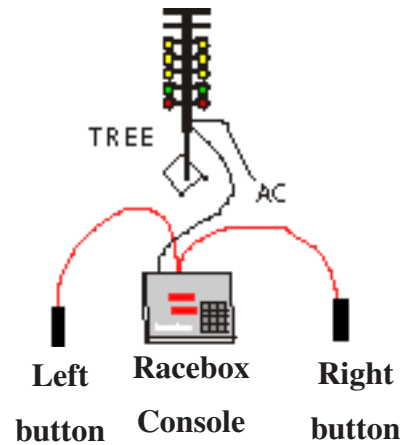
### Light Pod Adjustment

Loosen the screw on the light pod (AC Tree) to adjust the angle of the pod for desired placement of the light. Tighten the screw when the desired position is attained (several detents are available).



Tree Interconnect Cable

The Tree as seen from the back; do not connect the AC power until all cables have been connected and the system is ready for power up.



### Cable Connections

cable with round four conductor connectors on both ends is the Tree Interconnect Cable, and the two push-buttons are the Player Cables (left lane and right lane).

All connectors are labeled and keyed for proper connections between the Tree and console.

#### STEP 2 - Tree Assembly

The Tree is assembled as shown with the pipe clamp and then screwed into the threaded flange on the Base Plate. Bulbs can be screwed into the sockets once the Tree is assembled and standing upright.

The AC Tree light pods can be adjusted for desired angular view using the screws on each pod. DC Tree pods can be moved manually.

#### STEP 3 - Connect Tree Cable

Connect the TREE Interconnect Cable between the TREE and console.

#### STEP 4 - Connect Player Cables

Connect the push-button Player Cables to the console (or Foot Pedals or Vehicle Launch Kit).

#### STEP 5 - Power On

Connect the power cord to the appropriate source. A surge suppression power strip is suggested to compensate for line voltage fluctuations (110/230 VAC systems). Use the On/Off switch on the surge strip to turn the system on.

Connecting the power to the Tree turns on the system and places the RaceAmerica 3205 system into a self-test of the microprocessor circuitry, the LED display (Light Emitting Diode) and the 'Christmas' Tree. This is an internal test as well as a visual check of the display and Tree lights.

The LED Display will show the **PRODUCT** number and the **CODE** revision level contained within the microprocessor in the upper and lower windows respectively.

The Tree sequences through a lamp test and circuitry test by illuminating the left red lamp and stepping up through the green and yellows, Stage and Pre-stage on the left side, then on the right side to Stage and Pre-stage. The tree then illuminates all top Stage (Pre-stage) lamps and steps down through each set of lamps for both lanes. Next the lamps are all sequenced on starting with the red up the left side, then the red up the right side. All lamps are then flashed once to conclude the self-test. When the tree has completed the self-test display, the system is fully functional and ready for final setup. If the lights do not follow this sequence or some lights were not illuminated, check for insufficient power or defective bulbs. Each time power is applied to the TREE, a self-test sequence is initiated by the microprocessor to insure proper operation of the display and electronics. At the end of the power up sequence, the system will go to the mode selected in the ConFig menu!

### STEP 6 - Mode Configuration

The system has eight different modes of operation:

- **Best of 7 ([bEST] [of 7])** is a game mode for two players competing for best reaction times. First player to win four races is the winner. Number of wins are tallied and displayed on the tree while reaction times are displayed on the console.



**Console Keypad**

The keypad is used to select operational modes and to set dial-ins, rollouts, light sequences and to reset the system.

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- **Left Computer ([LEFT] [CPU])** is a Best of Seven game series where the computer plays the Left lane with selectable skill levels. First lane to win four races is the winner. Number of wins are tallied and displayed on the tree while reaction times are displayed on the console.

- **Right Computer ([riGht] [CPU])** is a Best of Seven game series where the computer plays the Right lane with selectable skill levels. First lane to win four races is the winner. Number of wins are tallied and displayed on the tree while reaction times are displayed on the console.

- **Two Player ([duAL] [PLAyEr])** RT Practice mode allows two players to compete with the winner indicated on the tree for each race and reaction times displayed on the console.

- **Single Player ([LEFT] [PLAyEr] or [riGht] [PLAyEr])** RT Practice mode allows one person to practice their reaction time to the tree using the left or right handheld push-button with reaction time displayed on the console.

