

QC
Avro
C.105
P/WT/40
40

QCX
Avro
CF105
P-WT-40
(28)

FILE IN VAULT

C-105

ADW
ANALYZED

P/WIND TUNNEL/40

C.A.L. WIND TUNNEL TESTS AUGUST 1954.

DERIVATIVES AND ZERO VALUES 28

UNCLASSIFIED

ANALYZED



National Research Council
Canada

Conseil national de recherches
Canada

C.I.S.T.I.

I.C.I.S.T.

Aeronautical and

Bibliothèque

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d'aéronautique

Engineering Library

et de génie mécanique

TO
A

DATE

Report no.: QCX - AVRO - CF105 - P-WT 40

has been

☐

downgraded to: _____

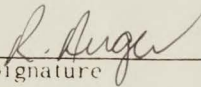
☒

de-classified

by (Name): Michel W. Drapeau

(Dept.): A/DND Coordinator, Access to Information

Date: Dec. 7, 1992


Signature



45106

12417911



UNCLASSIFIED

A. V. ROE CANADA LIMITED
MALTON - ONTARIO

TECHNICAL DEPARTMENT (Aircraft)

AIRCRAFT C-105

REPORT NO. P/WIND TUNNEL/40

FILE NO.

NO. OF SHEETS:

TITLE

DERIVATIVES AND ZERO VALUES

confirmed as:
Classification ~~cancelled / changed to:~~ UNCLASSIFIED
By authority of: DRDA 7/DARFT 5-8/DAS Eng 6-4-5
Date: 5 Nov 1992
Signature: *B. Aubrey*
Unit / Rank / Appointment: DSIS 3, Secretary CRAD HQ DEP

PREPARED BY D. Ewart

DATE Aug. '54.

CHECKED BY

DATE

SUPERVISED BY

DATE

APPROVED BY

DATE

ISSUE NO	REVISION NO	REVISED BY	APPROVED BY	DATE	REMARKS

TECHNICAL DEPARTMENT (Aircraft)

AIRCRAFT

C-105

REPORT NO. P/WIND TUNNEL/40

SHEET NO. i

PREPARED BY

DATE

Aug. 1954.

CHECKED BY

DATE

LONGITUDINAL STABILITY

UNCLASSIFIED
NON CLASSIFIE

SECTION

1. Lift

- | | |
|----------------|-----|
| 1. CL_q | 1.1 |
| 2. CL_δ | 1.2 |
| 3. q_0 | 1.3 |

2. Pitching Moment

- | | |
|---------------------|-----|
| 1. a.c. | 2.1 |
| 2. c.p. | 2.2 |
| 3. $CM_\delta(q)$ | 2.3 |
| 4. $CM_\delta(C_L)$ | 2.4 |

3. Fin and Rudder Effectivenesses

- | | |
|------------------|-----|
| 1. a_1 | 3.1 |
| 2. a.c. | 3.2 |
| 3. $\eta_{a.c.}$ | 3.3 |
| 4. a_2 | 3.4 |
| 5. c.p. | 3.5 |
| 6. $\eta_{c.p.}$ | 3.6 |

4. Lateral and Directional Derivatives

- | | |
|--------------------|-----|
| 1. $C_{N\beta}$ | 4.1 |
| 2. $C_{l\beta}$ | 4.2 |
| 3. $C_{y\beta}$ | 4.3 |
| 4. $C_{N\delta_r}$ | 4.4 |

