



Winter 2023

Piper L-4H Grasshopper 44-79780 Restoration



AIRCORPS AVIATION

by Chuck Cravens



This was the starting point of the L-4 project.



AirCorps Aviation recently began a new project, the restoration of a WWII veteran L-4H. The L-4 version of the ubiquitous Piper J-3 Cub was the L bird of choice for Army Ground Forces support in the combat theaters of WWII.

Project Origin

This Piper was a classic “barn find”. While on a bike ride with his daughter, AirCorps’ Senior Vice President of Marketing and Sales, Eric Trueblood, noticed a Beech C-45 in an outbuilding in Grand Forks, North Dakota. He couldn’t resist trying to find out more about it and contacted the property owner to learn what the situation was with the vintage Beechcraft. In the process, Eric discovered that there was another aircraft in storage at the site.

It was a Piper L-4H, which the owner believed to be USAAF serial number 44-7879.

AirCorps Aviation’s friend and customer, Pat Harker, has a varied collection of award-winning L birds, including some very rare liaison aircraft like a Stinson L-1 Vigilant and a Convair L-13A, but he doesn’t have the most common L-bird, an L-4, so Eric notified him that an L-4 might be available. The Grasshopper project was purchased and taken to AirCorps Aviation for restoration.

Once it arrived, research began on the Grasshopper’s history.

The previous owner, Daniel Romuld, had written several letters and had done some research on this airplane. He wasn’t able to find much information, so the history of 44-79780 was unknown at the start of the project.

But there is a good reason why Mr. Romuld wasn’t very successful.

Corrosion and accumulated dirt on the data tag obscured two important numbers. That led to misreading two numbers and Mr. Romuld was researching AAF serial number 44-7978. That AAF serial number belongs to a P-40N¹. The discovery that the supposed serial number was assigned to a P-40N warranted a closer look at the L-4’s data plate.

By moistening the rusty data plate, the various numbers were much easier to read and it became clear that the actual AAF serial number is 44-79780. The other number Daniel misread was the order number. He was researching order number AF 86506. The order number corresponds with the contract number, the correct contract number is AC 36506². It is unknown at this point why the order number on the data plate begins with AF rather than AC.

The order number usually isn’t of much significance to the aircraft history, but in this case, Daniel Romuld chose to use that erroneous number as the aircraft N number N86506 when he obtained FAA registration on 12-30-2003 (canceled 3-07-2018).

¹Army Air Force Serial Number Index

²Army Air Force Serial Number Index



This is the USAAF data plate after moistening and rubbing it cleaner.

With the correct AAF serial number, it was possible to obtain the Individual Aircraft Record Card from the Air Force Historical Research Agency.



Here is the manufacturer's data plate.



44-79780 History Card Information

Many thanks to James H. Gray for his invaluable help in interpreting the IARC. Jim is a well-known liaison aircraft expert and founder and president of the Sentinel Owners and Pilots Association, a club devoted to the Stinson L-5. He generously offered his help in decoding some of the codes and notations that are unique to liaison aircraft.

A pleasant surprise was that the history card shows this L-4H to be a war veteran.

INDIVIDUAL AIRCRAFT RECORD CARD

TYPE, MODEL, SERIES: **L-4H** A. S. T. SERIAL NUMBER: **44-79780** MANUFACTURE AND LOCATION: **Piper, Lockhaven, Pa.**

CONTACT NUMBER: **AC-36506** FOREIGN SERIAL NUMBER: FINAL DESTINATION IN U. S.: **Philadelphia**

ALLOCATION, BLOCK, PROMPT NUMBER: **AGF Pw 1-408** PROJECT OR OTHER LEAD INDICATION NUMBER: **F90812 (Name) 2002 2187 2167**

MANUFACTURER'S SERIAL NUMBER: _____

UPPER COLUMN HEADINGS AND FIG. INDICATED OPERATION IN FIGURES.
LOWER COLUMN HEADINGS AND FIG. I. S. W. INDICATE OPERATION IN VERTICAL COLUMNS.

