

THE NACA IN THE 1930s: TRAILBLAZING THE TECHNICAL WORLD OF AERODYNAMICS

John D. Anderson, Jr.

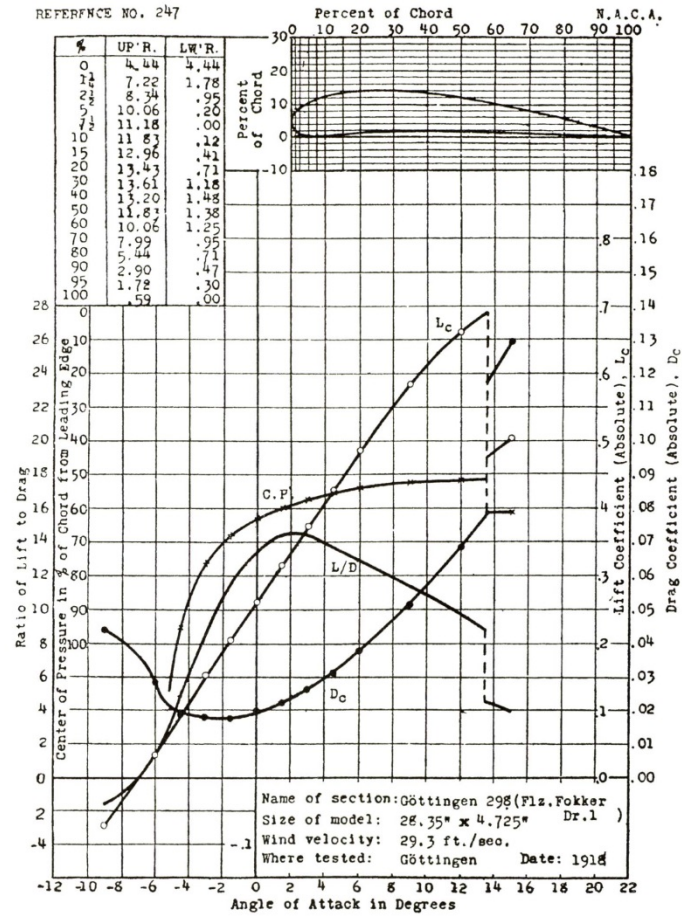
Curator of Aerodynamics, National Air and Space Museum
and

