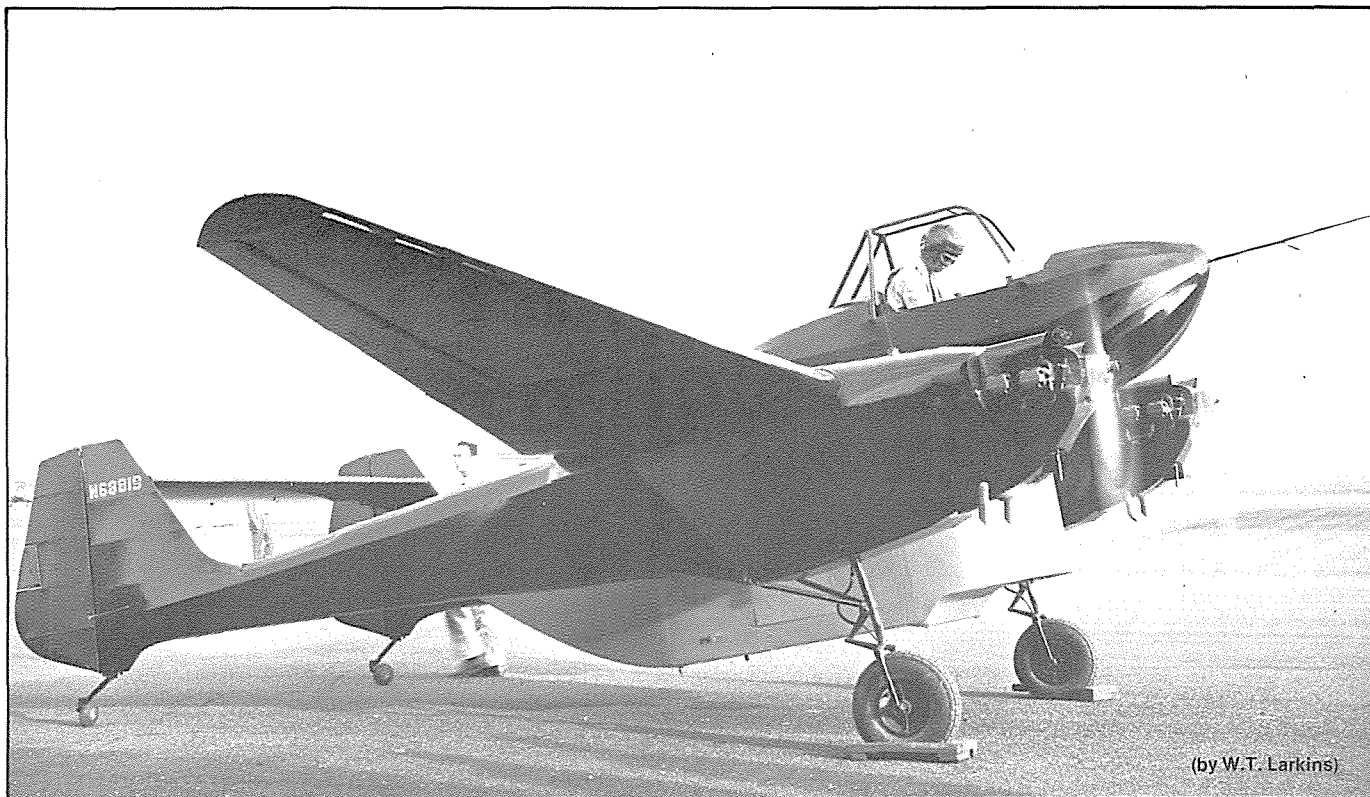




(by W.T. Larkins)

THE AU-18 AERIAL TRUCK

The Story of the AirUtility Cargo Co.

by R.E. Martin

(All photos courtesy of Mrs. Gail Gardenhire unless noted otherwise)

Imagine if you can the midsize town of the postwar 1940s with two airlines serving the citizens. One, the royal blue of a United Airlines Flagship DC-3, the other a soft red and gold Southwest Airlines DC-3. Scattered around the Sacramento, California airport in that era was the occasional young entrepreneur attempting to cash in on his dream.

That is the scene this writer recalls as I attempted to convince my parents I should be permitted to cultivate my destiny and become an airport bum. To do any task no matter how small in order to win the exalted privilege of touching a shiny new 140 or Tri-Pacer.

But, such was not to be. My home, alas, was many miles from the airport and I could only occasionally visit when my hosts were willing to drive the distance. Thus I was cast in the role of dreamer—while I remained on home turf pulling weeds or some other innocuous chore. I suspect Elsworth “Speed” Gardenhire to also have been a dreamer.

Some wise person has said the world is comprised of doers and dreamers. And it is only the occasional dreamer who moves his dream to capture reality through doing. This feature illustrates a man and his wife who dreamed a dream and persevered, working through repeated obstacles to achieve what they sought. The late 19th century well illustrates America’s Industrial Revolution: Fulton, Singer, Bell, Howe,

the Wright Brothers . . . America’s gift to the world has always been to cultivate the human field of choice and allow the growth of invention.

Elsworth Gardenhire, born in 1913, is one such American inventor. Raised in the Stockton-Lodi, California area 50 miles east of San Francisco, Gardenhire received the name “Speed” during his adolescence as he satisfied many customers at a local gas station providing the level of service which might bring a customer back. A highly valued commodity for an employee during the California Depression years.

