

FOILED LIGHTNING

Technique

How to finish your plane with aluminum foil

Story and photos by Bucky Sheftall

Like other incurable perfectionists in our hobby, I was discouraged by modeling natural-metal finishes. Metallic paints never seemed convincing on anything much larger than a 1/48 scale landing gear strut.

About a year ago, I saw pictures of an aluminum-foil covered B-58 Hustler, and I was enthralled. I just had to try aluminum foil.

There are two ways to apply an aluminum foil finish. The easier method is to use a commercial adhesive foil product, such as Bare-Metal Foil (see sidebar on page 29). The more difficult way is to use household aluminum foil and apply adhesive yourself. This not only takes more time, but it creates more problems: applying the right amount of glue, keeping dust and dirt out of the glue, and so forth.

In either case, the application of foil is a challenging task, but the effect is worth the effort.

I use household aluminum foil and apply Microscale's Micro Metal Foil Adhesive with a brush. I will concentrate on basic foiling techniques in this article, especially the foiling of compound curved surfaces – a surface curving in more than one direction (a sphere is a perfect compound curve). The P-38 has plenty of compound curves.



Bucky Sheftall's 1/48 scale Hasegawa P-38J Lightning is covered with aluminum foil. The markings for "Si Si Señor" came from AeroMaster sheet No. 48-350.

Getting around it. The harsh reality of foiling is that you are trying to apply a two-dimensional material to a three-dimensional object. Household foil has almost no “stretchiness,” and can be torn or wrinkled if forced around a sharp compound curve. Bare-Metal Foil stretches better over curves.

While it is desirable to minimize joints by using large pieces of foil on large, flat areas, such as wings or control surfaces, small curved items should be covered in small pieces to avoid wrinkles.

For my example, I’m going to foil over the teardrop-shaped P-38 150-gallon fuel tank first. There are plenty of curves here; it has a round cross-section, a blunt nose, and a radically tapered tail. Sweat beads begin to form on my brow just looking at the drop tank!

Ready ... set ... foil! The first step is to sand away all imperfections from the parts. Foil is not going to cover seams or irregularities – it’s only going to make them look worse!

Once you have smoothed the item, wash it with soapy water so oils don’t reduce adhesion of the foil. Remove any lint or sanding dust anywhere that could be conspicuously trapped by the foil.

If you are using Bare-Metal Foil, you can skip this next step. When using household foil, cut a suitably sized piece and lay it on a clean work surface with the foil’s matte side facing up. The fluid adhesive spreads better on the matte side. Don’t worry about the overly shiny side of the foil; you’ll be taking care of that later. Fold ¼” of one end over on itself to serve as a handle.

Material list

- either Bare-Metal Foil (regular “chrome” is best) or the thinnest aluminum foil you can find
- Microscale Metal Foil Adhesive
- a couple of flat artist’s brushes, maybe 1.5cm (about ½”) wide
- glass, Plexiglas, or coated, lint-free cardboard work surface
- scissors
- sharp hobby knife blades or razor blades
- fine steel wool (0000)
- cotton swabs
- round toothpicks
- rubbing alcohol
- facial tissues





Nothing looks more like aluminum than aluminum. Adhesive-backed aluminum foil is available in many hobby shops, or you can add adhesive to household foil.



1 If you aren't using Bare-Metal Foil, you'll need to brush Micro Metal Foil Adhesive on the matte side of household aluminum foil. The folded-over edge on the foil sheet serves as a handle.



2 Applying foil to compound curves, such as those of this P-38 drop tank, is the most difficult part of the process. Here's how to start: Cut a thin strip of foil and lightly press it onto the tank along the middle.

Apply Micro Metal Foil Adhesive with a flat brush. Keep brush strokes roughly parallel, pushing away from the handle to spread the liquid in a thin, even layer, **1**. Be careful not to let any dust get on the foil, especially while the adhesive is drying. When the milky liquid dries to an even Scotch-tape-like clear matte appearance, the pressure-activated adhesive is ready, and the foil can be applied to the model.

One piece at a time. Cut a strip of foil slightly longer than the tank and a width (varying with the shape of the tank) maybe one-sixth of the circumference. The fraction is not important, just try to keep the edges straight along the axis of the tank. Lightly press the strip onto the tank at the midpoint, and adjust the position, **2**. As you can see in the photo, wrinkles are already evident and will likely get worse as you work the foil down.

