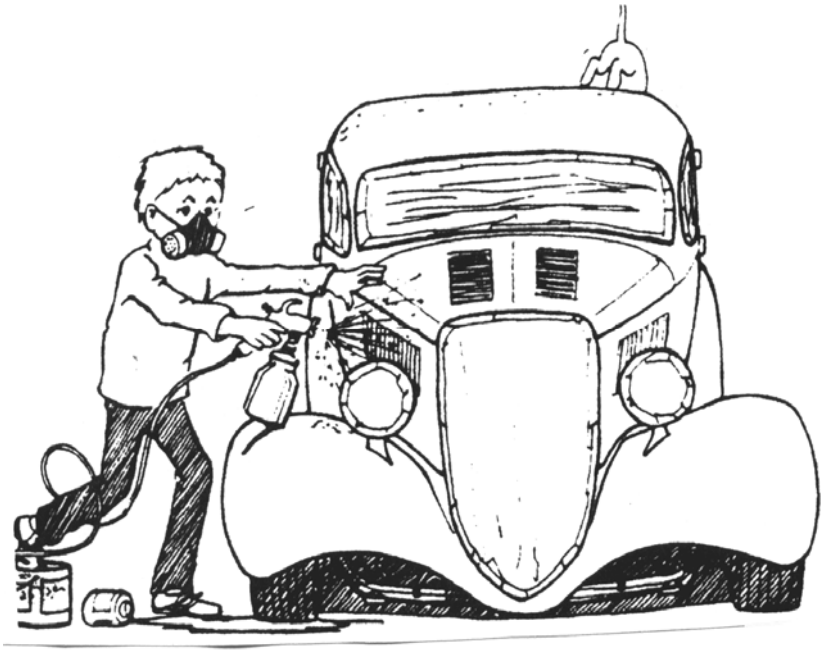
SPRAY PAINTING



- A GUIDE FOR THE AMATEUR

This Guide has been prepared by Spray Chief, custom paint manufacturer, suppliers to the trade and public. This article is based upon our own personal experiences and the knowledge brought about by 'talking' to the custom painters who use the products. Every painter has his own particular style and methods to achieve a first class finish. Rather than mention some of the "tricks" that good painters utilise on obtaining gloss and depth I have written this article for the hobby painter or as a basic guide for the first time "do it yourself". Unless you are skilled there are no shortcuts to a good job.

BODY PREPARATION

The bodywork of your vehicle should be thoroughly inspected to assess how it is going to be painted.

Large areas of rust, evidence of major repairs or simply that the car is rippled down the whole side (especially vans) are best avoided as to get a good paint finish an incredible amount of time/money will need to be expended. If you are building a rod there may not be a choice, as pre 1940 bodies are scarce and if in convertible or coupe form expensive so in this case the body you have is the one you have to work with. Most rods have the body removed whilst the chassis and running gear are attended to and later model street machines being mainly monocoque (no chassis) are painted with the suspension etc. in situ depending on the degree of rebuild.

With either street machine or rod the old paint should be inspected to decide whether your intended paint job will commence by stripping the old paint to the bare metal or if the previous finish is suitable for repainting. Generally any original car produced before 1960, unless in exceptional condition, should be stripped back to the bare metal. There are several methods of removing old paint finishes to the bare metal. They are:

- Removal of old paint by sanding with orbital or disc sander.
- Removal of old paint with paint stripper.
- Removal of old paint by sandblasting.
- Chemical dipping. Derust and cleans, may be the best, and could be more expensive.

Let us look at the advantages (and disadvantages) of each of the above paint removal methods.

REMOVAL OF OLD PAINT BY SANDING

WITH ORBITAL OR DISC SANDER

Sanding off the old paint finish can be a tedious job that quickly dampens the enthusiasm, however, there are some very positive benefits.

1. Low costs.
2. Will not attack or remove previous filled repairs.
3. Large areas can be covered quickly with sanding machines.

Against this is the inside of doors and under bonnet areas are tedious having to be done by hand and some of the hard to get at corners etc are near impossible.

If you decide to sand the old finish completely away, start with 36 grit paper and keep the sander moving, lifting the sander regularly to stop the paper from clogging. Don't worry about scratching the body with the paper as these scratches are easily filled with primer later. There will be areas that the sander cannot get into, these areas will have to be done by hand or by paint stripper. If sanding by hand 36 grit will not be flexible enough to bend around your fingers so try 80 grit which has good cutting properties and is reasonably flexible. Any corners or areas that you can't hand sand don't waste time with as paint stripper will be more effective or if you have one of the small spray gun type of sandblasters these are excellent (good for cleaning parts also). By now the vehicle body should be shiny steel with perhaps a few filled repairs, check these filled repairs have been put on bare metal, have not cracked and are not too thick. If the filled repair looks defective it will have to be removed and filled again or preferably beaten out.