COMPONENT

SHEET No. 1.1

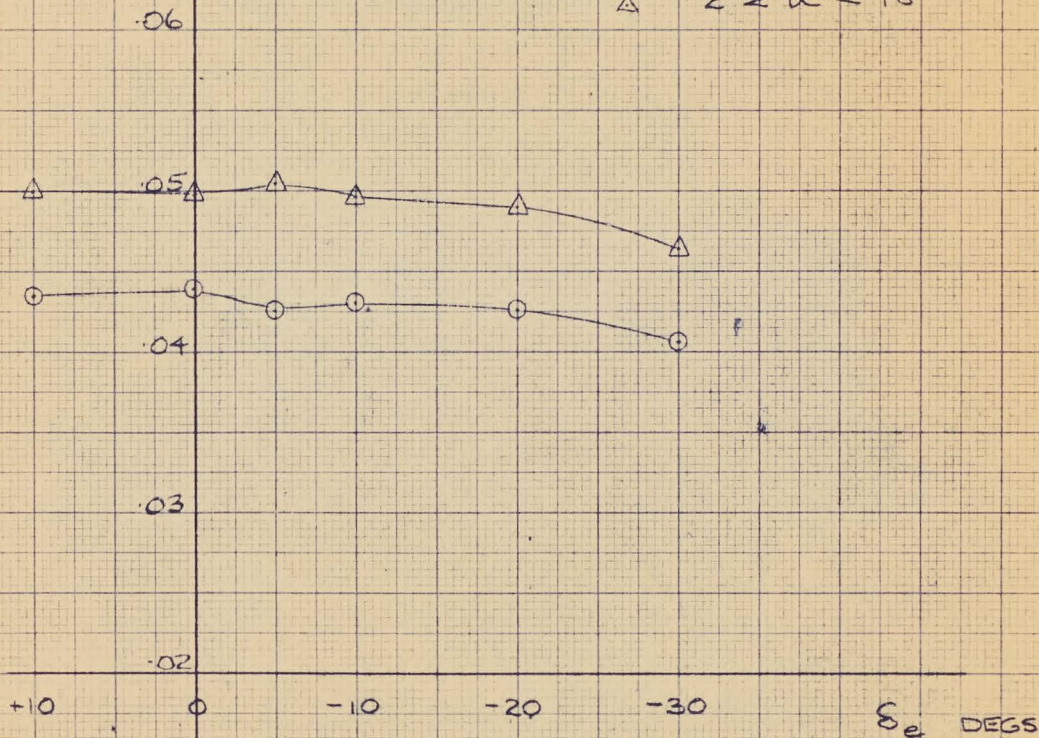
REPORT No. P/WT/40

DATE AUG. '54

PREP BY L. S. Sewart

C-105

C.A.L. WIND TUNNEL TESTS ~ AUG. '54

 $C_{L\alpha}$ vs δ_e $M = .50$ CONF. $B_3 C_3 W_5 V_2 R_5$ $C_{L\alpha}$
PER DEG.UNCLASSIFIED
NON CLASSIFIED○ $-4^\circ < \alpha < 2^\circ$ △ $2^\circ < \alpha < 18^\circ$ 