Professor Emeritus, Aerospace Engineering, University of Maryland



Dr. Edward Warner
PRESIDENT

REFERENCE NO. 247







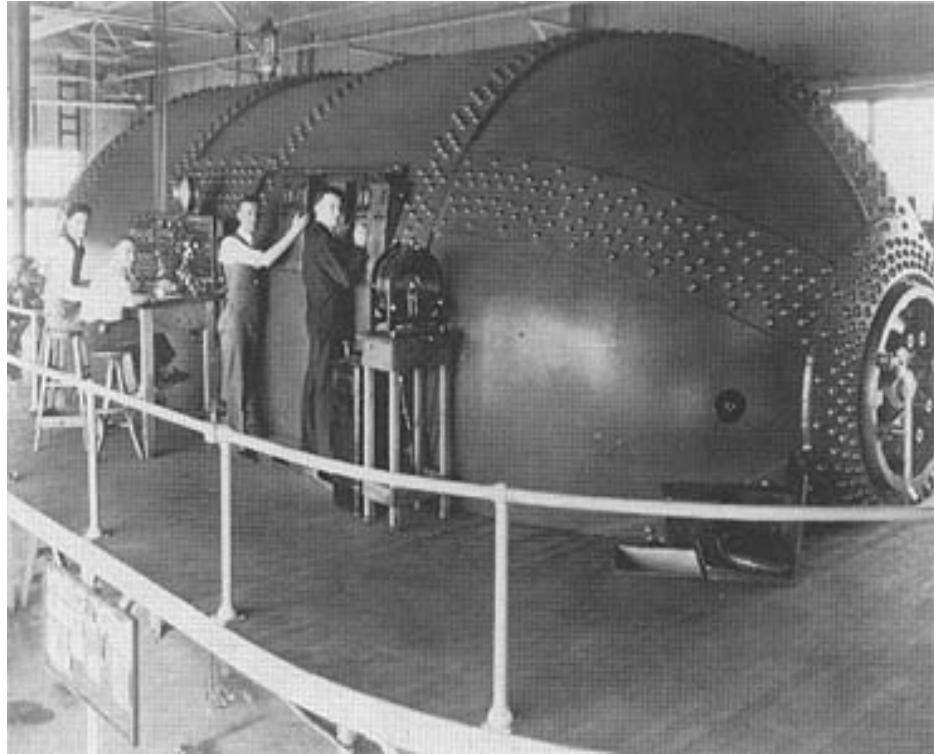
CLARK Y

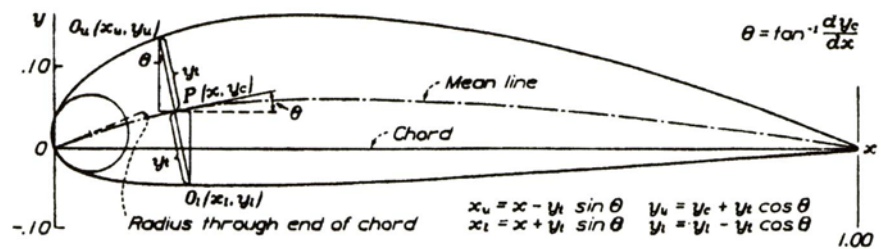
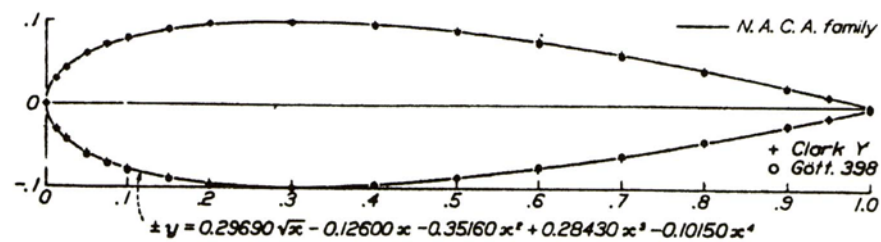


EASTMAN JACOBS

- Wind Tunnel Work In The 30's Established The Shape Of Airfoils
- 1939, Eastman Jacobs at NACA at Langley designed and tested the first laminar flow aerofoil. These shapes had very low drag and the section shown below achieved a lift to drag ratio of about 300.