Speed nurtured a fascination with all things mechanical. Though held back from a professional career because of his lack of formal education, he made up for this through a natural enthusiasm. As the years progressed, Speed’s interest, like the Wright brothers, developed from earth-confined vehicles to aeronautics.

In 1938, Gardenhire’s aeronautical concepts began to assume tangible form. The project into which he focused most of his time was a large utility vehicle with wings. In that year he constructed a small scale model of a twin-boomed, twin tail and engined aircraft intended to be about the size of a DC-3. This concept envisioned a detachable cargo carrier beneath the low wing. For the next 20 years Speed Gardenhire would not vary this basic concept. Other aircraft designs

Speed considered were a personal plane with a pusher propeller and a jet fighter of what today would be of conventional concept but in 1938 represented tremendously forward thinking.

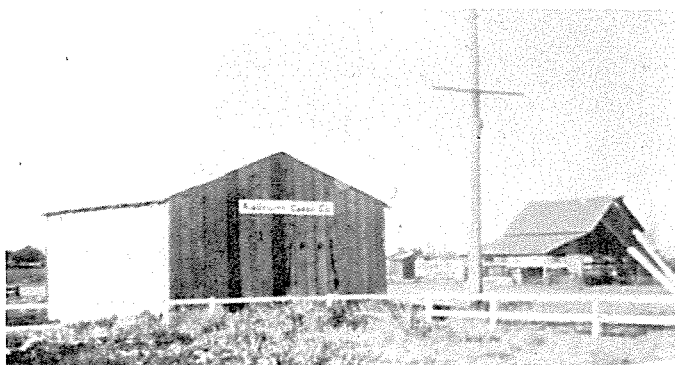
Speed Gardenhire's efforts toward development of his design were set aside during the war years as he worked at a local Air Force Base. During those years all of his spare time and money were devoted to development of his aerial "truck." Following war's end Speed devoted many hours bending over his drafting board in the family home designing the equipment layout of his Air-Utility Vehicle. He founded a local airframe repair shop and began to formally put wings to his plans starting fabrication at his home of what would become the AU-18. Family photos feature his young daughter's lifting a 20-foot main wing spar or both his children holding a completed rib section of a horizontal stabilizer or other part. Making all the calculations himself, Speed developed his dream into practical reality.

Soon his wife Gail and he began work side by side creating various parts of the aircraft. Meanwhile, Speed had built "The Factory," a 30' by 40' building constructed behind the Gardenhire home in a tract development located north of Sacramento. The Gardenhires usually worked alone except for whatever two young children could contribute. Later, friends assumed some of the workload. One can imagine the viewpoint of various neighbors as they looked out their rear windows to see a 40-foot aircraft taking shape in the yard next door. It must have resembled what Noah's neighbors thought.

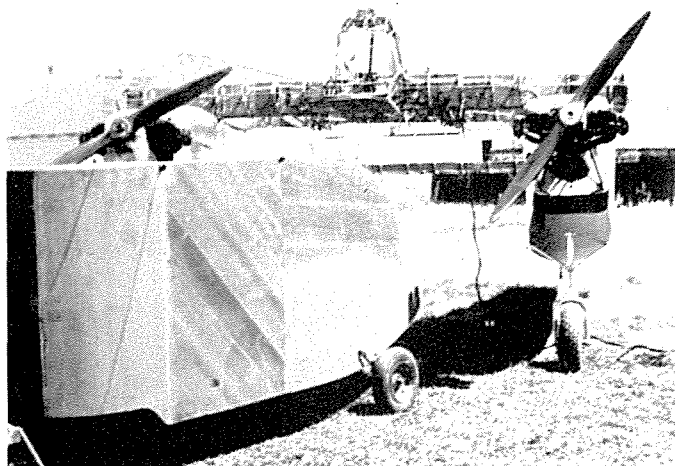
As 1948 progressed into 1949 the AirUtility AU-18-150A assumed the form of a finished aircraft. Initially the fuselage and wing root section were created inside "The Factory." The passage of time led to the aircraft's dimensions exceeding the large door in the building which required the removal of a portion of the wall.

Resembling the layout of a P-38 and with the temporarily detached wings installed, the aircraft measured 21', 11-3/8" long, 9' 3/8" high and 39', 10 1/2" in wing span. Empty weight was 1,322 pounds with a useful load of 797 pounds, intended to be carried in a detachable pod. Aircraft gross weight was 2,119 pounds. The fuselage and extended nacelle sections were of conventional steel tube construction with the wings built up of wood. Gardenhire did not accept for himself a simple wing chord consisting of wing ribs of identical shape. Rather, his wing planform, though of nearly straight leading edge, featured a swept-forward trailing edge. All surfaces were of doped fabric. Mrs. Gardenhire's seamstress skills were honed to a fine degree as this literal home project took shape. Later she was also responsible for all the spray painting of the 400-odd square feet of lifting surfaces in addition to the vast nacelle and fuselage areas. Quite a project for a wife and mother! Two Continental A-75-3 air-cooled engines were installed which yielded a reported cruising speed of 125 mph, an 850-foot-per-minute climb rate unloaded and a service ceiling of 12,900 feet.

