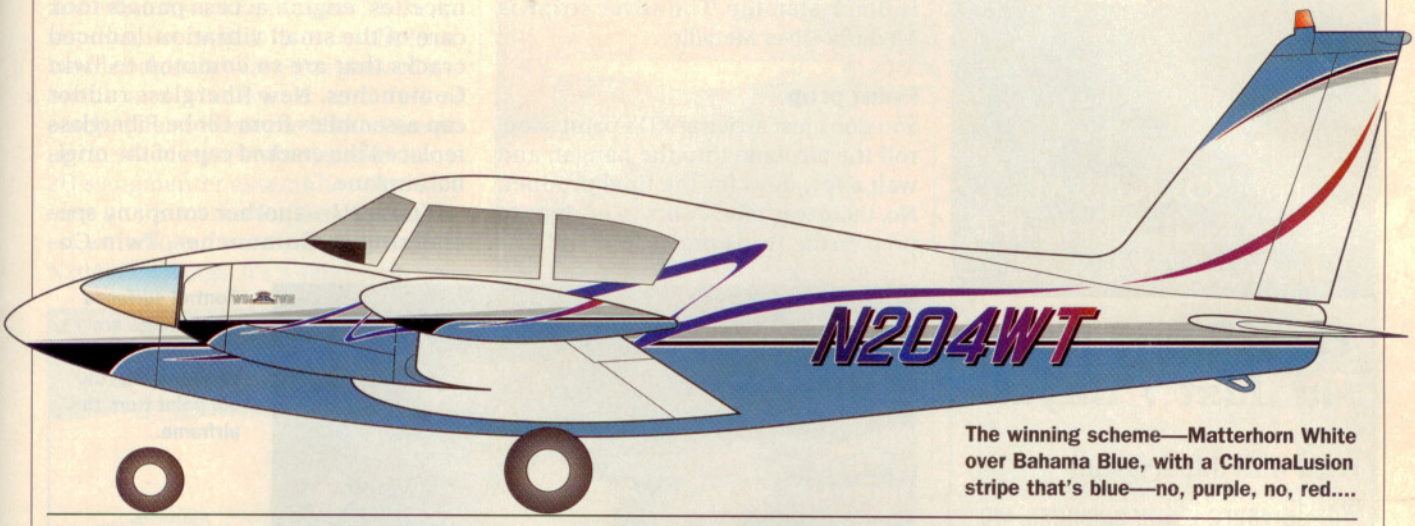


The winning scheme—Matterhorn White over Bahama Blue, with a ChromaLusion stripe that's blue—no, purple, no, red....

Paint perfect

Win-A-Twin Comanche status report

BY THOMAS A. HORNE

By the time you read this, AOPA's Win-A-Twin Sweepstakes Twin Comanche will have its new N number, N204WT—for "2004" and "Win-A-Twin," get it?—and be wearing its new paint job. With a paint scheme designed by Craig Barnett of Scheme Designers, selected by an online vote of members like you, and executed by Ken and Don Reese's crew at KD Aviation, this scheme features DuPont's Imron paint for the main colors and DuPont's ChromaLusion for a single swoopy stripe down the side of the fuselage. More about that in just a bit.

But first things first. The airframe mods and newly rejuvenated powerplants were added to the funky original airplane by LoPresti Speed Merchants, of Vero Beach, Florida, back in February. On February 20 I flew the airplane from Vero to KD Aviation's paint shop at the Stewart International Airport in Newburgh, New York. Along the way, I ran the engines at high-power settings to properly break them in. Superior Air Parts, maker of the Millennium Certified Pre-Owned engines that now grace the Twin Comanche, says to break in the engines at 75-percent power. To make sure that power levels stayed high I cruised mostly at 2,500 to 3,500 feet.

