

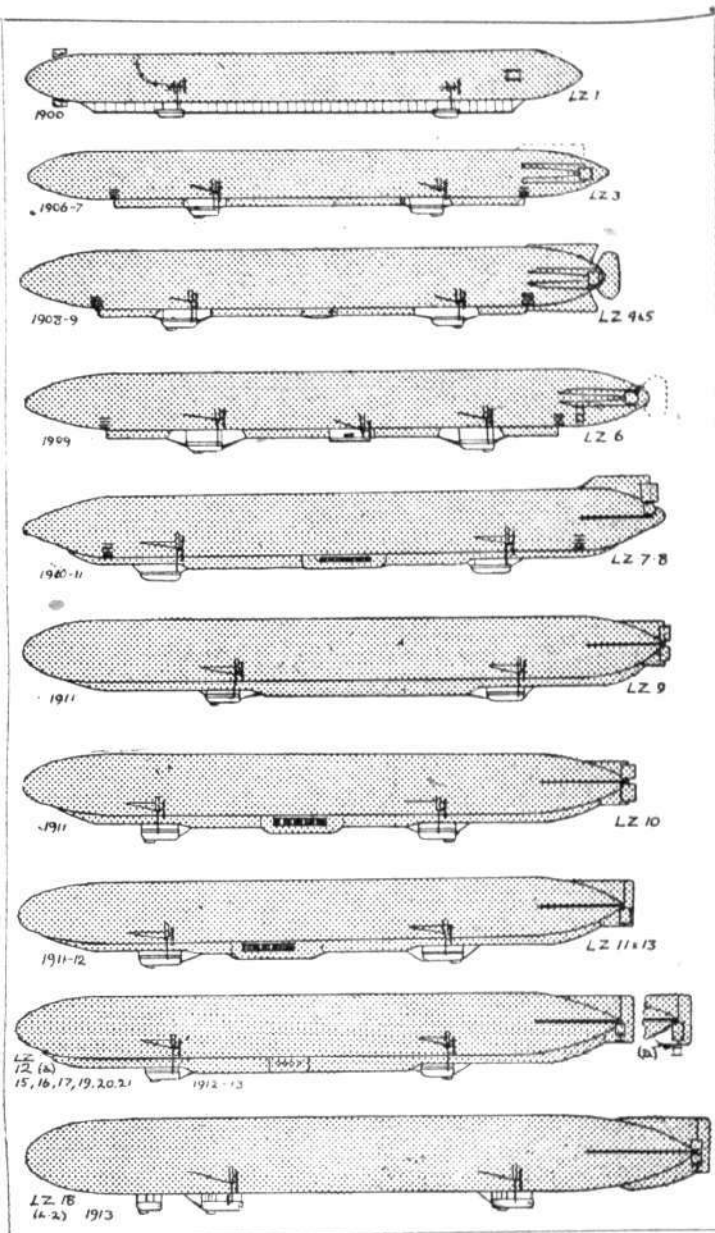
## THE EVOLUTION OF THE GERMAN AIRSHIP FLEET.

By way of introduction to our description of LZ33, which follows, it is not inappropriate to give once again the briefest of historical *résumés* of the evolution of the Zeppelin. An absolutely complete history would fill far more space than we have at our disposal in this issue, but the following brief pedigree of the various models turned out from the first up to the year 1914, together with the accompanying diagrams and illustrations, should give a very fair idea as to the progress made by this type of aircraft. It should be mentioned, however, that this progress has already been chronicled, not only in "FLIGHT," from Vol. I, in 1908, but in the pages of its parent, the "Auto.," for many years before.

It was in 1893 that Count Ferdinand von Zeppelin, inspired by the efforts of D. Schwarz, got out the designs of his first rigid airship with the help of his chief engineer, Kober; but it was not until 1898 that he started in earnest on the construction of LZ1. This airship was completed, and made its first trials over Lake Constance, in July, 1900. In general design it was much the same as those that followed, viz., a long aluminium framework, made up into compartments containing the gas-balloons, having an outside covering of fabric and two cars or gondolas suspended beneath it. It was 420 ft. long and 38 ft. 6 ins. in diameter, and had a capacity of 400,000 cubic ft. The two gondolas each had one 16 h.p. Daimler motor, which drove a pair of propellers, mounted one on either side of the ship. The trials of LZ1 not being very successful, it was broken up in 1902. Three years later LZ2 made its appearance, but on its second trial was destroyed beyond repair, in January, 1906.

LZ2 was very similar to LZ1, but measured 413 ft. in length and had a capacity of 367,500 cubic ft. This time two 85 h.p. motors were employed, and the results, though cut rather short, were certainly more promising. A third airship was, therefore, immediately got in hand, and was completed in October, 1906. LZ3 turned out to be a comparative success, and was, in fact, the model upon which subsequent ships were based. It was of the same size as LZ1, but with an extra capacity of 4,000 cubic ft. The two motors were of 85 h.p. each, and the covered-in "cat-walk" between the two gondolas made its first appearance. LZ3 "carried on" until 1908, when it was reconstructed and acquired by the Government. Under the name of Z1 it continued work up to the outbreak of the present war, when its movements became obscure. During this time it was again reconstructed in 1911. In 1908 LZ4 was built, and LZ5 started the same year. Both these ships were more or less of the same type, and similar to LZ3. They measured 446 ft. in length and 38 ft. 6 ins. and 43 ft. in diameter respectively. LZ4 was wrecked and burned on August 5th, 1908, and LZ5 was taken over by the Government as Z11 and was destroyed in a storm in 1910. LZ6 was built on the same lines as LZ5, for the Government, but was not accepted until it was reconstructed, with a third engine in the centre, as shown in the illustrations, in 1909. It was destroyed by fire in 1910. In 1910 the first passenger Zeppelin was built, the LZ7, "Deutschland," measuring 148 ft. by 14 ft., and having a central cabin in the

"cat-walk." Besides the latter innovation, this ship was the first to have three motors, of 120 h.p. each, installed, and also differed from previous models in having sharper, pointed ends and a single horizontal stabilising surface at the stern. The "Deutschland" was destroyed by a gale in June, 1910, but was replaced by LZ8 the next month. LZ8 was very much the same in general design, but was 7 ft. longer and 3 ft. larger in diameter. This ship also met with disaster, in May, 1911. The



next ship, LZ9, was built in 1911 to replace LZ5 (Z2), and was similar in appearance to the second passenger ship, LZ10, "Schwaben," built the same year, but did not possess a central cabin. LZ10 was burnt at Düsseldorf in June, 1912, and was replaced by LZ13, "Hansa." The "Hansa," and LZ11, "Viktoria Luise," which was built towards the end of 1911, were sister ships, and differed from LZ10 in length and in the arrangement of the central cabin (which was more forward) and the tail planes. Then followed a set of ships, LZ12, 15, 16, 17, 19, 20 and 21, during 1912 and 1913, which were all practically of the same type, and with the exception