RUN 961

RUN 960

RUN 962

RUN 930

RUN 963

RUN 964

COMPONENT

SHEET NO. 1.3

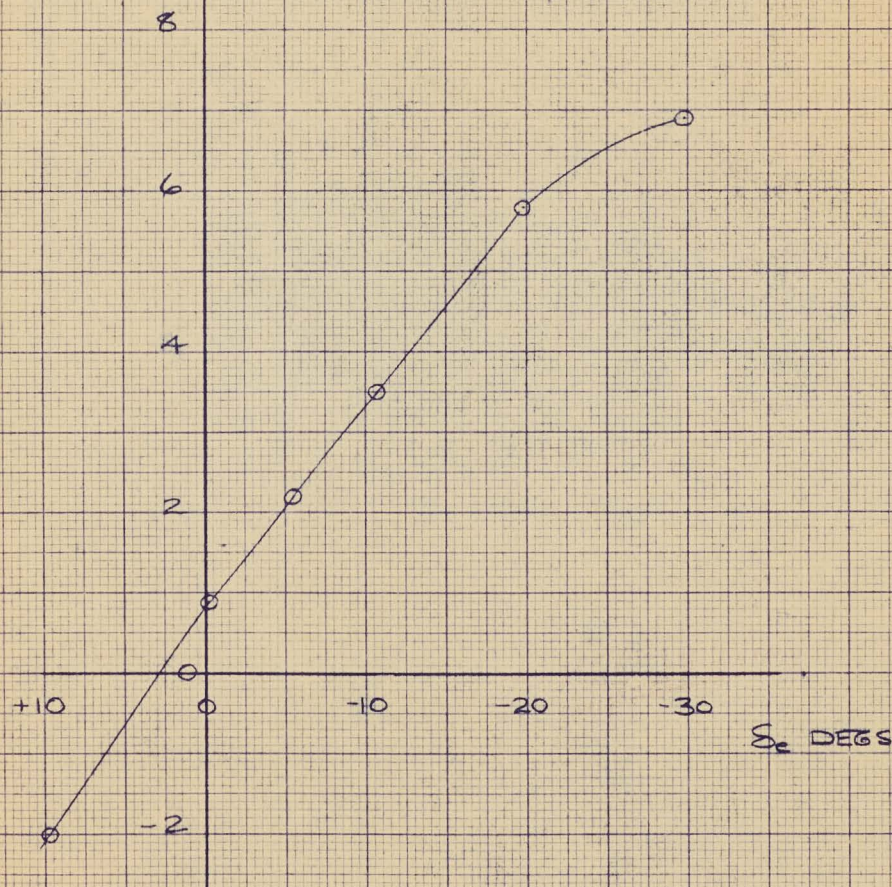
REPORT NO. P/WT/40

DATE AUG '54

PREP BY D. J. MONT

C-105C.A.L. WIND TUNNEL TESTS AUG '54 α_o vs δ_e

M = .50

CONFIG. $B_3 C_3 W_5 V_2 R_5$ α_o DEGS.UNCLASSIFIED
NON CLASSIFIED

C105
C.A.L. WIND TUNNEL TESTS JULY 57
AERODYNAMIC CENTRE VS. ELEVATOR
DEFLECTION

$M = 1.5$

40%

a.c.

