

ATC # 588
(12-3-35)
FAIRCHILD, MODEL 45.

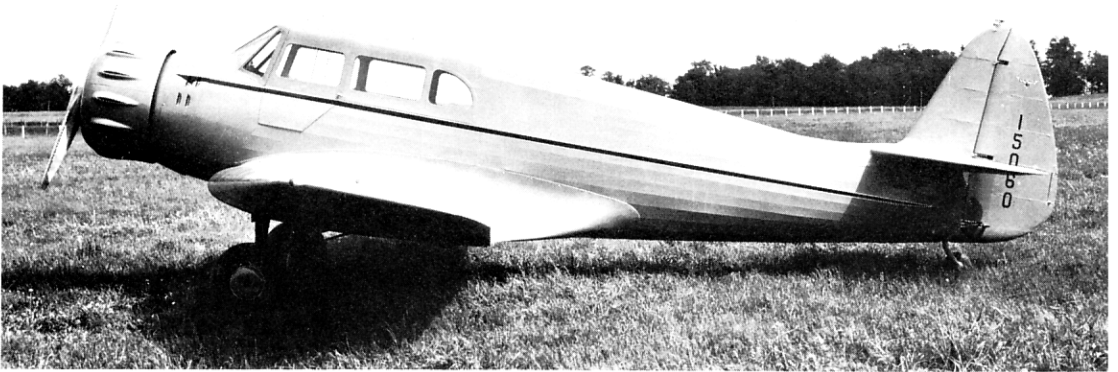


Fig. 319. The Fairchild "Model 45" with 225 h.p. Jacobs engine.

The "Model 45" as "Sedan of the Air" was designed specifically as a small high-speed transport having the capacity, comfort, and convenience generally associated with an expensive automobile. Outstanding features included a large, roomy cabin that was entered effortlessly through 2 large doors, a luxurious interior that invited one to settle down in comfort, and an above-average performance with miserly economy. Designed under the supervision of Geo. W. Hardman, chief engineer of Fairchild's commercial aircraft division, the "Forty Five" was flown on its maiden flight (31 May 1935) by Richard A. Henson, Fairchild's test pilot, and pronounced a complete success. It is logically assumed that "Dick" Henson must have been enamored by the airplane because the first flight lasted 3 hours 20 minutes, and a flight a few days later lasted 2 hours 21 minutes; it is doubtful if a pilot would have stayed up that long in a new airplane that didn't please him. In appearance the new "45" was an appealing airplane; the aerodynamic features were truly impressive and they all had definite performance functions. Built with traditional Fairchild quality the structure as used in the Model 45 was somewhat complex and costly, yet to have varied from this design would have resulted in just another airplane. The first airplane in the Model 45 series was delivered to the Superior Oil Co. of

Houston, Texas for speedy transportation of company executives. As is quite often the case, before a second airplane is built, there was pondering about "what a terrific airplane this would be if it had more power"! As a consequence, only one example, the prototype, was built with the 225 h.p. Jacobs engine. Subsequent airplanes in this series were powered with 320 h.p., actually more to the liking of the wealthy people that were buying these airplanes. Perhaps man's progress is driven by his faculty of never being satisfied.

The graceful Fairchild "Model 45" was a cantilever low-winged cabin monoplane with seating arranged for five. The primary objective in creating the "Forty Five" was to give the private-owner an economical five-place airplane which combined speed, luxury, and strength with flight characteristics and handling features that would permit operation from the smaller fields by non-professional pilots. In uncrowded seating to tolerate the longer flights, there was ample visibility and room for plenty of baggage. To obtain the combination of high speed, range, and payload with reasonable horsepower it was necessary to take advantage of the useful aerodynamic features of the low-wing design. Most aircraft of this type were designed for professionals and flown by expert pilots. The "45", however, was a gentle airplane that could



Fig. 320. Model 45 over checker-board of Maryland landscape.

be flown by any average pilot without difficulty. And too, it was loaded with thoughtful details that produced convenience for the pilot and luxurious comfort for his passengers; Fairchild wanted this to be the best in an airplane for personal transportation. As powered with the 7 cyl. Jacobs L-4 engine rated 225 h.p. at 2000 r.p.m. the Model 45 made every ounce of power count and delivered a performance well above the average. Inherently kind to non-professional pilots the "Forty Five" was gentle to its very bones and everyone loved it. It was planned to have the "45" also available with Lycoming 225, Continental 210, and other engines to 285 h.p., but these plans were cancelled in favor of the 320 h.p. Wright engine. The type certificate number for the Model 45 was issued 12-3-35 and only one example of this model was manufactured by the Fairchild Aircraft Corp. at Hagerstown, Md.

