



REVITALIZED BY A SYMBIOTIC SYMPHONY
AND A TOUCH OF SYNCHRONICITY

BY SPARKY BARNES



POISED ELEGANTLY IN FRONT of the VAA Red Barn during EAA AirVenture Oshkosh 2021, NC8112's glistening black fuselage, glowing orange wings, and lustrous mahogany interior attracted a continual throng of admirers. Yet the most exceptional aspect of this exquisitely restored Travel Air 6000 couldn't be perceived by the eyes alone; it's the way in which it has resonated in dozens of lives, past and present.



Airplanes aren't merely flying machines that provide the means by which we ascend from the earth; they can also facilitate opportunities to transcend our individualism and thrive

as a larger entity. With minds and hands working rhythmically toward a purpose-driven goal, a cohesive team ultimately relied upon more than 600 fingers to complete the restoration, all of which left their unique fingerprints on this Travel Air. Owned by Scott Glover's Mid America Flight Museum (MAFM) at Mount Pleasant, Texas, NC8112's restoration took place at Mid America North at Grimes Field in Urbana, Ohio, due to Scott's good friend, Jim Bob White.

Orchestrating this symphonic restoration was master airplane restorer Doug Smith of Ohio. One of Doug's inherent gifts is possessing the global vision of all that needs to be accomplished, the timing of the tasks, and the finest details. He delegated tasks to a cadre of volunteers as they came and went, keeping them purposefully engaged in harmonious efforts. That is how this rare Travel Air became the beautiful symmetry of function and form that it is.

HISTORICAL CONTEXT

One of 160 manufactured and eight flyable today (according to volunteer Larry Furrow), this Travel Air 6000's story begins in Wichita, the "Air Capital of the World." The now-legendary Clyde Cessna, Walter Beech, and Lloyd Stearman started the Travel Air Manufacturing Co. in early 1925 in a 30-by-30-foot building. Just prior to the Great Depression, their company was thriving, and NC8112 was completed on March 18, 1929.

Priced around \$12,000, the Travel Air 6000 was designed as an executive transport and airliner, whose reliable and dependable performance would comfortably transport six passengers. To that end, the company touted the monoplane as being "the last word in Performance, Dependability and Comfort," with a "spacious cabin permitting passengers to exchange seats at will with the relief pilot while in flight."

Purchased new by Pittsburgh Airways, NC8112 was based at Bettis Field and flew scheduled passenger service connecting Pittsburgh, Philadelphia, and New York City. It was later owned by Atlantic Airways and then in 1934 by Queen City Flying Service at Lunken Field near Cincinnati, Ohio, where it flew passenger and cargo charters.

"People look at the Travel Air and see a beautiful airplane, but it's more than that. You've got to put it back in the context of the times. It wasn't made to be beautiful; it was made for a purpose, a function. It was an airliner, and people would pay money to go fly from Pittsburgh to New York on this airplane — it was a big deal, and they were wearing coats and ties and hats. It was an airliner back when there were very few airplanes and airports. But people wanted to go places, so there were lots of challenges to air travel, including weather," Scott said. "The Travel Air 6000's purpose was to help lead the way for the birth of a brand new industry in the 1920s — and we're trying to keep the history of that functionality alive."

NC8112 just happened to be instrumental in the birth of another new industry as well: dropping firefighters by parachutes to fight forest fires, known as smokejumping.





Doug Smith orchestrated the harmonious restoration efforts of dozens of volunteers.

SMOKEJUMPERS

The Johnson Flying Service of Missoula, Montana, acquired NC8112 in 1939; it was its sixth Travel Air 6000. Powered by a 300-hp Wright engine, it could haul 1,500 pounds of freight while operating on short, unimproved fields, and “was just what the Forest Service needed to compete with pack mules in supplying the many remote areas in the mountains. The Johnson brothers developed air freight and the air drop procedures used in delivery. ... Bob Johnson, assisted by [his brother] Dick, as well as Frank Derry — an old head at exhibition parachute jumping — then perfected the smoke jumper technique, which revolutionized the whole firefighting procedure.” (*Montana and the Sky: Beginning of Aviation in the Land of the Shining Mountains*, by Frank W. Wiley.)