Fuel burns were about 9 gph per side, which turns out to generate exhaust gas temperatures (EGTs) in the 100-degrees-rich-of-peak area—ideal for maximum power settings. How about range, you say? Well, with the J.L. Osborne tip tanks carrying 15 additional gallons of fuel per side, plus the stock tankage of 90 gallons, I had a good five to six hours worth of endurance. True airspeeds worked out to be 170 knots, what with all the LoPresti speed mods.

To give you an idea of what this very special Twin Comanche's combination of speed and economy means, here's an interesting fact: I flew from Vero Beach to the Savannah, Georgia, area in just less than two hours—and on the tip tanks only! (Except for takeoff, which calls for using the main tanks.)

Paint selection

Online voting on the Web site (www.aopa.org/sweeps) was unequivocal: Members loved the white-and-blue design at the top of the list. So we had our marching orders.

The airplane was painted with DuPont's Imron polyurethane paint. The main colors are Matterhorn

CRAIG BARNETT

White and Bahama Blue. The black trim around the nose and engine nacelles, and one of the fuselage stripes, is Black Metallic. The silver stripe is Medium Silver Metallic.

Paint prep

You don't just arrive at KD's paint shop, roll the airplane into the hangar, and wait a few days for the final product. No, there was much work to be done to prepare the Twin Comanche.

First, several small dings—the result of 40 years of wear and tear—had to be filled and contoured. One especially bad dent on the nose cone appeared to have been caused by ice slung from the left propeller. Another fix to the nacelles' engine access panels took care of the small vibration-induced cracks that are so common to Twin Comanches. New fiberglass rudder cap assemblies from Globe Fiberglass replaced the cracked caps of the original airplane.

Knots 2U—another company specializing in Comanche-, Twin Comanche-, and other speed mods—donated much-needed stainless-steel exhaust augmenters. Although they're called augmenters they include heat shields that protect the wings' fuel cells from the heat of each engine's exhaust, and exhaust stacks and pipes. These are important components to say the least, but the originals were—you guessed it—burnt and blackened, and full of patched holes where the heat had eaten up the stainless over the decades. Knots 2U's augmenter assemblies (the only ones on the market for Twin Comanches) were bolted onto the underside of N204WT's wings. It's a sandwich-type

First the ratty-looking airplane was rolled into the paint shop and all its sensitive parts covered up.

arrangement. First the new ceramic shields are fitted to the old, burnt-out augmenter surfaces, then the shiny new augmenters are riveted to hold the whole works firmly in place.

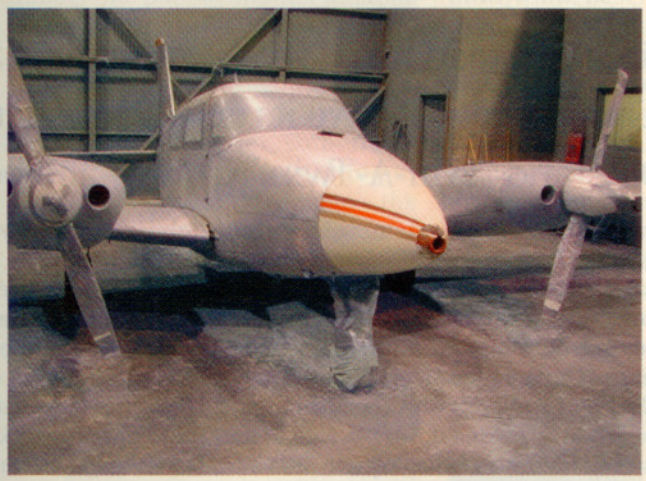
While all this was going on, Knots 2U's rudder and aileron gap seals also were installed. Old antennas were taken off the airframe, and replaced with new ones—for the new avionics.

New windows, complete with frameless storm windows, were also installed. LP Aero Plastics supplied the gray-tinted windows and one-piece windshield.

Blasting to fantastic

Ken Reese explains the painting preparation process as a constant, repetitive

Control surfaces and fairings are removed prior to bead-blasting the old paint from the airframe.



The first pass blew all the old paint off the airplane's aluminum skins. The fiberglass nose cone will get its own paint-removal treatment. Looks better already!

