

■ Look-alike airplanes have been with us since the Wright Brothers and always will be. If you have a hard time distinguishing between a Piper Cherokee and a Beech Musketeer at a distance, or between a Boeing 707 and a Douglas DC-8, relax. Your aircraft recognition problem is simple compared to the one that exists when several manufacturers build the same airplane.

Recent examples are plentiful—Ryan building the North American Navion; Aeronca selling its Champion design to Champion Aircraft, a new firm organized to manufacture it; and of course the transfer of the Globe Swift from Globe to Temco as discussed in The PILOT for April 1968 (page 52). The identification problem in these cases is minimized by the fact that the airplane kept the same model name and the "what" of the situation was more important than the "who."

There were some interesting variations during World War II. Under the Army identification system, a B-17 was a B-17 no matter who built it—Boeing, Vega (a Lockheed subsidiary), or Douglas. The Navy tied the actual manufacturer into the designation. The famous Vought F4U Corsair was built also by Brewster as the F3A and by Goodyear as the FG-1. In combat, the recognition problem wasn't Vought, Brewster, or Goodyear. It wasn't necessarily the collective Corsair, either. The important question then was: "Ours or theirs?"

Perhaps the prime aeronautical confusion item of all time is the conventional Challenger biplane design introduced in 1927 by the Kreider-Reisner Aircraft Company (K-R) of Hagerstown, Md., but subsequently produced by Fairchild, Parks, Detroit, Ryan, and finally Hammond. This little identity problem was further complicated by the fact that the airplane in question was an adaptation of two other well-known designs already in service and, like many other models of the late 1920's, picked up a variety of model designations following a series of engine changes and minor structural refinements.

Recognition problems of this period were also complicated by the fact that designers moved around a lot. When a designer left Company A and hired in Photo by Howard Levy

(ABOVE) The Fairchild K-R 31, with straight-axle landing gear, vertical radiator, and ailerons on the upper and lower wings, was originally the Kreider-Reisner Challenger C-2. (BELOW) The Parks P-I was identical to the Challenger C-2 and Fairchild K-R 31 except the radiator was relocated under the nose and ahead of the straight-axle landing gear.

Photo by A. U. Schmidt

Six companies produced the same airplane, and it's difficult to distinguish among them

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at Company B, his first design for Company B was often a dead ringer for his last one at Company A. Such wasn't the case at K-R, however. That company, founded in 1923, was a Waco distributor. After building a successful baby racer in 1926, K-R decided to produce commercial biplanes in 1927 and found the resident Wacos a very convenient source of design inspiration as well as useful parts.

The new biplane, designated Challenger C-2, reflected the standards of the time. Looking like a cross between the Waco Models 9 and 10 that inspired it, the C-2 was a three-seater powered by the ubiquitous war-surplus Curtiss OX-5 engine. The pilot sat in a single cockpit, and the passengers sat side by side in a cockpit just ahead of him and right on the center of gravity. The wings used solid spruce spars and routed-web-andcapstrip ribs with the same modified Aeromarine airfoil used on the Wacos. Fuselage and tail were steel tube, and the whole was fabric covered. The straight-axle landing gear was like that on the Waco 9, with unique double forward struts, so the only distinguishing feature of the C-2 was its odd vertical radiator, a common sight on 1918 trainers and in the early 1920's, but an anachronism in 1927.

The C-2, certificated in December 1927, found a good market in the expansive 1928-29 period. Minor refinements and desirable engine changes soon resulted in a whole series of Challengers. Various new engines, including the unorthodox Caminez four-cylinder radial, were tried in the C-2, but none of these variants went into production. A change to the new seven-cylinder 110 h.p. Warner radial resulted in the Challenger C-3, and use of the similar 130 h.p. Comet radial produced the C-4. Another 110 Warner variant became the C-5. The C-6 was an entirely different design.

None of these initial changes was notably successful. A 165 h.p. Curtiss Challenger engine in a C-4 resulted in the C-4A. The new five-cylinder Wright J-6-5 of 165 h.p., introduced early in 1929, gave better promise. Fitted into C-4's, these resulted in the C-4B and

## One Basic Biplane Poses Unusual Recognition Problems



Parks Aircraft built the Parks P-IIA, a duplicate of the K-R 34C. When Parks was shut down by the parent company, Detroit Aircraft, P-IIA production was transferred to Detroit-Ryan as the Ryan Speedster. Photo by Gordon S. Williams

Fairchild's K-R 31 became the K-R 34C model when the Curtiss OX-5 water-cooled engine was replaced by the Wright J-6-5 air-cooled radial. Other minor refinements were made.

