



Literature

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CAR SPRAYING

by

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CAR SPRAYING

PREPARATION

Good preparation is 90% of the way to a good finish. Paint should not be used as a filler, sound preparation is all that is required.

Glass Fibre: for moulding, glass fibre is covered with a releasing agent, the only effective way to remove this is to thoroughly rub the surfaces with medium grit wet and dry paper and plenty of clean water. Any small imperfections or bubbles (usually found on corners or edges) must be ruthlessly dug out, filled with a plastic filler (such as Isopon P38). Always rub down with the wet and dry paper fixed to a rubber sanding block (available at paint suppliers). Failure to use a block can cause a ripple effect on the body.

Aluminium: is prepared in a similar manner with wet and dry medium grit.

Choice of Materials: Acrylic v Cellulose. Acrylics are reputed to be the easier to put on and tend to resist the elements more than cellulose. The main drawback is if an error is made whilst spraying, acrylics are hard to correct and the finish tends to contain less lustre and looks a bit plastic. Cellulose on the other hand gives an outstanding deep lustre and any errors in spraying can be easily rectified when dry, but the equipment used has to be carefully set up and care taken when spraying. I thoroughly recommend the use of cellulose for the novice, although more care is needed to apply the paint, it gives a much superior finish that gives the car that coach built look.

A NOTE ABOUT ACRYLICS if you choose to use acrylic there are two different types - the one and two pack. Ask for the one pack because the two pack is a professional finish known as Isocyanate Cured Hydroxy Acrylic. Its qualities are amazing, it covers small scratches and imperfections has a superb deep lustre that will last for years and it holds its pigment better than any other finish. It is incredibly tough and durable BUT there is a drawback. Inhaling the spray is LETHAL. As its name suggests it contains CYANIDE and will kill! It must be used in a sealed booth with the correct breathing equipment.

Choosing your equipment: There is no doubt that the better the equipment the greater the chance of a superior finish. Bearing this in mind you must make the decision as to whether to hire or buy, but having said that, using quite modest equipment with lots of practice and determination your skills can soon produce a very good finish. Here is a brief outline of the different types of spray equipment available:

GUNS

Suction or syphon feed - these guns both work on a principle similar to a carburettor, they suck the paint up by a vacuum effect. They require large quantities of air and they are generally used by the trade.

Pressure Feed: this gun pushes air down into the pot and so pressuring the contents. Generally these consume less air than the suction feed guns. Within this range there are two types of gun.

Bleeder type - these guns discharge air through the air cap the whole time the compressor is on, although paint only comes out when the trigger is pressed. They are for simple set ups with small compressors and no air receiver tanks.

Non-Bleeder type - here the air and the paint are both shut off when the trigger is released. These guns are mainly used with the receiver tanks with auto mechanism for shutting the compressor off when the tank is full.

AIR CAPS:

Internal mix - here the air and paint are mixed inside the air cap. This is not really suitable for fast drying paints such as most car finishes since the nozzle clogs up much too quickly. These nozzles are always used with pressure feed guns.

External mix - these air caps are fitted to most guns. Here the air and paint are mixed in the space outside the air cap.

CONCLUSION

The primary disadvantage of the suction feed gun is that it requires large quantities of air and hence a large expensive compressor. The home sprayer is more likely to consider a smaller compressor fitted with a small air receiver tank, (all but the smallest compressors are). The reservoir of air would allow the compressor to cope for a short while but it would soon be spluttering breathlessly.

The main advantage of the pressure feed system however is that it can work perfectly well for the home sprayer on reduced pressure or volume of air. Its disadvantage is that the spread of the spray will be reduced giving slower operation than the suction feed gun. Another plus point is that the pressure feed actually wastes less material in the form of overspray. The external mix cap is a must for the car sprayer.

PRIMING

Why prime? Priming serves two purposes. (a) to fill in all minor imperfections on base surface i.e. fine wet and dry marks (remember as established in part one, good surface preparation including using plastic filler on as many imperfections as possible is required before attempting to prime - paint is not a filler) (b) to provide a base for the paint to adhere to as without the primer the paint would merely run off the surface.

