



GEE BEE R3R

Dave Wilshere gets in the groove with a stylish scale racer from Top RC Hobby

The Gee Bee series from the early years of aviation was basically a streamlined fairing aft of a big radial engine, with wings and horizontal tail bolted on. The vertical fin and rudder were definitely an afterthought; the rudder actually required increasing after the first flights. For most the 'Barrel' Gee Bee R2 from the early 1930s epitomises the racing era it was designed to compete in. The problem was that the design was lacking in various ways and the fuselage shape added quite a percentage to the available lift. This was good for the pylon turns and, as it turned out, for knife-edge flight.

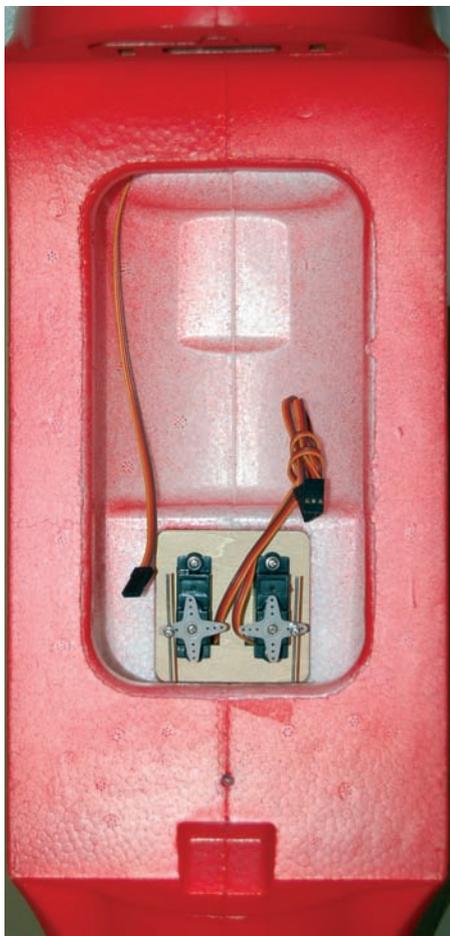
Although there were more than a dozen Granville Brothers designs, only three or four are regularly modelled. The Gee Bee R3 never actually existed, yet I have seen several different manufacturers release



The Gee Bee R3R is a sweet looking aeroplane, with a great colour scheme

versions... You can see why — it looks great and probably, in Gee Bee design terms, it has better proportions. It was designed by an Italian guy, but was never actually built as a full-scale aircraft.

This 1200 mm span example is sold through Century UK and features Epo-Flex foam construction (what I call bouncy foam!). The airframe is completely painted and decorated; the paint finish is fantastic and on my kit the decals were pretty good too, but I have seen some with a wrinkle or two.



Wing mount and radio bay showing the preinstalled tail servos

The power unit is slightly unusual featuring a 750 KV large diameter outrunner bell type motor, which features a tubular clamp mount. The whole assembly comes complete with 12" x 8" prop and spinner, all factory fitted. The low KV motor and 3S LiPo voltage gives just over 300 W which is achieved at around 27 A. The ESC is only labelled at 30 A, so if there is not a healthy safety factor the ESC might be working quite close to its maximum on high quality LiPo's. Mounting is simple as even the ESC is ready attached. You literally just thread the ESC into the fuselage and insert the mounting tube into the mount socket and clamp it tight.

The tailplane comes complete from its own bag. There is a plywood tongue fitted through the tailplane and this just inserts into a slot, centralising the tailplane and providing a fixing point for the two screws. The elevators are in two pieces, but come linked with a wire joiner. Even the control horn is fitted.



The two wing panels need joining together

The rudder is a little strange in shape — it's like a pointed fish tail. This is really simple to fit as it clips into place. The tail wheel steering is driven by the rudder and you need to ensure it is engaged before snapping the rudder home.

Wings

The wings are retained by two plywood stubs, which locate in slots in the fuselage and a long M4 screw at the rear.

