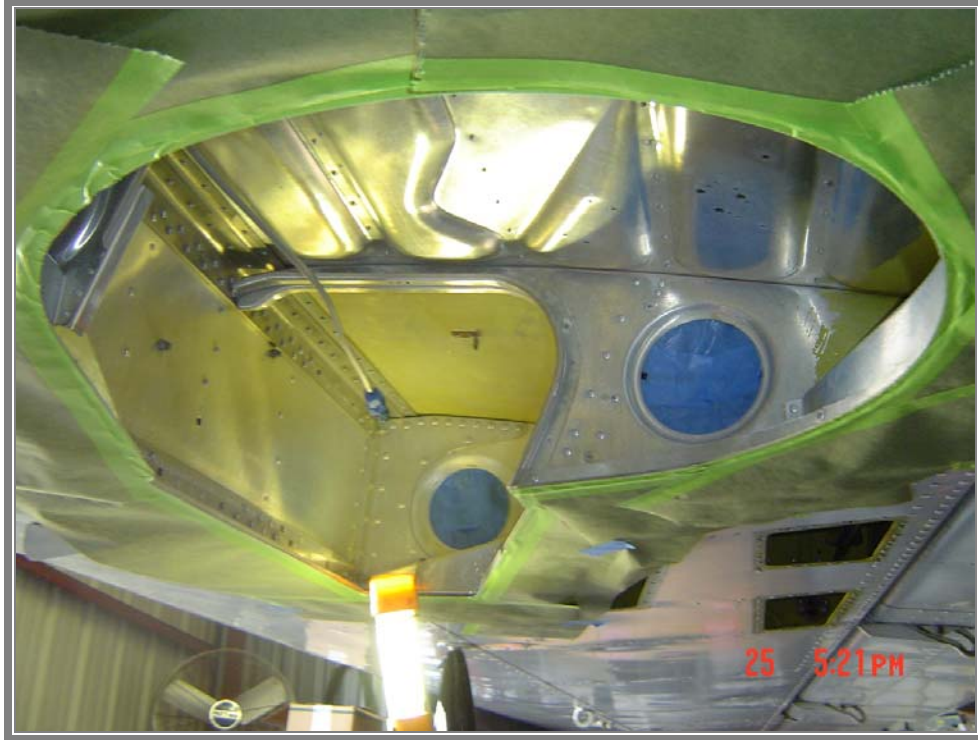


JUST ANOTHER CHEAP SPEED MOD, OR CABIN BREEZE-REDUCTION TOO?

