Final Report: Wing Walk Replacement

Posted by Wade@AWO on December 31, 2010, 11:43 am

This is what I'm going to submit to Pipers magazine. A lot of the words you've probably already seen

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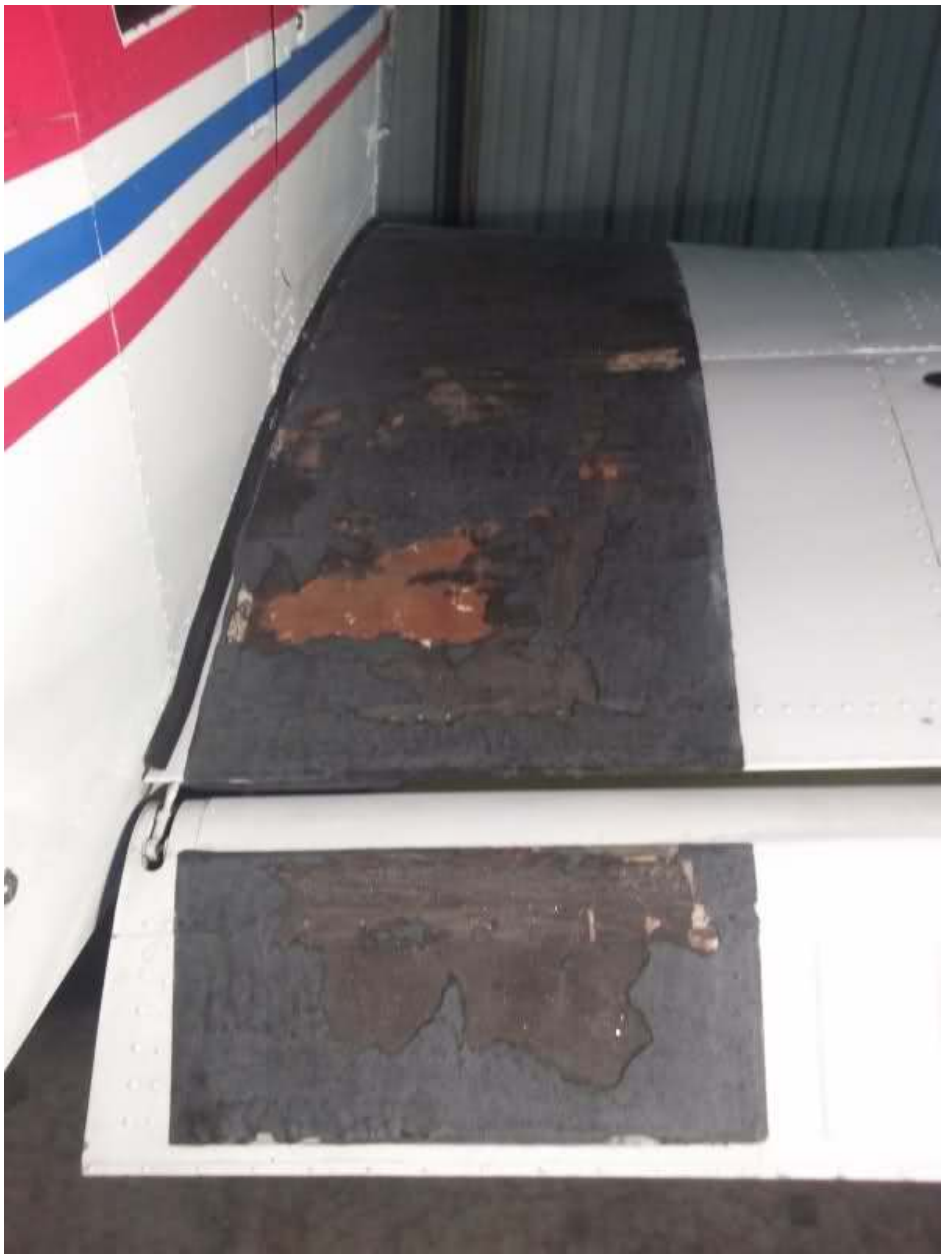
December 31, 2010

My airplane has a so-so 20/20 paint job, but the wing walk was just atrocious. A blotch on an otherwise decent-looking airplane. Time to fix it!

There are three basic types of wing walks out there, (1) the stick-on (looks like sandpaper with sticky-back that is applied like a decal), (2) the paint-on kind (paint with sand or rubber particles suspended in it), and (3) the glue-on kind (like the stick-on kind, except the glue is separate).

