

A budget 40 MHz Steerwheel radio

Benchmark

The 'Hitec' Lynx comes under the spotlight



The Lynx, likely to become a more common cat?

If you research the beginning of radio control you will find, like I did, that although there were pioneers in both marine and aero applications it was the requirements of controlling an aeroplane that evolved the two stick layout of the transmitter that the majority of us use today for controlling our cars. For aero control it's quite logical to recreate on the TX a joystick system which operates the elevators, up and down, the rudder/ailerons left and right and the throttle forward and back. With cars however who has ever seen either full size being steered with a stick? (Well Hugh, according to the office Anorak both Saab and Mercedes have experimental models running with a side mounted joystick!) So it seems much more natural for a wheel to control the direction of a model car. Controlling the power in our discipline is not so different to aero use being up and down whether its an

IC throttle/electric motor in a model or a full size car accelerator. From the early days our discipline has had to accept RC gear produced for aero use mainly due, I suspect, to production economics of the manufacturers. Over the last few years however sets have lost their aero look with the functions being numbered and the sticks becoming universal. (Who remembers Mode 1 and Mode 2!) Pistol Grip with Computer Steerwheel TX's have appeared in small numbers mainly in the car field but it is quite rare to find budget priced 40meg gear at the trackside. Those Pistol Grip sets that have appeared have been either budget priced 27MHz or expensive 40MHz computer sets. For those drivers who are convinced that 40MHz is the future there was a gap in the market for a budget priced 40MHz Steerwheel system. Hitec and Amerang, the UK importers, have recognised this gap with the budget priced LYNX two function steerwheel system now under review.

Radiation

The thing that impressed me the first time I handled a pistol grip TX was the extraordinary difference in balance and aerial position between it and the conventional two stick RX. Like the TV ad here comes the scientific

bit! The radio frequency (RF) energy that the TX radiates in the form of radio waves is known as propagation which is far too complex a subject to discuss here. But we do need to understand certain principles to obtain the most efficient RF coupling between TX and RX. The radiation from any aerial can be regarded as a succession of concentric spheres of RF energy of ever-increasing radius moving outward at a constant speed. The aerial RF current is alternating, in our case either at 40 or 27 MHz, which in turn creates RF waves along the lines of the concentric spheres which the RX aerial detects and completes the coupling. With dipole aerials these waves are said to be polarised parallel to the length of the aerial which in the case of a TX used for aero use the TX dipole is naturally angled upwards and is at its most efficient radiating position for the RX coupling. However for car control the stick TX dipole is far lower and in some users hands virtually points at the RX - the most inefficient coupling between the two. This is where the pistol grip TX scores as in use the dipole is always at its most efficient radiating angle for constant TX/RX coupling. To point the dipole at the RX is an unnatural operating position and would never happen. (For all those users of two stick gear always keep your TX dipole as high above the horizontal

LED indication of battery pack status

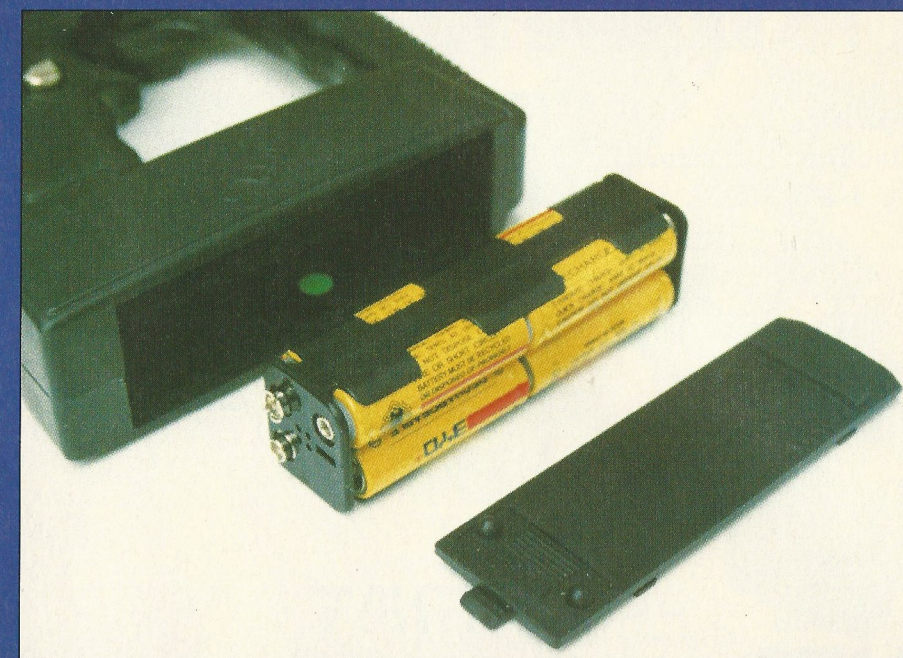
The servo reverse switches are recessed against accidental operation