- **Demo ([no] [PLAyEr])** mode or No Player mode simulates race starts using pre-programmed tree starting sequences for use as an active and unattended store or window display.

- **Manual ([PUSH] [button])** mode allows manual control to start the tree using the right hand push-button to bring down the lights.

Mode selections are viewed by repeatedly pressing the **Mode Select (0)** button on the console keypad. Select a mode by pressing Enter [#] when it is displayed.

### STEP 7 - System Configuration

Use the **[8] CONFIG** key to select Gas Pedal or Trans-brake modes, type of tree connected and the reaction time (RT) format. All player modes can be operated by either pressing the push-buttons (foot pedals) (gas pedal simulation) or releasing the push-buttons (Vehicle launch kit) (trans-brake simulation). This selection is made in **CONFIG** by pressing **[8]; [trAnS] [button]** (RT when the button is released) or **[GAS] [PEdAL]** (RT when the button is pressed) displays; press the **[8]** key until the desired simulation displays, press **[#] ENTER** to accept the selection.

Next the display will cycle through **[trEE] [12 dc]**, **[trEE] [110 AC]** and **[trEE] [230 AC]** with repeated presses of the **[8]** key. Press **[#] [ENTER]** when the correct tree is displayed.

Next the display will show **[rt 0.0] [on]**; pressing **[8]** again will display **[rt 0.0] [OFF]**. When RT 0.0 is ON, the RT timer is from the Green light (perfect RT is zero); when OFF, the RT timer starts at the last yellow resulting in a perfect RT of 0.400 (Pro Tree) or 0.500 sec (Full Tree). When the desired format is displayed, press **[#] [ENTER]**.

The display will now show the selected default start-up mode; press the **[8]** to cycle through the modes; press **[#]** to accept.

These selections are saved for future use or change.

Select the desired starting light sequence (**Full** or **Pro**) by pressing the **[3]** key. This

will toggle the starting sequence between the **[Pro] [trEE]** format (all yellows then green at a 0.400 second interval) and the **[Full] [trEE]** or **SPORTSMAN** format (each yellow then green at 0.500 second intervals). Starting Light selection is available in all modes except Demo mode and the selected mode displays in the upper window.

Dial-in times can be entered individually or selected randomly by the computer.

Configure dial-in times for simulated bracket starts by pressing the **[1] DIALIN** key to zero out the existing times; the display will show **[SEt by] [CPU]** which will randomly select Dial-in times for each lane; press **[#] ENTER** to accept random Dial-ins or press **[1] DIALIN** again to input the racers Dial-in times (top display is for left lane and bottom display is for right lane times). Press the **[#] ENTER** key to accept the new times (all zeros will be heads-up format). Recall current Dial-in times by pressing the **[4]** key. Bracket racing is a form of handicapping where the expected Elapsed Time is entered for each racer, the starts are adjusted so if both racers have perfect reaction times and run their Dial-in, they will finish at the same time.

To simulate the roll out delay between the time the accelerator is pressed in the vehicle and the vehicle actually moves forward. Current **[roll] [out]** is displayed by pressing the **[5] Display Roll Out** key for the left lane (upper window) and right lane (lower window); press the **[2]** key to zero out the existing times and receive the prompt to enter new numbers (top window is for the left lane and bottom window is for the right lane times) for racers roll out times. Press the **[#] ENTER** key to accept the new times. System defaults for dial-in and rollout are 0.000 seconds. A maximum rollout of 0.999 seconds can be entered. When the push-button is pressed, the system delays sensing of the push-button for the configured rollout time entered for that lane.

Dial-in times and Vehicle Rollout times are enabled but not required in Best of 7, Dual Player, and Single Player modes. These times as well as starting light selection (Full or Pro) can be changed at any time before each race is begun.

## OPERATION

### BEST OF 7 GAME MODE -

Press the MODE [0] key repeatedly until [bEST] [of 7] displays, press Enter [#] to accept.

In Best of 7 game mode, each race results in a winning lane. The Yellow lights for each lane illuminate after each race to display the number of wins by each player. The game is over when one lane reaches four wins indicated by all three Yellow lights and the Green light flashing the four wins.

To verify the left and right push-buttons are active, press each push-button briefly. The Pre-Stage lights in each lane illuminate indicating the button is active.