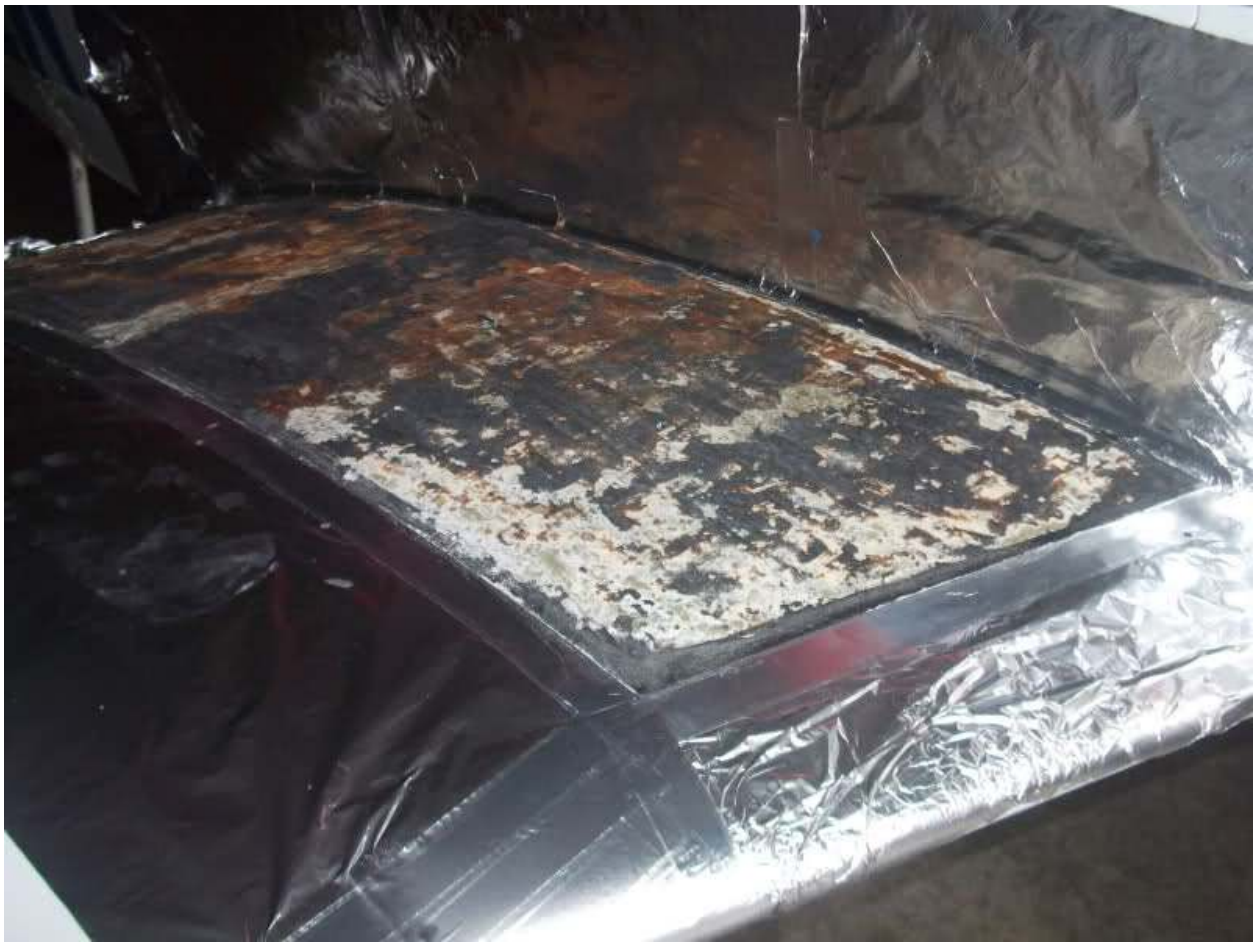
My wing walk started life as a glue-on type. I don't know when it was applied, but I do know the airplane has only been repainted once, and they didn't touch the wing walk, so it appears that old stuff has been on there since 1964. As it wore, folks just painted on more wing-walk over the top. There was approximately 8 thick layers of painted-on wing walk over the top of the original glued-on walk. As the years passed and the painted-on stuff got brittle, it started cracking. Then flaking. Then someone would paint over it again. Then that would start cracking and flaking. Then the glued-on stuff started flaking. I had many, many, MANY layers of old wing walk, and it had gotten so thick that it smoothed right over the rivets along the spars. Chunks up to 3/32" and 1/8" thick were flaking off, and there were still more layers under that.

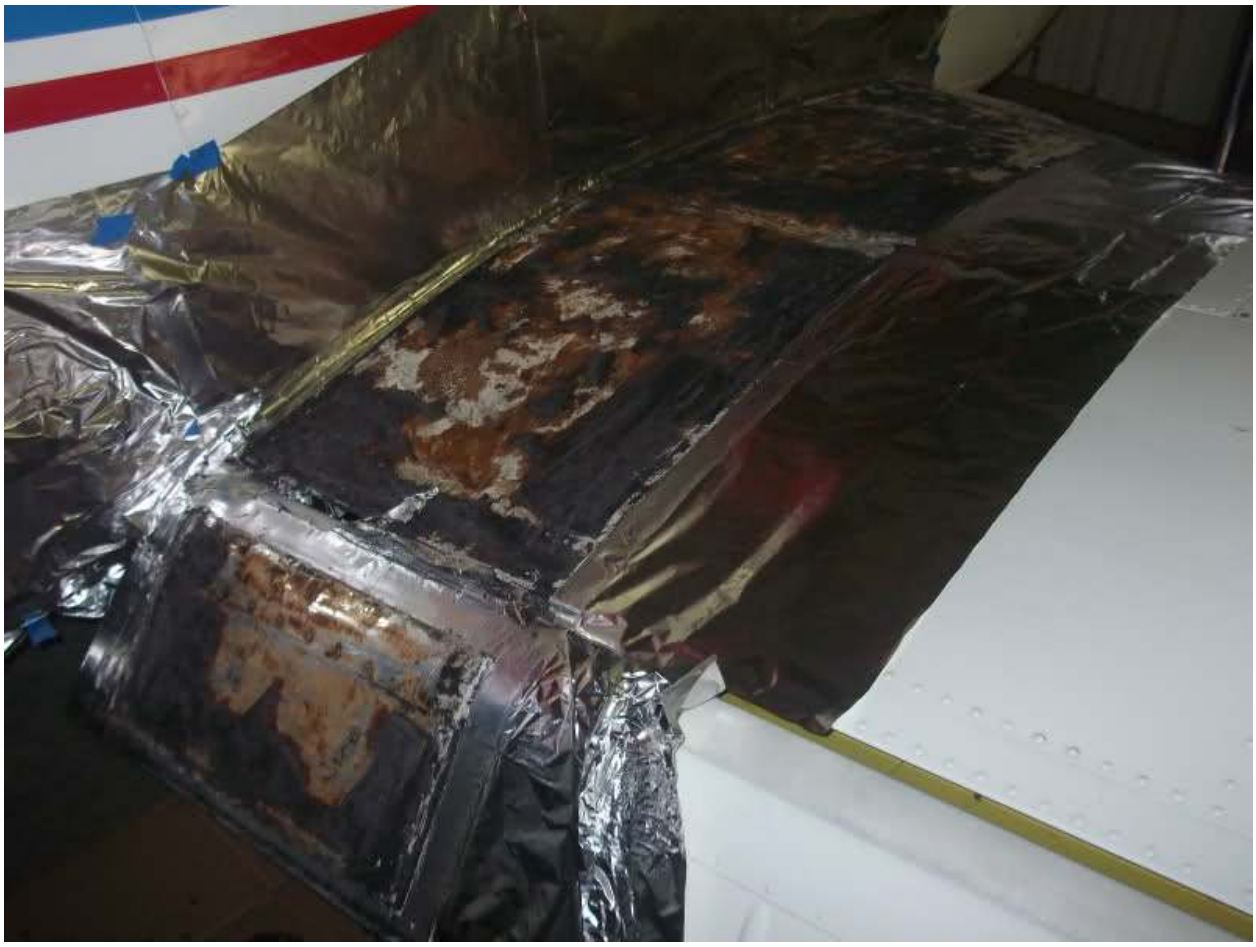
Here is the embarrassing starting point for this project (the brown stuff is the glue under the original wing walk):



