

C-105

7/0500/9

RESULTS FROM R.T. 08-265
& R.T. 08-276

SECRET

C2
C1 marked
unclassified



A. V. ROE CANADA LIMITED
MALTON - ONTARIO

SECRET

TECHNICAL DEPARTMENT (Aircraft)

AIRCRAFT: C105

REPORTING NO. 7-0500-9

FILE NO.

NO. OF SHEETS: _____

TITLE:

SECTION 1

RESULTS FROM RT 03-265

STATIC & FATIGUE STRENGTHS
OF BUTT JOINTS

SECTION 2

RESULTS FROM RT-08-276

STATIC & FATIGUE STRENGTHS
OF SKIN SPLICES

PREPARED BY E.J. SMITH

DATE NOV. 1955
4 APRIL '56

CHECKED BY

DATE

SUPERVISED BY

DATE

APPROVED BY

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ISSUE NO	REVISION NO	REVISED BY	APPROVED BY	DATE	REMARKS



AVRO AIRCRAFT LIMITED
MALTON - ONTARIO

TECHNICAL DEPARTMENT

REPORT No.

SHEET No.

100

AIRCRAFT:

C105

RT-08-265

PREPARED BY

DATE

E.J. SMITH

13 APR 50

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DATE

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SECTION I

STATIC & FATIGUE STRENGTHS
OF BUTT JOINTS

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MALTON, ONTARIO

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REPORT NO. _____

SHEET NO. 1.2.4.

AIRCRAFT:

C1105RT-08-265

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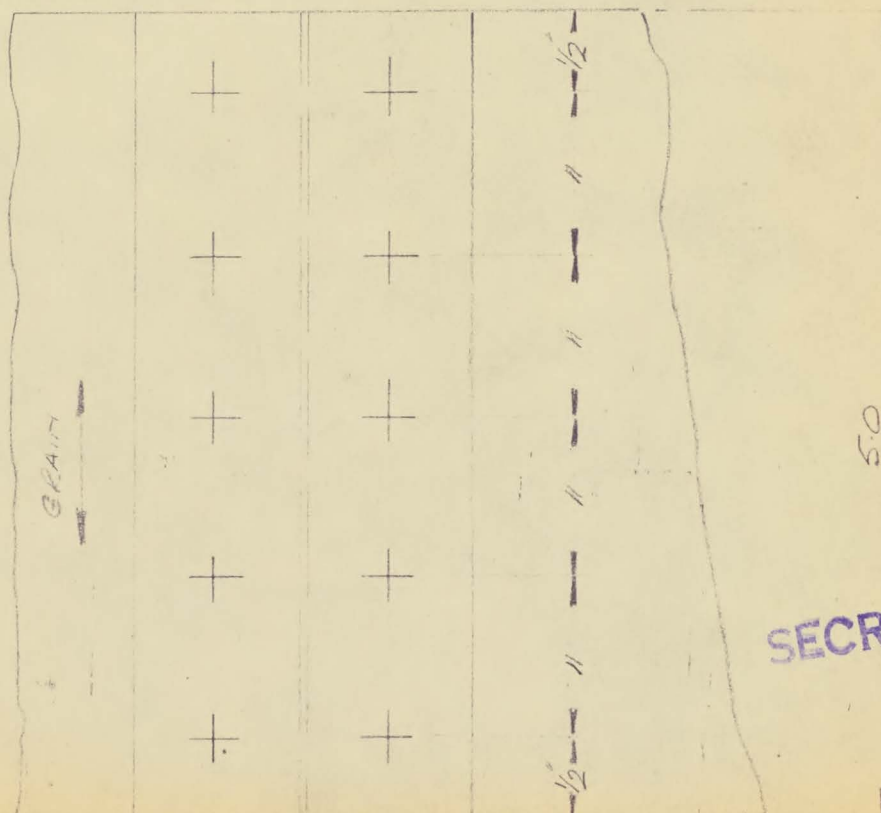
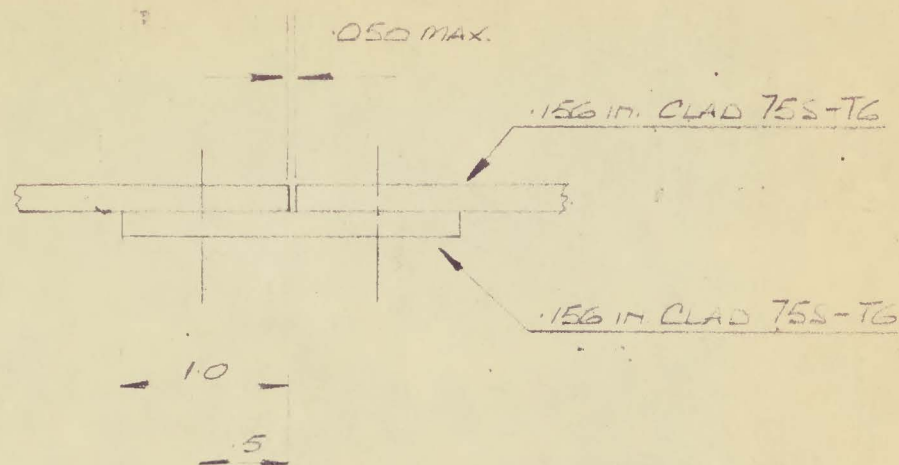
E. J. SMITH

DATE

25 NOV. '55

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DATE

DETAILS OF JOINT TESTED
FOR SPECIMENS 64-81

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MALTON - ONTARIO

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REPORT NO. _____

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SHEET NO. 1.27.

AIRCRAFT:

C105

RTOR-265

PREPARED BY

DATE

E.J. SMITH

28 NOV. '55

CHECKED BY

DATE

DETAILS OF JOINT TESTED
FOR SPECIMENS 91-99

ALL CONNECTIONS

BY $\frac{1}{4}$ " CSK. BOLT

HAS 334 P AG-5

.000
MAX.

