REPORT NUMBER 141
JANUARY 1964

WIND TUNNEL TEST REPORT CONVENTIONAL MODEL VOL. I

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REPORT NUMBER 141

WIND TUNNEL TEST REPORT

CONVENTIONAL MODEL

VOLUME I

LOW SPEED FORCE & MOMENT DATA

XV-5A LIFT FAN

FLIGHT RESEARCH AIRCRAFT PROGRAM

JANUARY 1964

ADVANCED ENGINE AND TECHNOLOGY DEPARTMENT
FLIGHT PROPULSION DIVISION
GENERAL ELECTRIC COMPANY
Cincinnati, Ohio 45215

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1.0 INTRODUCTION

This report presents the results from the wind tunnel tests of a 1/8-scale conventional model of the U.S. Army XV-5A Lift Fan Flight Research Aircraft. The tests were performed to determine the subsonic aerodynamic characteristics of the XV-5A in its conventional flight configuration.

The test results are presented in three volumes. Volume I contains the tabulated force and moment data from the low speed (M = 0.285) tests. Pressure and hinge moment data for the low speed tests is presented in Volume II. Volume III presents the results of the high speed (M = 0.4 to 0.9) wind tunnel tests.

The 0.285 Mach wind tunnel tests were conducted in the eight foot by twelve foot test section of the General Dynamics/Convair low speed wind tunnel. Two series of tests were performed; the first from June 6 through 19, 1962, and the second during the period August 21 through 27 of the same year. The high speed tests were conducted at the David Taylor Model Basin (DTMB) seven by ten foot transonic wind tunnel facility during the period July 23 through August 1, 1962. The information presented in the three volumes of this report have been obtained largely by consolidating the data given in the test reports prepared by the test facility. This report is limited to a presentation of the data and information considered useful in interpretation of results. Discussions covering the use of data in predicting aircraft characteristics will be found in subsequent technical reports.

2.0 MODEL DESCRIPTION AND TEST PROCEDURES

2.1 MODEL AND INSTALLATION

The XV-5A 1/8-scale model was designed for testing in both low speed and high speed wind tunnel facilities. The basic model consisted of a wing of aluminum construction, which was equipped with flaps, ailerons, removable plates for wing fan covers and exit louver simulation; removable wing fan strut fairings. The fuselage was constructed of aluminum, mahogany, and Fiberglas with simulation of intermix gas generator inlet and exhaust ducting. The empennage was removable with the rudder and elevators. The model was installed on the Convair tandem strut support system. An external balance was used for measurement of forces and moments. The model was designed for testing upright, but was inverted for determination of aerodynamic tares. Provisions were made to permit testing of wing and fuselage alone.

Four internal strain gauge beam balances were used to measure hinge moments acting as the rudder, left elevator surface, left flap, and left aileron. Flexible seals contained within the aileron balance cavity and extending from the wing structure to the leading edge of the aileron were used to simulate similar seals in the aircraft. The seal installation permitted the measurement of upper and lower balance chamber pressures on the right aileron simultaneously. A fixed wiper-type seal attached to the stabilizer structure served the same purpose for measurement of the right-hand elevator balance chamber pressures. The rudder chamber was also pressure instrumented. Pressures were measured using five internally mounted, 48 port Scanivalves. To simulate the effect of various engine inlet mass flows, the model was provided with throttling plates which were inserted immediately downstream of the duct inlets. These throttling plates were used in conjunction with a duct pressure survey rake for inlet flow drag measurement.

Additional design features included removable horizontal tail and wing leading edges and outboard panels. The removable wing sections simplified the testing of variations in the configuration of the basic model during the second phase of low speed tests.

Additional model parts were fabricated for the second series of tests. These new model parts included two sets of wing outboard panels, flap chordwise and spanwise extensions, wing fences and vortex generators, horizontal tail spanwise extensions, and a horizontal tail made in two parts so that it could be mounted in any position on the vertical tail.

The two additional wing outboard panel configurations provided 0° and 4° positive dihedral, in addition to the 6° tips-down configuration of the initial test. The new sets of wing outboard panels, made of mahogany, were constructed without deflectable ailerons; one set (0° dihedral) was cut out to accommodate the spanwise extended flaps. The spanwise flap extension was simply an added piece of the same cross-section attached to the existing flap. The chordwise flap extensions were sheet metal, attached and faired to the existing flaps. The vortex generators were shop fabricated in strips and taped to the model.

Following the first series of tests, but prior to conducting the high speed test program and the second phase of low speed tests, minor modifications were made to the model. These changes included:

1) Rework of the external contours of the wing fan cover plates to represent the redesigned covers of the aircraft. These changes necessitated some rework of the wing fan strut fairings.

2) Modification of the ailerons to eliminate the horn balance. This resulted in an aileron of reduced span. Minor modifications were also made in the installation of the aileron seals at this time. (All 2nd series tests were performed with ailerons undeflected.)

Model geometrical data is given in Section 4.3 of the Appendix. A drawing showing the general arrangement of the model is presented in Figure 4.1 and model dimensional data is given in Table 4.1. Additional detail information on model configuration and nomenclature is also given in the Appendix.

2.2 TEST PROCEDURES

Information on the configurations tested and the types of data recorded during the test are given in the run indexes for the first and second series test programs. While external belance force and moment data, pressure data, control surface hinge moment data, and tuft data were recorded, not all types of data were recorded for each run. Only force and moment data were recorded during the second series of tests.

All runs were made at a dynamic pressure of 120.0 pounds per square foot, for which the corresponding Reynolds Number was 2.21 million, based on the model wing mean aerodynamic chord of 14.115 inches and assumed average operating conditions of 90° F temperature and 29.92" hg barometric pressure.

With the exception of the horizontal tail configuration, (H_2 used for tail position investigations during the second series of tests), carborundum grit was installed on all model parts in the pattern T_1, with the exception of first series runs 31 through 37, during which a grit study was made. Grit size #150 was used during all other tests.

During all tests, the model was considered to be in good condition. All joints and screw holes were filled with wax or covered with cellophane tape. With the exceptions of the transition grit, and tufts as noted on the Run Index, the model was in a smooth condition.

In general, external control surface gaps were left unsealed because a seal would have interfered with pressure and hinge moment measurements. Notes on the Run Index indicate the special occasions when external seals were applied.

The horizontal tail (designed for variable incidence) was mounted atop the vertical tail with the incidence pivot point below the horizontal tail surface. The horizontal tail was mounted from a vertical plate which inserted into the vertical tail in such a way that a portion of the vertical mounting plate was left exposed. During some parts of the test this mounting plate was faired with wax to match the airfoil section of the vertical tail; this fairing was treated as a vertical tail modification, V_1, although it existed only in the presence of the horizontal tail.

One series of runs in the latter test was made experimenting with the flap gap, gradually reducing the gap by applying added layers of tape to the flap leading edge. In each instance the final layer was cellophane tape to minimize the friction due to the tape texture.

Pressures were read directly through five 48-port Scanivalves with pressure transducers installed inside the model. Digitized output from the five transducers was simultaneoulsy printed and punched into IBM data cards. Trial determined that the recording of other data simultaneously with pressure data was inadvisable, because the long running time required to scan 48 Scanivalve ports at each model test point made it difficult to obtain a zero return on the external balance. The

hinge moments also were digitized directly, and readings from all 4 instrumented control surfaces were simultaneously printed and punched into IBM data cards.

The model was mounted on the two-strut support system with the balance measuring center at the intersection of Water Line 12.500 and Fuselage Station 32.500 with the model plane of symmetry. The image support system was used to determine aerodynamic tares for the fuselage alone and for the wing-fuselage combination, empennage off; an image sting, necessary to determine pitch aerodynamic tares for the wing-alone, was also used to determine the effects of the sting in yaw.

3.0 RESULTS

Test results are presented in this report for the two series of low speed wind tunnel tests of the XV-5A 1/8-scale conventional model. Force and moment data are found in this report, and the data have been segregated for presentation according to test phase. Pressure and hinge moment data are given in Volume II under separate cover, and as no data of this type were obtained during the second series of tests, the data in Volume II covers only one test phase. Tuft photographs are not presented in this report. Negatives are on file at the low speed wind tunnel facility.

With the exception of image system runs, the force and moment data from all good runs are presented in this report. External balance coefficients are referred to stability axes, and are presented as both plots and tabulations. Duct internal flow data are presented as tabulated pressures in pounds per square inch. Wing pressures are presented as plotted coefficients, and tabulated coefficients. Fuselage pressures and control surface cavity pressures are presented as tabulated coefficients. Control surface hinge moments are presented as plots and in tabulation.

All external balance data were reduced to the same model moment reference center at Station 30.75 and Waterline 14.00 as shown in the diagram of Figure 4.15 in the Appendix. All force coefficients were reduced on the basis of wing area. Pitching moment coefficients were reduced on the basis of wing area and mean aerodynamic chord. Rolling moment and yawing moment coefficients were based on wing area and wing span.

All external balance coefficients were corrected for the effects of flow inclination and model support system; aerodynamic tares were determined for body alone, wing alone (flaps 0°) and for the wing-body combination with flaps 0°, 30°, and 45°; tares were interpolated for flaps 15° and 40°. Coefficients were also corrected for wall effects based on the theory for unswept wings; the differences between wall corrections for an unswept wing and a wing of this sweep and taper ratio are known to be negligible. Although duct internal flow measurements were recorded, no internal drag correction has been applied to any of the data contained in this report.

Force and moment data are presented chronologically according to test phase. In each case, the plotted data is preceded by the Run Index applicable to that test phase and is followed by the tabulated results derived during the test. Force and moment coefficients derived during the first test phase are shown in plotted form in Figures 3.1 through 3.32. Similar data for the second phase of tests are presented in Figures 3.32 through 3.55. Refer to the List of Figures to identify the plot of interest. The Run Indexes are shown in Tables 3.1 and 3.3. Tabulated force data for the two test phases are given in Tables 3.2 and 3.4.

Model configuration geometry, detailed description of components and definition of symbols and nomenclature are given in the Appendix. Configuration geometry is shown by sketch and photograph.

Exercise caution in comparing the force and moment coefficients of the first and second test series. At the end of the second low speed wind tunnel test on this model, a difference in lift level for a particular angle of attack was observed between the two tests not attributable to dynamic pressure. Power off data from tests of the XV-5A 1/6-scale lift-fan powered model, and data from high speed tests of the conventional model substantiate the results obtained in the second test and indicate that a correction of approximately two degrees positive should be applied to the recorded angle of attack for the earlier test. However, considerable care was exercised in all tests to assure an accurate calibration of angle of attack. Therefore, no definite cause for the discrepancy has been determined.