I have followed posts on Cherokee Chat regarding this subject with considerable interest, and decided Christmas vacation was the time to tackle that ugly, ugly mess. All the posts I chose to believe had me thinking it would be a quick, easy job. How does the line go? "A man hears what he wants to hear and disregards the rest".

After the first day's hard labor and a quart of Jasco paint stripper later, I was dismayed at how hard it was to remove that ugly old wing walk. The stripper only stripped one layer of the painted-on stuff at a time, and the glue-on stuff was even more difficult, as the stripper had to soak through the cloth to get to the glue, AFTER all the painted-on stuff on top of it has first been stripped. Here is where I ended up the first day (note the aluminum foil masking with aluminum tape, paper and plastic won't protect paint from paint stripper):



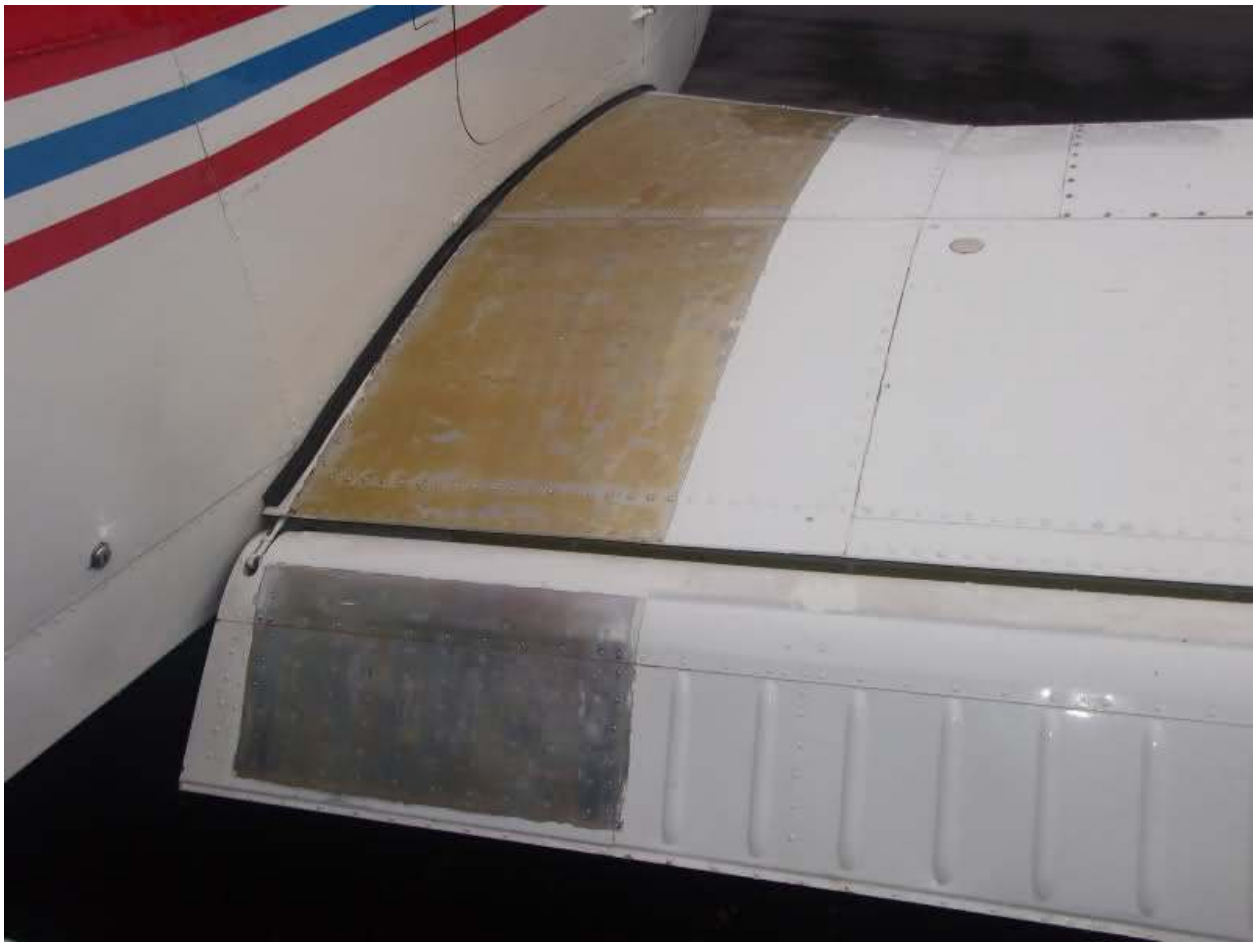


Discouraging - much more work and time than I had anticipated. I started thinking maybe the old stuff wasn't that bad, after all, and maybe should have just slathered another layer of the painted-on stuff over the top. Too late - I was now committed.

