

QC
Avro
C-105
P/M/15

QCX
Avro
CF105
P-Models-15

(2)

FILE IN VAULT

SECRET	ANALYZED	P/MODELS/15
N.A.E. SPINNING MODEL		
C-105 AIRCRAFT		
N.A.E.	UNCLASSIFIED	SECRET



National Research Council
Canada
C.I.S.T.I.
Aeronautical and
Mechanical
Engineering Library

Conseil national de recherches
Canada
I.C.I.S.T.
Bibliothèque
d'aéronautique
et de génie mécanique

TO
A

DATE

Report no.: QCX-AVR0-CF105- P- Models - 15

has been ☐ downgraded to : _____

☒ de-classified

by (Name): Michel W. Drapeau

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

Date: Dec. 7, 1992

R. Auger
Signature

UNCLASSIFIED

P/Models/15

A. V. ROE CANADA LIMITED

MALTON, ONTARIO

ANALYZED

INITIAL PROJECTS OFFICE
AIRCRAFT ENGINEERING DIVISION

N.A.E. 'SPINNING' MODEL

SCALE 1/24

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: PSIS 3, Secretary CRAD HQ DRP

Prepared by L. J. Crowe
Approved by J. A. Chamberlin
Date November 6th, 1953.



45135

12420647

Date: 6/11/53
Issue: 1

P/Models/15

INDEX

'C-105 AIRCRAFT'

G. A. - Side Elevation	1-
G. A. - Plan Elevation	2-
Aerodynamic Data	3-
Pressure Taps	4-
Fuselage	5-
Canopy	6-
Wing	7-
Nacelle	8-
Vertical Tail	9-
Elevators	10-
Ailerons	11-
Rudder	12-
Dive Brakes	13-
Wing - Nacelle Fillet	14-
Fin - Fuselage Fillet	15-
External Stores	16-

FINCHES, 15 F

UNCLASSIFIED / NON CLASSIFIÉ

CHORD PLAN.
UNLESS NOTED

SPARK GLORY
SEE 7-11

DATE: 7/12/33
ISSUE: 2

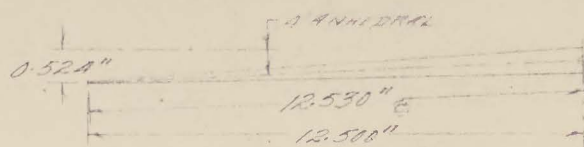
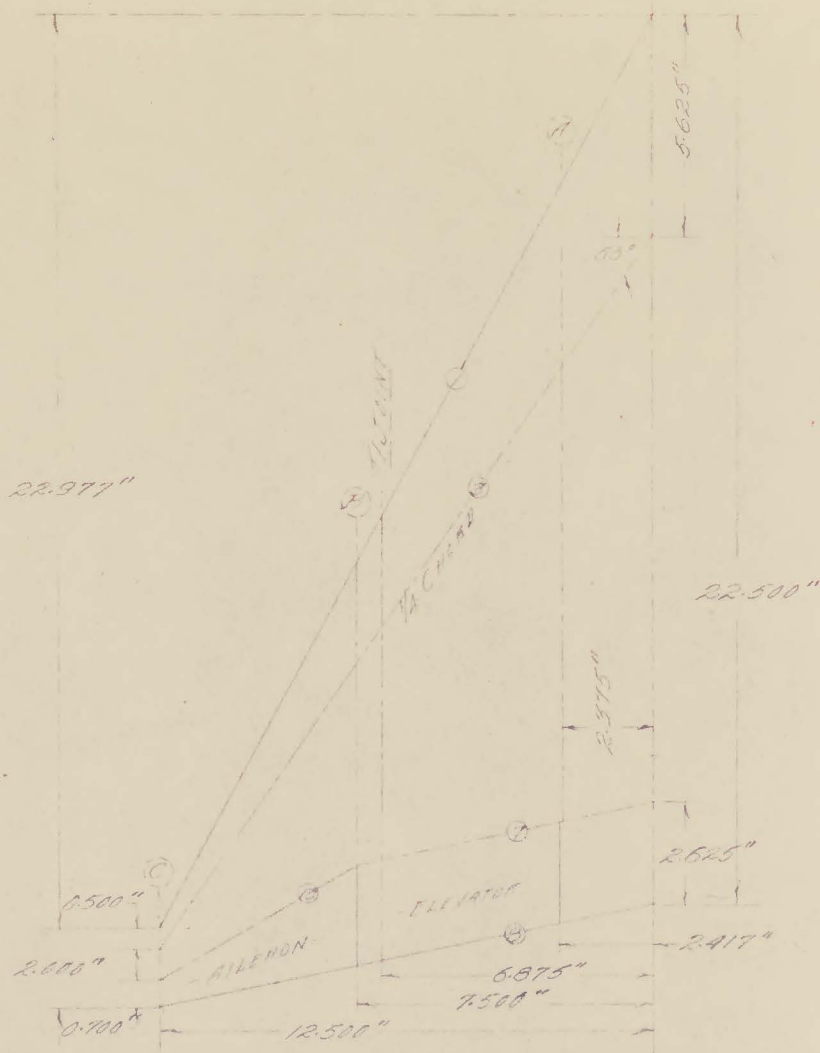
WING DATA
C-105 AIRCRAFT