as you can and never point it at the RX. This will prevent RF reflections which cause unexplained 'glitches' and other apparent radio failures.) For me I've found that in use the steerwheel is more natural than a stick to control the steering and the orientation problem when driving towards you far less than with a stick control.

Trigger finger

The LYNX throttle control is the trigger you can see in the pic. To me in use the throttle feels much more positive due I believe to the fact that your index finger is secure within the trigger surround. The trigger is spring loaded to the centre position with equal movement pushing it forward or pulling it back so it's a personal choice which way it is used. Personally I favour squeezing it for forward motion and pushing it for reverse. Both functions can be trimmed electronically with the two small knobs to the right of the steerwheel. Two servo reverse switches are located on the top of the TX and are recessed for safety - a good point. To the left of the steerwheel is the TX crystal holder raised above the surface for easy changing. Below this is the charging socket if nicads are fitted. The TX batteries - eight AA size - are loaded into a separate battery case which in turn is fitted into the base. Case/TX connec-

The Hitec micro receiver supplied with this



Battery location in the bottom of the grip handle. Note the twin contacts which must be kept clean

tion is via two spring contacts which would need to be regularly inspected and kept clean. The optional Hitec nicad pack has fly lead which plugs into a receptacle in the base of the battery compartment. Much to be preferred than the using the separate battery case. Battery state is indicated by three LEDs above the trim knobs. Green: Full power. Amber: Normal and Flashing Red: Stop and change or recharge. The TX back is bare other than the a 'parking' slot for the collapsed aerial. All the features so far described are what we come to expect on modern 40megs budget price gear.

