C-105 P/Aero Data/61

LATERAL STABILITY DERIVATIVES IN LEVEL FLIGHT

L.E. Droop, Notch and Extension

Copy (2) July 1955

A. V ROE CANADA LIMITED

MALTON - ONTARIO

TECHNICAL DEPARTMENT (Aircraft)

AIRCRAFT: C-105 REPORT NO. P/Aero Data/61

FILE NO: NO. OF SHEETS:

TITLE:

Classification cancelled / Changed to UNCLAS

By authority of AVES

Date 27 Sept 96

Signature

Unit / Rank / Appointment AVES 5

C-105

ELASTIC LATERAL STABILITY DERIVATIVES IN LEVEL FLIGHT

L.E. Droop, Notch and Extension

PREPARED BY DATE July 1955

CHECKED BY DATE

SUPERVISED BY DATE

APPROVED BY DATE

ISSUE NO	REVISION NO	REVISED BY	APPROVED BY	DATE	REMARKS

FORM 1316A

C-105

July 1955

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C-105 ELASTIC LATERAL DERIVATIVES IN LEVEL FLIGHT

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C_{ℓ_r} 4.2

C_{y_r} 4.3

5. Rolling Derivatives

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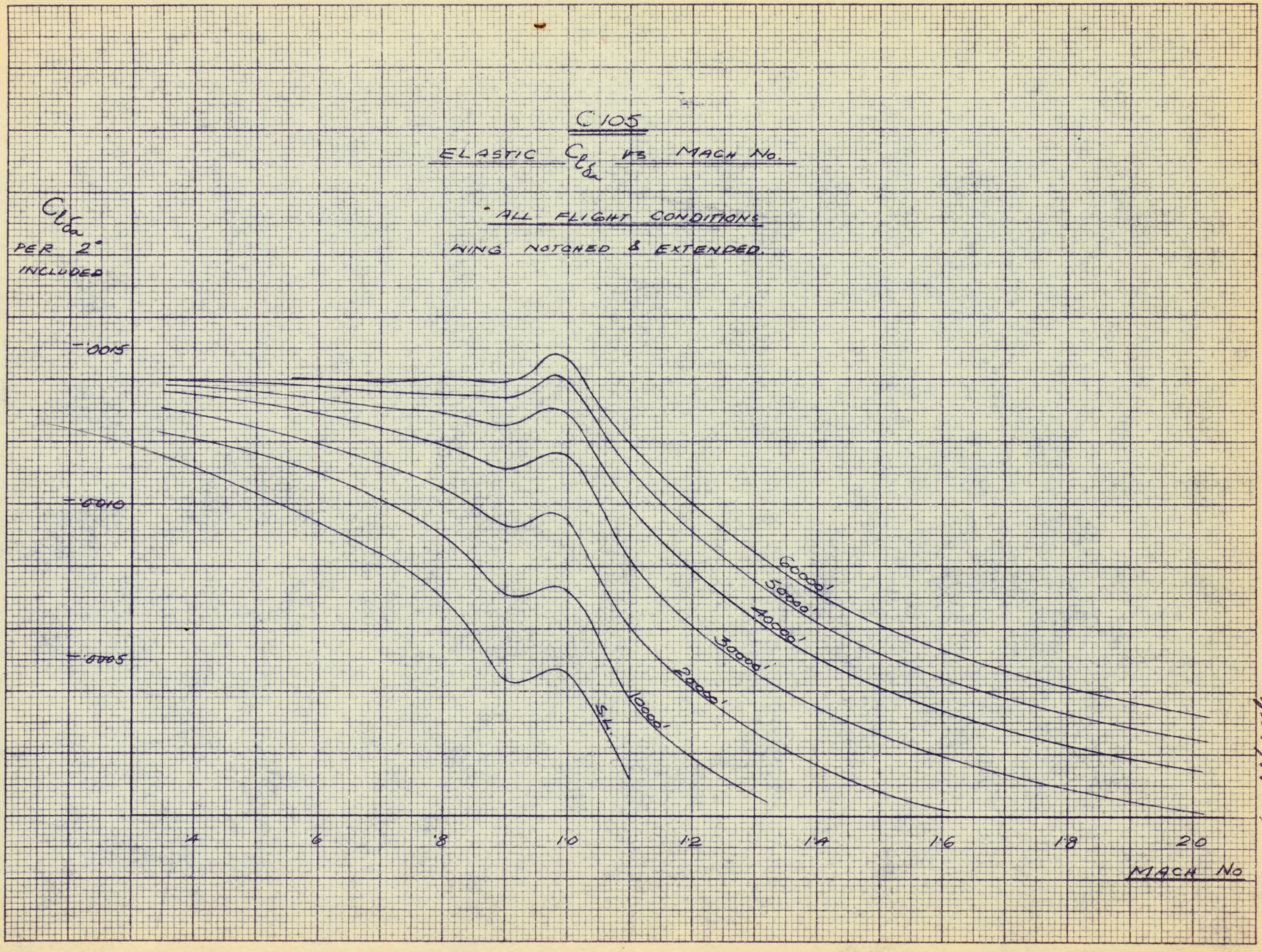
C_{ℓ_p} 5.2

C_{y_p} 5.3



P/AERO DATA/61 1.1.
April /55 Kuathaal.