PL/Model 5/15 7.01

UNCLASSIFIED / NON CLASSIFIÉ

PLAN VIEW

PROJECTED CHORD
PLANE DATA ANALYSIS
NOTED



AIRCRAFT

DATE 7-12-83

WING DATA

11/MEG/15/15

146

100001

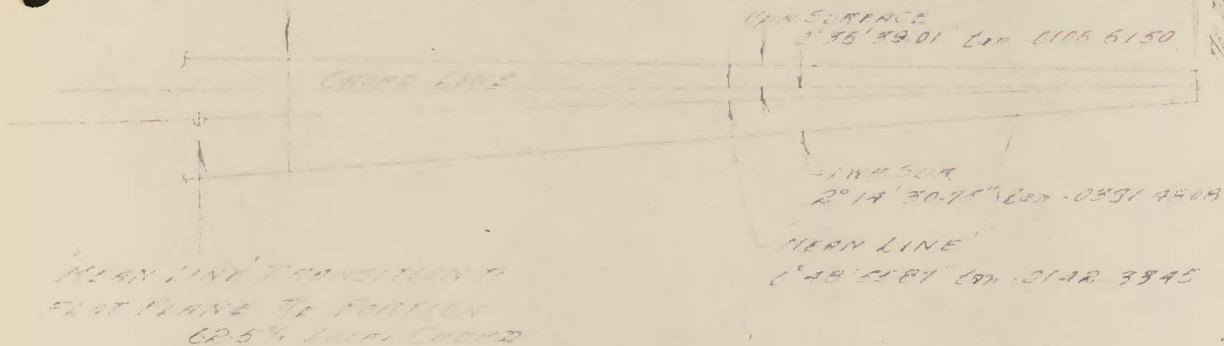
C-105 AIRCRAFT

UNCLASSIFIED / NON CLASSIFIED

CAMBER DESCRIPTION



ALL SPANS NORMAL TO CHORD



TO BE USED IN MEAN LINE

Date: 7/1/54
Issue: 2

P/Models/15

7-1-1

WING DATA

UNCLASSIFIED / NON CLASSIFIED

'C-105 AIRCRAFT'

CHORD PLANE DATA

MAIN WING

NO.	DESCRIPTION	TRIG. FUNCTION	COORDINATE DATA				
			ROOT	T/JOINT			
1	Leading Edge 61° 23' 39.29"	Cotan	.5453	54289	X _w	0.00	6.392
		Sin	.3779	3258	Y _w	0.00	12.637
		Cos	.4737	3428	Z _w	0.00	0.00
2	Front Spar 58° 50' 43.10"	Cotan	.6045	41278	X _w	0.00	6.892
		Sin	.3557	7362	Y _w	2.527	13.927
		Cos	.5173	5046	Z _w	0.00	0.00
4.	Main Spar 34° 28' 6.59"	Tan	.6864	71706	X _w	0.00	6.892
		Cos	.3244	3157	Y _w	10.958	15.639
		Sin	.5659	5300	Z _w	0.00	0.00
5-A	Centre Spar 'Fwd'	Tan	.5235	36245	X _w	0.00	6.392
		Cos	.3859	0522	Y _w	13.545	17.153
		Sin	.4638	0628	Z _w	0.00	0.00
5-B	Centre Spar 'Aft'	Tan	.3606	00783	X _w	0.00	6.392
		Cos	.9407	0715	Y _w	16.131	18.616
		Sin	.3388	0346	Z _w	0.00	0.00
6	Rear Spar	Parallel to trailing edge		X _w	0.00	7.518 B	
				Y _w	18.717	20.204 B	
				Z _w	0.00	0.00	
7	Elevator Hinge	" "		X _w	0.00	7.518 B	
				A Y _w	19.875	21.361 B	
				Z _w	0.00	0.00	
8	Trailing Edge 11° 10' 52.51"	Tan	.1976	65322	X _w	0.00	7.518 B
		Cos	.9810	1865	Y _w	22.500	23.986 B
		Sin	.1939	1336	Z _w	0.00	0.00

KEY Angles represent sweep

A This T/E value (2.625") constant to X_w = 7.518" (elevator tip)

B These values taken at elevator tip (Directrix 'B')

X_w Spanwise value

Y_w Chordwise value

Z_w Vertical value

Date: 6/11/53
Issue: 1

P/Models/15

7-1-013

WING DATA

C-105 AIRCRAFT

DIRECTRIX 'A'