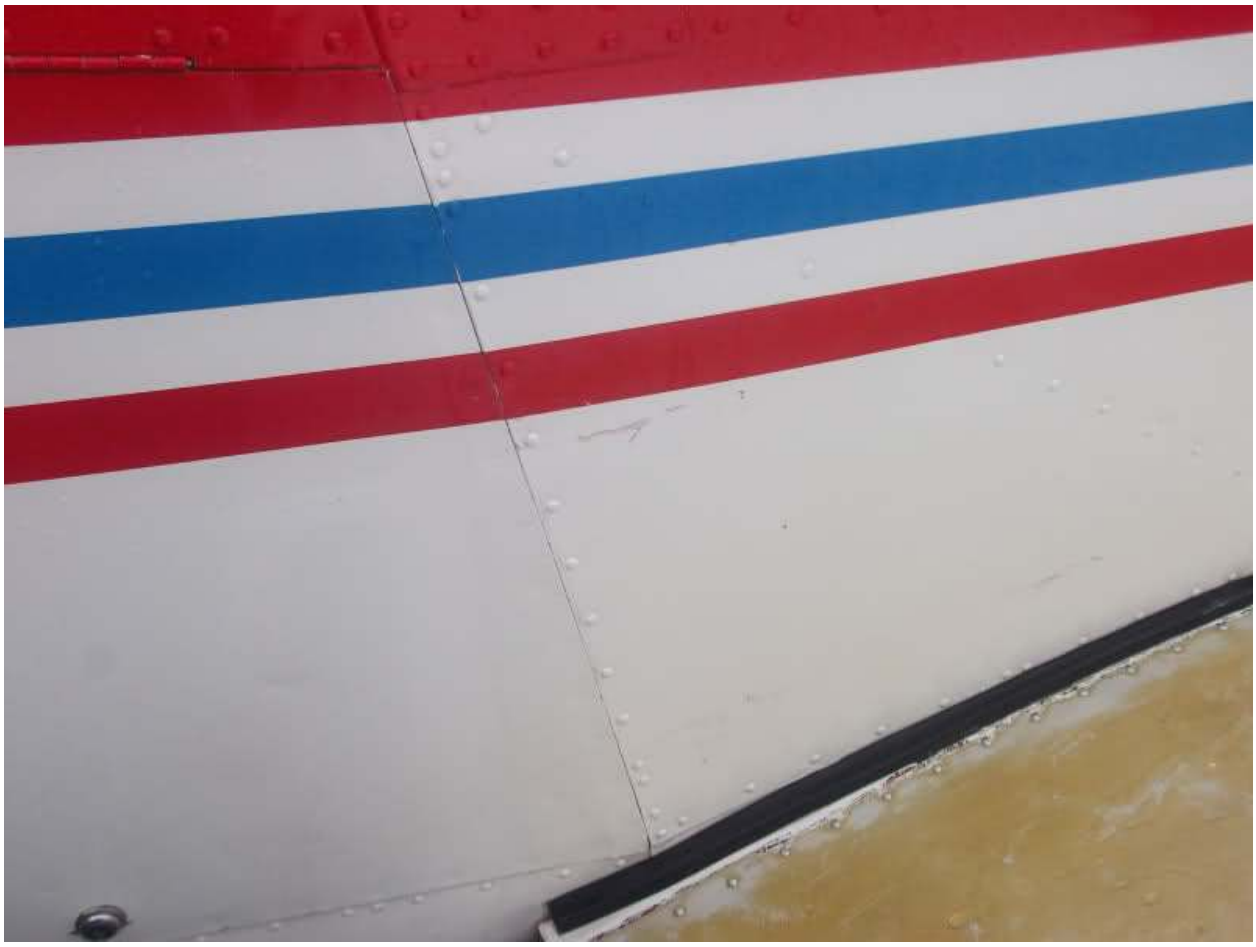
It eventually took 2-1/2 quarts of Jasco Stripper, and about 7 hours of hard labor, but I finally managed to strip off the old wing walk. Out of desperation, I wound up using a metal paint scraper on the top layers, but was careful to use only a plastic scraper and Scotch Brite when I finally got down to metal (someday ask me about "scribe lines" on big airplanes caused by metal scrapers ~ bad news).

Stripping the old wing walk was a much uglier job than I thought it would be, but I don't know why I was surprised, stripping paint is always harder than I think it's going to be. My arms and back were pretty sore, as the middle of the walkway is quite a reach from either the leading edge or the trailing edge.

The aluminum under the old wing walk was nicely alodined (which is why the gold color in the photos). I touched up with additional alodine where needed and let the whole thing thoroughly dry.



