

BUILDING A BO-LINK

BO-LINK 1/12th scale cars enjoy a terrific reputation in USA and were quickly taken up by the experts in the UK as the car to win races with when Ally Pally first became available for racing. As experts will they were produced with all the refinements including proportional "black box" power control which put the price up somewhat and left the impression that they were exotic products not for the common herd. I fell too, and still run my car complete with Electro-Craft "black box" though I have never aspired to expert status. Meeting Bob Rule who is Mr Bo-Link at two Nuremberg toy fairs and chatting to him it is quite clear that his range of cars are by no means "expert only" but suited to all classes of racers and would be racers.

Meanwhile, from a trickle of imports, Micro-Mold down in Sussex are bringing them in by the plane load, and their Sales Manager John Dean, who is something of an electronics buff himself has not only sent me a kit to make up but also given me a number of useful tips to make the most of it inexpensively and without extensive alteration or additions. So remember all the clever bits probably come from John, and the run of the mill comments are mine.

Originally, the first electric cars came from Bob Rule using as a basis the ex-

Nearly completed Bo-Link with ready painted body at rear. Charger cord on right. The kit being made up has black chassis and sub-base, some wiring has to be completed, and body painted (Lexan).

cellent Jerobee chassis from 1/12th glow plug cars which enjoy a high degree of popularity stateside though have not caught on over here. This chassis has not been improved upon and is still the basic element. Underneath goes a shaped Kydex plate which incorporates front and rear bumpers and two shelves on which the two three battery nicad packs are located. Underplate is attached to Jerobee chassis via a series of remarkably small countersunk head screws which are self tapping. So assemble over a sheet of white paper or you will mislay some.

American practice is to enclose the nicads in a stuck on cover to hold them firmly and for ever in place. These are not provided with the import kit, instead cable ties are supplied to fix them. This is not entirely satisfactory since it allows an undesirable degree of wobble. John drills four holes on each side plate and slots them out to take the cable ties, just in-board of the ends. This gives a neater and much more secure fixing. The two 3-battery packs are not joined together but a plate brass jumper strip must be soldered between them. This slides between the

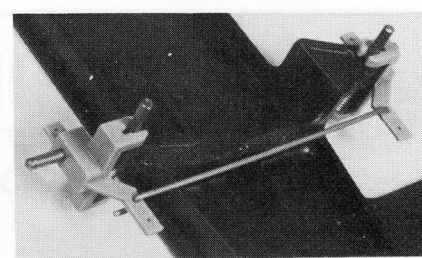
chassis and the Kydex underplate, and is turned up to meet the nicad connector strips. These from fine Ever-Ready batteries have insulating sleeves on them, which can be slipped off and put aside for use elsewhere if so desired — they won't go over the jumper connection.

Apparently also in USA the builder is expected to assemble his nicads one by one with connecting strips, which is very carefully explained in the instruction sheet. . so you can ignore that bit! Indeed the very detailed description of every electrical move to my mind tends to make it all seem much harder, when a look at the wiring diagram provided will prove much more rewarding. I also find the lead wires supplied rather stiff and unbending, so have cheated and substituted more malleable leads from my odd box. But take not of their lengths since instructions are careful to say how long to cut them (and like a Chinese tailor leave none over) so that their lengths indicate where they are to go with just enough length to fit in.

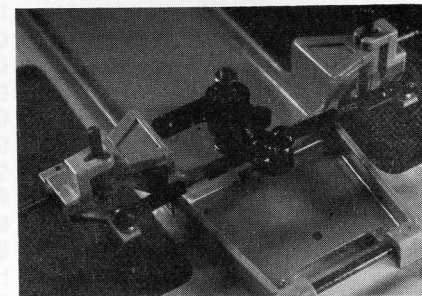
Unlike the printed circuit type of speed control in vogue with some British kits, Bo-Link use the wound ceramic type of resistor originally created for slot-race had speed controllers, with a wiper-arm attached to the throttle servo. These take up rather less space, have good forward speed range and braking but no reverse is fitted. Some British groups are now campaigning for reverse to be mandatory. This is a matter of opinion, but I would just mention that fullsize racing cars do not normally have this facility installed — they are complicated enough without it: nor do 1/8th scale i.c. cars.

A nicely shaped bracket comes to carry this resistor and should be fixed to the base of the chassis where indicated. Self tapping screws are supplied to hold it there but I preferred to use a couple of nuts and bolts instead to be really secure. I have read of devices to hold servo and resistor together when the latter comes adrift so take appropriate precaution. Now we come again to a slight variation in practice. It is suggested that the charging resistor (which on British kits is embodied in the charging cords) should sit under the speed resistor anchored to base of the bracket with Zap or epoxy and be wired into the circuit there.