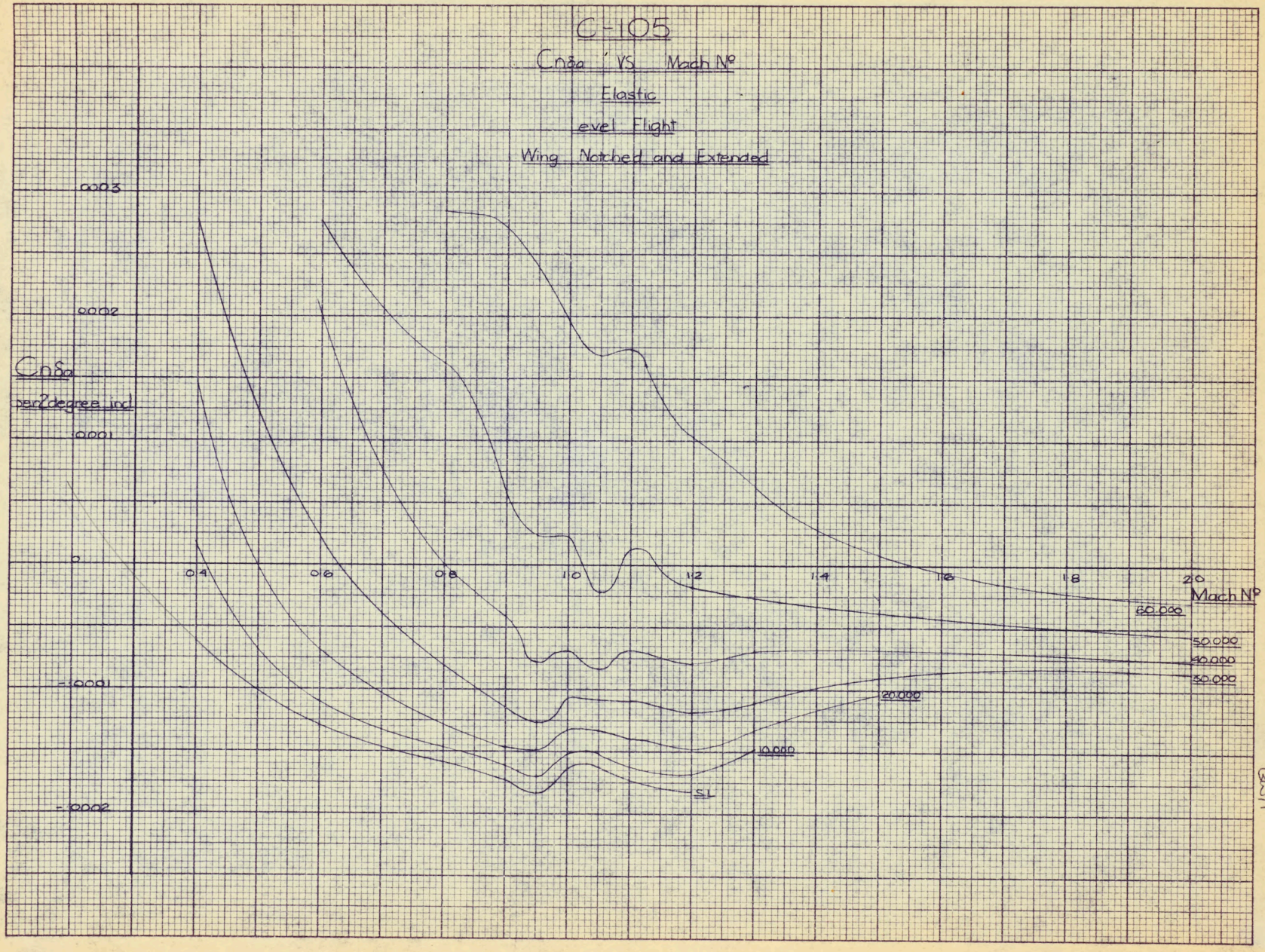
C-105

$C_{n\delta a}$ vs Mach No

Elastic

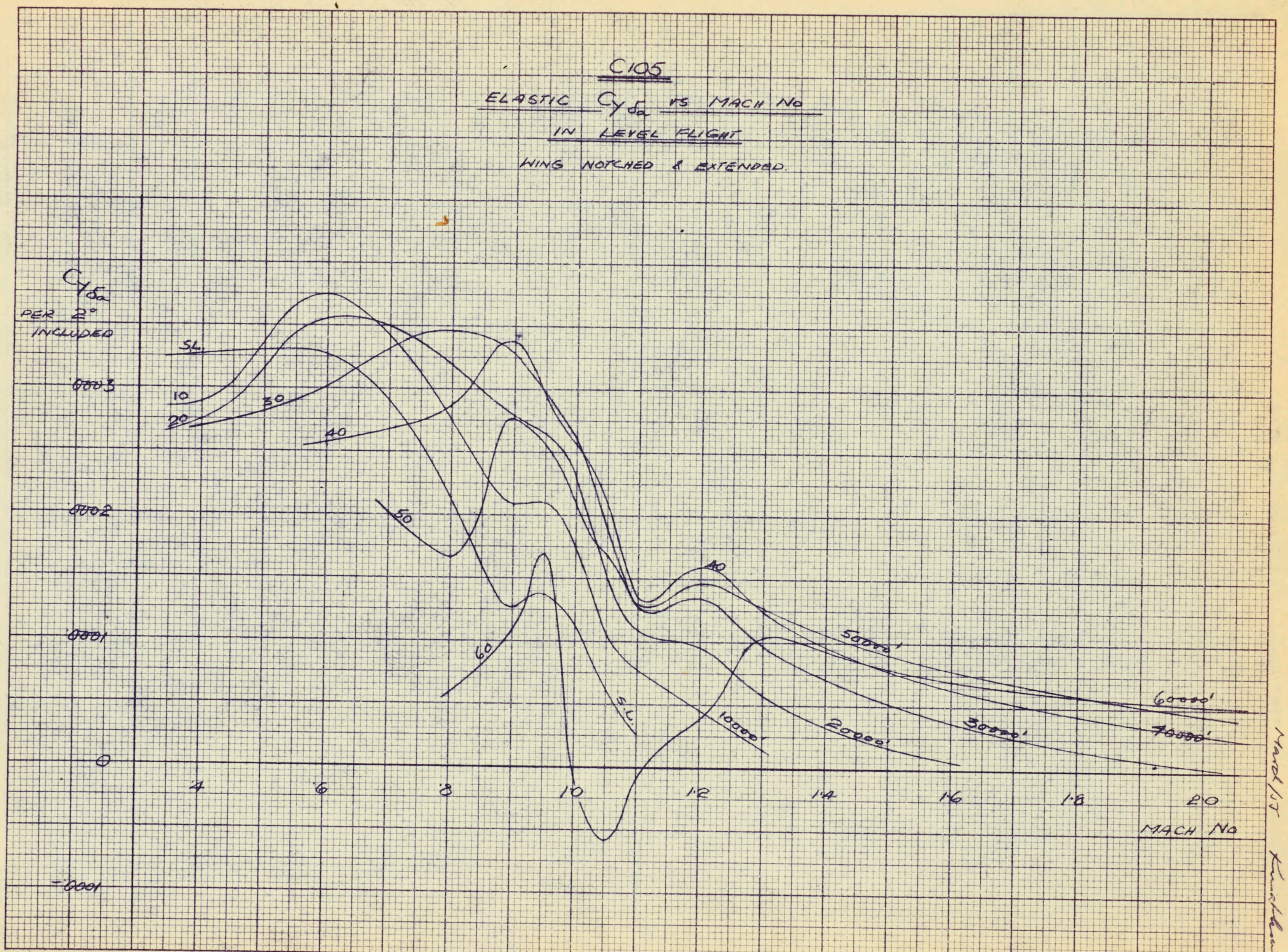
Level Flight

Wing Notched and Extended



1.2. P/AERO DATA/61

GSH

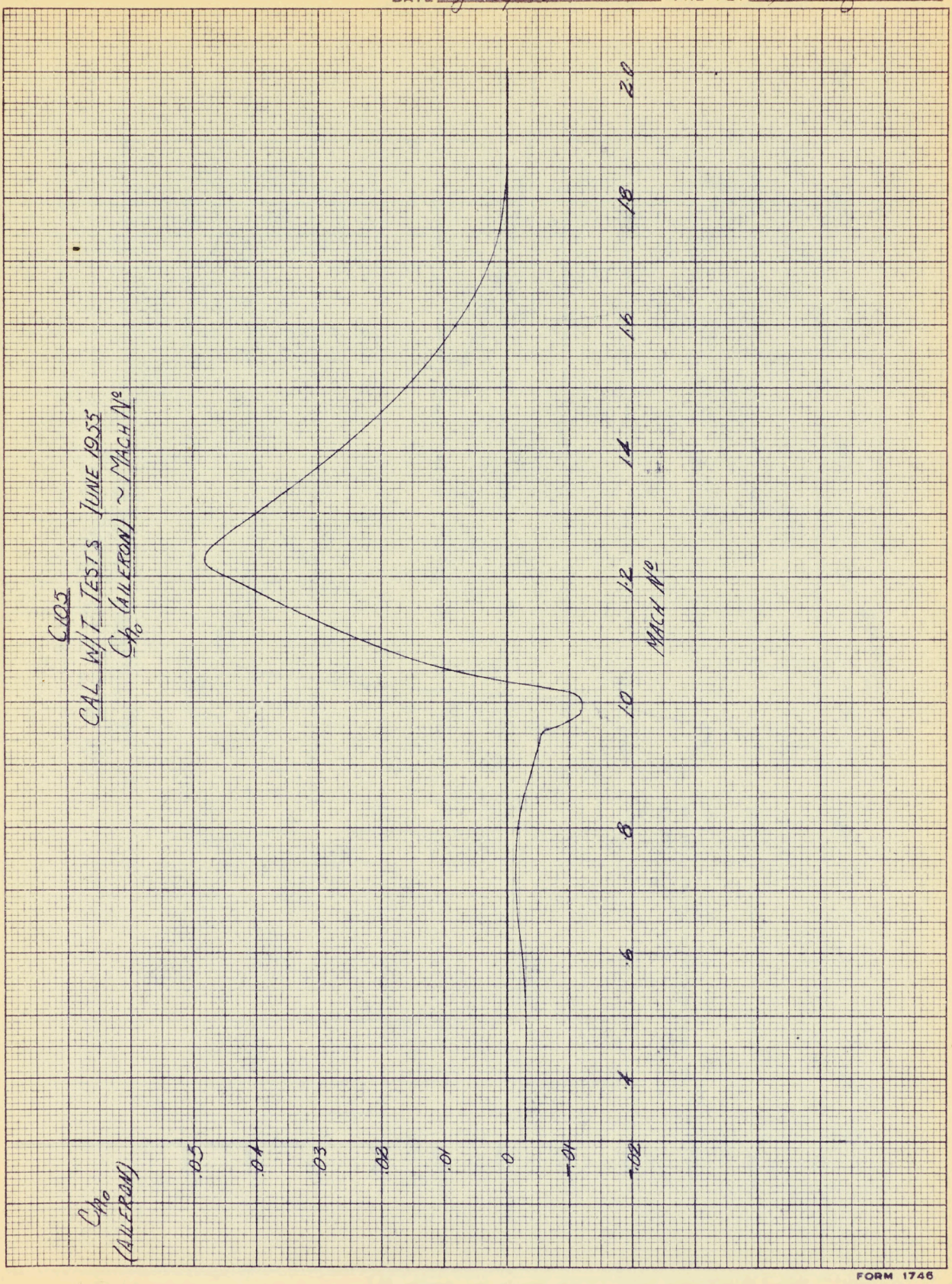


AIRCRAFT
A. U. W.

COMPONENT

SHEET NO. 1-4 REPORT NO. P/AERODATA/61

DATE July 1955 PREP. BY Salezonsh



10 X 10 TO THE ½ INCH KEUFFEL & ESSER CO. MADE IN U.S.A. 359-12

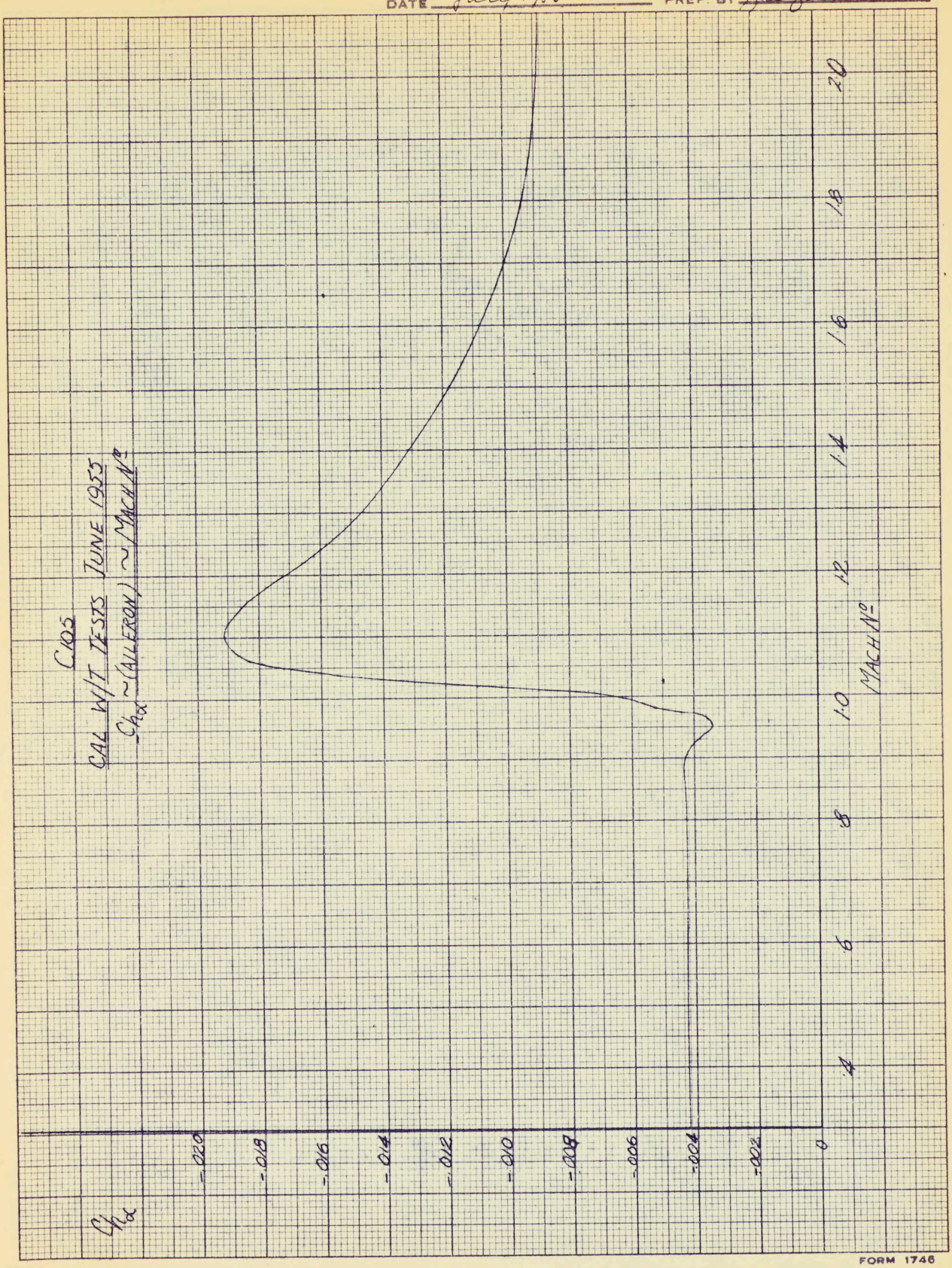
FORM 1746

AIRCRAFT
A. U. W.

