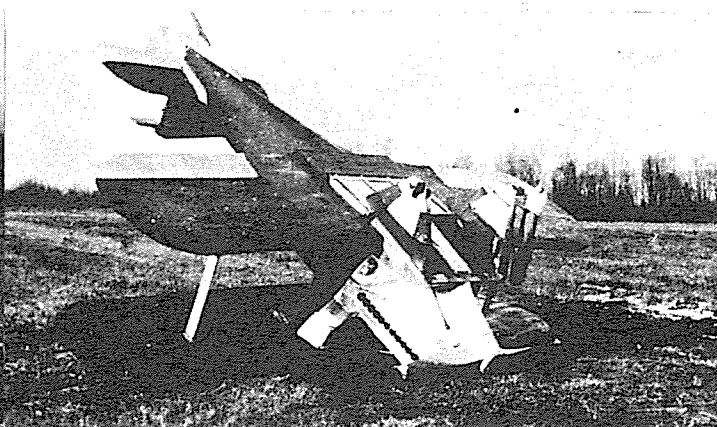
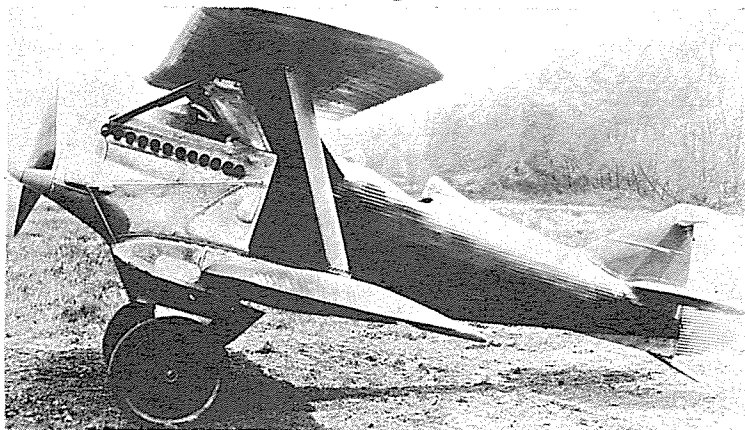




