

# On TEST

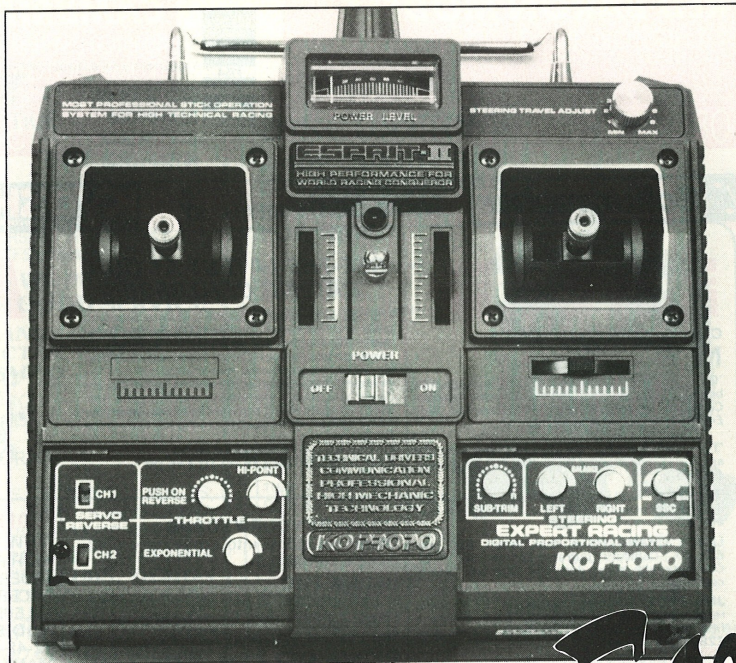
## KO Esprit II

**K**O have built a reputation for quality, reliability and performance. This achievement is due in no small measure to the fact that the world champion in 1/10 off road and 1/12 circuit racing (Masami Hirotsuka) uses KO equipment. I am sure that no-one would deny that the success of Hirotsuka is going to rub off on the manufacturers of his equipment. Therefore it does seem a little strange that we in the UK are not ankle deep in importers trying to persuade us to buy KO equipment.

Recently, however, a few of the specialist companies have decided to try their hand at importing KO equipment. Now is an appropriate moment to have a close look at the equipment that made Hirotsuka and Hirotsuka made his own.

First of all the KO range of equipment. For some years, KO have produced mainly steering wheel sets, plus one featureless stick unit that seemed to have little to offer other than the KO name. The popularity of this particular unit may remain a secret, as far as I know it never made it to this country in any quantity. More recently the 'Trendy', a budget priced, straight no frills 2 channel unit has been introduced. However, when it comes to steering wheel sets it must be said that KO have an outfit for every occasion. Their RC sets positively drip knobs and buttons and looked extremely '20th century', lots of plastic panels and shiny controls. Do not let this particular fashion look deceive you. These radios are of outstanding quality and excellent performance, but not everyone wants a steering wheel set.

So for years we have waited and waited for

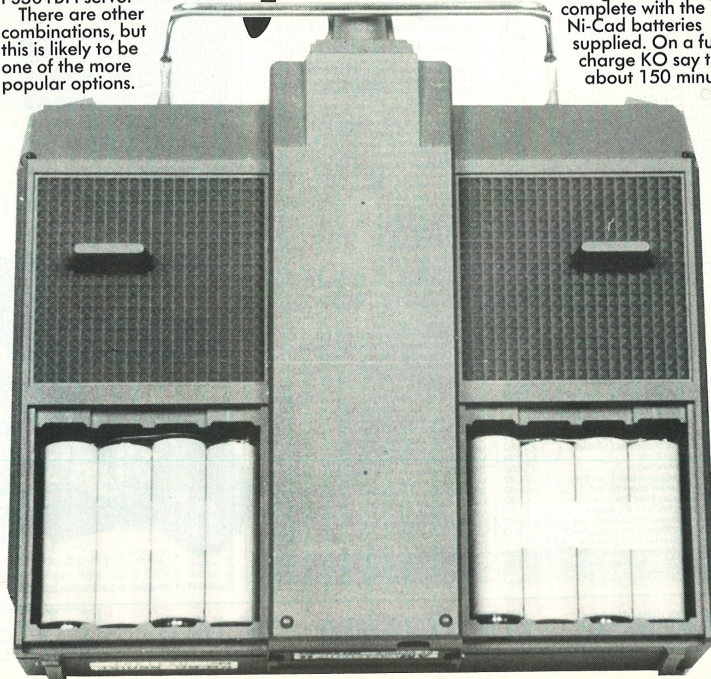


something special in the stick style. That day has now arrived.

The subject of this review is the Esprit II, providing as it does all the features of KO's steering wheel transmitters on a stick set.

