Slot car race management for Scalextric ARC Powerbase

User Manual

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INTRODUCTION

Magic ARC (App Race Control) APP is a slot car system that allows users to wirelessly create and manage races with a handheld smart device, such as a smartphone or tablet.

Connect your smart device via Bluetooth to the new Scalextric ARC Powerbase, unlocking unique features and control of your races.

This App is not endorsed by, affiliated with or associated with Hornby Hobbies Limited (GB).

MAIN PAGE

This is the main screen. At the top right there is the hamburger menu to access the contextual menus relating to the current page.

GENERAL CONFIGURATION

These are the general operating settings. They do not depend on a specific race, but are valid for the entire application.

Text to speech

Enable or disable the use of the spoken voice during the race. If enabled, during the race some race events will be accompanied by phrases pronounced by the device.

Text to speech language

Allows you to choose the language of the spoken voice. The list of possible choices depends on the device on which the application is running.

No car power in menu

Activate or deactivate the power to the cars while you are using the application in the various menus. It is a function designed for those who have children and want to avoid the use of cars, limiting it to running alone.

Driver color

For each of the six possible runners, set the colors of the information display displayed during the run.

Information color type

It allows you to choose whether to use different colors to display the information displayed during the race, based on the driver's number, or whether to have a single color for everyone.

Information color

Set the color to display the information displayed during the race in case you have chosen to use a single color for everyone.

Distance

Sets the unit of measurement for all distance information, chosen between metric or imperial system.

Track length

Set the length of the track. This information is used to calculate the average speeds for traveling a lap.

Speed units

Set the unit of measure for speed, chosen from miles or kilometers per hour.

Speed scale

Choose whether to display speed information on a real basis, or relative to model scale.

Minimum possible lap time

Set the minimum travel time of a lap on the track. A time shorter than the set time will not be considered valid. This option is used to avoid situations in which the car exits the track near the start/finish, and the car is repositioned just before the finish itself, generating the lap time detection.

Estimated Average lap time

Set the average lap time. This parameter is used to estimate the average duration of a run. It is a fundamental parameter if variable weather conditions are used.

Driver order

Sets the order in which information is displayed during a ride. It is possible to choose whether the order depends on the current position during the race, or it remains always fixed.

Pit stop request

Set how to activate a pit stop via the controller. You can choose which button or which combination of buttons to press.

Pit stop wait

Set how long the buttons should be held down before the pit stop mode is activated.

Add lap on pit stop

If activated, it automatically adds a lap at the end of each pit stop request. This option should be activated only for those who are using tracks in which the pit lane is parallel to the powerbase, therefore passing in the pit lane, one would not pass over the powerbase for detecting the end of the lap.

Yellow flag method

Set how to activate a yellow flag via the controller. You can choose which button or which combination of buttons to press.

Yellow flag resume timer

Set how long the buttons should be held down before the yellow flag mode is activated.

Kers power

Set how much extra power the kers activation provides.

Kers duration

Set the duration of the kers.

Kers recovery speed

Sets the recovery speed of the kers module. This value should depend on the length of the track.

Fuel consumption ratio

Set the fuel consumption speed. This value should depend on the length of the track.

Fuel load weight

Set the weight of a full tank of fuel. A higher weight will correspond to a lower speed.

Fuel load simulation minimum level

Sets how much the weight of the fuel load will affect the speed decrease.

Fuel level warning

Sets the fuel level below which a spoken alert is notified.

Tyre wear

Set the tyre consumption speed. This value should depend on the length of the track.

Tire level warning

Sets the tyre level below which a spoken alert is notified.

Pit refuel time

Set the time required to complete a full tank of fuel.

Pit tyre change time

Set the time required to make a tire change.

Damage repair time

Set the time to repair car damage.

DNF no acceleration wait

Set after how long idle time on the accelerator, the runner is disqualified. This option is useful in the event that some runners have already crossed the finish line, but there are other runners who are very late, so to avoid waiting for everyone to pass completely, the possibility is given to withdraw from the race.

Car engine at end of the race

Set the behavior of the cars at the end of a race, choosing between reduced speed with automatic driving, or leaving full control to the individual runners.

CARS

In this section there are all the cars, and their settings. It is possible to insert a large number of cars, and for each of them specify unique characteristics, which will then be reflected in the race.

The main information is displayed for each car. Using the arrows it is possible to change the order of the cars in the list. Using the search box below you can filter the displayed cars. A new car can be added from the hamburger menu.

Add new car

For each car it is possible to specify the name of the car and set an image and assign it a useful Tag to categorize the cars, if you have an extensive fleet.

There are four settings that affect the car's behavior during the race:

- **Max power**: Sets the percentage of maximum usable power, based on the car's maximum power. This setting allows you to calibrate the speed of various types of cars, each with its own maximum speed, in order to level its performance, and to have a more balanced run and less dependent on the power of the car.
- **Fuel load**: Percentage of available fuel load. This percentage refers to the fuel load set in the general configuration.
- **Fuel burn**: Load percentage of fuel consumption. This percentage refers to the fuel consumption speed set in the general configuration.
- **Tyre wear**: Load percentage of tire wear. This percentage refers to the tire wear speed set in the general configuration.