NC8112 was flown by Dick Johnson on the historic first jump. “In 1940, the Moose Creek Ranger Station airfield was chosen to serve as the base for the new smokejumper program. ... On July 12, 1940 a fire call came through, requesting the new jumpers to make their first jump to a fire located on the Moose Creek District of the Nez Perce Forest. Travel Air NC8112 was dispatched to pick up the jumpers. Rufus Robinson of Kooskia, ID and Earl Cooley of Hamilton, MT made the first fire jump in the history of the Forest Service on the Rock Pillar Fire in the Marten Creek drainage.” (United States Department of Agriculture brochure, *Smokejumpers — Firefighting’s Elite*.)

By 1965, Johnson Flying Service had sold NC8112 to Dolph Overton for his Wings & Wheels collection in Santee, South Carolina. In 1979, NC8112 was re-covered with cotton and painted in Delta Air Service livery as a representative example of one of Delta’s three Travel Airs. As such, it participated in Delta’s 50th anniversary of passenger service. Then in late 1981, it was sold to Richard Holbert, owner of Central Flying Service in Little Rock, Arkansas, but was rarely flown. Next in the chain of owners was Scott Glover.

Smokejumpers boarding NC8112 at Lolo National Forest.









Balsa formers on the longerons.

ACQUIRED BY MAFM

Scott has a personal history with this Travel Air that dates back to the late 1990s. “My parents had a feed mill when I was growing up, and I ended up buying a feed mill in Little Rock in 1997. We had a Cessna 210, and I rented a hangar space from Central Flying Service in a community-type hangar — this Travel Air was in the back of that hangar and hadn’t flown in many years. I didn’t know anything about the Travel Air 6000 but I just loved the airplane, but the owner wouldn’t sell it,” Scott said. “Fast-forward to the mid-2000s, when I was a corporate pilot, occasionally flying back in to Central Flying. I would take my captain back to see the old Travel Air there, and I was finally able to acquire the airplane in 2008. Radial Engines of Guthrie, Oklahoma, overhauled the Wright R-975, and then we had a new exhaust made. We flew it for about 10 years, giving rides, going to a few fly-ins, and even a local Antique Airplane Association event, where it won an award for the best vintage airline aircraft.”

RESTORATION BEGINS

On March 18, 2018, precisely 89 years after it rolled out of the Travel Air factory, NC8112’s restoration began — after one last day of ride hopping, of course. New and old technologies were skillfully blended to restore the Travel Air to its Antique Grand Champion Gold Lindy award-winning status over a period of three-and-a-half years, during which Doug Smith and 60 volunteers, ranging in age from 13 to 85, logged approximately 30,000 hours.