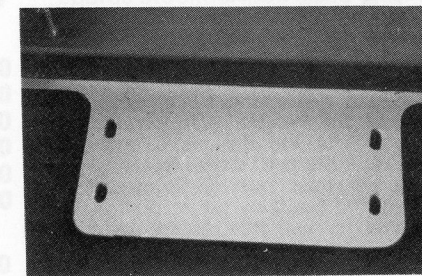
The Bo-Link charging leads are very beautiful, and there is a neat little charging socket to go at the back of the car. It is intended to fit into the cigar lighter on a car dashboard to obtain charging power. This need not mean you need the family car every time — you can obtain a suitable



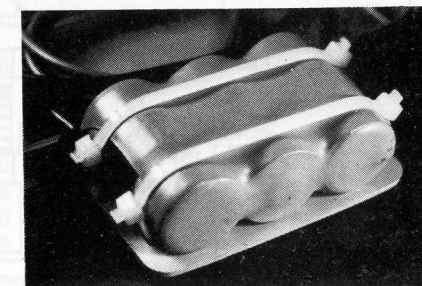
Steering unit assembled as per standard kit.



John Dean's failsafe device using Micro-Mold fail safe and their low-priced ball link and threaded rod set. Well worth fitting.



Another John Dean notion. Drill and slot nicad platforms to secure batteries with cable ties (these are provided in the kit).



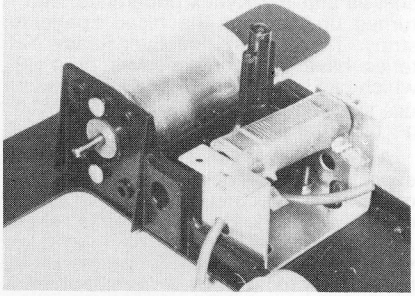
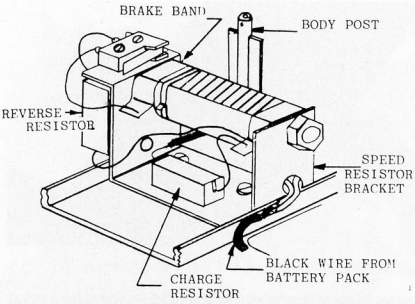


Diagram showing additional wiring for reverse kit. On right is standard resistor rig. Microswitch for reverse is screwed into two holes seen on left if desired.

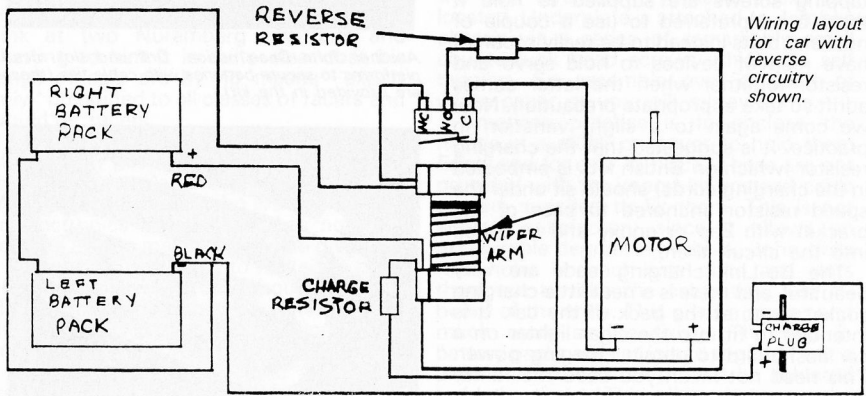
socket for the plug provided and have this installed on your charging panel. Many of us still clamp a couple of great bulldog clips on the neg and pos ends of the charging battery and I have made provision for this. John Dean has fitted his resistor on a hi-fi heatsink (15p he told me at his electronics shop) Mine goes on a 4in square alloy block and is part of the charging lead. If you leave it where told — it gets hot and you are advised to see that it is not too near the servo in case it melts it so I have followed the sound practice of keeping it off the car.

Harking back to reverse or not to reverse. There are two little holes on the resistor bracket side piece which is folded over at right angles. This device is intended to take a micro switch which forms part of the reverse unit which can be acquired for the Bo-Link as an extra if required. Rather than waste an opportunity I telephoned Ted Longshaw who lists it and got it by return post. There it sits with its own little resistor underneath,

cunningly wired up as per diagram, giving the best of both worlds . . . It's there, no need to use it if you don't want to . . . like . . . the starting handle on a Rolls Royce.