For a more detailed discussion of model hinge moment and pressure measurements, and the data derived therefrom, refer to Volume II.

MODEL CONDITION	PREVIOUS TESTS
BAYONETS	WINDSHIELDS
TRUNNION SPACING	BOOM TAIL LENGTH

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	ψ_g°	δ_f°	$\delta_{a_{L/R}}^\circ$	δ_e°	δ_r°		FIGURE NO.
6-6	1*	$W_o F_o a_o$ + IMAGE STING	Y_6	118.9	0	-4 TO +12	0	0	—	—	STATIC YAW TARE	NOT PRESENTED
6-7	2*	" + IMAGE	P_6	1177	-8 TO +24	0	"	"	—	—	STATIC PITCH TARE	NOT PRESENTED
	3	$W_o F_o a_o$ (INV) + "	"	"	+8 TO -24	"	"	"	—	—	STATIC PITCH TARE	NOT PRESENTED
	4	$W_o F_o a_o$ (INV)	"	118.9	+8 TO -24	"	"	"	—	—	STATIC PITCH TARE	NOT PRESENTED
	5	$W_o F_o a_o$	"	"	-8 TO +24	"	"	"	—	—	STATIC PITCH TARE	3.1
	6	"	Y_6	"	0	-4 TO +12	"	"	—	—	STATIC YAW TARE	3.19
	7	"	"	"	8	"	"	"	—	—		3.19
	8	"	"	"	16	"	"	"	—	—		3.19
	11	$W_o F_o a_o$ + IMAGE STING	Y_6	"	0	-4 TO +12	"	"	—	—		NOT PRESENTED
	9	B_o (INV)	P_6	118.4	+8 TO -14	0	—	—	—	—	STATIC PITCH TARE	NOT PRESENTED
	10	" + IMAGE	"	117.3	"	"	—	—	—	—		NOT PRESENTED

REMARKS a.) ALSO GRIT IN TRANSITION PATTERN T_1 WAS ON THE MODEL FOR ALL RUNS EXCEPT 31-36. THOSE RUNS COMPRISED A GRIT STUDY USING GRADES 80-260 INCLUSIVE IN PATTERN T_1.
RUN 1: RERUN BECAUSE EXTERNAL BALANCES AND DATA OUTPUT CHANNELS WERE INCORRECTLY CONNECTED.
RUN 2: FOR WING ALONE CONFIGURATION, IMAGE INCLUDES THE IMAGE STING.

4/R

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	ψ_g°	δ_f°	δ_a°	δ_e°	δ_r°		FIGURE NO.
6-7	11	B_o + IMAGE	P_6	117.3	-8 TO +10	0	—	—	—	—	STATIC PITCH TARE	NOT PRESENTED
	12	B_o	"	118.4	-8 TO +24	0	—	—	—	—		3.1
	13	"	Y_6	"	0	-4 TO +12	—	—	—	—		3.19
	14	"	"	"	8	"	—	—	—	—		3.19
	15	"	"	"	16	"	—	—	—	—	STATIC PITCH TARE #	3.19
	16	$B_o W_o F_o a_o$ (INV)	P_6	118.3	+8 TO -14	0	0	0	—	—		NOT PRESENTED
6-8	17	"	"	"	"	"	30	"	—	—		"
	18	"	"	"	"	"	45	"	—	—		"
	19	$B_o W_o F_o a_o$ (INV) + IMAGE	"	117.1	+8 TO -14	"	45	"	—	—		"
	20	" + "	"	"	"	"	30	"	—	—		"
	21	" + "	"	"	"	"	0	"	—	—		"
	22	$B_o W_o F_o a_o$ + IMAGE	"	117.1	-8 TO +14	0	0	"	—	—	STATIC PITCH TARE	"
	23	" + "	"	"	"	"	30	"	—	—		"
	24	" + "	"	"	"	"	45	"	—	—		"
	25	$B_o W_o F_o a_o$	P_6	118.3	-8 TO +24	0	45	"	—	—	SET M_{6_0}	3.6
	26	"	"	"	"	"	30	"	—	—		3.6

REMARKS # AFTER RUN 15 A STATIC PITCH TARE WAS MADE, APPLICABLE TO RUN 12.

4/R

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	ψ_g°	δ_f°	δ_a°	δ_e°	δ_r°		FIGURE NO.
6-8	27	$R_2 W_0 F_0 a_0$	P_6	118.3	-8 TO $+18$	0	0	0	–	–		3.1, 3.2, 3.6, 3.11
	28	"	Y_6	"	0	-4 TO $+12$	"	"	–	–		3.19
	29	"	"	"	8	"	"	"	–	–		3.19
	30	"	"	"	16	"	"	"	–	–		3.17
	31	$R_0 W_0 F_0 a_0 + T_1^{280}$	P_6	"	-4 TO $+20$	0	"	"	–	–		3.2
	32	" $+ T_1^{220}$	"	"	"	"	"	"	–	–		3.2
	33	" $+ T_1^{180}$	"	"	"	"	"	"	–	–		3.2
	34	" $+ T_1^{120}$	"	"	"	"	"	"	–	–		3.2
	35	" $+ T_1^{100}$	"	"	"	"	"	"	–	–		3.2
	36	" $+ T_1^{80}$	"	"	"	"	"	"	–	–		3.2
	37*	" $+ T_1^{150}$	"	"	"	"	"	"	–	–		3.2, 3.11
	38	$R_0 W_0 F_0 a_0$	P_6	"	"	"	15	"	–	–		3.6
	39	"	"	"	"	"	40	"	–	–		3.6
	40*	"	"	"	"	"	50	"	–	–		NOT RECORDED
	40.1	"	"	"	"	"	"	"	–	–		3.6
	41*	$R_0 W_0 F_0 a_0$ - SEE NOTE	"	"	"	"	0	"	–	–		3.11

REMARKS RUN 37: REPEAT OF RUN 27.
RUN 40: ZERO SHIFT.
RUN 41: SEALED FLAP GAP TO FUSELAGE AND TO WING UPPER SURFACE.

L/R

DATE 1964	RUN	CONFIGURATION	TEST	q_m	α_g°	Ψ_g°	δ_f°	δ_a°	δ_{tc}°	δ_r°		FIGURE NO.
6-11	42	$B_o W_o F_o a_o + R_o$	P + Duct Press	1183	-4 TO +20	0	0	0	—	—		Press. Data Only
	43	" $+ R_o P_1$	"	"	"	"	"	"	—	—		"
	44	" $+ R_o P_2$	"	"	"	"	"	"	—	—	99°F 30.01 in Hg	"
	45*	" $+ P_2$	P_6	"	"	"	"	"	—	—		3.3
	46*	" $+ P_1$	"	"	"	"	"	"	—	—		3.3
	47*	$B_o W_o F_o a_o$	R_6	"	"	"	0	0	—	—		3.3, 3.12
	48	$B_o W_o F_o a_o$	P_6 + Press	"	"	"	"	"	—	—		3.12
6/11 6/12	49	"	Y_{6_L} + Press	"	0	-4 TO +20	"	"	—	—		3.21
	50	"	Y_{6_L} + Press	"	8	"	"	"	—	—		3.21
	51	"	"	"	16	"	"	"	—	—		3.21
	52	$B_o W_o F_o S_3'' a_o$	P_6	"	-8 TO +20	0	"	"	—	—		3.5
	53	S_o''	P_6 + Press	"	"	"	"	"	—	—		3.5
	54	$B_o W_o F_o S_o'' a_o$	P_6 + HM + Press	"	-8 TO +20	"	"	"	—	—		3.1, 3.5
	55	"	Y_6	"	0	-4 TO +12	30	"	—	—		3.22
	56	"	"	"	8	"	"	"	—	—		3.22
	57	"	"	"	16	"	"	"	—	—		3.22

REMARKS * RUNS 45, 46 & 47: FLAPS AND AILERONS WERE SEALED TO THE WING UPPER SURFACE AND FLAPS WERE SEALED TO FUSELAGE.

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	Ψ_g°	δ_f°	δ_a° L/R	δ_e°	δ_r°		FIGURE NO.
6-12	58	$B_o W_o F_o S_o^W a_o$	Y_6	118.3	0	-4 to +12	45	0	-	—		3.22
	59	"	"	"	8	"	"	"	-	—		3.22
	60	"	"	"	16	"	"	"	-	—		3.22
	61	$B_o W_o F_o S_o^W a_o$	"	"	0	"	0	"	-	—		3.28
	62	"	"	"	8	"	"	"	-	—		3.28
	63	"	"	"	16	"	"	"	-	—		3.28
6-13	64*	$B_o W_o F_o S_o^W V_o a_e$ + TIFT=	"	"	0	-4 TO +12	"	"	-	0		Not Preserved
	64-1*	" + "	"	"	"	-8 TO +12	"	"	-	"		"
	64-2	" + "	"	"	"	"	"	"	-	"		3.28
	65	" + "	"	"	8	-8 TO +12	"	"	-	"		3.28
	66	" + "	"	"	16	"	"	"	—	"		3.28
	67	$B_o W_o F_o S_1^W V_o a_o$ + "	P_6 + HM + P_{1x}	"	-8 TO +20	0	"	"	—	"	P_{1x} TOP VIEW	3.4
	68	S_2^W + "	"	"	"	"	"	"	—	"	"	3.4
	69	S_o^W + "	"	"	"	"	"	"	—	"	"	3.4
	70	$B_o W_o F_o S_o^W V_o a_o$	P_6 + HM	"	-8 TO +20	0	0	-20/+20	-	0		3.13
	71	"	"	"	"	"	"	-15/+15	-	"		3.13

REMARKS RUNS 64 & 64.1 : ZERO SHIFT IN L/R.