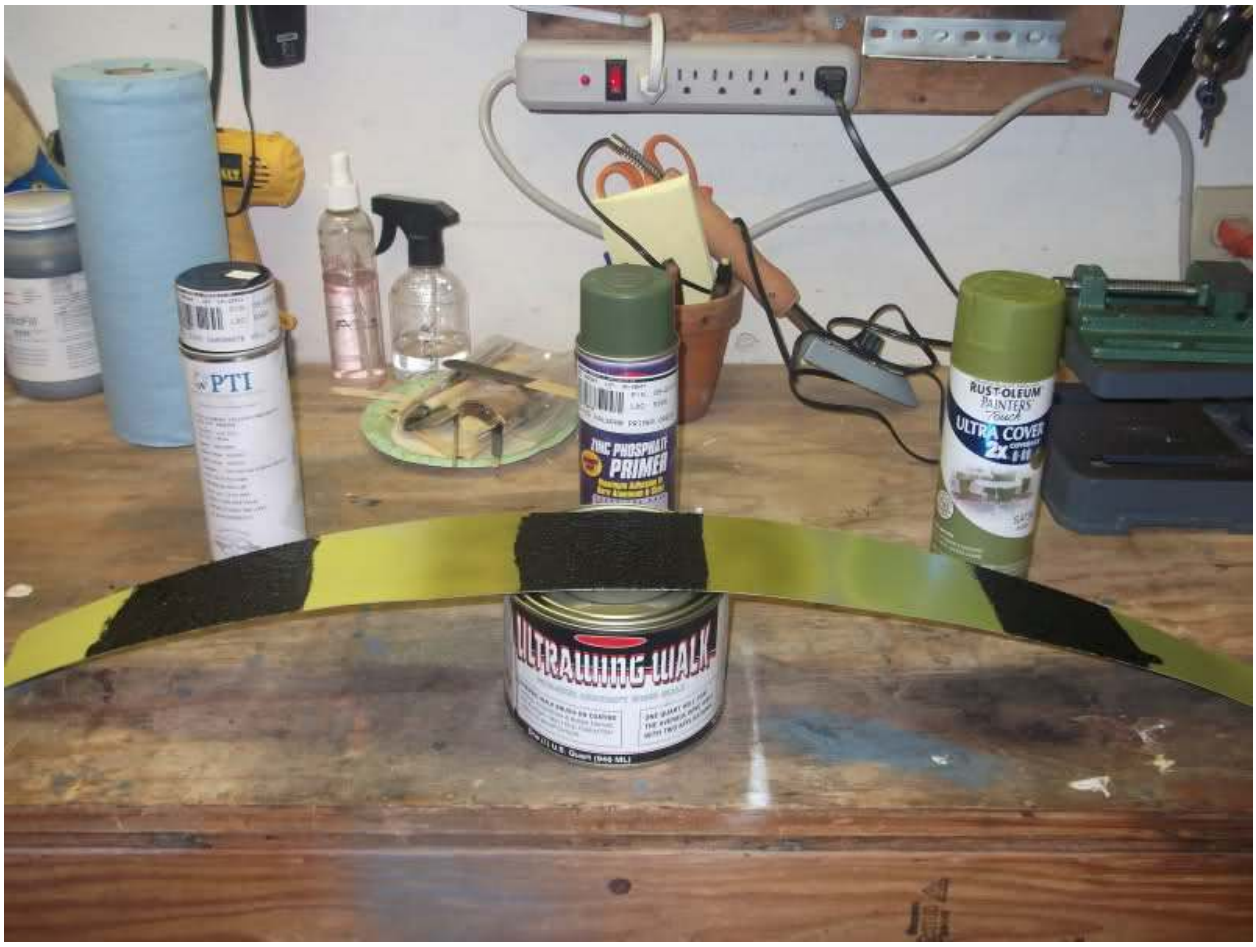
Only one screw-up. I maybe shouldn't admit it, but as I was removing the foil, a dab of stripper hit the paint and I didn't notice until later. Rats, now I have (another) blemish in the paint (right below the red stripe).



Crud. It looks like someone accidentally scratched the paint with a shoe or a baby seat, which is what I'm going to tell everyone anyway. I guess in the big scheme of things, it's not so bad, and I will touch it up later.

I had heard so many raving reviews about "UltraWing Walk" from Aircraft Door Seals Inc, that I bought a can. Curiosity bade me to test how the stuff goes on, and for compatability with different paints, and for the adhesion of those paints to aluminum. I tested how it worked with three different paints: (1) PTI zinc chromate, (2) Valspar zinc phosphate, and (3) Rustoleum Ultra Cover (aka "green aircraft primer").

The Utra Wing Walk proved to be easy to apply and compatible with all of the paints, but the Rustoleum was the better paint by a LONG shot! The others go on splotchier, cover less-well, don't adhere even close to as well, and don't wear as well (by the fingernail test). I had to really work at scratching the Rustoleum, and it won't flake off the underlying aluminum. The other two had problems adhering to the test panel and flaked off with very little effort.



Chat question to Dick Russ Dec 29th: "I am currently replacing my wing walk, and purchased your Ultra Wing Walk. I am doing the work now because I have the time off, but I'm in an un-heated hangar and the temps have been in the 40's here. How cold is too cold to apply Ultra Wing Walk? I see no temperature recommendation on the can itself. Should I wait to spring to apply it?"

Answer from Dick Russ Dec 29th: "Due to the viscosity it would be better if you could apply it above 60 degrees F. to get a even flow on the wing. We never tested it below that temp. If you don't have access to heated hangar, you might try applying a small amount on a test piece of aluminum at a lower temp. The bonding strength shouldn't be effected. It will just take a little longer to harden. At 60 degrees it will normally be hard enough to walk on the next morning if applied in the afternoon the day before. I went back through my notes and the manufacturer actually tested the bonding strength to as low as 32 degrees F. with now ill effects. They did say that it will take longer for the aeromatics to evaporate which may take 24 hours at least (again depending on the OAT)."

How 'bout THAT for customer service? Same-day response, exactly the info I needed. Thanks, Dick, that really helps!