Burnish the strip onto the tank with a cotton swab, **3**. Increasing the pressure will activate the adhesive. The wrinkles on my tank weren't as bad as I thought they would be, and they were easy to rub out with toothpicks and steel wool.

Lightly sand the edges of the strip with 1,000-grit sandpaper or an ultra-fine sanding stick. Sand perpendicular to the edge and push away from the edge of the foil strip. This will feather the edge, reducing the "cliff" and allowing the overlap of the next foil segment to become nearly invisible.

Continue laying strips, **4**, until the entire tank is covered, **5**. Thin ($\frac{1}{8}$ "-wide) strips can be burnished over the prominent raised fuel tank seams.

Reducing the shine. A rub down (front to back) with 0000 steel wool gives a "grain" or patina to the too-shiny foil and makes it look more like real aircraft skin. The steel wool also helps obscure the fine edges of the foil segments, **6**.

After the tank and its pylon are completely foiled, wash it with warm soapy water to remove finger oils (which can oxidize on the foil and leave dark gray fingerprints) and remove the grains of aluminum dust generated by the sandpaper and steel wool. It is essential to remove this dust before the next step.

That's the basic technique for foiling, which is repeated over and over, with slight variations according to the shapes of the parts, **7** through **10**. Larger or flatter parts are easier to cover.

Tips for better foiling. When foiling a wing or stabilizer, wrap the top-surface foil over the leading edge, **11**,

so the seam is on the under-surface where it is less conspicuous, **12**.

Burnish foil over raised or recessed panel lines, and use those lines as trim points between pieces of foil. Use only a sharp blade to cut the foil along the panel lines. The adjacent piece of foil overlaps the panel line and should be trimmed in the same manner.

To cover small intake scoops such as the one on the side of the P-38 engine cowl, make a slit along the leading edge of the scoop before burnishing the foil. This will allow the foil to conform. Cover any “bald spots” with little “toupee strips” of foil, then burnish and polish with steel wool as usual, **13**.

If you find small unfoiled spots, cover them with small patches of foil, or touch up with slightly thinned aluminum paint after the model is finished.

Bursting bubbles. If you find an air bubble under the foil, slit it with a sharp blade, then burnish it with a toothpick. Be careful not to snag the edge of the slit with the toothpick, causing the foil to rip. Rub steel wool over the area, and the bubble and the slit will disappear.

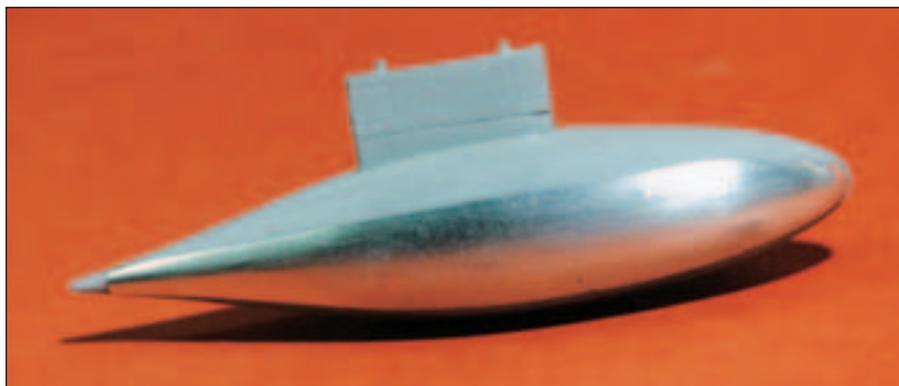
It's usually a good idea to foil sub-assemblies before attaching them to the model. Keep in mind, though, that the