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	Ψ_g°	δ_f°	$\delta_{c_{L/R}}^\circ$	δ_e°	δ_r°		FIGURE NO.
6-13	72	$B_o W_o F_o S_o^{''} V_o a_o$	P_6 + HM	118.3	-8 TO +20	0	0	-10/+10	-	0		3.13
	73	"	"	"	"	"	"	-5/+5	-	"		3.13
	74	"	"	"	"	"	"	+5/-5	-	"		3.13
	75	"	"	"	"	"	"	10/-10	-	"		3.13
	76	"	"	"	"	"	"	15/-15	-	"		3.13
	77	"	"	"	"	"	"	20/-20	-	"		3.13
	78	"	"	"	-4 TO +20	12	"	0	-	"		3.32
	79	"	"	"	"	8	"	"	-	"		3.32
	80	"	"	"	"	0	"	"	-	"		3.7, 3.13, 3.32
	81	"	"	"	"	-8	"	"	-	"		3.32
	82	"	"	"	"	-12	"	"	-	"		3.32
	83*	"	"	"	"	0	30	"	-	"		Not Reduced
	83-1	"	"	"	"	"	"	"	-	"		3.7
	84*	"	"	"	-8 TO +20	-12	45	"	-	"		Not Reduced
	84.1	"	"	"	"	"	"	"	-	"		3.32
	85		"	"	"	-8	"	"	-	"		3.32

REMARKS

RUN 83: ZERO SHIFTS IN L, D & HM_4.
RUN 84: ZERO SHIFT IN D.

L/R

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	Ψ_g°	δ_f°	δ_a°	δ_e°	δ_r°		FIGURE NO.
6-13	86*	$B_o W_o F_o S_o^W V_o a_o$	P_6 HM	1183	-8 to +20	0	45	0	—	0		Not Reduced
	86.1	"	"	"	"	"	"	"	"	"		3.7 3.32
	87	"	"	"	"	8	"	"	—	"		3.32
	88	"	"	"	"	12	"	"	—	"		3.32
	89	$B_o W_o F_o S_o^W V_o M_o^F N_o D_o a_o$	P_6	"	-4 to +12	0	45	0	—	0		3.9
	90	"	"	"	-4 to +16	"	0	"	—	"		3.9
	91	"	"	"	"	"	30	"	—	"		3.9
6-14	92*	$B_o W_o F_o S_o^W V_o H_o^{-2.5} a_1$	P_6 HM	"	-6 to +20	0	0	0	0	0	Set M's	Not Reduced
	92.1	"	"	"	"	"	"	"	"	"		3.15
	93	$B_o W_o F_o S_o^W V_o H_o^o a_1$	"	"	-4 to +20	"	"	"	"	"		3.1, 3.8, 3.14, 3.15, 3.16
	94*	"	V_6 HM	"	0	-12 to +12	"	"	"	"		Not Reduced
	94.1	"	"	"	"	"	"	"	"	"	3.19, 3.22	3.20, 3.21 3.23, 3.24
	95	" $H_o^{M.S.} a_1$	P_6 HM	"	-4 to +20	0	"	"	"	"		3.15
	96	" $H_o^S a_1$	"	"	"	"	"	"	"	"		3.15
	97	" $H_o^{M^o} a_1$	"	"	"	"	"	"	"	"		3.15 3.17
	98	$H_o^o a_1$	"	"	"	"	0	0	25	0		3.16

REMARKS RUN 86: ZERO SHIFT IN M.
92: ZERO SHIFT IN ALL FORCES AND MOMENTS.
94: SHIFT IN α.

L/R

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	ψ_g°	δ_f°	δ_a°	δ_e°	δ_r°		FIGURE NO.
6-14	99	$B_0 W_0 F_0 S_0^W V_0 H_0^\circ a_1$	P_6 + HM	118.3	-4 TO +20	0	0	0	20	0		3.16
	100	"	"	"	"	"	"	"	10	"		3.16
	101	"	"	"	"	"	"	"	5	"		3.16
	102	"	"	"	"	"	"	"	-5	"		3.16
	103	$B_0 W_0 F_0 S_0^W V_0 H_0^\circ a_1$	"	"	"	8	30	0	0	0		3.18
	104	"	P_6	"	"	0	"	"	"	"		3.8 3.18
	105	"	"	"	"	"	45	"	"	"		3.8
	106	"	Y_6 + HM	"	8	-12 TO +12	0	0	0	0		3.19 3.20 3.23
	107	"	"	"	16	"	"	"	"	"		3.19 3.23 3.31
	108	"	"	"	0	"	"	"	"	10		3.29
	109	"	"	"	8	"	"	"	"	"		3.27
	110	"	"	"	16	"	"	"	"	"		3.27
	111	"	"	"	0	"	"	"	"	20		3.29
	112	"	"	"	"	"	"	"	"	25		3.29
	113	$B_0 W_0 F_0 S_0^W V_0 H_0^\circ a_1$	Y_6	"	0	-12 TO +12	0	0	0	0		3.24
	114	$B_0 W_1 F_0 S_0^W V_0 H_0^\circ a_1 + P_1$	"	"	"	"	"	"	"	0		3.20

REMARKS

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	ψ_g°	δ_f°	$\delta_{a_{L/R}}^\circ$	δ_e°	δ_r°		FIGURE NO.
6-14	115	$B_0 W_0 F_0 S_0^W V_0 H_0^\circ a_1 + P_1$	Y_6	118.3	8	-12 TO +12	0	0	0	0		3.20
	116	" $+P_2$	"	"	"	"	"	"	"	"		3.20
	117	" + "	"	"	0	"	"	"	"	"		3.20
	118*	$B_0 W_0 F_0 S_0^W V_1 H_0^\circ a_1$	P_6	"	-8 TO +20	0	0	0	0	0		3.14 3.15 3.19
	119	"	$P_6 + HM$	"	-4 TO +20	"	"	-20/+20	"	"		3.10 3.14
	120	"	"	"	"	"	"	-15/+15	"	"		3.14
	121	"	"	"	"	"	"	-10/+10	"	"		3.14
	122	"	"	"	"	"	"	-5/+5	"	"		3.14
	123	"	"	"	"	"	"	+5/-5	"	"		3.14
	124	"	"	"	"	"	"	10/-10	"	"		
	124.1	"	"	"	"	"	"	"	"	"		3.14
	125	"	"	"	"	"	"	15/-15	"	"		3.14
	126	"	"	"	"	"	"	20/-20	"	"		3.14
	127	"	"	"	-8 TO +20	0	30	+20/-20	0	0		NOT RECEIVED
	127.1	"	"	"	"	"	"	"	"	"		3.14
	128	"	"	"	"	"	"	10/-10	"	"		NOT RECEIVED

REMARKS RUN 118: WAXED VERTICAL-HORIZ. TAIL INTERSECTION; TAPED AILERON TIP SMOOTH SEALED AILERON UPPER SURFACE GAP. MADE MODEL AS SMOOTH AS POSSIBLE FOR MINIMUM DRAG

124: ZERO SHIFT IN HM_4. RE-RUN

127: ZERO RETURN TAKEN AT WRONG ANGLE. RE-RUN.

128: BAD LIFT COUNTER. RE-RUN

L/R

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	Ψ_g°	δ_f°	δ_a°	δ_e°	δ_r°		FIGURE NO.
6-14	128.1*	$B_o W_o F_o S_o^W V_1 H_o^\circ a_1$ + TUFTS	P_6 + HM	118.3	-8 TO +20	0	30	10/40	0	0		3.14
	129	"	"	"	"	"	"	0	"	"		3.14
	130	"	"	"	"	"	"	-10/10	"	"		3.14
	131	"	"	"	"	"	"	-20/20	"	"		3.14 3.10
	132*	"	"	"	"	"	45	-20/20	"	"		NOT RECEIVED
	132.1*	"	"	"	"	"	"	"	"	"		"
6-15	133	" + TUFTS	P_6 + Pix	"	-4 TO +20	"	0	0	0	0	Pix 3 VIEWS	"
	133.1	" + "	P_6	"	"	"	"	"	"	"		3.17
	134	" + "	Y_6 + R_R	"	0	-12 TO +12	"	"	"	"	Pix 3 VIEWS	NOT RECEIVED
	134.1	" + "	Y_6	"	"	"	"	"	"	"		3.23
	135	" + "	"	"	8	"	"	"	"	"	Pix 3 VIEWS	3.23
	135.1	" + "	P_6 + HM + Pix	"	-8 TO +20	0	45	"	"	"	Pix TWO VIEW	3.14
	132.2	$B_o W_o F_o S_o^W V_1 H_o^\circ \omega_1$	P_6 + HM	"	"	"	45	-20/20	0	0		3.10 3.14
	137	"	"	"	"	"	"	-10/10	"	"		3.14
	138	"	"	"	"	"	"	10/-10	"	"		3.14
	139*	" * SEE NOTE	P_6 + PRESS	"	-8 TO +18	"	0	-20/20	"	"		PRESS. DATA ONLY

REMARKS RUN 128.1: OBSERVED TUFTS. MODEL PICTURE SHOWS LOCATION OF TUFTS.
132: ZERO SHIFT IN HM$_4$.
132.1: ZERO SHIFT IN L & HM$_4$
133: ZERO SHIFT IN L & D
134: ZERO SHIFT IN R & M

RUN 139: UNDERSIDE OF FLAP GAP TAPED DURING RUNS 139 - 146 INCLUSIVE.

DATE 1962	RUN	CONFIGURATION	TEST	q_m	$\alpha_g°$	$\Psi_g°$	$\delta_f°$	$\delta_a°$ L/R	$\delta_e°$	$\delta_r°$		FIGURE NO.
6-15	140*	$B_o W_o F_o S_o^w V_1 H_r a_1$	Y^+_{PRESS}	118.3	0	-20, -8 +8, +20	0	-20/20	0	0		PRESS DATA ONLY
	141	"	"	"	16	"	"	"	"	"		"
	142	"	P^+_{PRESS}	"	-2 TO +18	0	"	-10/10	"	"	101°F 29.91 Hg	"
	143	"	"	"	"	"	"	10/-10	"	"		"
	144	"	"	"	"	"	"	20/-20	"	"		"
	145	"	Y^+_{PRESS}	"	16	-20, -8 +8, +20	"	"	"	"		"
	146*	"	"	"	0	"	"	"	"	"		"
	147	$B_o W_o F_c S_o^w V_1 H_o^c a_1$	P^-_{PRESS}	"	-4 TO +18	0	30	20/-20	0	0		"
	148	"	"	"	"	"	"	-20/20	"	"		"
	149	"	"	"	"	"	"	0	10	0		"
	150	"	"	"	"	"	45	0	0	0		"
	151	"	"	"	"	"	"	20/-20	"	"	106°F 30.09" Hg	"
	152	"	Y^+_{PRESS}	"	0	-20, -8 +8, +20	"	"	"	"		"
	153	"	"	"	16	"	"	"	"	"		"
	154	"	P^+_{PRESS}	"	-4 TO +18	0	"	-20/20	"	"		"
	155	"	Y^+_{PRESS}	"	0	-20, -8 +8, +20	"	"	"	"		"

* SEE NOTE

REMARKS RUNS 139 - 146 INCLUSIVE - UNDERSIDE OF FLAP GAP TAPED.

