The Command-Aire

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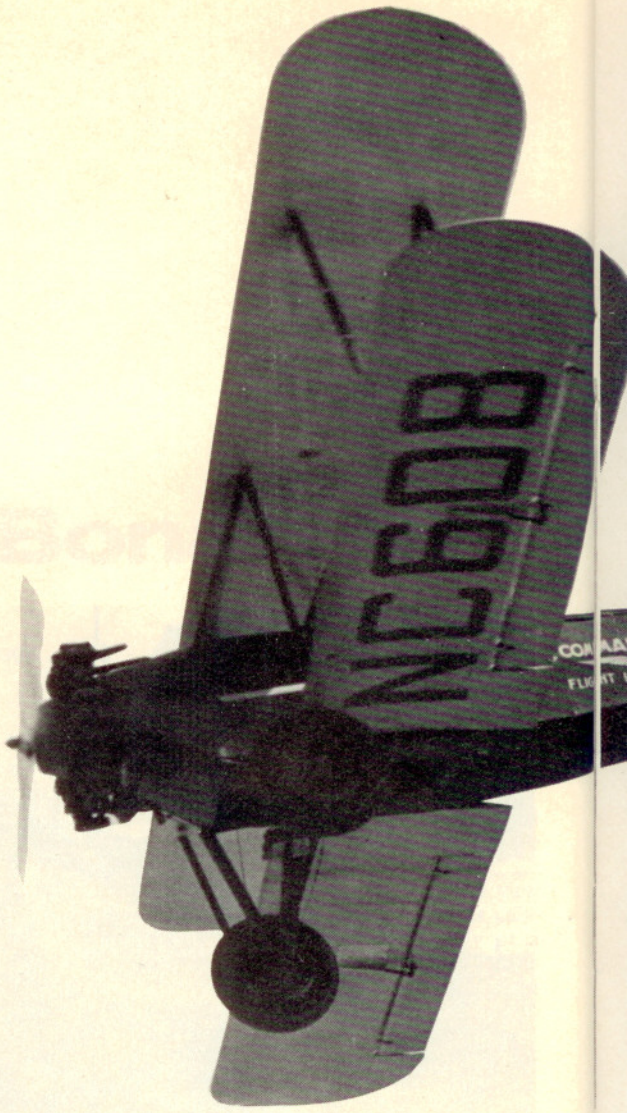
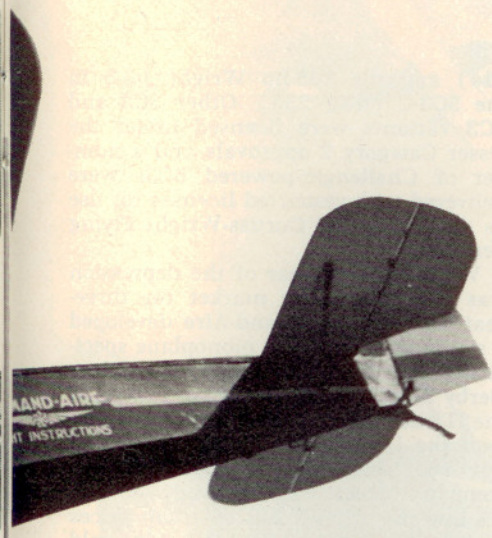


THE COMMAND-AIRE

	3C3	5C3
Price	$3,350	$6,325
Specifications		
Engine	Curtiss OX-5 90 hp @ 1,400 rpm	Curtiss Challenger 185 hp @ 2,000 rpm
Span	31 ft 6 in	31 ft 6 in
Length	24 ft 6 in	24 ft 5 in
Wing area	303 sq ft	303 sq ft
Passengers and crew	3	3
Empty weight	1,410 lb	1,482 lb
Gross weight	2,200 lb	2,365 lb
Performance		
Initial climb	510 fpm	850 fpm
Maximum level speed	100 mph	123 mph
Cruise speed	85 mph	103 mph
Range	440 mi	500 mi
Service ceiling	9,500 ft	14,000 ft
Stall speed	36 mph	37 mph

■■ The Command-Aire Models 3C3 and 5C3 of 1928-1930 were fine little airplanes that missed out on deserved recognition by being lost in the crowd. Command-Aire was a relative latecomer to the aviation scene, not appearing until after the "Lindbergh Boom" got under way. Before the boom started, the market was pretty well monopolized by the Big Five—Travel Air, Waco, American Eagle, Eaglerock, and Swallow, all of whom were producing three-seat biplanes. A rash of newcomers appeared early in 1928 and while Command-Aire was among the leaders of this group it was at best in the number six or seven spot overall.

