

# A Tour of the Historic Aircraft Restoration Museum

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## Part 1

Photos: Don Parsons/HARM

*Editor's Note: There's a marvelous collection of some 35+ golden era airplanes just West of St. Louis, MO near the Missouri River at Creve Coeur Airport. It's called the Historic Aircraft Restoration Museum (or HARM, for short). If you can get to St. Louis I highly recommend you set aside some time for a visit to Creve Coeur Airport to see these great antiques. There are guided tours from 10 AM to 4 PM Saturdays and Sundays or by appointment during the week. Call (314) 434-3368. If you're fortunate enough to get museum co-founder/director Al Stix for your guide, as we did recently, you're in for a real treat. Al can tell you the history of these great classics, how they flew (he's flown most of them), their attributes and idiosyncrasies, with some great stories thrown in as well. One unique thing about these airplanes is that they're not just a bunch of static museum artifacts; most of them are flyable, and on a nice weekend especially, there's a good chance you'll see some of them fly. With all the museum activity at Creve Coeur, the airport has become home for a lot of privately-owned vintage airplanes, and you might see some of these on a nice day as well. There are continual aircraft restoration projects underway at HARM. They are well along with a beautiful Liberty-powered deHavilland DH-4M which they hope to fly this year. A recently acquired Gee Bee R-1/R-2 reproduction will be completed and flying also. Museum memberships (with nice benefits, like a Stearman or T-6 ride), gift*

*certificates, and T-shirts with logos of your favorite airplane are available to help support this worthy activity. You can find more information on the museum's website at [historicaircraftrestorationmuseum.org](http://historicaircraftrestorationmuseum.org). For those of you who can't visit the museum in person, we've arranged a tour through this article in Skyways. It's based on a booklet called THE TOUR prepared by Al Stix and it's also available at the museum. Our thanks goes to Al for the use of his tour information and photos in Skyways.*

The object of the Historic Aircraft Restoration Museum is to acquire, conserve, display, and otherwise make available for viewing, aircraft dating from the WWI era to the end of the "fabric" age—when planes were still mostly fabric covered. If we can, after giving a tour through the Museum, impart some of the excitement, the interest, and knowledge that these aircraft hold for us, our job has been successful. But the real excitement comes from the fact that these aircraft are airworthy—fully capable of flight—not just a bunch of pretty faces.

Come with us now as we begin our tour:

The most prolific of the light plane manufacturers from the early Twenties to the middle Thirties was WACO, now referred to as Waco. Pronounced with a short "a" unlike the Texas town, the acronym stood for Weaver Aircraft Company. (Perhaps it should have been

The earliest Waco in the museum, a 1928 Waco 10 (GXE)



called “WECO”.) Starting with a converted Curtiss Jenny, this company built some of the finest open and closed cockpit biplanes of the era. In the Museum, we have several Waco airplanes.

The earliest Waco in the collection is a 1928 Waco 10 (or GXE) as it came to be called. Only a few years removed from the Curtiss trainers which predated it, this early model could carry three people at a comfortable 80 mph. As long as the OX-5 valve train continued its tap dance (thankfully covered by a cowling to reinforce the “out of sight—out of mind” School of Denial), this sturdy biplane brought enough of a refinement over the surplus Curtiss and Standard aircraft that were so inexpensively available to insure their sale. Its metal tubing fuselage provided a larger measure of safety for its occupants than those aircraft with only wooden construction, during the inevitable unexpected landings and ground handling misadventures.

Although the OX-5 engine was inexpensive, by the late 20s enough flying was being done so that people

began to expect a greater level of reliability in their power plants. Companies like Continental, Wright, Warner and Jacobs each petitioned Waco to use their engines on the new aircraft which were being designed by the Ohio firm. The 1928 GXE example shown here has been upgraded with wheel brakes and a tail wheel. Early models were fitted with a tailskid and no brakes.

Waco’s next efforts were, for the most part, evolutionary rather than revolutionary. Low engine horsepower had called for high lift wing profiles—more available power could mean a wing profile that would translate that power into speed. The “straight wing” models, ASO through DSO—(depending on engine manufacturer), were really just a slightly more sophisticated GXE. The new engines did much to improve reliability, rate of climb, and lifting ability; the increase in speed had to wait for the next series. The beautiful example of an ASO shown here has been fitted with a 220 Continental engine in place of its original J6-5 unit.



Waco ASO

Waco Taperwing



Waco CTO Taperwing  
*Question Mark*



Waco JYM

And then along came the Taperwings. Derived from the GXE, these amazing aircraft were fitted with a finely tapered wing of completely different airfoil section than that of the straight wing models. Combined with the increased power of the Wright engines, these aircraft were capable of speeds exceeding 125 mph; and control responses much more attuned to the sportsman pilot than the “Sunday Driver”. Our yellow beauty Taperwing with its Dove Grey leather interior is truly a work of art. But using sheer speed and power instead of finesse, the 500 hp, red record-setting *Question Mark* (?) will certainly get your juices flowing! Having once held all the records for time to altitude and back again, this speedster can still hold its own among piston powered aircraft.

But not all Taperwings were created equal. The JYM, although having the outer wing panels of the CTO, has a

longer and slightly wider fuselage than that series of Wacos. It is actually the brother of the JWM featured later in this article. Faithfully reproduced in the colors of its first owner, Northwest Airlines, this 440 hp speedster can be rightfully called the King of all Wacos. Another gorgeous creation to come out of the Old Style Aircraft Company’s shop (which also created a CTO and ASO), this aircraft is often demonstrated by Old Style’s Terry Chastain. He not only did the restoration work, but also puts this amazing machine through its paces on a sunny weekend day. Designed to carry both freight and passengers, it is displayed with the front hatch in place and the front windshield removed and stored in the rear baggage compartment. The 14 inch increase in length over the “standard” taperwing is even more apparent in this configuration.