The kit I have reviewed comprises the transmitter, receiver (KR 385A), two PS301BH servo.

There are other combinations, but this is likely to be one of the more popular options.



### The Transmitter

This unit is not small. The main body measures 160mm x 160mm x 60mm and weighs in at 787gm complete with the Ni-Cad batteries supplied. On a full charge KO say that about 150 minutes

of continuous transmission is possible. The stick controls fall easily to hand and I found them just about the correct length for me. However, if adjustment is needed, stick length alteration could not be easier. Unlock the small socket screw in the centre of a stick and you can wind out the length of the stick to suit.

The set is in fact very comfortable to hold. The rear of the case has a notched surface providing plenty of grip for cold, wet and slippery fingers and a neat (what I can best describe as a) ledge to rest fingers on. Although the case does not look at first

anything particularly special, it has been very carefully designed and is one of the nicest transmitters I have handled. There is a red LED on the front panel to show you that all is working and a power meter to show you battery condition. As with most battery condition meters (voltmeter) you need to recharge as soon as the needle hits the red area. Alongside the sticks are what appear to be the usual trim controls. Nothing new with that, but even a raw novice might wonder why, with a two channel set, there are three trim controls. More will be revealed later. Located between the joysticks is the main on/off switch. The other visible controls are:

1. Just above the steering stick is a steering travel adjustment. This allows you to pre-set the maximum limit of steering movement.
2. Mounted on the top left side of the case is a small button that provides instant, pre-set throttle opening, it is called the Push On Reverse button. More of this later.

Where then are the rest of the controls? In fact they

**Left rear transmitter styling and Nicad installation - note grippy surface on rear of transmitter.**

are neatly hidden behind two slide off covers on the bottom left and right of the controller.

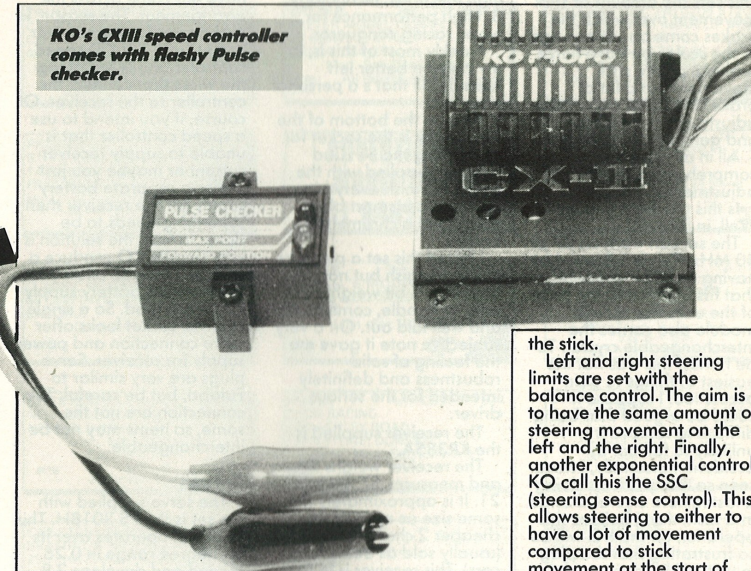
Behind the left slide off panel are the servo reverse switches for the two channels. Also within this section is the pre-set control for throttle adjustment, (the Push On Reverse). On the surface it may seem a little pointless to have a control to allow you to go straight to full throttle forward or

upper one is to pre-set the full throttle position. The other is to introduce the option of exponential control. This is a feature which alters the relationship between transmitter stick movement and actual servo (or speed controller effect). The idea is to reduce the initial servo movement compared to stick movement. The servo effectively catches up later. Perhaps a difficult idea to

grasp if you are new to the sport, but in practice it will give more control at lower speeds, particularly useful on slippery surfaces.

Behind the right panel are the pre-set controls for steering adjustment. These comprise a sub-trim adjuster to give a course steering set up, mainly to set the servo at its centre position when the stick is central. Fine tuning is still carried out with the trim control alongside

**KO's CXIII speed controller comes with flashy Pulse checker.**



the stick. Left and right steering limits are set with the balance control. The aim is to have the same amount of steering movement on the left and the right. Finally, another exponential control. KO call this the SSC (steering sense control). This allows steering to either to have a lot of movement compared to stick movement at the start of the stick stroke, or a lot of movement at the end of the stick movement. The final choice, of course, is to leave the control in the centre and

reverse (especially as KO speed controllers are forward only). The time saved in shifting the stick compared to pressing the button must be marginal. However, I think that there is a case for pre-setting anything other than full throttle. Imagine tracks with slippery surfaces. It would be possible to work out the optimum throttle setting to use from the start line, avoiding excessive, non-productive wheel spin and just getting the edge on the opposition. If you think this is splitting hairs just look at the difference between top club drivers at the end of the first straight. Any advantage could be the difference between first and second. The other possible use would be to pre-set the amount of braking. So a single push on the button would apply exactly the right amount of braking.

