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CHASE AIRCRAFT CO., INC., WEST TRENTON, N.J. (REPORT NO. 7017C-1)

WING AXIAL LOADS AND STRESSES - AND APPENDIX A

J. HENRY PETACH NOV '49 - REVISION "A" 4 OCT '50
76PP. DIAGRS, GRAPHS, CHARTS

USAF CONTR. NO. W33-038-AC-17025

STRUCTURES (7)
DESIGN AND DETAILS (3)

WINGS - STRESS ANALYSIS
C-122 - STRESS ANALYSIS
C-122C

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CHASE AIRCRAFT CO., INC.

WEST TRENTON STROUKOFF AVITRUC NEW JERSEY

REPORT NO. . 70170-I .

TITLE

WING AXIAL LOADS AND STRESSES

CHASE MODEL . MS-70. . . . .

USAF DESIGNATION . YC-122C . .

CONTRACT NO . W33-038-ac-17025

DESIGNER AND CHIEF ENGINEER
MICHAEL STROUKOFF

NO. OF PAGES . 159 .

DATE OF ISSUE Nov. 1949 .

REVISION a. DATE Oct. 4, 1950

PREPARED BY J. Henry Petach

CHECKED BY . C. E. Mayerson . . .

APPROVED BY . J. C. Barfield . . .

APPROVED BY . M. Stroukoff

PREP. S.R.P. ON 10-2-50
CHKD. M.R. ON 10-3-50
REVISED

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

PAGE
REPORT NO. 70170-Y
MODEL YC-122C MS

SUBJECT

REVISIONS

REV. LTR.	DESCRIPTION	PREP. BY	CHK'D BY	APPR. BY	APPR. BY
a	Load factor in flap conditions changed to: PG+F - 1.86 was 1.50 } See p. 36 NG+F - 0.13 was 0.10 } Loads stresses and margins of safety changed accordingly. The outer panel rear spar capstrip mat'l. corrected to 14ST. Was 24ST. Allowable stress and margins changed to conform. (Ref. p. 15) Error made in noting tension allowable for stringers 608-2 in center section. Corrected to 51.9(10^3). Was 70.5(10^3). New margins determined. (Ref. p. 111) Corrected A_s to .708 on p. 67 et. al. Was .335. Changed figures on pp. 13 and 14 to YC-122B. Were YC-122C. Added Appendix "A" covering change in stringers effective on the YC-122C. Title page and table of contents changed accordingly.	SRP 10/5/50	MaR 10/5/50	JEB 10.9	

SUBJECT

This report is a final analysis of the YC-122C Wing Axial Loads and Stresses.

As the YC-122C loads are greater than the YC-122B load (because of increased gross weight) and as the wings are almost structurally identical, this analysis is applicable and conservative for the YC-122B Airplane.

The YC-122B wing structure differs from the YC-122C wing only in the location of the lower wing surface fuel tank doors. An investigation of the effect of this difference was made in Appendix A of Chase Report 7017C-I. The resultant changes were found to be small enough to be neglected.

SUBJECT Appendix A

PURPOSE:

The purpose of this appendix is to show that structural changes (Ref. sketch p. A-3) made on the YO-1220 wing result in negligible differences from the results obtained before change was incorporated. Thus no changes need be made in the wing axial load report, wing shear stress report, wing rib and wing detail reports. (Report Nos. 7017-0-1, 70170-II A and B, 70170-III A and B respectively. Two typical examples of the changes are:

	Station	Item and Cond.		Load	MoS.	Ref. Page
Original	69.45	5	PHAA	-19.5	.02	116
New	69.45	5	PHAA	-19.5	.03	A-18
Original	125.45	7	PHAA	-16.6	.20	121
New	125.45	7	PHAA	-16.7	.19	A-20

INTRODUCTION:

Several changes are made in the primary structure of the wing. This necessitates a reinvestigation of the wing load - carrying abilities. Refer to pp. 17 - 19, 58 et-al, for method of analysis and for other information not otherwise supplied here.

DESCRIPTION OF STRUCTURE AND MATERIALS:

The following changes have been made: (Ref. sketch p. A-3)

a. Center section removable underside door chordwise width reduced. Did include stringers No. 12 thru No. 17; now includes stringers No. 12 thru No. 15.

b. Stringer No. 16 changed to CDS No. 614 in center section. Was CDS No. 1608-2.

c. Stringer No. 18 changed to CDS No. 608-2 in center section. Was CDS No. 614.

d. Stringers Nos. 1 and 24 partially removed from center section and are not considered effective in bending.

PROCEDURE:

Computations have been made of only the highly loaded conditions at several stations. These results are indicative of the general effect of the structural changes incorporated.

The stations for which new section properties and/or stresses have

SUBJECT Appendix A

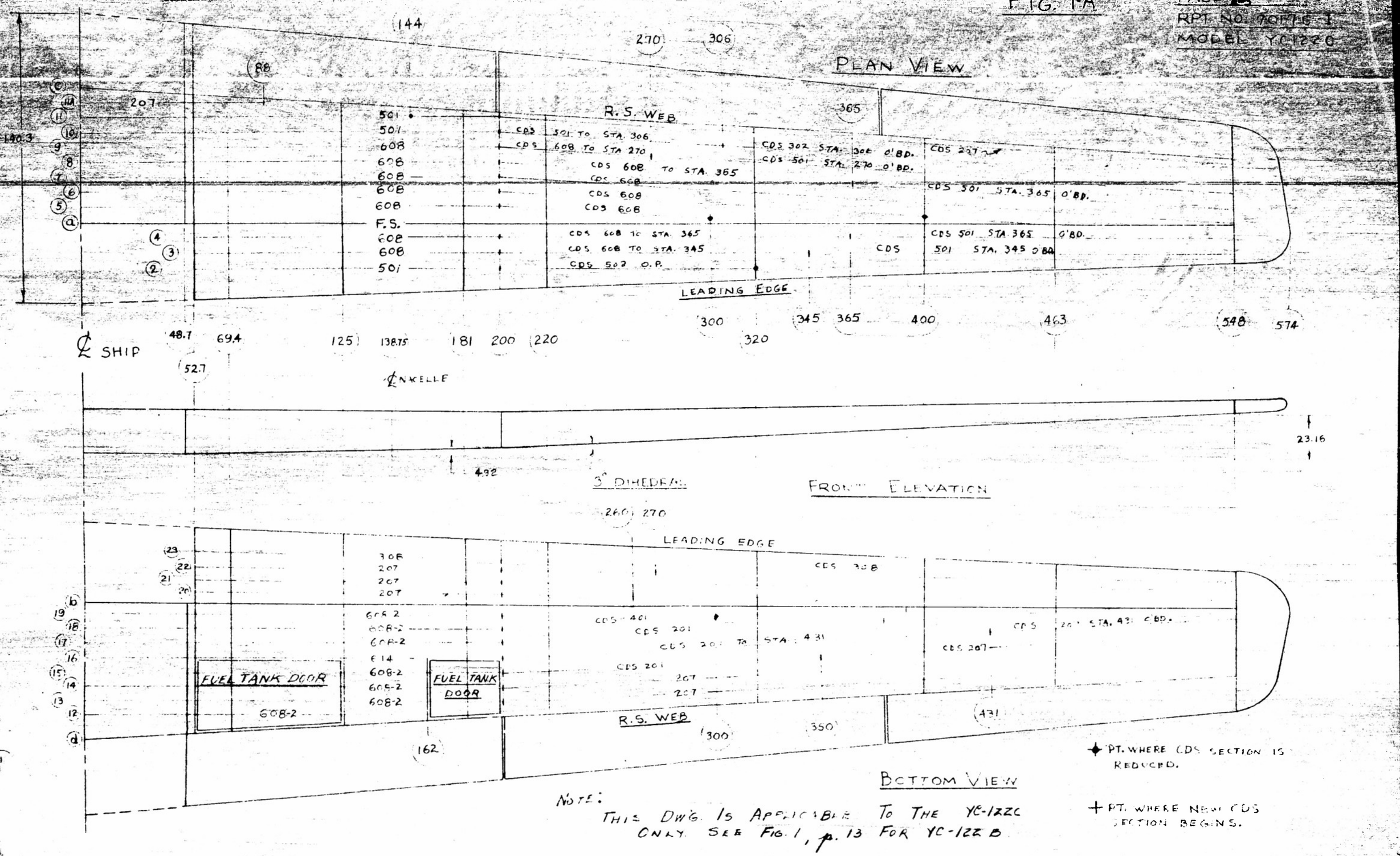
PROCEDURE: (Cont'd.)

been calculated are stations 69.45, 125.40 and 181.35. The tabular results are given in the following pages.

PREP. F.A.S. 10-2-50
CHK'D. S.R.P. 10-3-50

CHASE AIRCRAFT CO. INC.

FIG. 1-A



NOTE:
THIS DWG. IS APPLICABLE TO THE YC-122C ONLY. SEE FIG. 1, p. 13 FOR YC-122B

PREP. [illegible]
CHKD. [illegible] 10-2-50
REVISED:

CHASE AIRCRAFT CO. INC.

WING SKIN DIAGRAM

PAGE [illegible]
RPT. NO. 7017C-I
MODEL YC122C

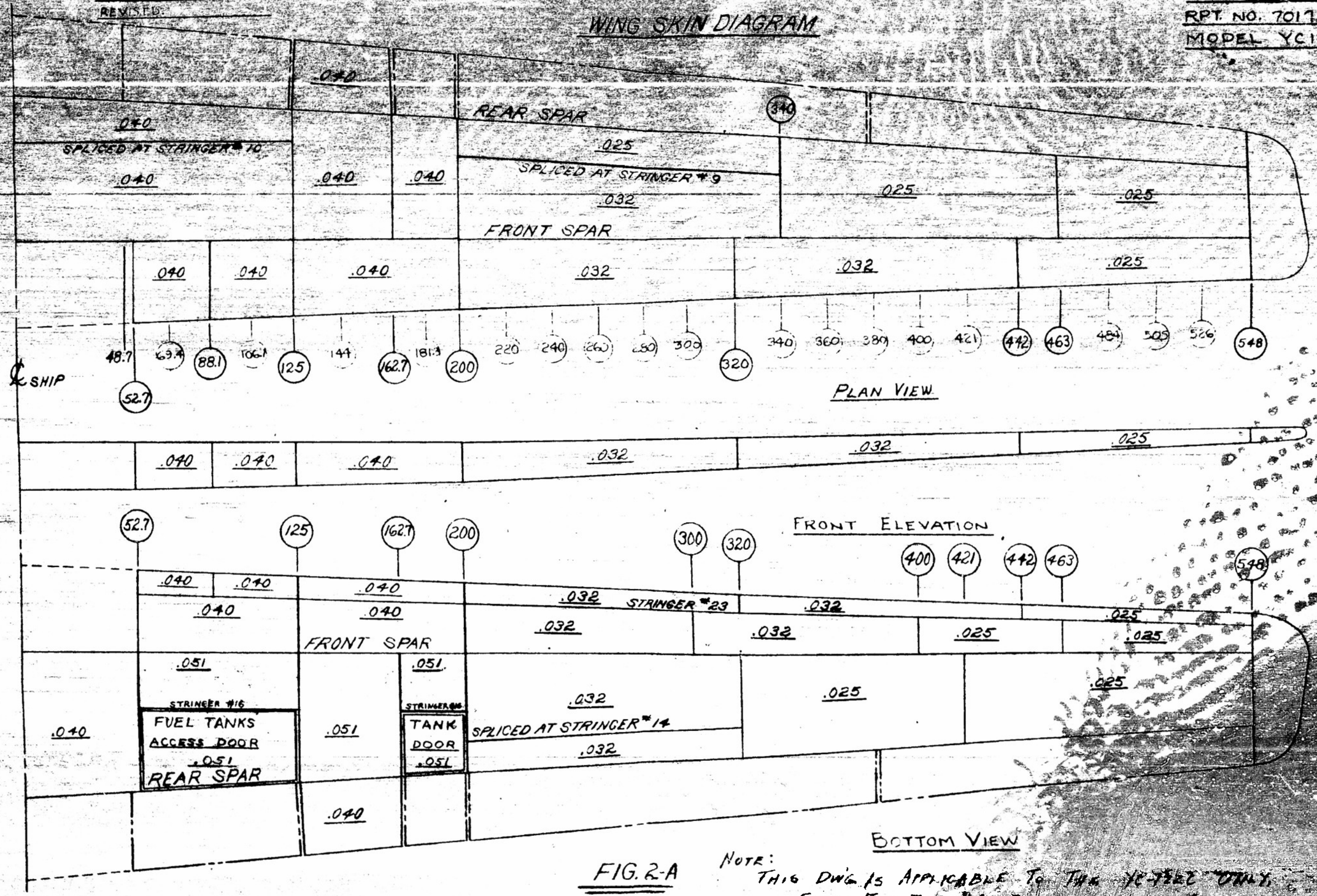


FIG. 2-A

NOTE:
THIS DWG. IS APPLICABLE TO THE YC-122C ONLY.
SEE FIG. 2, p. 14 FOR YC-122B.

PREP FAS ON 10-4-60
CHKD ON 10-5-60
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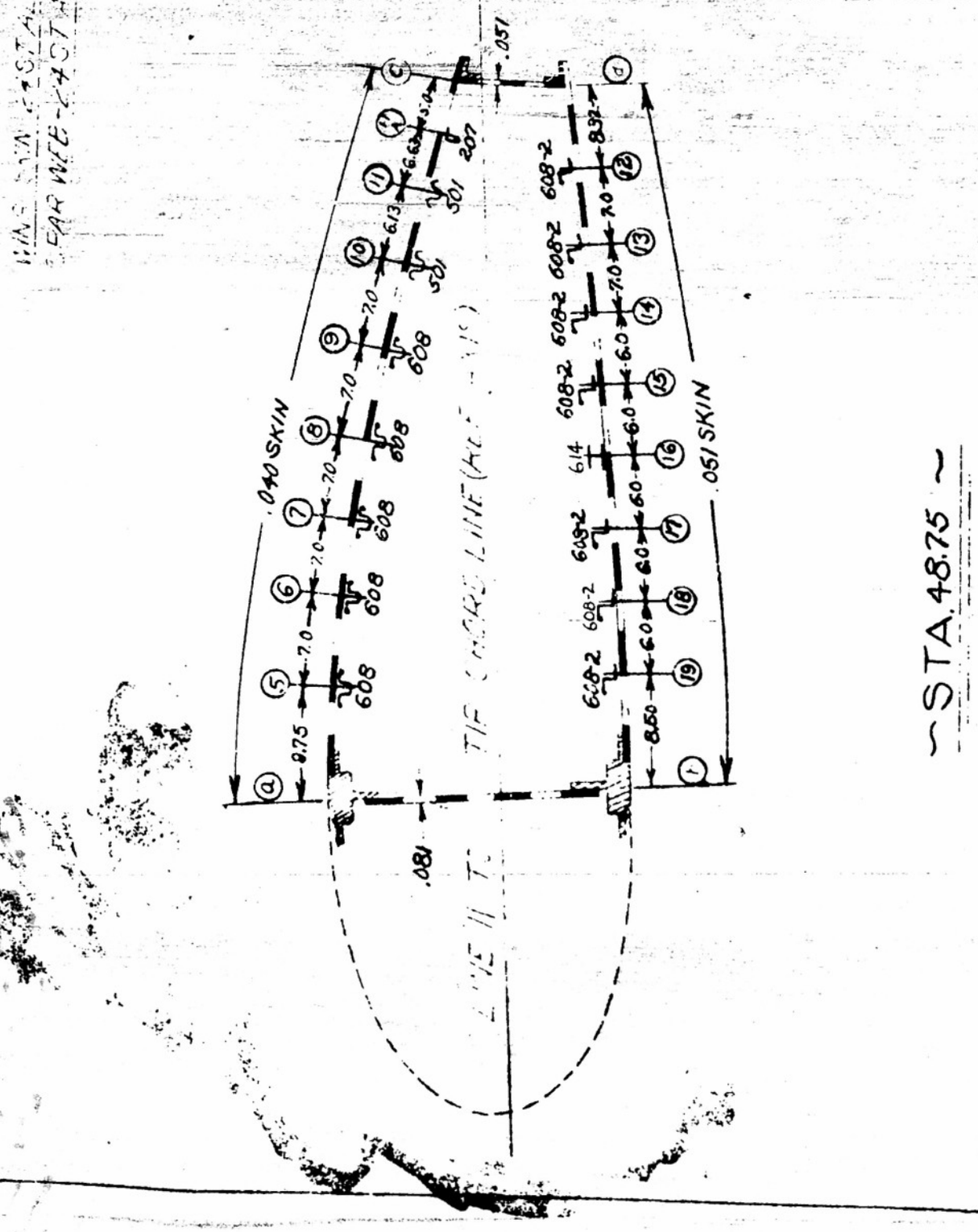
WEST TRENTON, N.J.

REPORT NO. 70-70-1
MODEL YC-122E MS. 76

SUBJECT WING SECTION PROPERTIES

DETERMINATION OF CONSTANTS



PREP FAS ON 10-5-50
CHKD. [illegible] ON 10-5-50
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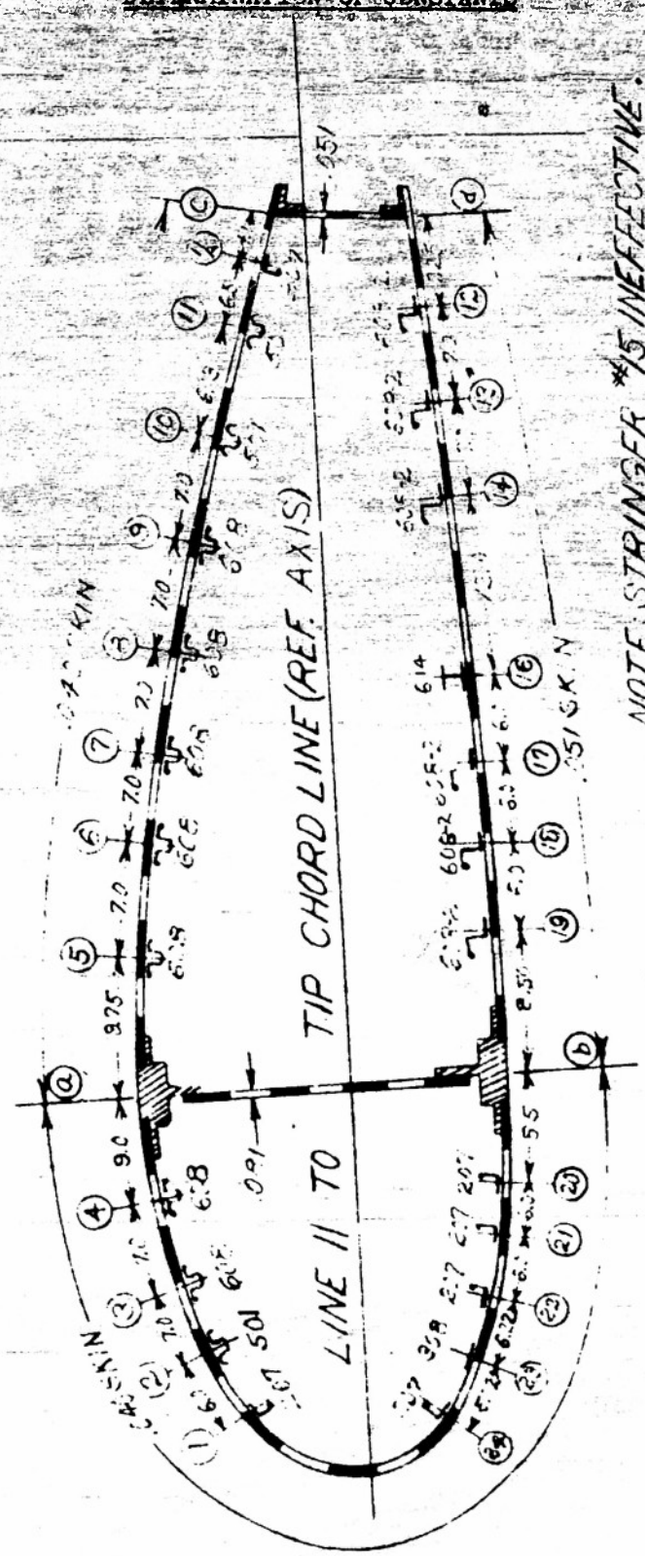
WEST TRENTON, N.J.

PAGE A-6
REPORT NO. 7014C-1
MODEL XC-122C MS 7C

SUBJECT WING SECTION PROPERTIES

DETERMINATION OF CONSTANTS

WING SKIN - 24ST ALCLAD
SPAR WEB - 24ST AL ALLOY



NOTE: STRINGER #15 INEFFECTIVE.
STRINGERS #12 THRU #14, 50% INEFFECTIVE IN COMPRESSION DUE TO TANK DOORS.

~STA. 69.45~

PREP. [illegible] ON 9-7-50
CHKD. [illegible] ON 9-29-50
REVISED

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WEST TRENTON, N.J.

PAGE [illegible]
REPORT NO. 7017C-1
MODEL XC-122C MS 70

SUBJECT WING SECTION PROPERTIES STATION 69.45
DETERMINATION OF CONSTANTS

TENSION ON BOTTOM

σ	① ITEM REF.	② A_s	③ x	④ $A_s x$ (②×③)	⑤ z'	⑥ Δz	⑦ z (⑤+⑥)	⑧ $A_s z$ (②×⑦)	⑨ x_0 (③−$\bar{x}$)	⑩ z_0 (⑦−$\bar{z}$)	⑪ a ×10³	⑫ β ×10⁶	① ITEM REF.
	1												1
.21	2	.076	-22.92	-1.74	12.05	.26	11.79	0.90	-34.81	10.85	-2.86	3.08	2
.35	3	.164	-16.00	-2.62	13.02	.33	12.69	2.08	-27.89	11.75	-3.61	2.31	3
.50	4	.234	- 9.00	-2.11	13.25	.33	12.92	3.02	-20.89	11.98	-4.07	1.56	4
	a	8.031	0	0	12.96	.68	12.28	98.62	-11.89	11.34	-4.26	0.65	a
	5	.469	9.71	4.55	12.0	.33	11.67	5.74	- 2.18	10.73	-4.51	-0.33	5
	6	.469	16.68	7.82	11.11	.33	10.78	5.06	4.79	9.84	-4.49	-1.01	6
	7	.469	23.52	11.03	10.01	.33	9.68	4.54	11.63	8.74	-4.37	-1.67	7
	8	.469	30.44	14.28	8.88	.33	8.47	3.97	18.55	7.53	-4.21	-2.33	8
	9	.469	37.31	17.50	7.50	.33	7.17	3.36	25.42	6.23	-4.01	-2.99	9
	10	.364	44.17	16.08	6.11	.26	5.85	2.13	32.28	4.91	-3.88	-3.64	10
	11	.364	50.20	18.27	4.80	.26	4.54	1.65	38.31	3.60	-3.54	-4.20	11
	11A	.139	56.30	7.83	3.42	.22	3.20	0.44	44.41	2.26	-3.29	-4.27	11A
	e	.659	60.85	40.10	2.30	.54	1.76	1.16	48.96	0.82	-2.90	-5.17	e
	Σ UPPER	12.311		131.01				132.40					Σ UPPER
	d	.797	60.00	47.82	-9.71	-.39	-9.32	-7.43	48.11	-10.26	1.87	-4.40	d
	12	.577	52.15	30.09	-10.00	-.14	9.86	-5.69	40.26	-10.80	2.55	-3.65	12
	13	.570	45.15	25.74	-10.19	-.14	-10.05	-5.73	33.26	-10.99	3.00	-2.91	13
	14	.698	38.16	26.64	-10.25	-.11	-10.14	-7.08	26.27	-11.08	3.40	-2.17	14
	15												15
	16	.713	26.18	18.67	-10.22	-.21	-10.01	-7.14	14.29	-11.04	4.00	-0.92	16
	17	.519	20.16	10.46	-10.09	-.15	- 9.94	-5.16	8.27	-10.88	4.25	-0.30	17
	18	.519	14.12	7.33	-9.85	-.12	-9.73	-5.05	2.23	-10.58	4.44	0.32	18
	19	.583	8.14	4.75	-9.50	-.13	-9.37	-5.46	- 3.75	-10.31	4.63	0.93	19
	b	6.955	0	0	-8.83	-.71	-8.12	-56.47	-11.89	-9.06	4.52	1.72	b
.80	20	.305	-8.30	-2.53	-7.68	-.07	-7.53	-2.30	-20.19	-8.47	4.70	2.55	20
.45	21	.149	-14.12	-2.10	-6.52	-.08	-6.44	-0.96	-26.01	-7.38	4.53	3.11	21
.25	22	.084	-19.96	-1.68	-5.20	-.08	-5.12	-0.43	-31.85	-6.06	4.27	3.65	22
.10	23	.036	-26.10	-0.94	-3.42	-.04	-3.38	-0.12	-37.99	-4.32	3.88	4.20	23
	24												24
	Σ LOWER	12.505		164.25				109.03					Σ LOWER
	Σ TOTAL	24.816		295.26				23.37					Σ TOTAL

PREP. W.A.B. ON 9-7-50
CHKD. S.R.P. ON 9-29-50
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CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

