



# Piper L-4H Grasshopper

## 44-79780 Restoration, Winter Update



AIRCORPS AVIATION

by Chuck Cravens

Work on the fuselage, empennage, installation of control cables, and windows were the focus of recent restoration efforts on the L-4H.

**ENEMY TANKS AHEAD!**

**EYES UPSTAIRS!**

On many fighting fronts of the world, our tank destroyers often count on the Piper L-4 "Grasshopper" to help spot enemy tanks. Serving as the "Eyes Upstairs," the Piper L-4 flashes instructions by radio to the tank destroyers, directing their courses and fire.

The plane's ability to fly low, land quickly almost anywhere and hide easily enables it to

play an important part also in the Artillery, Cavalry and Infantry. It acts as a scout, directs troop movements, transports officer personnel and delivers messages.

The advantages of the Piper L-4 in wartime will prove invaluable also in peacetime. Then, in your smart, new Piper Cub you'll hop around the country on vacation and business trips with the greatest of ease, pleasure, safety and economy.

**PIPER Cub**  
Points the Way to Wings for All Americans

FREE BOOKLET ON HOW TO FLY. Send today for your copy  
Piper Aircraft Corporation, Dept. PA103, Lock Haven, Penns.

WWII Piper L-4 advertisement



## Parts Returned from the Paint Shop

Once parts are inspected or restored and are fit for use, those that require painting are removed and sent to the paint shop.

Landing gear struts, fuel tank, and elevator control cable cover are among the parts that have returned from painting.



The larger freshly painted parts shown include the brake cylinders (lower left center), brake pedals above them, the vertical stabilizer fairing on the near right center, and the horizontal stabilizer's center tube on the far right.

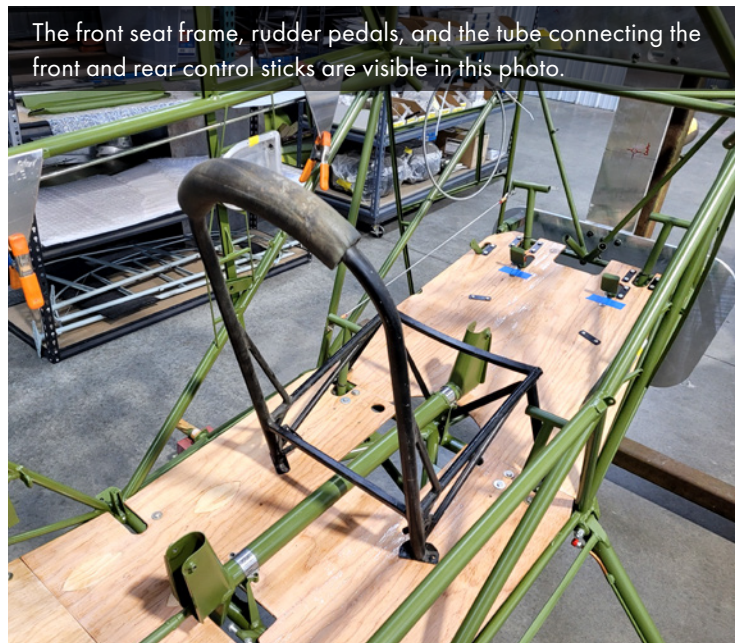


## Fuselage

The “alighting gear” or main landing gear has been fitted to the fuselage along with the wooden floor, front seat, fire extinguisher, and fuel tank.



The landing gear components have been test-fitted before painting.



The front seat frame, rudder pedals, and the tube connecting the front and rear control sticks are visible in this photo.



The shelf behind the rear seat is called the observer's desk.



The wood floor, observer's desk, and map case are visible in this photo.



The bare instrument panel has been clamped in place.