Coice of primer: The primer you choose must be suitable for the top finish chosen. Preferably even by the same manufacturer, otherwise an adverse reaction can occur. For the aluminium you will need an etch primer first. The reason for this is due to the instant oxidation which occurs on the surface of the aluminium when exposed to air. The etch primer 'burns' through this oxidation to provide a firm 'key' this should be followed up with normal primer.

Mixing: When purchased from your paint supplier the primer will be a very thick substance - this will need thinning with the correct thinners (there again the correct type of thinners is essential for the reasons explained earlier). Assuming nitro cellulose products are being used as advised earlier, thinning is approximately 50/50. You will have to refer to the paint manufacturers charts for specific information on the correct ratio. They may very well refer to running times thropough a viscosity cup. Simply, these are measured cups with a hole in the bottom-fill up cup and register how long it takes to empty. The thinner the paint the quicker the flow. The other factor to be considered is the type of equipment used so with all the above science, good old fashioned trial and error has its place. All paint must be strained before pouring into your spray pot. Cheap paper disposable filters are available from your paint suppliers.

Pre-spraying: Prior to spraying any material on the car, wipe the entire surface over with a lint free cloth soaked in cellulose thinners. This will remove any grease i.e. finger marks. Finally immediately prior to spraying wipe the entire surface over with a 'tack-cloth'. This is a sticky cloth which will remove any dust particles that settle on the body (also available at your paint supplier and highly recommended).

If all goes well you will need no more than three coats of primer with fine rubbing down between each layer.

TECHNIQUE

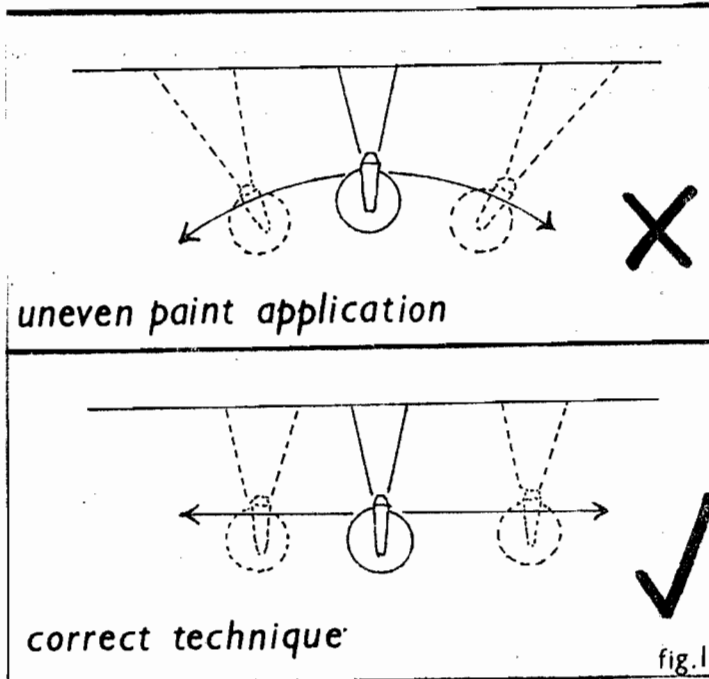
Theprinciple of spraying is very simple, it is a matter of gradually building up several layers of paint each one getting thicker and wetter and being supported by the previous coat. The difficulty is acquiring the skill of knowing the right amount of paint to apply. Not enough and the thinners will be quickly absorbed into the previous layer not allowing the new layer to level itself. The effect will be an 'orange peel' finish. Conversly too much paint applied will cause sags and runs on vertical planees and slopes. Only practice will give you this ultimate skill. You can get away with murder on horizontal surfaces, but be careful on verticles.

TECHNIQUE OF USING THE GUN

Keep a uniform distance from the panel. This should be approximately nine to fourteen inches depending on equipment. It

is essential to keep the gun parallel to the panel being sprayed, including following curves.

Failure to observe this will result in an uneven build-up of paint (see fig 1). If your gun has a variable fan, set it as wide as is required for the panel to be sprayed, but no more. Try to get into a rhythm travelling at a uniform speed. Too slow will result in a rapid build-up of paint and runs, too fast will result in orange peel effect. Plan your spray route in advance so as your join (where you start and end) will be least noticeable place. Spray all returns and least accessible places first.



A maximum of three coats of primer should be sufficient. Usually two will suffice. Rub down between coats with 800-1000 grade wet and dry paper. You are now ready for the big moment.

