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HAW HAMBURG

Hamburg Aerospace Lecture Series
Hamburger Luft- und Raumfahrtvorträge

DGLR in cooperation with the RAeS, HAW Hamburg, VDI, & ZAL invites you to a lecture

Seaplane Design - A Forgotten Art

Prof. Dr.-Ing. **Elmar Wilczek**, Expert in Marine Aviation

Lecture followed by discussion
No registration required !
Online Zoom lecture

Date: Thursday, 20 May 2021, 18:00 CEST

Online: http://purl.org/ProfScholz/zoom/2021-05-20

Beriev Be-200 Altair – Courtesy of United Aircraft Corporation (UAC)

A seaplane gives the ultimate freedom of flight with theoretically endless take-off and alighting possibilities along the coast, on lakes and rivers – and not to forget on the open seas. The design of seaplanes is based on the knowledge of aircraft design and speedboat design. The craft must meet buoyancy and lift requirements. Hydrostatic and -dynamic stability has to be matched with the longitudinal and lateral static and dynamic stability in the air. The structure has to withstand water and air loads. Crucial are hydrodynamic resistance at take-off as well as the lift-to-drag ratio in flight and particularly the water loads in defined sea states.

Sea plane design has a glorious past, but much of the knowledge is buried in dusty archives. It is even worse if knowledge is lost forever and needs to be reinvented.

Elmar Wilczek has taught seaplane design for decades. In his presentation he will focus on particular research results among others: the importance of water spray for hydrodynamic resistance, scale effects, hydrodynamic elasticity for seaworthiness, length-to-beam ratio for hydrodynamics and aerodynamics. He advocates the conservation of seaplane design knowledge and is very open to share the information he has diligently collected.

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