

YESTERDAY'S WINGS

The Curtiss / MF Seagull

by PETER M. BOWERS / AOPA 54408

Introduced in 1918 as a Navy trainer, Curtiss' new, improved flying boat soon appeared in civvies, saw widespread use in the '20s. Dearborn's Ford Museum has the only remaining MF in displayable condition

■ ■ While American-designed planes didn't get a chance to make the history books as a result of World War I military activity, several models became famous for civilian activity in the early postwar years. The best known of these—notably the Curtiss JN-4 *Jennies* and their *Canuck* cousins, the Standard J-1, and the Thomas-Morse S-4C—have been featured previously in these pages. [See *PILOT* issues for Sept. 1963, July 1969, and Dec. 1968, respectively.]

However, one wartime model, which saw very wide postwar use relative to the original number built, has escaped the attention of the historians. This was the Curtiss/MF, a small trainer flying boat. The designation stood for "Modified F" and traced the origin of that 1918 model to the Model F of 1913, which was itself an early production version of the original Curtiss flying boat of 1912.

Glenn H. Curtiss, contemporary and arch rival of the Wright Brothers, is recognized as the builder of the world's first successful seaplane (January 1911) and inventor of the flying boat (January 1912). Most of the small flying boats in production today—with their hulls in the water, pusher engines mounted above the hull, and outrigger floats under each wingtip—are basically similar to Curtiss' 1912 *Flying Fish*. The fact that most of these moderns are also amphibians can be credited to Curtiss, too. He was also the first to add retractable wheels to seaplanes, both the pontoon and flying-boat type.

The production Model F was a thing of beauty in its day, and some of the details would be such today. The principal feature was the hull, which was a wood frame, covered with cross-laminated strips of mahogany. Copper nails were used to hold the skin to the frames, and the unpainted wood was varnished to a high gloss. The two-man

crew sat side by side in an open cockpit just ahead of the lower wing.

A distinctive Curtiss feature of the time was the aileron control system, by means of which the pilot worked the ailerons by "body English." A yoke fitted to his shoulders from behind; to raise a low left wing, he leaned to the right. Turns were entered by leaning into them, an action that was probably a carryover from Curtiss' motorcycle racing days. The ailerons themselves were located between the wings instead of being built into the trailing edges. Turning the control wheel worked the rudder, while push-pull action on the wheel worked the elevators.

The F enjoyed a brisk export business prior to World War I and was

Except for the basic configuration of a wooden pusher-biplane flying boat, there was little detail resemblance between the MF and the old F. The MF clearly showed five years of aircraft design improvement. One significant change was the use of the now-standard "Dep" control system, with the control wheel actuating the ailerons when turned, while a foot bar moved the rudder. Curtiss' differences with the Wright Brothers over control systems had been resolved, at least temporarily, by the formation of the Manufacturer's Aircraft Association. This was a patent pool, set up when the United States got into World War I, to resolve the complicated aeronautical patent situation and clear the way to aircraft production for the war effort.

The hull of the MF differed greatly from that of the F. Additional forward buoyancy—needed to resist the tendency of the high-mounted engine to force the bow under water at the start of the takeoff run—was supplied by sponsons built along the sides of the hull from the bow to a point even with the second step in the hull. (Curtiss also invented the "hydroplane step" used on seaplanes, flying boats, and hydroplane speedboats.)

Powerplant for the MF was the eight-cylinder Curtiss OXX-6, a slight improvement over the famous OX-5. This produced 100 h.p. to the OX-5's 90, by virtue of dual ignition and a quarter-inch-larger bore.

The Navy gave Curtiss an initial order for six MFs and then followed it with an order for 47. However, because of the armistice, only the first 16 were delivered to the Navy. The Navy's own aircraft factory in the Philadelphia

A 1914 production-model Curtiss F. While most of the Fs had a rounded foredeck, the angular structure shown here was hinged at the bow and swung forward onto the beach or ramp to provide a gangplank for the crew.

Photo courtesy of Ray Wagner



even built under license in France and Russia. The U.S. Army and Navy both used them. The F was the Navy's principal flying-boat trainer of World War I, with approximately 150 procured into 1918, when it began to be replaced by the MF.

Navy Yard then built an additional 80 MFs, for a total of 102 military versions delivered.

