



The new 'Attack' looks much more refined.

**F**utaba is the world's largest manufacturer of radio control equipment. The range of different types is vast and is continually being updated and modified. For some years now the major Japanese manufacturers, including Futaba have been saturating the world market with inexpensive two-channel sets. It is difficult to see where all of this equipment is going.

However, to supplement the output from the Japanese factories we have recently had even cheaper sets arriving from Korea and Taiwan. So significant is this challenge to the Japanese market that even Acorns is now looking at producing sets in Hong Kong. As mentioned in an earlier edition of RCMC, Futaba have plants not only in Japan, but

also other countries around the far east. I wonder how long Futaba can resist the cheap wage bills of Korea and Hong Kong.

The combo I was given to review is the latest addition of the enormously successful 'Attack' series. This version includes some changes to circuitry and a face-lift as far as the transmitter is concerned.

The transmitter and receiver are stamped made in Japan. However the servo's, rather interestingly have no such marking on them. I checked with some old 128's (the type provided in the kit) and they definitely had 'made in Japan' stamped on them. Read into this what you will. I pass no further comment.

The three versions of 'Attack'

vary primarily with facilities offered on the transmitter. The standard 'Attack' transmitter offers no special facilities. The 'Attack'-R includes servo reversers. For those who have never encountered servo-reversers, the purpose of this facility is to change servo direction without changing the position of servos, rewiring the servos or turning the transmitter control sticks upside down. The reversing switches are mounted on the base of the case.

The top of the range 'Attack' is the 'BFR'. This includes servo-reversers and a new piece of circuitry which causes the receiver to switch the speed controller into a standby mode if the supply battery voltage drops below a critical point. A switch alongside the servo reversers is used for setting up the 'fail-safe' system.

Starting with the transmitter, this unit, although very similar in style to the earlier 'Attack' is now finished in black and silver and looks very smart indeed. The transmitter takes eight AA size batteries, either Ni-Cad or dry cells. Controls fall easily to hand, although I must say I found the edges of the control sticks a bit on the sharp side, but it would only take a few moments to cure this with a piece of abrasive paper. Both the stick controls have trim levers for setting up the zero or off positions. The left-hand stick (usually used as the throttle) also includes another lever called the neutral lever which pulls the stick's zero position nine degrees down. This restricts the amount of reverse movement and is probably of more use to the I/C driver than the electric car driver. In addition both the steering and throttle gimble assemblies can be swung five degrees either side of vertical. This may be of use to some people, but I am somewhat at

loss to see much gain with this adjustment.

I am sorry to all of you experienced drivers who will hardly need to have any of the mentioned spelled out, but their may be some newcomers to the hobby wanting to have the additional detail.

Between the two sticks is the on/off switch and above it is the easy-to-read battery condition meter. So much for the transmitter.

## The Receiver

The receiver is covered in logos and information. This includes the 6 main crystals available, and the receiver is equipped with Adjustable Safety Position (ASP) and Battery Eliminator Circuit (BEC) features. The same receiver is common to all the 'Attack' range, whether or not your transmitter is the 'BFR' type. However it is worth remembering that unless you have a 'BFR' transmitter the ASP function does not work correctly.

The battery eliminator circuit does not mean that the receiver is either gas powered or even solar powered. What it does mean is that the receiver and servos can be operated from the main drive battery. This has been available from most of the electronic speed controllers for some time, and now most of the Japanese made kits are coming out with BEC circuits built into the mechanical speed controllers.

Some more words about ASP. This I believe has been introduced in an attempt to make R/C safer. I notice that some electric aircraft already operate a similar system. The idea is that when the drive battery has run down on power to a critical point, the drive motor power is cut, but there is still sufficient power left to give steering, or in the case of an aircraft to bring the model safely to earth. The system

works by detecting low volts from the supply battery and then sending a signal to drive the speed control servo to the off position. I can see some real advantage in electric flight uses or even boats, but I am a little unsure as to the real advantage for a car.

There is a disadvantage when using the system in a serious competition car. As some cars are now using very powerful motors indeed, the starting (and for that matter the running) current can be quite high. This will mean that if a very high current is drawn from the battery, the voltage across the battery could drop significantly. This drop could be detected by the ASP system and immediately shut the motor speed controller down. On the plus side, and this is only a guess, as it is not mentioned in the instructions, should the car run into an immovable object and for some reason the throttle stays

open, it is quite likely that the battery volts will drop due to the high stall current involved, and so invoke the ASP circuitry and save the car, motor and batteries to fight another day. If the ASP functions, it is an easy matter to reset it by just switching the transmitter off and then on. If the receiver is used without a BFR transmitter then a small link can be fitted to short out the ASP connection inside the receiver.

The servos. Standard 128 type servos came with the combo, these being the Futaba basic, hard-working reliable units that have been around for quite a few years. As mentioned earlier the servo case has no 'made in Japan' legend. A quick glance on the inside of the servo indicates the same motor, a Mabuchi with (it says in the instructions) a skew type of armature. All nylon gears and a plain bearing output shaft

allows the cost to be kept to manageable proportions. For all its standard specification the 128 servo is nevertheless an excellent reliable and quite powerful unit and should not be underrated. The kit also comes with a range of servo norms, battery box and switch if you prefer to manage without BEC, and a crystal flag.

Some basic spec taken from the instructions are:  
**Transmitter current drain:** 170mA  
**Receiver current drain:** 13mA  
**Range on ground:** 500 metres  
**Weight:** 38g  
**Dimensions:** 37 x 55.5 x 19mm  
**Servo current drain:** (idle 8mA)  
**Output torque:** 3.5kg/cm  
**Speed:** 0.24sec./60deg.  
**Weight:** 53g  
**Dimensions:** 40.5 x 20 x 40.5

In conclusion this R/C set is well made. The range claims are perhaps a little on the optimistic side, but still very good.

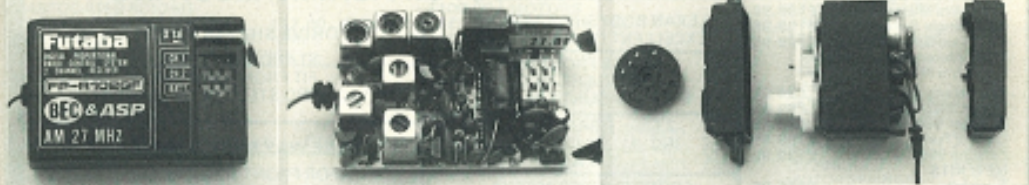
The new features have to be

paid for. Whether the first time buyer will find ASP desirable remains to be seen. I can see a lot to be said for having the BEC circuitry included in the receiver, but as most high performance speed controller already have a similar in-built feature, it may be that BEC is a little late arriving on the scene.

Although the instructions are very well laid out, I had to read them a few times to make sure I understood exactly what I could and could not do, especially if I intended to use a non-Futaba electronic speed controller.

Reviewed by Geoff Driver.  
 Price Approx. £50.00.

From left: the standard Futaba receiver. Inside showing all the bits. The servos are the well tested 128's.



Geoff Driver has been looking at Futaba's latest two channel

# FUTABA ATTACK