COMPONENT

SHEET No. 15 REPORT No. P/AERO DATA/61

DATE July 1958 PREP. BY J. Alexander



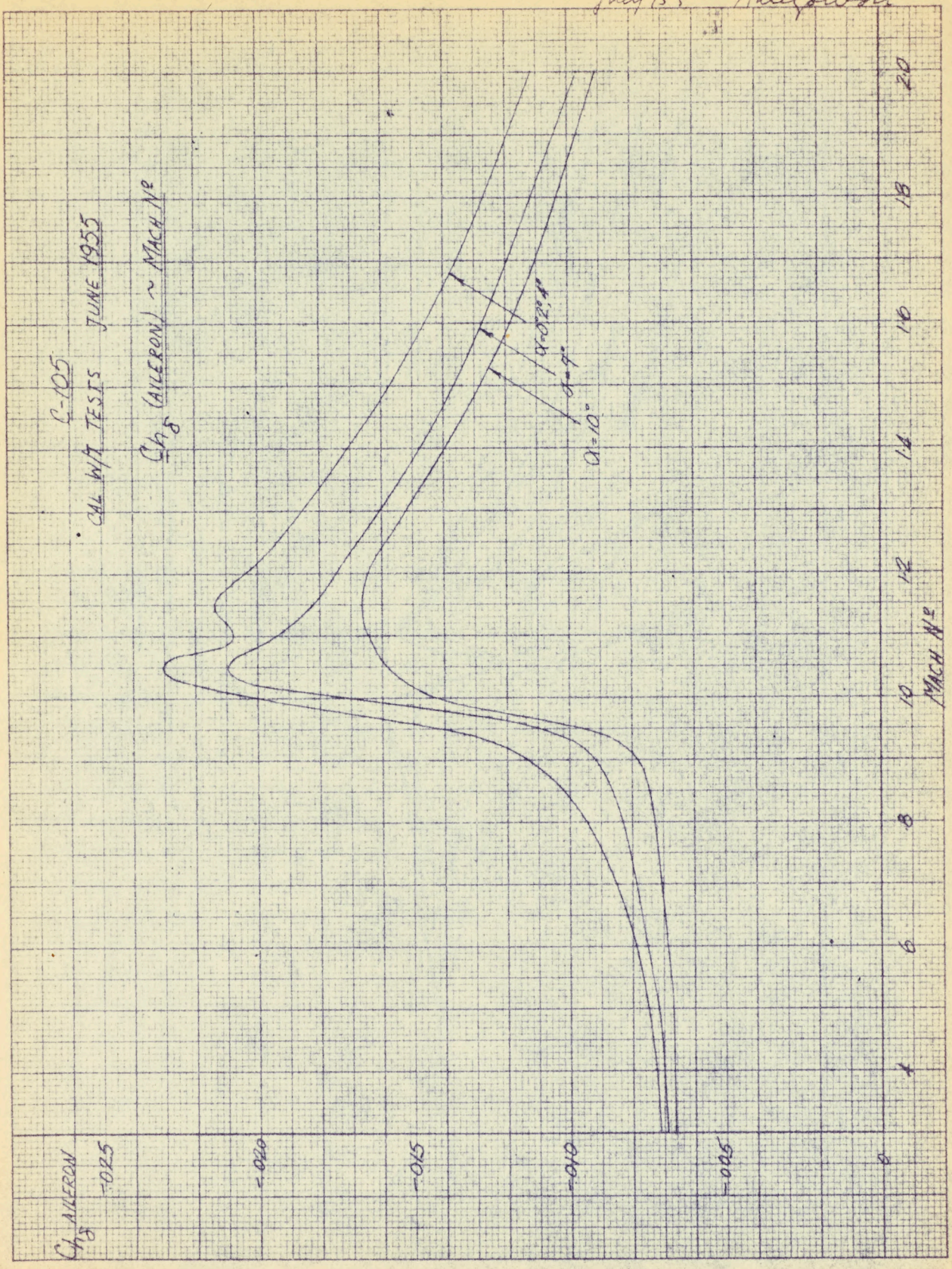
C_{l_α} CAL W/T TESTS JUNE 1955
C_{l_α} ~ (AILERON) ~ MACH No.

10 X 10 TO THE ½ INCH 359-12
KEUFFEL & ESSER CO. MADE IN U.S.A.

FORM 1746

P/AERO DATA/61 1.6

July 15th Galesworks



2.1 P/AERO DATA/68
JULY 55 Kwiatkowski

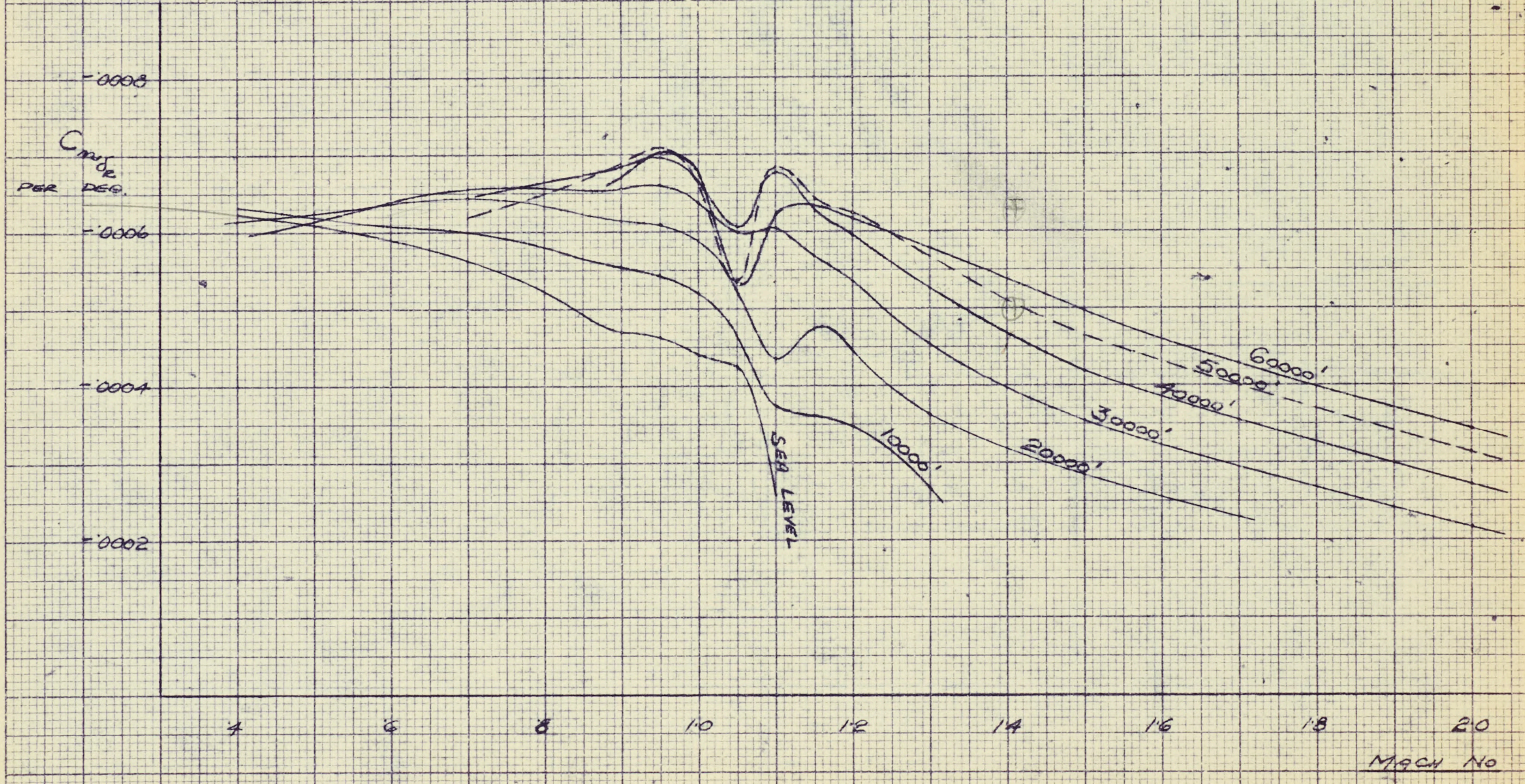
C105

ELASTIC $C_{m_{\delta_R}}$ VS. MACH No

IN LEVEL FLIGHT

L.E. DROOP, NOTCH & EXTENSION.