Follow these steps to play a game in the Best of 7 mode - gas pedal simulation (trans-brake NO).

1) Press either push-button to clear the TREE (the Pre-Stage lights for that lane will illuminate while the push-button is pressed).

2) Press and Hold both push-buttons until the Pre-Stage lights illuminate.

3) When ready to race, release the push-button for each lane. The Stage light will illuminate to confirm that lane is ready to race. When both Stage lights are illuminated, the tree will start using the configured Pro or Full starting sequence, Dial-ins, and Vehicle Roll-outs.

4) Press the push-button (do not hold) for each lane as close to the illumination of the green light as possible. When both push-buttons have been pressed, the Reaction Time for each lane will display on the console (left lane in the upper window and right lane in the lower window) and a yellow light for the winning lane will flash. After each race, another yellow light will illuminate and all illuminated lights for the last winning lane will

flash until one lane wins four races indicated by the yellows and green light flashing.

5) Go to step 1 until one player wins four races, then go to step 6.

6) Game Over, press and hold both push-buttons for 1 second to start a new game or press the New Game [7] key to begin another game.

If the trans-brake simulation is selected in the CONFIG mode (trans-brake - YES); simply press/hold the push-buttons until the tree comes down, releasing the push-button to get a RT.

The starting light sequence (Full or Pro), dial-ins, or vehicle rollouts can be selected or changed at any time before a race begins. A random delay between Stage light illumination and Yellow has been built into the starting sequence to simulate realistic starting conditions at the track. When using Pro starts, a perfect light is 0.400 seconds and 0.500 in Full starts. A Redlight or Foul Start occurs when the push-button was pressed prior to the Green light illuminating. If both players Redlight, the first lane to Redlight loses as indicated by a lower RT, however, if a dial-in was entered, then the first to redlight loses irregardless of RT's. If both players result with the same RT, the system determines the winner using a higher level of internal accuracy than what is displayed.

The mode [0] key can be pressed after any race to change modes. The Last Race [9] key will display the last race results and can be pressed after race results have been cleared and before the next race begins.

## BEST OF 7 GAME MODE - LEFT Computer/RIGHT Player

Press the MODE [0] key repeatedly until [LEFT][CPU] displays, press Enter [#] to accept. The computer skill level will display as [CPU] [At 1] with the [1] blinking, press the [0] key repeatedly to scroll through the five skill levels (Level 1 represents the computer as a novice while Level 5 represents the computer as an expert racer), press [#] to accept the desired level.

In this Best of 7 game mode, each race results in a winning lane. The Yellow lights for each lane illuminate after each race to display the number of wins by the computer (Left) or the player (Right). The game is over when one lane reaches four wins indicated by all three Yellow lights and the Green light flashing the four wins.

As the skill level of the computer increases, the computer is able to maintain a more consistent and closer to perfect RT while redlighting less often, making it more and more difficult to 'beat the computer'.

To select the right push-button, press each push-button briefly. The Pre-Stage lights in the right lane illuminate when the right push-button is pressed.

Follow these steps to play a game in the Best of 7 Left Computer mode - gas pedal simulation (trans-brake NO).

1) Press the Right push-button to clear the TREE (both Pre-Stage lights will illuminate while the push-button is pressed).

2) Press and Hold the Right push-button until the Pre-Stage lights illuminate.

3) When ready to race, release the push-button. The Stage lights will illuminate to confirm the system is ready to race. The tree will start using the configured Pro or Full starting sequence, Dial-ins, and Vehicle Roll-outs.

4) Press the push-button (do not hold) as close to the illumination of the green light as possible. The computer's RT for the Left lane is based on the Skill Level selected. The Reaction Time for each lane will display (left lane in upper window and right lane in lower window) and a yellow light for the winning lane will flash. After each race, another yellow light will illuminate and all illuminated lights for the last winning lane will flash until one lane wins four races indicated by the yellows and green light flashing.

5) Go to step 1 until one player wins four races, then go to step 6.

6) Game Over, press and hold both push-buttons for 1 second to start a new game or press the New Game [7] key to begin another game at any time.

If the trans-brake simulation is selected in the CONFIG mode (trans-brake - YES); simply press/hold the push-button until the tree comes down, releasing the push-button to get a RT.

