A. V ROE CANADA LIMITED

MALTON ONTARIO

TECHNICAL DEPARTMENT (Aircraft)

ANALYZED

AIRCRAFT:

REPORT NO. 7-0558-63

FILE NO. ~~CONFIDENTIAL~~

NO. OF SHEETS: 12

Classification cancelled / Changed to UNCLASS

By authority of AVRO

Date 30 Sept 96

Signature

Unit / Rank / Appointment AVRO

TITLE:

NATURAL FREQUENCIES UNDER LATERAL LOAD OF FUSELAGE FORMERS

Stn. 591·65, 644·43, 697·28, 742·50
485·00 538·77

PREPARED BY [signature] DATE 25/1/56

CHECKED BY DATE

SUPERVISED BY [signature] DATE Jan 56.

APPROVED BY DATE

ISSUE NO	REVISION NO	REVISED BY	APPROVED BY	DATE	REMARKS
1	—	—	—	—	—
					15865926

FORM-1364

AVRO AIRCRAFT LIMITED
MALTON - ONTARIO
TECHNICAL DEPARTMENT

REPORT NO. 7-0558-63
SHEET NO 1

AIRCRAFT: C 105		PREPARED BY	DATE
		CHECKED BY	DATE

Calculation of Natural Frequency

CONFIDENTIAL

The Natural Frequency f, in cycles/sec., is given by

$$f = \frac{1}{2\pi}\sqrt{\frac{k}{m}}$$

where: k = spring constant of structure, in lb. of load per inch of deflexion.

m = mass of structure and equipment, in lb.sec./in.

The values of k, for the five formers under consideration, were obtained in the following reports:

stn. 591.65	Rep. 7-0558-47
644.43	7-0558-62
697.28	"
742.50	"
538.77	"

RM 1319A

A. V. ROE CANADA LIMITED
MALTON · ONTARIO
TECHNICAL DEPARTMENT (Aircraft)

REPORT NO. 7-0558-63
SHEET NO. 3

AIRCRAFT:		PREPARED BY	DATE
C 105	STA 538·77 – 742·50	J. J. Hume	21/12/55
		CHECKED BY	DATE

Weights of Items Mounted Below ℄ Duct Between above Sta.

STA.	ITEM	WEIGHT To nearest lb.	
509·50 to 567·50	Hydraulic Piping (Uret)	21	
485, 538	Dive Brake Jacks	33	
491	2 Service Panels i) Refuel + Test ii) Aft Circuit Limiter	8	
524, 538	Main Alternator + Rectifier Panels (2 Panels + Boxes)	175	
514, 519, 529, 534	Ground Fault Relays (2 off)	9	
539	2 Small Valves i) Dive Brakes Selector ii) Emergency by pass for Utility System	6	
542	U/C Selector valve	4	
548	Heat Exchanger (Fuel to Oil) Fuel Proportioner	100	356.

RM 1319A

A. V. ROE CANADA LIMITED
MALTON · ONTARIO
TECHNICAL DEPARTMENT (Aircraft)

REPORT NO. 7-0558-63
SHEET NO 5

AIRCRAFT		PREPARED BY	DATE
C105	STA 538·77-742·50		21 12 55
		CHECKED BY	DATE

Weights of Items Mounted Below ℄ Duct, Between above Sta.

STA	ITEM	WEIGHT to nearest lb
673·25 TO 717·36	Hydraulic Piping (wet)	5
697 } 707	Hydraulic Accumulators (Flying Controls) 2 off	44
	Control valves 2 off	8
	Pressure Switches 2 off	3
690	Filters 2 off mounted on beam at ℄ duct	15

N.B this table is based on information received from D.O.

FORM 1319A

AVRO AIRCRAFT LIMITED
MALTON ONTARIO
TECHNICAL DEPARTMENT

REPORT NO 7-0558-63
SHEET NO 6

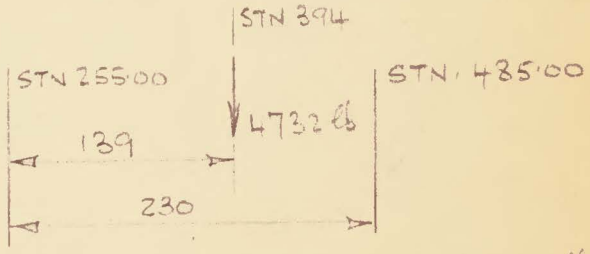
AIRCRAFT		PREPARED BY	DATE
C 105	FORMER STN 485·00	D. Turner	29/2/56
		CHECKED BY	DATE

Estimated Weights of Items between stn. 370·00 and 509·50

Armament Pack : 3700 lb. (D. Turner 29/2/56)
assume that half of this (1850 lb) is applied at stn. 485·00

Fuel Tank + Fuel :

Tank structure : 250 lb assume @ stn 394·31
cells and fuel : 4482 lb. @ stn. 394·31
(K. Griffin & J. Watson 29/2/56)
Total : 4732 lb @ stn 394·31



Reaction @ stn 485·00 = $\frac{139 \times 4732}{230}$ = 2860 lb.

Structure (below ℄ duct) = 696 lb
(J. Maclean 29/2/56)

Power Panel = 70 lb. @ stn. 493
(A. Shaw 29/2/56)

RM 1194