For anybody with a fibreglass-bodied vehicle, sanding is the best and safest method of paint removal. The only difference between the fibreglass and metal bodies procedure is that 80 grit could accidentally go through the gelcoat and into the glass body. DO NOT USE PAINT STRIPPER ON FIBREGLASS.

COMPLETE PAINT REMOVAL USING PAINT STRIPPER

Paint stripper has good and bad features, the good features are:

1. Excellent for 'fiddly areas'.
2. Will not damage metal.
3. Works quickly on thin paint films and enamels.

The bad features:

1. Requires gloves and protective clothing.
2. Is messy.
3. For vehicles with thick, dried old paint the stripper requires several applications.
4. Attacks rubber and trim.

Firstly double mask all rubbers and interior trims, don't forget that stripper will seep into boot channels etc so double mask these areas or be prepared to strip them. Generally the softer and thinner the paint film, the better that stripper will work. Instructions are always on the can and for most vehicles you will require 4-6 litres. Before applying the stripper, the old paint film should be 'scratched' with 80 grit paper. Apply the stripper starting at the roof and apply the stripper thickly. Once applied do not disturb the stripper. When the paint has wrinkled or become soft, the paint residue can be removed with a scraper. The stripper will attack body filler so remove any filler from repaired areas of vehicle. After the vehicle has been stripped, it should be washed thoroughly and dried. When dry, clean metalwork with wax and grease remover to remove wax that is contained in the stripper.

Be careful where you use stripper as the paint residue can stain concrete, kill lawn and in general is a messy job.

Stripping is best done outside, on a still day in the shade and keep a running hose handy to wash paint scrapings from vehicle and concrete. I must stress again the need for protective clothing as spatters of stripper do burn skin and if you have a helper with you, both wear protective glasses. It's all too easy for a spatter to flick from the brush hitting your helper (wife?) in the eye.

When the vehicle has been stripped and washed, wet rub the vehicle with 120 grit to remove any last residues of paint.

COMPLETE PAINT REMOVAL BY SANDBLASTING

Sandblasting will give complete removal of paint, rust and filler wherever the blasting nozzle is pointed. Obviously the good features of sandblasting are:

1. Complete paint removal with little effort.
2. Removes rust leaving shiny metal.
3. Clean and fast leaving metal with an etched surface.

Other than sand particles that lodge themselves on ledges and in doors etc. the main concern with blasting is the possibility of rippling panels. Should you decide on sandblasting, ensure that the sandblaster is experienced with car bodies and that sand not steel shot is used. If your car has large flat panels (doors etc or vans) ask the blaster to use the utmost care even though it will take longer and cost a little more. Vehicles presented for sandblasting must have all the chrome, glass, rubber etc removed. (The bare bodyshell devoid of any trimmings or hardware).

For rods or street machines where the vehicle is stripped to the bare shell sandblasting in my opinion is a good method of paint removal, but remember the person operating the blaster must be experienced so that you don't finish up with rippled panels.

Whatever method of paint removal is used the bare steel should be primed as soon as possible with Spray Chief 2 Pack Primer to avoid rust (see primer application further on).

BODY PREPARATION OVER PREVIOUSLY PAINTED SURFACES

The majority of later model cars can be repainted over the previous paint finish subject to the condition of this previous paint. If previous paint finishes are showing signs of cracking, crowsfeet or crazing, these areas should be sanded back to the bare metal or more than likely the filler that is underneath them.

Below is an indication of what <u>was</u> required with Paint Build. Modern type paints are more tolerant and may be 'built' much thicker. <u>NOTE</u> this does not apply to primers and spray putty.

There is a limit to how thick the paint film on a vehicle should be, as a general rule the total paint film should not exceed 350 micron or 14 thou. Take into account approximately 200 micron or 8 thou that you are going to add on with the new primer and colour coats. The original factory finish on most cars will be around 100 micron or 4 thou. If the vehicle has been repainted over the factory finish with say acrylic primer surfacer (APS) a coat or two of spray putty, more primer then colour coats this will add around 200 micron/8 thou, making the complete film thickness approximately 12 thou thickness which is the maximum thickness you should have. Since you have decided to repaint again it is wisest to sand back the original factory finish so that after you repaint the film thickness is still around the 300 micron/12 thou mark.

Excessive paint thickness from a previous repaint could contain a 'weak' layer of primer etc and changes of flaking or chipping are greatly increased.