PAGE 8-8
REPORT NO. 7017C-1
MODEL YC-122C No. 70

SUBJECT WING SECTION PROPERTIES STATION 69.45
DETERMINATION OF CONSTANTS
TENSION ON TOP

σ	① ITEM REF.	② A_s	③ x	④ $A_s x$ (②③)	⑤ z'	⑥ Δz	⑦ z (⑤-⑥)	⑧ $A_s z$ (②·⑦)	⑨ x_o (③ - $\bar{x}$)	⑩ z_o (⑦ - $\bar{z}$)	⑪ α ×10³	⑫ β ×10³	① ITEM REF.
	1												1
.21	2	.111	-22.92	- 2.54	12.05	.17	11.88	1.32	-33.02	8.97	-3.26	3.32	2
.35	3	.229	-16.00	- 3.66	13.02	.23	12.79	2.93	-26.99	9.88	-3.85	2.65	3
.50	4	.346	- 9.00	- 3.11	13.25	.22	13.03	4.51	-19.99	10.12	-4.16	1.88	4
	a	8.155	0	0	12.96	.67	12.29	100.22	-10.99	9.31	-4.03	0.70	a
	5	.708	9.71	6.87	12.00	.21	11.79	8.35	-2.28	8.88	-4.10	-0.11	5
	6	.653	16.68	10.89	11.11	.23	10.88	7.10	5.69	7.97	-3.87	-0.84	6
	7	.653	23.52	15.36	10.01	.23	9.78	6.39	12.53	6.87	-3.55	-1.56	7
	8	.653	30.44	19.88	8.80	.23	8.57	5.60	19.45	5.66	-3.17	-2.26	8
	9	.653	37.31	24.36	7.50	.23	7.27	4.75	26.32	4.36	-2.76	-2.97	9
	10	.531	44.17	23.45	6.11	.17	5.94	3.15	33.18	3.03	-2.33	-3.47	10
	11	.501	50.20	26.15	4.82	.17	4.63	2.41	39.21	1.72	-1.89	-4.29	11
	11A	.303	56.30	17.06	3.42	.09	3.33	1.01	45.31	0.42	-1.45	-4.81	11A
	c	.693	60.85	24.17	2.30	.52	1.78	1.23	49.86	-1.13	-0.86	-5.36	c
	Σ UPPER	14.209		176.88				148.97					Σ UPPER
	d	.690	60.00	41.40	-9.71	-.46	-9.25	-6.38	49.01	-12.16	4.30	-4.97	d
	12	.185	52.15	9.65	-10.00	-.23	-9.77	-1.81	41.16	-12.68	4.76	-4.10	12
	13	.185	45.15	8.35	-10.19	-.23	-9.96	-1.84	34.16	-12.87	5.04	-3.34	13
	14	.185	38.16	7.06	-10.25	-.23	-10.02	-1.85	27.17	-12.93	5.27	-2.58	14
	15												15
	16	.331	26.18	8.67	-10.22	-.38	-9.84	-3.28	15.19	-12.75	5.51	-1.29	16
	17	.291	20.16	5.87	-10.09	-.23	-9.86	-1.82	9.17	-12.77	5.69	-0.63	17
	18	.291	14.12	4.11	-9.85	-.23	-9.62	-2.80	3.13	-12.53	5.75	0.01	18
	19	.291	8.14	2.37	-9.50	-.30	-9.20	-2.62	2.85	-12.11	5.56	0.03	19
	b	6.870	0	0	-8.83	-.72	-8.11	-55.72	-10.99	-11.02	5.43	1.49	b
.80	20	.111	- 8.30	-0.92	-7.60	-.22	-7.38	-0.82	-19.29	-10.29	5.33	2.37	20
.45	21	.062	-14.12	-0.88	-6.52	-.22	-6.30	-0.39	-25.11	-9.21	4.98	2.97	21
.25	22	.035	-19.96	-0.70	-5.20	-.22	-4.98	-0.17	-30.95	-7.89	4.53	3.57	22
.10	23	.022	-26.10	-0.57	-3.40	-.07	-3.35	-0.07	-37.11	-6.26	3.94	4.14	23
	24												24
	Σ LOWER	9.549		84.41				79.63					Σ LOWER
	Σ TOTAL	23.758		261.29				69.34					Σ TOTAL

SUBJECT WING SECTION PROPERTIES

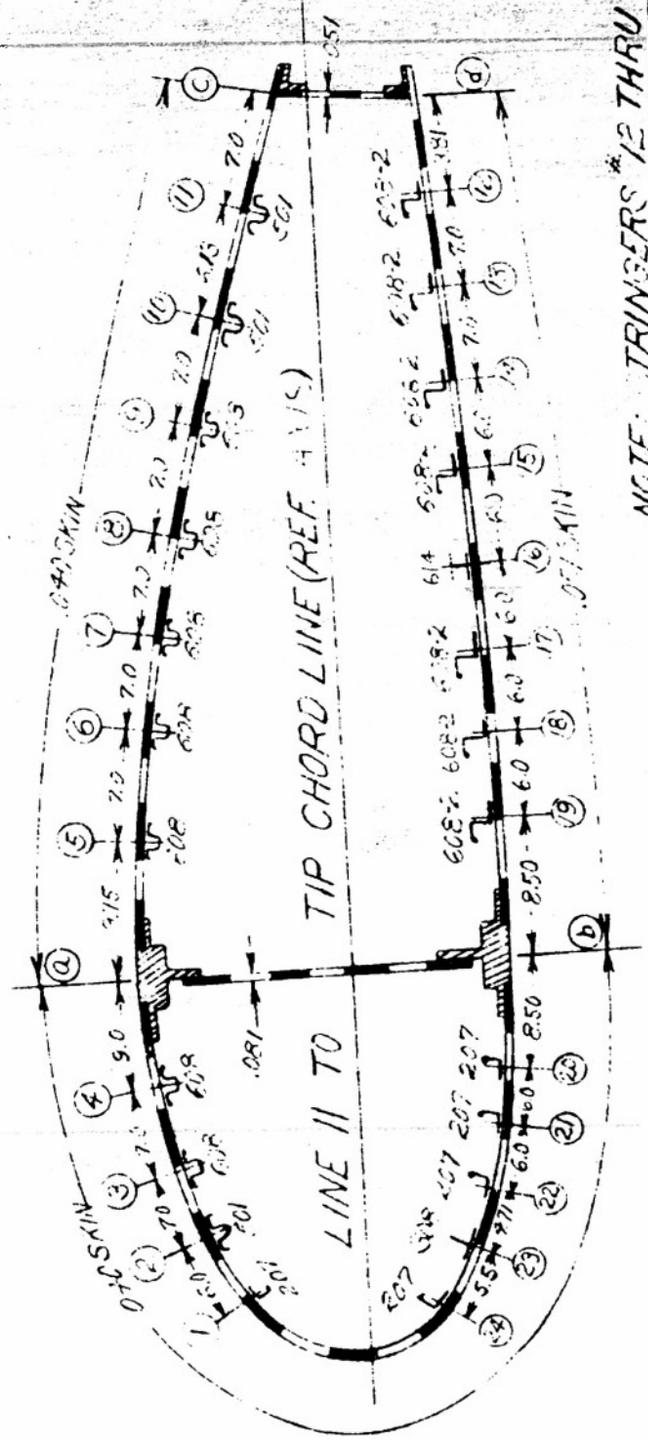
DETERMINATION OF CONSTANTS - STATION 69.45

	TENSION ON TOP	TENSION ON BOTTOM
$\Sigma A_s x^2 = \Sigma$ col. ③ x ④ =	= 12249	= 13672
$\Sigma A_s z^2 = \Sigma$ col. ⑦ x ⑧ =	= 2383	= 2493
$\Sigma A_s xz = \Sigma$ col. ④ x ⑦ =	= 201	= -952
$\bar{x} = \frac{\Sigma A_s x}{\Sigma A_s}$		
$= \frac{\Sigma \text{ col. } ③}{\Sigma \text{ col. } ②} = \frac{261.29}{23.758} = 10.99$		$\frac{295.26}{24.816} = 11.89$
$\bar{z} = \frac{\Sigma A_s z}{\Sigma A_s}$		
$= \frac{\Sigma \text{ col. } ⑥}{\Sigma \text{ col. } ②} = \frac{69.34}{23.758} = 2.91$		$\frac{23.37}{24.816} = 0.94$
$I_{x_o} = \Sigma A_s z^2 - (\Sigma A_s)\bar{z}^2$		
$= \Sigma A_s z^2 - \Sigma$ col. ② $\bar{z}^2 = 2181$		= 2471
$I_{z_o} = \Sigma A_s x^2 - (\Sigma A_s)\bar{x}^2$		
$= \Sigma A_s x^2 - \Sigma$ col. ② $\bar{x}^2 = 9380$		= 10164
$I_{x_o z_o} = \Sigma A_s xz - (\Sigma A_s)\bar{x}\bar{z}$		
$= \Sigma A_s xz - \Sigma$ col. ② $\bar{x}\bar{z} = -359$		= -1229
$K = I_{x_o} I_{z_o} - (I_{x_o z_o})^2 = 20.15 \times 10^6$		$= 23.60 \times 10^6$
$C_1 = \frac{I_{x_o z_o}}{K} = \frac{-559}{20.15 \times 10^6} = -27.74 \times 10^{-6}$		$\frac{-1229}{23.60 \times 10^6} = -52.07 \times 10^{-6}$
$C_2 = \frac{I_{x_o}}{K} = \frac{2181}{20.15 \times 10^6} = 108.2 \times 10^{-6}$		$\frac{2471}{23.60 \times 10^6} = 104.7 \times 10^{-6}$
$C_3 = \frac{I_{z_o}}{K} = \frac{9380}{20.15 \times 10^6} = 465.5 \times 10^{-6}$		$\frac{10164}{23.60 \times 10^6} = 430.6 \times 10^{-6}$

SUBJECT WING SECTION PROPERTIES

DETERMINATION OF CONSTANTS

WING SKIN-24ST AL. CLAD
SPAR WEB-24ST AL. ALLOY



NOTE: STRINGERS #12 THRU #15, 50% INEFFECTIVE IN COMPRESSION DUE TO TANK LOCKS

~STA. 125.45~

PREP. W.A.S. ON 9-8-50
CHKD. S.R.F. ON 9-29-50
REVISED

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

PAGE A-8
REPORT NO. 7017C-1
MODEL YC-122B MS YC

SUBJECT WING SECTION PROPERTIES STATION 125.40
DETERMINATION OF CONSTANTS

TENSION ON BOTTOM

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(1)
ITEM REF.	A_s	x	$A_s x$ (2)(3)	z'	Δz	z (5)-(6)	$A_s z^2$ (2)·(7)	x_o (3)-$\bar{x}$	z_o (7)-$\bar{z}$	α ×10³	β ×10³	ITEM REF.
1												1
2	.364	-22.88	-8.33	10.73	.26	10.47	3.81	-32.65	9.67	-3.17	2.17	2
3	.469	-15.98	-7.49	11.86	.33	11.53	5.41	-25.75	10.73	-4.09	2.01	3
4	.469	- 8.98	-4.21	12.18	.33	11.85	5.56	-18.75	11.05	-4.64	1.46	4
a	7.413	0	0	11.89	.69	11.20	83.03	- 9.77	10.40	-4.80	0.50	a
5	.469	9.71	4.55	11.00	.33	10.67	5.00	- 0.06	9.87	-5.06	-0.54	5
6	.469	16.63	7.80	10.09	.33	9.76	4.58	6.86	8.96	-4.97	-1.19	6
7	.469	23.56	11.09	9.06	.33	8.73	4.09	13.79	7.93	-4.82	-2.63	7
8	.469	30.54	14.28	7.86	.33	7.55	3.54	20.48	6.75	-4.59	-2.44	8
9	.469	37.35	17.52	6.62	.33	6.29	2.95	27.58	5.49	-4.33	-3.09	9
10	.346	44.20	16.09	5.24	.26	4.98	1.81	34.43	4.18	-4.03	-3.71	10
11	.346	50.17	18.26	3.98	.26	3.72	1.35	40.40	2.92	-3.72	-4.24	11
11A												11A
c	.659	57.54	37.92	2.26	.54	1.72	1.13	47.77	0.92	-3.10	-4.88	c
Σ UPPER	12.447		107.44				122.26					Σ UPPER
d	.709	56.76	40.24	-8.67	-.45	-8.22	-5.83	46.99	-9.02	2.04	-4.26	d
12	.489	52.20	25.53	-8.88	-.17	-8.71	-4.26	42.43	-9.51	2.55	-3.77	12
13	.570	45.20	25.76	-9.09	-.14	-8.95	-5.10	35.43	-9.75	3.05	-3.05	13
14	.545	38.22	20.83	-9.23	-.15	-9.08	-4.95	28.45	-9.88	3.50	-2.33	14
15	.519	32.22	16.72	-9.26	-.15	-9.11	-4.73	22.45	-9.91	3.85	-1.73	15
16	.559	26.22	14.66	-9.25	-.21	-9.04	-5.05	16.45	-9.84	4.14	-1.12	16
17	.519	20.22	10.49	-9.16	-.15	-9.01	-4.68	10.45	-9.81	4.46	-0.52	17
18	.519	14.22	7.38	-8.97	-.15	-8.82	-4.57	4.45	-9.62	4.69	0.08	18
19	.583	8.22	4.79	-8.66	-.13	-8.53	-4.97	-1.55	-9.33	4.87	0.67	19
b	6.955	0	0	-7.96	-.71	-7.25	-50.42	-9.77	-8.05	4.66	1.43	b
20	.381	-8.19	-3.12	-6.89	-.07	-6.82	-2.60	-17.96	-7.62	4.89	2.23	20
21	.331	-14.09	-4.66	-5.84	-.08	-5.76	-1.91	-23.86	-6.56	4.67	2.77	21
22	.305	-19.95	-6.08	-4.50	-.09	-4.41	-1.34	-29.72	-5.21	4.30	3.29	22
23	.330	-24.74	-8.16	-3.17	-.04	-3.13	-1.03	-34.51	-3.93	3.91	3.70	23
24												24
Σ LOWER	13.314		144.38				101.46					Σ LOWER
Σ TOTAL	25.761		251.82				20.80					Σ TOTAL

PREP F.A.S. ON 9-8-50
CHKD: S.R.P. ON 9-29-50
REVISED

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

PAGE A-[illegible]
REPORT NO. 7017C-1
MODEL YC-122C MS 70

SUBJECT WING SECTION PROPERTIES STATION 125.40
DETERMINATION OF CONSTANTS

TENSION ON TOP

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(1)
ITEM REF.	A_s	x	$A_s x$ (2)(3)	z'	Δz	z (5)-(6)	$A_s z$ (2)·(7)	x_0 (3)-$\bar{x}$	z_0 (7)-$\bar{z}$	α ×10³	β ×10³	ITEM REF.
1												1
2	.528	-22.88	-12.08	10.73	.17	10.56	5.58	-31.86	7.93	-3.04	3.05	2
3	.653	-15.98	-10.43	11.86	.23	11.63	7.59	-24.96	9.00	-3.91	2.27	3
4	.693	- 8.98	-6.22	12.18	.22	11.96	8.29	-17.96	9.33	-4.35	1.52	4
a	7.537	0	0	11.89	.68	11.21	84.49	- 8.98	8.58	-6.30	0.60	a
5	.708	9.71	6.87	11.00	.21	10.79	7.64	- 0.73	8.16	-4.40	-0.25	5
6	.653	16.63	10.86	10.09	.23	9.86	6.44	7.65	7.23	-4.27	-1.10	6
7	.653	23.56	15.38	9.06	.23	8.83	5.77	14.58	6.20	-3.98	-1.80	7
8	.653	30.45	19.88	7.88	.23	7.65	4.99	21.47	5.02	-3.62	-2.48	8
9	.653	37.35	24.39	6.62	.23	6.39	4.17	28.37	3.76	-3.21	-3.16	9
10	.531	44.20	23.47	5.24	.17	5.07	2.69	35.22	2.44	-2.76	-3.83	10
11	.531	50.17	26.64	3.98	.17	3.81	2.02	41.17	1.18	-2.31	-4.41	11
11A												11A
c	.751	57.54	43.21	2.26	.48	1.78	1.34	48.56	-0.85	-2.43	-5.11	c
Σ UPPER	14.544		141.97				141.01					Σ UPPER
d	.690	56.76	39.16	-8.67	-.46	-8.21	-5.66	47.78	-10.84	4.00	-4.62	d
12	.185	52.20	9.66	-8.88	-.23	-8.65	-1.60	43.22	-11.27	4.42	-4.12	12
13	.185	45.20	8.36	-9.09	-.23	-8.86	-1.64	36.22	-11.49	4.82	-3.37	13
14	.185	38.22	7.07	-9.23	-.23	-9.00	-1.67	29.34	-11.63	5.18	-2.63	14
15	.185	32.22	5.96	-9.26	-.23	-9.03	-1.67	23.24	-11.66	5.44	-1.99	15
16	.331	26.22	8.68	-9.25	-.38	-8.87	-2.94	17.24	-11.50	5.60	-1.36	16
17	.291	20.22	5.88	-9.16	-.23	-8.93	-2.60	11.24	-11.56	5.87	-0.72	17
18	.291	14.22	4.14	-8.97	-.23	-8.74	-2.54	5.24	-11.37	6.01	-0.09	18
19	.291	8.22	2.39	-8.66	-.30	-8.36	-2.43	0.76	-10.99	5.98	0.36	19
b	6.870	0	0	-7.96	-.72	-7.24	-49.74	-8.98	-9.87	5.77	1.35	b
20	.139	-8.19	-1.14	-6.89	-.22	-6.67	-.93	-17.17	-9.30	5.79	2.20	20
21	.139	-14.09	-1.96	-5.94	-.22	-5.62	-.78	-23.07	-8.15	5.39	2.77	21
22	.139	-19.95	-2.77	-4.50	-.22	-4.28	-.59	-28.93	-6.91	4.95	3.34	22
23	.222	-24.74	-5.49	-3.17	-.07	-3.10	-.69	-33.76	-5.73	4.50	3.88	23
24												24
Σ LOWER	10.143		79.92				-76.08					Σ LOWER
Σ TOTAL	24.687		221.89				64.93					Σ TOTAL

SUBJECT WING SECTION PROPERTIES

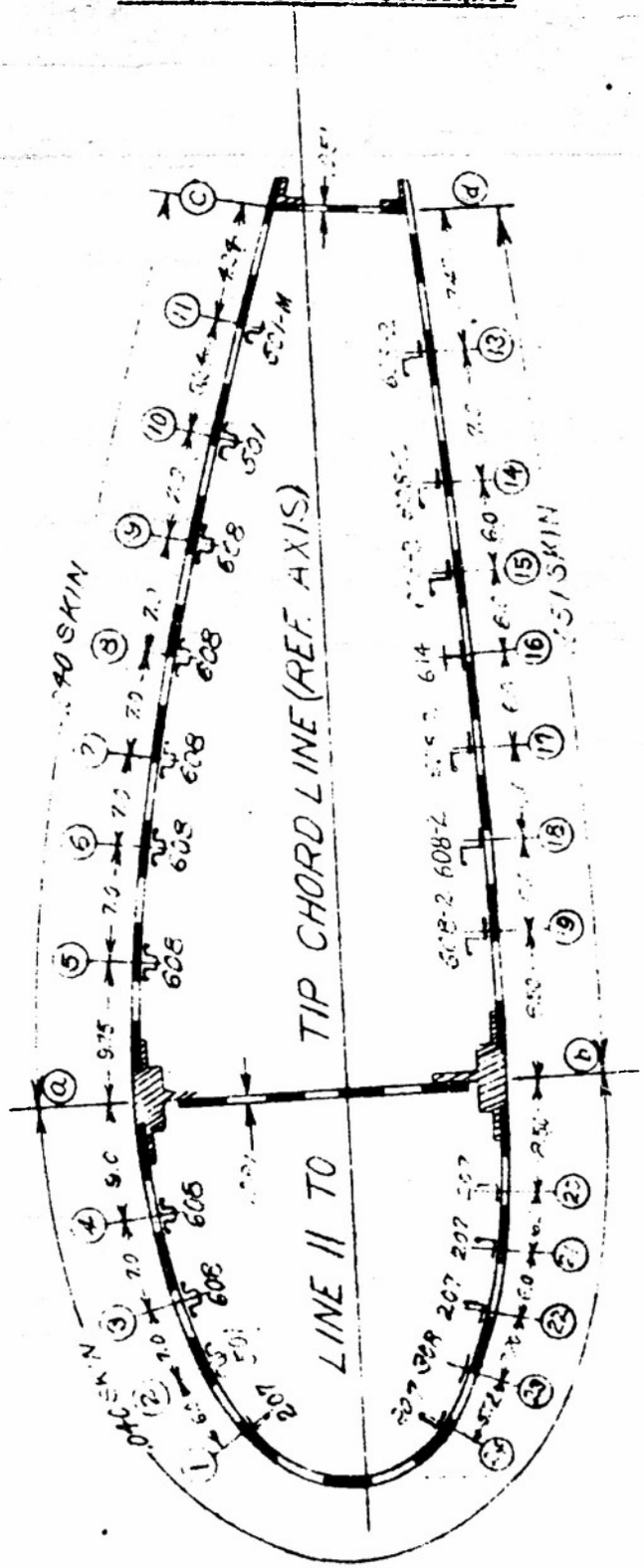
DETERMINATION OF CONSTANTS - STATION 125.40

	TENSION ON TOP	TENSION ON BOTTOM
$\Sigma A_s x^2 = \Sigma$ col. (3) x (4) =	= 11705	= 12952
$\Sigma A_s z^2 = \Sigma$ col. (7) x (8) =	= 2051	= 2086
$\Sigma A_s xz = \Sigma$ col. (4) x (7) =	= - 136	= - 923
$\bar{x} = \frac{\Sigma A_s x}{\Sigma A_s}$		
$= \frac{\Sigma \text{ col. } (4)}{\Sigma \text{ col. } (2)} = \frac{221.89}{24.687} =$	8.98	$\frac{251.82}{25.761} =$ 9.77
$\bar{z} = \frac{\Sigma A_s z}{\Sigma A_s}$		
$= \frac{\Sigma \text{ col. } (8)}{\Sigma \text{ col. } (2)} = \frac{64.93}{24.689} =$	2.63	$\frac{20.80}{25.761} =$ 0.80
$I_{x_o} = \Sigma A_s z^2 - (\Sigma A_s)\bar{z}^2$		
$= \Sigma A_s z^2 - \Sigma$ col. (2) $\bar{z}^2 =$	1880	= 2070
$I_{z_o} = \Sigma A_s x^2 - (\Sigma A_s)\bar{x}^2$		
$= \Sigma A_s x^2 - \Sigma$ col. (2) $\bar{x}^2 =$	9715	= 10493
$I_{x_o z_o} = \Sigma A_s xz - (\Sigma A_s)\bar{x}\bar{z}$		
$= \Sigma A_s xz - \Sigma$ col. (2) $\bar{x}\bar{z} =$	-719	= -1124
$K = I_{x_o} I_{z_o} - (I_{x_o z_o})^2 =$	17.75×10^6	$= 20.46 \times 10^6$
$C_1 = \frac{I_{x_o z_o}}{K} = \frac{-719}{17.75 \times 10^6} =$	-40.50×10^{-6}	$\frac{-1124}{20.46 \times 10^6} = 54.93 \times 10^{-6}$
$C_2 = \frac{I_{x_o}}{K} = \frac{1880}{17.75 \times 10^6} =$	105.9×10^{-6}	$\frac{2070}{20.46 \times 10^6} = 101.1 \times 10^{-6}$
$C_3 = \frac{I_{z_o}}{K} = \frac{9715}{17.75 \times 10^6} =$	547.3×10^{-6}	$\frac{10493}{20.46 \times 10^6} = 512.8 \times 10^{-6}$

SUBJECT WING SECTION PROPERTIES

DETERMINATION OF CONSTANTS

WING SKIN-24ST AL CLAD
SPAR WEB-24ST AL ALLOY



NOTE: STRINGER #11 OUT IN HALF
STRINGERS #12 THRU #15, 50% INEFFECTIVE IN COMPRESSION DUE TO TANK DOORS.