The two panels need joining together. On my kit the roots did not match particularly well and dry checking the fit showed that the two wooden lugs finished wider apart than the fuselage slots that accept them. Sanding the roots flat quickly achieved a perfect fit. A plastic mount, which accepts the rear mounting screw, helps hold the two halves together while the glue dries and spreads the load from the fixing screws once complete.

While the wings were drying I sorted the bracing wires into pairs. There are ten wires. Luckily they will only easily fit one position!

The rudder and elevator servos are ready fitted in the cavernous fuselage, leaving plenty of space for even the largest receivers. My JR DMSS 631B Rx looked lost. I intended keeping the R3 in one piece, so I installed an extension lead to the LiPo hatch in the nose for binding my various JR DMSS transmitters.

It's worth checking that the outer sleeve on the rudder and elevator pushrods is fixed to the fuselage. Mine were not and this creates quite a lot of slop and inaccuracies in centring.

The pre-assembled undercarriage units have wire hoops that insert into plastic plates in the wing's lower surface. The bracing wires hold the units in position so they can be removed without any tools.

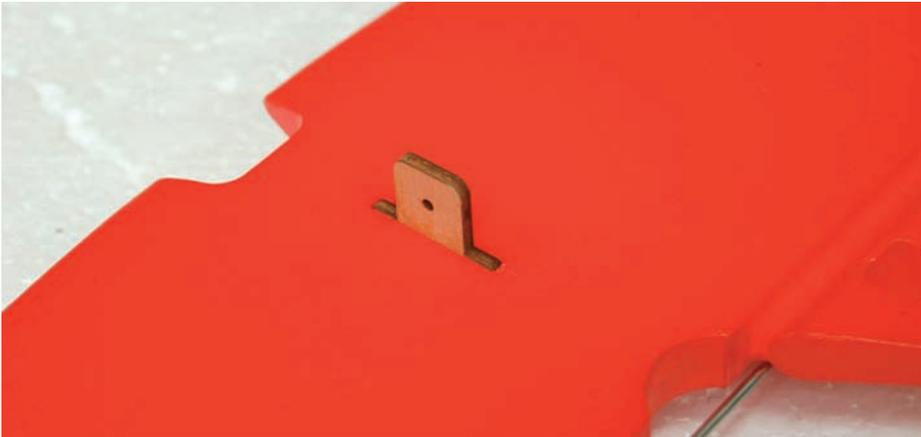
The manual does not show any control movements or expo figures, so I left everything at 100% on the travel and D/R, and added 10% aileron expo, 20% elevator expo and 20% rudder expo (later increased).

Flight Test

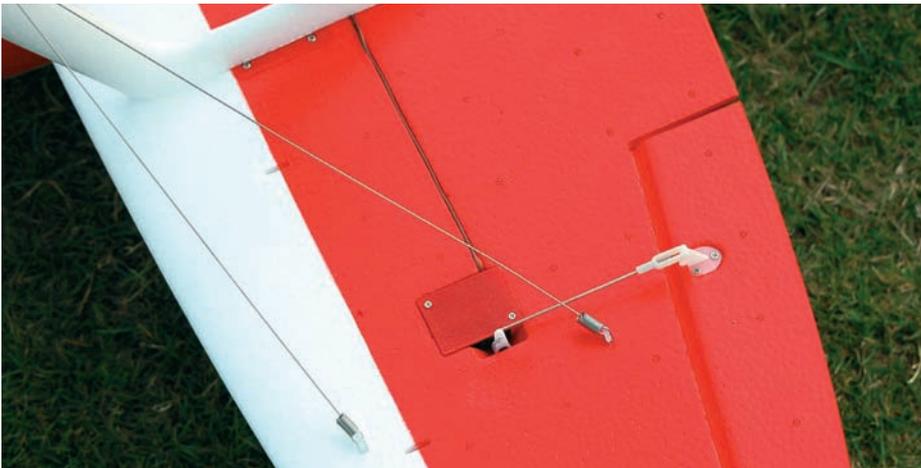
Ground handling on our short grass strip is good. The small tail wheel and fairing does not steer particularly well but the massively powerful rudder kicks the tail around easily. The ground sit means you can power the Gee Bee through a take-off



The rudder simply clips into place. The hinge line is neatly recessed



This plywood tongue inserts into a slot and centres the tailplane. It also provides a fixing point for the two retaining screws



Aileron hook up and bracing wire connections to the wing



The elevators are in two pieces but come linked with a wire joiner. The control horn is ready fitted



The 3S battery bay is covered with a latched plastic hatch

or open the throttle slowly and allow the tail to rise and float the R3 off level.