Bare-Metal Foil

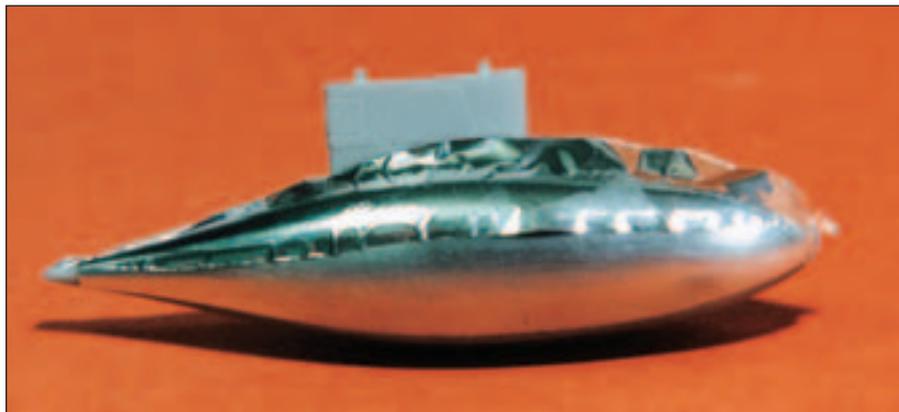
If you don't want the hassle of applying adhesive to foil, you can obtain ultra-thin aluminum foil with a pressure-sensitive adhesive already on it. Bare-Metal Foil was one of the original foils for modelers, developed in the early 1970s. Other brands of self-stick foils have come and gone, but Bare-Metal Foil is still around.

Bare-Metal Foil is an aluminum alloy that has more malleability than standard household foil, and it's thinner, too. It comes in 6" x 12" sheets, mounted on a waxy paper. You remove it by scoring through the foil with a sharp blade, peeling the foil from the paper with tweezers, and transferring it to the model.

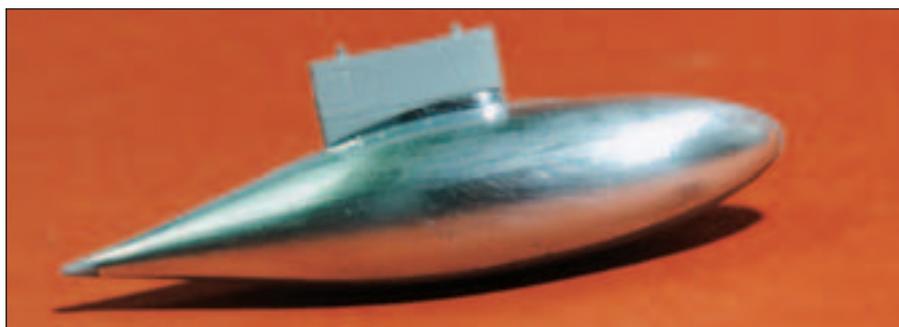
In addition to the regular chrome finish, BMF is also available in ultra-bright chrome, matte aluminum, black-chrome, real copper, and gold-colored versions.



3 Burnish the strip onto the part with a cotton swab, then go over the edges with an ultra-fine sanding stick.



4 The next piece of foil overlaps the first and then is burnished in place.



5 Lightly sanding the edges of the foil helps the next piece hide the overlap.



6 Once the covered tank is scoured with 0000 steel wool, the seams between the pieces of foil practically disappear.



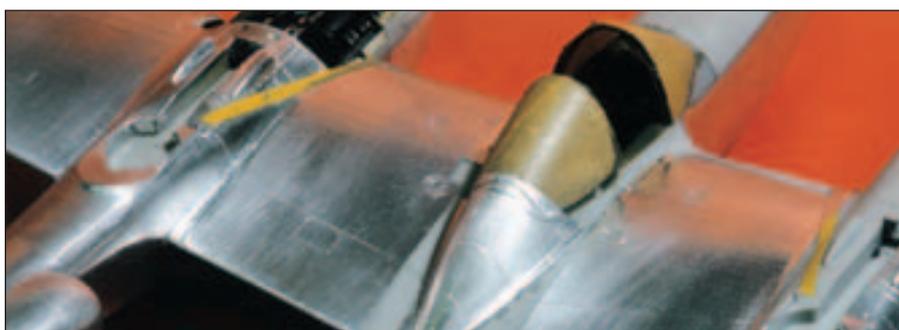
7 The rear of the Lightning's central pod is another curved area. The foil is lightly tacked in place.



8 Burnishing begins with a cotton swab ...



9 ... and ends with a round toothpick that pushes the foil into and over surface detail.



10 With the foil burnished in place, the edges can be trimmed with a sharp blade.

areas to be bonded must be free of foil. You can touch up the glue joints with bits of foil after final assembly.

Sealing the foil. After you "grain" the foil with steel wool, wipe away excess adhesive with a tissue dampened in rubbing alcohol. Next, wash the entire model with warm, soapy water, wipe away excess water, and let the model air-dry.