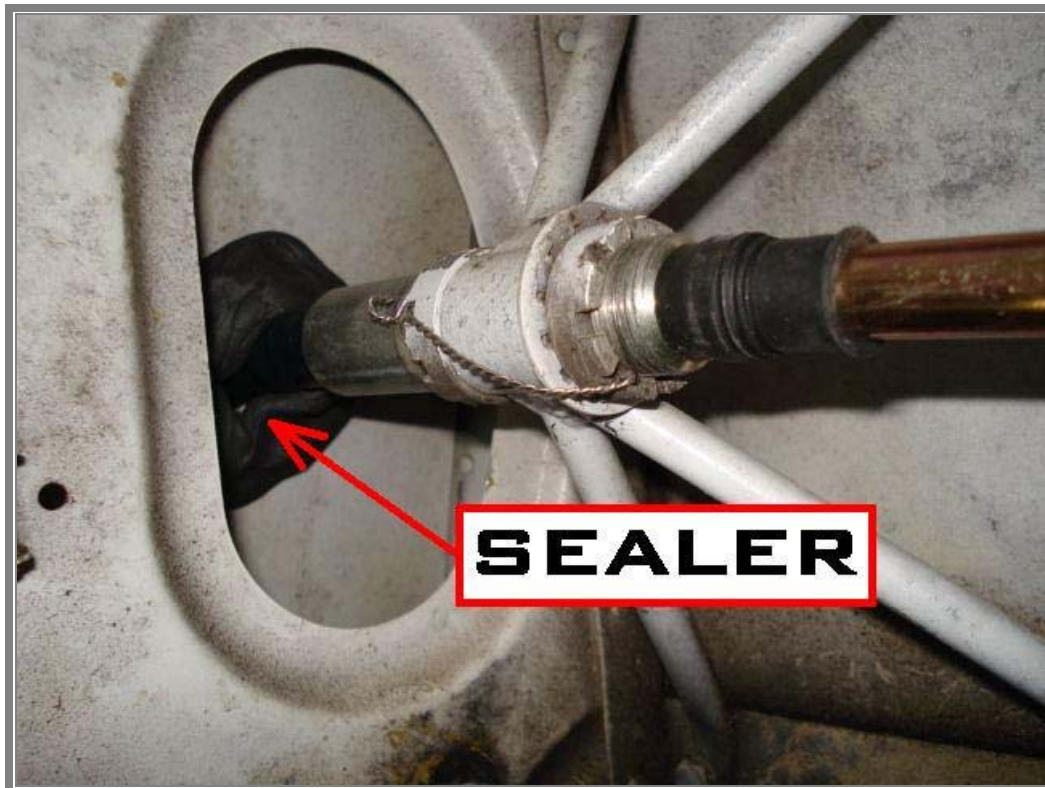
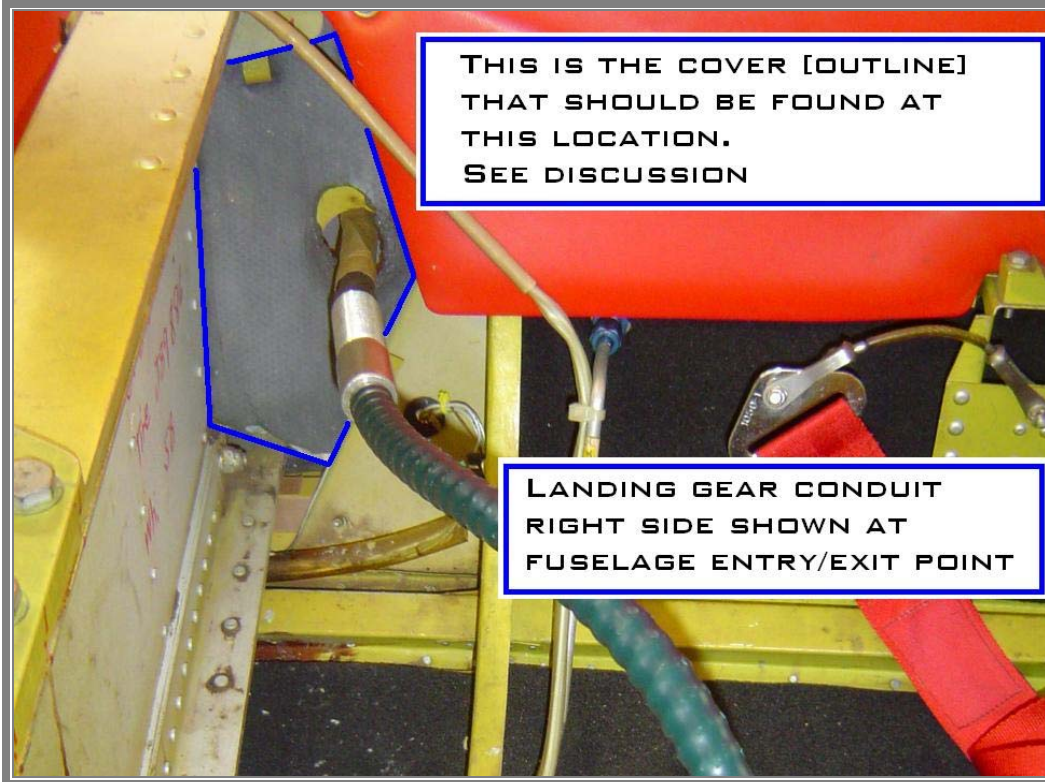


THE OBJECTIVE IS TO MAKE COVERS FOR THE TWO HOLES PICTURED ABOVE [THINK BLUE].
THE PHOTOS ABOVE AND BELOW WERE TAKEN DURING THE WHEEL WELL REFINISH
PROJECT ON MY 400.



ALSO MAKE COVERS FOR THE KIDNEY-SHAPED OPENING IN THE ROOT RIB.
THESE COVERS WILL BENEFIT CABIN-DRAFT REDUCTION.

JUST ANOTHER CHEAP SPEED MOD, OR CABIN BREEZE-REDUCTION TOO?



USE "DUCT SEAL" HERE WHICH WILL ALSO REDUCE CABIN DRAFT SOMEWHAT, AND POSSIBLY KEEP WILDLIFE FROM NESTING INSIDE THE FUSELAGE.

JUST ANOTHER CHEAP SPEED MOD, OR CABIN BREEZE-REDUCTION TOO?

REFERENCE PHOTOS PAGE 1. AIRFLOW CREATES HIGH PRESSURE UNDER THE WING AND CONSEQUENTLY IN THE WHEEL WELLS. THERE ARE 3 OPENINGS LOCATED IN EACH WHEEL WELL TO BE BLOCKED. ONE IS AT THE WING-ROOT RIB, A KIDNEY-SHAPED COVER; THE OTHER 2 ARE ROUND COVERS. ONE IS JUST OUTBOARD THE MLG STRUT; THE OTHER IS BEHIND THE WHEEL-WELL SPLASH SHIELD. IF YOU GIVE SOME THOUGHT TO THIS ISSUE YOU'LL DISCOVER THIS APPROACH IS ALSO A SPEED-MOD. REMEMBER BERNOULLI'S PRINCIPLE? THE AIRFLOW THROUGH THESE OPENINGS ENTERING THROUGH THE WHEEL WELLS TO EXIT POINTS IS A TOTAL WASTE OF ENERGY; EXCEPT POSSIBLY TO VENT ODOR FROM MOUSE DROPPINGS.