Several years ago I restored an MGA roadster which on inspection had 1/8" of paint thickness of various colours and putties. There was no alternative than to completely strip the car to a rolling shell and have it sandblasted. Recently a customer of mine (custom painter) had to remove nearly 1/4" of paint thickness from a Corvette - the car must have breathed a sign of relief to have the load off its back! These are just a couple of incidents that reveal how bad the paint is on some cars. The paint must be the right thickness if the finished job is to be a good one. After you have inspected the vehicle and are convinced that the previous paint will accept further painting the following procedures could be adopted.

1. Wash the car thoroughly with detergent and allow to dry. Remove all tail lights, emblems, door handles etc.
2. Sand crazed or cracked areas back to the filled repair or bare metal, generally these areas contain spray putty over filler.
3. Sand areas with stone chipping/scratches with orbital sander or by hand with block using 120 grit dry. If there is considerable stone chipping it is probably easier to sand the whole area back to bare metal. Stone chipping is most prevalent in the front of the car, along sills and bottom of guards.
4. Sand entire vehicle with 180 grit wet taking particular attention to "feather in" areas that have been previously sanded back to bare metal. Sanding should be carried out with a sanding block or by orbital sander. If wet sanding with the orbital, keep a water soaked rag handy to wipe the slurry from the sandpaper on the orbital sander. The same soaked rag can be used to wet the body of the vehicle prior to orbital sanding - don't use a hose or you risk an electric shock.
5. Areas around window glass should be rubbed by hand as closely as possible

to the window rubber etc. I've assumed that tail lights, door handles etc. have been removed. Removing these may take longer than masking but the end result will be worth it.

The vehicle body should now be completely dull. If any shine is evident this will require sanding off with 180 grit of 220 grit wet. For areas where a sanding block is difficult to use these have to be done by hand. Always keep your fingers together when sanding if your fingers are apart you run the risk of putting "tram lines" in the paint.

We can now assume the vehicle is ready for masking.

MASKING

The aim of masking is to cover areas that do not require paint. Personally, I find it easier to remove hardware because small odd shapes are awkward to mask and more importantly it is difficult to sand right up to the edge of chromework without scratching the chrome. As a general rule the less masking the easier and better the job.

Masking tape of good quality should be deeply creped and resist puckering on curves with good adhesion to rubber. For general work 3/4" or 1" is economical and will do most curves. However, for tight corners, use 1/4", which will bend around the radius.

The textbook says that wet strength tight fibre paper should be used for masking. I've always used newsprint and never had problems but if you have a source for brown kraft paper, it is better.

Have a pair of scissors handy to cut the paper to shape and if using newsprint, do it double thickness. A butter knife is useful in pushing down the edge of masking tape into corners etc.

The following procedure is how we mask:

1. Tape around windows etc (in long lengths of tape) pushing down the outside edge of the tape (use butter knife if your finger won't fit). Leave the inside edge of the tape "up".
2. Use centrefold of newsprint and push it under the lifted inside edge of the tape then push the tape down onto the newsprint (e.g. for windscreens).
3. Use scissors to cut the bottom edge of the newsprint to size so that newsprint will neatly tuck under the tape. Whether you go from top to bottom or side to side it doesn't make much difference but try to keep your paper in large sheets. Where sheets have to overlap use masking tape to seal this overlap. Remember, it's easier to pre-cut the paper to shape before putting it on the windows.

The whole vehicle should now be ready for paint.

THE THINNERS

Try to buy thinners in a drum with a tap which makes the job so much easier and cleaner. For acrylic paints double the number of litres of paint (including acrylic primers) for the amount of thinners to be used, e.g. 4 litres primer, 4 litres colour should use approximately 16 litres thinner. This formula will leave enough thinners to clean out the gun, clean stirrer, hands etc.

Buy the recommended premium grade thinner for best results (these give better flow and shine off the gun).

FILLING THE POT WITH PAINT

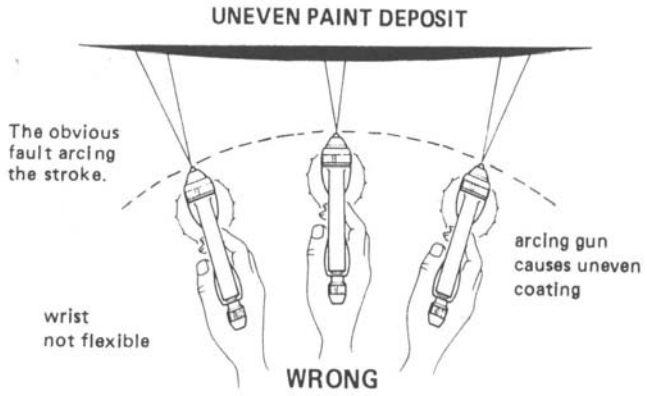
Always use the recommended thinning ratio of paint to thinner. If the inside of the pot has no guide marks (most don't) use your flat sided stirrer as a dipstick. Never fill the pot to the very top as there is the possibility of paint leaking past the pot sealing washer or dripping out of the small breather hole in the pot top. This problem mainly happens doing horizontal surfaces such as bonnets, bootlids, roof etc. where the gun is tilted. Use a flat sided stirrer to stir the paint and thinner together in the same manner as stirring the paint in the can. Always wipe stirrer clean with a wet thinners rag.