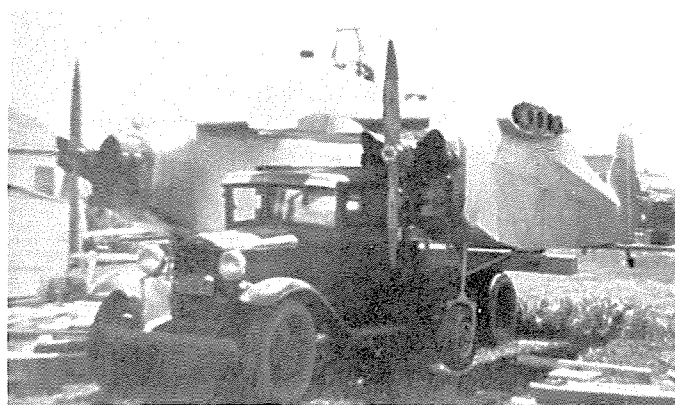
On April 15, 1949, minus wing panels, a homemade crane arrangement lifted the entire aircraft to rest on the flatbed of a Model A Ford truck for transport to a flight test area 25 miles south of the Gardenhire home. The flight test area chosen by Gardenhire was an ex-USAAF practice field located in farm country south of Sacramento known as Franklin Field.



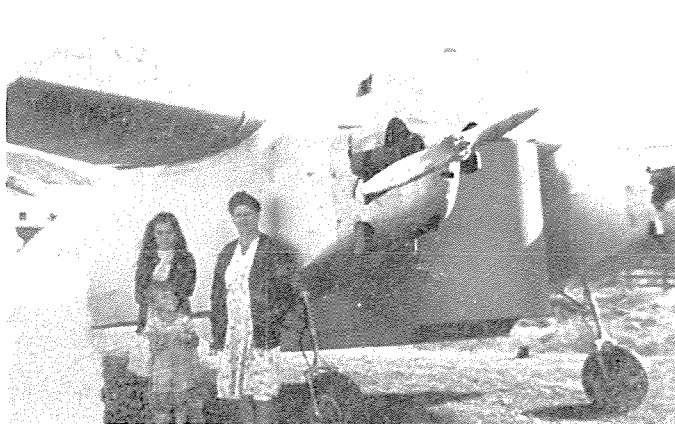
1945—AirUtility Cargo Co. original factory behind Gardenhire home in residential Sacramento.



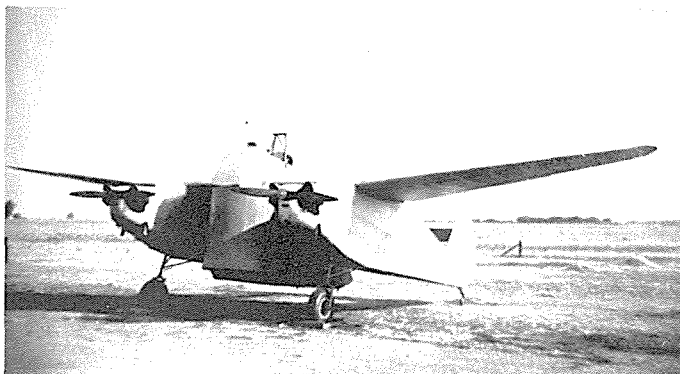
1948—Completed cargo unit in position to be mated with substructure.



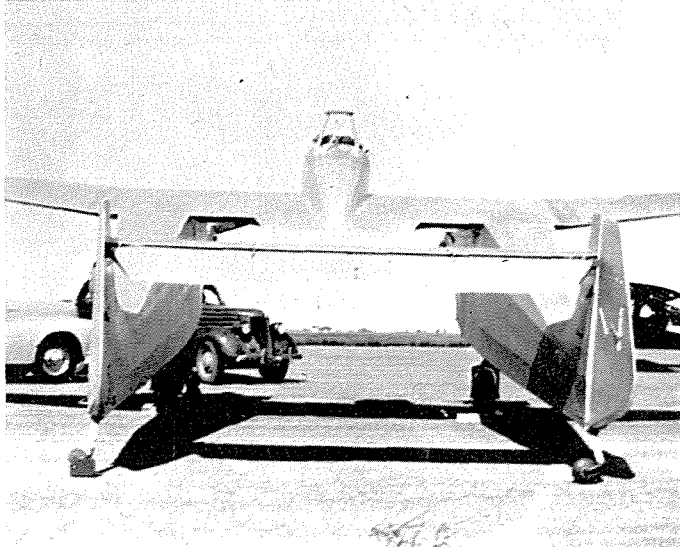
April 15, 1949—Partially assembled aircraft is trucked to local airport.



April 1949—AirUtility Cargo Co. engineering staff. Mrs. Gail Gardenhire, Carol and Leslie.



April 18, 1949—The completed AU-18-150A with wings fully assembled. Franklin Field south of Sacramento, California.



Aft view of assembled aircraft.

There, the aircraft was carefully unloaded, wings attached and the airframe tuned for first flight. Several days later, on April 18, 1949, the AU-18-150A (the numerals 150 assigned to represent total engine power) took flight without the cargo pod. Initial flight testing was done by Harvey Mace, retired Captain, USAF. Mace had lengthy World War II experience as Operations Officer of the 362nd Fighter Squadron, 357th Fighter Group, flying P-51s in the European theater. Coincidentally a young pilot named Chuck Yeager was also a member. Just as he had done in uniform, so again he was called upon to flight test an aircraft but of even more pronounced unknown character. On this occasion lay the potential of far more adventure. Fortunately Speed's design theory bore fruit and a brief circuit of the field was completed with only minimal complication. Nevertheless, Mace's skills were certainly tested inasmuch as he lacked precise airspeed calibration. A pitot head calibrated for the aircraft was not installed until later in the testing program.