LOCATION	ORGANIZATION	RECIPIENT	NEXT DESTINATION	LOANED OR PLT. TRANS.	CONDITION	DATE	ACTION	REMARKS	
STATION	ORGANIZATION	PARENT UNIT	SUBUNIT	GAINED FROM OR LOST TO	SERIAL NUMBER	MO. DA.	STATION NO.	ICR	MCU
Lockhaven	Piper				Accepted Available	6-13			
Philadelphia				Philadelphia	Delivered	6-16			
"					Approved	6-18	WPR		
					Ref. U.S.	6-20			
DUKO	AGF			C L 4H	BO 44	79780	725 44		
DUKO	AGF			A L 4H	BO 44	79780	630 44		
San Francisco					Ret. WJ	9-12	Kyle		
Spokane					arrived	5-11	11-5-8		
Oxgate Tex					On Hand	11-20	S.C.O.		
S. F. SAN	RENTS			PRO PG 44 RETW	L 4H	44	79780	4-12	9075 13
PYOTE	RTS NYI BAJUT				L 4H	44	79780	31	8663
PYOTE	AMC4141HASSU				L 4H	44	79780	4304	8663 10
PYOTE	AMC4141BASSAU			AMC4141BASUT	L 4H	44	79780	7226	8663 10
PYOTE	AMC4141BASSULU			AMC4141BASUT	L 4H	44	79780	7226	8663 10
PYOTE	AMC4141HASSU				L 4H	44	79780	6304	8663 10
PYOTE	AMC4141BASSA				L 4H	44	79780	0704	8663 10
ACFT ASSGN	31 MARCH 47			AMCSA	L 4H	44	79780	0000	7 316
PYOTE	AMC4141BASSBAMC4141BAS				L 4H	44	79780	1 14	8663 10
PYOTE	AMC4141BASSB			AMC4141BAS	L 4H	44	79780	7 14	8663 10
ASSGN	CAPTEHIMATE			AMC CAP00003	L 4H	44	79780	728	8 19 79704
LPYOTE	AAUCR753451BPLICAP3440			CI L 4H	44	79780	8453	9 23 9 2	79784

ARB

GENERAL DATA MONTHS AND DAY DATE OF LAST MOVEMENT

PLANE: _____ A. S. T. SERIAL NO. _____ OTHER SERIAL _____ STATUS _____

DATE RETURNED: _____

L-4H 44-79780

Individual Aircraft Record Card, courtesy of Air Force Historical Research Agency microfilm reel ACR-111



Individual Aircraft Record Card (IARC) Notation Interpretation:

- AAF serial number: 44-79780
- Contract number: AC-36506
- Allocation Block Priority Number: AGF (Army Ground Forces) Pri 1-408
- Project number: F90812³
 - * *The meaning of the 'F' in the above project number is unknown. James Gray indicated that he had never seen this notation preceding a project number in over 4,000 IARCs that he had inspected. 90812 is the project number for the Italian campaign.*
- Accepted: 6-13-1944 Piper Aircraft factory, Lock Haven, Pennsylvania
- Crated and shipped by train to Philadelphia: 6-16-1944 Arrival in Philadelphia reported: 6-18-1944
- Sailed from the port of Philadelphia for Naples, Italy: 6-20-1944
- Assigned to 12th Army Air Force, Army Ground Forces: 6-30-1944
44-79780 is listed as being under the jurisdiction of the Twelfth Air Force from the time it was loaded aboard the ship until being delivered to the Fifth Army after reassembly in Italy. The delivery probably occurred at Pomigliano airfield, about 8 miles northeast of the docks at Naples.
- Under the jurisdiction of the Army Ground Forces: 7-25-1944
- Returned to the US, to San Francisco Port of Embarkation Army Transport Service on an Army Transport Service vessel, aircraft gained from outside the US, Pacific Area of Operations Port of Embarkation: 9-12-1945

Note: 44-79780 was very likely on a ship at sea from Italy to a destination in the Philippines or Marianas Islands at the time of VJ Day and was therefore diverted to San Francisco.