THE GLOSS COAT

Here again two to three coats will be sufficient. If possible mix all your top coat in one clean bucket, this will ensure colour accuracy on all panels. Here are a list of do's and don'ts

- DO Make sure that all your equipment is scrupulously clean especially before filling with your top coat.
- DO Have as much lighting as possible.
- DO Have garage as clean and dust free as possible. Be particularly aware of insects flying around. Sods Law says they will wait until you have finished spraying before landing on your newly applied shiney paint!
- DON'T Forget to dampen down the garage floor to stop dust flying and to hold overspray
- DON'T Forget to use paper filter to strain paint into pot.
- DON'T Forget to use a tack cloth immediately prior to spraying
- DON'T Forget to wear your particle mask before doing any spraying

The rest is now up to you, but before I leave you to it there is a secret weapon which will make your finish a cut above the rest.... BLENDING CLEAR. This is available from your paint stockist and is basically a clear high gloss laquer. This should be added to your final pot of gloss paint, approximately 10/15%. After cutting back and polishing this will give your finish a deep lustre second to none.

APPROXIMATE QUANTITIES (assuming two coats of primer and two coats of top coat) AND SUPPLIES NEEDED TO SPRAY AN N.G.:

1 litre Etching primer
1 litre Etching primer thinners
4 litres Primer
4 litres Gloss
4 litres Gloss thinners
1 roll Masking Tape
1 Particle Mask
1 box Tack clothes
1 3M Rubbing block
1 box Paper filters to strain paint
Sheets Wet and Dry paper (500/800 to 1000/1200 grades)
Various polishes
Old newspapers for masking
Rags and a roll of fine mutton cloth for polishing.

CUTTING BACK AND POLISHING

This process should not be attempted until the finish has thoroughly dried out. Cellulose can go on shrinking (revealing any imperfections that were not removed in the priming stage) for up to six months or sometimes longer! Practically speaking you should be able start this process 10-12 weeks after paint has been applied. This waiting can be avoided by having the finish baked at a refinishers.

Depending on the standard of finish you have achieved with your spraying and the ultimate standard of finish you are aspiring to achieve you may need you rub doown the surface with 1200 grit wet and dry to remove 'orange peel' or imperfections i.e. runs or sags. This process should be carried out using copious quantities of clean water and rubbing block. Extreme care is needed whilst rubbing down to avoid rubbing through on edges ro producing hollows which will be seen as ripples when finally polished. Use a sponge to apply lots of water whilst rubbing small sections at a time. A good tip is to rub household soap onto the wet and dry, this will perform two functions. First to luricate the process and stop 'burning' and secondly to reduce the abrasiveness of the paper.

The next step is to cut back with a medium grade 'cutting back compound'. I recommend FERACLA which is available at your paint stockist. You should use a soft mutton cloth and should again only take a 'small bite of the cherry at a time' that is to say one section at a time working the compound evenly over the section. You should not use a rotary motion, but straight rubbing strokes. You should continue rubbing using an even pressure until the compound has been absorbed by the cloth. You should then get a clean piece of mutton cloth to polish off the remaining streaks of compound. You can observe the finish for any outstanding scratches or surface imperfections and repeat the above process as necessary. PLEASE NOTE some cutting compounds can discolour your paint hence never leave on your bodywork.

Our next process is very fine cutting back. As with Aston Martin I use Brasso (using of course a clean piece of mutton cloth). This will finally cut the surface and also remove any compound left by the previous process. The final cut (again with clean mutton cloth) should be with a branded polish. I recommend DYNA GLAZE. As before work on a small area at a time using sweeping strokes. You are now getting to the stage where sun glasses will be needed, the finish and the smile on your face should now begin to appear.

now the penultimate task is to seal the finish using a good quality silicon polish such as Simoniz Liquid Diamond which will protect your finish from the elemnets and give it the ultimate lustre.

.....And finally stand approximately 8'6" from the car, allowing an extremely large grin to appear on the face and admire the dazzling finish - you've earnt it! The idiot in the street who has had the rusty heaps in the drive and been making all the noise for the past year has now come good and your biggest problem will be how to cope with the admiration of your neighbours who are now starting to talk to you again.....

THE END