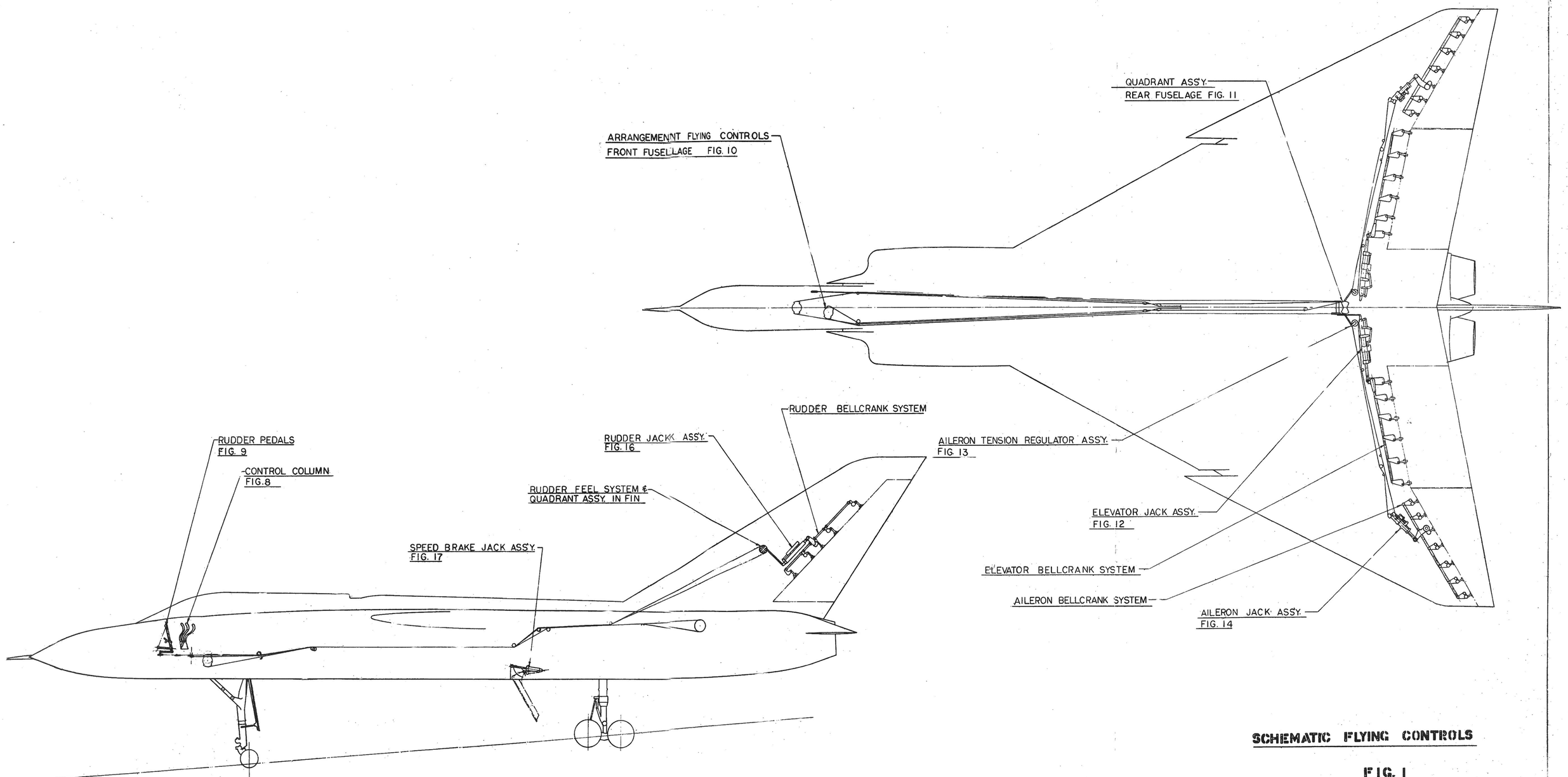
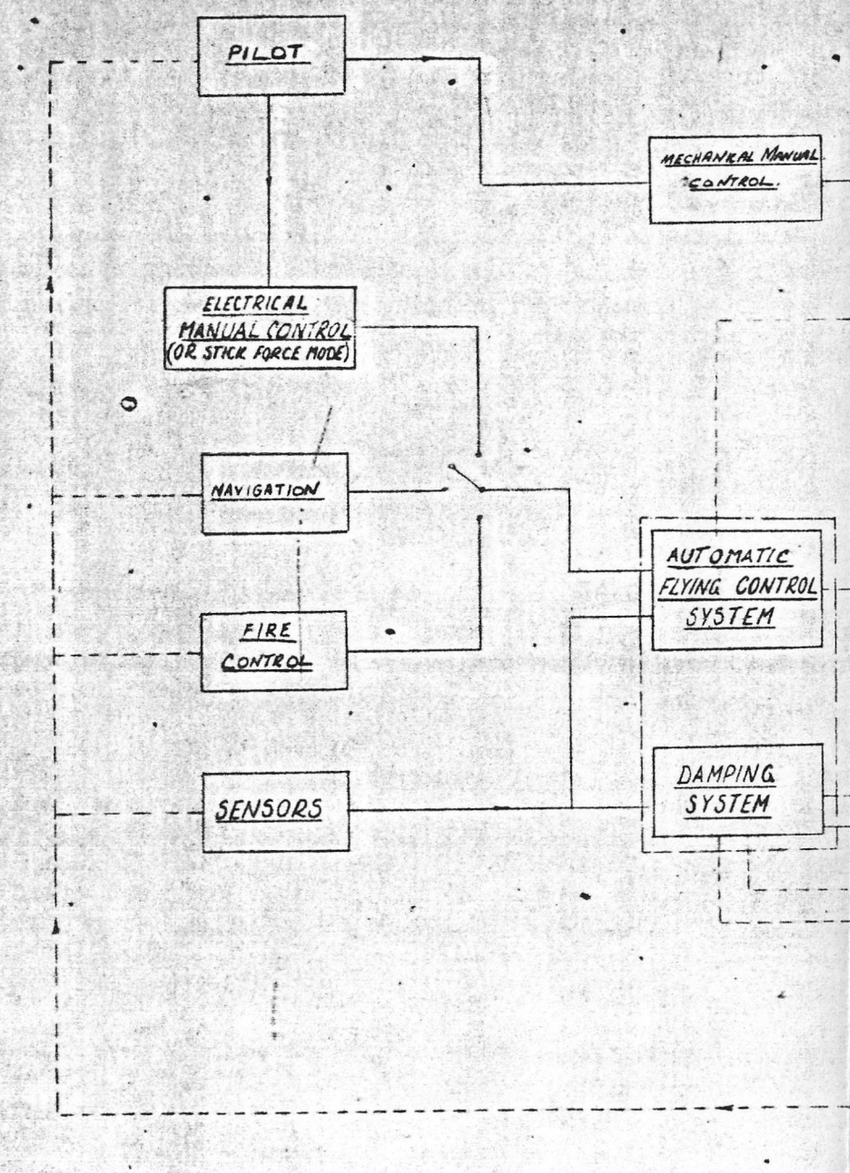
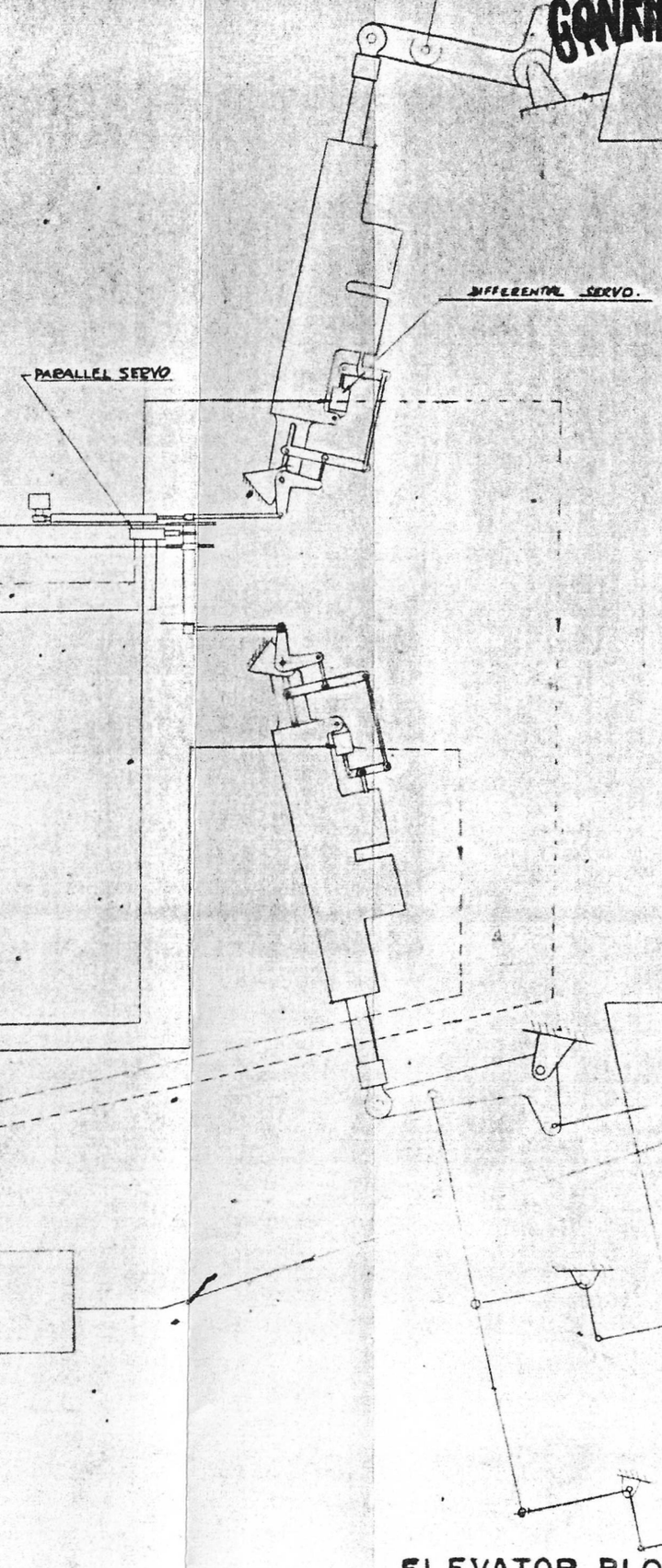


SCHEMATIC FLYING CONTROLS

FIG. 1

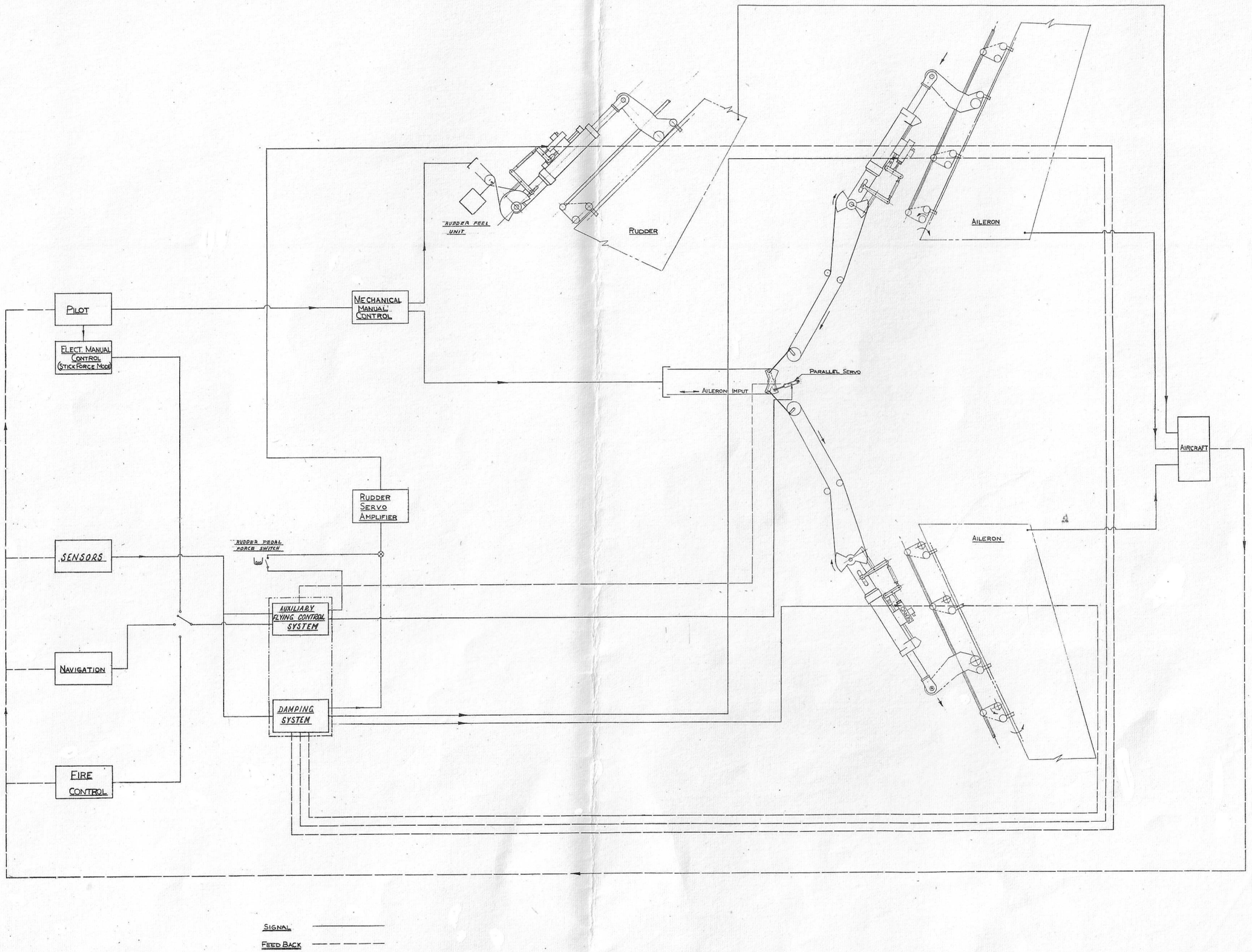
AC. 1998.





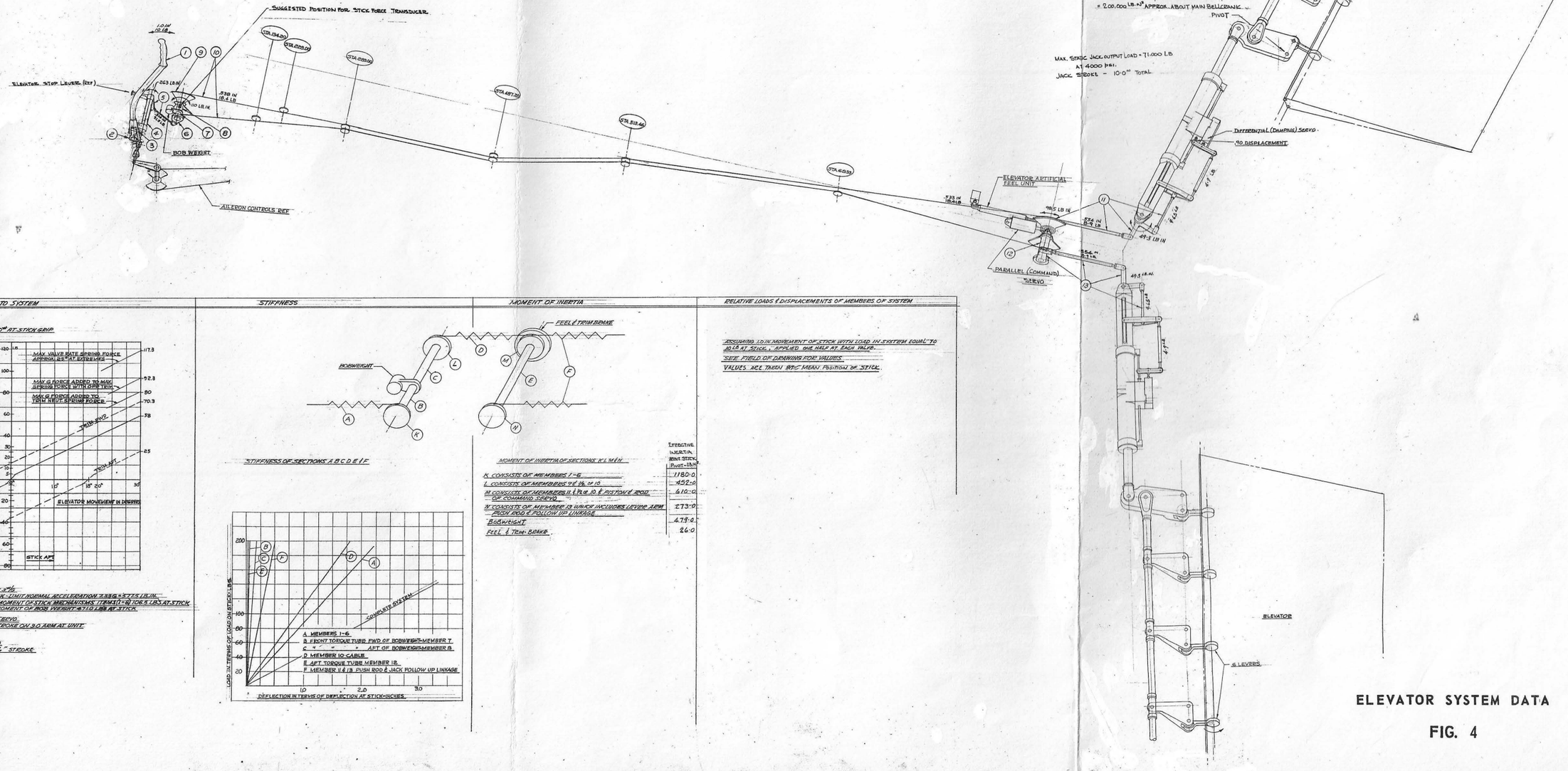
ELEVATOR BLOCK DIAGR

FIG. 2.



RUDDER AND AILERON BLOCK DIAGRAM

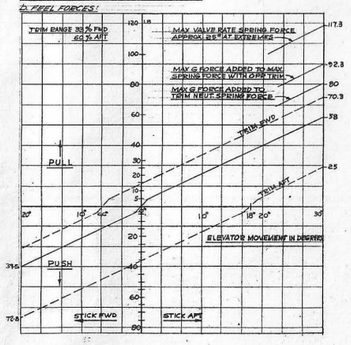
FIG. 3



LOAD APPLIED TO SYSTEM	STIFFNESS	MOMENT OF INERTIA	RELATIVE LOADS & DISPLACEMENTS OF MEMBERS OF SYSTEM

a. PILOTS LIMIT LOAD 200 LB AT STICK GRIP

b. FEEL FORCES:



c. BOB WEIGHT:
FORCE ADDED AT STICK = 2.4 LB.
MOMENT ADDED AT STICK = UNIT NORMAL ACCELERATION 2.33 G x 2.7 LB.IN.
MADE UP OF = STATIC MOMENT OF STICK MECHANISMS ITEMS (1) TO (9) 106.5 LB.IN AT STICK
+ STATIC MOMENT OF BOB WEIGHT 4.7 LB AT STICK.

d. PARALLEL (COMMAND) SERVO:
130 LB OUTPUT, 3.0 STROKE ON 3.0 ARM AT UNIT
41 LB AT STICK.

e. DIFFERENTIAL SERVO:
300 LB OUTPUT 2.6" STROKE

STIFFNESS OF SECTIONS A B C D E F

MOMENT OF INERTIA OF SECTIONS K L M & N

	Effective Inertia, Ref Stick, Pivot-lb.in²
K CONSISTS OF MEMBERS 1-6	1180·0
L CONSISTS OF MEMBERS 9 & 10 & 14	452·0
M CONSISTS OF MEMBERS 11 & 13 & 10 & PISTON & BODY OF COMMAND SERVO	610·0
N CONSISTS OF MEMBER 13 WHICH INCLUDES LEVER ARM PUSH ROD & FOLLOW UP LINKAGE	273·0
BOBWEIGHT	479·0
FEEL & TRIM BRAKE	26·0

ASSUMING 1.0 IN MOVEMENT OF STICK WITH LOAD IN SYSTEM EQUAL TO 10 LB AT STICK - APPLIED ONE HALF AT EACH HALF.

