

A NEW GAME OF SKILL...

200 miles per Hour in your sitting room

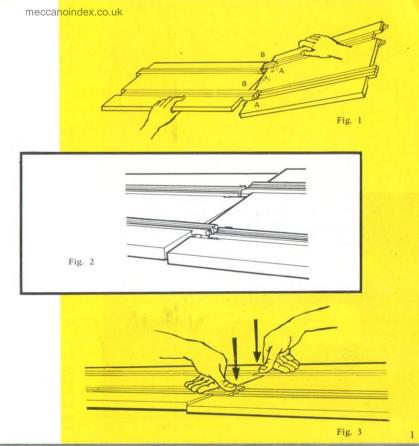
Lightning pick-up... Exhilaration of speed... Cornering and sideslipping technique... All the thrills of real motor racing you will live through in your own home on your "Circuit 24", racing at over 3m/sec. (i.e., 200 miles per hour, at full scale). It requires concentration and skill, since in reality the way of driving and all the way of driving and all the reflex actions are the same as in reality... Try it yourself, you will be enthralled.

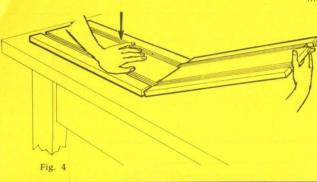


TRACK

The units forming the track of Circuit 24 are joined to each other by a very positive system of coupling; they can be put together with a speed that beats all records. Once joined, neither the vibrations set up by the running of the cars nor the inherent stresses of the track can dislodge them. The coupling is instantaneous as it requires no troublesome screws or hooks. The first time you connect them you will certainly experience some difficulty in finding the best way of assembling the units, but if you follow the instructions you will very quickly acquire the "knack" and soon come to appreciate to its fullest extent this game which can be set up and dismounted in a shortness of time that cannot be equalled.

- 1 Take the two pieces of track as above: the left half resting on the table (or on the ground), the other half inclined at 45°, so that the two notches A come below the two catches B (see Fig. 1).
- 2 Place the two catches in the notches (see Fig. 2).
- 3 Push very hard with your thumbs. The rigid sections (straights and 90° curves) require most pressure and a very sharp snap will be heard as they are coupled. (see Fig. 3).







High cornering technique

All the components (straights, curves, bridges, chicanes, etc.) are joined in the same way.

To disconnect your pieces of track, keep flat one piece and lift the other one according to the arrow (see Fig. 4).

Set up your track in accordance with one of the diagrams on pages 11 to 21, - or according to your own ideas. You must wipe your track with a dry cloth, as dust is the cause of bad contact.

Occasionally wipe the conductors with a cloth lightly charged with oil. This will treble the life of your pickups.

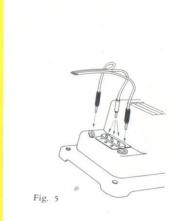
TRANSFORMERS

DO NOT LEAVE YOUR TRACK IN THE SUN

DOUBLE POWER CONTROL UNIT (with 2 accelerators)

TO CONNECT THE STRAIGHT WITH HUMP TO THE POWER UNIT:

- 1 Insert the two terminal plugs of the same color to the two exterior output holes (see Fig. 5).
- 2 Insert the central plug in position N° 2.

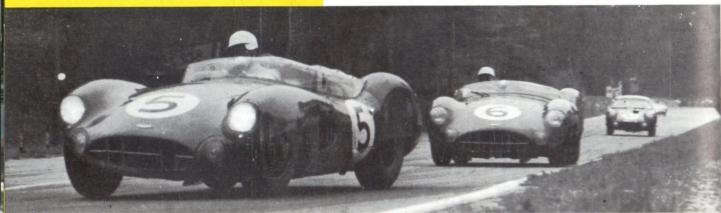


Place the two cars on the track and press one of the accelerators lightly. The corresponding car should move slowly forward (see Fig. 7). If it shoots forward when you are barely depressing the accelerator, it is because your voltage is too high so place the plug in position 3 (see Fig. 5).