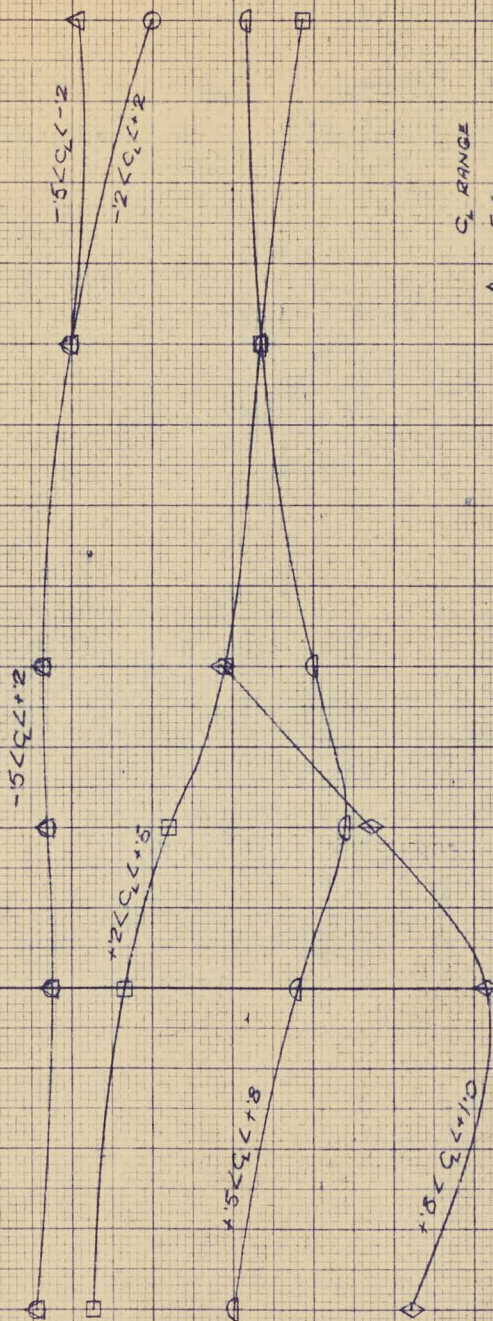
7.4%

35%

30%

25%

20%



C.L. RANGE

-5 < C.L. < +2

-2 < C.L. < +2

+2 < C.L. < +5

+5 < C.L. < +8

+8 < C.L. < +10

△

○

□

◇

◇

UNCLASSIFIED
NON CLASSIFIED

-30°

-20°

-10°

-5°

0°

10°

C105
C.A.L. WIND TUNNEL TESTS JULY 52.