L/R

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	Ψ_g°	δ_f°	δ_a°	δ_e°	δ_r°		FIGURE NO.
6-15	156	$B_0 W_a F_c S_o^W V_1 H_o^\circ a_1$	Y^+_{PRESS}	116.3	16	-20, -8 +8, +20	45	-20/+20	0	0	115°F	PRESS. DATA ONLY
6-18	157	"	"	"	0	"	0	"	"	"		"
	158	$B_0 W_0 F_0 S_c^W V_1 H_0^\circ a_1$	"	"	0	"	45	"	"	"		"
	159*	"	$Y_6^+{}_{HM}$	"	0	-12 TO +12	0	0	"	"		3.23, 3.26, 3.29
	160	"	PRESS	"	0	0	0	0	20	0		PRESS. DATA ONLY
	161	"	"	"	"	"	"	"	10	"		"
	162	$B_0 W_0 F_0 S_0^W V_0 H_0^{-5} a_1$	"	"	"	"	"	"	0	"		"
	163	$B_0 W_0 F_0 S_0^W V_0 H_c^{+5} a_1$	"	"	"	"	"	"	"	"		"
	164	$B_0 W_0 F_0 S_0^W V_0 H_0^\circ a_1$	"	"	"	"	"	"	"	"		"
	165	"	"	"	"	"	"	"	"	20	TAPED K.T. SIDE OF RUDDER	"
	166	"	"	"	"	"	"	"	"	10	"	"
	167	"	"	"	"	"	"	"	"	-10	"	"
	168	"	"	"	"	"	"	"	"	-20	"	"
	169	"	Y^+_{PRE-}	"	0	-12 TO +12	"	"	"	0	"	"
6-19	170	$B_0 W_0 F_0 S_0^W V_0 H_0^\circ a_1$	$P_6^+{}_{HM}$	"	-E TO +20	0	45	20/-20	0	0		14
	171	"	$Y_6^+{}_{HM}$	"	0	-12 TO +12	"	"	"	"		NOT PRESENTED

REMARKS RUN 159 : REPEAT OF RUN 94.1 EXCEPT WITH WAX FAIRING ON VERT. TAIL (V_1).
160 : SCANIVALVE #2 WENT OUT : WILL NOT BE REPAIRED FOR REMAINDER OF TEST.
162 : OMITTED WAX FAIRING ON VERTICAL TAIL WHEN HORIZ. INCIDENCE CHANGED.
171 : ZERO SHIFT IN M & R ; RE-RUN
171.1 : ZERO SHIFT IN M. NOT RERUN.

DATE 1962	RUN	CONFIGURATION	TEST	q_m	α_g°	Ψ_g°	δ_f°	δ_a°	δ_e°	δ_r°		FIGURE NO.
6-19	171.1	$B_o W_o F_o S_o^w V_o H_o^\circ \omega_1$	$V_o + \mu_{M1}$	118.3	0	-12 TO +12	45	20/-20	0	0		3.31
	172		"	"	16	"	"	"	"	"		3.31
	173	"	"	"	16	"	"	-20/20	"	"		3.31
	174	"	"	"	0	"	"	"	"	"		3.31
	175	"	"	"	0	"	0	"	"	"		3.31
	176*	"	"	"	16	"	"	"	"	"		
	176.1	"	"	"	16	"	"	"	"	"		3.31
	177	"	"	"	16	"	"	-10/10	"	"		3.31
	178	"	"	"	0	"	"	"	"	"		3.31
	179	"	"	"	"	"	"	0	"	"		3.31
	180	"	"	"	"	"	"	10/-10	"	"		3.31
	181	"	"	"	16	"	"	"	"	"		3.31
	182	"	"	"	"	"	"	20/-20	"	"		3.31
	183	"	"	"	8	"	"	0	"	"		NOT PLOTTED
	183.1*	" SEE NOTE	"	"	"	"	"	"	"	"		3.26
	184	$B_o W_o F_o S_o^w V_1 H_o^\circ \omega_1$	"	"	"	"	"	"	"	"		3.24, 3.30

REMARKS RUN 176: ZERO SHIFT IN D

183.1: THIS RERUN WAS MADE TO INVESTIGATE THE WIDE VARIANCE OF N @ $\Psi_g = -8°$. BETWEEN RUNS 183 AND 183.1 THE TAIL STRUT WAS ADJUSTED TO MINIMIZE INTERFERENCE.

4/R

DATE 1962	RUN	CONFIGURATION	TEST	q_m	$\alpha_g°$	$\psi_g°$	$\delta_f°$	$\delta_a°$	$\delta_e°$	$\delta_r°$		FIGURE NO.
6-19	185	$B_o V_o F_o S_o^W V_o H_o^c a_o$	$\frac{1}{6}$ "HM	113.3	8	-12 TO +12	0	0	0	10		3.27 3.30
	186	"	"	"	"	"	"	"	"	20		3.36
	187	"	"	"	"	"	"	"	"	25		3.36
	138	" $+T_2$	"	"	0	"	"	"	"	0		3.26
		FINIS										

REMARKS

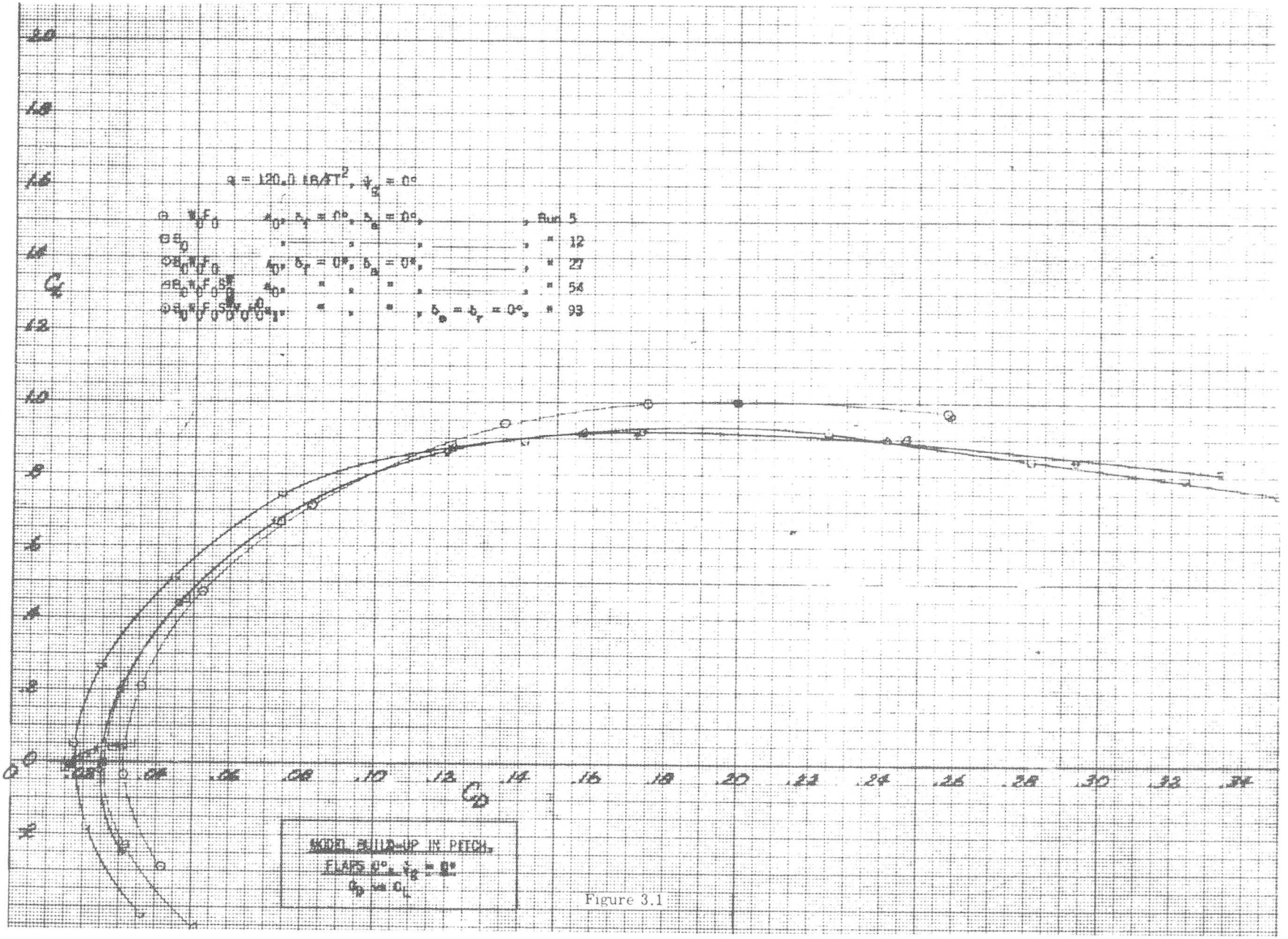

$q = 120.0$ LB/FT^2, $\psi_g = 0°$
α_0, $\delta_f = 0°$, $\delta_a = 0°$, ——— , Run 5
" " " " " , " 12
" $\delta_f = 0°$, $\delta_a = 0°$, ——— , " 27
" " " " ——— , " 56
" " " $\delta_a = \delta_r = 0°$, " 93
C_L
C_D
MODEL BUILD-UP IN PITCH,
FLAPS 0°, $\psi_g = 0°$
C_D vs C_L
RUN SYM
5 ○
12 □
27 ◇