SEE FIELD OF DRAWING FOR VALUES.

VALUES ARE TAKEN WITH MEAN POSITION OF STICK.

ELEVATOR SYSTEM DATA

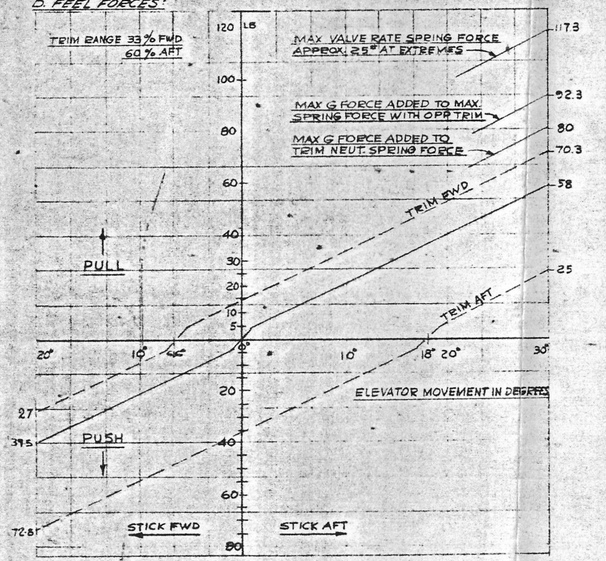
FIG. 4

CONFIDENTIAL
UNLIMITED

LOAD APPLIED TO SYSTEM

a. PILOTS LIMIT LOAD 200 LBS AT STICK GRIP

b. FEEL FORCES:

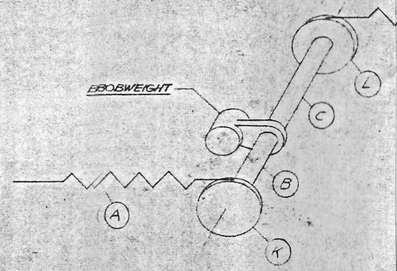


c. BOB WEIGHT:
FORCE REQD AT STICK 3 3/16
MOMENT REQD AT STICK - LIMIT NORMAL ACCELERATION 7.33G = 577.5 LB.IN.
MADE UP OF - STATIC MOMENT OF STICK MECHANISMS (ITEMS (1-6) 106.5 LBS AT STICK
STATIC MOMENT OF BOB WEIGHT 471.0 LBS AT STICK

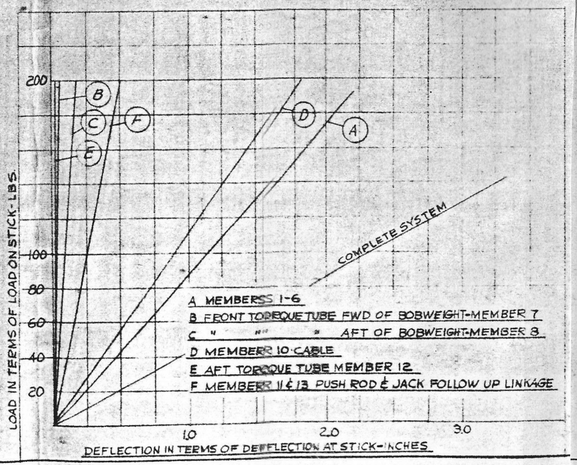
d. PARALLEL (COMMAND) SERVO
150 LB OUTPUT 3.0 STROKE ON 3.0 ARM AT UNIT
4 1/2 LB AT STICK.

e. DIFFERENTIAL SERVO
300 LB OUTPUT ± .6" STROKE

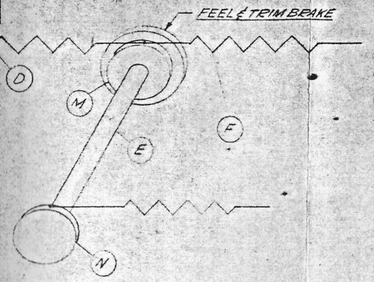
STIFFNESS



STIFFNESS OF SECTIONS A B C D E & F



MOMENT OF INERTIA



MOMENT OF INERTIA OF SECTIONS K L M & N	EFFECTIVE INERTIA ABOUT STICK PIVOT - LB.IN.²
K CONSISTS OF MEMBERS 1-6	1180.0
L CONSISTS OF MEMBERS 9 & 1/2 OF 10	452.0
M CONSISTS OF MEMBERS 11 & 1/2 OF 10 & PISTON & ROD OF COMMAND SERVO	610.0
N CONSISTS OF MEMBER 13 WHICH INCLUDES LEVER ARM PUSH ROD & FOLLOW UP LINKAGE	273.0
BOBWEIGHT	479.0
FEEL & TRIM BRAKE	2.0

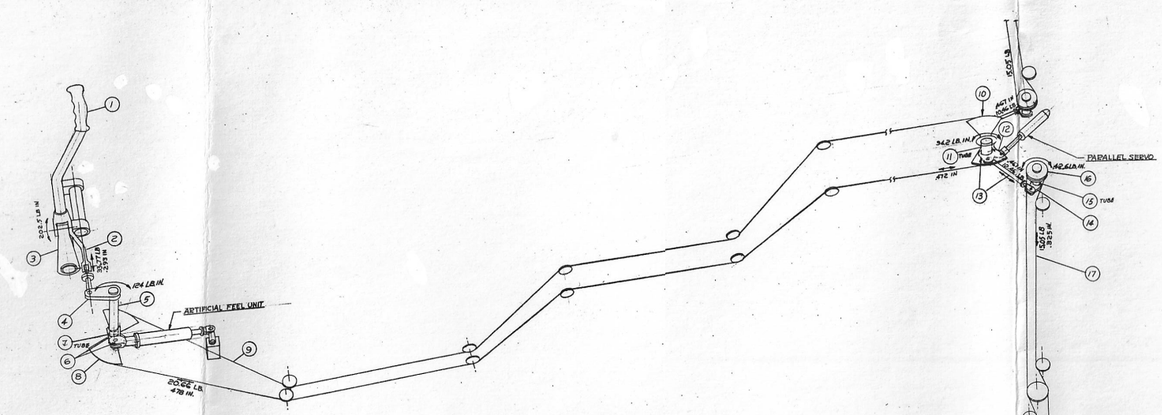
RELATIVE LOADS & DISPLACEMENTS OF INERTIA MASSES

ASSUMING 1.0 IN MOVEMENT OF STICK WITH LOAD OF 10 LBS AT STICK : APPLIED ONE HALF AT EACH VALVE

SEE FIELD OF DRAWING FOR VALVES

VALVES ACT TO AT [illegible] POSITION OF STICK

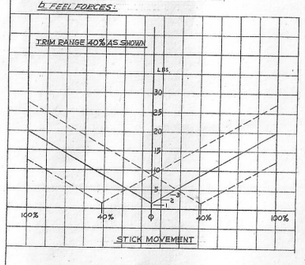
ELEVATOR SYSTEM DATA
FIG. 4-A



LOADS APPLIED TO SYSTEM	STIFFNESS	MOMENT OF INERTIA	RELATIVE LOADS & DISPLACEMENTS FOR MEMBERS OF SYSTEM

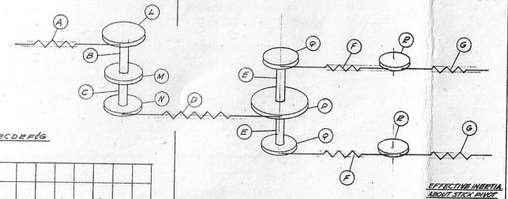
a. PILOTS LIMIT LOAD 100 LB AT STICK GRIP

b. FEEL FORCES:

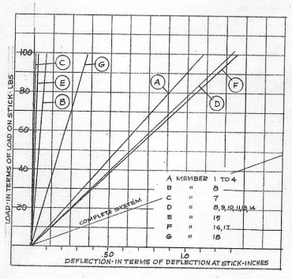


c. PARALLEL (COMMAND) SERVO
75 LB AT UNIT 3.0 IN STROKE ON 3.0 IN. ARM = 225 IN LB AT STICK.

d. DIFFERENTIAL (DAMPING) SERVO
300 LB OUTPUT @ 6 STROKE



STIFFNESS OF SECTIONS A B C D & E & G



MOMENT OF INERTIA OF SECTIONS

			EFFECTIVE INERTIA ABOUT STICK PIVOT LB IN²
L	CONSISTS OF MEMBERS 1 TO 6		
M	" "	6 - FEEL & BRAKE	
N	" "	7+8+½ of 9	
P	" "	11+12+10+11+12+13+14	
Q	" "	16+15=17	
E	" "	15+17+GROUP 18	

ASSUMING 1.0 IN. MOVEMENT OF STICK WITH LOAD IN SYSTEM EQUAL TO 10 LB AT STICK APPLIED ONE HALF AT EACH VALVE

SEE FIELD OF DRAWING FOR VALUES

VALUES ARE TAKEN AT MEAN POSITION OF STICK

STATIC JACK LOAD 418.100 LB'S
4000 PSI SYSTEM
NORMAL OPERATING STROKE 5.16 IN

AILERON SYSTEM DATA

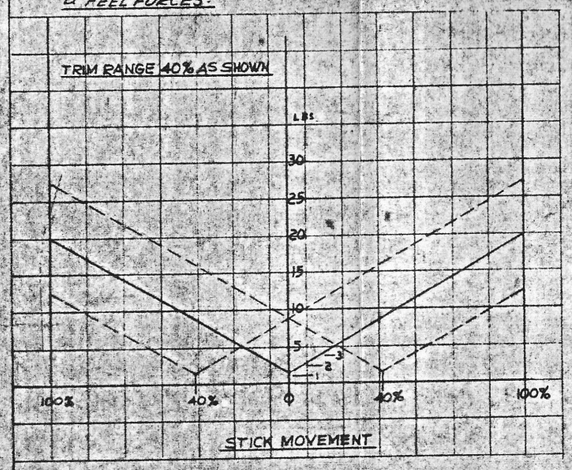
FIG. 5

CONFIDENTIAL

LOADS APPLIED TO SYSTEM

a. PILOTS LIMIT LOAD 100 LB AT STICK GRIP

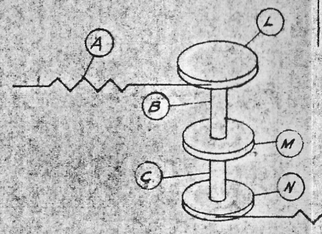
b. FEEL FORCES:



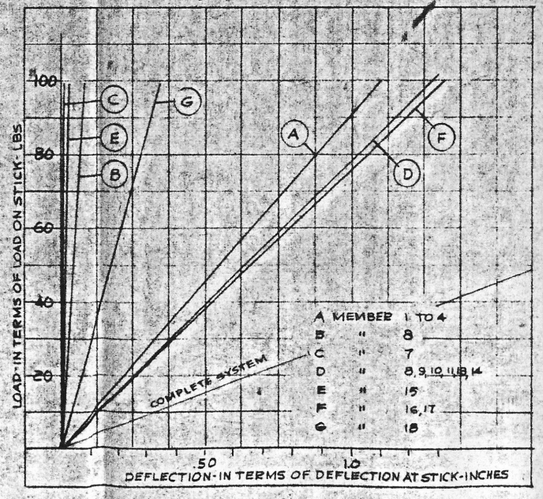
c. PARALLEL (COMMAND) SERVO
75 LB AT UNIT 3.0 IN. STROKE ON 3.0 IN. ARM - 22.5 LB AT STICK

d. DIFFERENTIAL (DAMPING) SERVO
300 LB OUTPUT ± .6" STROKE

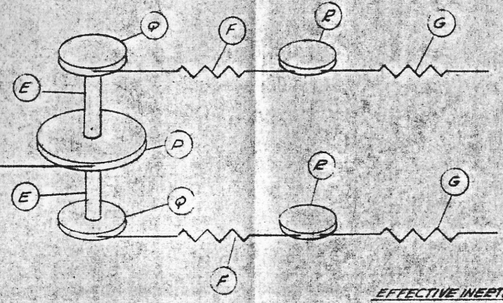
STIFFNESS



STIFFNESS OF SECTIONS A B C D E F & G



MOMENT OF INERTIA



MOMENT OF INERTIA OF SECTIONS		EFFECTIVE INERTIA ABOUT STICK PIVOT LB IN.²
L	CONSISTS OF MEMBERS 1 TO 5	619.25
M	" " -6-FEEL & BRAKE	55.05
N	" " 7+8+½ of 9	301.65
P	" " ½ of 9+10+11+12+13+14	292.29
Q	" " 16+½ of 17	150.60
R	" " ½ of 17 + GROUP 18	157.96

NOTE - VALUES FOR INERTIA WILL BE ADDED AT NEXT ISSUE

RELATIVE LOADS & DISPLACEMTS FOR MEMBEES OF SYSTEM

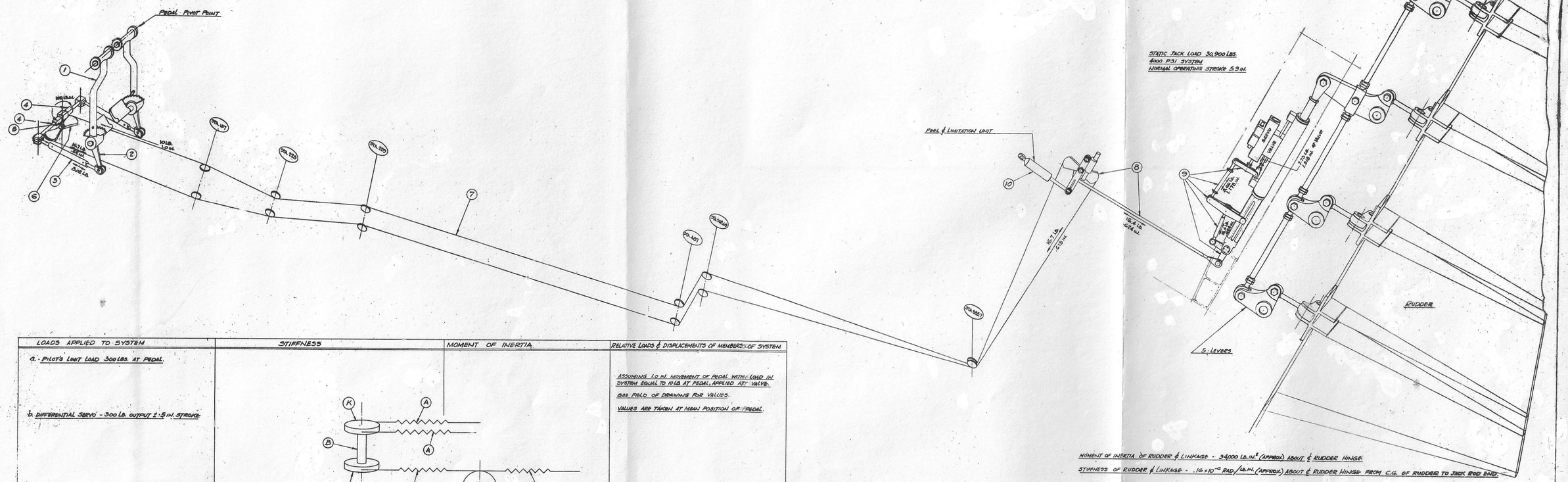
ASSUMING 1.0 IN MOVEMENT OF STICK WITH LOAD IN SYSTEM EQUAL TO 10 LB AT STICK APPLIED ONE HALF AT EACH VALVE

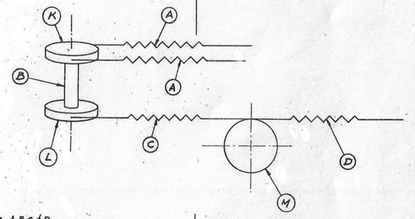
SEE FIELD OF DRAWING FOR VALUES

VALUES ARE TAKEN AT MEAN POSITION OF STICK

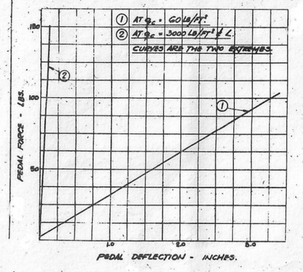
AILERON SYSTEM DATA

FIG. 5-A

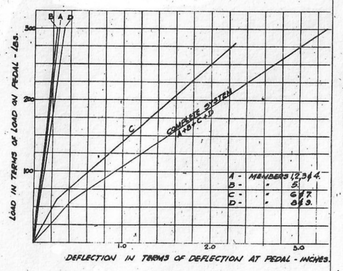


LOADS APPLIED TO SYSTEM	STIFFNESS	MOMENT OF INERTIA	RELATIVE LOADS & DISPLACEMENTS OF MEMBERS OF SYSTEM
a. - PILOT'S LIMIT LOAD 300 LBS. AT PEDAL. b. DIFFERENTIAL SERVO - 300 LB. OUTPUT ± .5 IN. STROKE.			ASSUMING 1.0 IN. MOVEMENT OF PEDAL WITH LOAD IN SYSTEM EQUAL TO 10 LB AT PEDAL, APPLIED AT VALVE. SEE FIELD OF DRAWING FOR VALUES. VALUES ARE TAKEN AT MEAN POSITION OF PEDAL.

RUDDER - FEEL CHARACTERISTICS



STIFFNESS OF SECTIONS A, B, C & D



MOMENT OF INERTIA OF SECTIONS	EFFECTIVE INERTIA ABOUT PEDAL PIVOT POINT LB.IN.²
(K) CONSISTS OF MEMBERS: Σ = ① + 2×② + 2×③ + 2×④ + ½ OF ⑤	2514.0
(L) CONSISTS OF MEMBERS: ½ OF ⑤ + ⑥ + ½ OF ⑦	668.2
(M) CONSISTS OF MEMBERS: ½ OF ⑦ + ⑧ + ⑨ + ⑩	1788.5

MOMENT OF INERTIA OF RUDDER & LINKAGE - 34000 LB.IN.² (APPROX) ABOUT ℄ RUDDER HINGE

STIFFNESS OF RUDDER & LINKAGE - .16 ×10⁻⁶ RAD/LB.IN. (APPROX) ABOUT ℄ RUDDER HINGE FROM C.G. OF RUDDER TO JACK ROD END.

RUDDER SYSTEM DATA

FIG. 6

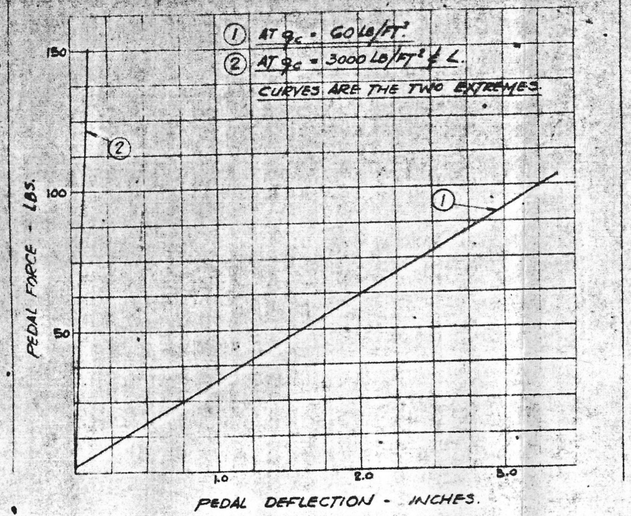
CONFI

LOADS APPLIED TO SYSTEM

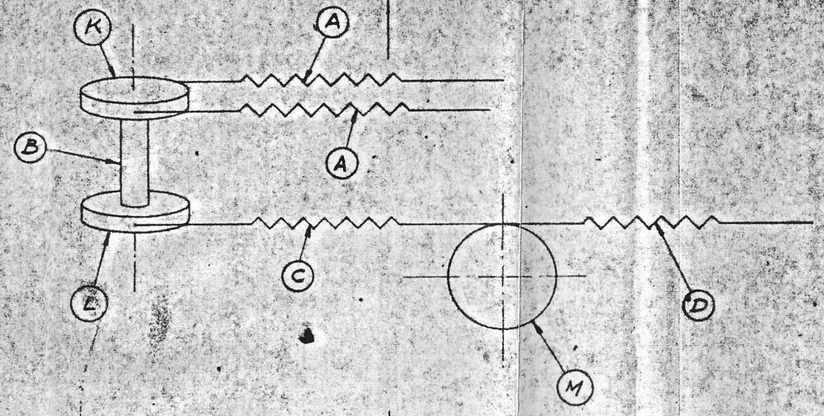
a. - PILOT'S LIMIT LOAD 300 LBS. AT PEDAL.

b. DIFFERENTIAL SERVO - 300 LB. OUTPUT ± 1.5 IN. STROKE.