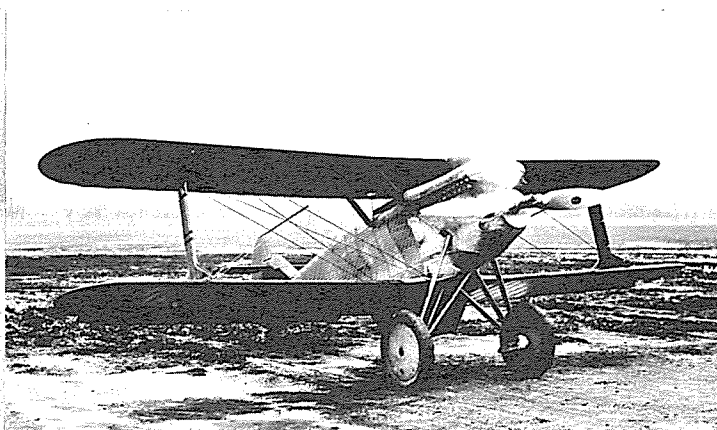
Thomas-Morse TM-23, original version



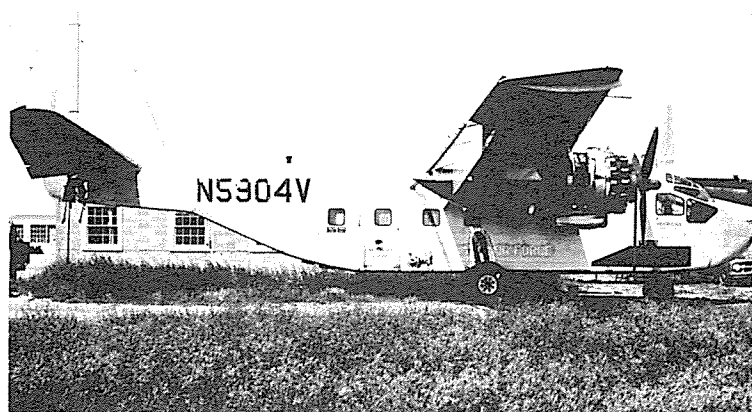
Wreck of first version



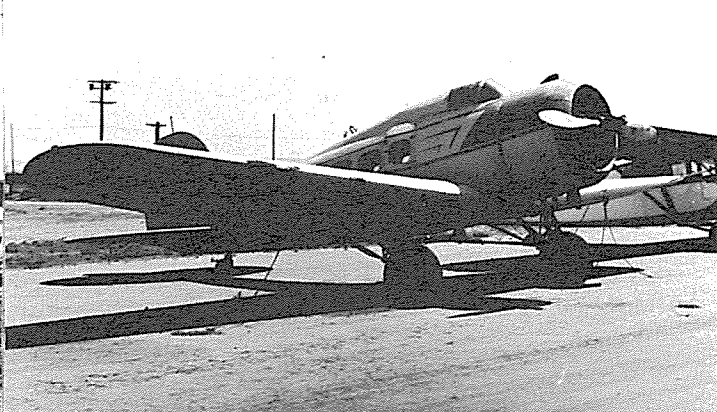
TM-23, interim version



TM-23, final configuration

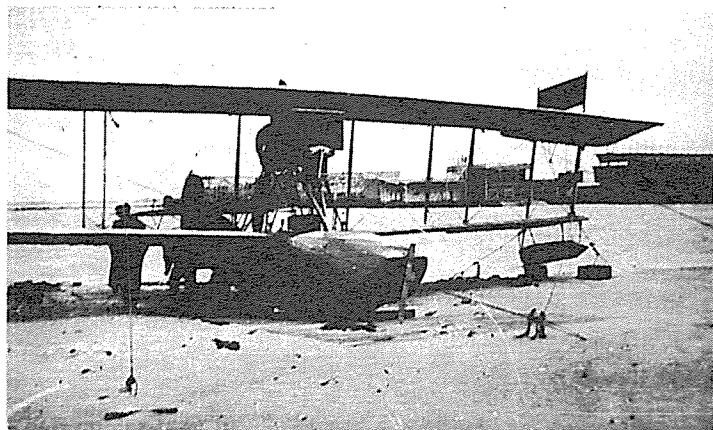


Chase YC-122

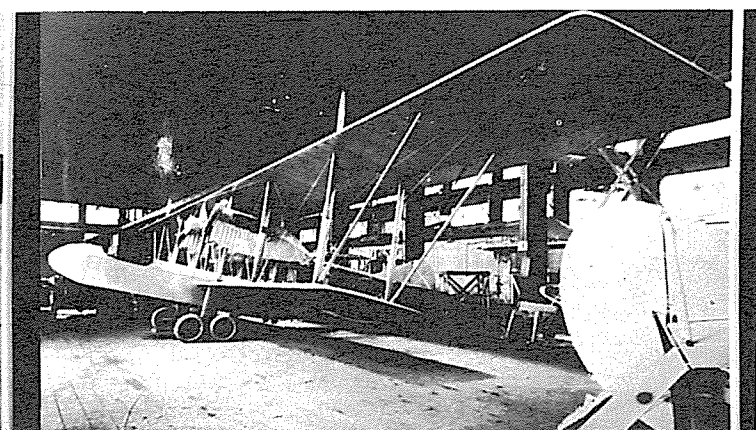


G.Kuhn Lockheed "Orion"

P.Nevai



Curtiss "K" (1915)



K.Molson Curtiss "C" (1916)

K.Molson

THE MAIL SACK

"Notes on the Thomas Morse TM-23" - Paul D. Wilson

Harold Andrews, one of the AAHS directors, is a friend of Paul Wilson and sent in these notes on the TM-23 originally composed by Mr. Wilson. From 1920 to 1928, after Frank Burnside left the company, Paul Wilson was the chief test pilot for the Thomas Morse Company.

From its initial appearance to its conclusion, this design went through several modifications and a complete redesign. Only the motor mount and after portion of fuselage were retained in the later version.

In the first design cantilever wings were fitted. Although a single strut connected upper and lower wings, the plans called for elimination of this strut. The span was approximately 20 feet and the fuselage length was a few inches over 16 feet. It was fitted with a Curtiss D-12 engine rated at 425 HP. It was probably the smallest plane flown up to this date with a power plant of this size.

The fuselage was extremely narrow and the cockpit was very cramped even for a pilot weighing 150 lbs. The use of a parachute was difficult as there was not sufficient width for a seat pack chute without using pressure to force it into position. (It is doubtful if an exit could have been made in an emergency.) The rudder stirrups were on either side of the rear section of the engine.

During initial taxi tests it was discovered that rudder area was not sufficient; the plane would go to the right even with full left rudder applied. Additional surface was added and this permitted straight take-off unless throttle was opened suddenly.

