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THE COLLEGE OF AERONAUTICS

CRANFIELD

Note on the Limits to the Local Mach Number
on an Aerofoil in Subsonic Flow

-by-

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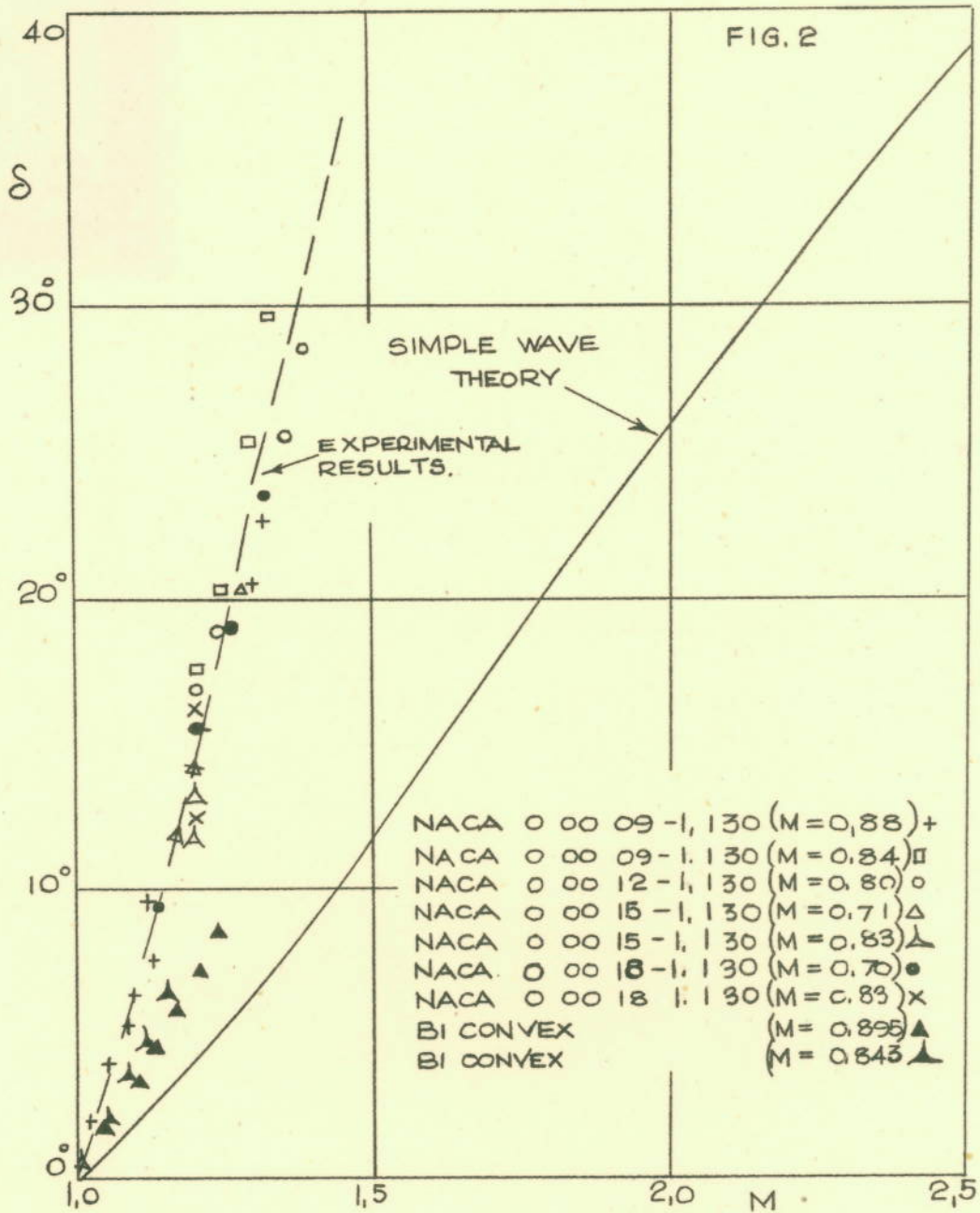## ADDENDA and CORRIGENDA

1.   FIG.2 should be relabelled FIG.3 and FIG.3 replaced by
the attached FIG.2.   The latter includes a number of additional
points resulting from further analysis, and replots of the original
data which were given incorrectly in the earlier diagram.   The
data obtained for a biconvex aerofoil (Ref.3) suggests that with
rearward movement of the position of maximum thickness the relation
between deflection (δ) and local Mach number (M) tends from the·
relation given by the dotted curve towards the Prandtl-Meyer
relation.   It is intended to continue the analysis of available
data in order to investigate the potentialities of this approach
for providing an empirical method of predicting the pressure
distributions and therefore the aerodynamic characteristics of
aerofoils in the transonic range.

2.   Page 5, line 3.   Delete 'only'

Page 5, line 4, to the end of the sentence, should read

'... is a unique relation between the Mach number at a
point on a streamline and the slope of the streamline
at that point relative to the slope at a point
corresponding to some datum Mach number.'

ADD

Reference 3.   Liepmann.   The interaction between
boundary layer and shock
waves in transonic flow.
J.Ae.Sc. Vol.13, No.12,
Dec. 1946.

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FIG. 2

SIMPLE WAVE
THEORY

EXPERIMENTAL
RESULTS.

NACA O OO O9 -1, 1 30	(M = 0,88) +
NACA O OO O9 - 1. 1 30	(M = 0.84) ▯
NACA O OO 12 -1, 1 30	(M = 0, 80) o
NACA O OO 15 -1, 1 30	(M = 0, 71) △
NACA O OO 15 - 1. 1 30	(M = 0, 83) ⊥
NACA O OO 18 -1, 1 30	(M = 0, 70) •
NACA O OO 18 1. 1 30	(M = c. 89) ×
BI CONVEX	(M = 0,895) ▲
BI CONVEX	(M = 0.843) ⊥

RELATION BETWEEN STREAM DEFLECTION
AND LOCAL MACH. NUMBER. COMPARISON
BETWEEN SIMPLE WAVE THEORY AND
EXPERIMENTAL RESULTS FOR ISOLATED
AEROFOILS.