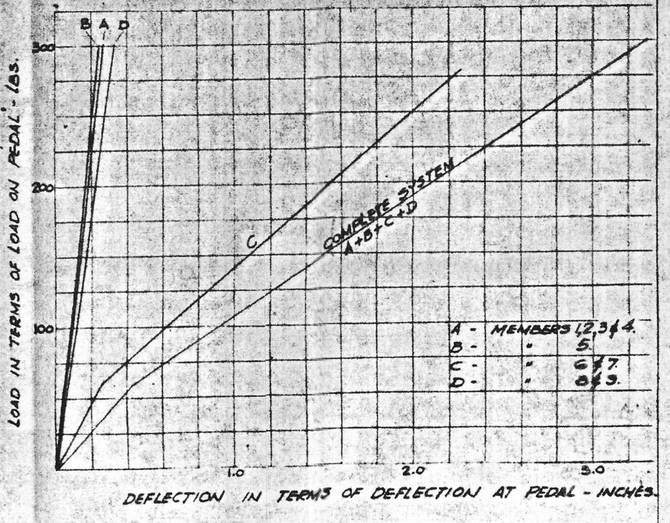
RUDDER - FEEL CHARACTERISTICS



STIFFNESS



STIFFNESS OF SECTIONS A, B, C & D



MOMENT OF INERTIA

MOMENT OF INERTIA OF SECTIONS	EFFECTIVE INERTIA ABOUT PEDAL PIVOT POINT LB. IN.²
(K) CONSISTS OF MEMBERS: 2×(1) + 2×(2) + 2×(3) + 2×(4) + ½ OF (5)	2514.0
(L) CONSISTS OF MEMBERS: ½ OF (5) + (6) + ½ OF (7)	668.2
(M) CONSISTS OF MEMBERS: ½ OF (7) + (8) + (9) + (10)	1788.5

RELATIVE LOADS & DISPLACEMENTS OF MEMBERS OF SYSTEM

ASSUMING 1.0 IN. MOVEMENT OF PEDAL WITH LOAD IN SYSTEM EQUAL TO 10 LB AT PEDAL, APPLIED AT VALVE.

SEE FIELD OF DRAWING FOR VALUES.

VALUES ARE TAKEN AT MEAN POSITION OF PEDAL.

RUDDER SYSTEM DATA

FIG. 6A

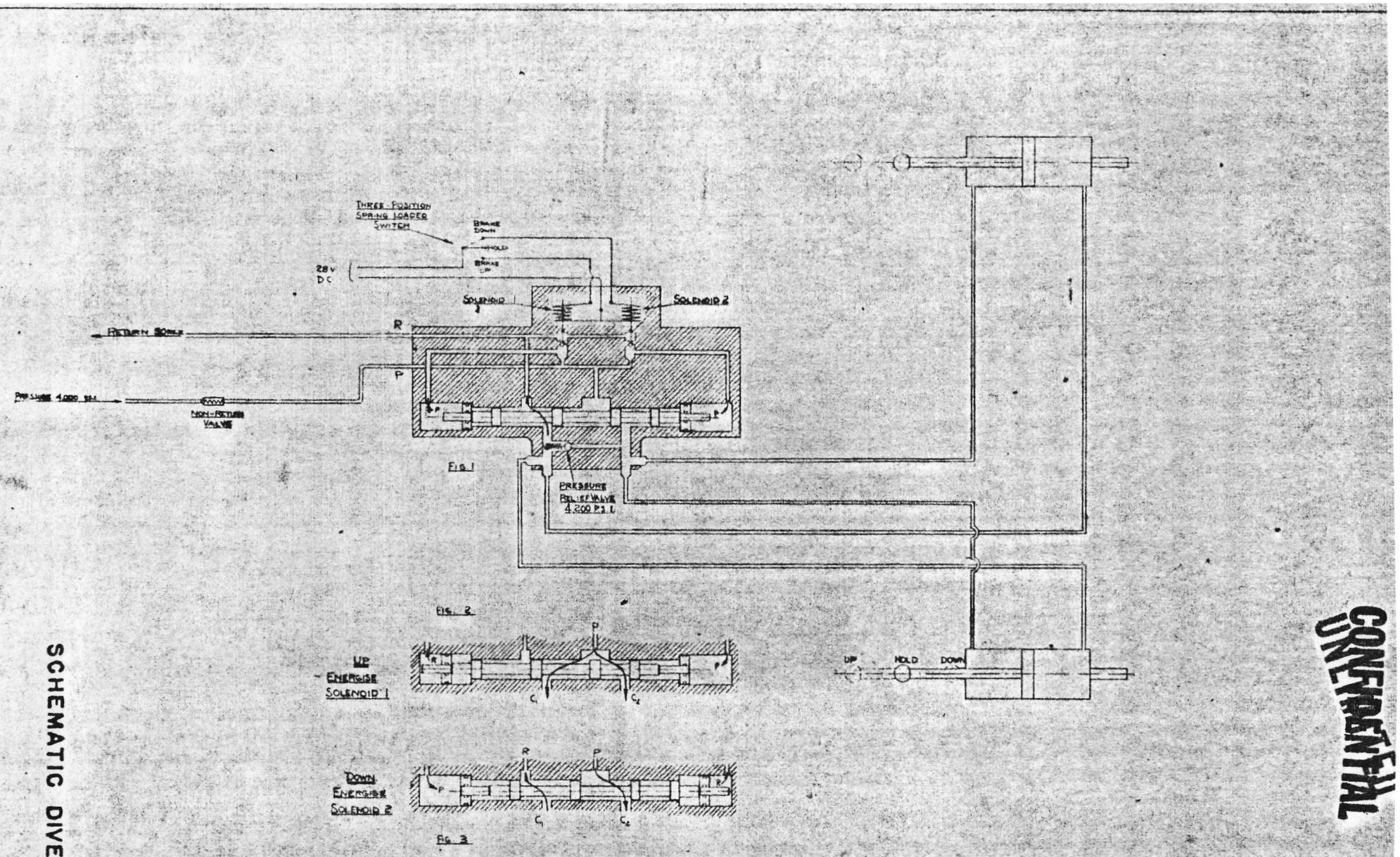


FIG. 1

FIG. 2

FIG. 3

SCHEMATIC DIVE BRAKE CONTR

FIG. 7.