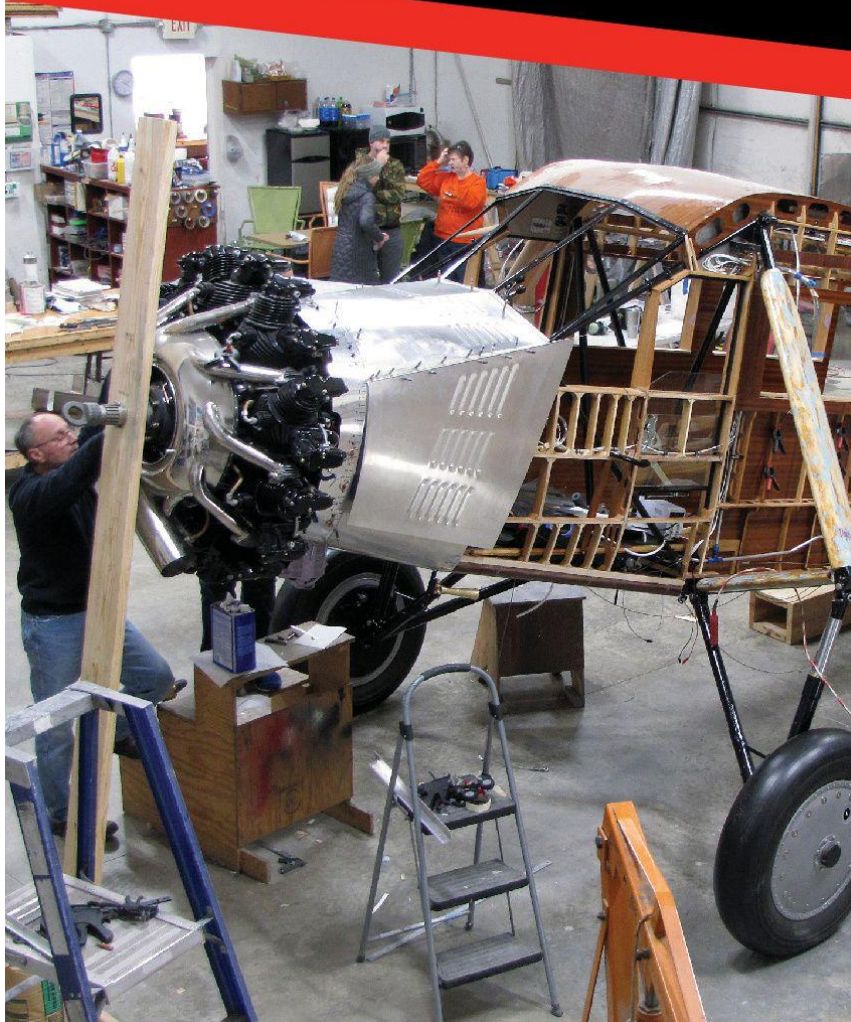
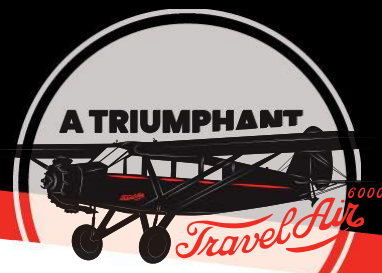
There’s a time capsule, of sorts, which is now hidden by the fuselage fabric, but when someone restores this airplane again, they’ll discover a panel that has the signatures of nearly every volunteer who touched this project.

One of the volunteers was Jim Buxton, a certificated A&P mechanic and mechanical engineer who had built a lot of models but had never worked on an airplane. “He’s been coming to Oshkosh with his family for over 40 years,” Doug said, “and it was really providence that brought us together. The airplane would not look like it does without Jim Buxton and his engineering skills. He even hand carved the curved ‘V’ balsa fairing where the landing gear legs join the axle. His 15-year-old daughter, Jocelyn, along with sister and brother-in-law Jamie and Tim Moeller, and brother Jay Buxton with wife Roxanne, came with him and put a lot of hours into the restoration, too.”

The synchronicity that occurred during the project was remarkable. “Volunteer Leroy Lynn said it best: ‘Throughout the entire restoration, whenever we got to a point where we were kind of stuck, somebody would walk through the door that had the answer.’ That happened time and time again, just out of the blue!” Doug said.

Jim Buxton masking and prepping for the Travel Air logo to be painted.





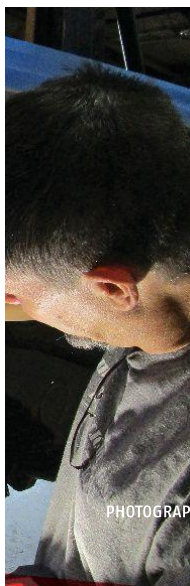
The Travel Air is taking shape.

CNC AND 3D PRINTING

The throttle quadrant was in poor condition, but fortunately, Jim digitized it so a CNC maple mold could be made. Doug formed each half of the aluminum quadrant in the female molds, and the halves were then welded together.

Volunteer John Nance took on the task of making new wooden control wheels, and as a master furniture craftsman, he also taught woodworking to young volunteers. John made the maple wheels from scratch, routing out teeth in the wood and overlapping them in the same manner the originals were made. The finishing touches were sanding and 17 coats of shellac.

As with other early airplanes, the landing gear and wing strut fairings are made of balsa wood and wrapped with fabric. "One of our volunteers, Dan Kafka, who is a captain for Jet Blue, had a 3D printer in his basement, and he 3D-printed sanding blocks for the different airfoils," Doug said. "So the fairings are made in two halves, and the volunteers were able to sand the balsa into the correct airfoil shapes after the balsa was spliced together around the steel tubing."