Among the initial control problems experienced was some buffeting in the tail. As we shall see this was a long-standing problem not to be solved for several years. Mace, however, recalls that generally the AU-18 "was a very acceptable performer and flew in a straightforward manner."¹

One other design flaw had also reared its head. During initial taxi trials the somewhat stawky fixed landing gear had suffered from a lateral weakness due to tension in its great



April 1949—Designer and builder of the AU-18, E.W. "Speed" Gardenhire (left) with Chief Test Pilot, Capt. Harvey Mace.

length. However, the test flight verified the newly strengthened gear to measure up to the stress imposed upon it.

When brought to Franklin Field, the aircraft had been completely covered with cotton fabric and was painted silver without CAA license. In his eagerness to have his creation fly, Speed had neglected seeking the blessing of Uncle Sam. So, first flight was conducted with the aircraft unlicensed. Shortly thereafter, however, Speed proudly applied N68819 to wings and outside fins. A series of small but nagging adjustments to the airframe was completed through the summer of 1949 with testing by Mace accompanied by another pilot friend of Gardenhire's, Pat Symons. Mr. Symons, also retired from the Air Force, had spent his military days squiring C-47s and C-46s throughout the military theater.

On November 10, 1949, Harvey Mace first flew the AU-18 with cargo unit attached. Demonstrating Speed's usual resourcefulness and thrift he attached the cargo unit beneath the wing by purchasing four standard military bomb hoists from a local military surplus store. Gardenhire's original concept envisioned the manufacture of numbers of these cargo units. About the size of a small car, the unit was capable of moving a considerable mass of material but as underpowered as the aircraft was, the full volume could not be exploited by the AU-18. Understandably, the flight characteristics of this newly installed cargo unit seriously interfered with the handling of the aircraft due to drag, especially escalating the

already poor climb characteristics. Unfortunately, Mr. Gardenhire's funding sources for aircraft development were marginal and neither a chase aircraft nor photo plane was possible. Most of the ground-to-air photos illustrating these initial flights are too poor for reproduction. Though not planned as a chase aircraft, Mace recalls on one occasion encountering his personal Piper *Supercruiser* one day, flown by a friend. Test flying the AU-18, Mace joined up with the Piper, outcruising and outclimbing his own aircraft. This flight was made without the cargo unit thus granting the greatly lightened airframe enhanced speed from what normally would be an underpowered aircraft.

As news of Speed's progress in aircraft development was spread through the local aviation community, he received the offer of a sanctuary in the hangar of a friend located at Clarksburg Airport about 10 miles south of Sacramento. However, before leaving the Franklin Field facility, Mace recalls, "... my desire to get non-flyer Speed up for at least a little bit in his creation. So, before we left Franklin, I had him straddle the rear of the open cockpit pod and with a bear hug on the turnover bar I gave him a short hop down the runway. He was quite pleased." Similarly, test pilot Joe Hammer permitted the designer to climb inside the later-developed air ambulance pod on several occasions for a circuit around the field. Though these events were technically illegal in an experimental-rated aircraft, each pilot felt great confidence in their aircraft, the fruit of Speed's careful design.

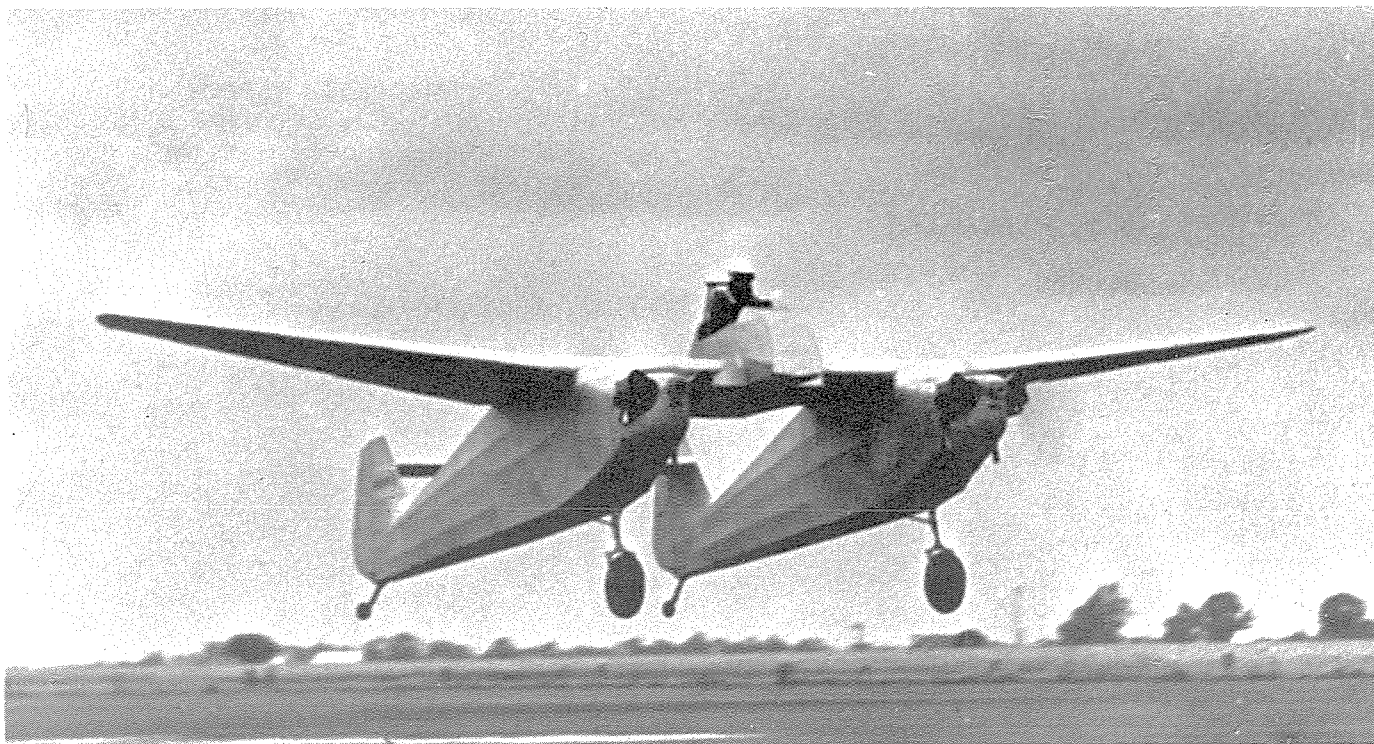
The "Air-Repair" facility at Clarksburg became home for the AU-18 in late 1949 where it adopted a new color scheme of navy blue wings over a partial bright yellow set of tail booms. In early 1950 the AU-18, after numerous "tweaking" by Gardenhire and others, began taxi trials with a pilot friend, Mr. Ed Listons. Testing continued at the Clarksburg Airport which in 1951 was a large grass field primarily used by crop dusters. Test flights revealed a tail-heavy condition which caused Speed a prompt return to his drafting table.