C.G. = 31 $\bar{c}$

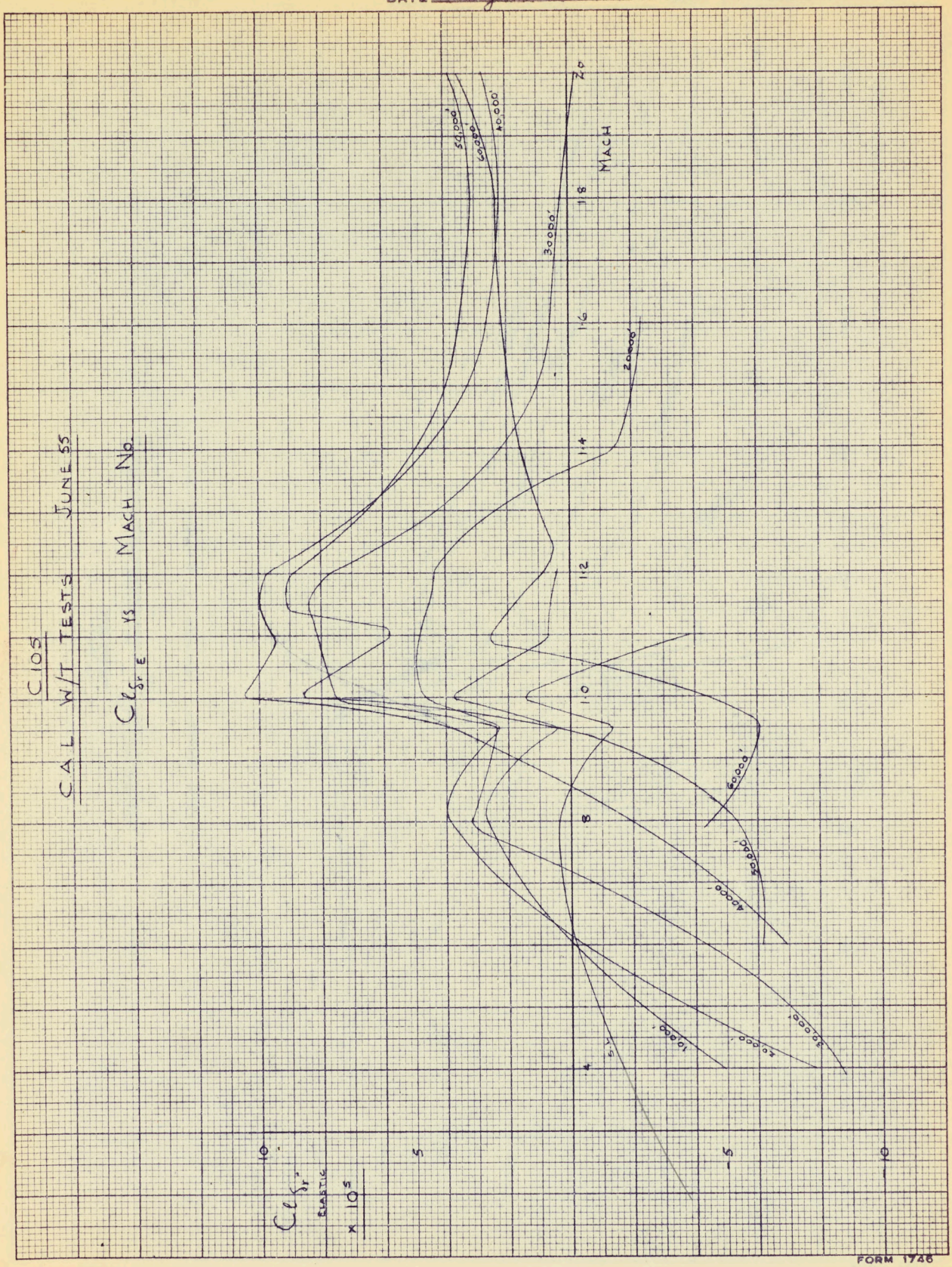


AIRCRAFT
A.U.W.

COMPONENT

SHEET NO. 2.2 REPORT NO. P/AERO DATA/61

DATE July 1955 PREP. BY J.S.B



FORM 1746

AIRCRAFT C105
A.U.W.

COMPONENT

SHEET NO. 2.3.

REPORT NO. P/AERO DATA/61

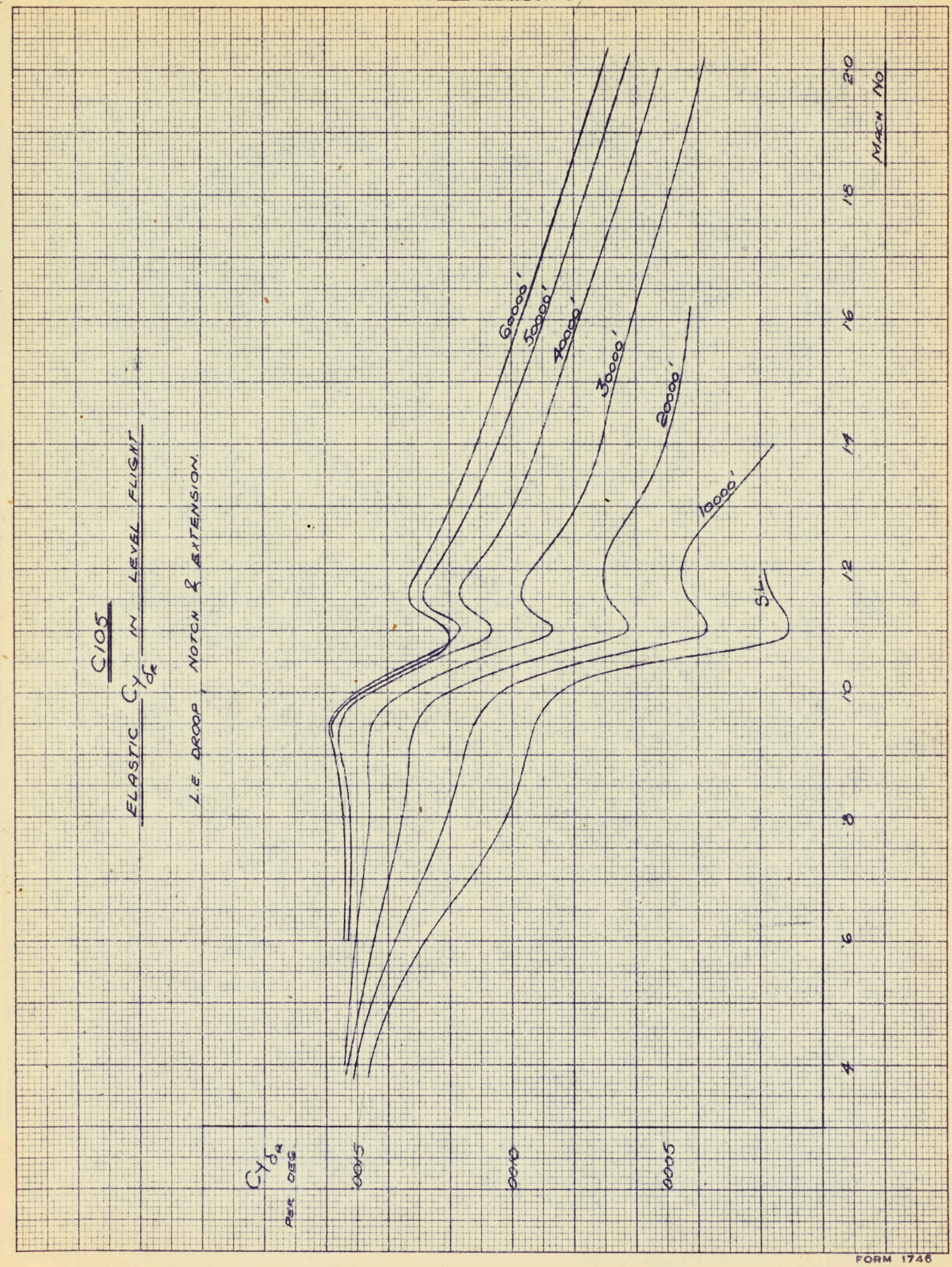
DATE JULY/55

PREP. BY Kuriakose

C105

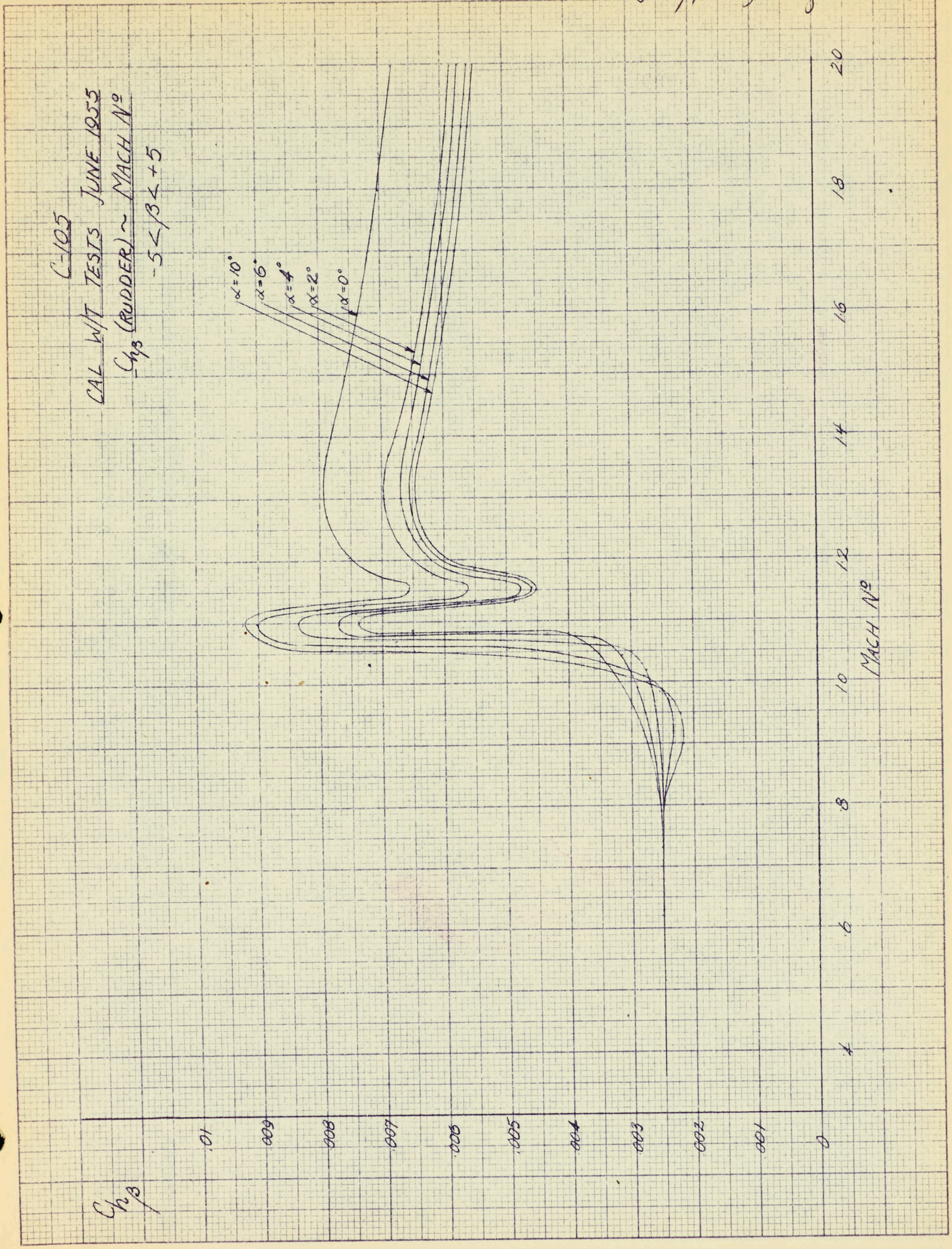
ELASTIC $C_{Y_{\delta_E}}$ IN LEVEL FLIGHT

L.E. DROOP, NOTCH & EXTENSION.