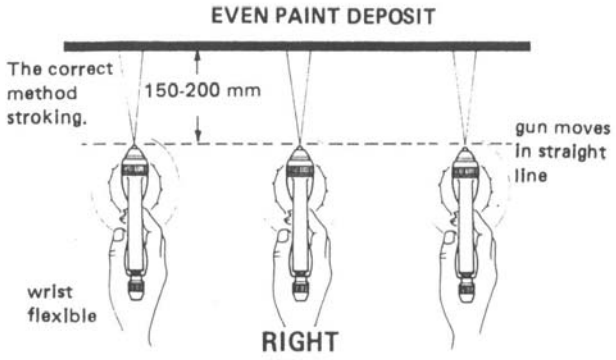
THE COMPRESSOR AND AIRLINE

Most finishes require 45-50 psi at the gun. With airline there is a pressure drop in the line. Try to use 3/8" I.D. hose and with a 6m length of line the pressure drop from filter regulator to gun will be approximately 10%. With 1/4" I.D. line this could be about 30% so set the regulator and allow for this pressure drop.

Always have a filter/regulator on the compressor. If you are borrowing or hiring the compressor check the filter as it's probably full of water etc; there should be a knurled knob on the bottom the filter bowl to release this. If the bowl appears to be full of muck, unscrew the bowl and clean the filter. For spraying at 45-50 psi pressure an 8 cubic foot compressor is minimum, in most cases this is the standard twin cylinder set-up.

THE SPRAYING TECHNIQUE





Most of you will have developed some form of technique in the spraying of primer etc., these spraying techniques should be used and practised during the primer stages so that by the time you get to the colour you have mastered some co-ordination between eye and hand.

(a) The gun should be held approx. 200 mm from the vehicle's panel and the paint film should hit the panel at approx. 90° to the panel (in the centre of the spray fan). 200 mm is approx. the distance between your outstretched little finger and thumb.

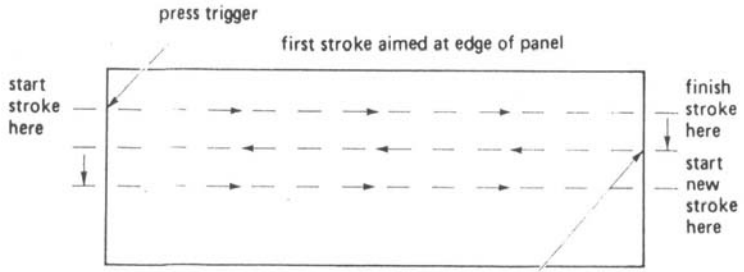
(b) When holding the gun always hold the air line in the other hand and keep this airline away from the vehicle.

(c) Always start spraying when the gun is moving. It should be noted that the trigger of the gun will spray air only for approx. 60% of its travel, the final 40% will bring in the paint film. Good spray painters **only switch off the paint spray** and leave the air running between strokes. I would suggest you practice this until you get the co-ordination.

(d) The overlap of each fan stroke should be about 40% which will give an even paint film thickness as the paint is concentrated in the centre of the fan.

The degree of overlap that should be used can vary depending on the brand and type of gun but a little practice will show you what amount of overlap will give a consistent paint film thickness.

Diagrams by courtesy of CIG.



Correct triggering procedure.

Heavy right or left side pattern (figs. 3 and 4), caused by:

1. Horn holes partially blocked.
2. Obstruction on fluid tip.
3. On multi-jet air cap, one jet blocked.

Heavy centre pattern (fig. 5), caused by:

1. Atomizing pressure low, or material too thick.
2. With pressure feed, fluid pressure too high, or material flow in excess of the cap's normal capacity.
3. Wrong size nozzle for material being used.

Split spray pattern (fig. 6) caused by:
Air and fluid not properly balanced. Reduce spray width, or increase fluid pressure. The latter increases speed of application.

Snap-on-off fittings are handy to have on the airline with the female on the hose, this way the gun can be removed from the hose without the hose turning into a python.