~STA 1235~

PREP. F.A.S. ON 9-7-50
CHKD. S.M.P. ON 9-29-50
REVISED

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

PAGE A-15
REPORT NO. 7017C-1
MODEL YC-122B MS YC

SUBJECT WING SECTION PROPERTIES STATION 181.35

DETERMINATION OF CONSTANTS

TENSION ON BOTTOM

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(1)
ITEM	A_s	x	$A_s x$	z'	Δz	z	$A_s z$	x_o	z_o	α	β	ITEM
REF.			(2)(3)			(5)-(6)	(2)·(7)	(3) - $\bar{x}$	(7) - $\bar{z}$	$\times 10^3$	$\times 10^4$	REF.
1												1
2	.364	-22.86	-8.32	9.39	.26	9.13	3.32	-31.79	8.48	-3.59	3.28	2
3	.469	-15.98	-7.49	10.72	.33	10.39	4.87	-26.91	9.72	-4.73	2.62	3
4	.469	- 8.98	-4.21	11.12	.33	10.79	5.06	-17.91	10.12	-5.59	1.51	4
a	6.843	0	0	10.84	.72	10.12	69.25	- 8.93	9.45	-5.72	0.47	a
5	.469	9.71	4.55	10.02	.33	9.69	4.54	0.78	9.02	-6.05	-0.67	5
6	.469	16.63	7.80	9.16	.33	8.83	4.14	7.70	8.16	-5.93	-1.45	6
7	.469	23.56	11.05	8.12	.33	7.79	3.65	12.63	7.12	-5.55	-1.98	7
8	.469	30.45	14.28	7.00	.33	6.67	3.13	21.52	6.00	-5.37	-2.98	8
9	.469	37.35	17.52	5.75	.33	5.42	2.54	28.42	4.75	-4.98	-3.73	9
10	.364	44.20	16.09	4.39	.26	4.13	1.50	35.27	3.46	-4.57	-4.47	10
11	.182	49.01	8.92	3.41	.26	3.15	0.57	40.08	2.49	-4.23	-4.99	11
11A												11A
e	.659	54.11	35.66	2.24	.54	1.70	1.12	45.18	1.03	-3.58	-5.51	e
Σ UPPER	11.695		95.85				103.69					Σ UPPER
d	.802	53.40	42.83	-7.70	-.39	7.31	-5.86	44.47	-7.98	2.46	-4.84	d
12												12
13	.583	45.20	26.35	-8.07	-.16	-7.91	-4.61	36.27	-8.58	3.38	-3.82	13
14	.545	38.22	20.83	-8.22	-.15	-8.07	-4.40	29.29	-8.75	3.95	-2.97	14
15	.519	32.22	16.72	-8.28	-.15	-8.13	-4.22	23.29	-8.80	4.36	-2.24	15
16	.559	26.22	14.66	-8.32	-.21	-8.11	-4.53	17.29	-8.78	4.73	-1.52	16
17	.519	20.22	10.49	-8.22	-.15	-8.07	-4.19	11.29	-8.74	5.09	-0.80	17
18	.519	14.22	7.38	-8.07	-.15	-7.92	-4.11	5.29	-8.59	5.38	-0.09	18
19	.583	8.22	4.79	-7.82	-.13	-7.69	-4.48	-0.71	-8.36	5.61	0.62	19
b	6.955	0	0	-7.17	-.71	-6.46	-44.93	-8.93	-7.13	5.32	1.53	b
20	.381	-8.19	-3.12	-6.14	-.07	-6.07	-2.31	-17.12	-6.74	5.58	2.49	20
21	.331	-14.09	-4.66	-5.11	-.08	-5.03	-1.66	-23.02	-5.60	5.20	3.13	21
22	.275	-19.95	-5.49	-3.80	-.10	-3.70	-1.02	-28.88	-4.37	4.76	3.76	22
23	.304	-23.28	-7.08	-2.87	-.05	-2.82	-0.86	-32.21	-3.49	4.39	4.10	23
24												24
Σ LOWER	12.875		123.71				-87.18					Σ LOWER
Σ TOTAL	24.570		219.56				16.51					Σ TOTAL

PREP. E.A.S. ON 9-5-60
CHKD. S.K.P. ON 9-23-60
REVISED

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

PAGE A-14
REPORT NO. 70110-1
MODEL YC-122B MS 70

SUBJECT: WING SECTION PROPERTIES — STATION 181.35
DETERMINATION OF CONSTANTS — TENSION ON TOP

(1) ITEM REF.	(2) A_s	(3) x	(4) $A_s x$ (2)(3)	(5) z'	(6) Δz	(7) z (5)-(6)	(8) $A_s z$ (2)·(7)	(9) x_o (3)-$\bar{x}$	(10) z_o (7)-$\bar{z}$	(11) α ×10³	(12) β ×10³	(1) ITEM REF.
1												1
2	.528	-22.84	-12.07	9.39	.17	9.22	4.87	-31.03	6.92	-3.38	3.49	2
3	.653	-15.98	-10.43	10.72	.23	10.49	6.85	-24.15	8.19	-4.64	2.36	3
4	.693	-8.78	-6.22	11.12	.22	10.90	7.55	-17.15	8.60	-5.29	1.69	4
a	6.967	0	0	10.84	.71	10.13	70.58	-8.17	7.83	-5.19	8.62	a
5	.708	9.71	6.87	10.02	.21	9.81	6.95	1.00	7.51	-5.42	-0.58	5
6	.653	16.63	10.86	9.16	.23	8.93	5.83	8.46	6.63	-5.17	-1.38	6
7	.653	23.56	15.38	8.12	.23	7.89	5.15	15.39	5.59	-4.78	-2.19	7
8	.653	30.45	19.88	7.00	.23	6.77	4.42	22.28	4.47	-4.33	-2.98	8
9	.653	27.35	24.39	5.75	.23	5.52	3.60	29.18	3.22	-3.78	-3.78	9
10	.515	44.20	22.76	4.39	.18	4.21	2.17	36.03	1.91	-3.19	-4.46	10
11	.326	49.01	15.98	3.41	.14	3.27	1.06	40.84	0.97	-2.76	-5.11	11
11A												11A
c	.696	54.11	37.66	2.24	.51	1.73	1.20	46.94	-0.57	-1.97	-5.78	c
Σ UPPER	13.698		125.06				120.24					Σ UPPER
d	.690	53.40	36.85	-7.70	-.46	-7.24	-5.00	45.23	-9.54	4.54	-5.12	d
12												12
13	.185	45.20	8.36	-8.07	-.23	-7.84	-1.45	37.03	-10.14	5.38	-4.07	13
14	.185	38.22	7.07	-8.22	-.23	-7.99	-1.48	30.05	-10.29	5.84	-3.20	14
15	.185	32.22	5.96	-8.28	-.23	-8.05	-1.49	24.05	-10.35	6.19	-2.45	15
16	.331	26.22	8.68	-8.33	-.38	-7.95	-2.63	18.05	-10.25	6.82	-1.72	16
17	.291	20.22	5.88	-8.22	-.23	-7.99	-2.33	12.05	-10.29	6.75	-0.97	17
18	.291	14.22	4.14	-8.07	-.23	-7.84	-2.28	6.05	-10.14	6.95	-0.24	18
19	.291	8.22	2.39	-7.82	-.30	-7.52	-2.19	0.05	-9.82	7.02	0.49	19
b	6.870	0	0	-7.17	-.72	-6.45	-44.31	-8.17	-8.75	6.67	1.46	b
20	.139	-8.19	-1.14	-6.14	-.22	-5.92	-0.82	-16.36	-8.22	6.71	2.44	20
21	.139	-14.09	-1.96	-5.11	-.22	-4.89	-0.68	-22.26	-7.19	6.27	3.12	21
22	.139	-19.95	-2.77	-3.80	-.22	-3.58	-0.50	-28.12	-5.88	5.63	3.78	22
23	.222	-23.28	-5.17	-2.87	-.07	-2.80	-0.62	-31.45	-5.10	5.24	4.54	23
24												24
Σ LOWER	9.958		68.29				65.78					Σ LOWER
Σ TOTAL	23.656		193.35				54.46					Σ TOTAL

SUBJECT

DETERMINATION OF CONSTANTS - STATION 181.35

	TENSION ON TOP	TENSION ON BOTTOM
$\Sigma A_s x^2 = \Sigma$ col. ③ x ④ =	= 9897	= 10706
$\Sigma A_s z^2 = \Sigma$ col. ⑦ x ⑧ =	= 1582	= 1595
$\Sigma A_s xz = \Sigma$ col. ④ x ⑦ =	= -151	= -696
$\bar{x} = \frac{\Sigma A_s x}{\Sigma A_s}$		
$= \frac{\Sigma \text{ col. } ④}{\Sigma \text{ col. } ②} = \frac{193.35}{23.656} =$	8.17	$\frac{219.56}{24.570} =$ 8.93
$\bar{z} = \frac{\Sigma A_s z}{\Sigma A_s}$		
$= \frac{\Sigma \text{ col. } ⑦}{\Sigma \text{ col. } ②} = \frac{54.46}{23.656} =$	2.30	$\frac{16.51}{24.570} =$ 0.67
$I_{x_o} = \Sigma A_s z^2 - (\Sigma A_s)\bar{z}^2$		
$= \Sigma A_s z^2 - \Sigma$ col. ② $\bar{z}^2 =$	1460	= 1583
$I_{z_o} = \Sigma A_s x^2 - (\Sigma A_s)\bar{x}^2$		
$= \Sigma A_s x^2 - \Sigma$ col. ② $\bar{x}^2 =$	8318	= 8747
$I_{x_o z_o} = \Sigma A_s xz - (\Sigma A_s)\bar{x}\bar{z}$		
$= \Sigma A_s xz - \Sigma$ col. ② $\bar{x}\bar{z} =$	-596	= -843
$K = I_{x_o} I_{z_o} - (I_{x_o z_o})^2 =$	11.79×10^6	$= 13.14 \times 10^6$
$C_1 = \frac{I_{x_o z_o}}{K} = \frac{-596}{11.79 \times 10^6} =$	-50.60×10^{-6}	$\frac{-843}{13.14 \times 10^6} =$ 64.14×10^{-6}
$C_2 = \frac{I_{z_o}}{K} = \frac{1460}{11.79 \times 10^6} =$	123.8×10^{-6}	$\frac{1583}{13.14 \times 10^6} =$ 120.4×10^{-6}
$C_3 = \frac{I_{x_o}}{K} = \frac{8318}{11.79 \times 10^6} =$	715.6×10^{-6}	$\frac{8747}{13.14 \times 10^6} =$ 665.6×10^{-6}

PREP. F.A.S. ON 9-8-50
CHKD. S.R.P. ON 9-29-50
REVISED

CHASE AIRCRAFT CO., INC.
WEST TRENTON N.J.

PAGE A-10
REPORT NO. 70170-I
MODEL YC-122C MS. 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 69.45

σ	(1) Item	(13) F_{all} Pg.	CONDITION PHAA (14) L·α * · (11)	(15) N·β * · (12)	(16) f_{act} (14)+(15)	(17) P (2)·(16)	(18) M.S. (13)/(16)-1	CONDITION (14) L·α * · (11)	(15) N·β * · (12)	(16) f_{act} (14)+(15)	(17) P (2)·(16)	(18) M.S. (13)/(16)-1
	1											
.21	2	-44.8	- 5.66	- 1.64	- 7.30	- 2.6	L					
.35	3	-71.5	- 11.90	- 2.05	-13.95	- 6.5	L					
.50	4	-71.5	-19.17	- 1.98	-21.15	- 9.9	L					
	a	-60.0	-40.13	- 1.65	-41.78	-335.5	.43					
	5	-42.7	- 42.48	0.84	-41.64	-19.5	.03					
	6	-42.7	- 42.30	2.57	-39.73	-18.6	.07					
	7	-42.7	-41.17	4.24	-36.93	-17.3	.16					
	8	-42.7	- 39.66	5.92	-33.74	-15.8	.29					
	9	-42.7	- 37.77	7.59	-30.18	-14.2	.41					
	10	-33.3	- 35.80	9.25	-26.55	- 9.7	.25					
	11	-33.3	- 33.35	10.67	-22.68	- 8.3	.47					
	11a	-29.5	- 30.99	12.12	- 18.87	- 2.6	.56					
	c	-37.1	- 27.32	13.13	-14.19	- 9.4	A					
	d	51.9	17.62	11.43	29.05	23.2	A					
	12	51.9	24.02	9.27	33.29	19.2	.55					
	13	51.9	28.26	7.39	35.65	20.3	.45					
	14	51.9	32.03	5.51	37.54	26.2	.38					
	15											
	16	51.9	37.77	2.34	40.11	28.6	.29					
	17	51.9	40.04	0.76	40.80	21.2	.27					
	18	51.9	41.82	- 0.81	41.01	21.3	.26					
	19	51.9	43.61	- 2.36	41.25	24.0	.25					
	b	61.2	42.59	- 4.37	38.22	265.8	.60					
.80	20	51.9	35.42	- 5.18	30.24	11.5	.72					
.45	21	51.9	19.20	- 3.55	15.65	5.2	L					
.25	22	51.9	10.06	- 2.32	7.74	2.6	L					
.10	23	51.9	3.62	- 1.07	2.55	0.7	L					
	24											

* L and N from page 37
α and β from section property table

Note: All values in thousands

PREP. F.A.S. ON 9-8-50
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CHASE AIRCRAFT CO., INC.
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PAGE A-19
REPORT NO. 7017C-I
MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 69.45

σ	(1) Item	(13) F_{all} Pg.	CONDITION NO and F (14) L · α * · (11)	(15) N · β * · (12)	(16) f_{act} (14) + (15)	(17) P (2) · (16)	(18) M.S. (13)/(16) - 1	CONDITION (14) L · α * · (11)	(15) N · β * · (12)	(16) f_{act} (14) + (15)	(17) P (2) · (16)	(18) M.S. (13)/(16) - 1
	1											
.21	2	58.7	0.5	0.2	0.7	.4	L					
.35	3	57.8	1.0	0.2	1.2	.8						
.50	4	70.5	1.5	0.2	1.7	1.2						
	a	70.5	2.94	0.18	3.12	25.44						
	5	61.2	2.99	-0.03	2.96	2.1						
	6	70.5	2.83	- 0.21	2.62	1.7						
	7	70.5	2.59	- 0.39	2.20	1.4						
	8	70.5	2.31	- 0.57	1.74	1.1						
	9	70.5	2.01	- 0.74	1.27	0.8						
	10	57.8	1.70	- 0.92	0.78	0.4						
	11	57.8	1.38	- 1.08	0.30	0.2						
	11a	51.9	1.06	- 1.25	- 0.19	- 0.1						
	c	51.9	0.63	- 1.34	- 0.71	- 0.5						
	d	-37.0	- 3.14	- 1.24	- 4.38	- 3.0						
	12	-34.8	- 1.72	- 0.51	- 2.23	- 0.8						
	13	-34.8	- 1.84	- 0.42	- 2.26	- 0.8						
	14	-34.8	- 1.92	- 0.32	- 2.24	- 0.8						
	15											
	16	-37.2	- 4.02	- 0.32	- 4.34	- 1.4						
	17	-34.8	- 4.15	- 0.16	- 4.31	- 1.3						
	18	-34.8	- 4.20	0	- 4.20	- 1.2						
	19	-34.8	- 4.06	0.01	- 4.05	- 1.2						
	b	-60.0	- 3.96	0.37	- 3.59	-24.7						
.80	20	-36.8	- 3.11	0.50	- 2.61	- 0.4						
.45	21	-36.8	- 1.62	0.33	- 1.29	- 0.2						
.25	22	-36.8	- 0.83	0.22	- 0.61	- 0.1						
.10	23	-31.5	- 0.29	0.11	- 0.18	0	L					
	24											

* L and N from page 38
α and β from section property table

Note: All values in thousands

PREP. F.A.S. ON 9-8-50
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CHASE AIRCRAFT CO., INC.
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PAGE A-20
REPORT NO. 7017C-I
MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 125.45

		CONDITION PHAA					CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	F_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2	-44.8	-25.80	-5.46	-31.26	-11.4	.43					
3	-71.5	-33.29	-3.96	-37.25	-17.5	.92					
4	-71.5	-37.77	-2.88	-40.65	-19.1	.76					
a	-60.6	-39.07	-0.98	-40.05	-296.9	.51					
5	-42.7	-41.18	1.06	-40.12	-18.8	.06					
6	-42.7	-40.46	2.34	-38.12	-17.9	.12					
7	-42.7	-39.23	3.60	-35.63	-16.7	.19					
8	-42.7	-37.36	4.80	-32.56	-15.3	.31					
9	-42.7	-35.25	6.09	-29.16	-13.3	.46					
10	-33.3	-32.80	7.31	-25.49	- 9.3	.30					
11	-33.3	-30.28	8.35	-21.93	- 8.0	.51					
11a											
c	-37.1	-25.23	9.61	-15.62	-10.3	A					
d	51.9	16.61	8.39	25.00	17.7	A					
12	51.9	20.76	7.43	28.19	13.8	.84					
13	51.9	24.83	6.01	30.84	17.6	.68					
14	51.9	28.49	4.59	33.08	18.0	.57					
15	51.9	31.34	3.41	34.75	18.0	.49					
16	51.9	33.70	2.20	35.90	20.1	.44					
17	51.9	36.30	1.02	37.32	19.4	.39					
18	51.9	38.18	-0.16	38.02	19.7	.36					
19	51.9	39.64	-1.32	38.32	22.3	.35					
b	61.2	37.93	-2.82	35.11	244.2	.74					
20	51.9	39.80	-4.39	35.41	13.5	.46					
21	51.9	38.01	-5.46	32.55	10.8	.59					
22	51.9	35.00	-6.48	28.52	8.7	.81					
23	51.9	31.82	-7.29	24.53	8.1	A					
24											

* L and N from page 37
α and β from section property table

Note: All values in thousands

SUBJECT

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SUBJECT

SUMMARY OF MINIMUM MARGINS OF SAFETY
(See Pages 110 Through 159 .)

Stringer	M.S.	Station	Condition
1	.73	125.40	PHAA
2	.13	220.00	PHAA
3	.92	220.00	PHAA
4	.76	220.00	PHAA
a	.43	69.45	PHAA
5	0	220.00	PHAA
6	.05	220.00	PHAA
7	.15	69.45	PHAA
8	.22	69.45	PLAA
9	.31	69.45	PLAA
10	.09	69.45	PLAA
11	.19	69.45	PLAA
11A	.16	69.45	PLAA
c	.70	69.45	PLAA
d	.70	220.00	PHAA TO
12	.73	69.45	NLAA
13	.13	220.00	NLAA
14	.03	220.00	NLAA
15	.12	220.00	NLAA
16	.06	220.00	NLAA
17	.01	220.00	NLAA
18	.03	48.75	NLAA
19	0	220.00	NLAA
b	.43	48.75	PHAA PLAA
20	.15	220.00	NLAA
21	.23	220.00	NLAA
22	.35	125.40 220.00	NLAA NLAA
23	.19	220.00	NLAA
24	.80	125.40	NLAA

PREP. J.H.P. 5-24-49
CHKD. [illegible] 6/7/49
REV'D. [illegible] 10/2/50

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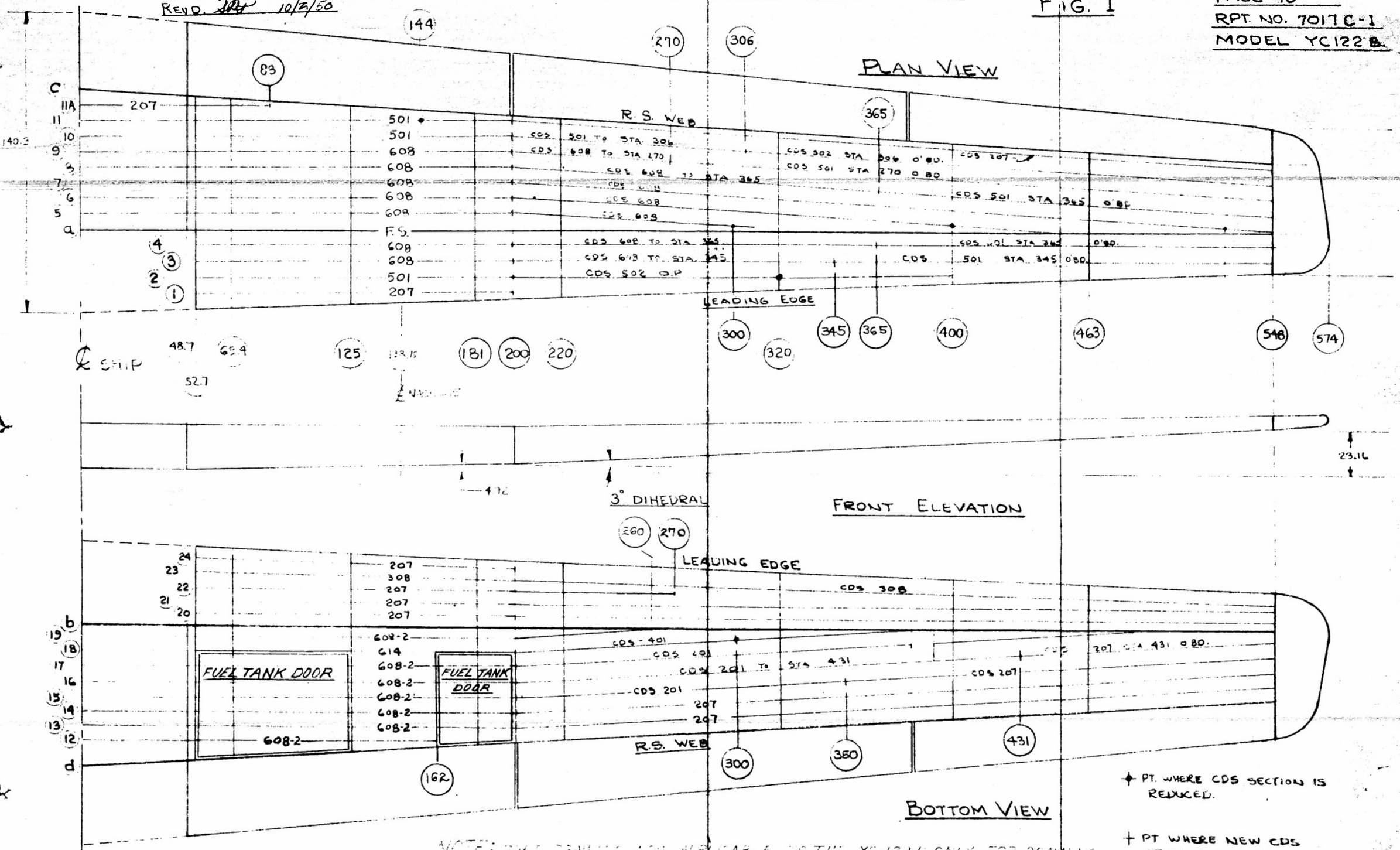
FIG. 1



NOTE: THIS DRAWING IS APPLICABLE TO THE YC-122B ONLY. FOR DRAWING [illegible] SEE APPENDIX p. A-3.

PREP. V.G.P. 7-7-49
CHKD. J.H.P. 7-8-49
REVD. SRP. 10-2-50

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WING SKIN DIAGRAM

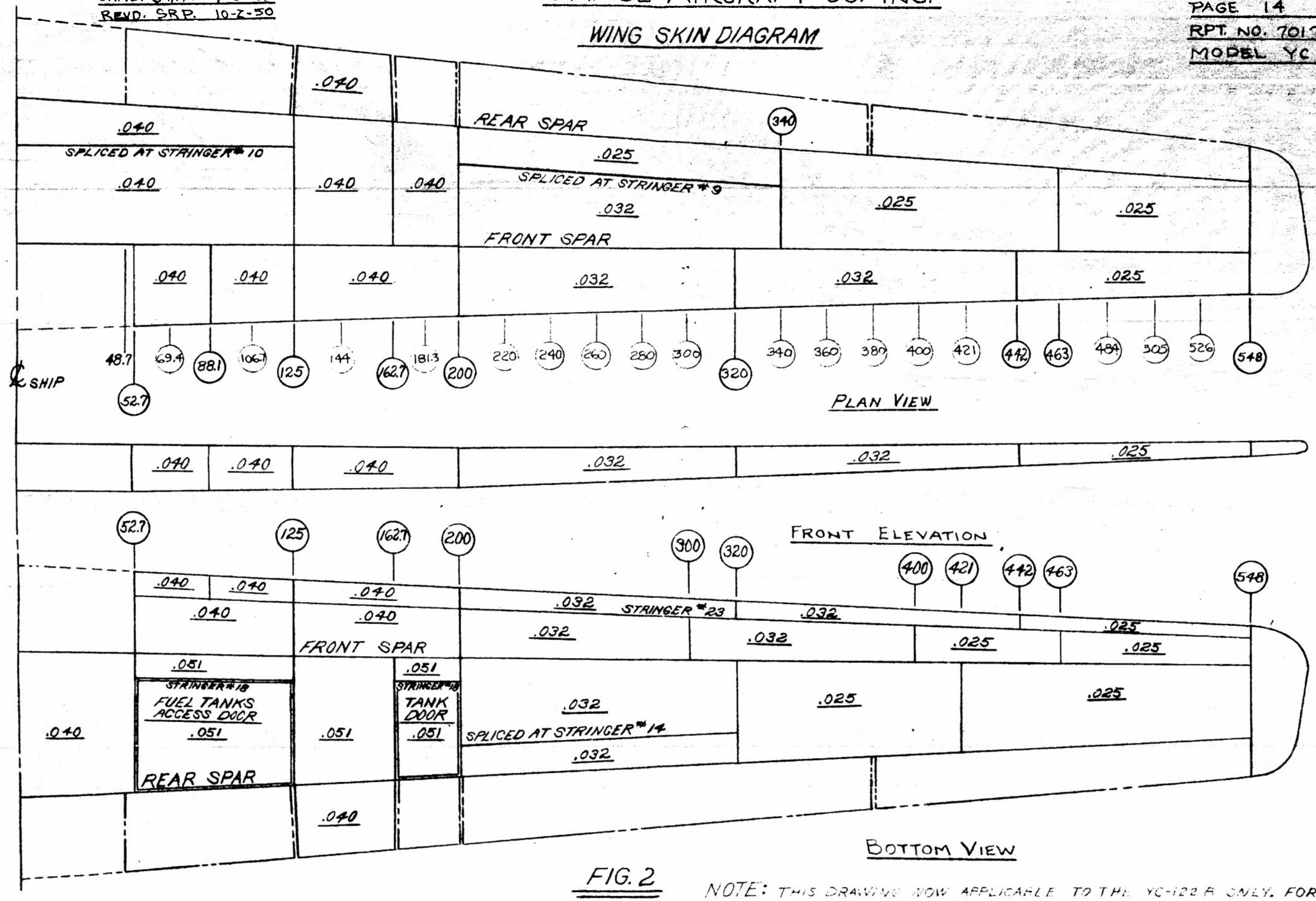

FIG. 2

NOTE: THIS DRAWING NOW APPLICABLE TO THE YC-122 B ONLY. FOR DRAWINGS FOR THE YC-122C, SEE APPENDIX pp. A-4.

SUBJECT

DESCRIPTION OF WING MATERIALS

The following design data was obtained from the Chase Design Standard Book (CDS) and the ANC-5, Reference b.

Item	Material	Section	F_{tu} psi $\times 10^{-3}$	F_{cy} psi $\times 10^{-3}$	A in^2	I_{xx} in^4	ρ_{xx} in
Skin	24ST Alclad	t<.064	60	38			
		t≥.064	62	39			
Web	24ST Alum.	t<.250	68	42			
CDS-118	24ST Extrus.	⌋	61	41	.526	.147	.530
CDS-119	24ST Extrus.	⌋	61	41	.658	.213	.568
CDS-120	24ST Extrus.	⌋	61	41	.699	.252	.618
CDS-201	24ST Extrus.	L	61	41	.124	.0161	.361
CDS-207	24ST Extrus.	L	61	41	.091	.0095	.323
CDS-309	24ST Extrus.	⊥	61	41	.126	.00449	.189
CDS-310	14ST Extrus.	⊤	68	60	Varies	From Sta.	to Sta.
CDS-401	24ST Extrus.	⊓	61	41	.130	.0206	.398
CDS-501	24ST Sheet	⊓	68	42	.268	.0273	.319
CDS-502	24ST Sheet	⊓	68	42	.1411	.01384	.313
CDS-608	75ST Extrus.	⊓	83	75	.373	.0430	.339
CDS-608-2	24ST Extrus.	⊓	61	41	.2134	.0253	.344
*CDS-614	24ST Extrus.	⊓	61	41	.253	.0399	.398

The above values are from the "B" column of ANC-5 (lowest value for 90% material). Also the longitudinal values "L" are used since stringers are with grain.

*CDS-614 is used in this wing has two legs removed resulting in either a "Z" Section or "C" Section, therefore in this analysis reduced section properties are employed.

SUBJECT

DESCRIPTION OF WING MATERIALS

The following design data was obtained from the Chase Design Standard Book (CDS) and the ANC-5, Reference b.

Item	Material	Section	F_{tu} psi x10^{-3}	F_{cy} psi x10^{-3}	A in^2	I_{xx} in^4	ρ_{xx} in
Skin	24ST Alclad	t<.064	60	38			
		t≥.064	62	39			
Web	24ST Alum.	t<.250	68	42			
CDS-118	24ST Extrus.		61	41	.526	.147	.530
CDS-119	24ST Extrus.		61	41	.658	.213	.568
CDS-120	24ST Extrus.		61	41	.659	.252	.618
CDS-201	24ST Extrus.		61	41	.124	.0161	.361
CDS-207	24ST Extrus.		61	41	.091	.0095	.323
CDS-308	24ST Extrus.		61	41	.126	.00449	.189
CDS-310	14ST Extrus.		68	60	Varies	From Sta.	to Sta.
CDS-401	24ST Extrus.		61	41	.130	.0206	.398
CDS-501	24ST Sheet		68	42	.268	.0273	.319
CDS-502	24ST Sheet		68	42	.1411	.01384	.313
CDS-608	75ST Extrus.		83	75	.373	.0430	.339
CDS-608-2	24ST Extrus.		61	41	.2134	.0253	.344
*CDS-614	24ST Extrus.		61	41	.253	.0399	.398

The above values are from the "B" column of ANC-5 (lowest value for 90% material). Also the longitudinal values "L" are used since stringers are with grain.

*CDS-614 is used in this wing has two legs removed resulting in either a "Z" Section or "C" Section, therefore in this analysis reduced section properties are employed.