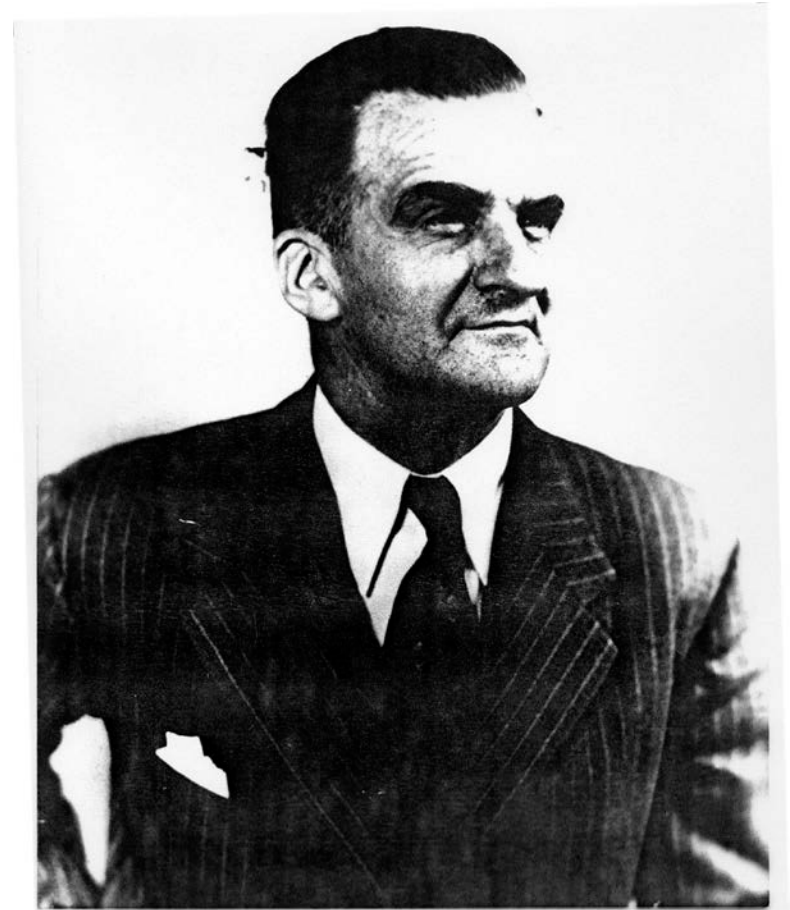
0008	2206	2306	2406	2506	2606	2706
0009	2209	2309	2409	2509	2609	2709
0012	2212	2312	2412	2512	2612	2712
0015	2215	2315	2415	2515	2615	2715
0018	2218	2318	2418	2518	2618	2718
0021	2221	2321	2421	2521	2621	2721
0025	4206	4306	4406	4506	4606	4706
	4209	4309	4409	4509	4609	4709
	4212	4312	4412	4512	4612	4712
	4215	4315	4415	4515	4615	4715
	4218	4318	4418	4518	4618	4718
	4221	4321	4421	4521	4621	4721
	6206	6306	6406	6506	6606	6706
	6209	6309	6409	6509	6609	6709
	6212	6312	6412	6512	6612	6712
	6215	6315	6415	6515	6615	6715
	6218	6318	6418	6518	6618	6718
	6221	6321	6421	6521	6621	6721

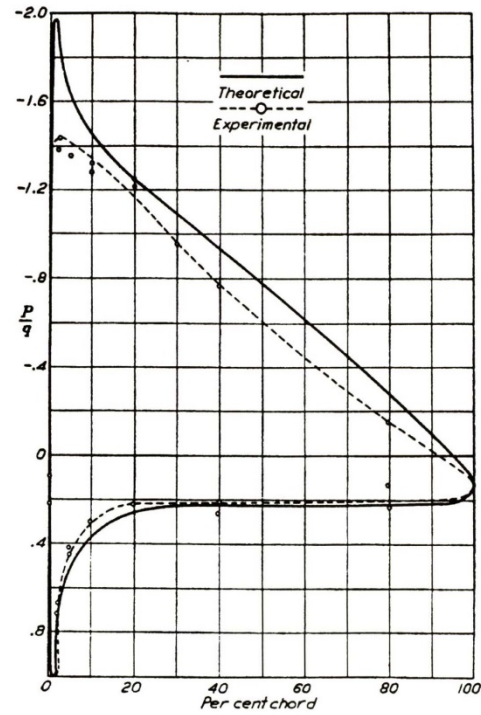
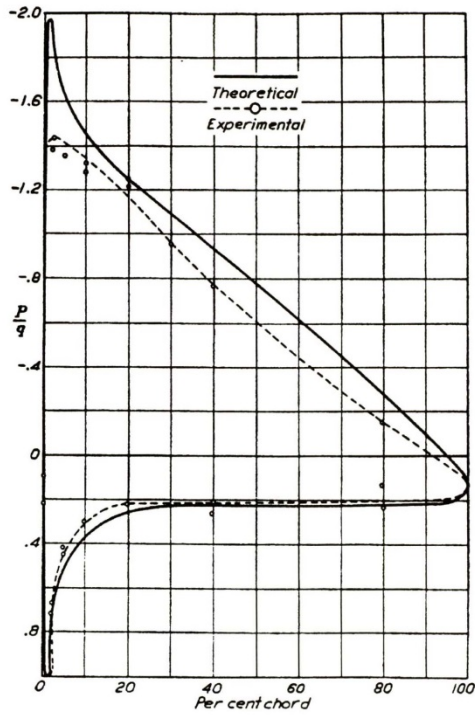