The starting light sequence (Full or Pro), dial-ins, or vehicle roll-outs can be selected or changed at any time before a race begins. A random delay between Stage light illumination and Yellow has been built into the starting sequence to simulate realistic starting conditions at the track. When using Pro starts, a perfect light is 0.400 seconds and 0.500 in Full starts. A Redlight or Foul Start occurs when the push-button was pressed prior to the Green light illuminating. If both players Redlight, the first lane to Redlight loses as indicated by a lower RT, however, if a dial-in was entered, then the first to redlight loses irregardless of RT's. If both players result with the same RT, the system determines the winner using a higher level of internal accuracy than what is displayed.

The mode [0] button can be pressed after any race to change modes. The Last Race [9] button will display the last race results and can be pressed after race results have been cleared and before the next race begins.

## BEST OF 7 GAME MODE - RIGHT Computer/LEFT Player

Press the MODE [0] key repeatedly until [riGht] [CPU] displays, press Enter [#] to accept. The Skill level will display as [CPU] [At 1] with the [1] blinking, press the [0] key repeatedly to scroll through the five skill levels (Level 1 represents the computer as a novice while Level 5 represents the computer as an expert racer), press [#] to accept the desired level.

In this Best of 7 game mode, each race results in a winning lane. The Yellow lights for each lane illuminate after each race to display the number of wins by the computer (Right) or the player (Left). The game is over when one lane reaches four wins indicated by all three Yellow lights and the Green light flashing the four wins.

As the skill level of the computer increases, the computer is able to maintain a more consistent and closer to perfect RT while redlighting less often, making it more and more difficult to 'beat the computer'.

To select the left push-button, press each push-button briefly. The Pre-Stage lights in the left lane illuminate when the left push-button is pressed.

Follow these steps to play a game in the Best of 7 Right Computer mode - gas pedal simulation (trans-brake NO).

1) Press the Left push-button to clear the TREE (both Pre-Stage lights will illuminate while the push-button is pressed).

2) Press and Hold the Left push-button until the Pre-Stage lights illuminate.

3) When ready to race, release the push-button. The Stage lights will illuminate to confirm the system is ready to race. The tree will start using the configured Pro or Full starting sequence, Dial-ins, and Vehicle Roll-outs.

4) Press the push-button (do not hold) as close to the illumination of the green light as possible. The computer's RT for the Right lane is based on the Skill Level selected. The Reaction Time for each lane will display (left lane in upper window and right lane in lower window) and a yellow light for the winning lane will flash. After each race, another yellow light will illuminate and all illuminated lights for the last winning lane will flash until one lane wins four races indicated by the yellows and green light flashing.

5) Go to step 1 until one player wins four races, then go to step 6.

6) Game Over, press and hold both push-buttons for 1 second to start a new game or press the New Game [7] key to begin another game at any time.

If the trans-brake simulation is selected in the CONFIG mode (trans-brake - YES); simply press/hold the push-button until the tree comes down, releasing the push-button to get a RT.

The starting light sequence (Full or Pro), dial-ins, or vehicle roll-outs can be selected or changed at any time before a race begins. A random delay between Stage light illumination and Yellow has been built into the starting sequence to simulate realistic starting conditions at the track. When using Pro starts, a perfect light is 0.400 seconds and 0.500 in Full starts. A Redlight or Foul Start occurs when the push-button was pressed prior to the Green light illuminating. If both players Redlight, the first lane to Redlight loses as indicated by a lower RT, however, if a dial-in was entered, then the first to redlight loses irregardless of RT's. If both players result with the same RT, the system determines the winner using a higher level of internal accuracy than what is displayed.

When the reaction time is displayed on the Tree for two players, the left lane is displayed first then walks off the display to the left side. The right lane is displayed next and walks off to the right side. This repeats until the race is reset.

The mode [0] button can be pressed after any race to change modes. The Last Race [9] button will display the last race results and can be pressed after race results have been cleared and before the next race begins.

## **TWO PLAYER RT PRACTICE MODE**

Press the MODE [0] key repeatedly until [duAL] [PLAyEr] displays, then press Enter [#] to accept. Two Player RT Practice mode allows two players to compete at the same time.

Follow these steps to play a game in the Two Player mode - gas pedal simulation (trans-brake NO).

1) Press either push-button to clear the Tree (the Pre-Stage lights for that lane will illuminate while the push-button is pressed).