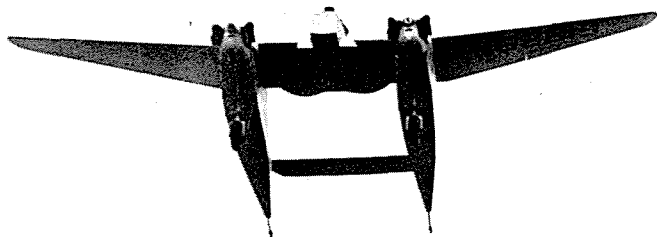
Calculations indicated that greater lift would ease the c/g problem and the wing incidence angle was increased to 2.50° and elevator cables tightened. Test flights revealed these changes to result in marginal control forces at higher speeds, but with power reduction improved, control was realized.

Though the wing incidence change was helpful, Gardenhire experimented with other changes in the airframe which would yield improved performance. The horizontal tail continued to suffer from buffet. Speed's fix was to engineer the first major modifications by raising the horizontal tail several inches between the twin fins. Mace describes his first flight following this change. "I took off of Clarksburg on the first flight after the change, and when it was too late to abort on that short runway, I found I was having to use more and more forward stick to keep from climbing until I was against the forward stop and the nose was still raising. I used the only option available and sharply reduced the power. I then found I could maintain level flight just above the stalling speed and with the stick hard against the stop. I resisted the temptation to land in a field and managed a slow turnaround and made a nice four-point landing back on the Clarksburg runway without ever getting the stick off the forward stop, using only the throttle for pitch control. Obviously, Speed had erred in relocating the horizontal stabilizer."¹

Following reversion of the horizontal tail to earlier configuration, Speed and his assistants endeavored to solve the continued buffet problems in the tail. An acquaintance of Gardenhire was Mr. W.P. Sullivan, a research and development engineer formerly with Hughes Aircraft. Working with Speed, Sullivan devised a different approach to the tail buffet problem. The open cockpit pilot nacelle which sat upon the wing upper surface was completely revised to include a new windshield in front of the still open cockpit and turnover

April 18, 1949—Harvey Mace, pilot. First flight of AU-18. Note ungainly position of pilot.
(via H. Mace)





Nov. 1949—Note scalloped mid-wing trailing edge to aid smooth airflow with cargo pod installed.

structure with a neater cockpit comprising more conveniently placed instruments and controls. In 1953 a new smoothly pointed nose replaced the formerly flat-surfaced nacelle and the wing suffered still further manipulation of wing incidence. Further, redesign of the pod aft of each engine created not only a considerably lighter structure easing c/g problems but was more esthetically appealing. The improved power-to-weight ratio in turn led to better control characteristics. These extensive modifications progressed slowly with all work dependent on voluntary financial and time contributions from anyone willing. Though Gardenhire did not lack for friends, a distinct lack of finances jeopardized timely correction of aircraft defects. So limited was funding that no one received a salary for their work on the AU-18. Their long hours of commitment as pilots or mechanics were rewarded with a handshake and on occasion a promise of financial reward later, if the company flowered into prosperity. Joe Hammer, one of the test pilots, recently stated he still has in his possession an

informal stock note for the AirUtility Cargo Company received for services rendered. This lack of capital was seen in the lengthy development work from 1952 through December 1954 by which time the aircraft modifications of the pilot nacelle and other smaller changes created a cause to change the designation to AU-18-150B.

Another test pilot, Mr. Ted Croghan, now entered the scene flying the aircraft to Sacramento Municipal Airport in early 1955 in its new all-black paint scheme. With the advent of the Korean "Police-Action" in 1950, Gardenhire realized the need for a light but dependable multi-use utility aircraft capable of operation from the military battlefield environment. Such an aircraft would be faster than the then newly introduced operational helicopters and carried a greater payload with less risk of mechanical failure. Thus were introduced two additional attachment pods tested on the AU-18 but intended eventually for installation on a developed version of the AU-18 concept. The ambulance unit and the gun pod mock-up received considerable flight testing on the AU-18. Also under development was an agricultural spray bar attachment in lieu of a cargo pod.