The first thing I noticed was its tracking. At full power I fed in some right rudder trim, indicating a lack of right thrust, and any variation in rpm changed the trim requirements. You can fly it without changing the trim, but you need to fly the rudder much more than I'd expect on this type of aeroplane. Turning downwind the Gee Bee R3 wasn't as fast as I had hoped. It's not slow, but it does not get the senses buzzing either. This probably is no bad thing if the Gee Bee is to appeal to a wider range of pilot ability and eyesight!

Rolling manoeuvres are pretty axial and look right, even with the large undercarriage fairings. Loops cannot be huge with the power available, but they are large enough and I found the control balance, with everything set at 100% on my XG-11 radio, was good. Only a slight increase of expo on elevator was needed to completely harmonise the primary controls. The rudder control needs lots of expo to keep things balanced; the rudder is so powerful it is easy to over control during a slow roll and have the Gee Bee climbing during the knife-edge phase of a roll. I increased the rudder to 45% expo.

As expected the knife-edge is great. Very little rudder is required at speed and the R3 is very stable, allowing complete knife-edge circuits with little more than elevator inputs. Inverted the Gee Bee felt nice and solid with very little down required.

Slowing things down the R3 was flown around at low power, where the handling was solid with no nasty tendencies. I did find that coordinated turns with rudder added to the aileron helped when flying slowly; it only needs a tiny amount of rudder. I actually set another R3 up for an inexperienced club member and used his JR radio's CAR (coupled ailerons and rudder) function to program in a little and he found it much more comfortable to fly.

Setting up for landing, the R3R has quite a lot of drag, with its radial cowl, large spats and bracing wires. It's best to fly the Gee Bee right down to the ground rather than holding it off for a stalled touchdown. The landing gear does not have much give so any touchdown with a fast vertical descent will cause a bounce.

This shows off one of the flaws in the model and that is the flying wire attachments, which easily pop off at the fuselage end and the wheel spats. The plastic hooks can also open easily and once stretched they will need replacing.

I leave the model assembled so a small amount of epoxy used to seal the open end and will massively increase the hook's strength. Even if you need to remove the wings it would be easy to rig a better hook attachment.

Everyone agrees that the Gee Bee R3R is a sweet looking aeroplane, with a great colour scheme. It's probably more suitable as a third or fourth model as it requires a little bit of understanding to set it up properly. **RCMW**



The R3R isn't as fast as it looks. It's no slouch, but it does not get the blood racing much either. This will give it a wider appeal though



When inverted the Gee Bee felt nice and solid with very little down required



Knife-edge is great. Very little rudder is required at speed and the R3 is very stable when flying on its side



With its radial cowl, large spats and bracing wires the R3R has quite a lot of drag. So when landing it's best to fly the Gee Bee right down to the ground

RC MODEL WORLD DETAILS

MODEL INFORMATION

NAME: GeeBee R3R PNP
MANUFACTURER: Top RC Hobby
DISTRIBUTOR: Century UK
PRICE UK: £119.99
MODEL TYPE: Sport Scale Racing Plane
CONSTRUCTION: Moulded Epo-Flex Foam
PARTS SUPPLIED: Brushless Motor, 30 A ESC, 12" x 8" Prop, 2x 9 g & 2x 17 g Servos, Receiver,
PARTS REQUIRED: 3S 2200 mAh LiPo

MODEL SPECIFICATIONS

WINGSPAN: 1200 mm (47.2")
LENGTH: 1140 mm (44.9")
FLYING WEIGHT: 1150 g (40.5 oz)

DISLIKES

Flying wire attachments

LIKES

Looks and finish