2) Press and Hold both push-buttons until the Pre-Stage lights illuminate.

3) When ready to race, release the push-button for each lane. The Stage light will illuminate to confirm that lane is ready to race. When both Stage lights are illuminated, the tree will start using the configured Pro or Full starting sequence, Dial-ins, and Vehicle Rollouts.

4) Press the push-button (do not hold) for each lane as close to the illumination of the green light as possible. When both push-buttons have been pressed, the Reaction Time for each lane will display on the console (left lane RT in upper window and right lane in lower window) and the Green light illuminates for the winning lane. The Redlight illuminates for all Redlights and the middle yellow light illuminates for breakouts.

5) Go to step 1 to clear the Tree and start a new race.

If the trans-brake simulation is selected in the CONFIG mode (trans-brake - YES); simply press/hold the push-buttons until the tree comes down, releasing the push-button to get a RT.

The starting light sequence (Full or Pro), dial-ins, or vehicle rollouts can be selected or changed at any time before a race begins. A random delay between Stage light illumination and Yellow has been built into the starting sequence to simulate realistic starting conditions at the track. When using Pro starts, a perfect light is 0.400 seconds and 0.500 in Full starts. A Redlight or Foul Start occurs when the push-button was pressed prior to the Green light illuminating. If both players Redlight, the first lane to Redlight loses as indicated by a lower RT, however, if a dial-in was entered, then the first to redlight loses irregardless of RT's. If both players result with the same RT, the system determines the winner using a higher level of internal accuracy than what is displayed.

The mode [0] key can be pressed after any race to change modes. The Last Race [9] key will display the last race results and can be pressed after race results have been cleared and before the next race begins.

## **ONE PLAYER RT PRACTICE MODE -**

Press the MODE [0] key repeatedly until [LEFT] [PLAyEr] or [riGht] [PLAyEr] displays in the windows, press Enter [#] to accept whichever side you wish to play from. One Player RT Practice mode allows one person to repeatedly test their skills against the lights and the clock.

Follow these steps to use the One Player mode - gas pedal simulation (trans-brake NO).

1) Press the push-button (of the selected lane) to clear the Tree (both Pre-Stage lights will illuminate while the push-button is pressed).

2) Press and Hold the push-button until the Pre-Stage lights illuminate.

3) When ready to race, release the right lane push-button. Both Stage lights will illuminate to confirm ready to race. When both Stage lights are illuminated, the tree will start using the configured

Pro or Full starting sequence, Dial-ins, and Vehicle Rollouts.

4) Press the right lane push-button (do not hold) as close to the illumination of the green light as possible. When the push-button has been pressed, the Reaction Time for the lane will display in the console window (left lane in the upper window and right lane in the lower window). The Redlight illuminates for any Redlight condition.

5) Go to step 1 to clear the Tree and start a new race.

If the trans-brake simulation is selected in the CONFIG mode (trans-brake - YES); simply press/hold the push-button until the tree comes down, releasing the push-button to get a RT.

The starting light sequence (Full or Pro), dial-ins, or vehicle rollout delays can be selected or changed at any time before a race begins. A random delay between Stage light illumination and Yellow has been built into the starting sequence to simulate realistic starting conditions at the track. When using Pro starts, a perfect light is 0.400 seconds and 0.500 in Full starts. A Redlight or Foul Start occurs when the push-button was pressed prior to the Green light illuminating.

The mode [0] button can be pressed after any race to change modes. The Last Race [9] button will display the last race results and can be pressed after race results have been cleared and before the next race begins.

### DEMO MODE -

Press the mode [0] key repeatedly until [no] [PLAYEr] displays in the window, press Enter [#] to accept.

Demo mode (no player) can be used as a static show or window display. When Demo mode is selected, Demo Mode pre-stages each lane, then stages both lanes, then Demo Mode selects a starting light sequence and dial-in for each lane before starting the tree. Redlights occur on some starts and green lights are illuminated for the

winning lane. After displaying the race results on the tree, the tree clears and after a short pause, a new race start begins.

The mode [0] key can be pressed after any race when the Pre-stage and Stage lights are OFF and the Green lights are ON to change to a different mode.

### MANUAL MODE -

Press the mode [0] key repeatedly until [PUSH] [button] displays in the windows, press Enter [#] to accept. Manual mode is a way to manually start the Tree for external events; no reaction time is measured.

