# PAINTING & FINISHING BALSA WOOD MODELS

MANY READERS will have experienced a great deal of trouble in obtaining a smooth or glass-like surface finish on balsa wood models. The rough surface finish, so often seen, can easily be avoided with very little effort, provided some simple procedure rules are followed.

Balsa wood is a lightweight hardwood, and has a very low density. As it has a large and wide grain the surface tends to be rather rough, even when sanded smooth. Unfortunately, the large grain can absorb a vast amount of paint if the correct finishing procedure is not followed. Always remember that the final finish on any model is only as good as the surface over which it is applied. Cracks, gaps and rough patches show up after final painting quite alarmingly, so fill, remove or sand any blemishes to the best of your ability, before any grain sealing or painting is commenced.

Commence to prepare a smooth and flat surface by sanding the model down with flour paper and filling all the blemishes with body putty, plastic wood, etc. Apply one coat of full strength clear dope and leave until it is thoroughly dry. When completely dry (i.e. the solvents have evaporated from the dope), your smooth, sanded surface will have been transformed into a very rough and sandpaper-like finish; this is a good thing, as the dope has now sealed up the loose surface fibres and started to fill the grain holes. Sand all the fibres off until a smooth hard surface remains.

Several different methods of grain filling can be followed, each one being suited to different types of models due to weight, strength and flexibility. The most common is sanding sealer, which is clear dope with a powder mixed into it, that fills the grain holes as the dope dries. If multiple coats are applied, the surface finish can crack and craze with age; to prevent this, a few drops of oil can be mixed with the sanding sealer to " plasticise " it. As many as five coats can be applied to static models straight onto the clear doped, sealed wood. Each coat should be thinned a little more than the preceding one, up to a maximum of 50 per cent., using the recommended thinners for the dope brand. It is advisable to rub the surface down flat between each coat, leaving the final coat for up to a week to harden off before this is flattened down. For a flying model the sheet balsa surfaces can be considerably strengthened by applying a layer of lightweight tissue onto the bare, clear doped, and rubbed down surface. Apply a coat of thick clear dope and lay the tissue onto this, using the dope as an adhesive; you have to work quickly here or the dope dries before you have time to smooth the wrinkles out! When this has dried, apply up to three coats of sanding sealer, rubbing down between each coat, and thinning as necessary. This method of finishing imparts a great deal of strength to the wood and prevents all sorts of minor damages by really binding the surface grain together.

Another type of surface preparation is car primer; although not so well known, it is very effective when used on certain types of models. The thing to watch out for here is weight, as this can mount up very rapidly if four or five coats are used and we would not recommend it for use on free flight models. With " Belco " grey primer, tissue covering is not really needed to obtain the necessary strength for fast control line models or power boats, and it really does fill the grain—if a trifle heavy. With this type of paint, wet and dry paper is best for rubbing down as it tends to clog ordinary sand or flour paper. Wet and dry paper can be purchased from most ironmongers or car accessory shops, it is quite cheap and it lasts for quite a long while. For this type of work, 400 or 600 grade is most suitable, but don't press too hard when it's new, as it has quite a bite and will soon cut the surface down to bare wood.

So much for basic surface preparation, next we come to final colour painting, and here the choice of materials is quite staggering—enamels, dopes, household paints, epoxy paints, polyurethane and acrylic paints abound aplenty. As well as the normal tins, most of these paints are available in spray cans for direct application.

The two most popular methods of finishing are brushed-on enamel and brushed-on colour dope. If you have prepared the surfaces in the preceding manner, you should not experience any problems in getting a fine smooth and glossy final finish. When brushing dope, try and flow it on, rather than brushing it into the surface. With enamel paints this is not so important as it is thinner to start with and withstands the brushing. If you are lucky and the colour has a high density, you may only need one coat; if it turns patchy, it is best to rub it down with 600 grade wet and dry paper used wet, with water for lubrication. Don't rub all the paint off, just remove the surface gloss so that a matt surface remains. For each successive coat of paint add a slight amount of thinners—we use about 20 per cent. for each coat, i.e. one fifth thinners for the second coat, two fifths for the third and a maximum of three fifths for the fourth coat, any other coats should be of the fourth coat consistency. When finally finished, a really gleaming surface should result. For that final professional touch you can rub the surface up with Brasso or Duraglit metal polishes; when the metal polish has dried, rub the painted surface up as hard as you dare with a soft duster and wax polish with as much ' elbow-grease ' as possible. So much for doped or enamel finishes.

If you are painting an internal combustion engine powered model, remember that colour dope with a nitrate base is not proof against any fuels, enamel is usually proof against diesel fuel, and some are proof against ordinary glow plug fuel, always read the instructions on the can to see exactly what the situation is, or check with the model shop manager. If you do have to fuel-proof dope or enamel, several clear varnish fuel proofers are available at most model shops—both " Humbrol One-Pack " and " Titanine " are very good.

The recently developed Acrylic and Polyurethane paints are more expensive as you have to purchase them in larger quantities. We have used both " International " and " Yachtsman " domestic polyurethane paints to obtain very good finishes with just one coat of colour paint and no final rubbing up or waxing. Rather heavier than dope by volume, the finished paint job will not weigh any more as you use proportionally less to obtain a good finish. Most of the best Polyurethane paints are two parts mixed, i.e. the paint and a separate hardener; Acrylic is one part and both types require special thinners. Polyurethane is slow drying (up to 150 hours for complete chemical hardening), but Acrylic dries very quickly. Your best source of supply for these types of paint are Marine shops or large garages.