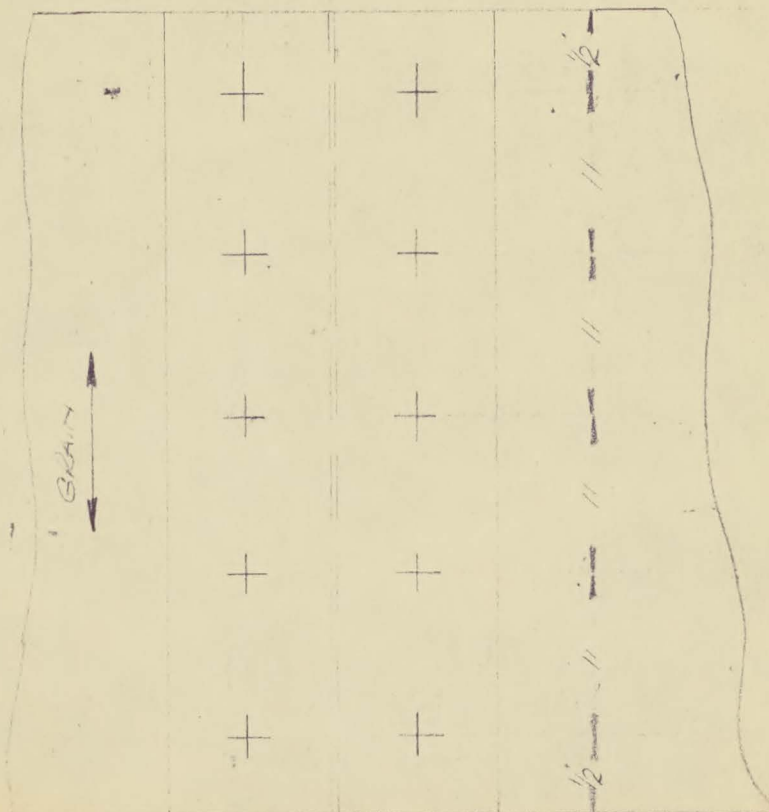
.125 IN. CLAD 755-T6

.012 CH IN STEEL

QD S GRC

HT TO 15000

.001 IN. CLAD 755-T6



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TECHNICAL DEPARTMENT

REPORT NO.

SHEET NO.

1.2.8.

AIRCRAFT:

C105

RT08-265

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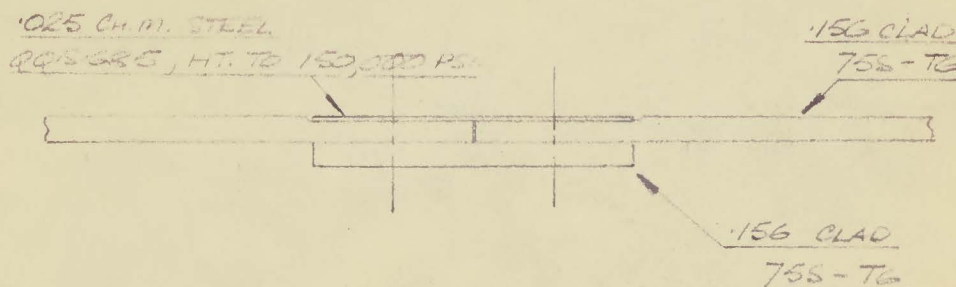
E.J. SMITH

DATE

11 APRIL '66

CHECKED BY

DATE

DETAILS OF JOINT TESTED
FOR SPECIMENS 108 - 110


ATTACHMENT IS MADE BY 5- $\frac{1}{4}$ " NAS
 OSK BOLTS ON EACH SIDE OF THE SPLICE.

THIS SPLICE IS IDENTICAL TO THAT FOR
 SPECIMENS 82-90, EXCEPT FOR THE
 THICKNESS OF THE STEEL STRAP.

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MALTON - ONTARIO

TECHNICAL DEPARTMENT (Aircraft)

REPORT NO. _____

SHEET NO. 1.3.1.

AIRCRAFT:

C 105RTOR-265

PREPARED BY

E. J. SMITH

DATE

28 NOV. '55

CHECKED BY

DATE

TEST RESULTS (CONTD)

SPECIMEN NO.	FASTENERS	STATIC		FATIGUE		
		FALLING LOAD	MODE OF FAILURE	REPEATED LOAD	CYCLES TO FAILURE	MODE OF FAILURE
28	1/4" DEUTSCH STEEL RIVETS - CSK. LONG TAILS	19250		2000	131000*	
29						
30				2000	168000*	
31						
32				7500	12400	
33				2000	665000	
34				1800	2071000	
35				5000	40000	
36				3000	131300	
37						
38	1/4" DEUTSCH STEEL RIVETS - CSK SHORT TAILS	19500		1800	376500	
39				2000	280000	
40				3000	290000	
41				5000	47000	
42				7500	7750	
43				2000	332000*	
44				5000	13700*	
45				7500	6100	
46						
47				1800	819000	
48	3/16" CSK. RD-BOLTS STEEL	16500		2000	559000	
49				3000	150100	
50				5000	45600	
51				7500	9800	
52						
53				2000*	621500*	
54				5000*	16000*	
55						
56						
57						
58						

* VALUES AT 250 F

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 AVRO AIRCRAFT LIMITED
 MALTON ONTARIO

TECHNICAL DEPARTMENT

REPORT NO. _____

SHEET NO. 1.4.1.