Apply several coats of Future acrylic floor polish with a flat, carefully cleaned brush or with an airbrush. Future seals the foil, protects it from oxidation, and forms a primer coat that is needed under any additional painting or weathering. (Enamels, artist's oils, lacquers, or acrylic paints don't adhere well to bare foil.) Future also adds to the luster of the metal, and forms a perfect surface for the application of decals.

Try it, you'll like it! To me, foil is the most realistic natural-metal finish. Well, outside of scratchbuilding from sheets of aluminum, that is. **FSM**

Meet Bucky Sheftall



Bucky Sheftall (seen here passing the torch to his son, Levi Riku) cut his modeling teeth in the late '60s and early '70s on Aurora, Monogram, and Lindberg plane and armor kits. Bucky watched his father make spectacularly detailed Napoleonic figures. After a ten-year hiatus, Bucky returned to modeling in the late '80s.

When he isn't modeling, Bucky is a professor of English at Tokoha Gakuen Tanki Daigaku, a private women's junior college in Shizuoka, Japan, where he has lived and worked since 1987. He is also a published English textbook author and a Japanese/English translator for Hasegawa Seisakusho Co. Ltd. His work has appeared in *Scale Aviation*, *Model Art*, *Tamiya News*, and other print and on-line publications.

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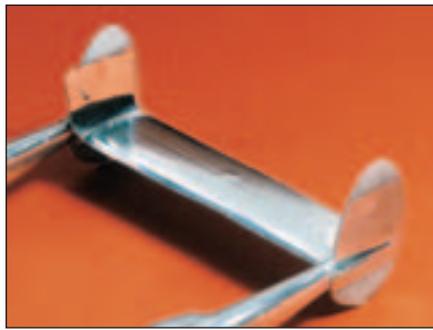
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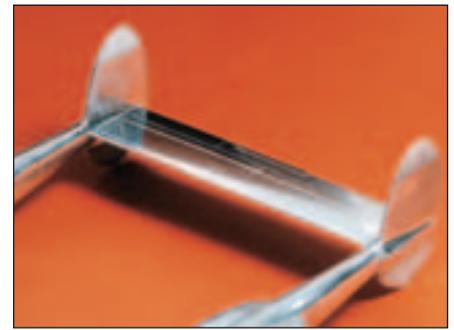
SOURCES

Self-adhesive foil Bare-Metal Foil & Hobby Co., P.O. Box 82, Farmington, MI 48332, 248-476-4366, www.bare-metal.com

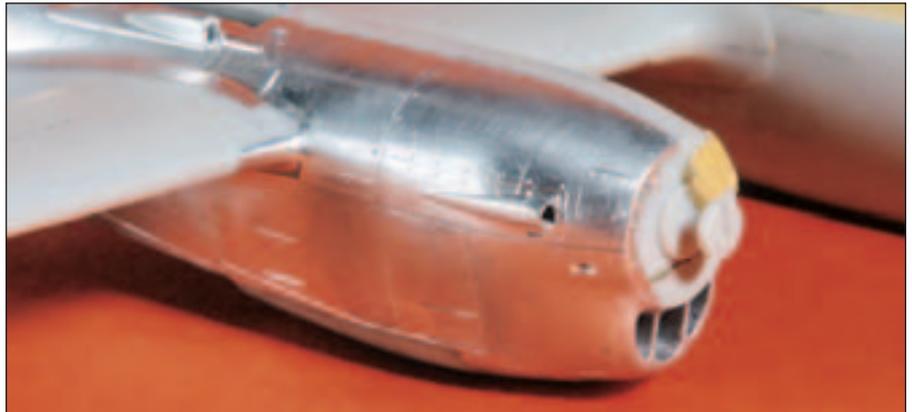
Adhesive Microscale Industries, 18435 Bandilier Circle, Fountain Valley, CA 92708, www.microscale.com



11 Large, flat areas are a little easier to foil. Here a strip has been gently laid onto the horizontal stabilizer. Excess foil will wrap around at the leading edge.



12 Now the foil has been burnished down, but it has yet to be scoured with steel wool.



13 Foiling over small scoops can be done with small strips of foil. Slicing through the foil at scoop openings allows the foil to work around the holes.



Bucky's foil-finished fighter looks like it is made of aluminum. But the metal is only skin deep.