If on the other hand the car can only move slowly, the voltage is too low; if this is the case, use position 1.

As you see, these positions enable you to adapt yourself to any current variations in your area.

ASTON-MARTIN 2993 cc driven by STIRLING MOSS



AUTOMATIC POWER UNIT



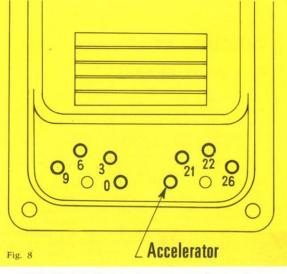


Fig. 7

- 1 The automatic Power Control Unit is plugged to the track by means of "automatic couplings". You need an automatic Power Control Unit for each car.
 - a) If you want the car to run in the normal way by means of the accelerator, connect one of the wires to the "accelerator" terminal and the other to the 3 volt terminal (see diagram opposite showing the voltage at each terminal). To make the car go faster, connect with terminal 0, and to go slower, to terminal 6. These three terminals are respectively equivalent to positions 1, 2 and 3 of the centralplug (see page 4).
 - b) If you want to set up a continuously-running track, i.e., automatic track, you must divide it up into as many separate electrical sections as you want different speeds. For example:
 - full speed, after a curve;
 - low speed before entering into a curve;
 - moderate acceleration in a wide curve.

The isolated sections result from the automatic couplings which, as they do not have fish-plates, ensure complete isolation. This is why when running the car in the normal way by means of the accelerator you must add four fish-plates to the automatic coupling.

In each section, the most suitable speed is obtained by selecting the appropriate voltage on the automatic transformer. The terminals of your



automatic transformer give you complete freedom of choice (see Fig. 8).

For example, in order to get 19 volts (moderate speed), you connect the 2 wires from the automatic coupling to terminals 22 and 3, to get 15 volts (low speed), select terminals 21 and 6. to get 23 volts (high speed), select terminals 26 and 3.

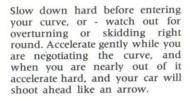
You can obtain an unlimited number of isolated sections with one only automatic transformer. provided that the wires are fed into the same track lane.

CIRCUIT 24

is a game of skill...

When your circuit is assembled and ready to operate, and when you have correctly chosen the position of your plug, press your accelerator gently

and your car will slowly advance; press harder and your car will go fast; step on it hard, and your car will leap.



If you have a competition car and an automatic transformer, you can brake by completely releasing the accelerator plunger, which makes the game even more interesting.

This telecontrolled brake enables you to drive your car just like a real

racing-driver, accelerating hard on the straights, braking before coming into a curve, negotiating it to the limits of the car's adhesion, and then shooting off with your foot hard down.

SOME ADVICE ...

- Follow the maintenance instructions scrupulously (as with real cars) - see page 10.
- The best way of looking after your car is never to lend it to anyone: no two cars are alike; each has its own personality and fits itself "to your hand". It is inadvisable to lend them to others (as with real cars).
- The "CIRCUIT 24" cars are made to go fast (like real racing-cars); so do not let them run slowly for too long at a time.
- Do not fit the plug into too high a voltage or you will "tire" your engine and it will wear out abnormally quickly (like real racing-cars that are pushed too hard).
- Camber your flexible curves with supports (see Fig. 9).
- To make hills use flexible half-straights.
- If you want to fasten your circuit to a baseboard you can insert screws in the holes in the lugs at the ends of the hooks (see Fig. 10).