8% NOTCH
AERODYNAMIC CENTRE VS. C_L
M = .5

D.C.
Z MAC

80

40

30

20

10

-2

0

20

40

60

80

100

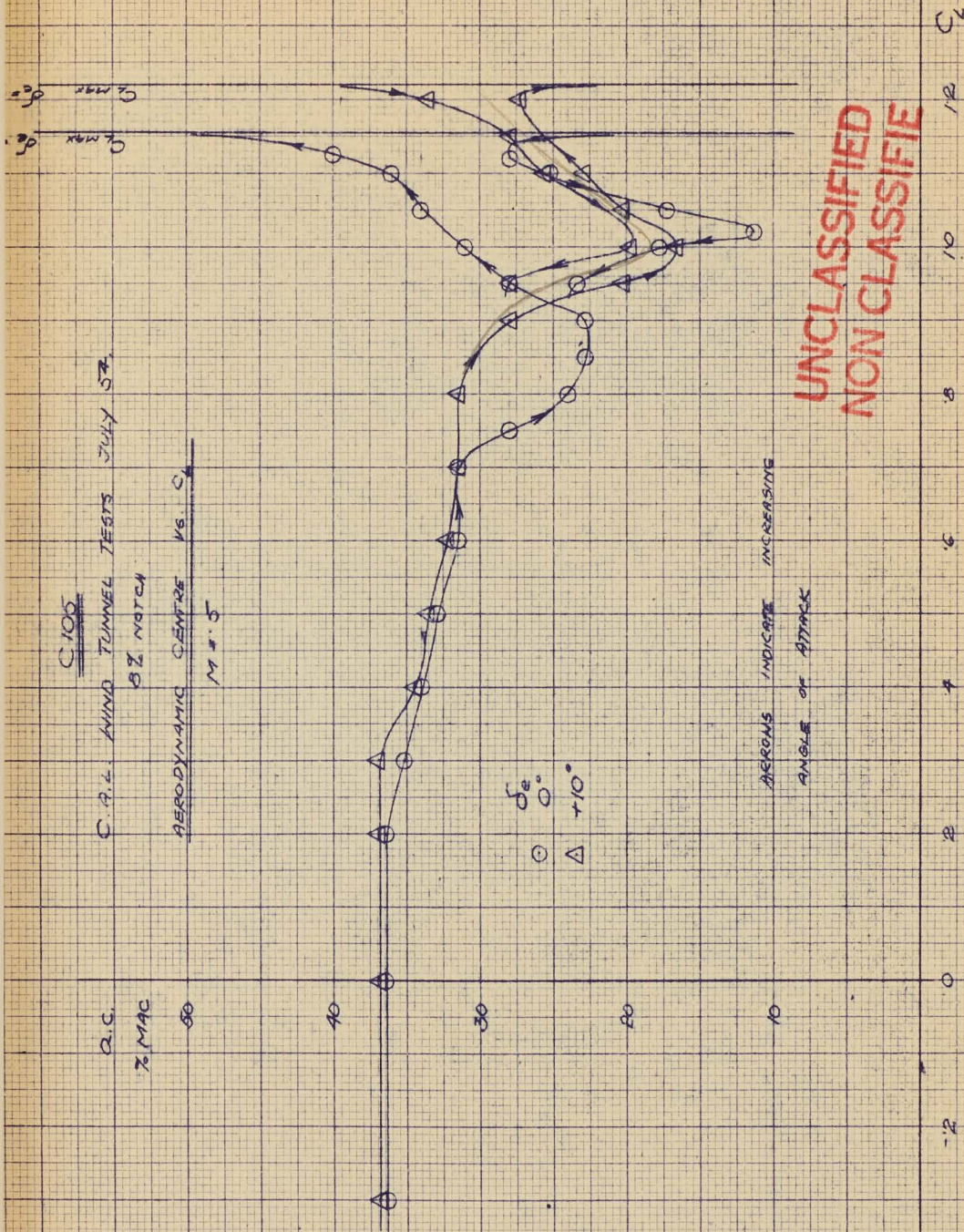
120

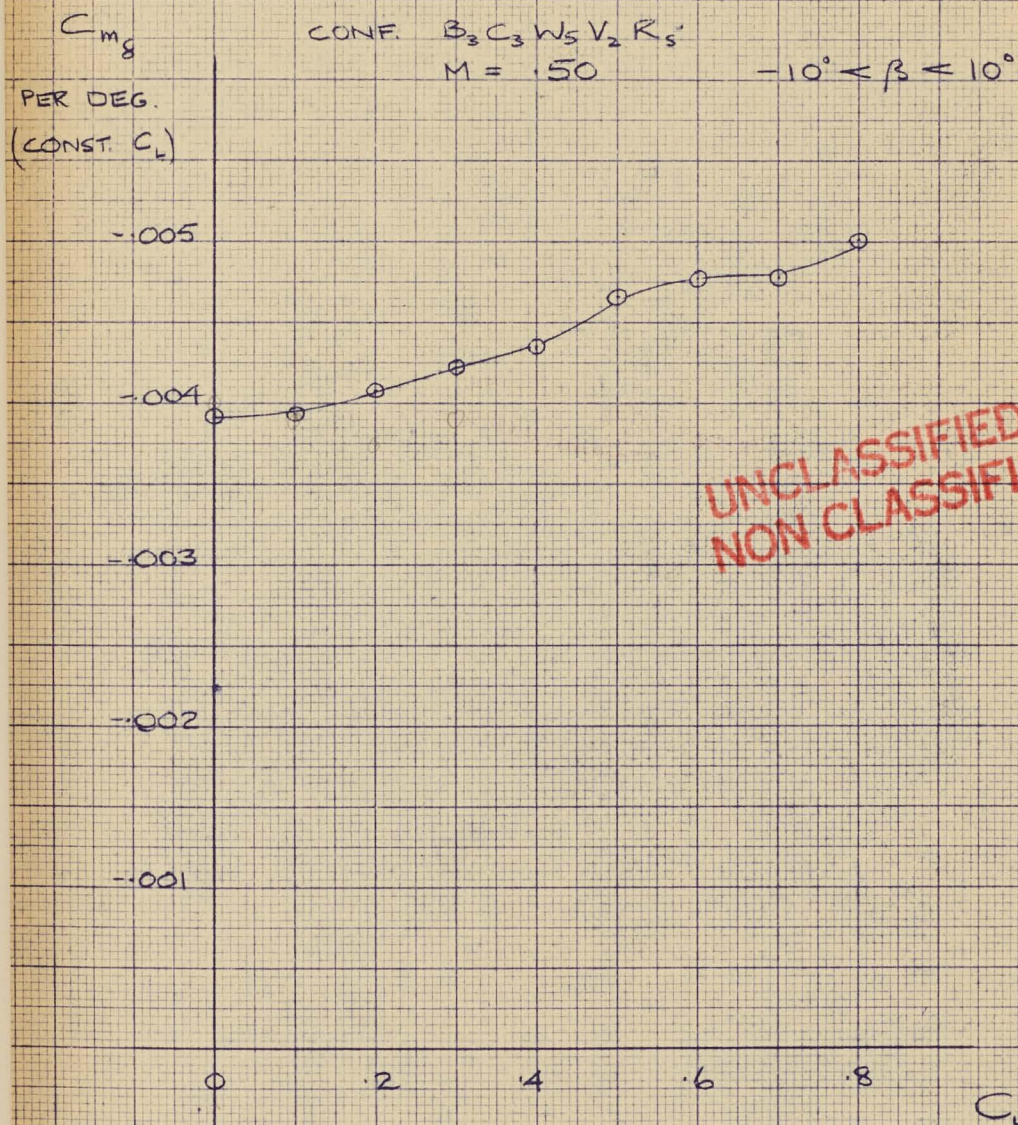
C_L

δ_e
0°
+10°

ARROWS INDICATE INCREASING
ANGLE OF ATTACK

