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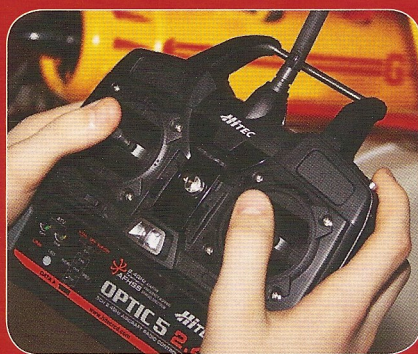
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COVER
STORY



FLITE METAL MUSTANG

Sean McHale creates an authentic natural metal finish

RCAF Mustang in 442
Squadron Colors

I can hear it now; "Oh great; not another Mustang" from readers around the world. Truth be known, I found myself saying the exact same thing at almost every warbird event I attended, despite the fact that I actually like the Mustang as an aircraft.

When this sleek American airframe was outfitted with the British Rolls-Royce Merlin, it became one of the most popular aircraft of all time. As a result, it's only natural that it would join the ranks of the Piper Cub as one of the most commonly modelled aircraft in our hobby. The goal of this article is not to add another Mustang build article to your library, heaven knows that subject has been covered extensively already.

What follows rather, is a step-by-step account of how I added a simulated metal finish to this icon of aviation history. This aims to demonstrate that a scale finish is possible on your next warbird, and should it be a Mustang, will help set it apart from the crowd at your favourite warbird event.

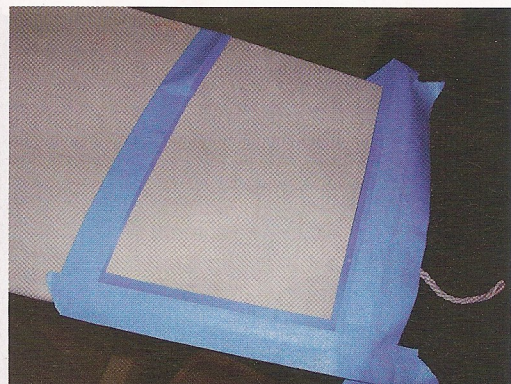
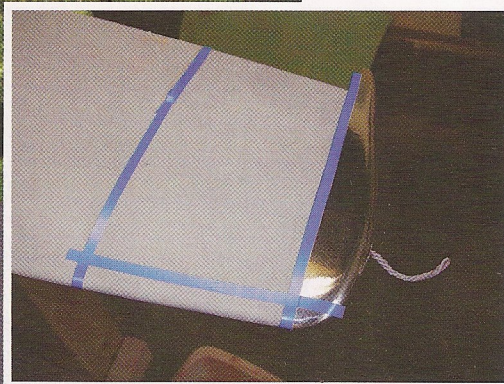
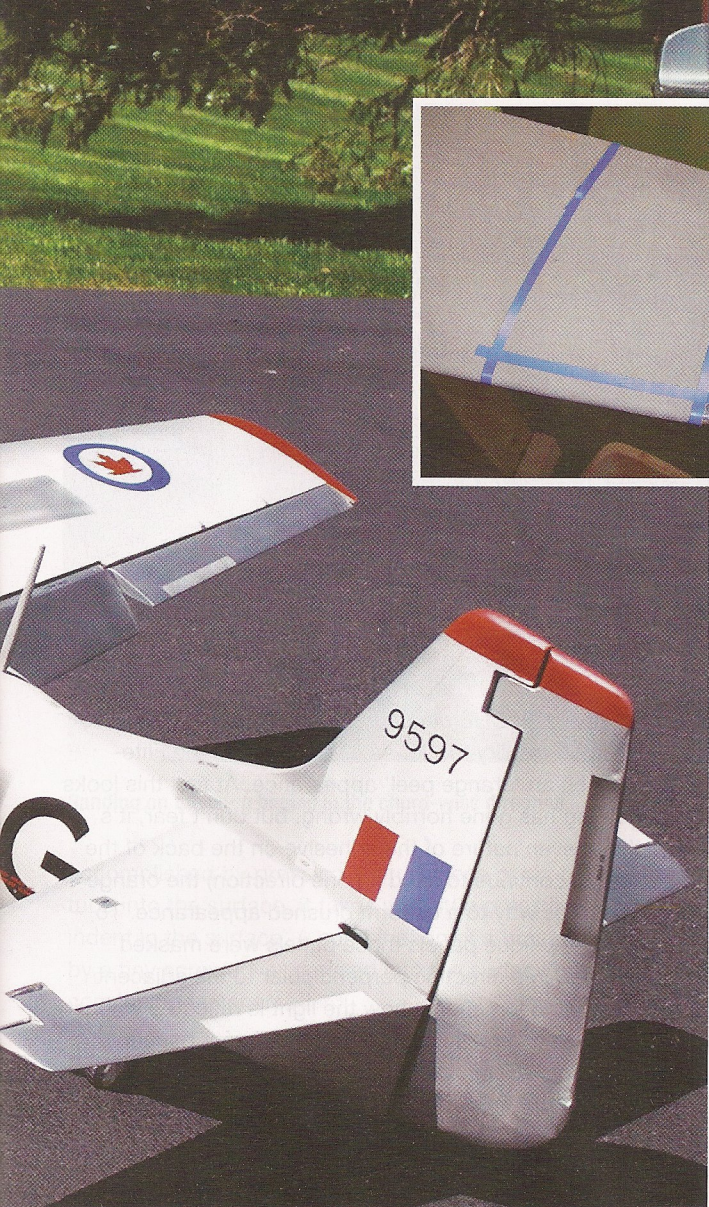
GETTING STARTED