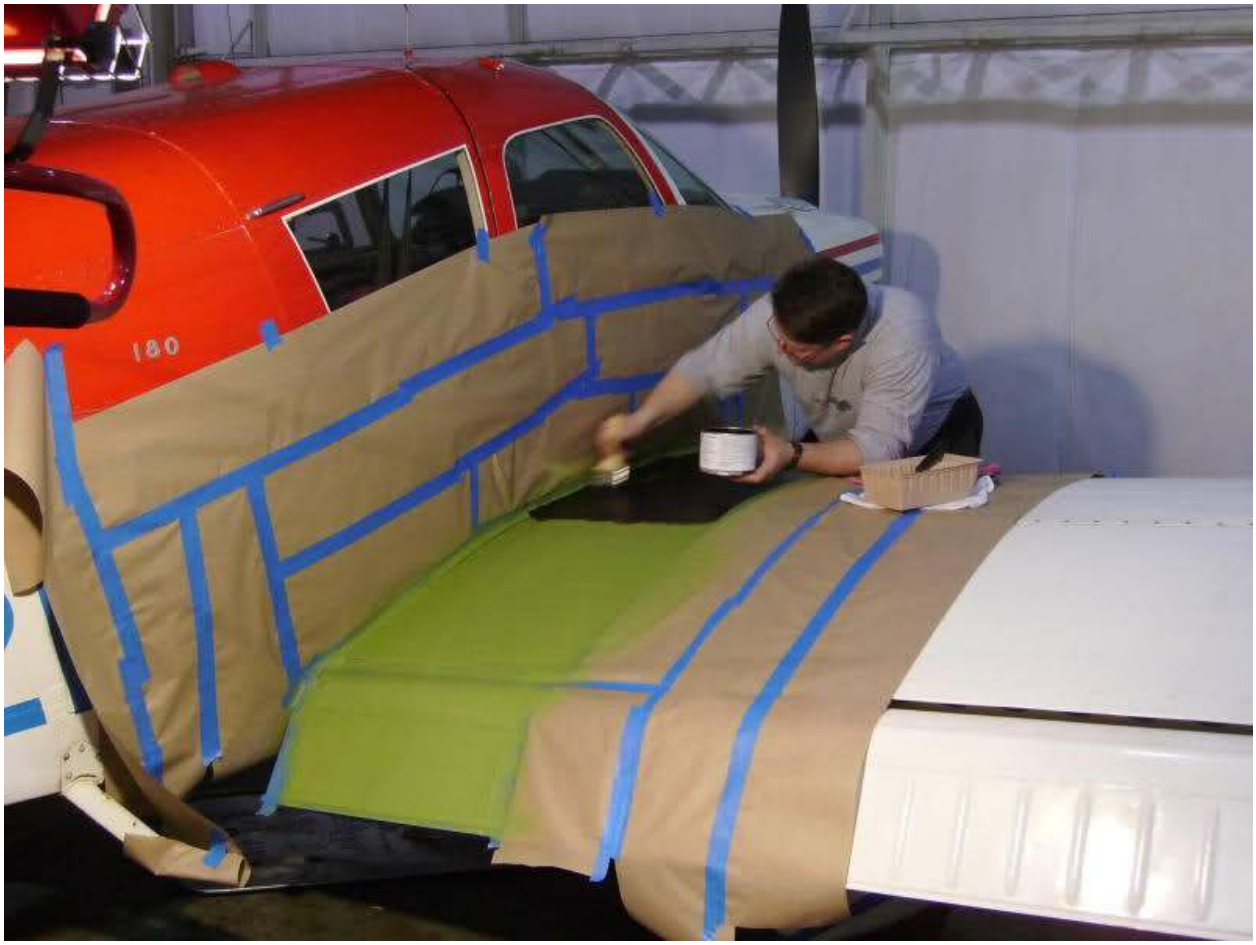
Reply from Dave Wheeler: "I have heat in my hangar if you need to use it".

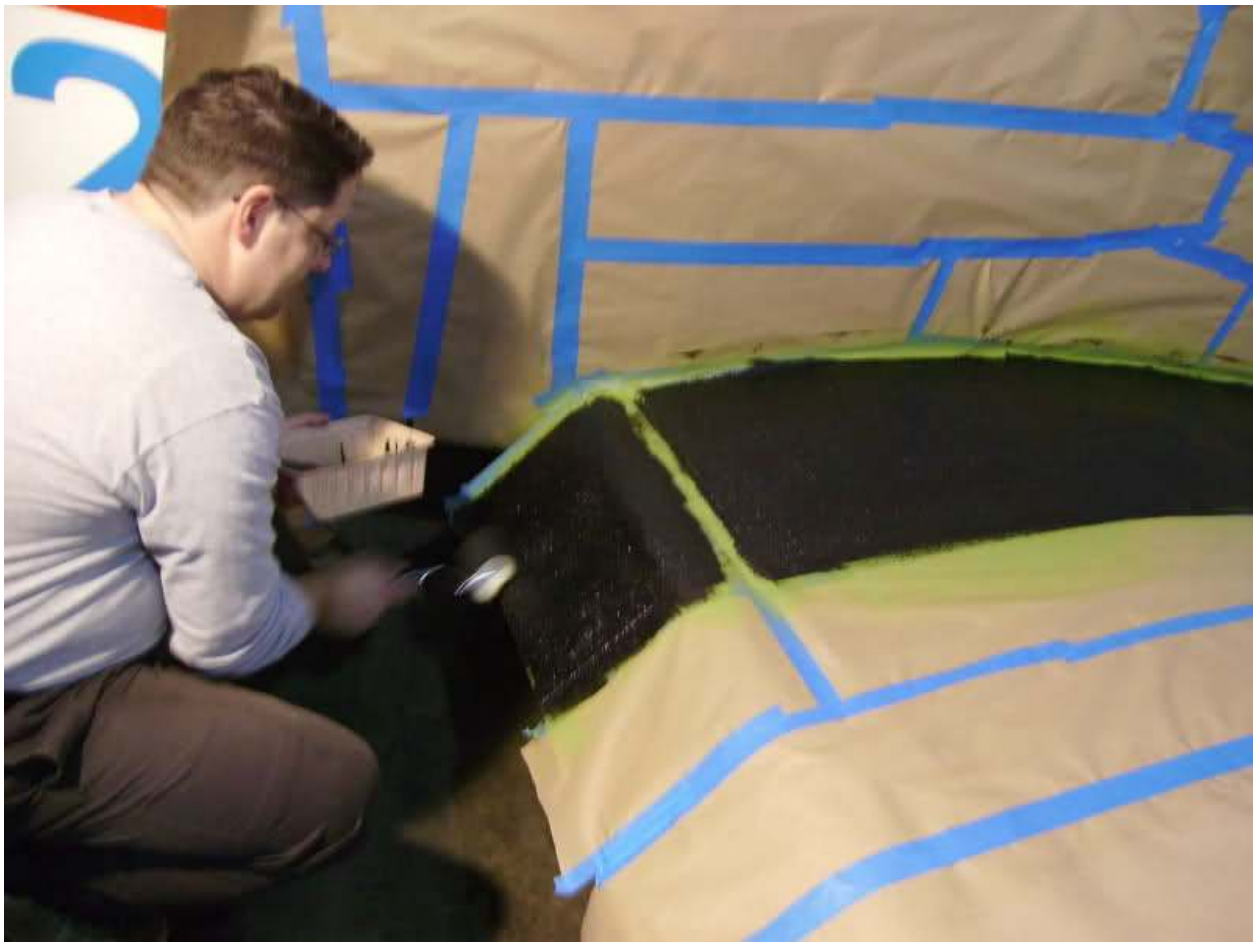
How 'bout THAT for friendship? I am humbled by Dave's generosity, as I ended up occupying the prime spot in Dave's heated hangar during a very busy day at his flight school. Not only was that a boon to my project, but the Wheelers are great company, too!