Taxi runs were made, gradually increasing speed, and initial indicators were fairly favorable. (Figure 1 shows the plane at the start of one of these runs.) It was not the writers intention to make a circle until a more favorable wind condition was present; but during one of the short hops (a few inches off the ground) the left wheel hit a ridge caused by a frozen ditch and the right wing nearly hit the ground. The power was left on in order to level the wing, but aileron response was slow and too much of the field was used up to permit landing in a normal attitude. The plane gained speed in a fairly steep climb and gradually became very nose heavy. At about three hundred feet elevation this condition exceeded the effect of the elevators (in full back position). The small trimming control was moved to its full limit. A crash appeared probable in the vicinity of the old Treman-King warehouse. It was found that the nose-heavy condition improved when the engine was throttled back and the ship leveled off some fifty feet from the ground. With engine throttled there was some elevator control until the engine speed reached 1600 RPM at which point the ship would nose over with the stick at the rear limit of travel. At 1500 RPM the speed was just above stall point. The plane was headed south and an effort made to gain sufficient height for a turn. Right rudder was extremely heavy and one hand had to be used on the knee to assist. Climb was slow (at about 1550 RPM) but a turn was accomplished. At this point the cooling system went over its limit and steam appeared at several points.

Another turn was made permitting a field approach from the north. On the descent the throttle provided most of the height control. By sheer luck the field boundary was crossed at the proper elevation and it appeared possible to make a near normal landing with tail high. The ship dropped through rapidly from a height of about ten feet and a wheel collapsed. The right wing hit the ground and the plane rolled onto its back, sliding some distance on the frozen ground. It is possible that a conventional landing gear might have taken this hard landing but the radical design provided on this plane had a travel of less than 3" and tires were only 28 by 3". Serious damage was confined to propeller and top wing. (Fig. 2).

The plane was returned to the plant and the top wing moved forward one foot. (Fig. 3). After its return to the field it was test flown without further difficulty. Attempts were made to improve cooling. Top speed was about 45 MPH below design estimate and handling characteristics were very poor. Stick forces were abnormal in many attitudes. At speeds around 150 MPH in straight flight it was fairly well balanced. It would attain this indicated speed with somewhat less than half throttle. Opening throttle resulted in quick acceleration up to about 160 MPH and there it stopped abruptly. Many speed runs were made but even with slight dive on approach the writer cannot recall reaching speeds above 175 MPH.

Although it was immediately apparent that this design had no possibilities in this form, tests were continued at the Field for several months. Cooling trouble still persisted but no space was available for an ample size radiator. A great deal of oil cooler trouble caused delays. The ship felt very insecure in a right turn and tight turns in either direction were difficult. Rudder control was still heavy.

The plane was again taken to the Hill Plant. The fuselage was lengthened some 20" by inserting a section just ahead of the pilot's cockpit. Conventional braced wings were substituted and span was increased approximately five feet. Appearance was much improved and flight characteristics were somewhat near normal. It was still very cramped and flights of any length would have been out of the question. (No elbow room was available due to narrow fuselage.) Tests continued for several additional months. Top speed was improved but it was still under 190 MPH. Landing speed was still around 100 MPH.

The writer was requested to fly this plane to Dayton but felt that the coding and other defective items made this inadvisable. It was shipped to McCook Field and flown about five times. (Fig. 4). The oil radiator failed on the first flight and four or five of the test pilots each flew it once on short flights.

The TM-23 was designed to be "an alert pursuit" plane. A substantial amount of money went into its development. The project was kept active for nearly two years. It is unfortunate that the plane was submitted to the Procurement Division pilots as it was certain to arouse unfavorable comment.

After these brief flights at McCook Field the motor was removed and the balance of the plane dismantled.

"The New Lives of the Chase YC-122" - Gary S. Kuhn

The world's largest tilt-wing VTOL/STOL aircraft, the Hiller X-18, was rolled out on December 8, 1958, and extensive testing of this pioneering venture has followed. Yet, the fuselage and tail unit of this current research aircraft date back some ten years to an obscure U. S. Air Force light assault transport derived from a cargo glider--the Chase YC-122!

The original YC-122 (47-641) was actually the second Chase YCG-18A glider of 1947 with two Pratt & Whitney R-2000-11 engines attached to the wings. This successful modification led to the order for two YC-122A 30-troop assault transports in fiscal year 1948. The second of these (48-1370) became the YC-122B with the installation of two Wright R-1820-101 engines of 1425 h. p. each.

FY 1949 funds produced a contract for nine R-1820-101-powered YC-122C aircraft. These aircraft had a wing span of 95 feet 8 inches, length of 61 feet 8 inches, and height of 24 feet 8 inches. Top speed was 240 m. p. h. The normal range of 2,900 miles could be extended to 4,540 miles with extra tanks. With a gross weight of 32,000 pounds, the YC-122C carried a normal useful load of 13,000 pounds or 30 troops with equipment.

After serving for several years as troop carriers with the Tactical Air Command's Eighteenth Air Force, the YC-122s were made surplus. As related below, several YC-122 aircraft have found civil owners while two have been employed by Hiller in the X-18 project.