Calibrate

This option is used to be able to calibrate the minimum speed of the car, necessary to be able to complete a complete lap without stopping and without leaving the track. This setting is used in all cases of autonomous driving at minimum speed, such as during the yellow flags or at the end of the race.

DRIVERS

In this section there are all the drivers, and their settings. It is possible to insert a large number of drivers, and for each of them specify unique characteristics, which will then be reflected in the race.

The main information is displayed for each driver. Using the arrows it is possible to change the order of the drivers in the list. Using the search box below you can filter the displayed drivers. A new driver can be added from the hamburger menu.

Add new driver

For each driver it is possible to specify the name of the driver and set an image and assign it a useful Tag to categorize the drivers, if you have an extensive fleet.

There are four settings that affect the car's behavior during the race:

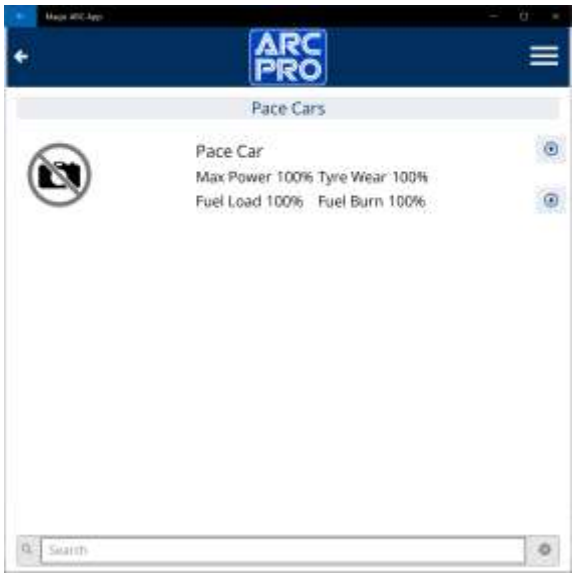
- **Max power**: Sets the percentage of maximum usable power. This setting allows you to calibrate the speed of various types of drivers, each with their own driving skills, in order to level

performance and have a more balanced race and less dependent on too much difference in skill between the various drivers.

- **Throttle profile type**: This setting allows you to choose the profile relating to the acceleration curve of the controller. It is possible to choose whether to define the curve in a simple (acting on one parameter), advanced (acting on three parameters) or one of the five predefined profiles. This choice depends very much on the driving sensitivity of the individual driver, but also on the characteristics of the track.
- **Throttle profile**: Based on the type of profile chosen (simple, advanced, predefined) it is possible to set the various parameters required in order to generate the desired acceleration curve.
- **Controller rumble**: Turn controller vibration on or off. If activated, in certain circumstances the controller will vibrate differently depending on the type of notification to report to the driver.

PACE CARS

In this section there are all the pace cars (self-driving car), and their settings. It is possible to insert a large number of pace cars, and for each of them specify unique characteristics, which will then be reflected in the race.



The main information is displayed for each pace car. Using the arrows it is possible to change the order of the pace cars in the list. Using the search box below you can filter the displayed pace cars. A new pace car can be added from the hamburger menu.

Add new pace car

For each pace car it is possible to specify the name of the pace car and set an image and assign it a useful Tag to categorize the pace cars, if you have an extensive fleet.

There are four settings that affect the pace car's behavior during the race:

- **Max power**: Sets the percentage of maximum usable power, based on the car's maximum power. This setting allows you to calibrate the speed of various types of cars, each with its own maximum speed, in order to level its performance, and to have a more balanced run and less dependent on the power of the car.
- **Fuel load**: Percentage of available fuel load. This percentage refers to the fuel load set in the general configuration.
- **Fuel burn**: Load percentage of fuel consumption. This percentage refers to the fuel consumption speed set in the general configuration.
- **Tyre wear**: Load percentage of tire wear. This percentage refers to the tire wear speed set in the general configuration.

Calibrate

This option allows you to calibrate the minimum and maximum speed of the car. The minimum speed must be set in order to be able to complete a complete lap without stopping and without ever leaving the track. This setting is used in all cases of autonomous driving at minimum speed, for example during the yellow flags or at the end of the race. The maximum speed must be set to the highest value in order to be able to complete a complete lap without ever leaving the track. This will be the speed at which the car will run on the track.

IMPORT DATABASE

This option allows you to load the entire previously exported database. It is useful for importing a backup copy previously saved outside the application.

EXPORT DATABASE

This option allows you to export the entire database in order to create a backup copy and store it outside the application.

EXPORT DATABASE BY EMAIL

This option allows you to export the entire database in order to create a backup copy and send the file to an e-mail address.

APPLICATION LOG

This option allows you to view the application log, and possibly send it directly to the support service for an analysis of any malfunctions.