Listed below are specifications and performance data for the Fairchild "Model 45" as powered with 225 h.p. Jacobs L-4 engine; length overall 28'11"; height overall 8'0"; wing span 39'6"; wing chord at root 90"; wing chord at tip 47"; total wing area 248 sq. ft.; airfoil at root NACA-2218 tapering to NACA-2209 at tip; wt. empty 2277 lbs.; useful load 1323 lbs.; payload with 60 gal. fuel 755 lbs. (4 pass. & 79 lbs. baggage); gross wt. 3600 lbs.; max. speed 160; cruising speed (.75 power) 147; landing speed (with flaps) 48; stall speed (no flaps) 60; climb 640 ft. first min. at sea level; ceiling 16,000 ft.; gas cap. 60 gal.; oil cap. 5 gal.; cruising range (.75 power) at 13.2 gal. per hour 620 miles; price

\$8000. at factory field.

The fuselage framework was built up of welded chrome-moly steel tubing, heavily faired to shape with plywood formers and spruce fairing strips, then fabric covered. The sound-proofed cabin was 51 in. wide x 110 in. long and all windows were of shatter-proof glass. The bench-type front seat (16 in. deep x 47 in. wide) was ample for 2 and a throw-over control wheel was provided; the large instrument panel included a glove compartment for flash-light, maps, and misc. gadgets. The ultra-soft rear seat (18 in. deep x 51 in. wide) was wide enough for 3 with shoulder and leg room for all; a trap-door in the floor opened on a baggage compartment for items that needed to be handy, but not clutter up the cabin. Front seat-backs were fitted with magazine pockets and a shelf behind the rear seat was handy for jackets and hats. A door on the left in front provided entry to the front seats, and a door on the right side opened directly into the rear section. Interior comfort was regulated by heat and ventilation. The all-metal center-section (C/S) of aluminum alloy beams and ribs was covered with dural sheet and fastened to underside of the fuselage frame; outer wings were bolted to stub ends. The tapered wing panels were built up of spruce box-type spar beams with spruce and plywood truss-type wing ribs; the leading edges were covered with plywood sheet and the completed framework was covered in fabric. Slotted and balanced ailerons were metal framed and covered in fabric. The metal-framed wing flaps, in 3 sections, were covered with fabric and hand-operated to 3 positions; 60 degs.