Seven Chase YC-122 aircraft were on the 1958 U. S. Civil Register, and at least several of these have been re-engined with the Wright R-2600-20. It is not known if this modification took place after the disposal of the aircraft by the USAF. Two YC-122C aircraft were flown into Moffett Field, California, on June 22, 1956, and were then dismantled and taken to the Hiller plant. They were 49-2883, which has furnished the fuselage and tail components of the X-18, and 49-2881, whose parts are being retained as spares for the X-18.

Thus the unheralded and uncommon YC-122 would seem to have several years still ahead of it as an important experimental project, as well as in civil use. Furthermore, its big brother the C-123, which also was created by attaching two engines to a large Chase glider (two P & W R-2800-83s to the first XCG-20), has been produced by Fairchild as a standard USAF transport type.

The "still active" YC-122s are listed below:

<u>Orig. AF Serial</u>	<u>Current Regis.</u>	<u>Owner</u>
48-1370	N122A	Cardina Aircraft, Durham, N. C.
49-2879	N122E	Cardina Aircraft, Durham, N. C.
49-2880	N122M	Cardina Aircraft, Durham, N. C.
49-2881	(X-18 spares)	Hiller Aircraft Corp., Palo Alto, Calif.
49-2882	N122R	Chris D. Stoltzfus, Chester, Pa.
49-2883	57-3078 (X-18)	Hiller Aircraft Corp., Palo Alto, Calif.
49-2884	N122S	Chris D. Stoltzfus, Chester, Pa.
49-2885	N68595	Master Equipment Co., Laramie, Wyo.
49-2886	N5904V	Master Equipment Co., Laramie, Wyo.

"The Last Orion" - Paul J. P. Nevai

Mr. Paul Nevai of New Rochelle sent in this fine picture of "the last Lockheed Orion in existence in the United States." He continued in his letter, "This plane was referred to in Mr. Chalmers' article on Orions in the first issue of the Journal. Its manufacturer's serial is 180 and registration is NR-12222 or NC-12222. This Orion is a special model 9-C and is powered by a 650 h.p. Wright Cyclone. Manufactured in 1931, its first owner was Shell Oil (the 'Shell Lightning' flown by J. Doolittle), then Paul Mantz (camera plane, Bendix Races, flights to Mexico, etc.), Barnsdall Oil Co., then a Mr. Henry Rollers and for a few years it was dismantled in a hangar in Delray, California. Finally it is being brought up to date. Does anyone know what registration it has now and who the owner is?" Paul J. P. Nevai, 169 Wykagyl Terrace, New Rochelle, N. Y.

"Canadian Curtiss Aircraft, 1914-1916" - K. M. Molson

Our very active Canadian member, Ken Molson, has sent us several rather interesting World War I vintage aircraft photos and information on the Canadian-built Curtiss "K" flying boat and the Curtiss "C" land plane.

"Curtiss K. When the Curtiss Aviation School opened in Toronto it was equipped with two imported Curtiss "F" boats. One additional boat was added in 1915, this being the Curtiss "K" built here in Toronto at the Curtiss plant. I have seen no specifications for this a/c nor am I aware of the same model being built in the U. S. Therefore it might be a design of the Canadian Curtiss plant. In any event there appears little doubt that it was the first flying boat to be built in Canada. If there is a Curtiss expert among the members possibly he can help and, if so, I would be very pleased to hear more of this a/c.

"Curtiss "Canada" or Model "C". The Curtiss Co. in the U. S. had made a large flying boat in 1914 named "America" for a trans-Atlantic attempt. This was considered to be a very successful a/c and so in 1915 it was proposed to develop a landplane counterpart. The Curtiss Co. in the U. S. was very busy and the job of designing and building this machine was given to the newly formed Canadian company (Curtiss Aeroplane & Motors Ltd. of Canada).

"The prototype was powered with two Curtiss V. x motors of 170 h. p. each and called the "Canada." It was shipped to England for the R. N. A. S. in the fall of 1915. All the above is fairly well known, being covered in periodicals at the time and in Jane's AWA.

"What is not so well known is that the Canadian Curtiss Co. went on to build 11 more of an improved model of the "Canada" called the Model "C." The photo shows one of these plus the tail of another. These were also shipped to England, but I do not know what happened to them. The main external difference between the "Canada" and Model "C" appears to be the addition of struts to brace the overhang of the upper wing.

Span 76 feet
Crew--3
Fuel--200 gallons

Gross weight 7,000 lbs approximately
Military load 1,000 lbs approximately

"Equipment included a bomb sight and an automatic stabilizer (forerunner of an autopilot) both of Sperry design. This was the first twin-engined a/c to be built in Canada."