10 X 10 TO THE ½ INCH 359-12
KEUFFEL & ESSER CO. MADE IN U.S.A.

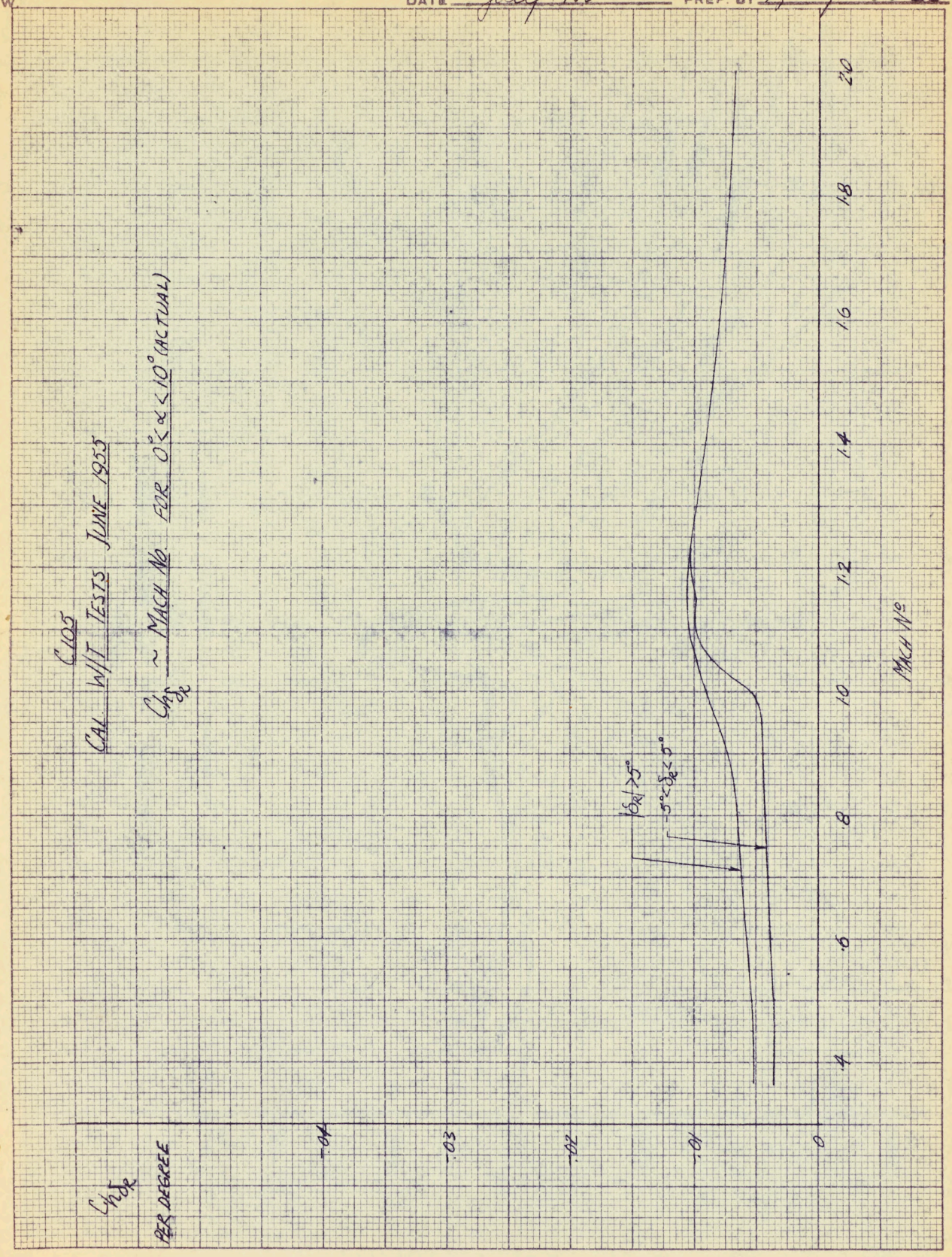
FORM 1746



AIRCRAFT C-105 COMPONENT
A. U. W.

SHEET NO. 2.5 REPORT NO. P/AD/61
DATE July 1955 PREP. BY Zalezonski

C105
CAL W/T TESTS JUNE 1955
$C_{m_{\delta_E}}$ ~ MACH NO. FOR $0° < \alpha < 10°$ (ACTUAL)