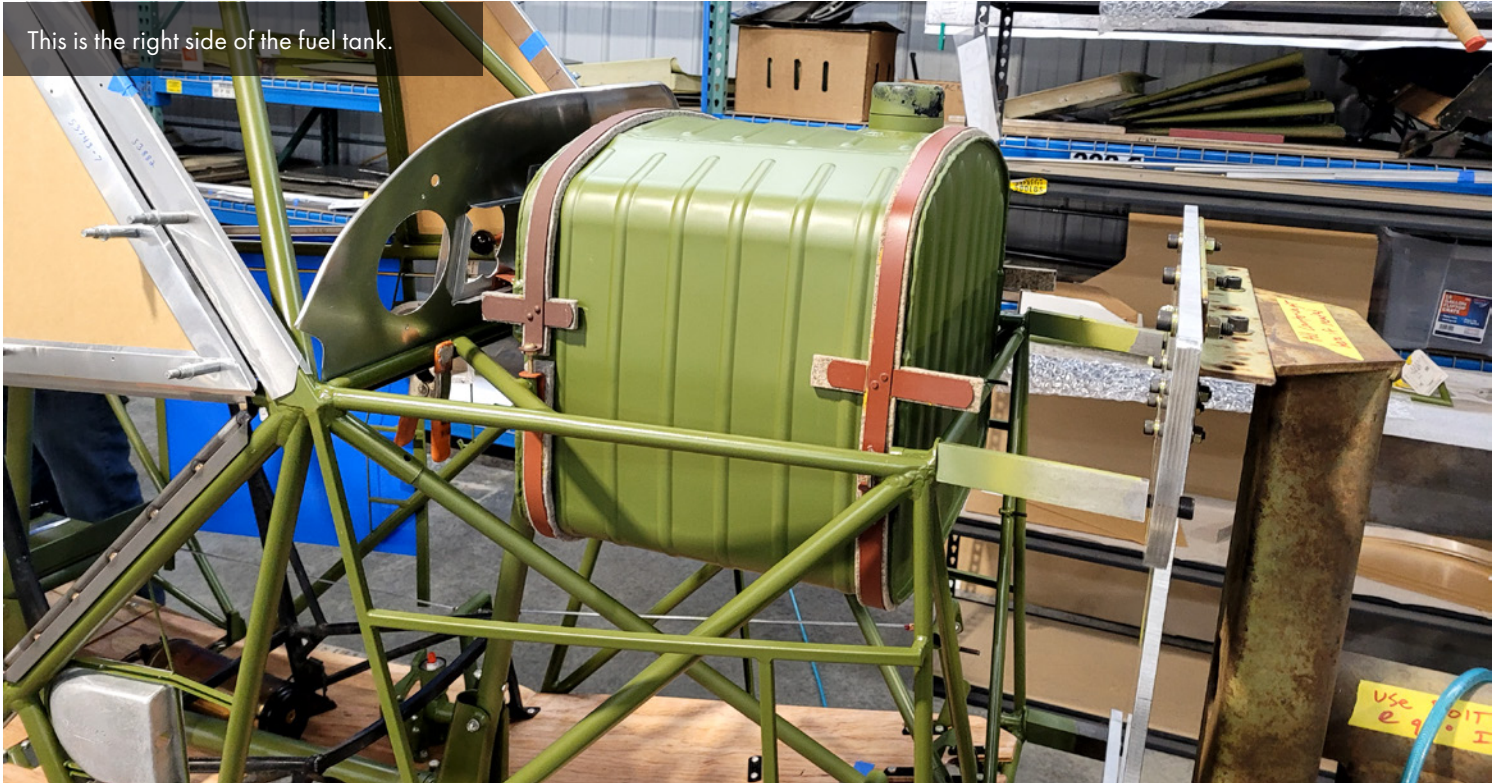
The General Fire Guard Quick Aid Model 85 extinguisher has been mounted.



The twelve-gallon fuel tank has been restored, painted, and mounted.



This is the right side of the fuel tank.



The cable guard for the elevator cables can be seen behind the rear seat base.





The greenhouse's upper clear acrylic window has been fitted.