WING DESIGN CONDITIONS

The design conditions for an airplane (transport) are noted in A.F. Specification C-1803-E, R-1803-2B and R-1803-3A. Wing span-wise air loadings were computed for these conditions in Report 7011B-I. As noted in R-1803-1B para. E-2e, the design conditions can be represented graphically on a velocity-load factor diagram (V-n). The load factors shown below were obtained from such a diagram appearing on page B-5 of Report No. 7009 B.

Wing design conditions are noted below. The symbols in the left hand column will be used throughout this report.

PHAA	Positive high angle of attack. Upper left corner of V-n diagram. Velocity = 163 MPH. Limit load factor = 3.00 Up .
PLAA	Positive low angle of attack. Upper right corner of V-n diagram. Velocity = 232 MPH. Limit load factor = 3.00 Up.
NHAA	Negative high angle of attack. Lower left corner of V-n diagram. Velocity = 143 MPH. Limit load factor = -1.50 Down.
NLAA	Negative low angle of attach. Lower right corner of V-n diagram. Velocity = 232 MPH. Limit load factor = -1.50 Down.
PG+F	Flaps deflected plus positive gust velocity = 130 MPH Limit load factor = [illegible] Up.
NG+F	Flaps deflected plus negative gust velocity = 130 MPH Limit load factor = 0.13 Up.
LC	Landing limit load factor = 2.67 (Reference ANC-2A)
TO	Take off - limit load factor = 2.00 (Reference a)
$\delta = 15^\circ$	Aileron deflected 15° up. Limit load factor = 2.00
$\delta = -20^\circ$	Aileron deflected -20° down. Limit load factor = 2.00

For reasons noted on page 110 some of the above design conditions will not be critical for wing bending.

Design gross weight for all flight conditions above is 33 000 lbs.

SUBJECT DETERMINATION OF WING MOMENTS

COMBINED AIR AND INERTIA MOMENTS, L AND N

The resultant spanwise bending moments on the wing is equal to the sum of the air load moment and inertia moment, i.e.:

$$L = L_a + nL_w + \alpha_x L_a$$

$$N = N_a + n_c N_w$$

where n = ultimate vertical load factor (positive down)

n_c = ultimate chordwise load factor (positive aft)

Values of n limit are tabulated on page 16 . Ultimate values, the above times 1.50, are shown below:

Condition	n (Limit)	n (Ultimate)
PHAA	3.00	4.50
PLAA	3.00	4.50
NHAA	- 1.50	- 2.25
NLAA	- 1.50	- 2.25
PG+F	1.86	2.79
NG+F	0.13	0.20
LC	2.67	4.00
TO	2.00	3.00
Ail δ=15°	2.00	3.00
Ail δ=20°	2.00	3.00

Since n_c is dependent upon the altitude of the airpalne, type of maneuver and other variables, n_c is taken to be equal to zero for this analysis.

α_x is zero for all above conditions except aileron maneuvers. Its value is computed on page 41 .

L_a, N_a and L_w are obtained from charts on pages 20, 21, 31

Values of L and N are computed on the following pages for various selected wing stations.

PREP S.R.P. ON 6-28-49
CHKD V.G.P. ON 6-29-49
REVISED R.A.S. 8-2-50

CHASE AIRCRAFT CO. INC.
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REPORT NO. 7017C-I
MODEL YC-122C WS 7C

SUBJECT DETERMINATION OF WING MOMENTS

COMBINED AIR AND INERTIA MOMENTS, L AND N

Condition NLAA (All Values in inch-pounds)

Station	L_a $x10^{-6}$	N_a $x10^{-6}$	nL_w $x10^{-6}$	L $x10^{-6}$	N $x10^{-6}$
48.75	- 7.90	- .82	1.80	- 6.10	- .82
69.40	- 7.30	- .75	1.49	- 5.81	- .75
125.40	- 5.70	- .58	0.61	- 5.09	- .58
181.35	- 4.30	- .42	0.27	- 4.03	- .42
200.00	- 3.85	- .36	0.25	- 3.60	- .36
220.00	- 3.42	- .32	0.20	- 3.22	- .32
320.00	- 1.65	- .16	0.09	- 1.56	- .16
400.00	- 0.70	- .08	0.04	- 0.66	- .08
463.00	- 0.27	- .04	0.02	- 0.25	- .04

Condition PG+F

48.75	8.15	- .09	-2.23	5.9[illegible]	- .09
69.40	7.36	- .11	-2.[illegible]	5.51	- .11
125.40	5.35	- .14	-0.76	4.59	- .14
181.35	3.70	- .15	-0.3[illegible]	3.37	- .15
200.00	3.25	- .15	-0.3[illegible]	2.94	- .15
220.00	2.78	- .14	[illegible]	2.53	- .14
320.00	1.10	- .10	[illegible]	0.99	- .10
400.00	0.40	- .05	[illegible]	0.3[illegible]	- .05
463.00	0.10	- .02	[illegible]	0.0[illegible]	- .02

Condition NG+F

48.75	- 0.52	.30	[illegible]	[illegible]	.30
69.40	- 0.60	.25	-0.13	-0.[illegible]	.25
125.40	- 0.68	.12	-0.05	-0.[illegible]	.12
181.35	- 0.67	.06	[illegible]	-0.[illegible]	.06
200.00	- 0.65	.03	[illegible]	-0.[illegible]	.03
220.00	- 0.62	.02	[illegible]	-0.[illegible]	.02
320.00	- 0.42	- .04	[illegible]	-0.[illegible]	- .04
400.00	- 0.23	- .04	-	-0.23	- .04
463.00	- 0.10	- .01	-	-0.1[illegible]	- .01

PREP. V.G.P. ON 6-30-49
CHKD. S.R.R. ON 6-30-49
REVISED F.A.S. @ 10/4/49

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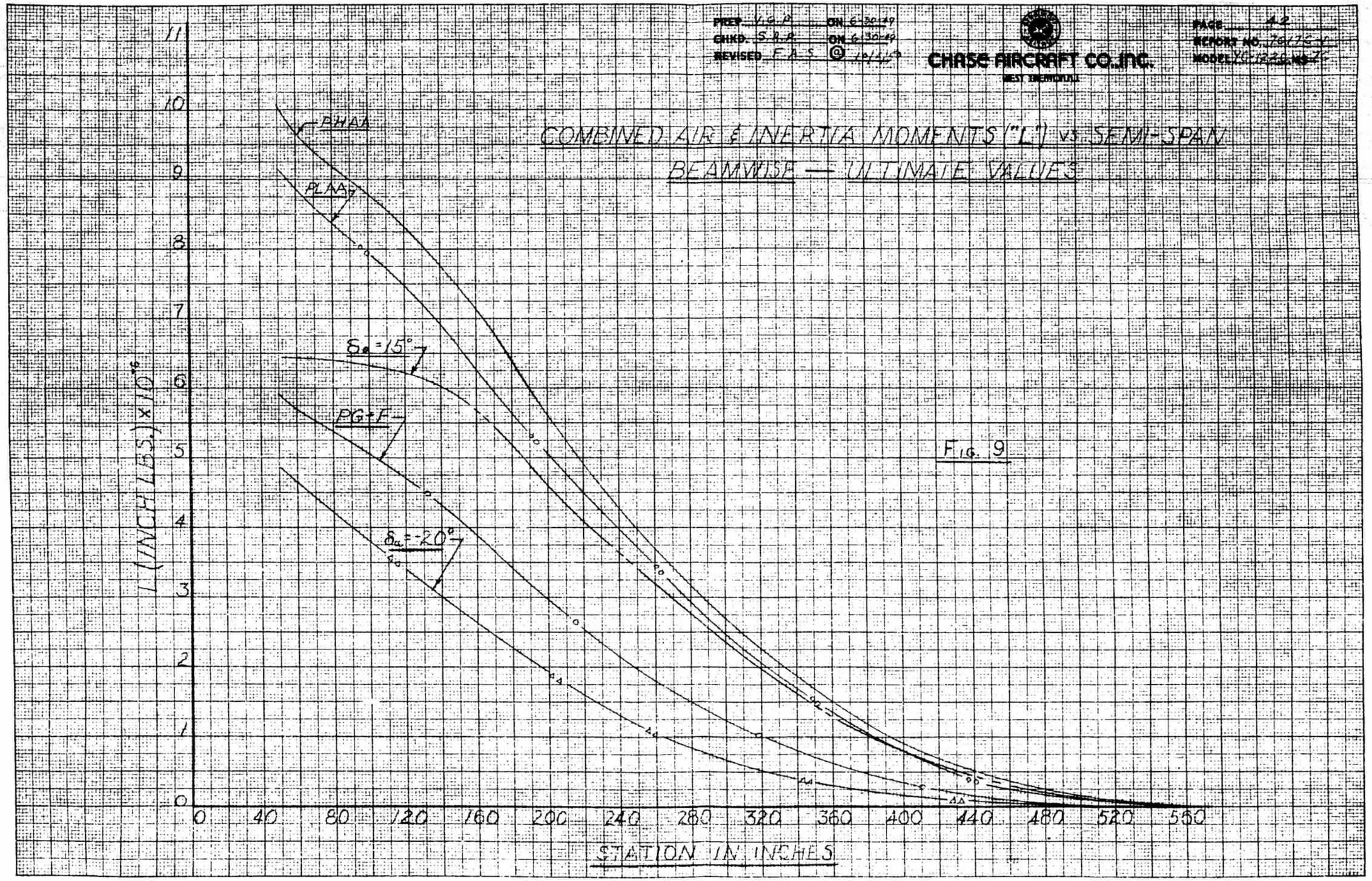
PAGE 42
REPORT NO. 79-72-1
MODEL YC-122A NO. 7



PREP. S.R.P. ON 5-5-49
CHKD. V.G.P. ON 5-16-49
REVISED F.A.S. 10-9-50 (a)

CHASE AIRCRAFT CO., INC.
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REPORT NO. 70170-1
MODEL YC-122C MS 70

SUBJECT WING SECTION PROPERTIES STATION 48.75
DETERMINATION OF CONSTANTS
TENSION ON TOP

(1) ITEM REF.	(2) A_s	(3) x	(4) $A_s x$ (2)(3)	(5) z'	(6) Δz	(7) z (5)-(6)	(8) $A_s z$ (2)·(7)	(9) x_o (3) - $\bar{x}$	(10) z_o (7) - $\bar{z}$	(11) α ×10³	(12) β ×10⁴	(1) ITEM REF.
1												1
2												2
3												3
4												4
a	10.065	0	0	13.30	.50	12.80	128.83	-11.35	9.08	-3.48	+0.93	a
5	.708	9.72	6.88	12.38	.21	12.17	8.62	- 1.63	8.45	-3.56	-0.12	5
6	.653	16.65	10.87	11.47	.23	11.24	7.34	+ 5.30	7.52	-3.41	-0.85	6
7	.653	23.56	15.38	10.38	.23	10.15	6.63	12.21	6.43	-3.18	-1.58	7
8	.653	30.48	19.90	9.13	.23	8.90	5.81	19.31	5.18	-2.90	-2.32	8
9	.653	37.35	24.39	7.84	.23	7.61	4.97	26.00	3.89	-2.59	-3.01	9
10	.530	44.20	23.43	6.45	.17	6.28	3.33	32.85	2.56	-2.26	-3.72	10
11	.523	50.22	26.27	5.13	.17	4.96	2.59	38.87	1.24	-1.91	-4.34	11
11A	.323	56.38	18.21	3.74	.09	3.65	1.18	45.03	-0.07	-1.57	-4.97	11A
c	.711	62.12	44.17	2.32	.50	1.82	1.29	50.77	-1.90	-0.99	-5.54	c
Σ UPPER	15.472		189.50				170.59					Σ UPPER
d	.690	61.20	42.23	-10.10	- .46	-9.64	- 6.65	49.85	-13.36	3.95	-5.03	d
12	.185	52.10	9.64	-10.41	- .23	-10.18	- 1.88	40.75	-13.90	4.51	-4.01	12
13	.185	45.14	8.35	-10.55	- .23	-10.32	- 1.91	33.79	-14.04	4.81	-3.23	13
14	.185	38.12	7.05	-10.61	- .23	-10.38	- 1.92	26.77	-14.10	5.09	-2.46	14
15	.185	32.12	5.94	-10.61	- .23	-10.38	- 1.92	20.77	-14.10	5.30	-1.79	15
16	.185	26.18	4.84	-10.58	- .23	-10.35	- 1.91	14.83	-14.07	5.50	-1.14	16
17	.185	20.18	3.73	-10.42	- .23	-10.19	- 1.89	8.83	-13.91	5.64	-0.48	17
18	.331	14.13	4.68	-10.17	- .38	- 9.79	- 3.24	+2.78	-13.51	5.68	+0.17	18
19	.291	8.18	2.38	- 9.81	- .30	- 9.51	- 2.77	-3.17	-13.23	5.77	0.82	19
b	6.637	0	0	- 9.08	- .74	- 8.34	-55.35	-11.35	-12.06	5.56	1.68	b
20												20
21												21
22												22
23												23
24												24
Σ LOWER	9.059		88.84				-79.44					Σ LOWER
Σ TOTAL	24.531		278.34				91.15					Σ TOTAL

PREP. G.R.R. ON 5-11-49
CHKD. V.G.P. ON 5-19-49
REVISED T.A.S. 8-2-50

CHASE AIRCRAFT CO., INC.
WEST TREMONT, N.J.

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REPORT NO. 7017-1
MODEL YO-122C MS 7

SUBJECT WING SECTION PROPERTIES STATION 69.45
DETERMINATION OF CONSTANTS
TENSION ON TOP

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	①
	ITEM	A_s	x	$A_s x$	z'	Δz	z	$A_s z$	x_o	z_o	α	β	ITEM
	REF.			②③			⑤-⑥	②·⑦	③-$\bar{x}$	⑦-$\bar{z}$	$\times 10^3$	$\times 10^3$	REF.
.08	1	.026	-28.82	-0.75	10.25	.08	10.17	0.26	-39.66	7.31	-2.32	4.09	1
.21	2	.111	-28.92	-2.54	12.05	.17	11.88	1.32	-33.76	9.02	-3.29	3.40	2
.35	3	.229	-16.00	-3.66	13.02	.23	12.79	2.93	-26.84	9.93	-3.92	2.63	3
.50	4	.346	-9.00	-3.11	13.25	.22	13.03	4.51	-19.84	10.17	-4.23	1.86	4
	[illegible]	8.155	0	0	12.96	.67	12.29	100.22	-10.84	9.43	-4.13	0.91	[illegible]
	5	[illegible]	9.71	6.87	12.00	.21	11.79	[illegible]	-1.11	[illegible]	-4.18	-0.13	5
	6	.653	16.68	10.89	11.11	.23	10.88	7.10	+ 5.84	8.02	-3.96	-0.86	6
	7	.653	23.52	15.36	10.01	.23	9.78	6.39	12.68	6.92	-3.61	-1.57	7
	8	.653	30.44	19.88	8.80	.23	8.57	5.60	19.60	5.71	-3.24	-2.29	8
	9	.653	37.31	24.36	7.50	.23	7.27	4.75	26.47	4.41	-2.82	-3.00	9
	10	.531	44.17	23.45	6.11	.17	5.94	3.15	33.33	3.08	-2.39	-3.70	10
	11	.521	50.20	26.15	4.80	.17	4.63	2.41	39.36	1.77	-1.95	-4.38	11
	11A	.303	56.30	17.06	3.42	.09	3.33	1.01	45.46	0.47	-1.53	-4.95	11A
	o	.693	60.85	42.17	2.30	.52	1.78	1.23	50.01	-1.08	-0.97	-5.40	o
	Σ UPPER	[illegible]		[illegible]				149.14					Σ UPPER
	d	.690	60.00	41.40	- 9.71	- .46	- 9.25	- 6.38	49.16	-12.11	4.33	-4.99	d
	12	.185	52.15	9.65	-10.00	- .23	- 9.77	- 1.81	41.31	-12.63	4.78	-4.12	12
	13	.185	[illegible]	[illegible]	-10.[illegible]	- .23	[illegible]	[illegible]	[illegible]	[illegible]	5.07	[illegible]	13
	14	.185	38.16	7.06	-10.25	- .23	-10.[illegible]	- 1.85	27.32	-12.88	5.29	-2.60	14
	15												15
	16	.185	26.18	4.84	-10.22	- .23	- 9.99	- 1.85	15.34	-12.85	5.42	-1.30	16
	17	.185	20.16	3.73	-10.09	- .23	- 9.86	- 1.82	9.32	-12.72	5.73	-0.65	17
	18	.331	14.12	4.67	- 9.85	- .38	- 9.47	- 3.13	3.28	-12.33	5.71	0.00	18
	19	.281	8.14	2.37	- 9.50	- .30	- 9.20	- 2.68	-2.70	-12.06	5.80	0.64	19
	b	6.870	0	0	- 8.83	- .72	- 8.11	-55.72	-10.86	-10.97	5.47	1.49	b
.80	20	.111	-8.30	-0.92	- 7.60	- .22	- 7.38	- 0.82	-19.14	-10.24	5.36	2.37	20
.45	21	.062	-14.13	-0.88	- 6.52	- .22	- 6.30	- 0.39	-24.96	- 9.16	5.08	2.97	21
.25	22	.035	-19.96	-0.70	- 5.20	- .22	- 4.98	- 0.17	-30.80	- 7.84	4.56	3.57	22
.10	23	.022	-26.10	- 0.57	- 3.42	- .07	- 3.35	- 0.07	-36.94	- 6.21	3.97	4.19	23
0	24												24
	Σ LOWER	9.337		79.00				-78.53					Σ LOWER
	Σ TOTAL	[illegible]		255.13				70.61					Σ TOTAL

SUBJECT: WING SECTION PROPERTIES

DETERMINATION OF CONSTANTS - STATION 69.46

TENSION ON TOP		TENSION ON BOTTOM
$\Sigma A_s x^2 = \Sigma$ col. (3) x (4) =	12135	13098
$\Sigma A_s z^2 = \Sigma$ col. (7) x (8) =	2368	2494
$\Sigma A_s xz = \Sigma$ col. (4) x (7) =	200	-951
$\bar{x} = \frac{\Sigma A_s x}{\Sigma A_s}$		
$= \frac{\Sigma \text{ col. } (6)}{\Sigma \text{ col. } (2)} = \frac{255.13}{23.572} = 10.82$		$\frac{292.50}{24.891} = 11.83$
$\bar{z} = \frac{\Sigma A_s z}{\Sigma A_s}$		
$= \frac{\Sigma \text{ col. } (8)}{\Sigma \text{ col. } (2)} = \frac{78.61}{23.572} = 2.99$		$\frac{23.51}{24.891} = 0.94$
$I_{x_o} = \Sigma A_s z^2 - (\Sigma A_s)\bar{z}^2$		
$= \Sigma A_s z^2 - \Sigma \text{ col. } (2)\bar{z}^2 = 2157$		$= 2470$
$I_{z_o} = \Sigma A_s x^2 - (\Sigma A_s)\bar{x}^2$		
$= \Sigma A_s x^2 - \Sigma \text{ col. } (2)\bar{x}^2 = 9377$		$= 10210$
$I_{x_o z_o} = \Sigma A_s xz - (\Sigma A_s)\bar{x}\bar{z}$		
$= \Sigma A_s xz - \Sigma \text{ col. } (2)\bar{x}\bar{z} = -563$		$= -1230$
$K = I_{x_o} I_{z_o} - (I_{x_o z_o})^2 = 19.91 \times 10^6$		$= 23.71 \times 10^6$
$C_1 = \frac{I_{x_o z_o}}{K} = \frac{-563}{19.91(10^6)} = -28.27 \times 10^{-6}$		$\frac{-1230}{23.71\ (10^6)} = -51.88 \times 10^{-6}$
$C_2 = \frac{I_{x_o}}{K} = \frac{2157}{19.91(10^6)} = 108.3 \times 10^{-6}$		$\frac{2470}{23.71\ (10^6)} = 104.2 \times 10^{-6}$
$C_3 = \frac{I_{z_o}}{K} = \frac{9377}{19.91(10^6)} = 470.9 \times 10^{-6}$		$\frac{10210}{23.71\ (10^6)} = 430.6 \times 10^{-6}$

PREP. R.R.P. ON 5-23-49
CHKD. V.R.P. ON 5-19-49
REVISED R.A.S. 8-2-50

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

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REPORT NO. TC113-1
MODEL TC-122C NO. 1C

SUBJECT WING SECTION PROPERTIES STATION 182.35
DETERMINATION OF CONSTANTS
TENSION ON TOP

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ITEM	A_B	x	$A_B x$	z'	Δz	z	$A_B z^2$	I_p	I_o	α	β	ITEM
REF.			(2)×(3)			(5)+(6)	(2)×(7)	(3)−$\bar{x}$	(7)−$\bar{z}$	$\times 10^3$	$\times 10^3$	REF.
1	.331	-28.50	-9.43	6.85	.08	6.93	15.23	-35.80	4.71	-1.54	1.94	1
2	.528	-22.84	-12.07	9.39	.17	9.23	44.87	-30.24	6.78	-3.54	3.18	2
3	.653	-15.98	-10.43	10.72	.23	10.49	71.85	-23.28	8.05	-4.73	2.34	3
4	.693	- 8.98	-6.22	11.12	.22	10.90	82.55	-16.28	8.46	-5.32	1.55	4
a	6.967	0	0	10.64	.71	10.13	70.58	- 7.30	7.49	-3.15	0.52	a
5	.708	9.71	6.87	10.02	.21	9.81	68.95	+ 2.41	2.37	-2.34	-0.39	5
6	.653	16.63	10.86	9.16	.23	8.93	58.31	9.33	6.49	-5.01	-1.35	6
7	.653	23.56	15.38	8.12	.23	7.89	51.51	16.26	5.45	-4.56	-2.11	7
8	.653	30.45	19.88	7.00	.23	6.77	44.22	23.15	4.33	-4.06	-2.88	8
9	.653	37.35	24.39	5.75	.23	5.52	36.08	30.05	3.08	-3.46	-3.60	9
10	.515	44.20	22.76	4.39	.18	4.21	21.68	36.90	1.73	-2.82	-4.13	10
11	.326	49.01	15.98	3.41	.14	3.27	1.07	41.71	[illegible]	[illegible]	-4.86	11
11A												11A
o	.696	54.11	37.66	2.24	.51	1.73	1.20	46.81	-0.77	-3.48	-5.37	o
Σ UPPER	14.029		115.63				122.47					Σ UPPER
d	.699	53.40	36.65	-7.70	-.46	-7.24	- 5.06	46.10	-8.68	4.92	-4.90	d
12												12
13	.185	45.20	8.36	-8.07	-.23	-7.84	-1.45	37.90	-10.28	5.89	-3.95	13
14	.185	38.22	7.07	-8.22	-.23	-7.99	-1.48	30.92	-10.43	6.10	-3.18	14
15	.185	32.22	5.96	-8.28	-.23	-8.05	-1.49	24.92	-10.49	6.39	-2.43	15
16	.185	26.22	4.85	-8.33	-.23	-8.10	-1.50	18.92	-10.54	6.68	-1.71	16
17	.185	20.22	3.74	-8.22	-.23	-7.99	-1.48	12.92	-10.43	6.86	-1.05	17
18	.331	14.22	4.71	-8.07	-.38	-7.69	-2.55	6.92	-10.13	6.59	-0.37	18
19	.398	8.22	2.39	-7.62	-.30	-7.32	-2.19	0.92	- 9.38	7.03	+0.32	19
b	6.870	0	0	-7.17	-.72	-6.45	-44.31	-7.30	-8.68	5.60	1.22	b
20	.139	-8.19	- 1.14	-6.14	-.22	-5.92	-0.82	-15.49	-8.36	4.89	2.14	20
21	.139	-14.09	-1.96	-5.11	-.22	-4.89	-0.68	-21.39	-7.33	4.11	2.78	21
22	.139	-19.95	-2.77	-3.80	-.22	-3.58	-0.50	-27.25	-5.82	3.43	3.47	22
23	.222	-23.28	- 5.17	-2.87	-.07	-2.80	-0.62	-30.58	-5.24	2.02	3.73	23
24	.139	-26.70	- 3.99	-0.94	-.22	-0.72	-0.10	-34.00	-3.16	1.77	[illegible]	24
Σ LOWER	9.885		58.98				64.27					Σ LOWER
Σ TOTAL	23.914		174.53				58.30					Σ TOTAL

DETERMINATION OF ALLOWABLE STRESSES

TENSION ALLOWABLES

The allowable tensile stresses for all the sections used are tabulated on page 15 . In computing wing section properties, etc., no account was taken of the fact that all tension members are punched with rivet holes. These holes effectively reduce the allowable stress that the stringer can take. Hence, the following conservative assumptions are made:

(a) 15% of all stringer and rear spar cap areas are removed by rivets:

$$F_t \text{ allow.} = F_{tu}\,(1 - .15) = .85\,F_{tu}$$

(b) 10% of the front spar cap area is removed by rivet holes:

$$F_t \text{ allow.} = .90\,F_{tu}$$

(c) 15% of the front spar cap area is removed from station 184 to station 216 because of rivet holes and splice bolt holes:

$$F_t \text{ allow.} = .85\,F_{tu}$$

Therefore, for extruded stringers CDS 201, 207, 308, 401, 401M, 614, 608-2

$$F_t \text{ allow.} = 61\,000\,(.85) = 51\,900 \text{ psi}$$

For rolled sections CDS 501, 502, 501M, 502M

$$F_t \text{ allow.} = 68\,000\,(.85) = 57\,800 \text{ psi}$$

For extruded stringers CDS-608

$$F_t \text{ allow.} = 83\,000\,(.85) = 70\,500 \text{ psi}$$

For rear spar caps CDS-119, 120 (Center Section)

$$F_t \text{ allow.} = 61\,000\,(.85) = 51\,900$$

For rear spar cap CDS-118 (Outer Panel)

$$F_t \text{ allow.} = 61\,000\,(.85) = 51\,900 \text{ psi}$$

For front spar cap CDS-310

$$F_t \text{ allow.} = 68\,000\,(.90) = 61\,200 \text{ psi}$$

For front spar cap CDS-310 at stations 181.35 and 220:

$$F_t \text{ allow.} = 68\,000\,(.85) = 57\,800 \text{ psi}$$

SUBJECT DETERMINATION OF ALLOWABLE STRESSES

COMPRESSION ALLOWABLES

Rear Spar Cap

The rear spar caps are also supported by the wing skin, ribs, spar web and stiffeners. The trailing edge, however, is fairing and does not give complete support against the cap bending forward. Hence, the cap is considered to act as a column with a fixity coefficient, c = 2.00.

