

SANWA EXERD

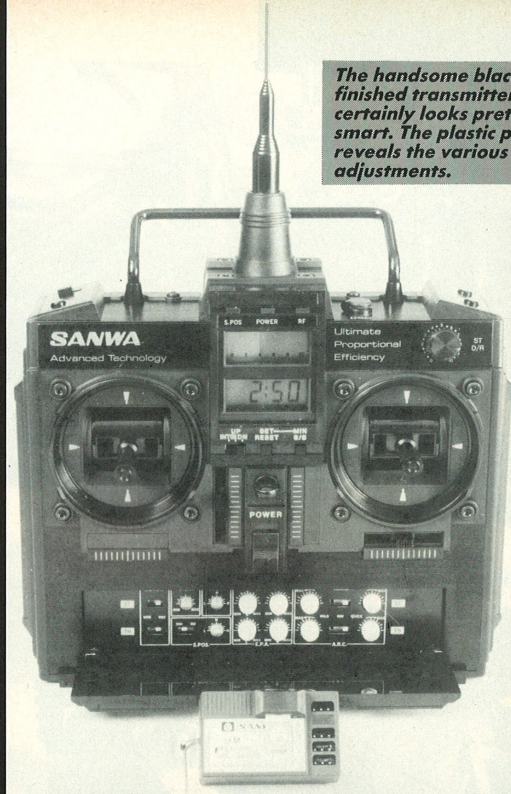
Renowned for many years as suppliers of quality, reliable, R/C systems, Sanwa, imported and distributed by Irvine Engines Ltd., have recently released what must be regarded as an extreme top-of-the-range unit particularly aimed at the R/C car user, both internal combustion and electric powered.

The Exerd (which presumably is derived from EXpert, but we're not sure about the 'erd' part of the name, and suggestions from readers will not be warmly received!), is a 40MHz two function system aimed straight at the competitive R/C car racer. It has a number of special functions which will appeal to the model car enthusiast, but first let's take a look at the basics.

Transmitter

The mainframe is aluminium with some black moulded plastic parts, and with the metal parts open to view all in black anodised aluminium, and is ergonomically designed with raised mouldings on the side which fit comfortably into the palms of the hands. The thumbs then fall quite naturally onto the short sticks, and equally easily find the trim controls.

The top features the telescopic aerial, also anodised black, a black carrying handle and a small control panel on each side. The one on the right hand side is called Driving Control Trim, and consists of two small buttons which naturally fall under the forefinger, and labelled left and right. This feature enables fine adjust-

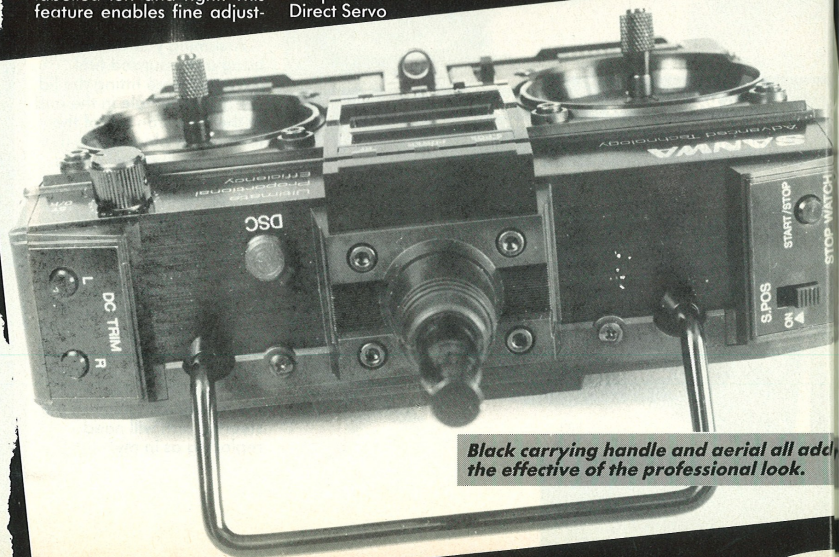


The handsome black finished transmitter certainly looks pretty smart. The plastic panel reveals the various adjustments.

With some exciting new features not seen before, the Exerd from Sanwa enters the market right at the top.

ment of the steering trim whilst still keeping the thumb on the stick. Also adjacent to this panel is the Direct Servo

Control socket which allows adjustments to be made to



Black carrying handle and aerial all add to the effective of the professional look.