The airplane is continually cleaned throughout the paint process. Here's a view of the blasted skins after a Scotch-Brite cleaning. Though it's taken on a shine of sorts, we're still going to paint it.

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sequence of stripping, cleaning, washing, and cleaning again, all the while adding layer after layer of paint.

First the ratty-looking airplane was rolled into the paint shop and all its sensitive parts covered up. This included windows, engines, pitot tubes, static ports, and any other critical openings.

Then the airplane's old paint was literally blasted away in a two- to four-day process. Millions of tiny plastic beads are sprayed at the old paint under pressures of 20 to 25 psi. Higher pressures aren't good because they can cause too much heating of the Twin Comanche's notoriously thin skins (some thicknesses are as little as 0.016 inch, some of the thinnest skins in general aviation). The danger is that the skins will warp. For the same reason, technicians can't dwell on any one spot for too long.

After the blasting, abrasive Scotch-Brite pads were used over the whole airplane to make sure all the old paint was removed. That took another two days.

Washing came next. A 10-to-1 solution of a phosphoric acid etching medium was used to brighten the now-naked aluminum skin.

Dings and abrasion damage to the fiberglass nose cone are filled and smoothed over.

A "blowout" followed, meaning that high-pressure compressed air was used to blow any dust or contaminants out of the airplane's cracks and seams. This was an eight-hour job.

A wipe-down with another solvent followed, then another wipe-down using lint-free towels and an enamel thinner. Another blowout followed, then a cleaning with tacky cloths. Then it was a conversion coating to slightly etch the surface and promote paint adhesion and corrosion-resistance.

Finally the actual painting began. Two layers of primer were applied—the first one for corrosion resistance, the second a "high-fill" primer to smooth the surface. Scotch-Brite cleaning followed, then another blowout.

The DuPont Imron paint was then mixed and three full topcoats were applied. After that, the airplane's three stripes were masked off—in sequence—then painted. First came

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the black stripe, then the silver one, and then the ChromaLusion stripe.

In all, the process took some four weeks to complete.

About that ChromaLusion

ChromaLusion is a DuPont product with some special properties. Depending on your viewing angle, this metallic paint changes color. We've heard all sorts of colloquial names for ChromaLusion, most of them having to do with Winnebagos, but a fact remains: ChromaLusion gets the looks. That's why we chose it for the swoopy accent stripe. It's attention getting, yet not overpowering. At least, not as a stripe. Paint a whole Winnebago in ChromaLusion and you'd be blinded, but that's another story.

DuPont's Walt Kosachuk explains the paint's mechanics, if you can call it that, by saying that it has an internal reflective prismatic pigment. The pigment is even trademarked, under the MirroMetric name. So it's all these little prisms that make the colors change as you walk along the paint stripe.

Reese, who's had a lot of experience applying ChromaLusion, says the Win-A-Twin's stripe calls for as much as seven coats of paint. First a black base, then two to three coats of ChromaLusion, then three more clear-coat layers.

After the blasting, washing, Scotch-Brite cleaning, "blowing out" with compressed air, and wipe-down with tacky cloths, it's time to apply the first coat of primer.

We're all looking forward to hearing the popular response to the ChromaLusion's looks. Oh, by the way, our/your Twin Comanche's ChromaLusion color is True Blasberry. Viewed from the front, it looks purple. Look at it head-on and it's blue. Keep walking and it changes back to purple. Or maybe it's red. No, blue again. No, purple. Oh well, you'll know it when you see it!

I'll keep you posted on the latest news at the same times and channels: Every month in *AOPA Pilot* and on the Win-A-Twin's location on AOPA's homepage on AOPA Online (www.aopa.org/members/sweeps). Click on the Win-A-Twin logo button on the right side. AOPA

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i Links to additional information about the AOPA Win-A-Twin Sweepstakes may be found on AOPA Online (www.aopa.org/pilot/links.shtml). Keyword search: Win-A-Twin.