A planned military version was assigned AU-27-260 but never left the drawing board. Though similar in configuration it was considerably cleaned up featuring such niceties as retractable main undercarriage and an enclosed pilot canopy. It was intended to have the increased power of two 130-hp Continentals to yield a top speed of 154 mph. Dimensions were projected to include a length of 28'3" and span of 48'6". Now closely resembling the Lockheed P-38 in configuration the aircraft was to be capable of carrying a troop container for four or a "terror" unit. This latter device was to enclose guns and ammunition and provide mounts for four rockets, bombs or auxiliary fuel tanks. However, as tested the

Dec. 1949—Clarksburg Airport south of Sacramento, California. New blue over yellow paint scheme.



wooden pod only contained mock-up guns. The planned armament was to be four caliber .50 guns activated from the cockpit. The ambulance unit which was designed to be used by both the AU-18 and AU-27 was noteworthy by having two large rectangular plexiglass windows placed on the nose of the pod intended to house two full stretchers within. Similar in overall volume to the cargo pod, this unit was tested by still another new test pilot, Mr. Joe Hammer.

Gardenhire's fertile mind also bore uses for his aircraft in a more pacific role. He approached a local beer company to pay for development of a huge 20' x 4½' replica of a beer bottle intended to be flown over the local city as an advertising gesture. Test pilot Joe Hammer recalls the mock beer bottle installation as being mounted with the bottle neck facing aft. A fabric-covered streamlined metal framework attached to what would normally be the bottle's bottom became the forward end to reduce buffeting. As the aircraft sat on its undercarriage or in takeoff and landing configuration, this ponderous appendage cleared the ground only by four inches. As the only pilot to fly the aircraft with this mock bottle, Mr. Hammer recalls the aircraft exhibited satisfactory flight control but, as always with attached pods, the AU-18 flew in a distinctly underpowered state.²

The local Colgate-Palmolive representative was also approached concerning funding for a large mock Colgate toothpaste tube to be carried for advertising purposes. However, this somewhat amusing proposal was turned down and the idea existed only in model form.

Hammer recalls that the immense drag of any of the pods or the mock bottle created marginal performance with only one of the 75-hp motors operative. On one occasion, the sudden heightened noise level of the right engine caused Joe to shut it down. The aircraft was unable to maintain level flight and gradually lost altitude but not before he was able to make a successful return to the airport. The problem turned out to be only noisesome rather than catastrophic as a burned exhaust gasket was found to be the culprit.²

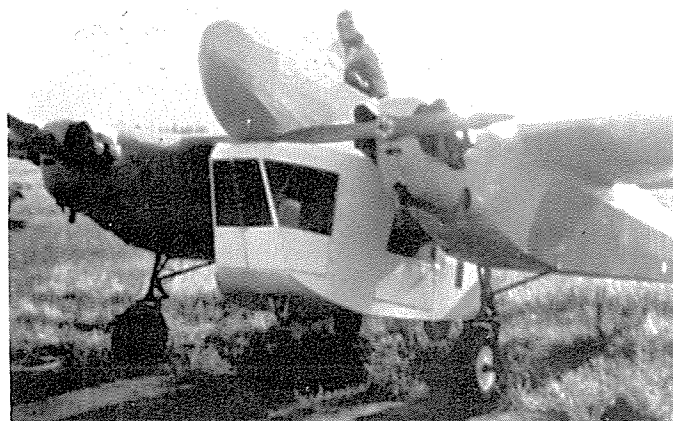
Tail flutter continued to dog the plane. On one flight test from Sacramento Municipal, Hammer experienced severe tail flutter on takeoff. Looking to the rear, Hammer observed the horizontal stabilizer vibrating 3-4" up and down. With a quick "Ag-pilot" 180° turn he returned to the runway. Following several experiments, Gardenhire applied an improved fairing to the leading edge of the wing to cockpit nacelle intersection which seemed to greatly assist in smoothing air flow over the horizontal stabilizers. Mr. Hammer did not attempt to spin the aircraft but on several occasions placed the AU-18 in stall configuration with no unusual characteristics. Though the Continental engines turned in the conventional direction rather than the opposite cycle the torque problem was not severe, no doubt assisted by the long moment arm of the engine pods extending back to the twin tails.

Apparently the final pilot to fly the AU-18 was Mr. Claude Bishop, a personal friend of Speed and Herb Andersen, Speed's design consultant. Claude recalls the aircraft as responsive with no peculiarities. He found the AU-18 a firm landing platform that did not float but was able to be firmly placed upon that landing spot desired by the pilot. The aircraft climbed well. On one of the last flights Claude attained