The subject of my Mustang was an aging Century Jet Models kit. At roughly 1/5 scale, the Mustang has a fibreglass fuselage with foam core, balsa-sheathed, tail and 82" span wing. The model comes void of any surface detail, which turns out to be ideal in the case of our chosen finishing method. Having completed the major construction, the airframe was finished up to a smooth, filled and primed state.

As modellers we are fortunate that there are a number of different ways to replicate a metal finish with varying degrees of effort and results. Paint is the obvious choice, and today the advancements in paint and application technology is really impressive. In fact, in the hands of an experienced painter, even a mirror finish can be achieved. For the Mustang I chose to simulate the metal finish by using just that, metal. Flite-Metal is a 0.0018" thick self-adhesive aluminium tape that can be applied in individual panels to achieve a convincing finish. While not a poly or plastic material, Flite-Metal still has the ability



Construction completed and model primed ready for its natural metal finish



The edge of panel is defined with tape and masking tape is added to further protect the surrounding area and to ease waste

COVERING THE MUSTANG

Using a scale 3-view drawing for reference the major panel lines are drawn on fuselage with a soft pencil. Once the lines are drawn, Scotch 3M Finesline tape is used around the perimeter of the panel, overlapping at each corner. Standing a ruler on its thin edge and rotating it around the panel quickly identifies the longest contact area for the panel. As a side note, plan to order about 40-50% more material than surface area you expect to cover to compensate for the waste required around the perimeter of each panel.

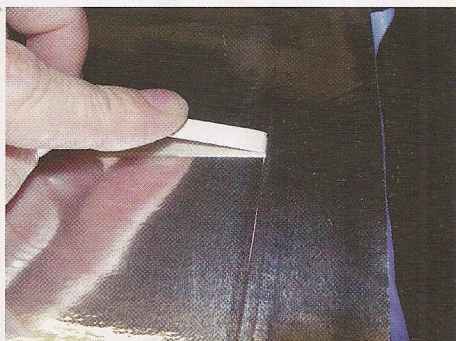
Back to the model, cut a piece of Flite-Metal larger than the panel itself and peel back half of the backing paper. Using your finger, rub the Flite-Metal down first along the established contact path then slowly burnish the sheet down moving away and parallel to the initial contact area. Continue to burnish the Flite-Metal with the fibrous burnishing tool out over top of the 3M Finesline tape. Using a blunt mixing stick, I continue to burnish down the Flite-Metal to a sharp seam against the tape's edge. Using a sharp knife, cut along the tape edge to remove the excess Flite-Metal. I like to use X-acto #11 blades because it's relatively inexpensive for a box of 100, and discard the blade after 1 or 2 panels. Curved blades like #10, 22, 23, etc. work equally as well or better. Mineral spirits can also be used on the blade to keep it sharp and prolong its use. Remove the waste Flite-Metal and Finesline tape to reveal the new panel.