The rear spar cap is made from 24ST extrusion. Using the column formulas of ANC-5a, Table 3.21.

$$F_c = F_{co}\left[\frac{1 - .385\,(L'/\rho)}{\pi\sqrt{E/F_{co}}}\right]$$

$$F_{co} = F_{cy}\left[1 + \frac{F_{cy}}{200\,000}\right]$$

$F_{cy} = 41\,000$ Ref.Pg. 15

$$F_{co} = 41\,000\left[1 + \frac{41\,000}{200\,000}\right] = 49\,400 \text{ psi}$$

$$F_c = 49\,400 - 296\ L/\rho$$

SUBJECT DETERMINATION OF ALLOWABLE STRESSES

COMPRESSION ALLOWABLES

Rear Spar Cap

Upper Cap

Station	L*	ρ**	L/ρ	296 (L/ρ)	49 400-296(L/ρ)
48.75	14.75	.450	32.80	9 700	39 700
69.40	18.65	↕	41.40	12 300	37 100
125.40	18.65	↕	41.40	12 300	37 100
181.35	18.65	.450	41.40	12 300	37 100

Lower Cap

48.75	14.75	.444	33.20	9 800	39 600
69.40	18.65	↕	42.00	12 400	37 000
125.40	18.65	↕	42.00	12 400	37 000
181.35	18.65	.444	42.00	12 400	37 000

Upper and Lower Caps

Station	L*	ρ**	L/ρ	296 (L/ρ)	49 400-296(L/ρ)
220	20.00	.448	44.6	13 200	36 200
320	20.00	.392	51.0	15 100	34 300
400	21.00	.347	60.5	17 900	31 500
463	21.00	.312	67.3	19 900	29 500

* Reference Pg. 102

** Reference Pg.s 56 & 57

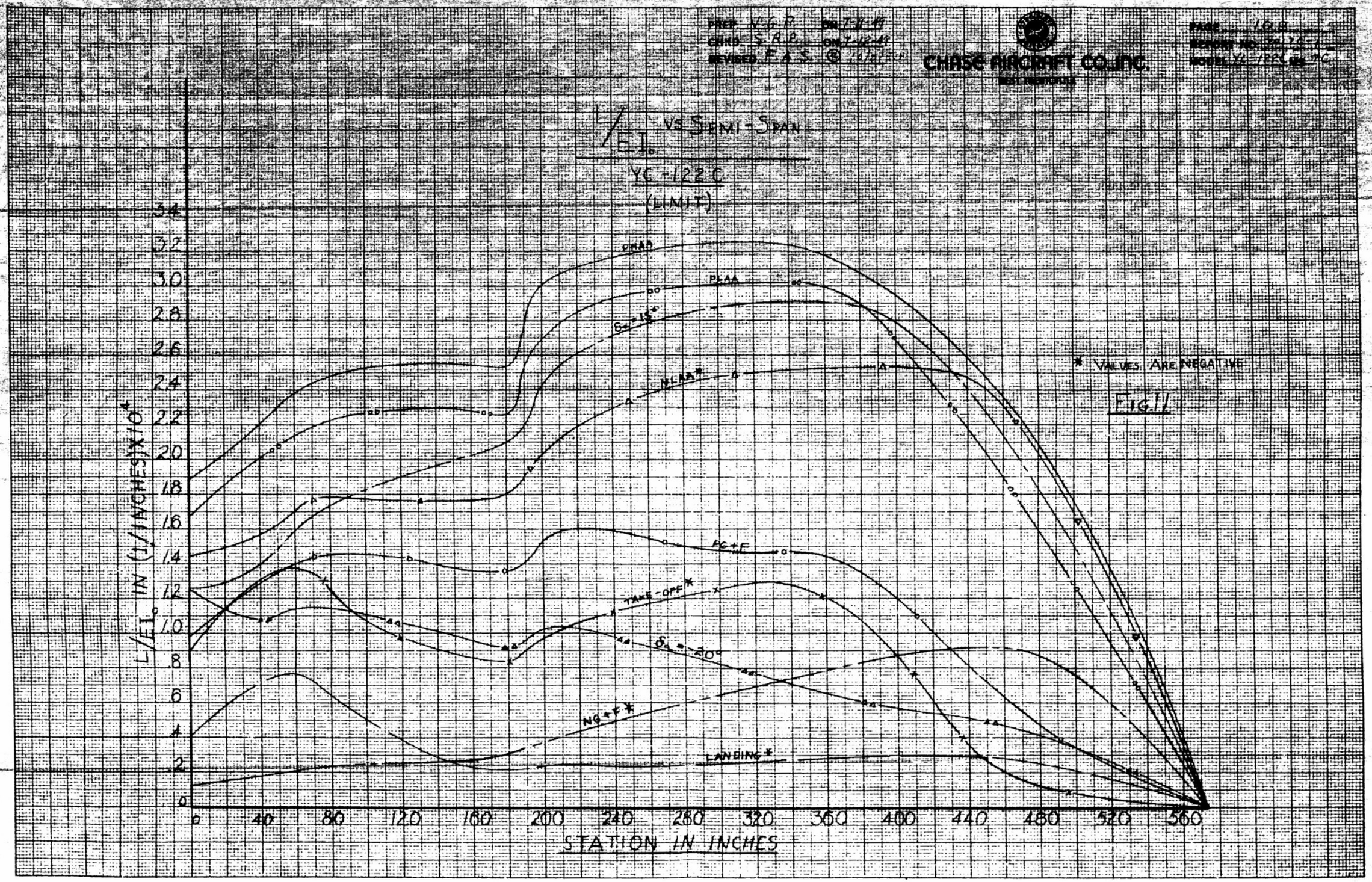
PREP. V.G.P. DATE 7-1-48
CHKD. S.R.P. DATE 7-6-48
REVISED E.A.S. @
CHASE AIRCRAFT CO. INC.
PAGE 10 B
REPORT NO. 7-1
MODEL YC-122C
L/EI₀ VS SEMI-SPAN
YC-122C
(LIMIT)
L/EI₀ IN (1/INCHES) X 10⁴
STATION IN INCHES
0
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
0
40
80
120
160
200
240
280
320
360
400
440
480
520
560
PNAD
PLAA
δe = 15°
NLAA*
PC+F
TAKE-OFF*
δe = -20°
NG+F*
LANDING*
* VALUES ARE NEGATIVE

FIG. 11

PREP. S.R.P. CHKD. V.G.P. REVISED F.A.S.

CHASE AIRCRAFT CO. INC.

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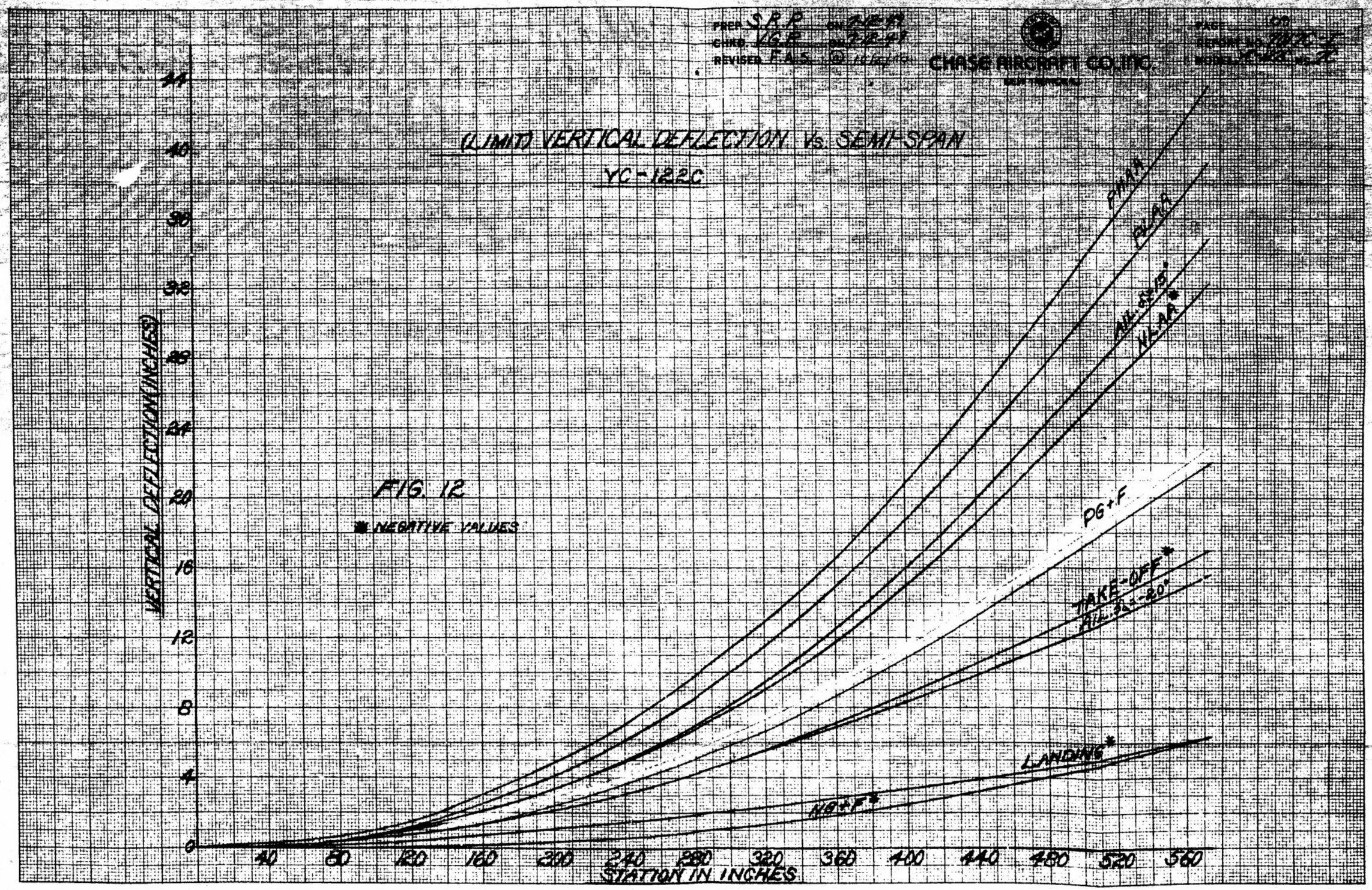

FIG. 12

* NEGATIVE VALUES

PREP. JP ON 7-11-49
CHKD. VOP ON 7-18-49
REVISED FAS 8-3-50

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

PAGE 111
REPORT NO. [illegible]
MODEL [illegible]

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 48.75

		CONDITION PHAA					CONDITION PLAA				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(13)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-
a	-60.0	-35.18	-1.82	-37.00	-369.8	.62	-32.07	-0.47	-32.54	-325.0	[illegible]
5	-57.0	-38.50	0.99	-37.51	-17.6	.52	-35.10	0.25	-34.85	-16.4	[illegible]
6	-57.0	-39.41	2.92	-36.49	-17.1	.56	-35.93	0.75	-35.18	-16.5	.62
7	-57.0	-39.51	4.80	-34.71	-16.3	.64	-36.02	1.23	-34.79	-16.3	[illegible]
8	-57.0	-39.11	6.68	-32.43	-15.2	.75	-35.66	1.72	-33.94	-15.9	[illegible]
9	-57.0	-38.40	8.53	-29.87	-14.0	.90	-35.01	2.19	-32.82	-15.4	[illegible]
10	-39.2	-37.60	10.38	-27.22	-9.9	.44	-34.28	8.67	-31.61	-11.5	[illegible]
11	-39.2	-36.29	11.95	-24.34	[illegible]	.61	-33.08	3.07	-30.01	-10.9	[illegible]
11a	-35.8	-34.98	13.58	-21.40	-3.0	.67	-31.89	3.49	-28.40	-9.9	[illegible]
a	-39.7	-31.75	15.01	-16.74	-11.0	A	-28.95	3.86	-25.09	-16.6	[illegible]
d	51.9	14.21	12.70	26.91	22.2	.93	12.96	3.26	16.22	13.4	[illegible]
12	51.9	22.38	9.85	32.23	19.4	.61	20.40	2.53	22.93	13.0	A
13	51.9	27.42	7.73	35.15	20.0	.48	25.00	1.99	26.99	15.4	[illegible]
14	51.9	32.05	5.60	37.65	20.5	.38	29.22	1.44	30.66	16.7	[illegible]
15	51.9	35.98	3.78	39.76	20.6	.30	32.80	0.97	33.77	17.5	.54
16	51.9	39.71	1.99	41.70	21.6	.24	36.21	0.51	36.72	19.1	.41
17	51.9	42.96	0.19	43.13	22.4	.20	39.15	0.05	39.20	20.4	.32
18	[illegible]	45.66	-1.57	44.09	24.6	[illegible]	41.63	-0.40	[illegible]	23.1	[illegible]
19	51.9	48.18	-3.31	45.07	26.3	.15	[illegible]	-0.85	[illegible]	[illegible]	.20
b	61.2	48.28	-5.55	42.73	285.3	.43	[illegible]	-1.43	42.59	264.6	[illegible]
20	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-

* L and N from page 37

α and β from section property table

Note: All values in thousands

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REVISED PAS 8-4-50

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 48.75

		CONDITION AILERON $\delta = 15^\circ$					CONDITION AILERON $\delta = -20^\circ$				
1	13	14	15	16	17	18	14	15	16	17	18
Item	P_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · 11	* · 12	14 + 15	2 · 16	13/16 - 1	* · 11	* · 12	14 + 15	2 · 16	13/16 - 1
1											
2											
3											
4											
a	-60.0	-22.54	-0.38	-22.92	-229.0	A	-17.0	-0.10	-17.1	-171.0	L
5	-57.0	-24.68	0.21	-24.47	-11.5	A	-18.6	0.06	-18.5	-8.7	L
6	-57.0	-25.26	0.61	-24.65	-11.6	A	-19.0	0.17	-18.8	-8.8	L
7	-57.0	-25.32	1.01	-24.31	-11.4	A	-19.0	0.28	-18.8	-8.8	L
8	-57.0	-25.06	1.40	-23.66	-11.1	A	-18.9	0.39	-18.5	-8.7	L
9	-57.0	-24.61	1.79	-22.82	-10.7	A	-18.5	0.49	-18.0	-8.5	L
10	-39.2	-24.09	2.18	-21.91	-8.0	.79	-18.1	0.60	-17.5	-6.4	A
11	-39.2	-23.26	2.51	-20.75	-7.6	.89	-17.5	0.69	-16.8	-6.1	A
11a	-35.8	-22.41	2.85	-19.56	-2.7	.83	-16.9	0.79	-16.1	-2.2	A
c	-39.7	-20.35	3.15	-17.20	-11.3	A	-15.3	0.87	-14.4	-9.5	A
d	51.9	9.11	2.67	11.78	9.7	L	6.8	0.74	7.6	6.3	L
12	51.9	14.34	2.07	16.41	9.9	L	10.8	0.57	11.4	6.9	L
13	51.9	17.57	1.62	19.19	10.9	A	13.2	0.45	13.6	7.8	L
14	51.9	20.54	1.18	21.72	11.8	A	15.4	0.32	15.7	8.6	L
15	51.9	23.06	0.79	23.85	12.4	A	17.4	0.22	17.6	9.1	A
16	51.9	25.45	0.42	25.87	13.4	A	19.1	0.11	19.2	10.0	A
17	51.9	27.52	0.04	27.56	14.3	.88	20.7	0.01	20.7	10.7	A
18	[illegible]	29.26	-0.33	28.93	16.2	.79	22.0	-0.09	21.9	12.3	A
19	51.9	31.01	-0.69	30.32	17.7	.71	23.3	-0.19	23.1	13.5	A
h	61.2	30.94	-1.16	29.78	199.0	A	23.3	-0.32	23.0	153.5	A
20											
21											
22											
23											
24											

* L and N from page 37, 38, 39 & 41
α and β from section property table

Note: All values in thousands

PREP. J.P. ON 7-13-49
CHKD. V.G.P. ON 7-19-49
REVISED F.A.S. 8-4-50 (a)

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 48.75

		CONDITION PG + F					CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	F_{all}	$L \cdot \alpha$	$N \cdot \beta$	f_{act}	P	M.S.	$L \cdot \alpha$	$N \cdot \beta$	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16)-1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16)-1
1											
2											
3											
4											
a	-60.0	-20.66	0.06	-20.60	-205.9	A					
5	-57.0	-22.61	- 0.03	-22.64	- 10.6	A					
6	-57.0	-23.15	- 0.09	-23.24	- 10.9	A					
7	-57.0	-23.20	- 0.16	-23.36	- 11.0	A					
8	-57.0	-22.97	- 0.22	-23.19	- 10.9	A					
9	-57.0	-22.56	- 0.28	-22.84	- 10.7	A					
10	-39.2	-22.08	- 0.34	-22.42	- 8.2	.75					
11	-39.2	-21.31	- 0.39	-21.70	- 7.9	.81					
11a	-35.8	-20.54	- 0.44	-20.98	- 2.9	.70					
c	-39.7	-18.65	- 0.49	-19.14	- 12.6	A					
d	51.9	8.35	- 0.41	7.94	6.5	L					
12	51.9	13.14	- 0.32	12.82	7.7	L					
13	51.9	16.10	- 0.25	15.85	9.0	L					
14	51.9	18.83	- 0.18	18.65	10.2	L					
15	51.9	21.13	- 0.12	21.01	10.9	L					
16	51.9	23.32	- 0.06	23.26	12.1	L					
17	51.9	25.22	-	25.22	13.1	L					
18	51.9	26.82	0.05	26.87	15.0	.95					
19	51.9	28.42	0.11	28.53	16.6	.85					
b	61.2	28.36	0.18	28.54	190.6	A					
20											
21											
22											
23											
24											

* L and N from page 38
α and β from section property table

Note: All values in thousands

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CHKD. VGP ON 7-19-49
REVISED FAS 8-4-50 ⓐ

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 48.75

		CONDITION LANDING					CONDITION NG & F				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L • α	N • β	f_{act}	P	M.S.	L • α	N • β	f_{act}	P	M.S.
	Pg.	* • (11)	* • (12)	(14) + (15)	(2) • (16)	(13)/(16)-1	* • (11)	* • (12)	(14) + (15)	(2) • (16)	(13)/(16)-1
1											
2											
3											
4											
5	61.2	9.99	0		101.0	L	2.37	0.28	2.65	26.[illegible]	L
5	70.5	10.22			7.2	L	2.42	-0.04	2.38	[illegible]	L
6	70.5	9.79			6.4	L	2.32	-0.25	2.07	1.4	L
7	70.5	9.13			6.0	L	2.16	-0.47	1.69	1.1	L
8	70.5	8.32			5.4	L	1.97	-0.70	1.27	.8	L
9	70.5	7.43		(14)	4.9	L	1.76	-0.90	0.86	.6	L
10	57.8	6.49			3.4	L	1.54	-1.11	0.43	.2	L
11	57.8	5.48		SAME AS COLUMN #	2.9	L	1.30	-1.30	0.0	0	L
11a	51.9	4.50			1.5	L	1.07	-1.49	-0.42	- .1	L
a	51.9	2.84			2.0	L	0.67	-1.66	-0.99	- .7	L
d	-39.6	-11.34			-7.8	L	-2.69	-1.51	-4.20	- 2.9	L
.50 12	-39.5	-6.4			-2.4	L	-1.53	-0.60	-2.13	- .8	L
.50 13	-39.5	-6.9			-2.6	L	-1.63	-0.50	-2.13	- .8	L
.50 14	-39.5	-7.3			-2.7	L	-1.73	-0.4	-2.13	- .8	L
.50 15	-39.5	-7.6			-2.8	L	-1.80	-0.3	-2.10	- .8	L
.50 16	-39.5	-7.9			-2.9	L	-1.87	-0.2	-2.07	- .8	L
.50 17	-39.5	-8.1			-3.0	L	-1.92	-0.1	-1.93	- .7	L
18	-35.8	-16.30			-5.4	A	-3.86	0.05	-3.81	- 1.3	L
19	-39.5	-16.56			-4.8	A	-3.92	0.24	-3.68	- 1.1	L
h	-60.0	-15.96	0		-106.0	L	-3.79	0.50	-3.29	-21.8	L
20											
21											
22											
23											
24											

* L and N from pages 38, 39

α and β from section property table

Note: All values in thousands

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REVISED FLS 8-6-50

CHASE AIRCRAFT CO., INC.
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MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 69.45

			PHAA CONDITION					PLAA CONDITION				
	(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
σ	Item	P_{all}	L · α	N · β	f_{act}	P ·	M.S.	L · α	N · β	f_{act}	P	M.S.
		Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
.08	1	-36.8	-1.36	-0.76	-2.12	-0.3	L	-1.25	-0.19	-1.44	-0.2	L
.21	2	-44.8	-5.68	-1.63	-7.31	-2.6	L	~~-5.20~~	-0.40	-5.60	-2.0	L
.35	3	-71.5	-11.95	-2.04	-14.00	-6.5	L	-10.90	-0.51	-11.41	-5.4	L
.50	4	-71.5	-19.21	-1.97	-21.18	-9.9	L	-17.60	-0.49	-18.09	-8.4	L
	a	-60.0	-40.22	-1.62	-41.84	-336.0	.43	-36.85	-0.40	-37.25	-299.0	.61
	5	-42.7	-42.48	0.86	-41.62	-19.5	.02	-38.92	0.21	-38.71	-18.2	.10
	6	-42.7	-42.29	2.59	-39.70	-18.6	.07	-38.75	0.64	-38.11	-17.9	.12
	7	-42.7	-41.16	4.24	-36.92	-17.3	.15	-37.71	1.05	-36.66	-17.2	.16
	8	-42.7	-39.66	5.92	-33.74	-15.8	.26	-36.33	1.47	-34.86	-16.3	.22
	9	-42.7	-37.68	7.57	-30.11	-14.1	.42	-34.52	1.88	-32.64	-15.3	.31
	10	-33.3	-35.70	9.19	-26.51	-9.6	.25	-32.71	2.28	-30.43	-11.1	.09
	11	-33.3	-33.35	10.62	-22.73	-8.3	.46	-30.55	2.63	-27.92	-10.2	.19
	11a	-29.5	-30.90	12.06	-18.84	-2.6	.56	-28.31	2.99	-25.32	-3.5	.16
	c	-37.1	-27.32	13.08	-14.24	-9.4	A	-25.03	3.24	-21.79	-14.4	.70
	d	51.9	18.09	11.40	29.49	23.5	.76	16.57	2.83	19.40	15.5	A
	12	51.9	24.11	9.24	33.35	19.2	.55	22.09	2.29	24.38	14.1	A
	13	51.9	28.26	7.37	35.63	20.3	.45	25.89	1.83	27.72	15.8	.87
	14	51.9	32.12	5.51	37.63	26.3	.37	29.43	1.37	30.80	21.5	.68
	15											
	16	51.9	37.77	2.34	40.11	27.0	.29	34.61	0.58	35.19	23.6	.47
	17	51.9	40.03	0.76	40.79	21.2	.27	36.68	0.19	36.87	19.1	.40
	18	51.9	41.82	-0.79	41.03	22.9	.26	38.32	-0.19	38.13	21.3	.36
	19	51.9	43.61	-2.34	41.27	24.7	.25	39.96	-0.58	39.38	23.0	.32
	b	61.2	42.48	-4.32	38.16	265.0	.60	38.92	-1.07	37.85	263.0	.61
.80	20	51.9	35.34	-5.16	30.18	11.5	.72	32.38	-1.28	31.10	11.8	.67
.45	21	51.9	19.16	-3.53	15.63	5.2	L	17.55	-0.88	16.67	5.6	L
.25	22	51.9	10.03	-2.30	7.73	2.6	L	9.19	-0.57	8.62	2.9	L
.10	23	51.9	3.61	-1.06	2.55	.9	L	3.31	-0.26	3.05	1.1	L
0	24	51.9										

* L and N from page 37
α and β from section property table

Note: All values in thousands

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CHKD VGP ON 7-21-49
REVISED WAS 8-6-50 ⓐ

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 69.45

			CONDITION AILERON $\delta = 15°$					CONDITION AILERON $\delta = -20°$				
	(2)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
$\bar{\sigma}$	Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
		Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
.08	1	-36.8	-0.93	-0.15	-1.1	-0.2	L	-0.64	-.04	-0.68	-0.1	L
.21	2	-44.8	-3.86	-0.33	-4.2	-1.5	L	-2.67	-0.1	-2.8	-1.0	L
.35	3	-71.5	-8.10	-0.40	-8.5	-4.0	L	-5.6	-0.1	-5.7	-2.7	L
.50	4	-71.5	-13.07	-0.40	-13.5	-6.3	L	-9.05	-0.10	-9.1	-4.3	L
	a	-60.0	-27.37	-0.33	-27.7	-222.0	A	-18.96	-0.08	-19.0	-153.0	L
	5	-42.7	-28.91	0.18	-28.7	-13.5	.49	-20.02	0.04	-20.0	-9.4	A
	6	-42.7	-28.78	0.53	-28.3	-13.3	.51	-19.93	0.13	-19.8	-9.3	A
	7	-42.7	-28.01	0.87	-27.1	-12.7	.57	-19.40	0.22	-19.2	-9.0	A
	8	-42.7	-26.99	1.21	-25.8	-12.1	.65	-18.69	0.30	-18.4	-8.6	A
	9	-42.7	-25.64	1.55	-24.1	-11.3	.77	-17.76	0.39	-17.4	-8.2	A
	10	-33.3	-24.29	1.88	-22.4	-8.2	.48	-16.83	0.47	-16.4	-6.0	A
	11	-33.3	-22.69	2.17	-20.5	-7.5	.62	-15.72	0.54	-15.2	-5.5	A
	11a	-29.5	-21.02	2.47	-18.5	-2.6	.59	-14.56	0.62	-13.9	-1.9	A
	a	-37.1	-18.59	2.68	-15.9	-10.5	A	-12.88	0.67	-12.2	-8.0	L
	d	51.9	12.31	2.33	14.6	11.6	L	8.52	0.58	9.1	7.2	L
	12	51.9	16.41	1.89	18.3	10.6	A	11.37	0.47	11.8	6.8	L
	13	51.9	19.23	1.51	20.7	11.8	A	13.32	0.38	13.7	7.8	L
	14	51.9	21.86	1.13	23.0	16.0	A	15.14	0.28	15.4	10.7	L
	15											
	16	51.9	25.70	0.48	26.2	17.6	.97	17.80	0.12	17.9	12.0	A
	17	51.9	27.24	0.16	27.4	14.2	[illegible]	18.87	0.04	18.9	9.8	A
	18	[illegible]	28.46	-0.16	28.3	15.8	[illegible]	19.71	-0.04	19.7	11.0	A
	19	51.9	29.68	-0.48	29.2	17.0	.77	20.56	-0.12	20.4	11.9	A
	b	61.2	28.91	-0.88	28.0	195.0	A	20.02	-0.22	19.8	138.0	L
.80	20	51.9	24.05	-1.05	23.0	8.8	A	16.66	-0.26	16.4	6.2	L
.45	21	51.9	13.04	-0.72	12.3	4.1	L	9.03	-0.18	8.8	2.9	L
.25	22	51.9	6.83	-0.47	6.4	2.1	L	4.73	-0.12	4.6	1.6	L
.10	23	51.9	2.45	-0.22	2.2	0.8	L	1.7	-.05	1.7	0.6	L
0	24	51.9										

* L and N from page 41
α and β from section property table

Note: All values in thousands

PREP. JP ON 7-13-49
CHKD. VGP ON 7-21-49
REVISED FAS 8-6-50 ⓐ

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 69.45

			CONDITION		PG + F			CONDITION				
	(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
	Item	F_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
		Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
.08	1	-36.8	- 0.8	0	- 0.8	- 0.1	L					
.21	2	-44.8	- 3.32	-0.1	- 3.42	- 1.2	L					
.35	3	-71.5	- 7.0	-0.1	- 7.1	- 3.3	L					
.50	4	-71.5	-11.24	-0.1	-11.34	- 5.3	L					
	a	-60.0	-23.53	-0.07	-23.60	-189.5	A					
	5	-42.7	-24.85	0.04	-24.81	-11.6	.72					
	6	-42.7	-24.74	0.11	-24.63	-11.6	.73					
	7	-42.7	-24.08	0.18	-23.90	-11.2	.78					
	8	-42.7	-23.20	0.26	-22.94	-10.8	.86					
	9	-42.7	-22.04	0.33	-21.71	-10.2	.96					
	10	-33.3	-20.88	0.40	-20.48	- 7.5	.62					
	11	-33.3	-19.51	0.46	-19.05	- 6.9	.74					
	11a	-29.5	-18.07	0.52	-17.55	- 2.4	.68					
	c	-37.1	-15.98	0.57	-15.41	- 10.2	A					
	d	51.9	10.58	0.49	11.07	8.8	L					
	12	51.9	14.81	0.40	14.51	8.4	L					
	13	51.9	16.53	0.32	16.85	9.6	L					
	14	51.9	18.79	0.24	19.03	13.3	A					
	15											
	16	51.9	22.10	0.10	22.20	14.9	A					
	17	51.9	23.42	0.03	23.45	12.2	A					
	18	51.9	24.46	-0.03	24.43	13.7	A					
	19	51.9	25.51	-0.10	25.41	14.8	A					
	b	61.2	24.85	-0.19	24.66	171.5	A					
.80	20	51.9	20.67	-0.22	20.45	8.0	A					
.45	21	51.9	11.21	-0.15	11.06	3.7	L					
.25	22	51.9	5.87	-0.10	5.77	1.9	L					
.10	23	51.9	2.11	-0.04	2.07	0.7	L					
0	24	51.9										

* L and N from page 38
α and β from section property table

Note: All values in thousands

PREP. JP ON 7-13-49
CHKD. VOP ON 7-21-49
REVISED FAS 8-7-50 (a)

CHASE AIRCRAFT CO., INC.
WEST TRENTON N.J.