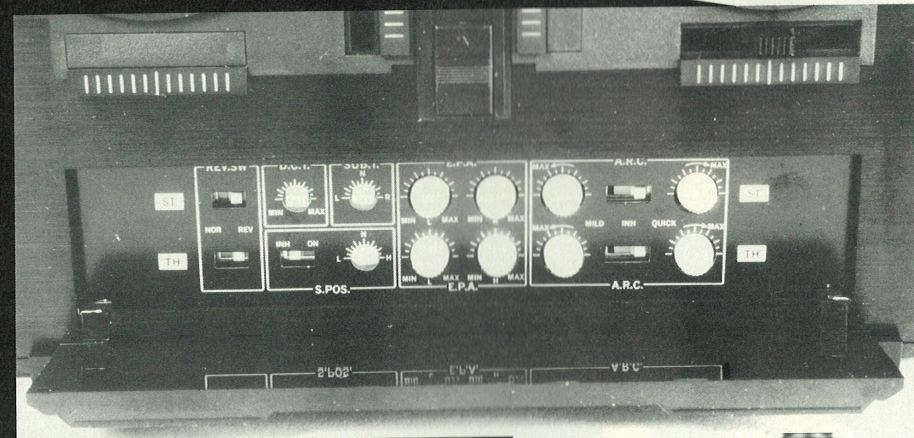
the car servos and/or electronic speed controller without switching on the transmitter. A special jack plug and lead on the receiver wiring harness connects the transmitter to the receiver. It is not necessary to install the harness permanently if you are running a speed controller though; it can be simply plugged in to the transmitter and receiver as and when this facility is required.

The other side of the transmitter top features the Starting Position Switch and Stop Watch Start/Stop switch which we come back to later.

At the back the main item is the 40MHz FM Module, held in place by two recessed snap connectors. Squeezing these in gently allows the module to be extracted and provides access to the crystal. At the bottom of the backside is the battery compartment. This is released by sliding two recessed gliders on the bottom of the case, and gently easing the compartment in a downwards direction.



The full set, carrying case transceiver and all the extras.



The compartment is moulded in black plastic and takes eight 1.5 volt pencils or nicads. Contact to the electronics is via a small three pin socket at the top right corner of the compartment which pushes into a suitable plug fixed to the main transmitter case.

Turning back to the front face, apart from the sticks and trims already mentioned, starting from the top, there are three red indicator lights, S.POS, POWER and RF, which light up to show if the Starting Position feature is activated, when main power is on, and when the

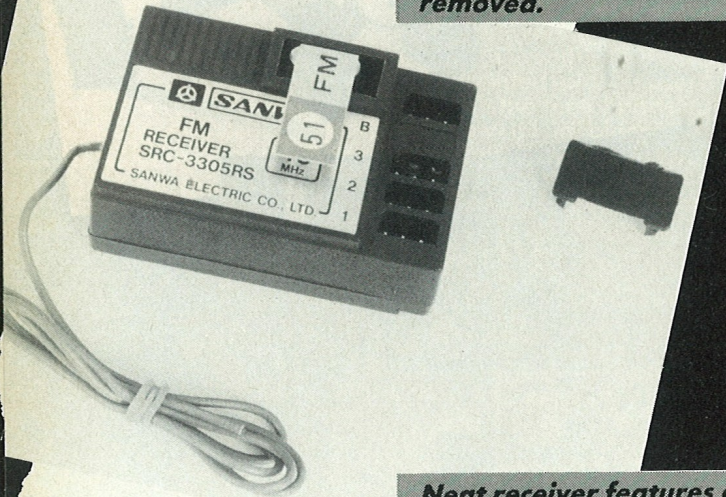
Power meter slowing drops - also a red warning light warns of low battery level.

direct link from transmitter to receiver is connected. The power light starts flashing intermittently when the battery pack reaches the point where it should be changed. To the far top right is the ST D/R knob. Turning this knob to Maximum gives full servo throw, and turning same in the opposite direction reduces the servo throw, hence one can counteract for over or understeering surfaces as you drive.

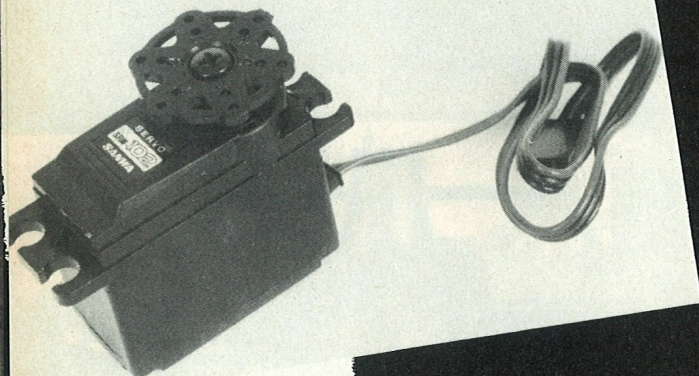




The eight Ni-cads and module are easily removed.



Neat receiver features a cover to keep out the dirt. Servos are the standard economy units.



Immediately below the indicator lights are two LCD panels; the upper one displays battery power in the form of vertical bands with the danger area in red. The lower is the digital stopwatch with alarm feature. This is controlled by the top side panel already mentioned and three square buttons immediately under the lower panel. These are INTG/UP/DN, SET RESET and MIN S/S.

Once activated by the switch on the top left panel, the watch can be used as a timer, say for timing battery charging simply by pressing the S/S button which acts as a Start/Stop. Alternatively you can set the watch to count downwards from any setting up to a total of one hour, and setting the switch to DN. The start can be activated by the forefinger of the left hand at the same time the throttle is hit for the start of the race. It counts down with a bleep at every minute, and with bleeps every second during the last ten seconds. The alarm is only just loud enough to be heard during an electric race but certainly not with i.c. power, however the digital numbers are quite large and a quick glance down soon gives the position.

