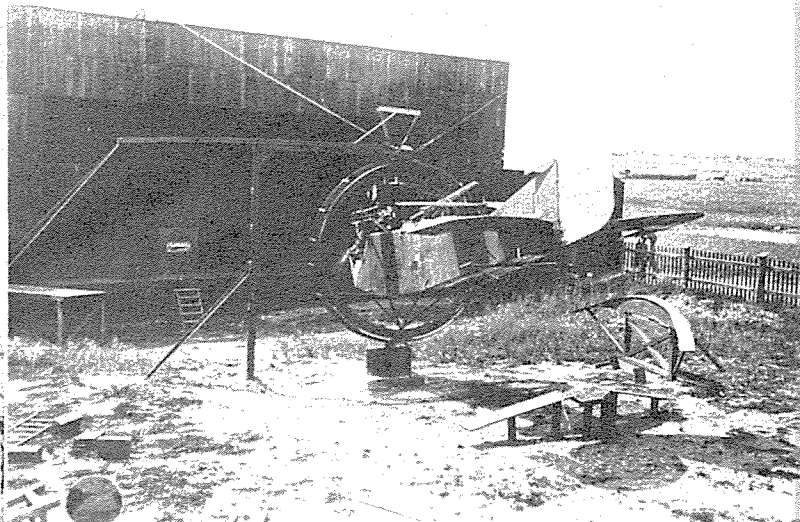
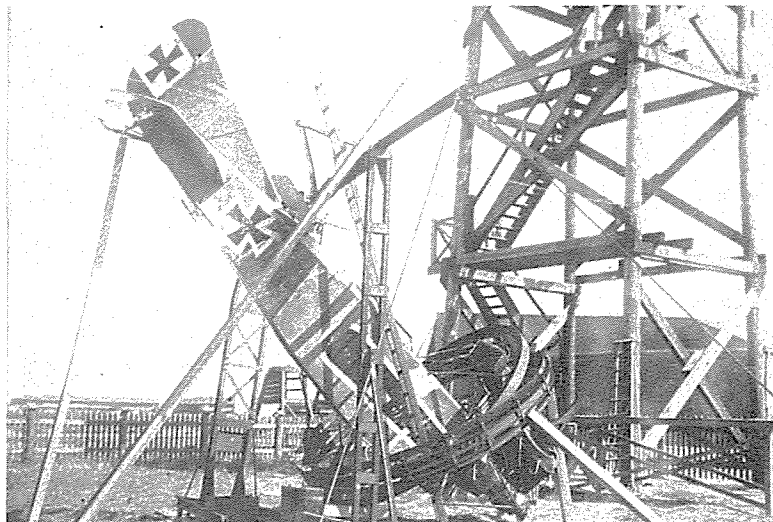


GERMAN FLIGHT SIMULATORS - WORLD WAR I.



THE HORN FLIGHT-SIMULATOR

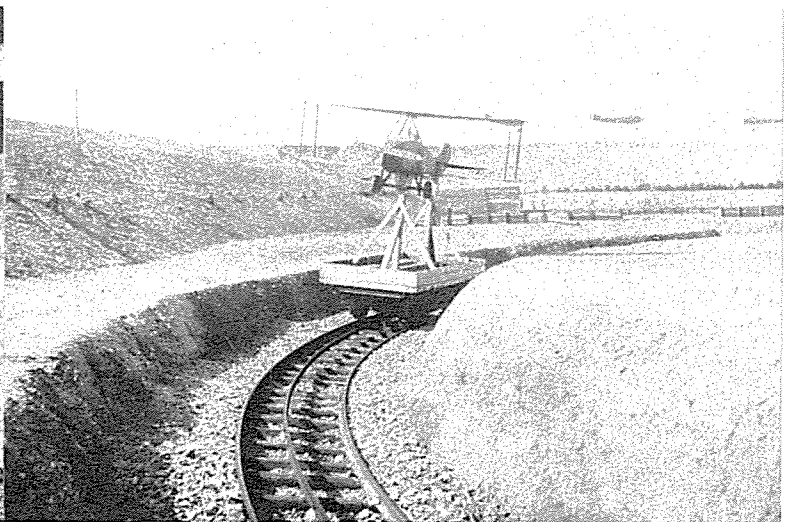
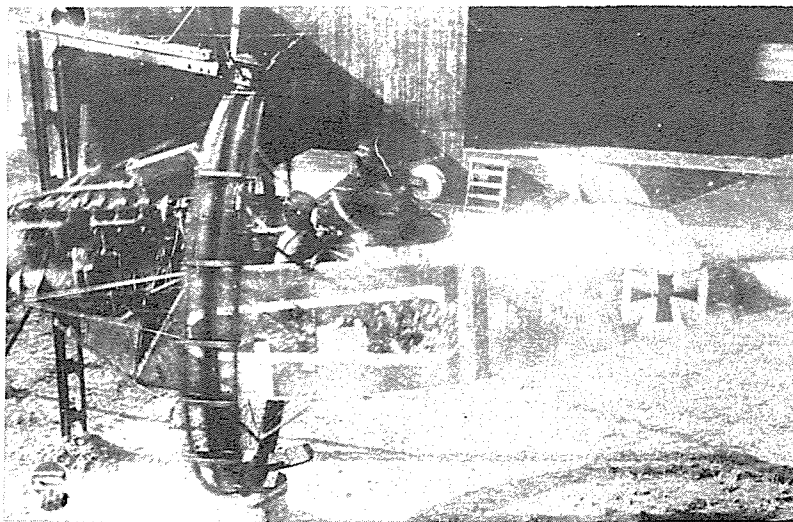
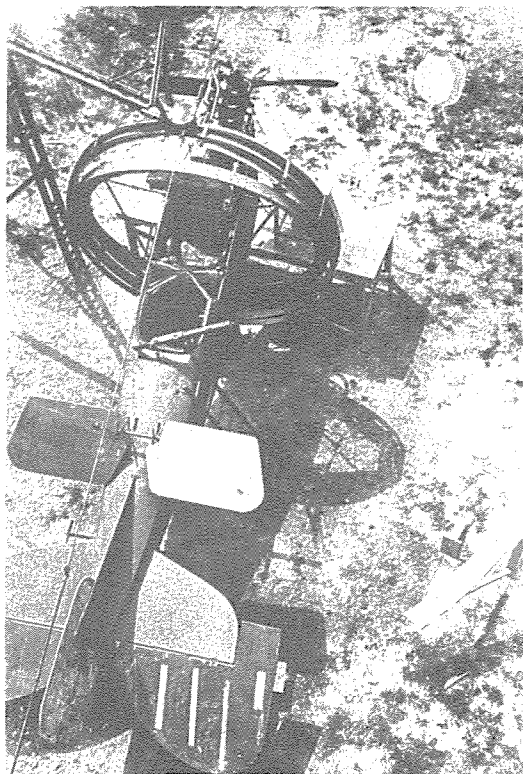
Upper left - Erecting the Flight-Simulator at Schwerin.