Curtiss (along with other established aircraft manufacturers) expected to cash in on the anticipated postwar boom in civil aviation and quickly pro-



The Curtiss/MF, later Seagull, of 1918, powered with 100 h.p. Curtiss OXX-6 engine. Notice that the skid plates, considered essential at the time, have been moved from the inboard location on the Model F to the upper wings. The sponsors at the bottom of the hull are quite noticeable. Curtiss photo

duced a civil version of the MF called the *Seagull*. Several of these were sold at the new-airplane price of \$9,000 in 1919, before the Government began to unload the war-surplus stock. At first, this unloading proceeded slowly, with the Government selling the planes back to the original manufacturers or to other firms that could recondition them



As an experiment, a Seagull was converted into an amphibian known as the Crane, but no production versions resulted.

Curtiss photo

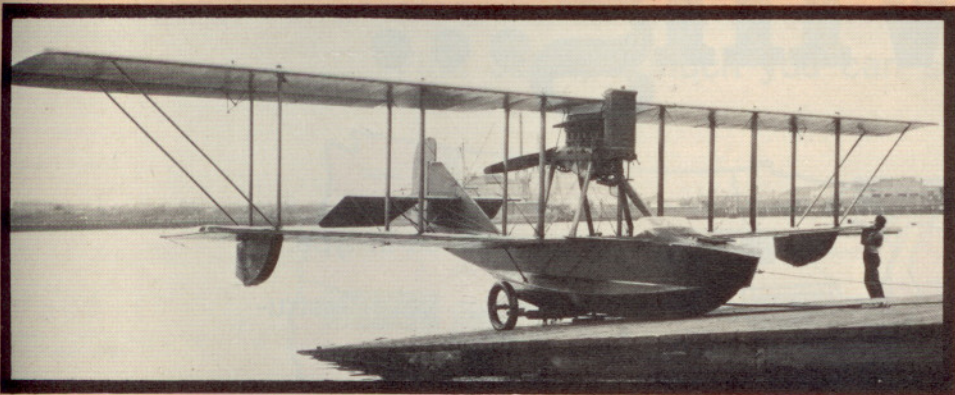
mately 40 MFs with various powerplants appeared on the 1927 civil register, in statuses from merely identified to full commercial license. Compared to other war-surplus designs on hand, this was a remarkably high percentage of the original production.

While Curtiss' development of the MF Seagull ended in the early 1920s, various improvements were made in later years by private owners and by other firms. One even tried a metal hull and intended to put it into production.

Only one MF can be seen today. This is on display in the Ford Museum in Dearborn, Mich., but is hard to recognize as such because it is fitted with entirely different wings. The remnants of one other MF are in the possession of the U.S. Navy and hopefully will be restored to displayable condition. □

CHARACTERISTICS AND PERFORMANCE 1919 Curtiss Seagull

Span	49 ft. 9 $\frac{1}{2}$ in.
Length	28 ft. 10 $\frac{1}{2}$ in.
Wing area	301 sq. ft.
Powerplant	Curtiss K-6 150 h.p. @ 1,700 r.p.m.
Empty weight	1,796 lbs.
Gross weight	2,726 lbs.
High speed	76.5 m.p.h.
Cruising speed	68 m.p.h.
Stall speed	48.5 m.p.h.
Climb	3,000 ft. in 10 minutes
Range	288 mi. (43 gallons)



A modified Seagull still active in the early 1930s. Notice that the upper-wing king posts and skid plates have been removed and that the wing overhang is now braced with struts instead of wires. A. U. Schmidt collection

and sell them to the public for about half the price of an equivalent factory-new plane. This procedure of course cut down on the production of new planes, which then came to a complete halt when sale of the remaining surplus was opened to the public on an "as-is-where-is" basis. Even so, Curtiss was able to sell approximately 200 new or reconditioned MFs through 1923.

Among the improvements that appeared were, of course, more powerful engines. The 150 h.p., American-built Hispano-Suiza, commonly known as the "Hisso," was popular because of its low war-surplus price. Curtiss, however, favored the new Curtiss K-6, a 150 h.p. in-line six that was soon replaced by the improved C-6. This was merely the K-6 upped to 160 h.p. and redesigned

C-for-Curtiss instead of K-for-Kirkham. Charles Kirkham had developed the 400 h.p. K-12 engine in the Curtiss plant early in 1918, and the K-6 was essentially a single-bank version of that original V-12 engine. After the war, however, Glenn Curtiss wanted the engines recognized as Curtisses and decreed the C-for-K switch for both the six- and twelve-cylinder models.

It was also easy to modify the original two-seat cockpit of the MF to carry three passengers plus pilot on profitable sightseeing flights. Many barnstormers and a few established flying services did a brisk business hopping passengers from beaches at amusement parks and seaside resorts.

Curtiss even tried an amphibious version, which it named the *Crane*. The Navy had similar interest and sent a Navy-built MF to the Elias Aircraft Company for another amphibious conversion. There were no follow-ups to either of these efforts.