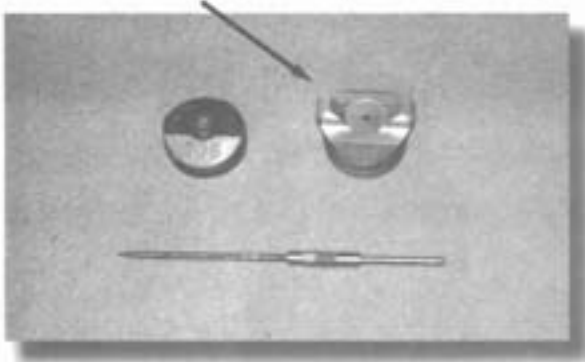


length, the maximum amount of material will be sprayed. As the trigger movement is restricted, the amount of paint emitted will be lessened. This adjustment for a HVLP spray gun is termed the fluid control. It is actually a needle adjustment screw.

Notice the air cap in this photo. This cap



can be rotated to allow the gun to spray a vertical or horizontal pattern. If you are moving the gun with a horizontal movement, the spray pattern will be set to spray vertically and vice versa with a vertical movement of the gun. Be sure you are using the correct nozzle for the material being applied. Generally, light viscosity coatings require a smaller nozzle, and vice versa. The spray gun manufacturer will recommend nozzles for various types of material.

What about air pressure? If you are using a conventional spray gun you will probably want to attach a small air pressure gauge on the air inlet of the spray gun. A normal pressure will be somewhere around 40 to 50 psi. Air pressure should be kept to the minimum required to achieve atomization of the paint and control of the fan shape. If you are using a HVLP painting system, the amount of pressure is reduced to about 7 psi at the gun itself. The pressure is preset in the turbine unit of the HVLP system itself. Remember, HVLP means **High Volume, Low Pressure**. Just remember to follow the

directions for your particular spray gun.

To begin the actual application procedure, hold the spray gun approximately 8 inches from the surface you will be painting. Spreading your fingers as shown below will usually approximate this distance. This



distance may vary somewhat depending upon whether you are using an HVLP system or a pressure spray gun. The spray gun should be far enough away so that the paint does not run or sag when applied, but close enough to lay on a wet coat.

The spray gun should be held exactly perpendicular to the surface being painted.



This will prevent the paint from being applied unevenly. If the gun is held at an angle, the material will be applied thicker

at the closest part and much thinner at the point farthest away. Drape the air hose over your shoulder to keep it from dragging in the fresh paint as you move the gun. The spray gun should be moved parallel to the surface only a distance you can comfortably move your entire arm while keeping the spray gun exactly parallel. If the gun is moved in an arc, the material will be applied heavier in some places and lighter in others.

You should squeeze the trigger of the gun just prior to beginning the paint stroke over the area being painted, and release it just after it is completed. You then should move up or down approximately half a fan width, and begin the next pass. You must overlap each pass approximately 50% to achieve an even buildup. It is also important that you release the trigger at the end of each stroke while moving the gun to the overlap position. Failure to do so will apply more paint than needed at the end of the pass, resulting in a run or sag.

Proper lighting is absolutely essential when painting. For best results, try to position your light 45 degrees to the surface being painted while you are spraying. A good painter looks into the glare, and if the glare is not visible he will move to where it is visible. By looking into the glare of the light you can detect heavy and light areas of material. Continuous movement is necessary to find the glare.

Paint the edges of the structure first. Edges often do not receive an adequate amount of paint. Painting them first will prevent this problem. Painting the edges also allows the overspray to fall onto the main area of the part. Later, when you paint the main area, this overspray will be covered up as the film flows over it.

If at all possible, paint on a flat surface. It is much easier for an amateur painter to spray one side of a part, let it dry, then turn it over and spray the other side.



Of course, this is not always feasible. Just be aware that paint will sag or run much more easily on a vertical surface. If you're spraying a wing it is advisable to make a turning jig so the wing can be sprayed horizontally on one side, then rotated to spray horizontally on the other side without having to wait for drying.

Spraying in and around corners can also present a problem. Practice in areas such as this to establish the proper technique. As a general rule, spray the corner first, whether it is inside or outside; then you can blend the paint in with subsequent strokes.

Another common question is this: *"If I'm painting my entire airplane, should I paint it before assembling the parts or after the airplane is completely assembled?"* In my opinion it is much easier if you paint the parts of the airplane and then assemble them. It takes a lot of practice and skill to be able to paint an entire assembled airplane. Overspray is the problem. You must keep overspray off the surfaces you have finished. I recommend visiting a local paint

shop and watching their techniques. There are a number of ways to do this, and each painter has a trick or technique. When you paint the airplane unassembled, the problems are minimized.

### Common Problems

More than likely as you spray you will encounter problems that may be a result of using improper techniques. Runs and sags are perhaps the most common. These are often caused by holding the gun too close to the surface or by thinning the material too much. When you create a run or sag, simply stop and let the paint dry. If it is polyurethane you should let it dry several days. Then go back and sand out the run or sag, and respray the area.

An orange peel look is also a common problem. That usually results from the air pressure being too high in a pressure gun, the paint too viscous, or use of an improper solvent. Blistering of the paint is a result of the surface not being properly primed or moisture being present on the surface. A coarse finish is another problem that occurs because the surface was not thoroughly cleaned.

If the spray gun is held too far from the surface, or you are not applying enough paint, a grainy or sandy film may result. The atomized paint is simply drying in the air before it has a chance to form into a wet film on the surface. Either hold the gun closer to the surface being sprayed or slow down the movement of the gun as you make your passes.

Learning to paint is analogous to learning to land in a crosswind; you can only really learn by actually doing it. Theories about spraying are great, but they are no substitute for picking up a spray gun and using it.

### Time Required

How much time will it take to paint your entire airplane? That is a general question that cannot be answered without knowing the type of airplane, size, etc. However, like everything else you can be assured that it will probably take more time than you think. A typical paint job accomplished by a *professional* painter will require on the order of 7 to 10 days.

The important point is to give yourself enough time to allow the parts to dry properly before you turn them or before applying trim coats. To rush any part of the painting process is a mistake. How many times have we seen the result of a hurried paint job completed so the airplane could fly to an airshow? The builder or restorer wants to get the airplane to the airshow, and in the process the quality is compromised. That is a big temptation and a giant mistake! Take your time or you will more than likely regret it in the future.

### Cleanup

The final step is one everyone dislikes – cleaning up. If you are going to preserve your valuable spray gun you **must clean it thoroughly**. This means taking the gun apart and cleaning it with a solvent, either reducer or MEK. Remember, protect your hands from any solvent. After a complete cleaning, some painters will actually leave the nozzle of the gun in a solvent until the next job. You also want to properly dispose of any waste.