AIRCRAFT:

C105RT-08-235

PREPARED BY

E. J. SMITH

DATE

13 APRIL '56

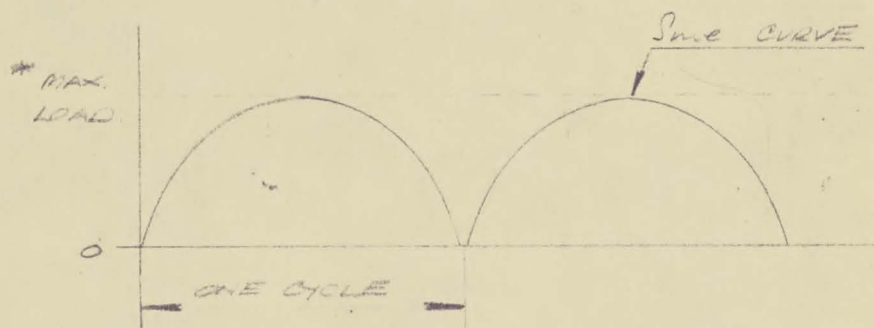
CHECKED BY

DATE

FATIGUE STRENGTHS

CURVES ARE PLOTTED ON THE FOLLOWING SHEETS OF REPEATED LOAD/BOLT AGAINST LOAD CYCLES.

IN THIS TEST, THE LOAD CYCLE HAS BEEN DEFINED AS:



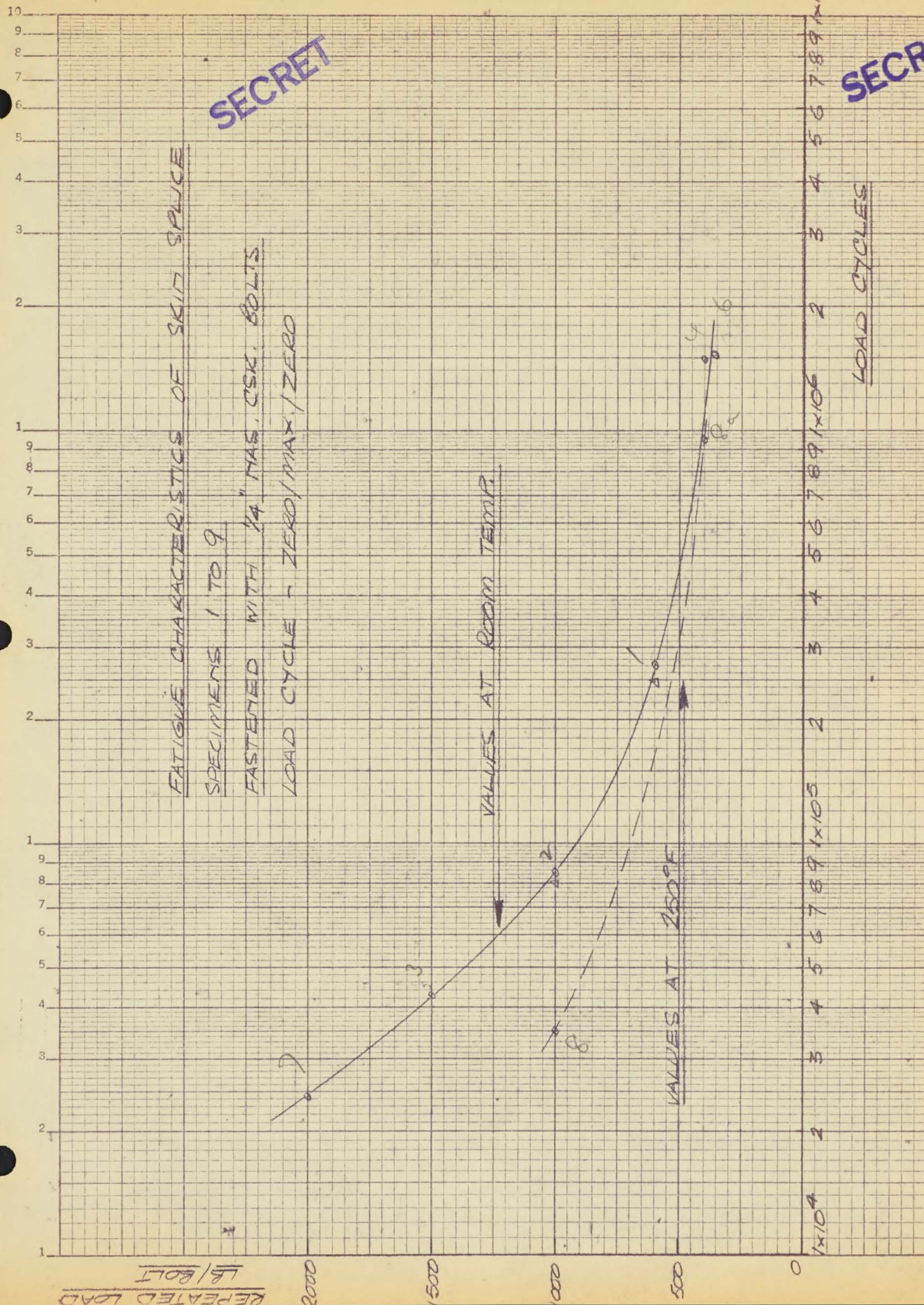
* VALUES GIVEN IN RESULTS & ON CURVES

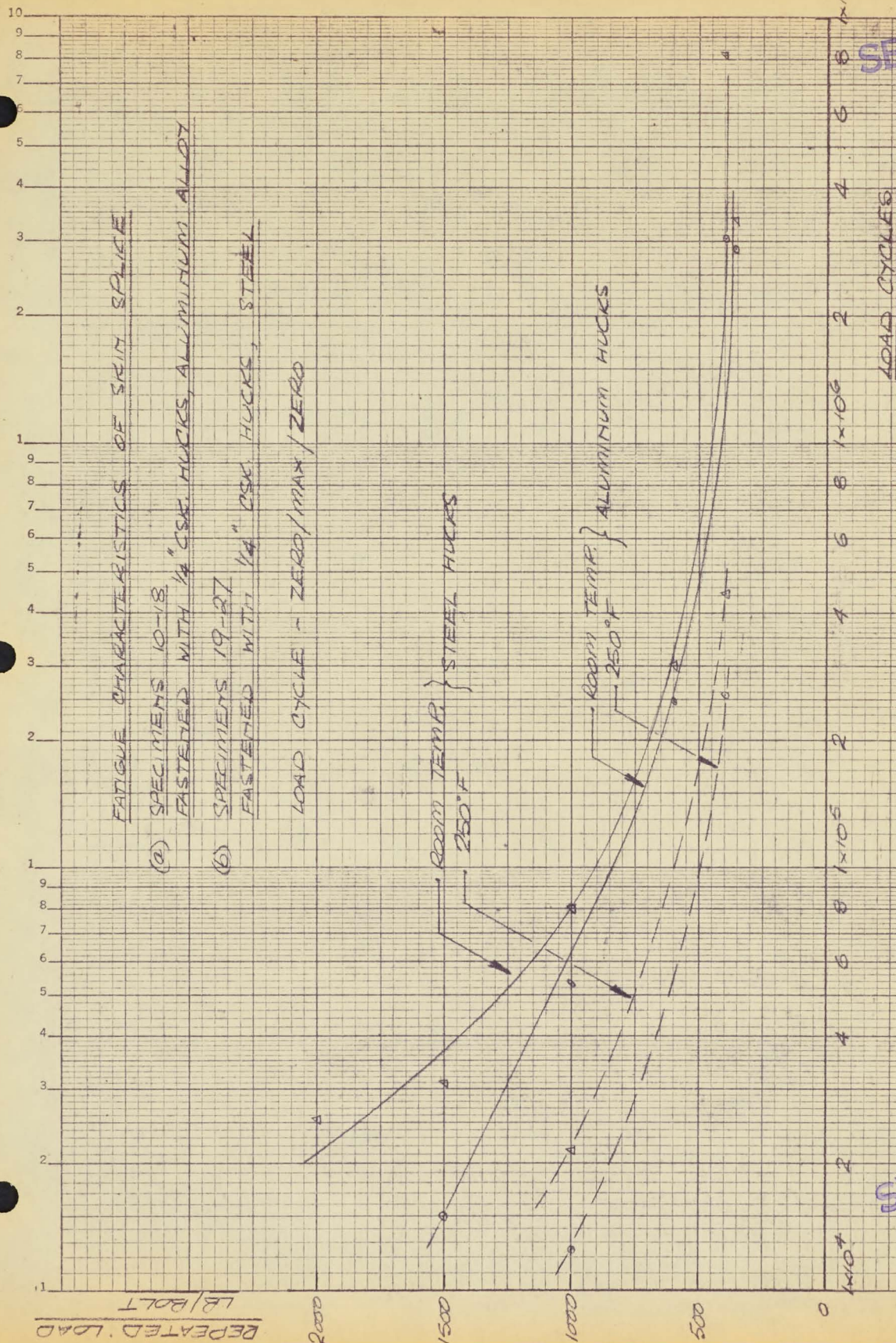
i.e. LOAD CYCLE IS ZERO - MAX. - ZERO.