PHOTOGRAPHY COURTESY OF MID AMERICA FLIGHT MUSEUM

FUSELAGE STRUCTURE

Hank Galpin of Kalispell, Montana, kindly provided the team with information he accumulated while restoring his own Travel Air (NC9038), including drawings for the steel components. But there were no drawings for the wood stringers and formers, and the old wood was only partially usable for patterns.

Fortunately, Doug had the proverbial ace up his sleeve — Larry found a March 1929 Travel Air factory photograph of a fuselage on its gear, with all the wood structure visible. They could see where all the pieces went but couldn't quite determine the precise shapes. "After making and installing the pieces, we used strings and lasers and even masking tape to simulate the fabric covering, but it wasn't until we pulled fabric over it in February 2021 that we knew we had it just right," Doug said. "What a feeling that was!"

Volunteer Price Smith helped make the balsa formers on the four longerons, which consisted of a long, rounded block of balsa with spruce on the ends as attachment points. The 16-foot-long bottom stringer was scarfed together from Sitka spruce — that was the easy part.

"Then we had to put the curve in it, so we built a jig with PVC tubing and slid the stringer inside it," Doug said. "I filled the PVC with steam, using my wife's pressure canners — we put hoses on the little stem that comes out the top — and after about an hour of steaming the wood, we pulled it out and let it sit on the table for a day. That created a smooth, constant curve for that stringer."

Cowling sheet metal work is underway.



www.eaavintage.org 35

SPECS

NC8112, Serial No. 884

1929 Travel Air 6000

ATC No. 130

Not eligible to be flown by a sport pilot.

WINGSPAN:	48 feet, 7 inches
WING CHORD:	78 inches
TREAD:	9 feet
LENGTH:	30 feet, 10 inches
HEIGHT:	9 feet, 3 inches
EMPTY WEIGHT:	2,788 pounds
GROSS WEIGHT:	4,420 pounds
USEFUL LOAD:	1,632 pounds
SEATS:	1 pilot, 6 passengers
ENGINE:	440-hp Wright Whirlwind R-975
FUEL:	80 gallons
OIL:	7 gallons
MAX SPEED:	130 mph
CRUISING SPEED:	90 mph
LANDING SPEED:	60 mph
STALLING SPEED:	60-70 mph
RATE OF CLIMB:	800 fpm
SERVICE CEILING:	16,000 feet
CRUISING RANGE:	400 miles



Close up view of the tail wheel assembly.

WING STRUTS

The wing struts were in sad shape due to water seeping into balsa wood at the jury struts, so the damaged areas were cut out, and new tubing was spliced per FAA Advisory Circular 43.13-1B. The front wing struts weren't adjustable, however, so their length had to be precise to retain the correct dihedral. The team built jig tables just to hold the struts prior to cutting out and replacing the middle sections.

LANDING GEAR

Doug took the landing gear parts and wheel spokes to Lori Galovics at her shop, G & M Precision Machining in Tipp City, Ohio. Lori machined brass gland nuts for the oleo struts (as well as many other parts), and sourced new spokes from Buchanan Spokes in California. It made the slotted nuts for the spokes and even replicated the stamped "S" (which designated Indian Motorcycles) on the heads of the spokes, per the originals.

"That's one of those things when you're restoring an airplane and you're trying to get the details just right," Doug said, "and you can pull off something like that, it just makes it!"

Jim digitized the outer wheel cover, and an oak buck was made and taken to a shop in Columbus, Ohio, that spun new covers. The Travel Air had suffered half a dozen accidents in previous years, which affected the geometry of the landing gear, making both wheels pull to the left. The team straightened the gear and was delighted later to hear that the airplane tracked perfectly down the runway.

"Volunteers John Lynn and Rich Snell spent countless hours overhauling the wheels and brakes," Doug said. "Snell has now moved on and is working in the restoration department at the National Air and Space Museum in Washington, D.C."

SHEET METAL

All of the Travel Air's sheet metal is new; shaping the tail cone's tapered radius was a bit of a challenge. The team glued a hefty chunk of oak together, and Al Schmidt, an experienced woodworker, turned an oak taper pin on his lathe. That was used as a buck to form all four radii on the tail fairing.

