

## **Aero-Technology Transfer from Germany to Japan during the Interwar Period: The Process toward Self-Sufficiency of Japanese Aviation Technology and Military Expansion under the Disarmament**

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This paper explores the aero-technology transfer from Germany to Japan during the interwar period. It aims to show that the comprehensive acquisition of German advanced aviation technology by the Japanese military and private companies in the 1920s was a crucial factor in enabling Japanese aero-technology to rapidly accomplish self-sufficiency in 1930s.

When the First World War ended in 1918, the technological level of the Japanese air force and its aircraft industry was extremely inferior to that of Western countries. To modernize its aviation technology, the Japanese army and navy invited aviation missions and imported many aircraft from France and Britain in 1919-21. However, the military in Japan, one of the war's victorious countries, also recognized that aviation technology in a defeated Germany, particularly its all-metal aircraft, was advanced and intended to transfer it to Japan just after the war.

In 1922, engineers of the Japanese navy, the Sumitomo Co. and the Mitsubishi Co. were sent to Rohrbach and Dürerer Metallwerke to master technology involving duralumin for the all-metal flying boat. Although the Versailles Treaty imposed many severe restrictions on the German aircraft industry, including a ban on production and exports, Rohrbach produced the latest flying boat for Japan in secret, and the Japanese financially supported this company even though it was a major member of the Allies.

The Japanese army also highly appreciated Germany's all-metal aircraft. In 1927, the Kawasaki Co. constructed the Japanese army's first all-metal heavy bombers, under a license agreement with Dornier. In 1928, under an arrangement with Junkers, Mitsubishi produced Junkers K.51 all-metal, four-engine heavy bombers for the army as Ki-20 aircraft.

In the 1920s, Japan's military budget was controlled as a result of serious internal depression and the limitations of the Washington Conference disarmament treaty. However, the Japanese military and private companies kept putting much funding into its air force and aircraft industry and invited

many German aviation experts to Japan. They contributed to the development of Japanese aviation technology and the cultivation of young Japanese aircraft designers.

All of the above contributed to the rapid self-sufficiency of Japanese aircraft in the 1930s. In particular, the navy's Type 96 land-based attack aircraft, constructed with the airframe technology of Rohrbach and Junkers, enabled Japan's air force to do strategic bombing against China after 1937.