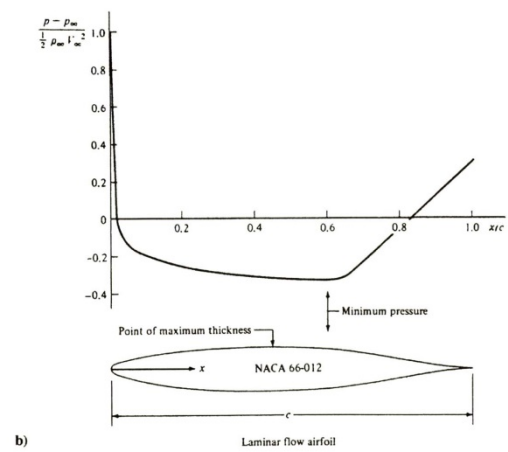
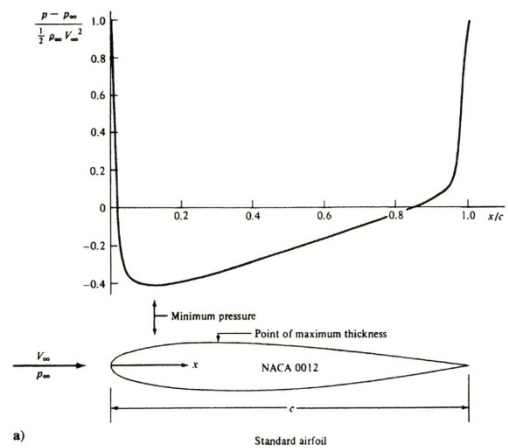


THEODORE THEODORSEN

- General Theory of Aerodynamic Instability and Mechanism Flutter
- Aerodynamic forces on oscillating airfoil





