
PITCAIRN-CIERVA C-8

By WILLIS L. NYE

It had been stated by reliable authority in the early years of the 1930s "that the Autogyro was here to stay." Evidently, the enthusiasts for this type of aircraft were more visionary than realistic. The era of the Autogyro in the United States and abroad did not last longer than eight years at the most, and now this kind of aircraft is only a part of the past, a part of aeronautical history.

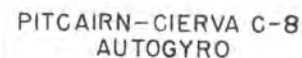
The drawings appearing opposite represent the technical portrayal of the Pitcairn-Cierva C-8, an American prototype powered with a 200 hp Wright J-5 aircooled, radial engine. The aircraft made many flights before its consignment to antiquity and proved to be successful. It exhibited freedom from stalling or autorotation and was simple to fly and maneuver in the air. The basic theory around which the Autogyro was developed was that once the aircraft was airborne, the rotor would positively and continuously rotate irrespective of whether the machine was climbing, diving, hovering, descending vertically, moving forward or, for that matter, backward. It could do all of these maneuvers with safety provided that the rotor was moving at conventional rotating speed.

If the Autogyro could perform so well, why was it not further perfected so that it could function in the era of STOL (Short Take Off and Landing) aircraft? The economics of the times had something to do with its demise. The Autogyro patents were licensed to the Pitcairn Aviation organization of Willow Grove, Pennsylvania. The basic prototype was brought to the United States toward the close of the 1920s and considerable engineering development was undertaken.

Extensive demonstration flights were made and, in fact, Amelia Earhart flew one of the later perfected models all over the United States for Beechnut Gum. The Kellett aviation interests also developed an Autogyro under the original patents and it, too, flew successfully. These aircraft, from both companies, all received Approved Type Certificates, and many were manufactured for private or commercial use. The Depression ended further development in the 1930s as the Pitcairn aircraft interests ceased operation, the expected procurement of Autogyros by the Armed Forces did not materialize and, finally, the development of the helicopter tended to snuff out the era of the Autogyro as a type of aircraft.

The Pitcairn-Cierva C-8 which now belongs to the National Air Museum, Smithsonian Institution, had an Avro wooden fuselage from a Model 504-K training biplane. It was a two-passenger lash-up and performed satisfactorily before the Depression brought an end to its career (both manufacturers folded their tents and silently stole away). Now it is part of bygone aviation history, but the basic knowledge of rotor aerodynamics and lift forces of rotors was all obtained by the use of the Autogyro. The helicopter owes much to its hybrid first cousin.

ABOUT THE AUTHOR: Willis Nye was one of the originators of the A.A.H.S. and has long been known for his technically-detailed drawings of aircraft. They have appeared in many of the finest aviation magazines published in the United States. The JOURNAL is grateful that he has produced the drawings opposite for its use.



SCALE: 1/34 DRAWN BY: WILLIS L. NYE MARCH 1966