

## The Care and Feeding of Your Helicopter's Paint Job

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Today's helicopters are painted with polyurethane type paints. Whether it is DuPont, PPG or Sherwin Williams, the same basic rules apply. Urethane paints cure from the bottom out, as opposed to lacquers which cure very quickly and from the top. When urethane paint cures, it skims the top layer to become dust free, and takes in many cases 30 to 90 days to fully cure. When a helicopter is painted, the operator should allow 90 days before polishing the paint with any products. There are many products to choose from in the detailing world. I suggest that petroleum based, silicon based or wax based products not be used.

For daily cleaning a good spray detailer is ideal. While washing the helicopter avoid washing it in direct sunlight. If a hangar is not available, early morning and in the shade would be the best time to wash the helicopter. At the end of the day, washing the aircraft before it has a chance to cool down from flight operations could pose a problem for the paint also, especially if parts of the helicopters fuselage are above 150°F, depending on the color of the paint. Water and cleaner hitting that surface can shock the finish, causing premature cracking and fading. While washing the ship do not use Ajax dish washing detergent, Palmolive hand cleaner or similar products. Many mechanics think that soap is soap and that is not the case. Most auto supply stores carry an approved soap, where 1oz of product mixed with 3 gallons of water is fine. These types of cleaners will clean, protect and enhance the paint finish.

After the initial 90 days cure time has passed, it's time to polish the helicopter. It is good practice to apply a polish every 90 days thereafter. Do not use wax! Do not use wax products of any type. Wax will dull the finish and cause premature paint failure. Wax is a product that will prevent your paint from breathing. When you trap the solvents in with wax, they are forced to go another direction usually causing peeling, crazing and flattening a finish. Using clean micro fiber towels for detailing, washing and polishing is the safest route. All these products are safe for Lexan, Plexiglas, metal and paint surfaces.

### **SIMPLE FIELD REPAIRS OF PAINT**

Performing paint repairs in the field can be performed by most A&P mechanics with the basic grasp of the paint system used.

Step 1. Determine the type of product used i.e., DuPont Aviation Finishes, Imron, and Sherwin Williams etc.

Step 2. Identify the material needing touch up. Is it a composite, aluminum or stainless steel?

Step 3. Check the maintenance manual for procedures on the particular panel to be painted. Many panels can be a composite where an anti-static primer is needed. Examples are magnesium or aluminum panels where special pre-treatments are

required. Stainless steel panels also need a special etch primer. Once determined, obtain all the necessary materials to perform the job.

For this example we will use a general panel for the procedures.

Step 1. Clean the entire area with a wax and grease remover first. Many mechanics make the mistake of starting to sand first. By doing this, the wax and oil will actually get sanded deep into the surface causing fish eyes and peeling.

Step 2. Once the entire area is cleaned, mask the area for refinishing using a quality masking tape. If repainting a stripe area, use blue fine line vinyl tape to get a crisp paint edge. Repair the area as necessary and prep, using alodine if required.

Step 3. Next apply the appropriate primer. Most primers used today have a "topcoat" window. What that means is that once you apply the primer you must wait the recommended amount of time, but not longer than the time specified before applying the top coat. A common time frame is 2 hours but no longer than 24 hours. By doing this you guarantee a chemical bond where the primer and paint adhere chemically, which is the strongest most desirable bond. If by chance too much time has elapsed you will have to achieve a mechanical bond.

Step 4. Lightly sand the surface with 400 grit sandpaper prior to the topcoat application. Wipe away all dust with a tack cloth. Mix the paint in accordance with the manufacturer's specifications. Do not deviate from the directions. Many times mechanics like to stray away from the directions because they "know better." The manufacturer will tell you how many coats, and what pressure and mix ratios to use. They will specify the time in between coats.

Follow these simple guidelines and you can keep all of your helicopter's panels looking like they just came from the factory.