The Command-Aire was produced originally by the Arkansas Aircraft Co., which had been founded at Little Rock, Ark., in 1926. The firm acquired the American manufacturing rights to the German Heinkel HD-40 mailplane and



The Command-Aire 5C3 was outwardly identical to the three-seat 3C3, powered by the 90-hp Curtiss OX-5 engine, but had a heavier structure to accommodate more powerful engines. This is the 5C3-B with the 110- to 150-hp Axelson.

with it the services of former Heinkel engineer Albert Voellmecke, who became the firm's chief engineer. After Voellmecke's new design was on the market as the Command-Aire in 1928, the company reorganized, expanded its plant and changed its name to Command-Aire, Inc.

Like most of its contemporaries that were aimed at the bottom end of the private owner and trainer market, the Command-Aire 3C3 was a conventional three-seat open-cockpit biplane powered by the low-cost and readily available war-surplus Curtiss OX-5 engine. Fuselage and tail were welded steel tubing and the wings were wood frame, all fabric covered. In the interest of lower cost, the early models did not have brakes or tail wheels. Shock absorbers were rubber cord instead of more expensive oleo units.

The Command-Aire had one notable structural oddity—the upper wing did not have a center section; the two panels joined at the airplane center line but not over a rigid cabane as on the American Eagle or the "Long Wing" model of the Eaglerock. Conventional-looking struts connected to the upper wing panels considerably outboard of the fuselage. In the absence of a cabane or the traditional roll wires, the wing bracing system was made rigid by an additional strut on each side that created an immoveable tripod arrangement somewhat in the style of the wartime German Fokker D-VII.

Another distinctive feature, and somewhat of an anachronism shared with the contemporary Curtiss Robin monoplane, was the use of a nose radiator. The others had all gone to separated units under the center section of the upper wing or under the belly. The airflow was more efficient in these locations but the automobile-like nose installation certainly improved the appearance.

The 3C3 model was awarded Approved Type Certificate (ATC) 53 in July 1928, and went on the market at an initial price of $3,350. Quite a few minor variants were to follow, resulting in a total of 10 ATCs. Other OX-5 powered models were the better-equipped 3C3-A (ATC-118) and the simplified 3C3-T trainer (ATC-150).

Since it was in the same size/weight category as the competition and used the same engine, the Command-Aire also had about the same performance. In order to sell in the overcrowded market, Command-Aire pushed flight characteristics rather than numbers. Voellmecke had set out to achieve superior inherent stability and had succeeded. A favorite sales gimmick was to have the pilot let go of the controls and climb part-way out of the rear cockpit while the airplane flew steadily on.

An additional and very effective device was also employed in the sales pitch. Voellmecke had developed and patented a "slotted" aileron that greatly increased the effectivity of that con-

trol at low speeds and lightened the stick forces at all speeds for easier operation. This feature appeared on some of the competing models the following year.

Like the competition, Command-Aire was not content to serve only the bottom of the market. The OX-5 had been the only engine in its power class when the airplane was designed, but 1928 saw the introduction of several new air-cooled radial engines. Command-Aire did not leap into the 220-hp class along with Travel Air, Swallow, and Eaglerock, but stayed under 150 hp for a while.

The first engine change was to the 114-hp German Siemens SH-14 that was distributed in the U.S. by Claude Ryan as the Ryan-Siemens. Designated 3C3-B, this model received ATC 120 in March 1929. An all-American engine, the 110-hp Warner Scarab appeared next in the 3C3-AT, which got ATC 151 in May.

A need for still more power resulted in the 5C3 model, which was outwardly identical to the 3C3 but had a beefed-up structure to take the increased power. Two versions were offered in July 1929, the basic 5C3 (ATC 184) with the new 185-hp, six-cylinder, twin-row Curtiss Challenger radial and the 5C3-A (ATC 185) with the much less costly 150-hp war-surplus Wright-Hispano A, or Hisso. Although the Hisso was a water-cooled engine, the airplane lost a trademark; the nose radiator was eliminated in favor of a larger unit installed under the belly.

Other new radials were also used, the 115- to 150-hp Floco that later became the Axelson in the 5C3-B (ATC 214) and the 165-hp Wright J-6-5 in the 5C3-C (ATC 233). Other 3C3 and 5C3 variants were licensed under the lesser Category 2 approvals and a number of Challenger-powered 5C3s were delivered with restricted licenses for use as dusters by the Curtiss-Wright Flying Service.

While the first year of the depression was wiping out the market for three-seat biplanes, Command-Aire developed a single-seat, low-wing monoplane specifically for the 1930 American Cirrus Derby held July 21 to August 1. Named the Little Rocket, the Command-Aire won the long tour but the victory did not sell single-seat sportplanes. The company, which had followed the leaders into the aircraft business, cut prices drastically to stimulate sales but could not keep going. It then followed many of the same leaders as they quit the business. □