Follow these steps to use the Manual mode:

1) Press the right lane push-button to clear the Tree (the Pre-Stage lights will illuminate briefly).

2) Press and Hold the push-button until the Pre-Stage lights illuminate.

3) When the push-button is released the Stage lights will illuminate and start the Tree.

4) Go to step 1 to start another race or press the mode [0] key to select a different mode.

The starting light sequence (Full or Pro) can be selected or changed at any time before a race start.

## VEHICLE LAUNCH OPTION -

The Vehicle Launch option kit replaces the push-buttons or foot pedals with track electronic Infra-red beam emitter/sensor pairs so a real vehicle can be staged and launched as the tree comes down; and the RT recorded.

The Vehicle Launch option operates with the RaceBox in Trans-brake mode. The kit can be added to either or both lanes for one or two vehicle launch operation. Functionality is such that the Racebox is self-resetting with each subsequent vehicle stage.



**Console Keypad**

The keypad is used to select operational modes and to set dial-ins, roll-outs, light sequences and to reset the system.

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## KEYPAD FUNCTIONS

The following defines the keypad key functionality:

### KEY 0

To select the operation **MODE**, repeatedly press [0] to scroll through [bESt] [of 7], [LEFT] [CPU], [riGht] [CPU], [duAL] [PLAyEr], [LEFT] [PLAyEr], [riGht] [PLAyEr], [no] [PLAyEr], and [PUSH] [button] as described in the configuration section.

### KEY 1

Press the [1] key to enter new bracket or index (dial-in) times for each lane. The LED display momentarily shows [SEt by] [CPU] to allow the computer to randomly assign dial-in times to each lane; press [1] again to enter the bracket or index times for each lane (left lane in upper window and right lane in lower window). Press the [#] pound sign key to accept the random mode or times as entered.

### KEY 2

The [2] key is used to enter a vehicle roll-out (delay). Pressing [2], zeros out any times and presents the prompt to enter new times. Enter the desired rollouts and press [#] to accept. It is not required that both lanes enter a rollout. The delay will occur (0 to 0.999 seconds) from the time the button is actually pressed until it registers in the system simulating the vehicle rollout time from pressing the accelerator until the vehicle lifts and moves forward.

### KEY 3

Pressing the [3] key shows the starting light sequence between [Pro] [trEE] mode and [Full] [trEE] or SPORTSMAN mode. The LED Displays on the console will confirm which starting sequence will be used. To switch to the other sequence, press the [3] key again.

### KEY 4

Pressing the [4] key will display the current bracket/index dial-in values for each lane (left lane in the upper window and right lane in the lower window). Press [#] to leave Dial-in recall.

### KEY 5

Pressing the [5] key will display the current vehicle rollout values (left lane in the upper window and right lane in the lower window). Press [#] to leave rollout recall.

### KEY 7

Press the [7] key to start a new game when in the Best of 7 [bESt] [of 7], [LEFT] [CPU] and [riGht] [CPU] modes.

### **KEY 8**

Press the **[8]** key to disable/enable gas pedal/trans-brake simulation; Press the **[8]**; **[trAnS]** **[button]** (RT when the button is released) or **[GAS]** **[PEdAL]** (RT when the button is pressed) displays; press the **[8]** key until the desired simulation displays, press **[#]** **ENTER** to accept the selection. Trans-brake simulation records RT when the push-button is released instead of when the push-button is pressed (gas pedal simulation). The **[8]** key also sets the Tree power source and the perfect RT 0.0 option.

### **KEY 9**

Press the **[9]** key to recall and display the last race results if the push-buttons were pressed too quickly and cleared the display and tree.

### **KEY #**

The **[#]** pound key is used to accept input values, end races and clear the system.

### **MAINTENANCE**

The Racebox system does not require any maintenance beyond normal cleaning to insure good electrical connections.

### **SPARE PARTS**

RaceAmerica recommends a spare set of bulbs and spare Player Cable for serious users. Contact RaceAmerica for availability and pricing of spares items.

### **SUPPORT AGREEMENTS**

Support agreements are available from RaceAmerica providing Telephone Assistance on technical issues and operational questions, repair and/or replacement of hardware failures, Software and Firmware updates and bug reporting. Contact RaceAmerica for more information and pricing of Support Agreements.