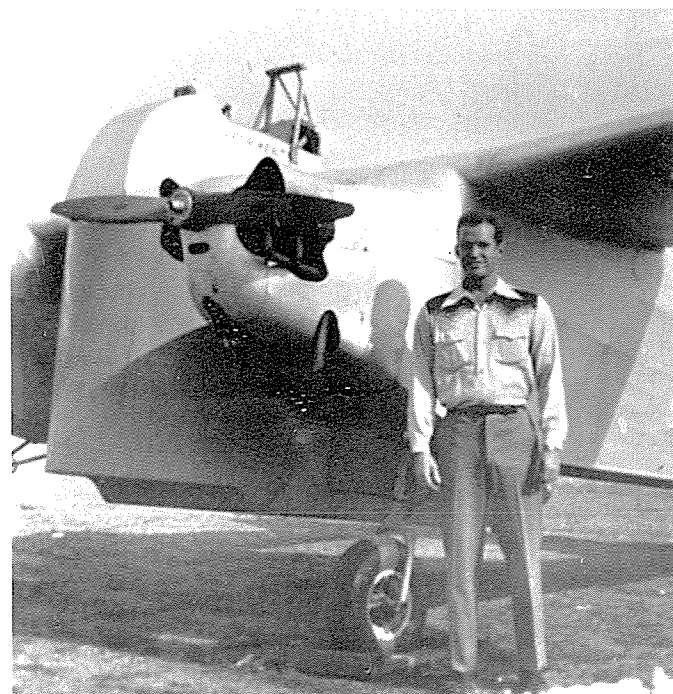
11,500 feet when an engine quit. Fortunately he was able to sustain flight to a point where an emergency landing could be made at a nearby duster strip inasmuch as the aircraft was incapable of sustained flight on one engine. Later, Claude was to discover that the cause of the engine shutdown was an oil plug which had vibrated loose, allowing the oil to drain, resulting in an engine seizure. An engine change was made and the aircraft later flown back to Sacramento.³

As the decade of the '50s progressed it became evident that profitable disposition of the AU-18 was decreasingly likely. Speed and his assistants had exhausted all of their resources in an attempt to sell the concept of a detachable cargo pod aircraft. Thus the AU-18 ended its days parked in the open air beside a little-used taxiway at Sacramento Municipal Airport. Those once affiliated with the project believe final flight of the aircraft to be in 1958 with total flight time since 1949 of about 50 hours.

Inasmuch as the aged fabric had become distinctly unsafe



Circa 1951—Clarksburg Airport. Ambulance unit. Note windscreen and windows permitting occupant vision. One wonders about the emotional comfort of an ill patient located two feet from roaring engines and vibrating airframe.



Chief Test Pilot H. Mace.

(via H. Mace)

for flight, the aircraft was not moved from its airport site for the four years previous to 1962. Speed and his wife founded Gail Aircraft Engineering at the local airport performing airframe modification on general aviation aircraft. About 1962, Speed sold off the two Continentals of the AU-18. These engines were in great demand by home builders. Finally, about 1965 the AU-18 airframe was dismantled and moved to a rural mountain airport 50 miles east of Sacramento called Jackson Airport. The airframe was stored there until about 1970.

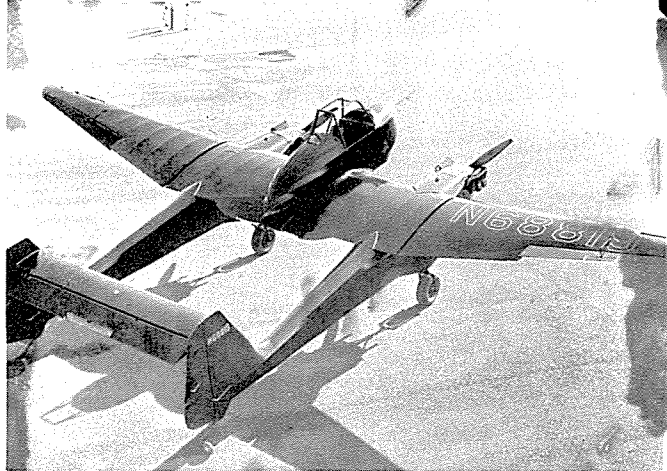
In 1965/66, Speed had modified a Kinner *Sportster* into an example crop-spray aircraft intending to develop a modification business using old Kinner *Sportster* airframes. The indefatigable Speed again became enthusiastic over this new project featuring this low-wing personal, side by side, sport aircraft which was originally sold in 1932. However, it was not to be. Speed sold his interests in the Kinner project about 1968. Following the conclusion of the Kinner project, the Gail Aircraft Engineering firm was dissolved and the now dismantled AU-18 airframe returned to Sacramento and was stored outside. The weather quickly took its toll and the airframe was reduced to salvage in 1972.

Meanwhile, Speed had submitted his financial concerns to others on the Board of the AirUtility Cargo Co. In an attempt to provide funds for further development, the company went public and sought the sale of stock from which was derived a small sum. Speed had hoped to interest the military in his project, but after repeated efforts succumbed to discouragement and sought more experienced spokesmen for his cause. However, even a professional lobbyist was unable to interest the military in Gardenhire's project. It would appear that simultaneously with Gardenhire's work with the AU-18 in another part of the United States other inventive minds were at work. For, coincident with AU-18 cargo pod development, Fairchild Aviation Corporation also promoted the concept. Is it possible that the giant Fairchild Corp. first confronted the detachable cargo pod concept by hearing of Gardenhire's work? We shall never know. For in countless other examples in the aviation world such as invention of the jet engine, origin of the monoplane fighter and in the use of retractable undercarriage design engineers thousands of miles apart have developed near-identical concepts.