From James Gray's IARC interpretation: "As far back as 1943, plans were begun for demobilization as soon as the war was over. Part of the procedures included ending war material production and stopping all ships from leaving U.S. ports loaded with more troops and equipment. Those already bound for the Pacific were to be halted and brought back to the States if they were less than halfway to their destinations. A study of shipping timetables shows that the time at sea for a fast freighter (14 knots) was 20 days from Naples to the Panama Canal (6,600 nm) and another 15 days to Hawaii (5,100 nm). The war ended on Sept. 2, so I'm speculating that by then the ship carrying 44-79780 was already in the Pacific Ocean, but less than halfway to its final destination (somewhere beyond Hawaii) when it was suddenly turned around and diverted to SFO. If this was not the case, it would not have ended up in San Francisco, it would have been returned from Europe by the cheapest and most direct means to an East Coast or Gulf Coast port."⁴

³The project number includes an "F" preceding the number (F90812). The meaning of the "F" is unknown and possibly unrelated

⁴James Gray, From email correspondence 9-25-2023



Individual Aircraft Record Card (IARC) Notation Interpretation:

- *Alternatively, if the vessel had been loaded with troops being returned to the States, for a number of reasons it may have been more convenient for the Army to have it unloaded in California despite the extra ten days at sea. One reason could have been overcrowded processing centers and trains along the East and Gulf coasts. Another could have been an urgent need for the ship in the Pacific afterward (not unlikely), and yet another reason could be that the personnel aboard were either from the western U.S., or their units would be stationed and refitted on the west coast. Perhaps a National Guard unit that had been nationalized for WWII may have been returning home in one of the western states.*
- Arrived Oakland storage: 9-18-1945
- Departed Oakland storage: 11-2-1945
- On hand Pyote AFB, TX AF Base Unit, Air Technical Services Command: 11-20-1945- through 4-30-1946
"S.C.O." indicates the above information derived from an inventory list on file at the Statistical Control Office. Pyote AFB's main purpose post-war was aircraft storage and dismantling.⁵
- Pyote AFB assigned to Air Material Command: 9-30-1946 through 8-19-1949
- Serviceable or repairable aircraft Assigned to Civil Air Patrol and Terminated from Air Materials Command, due to normal wear and tear (condition code 1, mechanical Trouble): 7-28-1949 data entered 8-19-1949

Location Pyote AFB, 2753 Aircraft Storage Depot, from non-cocooned storage, loss codes CI indicates transfer to an organization outside the USAF: 9-23-1949

(79874 is the serial number of the next aircraft to be processed in the punch card file.)

Additional Information from Other Sources:

AAF Serial Number Index

- Contract AC 36506 was approved on 3-30-44
- 44-79780 was the 236th L-4H from a production run of 500, (Serial numbers 44-79545 through 44-80044).

Wright Field Liaison Program Files Chart, "Sarah Clark Collection"⁶

The order for 500 L-4Hs was the second addendum to contract AC 36506 which was first approved on Feb. 17, 1943.

⁵James Gray ,From email correspondence 9-25-2023

⁶James Gray personal email 9-27-2023



AAF Data Tag and Piper Aircraft Data Tag

Piper Aircraft Serial Number 12076



The last known flight of 44-79780 ended up in a field. Research on the Civil Air Patrol portion of this Cub's history is ongoing.



Restoration Begins Fuselage



Fuselage frame damage corresponds to the crash damage evident in the accident photo.