The next panel is applied the same way. When putting down the Finesline tape along the edge that already has Flite-Metal applied, I move the tape to expose about 1/32" of the existing panel. This panel edge is then visible once the new panel is burnished down, allowing a cut right along the seam of the existing panel, resulting in a snug butt joint appearance between the panels.

to stretch up to 25% of its original size to allow it to conform to some gradual concave and convex surfaces. However, it will not compress or shrink so careful application is important.

Flite-Metal has been used and tested thoroughly with 2.4 GHz radio systems and when the radio is installed correctly the results are the same as a painted finished. More information is available on their website via the link at the end of this article.

Due to the thin nature of the material, the surface it's applied to needs to be perfectly smooth and clean, as any scratches or debris will show through. Flite-Metal is applied one panel at a time thus creating its own panel lines.



Flite-Metal is cut larger than the required panel area and after an initial rub down with a finger in swift motion out from the initial contact patch and burnished with a fibrous tool, a blunt mixing stick is used to burnish the Flite-Metal tight against the tape edge. With the tape and waste removed a very nice butt joint between panels is revealed

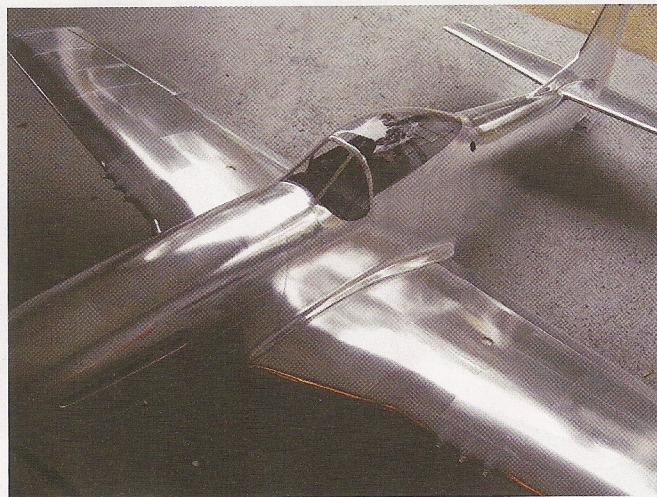


Continue adding panels until the wing is covered

As mentioned earlier, Flite-Metal will not compress or shrink; it will only stretch. So to cover concave or convex surfaces you must first identify the highest or lowest point of the panel to be covered. Then carefully moving out 90 degrees from that point the Flite-Metal can be rubbed down on the surface. I understand some users have had success by first spraying a fine mist of Windex on the surface, then during the burnishing process the liquid is squeezed out from under the metal. I haven't tried that but intend to experiment with the process as it may help eliminate some small wrinkles that can occur. If small wrinkles do appear as the metal is applied, for the most part they can be sanded out later.

IT'S METAL, NATURALLY

The raw finish on the Flite-Metal gives the model a shiny 'chrome' look when first applied. As you can see in the accompanying photos, this makes our Mustang take on the appearance of a 'toy' rather than a convincing scale model. To change this, Flite-Metal is weathered by sanding until the desired finish is achieved. Wearing disposable gloves I like to



Model fully covered in raw Flite-Metal

sand the surface in ONE direction starting with 320 grit wet 'n' dry paper in the dry mode. As sanding starts the Flite-Metal takes on an 'orange peel' appearance. At first this looks like something has gone horribly wrong, but don't fear, it's due to the uneven nature of the adhesive on the back of the metal. As you continue to sand (in one direction) the orange peel effect gives way to a uniform brushed appearance. To highlight a few unique panels those panels were masked off and sanded in a direction perpendicular to the adjacent panels. This variation effects how the light is reflected when it hits the surface and really highlights the different panels.

After using the 320 grit paper, finer grits can be used to further smooth out the surface. This is particularly important if you intend to paint or add markings to the metal. The smoother, and cleaner, the surface the better any paint or transfers will stick.