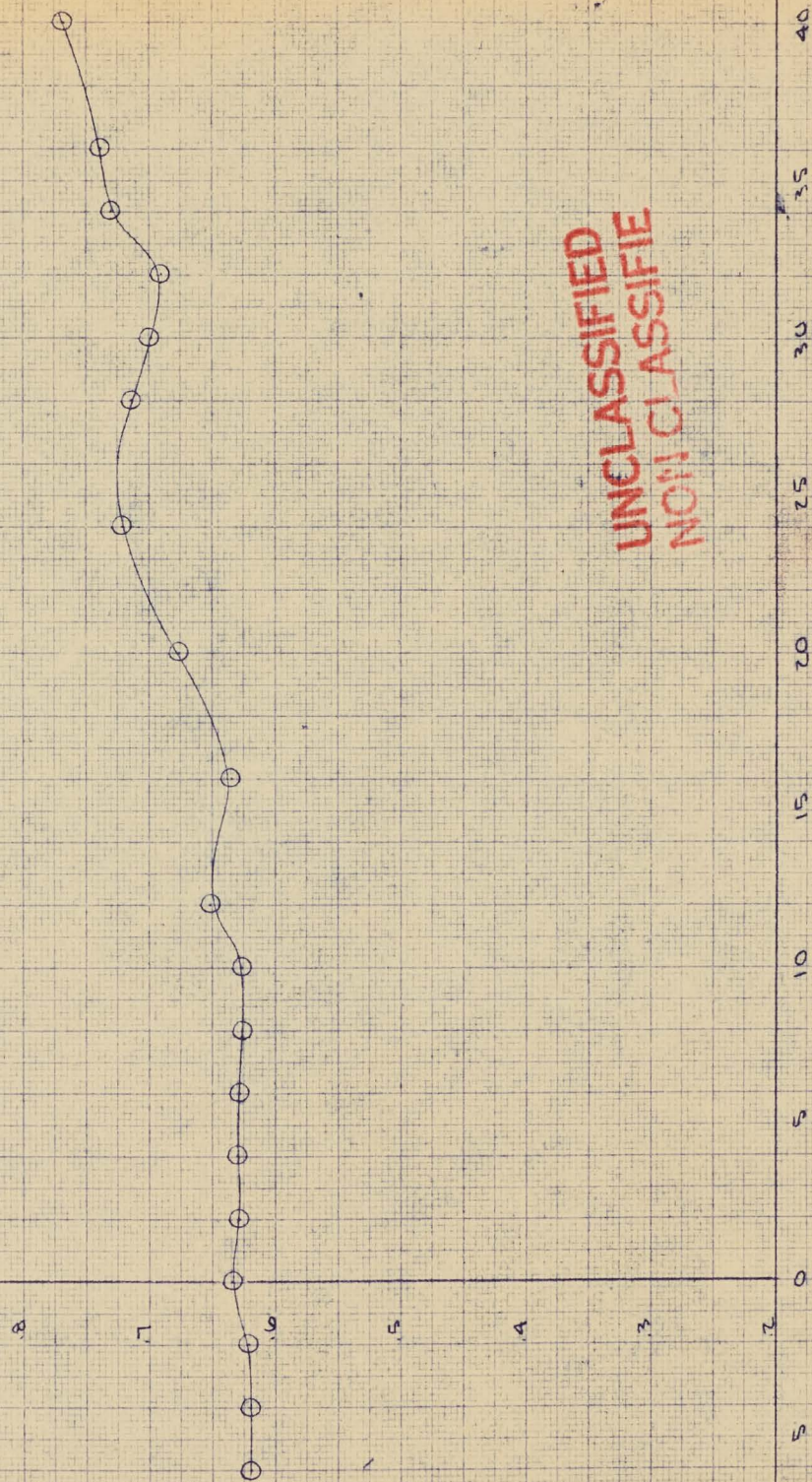
UNCLASSIFIED
NON CLASSIFIED



C-105C.A.L. WIND TUNNEL TESTSAUGUST '54 C_{m_s} vs C_L 

Aug. '54

G.K. DIMOCK

C-105
C.P.L. WIND TUNNEL TESTS JULY '54VERTICAL TAIL - CHORDWISE C.P. POSITION W. Y
B₃ & W₃ V₂ R₃ -C.P.
% MAG.UNCLASSIFIED
NOT CLASSIFIED