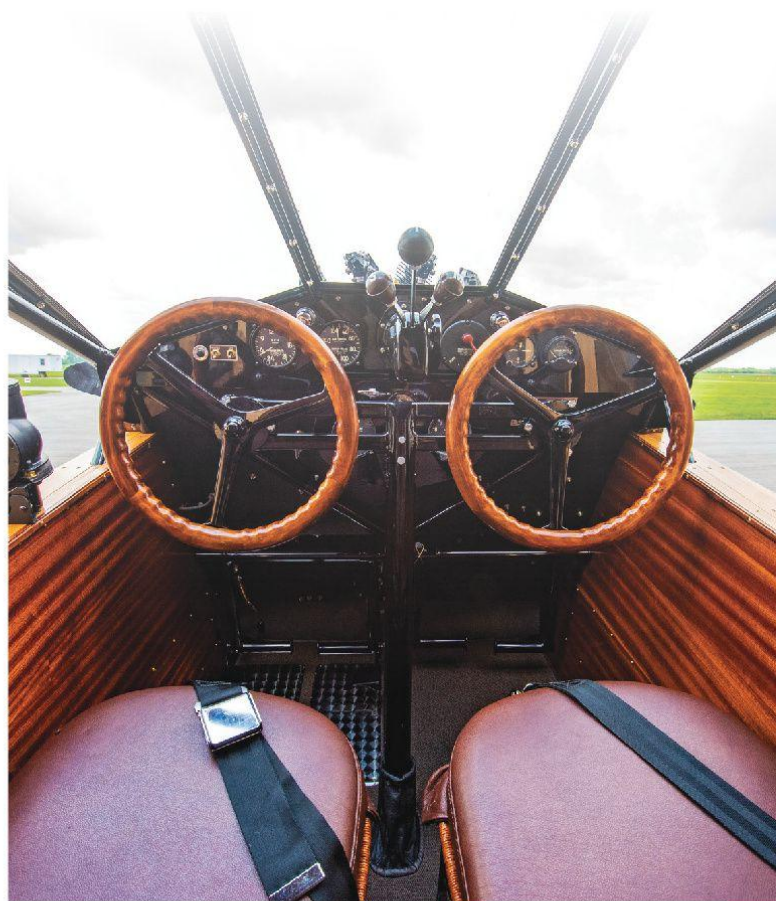
The instrument panel completes the top of the firewall, and that presented another challenge. The firewall (originally aluminum) is composed of separate pieces sans fasteners — the pieces are folded over and crimped onto themselves. "I recruited the guys that are helping restore Champaign Aviation Museum's B-17 here at Grimes to make the firewall from galvanized steel, and they did a great job."

DUELING PAINT GUNS

When it was time to paint, an inflatable paint booth was set up inside the restoration hangar. The booth had a compartment that served as a mixing room, but it was opened so the entire 29-foot length could be used. Local high school students welded rotisseries to hold and rotate the fuselage and wings, which facilitated the entire painting process.

Doug and master craftsman Bill Knisely (who is now on staff) became "dueling paint gun" partners. "We sprayed with high-volume low-pressure systems, and we each had guns going at the same time. We used Air-Tech Coatings, which cure slowly, so everything stayed wet," Doug said. "We'd start at opposite ends of the wing and meet in the middle, rotate, spray the leading edge and trailing edge, and rotate. When we'd get close to meeting in the middle, either he or I would stand back and let the other one finish that middle section. There's very little difference in who painted what."

They took turns painting the fuselage instead of painting simultaneously. One held a light in the booth to make it easier to see the fresh paint, while the other painted. "Bill painted the top and the bottom, and I painted the sides. It's exhausting, both physically and mentally, to paint something that big," Doug said. "Our volunteers Bruce Larson and Mark Curtner were in the booth too. One's sole purpose was to crank the rotisserie when we were ready, and the other supplied us with paint when we needed a refill. We had another set of volunteers, led by Christine Detwiler and her daughters, outside the booth who were continually mixing and agitating the paint. It was a huge team effort."



The throttle quadrant and control wheels are newly made by hand.