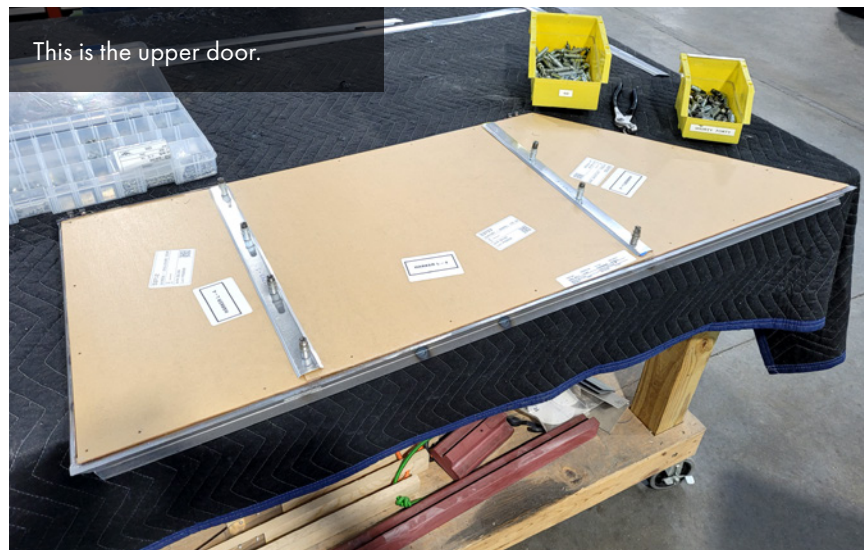
Top view of the greenhouse "glazing".



The extensive side windows have been cut and fitted.



The left-side windows are also in place.



This is the upper door.





## Empennage

The bracing wires and the fairing for the vertical fin/fuselage intersection have been installed.



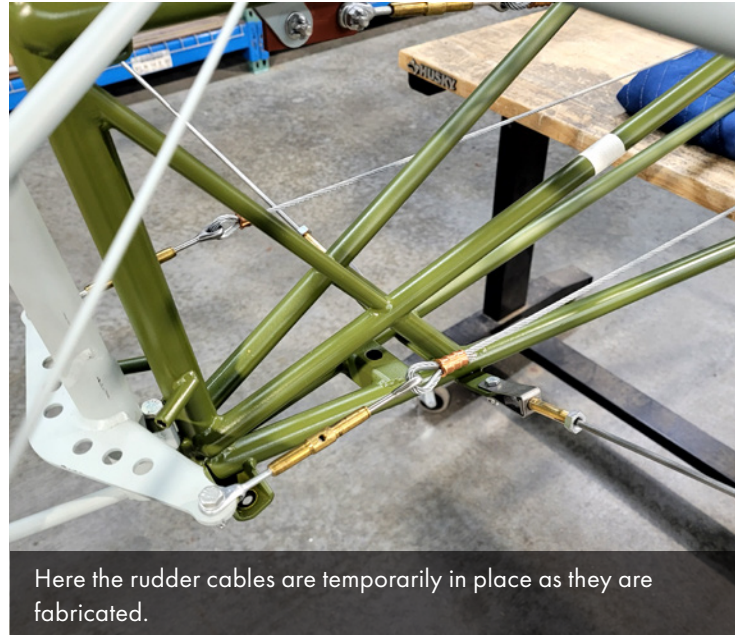


## Control Linkages

Control cable linkages to the rudder and elevator, throttle controls, and fuel valve linkages were part of the recent restoration progress.



The front seat throttle (triangular) and the fuel valve control (red handle) are in place.



Here the rudder cables are temporarily in place as they are fabricated.



This is the rudder cable connection at the pedal end.



The process of fabricating the elevator cables includes temporarily fitting them in place.



The brake cylinders are mounted underneath the front seat.