Photo by the author



C-4C. The C-4C combination was a winner and became a major production item. Except for the radial engines and minor structural refinements like divided-axle landing gear and deletion of the two ailerons in the top wing, the C-3 through C-5 models were identical to the C-2.

In April 1929, K-R was acquired by the Fairchild Aviation Corporation, which also controlled the Fairchild Airplane Manufacturing Corporation of Farmingdale, N.Y. K-R became another division of the parent company, but continued to produce its own designs at Hagerstown. The airplanes were redesignated. The Kreider-Reisner C-2 became the Fairchild KR-31, and the C-4C became the KR-34C.

These designations had significance. The K-R, of course, identified the Kreider-Reisner design. The numeral, 3, meant three-place, and the 1 meant the first three-place model. The C-4 to K-R 34 change seems to be out of sequence with the other three-place C's, but the two-place C-6 became the K-R 21.

At this point, the recognition problem

really began to get complicated because Parks Aircraft, Inc., of St. Louis, Mo., began building duplicates of the C-2/ K-R 31 as the Parks P-I. Parks Aircraft was a subsidiary of Parks Airlines, Inc., which also owned and operated Parks Air College. The aircraft company built trainers for the school. The P-I even had the old Waco landing gear and four ailerons of the C-2. The only distin-guishing feature of the P-I was the mounting of the radiator under the nose in the manner of the contemporary Travel Air and American Eagle biplanes. An improved P-II soon appeared, incorporating the structural refinements of the C-4/K-R 34, but using the 150 h.p. seven-cylinder Axleson radial engine that had originally been known as the Floco. This engine wasn't very satisfactory and was quickly replaced by the reliable Wright J-6-5, resulting in the Parks P-IIA that duplicated the K-R 34C.

By the time the P-IIA was in production, Parks had become part of the great Detroit Aircraft Corporation, which controlled several other manufacturers. Technically, this made the planes "Detroit-Parks," and some were actually described in the contemporary press and by subsequent historians as "Detroits."

The depression stirred the recognition problem up a bit, too. Detroit elected to shut Parks down and transfer P-II production to the Ryan Aircraft Company, another Detroit subsidiary that had been moved from San Diego, Calif., to new plants in Detroit and St. Louis. After Ryan took over the P-II, it was marketed as the Ryan Speedster. Some Speedsters may have been built in Detroit, but major production was at Ryan's St. Louis plant. This didn't last long, however. Detroit and Ryan both folded due to the depression, and Speedster production ended.

This wasn't quite the end of the line. Fairchild had finished K-R 34 production by this time but Detroit sold the *Speedster* design to Hammond Aircraft Corporation of Ypsilanti, Mich., in June 1932. The recognition problem was not compounded this time because Hammond had the initiative to alter the old standby in several notable ways before putting it on the market as the Hammond 100 with a 100 h.p. Kinner fivecylinder radial.

There are 25 of these old-timers of the various makes around today, and examples are frequently seen at the many antique airplane fly-ins held around the country. Be darn sure which is which (if you can) before you stick your neck out and try to play the "name the plane" game when a Kreider-Reisner-Fairchild-Parks-Detroit-Ryan is involved.

## SPECIFICATIONS AND PERFORMANCE

	Challenger C-2	Parks P-IIA
Span	30 ft. 1 in.	30 ft. 0 in.
Length	23 ft. 9 in.	23 ft. 0 in.
Height	9 ft. 4 in.	9 ft. 3 in.
Wing Area	296 sq. ft.	285 sq. ft.
Power Plant	Curtiss OX-5,	Wright J-6-5,
	90 h.p.	165 h.p.
Empty Weight	1,236 lbs.	1,483 lbs.
Gross Weight	2,087 lbs.	2,380 lbs.
High Speed	98 m.p.h.	120 m.p.h.
Cruising Speed	85 m.p.h.	100 m.p.h
Landing Speed	37 m.p.h.	41 m.p.h.
Rate of Climb	548 ft./min.	800 ft./min.
Ceiling	12,000 ft.	14,000 ft.
Range	340 mi.	500 mi.
Cost	\$3,100 complete	\$6,350 complete
	(1928)	(1930)