Figure 3.1

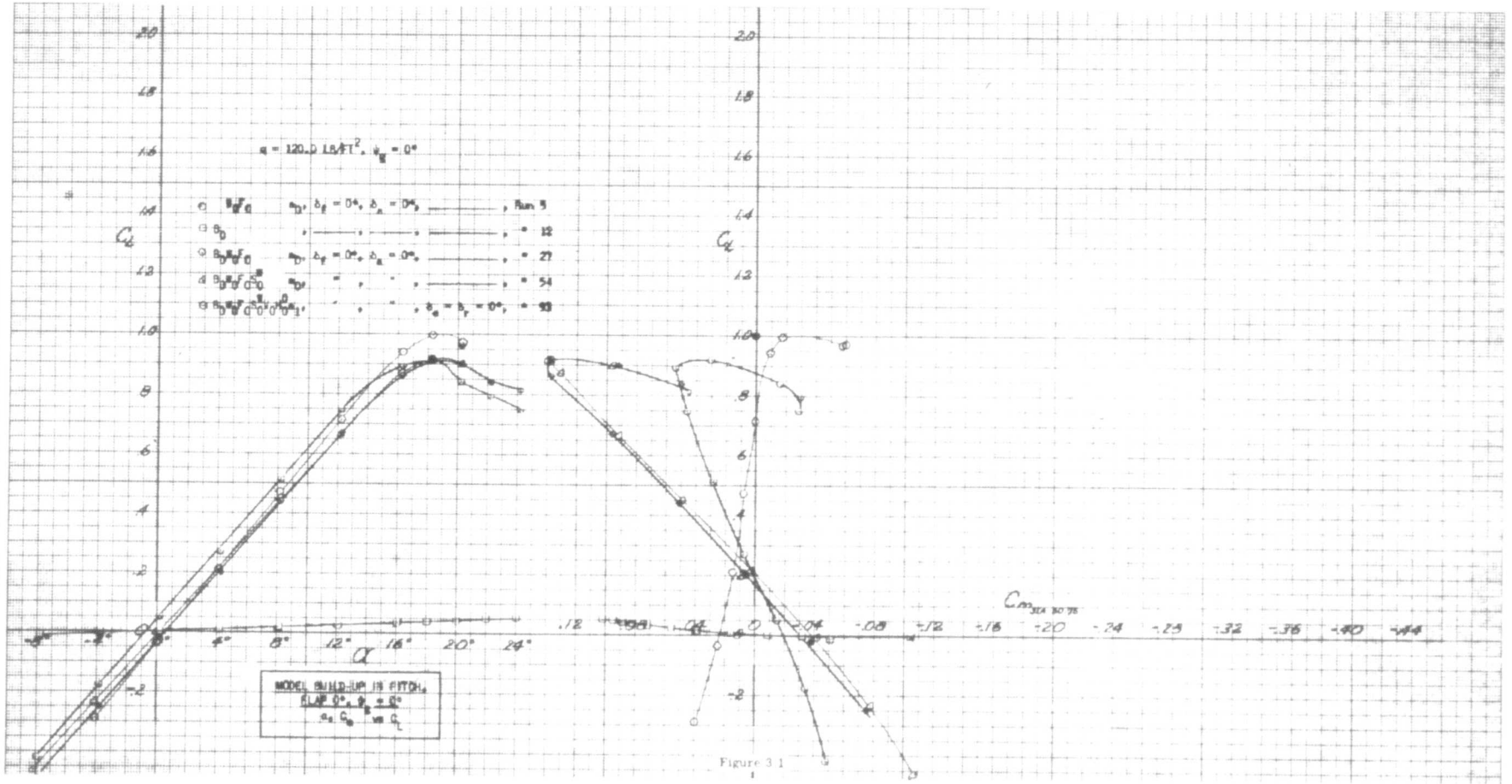

q = 120.0 LB/FT², ψ_E = 0°
RUN SYM
5
12
27
MODEL BUILD-UP IN PITCH, FLAP 0°, δ_E = 0°
C_m vs C_L
C_L
C_m
α

Figure 3.1

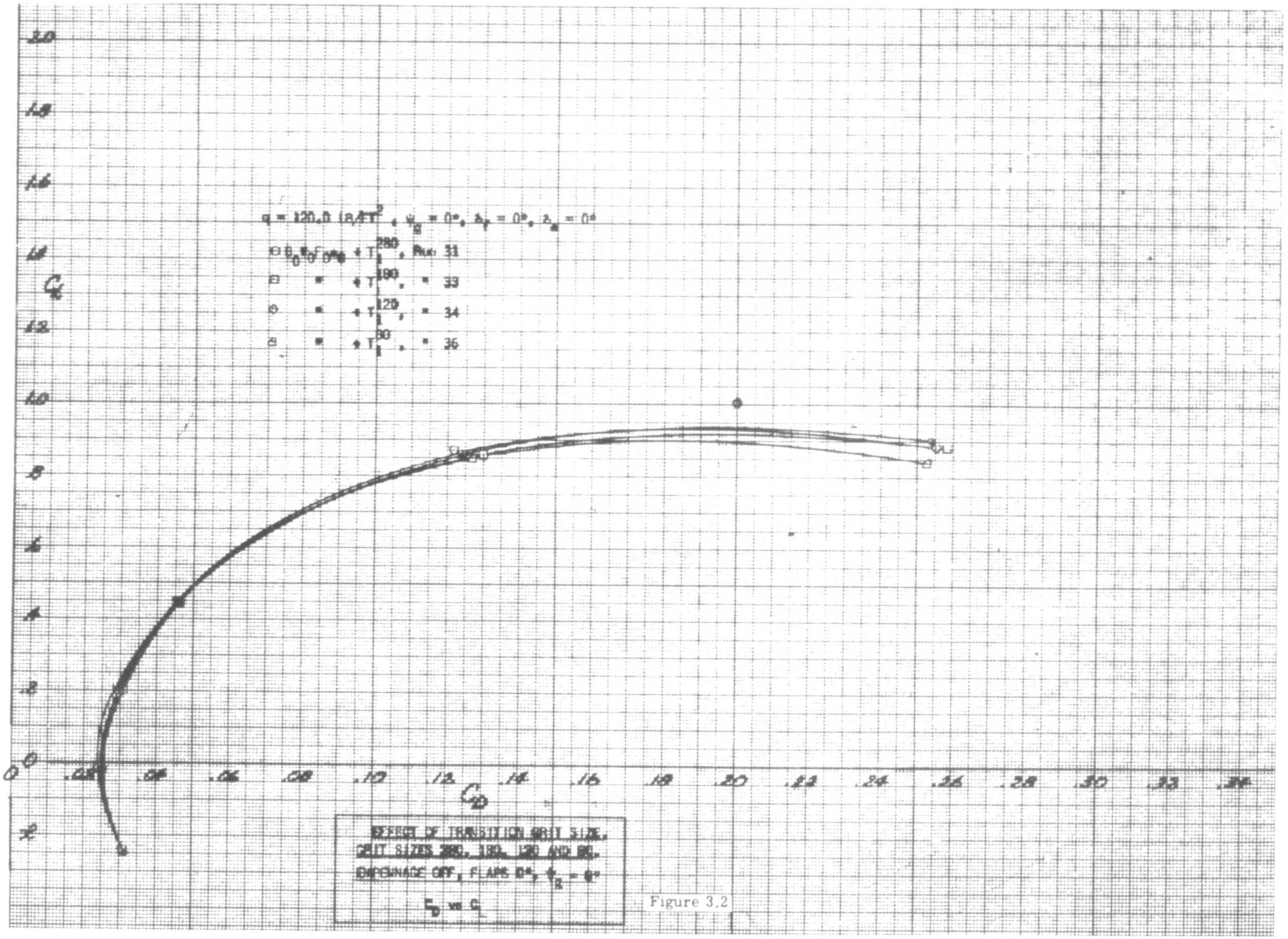

q = 120.0 lb/ft²
i_w = 0°, i_t = 0°, i_a = 0°
δ_f = 0°
T_1 = 280, Run 31
T_1 = 180, " 33
T_1 = 120, " 34
T_1 = 80, " 36
C_L
C_D
RUN SYM
31 ○
33 □
34 ◇
36 △
EFFECT OF TRANSITION GRIT SIZE.
GRIT SIZES 280, 180, 120 AND 80.
ENGINNACELLE OFF, FLAPS 0°, δ_e = 0°
C_D vs C_L