THE GUN

Most standard finishing guns can spray primers, colour coats, clear etc. Check the sealing washer between the pot and pot top does not leak, if so, replace. Beware of hired or old loaned spray guns (unless from a spray painter). Most of these guns have been used to spray fences, insecticide etc. New spray guns of good quality can be bought for around $100 e.g. Binks 230, Arnold GP4.

The majority of guns have two adjusters at the rear of the gun, the top adjuster controls the fan size and the lower one the material flow. Check the two adjusters for fan and material work by screwing them in and out and noting the change in the spray pattern. Practice on a sample panel to get the feel of these adjustments and when there is no change to maximum setting, i.e. full fan/full paint flow, leave the controls at that. The fan can be reduced to spray the inside of doors etc. to reduce overspray.

Always clean the gun by running through approximately 1/4 pot of thinners. These thinners can be sprayed into a rag to clean the gun body and underneath the pot lid. Soak the aircap in thinners in the pot and use the gun to blow through the air cap holes.

Always keep the breather in the 'pot top' clear and check this hole regularly when spraying. A 11/2" nail is excellent for this. If the paint seems to be going on dry or the gun is spluttering the breather hole is probably blocked.

SPRAY ROOM

1. Try to use area that is big enough to work in and freely move around the vehicle.

2. Check for any loose dust, spiderwebs, etc on the beams in the garage roof.

3. Wet the floor of the garage with water and sweep any excess water away. The wetting of the garage floor is not really necessary for primer but reduces the possibility of dirt being blown into the job especially when spraying sills etc.

4. Wipe the car over with wax and grease remover (see part 1 of feature).

5. Now wipe the entire vehicle over with a Tac Rag, this rag is a cloth that is designed to pick up lint, dust and fluff. (Tax Rags cost about $1 each so buy a couple).

6. Try to paint on a still day that is not excessively hot, cold or damp. If you have to paint on a cold damp day (and I strongly advise against it) you will have to use a retarder with your thinners (see your paint supplier).

PRIMERS

Spray Chief supply A.P.S. (Acrylic Primer, Surfacer) in 3 colours or better still 2 Pack Primer available in several colours.
We recommend 2 Pack Primer for all applications no matter what top coats are applied i.e. Acrylic or 2 Pack. 2 Packs rely more on their hardeners (Catalysts) for adhesion and performance rather than acrylics relying on their thinners to soften the base coats for adhesion.

Advantages of 2 Pack Primer.

Advantages of Spray Chief to pack epoxy Primer

1. Can be sprayed directly onto bare metal due to the acidic content in the primer it does not require etch primer to be used first.
2. Two pack has a consistency like spray putty so it has the ability to fill in scratches, nicks and stonechips.
3. Two pack can be sanded wet or dry and when fully hard it will not clog the paper even when sanding dry.
4. Spray Chief Two pack primer does not require the use of spray putties or spot fillers and the two pack has excellent flexibility without cracking or crazing.
5. The most important feature is that any sanding marks in filler or scratches in metal will not 'show up' when the colour coats are applied. No doubt we've all seen the orbital sanding marks in some cars that have been crash repaired. These type of scratches only seem to appear when the final colour is applied. This is caused mainly by spray putty absorbing the thinners of the colour coats, so the putty swells slightly and as the thinner is released into the atmosphere the spray putty shrinks back, except that it shrinks back a little more solidly where the scratches exists.

Now that I've sung the praises of two pack epoxy primers you are probably thinking it's God's gift to painters - there are a couple of disadvantages. They are:

1. Most two pack primers require overnight drying and reasonably mild conditions to fully harden, 15°C plus, so a heater in the garage is required in winter.
2. Two pack requires a little more effort to sand.
3. Two pack may not be suited for use over "new" paint.
4. Two pack costs approx. 100% more than acrylic primer.

The other primer for use with acrylic lacquer colour coats naturally enough is acrylic primers. The most common of the acrylic primers is A.P.S. or acrylic primer surfacer. Being a surfacer it has the ability to fill small (and I mean small) scratches etc. The advantages of acrylic primer surfacer are:

1. Simple to spray and great practice prior to putting on colour coats.
2. Is available in several colours e.g. use black primer under dark colours so that scratches are disguised.
3. Dries quickly and can be sanded after a few hours.
4. Economical to use.

The disadvantages:

1. For scratches, nicks and stonechips spray putty or spot filler is required.
2. Etch primer is needed for bare metal applications.
3. If used with spray putty or spot fillers once these materials are sanded the filler/putty has to be reprimed.

Now that we have looked at both priming systems suited for use under acrylic lacquer and 2 Pack the following spraying techniques and paint preparation are suitable for both bare metal and over previously painted surfaces.