The two stub axle units are sprung onto the kingpin unit on chassis frame, remembering to slip in one end of tie rod into the first after fitting and into the second before springing into place. This makes an effective unit when joined with the addition of the steering linkage with its "servo saver" bend. John Dean rather naturally prefers the Micro-Mold ball joint accessory and the Micro-Mold failsafe unit to take the place of this. His photos and brief description show what is needed. In passing I have used the Micro-Mold ball joints as part of the steering set-up on my Jerobee for nearly two years and haven't lost a servo yet — the unit springs apart under great stress, but normally just takes it and carries on. Front end is sprung and requires only an occasional drop of oil to function perfectly. Wheels and tyres (supplied t & g — trued and glued) slide on to stub axles and are secured with circlips. (E ring retainers in American). Very

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Wiring layout for car with reverse circuitry shown.

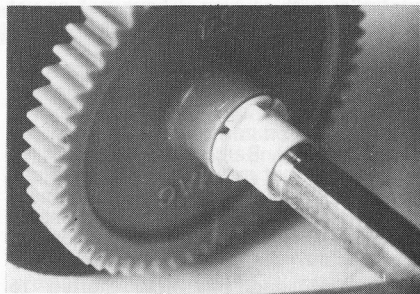
BUILDING A BO-LINK

(continued from page 40)

valuable tip here! The circlips are small, the wheel recessed: it is impossible to grip them with ordinary needle nose (snipe) pliers and they drop easily and invisibly. Stick them on a piece of sellotape with the two prongs clear and then introduce each one to the axle, pushing on with the end of the pliers. Easy this way.

Rear axle is hexagonal with turned sections to run on. Hex shape makes driving wheel location positive. A pair of split nylon bearings are provided to open up over the hex part and slip into the turned sections. Each bearing has a tiny little knob on it which fits into a matching hole on the chassis axle bearer thus locating to stop it spinning round at random with the wheels. Large plastic gear has hex hole to slip on to axle on drive side and a spacer is provided on the other side. (I had a bit of a Biro as a spacer for ages with my original car until out of very shame I turned up an alloy one!) Circlips that hold wheels on are bigger this time, but the sellotape trick still useful. Small drive gear of course on motor shaft and should align up nicely. If stiff loosen screws holding on motor and ease off fractionally. About a cigarette paper thickness clearance does the trick. Some of the hex axle cars have threaded ends that take button screw retainers.

Body mount posts remain to be fitted before doing the body. If you are a careful type you will have got this moving whilst assembling the kit. Paint the inside (using paint acceptable to Lexan — NOT car aerosol! Several good brands on the

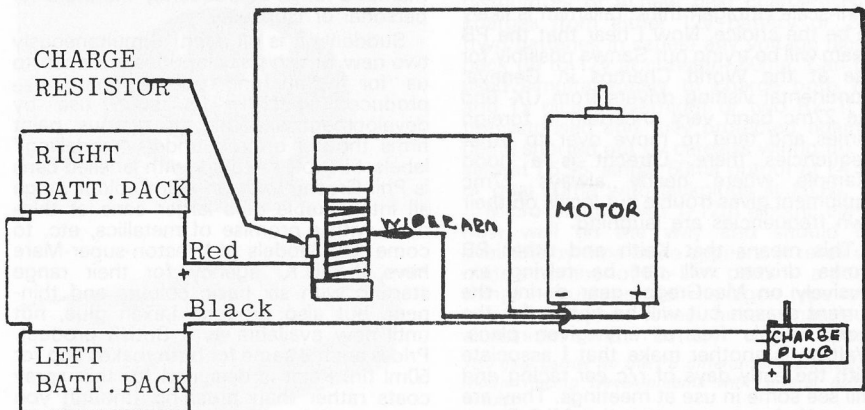


Cunning little knob that locks nylon bearing on chassis axle bearer.

market now — check with your model shop and still test on a bit that would be cut away anyhow). Mask windows and roughen up inside with steel wool or similar and paint inside before trimming. Remember that any stripes needed are done first (next to the clear part) and main body colour last. A final spray with white paint, I am told, gives a richer finish to any colours used. Slide transfer (decals) can be added to the outside as desired.

Radio installation follows usual practice. With a strong recommendation to fit servos on brackets certainly for speed servo, and not rely too much on servo tape. I am also still addicted to a whip aerial which can be fixed nearly anywhere to choice since none of the chassis or underplate is of metal.

Final word: If you are lazy or unhandy with the paint pot remember that a whole host of ready painted bodies are available — they only need money but really are worth it to make a real job.



Wiring diagram for standard arrangement without reverse facility.