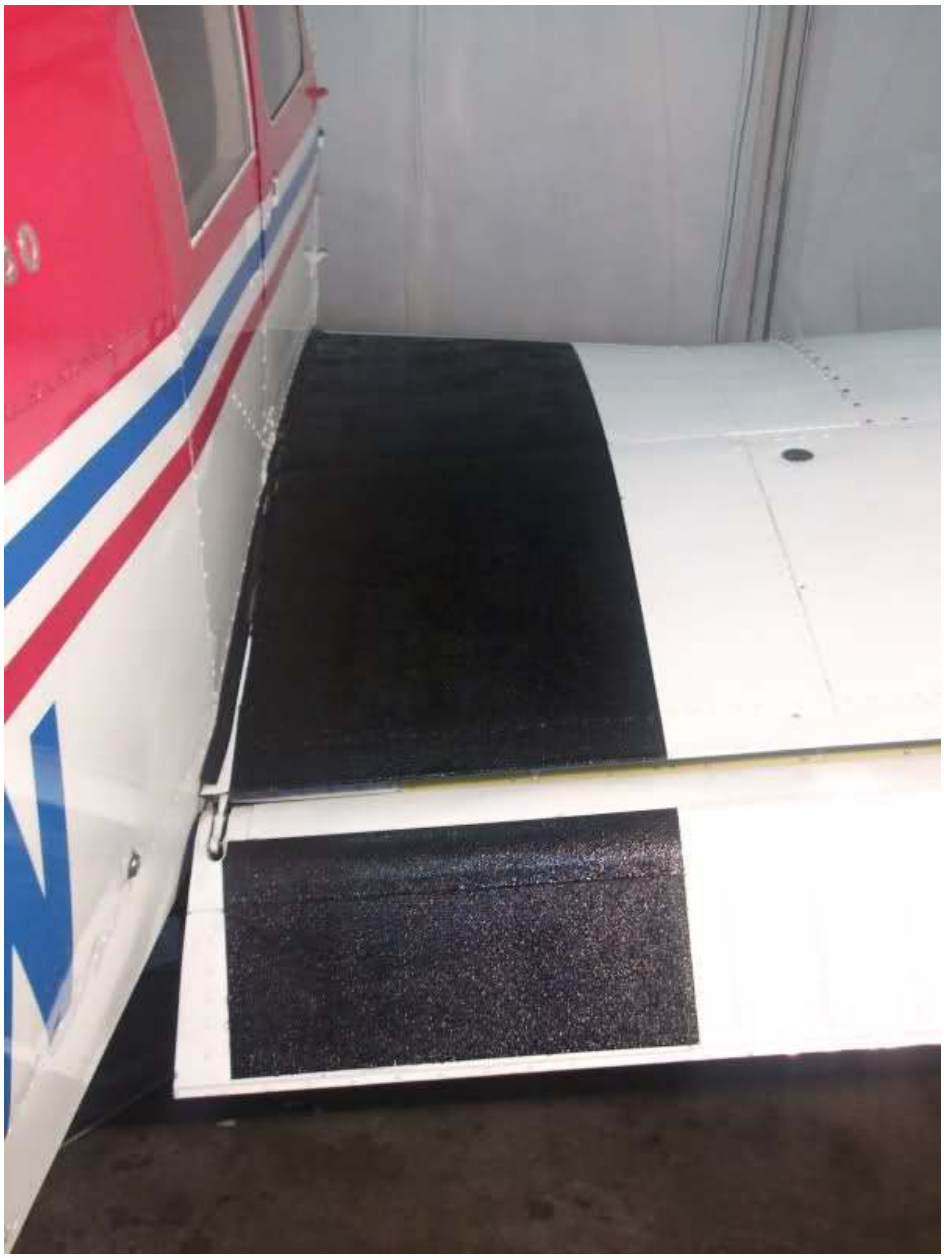
Learning a lesson from the stripping process, I used PLENTY of masking (clearly should have used more with the stripper, darn it). Going with the results of my previous testing, I cleaned the area with alcohol and a lint-free cloth, then applied a coat of Rustoleum Ultra Cover (aka "green aircraft primer"). I may be less-correct for not using the zinc chromate or the zinc phosphate, and I fully-understand the anticorrosion benefits of zinc, but the Rustoleum is so much better for wear and adhesion, and that's my main concern under the wing walk. I did apply alodine first, which makes me feel better about it.

Once the paint was dry, I applied UltraWing Walk with a brush, then went back over it with a roller. I can't say that the roller step was really necessary, but I am very pleased with the results, there are no brush marks. Because I have lived with an ugly, super-thick wing walk, I wanted my new wing walk to be a thin layer. I used only the one coat, which turned out to be plenty. I was able to clean some small seeps where the UltraWing Walk seeped under the masking tape with a rage and alcohol while the UltraWing Walk was still wet. Smiles all around.