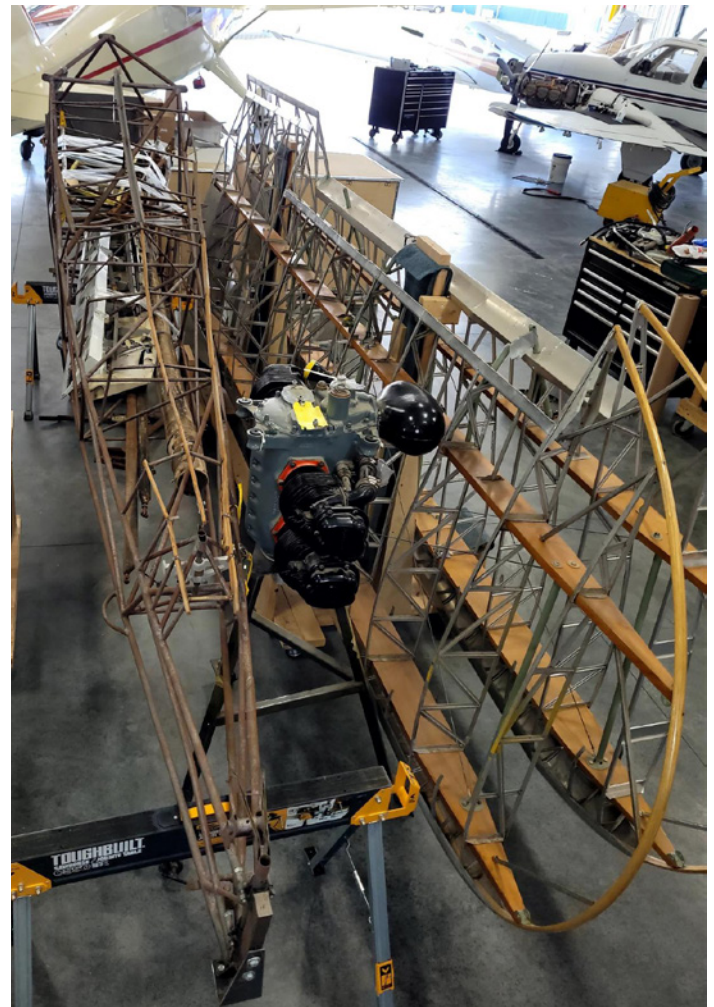


Here is a front view of the frame damage.