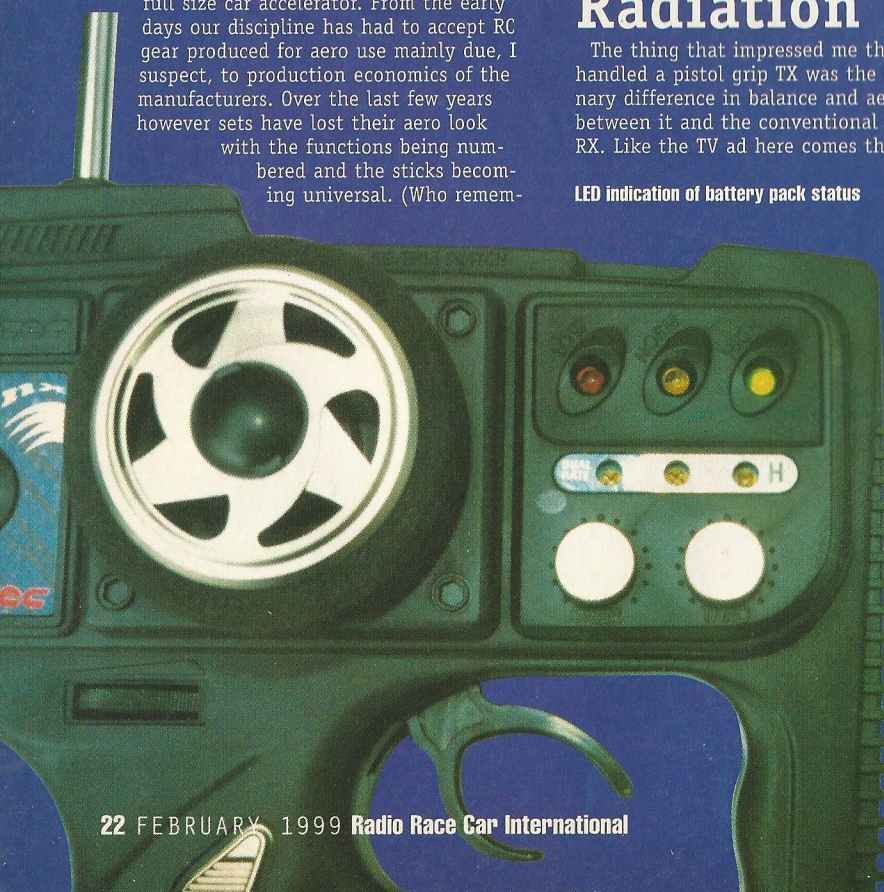
Rates

However, what makes the Lynx different is that it offers much more making it an attractive option for competition use. Just below and to the left of the steerwheel and above where the users thumb would normally be is a knurled wheel, part recessed, which Hitec identify as SRA - steering rate adjustment. SRA can be selected from 40 - 100% even when on the move. Couple this with SRO - steering rate override - switch which can be seen just under and to the right of the SRA wheel plus Dual Rate screwdriver adjustment located below the power LED's you have complete and instant inter-active control when approaching tight turns under difficult driving conditions. The SRO switch nestles comfortably under the pistol grip thumb and provides instant steering correction by overriding the SRA setting. I've no doubt that experienced drivers will, with practice, be able to operate these two features 'on the run' and at speed probably without thinking about it! The throttle has EPA - End Point Adjustment - with two recessed screwdriver operated adjustments labelled L and H situated below the power

The receiver

The RX is Hitec's two function micro, 29 x 48 x 19mm, narrow band single conversion 40 MHz receiver HFS-04MI without Battery Eliminator Circuitry (BEC). Only one servo HS.300BB is supplied. It has ball bearing output with a respectable torque of 3.0kg/cm at 0.19sec/60°. A standard non charging switch harness is included and there is no charger either although one should be able to identify these and order from any Hitec stockist. Well that's how the gear is on the bench and in my view at around £64-99 it's good value for a basic RC kit with a number of unexpected extras. For further details of the Hitec HT380 LYNX FM Pistol Grip 2 Function 40 MHz system contact your local stockist or Amerang Ltd., Commerce Way, Lancing, West Sussex. BN15 8TE, tele: 01903 765496 or Fax: 01903 765178.

May Your RC Force Never Leave Your Correctly Held Aerial!! **RACI**



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New Year, New Gear!

World Class

The new Associated 12L -
Part 2

If you followed last month's article you should by now have the 12L 50% completed. Now let's finish the assembly and take to the tracks.



Who stole my wheels?

Shock Absorber

This little interesting component is I believe, one of the main features of the new L3, a revised suspension unit. Instead of the traditional piston and 'O' ring system, what they are

using is almost a sponge, with a plastic backing absorbing the oil before assembly. This is acting as a true damper system. With the actual shock absorber being larger than before, it is obviously more reliable and is more likely to be consistent between runs. This means less maintenance on the car, i.e. re-filling, re-springing and more durability in racing conditions. In the package are two springs, optional springs are available. Simply follow the instruction for assembly, it is straightforward. You do need to check the suspension and the shock absorber itself that it is clean and free of any swarf. Also make sure all

'The L3 generally felt smoother and was more predictable'

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