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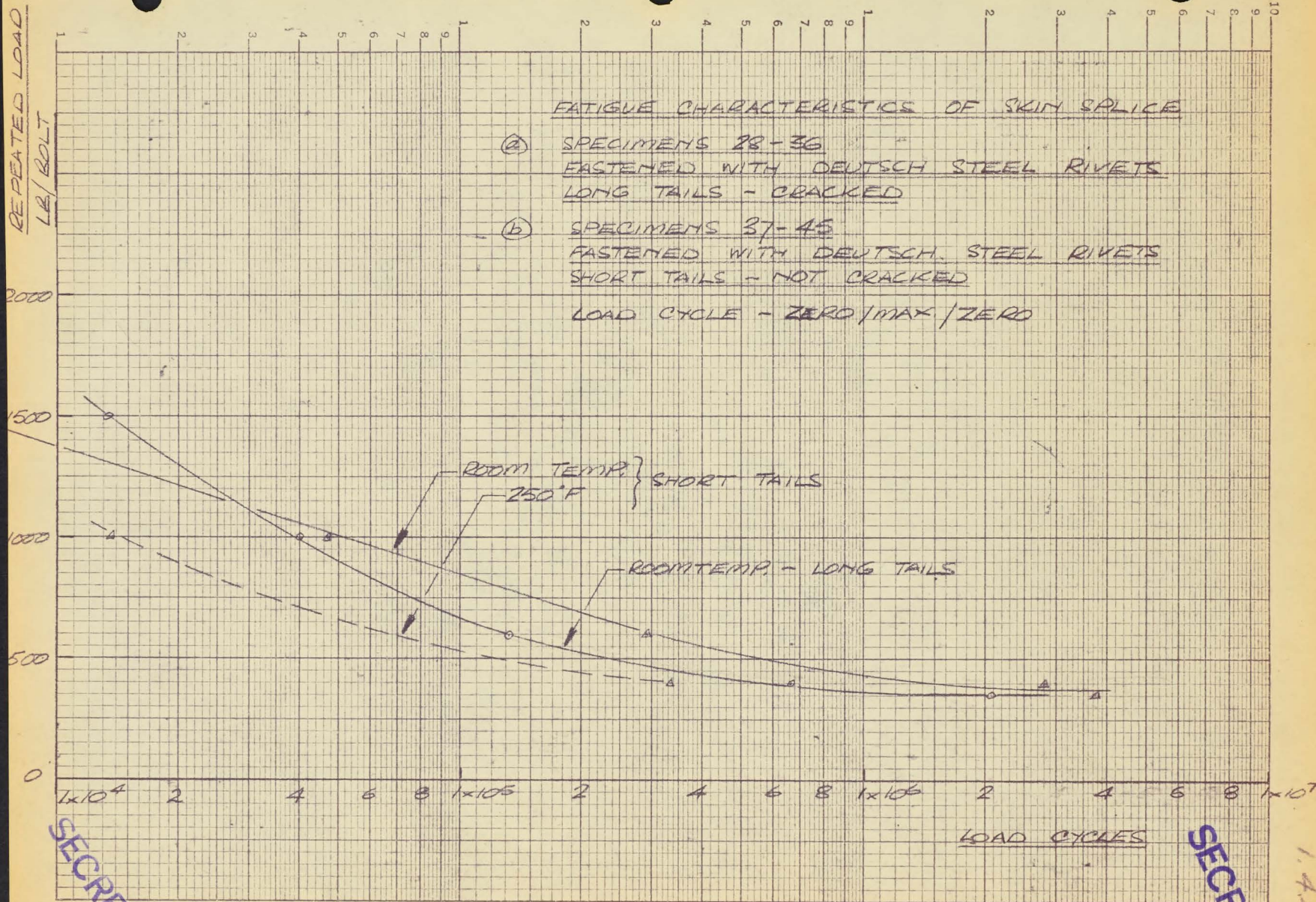
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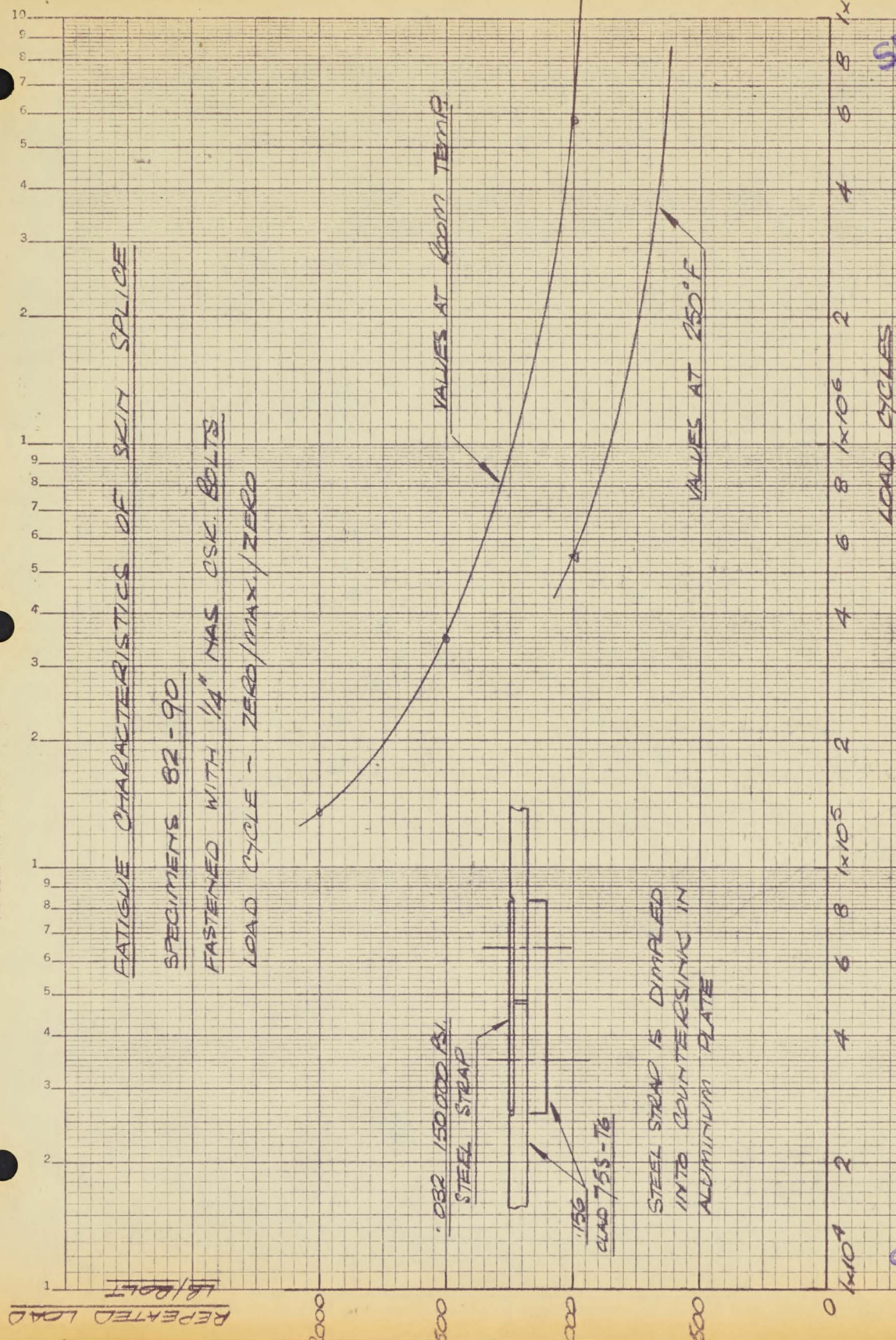
1.4.3.
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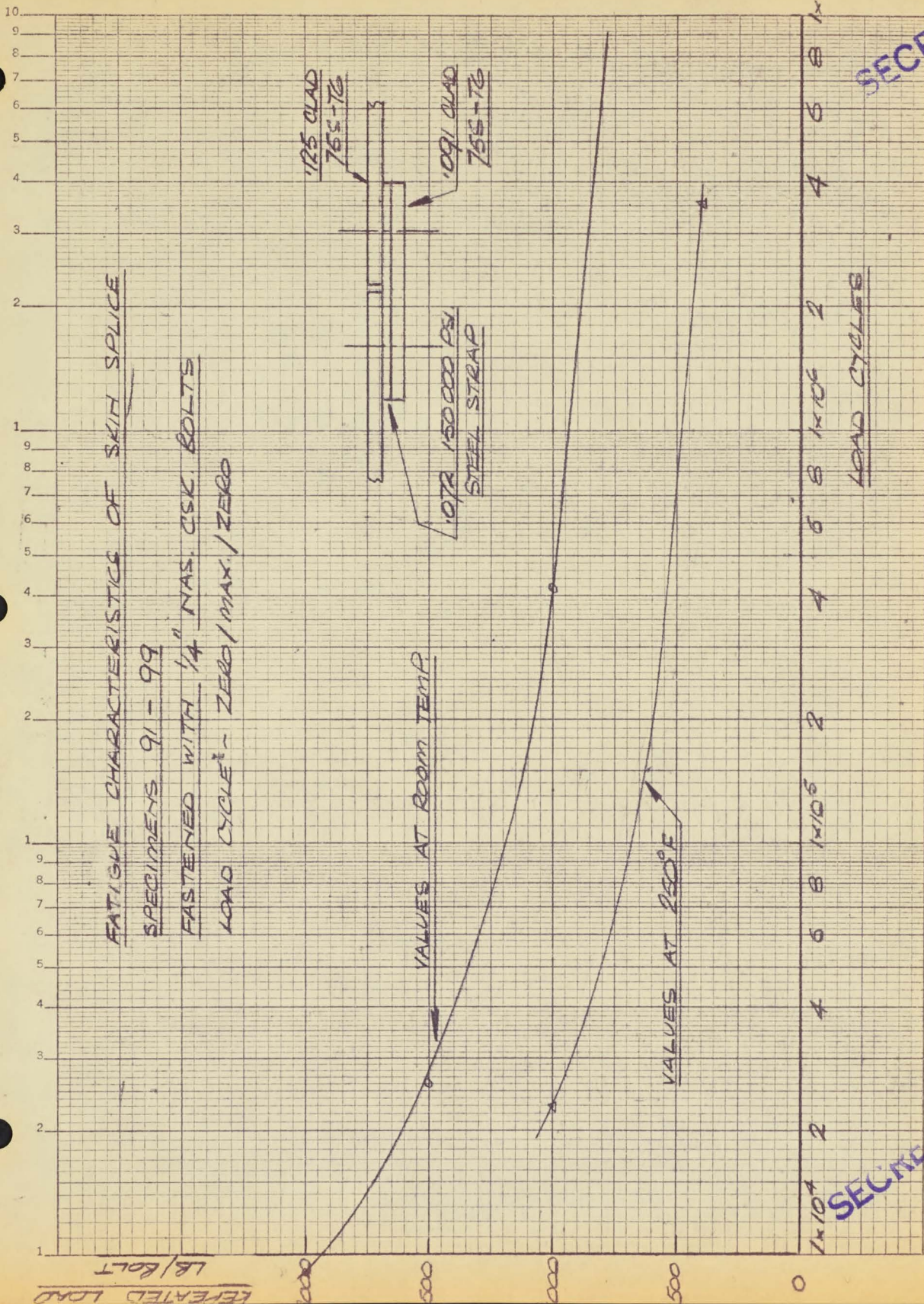