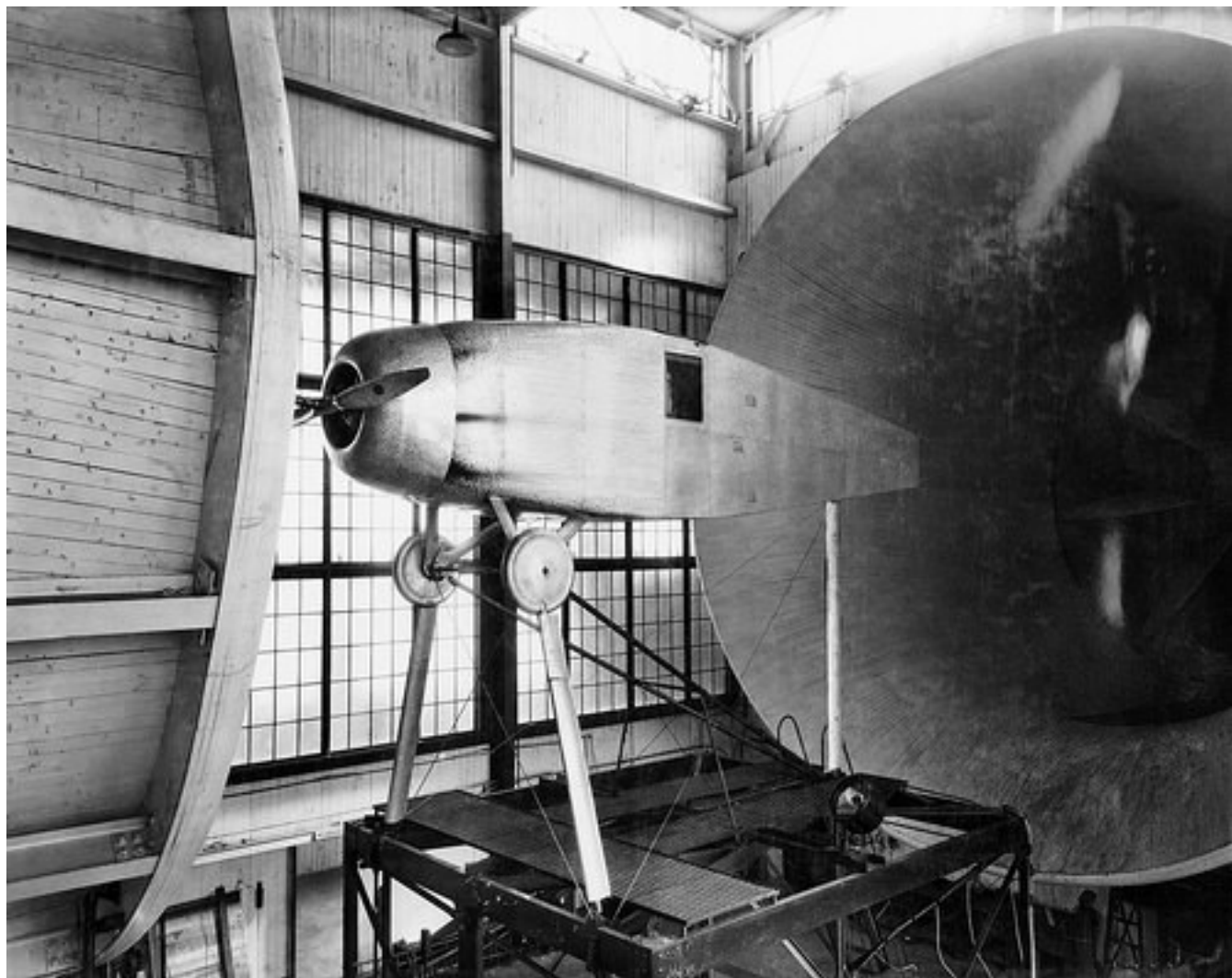






Fred Weick

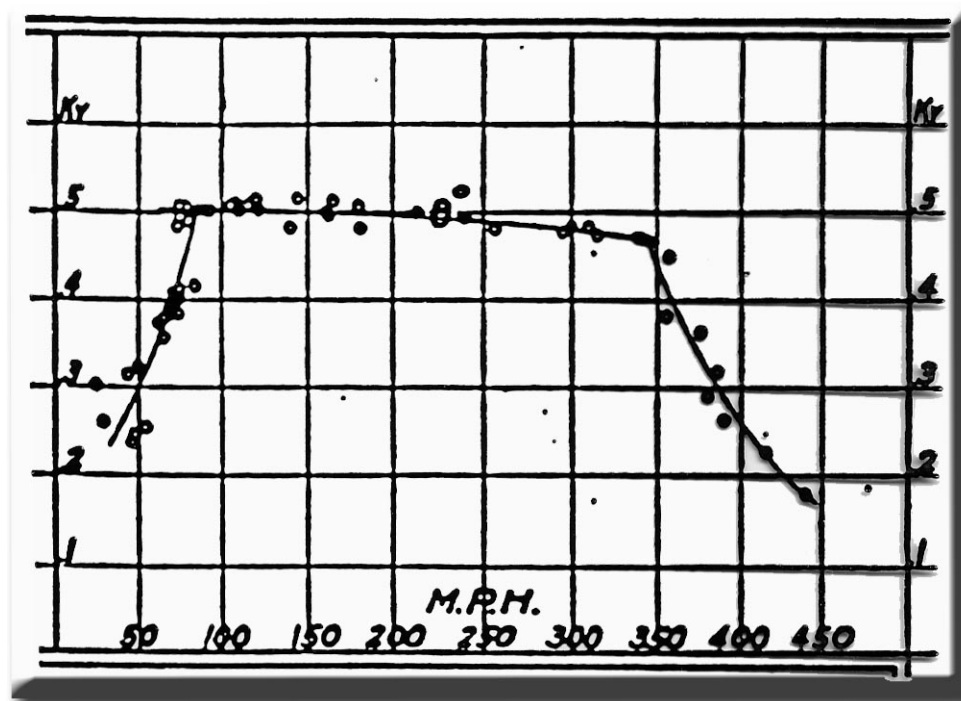






- FRANK CALDWELL AND ELISHA FALES
- McCOOK FIELD, DAYTON, OHIO
- 1918 – WIND TUNNEL TESTS: 25-465 mph
- AIRFOILS: 8% TO 20% THICKNESS