CODE	Y _R	Z _R UPR.	Z _R LWR.
	0.00	0.00	0.00
	0.024	0.029	0.033
	0.138	0.065	0.079
	0.415	0.098	0.137
	0.692	0.116	0.178
	1.108	0.130	0.225
	1.523	0.137	0.263
F/S	2.100	0.143	0.305
	2.383	0.144	0.322
	2.988	0.146	0.353
	3.594	0.146	0.378
	4.200	0.145	0.396
	4.805	0.144	0.409
	5.411	0.143	0.417
	6.017	0.141	0.419
	6.622	0.138	0.417
	7.228	0.135	0.412
	7.833	0.131	0.404
	8.227	0.127	0.398
	8.829	0.122	0.385
	9.538	0.115	0.366
	10.600	0.104	0.331
	10.954	0.100	0.318
	11.525	0.094	0.296
	12.017	0.089	0.277
	12.725	0.081	0.249
	13.433	0.074	0.221
	14.142	0.066	0.193
R/S	14.822	0.059	0.167
(1)	15.980	0.047	0.121
(2)	15.980	-	0.037
(3)	18.605	0.019	0.019

- (1) Elevator Spar
 - (2) Mean line location
 - (3) Trailing edge depth taken normal to mean line
- R/S to 3 flat plane area

Date: 6/11/53
Issue: 1

P/Models/15

7-1-015

WING DATA

C-105 AIRCRAFT

DIRECTRIX 'C'

CODE	Y_R	Z_R UPR.	Z_R LWR.
	0.00	0.00	0.00
	0.007	0.005	0.006
	0.032	0.010	0.013
	0.069	0.012	0.019
	0.131	0.015	0.026
	0.210	0.016	0.033
F/S	0.244	0.017	0.035
	0.286	0.017	0.038
	0.360	0.018	0.041
	0.431	0.018	0.044
	0.500	0.018	0.046
	0.567	0.018	0.047
	0.578	0.018	0.047
	0.632	0.018	0.048
	0.695	0.018	0.048
	0.756	0.018	0.047
	0.815	0.018	0.047
	0.872	0.018	0.047
	0.927	0.018	0.046
	0.981	0.017	0.045
	0.994	0.017	0.045
	1.024	0.017	0.044
	1.085	0.017	0.042
	1.124	0.017	0.041
	1.183	0.016	0.040
	1.230	0.016	0.038
	1.275	0.016	0.036
(14)	1.300	0.015	0.035
(2)	1.300	-	0.010
(3)	2.000	0.008	0.008

- (14) Aileron spar ϕ point of tangency (O/W flat plane)
 (2) Mean line location
 (3) Trailing edge depth taken normal to mean line
 (14) to (3) flat plane area

Date:
Issue: 3

UNCLASSIFIED / NON CLASSIFIED

WING DATA

'C-105 AIRCRAFT'

DESCRIPTION

The profile of the 'wing' and 'vertical tail' do not follow the usual conical pattern having the leading and trailing edge a generator of a single cone. Wing percent lines will therefore, not be straight unless they coincide with the generatrix pattern of the local 'ruled surface'.

The wing will contain 2 separate compatible groups of 'ruled surfaces' terminating at the transport joint. These groups are generated from a pattern of 3 directrix curves located spanwise at wing chord stations 'A - B & C'. This does not imply that the directrix at station 'B' generates a common profile at the transport joint, since the outer wing profile is generated from second directrix at 'C' different in profile to the main panel directrix at 'A'. This results in a slight discontinuity at the transport joint.

The directrix at chord 'C' (tip) is a basic N.A.C.A. .0003-63.7 section having its maximum thickness value (m) at .365 percent of the local chord. At chord 'B' the 'm' value has been factored to .3400 percent of the local chord. At chord 'A' the 'm' value has been factored to .321220 percent of the local chord.

The main panel extends from the aircraft centre line to the transport joint and is made up of 4 separate ruled surfaces. The directrix at chord 'A' & 'B' follow a profile as shown on sheet 7-1-03 to 011. Ruled section -1-2- will have as outer generators the wing leading edge and the front spar. Ruled section -2-4- will have as outer generators the front spar and main spar. Ruled section -4-6- will have as outer generators the main spar and rear spar. Spars -5- being generators of ruled section -4-6-. Ruled section -6-8- will have as outer generators the rear spar and trailing edge and will be flat in profile with a plane angle of $1^{\circ} 25'$ (tan .0248 9975) about the mean line.

The outer panel extends from the transport joint centre line to the tip and is made up of 2 separate ruled surfaces. The directrix at chord 'B' & 'C' follow a profile as shown on sheet 7-1-03 to 011 inclusive. Ruled section -1-9- will have as outer generators the wing leading edge and the flat plane tangent line. The spar arrangement will then coincide with the generating pattern. Ruled surface -9-8- will have as outer generators the flat plane tangent line and the trailing edge, and being flat the generators are not sensitive to any pattern.

Since all three section airfoils are different, it follows that no two generators are parallel or intersecting - hence a warped surface.

The camber 'Mean Line' is not sensitive to position and follows a normal conical pattern from root to tip. Its 'm' value remains constant at .321220 percent and its flat plane tangency at .625 percent of the local chord.

Date: 7-1-54

17th May 1895

9-01

1554513

VERTICAL TAIL
C-105 AIRCRAFT

UNCLASSIFIED / NON CLASSIFIÉ

