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Introduction to the Model Aircraft World
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The Oldest Remote Control Method Combined with Modern Technology

Gee Bee 1000 – the control line model with electric motor

The availability of very affordable R/C kits and/or ready-built models from robust EPP material[1)] make it possible to quickly and easily build simple electric-powered control line models.

Convert an RC model into a perfectly flying control line model

The Gee Bee 1000 is used to demonstrate how quick and easy it is to convert an RC model into a perfectly flying control line model. The propulsion components of motor, controller and timer are designed to be sufficient for a slightly larger model. The converted Gee Bee 1000 can be used as an entry-level model or for basic aerobatics training. With its unproblematic and very quiet motor, the Gee Bee 1000 can be launched from any area with short grass such as a football pitch. With a flying time of 1 minute and using a reduced speed, e.g. approx. 8000 rpm, only a little familiarisation is required to confidently fly the plane. However, the following must be observed:

- Only fly when there is no wind.
- Make sure you have permission to use the site.
- Spectators must remain safely outside the flying circle.
- A pilot with control line experience should be present for the first few flights.
- Reduce speed and do not fly higher than 3 - 4 m.

With EPP models, minor "incidents" do not normally result in a write-off.

Electronic components

Unfortunately, there are not many controllers on the market that come with a selectable "Control Line" mode. This allows operation with a constant

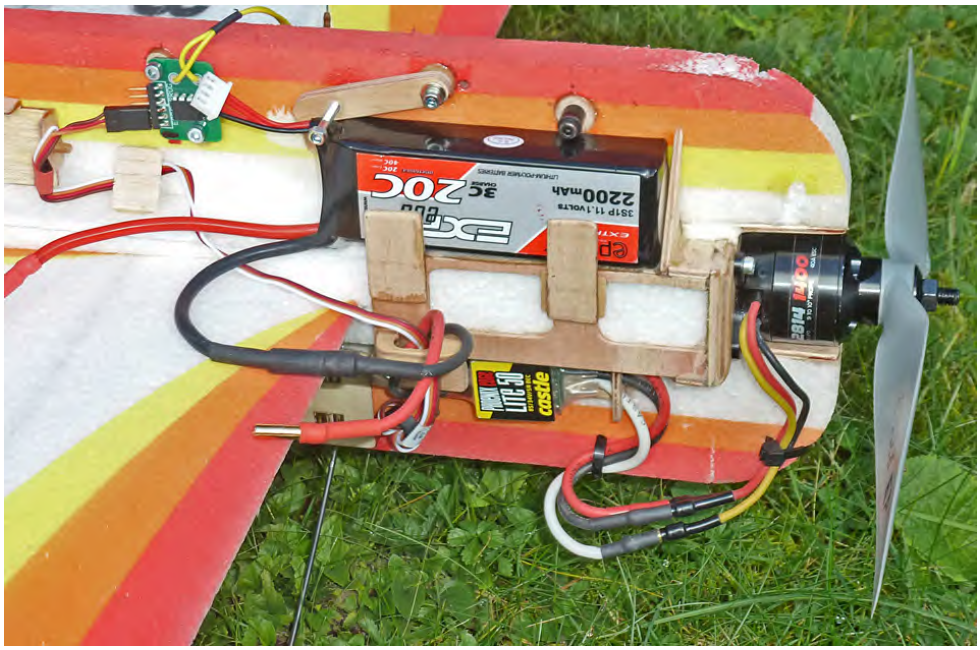
controlled speed (Governor or Heli mode). When selecting a controller for larger F2B competition models, this is a basic requirement. To operate the controller, control line pilots need a special component that generates suitable signals and transmits them to the controller via the 3-core servo cable to power it.

Other special considerations

Many electric-powered aerobatic control line models use left-handed propellers in a so-called "pusher" configuration to benefit from the influences of the airscrew's torque and gyroscopic moment. To compensate for the weight of the lines, a weight of approx. 25 g is attached at the outside wing tip. Levers, axes, etc. for steering control line models are available from specialised internet dealers.

Aerobatic training

For the first few flights, it is advisable to limit the flying time to 1 minute and to adjust the motor speed to achieve lap times of approx. 4.7 - 5.0 sec of horizontal flight at an altitude of approx. 2 m. This way, a fully charged 2200 mAh battery provides enough power for four flights. A speed of 4.8 sec per lap allows tidy and well-controlled execution of all F2B aerobatic manoeuvres. To repeatedly practice individual manoeuvres, a maximum flying time of 4 min is sufficient. This is also the case when flying at entry-level competitions. The approaching end of the flying time is indicated by a brief drop in motor speed.



In windier conditions, flights cannot always be well controlled and for F2B competitions a flying time of at least 5 minutes has to be possible. This requires a battery with a capacity of approx. 3000 mAh.

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1) *Expanded polypropylene* (EPP) is a polypropylene-based granulated foam plastic