SPRAYING TECHNIQUES FOR TWO PACK EPOXY/POLYESTER PRIMERS

1. **Read instructions on the can.** Generally most two packs need to be mixed with the catalyst/hardener for about 10 mins. before spraying.
2. After paint has been mixed and is ready for use (approx. 10 mins) spray a **light** coat over the entire vehicle.
3. Now spray a wetter coat over any repairs, scratches or stonechips.
4. Spray entire vehicle with a set coat.
5. By now you will need to mix another litre of 2 pack with the hardener, so mix the paint and hardener and while it is "setting" (approx. 10 mins) inspect the vehicle to see if any scratch marks or nicks still show.
6. If scratch marks or nicks show **only** spray these areas with a set coat (we do this to get a thicker build over scratched areas).
7. Now spray **entire** vehicle with a full wet coat.
8. If the vehicle has many repairs or stonechips it would be wise to spray another full wet coat to ensure that all scratches etc are "filled" so that they can be sanded level with the surrounding area.
9. For most vehicles approx. 4 litres of two pack will be required so depending on whether you spray wet or dry use the full 4 litres. Don't worry about getting runs or sags in your primer as they are easily sanded out later.
10. The two pack will require overnight drying with temperatures generally in excess of 15°C so in winter the garage will require some heating. A 2400 watt electric fan heather should be enough. If not the primer may take a couple of days to fully harden. If you **don't** have a heater and it's mid winter **forget painting**. Most spray jobs take a couple of weekends at the minimum so time usually is not important to the amateur. Allow a few days for the two pack as the harder the paint film becomes the easier the two pack is to sand. To test whether two pack paint film is hard try rubbing lightly with 400 grit "dry" freecut paper. The primer should sand away like talcum powder, if not and the primer forms "balls" or lumps in the paper it either means waiting a day or so, or sanding the two pack wet.
11. When you decide the primer is ready for sanding **it's now time to spray a guide coat.** A guide coat is a light mist coat that is sprayed over the primer to assist sanding it works this

way: the guide coat is sprayed in a contrasting colour (usually black) so the whole vehicle is given a **light** coat of black (a litre of black acrylic primer is best). When the two pack primer is being sanded (either wet or dry) the guide coat will show in any deep scratches or nicks as these scratches etc are very difficult to see in the matt finish or primer. Guide Coating Black Primer is not required.

Sanding two pack primer

The idea of sanding is to flatten the surface of the paint. If the primer is not sanded properly there is no way you can obtain a decent colour coat finish. Now the primer is on the car the sanding must be done to perfection. It's easy to say (especially when your arm is tired) this little mark won't matter. Believe me if you can see even the slightest pinhole in the primer it will stick out like dog's b...s when the colour coats are applied. The guide coat assists in locating pinholes, scratches etc. in your primer. I hope I have pressed home the point about perfection in the sanding of primer so now here's a few sanding tips.

1. Most two packs and acrylic primers can be sanded wet or dry. Dry is fastest but can leave scratches in the paintwork, so for amateurs let's sand wet. The grade of paper should be 400 grade wet paper (the dark grey coloured paper). Fill a bucket with water and add a little (just a squirt) of washing up detergent which will assist in preventing the paper from clogging. ALWAYS USE A SANDING BLOCK. A rectangular rubber block approx. 6" x 3" and 1/2" thick is fine. For areas where a block will not work such as deep contours and corners fold the paper in three. When sanding by hand always keep your fingers together and try to sand in a direction 90° to the direction that your fingers are pointing.

The idea behind this is to avoid putting in "tram lines" by the pressure of your fingertips creating troughs in the primer. Always keep fingers together and **don't** sand in the direction your fingers are pointing. When sanding by block or by hand never push too hard, just light pressure as this will allow the paper to cut the paint film and more importantly the paint will not "ball" up in the paper. These "balls" of paint can scratch the primer. If the paint keeps balling in the paper either you're not using enough water, the primer is too soft or you are pushing too hard.

All these sanding tips apply to acrylic primer surfacer and two pack epoxy primer.

SPRAYING OF ACRYLIC PRIMER SURFACER (A.P.S.)