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MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 69.45

			CONDITION NLAA					CONDITION TO				
	(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
	Item	F_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
		Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
.08	1	51.9	1.08	-0.24	0.8	.3	L	0.8	0		.3	L
.21	2	57.8	4.0	-0.5	3.5	1.9	L	3.1			1.6	L
.35	3	70.5	8.0	-0.7	7.3	4.7	L	6.1			3.9	L
.50	4	70.5	12.3	-0.7	11.6	8.0	L	9.5			6.6	L
	a	61.2	24.29	-0.68	23.3	190.2	A	18.5			150.9	L
	5	70.5	24.29	0.10	24.4	17.3	A	18.68			13.22	L
	6	70.5	22.89	0.64	23.5	15.4	A	17.6			11.5	L
	7	70.5	20.97	1.18	22.1	13.7	L	16.1			10.5	L
	8	70.5	18.82	1.72	20.5	13.4	L	14.5			9.5	L
	9	70.5	16.38	2.25	18.6	12.2	L	12.6			8.2	L
	10	57.8	13.89	2.77	16.7	8.9	L	10.7		SAME AS COLUMN (14)	5.7	L
	11	57.8	11.33	3.24	14.6	7.6	L	8.7			4.5	L
	11a	51.9	8.77	3.71	12.5	3.8	L	6.7			2.0	L
	c	51.9	5.29	4.05	9.3	6.5	L	4.1			2.8	L
	d	-37.0	-25.40	3.84	-22.3	-15.4	.71	-19.3			-13.3	.91
.50	12	-34.8	-13.88	1.5	-12.4	- 4.6	A	-10.7			4.0	L
.50	13	-34.8	-14.73	1.2	-13.5	-5.0	A	-11.3			- 4.2	L
.50	14	-34.8	-15.37	1.0	-14.4	-5.3	A	-12.5			- 4.4	A
.50	15	-34.8										
.50	16	-34.8	-16.32	0.4	-15.9	-5.9	A	-12.5			- 4.6	A
.50	17	-34.8	-16.65	0.2	-16.5	-6.1	A	-12.8			- 4.7	A
	18	-37.2	-33.18	0	-33.1	-11.0	.11	-25.5			- 8.4	.44
	19	-34.8	-33.70	-0.48	-34.1	-9.9	.01	-25.9			- 7.5	.34
	b	-60.0	-31.78	-1.12	-32.9	-226.0	.80	-24.5			-168.3	A
.80	20	-36.8	-24.91	-1.4	-26.3	-3.6	.38	-19.2			- 2.1	.90
.45	21	-36.8	-13.13	-1.00	-14.1	-1.9	A	-10.1			- 1.4	L
.25	22	-36.8	- 6.8	-0.7	- 7.3	-1.0	L	- 5.1			- .7	L
.10	23	-31.5	- 2.3	-0.3	-2.6	-0.8	L	- 1.8	0		- .4	L
0	24	-36.8										

* L and N from page 38 - 39
α and β from section property table

Note: All values in thousands

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CHASE AIRCRAFT CO., INC.
WEST TREMONT, N.J.

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 69.45

			CONDITION LANDING					CONDITION NG + F				
	(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
	Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
		Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
.08	1	51.9	0.4	0		0.1	L	0.1	0.1	0.2	0.1	L
.21	2	57.8	1.6			0.8		0.5	0.2	0.7	.4	
.35	3	70.5	3.2			2.2		1.0	0.2	1.2	.8	
.50	4	70.5	5.0			3.4		1.5	0.2	1.7	1.2	
	a	61.2	9.75			79.5		3.01	0.23	3.24	26.4	
	5	70.5	9.86			7.0		3.05	- 0.03	3.02	2.1	
	6	70.5	9.30			6.1		2.87	- 0.21	2.66	1.7	
	7	70.5	8.52			5.6		2.62	- 0.39	2.23	1.4	
	8	70.5	7.65			5.1		2.37	- 0.57	1.80	1.1	
	9	70.5	6.66			4.4		2.06	- 0.75	1.31	.8	
	10	57.8	5.64			3.0		1.74	- 0.92	0.82	.4	
	11	57.8	4.60			2.4		1.42	- 1.08	.34	.2	
	11a	51.9	3.56			1.1		1.10	- 1.24	- .14	- .1	
	c	51.9	2.14			1.5		0.66	- 1.35	- .69	- .5	
	d	-37.0	-10.17			- 7.1		- 3.15	- 1.25	- 4.40	- 3.0	
.50	12	-34.8	- 5.64			- 2.1		- 1.75	- 0.5	- 2.25	- .8	
.50	13	-34.8	- 5.99			- 2.2		- 1.8	- 0.4	-2.25	- .8	
.50	14	-34.8	- 6.24			- 2.3		- 1.8	- 0.4	- 2.38	- .8	
.50	15	-34.8				—		—	—	—	—	
.50	16	-34.8	- 6.63			- 2.5		- 2.0	- 0.1	- 2.15	- .8	
.50	17	-34.8	- 6.76			- 2.5	L	- 2.0	- 0.1	- 2.19	- .8	
	18	-37.2	-13.48			- 4.5	L	- 4.17	0	- 4.17	- 1.3	
	19	-34.8	-13.69			- 4.0	L	- 4.23	+ .16	- 4.07	- 0.1	
	b	-60.0	-12.91			-88.7	L	- 3.94	0.37	- 3.57	-24.1	
.80	20	-36.8	-10.12			- 1.4		- 3.0	0.5	- 2.45	- .4	
.45	21	-36.8	- 5.3			- .7		- 1.6	0.3	- 1.4	- .2	
.25	22	-36.8	- 2.7			- .4		- 0.8	0.2	- 0.6	-0.1	
.10	23	-31.5	- 0.9	0		- .2	L	- 0.3	0.1	- 0.2	-0	L
0	24	-36.8										

SAME AS COLUMN No. (14)

* L and N from page 38 - 39
α and β from section property table

Note: All values in thousands

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REVISED PAS 8-8-50 ⓐ

CHASE AIRCRAFT CO., INC.
WEST TRENTON N.J.

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MODEL YC-122C MS- 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 125.40

		PHAA CONDITION					PLAA CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16)-1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16)-1
1	-36.8	-14.90	-6.30	-21.2	-2.9	.73	-13.4	-1.4	-14.8	-2.1	A
2	-44.8	-26.37	-4.98	-31.4	-11.4	.43	-23.7	-1.1	-24.8	-9.0	.80
3	-71.5	-33.70	-3.58	-37.3	-17.5	.92	-30.3	-0.8	-31.1	-14.6	A
4	-71.5	-38.01	-2.24	-40.2	-18.9	.78	-34.1	-0.5	-34.6	-16.2	A
4	-60.0	-39.15	-0.63	-39.8	-295.0	.51	-35.2	-0.1	-35.3	-262.0	.70
5	-42.7	-41.11	1.14	-40.0	-18.8	.07	-36.9	0.3	-36.6	-17.2	.17
6	-42.7	-40.29	2.34	-38.0	-17.8	.12	-36.2	0.5	-35.7	-16.7	.20
7	-42.7	-38.99	3.52	-35.5	-16.6	.20	-35.0	0.8	-34.2	-16.0	.25
8	-42.7	-37.04	4.69	-32.4	-15.2	.32	-33.3	1.1	-32.2	-15.1	.33
9	-42.7	-34.76	5.85	-28.9	-13.6	.48	-31.2	1.3	-29.9	-14.0	.43
10	-33.3	-32.23	6.99	-25.2	-9.2	.32	-29.0	1.6	-27.4	-10.0	.22
11	-33.3	-29.55	7.98	-21.6	-7.9	.54	-26.5	1.8	-24.7	-9.0	.35
11a	-	-	-	-	-	-	-	-	-	-	-
c	-37.1	-24.42	9.16	-15.3	-10.1	A	-21.9	2.1	-19.8	-13.0	.87
d	51.9	17.17	7.98	25.2	17.9	A	15.4	1.8	17.2	12.2	L
12	51.9	21.16	7.07	28.2	13.8	.84	19.0	1.6	20.6	10.1	A
13	51.9	25.15	5.75	30.9	17.6	.68	22.6	1.3	23.9	13.6	A
14	51.9	28.65	4.43	33.1	19.0	.56	25.7	1.0	26.7	14.6	.94
15	51.9	31.34	3.29	34.6	18.0	.50	28.1	0.8	28.9	15.0	.79
16	51.9	33.86	2.19	36.0	18.7	.44	30.4	0.5	30.9	16.0	.67
17	51.9	36.06	1.06	37.1	19.3	.40	32.4	0.2	32.6	16.9	.59
18	51.9	37.61	-.04	37.6	21.0	.38	33.8	-0.0	33.8	18.9	.53
19	51.9	39.23	-1.12	38.1	22.2	.36	35.2	-0.2	35.0	20.4	.48
h	61.2	37.44	-2.54	34.9	243.0	.75	33.6	-0.6	33.0	230.0	.85
20	51.9	39.15	-4.02	35.1	13.4	.48	35.2	-0.9	34.3	13.1	.52
21	51.9	37.28	-5.02	32.3	10.7	.61	33.5	-1.2	32.3	10.7	.61
22	51.9	34.19	-5.97	28.2	8.6	.84	30.7	-1.4	29.3	8.9	.77
23	51.9	30.8	-6.7	24.1	8.0	A	27.7	-1.5	26.2	8.6	.98
24	51.9	24.6	-7.5	17.1	5.3	L	22.1	-1.7	20.4	6.3	A

* L and N from page 37

α and β from section property table

Note: All values in thousands

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CHKD VGP ON 7-22-49
REVISED PAS 8-8-50

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WEST TRENTON, N.J.

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 125.40

		CONDITION AILERON = 15°					CONDITION AILERON = -20°				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	F_{all}	L • α	N • β	f_{act}	P	M.S.	L • α	N • β	f_{act}	P	M.S.
	Pg.	* • (11)	* • (12)	(14) + (15)	(2) • (16)	(13)/(16) - 1	* • (11)	* • (12)	(14) + (15)	(2) • (16)	(13)/(16) - 1
1	-36.8	-11.29	-1.25	-12.5	-1.7	A	-6.07	-0.22	-6.3	-.9	L
2	-44.8	-19.99	-0.99	-21.0	-7.6	A	-10.76	-0.18	-10.9	-4.0	L
3	-71.5	-25.54	-0.71	-26.2	-12.3	A	-13.74	-0.13	-13.9	-6.5	L
4	-71.5	-28.81	-0.44	-29.2	-13.7	A	-15.50	-0.08	-15.6	-7.3	L
a	-60.0	-29.68	-0.12	-29.80	-221.0	A	-15.97	-0.02	-15.99	-119.0	L
5	-42.7	-31.16	0.22	-30.94	-14.5	.38	-16.77	0.04	-16.73	-7.8	A
6	-42.7	-30.54	0.46	-30.08	-14.1	.42	-16.43	0.08	-16.35	-7.7	A
7	-42.7	-29.55	0.70	-28.85	-13.5	.48	-15.90	0.12	-15.78	-7.4	A
8	-42.7	-28.07	0.93	-27.14	-12.7	.57	-15.10	0.17	-14.93	-7.0	A
9	-42.7	-26.34	1.16	-25.18	-11.8	.70	-14.18	0.21	-13.97	-6.6	L
10	-33.3	-24.43	1.38	-23.05	-8.4	.44	-13.15	0.25	-12.90	-4.7	A
11	-33.3	-22.40	1.58	-20.82	-7.6	.60	-12.05	0.28	-11.77	-4.3	A
11a											
c	-37.1	-18.51	1.81	-16.70	-11.0	A	-9.96	0.32	-9.64	-6.4	L
d	51.9	13.02	1.58	14.60	10.4	L	7.00	0.28	7.28	5.2	L
12	51.9	16.04	1.40	17.44	8.5	A	8.63	0.25	8.88	4.3	L
13	51.9	19.06	1.14	20.20	11.5	A	10.26	0.20	10.46	6.0	L
14	51.9	21.72	0.88	22.60	12.3	A	11.69	0.16	11.85	6.5	L
15	51.9	23.75	0.65	24.40	12.7	A	12.78	0.12	12.90	6.7	L
16	51.9	25.67	0.43	26.10	13.5	.98	13.81	0.08	13.89	7.2	L
17	51.9	27.33	0.21	27.54	14.3	.88	14.71	0.04	14.75	7.7	L
18	51.9	28.50	.01	28.51	15.9	.84	15.34	0	15.34	8.6	L
19	51.9	29.74	-0.22	29.52	17.2	.76	16.00	-0.04	15.96	9.3	L
b	61.2	28.38	-0.50	27.88	194.0	A	15.27	-0.09	15.18	106.0	L
20	51.9	29.68	-0.79	28.89	11.0	.80	15.97	-0.14	15.83	6.0	L
21	51.9	28.26	-0.99	27.27	9.0	.90	15.20	-0.18	15.02	5.0	L
22	51.9	25.91	-1.18	24.73	7.5	A	13.94	-0.21	13.73	4.2	L
23	51.9	23.38	-1.33	22.05	7.3	A	12.58	-0.24	12.34	4.1	L
24	51.9	18.69	-1.49	17.20	5.3	L	10.06	-0.27	9.79	3.0	L

Note: All values in thousands

* L and N from page 41
α and β from section property table

PREP. JP ON 7-13-40
CHKD. JGP ON 7-22-49
REVISED PAS 8-8-50 (a)

CHASE AIRCRAFT CO. INC.
WEST TRENTON N.J.

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 125.40

		CONDITION PG +F					CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	F_{all}	L • α	N • β	f_{act}	P	M.S.	L • α	N • β	f_{act}	P	M.S.
	Pg.	* • (11)	* • (12)	(14) + (15)	(2) • (16)	(13)/(16) - 1	* • (11)	* • (12)	(14) + (15)	(2) • (16)	(13)/(16) - 1
1	- 36.8	- 8.4	- 0.4	- 8.8	- 1.2	L					
2	- 44.8	-14.9	- 0.3	-15.2	- 5.5	A					
3	- 71.5	-19.0	- 0.3	-19.9	- 9.3	L					
4	- 71.5	-21.4	- 0.2	-21.3	-10.0	L					
a	- 60.0	-22.1	- 0.0	-22.1	-163.8	A					
5	- 42.7	-23.2	0.1	-23.1	-10.8	.84					
6	- 42.7	-22.7	0.2	-23.5	-11.0	.81					
7	- 42.7	-22.0	0.2	-21.8	-10.2	.95					
8	- 42.7	-20.9	0.3	-20.6	- 9.7	A					
9	- 42.7	-19.6	0.4	-19.2	- 9.0	A					
10	- 33.3	-18.2	0.5	-17.7	- 6.4	.88					
11	- 33.3	-16.7	0.6	-16.1	- 5.9	A					
11a											
c	- 37.1	-13.8	0.6	-13.2	- 8.7	A					
d	51.9	9.7	0.6	10.3	7.3	L					
12	51.9	11.9	0.5	12.4	6.1	L					
13	51.9	14.2	0.4	14.6	8.3	L					
14	51.9	16.2	0.3	16.5	9.0	L					
15	51.9	17.7	0.2	17.9	9.3	A					
16	51.9	19.1	0.2	19.3	10.0	A					
17	51.9	20.3	0.1	20.4	10.6	A					
18	51.9	21.2	0	21.2	11.9	A					
19	51.9	22.1	- 0.1	22.0	12.8	A					
b	61.2	21.1	- 0.2	20.9	145.4	A					
20	51.9	22.1	- 0.3	21.8	8.3	A					
21	51.9	21.0	- 0.4	20.6	7.8	A					
22	51.9	19.3	- 0.4	18.9	5.8	A					
23	51.9	17.4	- 0.5	16.9	5.6	A					
24	51.9	13.9	- 0.5	13.4	4.2	L					

* L and N from page 38
α and β from section property table

Note: All values in thousands

PREP JP ON 7-11-49
CHKD. SRP ON 7-15-49
REVISED PAS 8-8-50

CHASE AIRCRAFT CO., INC.

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MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 181.35

		PHAA CONDITION					PLAA CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	P_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1	-36.8	-10.95	-5.36	-16.3	-2.3	A	-9.76	-1.15	-10.9	-1.5	A
2	-44.8	-23.47	-4.25	-27.7	-10.1	.62	-20.92	-0.91	-21.8	-7.9	A
3	-71.5	-31.17	-3.04	-34.2	-16.0	A	-27.79	-0.65	-28.4	-13.3	A
4	-71.5	-35.43	-1.88	-37.3	-17.5	.91	-31.58	-0.40	-32.0	-15.0	A
a	-60.0	-35.99	-0.51	-36.5	-250.0	.64	-32.08	-0.11	-32.2	-220.0	.86
5	-42.7	-37.81	1.00	-36.8	-17.3	.16	-33.70	0.21	-33.5	-15.7	.27
6	-42.7	-36.75	2.04	-34.7	-16.3	.23	-32.75	0.44	-32.3	-15.1	.32
7	-42.7	-35.06	3.06	-32.0	-15.0	.33	-31.25	0.65	-30.6	-14.3	.39
8	-42.7	-32.93	4.06	-28.8	-13.5	.48	-29.35	0.87	-28.5	-13.4	.50
9	-42.7	-30.30	5.06	-25.2	-11.8	.69	-27.01	1.08	-25.9	-12.1	.65
10	-33.3	-27.48	6.05	-21.4	-7.8	.55	-24.50	1.29	-23.2	-8.4	.43
11	-27.9	-25.23	6.73	-18.5	-3.4	.51	-22.49	1.44	-21.0	-3.8	.32
11a	-	-	-	-	-	-	-	-	-	-	-
e	-37.1	-21.10	7.42	-13.7	-9.0	A	-18.80	1.59	-17.2	-11.3	A
d	51.9	16.40	6.54	22.9	18.4	A	14.62	1.40	16.0	12.8	L
12	-	-	-	-	-	-	-	-	-	-	-
13	51.9	21.91	5.18	27.1	15.8	.91	19.53	1.11	20.6	12.0	A
14	51.9	25.16	4.04	29.2	15.9	.88	22.43	0.86	23.3	12.7	A
15	51.9	27.61	3.09	30.7	15.9	.69	24.61	0.66	25.3	13.1	A
16	51.9	30.05	2.12	32.2	16.7	.61	26.78	0.45	27.2	14.1	.91
17	51.9	31.80	1.17	33.0	17.1	.57	28.35	0.25	28.6	14.8	.82
18	51.9	33.18	0.23	33.4	18.7	.55	29.57	0.05	29.6	16.5	.75
19	51.9	34.68	-0.72	34.0	19.8	.53	30.91	-0.15	30.7	17.9	.69
b	57.8	32.61	-1.93	30.7	213.0	.88	29.07	-0.41	28.7	200.0	A
20	51.9	34.05	-3.20	30.8	11.7	.68	30.36	-0.68	29.7	11.3	.75
21	51.9	31.93	-4.06	27.8	9.2	.86	28.46	-0.87	27.6	9.1	.88
22	51.9	28.54	-4.89	23.6	6.5	A	25.44	-1.04	24.4	6.7	A
23	51.9	26.17	-5.34	20.9	6.4	A	23.32	-1.14	22.2	6.7	A
24	51.9	19.97	-6.03	14.0	4.5	L	17.80	-1.29	16.5	5.3	L

* L and N from page 37
α and β from section property table

Note: All values in thousands

PREP. JP ON 7-11-49
CHKD. SRP ON 7-15-49
REVISED FRS 8-8-50

REPORT NO. 7017C-I
MODEL YC-122C MS 70

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 181.35

		CONDITION AILERON $\delta = 15^\circ$					CONDITION AILERON $\delta = -20^\circ$				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	P_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1	-36.8	-8.96	-0.96	-9.9	-1.4	L	-3.94	-0.07	-4.0	-0.5	L
2	-44.8	-19.20	-0.76	-20.0	-7.3	A	-8.44	-0.06	-8.5	-3.1	L
3	-71.5	-25.50	-0.55	-26.0	-12.2	A	-11.20	-0.04	-11.2	-5.2	L
4	-60.0	-28.98	-0.34	-29.3	-13.7	A	-12.73	-0.03	-12.7	-5.9	L
a	-42.7	-29.44	-0.09	-29.5	-202.0	.45	-12.94	-0.01	-12.9	-88.3	L
5	-42.7	-30.92	0.18	-30.7	-14.4	.39	-13.59	0.01	-13.6	-6.4	L
6	-42.7	-30.05	0.37	-29.7	-13.9	.44	-13.21	0.03	-13.2	-6.2	L
7	-42.7	-28.67	0.55	-28.2	-13.2	.51	-12.60	0.04	-12.6	-5.9	
8	-42.7	-26.93	0.73	-26.2	-12.3	.63	-11.83	0.06	-11.7	-5.5	
9	-42.7	-24.78	0.91	-23.9	-11.2	.79	-10.89	0.07	-10.8	-5.1	
10	-33.3	-22.48	1.08	-22.4	-8.1	.48	-9.88	0.08	-9.8	-3.6	
11	-27.9	-20.63	1.21	-19.4	-3.5	.44	-9.07	0.09	-9.0	-1.6	
11a	-	-	-	-	-	-	-	-	-	-	
a	-37.1	-17.25	1.33	-15.9	-10.5	A	-7.58	0.10	-7.5	-4.9	L
d	51.9	13.41	1.17	13.6	10.9	L	5.89	0.09	6.0	4.8	L
12	-	-	-	-	-	-	-	-	-	-	-
13	51.9	17.92	0.93	18.8	11.0	A	7.87	0.07	7.9	4.6	L
14	51.9	20.58	0.72	21.3	11.6	A	9.04	0.05	9.1	4.9	
15	51.9	22.58	0.55	23.1	12.0	A	9.92	0.04	9.9	5.1	
16	51.9	24.58	0.38	25.0	13.0	A	10.80	0.03	10.8	5.6	
17	51.9	26.01	0.21	26.2	13.6	.98	11.43	0.02	11.4	5.9	
18	[illegible]	27.14	0.04	27.2	15.2	[illegible]	11.92	—	11.9	6.6	
19	51.9	28.36	-0.13	28.2	16.4	.84	12.46	-0.01	12.5	7.3	
b	57.8	26.67	-0.34	26.3	183.0	A	11.72	-0.03	11.7	81.4	
20	51.9	27.85	-0.57	27.3	10.4	.90	12.24	-0.04	12.2	4.6	
21	51.9	26.11	-0.73	25.4	8.4	A	11.47	-0.06	11.4	3.8	
22	51.9	23.35	-0.88	22.4	6.2	A	10.26	-0.07	10.2	2.8	
23	51.9	21.40	-0.96	20.4	6.2	A	9.40	-0.07	9.3	2.8	
24	51.9	16.33	-1.08	15.2	4.8	L	7.18	-0.08	7.1	2.3	L

Note: All values in thousands

* L and N from page 41
α and β from section property table

PREP. JP ON 7-11-49
CHKD. SRP ON 7-15-49
REVISED FAS 8-8-50 @

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

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MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 181.35

		CONDITION PG + F					CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	F_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1	-36.8	- 5.90	-0.55	- 6.5	- 0.9	L					
2	-44.8	-12.64	-0.44	-13.1	- 4.8	L					
3	-71.5	-16.78	-0.31	-17.1	- 8.0	L					
4	-60.0	-19.07	-0.19	-19.3	- 9.0	L					
a	-42.7	-19.38	-0.05	-19.4	-133.0	A					
5	-42.7	-20.35	0.10	-20.3	- 9.5	A					
6	-42.7	-19.78	0.21	-19.6	- 9.2	A					
7	-42.7	-18.87	0.31	-18.6	- 8.7	A					
8	-42.7	-17.73	0.42	-17.3	- 8.1	A					
9	-42.7	-16.31	0.52	-15.8	- 7.4	A					
10	-33.3	-14.79	0.62	-14.2	- 5.2	A					
11	-27.9	-13.58	0.70	-12.9	- 2.3	A					
11a											
c	-37.1	-11.36	0.77	-10.6	- 7.0	L					
d	51.9	8.83	0.68	9.5	7.6	L					
12											
13	51.9	11.80	0.53	12.3	7.2	L					
14	51.9	13.55	0.42	14.0	7.6						
15	51.9	14.86	0.32	15.2	7.9						
16	51.9	16.18	0.22	16.4	8.5						
17	51.9	17.12	0.12	17.2	8.9	L					
18	51.9	17.86	0.02	17.9	10.0	A					
19	51.9	18.64	-0.07	18.6	10.8	A					
b	57.8	17.56	-0.20	17.4	120.7	L					
20	51.9	18.33	-0.33	18.0	6.9	A					
21	51.9	17.19	-0.42	16.8	5.6	L					
22	51.9	15.37	-0.50	16.9	4.6						
23	51.9	14.08	-0.55	13.5	4.1						
24	51.9	10.75	-0.62	10.1	3.2	L					

* L and N from page 38
α and β from section property table

Note: All values in thousands

PREP. JP ON 7-11-49
CHKD. SRP ON 7-15-49
REVISED PAS 8-8-50 (a)

CHASE AIRCRAFT CO., INC.
WEST TRENTON N.J.