Fig. 9

Fig. 10

TO GO STILL FASTER

- The pick-ups must be set with minimum tension (to reduce friction).
- Drive with new tyres to obtain better adherence.
- Race on "competition Ferrari" (it is faster) with telecontrolled brake.
- Top drivers will brake before the corner, accelerate to the limit of adherence right in it and press flat out just before getting out of it. It is indeed a matter of skill where Circuit 24 champions distinguish themselves.
- your car can turn over and fall on the ground without danger. Nevertheless, the pick-ups may be bent if they catch on anything. If this happens, you can easily straighten them out yourself (see Fig. 13).
- like real engines, the Circuit 24 engine gets hot but this is normal.
- if your car goes irregularly, in jerks, this is due to twisted pick-ups, or insufficient tension (insufficient pressure on the track conductors) or the pick-ups are perhaps worn; if this is so, they can be changed in less than three quarters of a minute (see page 10).
- your friends will be fascinated by this game. To increase its attraction, get some 18° curves or 90° standard curves, enabling you to build four-lane tracks for 4 players. The 18° external curves make it possible to have 6 cars.
- if you are a handy-man you will not resist the temptation of building entirely automatic circuits, on which certain cars will overtake at predetermined places; they will slow down, accelerate and side-slip. It is all a matter of ingenuity in the arrangement. Get some automatic electric couplings and automatic transformers.
- you can continuously enlarge your circuit, and increase its possibilities with fly-overs, chicanes, curves, and a lap-counter, sold separately by your dealer. In the same way, you can get replacements, such as tyres, pick-ups, etc...

SOME INFORMATION...

The engine of your miniature racing car is extraordinarily powerful for its size, which is why you can count on phenominal acceleration. It depends on the principle of alternating currents which, at each alternation, twice attract the vibrating blade, which in turn revolves the rear axle.

After 100 hours running, your vibrating blade has struck the rear axle ratchets 36,000,000 times. Therefore materials of the highest quality have to be used, as required in the highest techniques, such as in making space rockets (high-tension molybdenum steel, Stainless 18/8, Delrin, hight impact Nylon, etc...).

The measurments of your track are based on the famous golden numbers, as old as the World, the same which the Greeks of Antiquity used to calculate the proportions of their temples. They make possible the most extraordinary combinations. When you build a circuit you are always sure that you will be able to join the two ends.

For automatic circuits, see our building diagrams pages 11 to 21 as well as the explanations on page 5.



TO DEVELOP YOUR CIRCUIT GET SEPARATE PARTS FROM YOUR USUAL SUPPLIER

COMPETITION

FERRARIS

Their acceleration is much more powerful.

They are specially designed for those "handymen" who are able to dismantle and tune them. When finely tuned, they can reach a maximum speed of 16 ft per second.

These super cars are made and tuned one by one. The armature wire is special; the magnetic core is encased in araldite and assembled by hand.

They are provided with a telecontrolled brake, operated by the accelerator, working on the rear wheels.

Ferrari 1959 : Weight 859 kg, maximum speed 292 KM : 192 Mph Cubic capacity 2953 cc. Power at max. rev. 240 HP

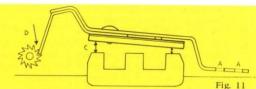


TUNING THE COMPETITION FERRARI

If you are skilful with your hands and have a few tools you can "tune up" this car and make it reach record breaking speeds. It is just a question of adjustment. But mind you do not upset everything, for it is a delicate operation.

1) Setting gap C:

1/10 of a millimetre more or less has an enormous influence on the speed. You will find the perfect



gap by trial and error. To alter this gap the vibrating blade must be dismounted by gripping its bedplate in a vice.

N.B. - It is best to have by you a few spare vibrating blades, as you may break some.

2) Adjustment of tooth pressure :

The angle of engagement of the 4 teeth of the fork or blade with the ratchets (in D) also plays an important role. By loosening bolts A you can advance or withdraw the vibrating fork, which determines the pressure of the teeth on the ratchets. You will find the best angle by feel.

RACING RULES

By making use of a stop watch you have a way of racing that is already exciting enough, even with only just one car.

But in fact, very soon, your friends will come to know that you have CIRCUIT 24 and several of them will suggest bringing their cars to race against yours (the cars should remain personal and you should always race with your own).