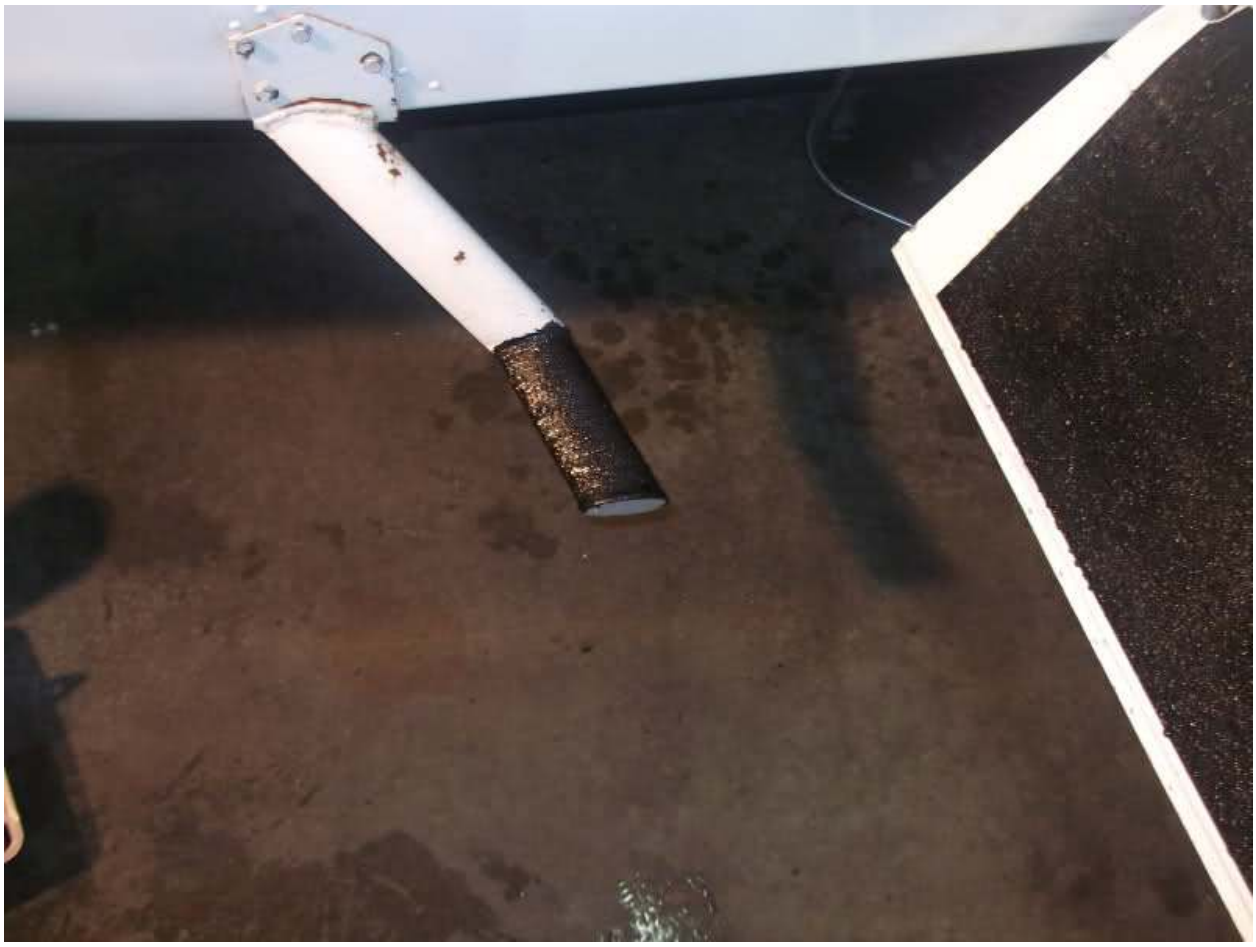
There was a pronounced paint step at the edge of the white paint on the wing where I stripped the old wing walk off to the bare metal, and I was worried that it would show through the UltraWing Walk. Based on what others have said, I gulped, gave myself ¼" overlap over the white paint, and applied the UltraWing Walk right over the step in the paint. I can add my happy report that the UltraWing Walk hid the paint step nicely, cannot see it at all. More smiles all around.







I almost forgot the last "step", that is, the entry step. Thanks again to Dave Wheeler, who saw my mistake in time. By now, smiles have turned to grins all around!



This is a project easily within the reach of any reasonably-handy airplane owner who's ever done any house painting. Stripping was a messy, frustrating, work-intensive, time-consuming process, and I would recommend anyone doing it to give themselves PLENTY of masking and time to do it. The UltraWing Walk was a pleasure to apply, and looks fantastic (I definitely made the right choice with this product). If I were to do it again, I would use black paint under the UltraWing Walk, instead of the green color I used.

Supplies I Needed:

Product.....Quantity.....My Source
Jasco Paint Stripper.....(3) qts.....Ace Hardware paint section
Aluminum Foil.....(50) feet....QFC Grocery Store
Aluminum Tape.....(2) rolls....Ace Hardware paint section
2" Cheap hair brushes.....(8).....Ace Hardware paint section
Plastic Paint Scraper.....(1).....Ace Hardware paint section
Course Scotch Brite.....(1) sheet....Ace Hardware paint section
DuPont AlumiPrep Acid Etch.....(1) bottle*..Kelly-Moore auto paint supply
DuPont Alodine 1201.....(1) bottle*..Kelly-Moore auto paint supply
Denatured alcohol.....(1) can*.....Ace Hardware paint section
Lint-free cloth rags.....(1) package..Ace Hardware paint section
Masking paper.....(75) feet....Ace Hardware paint section
Blue masking tape.....(2) rolls....Ace Hardware paint section
Rustoleum Ultra Cover.....(1) can.....Ace Hardware paint section
Aircraft Door Seals UltraWing Walk...(1) qt can...Aircraft Spruce and Specialty
*The smallest quantity I could buy was 1 quart, but it really only takes a tiny amount.

I am so pleased with the results! For me, this project ended up being well worthwhile, even though I had my doubts at first.