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MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 181.35

		CONDITION PG + F					CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	F_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1	-36.8	- 5.90	-0.55	- 6.5	- 0.9	L					
2	-44.8	-12.64	-0.44	-13.1	- 4.8	L					
3	-71.5	-16.78	-0.31	-17.1	- 8.0	L					
4	-60.0	-19.07	-0.19	-19.3	- 9.0	L					
a	-42.7	-19.38	-0.05	-19.4	-133.0	A					
5	-42.7	-20.35	0.10	-20.3	- 9.5	A					
6	-42.7	-19.78	0.21	-19.6	- 9.2	A					
7	-42.7	-18.87	0.31	-18.6	- 8.7	A					
8	-42.7	-17.73	0.42	-17.3	- 8.1	A					
9	-42.7	-16.31	0.52	-15.8	- 7.4	A					
10	-33.3	-14.79	0.62	-14.2	- 5.2	A					
11	-27.9	-13.58	0.70	-12.9	- 2.3	A					
11a											
c	-37.1	-11.36	0.77	-10.6	- 7.0	L					
d	51.9	8.83	0.68	9.5	7.6	L					
12											
13	51.9	11.80	0.53	12.3	7.2	L					
14	51.9	13.55	0.42	14.0	7.6						
15	51.9	14.86	0.32	15.2	7.9						
16	51.9	16.18	0.22	16.4	8.5						
17	51.9	17.22	0.12	17.2	8.9	L					
18	51.9	17.86	0.02	17.9	10.0	A					
19	51.9	18.64	-0.07	18.6	10.8	A					
b	57.8	17.56	-0.20	17.4	120.7	L					
20	51.9	18.33	-0.33	18.0	6.9	A					
21	51.9	17.19	-0.42	16.8	5.6	L					
22	51.9	15.37	-0.50	16.9	4.6						
23	51.9	14.09	-0.55	13.5	4.1						
24	51.9	10.75	-0.62	10.1	3.2	L					

* L and N from page 38
α and β from section property table

Note: All values in thousands

PREP YOP ON 7-14-49
CHKD SRP ON 7-15-49
REVISED FAS 8-8-50 (a)

CHASE AIRCRAFT CO., INC.
WEST TREMONT, N.J.

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REPORT NO. 7017C-I
MODEL YC-122C MS 78

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 200

		(EXTRAPOLATED) CONDITION		FO + F			(INTERPOLATED) CONDITION		FO + F		
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Fg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2		-12.11	-.60	-12.71	-2.6		-12.97	-.62	-13.59	-2.7	
3		-16.32	-.45	-16.77	-7.3		-17.58	-.45	-18.03	-7.8	
4		-18.49	-.28	-18.77	-8.1		-19.93	-.29	-20.22	-8.8	
a		-18.70	-.09	-18.79	-127.9		-20.32	-.10	-20.42	-123.8	
5		-19.35	.12	-19.23	-8.3		-20.90	.11	-20.79	-9.0	
6		-18.55	.26	-18.29	-7.9		-20.05	.26	-19.79	-8.6	
7		-17.32	.41	-16.91	-7.3		-17.86	.40	-17.46	-7.6	
8		-15.93	.55	-15.38	-6.7		-17.29	.55	-16.74	-7.3	
9		-14.20	.69	-13.51	-5.7		-15.41	.69	-14.72	-6.2	
10		-12.44	.83	-11.61	-3.6		-13.49	.83	-12.66	-3.9	
11		-10.79	.93	- 9.86	-1.1		-11.73	.93	-10.80	-1.2	
11a											
a		- 9.03	1.00	-8.03	-5.1		- 9.82	1.00	- 8.82	-5.6	
d		11.05	.90	11.95	8.5		12.02	.90	12.92	9.2	
12											
13		13.82	.75	14.57	4.4		15.05	.74	15.79	4.8	
14		15.49	.59	16.08	4.8		16.88	.58	17.46	5.2	
15		16.55	.46	17.01	5.4		18.05	.45	18.50	5.8	
16		17.70	.33	18.03	5.7		19.32	.31	19.63	6.2	
17		18.70	.20	18.90	6.0		20.40	.18	20.58	6.5	
18		19.29	.07	19.36	6.2		21.08	.05	21.13	6.8	
19		19.70	-.06	19.64	8.7		21.52	-.08	21.44	9.5	
b		18.32	-.23	18.09	124.7		20.23	-.26	19.97	119.8	
20		18.90	-.41	18.49	6.0		20.70	-.43	20.27	6.5	
21		17.55	-.53	17.02	4.8		19.26	-.56	18.70	5.3	
22		15.44	-.64	14.80	3.4		16.96	-.67	16.29	3.8	
23		14.32	-.70	13.53	2.9		15.67	-.73	14.94	3.2	
24											

* L and N from page 38
α and β from section property table

Note: All values in thousands

PREP SRP ON 7-13-49
CHKD VGP ON 7-19-49
REVISED FAS 8-9-50 (a)

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

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REPORT NO 7017C-I
MODEL XC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 220

		CONDITION PLAA					CONDITION PLAA				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	P_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2	-32.2	-23.18	- 5.29	-28.47	-5.73	.13	-21.19	-1.13	-22.32	- 4.53	.44
3	-70.0	-32.65	- 3.85	-36.50	-15.84	.92	-29.86	-0.83	-30.69	-13.32	A
4	-70.0	-37.37	- 2.49	-39.86	-17.30	.76	-34.17	-0.53	-34.70	-15.06	A
a	-60.0	-38.35	- 0.84	-39.19	-206	.53	-35.07	-0.18	-35.25	-185	.70
5	-37.6	-39.23	0.75	-38.48	-16.70	** 0	-35.88	0.16	-35.72	-15.50	.06
6	-37.6	-37.81	2.00	-35.81	-15.54	.05	-34.57	0.43	-34.14	-14.82	.10
7	-37.6	-35.45	3.24	-32.21	-13.98	.17	-32.42	0.69	-31.73	-13.77	.18
8	-37.6	-32.55	4.46	-28.09	-12.19	.34	-29.77	0.96	-28.81	-12.50	.30
9	-37.6	-29.12	5.67	-23.45	- 9.90	.60	-26.63	1.21	-25.42	-10.73	.48
10	-30.8	-25.43	6.87	-18.56	- 5.68	.66	-23.26	1.47	-21.79	- 6.67	.41
11	-28.0	-22.54	7.67	-14.87	- 1.64	.89	-20.61	1.64	-18.97	- 2.09	.48
11a											
c	-36.2	-18.30	8.32	-10.58	- 5.60	L	-17.29	1.78	-15.51	- 8.20	L
d	+51.9	22.98	7.48	30.46	18.61	.70	21.01	1.60	22.61	13.81	A
12											
13	51.9	28.82	6.09	34.91	10.61	.49	26.36	1.31	27.67	8.41	.88
14	51.9	32.41	4.75	37.16	11.15	.40	29.63	1.02	30.65	9.20	.69
15	51.9	34.81	3.61	38.42	12.14	.35	31.83	0.77	32.60	10.30	.59
16	51.9	37.27	2.46	39.73	12.55	.31	34.08	0.53	34.61	10.94	.50
17	51.9	39.28	1.32	40.60	12.83	.28	35.92	0.28	36.20	11.44	.43
18	51.9	40.56	0.20	40.76	13.12	.27	37.09	0.04	37.13	11.96	.40
19	70.5	41.29	- 0.90	40.39	17.21	.75	37.76	-0.19	37.57	16.00	.88
b	57.8	39.33	-2.17	37.16	186	.55	35.96	-0.47	35.49	178	.63
20	51.9	39.92	-3.65	36.27	11.64	.43	36.50	-0.78	35.72	11.47	.45
21	51.9	37.07	-4.69	32.38	9.16	.60	33.90	-1.01	32.89	9.31	.58
22	51.9	33.09	-5.70	27.39	6.16	.90	30.26	-1.22	29.04	6.53	.79
23	51.9	30.44	-6.12	24.32	4.91	A	27.84	-1.31	26.53	5.36	.85
24											

** THIS STRINGER WAS NOT CHANGED DUE TO THE HIGH M.S. OF F.S. ADJACENT TO IT

* L and N from page 37

Note: All values in thousands

α and β from section property table

PREP. SRP ON 7-13-49
CHKD. VOP ON 7-19-49
REVISED PAS 8-9-50 (a)

CHASE AIRCRAFT CO., INC.
WEST TRENTON N.J.

PAGE 41
REPORT NO. 7017C-I
MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 220

		CONDITION AILERON $\delta = 15°$					CONDITION AILERON $\delta = -20°$				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2	-32.2	-19.35	-0.90	-20.25	-4.11	.59	-7.50	0		-1.52	L
3	-70.0	-27.27	-0.65	-27.92	-12.12	A	-10.57			-4.59	
4	-70.0	-31.20	-0.42	-31.62	-13.72	A	-12.10			-5.25	
a	-60.0	-32.02	-0.14	-32.16	-169	.87	-12.42			[illegible]	
5	-37.6	-32.76	0.13	-32.63	-14.16	.15	-12.70			-5.51	
6	-37.6	-31.57	0.34	-31.23	-13.55	.20	-12.24		Same as Col. (E)	-5.31	
7	-37.6	-29.60	0.55	-29.05	-12.61	.29	-11.48			-4.98	
8	-37.6	-27.18	0.76	-26.42	-11.47	.42	-10.54			-4.57	
9	-37.6	-24.31	0.96	-23.35	-9.85	.61	-9.43			-3.98	
10	-30.8	-21.24	1.16	-20.08	-6.14	.53	-8.24			-2.52	
11	-28.0	-18.82	1.30	-17.52	-1.93	.60	-7.30			-0.80	
11a											
c	-36.2	-15.79	1.41	-14.38	-7.61	A	-6.12			-3.24	
d	+51.9	19.19	1.27	20.46	12.50	A	7.44			4.55	
12											
13	51.9	24.07	1.03	25.10	7.63	A	9.33			2.84	
14	51.9	27.06	0.81	27.87	8.36	.86	10.49			3.15	
15	51.9	29.07	0.61	29.68	9.38	.75	11.27			3.56	
16	51.9	31.12	0.42	31.54	9.97	.65	12.07			3.81	
17	51.9	32.80	0.22	33.02	10.43	.57	12.72			4.02	
18	51.9	33.87	0.03	33.90	10.92	.53	13.13			4.23	
19	70.5	34.48	-0.15	34.33	14.62	A	13.37			5.70	
b	57.8	32.84	-0.37	32.47	163	.78	12.74			63.9	
20	51.9	33.33	-0.62	32.71	10.50	.59	12.93			4.15	
21	51.9	30.96	-0.79	30.17	8.54	.72	12.00			3.40	
22	51.9	27.63	-0.97	26.66	6.00	.95	10.72			2.41	
23	51.9	25.42	-1.04	24.38	4.92	A	9.86	0		1.99	L
24											

* L and N from page 41
α and β from section property table

Note: All values in thousands

PREP. SEP ON 7-13-49
CHKD. WSP ON 7-20-49
REVISED PAS 8-9-50 (a)

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

PAGE 142
REPORT NO. 70170-1
MODEL YC-122C ms 78

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 220

		CONDITION PG + P					CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	σ_{all}	L • α	N • β	σ_{act}	P	M.S.	L • α	N • β	σ_{act}	P	M.S.
	Pg.	* • (11)	* • (12)	(14) + (15)	(2) • (16)	(13)/(16)-1	* • (11)	* • (12)	(14) + (15)	(2) • (16)	(13)/(16)-1
1											
2	-32.8	-11.94	-0.66	-12.60	-2.6	A					
3	-70.0	-16.82	-0.48	-17.30	-7.5	L					
4	-70.0	-19.25	-0.31	-19.56	-8.5	L					
a	-60.0	-19.76	-0.11	-19.87	-104.5	L					
5	-37.6	-20.21	0.09	-20.12	-8.7	.86					
6	-37.6	-19.48	0.25	-19.23	-8.3	.95					
7	-37.6	-18.27	0.40	-17.87	-7.8	A					
8	-37.6	-16.77	0.56	-16.21	-7.0	A					
9	-37.6	-14.98	0.71	-14.27	-6.0	A					
10	-30.8	-13.10	0.86	-12.24	-3.7	A					
11	-28.0	-11.62	0.96	-10.65	-1.2	A					
11a											
a	-36.2	- 9.74	1.04	- 8.70	-4.6	L					
d	+51.9	11.84	0.94	12.78	7.8	L					
12											
13	51.9	14.85	0.76	15.61	4.7	L					
14	51.9	16.70	0.59	17.29	5.2	L					
15	51.9	17.94	0.45	18.39	5.8	A					
16	51.9	19.20	0.31	19.51	6.2	A					
17	51.9	20.24	0.17	20.41	6.4	A					
18	51.9	20.90	0.03	20.93	6.7	A					
19	70.5	21.28	-0.11	21.17	9.0	[illegible]					
b	57.8	20.27	-0.27	20.00	100.3	A					
20	51.9	20.57	-0.46	20.11	6.5	A					
21	51.9	19.10	-0.59	18.51	5.2	A					
22	51.9	17.05	-0.71	16.24	3.7	L					
23	51.9	15.68	-0.76	14.93	3.0	L					
24											

* L and N from page 75 — Enter all values in thousands

α and β from section property table

PREP. SRP ON 7-13-49
CHKD. VGP ON 7-19-49
REVISED FAS 8-9-50

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

PAGE 143
REPORT NO. 7017C-I
MODEL XC-122C MS- 70

SUBJECT: DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 220

		CONDITION NLAA					CONDITION TO				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(3)/(17) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(3)/(17) - 1
1											
2	57.8	13.75	-1.54	12.21	4.46	L	6.70	0		2.45	L
3	70.5	19.87	-1.14	18.73	13.18	L	9.69			5.78	
4	70.5	22.73	-0.76	21.97	13.80	L	11.08			6.86	
5	57.8	22.44	-0.29	22.15	11.9	A	10.94			58.6	
6	70.5	22.86	0.17	23.03	14.35	L	11.15			6.95	
6	70.5	21.35	0.53	21.88	13.06		10.41			6.21	
7	70.5	19.22	0.88	20.10	12.00		9.37			5.59	
8	70.5	16.78	1.23	18.01	10.75		8.18			4.88	
9	70.5	13.94	1.58	15.52	8.89		6.80			3.90	
10	57.8	10.88	1.93	12.81	5.34		5.31			2.21	
11	51.9	8.69	2.16	10.85	2.10		4.24			0.82	
11a											
a	+51.9	9.54	2.35	7.89	4.35	L	2.70			-1.49	
d	-36.5	-23.38	2.15	-21.23	-11.49	.70	-11.40			-6.17	L
12											
13	-28.0	-26.57	1.76	-24.81	-9.00	.13	[illegible]			-1.57	A
14	-28.0	-28.59	1.38	-27.21	-3.29	.03	-13.94			-1.69	
15	-32.2	-29.82	1.06	-28.76	-4.46	.12	-14.54			-2.25	
16	-32.2	-31.14	0.74	-30.40	4.71	.06	-15.18			-2.35	
17	-32.2	-32.14	0.41	-31.73	-4.92	.01	-15.67			-2.43	
18	-36.7	-32.59	.09	-32.50	-5.23	.13	-15.89			-2.56	
19	-33.0	-32.75	-0.22	-32.97	-18.04	0	-15.97			-3.90	A
b	-60.0	-31.46	-0.59	-32.05	-159	.87	-15.34			-75.89	L
20	-36.5	-30.75	-1.00	-31.75	-3.84	.15	-14.99			-1.81	A
21	-36.5	-28.43	-1.31	-29.74	-3.60	.23	-13.86			-1.68	
22	-36.5	-25.37	-1.60	-26.97	-3.26	.35	-12.37			-1.50	
23	-30.3	-23.80	-1.72	-25.52	-4.77	.19	-11.60	0		-2.17	A
24											

SAME AS COLUMN (14)

* L and N from page 38, 39

α and β from section property table

Note: All values in thousands

PREP SRP ON 6-18-49
CHKD VOF ON 6-19-49
REVISED PAS 8-9-50

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

PAGE 144
REPORT NO. 7017C-I
MODEL YC-122C MS 78

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 220

		CONDITION LANDING					CONDITION NG & F				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	P_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2	57.8	1.84	0		0.56	L	2.69	.10	2.79	1.02	L
3	70.5	2.22			1.33		3.89	.07	3.96	2.36	
4	70.5	2.54			1.60		4.45	.05	4.50	2.83	
a	57.8	2.51			13.44		4.39	.02	4.41	23.62	
5	70.5	2.56			1.59		4.47	-.01	4.46	2.78	
6	70.5	2.39			1.43		4.18	-.03	4.15	2.48	
7	70.5	2.15			1.28		3.76	-.06	3.70	2.21	
8	70.5	1.88			1.12		3.28	-.08	3.20	1.91	
9	70.5	1.56			0.89		2.73	-.10	2.63	1.51	
10	57.8	1.22			0.51		2.13	-.12	2.01	0.84	
11	51.9	[illegible]			0.19		1.70	-.14	1.56	0.30	
11a											
a	51.9	0.62			0.34		1.08	-.15	0.93	0.51	
b	-36.2	-2.61			-1.41		-4.57	-.13	-4.70	-2.54	
12											
13	-28.0	-2.97			-0.36		-5.20	-.11	-5.31	-0.64	
14	-28.0	-3.20			-0.39		-5.59	-.09	-5.68	-0.69	
15	-32.2	-3.33			-0.52		-5.83	-.07	-5.90	-0.91	
16	-32.2	-3.48			-0.54		-6.09	-.05	-6.14	-0.95	
17	-32.2	-3.59			-0.56		-6.29	-.03	-6.32	-0.98	
18	-36.7	-3.64			-0.59		-6.38	-.01	-6.39	-1.03	
19	-33.0	-3.66			-0.89		-6.41	.01	-6.40	-1.56	
b	-60.0	-3.52			-17.41		-6.16	.04	-6.12	-30.28	
20	-36.5	-3.44			-0.42		-6.02	.06	-5.96	-0.72	
21	-36.5	-3.18			-0.38		-5.56	.08	-5.48	-0.66	
22	-36.5	-2.84			-0.34		-4.96	.10	-4.86	-0.59	
23	-30.5	-2.66	0		-0.50	L	-4.66	.11	-4.55	-0.85	
24											

SAME AS COLUMN (14)

* L and N from page 38, 39
α and β from section property table

Note: All values in thousands

PREP. SRP ON 6-20-49
CHKD. VGP ON 6-22-49
REVISED FAS 8-9-50

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

PAGE 145
REPORT NO. 70170-I
MODEL XC-122C MS-70

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 320

		CONDITION PHAA					CONDITION PLAA				
(2)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2											
3	-70.0	-26.00	-2.76	-28.76	-12.48	A	-24.00	-0.63	-24.63	-10.69	A
4	-70.0	-31.24	-1.76	-33.00	-14.32	A	-28.84	-0.40	-29.24	-12.69	A
5	-60.0	-32.59	-0.62	-33.21	-103.7	.81	-30.09	-0.14	-30.23	-94.4	.98
5											
6	-37.6	-32.86	0.62	-32.24	-13.99	.17	-30.34	0.14	-30.20	-13.11	.25
7	-37.6	-30.92	1.52	-29.40	-12.76	.28	-28.56	0.35	-28.21	-12.24	.33
8	-37.6	-28.24	2.41	-25.83	-11.21	.46	-26.08	.55	-25.53	-11.08	.47
9	-30.8	-25.33	3.29	-22.04	-6.99	.40	-23.39	.75	-22.64	-7.18	.34
10	-25.2	-21.65	4.16	-17.49	-3.13	.44	-19.99	.95	-19.04	-3.41	.32
11	-28.0	-18.49	4.74	-13.75	-1.51	A	-17.08	1.09	-15.99	-1.76	.75
11a											
a	-34.3	-15.32	5.22	-10.10	-4.60	L	-14.15	1.20	-12.95	-5.89	A
d	51.9	20.38	4.67	25.05	12.95	L	18.82	1.07	19.89	10.28	A
12											
13	51.9	25.75	3.65	29.40	7.64	.77	23.78	.84	24.62	6.40	A
14	51.9	29.15	2.67	31.82	8.05	.63	26.92	.61	27.53	6.97	.89
15	51.9	31.19	1.84	33.03	9.05	.57	28.80	.42	29.22	8.01	.78
16	51.9	33.19	1.02	34.21	9.37	.52	30.65	.23	30.88	8.46	.68
17	51.9	34.68	0.20	34.88	9.56	.49	32.02	.05	32.07	8.79	.62
18	51.9	21.59	-0.37	21.22	5.45	A	19.94	-.08	19.86	5.10	A
19											
h	61.2	34.30	-1.51	32.79	97.12	.87	31.67	-.35	31.32	92.8	.95
20	51.9	34.39	-2.48	31.91	9.86	.63	31.75	-.57	31.18	9.63	.66
21	51.9	31.39	-3.24	28.15	8.16	.84	28.99	-.74	28.25	8.19	.84
22											
23	51.9	26.62	-4.05	22.57	7.52	A	24.58	-.93	23.65	7.88	A
24											

* L and N from page 37

α and β from section property table

Note: All values in thousands

PREP. SRP ON 6-20-49
CHKD. VGP ON 6-22-49
REVISED FAS 8-9-50 (a)

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

PAGE 146
REPORT NO. T017C-I
MODEL XC-122C MS- 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 320

		CONDITION AIL. $\delta = 15^0$					CONDITION AIL. $\delta = -20^0$				
(2)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Fig.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2											
3	-70.0	-23.07	-.29	-23.36	-10.14	L	-6.09	0		-2.64	L
4	-70.0	-27.72	-.18	-27.90	-12.10	A	-7.32			-3.18	
5	-60.0	-28.92	-.06	-28.98	-90.5	A	-7.63			-23.83	
5											
6	-37.6	-29.16	.06	-29.10	-12.63	.29	-7.70			-3.34	
7	-37.6	-27.44	.16	-27.28	-11.84	.38	-7.24			-3.14	
8	-37.6	-25.06	.25	-24.81	-10.77	.52	-6.61			-2.87	
9	-30.8	-22.48	.34	-22.14	- 7.02	.39	-5.93			-1.88	
10	-25.2	-19.21	.43	-18.78	- 3.36	.34	-5.07			-0.91	
11	-28.0	-16.41	.49	-15.92	-1.75	.76	-4.33			-0.48	
11a											
c	-34.3	-13.59	.54	-13.05	- 5.94	A	-3.59			-1.63	
d	51.9	18.08	.49	18.57	9.60	A	4.77			2.47	
12											
13	51.9	22.85	.38	23.23	6.04	A	6.03			1.57	
14	51.9	25.87	.28	26.15	6.62	.98	6.83			1.73	
15	51.9	27.68	.19	27.87	7.64	.86	7.31			2.00	
16	51.9	29.45	.11	29.56	8.10	.76	7.77			2.13	
17	51.9	30.77	.02	30.79	8.44	.69	8.12			2.22	
18	51.9	19.16	-.04	19.12	4.89	A	5.00			1.28	
19											
b	61.2	30.44	-.16	30.28	89.7	A	8.03			23.78	
20	51.9	30.51	-.26	30.25	9.35	.72	8.06			2.49	
21	51.9	27.86	-.34	27.52	7.98	.89	7.35			2.13	
22											
23	51.9	23.62	-.42	23.20	7.73	A	6.23	0		2.07	L
24											

SAME AS COLUMN (14)

* L and N from page 41
α and β from section property table

Note: All values in thousands

PREP SRP ON 6-20-49
CHKD VGP ON 6-22-49
REVISED FAS 8-10-50

CHASE AIRCRAFT CO., INC.
WEST TREMONT, N.J.