You can apply various rules. We suggest the following:

GENERAL RULES

- allocate the lanes by lot (by tossing a coin for example). hump as a starting line.
- when a car leaves the track, the player to whom it belongs must replace it himself, at the exact spot where the guide pin came out of the slot in the track.
- 3) when a car causes an accident.
 - a) if its guide pin was properly in place in the slot of the track at the time of the accident, the two cars must leave from the spot where the accident occurred, as quickly as possible.
 - b) if the guide pin of the car causing the accident was out of its slot, this car is penalised and must leave again from the start (thus losing that part of the lap that was completed before the accident).

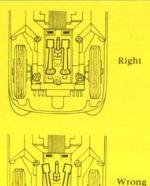
* RACES AGAINTS THE CLOCK

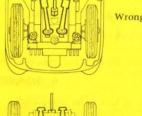
- 1) start the stop watch
- the car which, when the appointed time has run out, has completed the largest number of laps is the winner.



* ENDURANCE RACES, "LE MANS" TYPE

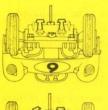
- 1) Establish a time of duration of the race;
- 2) same rules as above;
- if you have no automatic lap-counter, you are advised to ask a friend to count the laps.
 ★ GRAND PRIX
- 1) Determine the number of laps to be completed.
- 2) the first to complete them is the winner;
- 3) if the number of laps is great, see paragraph 3 above.
- If there are a lot of you: Race by teams:
- Each team is to complete a certain number of laps, 40 for example;
- the members of each team share the laps. If there are two teams of 4, each player will control the accelerator for 10 laps;
- 3) same rules as above (see Grand Prix).

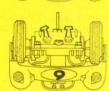




Right

Wrong





- 1 Every twonbowernoiddex.coarkaxle (ratchets mainly and bearings) with motor oil (best type SAE 20 or 30).
 - The mechanism of your car is practically unwearable, except the tyres, the rear ratchets and the pick-ups. For 1961 and 1962 models (recognisable from the fact that the pick-ups are **held by screws**) and the competition Ferrari, see the blue maintenance instructions.

For the 1963 models (recognisable because the pick-up are held not by screws but in sockets) there is no need to dismount anything at all.

The tyres are changed simply by

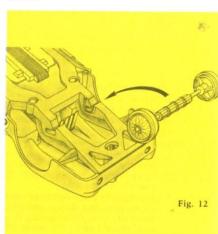
- pulling by the rim so as to dislodge them.2 The pick-ups are removed from their sockets by gripping them and pulling
- 2. The pick-ups are removed from their sockets by gripping them and pulling them upwards to dislodge the pin, and then toward the rear. The new ones are inserted by pushing them towards the front until the pin is engaged.

 A worn rear axle is easily removed
- pulling the axle (see figure 12).

 The new axle is inserted by forcing it into its seating. Mind which way: the left rear rim bears a red mark.

by holding the car in one hand and

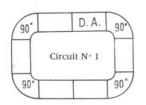
MAINTENANCE OF YOUR CAR...



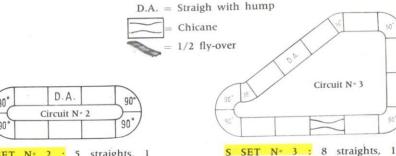
* CAREFUL WITH THE PICK-UPS

This is the only fragile part of the car. Sooner or later you will distort them, but you can set them right again without any trouble (see fig. 13).

Fig. 13

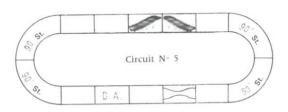


R SET N° 1: 5 straights, 1 straight with hump, 4 internal 90° curves.
Basic circuit.



R SET N° 2: 5 straights, 1 straight with hump, 4 internal 90° curves.

Ideal for a beginner.