CONFIDENTIAL

7

ISSUE NO.	1	2
MOD. NO.		
DOL NO.		
DRAWN BY		
DATE	7-OCT-58	27-NOV-58
CHECKED		

REFERENCE DRAWINGS

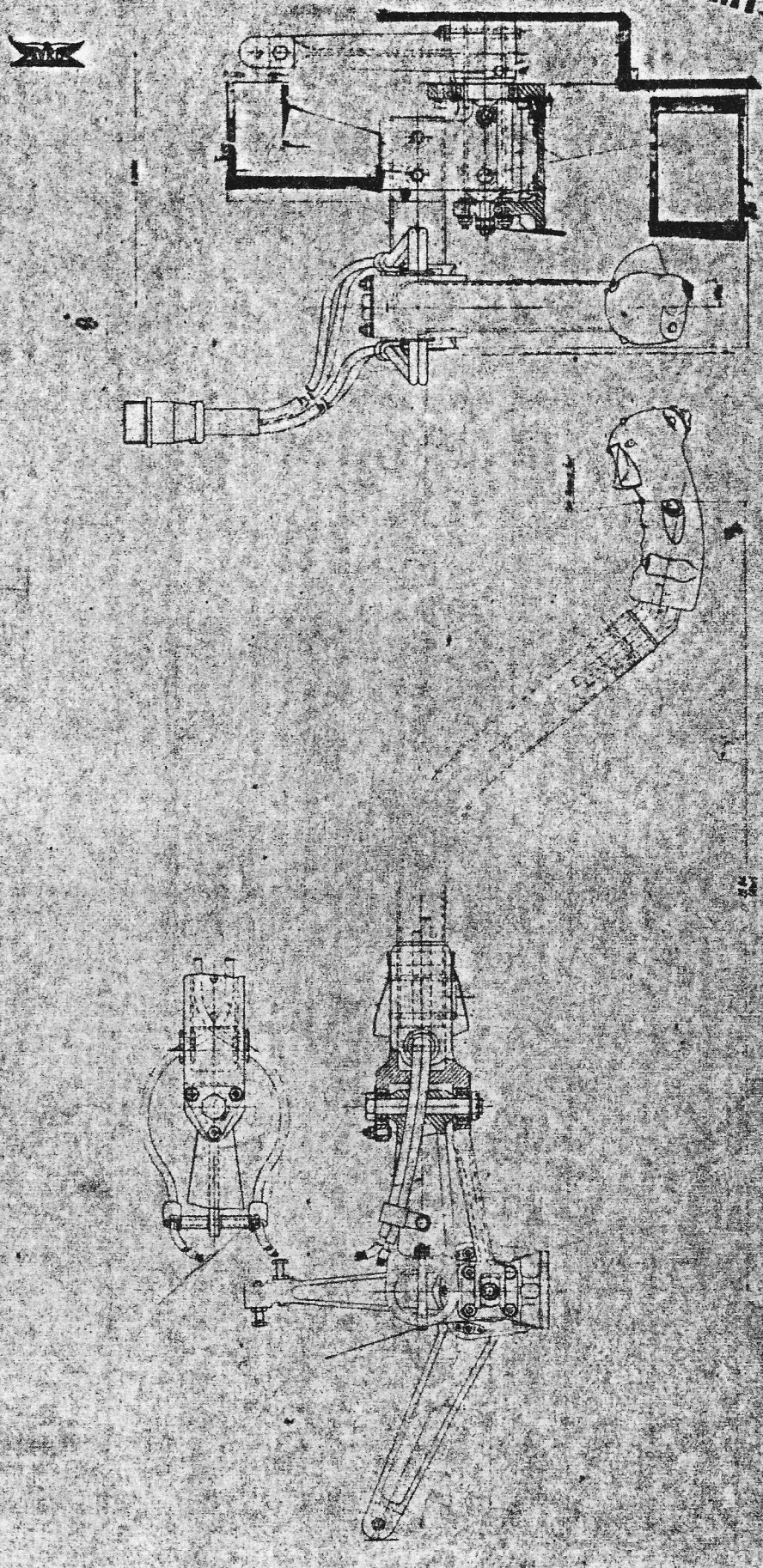
DWG NO.	DESCRIPTION

A. V. ROE CANADA LTD.
MALTON ONTARIO

CLASS SCHEMATIC
SPEED BRAKE CONTROL
FLYING CONTROLS

SCALE FULL

DRAWING NO. 7-0119-32



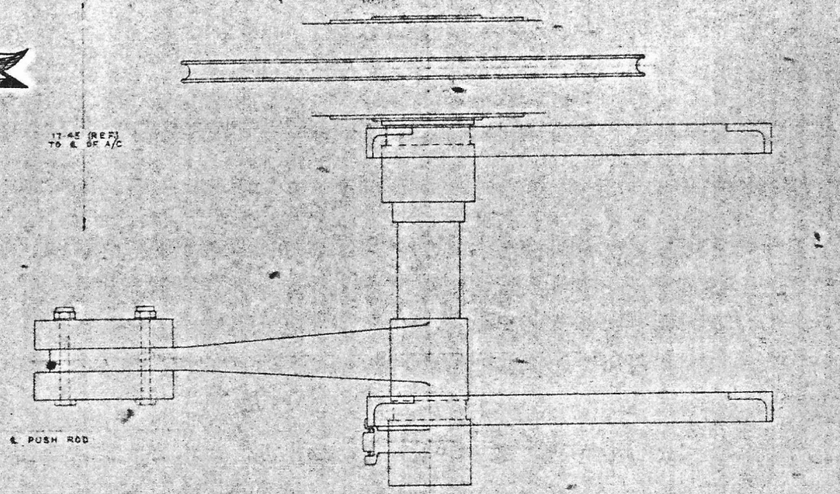
CONTROL COLUMN ASS'Y

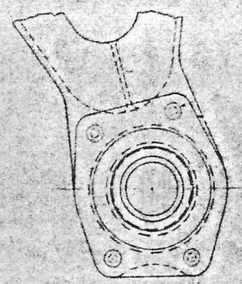
FIG. 8

SEC. A-A

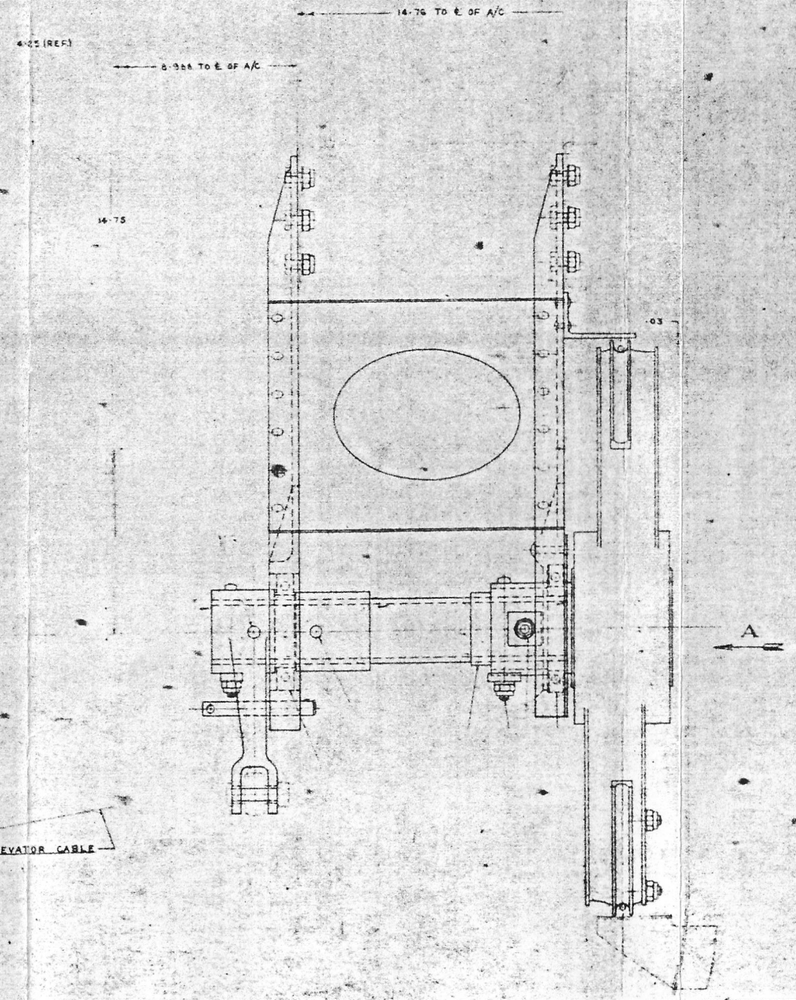
RUDDER PEDALS

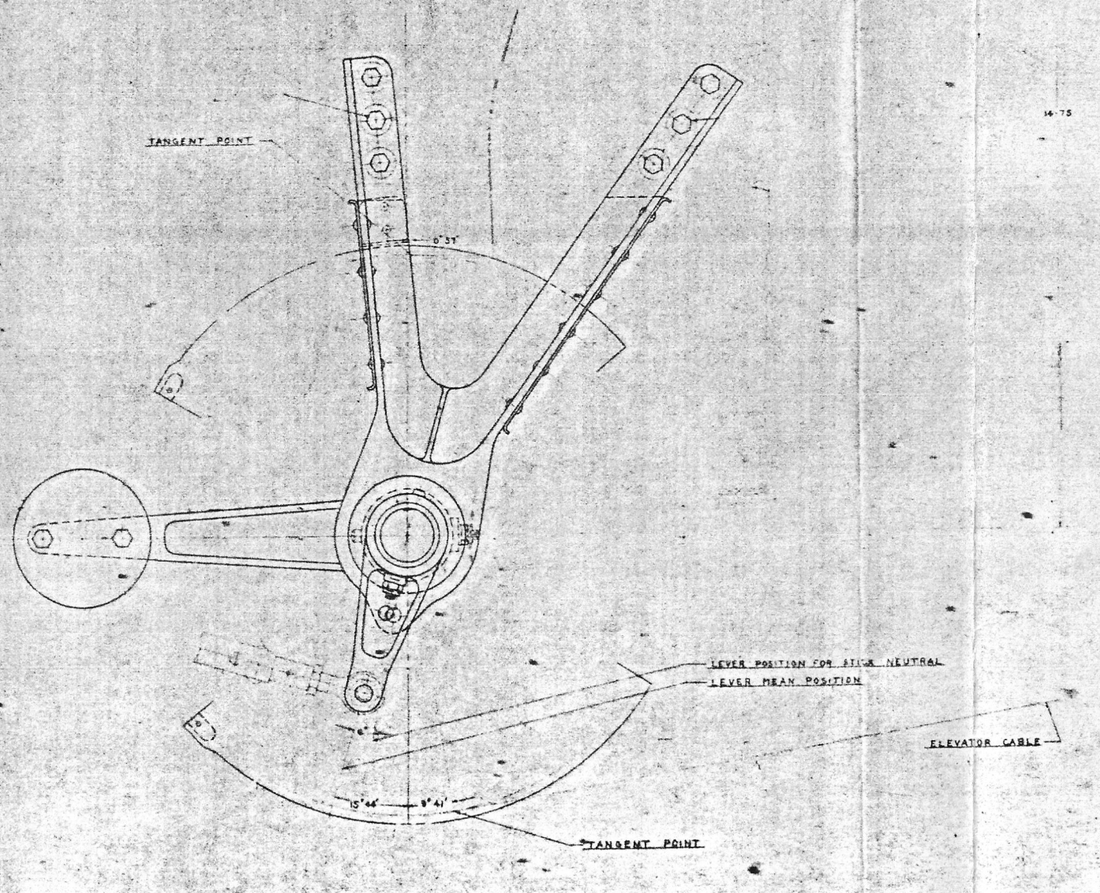
FIG. 9





VIEW ON ARROW A
QUADRANT OMITTED FOR CLARITY

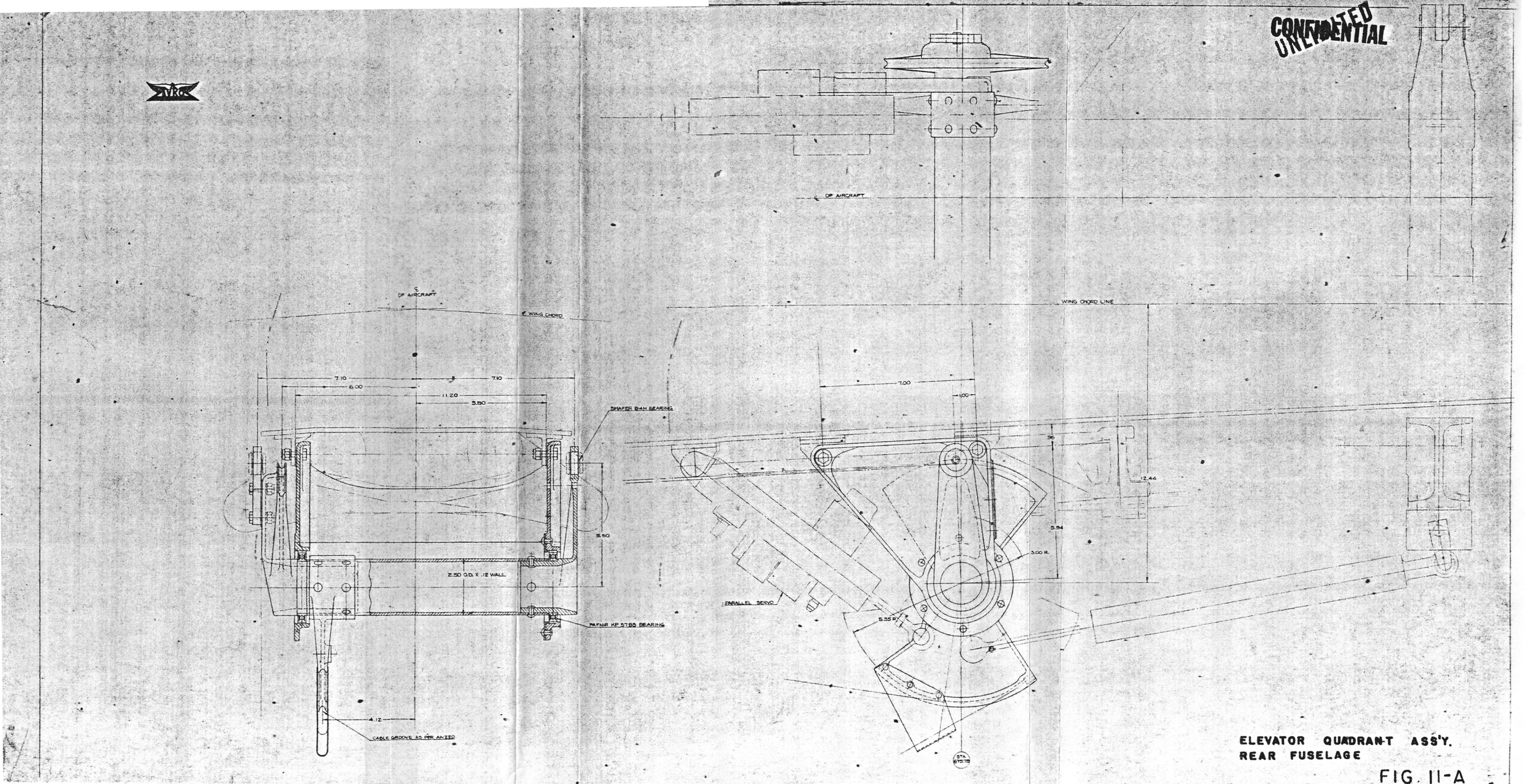




ELEVATOR QUADRANT ASS'Y.
FRONT FUSELAGE

FIG. 10

CONFIDENTIAL
UNCLASSIFIED

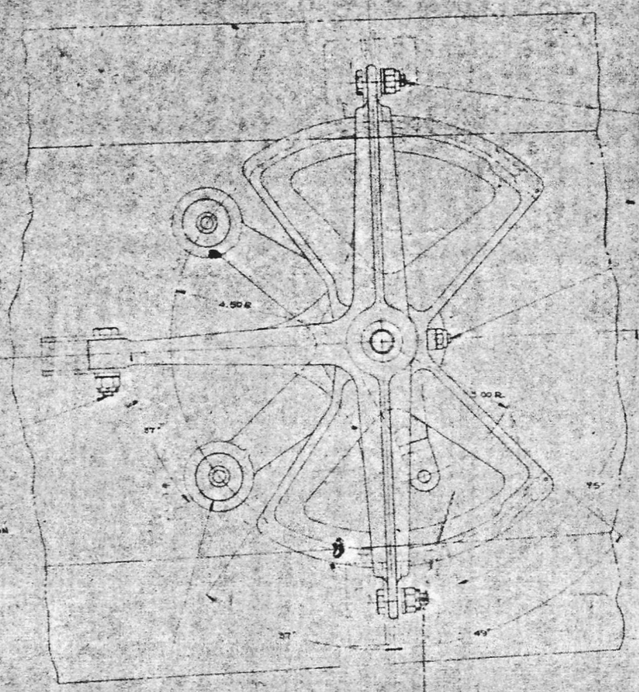


ELEVATOR QUADRANT ASS'Y.
REAR FUSELAGE

FIG. II-A

REPORT ERRORS TO DESIGN OFFICE

CONFIDENTIAL



AN4-12 BOLT
AN960-616L WASHER
AN310-6 NUT
AN381-2-10 COTTER PIN

AN4-16 BOLT
AN960-616L WASHER
AN310-6 NUT
AN381-2-10 COTTER PIN
(2 PLACES)

AN950-616 TAPER PIN
AN318-3 NUT
AN975-3 WASHER
AN380-2-2 COTTER PIN
(2 PLACES)

℄ AIRCRAFT

B.A.H. BEARING SHAFTS TAKE SECURELY (2 PLACES)

FUS STA 682.85

WING CHORD LINE

5.50

LOWER WING SURFACE ℄ AIRCRAFT

1.40

4.05

FORWARD

VIEW LOOKING INBOARD

℄ AIRCRAFT

KPBA BEARING (FARNER) NAS50-11C RING

11.06

5.53

9.129 P.D.

GROOVE PER AN220

KP25D BEARING (FARNER) NAS50-23K RING

VIEW LOOKING FORWARD

ADVANCE PRINT

AILERON QUADRANT ASS'Y.
REAR FUSELAGE

FIG 11-B

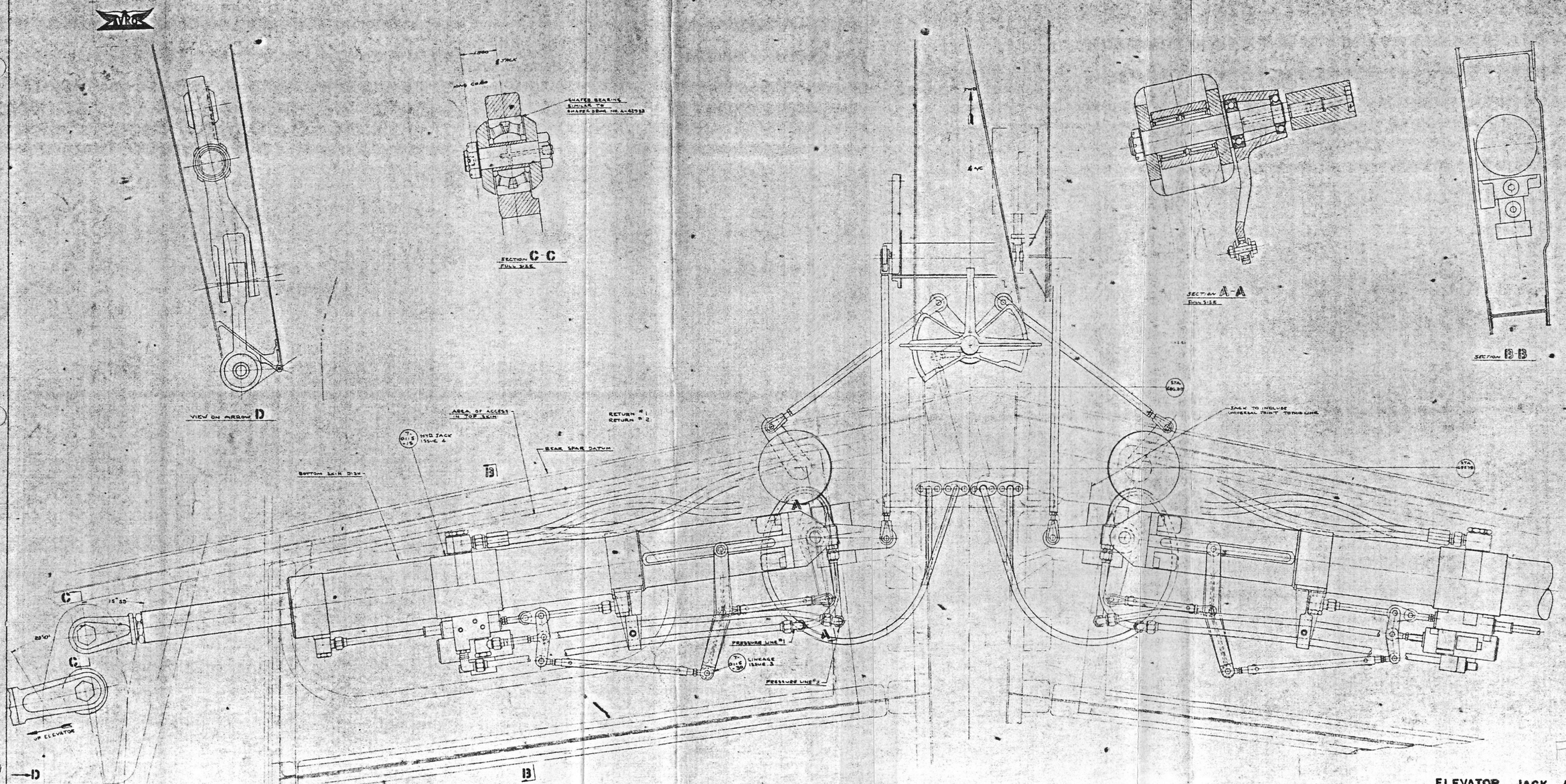
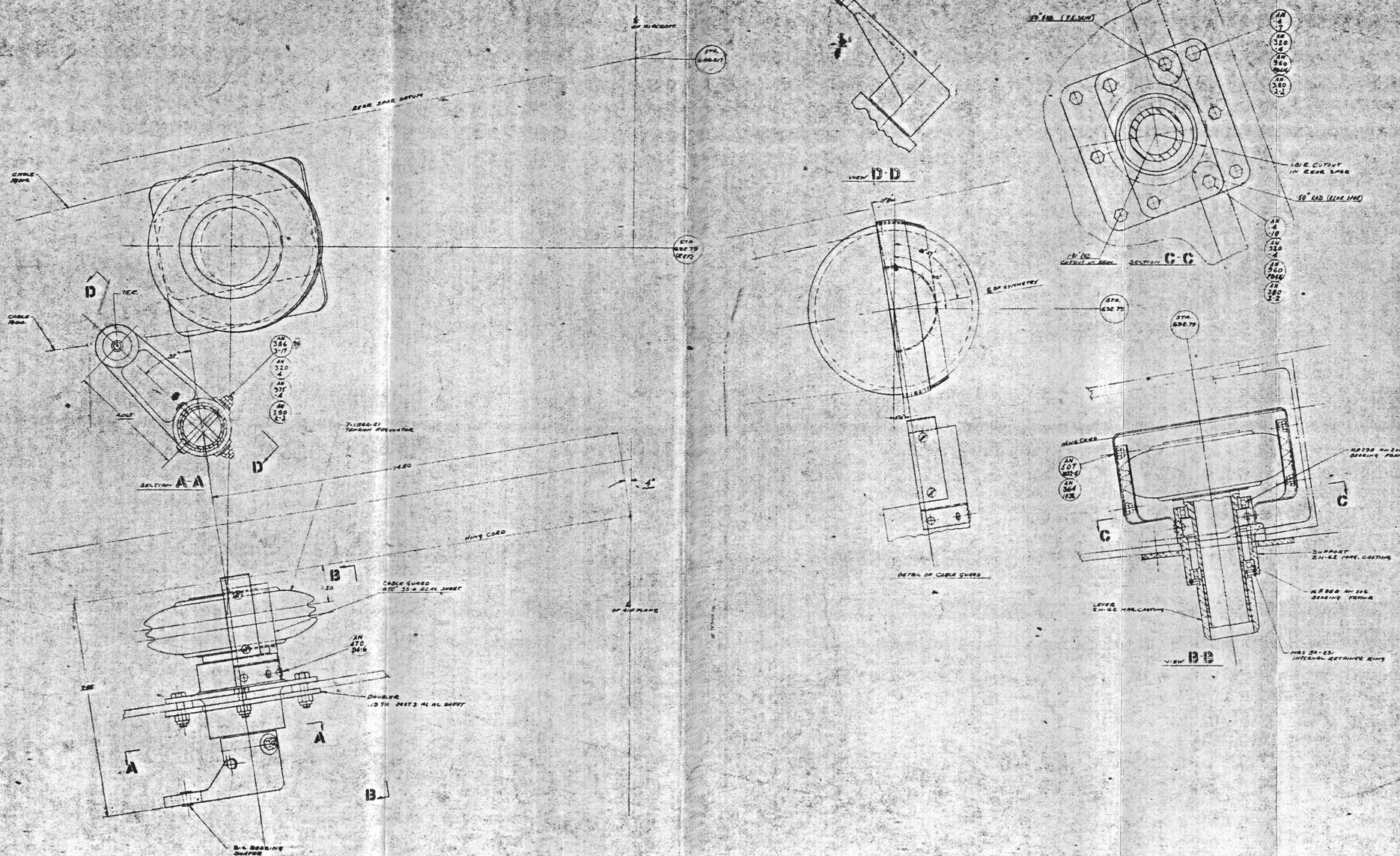


FIG 12

ELEVATOR JACK ASS'Y.

CONFIDENTIAL
UNCLASSIFIED



AILERON TENSION REGULATOR
QUADRANT ASS'Y. INNER WING

FIG. 13

UNCLASSIFIED
CONFIDENTIAL

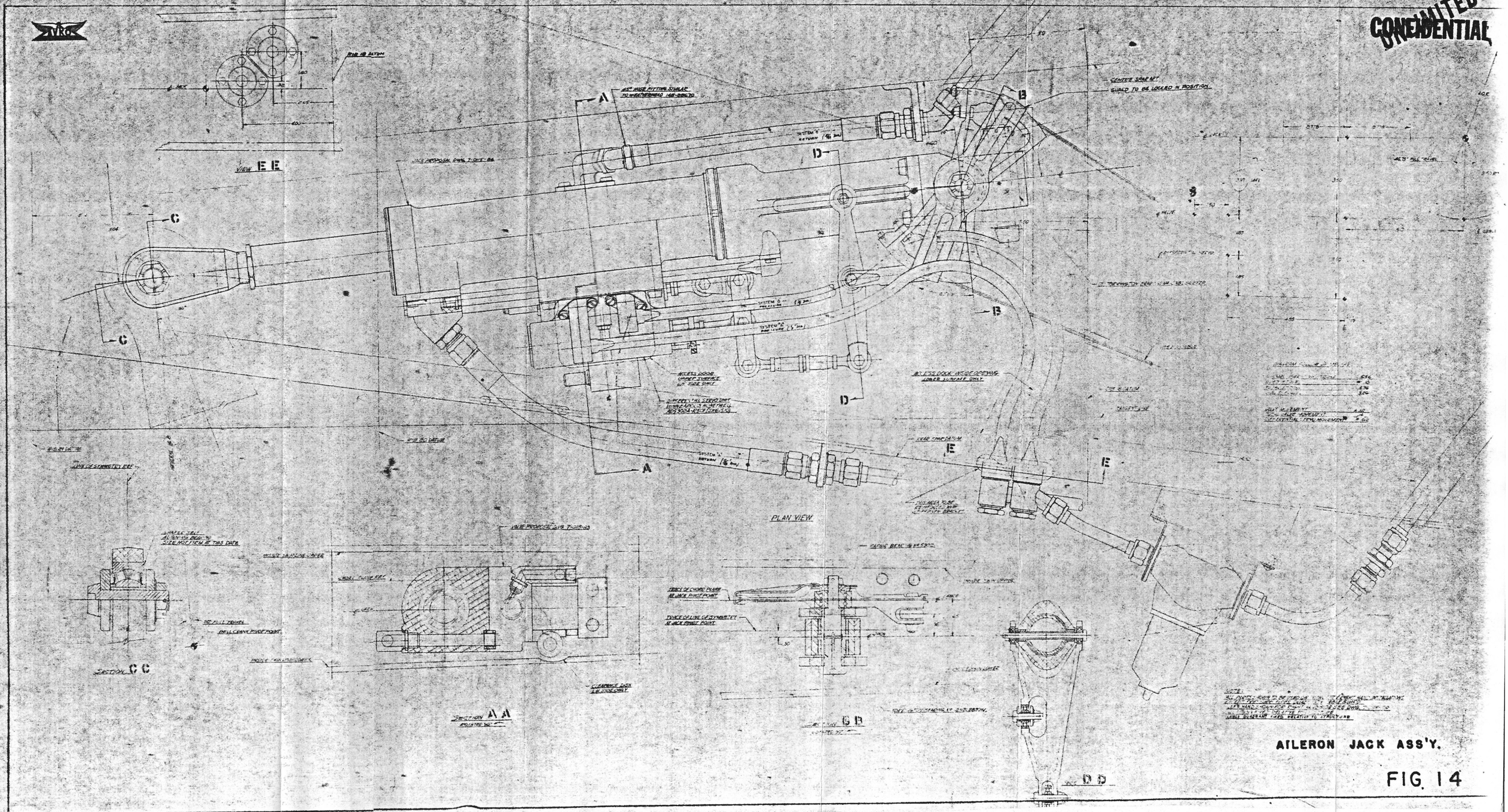
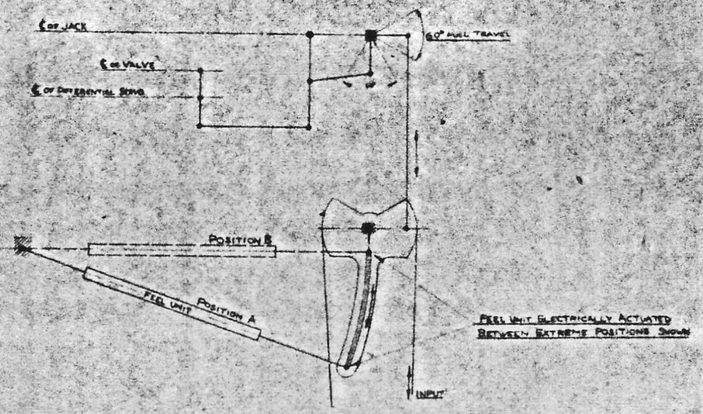
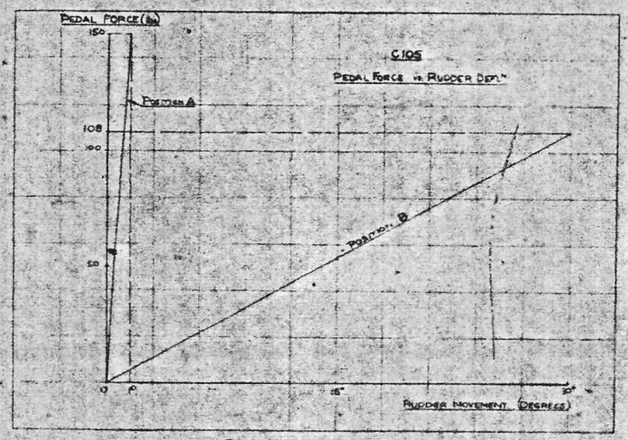
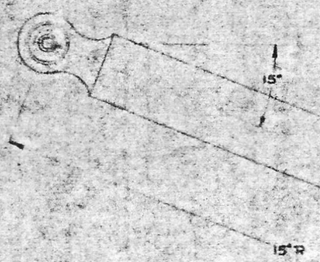


