The Curtiss Lark

Yesterday's Wings

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■■ Some aircraft design concepts that sound good in the study stage don't always work out as expected. Sometimes an intangible like aesthetics gets in the way of the technology. No matter how good the gadgetry may be, if the customer doesn't like the looks of the product it simply won't sell. A good example is the Curtiss Lark.

Back in 1925, the Curtiss Aeroplane and Motor Co. of New York was the leading U.S. aircraft manufacturer, but its output was exclusively military. What civil production there was at the end of 1924 was in the hands of a few small firms that were virtually custom shops. There was just no market for costly, new planes—plentiful and cheap war-surplus models were able to handle what commercial and general aviation activity there was at the time.

A market finally began to open up as the surplus types wore out and a number of new firms like Travel Air, Eaglerock and American Eagle entered the market and managed to survive. Curtiss got into the act, too, with two, new, nonmilitary models. The first was the Carrier Pigeon, a single-engine mailplane designed for a Post Office Department competition held in 1925.

While the Carrier Pigeon had the layout of the traditional mailplane, it employed a radical structural concept. In the interest of cost-reduction and minimum spare parts inventory, many major components were interchangeable—such as right and left wing panels, which could serve as either uppers or lowers. The vertical fin and the right- and left-hand horizontal stabilizers were identical, while the rudder, elevators, and ailerons were also interchangeable.

Since no center section was provided for the upper wing and the panels were

The prototype Curtiss Lark with C-6 engine and 1925 National Air Race numbers. Note that the shock absorbers on the landing gear are installed outboard of the wheels.

Three-quarter rear view emphasizes the angularity of the Lark. This is the second article, with a 180-hp "Hisso" engine and three-seat configuration with the pilot alone in a smaller, rear cockpit. The landing gear has widened and the shock absorbers are now inboard of the wheels.

CURTISS LARK

C-6 Engine J-4 Engine

Specifications

Engine	Curtiss C-6 160 hp @ 1,750 rpm	Wright J-4 200 hp @ 1,800 rpm
Span	30 ft 7½ in	30 ft 7½ in
Length	22 ft 2½ in	20 ft 11½
Wing area	264 sq ft	265 sq ft
Empty weight	1,579 lb	1,526 lb
Gross weight	2,449 lb	2,708 lb

Performance

High speed	114 mph	117 mph
Cruise speed	97 mph	101 mph
Initial climb	—	810 ft/min
Service ceiling	12,500 ft	13,100 ft
Range	449 sm	380 sm

The final version of the Lark had the 200-hp Wright J-4 Whirlwind engine. Note the auxiliary fuel tank under the upper wing and the faired-in belly cargo container. The bent metal propellers shown in all of the photos were developed by Dr. Sylvanus Albert Reed under Curtiss sponsorship and were manufactured and sold by Curtiss as the Curtiss-Reed propeller into the 1940s.

all the same size, the span of the lower wing exceeded that of the upper by the width of the fuselage. This interchangeability feature necessitated squared ends on the fixed surfaces and angled ends on the moveable surfaces to allow for rudder swing when being used as elevators. These, coupled with the longer bottom wing, made the Carrier Pigeon a leading contender for the title of ugliest American airplane of all time.

Although it looked as though Curtiss had come up with a cost-cutter's dream, the airplane lost out to the Douglas M-1 in the mailplane competition. The M-1 was a minor modification of an in-production Army observation plane that easily beat Curtiss on manufacturing cost. The Post Office did buy the Curtiss prototype, however, along with most of its competitors, and put them to work on the government's air mail routes. When the government began transferring its routes to private contractors in 1926,

the newly formed National Air Transport System (NAT) bought 10 production articles from Curtiss.

With an eye to the emerging civil market, Curtiss followed the mailplane with a scaled-down version that retained all of the Carrier Pigeon's unique features in a low-powered, four-seater called the Lark. Seating was two and two, with two passengers side-by-side in the front cockpit and a third at the left of the pilot in the rear cockpit. With versatility in mind, Curtiss designed the front pit for quick conversion to a cargo compartment and also provided for a small add-on container under the belly, if passengers and cargo were to be carried simultaneously. This was another good idea that didn't catch on until Lockheed and Cessna developed external belly cargo containers in the 1950s.

Since there were no civil production engines available in the desired power range, the prototype Lark was powered with a 160-hp Curtiss C-6, a 1919 model that had been forced out of production by the glut of cheap, war-surplus powerplants. The prototype was entered in the 1925 National Air Race events for its power and class, but was an also-ran behind smaller and faster models using the same engine.

The C-6 didn't quite meet the Lark's power requirements, so the second article used another out-of-production engine, the 180-hp war-surplus Wright-Hispano E, or Hisso. Since that didn't quite fill the bill either, Curtiss resolved the problem by installing the new 200-hp Wright J-4 Whirlwind in the third article. This was an air-cooled radial developed under military auspices and had only become available on the civil market late in 1925.

Although the J-4 made a good airplane of the Lark, it couldn't find a niche in the market. The little brother of the ugly Carrier Pigeon was equally as ugly, so the aesthetics may have had something to do with it. Actually, the Lark was the wrong-sized airplane for the time; it wasn't big enough to be an efficient heavy hauler and it was just too big to serve as a trainer or comfortable private owner type.

The J-4 model did become a workhorse, however. Colonial Airways bought it and used it on its New York City-Boston air mail run. It was given the short-lived 1926 registration of N-AABC, which was changed to 1052 when numbers were adopted in January 1927. This Lark was destroyed in a hangar fire at Hadley Field, N.J., in May 1927. □