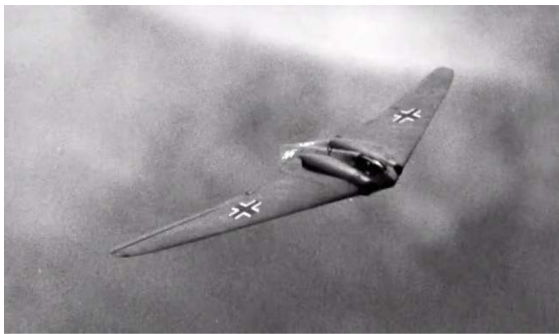


The Horten Ho-229 Aircraft

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The HO-229 in flight.

To me, the history of our subject is always fascinating and often surprising. To quote (approximately) the philosopher George Santayana: “Those who do not learn from history are doomed to repeat it.” In the case of technology, we often find that ideas that we believe to be new and original actually surfaced many years ago. Our predecessors were pretty smart.

This column has been published in the *Quarterly Electronic Blast (QEB)* newsletter, starting in 2018. It has proved popular, and it was suggested that it should also be published in the *AES Magazine*—so it will appear each quarter.

The subject of this column is a quite remarkable German aircraft from WW2: the Horten Ho-229. This was a single-seat fighter/bomber aircraft with a steel and laminated plywood airframe, powered by two turbojet engines, and designed and built by the Horten brothers, Walter and Reimer. Its maximum speed was close to 1000 km/h. It looks for all the world like a modern-day stealth aircraft—but from 75 years ago.

A prototype aircraft flew in test flights in February 1945—just three months before the end of WW2 in Europe. The results were encouraging, but there was no time and no manufacturing capability to develop it to operational status. The prototype was recovered as the Allies overran Germany, and now-declassified documents in the British National

Archives show that the airframe was carefully inspected and the performance assessed. It is not clear how much of this information may have been used in the design of the Northrop XB-35 (1946) and YB-49 (1947) “flying wing” aircraft.

The prototype aircraft lay in storage for many years, but has now been taken to the Smithsonian Udvar-Hazy museum, close to Dulles airport, VA, USA, where it is being restored. This is a painstaking operation that will take many years to complete, but the result will be a unique record of a remarkable piece of aviation history.

In 2008, Northrop Grumman built a full-scale model of the Ho-229 aircraft to allow its radar signature to be measured, and hence to assess to what extent it might be “stealthy.” The model did not include the engines nor the metal frame. The results showed that at the HF/VHF frequencies used by the British Chain Home radars, the frontal RCS of the Ho-229 would be about 4 dB lower than that of a Messerschmidt Bf 109 fighter—in other words, the radar signature of the Ho-229 was comparable with similar-sized conventional aircraft.

Further information may be found at:

<https://airandspace.si.edu/udvar-hazy-center>

https://en.wikipedia.org/wiki/Horten_Ho_229

https://www.youtube.com/watch?v=bVKgkfjzG_A

<https://www.youtube.com/watch?v=pO3OS6FNvEI>



The Horten Ho-229 aircraft about to undergo restoration at the Udvar-Hazy Museum (photo: Hugh Griffiths).

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