α - DEGREES

6113

- PER SEC

100

1001

1002

1003

1004

1005

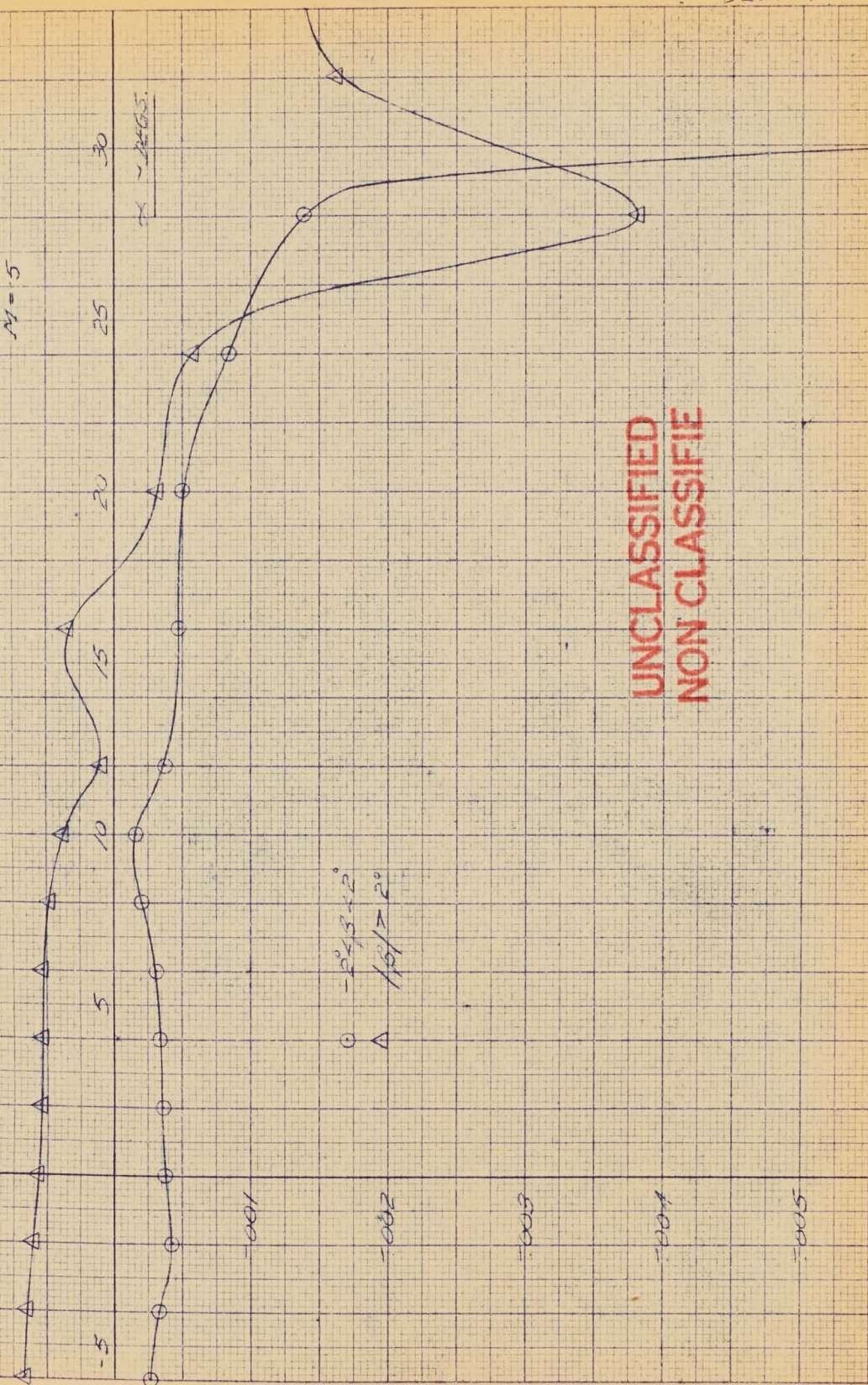
6105

CHL N F TESTS (100 X 54)

6110 RS ON

33 63 115 12 R3

N = 5



UNCLASSIFIED
NON CLASSIFIE

AUG. 54. CLARK

COMPONENT

SHEET No. 5.1
DATE AUG '54REPORT No. P/WT/40
PREP BY J. Stewart

C.A.L. WIND TUNNEL TESTS AUG. '54

 $C_{H\delta_e}$ vs α M = .50 CONF. B₃C₃W₅V₂R₅ $C_{H\delta_e}$

PER DEG.

 $-30^\circ < \delta_e < -10^\circ$ $-10^\circ < \delta_e < 10^\circ$ UNCLASSIFIED
NON CLASSIFIE $\alpha \sim \text{DEGS}$

COMPONENT

SHEET No.

5.2

REPORT No.