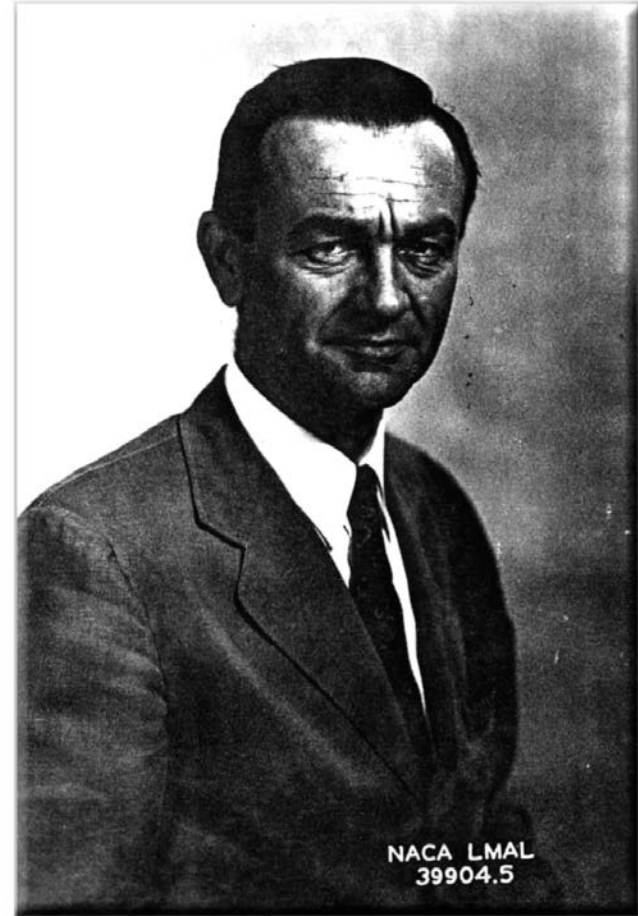
Lift Coefficient Variation with Speed



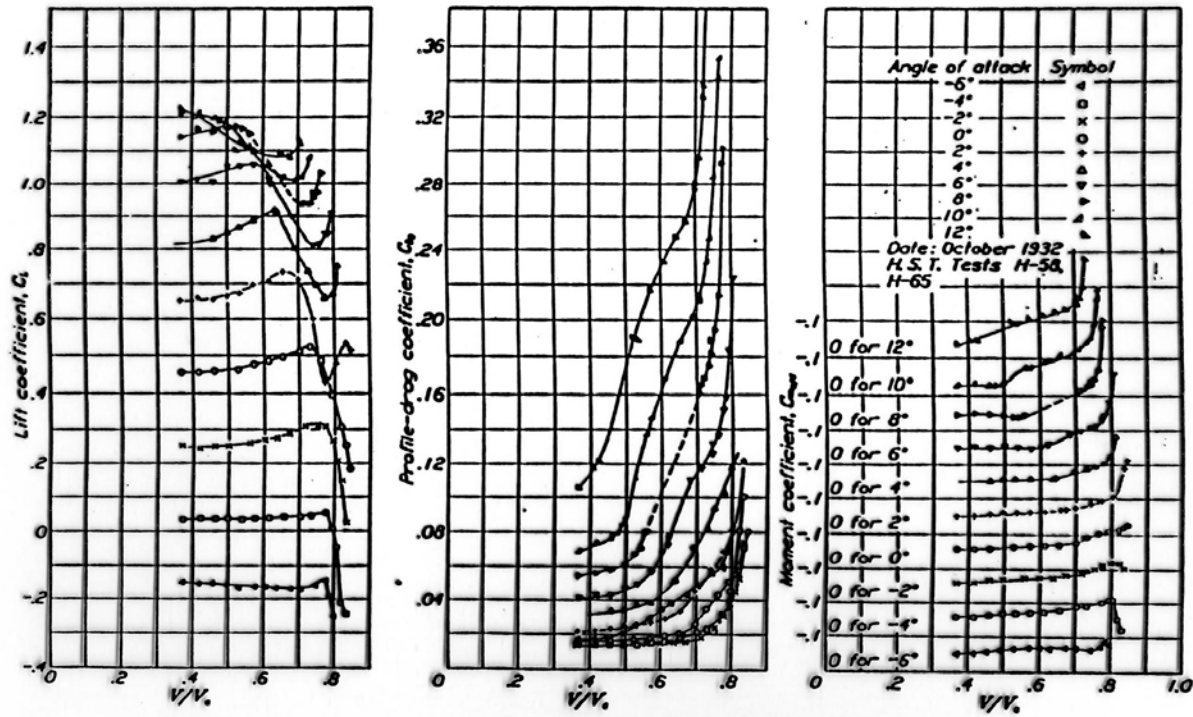
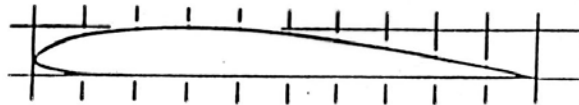
John Stack -- 1906-1972