Power to the people

As soon as a new set of batteries are put into the transmitter the timer records the operating time to date, regardless of the number of times the transmitter is switched off or on. Reset automatically occurs when the battery box is removed. The mode switch has to be moved to the INTG position to obtain a readout of time elapsed. With a set of nicads about one and a half hour to two hours operation is obtained.

A transmitter strap clip point is below the switches and just above the power slider switch. Finally at the bottom there is a full width drop down panel behind which hides a number of knobs and trimmers which enable one to adjust servo reversing on steering and throttle and a number of other parameters associated with the controls already mentioned.

For instance, the Driving Control Trim buttons can be set to give a minimum or maximum amount of throw.

The Sub. T trimmer controls the neutral setting point of the steering servo.

The Starting Position switch is for i.c. powered cars only, and facilitates setting the idling position, which can then be accurately recalled by simply switching on at start up.

The End Point Adjustment switches allow setting of the amount of throw on the steering and throttle servos, or electronic speed controller, independently on each side. Therefore if you have a car that oversteers more left than right, or a track that demands oversteer or understeer in a certain direction, the amount of rate for that particular direction can be programmed in and then controlled by the Dual Rate switch. With the throttle or speed controller this can be useful to match up the linkages correctly or the speed controller's output, particularly braking.

The ARC controls alter the rate at which the servo or speed controller works, either normal, mild or quick. On the steering side, this allows the driver to adjust the speed of response of the servo to match the surface conditions. On the throttle side, this allows adjustment in the sharpness or otherwise of power output, again to suit conditions.

One final adjustment is to the spring tension of the sticks. It is necessary to remove the rear of the transmitter case to reach these adjusters which can be achieved by the removal of eight screws, something which most users will only need to do once of course.

Receiver

This is extremely compact, measuring 47mm by 28mm by 20mm deep, with a small protrusion on the top to accept the crystal, an excellent position as most car installations require the receiver to be mounted close to other items on the car and it is sometimes quite awkward to find a suitable location where there is easy access to the crystal. Once the crystal is inserted, a plastic cover clips over the hole to restrain crystal. This is not water resistant so usual precautions need to be taken to keep the receiver dry. At the right top are sockets to accept receiver and the battery plugs. The wiring arrangement follows the usual Sanwa practice which is different to Acoms and Futaba, so care needs to be taken when wiring other manufacturers' servos or

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speed controllers.

Servos

These are Sanwa SRM102's, small enough for almost any installations that will be required in an R/C car. They are fitted with the normal Sanwa output discs, however two extra large discs which can be cut down to suit individual requirements are also supplied. The servo leads are approximately 270mm long, plenty long enough for 1/10th and 1/12th installations, but perhaps an extension lead might be called for in 1/8th. The usual rubber eyelet blocks and brass eyelets are supplied for servo mounting.

Harness

A normal four cell battery box is supplied for the receiver batteries. The switch harness is also normal,

except for a special socket which connects to a separate lead with a jack plug on the other end which can be plugged into the DSC socket on the top of the transmitter as described earlier.

Case and odds and ends

Just to add the final professional touch, the whole outfit is packed in a substantial carry case, lined with foam, which will protect the transmitter during transportation and storage. Also included is a frequency flag, and a trimming tool for the front panel trimmers. At the price it would have been nice to have seen a neck strap included, though. Also included are two small plastic spacers which can be used to slightly extend the length of the sticks if desired.

Setting up

We installed the system in

the Tamiya Egress electric powered 1:10 Off-Road Buggy driving a high speed ball-raced Futaba servo and a Black Box electronic speed controller. No problems were experienced with the physical installation of receiver and aerial, especially with the top crystal access. We had to fit Sanwa plugs to the servo and speed controller and the correct information re wiring was noted from the helpful instruction sheets.

The steering servo was soon set up, first by setting the neutral using the trimmer, then the end point adjustments were set for maximum steering lock with the rate knob also in its maximum position. The rate knob was reduced to 80% for normal running, and the car set up for a balanced steering on a typical short grass, dry surface. Adjustment of the knob while racing now allows oversteer or understeer to be dialled in as required. The trimmers between mild and quick settings didn't seem to provide much discernible difference, probably because of the quick action Futaba servo. This facility will no doubt come into its own as ex-

perience is gained on other track surfaces.

The speed controller was set up following its normal procedure, and here we did find that the quick/mild settings made quite a difference to the reaction speed. Also, the low end point adjustment could be set so that at maximum no braking was obtained, and at minimum setting, full braking – very useful.

In operation the sticks are very smooth and have that just right, indefinable feel about them. The trim buttons are easy to operate whilst driving, almost impossible of course with standard lever trims, and the stopwatch facility is a real winner – ideal for private testing sessions where there isn't anyone around to time you, and during races when a quick glance gives the immediate position of the race. And the ability to be able to set up and test during a race meeting with the direct link facility is also a real boon.

Altogether an excellent R/C system with a fine quality feel full of lots of useful ideas for the car racer – and it looks great too!

The distributors are Irvine Engines.