P/WT/40

DATE

AUG. '54

PREP BY

D. Swant

C.A.L. WIND TUNNEL TESTS AUG 54

 $C_{H\delta_r}$ vs α M = .50 CONF. $B_3 C_3 W_5 V_2 B_5$ $C_{H\delta_r}$

-.010

-.008

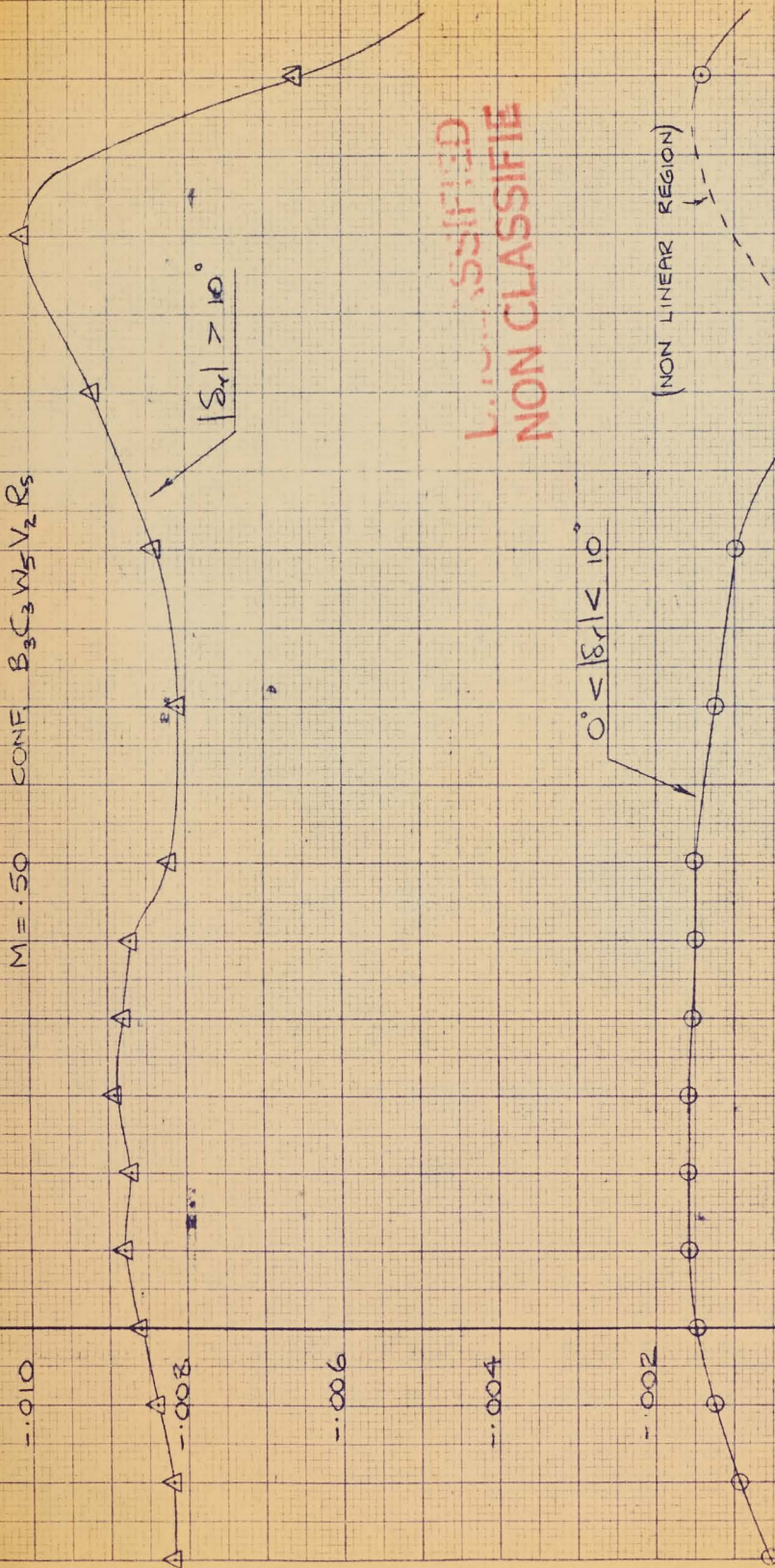
-.006

-.004

-.002

0

-5

 $|\delta_r| > 10^\circ$ UNCLASSIFIED
NON CLASSIFIED $0^\circ < |\delta_r| < 10^\circ$

(NON LINEAR REGION)

 α - DEGS