American Aeronautical Engineer

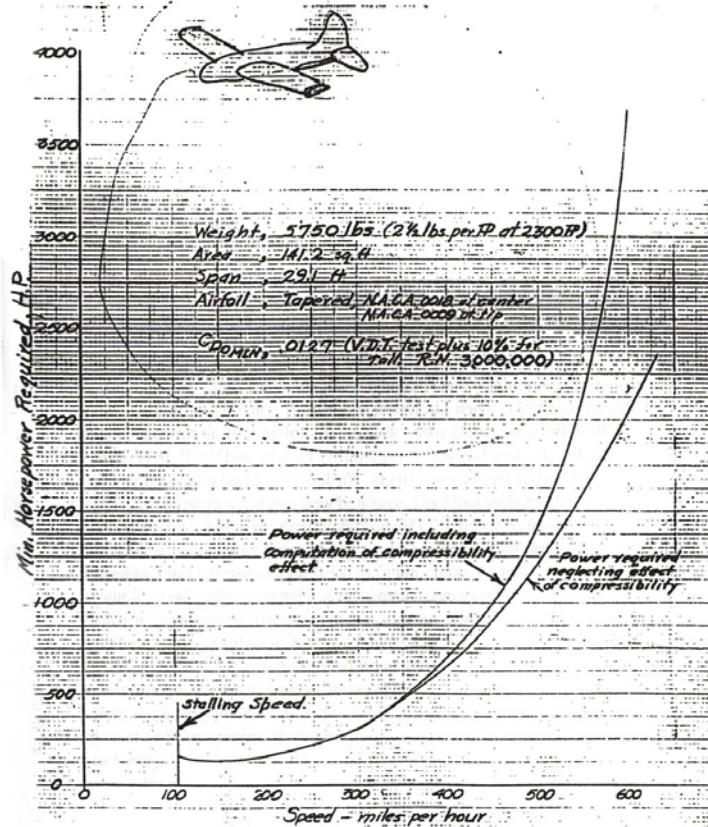
- Played an important role to achieve manned supersonic flight