FIG. 14

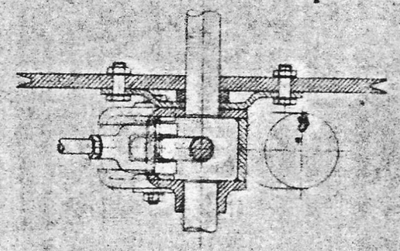
UNLIMITED
CONFIDENTIAL

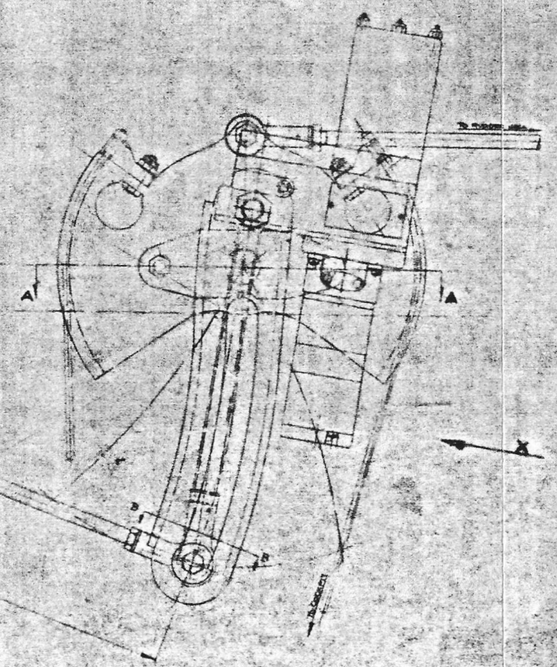






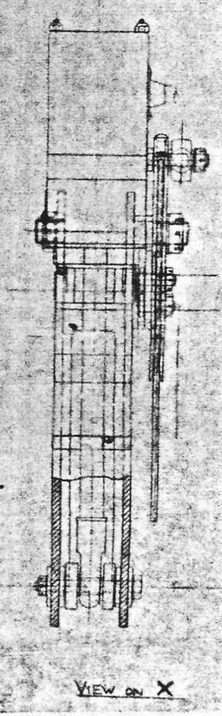
SECTION AA





SECTION BB

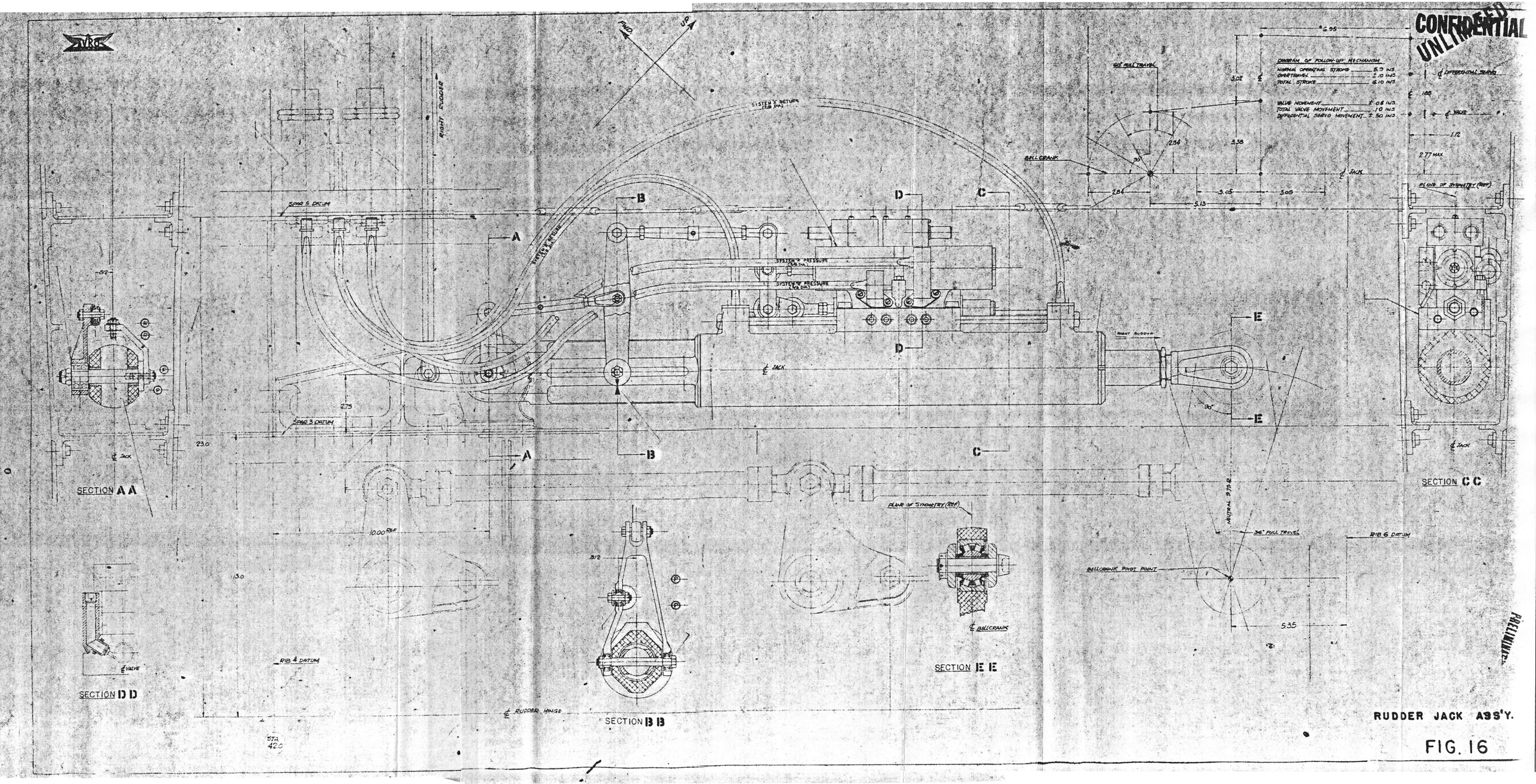




VIEW ON X

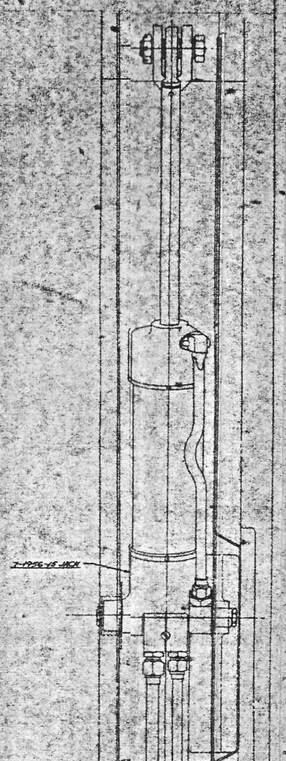
RUDDER FEEL SYSTEM & QUADRANT ASS'Y. IN FIN

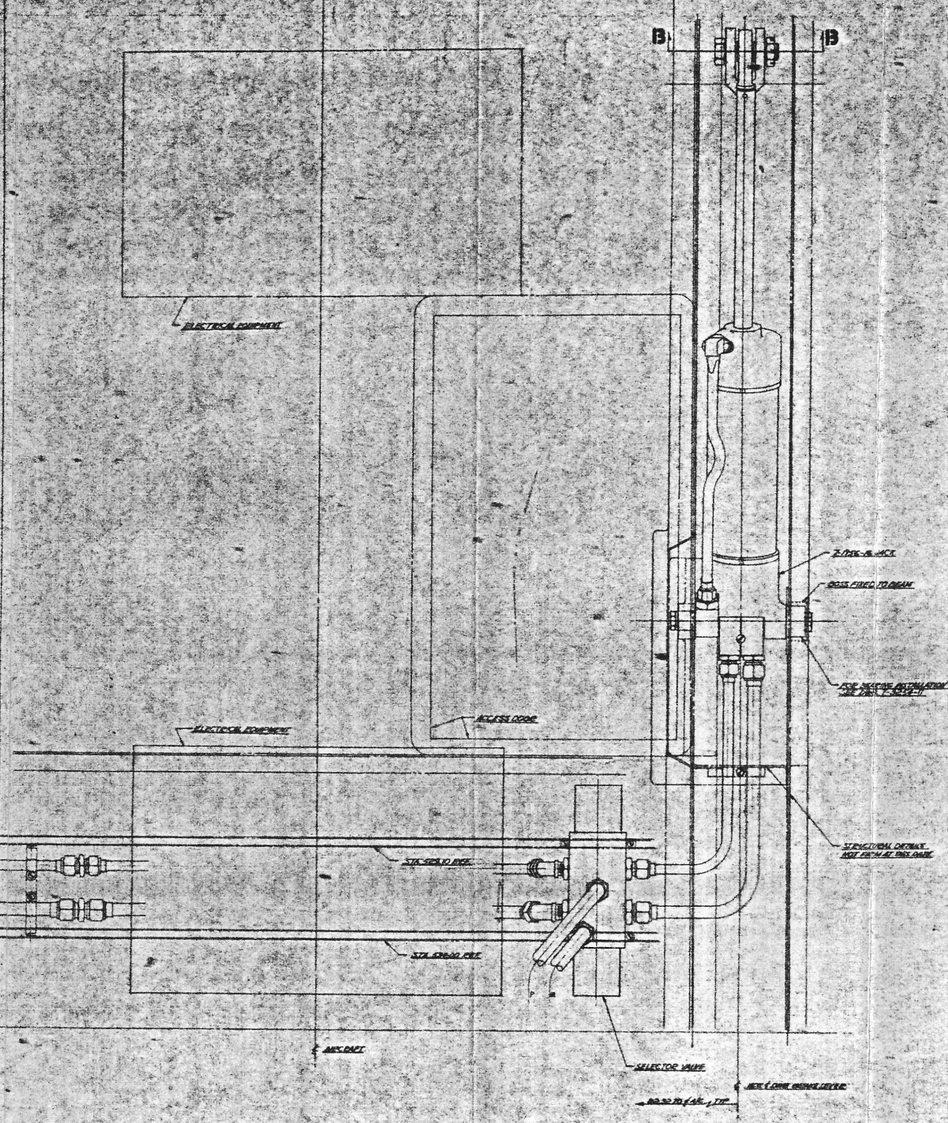
FIG. 15

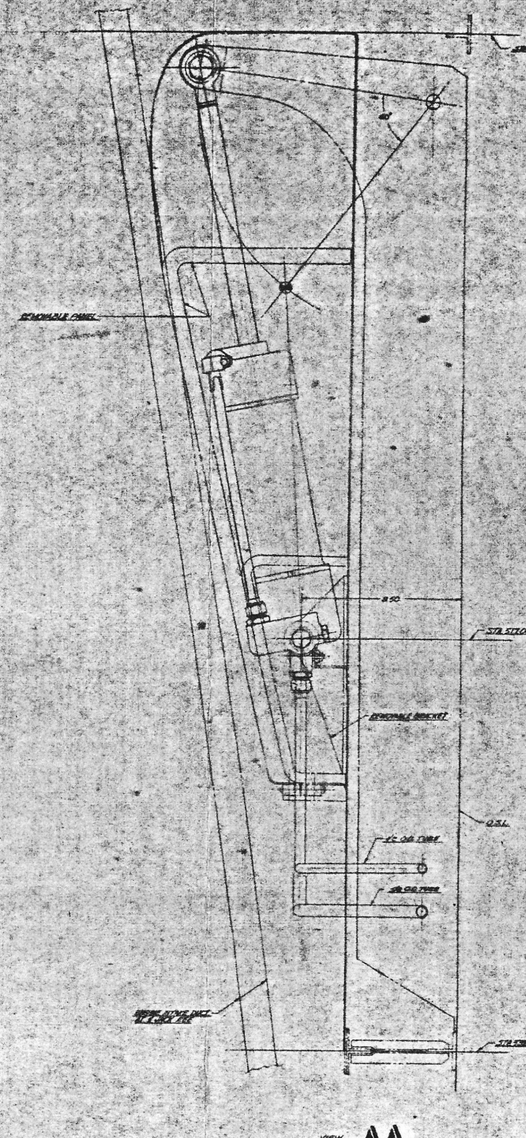

CONFIDENTIAL
UNCLASSIFIED
PRELIMINARY
RIGHT RUDDER
SPAR 5 DATUM
SPAR 3 DATUM
SYSTEM 'A' RETURN
SYSTEM 'B' RETURN
SYSTEM 'A' PRESSURE
SYSTEM 'B' PRESSURE
JACK
BALL CRANK
DIAGRAM OF FOLLOW-UP MECHANISM
NORMAL OPERATING STROKE 5.9 INS
OVERTRAVEL 1.10 INS
TOTAL STROKE 6.10 INS
VALVE MOVEMENT .08 INS
TOTAL VALVE MOVEMENT .10 INS
DIFFERENTIAL SERVO MOVEMENT .50 INS
DIFFERENTIAL SERVO
VALVE
PLANE OF SYMMETRY (REF)
60° FULL TRAVEL
36° FULL TRAVEL
NEUTRAL 97.12
BELLCRANK PIVOT POINT
RIB 6 DATUM
RIB 4 DATUM
RUDDER HINGE
BELLCRANK
SECTION AA
SECTION BB
SECTION CC
SECTION DD
SECTION EE
RUDDER JACK ASS'Y.
FIG. 16

CONFIDENTIAL

AVRO





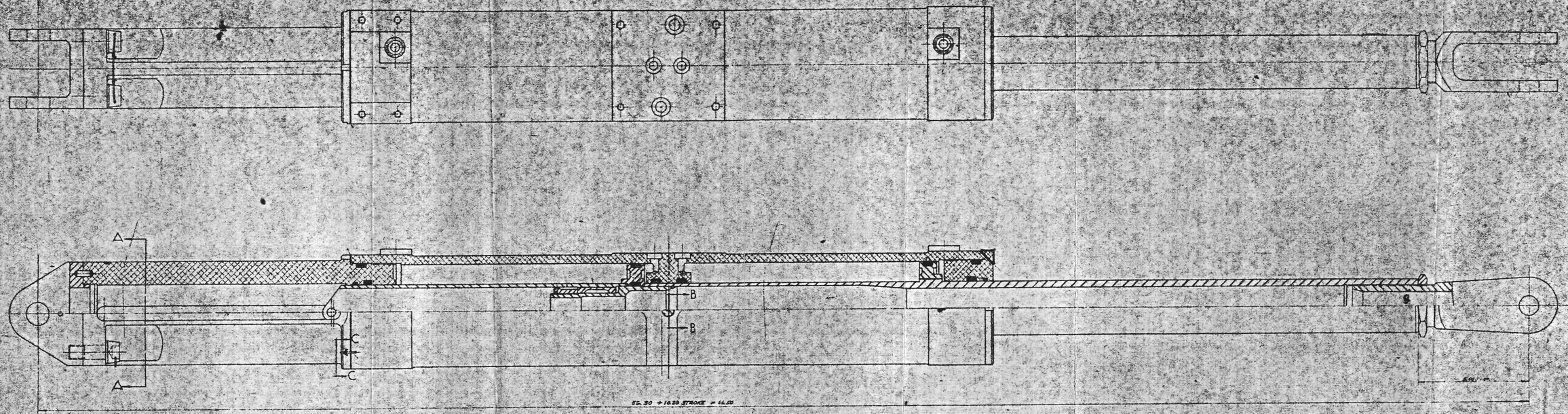


ISSUE NO.	1
NOD. No.	
D.D.I. No.	
DRAWN BY	Read
DATE	8/4/58
CHECKED	
STRESS APP.	
ENGRG. APP.	
CUSTOMER APP.	

SPEED BRAKE JACK ASS'Y.