1. **Read instructions on the can.** The majority of acrylic primer surfaces (A.P.S.) have a thinning ratio of approx. $1^1/_2$ parts thinner to 1 part paint. The mixing of paint and thinners was discussed in part 1 of this article.
2. If spraying bare metal an etch primer will be needed prior to the application of A.P.S. rather than go into the details of etch primer (as detailed instructions are on the can) a couple of tips to keep in mind is to spray the etch very thin so that it forms an almost transparent coat on the car body. Then as soon as the etch is dry it should be sprayed with A.P.S. This is important as etch primer has the ability to absorb moisture. Etch primer is not required over previously painted surfaces. Etch is for bare metal and bare fibreglass only!
3. Whether bare metal or painting over previously painted surfaces the application of A.P.S. will now be the same. Refer to paint mixing and gun set-up techniques in part 1 of our guide to painting. Spray 1 medium coat over the entire vehicle. It is good practice to start with the roof and work your way down; roof, bonnet, boot then the sides of the vehicle. Don't forget the lip inside the wheel arches and the underneath side of the sills.
4. Spray another 2-3 medium coats of A.P.S. on entire vehicle.
5. Spray a mist coat of contrasting A.P.S. over the entire car (see earlier hints). Allow A.P.S. to fully harden, as a general rule leave

sanding to the following day.

6. Sand vehicle (see earlier hints in this article). The mist coat will show any areas where scratches, nicks exist.
7. If the scratching is widespread, such as file marks over a filled repair, this area should be given a couple of coats of spray putty. For small holes and scratches spot putty applied with an applicator is easier.
8. Allow spray or spot putty at least 4 hours before sanding. Sand this putty **by block** until you have nearly reached the A.P.S. underneath.
9. All areas that have spot putty or spray putty **will have** to be recoated with A.P.S. These areas should then be lightly sanded with 400 grit wet.
10. **Carefully inspect every panel of the vehicle to ensure you have no imperfections in the primer.**
11. The Vehicle will now be fully primed ready for colour.
12. **YOU SHOULD NOW REALIZE THE ONLY PROPER WAY TO PREPARE YOUR VEHICLE FOR PAINT IS WITH SPRAY CHIEF 2 PACK PRIMER (NO ETCH, NO SPRAY PUTTY, NO PRIMERS). NOTE: SPRAY CHIEF 2 PACK PRIMER CAN BE USED AS A SPRAY PUTTY. <u>WE DO NOT RECOMMEND USING STANDARD SPRAY PUTTY</u>.**

PREPARATION BEFORE SPRAYING THE COLOUR COATS

A lot of paint jobs are let down by the painter being too keen to see what the colour is going to look like, so at the stage of having the vehicle primed, the primer sanded it's a good time to take 10 minutes to do the following:

1. Carefully inspect the vehicle **panel by panel** looking for pin holes, scratches or any minor flaws that exist in the primer. Take particular note of the lip of the guards, bottom of sills and behind door locks. If you find a flaw (and we nearly always do) fix it. It's easy to say "she'll be right", well believe me, you will regret it later when the job is finished that you didn't bother to take an extra few minutes with the sandpaper or spot filler. When the colour is applied and finally polished flaws that appear insignificant in the primer will stand out.

It is generally considered good practice never to spray coats that are too wet as though they look good coming off the gun the following problems can occur:

(i) Risk of runs and sags.
(ii) Risk of 'bringing out' sanding and scratch marks in primer coats (especially with acrylic primer).
(iii) Possibility of slight shrinkage in filled repairs.

What happens in the above cases is that the thinners in the 'wet' paint film has time to settle into the primer and/or spray putty, this primer/putty will absorb the thinners and swell slightly before shrinking back when the thinners is released into the atmosphere. Where the shrinking back occurs it tends to shrink more solidly in the scratches etc. So beware of spraying too wet (see part 2 for further details).

Metallics should always be sprayed with the same consistency, as when the paint is applied the metallic particles are suspended in the film. If the film is 'wet' these particles will have time to settle down and lie flat like 'platelets' which give a deeper darker metallic look. If the paint film is sprayed dry the metallic particles will not have time to settle flat and they will stand up at the position that they reach the panel in, spraying dry will leave a highly metallic brittle looking finish. Generally it is best to spray somewhere in the middle, neither dry nor wet and I would suggest to the inexperienced when using metallic to spray a sample panel first so that you know what style to use to get the desired effect with metallics. When you get the effect you should be consistent with this approach over the whole vehicle.

2. Most painters start with the car roof as when you are leaning over there is no risk of touching wet panels (e.g. door). When doing the roof, bonnet, bootlid you may not be able to reach all the way across (unless it's a Mini). In these instances start by painting from the outside edge (gutter edge on the roof) and working from side to side **paint towards the centre,** when you reach the centre go to the other side of the vehicle (watch your airline) and on the other side start from the centre and **work back to the outside edge** (gutter side). This will reduce the amount of overspray. DON'T WORK FROM OUTSIDE EDGE ON **BOTH** SIDES -

it's one side outside to centre the other from centre to outside.

As good practice start with roof, then bonnet, bootlid on to sides.