There are two other adjusters in this section. The



**The ultimate servo? Speed and power in the form of the PS 87Z.**

you have standard linear control.

Now for the other 'trim' controls.

Firstly, the control alongside the throttle stick. It is called the ALT. This adjustment alters the neutral position without effecting throttle high point. In practical terms, it varies the point at which the brakes come on. Used in conjunction with the ALT control is the final 'trimmer'. This sets the amount of stick movement over which the brakes come on. At one end of the scale you have fierce braking, a little stick movement but a lot of brake. The other end of the adjustment gives steady and gentle braking control.

All in all a pretty comprehensive set of adjustments.

Is this all I hear you ask? Well, in fact, no!

The set can work on 27 or 40 MHz. This is achieved by having a slide in module that fits neatly into the base of the unit. This slide in module also carries the interchangeable crystal. To be honest this was not the easiest of things to gain access too. I suppose it could be argued that being difficult to remove it is unlikely to fall out by accident. Personally, I have seen so many drivers doing a last minute crystal change in a rush, that I believe this operation on the KO will be so frustrating that the plug in unit will be damaged. I really think that KO should look at improving this part of the unit. The other feature of the set I found, if not annoying perhaps mildly amusing were the plethora of Jingles (Japan-English) phrases spread all over the transmitter. Some of these I reproduce in unexpurgated form.



1. Most professional stick operation system for high technical racing.
2. Technical drivers communication professional high mechanic technology.
3. High performance for world racing conqueror.

Frankly most of this is, in my opinion better left unsaid, still that's a personal view.

Also on the bottom of the transmitter is the socket for connecting the Ni-Cad charger supplied with the outfit. To finish everything off there is a smart black aerial and a chrome top handle.

I found this set a pleasure to use. Largish but not ungainly, a bit weighty but easy to handle, comfortable and well laid out. On a very subjective note it gave me the feeling of solid robustness and definitely intended for the serious driver.

The receiver supplied is the KR385A.

The receiver weighs 43gm and measures 57 x 41 x 21. It is approximately the same size as most of the cheaper 2 channel types (usually sold as deals with cars). This receiver is in fact a three channel unit, although as yet I cannot think of a use for the third channel in a car.

This average size receiver could be changed for a more compact version the KR 285A type.

Should you be lucky enough to find yourself in a position to be able to buy the smaller, lighter KR 285A

**Standard receiver is small and neat.**

receiver, it is worth noting that it does not have a battery input. This, on first sight will spread confusion and alarm to racers who have not come across the arrangement. The reason, is that power for the receiver comes from the KO speed controller and is fed along the wires that connect the controller to the receiver. Of course, if you intend to use a speed controller that is unable to supply receiver current or maybe you just prefer a separate battery supply for the receiver then something needs to be done. In fact, the solution is very simple. KO produce a special Y lead to allow you to connect a battery supply to a servo lead. So a single receiver socket looks after servo connection and power supply for receiver. Servo plugs are very similar to Futaba, but be careful. The connection are not the same, so items may not be interchangeable.

### Servos

The servo supplied with the set is the PS 301BH. This neat unit operates over its 60 degree range in 0.26 second and develops 3.8 Kg/cm torque. This will provide ample reserves of power for most of us. Weight is 45gm and it measures 41 x 35 x 21 mm. For those of you who require something very special in servos there is the PS 87.

KO have led the way in compact high power, high speed servos with their

renowned PS 87 originally known as the world championship limited edition. This device uses a separate FET amp to provide motor current. Other servos usually sacrifice speed for torque or vice versa. The PS 87 sacrifices nothing. The drawback is that you must find somewhere to put the separate FET amp and the extra bits of wire that the system uses. Now the PS 87 has been upgraded to the PS 87Z which includes metal gears. As far as performance is concerned it is outstanding.

To round things up. The quality of all KO products is excellent. They are robust, reliable and they deliver the performance. Within the product range they now have something for almost everyone. However, they are not cheap. The set I have looked at the Esprit II is offered at £275 complete with two PS301BH servos and the KR 385A receiver with a separate receiver battery box. High quality rarely is cheap, in my opinion KO is perhaps at the top of the quality league in Japanese made RC sets. What, of course, is more important is that people like Masami Hirotsuka and Jamie Booth must think this way, otherwise why would they trust in KO equipment.

The sets and servos are on offer from a limited number of suppliers. I suggest you scan the pages of RCMC for the best deal. My thanks goes to Demon Products for the loan of the equipment for this review. My only regret is that I have to return it (until I can save the pennies), still, that's life.

Available from: Selected suppliers and Demon Products, PO Box 12, Aldershot, Hants.