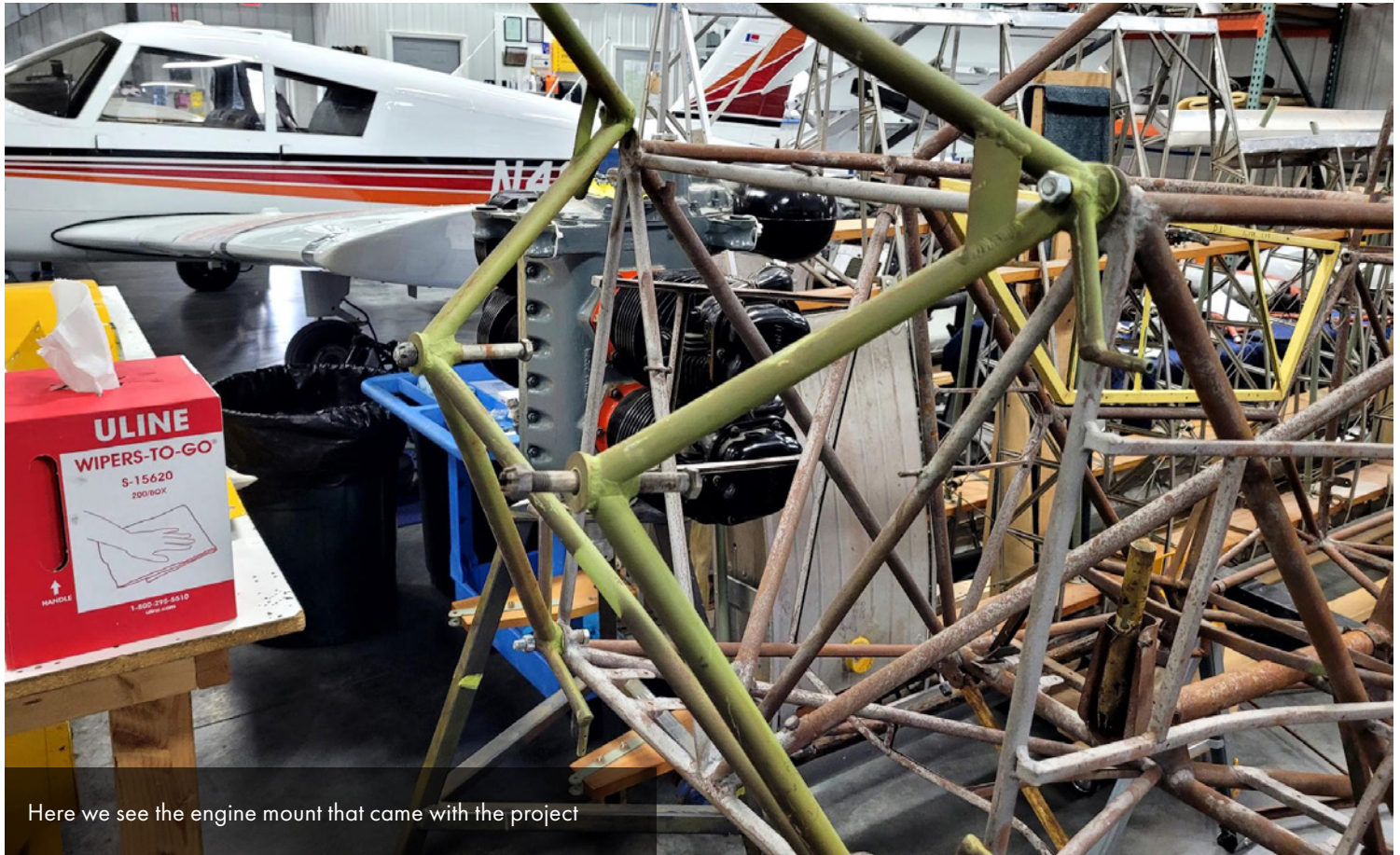


The fuselage frame and engine at the AirCorps Aviation hangar.

It is obvious in this photo that the tubing fuselage frame and the wooden stringers will need a great deal of work. The fuselage frame will be sent to Javron Inc. in Brainerd, MN, who specializes in this kind of work, for repair and restoration of the tube frame.



The rudder and vertical fin in pre-restoration condition.



Here we see the engine mount that came with the project



Another door frame was needed and was trial-fitted to determine what work was needed on the door.



Engine

The L-4H was equipped with a Continental A-65-8, 4-cylinder air-cooled horizontally opposed piston engine with a displacement of 171 in. This version of what is also known as the Continental O-170 is rated to produce 65 hp at 2,300 rpm.



The engine that came with the project has been overhauled, but it was done far enough in the past to warrant redoing the overhaul.



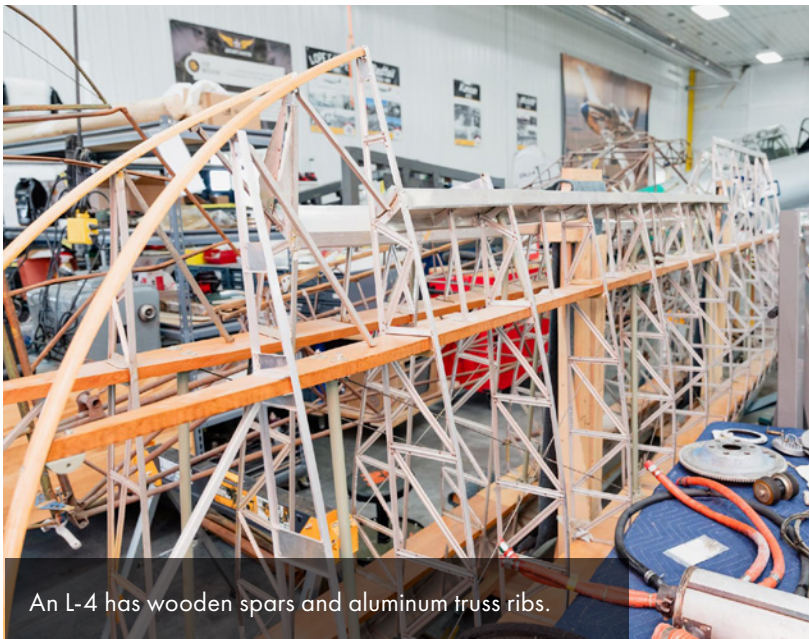
The nicely painted crankcase from the A-65 engine that came with the project.