Figure 3.2

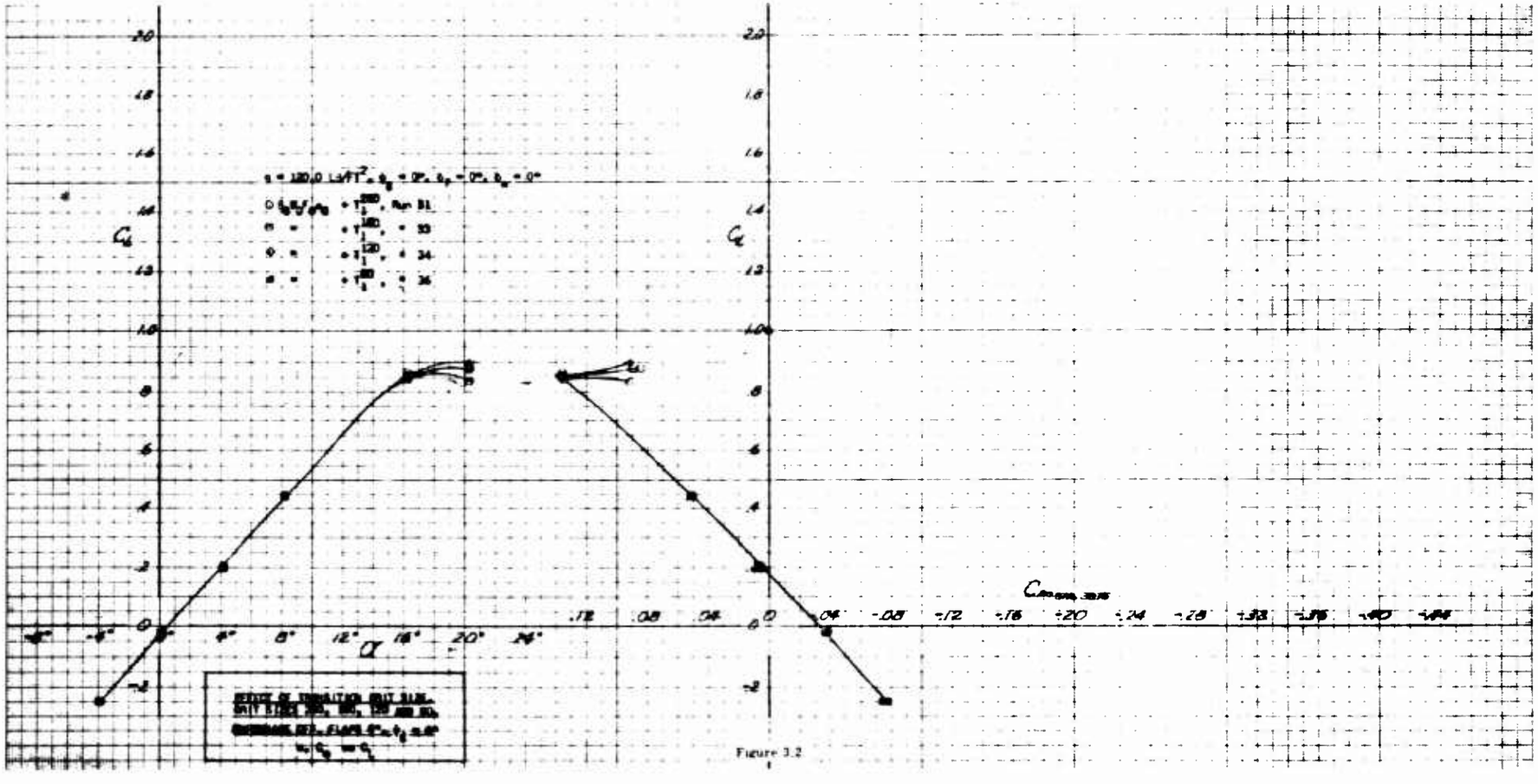


Figure 3.2

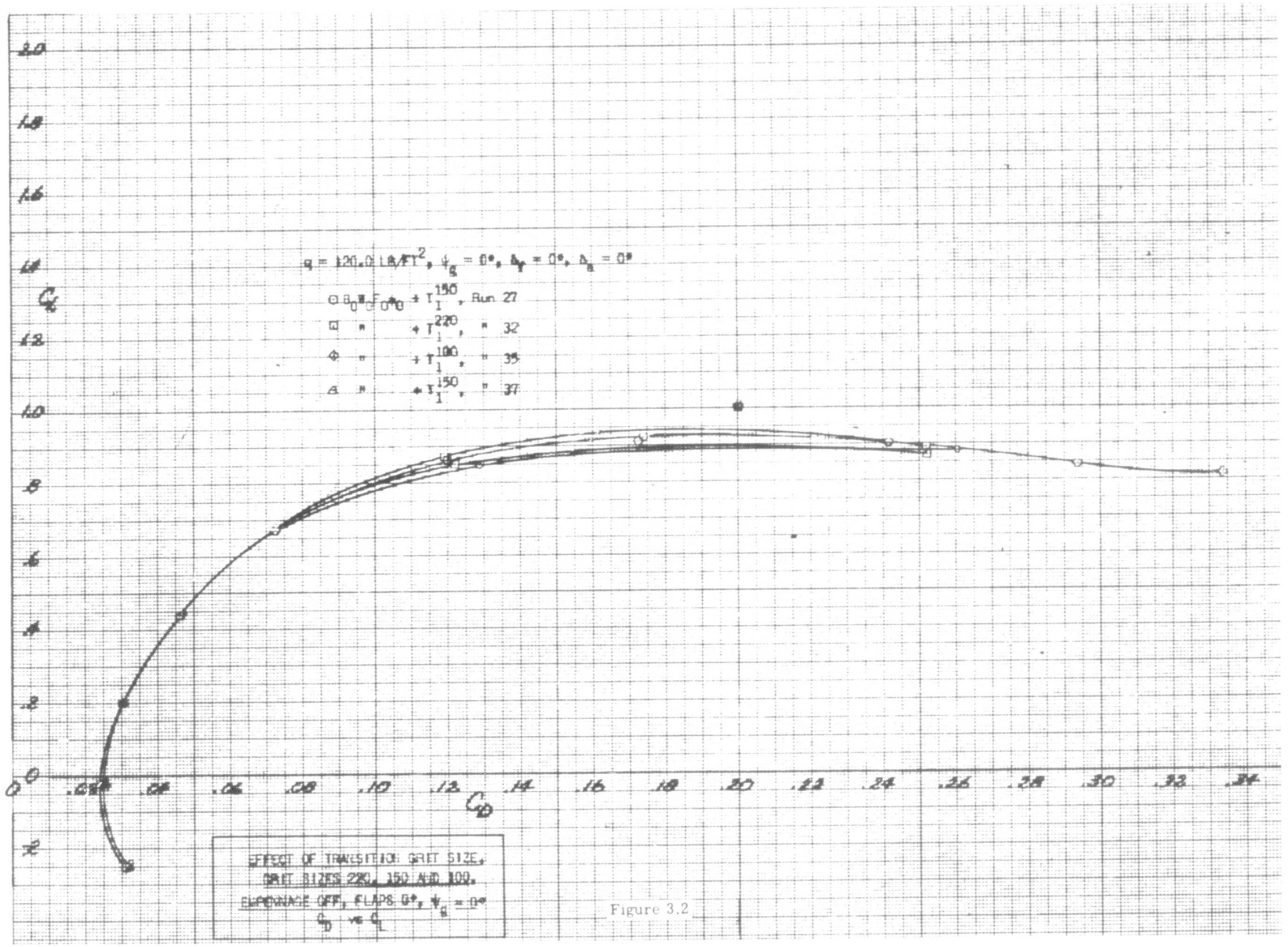

q = 120.0 LB/FT², i_g = 0°, δ_f = 0°, δ_s = 0°
Run 27
" 32
" 35
" 37
RUN SYM
27 ○
32 □
35 ◇
37 △
C_L
C_D
EFFECT OF TRANSITION GRIT SIZE.
GRIT SIZES 220, 150 AND 100.
FUSELAGE OFF, FLAPS 0°, i_g = 0°
C_D vs C_L

Figure 3.2

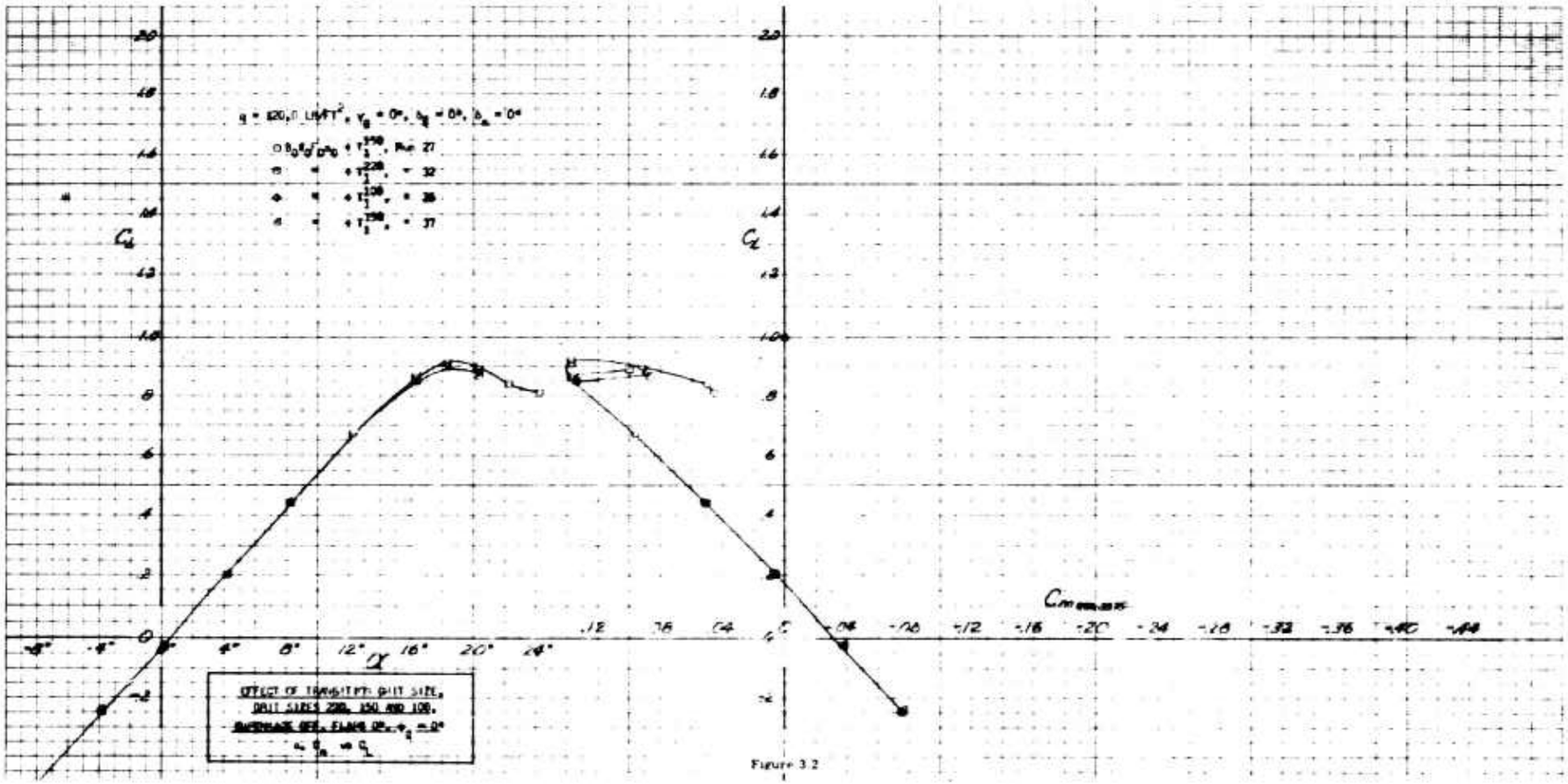

RUN SYM
27 ○
32 □
35 ◇
37 △
C_L
C_m
α
-4° 0° 4° 8° 12° 16° 20° 24°
-.12 -.08 -.04 0 .04 .08 .12 .16 .20 .24 .28 .32 .36 .40 .44
2.0 1.8 1.6 1.4 1.2 1.0 .8 .6 .4 .2 0 -.2