DEVICE INFO

This option shows information related to the powerbase to which you are connected, such as model, hardware version, firmware and software version present on the powerbase.

CREATE NEW RACE

Click on "Create new race" to create a new race, or select one from the list of previously created races.

To create a new race it is necessary to specify a series of parameters that will define the game modes. For each race mode it is possible to specify the name and set an image.

The following parameters are provided:

- **Game Mode**: it is possible to choose between Race and Hot Laps. In Race mode it will then be possible to customize many aspects of the race, while in Hot Laps mode the aim will only be to make a series of laps to try to beat the record time.

- **Number of Laps**: set the expected number of laps, or you can choose not to have any limit (in this case, any limit will be determined by the following Time Limit parameter).
- **Time Limit**: set the time limit for the duration of the game mode, or it is possible not to set any time limit (if a limit in number of spins and a time limit has been set, the game mode will end at the first of the two limits that is reached).
- **Qualifier Mode**: set the qualification mode. It is possible to choose whether not to have a qualifying session, or to choose a qualification based on a number of laps or a time limit.
- **Qualifier Laps**: Set the number of laps to complete the qualifying session (this setting only takes effect if you have chosen a qualification mode based on the laps).
- **Qualifier Time Limit**: Set the time duration to complete the qualification session (this setting only takes effect if you have chosen a time-based qualification mode).
- **Jump-start penalty**: set the number of penalty seconds that will be added to the final time for those who make a false start (the car will move before the race starts). It is possible to deactivate this penalty.
- **Yellow Flag**: enable or disable the use of yellow flags.
- **Yellow Flag Type**: sets the mode of operation of the yellow flags, if activated. It is possible to choose whether during the yellow flags the cars will remain stationary without current, or if they will automatically proceed at a constant speed.
- **Yellow Flag Penalty**: it is possible to specify a penalty for those who, during the race, request yellow flags. It is possible to choose a penalty that adds time to the end of the race, or that slows down the car for a certain period of time when the race is restarted.
- **Yellow Flag Penalty Time**: sets the duration of the penalty for those who call the yellow flags.
- **Fuel Usage**: turns fuel consumption on or off.
- **Fuel Load Simulation**: if fuel consumption is activated, activate or deactivate the fuel weight simulation.
- **Kers**: enable or disable the use of Kers. If this option is activated, each player has a power boost available for use during the race.
- **Tyre Wear**: activates or deactivates tire wear.
- **Weather**: Enable or disable the use of variable weather conditions. For correct operation it is essential to set the average lap time in the general settings in order to have an estimate of the duration of the race. Depending on the weather conditions, the correct tire must be used to avoid driving problems. At the start each car uses the correct tire.
  There are 3 types of tires:
  - Soft (Yellow color) / Hard (White color) [Hard, for further use]
  - Intermediate (Green color)
  - Full Wet (Blue color)

  There are 8 weather levels, each identified by an icon:

1	2	3	4	5	6	7	8
Soft/Hard	Soft/Hard	Soft/Hard	Intermediate	Intermediate	Intermediate	Full Wet	Full Wet

  There are three areas affected by the tire / weather combination: Wear, Speed, Control
  Wear only takes effect if the tire wear setting is activated.

The maximum speed is reduced according to the amount of rain.
The control affects the acceleration curve, this can lead to the loss of linearity / predictability of the use of the controller to dose the right acceleration; peaks in value may occur which cause loss of control of the car.
To change tires, a pit stop is required. At the end of the tire change, the best one is fitted for the current weather conditions.

- **Rain percentage**: set the percentage of probability of rain. Based on this value, a weather trend will be generated, with variable conditions.
- **Start Mode**: set the starting mode of the race, chosen from "Dead", the cars are automatically locked until the start of the race, or "Live", the cars are free to move during the countdown and the drivers must be able to start at the start, however, risking to incur the penalty of false start.
- **Race End**: set when the run ends. it is possible to choose if the first finishes the finish line (Immediate), as soon as everyone has completed the lap after the first has crossed the finish line (Everybody) or only after everyone has completed the scheduled laps.

SELECT CARS AND DRIVERS

After setting the game mode parameters, you must select the participants in the race. you can add ghost cars or manually driven cars.

It is also possible to change the order of the participants using the arrows to the right of each driver.

Press on "Select Car" to choose the car. Before choosing the car, you are asked if you want to add a manually driven car or a ghost car. Depending on the choice, the relative screen with the list of cars is shown.

Press on "Select Driver" to choose the driver. This option is only visible if you have not chosen to use a ghost car.

Once the selection of participants is complete, go to the bottom of the page and choose "Prepare for Race" to continue.

PREPARE FOR RACE

In this screen you can test the cars, the controllers and check that everything is in perfect working order.

If it has not already been done previously, you can calibrate the cars and set the related IDs.

Depending on what you do whether to pre-race or not, press "Start Qualify" or "Start Race" to continue. In the event of starting the race, make sure that all the cars are correctly positioned in the starting grid.

RACE

This is a typical race mode screen.