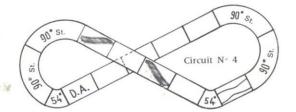


36° curves.

straight with hump, 1 chicane,

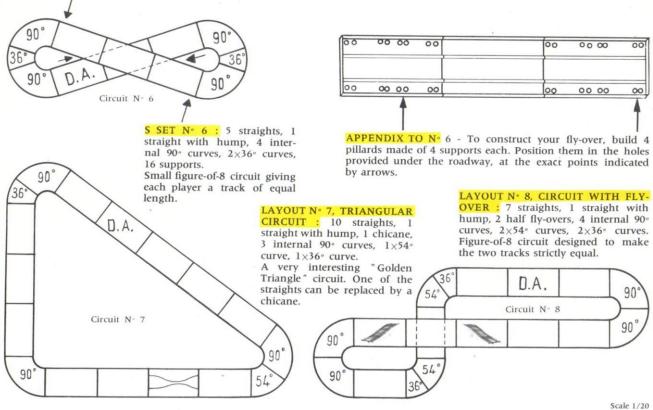
4 internal 90° curves, 2 internal

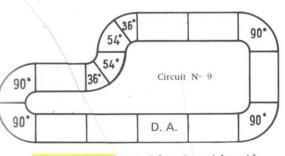
T SET N° 5: 6 straights, 1 straight with hump, 1 chicane, 4 standard 90°, 1 fly-over bridge.



T SET N° 4: 6 straights, 1 straight with hump, 1 chicane, 4 standard 90°, 2 internal 54° curves, 1 fly-over bridge. A recommended circuit.



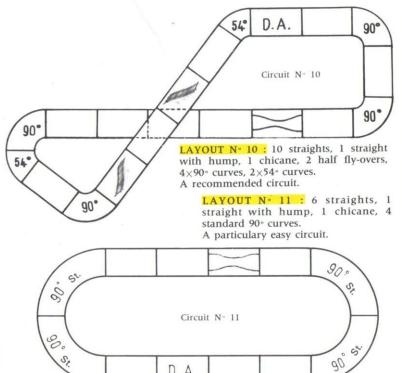


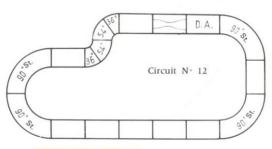


LAYOUT N° 9 : 7 straights, 1 straight with hump, $4\times90^{\circ}$ curves, $2\times54^{\circ}$ curves, $2\times36^{\circ}$ curves.

High number of tight turns.

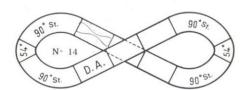
THE STANDARD 90° CURVES HAVE THE CHARACTERISTIC OF MAKING THE GAME EASIER AND OF ENA-BLING MUCH HIGHER SPEEDS TO BE ATTAINED.



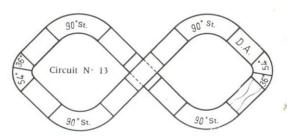


LAYOUT N° 12 : 8 straights, 1 straight with hump, 1 chicane, 4 standard 90° curves, 2×54° curves, 2×36° curves.

The "S" curve represents fairly well the difficulties of the principal international race tracks.

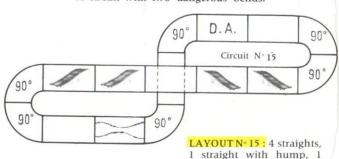


LAYOUT Nº 14: 4 straights, 1 straight with hump, 1 chicane, 4 standard 90° curves, 2×54° curves, 26 supports.
The classical figure-of-8 circuit.



LAYOUT N° 13: 8 straights, 1 straight with hump, 1 chicane, 4 standard 90° curves, 2×54° curves, 2×36° curves, 24 supports.

A circuit with two dangerous bends.



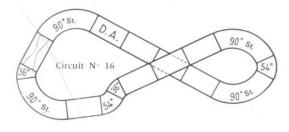
chicane, 4 internal 90°

curves, 2×36° curves, 2

complete fly-over bridges.

A very attractive circuit.