Wings



The wings are carefully stored in the AirCorps Aviation hangar.



An L-4 has wooden spars and aluminum truss ribs.



The wingtip bows are made of ash steamed into a curved shape.



Brief Early L-4 and Liaison Aircraft History

On February 18, 1941, William T. Piper, president of Piper Aircraft, wrote a detailed letter to Secretary of War Henry Stimson advocating the potential of light aircraft in support of Army ground forces. As a result of that letter and others received from competing light plane manufacturer's representatives, the War Department decided to conduct a study on the use of light planes supporting ground forces. In March of 1941, Piper and his employees contacted Army commanders directly.

Interestingly, one of those commanders was a Lieutenant Colonel who said he knew that light aircraft had a great deal of potential, especially for directing artillery fire from the air. He was able to visualize the uses of light liaison planes better than most officers because he had a private pilot license. That Lt. Colonel was Dwight D. Eisenhower.⁷

The light plane industry's efforts paid off with invitations to demonstrate their light planes at Fort Sill and Camp Bowie. The Second Army's maneuvers in June of 1941 resulted in recommendations to the War Department for light airplanes to be made a regular component of the artillery.



North American O-47 USAAF photo

The North American O-47 and Stinson L-1 (O-49) Vigilant were examples of much larger and heavier observation/liaison aircraft in use by the USAAF at the time.

⁷Richard Tierney and Fred Montgomery, *The Army Aviation Story*, Colonial Press, Northport, Alabama, 1963, p 45-46



Pat Harker's Stinson L-1 at AirVenture 2016, Chuck Cravens photo

By the end of April 1942, the tests and studies were finished. The War Department's light liaison aircraft study found that for Army Ground Force support and autonomous operations, the small "Grasshoppers" had several advantages over the heavier observation planes currently in use with the USAAF.

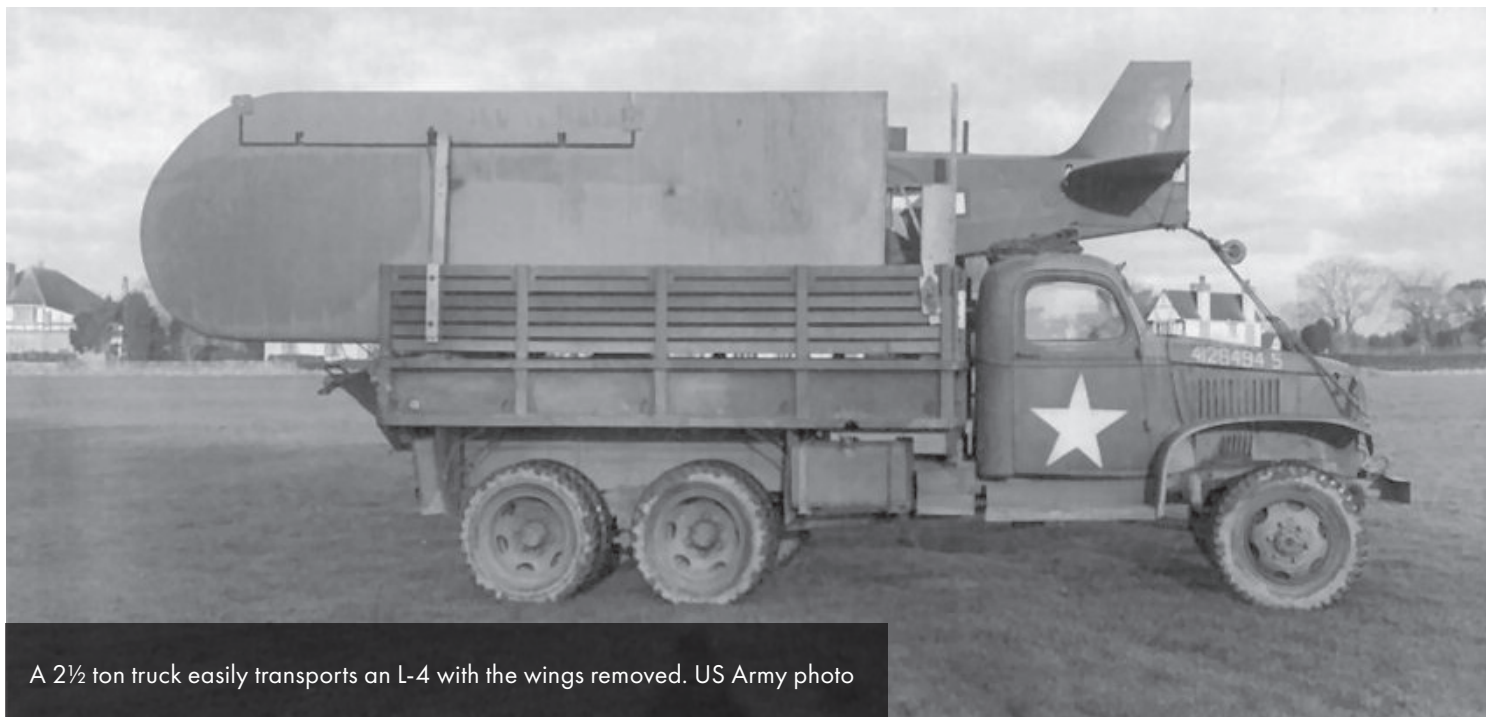
Ground Force Support Advantages Identified:

- The ability and ease with which field artillery personnel could operate the planes
- The simplicity of operation and maintenance of the planes
- The ease with which the planes could be dismantled and loaded on 2½ ton trucks for ground movement
- The effectiveness of the pilot-mechanic concept of having each pilot fully capable of repairing and servicing his aircraft⁸

An L-4 aircraft was light enough for one man to pick up its tail and pull it. That light weight also was the reason smaller liaison planes proved ideal for operations from small fields and dirt or gravel roads. The diminutive overall size also made the Grasshoppers difficult to spot in the air or on the ground.

In the early 1940s, the Army used letters to identify different classes of aircraft: B for bomber, P for pursuit, and so on. Until 1942, O meant observation. The new letter for planes designated to work closely with Army ground forces was "L" for liaison. Originally designated O-59, the military Cub was redesignated L-4 after April 2, 1942.

⁸ Richard Tierney and Fred Montgomery, *The Army Aviation Story*, Colonial Press, Northport, Alabama, 1963, p. 59



A 2½ ton truck easily transports an L-4 with the wings removed. US Army photo

The Grasshopper Nickname

A month later, the nickname that was almost universally applied to the lighter liaison aircraft came about.

Henry Wann, a district sales manager for Piper (and the same man who had initially telephoned Lt. Col. Eisenhower) was participating in maneuvers at Ft. Bliss, near El Paso on the Texas/ New Mexico border. . As part of the demonstration of the J-3 Cub's military utility, Wann was tasked with the delivery of a message to Maj. Gen. Innis P. Swift.

Wann found Swift's brigade easily because they stood out from the desert landscape, but the area was all sand, cactus, and clumps of grass. Wann brought the Cub in to land in the least obstructed spot, but the landing was still a bouncy one. Wann taxied up to the command post and delivered the message.

'General Swift seemed quite impressed and remarked, "You looked just like a damn grasshopper when you landed that thing out there in the boondocks and bounced around" '9

Later that day Gen. Swift needed Wann to return with the Cub and sent the message "SEND GRASSHOPPER signed SWIFT".

The Grasshopper name stuck. Unlike names such as Mustang, Bird Dog, or Sentinel, it referred to more than one specific manufacturer'. Taylorcraft L-2s, Aeronca L-3s, Interstate L-6s, as well as the much more numerous Piper L-4s, were all commonly called Grasshoppers.

⁹ Richard Tierney and Fred Montgomery, *The Army Aviation Story*, Colonial Press, Northport, Alabama , 1963, p 48-49