FIG. 17

CONFIDENTIAL



SECTION A-A

VIEW C-C

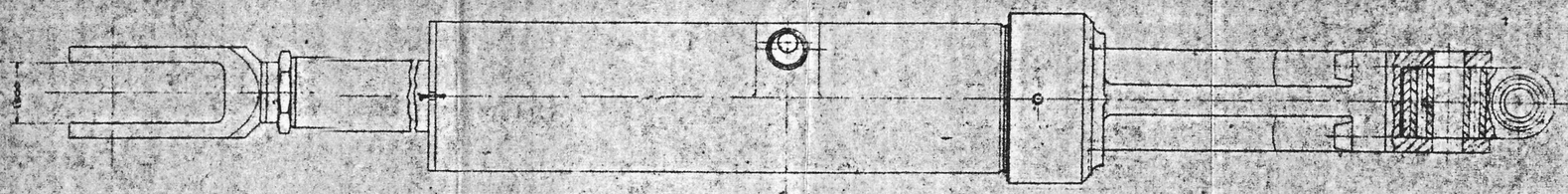
SECTION B-B

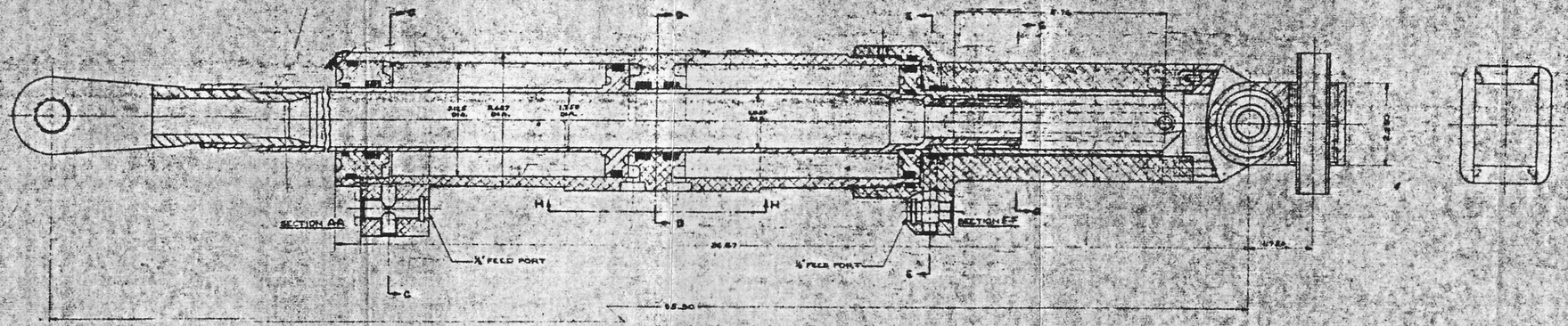
ELEVATOR JACK

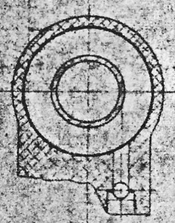
FIG. 18

VRC

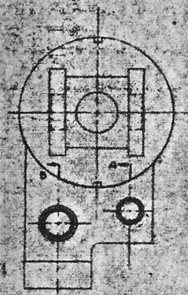
CONFIDENTIAL

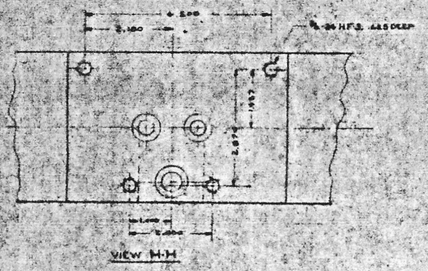


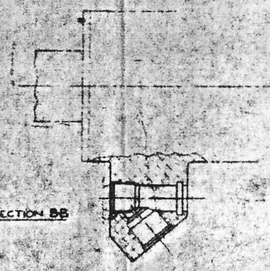




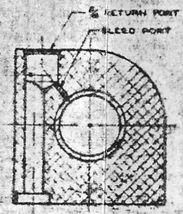
SECTION C-C



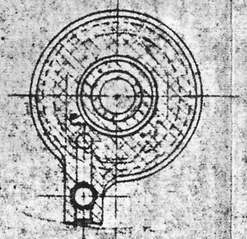




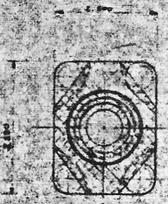
SECTION BB



SECTION D-D



SECTION E-E

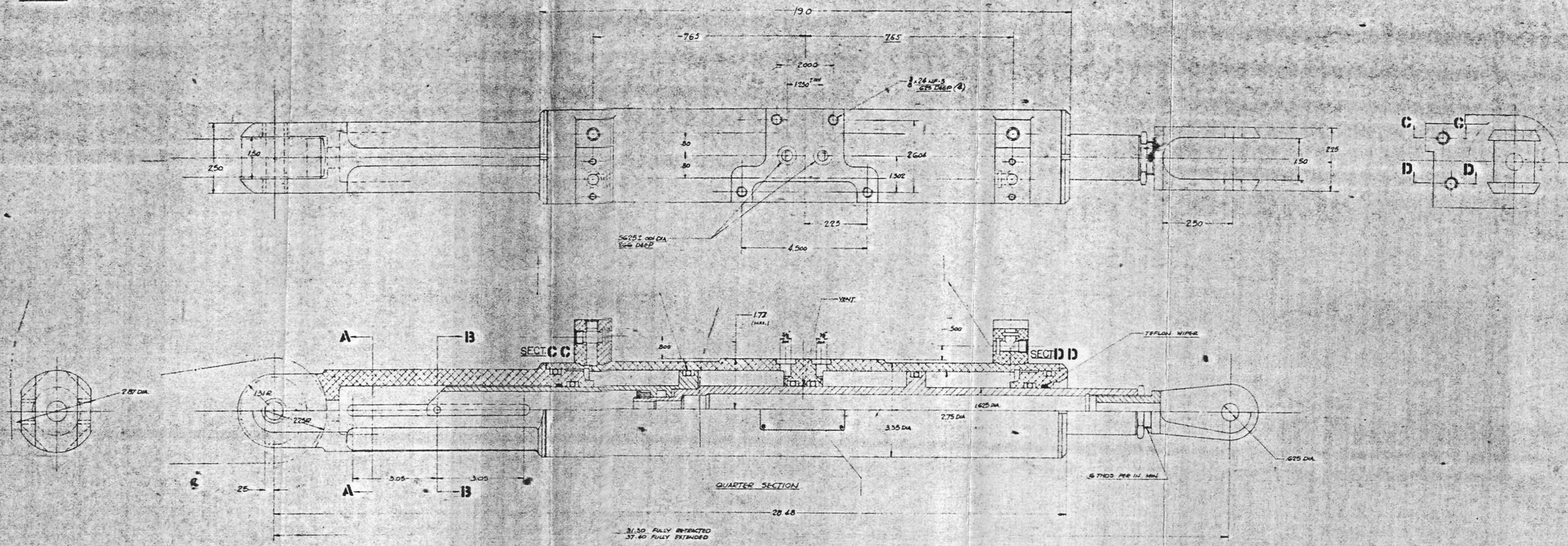


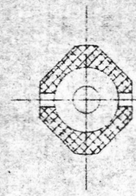
SECTION G-G

AILERON JACK

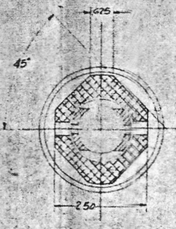
FIG. 19

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UNLIMITED





SECTION A A



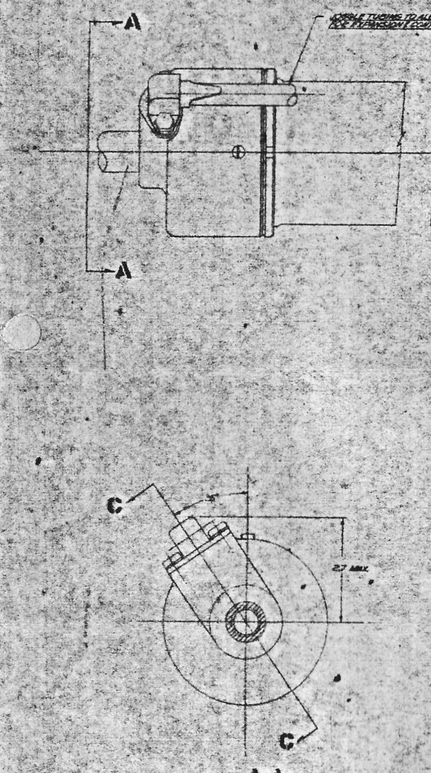
SECTION B B

NORMAL OPERATING PRESSURE	4000 PSI.
PROOF PRESSURE	6000 PSI.
BURSTING PRESSURE	10,000 PSI.
STATIC JACK LOAD (4000 PSI.)	30,300 LBS.
CYLINDER INSIDE DIAMETER - MAX. -	2.750 INS.
PISTON ROD OUTSIDE DIAMETER - MAX. -	1.625 INS.
WORKING AREA (2 x 3.865)	7.75 SQ. INS.
NORMAL OPERATING STROKE	5.3 INS.
TOTAL STROKE	6.10 INS.

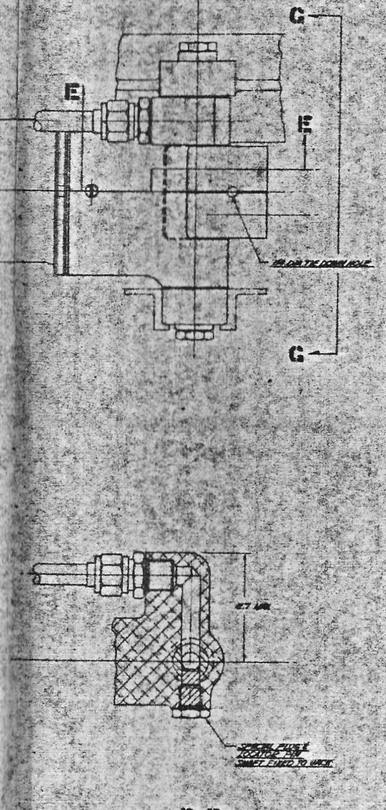
RUDDER JACK

FIG. 20

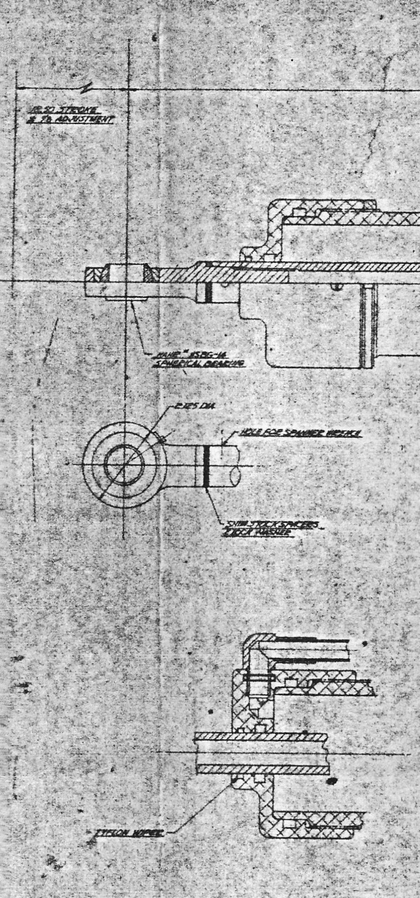
UNRESTRICTED
CONFIDENTIAL



VIEW AA



SECTION DD



SECTION CC
ROTATED 37°

SECTION EE

VIEW GG

GEN. NOTES:

STATIC JACK LOAD	28,500 LBS
NORMAL OPERATING PRESSURE	3000 PSI
PROOF PRESSURE	4500 PSI
BURST PRESSURE	13000 PSI
CYLINDER BORE	3.875
ROD OUTSIDE DIAMETER	1.00
WORKING AREA TENSION LOAD	9,375 LBS
STROKE	12.50
OPERATING TEMPERATURE	275° F

THIS DRAWING TO BE USED FOR GENERAL CONFIGURATION & ENVELOPE SIZE ONLY. VENDOR RESPONSIBLE FOR DRAWING & STRESS.

DIMENSIONS SHOWN TO BE HELD AS NEAR AS POSSIBLE

LEFT HAND SHOWN (1-1256-10), RIGHT HAND DOR (1-1256-11)

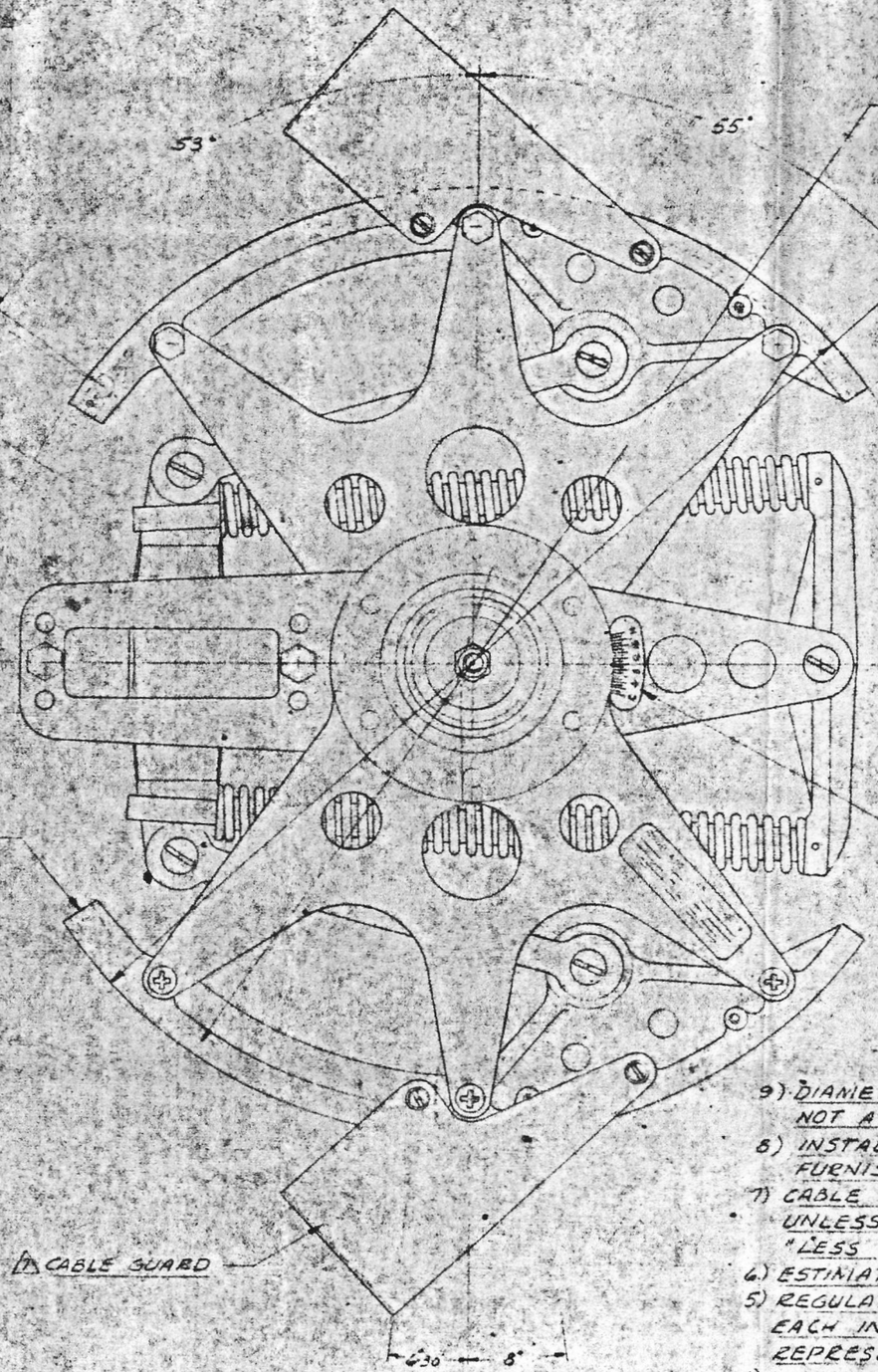
ANG. ANGULAR ROTATION OF SWIVEL 6.5°

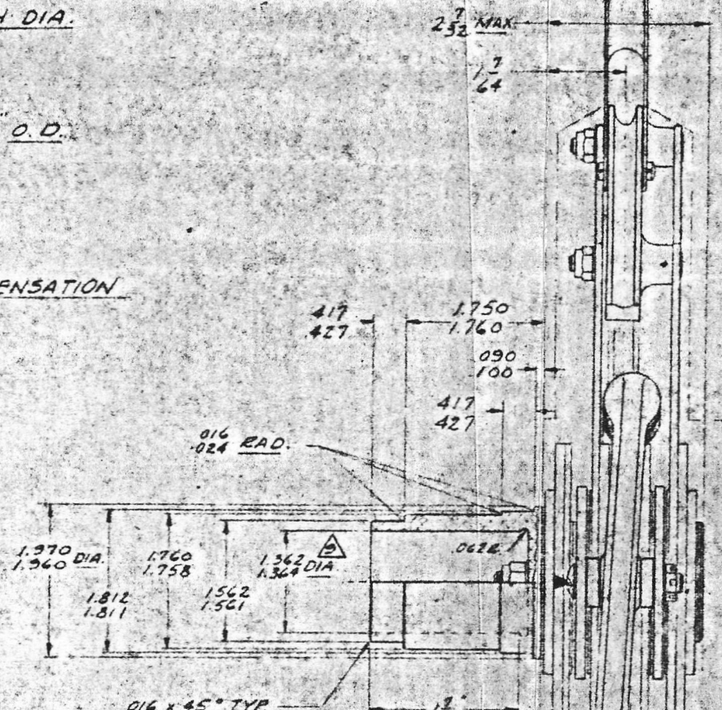
VENDOR TO SUPPLY ALL BEARINGS & BUSHINGS AS SHOWN

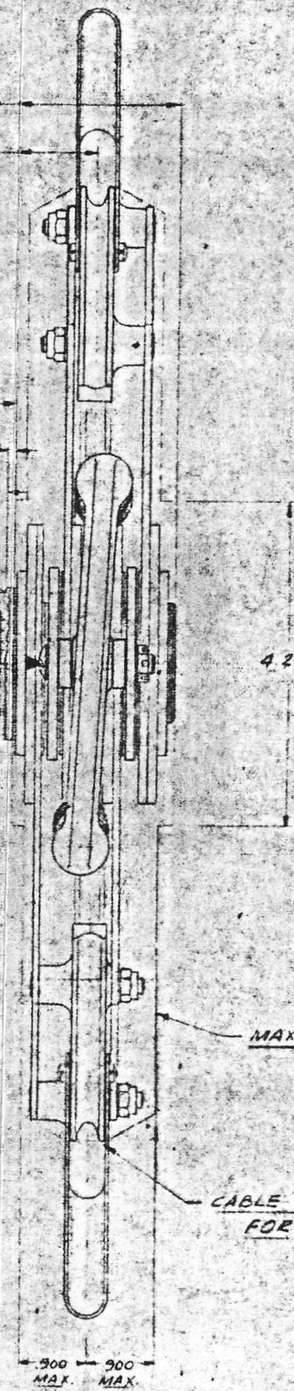
SPEED BRAKE JACK

FIG. 21

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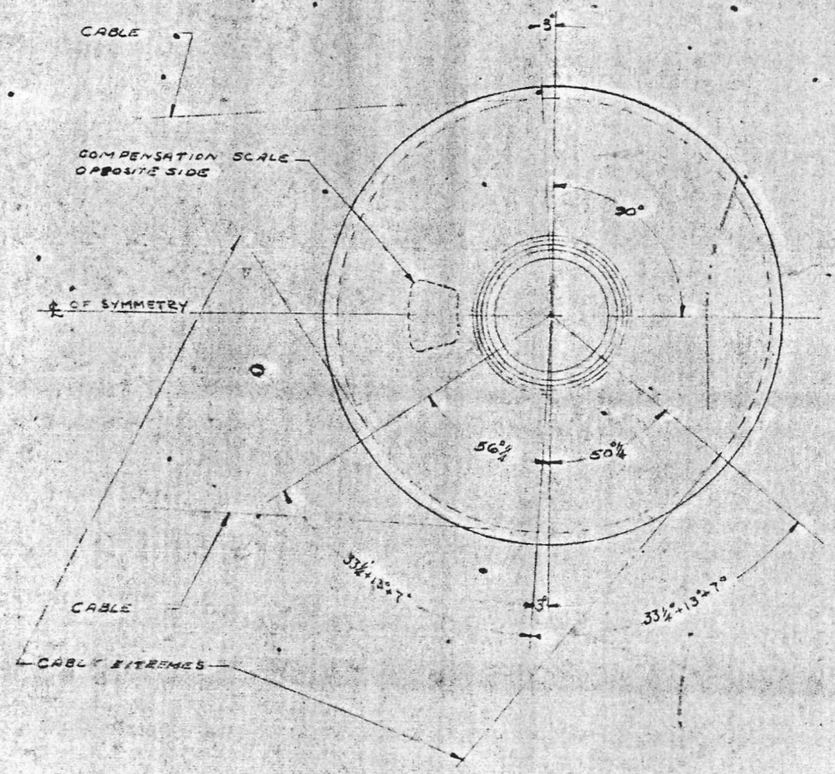
9) DIAMETER NOTED THUS ⌀ TO NOTED DEPTH NOT A THRU BORE.
8) INSTALLATION AND RIGGING INSTRUCTIONS FURNISHED WITH EACH UNIT.
7) CABLE GUARDS FURNISHED WITH EACH UNIT UNLESS SPECIFIED ON PURCHASE ORDER "LESS CABLE GUARDS"
6) ESTIMATED WEIGHT 6 LBS.
5) REGULATOR IS SHOWN IN MID POSITION. EACH INCREMENT OF COMPENSATION SCALE REPRESENTS 1/8" AT PITCH DIA.
4) ULTIMATE LOAD 820 LBS.
3) RIG LOAD VARIATION FOR FULL RANGE OF COMPENSATION 40 LBS. MIN.; 60 LBS. MAX.
2) COMPENSATION PER CABLE 2 1/2" MIN.
1) UNIT DESIGNED TO MEET THE REQUIREMENTS OF AV.ROE SPEC E222 (8) AND CONTROL DWG NO. 7·0115·95 · SEE PACIFIC SCIENTIFIC CO. DATA REPORT NO. 102 FOR SUMMARY OF COMPLIANCE.

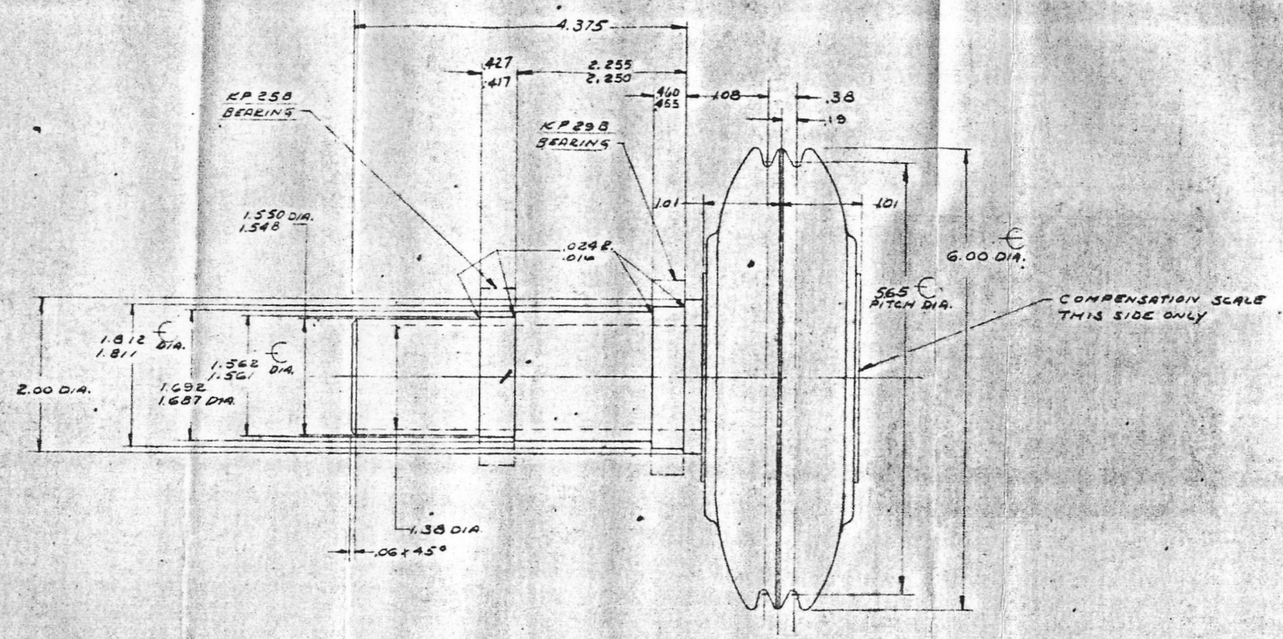
NOTE:-

TENSION REGULATOR QUADRANT FRONT FUSELAGE

FIG. 22

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NOTES:
1. CABLE DIA. 3/16
2. RIG TENSION 40# TO 60#
3. MOVEMENT OF SECTOR FROM TANGENT POINT OPERATING RANGE ±33¼° OVERTRAVEL ±7°, COMPENSATION ±13°
4. IRREGULARITIES SHOWN IN THIS POSITION OF COMPENSATION
5. CABLE LOAD @ 60# ULT.
6. LIMITERS MARKED THUS ℄ MUST BE CONCENTRIC WITHIN .010 F.I.R.