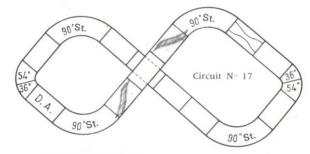
Scale 1/30



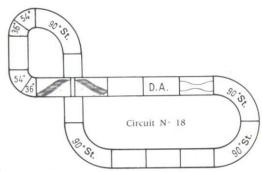
LAYOUT N° 16 : 7 straights, 1 straight with hump, 1 chicane, 4 standard 90° curves, 2×54° curves, 2×36° curves, 24 supports. A circuit strewn with difficulties.

LAYOUT N° 18: 7 straights, 1 straight with hump, 1 chicane, 2 half fly-overs, 1 neutral coupling, 4 standard 90° curves, 2×54° curves, 2×36° curves.

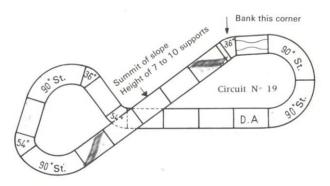
A circuit of average difficulty, - but mind the twist! It has to be negotiated with care.



LAYOUT N° 17: 8 straights, 1 straight with hump, 1 chicane, 2 half fly-overs, 4 standard 90° curves, 2×54° curves, 2×36° curves. A classical circuitwith fly-over.



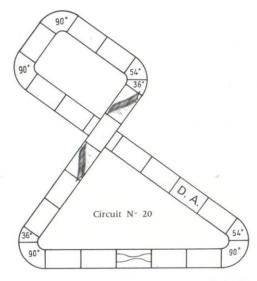
Scale 1/30



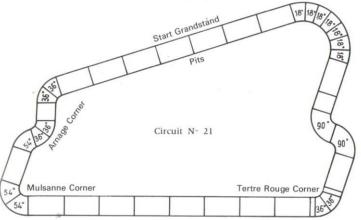
LAYOUT N° 19: 8 straights, 1 straight with hump, 1 chicane, 2 half fly-overs, 1 neutral coupling, 4 standard 90° curves, 2×54° curves, 2×36° curves, 24 supports. This circuit is a little difficult to set up, but is of great interest on account of its rises, its variety and its complete lack of symmetry. To make it perfect, the pillars made with supports can be replaced by our adjustable supports, by means of which it is easier to bank the corners and make the slopes.

LAYOUT N° 20, CIRCUIT WITH FLY-OVER AND TRIANGLE: 16 straights, 1 straight with hump, 1 chicane, 2 half fly-overs, 4 internal 90° curves, 2×54° curves, 2×36° curves. A circuit stimulating the skill of

A circuit stimulating the skill of the drivers by its variety.



Scale 1/30



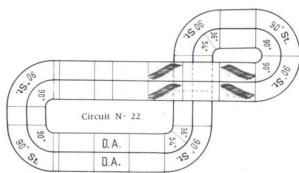
LAYOUT N° 21, LE MANS CIRCUIT: 18 straights, 1 straight with hump, 2 half straights, or 6 neutral couplings, 2 neutral couplings, 2 internal 90° curves, 3×54° curves, 6×36° curves, 7×18° curves.

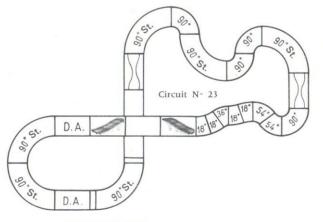
This circuit faithfully reproduces that of the celebrated contest, the same dangerous bends, the same potentialities for speed... Scale 1/30 From 1963 onwards you will be able to replace one of the straights opposite the Starting Point Grand-

stand by a very attractive staggered

start.

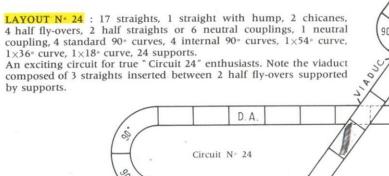
LAYOUT N° 22, 4-track CIRCUIT: 16 straights, 2 straights with hump, 4 half fly-overs, 4 half straights or 12 neutral couplings, 4 neutral couplings, 6 standard 90° curves, 4 internal 90° curves, 2×54° curves, 2×36° curves. The tracks for the 4 cars are indentical.