I find the sanding process to be the most time-consuming step in the application of Flite-Metal. Before embarking on covering your new project completely, I'd recommend applying it to a test subject and follow through the above

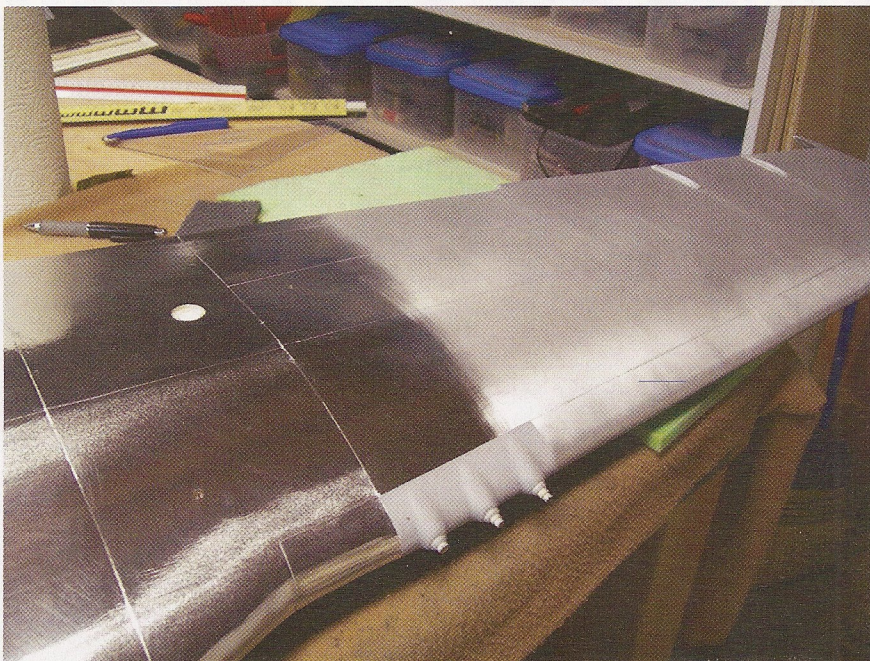
steps completely. That way you'll know what's involved and get a sense for just how long it will take to complete your new jet. In some cases, selecting a scheme for your model that has combination of paint and natural metal, where the more complicated areas are painted, makes a lot of sense.

Once the application of Flite-Metal is complete, the surface is cleaned with mineral spirits to remove the sanded metal and fingerprints. The material remains quite soft so any surface details such as rivets can be pressed into the surface quite easily before adding markings.

Small rivets are quickly applied by using a dressmaker's wheel run along the edge of a ruler. This puts a 'dot' at every point that makes contact with the surface. If you wish for a slightly larger rivet, in the form of a circle, then these can be



Use the same technique on the fuselage



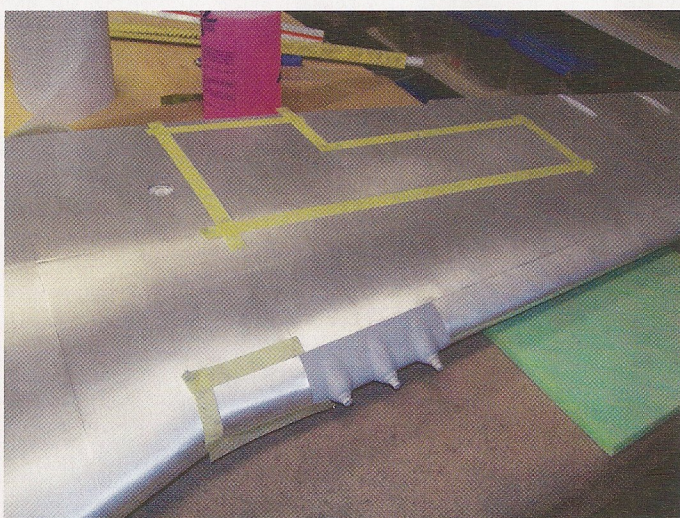
Sanding on the wing begins in the chord-wise direction

accomplished by pressing a small piece of sharpened brass tube into the surface. It takes very little pressure to create an indent in the surface. A combination of a brass tube followed by a tiny screwdriver pressed into the surface makes for convincing fasteners.

