MODEL AEROPLANES

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Notes on Materials

Balsa Wood.—A material which bids fair to revolutionise the construction as well as the results obtained from model aeroplanes is Balsa wood. It is lighter than cork, of closer grain, and easily cut, planed, sawn or whittled. Unfortunately, it is, as yet, only obtainable direct from America. A solid aerofoil constructed from this wood could be made lighter than a fabric-covered one, would remain true, need no bracing, and, moreover, would present a perfectly symmetrical form, a feature never present with fabric-covered aerofoils, as the camber of the ribs is seldom imparted to the fabric between them.

With this wood there would be no need to use bentwood screws on record machines in order to save weight, as carved Balsa-wood screws would be much lighter than our present birch bentwood ones; therefore the increased efficiency of carved screws would be obtained, with less weight than bentwood.

Elevators, too, could be made much lighter than at present, with the result that, with two machines of the same size, one using ordinary construction, and the other Balsa-wood planes, elevators and screws, the latter would possess much less weight, a greatly improved aerofoil, would require less power, and would generally give greatly improved results. I commend this matter to our model-aeroplane-accessory houses, and should be glad to indicate the source from whence it is obtainable, if they will communicate with me.

I hope shortly to give a design embodying the construction aforementioned.

Tempered Steel Wire.—Every modellist is acquainted with the vagaries of piano wire, with its tendency to spring out of its orderly coil into a jungled mass, and with the difficulty of straightening or working it to a given form. By practice most of these difficulties may be eliminated, but in any case tempered steel wire which opens out straight from the coil is preferable. A six-foot length will open out practically straight, enabling one to accurately lay off measurements or offer it to the outline of a template. It must be filed bright at the points where a soldered joint is to be made, and a soldering paste should be used in preference to spirits of salts. It may be purchased in small quantities.

Dope.—A good waterproof and airtight dope for ordinary jap silk may be obtained by giving the covering, *after* it has been placed upon the plane framework, a thin coat of gold size, and a second thin coat of coach varnish when the former is dry. This method has the advantage of sticking the fabric to each rib and so tying it against distortion. The high polish imparted improves the efficiency of the wing.

Elastic.—Good rubber should easily stretch six times its own length, and when new should not be given the full number of turns that the skein will stand, as fracture is nearly always the result of so doing. Twenty-five per cent of the maximum should be given for the first three flights, 35 per cent. for the succeeding three flights, and so on until the full number is reached. The rubber should be lubricated at each flight.

If the machine has twin screws, it is advisable to use a double winder so that no unbalanced stress is placed on the fuselage, and to prevent one skein remaining in tension whilst the other is being wound.

Lubricant should be washed off when the model is finished with for the day.