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1.47
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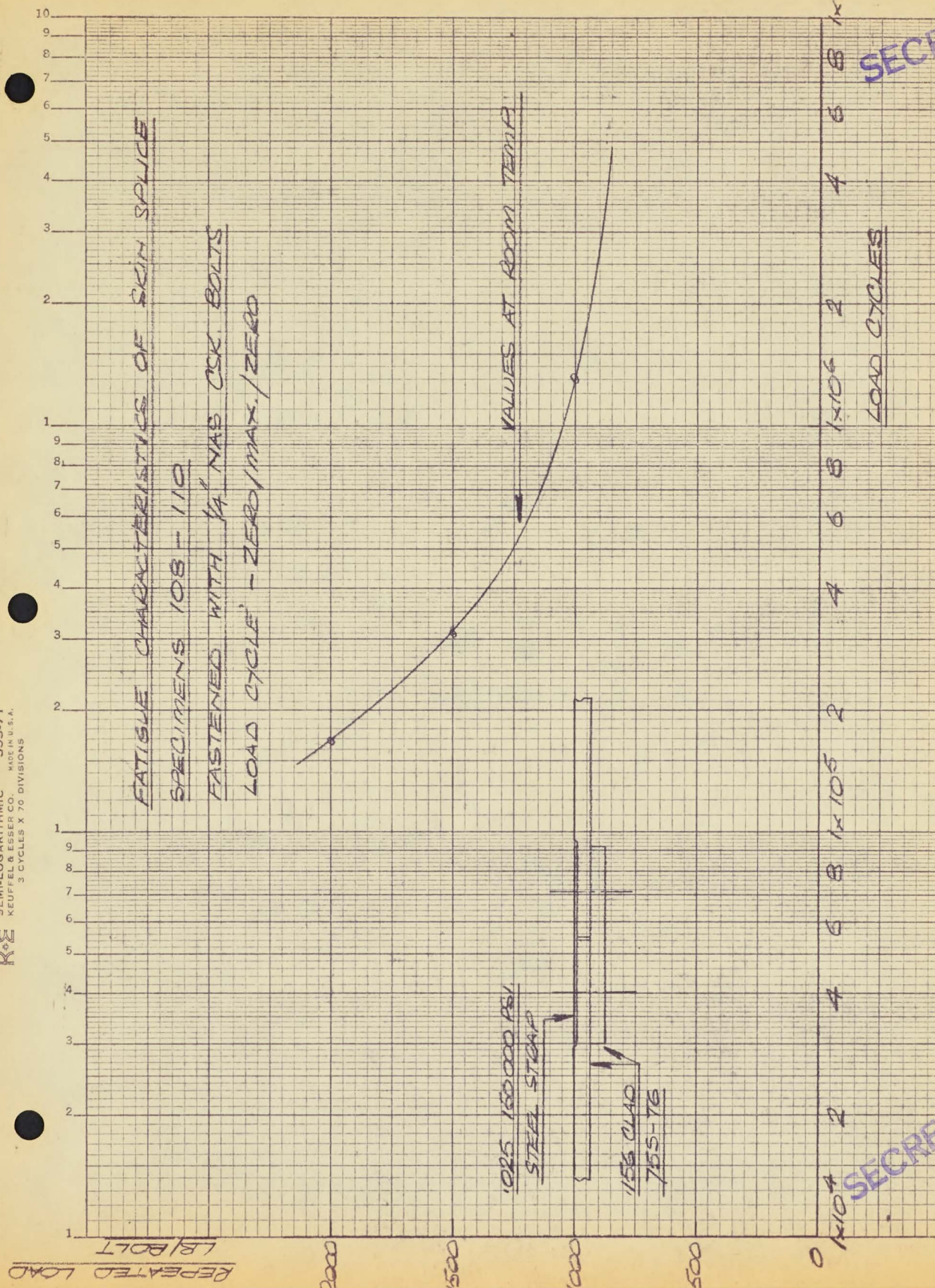
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1.4.8