## The Origin of the Cub Name

The L-4 is, of course, a Piper J-3 Cub slightly modified for the military. There is an interesting story about how the Cub name came about. According to several sources<sup>1</sup>, the first aircraft to be named Cub was a progenitor of the J-3, the Taylorcraft E-2. William Piper had purchased the assets of the Taylor Brothers Aircraft Corporation which had been under voluntary liquidation and closed for about 3 months. Piper used these assets to form the Taylor Aircraft Company with C.G. Taylor as his chief engineer.

Piper saw a market for a low-cost, low-powered trainer that could be used to provide affordable flying lessons. C.G. Taylor set to work to design a plane to fit Piper's concept, and the result was the Taylor E-2. The E-2 was a simple, lightweight, two-seat trainer built with a steel tube fuselage and wood wing structure, covered in fabric. It was a high-wing, open-cockpit design.



Taylor E-2 Cub with the Salmson engine that replaced the unsuccessful Tiger Kitten. W.Finch Jr collection<sup>2</sup>

The first completed E-2 sat at the factory for about a month as Piper and Taylor searched for an engine that was both suitable and available. They had hoped to use a new 40 hp Continental design but it wasn't ready yet. Another possibility was a Salmson nine-cylinder radial of 40 hp they'd ordered, but it hadn't arrived.

An engine called the Brownback Tiger Kitten engine, an inverted two-stroke twin that produced 20 hp, was available and the designers decided to test-fly the E-2 with the Tiger Kitten, despite its low horsepower.<sup>3</sup>

<sup>1</sup> Devon Francis, *Mr. Piper and His Cubs*, Iowa State University Press, 1973, p 2; and Roger Peperell, *Piper Aircraft, The Development and History of Piper Designs*, Air Britain Ltd, 1996, p20

<sup>2</sup> Photo from Roger Peperall, *Piper Aircraft, the Development and History of Piper Designs*, Air Britain Ltd, 1996,pg. 21

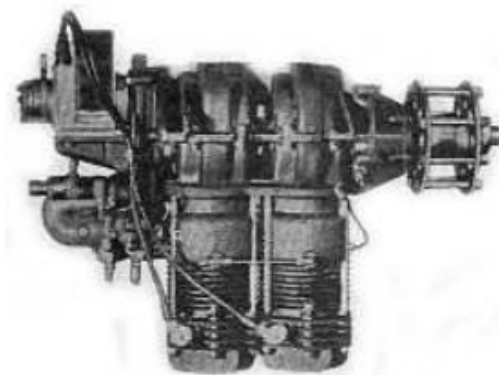
<sup>3</sup> Roger Peperall, *Piper Aircraft, the Development and History of Piper Designs*, Air Britain Ltd, 1996,p 20



On September 12, 1930, the Taylor E-2 was lined up at the end of the 1700-foot runway at the Bradford, PA airport for its first flight. The little trainer struggled into the air, but by the time test pilot George Kirkendall reached an altitude of 5 feet he was running out of runway and not gaining altitude very rapidly, so he closed the throttle and set the E-2 back down on the grass.

The test run proved that the E-2 handled well, but needed more power. Although the flight was only a limited success, it did engender the Cub name when Gilbert Hadrel, the company accountant, remarked "The engine is the Tiger Kitten, why not call the plane the Cub?"

Later that year, a 40 hp Salmson AD-9 Radial was installed and the Taylor E-2 flew very successfully. By the winter of 1934-35, C.G. Taylor had left the company and Walter Jamouneau became chief engineer. Subsequent Taylor (and after the company was renamed Piper) Cubs carried the J from Walter's last name in the model designation.



20 HP Brownback Tiger Kitten<sup>4</sup>



TA development of the E-2 that looked much more like the eventual iconic Piper J-3 was this 1936 Taylor J-2 owned by the Estrella Warbirds Museum in Paso Robles, CA. The J-2 was the first to carry the "J" for Walter Jamouneau designation

<sup>4</sup> Photo from [https://aeroenginesaz.com/en/brand\\_brownback](https://aeroenginesaz.com/en/brand_brownback)