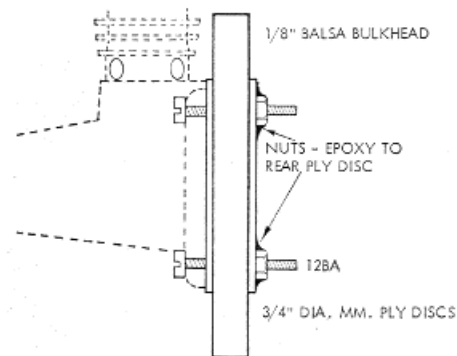
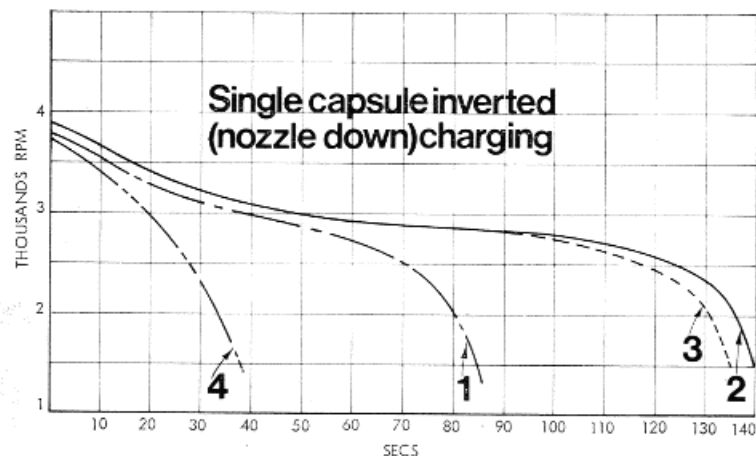
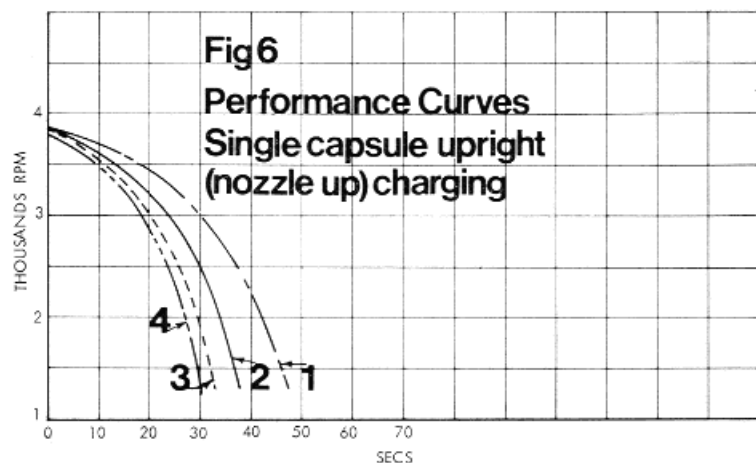




sharp razor blade. If you can countersink the two faces butting against the washer a more efficient gas seal will result. An incidental but significant advantage of this attachment is that it enables the cylinder to be more easily rotated to adjust the engine revolutions.

I have carried out a number of experiments with various propellers, both commercial and hand carved. On balance, I believe that the most practical propeller for

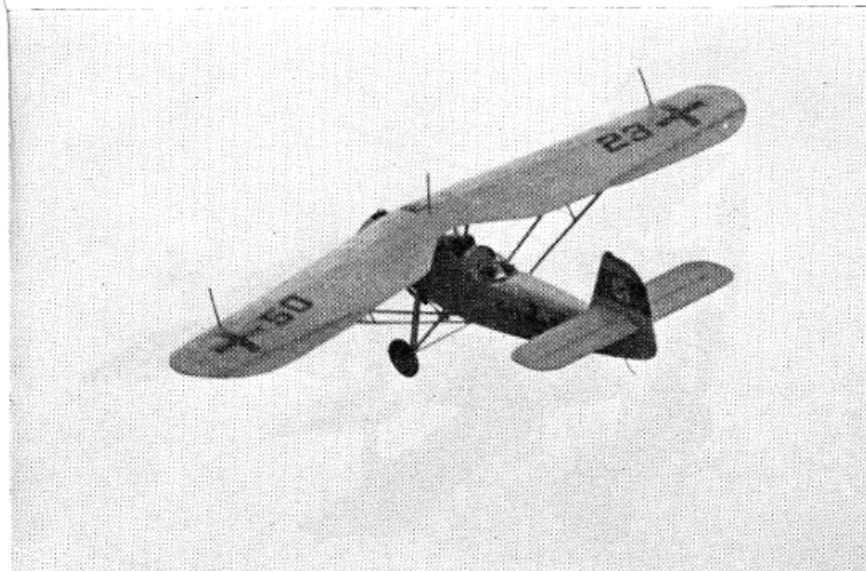


Fig 6 opposite: It is interesting to note that the revolutions at the start of each run remain very consistent despite the subsequent wide variation of total running time. Above: Fine view of Doug McHard's Heinkel He 46, climbing away for another long flight on a calm summer evening with the flutter of the CO₂ motor providing a realistic muffled sound.

the average flier is the 5½ in. Williams Bros. nylon prop. supplied with the engine. I have wooden props that are more efficient but it must be admitted that their rigidity is likely to bend or even break the thin prop attachment bolt following a turn-over landing. The He 46 likes the plastic prop diameter reducing to 4¾ in. for optimum performance.

The cover subject D.H.2 was built as an example of the type of aeroplane now made possible by the CO₂ engine, which with rubber power would be impractical and for free flight power would require dead ballast weight to achieve the correct C.G. No ballast weight is used in the D.H.2, which weighs just a fraction over one ounce in flying trim. First time never-miss starting in that cage of booms and wires is also a valuable "plus" and the total absence of fuel mess means that you can really build like a rubber model. The absence of engine scream produces a wonderfully realistic effect in flight.

The Heinkel He 46 shown here is 19 in. span and has a flying weight of 22 grammes (about ¾ oz.). The engine is adjusted to turn at about 3,250 revs. (upon starting) and this produces a gentle climbing flight which, on a single flight capsule with a liquid charge, will give durations of around 1½ minutes. Incidentally, these settings were used for the tables in this feature.

The He 46 is, of course, an adaptation of the rubber powered original (plans for which appeared in *Aeromodeller*, April 1970), and one reason why it was originally chosen for rubber power was its relatively long nose, which distributes the rubber weight more efficiently about the C.G. No such design limitations exist with a CO₂ engine and, in fact, a short nose layout has certain advantages, for it removes the temptation to move the flight capsule to and fro along the fuselage to achieve the correct C.G. If the flight capsule, because of a