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MALTON - ONTARIO

TECHNICAL DEPARTMENT (Aircraft)

REPORT NO.

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SHEET NO.

2.2.1.

AIRCRAFT:

C 105

RT08-276

PREPARED BY

E. J. SMITH

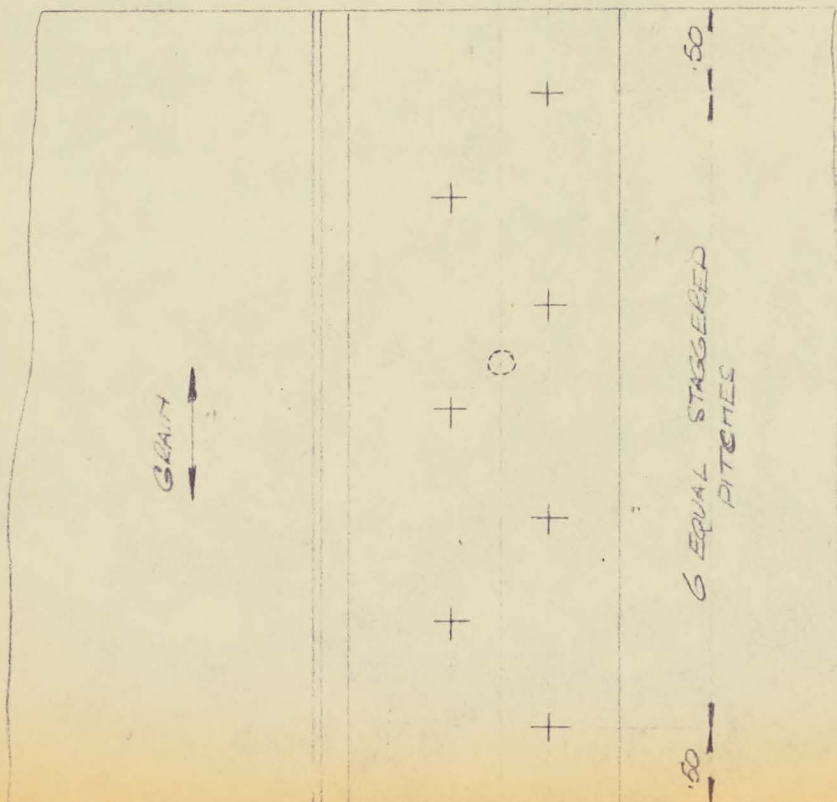
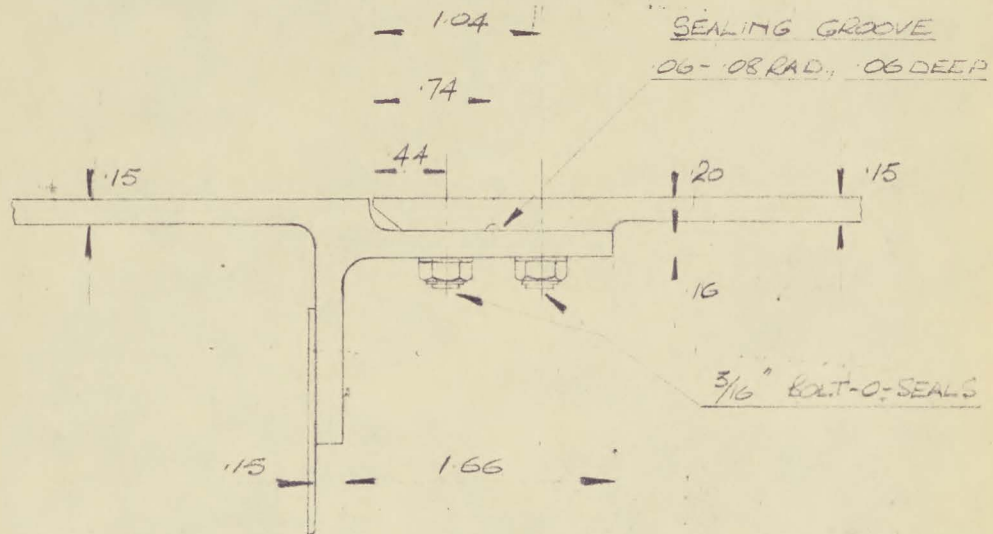
DATE

19 DEC '55

CHECKED BY

DATE

DETAILS OF SPLICE TESTED
FOR SPECIMENS 104 - 107



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

REPORT No. _____

SHEET No. 2.2.0.