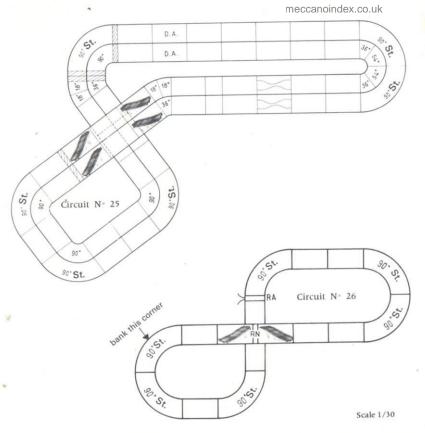


LAYOUT N° 23 : 3 straights, 2 straights with hump, 2 chicanes, 2 half fly-overs, 2 neutral couplings, 6 standard 90° curves, 4 internal 90° curves, 2×54° curves, 1×36° curves, 4×18° curves.

For cornering enthusiasts.



90 90 Sr Scale 1/30



LAYOUT N° 25, FOUR TRACK CIRCUIT: 36 straights, 2 straights with hump, 2 chicanes, 4 half fly-overs, 2 half straights or 6 neutral couplings, 8 neutrals couplings, 6 standard 90° curves, 2×54° curves, 4×36° curves, 4×18° curves.

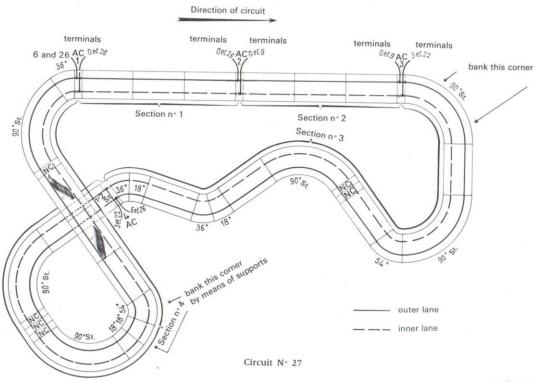
An ideal circuit for inviting your friends, to occupy idle evenings, rainy days, holidays or Sunday afternoons. The boys look on...

LAYOUT Nº 26, AUTOMATIC CIRCUIT :

8 straights, 2 half fly-overs, 1 neutral coupling, 1 automatic coupling, 6 standard 90° curves, 24 supports.

This track functions continuously, if the wires from the automatic coupling are connected to an automatic power unit. Connect the yellow and green cables to terminal 3, and the red and blue cables to terminal 26 (thus supplying 23 volts). The rheostat is placed in the 220 V. position, depending on the voltage in your region. Then regulate the speed of your cars by means of the rheostat. If, with the rheostat at the absolute minimum, your cars still go too fast, attach the wires to terminals 6 and 26 (thus supplying 20 volts). When the cars are warmed up the speed is reduced, and then you increase the current by means of the rheostat.

meccanoindex.co.uk



LAYOUT N° 27, AUTO-MATIC TRACK: 12 straights, 2 half flyovers, 6 neutral couplings, 4 automatic couplings, 6 standard 90° curves, 2×54° curves, 3×36° curves, 4×18 st. curves. 1 half straight or 3 neutral couplings.