3. Most average size vehicles will use 4-6 litres of colour for the job, the number of coats is of no relevance as it depends on whether you paint wet or dry, how much overspray you create and novices tend to waste a bit by spraying the sky occasionally.

4. Try to save at least 500 ml of colour for 'touch ups' that may be needed later because if an insect or accident happens during the last coat of colour it will be needed.

5. Now that the colour coats are applied it's time to sit back and have a break and allow the paint film an hour or so to enable it to be touched lightly.

When the film is hard the entire vehicle should be carefully inspected panel by panel for flaws. If there are flaws they must be repaired, in most cases it will be a hair or dirt particle that will need wet sanding out with 800 grit.

6. If the vehicle is painted in metallic it **must** have clear coats applied over the metallic. Clear coats are clear acrylic lacquer that provide protection and gloss for the metallic finish. Metallics cannot be sanded unless they are recoated.

7. For metallics allow the entire vehicle to be painted with 3-4 litres of acrylic clear. The acrylic clear should be sprayed as per the colour but save one litre of clear paint.

8. The vehicle now will be giving a medium shine and will require only cutting and polishing to give a good gloss. Rather than getting straight into the polishing procedure to give an even better finish at this stage we recommend that the vehicle be wet rubbed to flatten the clear coats. By flattening these clear coats you will take out the peel to a large degree and as we know by now the flatter the finish the better the depth and gloss. It's hard for the amateur to bring himself to sand his newly painted vehicle but believe me it's worth the effort. When sanding the colour coats always sand lightly with 800-1200 grit using water with a little soap or detergent and continually check your paper to ensure that there are no paint 'balls' which will scratch the colour coats too deeply. If the paper develops paint balls **change the paper over.** Continue the sanding process until the entire vehicle is 'dull'. After the colour coats have been applied the longer you wait before sanding (at least 24 hours) the easier the paint sands and resists balling in the paper.

9. The colour whether metallic or straight colour is now suitable for buffing or reclearing. If required, the one litre of clear you saved can now be sprayed over the vehicle. This time however, thin the clear with 2 parts thinners to 1 part paint so it sprays a little flatter. Use wax and grease remover prior to application of clear.

10. Buffing is a process of gently flattening the paint film and bringing up the gloss. Acrylic lacquers **must** be buffed by machine or if you're energetic, by hand. I would suggest to amateurs that your local panel shop or car detailer will do a better job than you can. Using the buff requires skill that can only be achieved by practice, so if you really want to complete the job yourself practice by cutting and polishing the wife's shopping car. The risk with the buff is that you can buff the paint right off on sharp edges (corners of guards, etc) so if you do it yourself take the following steps:

(a) Use an old paintbrush and daub on about 2" square of medium/fine buffing compound, bring the moving buff into contact with this and **always keep the buff moving** over the panel. If you stop the buff can burn the paint. The buff pad should be lambswool and held at approx. 15° to the panel so that one side of the pad is doing the work. Beware of edges, in fact for the amateur it's probably best to do the edges by hand or once again practice on another car.

(b) You will see when the buffing compound has run out, so daub a little more on, generally about a 2" square to every square foot or so is enough.

(c) The longer you can leave the paint film to harden before buffing the better the gloss so allow at least a couple of weeks if you can. There is no need for the masking to be on the car so you can remove all the masking etc. and even refit some of the accessories (lights etc) before the buffing procedure.

If you do buff through the paint it will have to be 'touched up' in that area, this can present a problem in matching up the colour if you've used a metallic so remember the "wetness" of the coats that were applied earlier and keep to that formula and **don't forget to re-clear.** If the colour won't match up paint the whole panel.

The Rules for Buffing:

1. **Always keep the buff moving.**

2. Use small blobs of compound and a lambswool pad.

3. Use caution when near sharp edges.

12. The car should exhibit a good deep gloss and what is required now is obviously a good wash, then a protective waxing. The wax can be applied by the buff (wash and dry the old pad or use a new one) in the normal polishing manner. There are a couple of new products on the market that will remove the small swirl marks that the butt will leave, these products are Liquid Ebony and Fill 'n' Glaze, etc.

I trust our article will give you the confidence to attempt your own paintwork or explain why a good job coats what it does. The article has been a brief one and should any reader have any problems or require further information on paints and painting **CONTACT SPRAY CHIEF PAINTS DIRECTLY.**

DIFFERENT PAINT BRANDS ARE NOT INTERMIXED. SPRAY CHIEF HAVE SUCH A COMPLETE RANGE OF PRODUCTS THAT FOR THE IDEAL JOB JUST USE SPRAY CHIEF PRODUCTS.

NOTE: IT IS MOST IMPORTANT THAT