PREPARED BY

DATE

E. J. SMITH

19 DEC '55

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DATE

AIRCRAFT:

C105

RT 03-276

TEST RESULTS

SPECIMEN NO.	FASTENERS	STATIC		FATIGUE		
		FAILING LOAD	MODE OF FAILURE	REPEATED LOAD	CYCLES TO FAILURE	MODE OF FAILURE
100	1/4" NAS BOLTS COUNTERSINK	17500				
101				2500	183000	
102				1500	2500000	NONE
103				2000	2500000	NONE
104	3/16" BOLTS COUNTERSINK	16600				
105				2500	425700	
106				1800	2500000	NONE
107				2150	509500	
111	1/4" NAS BOLTS COUNTERSINK	26850				
112				2500	25-10 ⁶	NONE
113				3500	1,027,000	
114				3000	1,675,000	

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MALTON - ONTARIO

TECHNICAL DEPARTMENT

REPORT NO. _____

SHEET NO. 2.4.0.

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AIRCRAFT:

C105

RT-08-265

PREPARED BY

E.J. SMITH

DATE

13 APRIL '56

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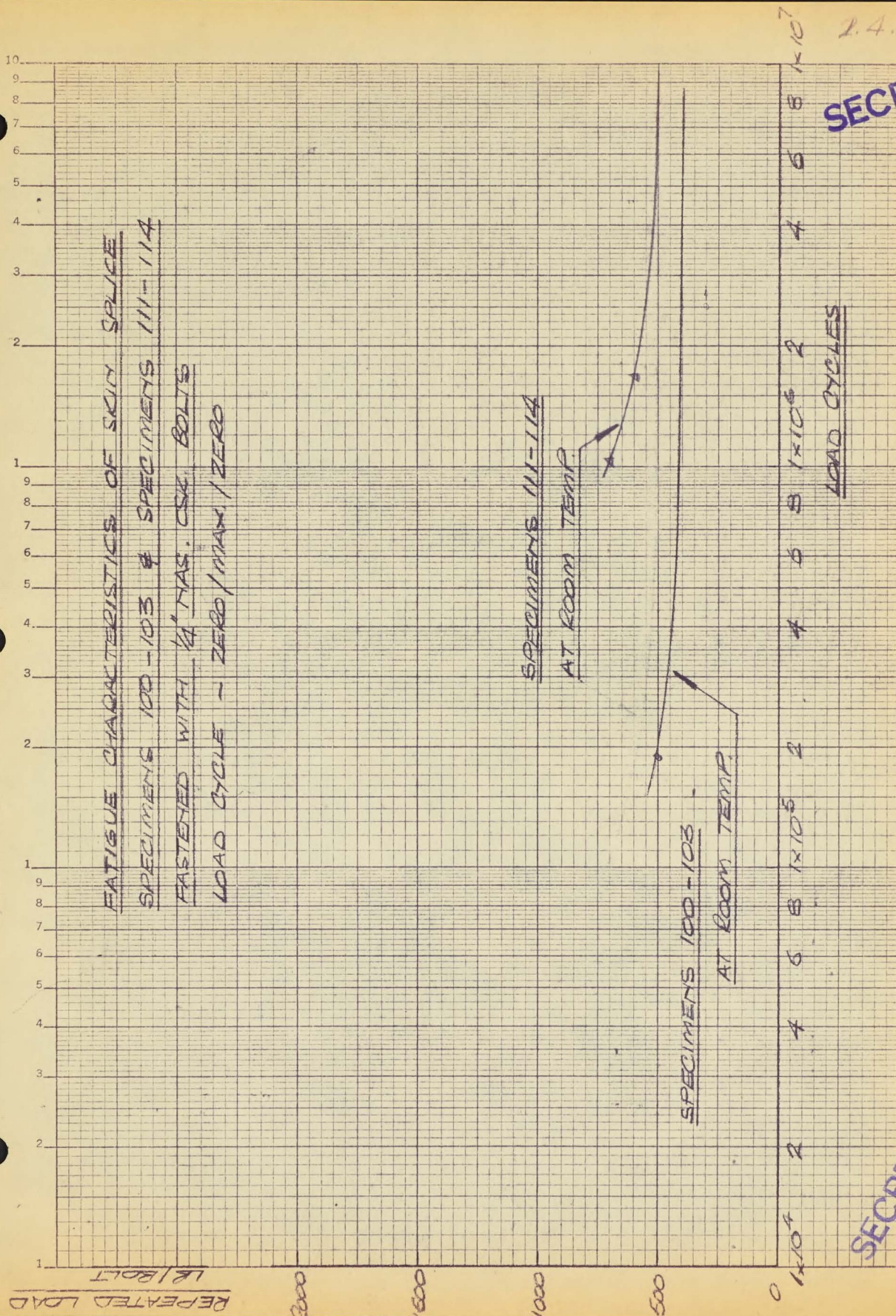
SUMMARY OF STATIC STRENGTHS

SPECIMEN NO.	DETAILS OF JOINT	STATIC STRENGTH LB/BOLT
100-103	1/4" HAS CRK. IN .20 SHANK IN .20 LESS .104 .05 SEALING GROOVE	3500
104-107	2 ROWS OF 3/16" BOLT-O-SEALS IN .20 (SEALING GROOVE BETWEEN ROWS) SHANK IN .16	2370
111-114	1/4" HAS CRK. IN .15 SHANK IN .25 LESS .104 .05 SEALING GROOVE	5370

FATIGUE STRENGTHS

CURVES ARE PLOTTED ON THE FOLLOWING SHEETS OF REPEATED LOAD/BOLT AGAINST LOAD CYCLES.

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2.4.1.
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REPEATED LOAD

15/BOLT

FATIGUE CHARACTERISTICS OF SKIN SPLICE

SPECIMENS 104 TO 107

FASTENED WITH $\frac{3}{16}$ " BOLT-O-SEALS

LOAD CYCLE - ZERO/MAX./ZERO

2000

500

1000

500

1×10^4

2

4

6

8

1×10^5

2

4

6

8

1×10^6

2

4

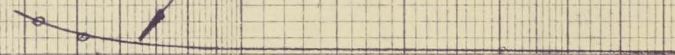
6

8

1×10^7

LOAD CYCLES

AT ROOM TEMP.



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2.4.2.