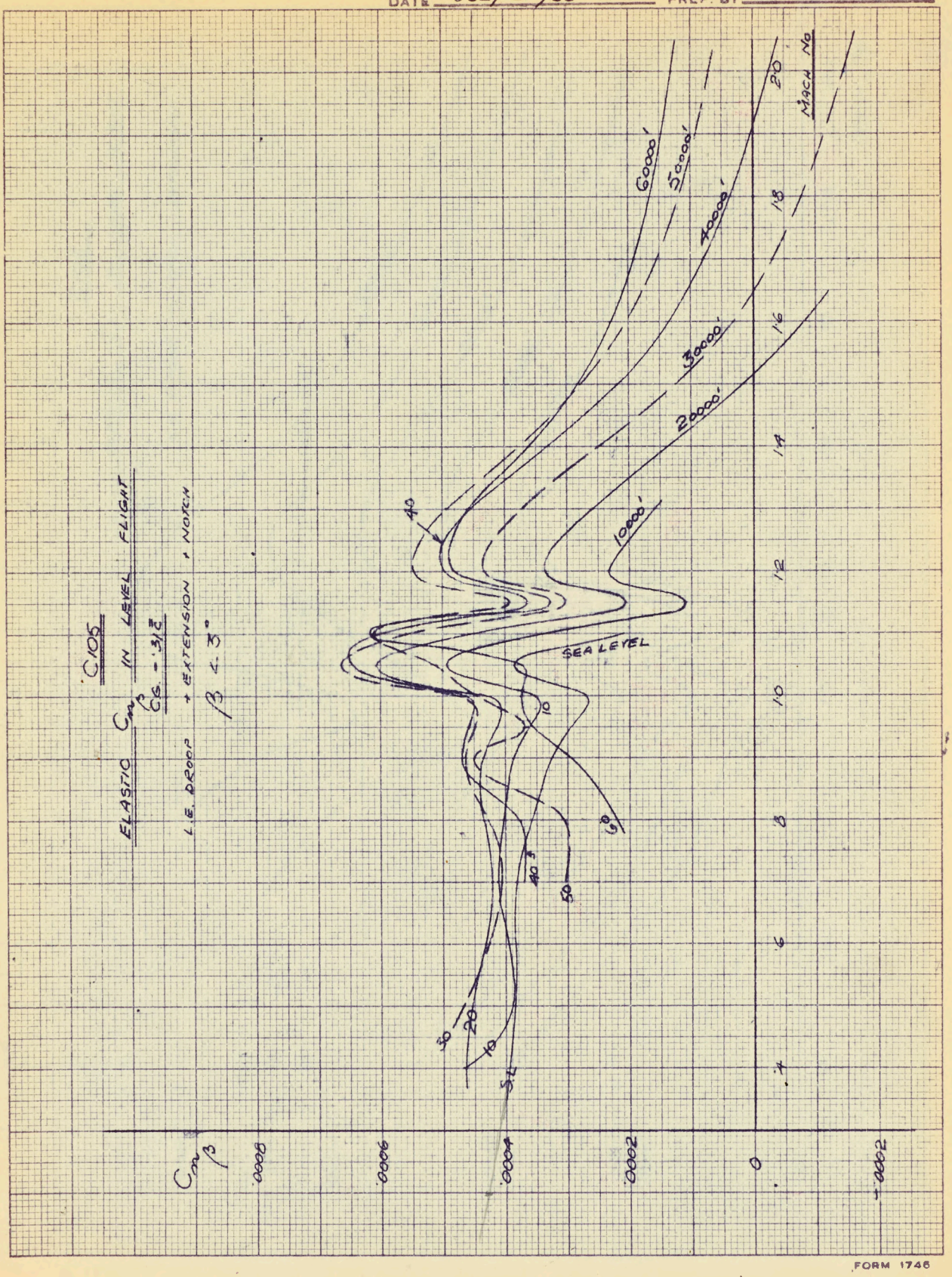


AIRCRAFT C105 COMPONENT

A. U. W.

SHEET No. 3.1. REPORT No P/AERO DATA/61

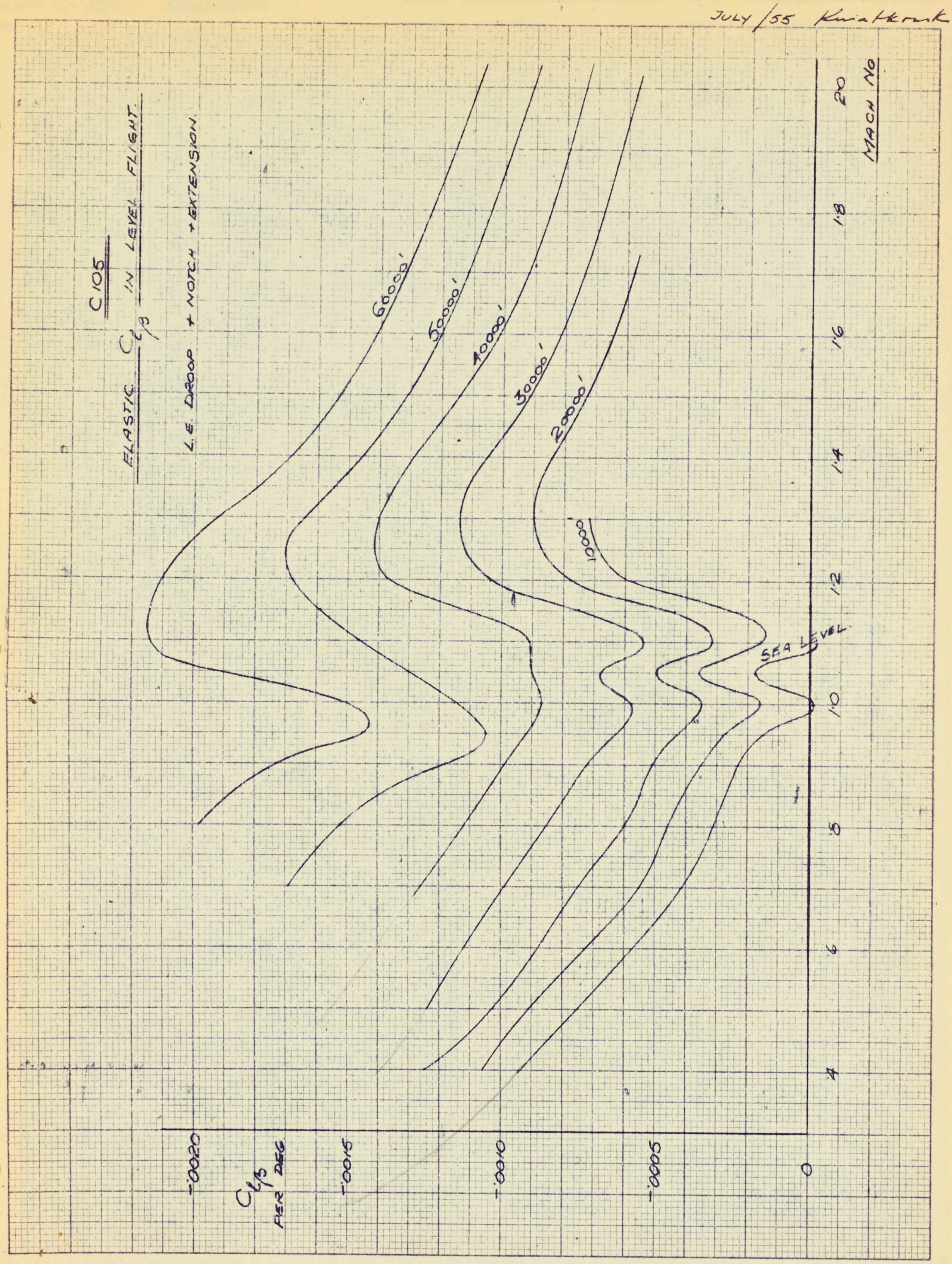
DATE JULY 21/55 PREP. BY Kwiatkowski



FORM 1746

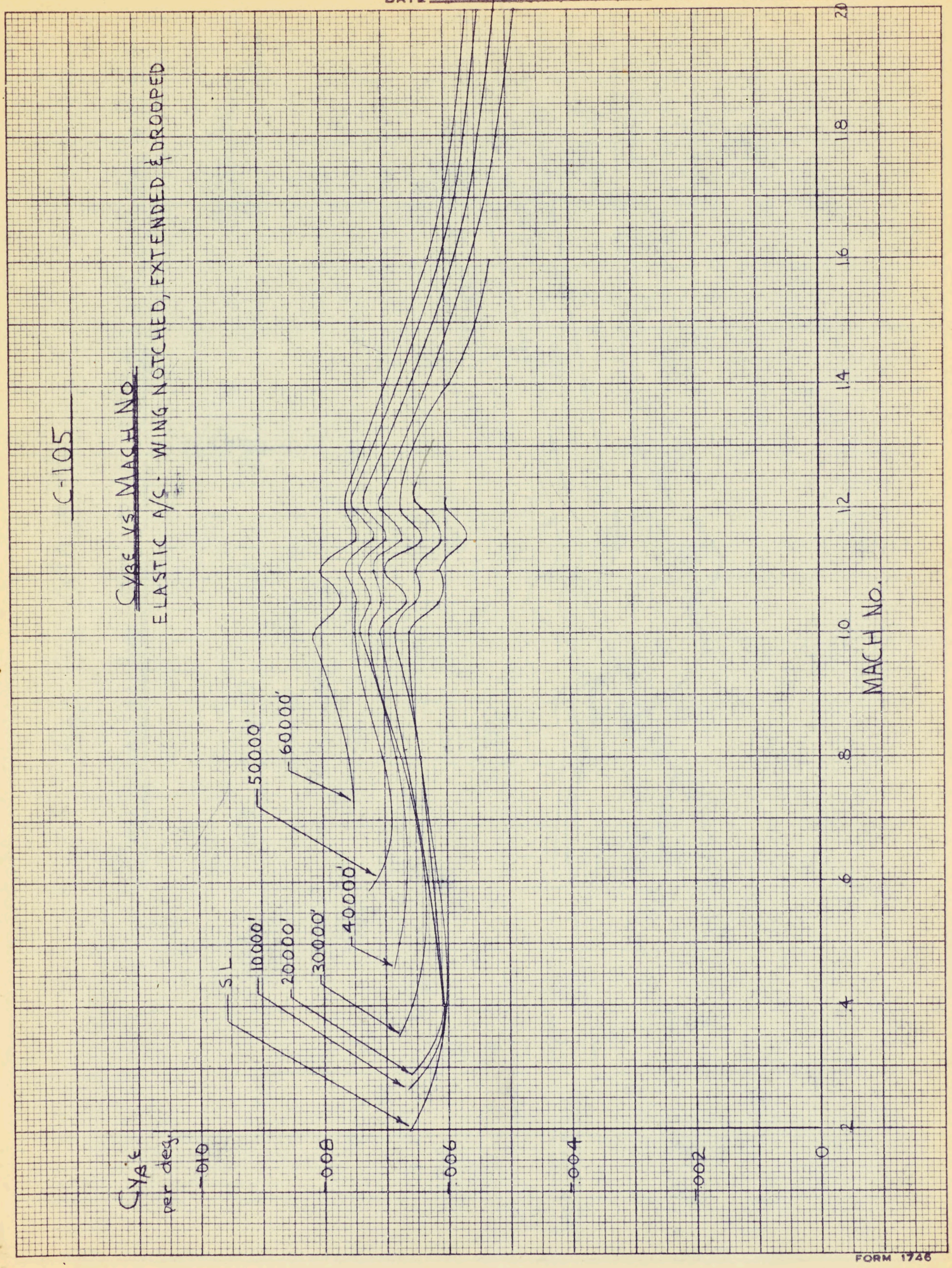
3.2. P/AERODATA/61

JULY/55 Kwiatkowski



AIRCRAFT C-105 COMPONENT SHEET No. 3.3. REPORT No. P/Aero Data/61

A.U.W. DATE VII.55 PREP. BY PRIDMORE

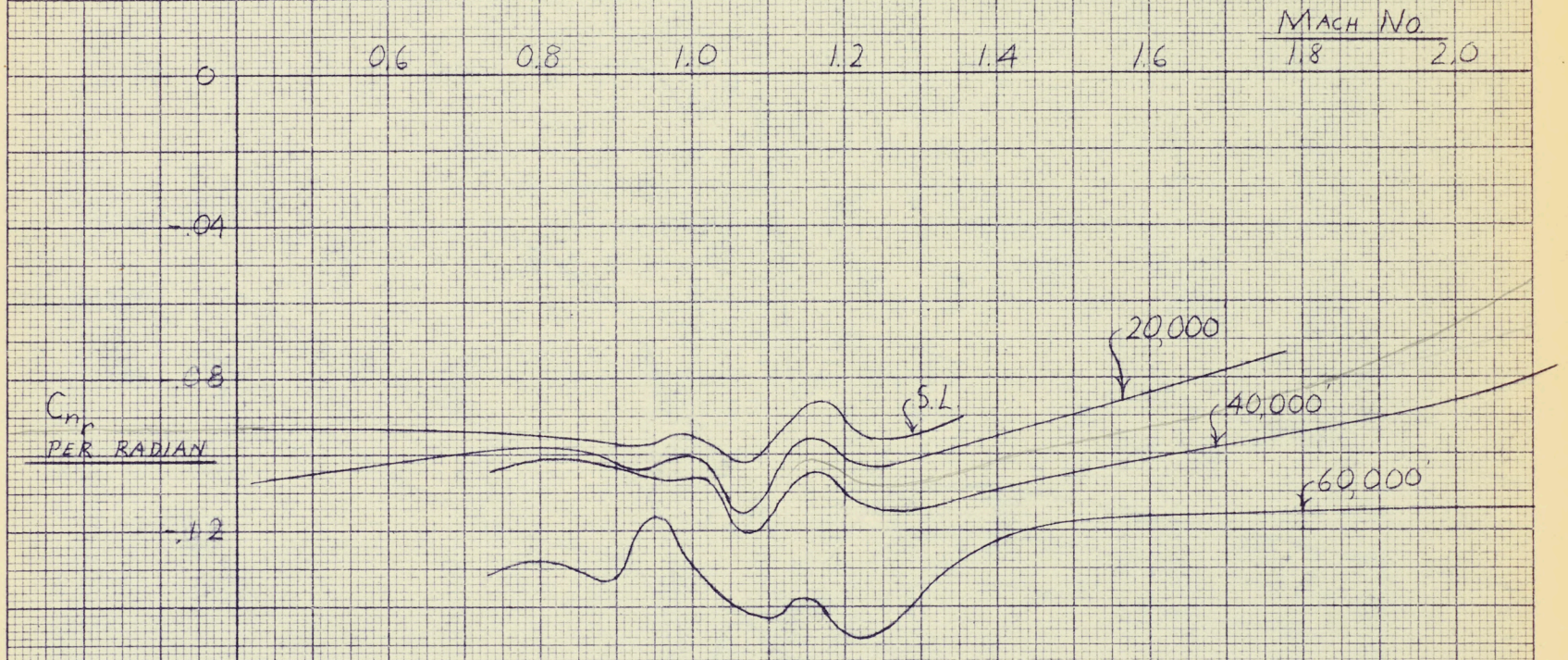


K&E 10 X 10 TO THE ½ INCH 359-12 KEUFFEL & ESSER CO. MADE IN U.S.A.