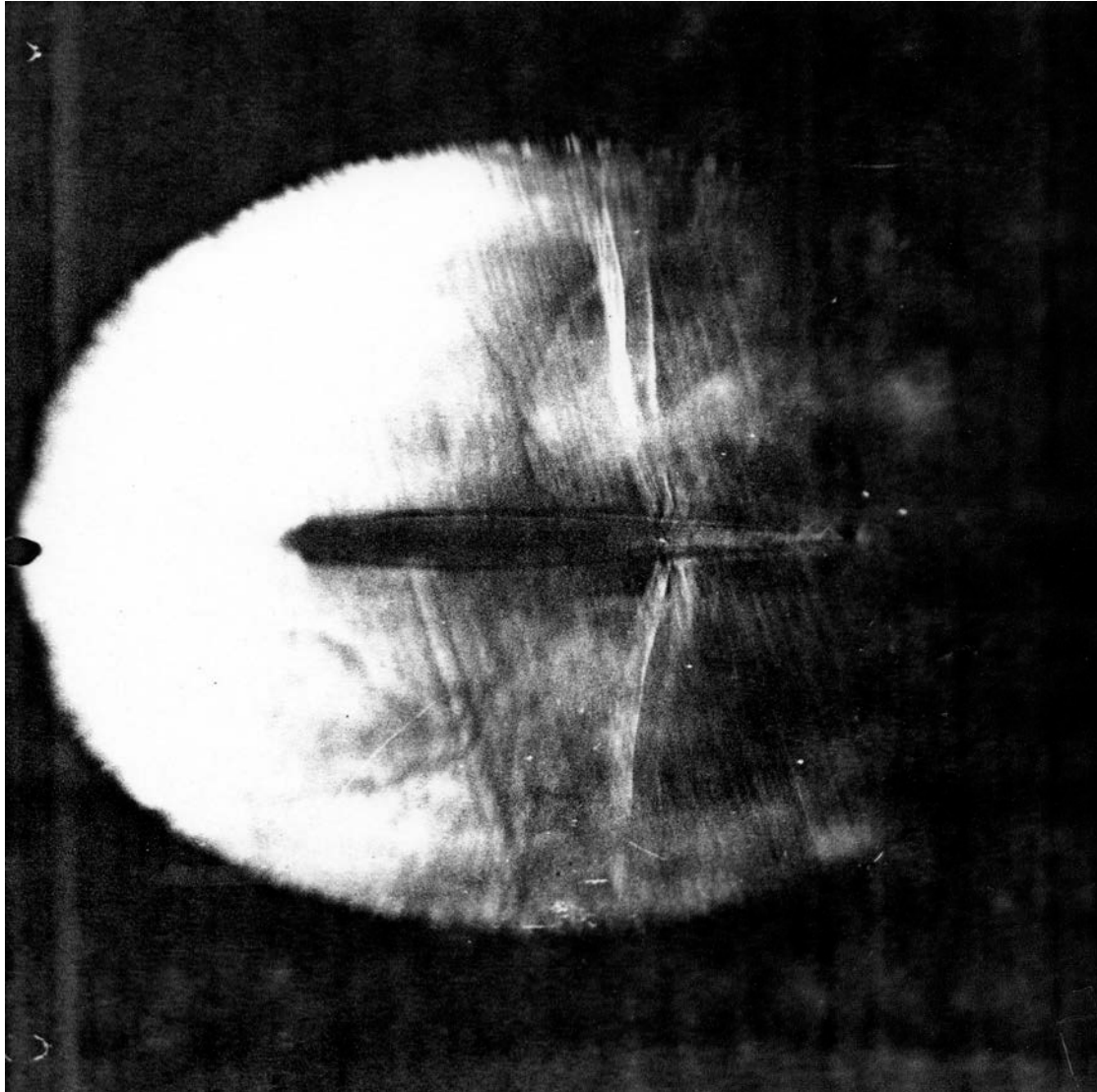
JOHN STACK'S AIRFOIL DATA -- 1934



EFFECT OF COMPRESSIBILITY IN HIGH SPEED FLIGHT.



SHOCK WAVES ON AIRFOIL FIRST PHOTOGRAPH, 1934





NASA Dryden Flight Research Center Photo Collection
<http://www.dfrc.nasa.gov/gallery/photo/index.html>

NASA Photo: EC72-3431 Date: 1947 Photo by: USAF photo by Lt. Robert A. Hoover

X-1 in flight