PAINTED SURFACES AND MARKINGS

My RCAF scheme is almost entirely natural metal, leaving only the anti-glare panel and major markings in need of paint. Computer cut vinyl paint masks to my specified sizes were provided by GetStencils.com for a very reasonable price. After masking, the larger areas that would require multi-layered masks were dusted by a self-etching primer to prep for paint. Once this dried the markings were painted with Testors Model Master enamels sprayed through my trusty airbrush. A little paint goes a long way and covers very well.

While my scheme is pretty straightforward with regards to the national markings, there are a lot of small stencils on the Mustang that would be critical to creating a convincing finish. For this I again enlisted the help of GetStencils.com. I made



Gun and ammunition panels masked off (left) then sanded in a perpendicular direction to differentiate from neighbouring panels

up all the artwork, which is 99% stencilled text, on my computer and set the files off to be converted to dry transfer rub-ons. Dry transfers are a wiser choice versus the more common water slide decal over the metal surface, as there is no clear film around the letters that need to be hidden.

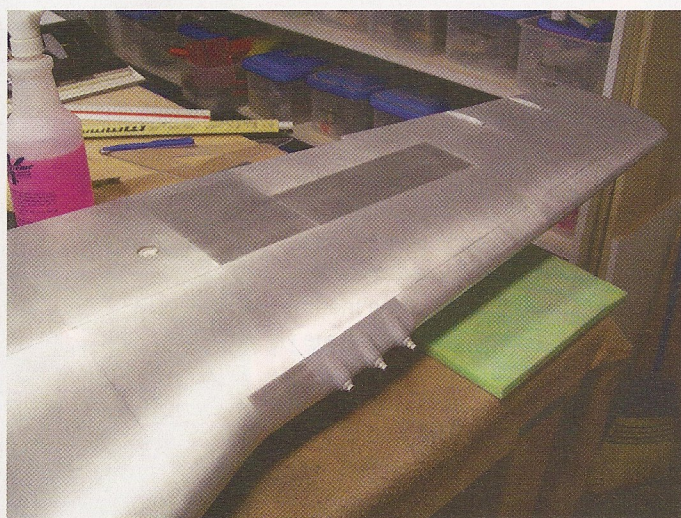
After the markings are applied it's again cleaned, this time with a neutral chemical such as Prepsol, doing your best to avoid any dry transfers. The model is then covered with a clean sheet to avoid dust settling on it and left to allow the Prepsol to evaporate overnight.

At this stage I added a light 'wash' with highly diluted Polly S acrylic steam power black paint. I used a small disposable foam brush to apply the paint, although a piece of paper towel works equally as well. I wiped it on 8-10" wide sections at a time and immediately wiped it off going LE to TE (on

wing and stab), and vertically on the fuse. The paint gets caught in the rivets and panel lines highlighting them. If you dilute the paint heavily it takes more passes to build up the weathering but this is also an advantage as it lets you control the exact amount of 'dirt' you wish to simulate. I also used this colour to lightly airbrush the exhaust and gun residue/staining and a little around the fuel fill caps.

My model was originally destined to have a Moki glow motor in it so it was necessary to apply a clear coat to seal the finish against the exhaust and fuel. I used a water-based satin clear from WarbirdColors and it proved effective, although some of the metal lustre is lost. I've since converted the model to electric power, and had that been my original plan I would have been able to avoid the clear coat step.

If you don't require a painted clear coat, then the final step involves using a metal cleaning/polishing cloth to apply small amount of polish to the surface and buffing it out. A product called Cape Cod Metal polish works well and a little goes a long way. This step actually seals the entire surface and prevents oxidation of the aluminium. Again, a little practice on your test piece is advised before applying to your finished model.





Airbrushed residue behind the gun barrels and fuel filler cap

ON THE FLIGHT LINE

As mentioned earlier, the glow motor was pulled from the Mustang in favour of an AXI 5345/16 running on 12S LiPos and a 22" x 10" prop. The finished model weighs 24 lb RTF, and despite being a few pounds more than the manufacturer's published weight, it flies well and feels very solid in the air.

Admittedly this sort of finished isn't one that happens overnight, and some dedication and patience is required to complete it with satisfactory results. However, I'm sure you'll agree that the effort is rewarded with a truly unique version of a very common model. Whether you're building a classic warbird or an early era jet, I hope that this article provides some motivation to seek an alternative to paint to achieve that natural metal finish you've dreamed of. **RCMW**