In this instance, in the late 1940s Fairchild was busy producing the C-119C *Flying Boxcar*. It is not beyond reason that given the similarity in aircraft configuration between the AU-18 and the C-119, Fairchild and Gardenhire simultaneously advanced the idea of a detachable cargo pod. Though as early as 1938, Speed built a model to illustrate his concept, he never received a government patent on his idea. The U.S. Patent Office records Armand J. Thieblot, Fairchild's chief design engineer, as applying for Patent Number 147927 on August 4, 1948.⁵

Though several persons affiliated with AU-18 development infer that Fairchild adopted Gardenhire's ideas in an unauthorized fashion, those persons intimately involved in the AU-18 categorically state that there was never an appeal to or from Fairchild for the latter's assistance in concept development.⁴

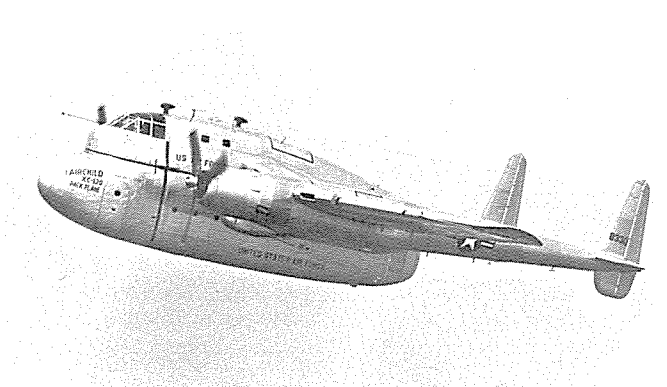
In mid-1987, this author received a response from the Fairchild Corp. that that company lacked the resources to re-



Dec. 1954—AU-18-150B in final configuration.



Early 1960s—AU-18 following dismount of engines, sold prior to scrapping of airframe by Russ Hiatt.



Though the AU-18 was never accepted for evaluation by the military, the single example of the Fairchild XC-120 was. A converted C-119B, the craft featured C-119 wings, engines, modified tail and a new fuselage including flight deck. USAF Serial 48-330. (Fairchild via Mitchell)

search the origin of the detachable pod concept as demonstrated by the Fairchild XC-120. Adopting the wings, engines and modified tail assembly from the C-119, the XC-120 featured a detachable cargo pod not unlike the AU-18 but of a size similar to the fuselage of the C-119. However, not even the giant Fairchild Corp. could interest the military in the concept inasmuch as their XC-120 also died with only a parsimonious level of development funding by the U.S. Air Force. The aircraft ended its days as a public relations vehicle ostensibly transporting blood plasma for military and civilian needs and was quietly surveyed in 1954.⁶

Gardenhire and his assistants exhibited the best that is American—initiative and perseverance with a willingness to see the project through to completion. The AU-18 deserved a better place in history. It is my hope that this brief synopsis of a man's dreams will serve to partially allay the disappoint-

ment Speed Gardenhire and those close to him must have experienced.

To give credit where due, Gardenhire had formally established his company delegating specific roles to his interested friends. The AirUtility Cargo Company was formally formed with the following officers:

Chairman of the Board: Elsworth W. Gardenhire

Vice President: Stephen F. Williams

Sales: Frank A. Cochella

Production: Almer L. Borges

Secretary: Walter R. Hale

Treasurer: Clinton H. Lee

Asst. Chief Engineer: E. Herbert Andersen, Jr.

Chief Test Pilot: Harvey Mace

Asst. Test Pilots: Theodore Croghan

Joe Hammer

Claude Bishop

Of these men, many are now deceased. Others such as Mace, Hammer, Bishop and Andersen continue to entertain their role in aviation, certain they have a part to play in the history of things aeronautical. Perhaps, through this brief glimpse into one man's dream and his family's unselfish willingness to see that dream bear fruit, you and I may also be provoked to sense the proud standard which the AU-18 raised. ■

NOTES

1. Correspondence with the author from H. Mace, Capt. USAF (Ret.).
2. Personal conversation with author from Mr. Joe Hammer.
3. Personal conversation with author from Mr. Claude Bishop.
4. Personal conversation with author from Mrs. Gail Gardenhire.
5. Copy of Patent Des. 157,645, patented March 7, 1950, via Kent Mitchell.
6. *USAF Aircraft 1947-1956*, James C. Fahey, "Ships and Aircraft," Falls Church, Va. 1956.

Ungainliness of landing gear caused USAF to question proposed purchase of XC-120. Later models were to incorporate pod nose built integral with upper fuselage so as to accommodate retractable nose wheel.
(Fairchild via Fabris)

Feb. 1955—AU-18-150B at Sacramento Municipal Airport, final location of AirUtility Cargo Co.
(by W.T. Larkins)

7. *U.S. Military Aircraft Designations and Serials*, John M. Andrade, 1979, Midland Press.

ACKNOWLEDGEMENTS

This article illustrates fond memories by this author. As a child the author's young imagination was provoked by this aircraft as it was subjected to assorted modification and testing at the local airport. I want to express my deep appreciation to Mrs. Gail Gardenhire for her great courage in discussing past events which in some cases unearthed difficult feelings. Also of great assistance were Msrs. Harvey Mace, Joe Hammer and Claude Bishop whose recollections added so much humaneness to this tale. Mr. Bob Cole, now of the State Department of Fish and Game, also contributed his experiences. Thanks, Bob!

As always, my wife Pat's smiling acceptance of all things aeronautical continues to encourage me. Thanks once again, Don Clark, as you continue to support projects that we do together through your interest in all things aeronautical, and your photographic skills. Finally, to the man who seems to have photographed every object with man-made wings: thanks, Bill Larkins, for the photos and encouragement.

ABOUT THE AUTHOR

Bob Martin is interested in any aircraft but especially those whose history remains an enigma. Many aircraft fit this description to him since in his employment as a Juvenile Probation Officer he encounters few airplanes and little aviation history. This is his fourth article for the *Journal*. If any reader should possess additional data concerning the AU-18, Mr. Martin would be interested in hearing from him. Please address your correspondence to 2309 Sabine Way, Rancho Cordova, CA 95670.