FORM 1746

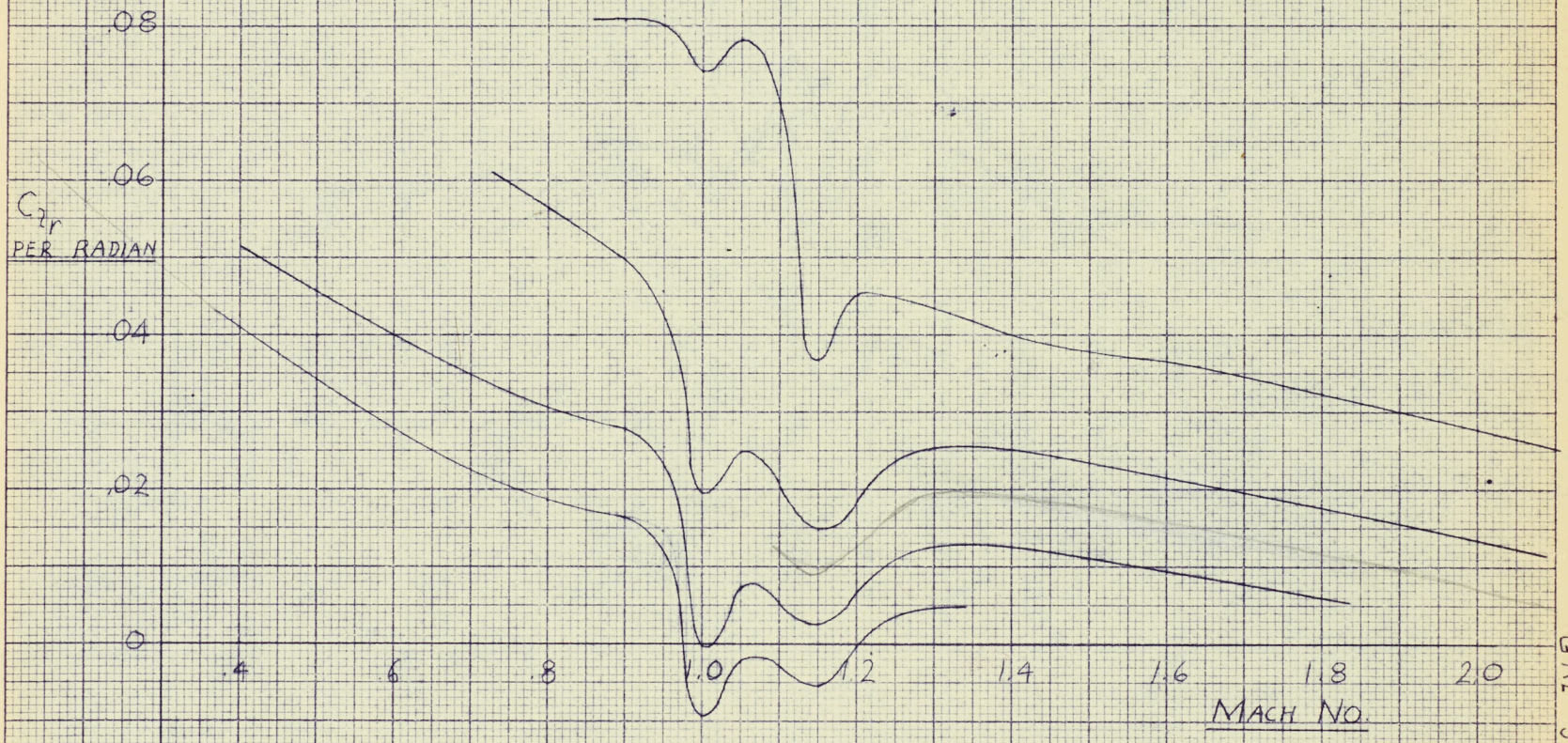
C_{n_R} VS MACH NO

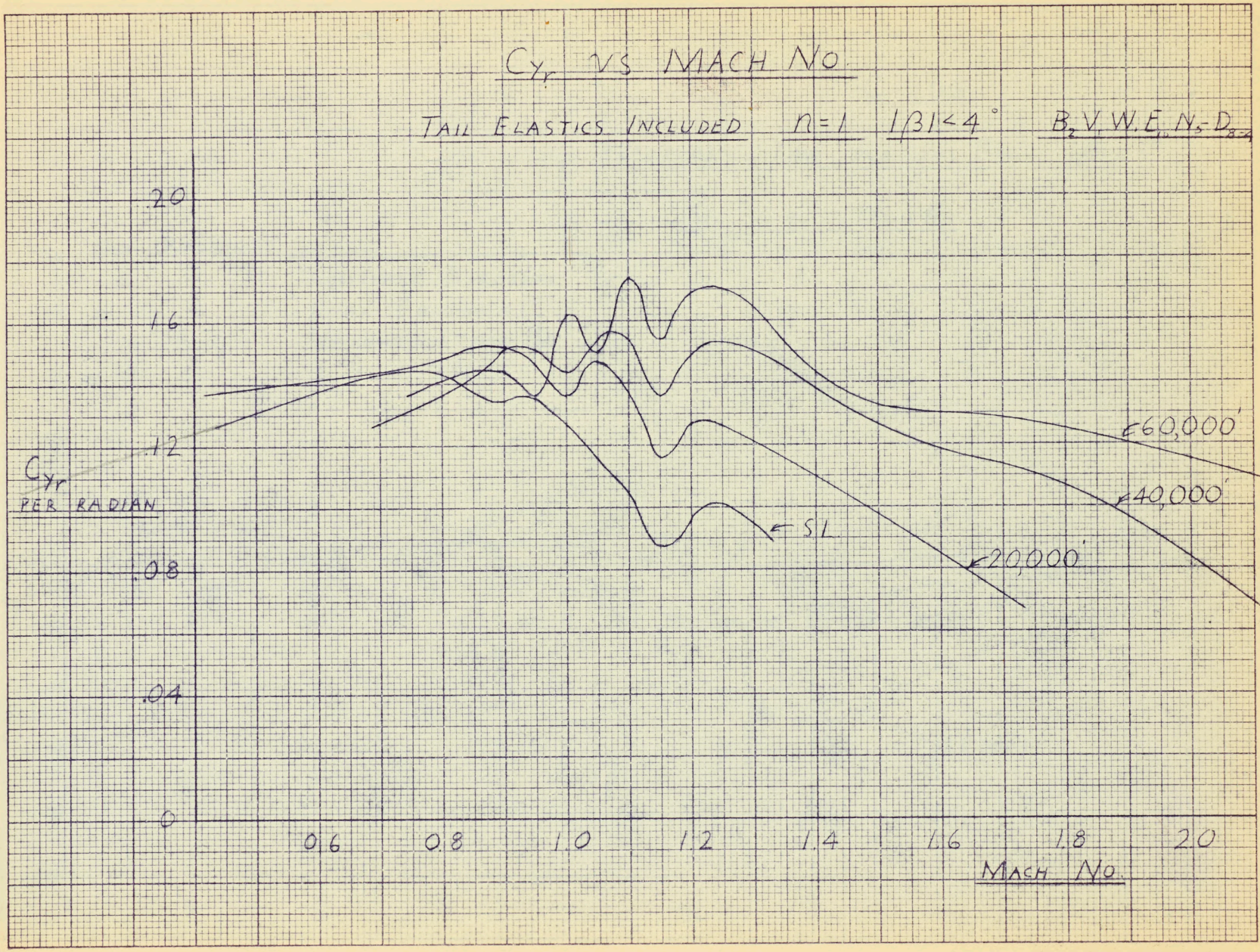
TAIL ELASTICS INCLUDED $n = 1$ $|\beta| < 4°$ B_2 V, W, E_{10} N_5 D_{5-4}



C_{l_r} VS MACH NO

TAIL ELASTICS INCLUDED n=1 1/3k4° B_2 V, W, E_{10} N_5 D_{8-4}





AIRCRAFT A.U.W. COMPONENT SHEET NO. 51
DATE July 1955 REPORT NO. P/AERO DATA/61
PREP. BY E. R. Fish

C-105

AEROELASTIC YAW DUE TO ROLL $|\beta| < 3°$

$C_{n_{PE}}$ VS MACH NO

C_{n_p} PER RADIAN

COMPLETE AIRCRAFT
LOAD FACTOR 1
WEIGHT = 47,000 lbs
C.G AT .31 $\bar{c}$

SEA LEVEL
20,000 ft
40,000 ft
60,000 ft

.08
.06
.04
.02
0
-.02
-.04
-.06
-.08
-.10

.2 .4 .6 .8 1.0 1.2 1.4 1.6 1.8 2.0

MACH NO.