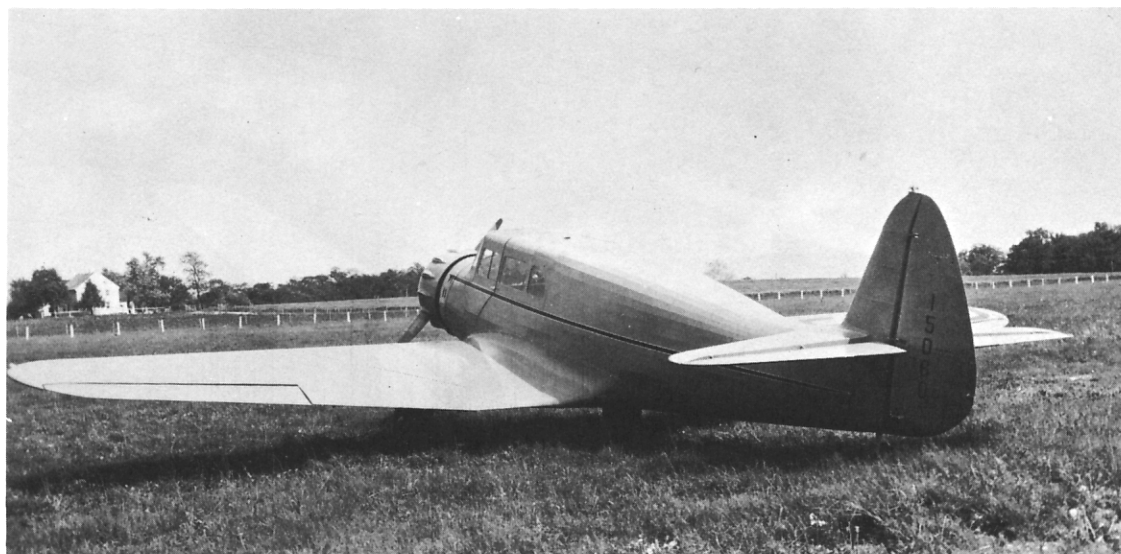


Fig. 321. Fairchild 45 was designed as "Sedan of the air".

was full deflection. The thick C/S housed two 30 gal. fuel tanks and provided attachment for the retractable landing gear. The landing gear of 8 ft. 10 in. tread was 2 separate assemblies that folded up into wheel wells; the wheels extended 11 in. below the wing when retracted to protect the "belly" in wheels-up landings. Oleo-spring shock struts of 7 in. travel were fitted with 8.50x-10 semi-airwheels with hydraulic brakes. The full-swivel tail wheel was fitted with an oil-spring shock strut. The cantilever tail group was an all-metal structure covered with fabric; rudder and elevators were of the balanced-hinge type. Elevator was fitted with an adjustable "trim

tab". The "Jacobs" engine was mounted in rubber and encased in an NACA-type cowling. A wooden propeller, electric engine starter, battery, compass, fuel gauges, parking brake, air-speed indicator, and first-aid kit were standard equipment. A metal propeller, navigation lights, landing lights, parachute flares, bonding & shielding, and radio equipment were optional. The next development in the Model 45 series was the Wright-powered 45-A as described in the chapter for ATC # 603.

Listed below is the only example of Model 45 as mfgd. with Jacobs engine:
 NC-15060; Model 45 (# 4000) Jacobs 225.

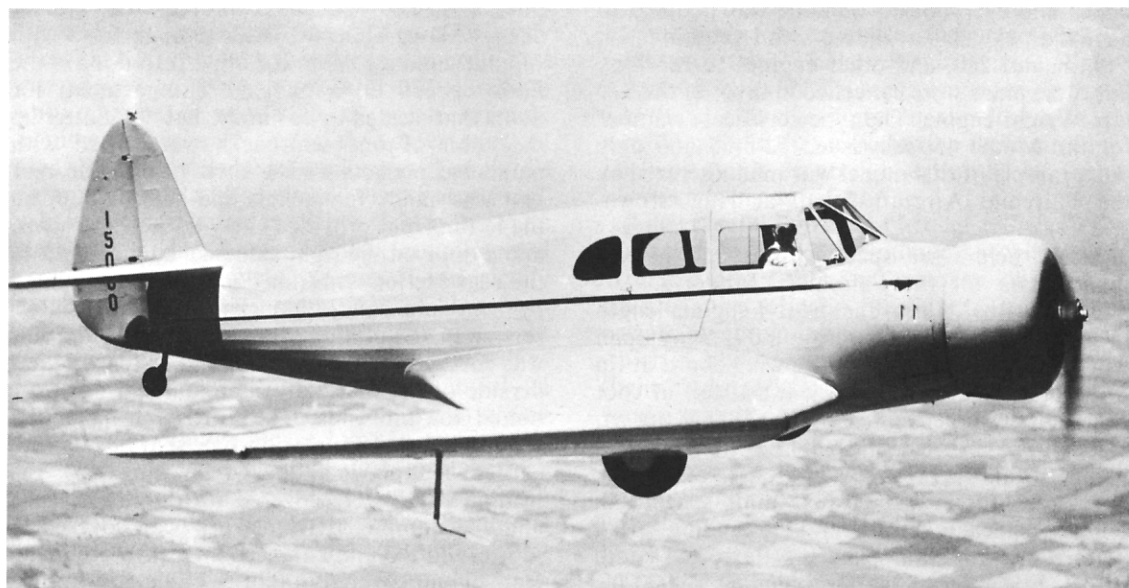


Fig. 322. The "Forty Five" was a gentle airplane with high performance.