INTERIOR

The interior panels are made of 1/16-inch mahogany veneer plywood, which received several brush coats of varnish, with each coat being sanded. The final coat was smoothed down by just a couple of light passes with 4-ought steel wool.

Paul Workman of Bedrock Aero in Zanesville, Ohio, did a beautiful installation of the carpet and the wool headliner, and he used his exceptional sewing skills to create the leather seat upholstery. The original seat frames were entrusted to Helen Cribbs of Delaware, Ohio, for wickering. But after a bit of research and taking one of the old seats apart, Helen realized that what was thought to be wicker was actually fibre rush, which is paper twisted into a cord. "So the laterals are simply that, and the verticals have a wire core in them for support," Doug said. "You can still buy that today; it comes on a spool. Helen did a wonderful job on the seats."





This image reveals the vitality of the restoration volunteers as they swarm the Travel Air with towels to make it spotless.

**“I’M TELLING YOU, THE PEOPLE
BEHIND THIS TRAVEL AIR
RESTORATION ARE WAY
MORE IMPRESSIVE TO ME
THAN THE AIRPLANE!”
— SCOTT GLOVER**

THE HOMESTRETCH

With the goal of flying NC8112 to AirVenture, Doug found himself deeply discouraged two weeks prior to the convention. There was a seemingly insurmountable list of things that still needed to be done. But help was on the way, in the form of MAFM mechanic-pilots Kelly Mahon and Denzil Charles, who were flying up from Texas to get the Stinson Model A Tri-Motor (NC15165) ready for Oshkosh.

Almost miraculously, everything was finished one week later, thanks to the symbiotic relationship between Mid America’s southern and northern locations. Kelly made the first flight on July 15, and there were no squawks — and there was still a week until Oshkosh.

“It was just surreal, how insurmountable it felt, and then it became complete,” Doug said. “Kelly and Denzil were a little bit apprehensive to help us, because we have all these volunteers who have such ownership in the Travel Air. But the volunteers were happy that Kelly and Denzil were there, and welcomed them as they all teamed up to finish the airplane. When we were about done, I looked at Kelly and said, ‘Two locations, one team!’ That’s what we are.”



VOLUNTEER VITALITY

Doug conducted the harmonious complexity of the restoration and its growing team of volunteers with gratifying results — much like a maestro leading a symphony in a great performance. He kept the volunteers, of all ages and walks of life, engaged in the project by instilling purpose-driven focus, while making sure they realized their work was vital to the overall success.

"Doug is an inspirational teacher. As one example, he showed high school kids how to burnish engine turning, gave them a few practice pieces of aluminum, and then he'd say, 'Okay, here are the pieces we want to do for this airplane.' He'd just walk away and let them work on their own, and the engine turning you see on the airplane was all done by high school kids," Scott said. "Doug has led this team and helped it evolve into something absolutely amazing. I think we all have grown a lot in learning each other and what each other's skill sets are. We also have each other's back, and I think it's really become an amazing family. I don't know of another airplane restoration that has a story like this Travel Air 6000. Here we land at Oshkosh, and it's like a NASCAR team gets around that airplane to clean it. You don't even have to tell them what to do. They just know because they have already touched every piece of that airplane. I'm telling you, the people behind this Travel Air restoration are way more impressive to me than the airplane!"

To learn even more about NC8112's history and restoration team, visit TravelAir6000.com. Learn more about Mid America Flight Museum at MidAmericaFlightMuseum.com.

WE WERE THERE



"Man! That was *close!*" Yes, it was, lieutenant, but we gave your ground crew just what they needed to put you back in the air the next day. Remember? We sent our best — good tough stuff that's easy to use, just like today's Randolph stuff. You'll see.

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Helluva Landing, Al



July 13, 1929. Al Borkowski pulls off a trick landing within the confines of the Vico station in Gumption, Iowa. He uses his own radical forward slip he calls The Piledriver.

Unfortunately, he came to rest on a small car that had just been topped up. Fortunately, the owner was in the office paying for his gas and buying some Mrs. Wagner's Pies. Vico's attorney portrayed his damage as "repairable."

Men from the Aeronautics Branch can be seen racing from their car to remove the prop so Al can't try to fly it out.

Al is NOT our kind of guy.

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