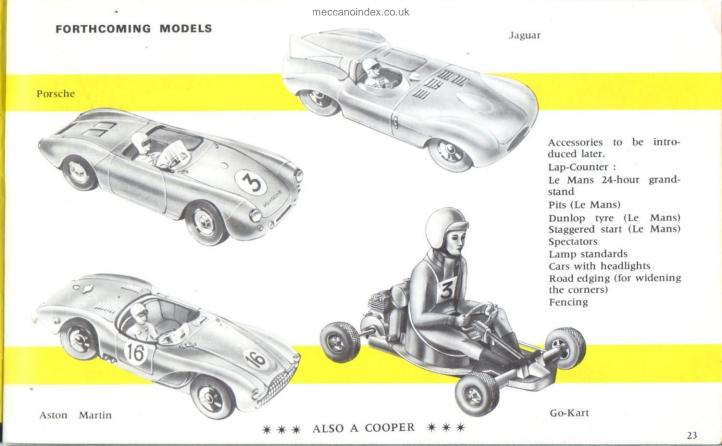
The 2 cars can compete against each other, automatically accelerating and slowing down. If you keep one car controlled manually you can "race the hare".

The track is divided into 4 electrically independent sections by means of the 4 automatic couplings. Actually, these have no fish-plates to form an electrical union. You will notice (very important!) that the Nº 1 automatic coupling is connected to section 1 of the inner track, but to section N° 4 of the outer track. The same applies to the other 3 automatic couplings, joined to the start of the internal sections, but to the end of the outer ones. You need one automatic power unit per lane and connect them to the terminals incated. The rheostat is to be placed in position for 110 or 220 volts, in accordance with the voltage in your area. Section No 1, where the cars have full acceleration, has to have maximum voltage, i.e., 26 volts (terminals 0 and 26). Section 2 is a slowing down zone: give it 9 volts (terminals 0 and 9). 3 and 4 should be taken at moderate speed. Depending on the cars, give them 18 to 22 volts. Start with 19 volts (terminals 22 and 3): if the cars go too slowly, increase the voltage, to for instance 21 volts (terminals 0 and 21). By trial and error you will find the ideal setting. Adjust the outer track first, and then the inner one. When the cars have warmed up they will go more slowly and then you speed them up by means of the rheostat.

We do not advise the use of internal 90° curves and do recommend you not to use 54° and 36° curves unless you fix with them at least, one 18° curve immediately before.

The construction of large automatic circuits requires considerable ingenuity and is beyond the capabilities of a child. On the other hand it forms a fascinating hobby for those adults who possess a mind of creative imagination and the temperament of a handy-man.

SOLD BY YOUR USUAL SUPPLIER



THE LE MANS 24-HOUR RACE

One Saturday next June, at precisely 16.00 hours, everybody who is anybody in the world of cars has a date with this enthralling moment when the 50 or 60 drivers taking part are unleashed.

The excitement of the spectators scattered over 13.461 km of the course will be at its height. When the cars flash by for the first time it will reach a peak from which it will not fall until after several laps when everyone has become accustomed to the thrill.

But, in the pits and amongst the officials, the start will only mark the beginning of their anguish. For the organisers, this Festival of the Car will have meant a year's continuous hard work. During each second that passes, the sum of all this effort will hang in the balance.

But this great struggle is of interest to everybody, for it is the veritable test-bench of the car.

The intense strictness of the rules is equalled only by the severity with which they are applied.

WHAT YOU SHOULD KNOW:

- the classification by distance is what causes the greatest
- in 1961 FERRARI won, covering a distance of 4,476.580 Km
 in 24 hours, that is, a distance roughly equal to that from Paris to Jerusalem.
- in 1962 PHILL HILL with a Ferrari, set up the lap record of 3 min 57 3/10 sec. for the 13.461 km (an average of 204 km 212).

THE LE MANS 24-HOUR RACE



The colours of the racers are:

The colours of the	
BELGIUM	Yellow
FRANCE	Blue
GERMANY	White
GREAT BRITAIN	Green
ITALY	Red
NETHERLANDS	Orange
SPAIN	Yellow and red
UNITED STATES	Blue and white

The text above was prompted by an article in "l'Action Automobile at Touristique" of June 1961.

The photograph on the front cover was kindly lent to us by l'AUTOMOBILE CLUB DE L'OUEST, organisers of the Le Mans 24-hour race. All the other photographs we owe to the courtesy of SCIENCE ET VIE.

PRINTED IN FRANCE