Figure 3.2

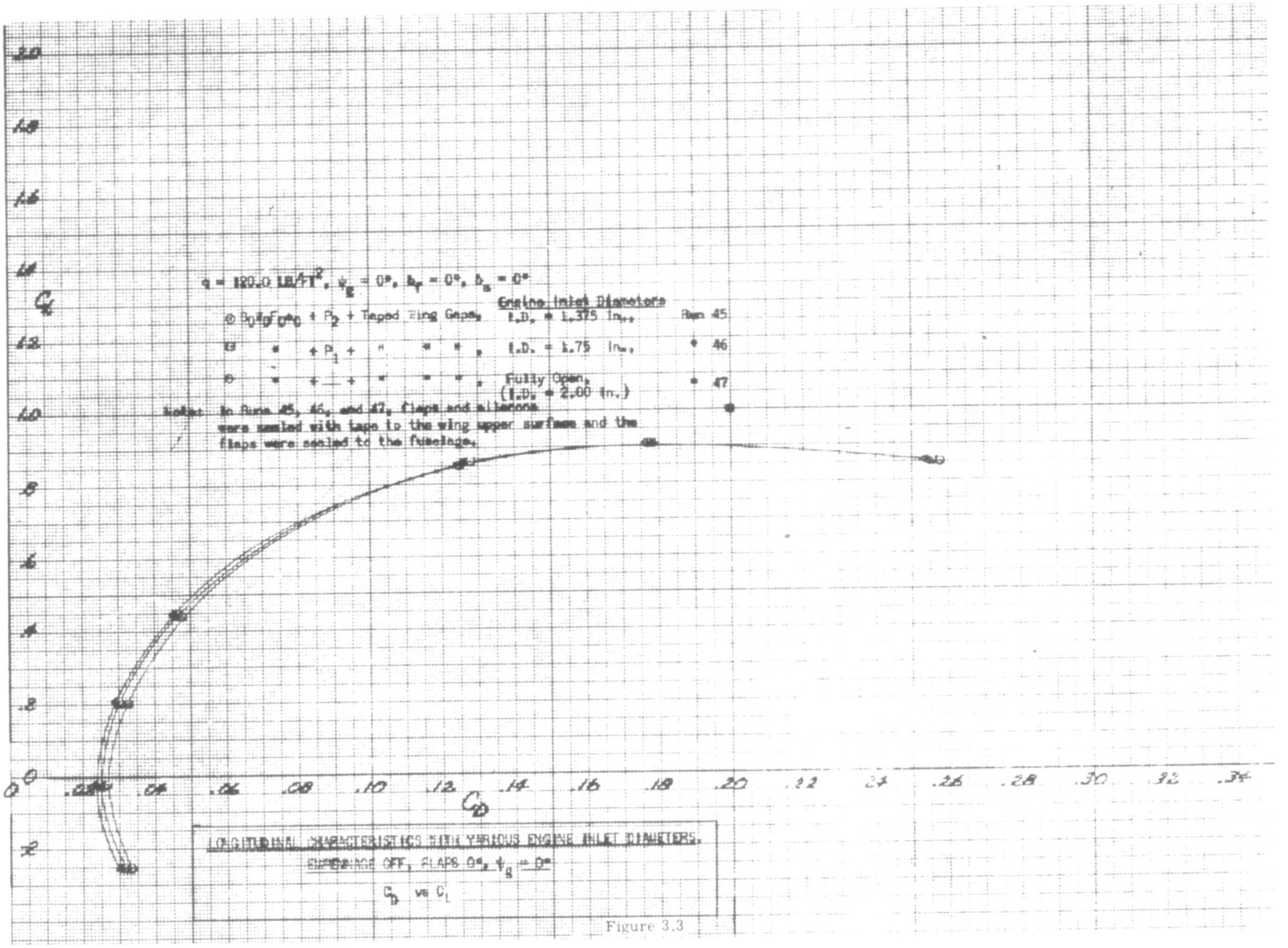
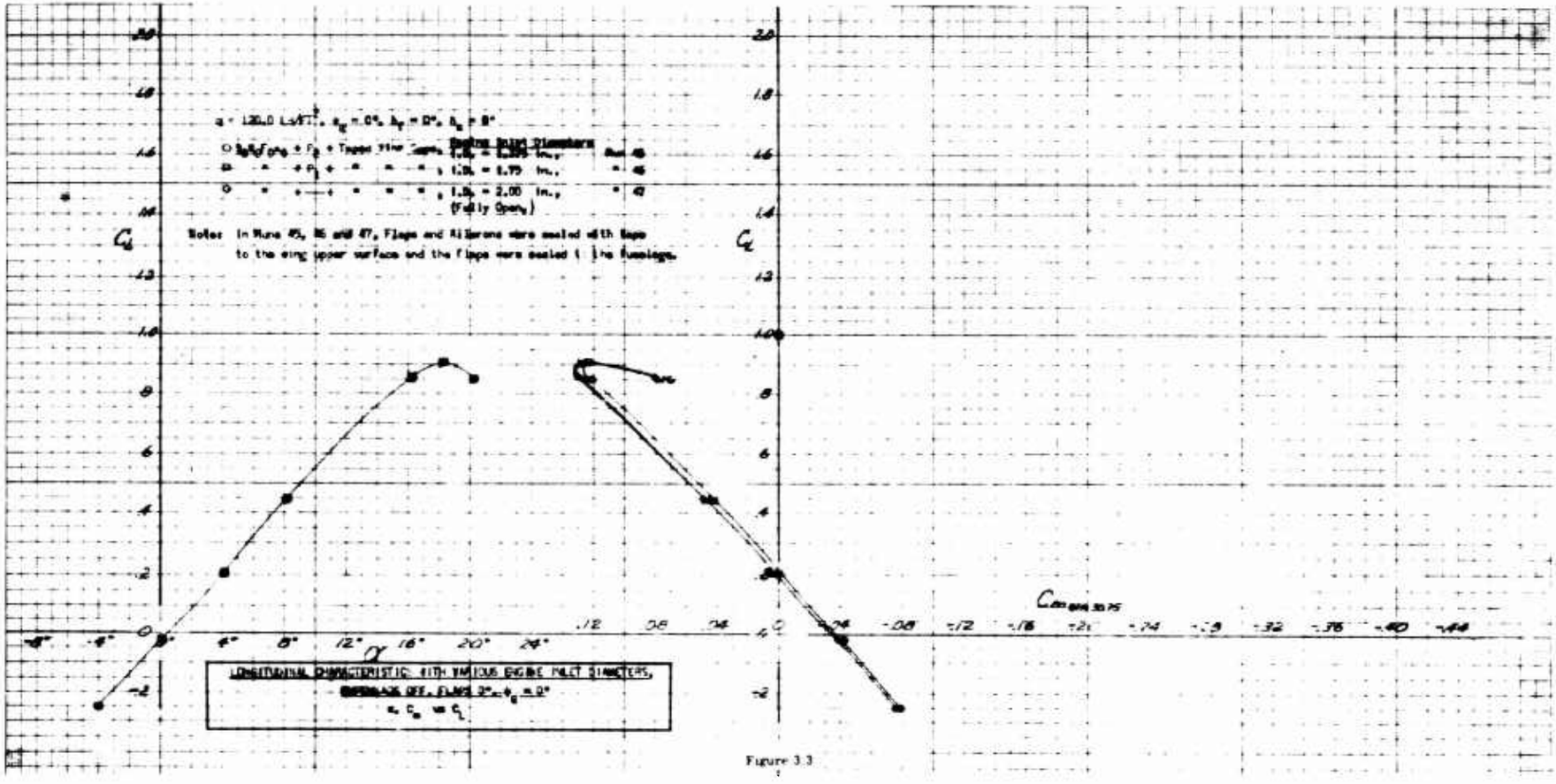

q = 120.0 LB/FT², ψg = 0°, δf = 0°, δa = 0°
Engine Inlet Diameters
Run 45
I.D. = 1.375 in.,
46
I.D. = 1.75 in.,
47
Fully Open,
(I.D. = 2.00 in.)
Note: In Runs 45, 46, and 47, flaps and ailerons were sealed with tape to the wing upper surface and the flaps were sealed to the fuselage.
RUN SYM
45 ○
46 □
47 ◇
CL
CD
LONGITUDINAL CHARACTERISTICS WITH VARIOUS ENGINE INLET DIAMETERS.
CL vs CD

Figure 3.3


RUN SYM
45 ○
46 □
47 ◇
Boles: In Runs 45, 46 and 47, Flaps and Ailerons were sealed with tape to the wing upper surface and the flaps were sealed ( ) to fuselage.
Figure 3.3