PAGE 147
REPORT NO. 70170-I
MODEL YC-122C MS 7C

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 320

		CONDITION		PG + F			CONDITION				
11	13	14	15	16	17	18	14	15	16	17	18
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · 11	* · 12	14 + 15	2 · 16	13/16 - 1	* · 11	* · 12	14 + 15	2 · 16	13/16 - 1
1											
2											
3	-70.0	-11.59	-.58	-12.17	-5.3	L					
4	-70.0	-13.93	-.37	-14.30	-6.2	L					
a	-60.0	-14.93	-.13	-14.66	-45.8	L					
5											
6	-37.6	-14.65	.13	-14.52	-6.3	A					
7	-37.6	-13.79	.32	-13.47	-5.8	A					
8	-37.6	-12.59	.50	-12.09	-5.2	L					
9	-30.8	-11.30	.69	-10.61	-3.4	A					
10	-25.2	- 9.65	.87	- 8.78	-1.6	A					
11	-28.0	- 8.25	.99	- 7.26	-0.8	L					
11a											
c	-34.3	- 6.83	1.09	- 5.74	- 2.6	L					
d	51.9	9.09	.97	10.06	5.2						
12											
13	51.9	11.48	.76	12.24	3.2						
14	51.9	13.00	.56	13.56	3.4						
15	51.9	13.91	.38	14.29	3.9						
16	51.9	14.80	.21	15.01	4.1						
17	51.9	15.46	.04	15.50	4.2						
.6 18	51.9	9.63	-.08	9.55	2.5						
19											
h	61.2	15.30	-.31	14.99	44.4						
20	51.9	15.34	-.52	14.82	4.6						
21	51.9	14.00	-.68	13.32	3.9						
22											
23	51.9	11.87	-.84	11.03	3.7	L					
24											

* L and N from page 38
α and β from section property table

Note: All values in thousands

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		CONDITION PO + P					CONDITION				
1	13	14	15	16	17	18	14	15	16	17	18
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · 11	* · 12	14 + 15	2 · 16	13/16 - 1	* · 11	* · 12	14 + 15	2 · 16	13/16 - 1
1											
2											
3	-70.0	-11.59	-.58	-12.17	-5.3	L					
4	-70.0	-13.93	-.37	-14.30	-6.2	L					
a	-60.0	-14.93	-.13	-14.66	-45.8	L					
5											
6	-37.6	-14.65	.13	-14.52	-6.3	A					
7	-37.6	-13.79	.32	-13.47	-5.8	A					
8	-37.6	-12.59	.50	-12.09	-5.2	L					
9	-30.8	-11.30	.69	-10.61	-3.4	A					
10	-25.2	- 9.65	.87	- 8.78	-1.6	A					
11	-28.0	- 8.25	.99	- 7.26	-0.8	L					
11a											
c	-34.3	- 6.83	1.09	- 5.74	- 2.6	L					
d	51.9	9.09	.97	10.06	5.2						
12											
13	51.9	11.48	.76	12.24	3.2						
14	51.9	13.00	.56	13.56	3.4						
15	51.9	13.91	.38	14.29	3.9						
16	51.9	14.80	.21	15.01	4.1						
17	51.9	15.46	.04	15.50	4.2						
.6 18	51.9	9.63	-.08	9.55	2.5						
19											
b	61.2	15.30	-.31	14.99	44.4						
20	51.9	15.34	-.52	14.82	4.6						
21	51.9	14.00	-.68	13.32	3.9						
22											
23	51.9	11.87	-.84	11.03	3.7	L					
24											

* L and N from page 38
α and β from section property table

Note: All values in thousands

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 320

		CONDITION NLAA					CONDITION TAKE - OFF				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	σ_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2											
3	70.5	15.46	-.99	14.47	8.64	L	8.03	0		4.79	L
4	70.5	19.20	-.66	18.54	11.49	L	9.97			6.18	
a	61.2	19.48	-.27	19.21	62.76	L	10.12			33.06	
5											
6	70.5	19.72	.15	19.87	12.58	L	10.24			6.48	
7	70.5	17.91	.46	18.37	10.97	L	9.30			5.55	
8	70.5	15.63	.77	16.40	9.79	L	8.12			4.85	
9	57.8	13.18	1.08	14.25	6.67	L	6.84			3.20	
10	57.8	10.17	1.37	11.54	3.35	L	5.28			1.53	
11	51.9	7.69	1.57	9.26	1.80	L	3.99			.77	
11a											
a	51.9	4.74	1.73	6.47	3.09	L	2.46			1.17	L
b	-34.3	-21.92	1.56	-20.36	-9.26	.68	-11.38			-5.18	L
12											
13	-28.0	-25.13	1.22	-23.91	-2.63	.17	-13.05			-1.44	A
14	-28.0	-27.44	.89	-26.55	-2.92	.05	-14.25			-1.57	.96
15	-32.2	-28.75	.61	-28.14	-4.02	.14	-14.93			-2.13	A
16	-32.2	-30.01	.33	-29.68	-4.24	.08	-15.58			-2.23	A
17	-32.2	-30.90	.05	-30.85	-4.41	.04	-16.05			-2.30	A
18	-20.3	-19.09	-.14	-19.23	-2.15	.06	-9.91			-1.10	A
19											
b	-60.0	-30.73	-.54	-31.27	-89.90	.92	-15.96			-45.89	L
20	-36.5	-29.87	-.86	-30.73	-3.72	.19	-15.51			-1.88	A
21	-36.5	-27.44	-1.12	-28.56	-3.46	.28	-14.25			-1.72	A
22											
23	-30.5	-24.04	-1.41	-25.45	-4.76	.20	-12.48	0		-2.33	A
24											

* L and N from page 38, 39
α and β from section property table

Note: All values in thousands

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 320

		CONDITION LANDING					CONDITION NO-W F				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(11)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	F	M.S.	L · α	N · β	f_{act}	F	M.S.
	Fig.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(3)/(17) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(3)/(17) - 1
1											
2											
3	70.5	1.59	0		-0.95	L	4.26	-.25	4.01	2.39	L
4	70.5	1.97			1.22		5.29	-.16	5.13	3.18	
5	61.2	2.00			6.53		5.37	-.07	5.30	17.32	
5											
6	70.5	2.02			1.28		5.44	.04	5.48	3.47	
7	70.5	1.84			1.10		4.94	.12	5.06	3.02	
8	70.5	1.60			.96		4.31	.19	4.50	2.69	
9	57.8	1.35			.63		3.63	.27	3.90	1.87	
10	57.8	1.04			.30		2.80	.34	3.14	.91	
11	51.9	.79		(34)	.15		2.12	.39	2.51	.48	
11a											
c	51.9	.49		SAME AS POSITIVE	.23		1.31	.43	1.74	.89	
d	-34.3	-2.25			-1.02		-6.04	.39	-5.65	-2.57	
12											
13	-28.0	-2.58			-.28		-6.93	.31	-6.62	-.73	
14	-28.0	-2.81			-.31		-7.54	.22	-7.34	-.81	
15	-32.2	-2.95			-.42		-7.92	.15	-7.77	-1.11	
16	-32.2	-3.08			-.44		-8.27	.08	-8.19	-1.17	
17	-32.2	-3.17			-.45		-8.52	.01	-8.51	-1.22	
18	-20.3	-1.96			-.22		-5.26	-.04	-5.30	-.68	
19											
b	-60.0	-3.15			-9.01		-8.47	-.13	-8.60	-24.73	
20	-36.5	-3.06			-.37		-8.23	-.22	-8.45	-1.02	
21	-36.5	-2.81			-.34		-7.56	-.28	-7.84	-.95	
22											
23	-30.5	-2.47	0		-.46	L	-6.63	-.35	-6.98	-1.31	L
24											

* L and N from page 38, 39

α and β from section property table

Note: All values in thousands

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 400

		CONDITION PHAA					CONDITION PLAA				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	M · β	f_{act}	P	M.S.	L · α	M · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2											
3	-43.8	-17.97	-1.52	-18.49	-6.1	Ample	-16.31	-.45	-16.76	-5.5	Ample
4	-43.8	-22.96	- .97	-23.93	-7.9	.83	-20.85	-.28	-21.13	-7.0	Ample
5	-60.0	-24.16	- .37	-24.53	-41.3	Ample	-21.94	-.11	-22.05	-37.1	Ample
5											
6	-39.1	-24.24	- .06	-24.30	-5.0	.61	-22.01	-.02	-22.03	-4.5	.54
7	-34.0	-23.39	.43	-22.96	-9.4	.48	-21.24	.13	-21.11	-8.7	.61
8	-29.1	-21.92	.93	-20.99	-6.4	.39	-19.91	.27	-19.64	-6.0	.48
9	-29.1	-19.69	1.41	-18.28	-5.6	.59	-17.88	.41	-17.47	-5.3	.67
10	-24.3	-17.03	1.88	-15.15	-2.7	.60	-15.47	.55	-14.92	-2.7	.63
11	-27.0	-14.49	2.20	-12.29	-1.4	Ample	-13.16	.65	-12.51	-1.4	Ample
11a											
a	-31.5	-12.03	2.45	- 9.58	-3.8	Large	-10.93	.72	-10.21	-4.1	Large
d	51.9	13.29	2.17	15.46	7.2	Large	12.07	.64	12.71	5.9	Large
12											
13	51.9	17.57	1.59	19.16	5.0	Ample	15.95	.47	16.42	4.3	Large
14	51.9	20.25	1.06	21.31	5.4	Ample	18.39	.31	18.70	4.7	Ample
15	51.9	22.29	.60	22.89	5.5	Ample	20.24	.18	20.42	4.9	Ample
16	51.9	23.50	.15	23.65	6.5	Ample	21.34	.05	21.39	5.9	Ample
17	51.9	24.58	- .29	24.29	7.3	Ample	22.32	.09	22.41	6.7	Ample
18											
19											
h	61.2	23.93	- .86	23.07	38.0	Ample	21.73	.25	21.98	36.2	Ample
20	51.9	23.59	-1.34	22.25	5.7	Ample	21.42	.40	21.82	5.5	Ample
21	51.9	21.26	-1.75	19.51	4.4	Ample	19.31	.52	19.83	4.5	Ample
22											
23	51.9	18.64	-2.10	16.54	4.9	Large	16.93	.62	17.55	5.2	Ample
24											

* L and M from page 37

α and β from section property table

Note: All values in thousands

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 400

		CONDITION AILERON $\delta = 15°$					CONDITION AILERON $\delta = -20°$				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16)-1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16)-1
1											
2											
3	-43.8	-16.73	-.09	-16.82	-5.6	Ample	-3.51	0		-1.2	Large
4	-43.8	-21.38	-.06	-21.44	-7.1	Ample	-4.49			-1.5	
5	-60.0	-22.49	-.02	-22.51	-37.9	Ample	-4.72			-7.9	
5											
6	-39.1	-22.57	- 0	-22.57	-4.6	.74	-4.74			-1.0	
7	-34.0	-21.77	.03	-21.74	-8.9	.56	-4.57			-1.9	
8	-29.1	-20.41	.05	-20.36	-6.2	.43	-4.28			-1.3	
9	-29.1	-18.33	.08	-18.25	-5.6	.59	-3.85			-1.2	
10	-24.3	-15.86	.11	-15.75	-2.8	.54	-3.33			- .6	
11	-27.0	-13.49	.13	-13.36	-1.5	Ample	-2.83			- .3	
11a											
a	-31.[illegible]	-11.20	.14	-11.06	-4.4	Ample	-2.35		(14)	- . 9	
d	51.9	12.38	.13	12.51	5.8	Large	2.60			1.2	
12											
13	51.9	16.35	.09	16.44	4.3	Large	3.43		SAME AS COLUMN	.9	
14	51.9	18.86	.06	18.92	4.8	Ample	3.96			1. 0	
15	51.9	20.75	.04	20.79	5.0	Ample	4.36			1.1	
16	51.9	21.88	.01	21.89	6.0	Ample	4.59			1.3	
17	51.9	22.88	-.02	22.86	6.9	Ample	4.80			1.4	
18											
19											
b	61.2	22.28	-.05	22.23	36.6	Ample	4.68			7.7	
20	51.9	21.97	-.08	21.89	5.6	Ample	4.61			1.2	
21	51.9	19.80	-.10	19.70	4.5	Ample	4.15			.9	
22											
23	51.9	17.36	-.12	17.24	5.1	Large	3.64	0		1.1	Large
24											

* L and N from page 41

α and β from section property table

Note: All values in thousands

PREP. VGP ON 6-14-49
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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 400

		CONDITION PG + P					CONDITION				
1	13	14	15	16	17	18	14	15	16	17	18
Item	F_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · 11	* · 12	14 + 15	2 · 16	13/16 - 1	* · 11	* · 12	14 + 15	2 · 16	13/16 - 1
1											
2											
3	- 43.8	-7.23	-.45	-7.68	-2.5	Large					
4	- 43.8	-9.24	-.28	-9.52	-3.1						
a	- 60.0	-9.72	-.11	-9.83	-16.6						
5											
6	- 39.1	-9.75	-.02	-9.77	-2.0						
7	- 34.0	-9.41	.13	-9.28	-3.8						
8	- 29.1	-8.82	.27	-8.55	-2.6						
9	- 29.1	-7.92	.41	-7.51	-2.3						
10	- 24.3	-6.85	.55	-6.30	-1.1						
11	- 27.0	-5.83	.65	-5.18	-0.6						
11a											
c	- 31.5	-4.84	.72	-4.12	-1.6						
d	51.9	5.35	.64	5.99	2.8						
12											
13	51.9	7.07	.47	7.54	2.0						
14	51.9	8.15	.31	8.46	2.1						
15	51.9	9.00	.18	9.18	2.2						
16	51.9	9.45	.05	9.50	2.6						
17	51.9	9.89	-.09	9.80	2.9						
18											
19											
b	61.2	9.63	-.25	9.38	15.4						
20	51.9	9.49	-.40	9.09	2.3						
21	51.9	8.55	-.52	8.03	1.8						
22											
23	51.9	7.50	-.62	6.88	2.0	Large					
24											

* L and N from page 30
α and β from section property table

Note: All values in thousands

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SUBJECT: DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 400

		CONDITION NLAA					CONDITION TO.				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	σ_{all}	L · α	N · β	σ_{act}	P	M.S.	L · α	N · β	σ_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2											
3	57.8	10.36	-.75	9.61	4.7	Large	3.61	0		1.8	Large
4	57.8	14.50	-.49	14.01	7.1	Large	5.05			2.6	
5	61.2	15.05	-.21	14.84	26.2	Ample	5.24			9.2	
6											
6	70.5	15.54	-.06	15.48	5.0	Large	5.41			1.8	
7	70.5	14.57	.18	14.75	8.1		5.08			2.8	
8	57.8	13.26	.41	13.67	6.1		4.62			2.0	
9	57.8	11.29	.64	11.93	5.3		3.93			1.7	
10	57.8	9.01	.87	9.88	2.9		3.14			.9	
11	51.9	6.90	1.02	7.92	1.5		2.40			.5	
11a											
a	51.9	4.34	1.14	5.48	2.3	Large	1.51			.6	
c	-31.5	-16.81	1.00	-15.81	-6.3	.99	-5.86			-2.3	
12											
13	-27.0	-19.79	.73	-19.06	-2.1	Large	-6.90			- .8	
14	-27.0	-21.99	.47	-21.52	-2.4		-7.66			- .8	
15	-27.0	-23.62	.25	-23.37	-2.6		-8.23			- .9	
16	-31.2	-24.57	.04	-24.53	-3.5		-8.56			-1.2	
17	-31.2	-25.32	-.17	-25.49	-3.6	Large	-8.82			-1.3	
18											
19											
h	-60.0	-25.34	-.44	-25.78	-39.5	Ample	28.83			-13.5	
20	-36.3	-24.37	-.67	-25.04	- 2.8	Large	-8.49			-. 9	
21	-36.3	-22.39	-.87	-23.26	- 2.6		-7.80			- .9	Large
22											
23	-29.8	-20.59	-1.03	-21.62	-3.8	Large	-7.18	0		-1.3	
24											

SAME AS FORM (11)

* L and N from page 38, 39

α and β from section property table

Note: All values in thousands

PREP VGP ON 6-14-49
CHKD SRP ON 6-15-49
REVISED FAS 8-11-50

CHASE AIRCRAFT CO. INC.
WEST TREMONT

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 400

		CONDITION LANDING					CONDITION NG & F				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	F_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2											
3	57.8	1.26	0	1.26	.6	Large	3.61	-.38	3.23	1.6	Large
4	57.8	1.76		1.76	.9		5.05	-.24	4.81	2.5	
a	61.2	1.82		1.82	3.2		5.24	-.10	5.14	9.1	
5											
6	70.5	1.88		1.88	.6		5.41	-.03	5.38	1.7	
7	70.5	1.77		1.77	1.0		5.08	.09	5.17	2.8	
8	57.8	1.61		1.61	.7		4.62	.21	4.83	2.1	
9	57.8	1.37		1.37	.6		3.93	.32	4.25	1.9	
10	57.8	1.09		1.09	.3		3.14	.43	3.57	1.0	
11	51.9	.84		.84	.2		2.40	.51	2.91	.6	
11a											
c	51.9	.53		.53	.2		1.51	.57	2.08	.9	
d	-31.5	-2.04		-2.04	-.8		-5.86	.50	-5.36	-2.1	
12											
13	-27.0	-2.40		-2.40	-.3		-6.90	.36	-6.54	-.7	
14	-27.0	-2.67		-2.67	-.3		-7.66	.24	-7.42	-.8	
15	-27.0	-2.86		-2.86	-.3		-8.23	.13	-8.10	-.9	
16	-31.2	-2.98		-2.98	-.4		-8.56	.02	-8.54	-1.2	
17	-31.2	-3.07		-3.07	-.4		-8.82	-.09	-8.91	-1.3	
18											
19											
b	-60.0	-3.07		-3.07	-4.7		-8.83	-.22	-9.05	-19.9	
20	-36.3	-2.95		-2.95	-.3		-8.49	-.34	-8.83	-1.0	
21	-36.3	-2.71		-2.71	-.3		-7.80	-.43	-8.23	-.9	
22											
23	-29.8	-2.50	0	-2.50	-.4	Large	-7.18	-.52	-7.70	-1.3	Large
24											

* L and N from page 38, 39
α and β from section property table

Note: All values in thousands

PREP. SRP ON 7-16-49
CHKD. VGP ON 7-18-49
REVISED FAS 8-14-50 @ CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 463

		CONDITION PHAA					CONDITION PLAA				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16)-1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16)-1
1											
2											
3	-43.8	-10.80	-.41	-11.21	-3.44	L	-8.64	-.13	-8.77	-2.68	L
4	-43.8	-14.74	-.26	-15.00	-4.60	A	-11.79	-.09	-11.88	-3.64	L
a	-60.0	-16.00	-.11	-16.11	-12.90	L	-12.80	-.04	-12.84	-10.28	L
5											
6											
7	-34.0	-15.29	.02	-15.27	- 6.28	A	-12.23	.01	-12.22	- 5.03	A
8	-29.1	-14.44	.15	-14.29	- 4.37	A	-11.55	.05	-11.50	-3.52	A
9	-29.1	-12.80	.27	-12.53	- 3.84	A	-10.24	.09	-10.15	-3.10	A
10	-24.3	-10.97	.39	-10.58	-1 .89	A	- 8.77	.13	- 8.64	-1.55	A
11	-27.0	- 8.88	.47	- 8.41	- 0.92	L	- 7.10	.16	- 6.94	-0.76	L
11a											
c	-29.5	- 7.45	.54	- 6.91	- 2.44	L	- 5.96	.18	- 5.78	-2.04	L
d	51.9	8.61	.48	9.09	3.80		6.89	.16	7.05	2.96	
12											
13	51.9	11.21	.33	11.54	3.04		8.97	.11	9.08	2.40	
14	51.9	13.01	.19	13.20	3.34		10.40	.06	10.46	2.64	
15	51.9	14.29	.08	14.37	3.46		11.43	.03	11.46	2.76	
16	51.9	15.20	-.04	15.16	4.44		12.16	-.01	12.15	3.56	
17											
18											
19											
b	61.2	15.19	-.22	14.97	14.00		12.15	-.07	12.08	11.27	
20	51.9	14.36	-.34	14.02	3.48		11.48	-.11	11.37	2.82	
21	51.9	12.58	-.44	12.14	2.59		10.07	-.15	9.92	2.11	
22											
23	51.9	11.58	-.51	11.07	2.44	L	9.27	-.17	9.10	2.00	L
24											

* L and N from page 37

α and β from section property table

Note: All values in thousands

PREP SRP ON 7-17-49
CHKD. VGP ON 7-18-49
REVISED FAS 8-14-50 (a)

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 463

		CONDITION AILERON δ =15°					CONDITION AILERON δ =20°				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(3)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(3)/(16) - 1
1											
2											
3	-43.8	-9.72	0		-2.98	L	-2.16	0		-.66	L
4	-43.8	-13.27			-4.05	L	-2.95			-.90	
5	-60.0	-14.40			-11.50	L	-3.20			-2.56	
6											
7	-34.0	-13.76			-5.6[illegible]	A	-3.06			-1.25	
8	-29.1	-13.00			-3.98	A	-2.89			- .89	
9	-29.1	-11.52			-3.52	A	-2.56			- .78	
10	-24.3	- 9.87		(11)	-1.77	A	-2.19		(11)	- .39	
11	-27.0	- 7.99			-0.88	L	-1.78			- .20	
11a											
a	-29.5	-6.71		SAME AS COLUMN #	-2.36	L	-1.49		SAME AS COLUMN #	-0.53	
d	51.9	7.75			3.24		1.72			0.72	
12											
13	51.9	10.09			2.66		2.24			0.59	
14	51.9	11.70			2.96		2.60			0.66	
15	51.9	12.86			3.10		2.86			0.69	
16	51.9	13.68			4.00		3.04			0.89	
17											
18											
19											
h	61.2	13.67			12.72		3.04			2.84	
20	51.9	12.92			3.20		2.87			0.71	
21	51.9	11.32			2.41		2.52			0.54	
22											
23	51.9	10.42	0		2.30	L	2.32	0		0.51	L
24											

* L and N from page 41

α and β from section property table

Note: All values in thousands

PREP. SRP ON 6-17-40
CHKD. VGP ON 6-18-49
REVISED EAS 8-15-50 ⓐ

CHASE AIRCRAFT CO. INC.
WEST TREMONT N.J.

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SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 463

		CONDITION FO+P					CONDITION				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	P_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2											
3	-43.8	-2.52	-.27	-2.79	-0.9	U					
4	-43.8	-3.43	-.17	-3.60	-1.1						
a	-60.0	-3.73	-.07	-3.80	-3.04						
5											
6											
7	-34.0	-3.57	.01	-3.56	-1.46						
8	-29.1	-3.37	.10	-3.27	-1.00						
9	-29.1	-2.99	.18	-2.81	-0.86						
10	-24.3	-2.54	.26	-2.28	-0.41						
11	-27.0	-2.07	.31	-1.96	-0.22						
11a											
c	-29.9	-1.74	.36	-1.38	-0.49						
d	51.9	2.01	.31	2.32	0.97						
12											
13	51.9	2.62	.21	2.83	0.75						
14	51.9	3.03	.13	3.16	0.80						
15	51.9	3.33	.05	3.38	0.81						
16	51.9	3.55	-.03	3.52	1.03						
17											
18											
19											
b	61.2	3.54	-.15	3.39	3.16						
20	51.9	3.45	-.22	3.23	0.80						
21	51.9	2.94	-.29	2.65	0.56						
22											
23	51.9	2.70	-.34	2.36	0.52	L					
24											

* L and N from page 38
α and β from section property table

Note: All values in thousands

PREP SRP ON 6-16-49
CHKD. VGP ON 6-18-49
REVISED FAS 8-16-50

CHASE AIRCRAFT CO., INC.
WEST TRENTON, N.J.

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MODEL YC-122C MS. 78

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 463

		CONDITION NLAA					CONDITION TO				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	P_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(13)/(16) - 1
1											
2											
3	57.8	5.72	-.55	5.17	2.29	L	.46	0		.21	L
4	57.8	9.68	-.36	9.32	4.21		.77			.35	
a	61.2	10.80	-.16	10.64	9.80		.86			.80	
5											
6											
7	70.5	10.40	.02	10.42	5.71		.83			.46	
8	57.8	9.65	.19	9.84	4.35		.77			.34	
9	57.8	8.12	.35	8.47	3.75		.65			.29	
10	57.8	6.44	.52	6.96	2.02		.51			.15	
11	51.9	4.51	.62	5.13	1.00		.36			.07	
11a											
e	51.9	2.76	.71	3.47	1.30	L	.22			.08	
d	-29.8	-12.92	.60	-12.32	-4.35	A	-1.03			-.36	
12											
13	-27.0	-15.08	.40	-14.68	-1.61	.84	-1.20			-.13	
14	-27.0	-16.96	.22	-16.74	-1.84	.61	-1.36			-.15	
15	-27.0	-18.30	.06	-18.24	-2.00	.48	-1.46			-.16	
16	-27.0	-19.19	-.10	-19.29	-2.12	.40	-1.54			-.17	
17											
18											
19											
b	-60.0	-19.80	-.35	-20.15	-15.67	L	-1.58			-1.23	
20	-36.3	-18.62	-.50	-19.12	- 2.10	.90	-1.49			- .16	
21	-36.3	-17.03	-.64	-17.67	- 1.94	A	-1.36			- .15	
22											
23	-29.8	-16.57	-.73	-17.30	-2.84	.72	-1.33	0		-0.22	L
24											

SAME AS COLUMN (11)

* L and N from page 38, 39
α and β from section property table

Note: All values in thousands

PREP. SRP ON 6-16-49
CHKD. VGP ON 6-18-49
REVISED FAS 8-16-50 ⓐ

CHASE AIRCRAFT CO. INC.
WEST TRENTON, N.J.

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REPORT NO. [illegible]
MODEL [illegible]

SUBJECT DETERMINATION OF AXIAL STRESSES AND M.S. WING STATION 463

		CONDITION LANDING					CONDITION NG & F				
(1)	(13)	(14)	(15)	(16)	(17)	(18)	(14)	(15)	(16)	(17)	(18)
Item	f_{all}	L · α	N · β	f_{act}	P	M.S.	L · α	N · β	f_{act}	P	M.S.
	Pg.	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(3)/(17) - 1	* · (11)	* · (12)	(14) + (15)	(2) · (16)	(3)/(17) - 1
1											
2											
3	57.8	0.69	0		0.30	L	3.29	-.14	3.15	0.95	L
4	57.8	1.16			0.53		3.87	-.09	3.78	1.71	
5	61.2	1.30			1.21		4.32	-.04	4.28	3.98	
5	—										
6	—										
7	70.5	1.25			0.69		4.16	.01	4.17	2.29	
8	57.8	1.16			0.51		3.86	.05	3.91	1.73	
9	57.8	0.97			0.43		3.25	.09	3.34	1.48	
10	57.8	0.77			0.22		2.58	.13	2.71	0.78	
11	51.9	0.54		(11)	0.11		1.81	.16	1.97	[illegible]	
11a											
a	51.9	0.33			.12		1.10	.18	1.28	0.48	
d	-29.8	-1.55			-.55		-5.17	.15	-5.02	-3.77	
12											
13	-27.0	-1.81			-.20		-6.03	.10	-5.93	-.66	
14	-27.0	-2.04			-.22		-6.79	.05	-6.74	-.74	
15	-27.0	-2.20			-.24		-7.32	.01	-7.31	-.81	
16	-27.0	-2.30			-.25		-7.68	-.02	-7.70	-.85	
17											
18											
19											
h	-60.0	-2.38			-1.85		-7.92	-.08	-8.00	-6.21	
20	-36.3	-2.23			-.25		-7.45	-.12	-7.57	-.83	
21	-36.3	-2.04			-.22		-6.81	-.16	-6.97	-.77	
22											
23	-29.8	-1.99	0		-.33	L	-6.63	-.18	-6.81	-1.12	L
24							—				

SAME AS COLUMN # (11)

* L and N from page 38, 39
α and β from section property table

Note: All values in thousands