THE PRIMARY INTEREST HERE WILL PROBABLY BE CABIN DRAFT-REDUCTION, ALTHOUGH I PREFER THE SPEED-MOD BENEFIT. THE KIDNEY-SHAPED COVER WILL BE THE MOST EFFECTIVE IN THIS CABIN-DRAFT REDUCTION APPROACH. THERE IS ALSO A COVER THAT IS SUPPOSED TO BE IN PLACE WHERE THE MAIN SPAR AND CONDUIT PENETRATE THE FUSELAGE. IF THEY ARE MISSING THERE WILL BE A VERY LARGE DRAFT IN THE CABIN. SEE THE PHOTO, TOP OF PAGE 2.

ANOTHER POINT, ALTHOUGH QUITE SMALL, IS THE SMALL AREA AROUND THE CONDUIT ENTRY/EXIT THRU THE FUSELAGE; PLUG THOSE AREAS WITH SOME SEALANT. I USE "DUCT SEAL", A PRODUCT OF GARDNER BENDER - GOOGLE™ IT - ABOUT \$2 FROM VARIOUS SOURCES; SORRY TO SAY HOME DEPOT NO LONGER CARRIES THIS STUFF. OR POSSIBLY PURCHASE AT AN AIR CONDITIONING/HEATING ESTABLISHMENT. SEE THE PHOTO, BOTTOM OF PAGE 2.

NOW LET'S PROCEED. USE A PIECE OF HEAVY POSTER PAPER AND CUT TO THE APPROXIMATE SIZE, OF THE COVER FOR THE ROOT RIB, PLUS SOME MARGIN. MEASURE THE CONDUIT DIAMETER [7/8"??] AND MARK THE HOLE LOCATION; USE A CIRCLE TEMPLATE TO DRAW THE HOLE. SLIT FROM AN EDGE OF THE PATTERN TO THE HOLE; THEN ACCURATELY CUT THE HOLE.

POSITION THE ROUGH-CUT PATTERN OVER THE CONDUIT AND USING YOUR FINGERS MAKE AN IMPRESSION OF THE EDGE OF THE ROOT-RIB OPENING ONTO THE POSTER PAPER. NOW YOU ALMOST HAVE A PATTERN. USING SCISSORS, CUT ON THE OUTLINE OF THE RIB-OPENING IMPRESSION, THEN LAY THIS PATTERN ONTO ANOTHER PIECE OF POSTER PAPER AND ADD A 3/8" MARGIN; NOW YOU HAVE A NEW PATTERN. TEST-FIT THE PATTERN AND TRIM AS NECESSARY BEFORE MAKING THE FINAL PRODUCT. THE HOLE FOR THE CONDUIT SHOULD LEAVE A BIT OF ROOM TO AVOID CONTACT, OR MAKE THE HOLE LARGER [1-1/4"] LIKE MY PHOTO FOR A GROMMET AN931-14-20. NOTE - THE RIB CUT-OUT COVERS FOR THE LEFT SIDE AND RIGHT SIDE ARE IDENTICAL PIECES, JUST MIRROR IMAGES.

TWO OPTIONS; IF YOU PLAN TO INSTALL THIS COVER WITH AN INSTALLED CONDUIT USE OPTION 1. OPTION 1 - MAKE A 2-PIECE COVER SPLIT DIAMETRICALLY THROUGH THE CONDUIT HOLE; ADD 1/2" OVERLAP AT THE SPLIT. USE POP RIVETS AT THE OVERLAP TO SECURE. OPTION 2 - FOR INSTALLING WITH NEW CONDUITS, MAKE THIS A ONE-PIECE COVER AS SHOWN IN THE PHOTOGRAPH ON THE BOTTOM OF PAGE 1.

USE 2024-T3, 0.032" ALUMINUM FOR ALL THE FABRICATED COVERS. USE A HOLE SAW FOR CUTTING THE HOLE FOR THE CONDUIT OPENING IN THOSE COVERS. INSTALL THE COVERS USING "3M SCOTCH-MOUNT DOUBLE COATED ACRYLIC FOAM TAPE". YOU CAN FIND THIS STUFF ON-LINE, GOOGLE™ "3M SCOTCH-MOUNT", OR TRY AN AUTOMOTIVE STORE [NAPA]. IT COMES IN 1/2" WIDTH WHICH IS TOO WIDE TO APPLY NEATLY; CUT TO 1/4" WIDTH. THIS STUFF HAS AN ACRYLIC ADHESIVE WHICH IS TENACIOUS AND THUSLY WORKS WELL ON CLEAN SURFACES. NIX THE SILICONE-ADHESIVE METHOD HERE.

ANOTHER HINT - ADHERE SOME BAFFLE MATERIAL AT THE OPENINGS WHERE THE AILERON CABLES ENTER/EXIT THE FUSELAGE; LIKewise FLAP CABLES [CONDUITS ON THE 400] AND STEP-LOCK CABLE.

