THREE-SCORE YEARS AND TEN

learn but—until the Wall Street Crash—no shortage of investment.

Three Aircraft Meanwhile three aircraft which were to be of fundamental moment to the future are worthy of their places among the Top Twenty. Each embraced original thought with new techniques. Each was to have a long line of indirect descendants.

The first was the four-engined, all-metal, smooth-surface, stressed-skin, 18-passenger Zeppelin-Staaken E.4/20 high-wing monoplane. It was designed by Adolf Rohrbach who had worked alongside Dornier in the Zeppelin aircraft works. The Zeppelin monoplane flew in October 1920 and showed, to those who would heed, the potential of the metal stressed-skin wing structure—the starting point for the modern aeroplane. It marked also Count Zeppelin’s disenchantment with the dirigible airship which he had pioneered, and his conviction (before he died in 1917) that the future lay with the metal monoplane.

Rohrbach, together with Prof H. Wagner (originally on his staff and later chief designer of Junkers) Dr Claude Dornier and Prof Hugo Junkers himself, pointed the structural way forward during the 1920s—a way pursued by Northrop, by the NACA and by Boeing in the USA and by Shorts in England.

Another break-through in aircraft development had come in 1923 when, on January 9, at Getafe near Madrid, Senor Juan de la Cierva flew for the first time his C.4 Autogyro. From this windmilling beginning there has come—through Breguet, Dorand, Focke and Sikorsky—the helicopter of today.

For the record, the Breguet-Dorand 314 twin co-axial-rotor helicopter flew in free-flight for the first time at Villacoublay, near Paris, on June 26, 1935. Though it was less controllable than the Focke Achgelis Fa 61 side-by-side rotor helicopter, which flew exactly a year later, the B-D 314 deserves to be remembered as the world’s first practical helicopter. It flew on June 26 for about a mile at a height of about five metres at up to 40 m.p.h.—powered by a 200 h.p. Bugatti water-cooled engine, at a loaded weight of 4,300lb.

Third of the classic between-the-wars aircraft was the Boeing 247 ten-passenger low-wing transport monoplane, first flown by Eddie Allen at Boeing Field, Seattle at noon on February 8, 1933. There was no prototype and the B.247 went straight into production, with 70 aircraft for United Air Lines—which flew the first service with the first 247 (NC-13301) on March 30, 1933.

So Lindbergh’s Ryan high-wing monoplane, Junkers’ and Rohrbach’s structural patents, Ford’s Stout-designed metal trimotor (in Fokker’s wooden pattern) and then Jack Northrop’s streamlined mailplanes all came together in the production of the Boeing B.247. They went on, in fuller flower, in the classic Douglas DC-1 prototype first flown by Carl Cover at Santa Monica on July 1, 1935.

Except that it lacked flaps and that it carried only ten passengers, the Boeing 247 had all the characteristics of the great piston-engined transport formula to come—low-

Europe produced the world’s first jet engine (Britain’s Whittle) and, shown here in 1945 as a prize of war at Farnborough, Germany’s Junkers-powered Messerschmitt Me 262, the first operational jet aircraft.