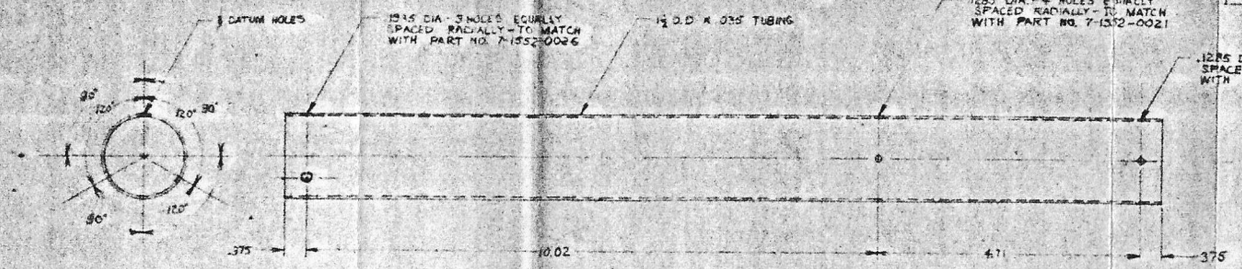
TENSION REGULATOR QUADRANT
INNER WING

FIG. 23

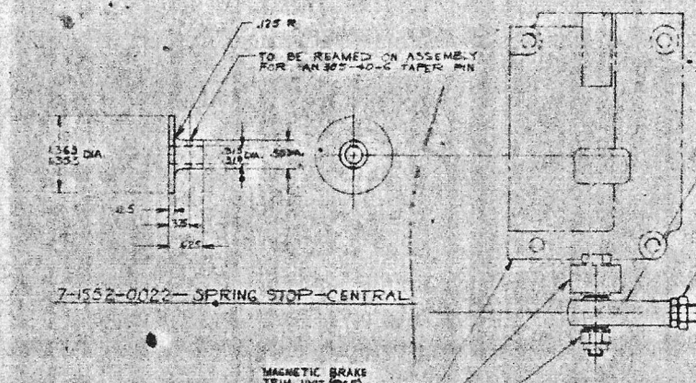
DRAWING PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	UNIT NO. REQ'D	FINISHED PART SPECIFICATION DESCRIPTION	FINISHED PART SPECIFICATION SPEC'—COMP'T	UNIT WT LBS	REMARKS
1	7-1552-0017	ASS'Y—COMPLETE	1				
2	AN316-5R	NUT—CHECK	1				
3	7-1552-0027	SHAFT	1	STEEL	MIL-S-6758 GRADE		
4	7-1552-0025	SPRING STOP—ADJUSTABLE	1	AL. ALLOY	QQ-A-225/6-COND T6		
5	AN936-16	RING—LOCK	1				
6	AN515-10-4	SCREW	3				
7	AN960PD10L	WASHER	3				
8	7-1552-0026	SUPPORT—SPRING STOP	1	AL. ALLOY	QQ-A-250/8-COND T6		
9	7-0175-1X17	ELEVATOR FEEL SPRING	2				
10	7-1552-0022	SPRING STOP—CENTRAL	1	AL. ALLOY	QQ-A-225/6-COND T6		
11	7-1552-0023	TUBE	1	AL. ALLOY	QQ-T-425 5.3		
12	AN385-10-6	PIN—TAPER MIL. PRAIN	1				
13	HUCK CRL-P4C	RIVET - BLIND	8				
14	7-1552-0021	SPRING STOP—FIXED	1	AL. ALLOY	QQ-A-225/6-COND T6		
15	RAPID RE-FP5	ROD END	1				
16	7-1552-0009	FORK - TUBE END	1				
17	AN995PAL	LOCKING SCREW	AR				

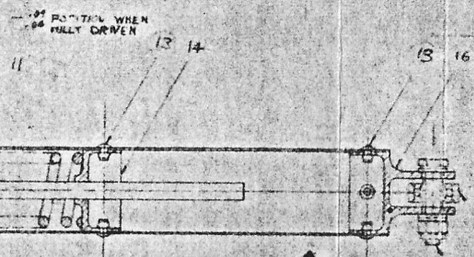
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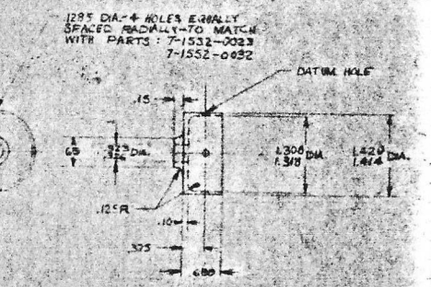
7-1552-0023-TUBE



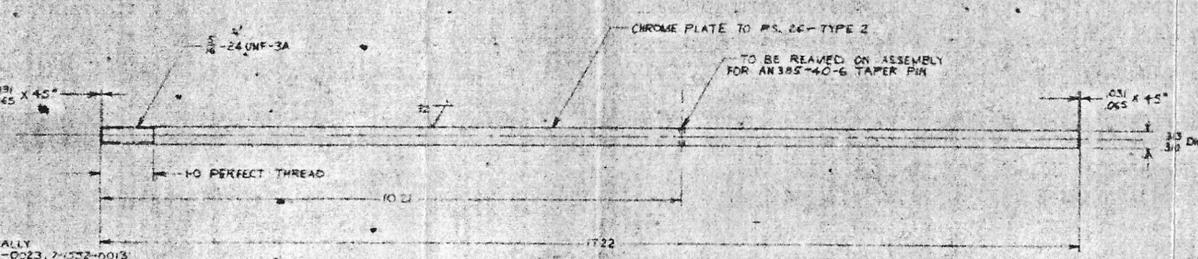
7-1552-0022—SPRING STOP—CENTRAL



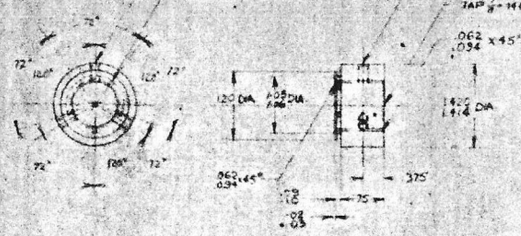
7-1552-0017—ASSEMBLY—ELEVATOR FEEL UNIT



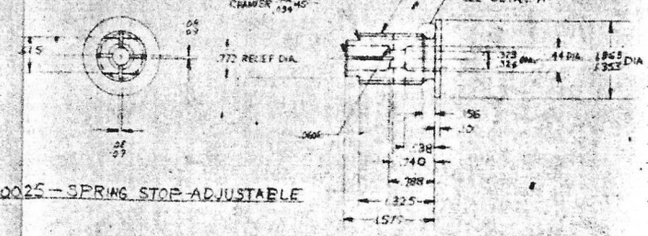
7-1552-0021—SPRING STOP—FIXED



7-1552-0027—SHAFT



7-1552-0026—SUPPORT—SPRING STOP



7-1552-0025—SPRING STOP—ADJUSTABLE

1- $\sqrt{}$ ALL MACHINED SURFACES EXCEPT AS NOTED
2- ALL EDGES MAY HAVE .005 - .015 RADIUS UNLESS OTHERWISE SPECIFIED.

SPRING FEEL UNIT, ELEVATOR

FIG. 24

DRAWING PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	PART No. QTY		STANDARD PART SPECIFICATION		CODE NO.	WEIGHT/PART
					Designation	Spec.-Grade		EST.	ACT.
1	7-1552-0006	ASSY-AILERON FEEL UNIT		1	COMPLETE				
2	Same as 6	BOLT		1					
3	7-1552-0003	BODY-TUBE END		1	AL ALLOY	RR-A-268-Cond. T			
4	7-1552-0004	STOP		1	AL ALLOY	RR-A-268-Cond. T			
5	7-1552-0011	SPRING END-ADJUSTABLE		1	AL ALLOY	QQ-A-268 Cond. T			
6	7-1552-0010	SPRING END-FIXED		1	AL ALLOY	QQ-A-268 Cond. T			
7				2					
8	7-1552-0012	SHAFT BRG.-SMALL END		1	AL ALLOY	QQ-A-268 Cond. T			
9	7-1552-0013	PLATE		1	STEEL	QQ-S-763 Cond. A			
10	7-1552-0007	SHAFT		1	STEEL	MIL-S-6758 Cond. A			
11	7-1552-0005	AILERON FEEL SPRING		1					
12	7-1552-0008	SUPPORT-SPRING STOP		1					
13	7-1552-0015	SPRING-STOP		1	AL ALLOY	QQ-A-268 Cond. T			
14	AN364-428	NUT-CRES		2					
15									
16									
17	AN960PD4	WASHER		4					
18	AN960PD8	WASHER		1					
19	MS20392-1P6	PIVOT-BUSHING		2					
20	AN396-16	RIVET-SOLID		1					
21	7-1552-0009	SPRING ADJUSTMENT NUT		1					

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7-1552-0002 - TUBE

7-1552-0010 - SPRING END FIXED

7-1552-0011 - SPRING END ADJUSTABLE

7-1552-0006 - ASSEMBLY - AILERON FEEL UNIT

7-1552-0007 - SHAFT

7-1552-0003 - ASSY-FORK - TUBE END

PART NO.	DESCRIPTION	NO. REQ'D	NO. REQ'D	DESCRIPTION	SPEC. CONDITION
7-1552-0003	ASSY-FORK, TUBE END		1	COMPLETE	
7-1552-0004	FORK		1	AL ALLOY	QQ-A-267 Cond. T6
NAS 75-4 MM	BUSHING-STEEL		2		

1. $\sqrt{125}$ ALL MACHINED SURFACES EXCEPT AS NOTED
2. ALL EDGES [illegible] .005 - .015 RADIUS UNLESS OTHERWISE SPECIFIED

7-1552-0015 SPRING STOP - ADJUSTABLE

DETAIL A

7-1552-0014 - STOP

7-1552-0012 - SHAFT BEARING - SMALL END

PART NO.	DESCRIPTION	NO. REQ'D	NO. REQ'D	DESCRIPTION	SPECIFICATION
7-1552-0009	ASSY-SPRING ADJUSTMENT NUT		1	COMPLETE	
AN364-1032-6	NUT, SELF LOCKING		1		
7-1552-0013	WASHER		1	CRES PLATE	AN-S-11 COLD ROLLED

SILVER BRAZE WASHER TO NUT PER AMS 52

7-1552-0009 - ASSY - SPRING ADJUSTMENT NUT

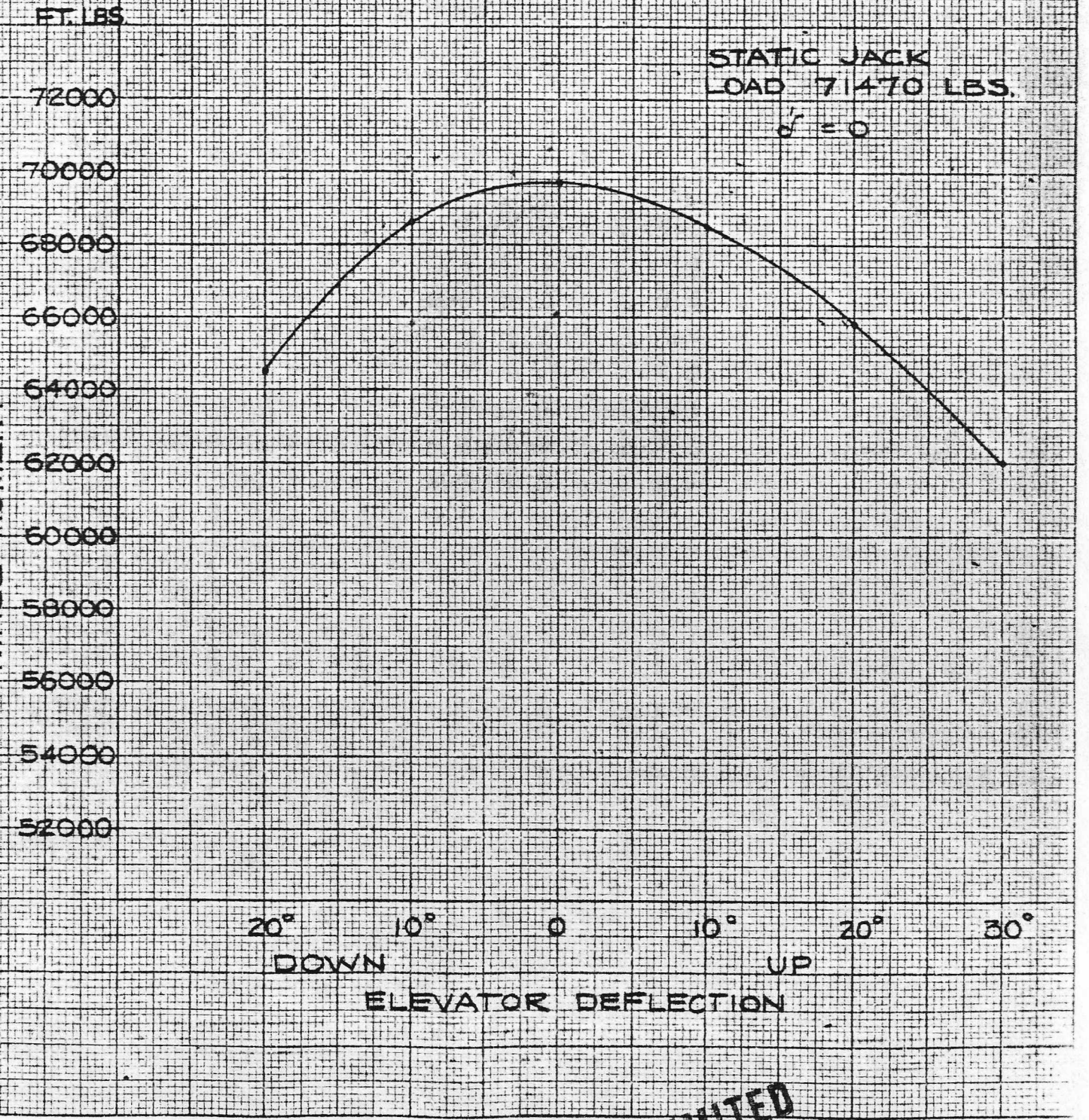
SPRING FEEL UNIT, AILERON

FIG. 25

MAR 21, 1955 BIRCKHOLTZ

AVRO AIRCRAFT

AVAILABLE ELEVATOR HINGE MOMENT



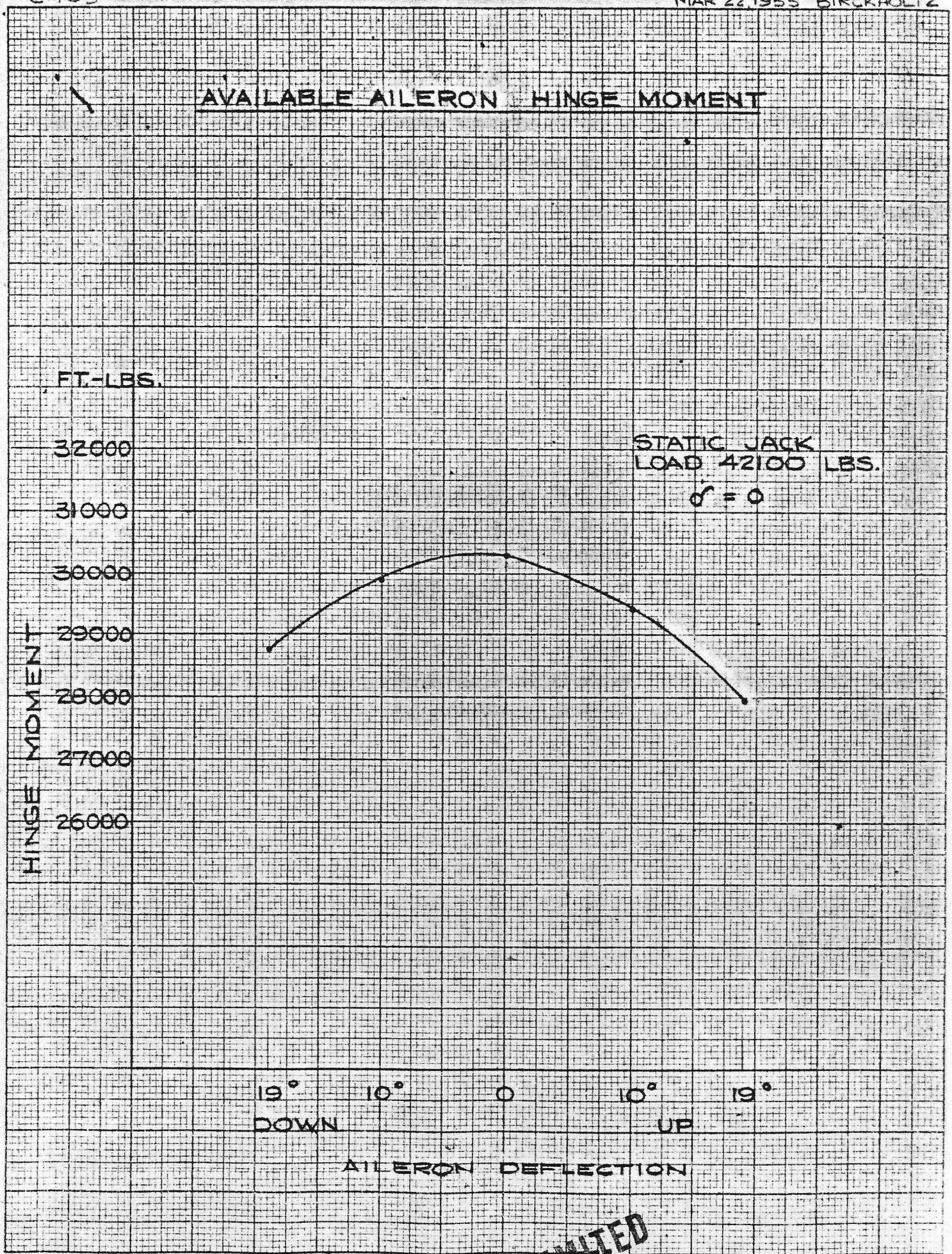
10 X 10 TO THE ½ INCH 359-12
KEUFFEL & ESSER CO. MADE IN U.S.A.