FORM 1748

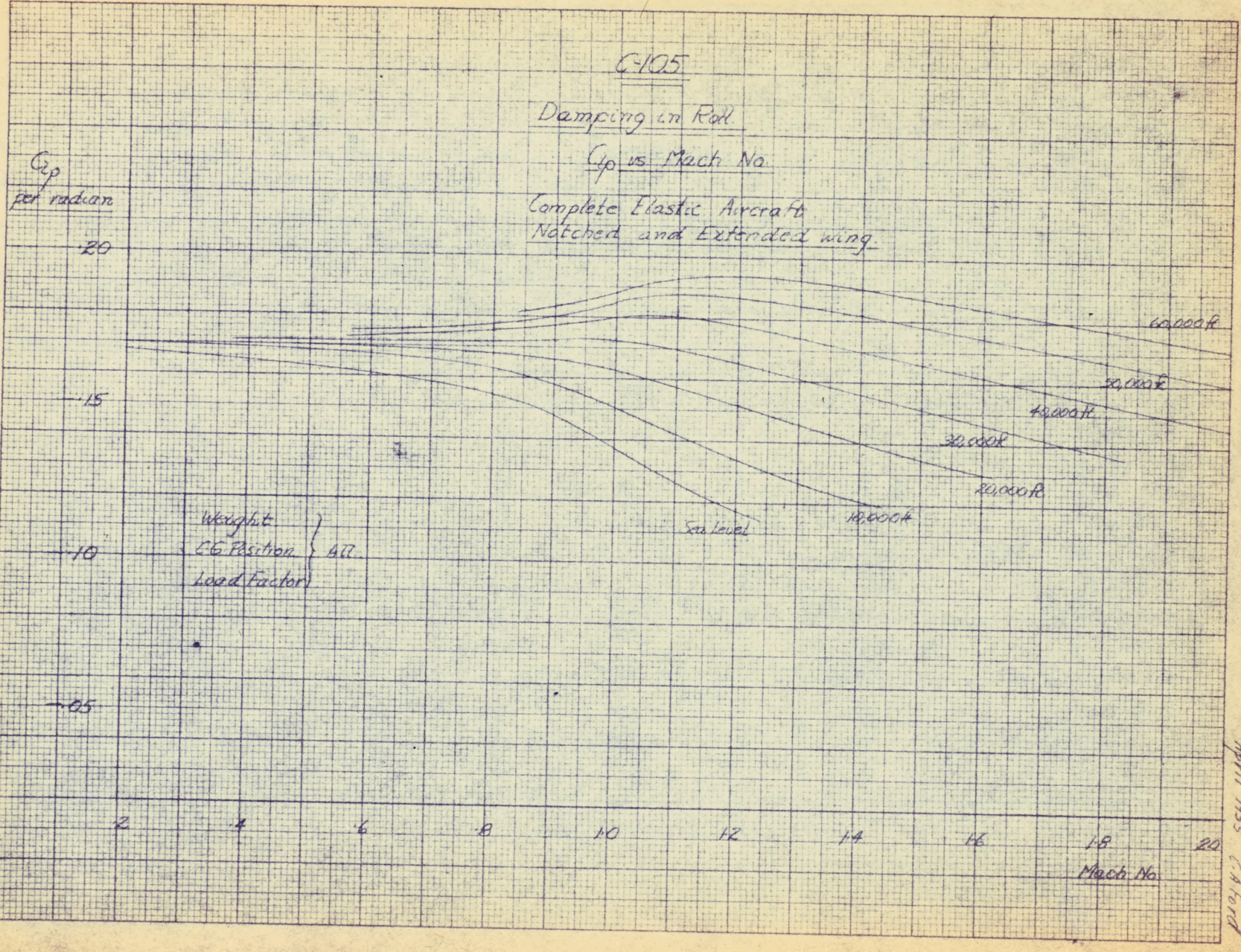
Stal/76

C-105

Damping in Roll

C_{lp} vs Mach No.

Complete Elastic Aircraft
Notched and Extended wing.



P/Aero Data/61 5-2
April 1955 C.A.Ford

AIRCRAFT

A.U.W.

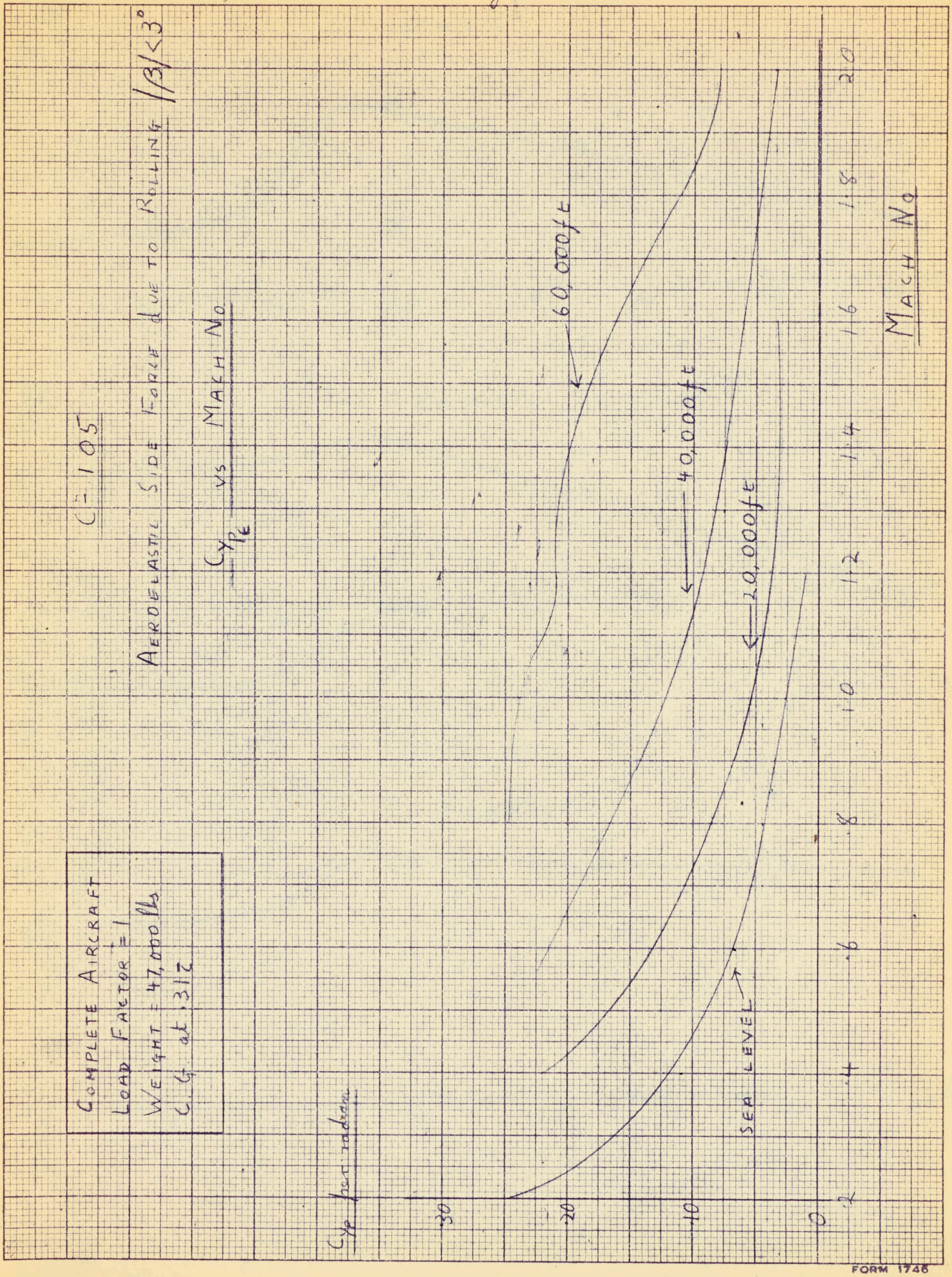
COMPONENT

SHEET No. 5.3.

DATE July 1955

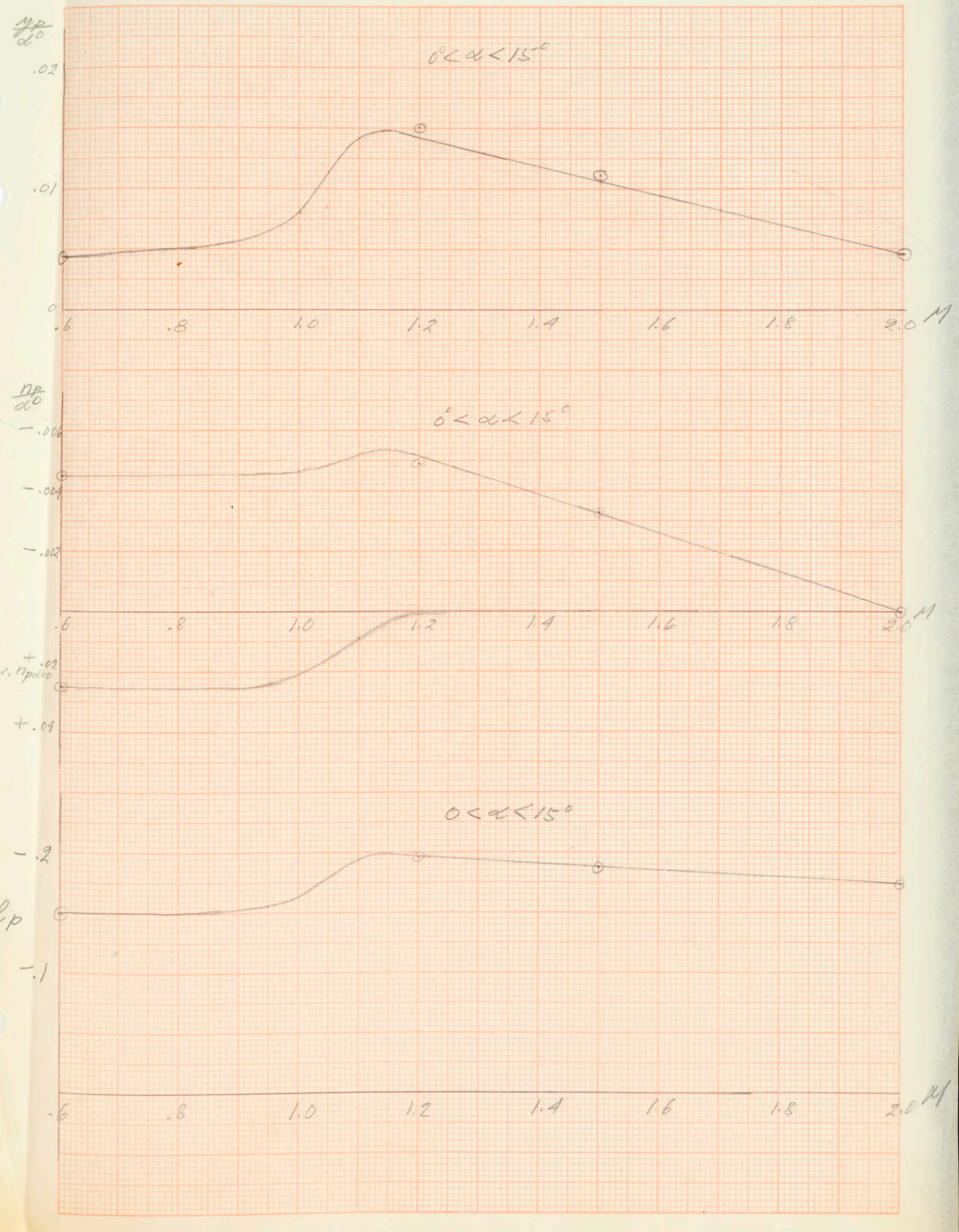
REPORT No P/AERO DATA/61

PREP. BY E K Fish



K+E 10 X 10 TO THE 1/2 INCH 359-12 KEUFFEL & ESSER CO. MADE IN U.S.A.

FORM 1746


$\frac{y_p}{\alpha_0}$
.02
.01
0
$0° < \alpha < 15°$
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
M
$\frac{n_p}{\alpha_0}$
−.006
−.004
−.002
$0° < \alpha < 15°$
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
M
+.02
Corr. $n_{p\alpha=0}$
+.01
$0 < \alpha < 15°$
−.2
l_p
−.1
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
M