Upper right - The Horn Simulator in position for pilot gunnery training.

At left - A top view of the Horn device. Note the improvised ailerons intended to provide movement around the longitudinal axis.

Lower left - The Horn Trainer "in flight" with pilot firing.

Lower right - The Kleiper-designed gunnery trainer at Asch.



HEINZ J. NOWARRA

GERMAN SYNTHETIC GUNNERY TRAINERS IN WORLD WAR I

Editor's Note. The following article and photos were received as a letter from Mr. Nowarra. We have chosen to leave the letter in its personal form even though it is presented here as an article. In the interest of clarity, at several points the editor has modified the structure and language of Mr. Nowarra's letter.

* * * * *

At the last monthly meeting of the Old Eagles (Alten Adler) in Berlin I made the acquaintance of the Obering. (Chief Engineer) Albert Wolf. He had served as a Corporal in a Prussian Army transport unit early in World War I and pressed constantly for a transfer to aviation. In April 1915 Wolf was assigned to the Flieger-Ersatz-Abteilung No. 7 (Pilot Reserve Detachment) in Cologne. After qualifying as a pilot at age 30, he discovered that he was too old for front-line service and was assigned to flight instructor duties.

Wolf was transferred to the Observer School at Konigsberg and some time later, despite his age, he was assigned to Feldluftpark Sud in Lemberg (Eastern Front). He worked successfully as an artillery spotter. Wolf also saw action on the Western Front and was shot down over Cambrai. After his recovery he was assigned to the Fokker Flying School in Schwerin.

While in service Wolf learned of an invention by a Mr. Guido Horn, a genuine flight simulator. It was not as complicated as the modern Link Trainer for it was designed only for aerial gunnery training. Wolf attempted to persuade his superiors that the device had merit, but neither he nor Horn met with any degree of success. Wolf had similar trouble as an Air Ministry official during World War II and had as little success as before.

The patent (No. 350362) was licensed to Guido Horn of Berlin-Weissensee under Class 77h, Group 9, February 2, 1916: "A Device for training of pilots and observers." The simplicity of the device is sur-

prising. By using an old aircraft fuselage, with improvised ailerons and a full empennage, it was possible to give the pilot and observer the impression of in-flight gunnery. As you can see in the photographs (1, 2, and 3), a wingless AEG C LV was installed in a double ring in such a manner that the unit could be rotated about all three axes. With the engine running, enough dynamic pressure was exerted on the ailerons and the tail to steer the airplane as if it were flying freely.

Under the direction of an experienced instructor, the pilot and observer learned to shoot on moving and fixed targets under combat conditions. By an additional device it was even possible to train pilots and observers in bombing. In contrast to this simple but effective unit another device is presented in photo five. This was built under the direction of Captain Kleiper at the gunner school at Asch, Belgium. The rails and gunnery car are from a Belgium tram. The whole apparatus proved useless.

About 1000 pupils were trained on the Horn-Simulator at schools in Schwerin and Konigsberg. Lieutenant Jeschonnek, later Chief of Staff of the Luftwaffe, was in charge of the training. Only two trainers were built; the Armistice of 1918 prevented further development.

In 1934 Mr. Wolf again attempted to stimulate interest in the Horn-Simulator but with no results. Under the pressure of World War II, General Galland in 1944 ordered urgent development of the device by the Erla Works in Antwerpen. But it was too late. The end of the flight simulator came when it was sunk in the River Schelde to prevent its falling into Allied hands.

* * * * *

The Vought Fighters: (Cont'd. from page 284)

2. Contract Correspondence files, Bureau of Aeronautics, 1926-1939
3. Aircraft Year Book, 1927, 1928, 1929.
4. Jane's All the World's Aircraft, 1930.
5. Aviation, September 19, 1927, pp. 671-672.
6. Model Airplane News, April 1957.

* * * * *