CONFIDENTIAL

FIG. 27

CONFIDENTIAL

AVAILABLE AILERON HINGE MOMENT



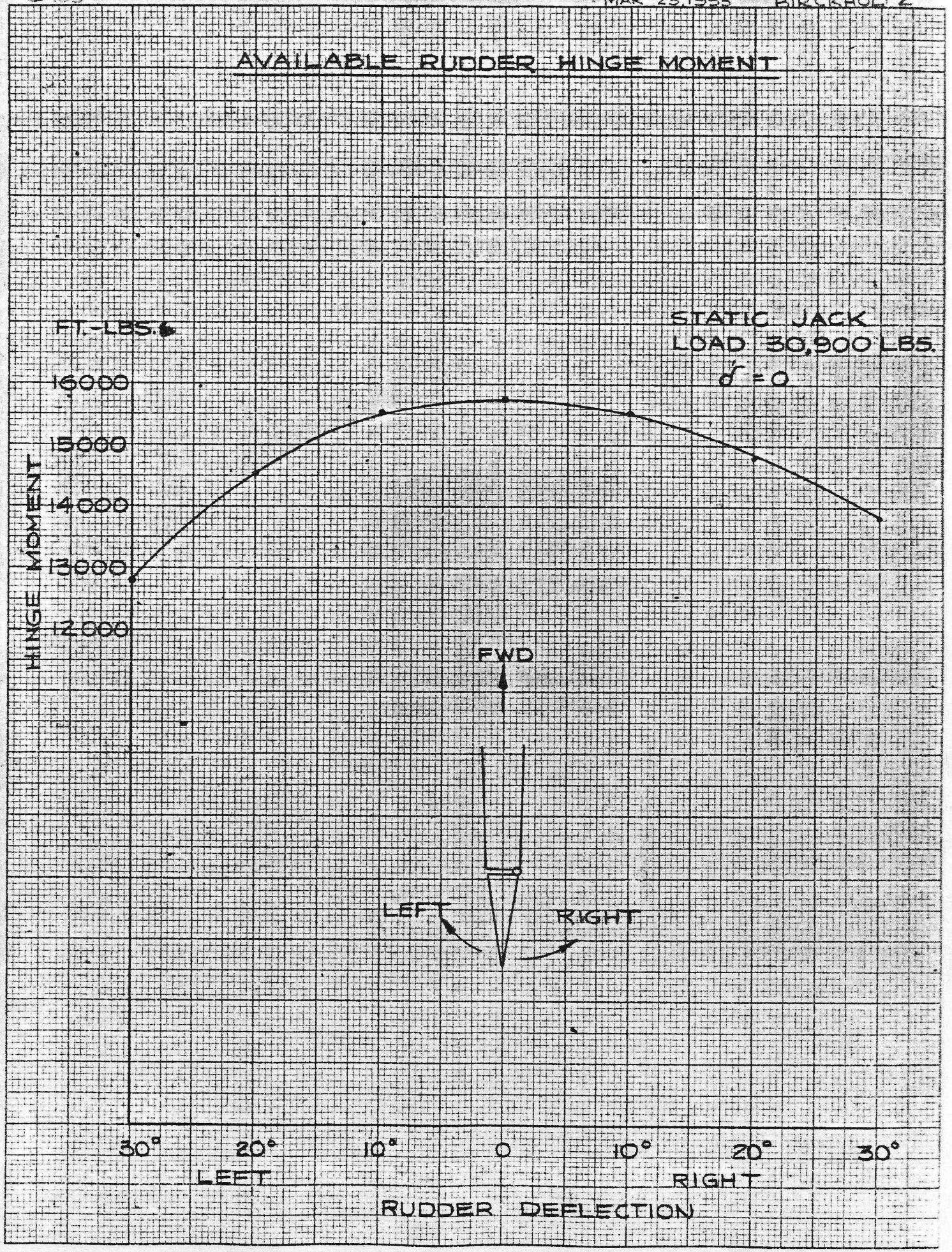
10 X 10 TO THE ½ INCH 359-12
KEUFFEL & ESSER CO. MADE IN U.S.A.

CONFIDENTIAL

FIG. 28

CONFIDENTIAL

AVAILABLE RUDDER HINGE MOMENT



10 X 10 TO THE ½ INCH 359-12
KEUFFEL & ESSER CO. MADE IN U.S.A.

FIG. 29

CONFIDENTIAL

HINGE MOMENTS FOR OPERATION OF SPEED BRAKES

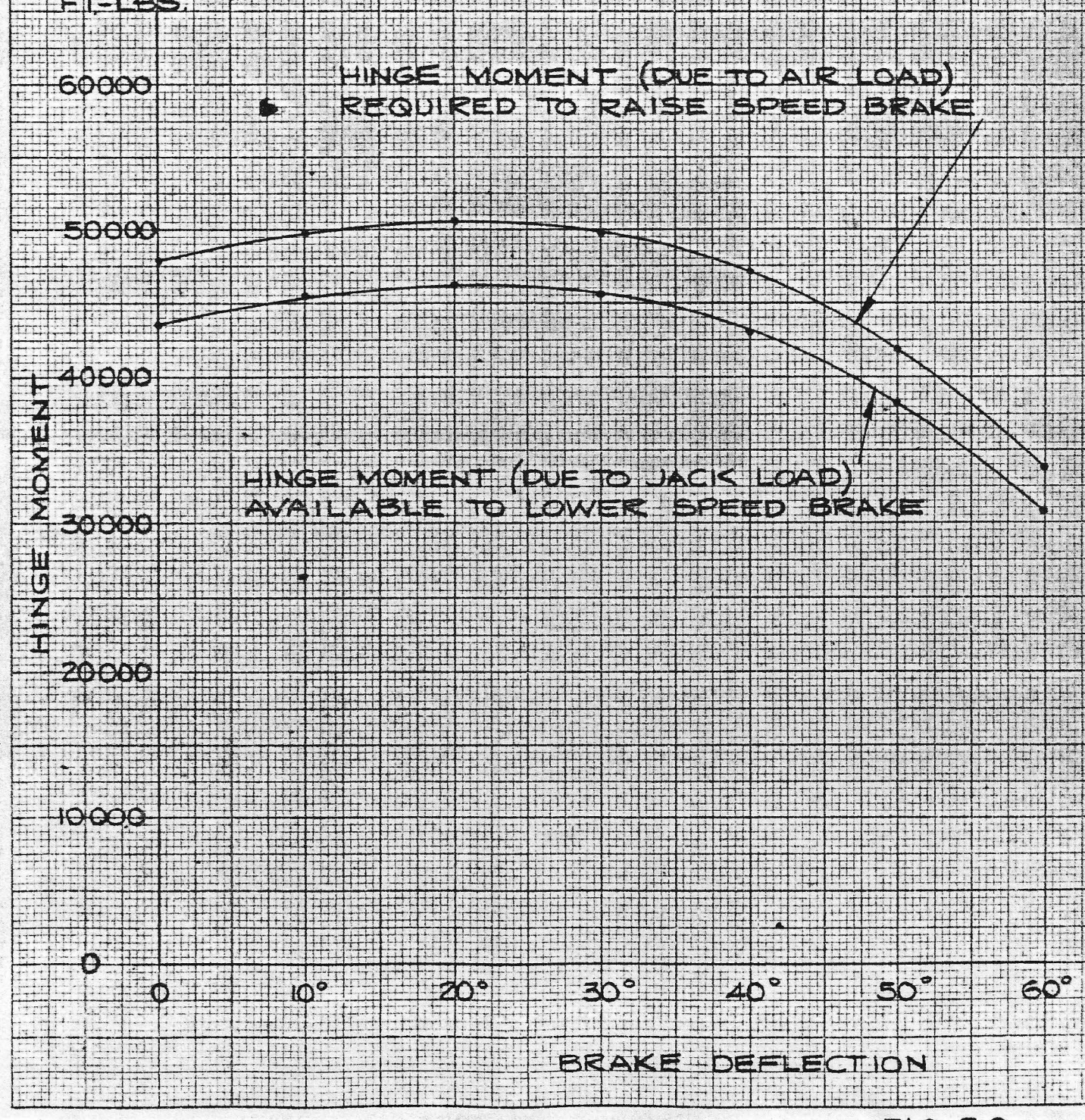


FIG. 30

10 X 10 TO THE ½ INCH 359-12
KEUFFEL & ESSER CO. MADE IN U.S.A.

CONFIDENTIAL
UNLIMITED

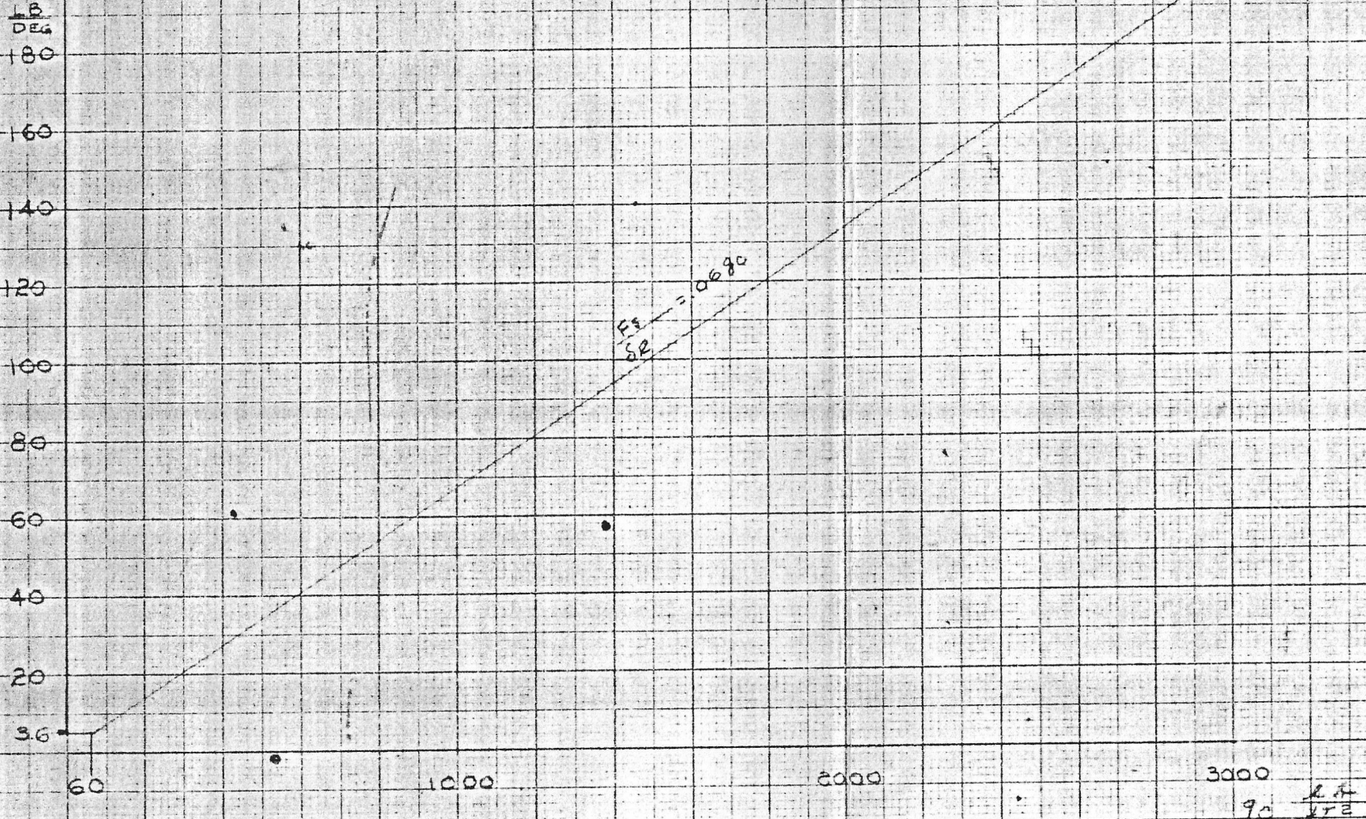
AVRO AIRCRAFT

C105

RUDDER FEEL CHARACTERISTICS

PEDAL FORCE
PER 1° OF RUDDER DEFLECTION

$\frac{F_s}{\delta e}$ $\frac{lb}{Deg}$



RUDDER FEEL CHARACTERISTICS

FIG. 31

10 X 10 TO THE ½ INCH
KEUFFEL & ESSER CO.
359-11L

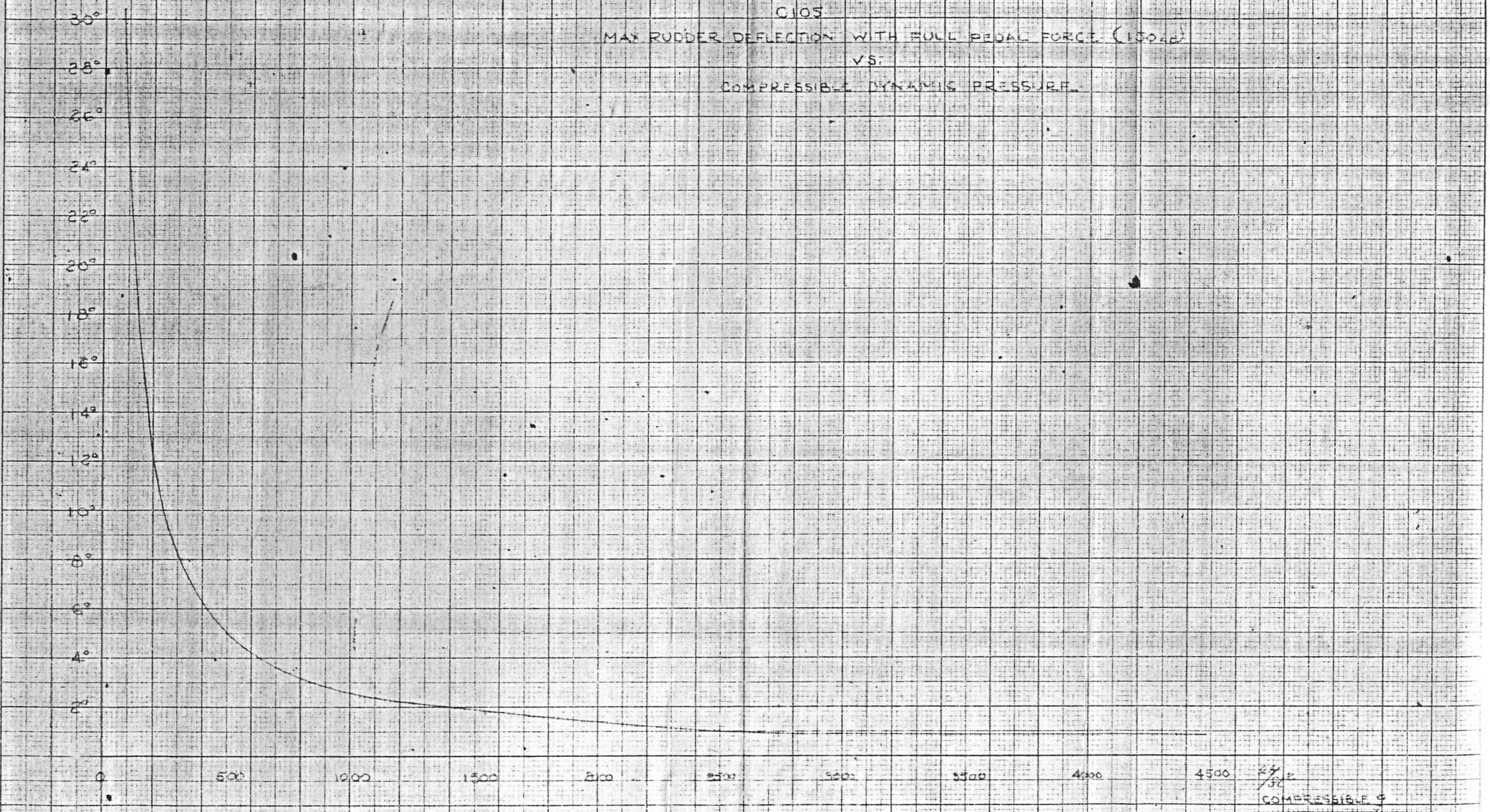
AVRO Malton Canada

C105

MAX RUDDER DEFLECTION WITH FULL PEDAL FORCE (150 lbs)

VS.

COMPRESSIBLE DYNAMIC PRESSURE



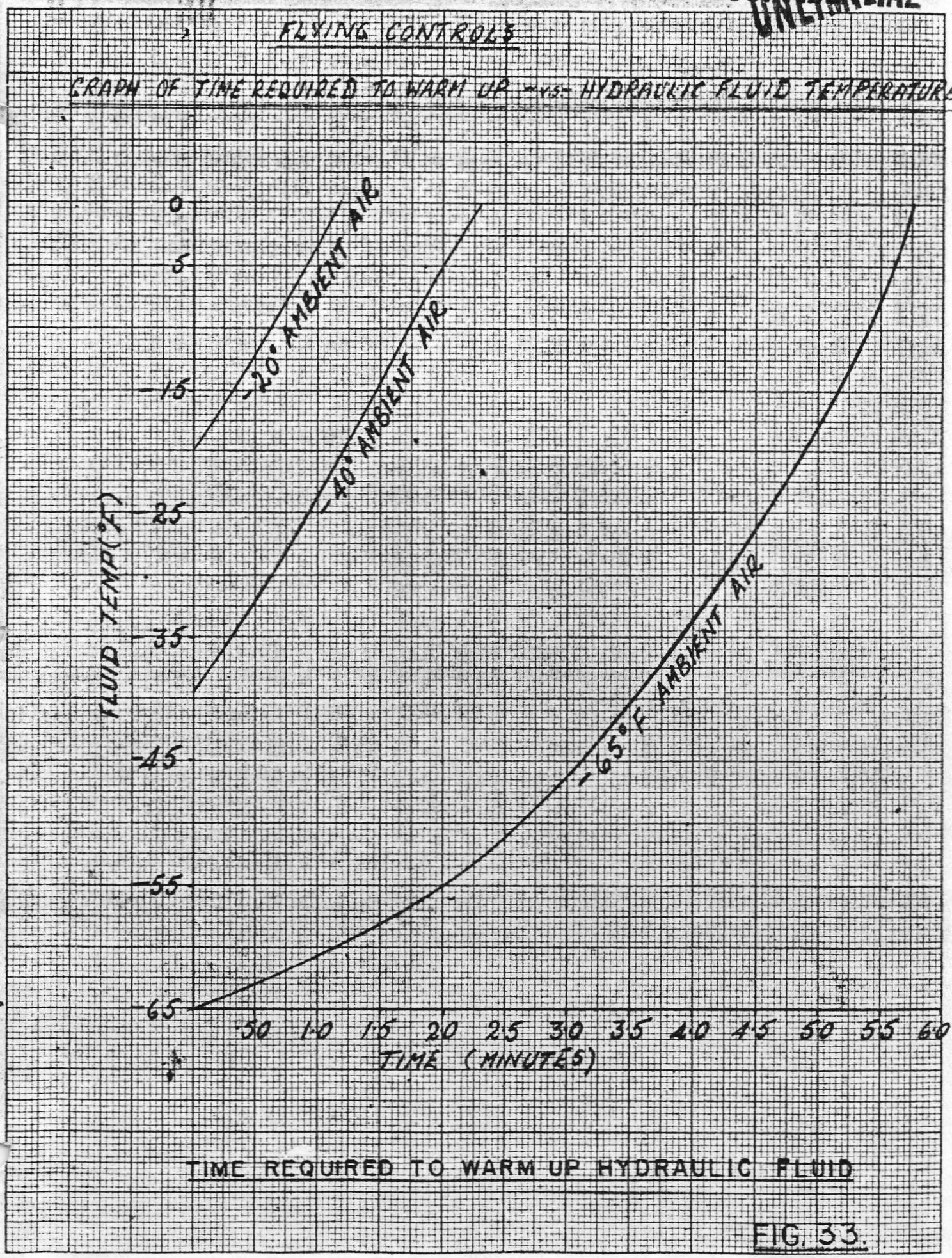
RUDDER DEFLECTION— COMPRESSIBLE DYNAMIC PRESSURE

FIG. 32

CONFIDENTIAL

CONFIDENTIAL

GRAPH OF TIME REQUIRED TO WARM UP -vs- HYDRAULIC FLUID TEMPERATURE



TIME REQUIRED TO WARM UP HYDRAULIC FLUID

FIG. 33.

K&E 10 X 10 TO THE ½ INCH 359-12 KEUFFEL & ESSER CO. MADE IN U.S.A.