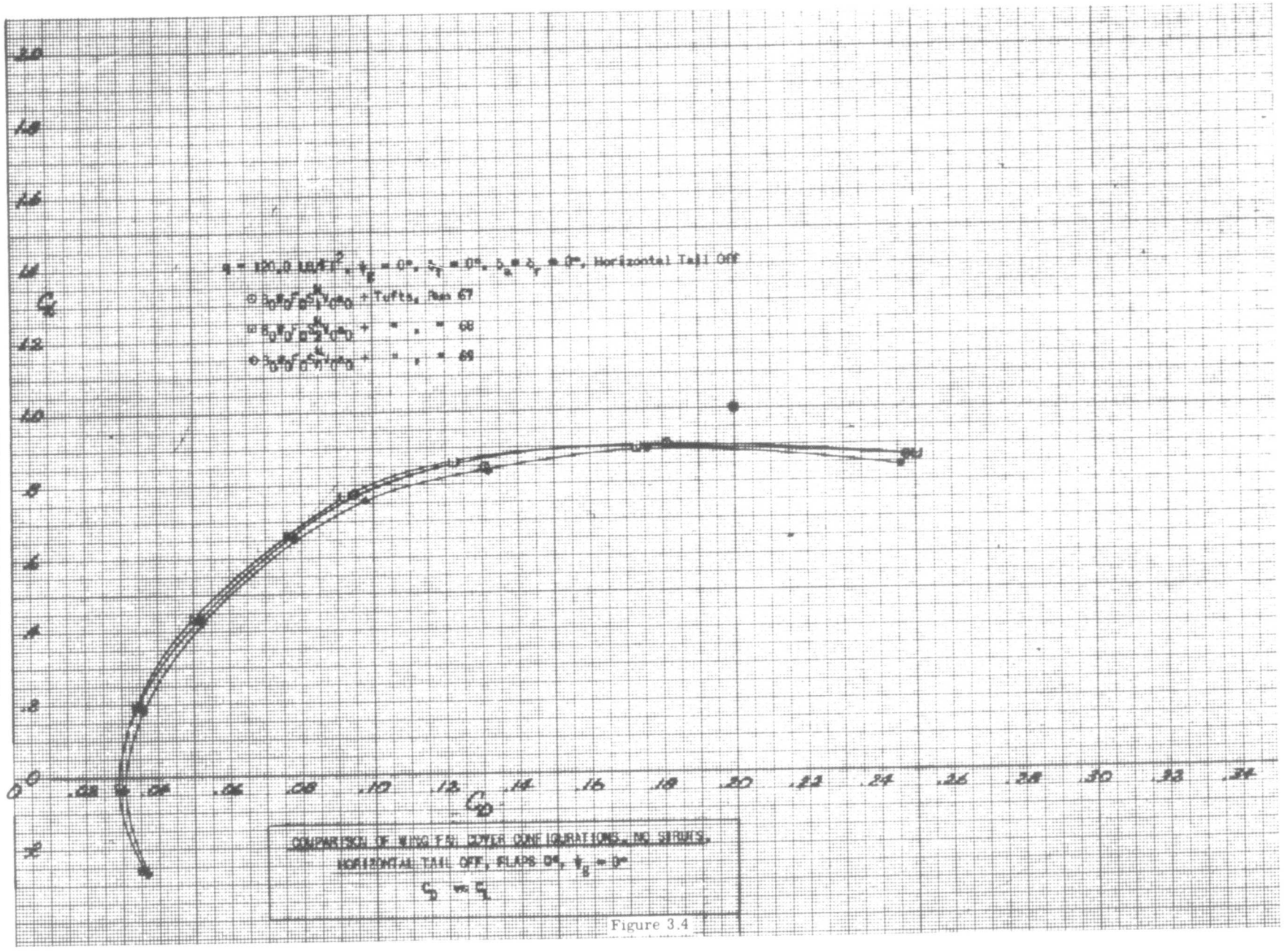

RUN SYM
67 O
69 □
69 ◇
C_L
C_D
.22
.18
.14
.10
.08
.06
.04
.02
0
-.02
.02
.04
.06
.08
.10
.12
.14
.16
.18
.20
.22
.24
.26
.28
.30
.32
.34
2
4
6
8
10
12
14
16
18
20
22
24
q = 120.0 lbs/ft^2, i_t = 0°, δ_f = 0°, δ_e = δ_r = 0°, Horizontal Tail Off
○ $b_0 \delta_0 f \delta_1 \delta_2 V_0 \sigma_0$ + Tufts, Run 67
□ $b_0 \delta_0 f \delta_1 \delta_2 V_0 \sigma_0$ + " , " 68
◇ $b_0 \delta_0 f \delta_1 \delta_2 V_0 \sigma_0$ + " , " 69
COMPARISON OF WING FULL SPAN CONFIGURATIONS, NO SERIES,
HORIZONTAL TAIL OFF, FLAPS 0°, i_t = 0°
$\zeta_1 = \zeta_2$

Figure 3.4

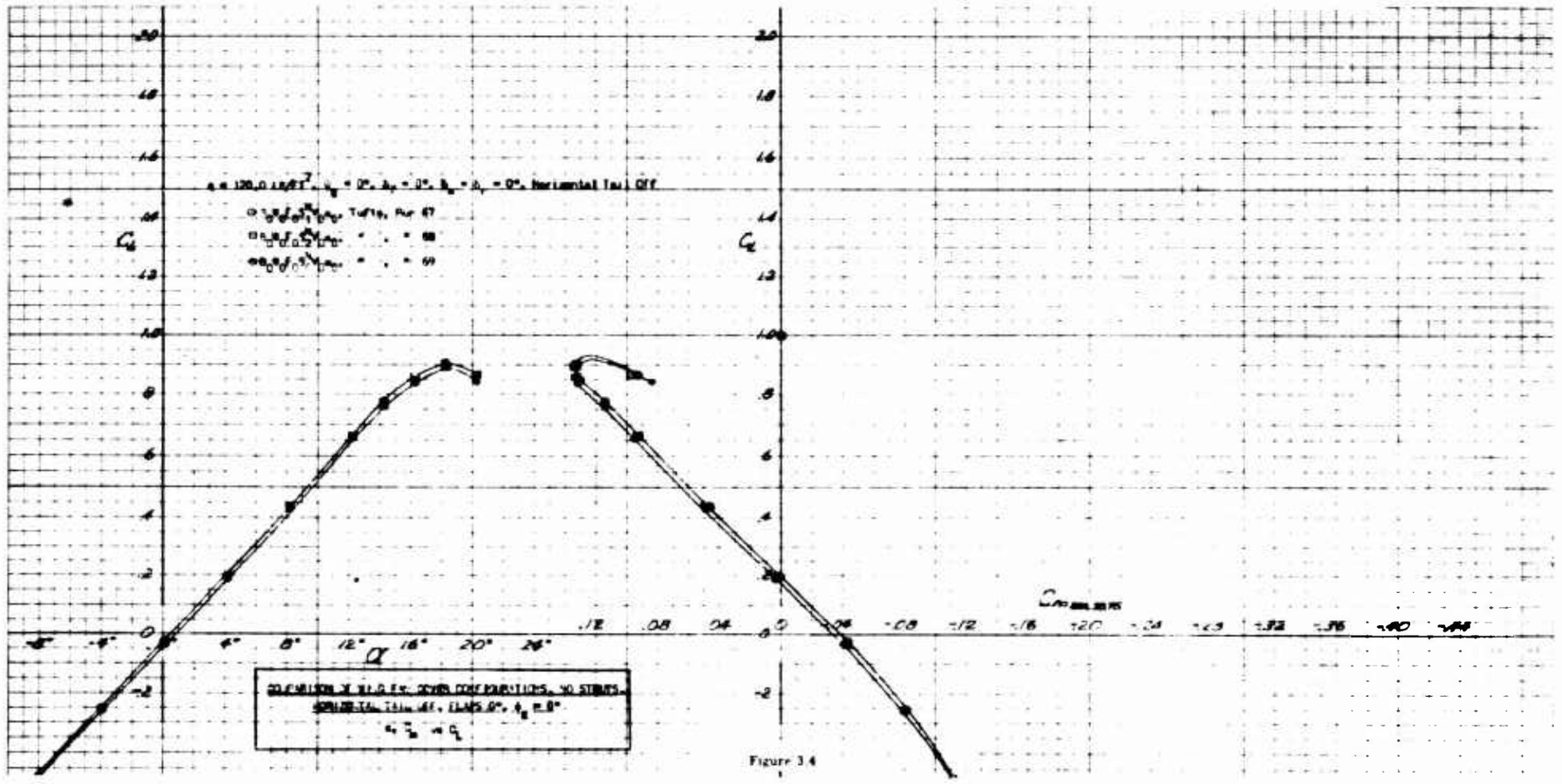


Figure 3.4

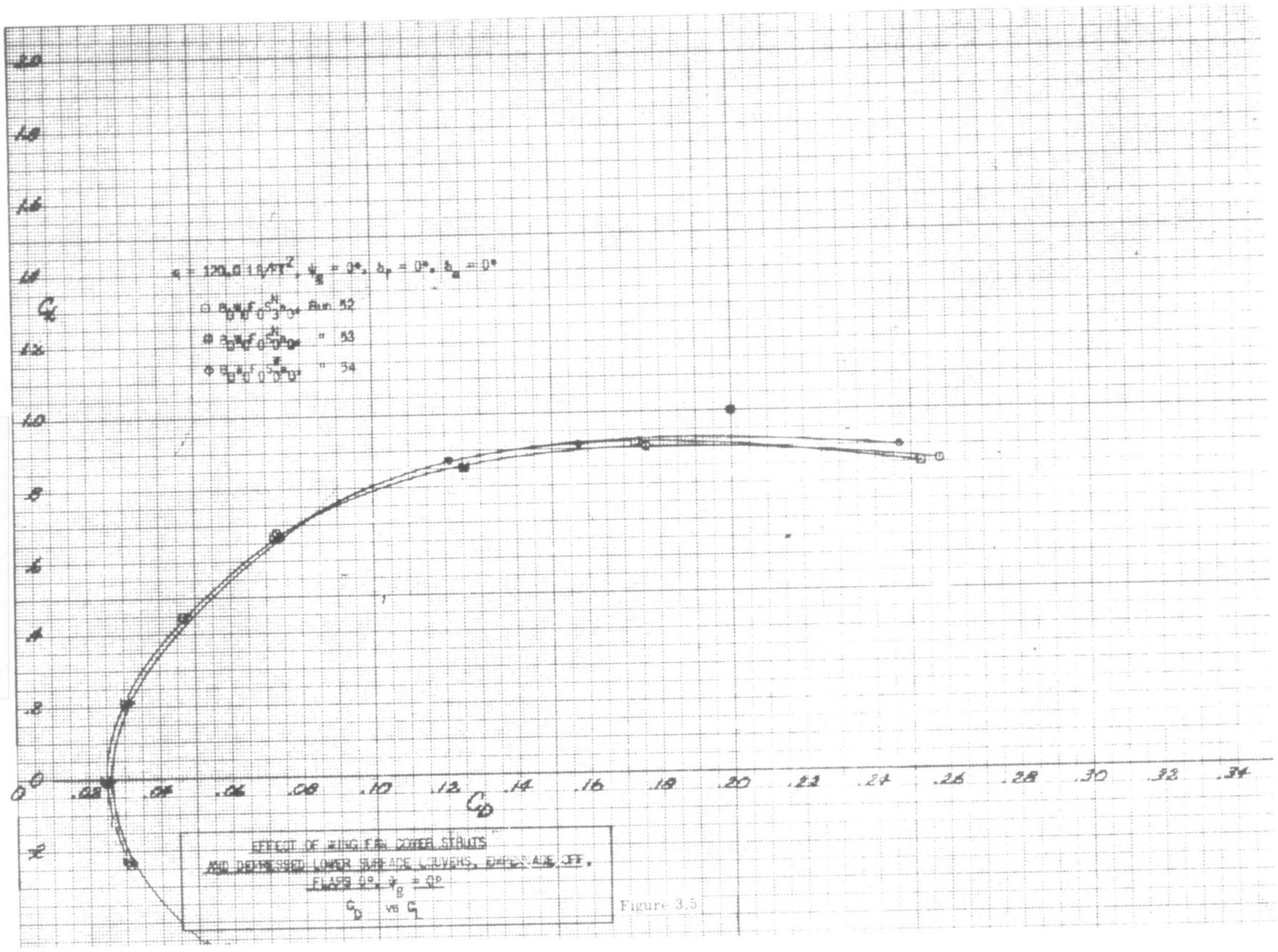

RUN SYM
52 ○
53 □
54 ◇
C_L
C_D
EFFECT OF WING FENCES, DOWNSTREAM STRUTS AND DEPRESSED LOWER SURFACE LOUVERS, FLAPS OFF, FLAPS 0°, δ_g = 0°
C_D vs C_L

Figure 3.5

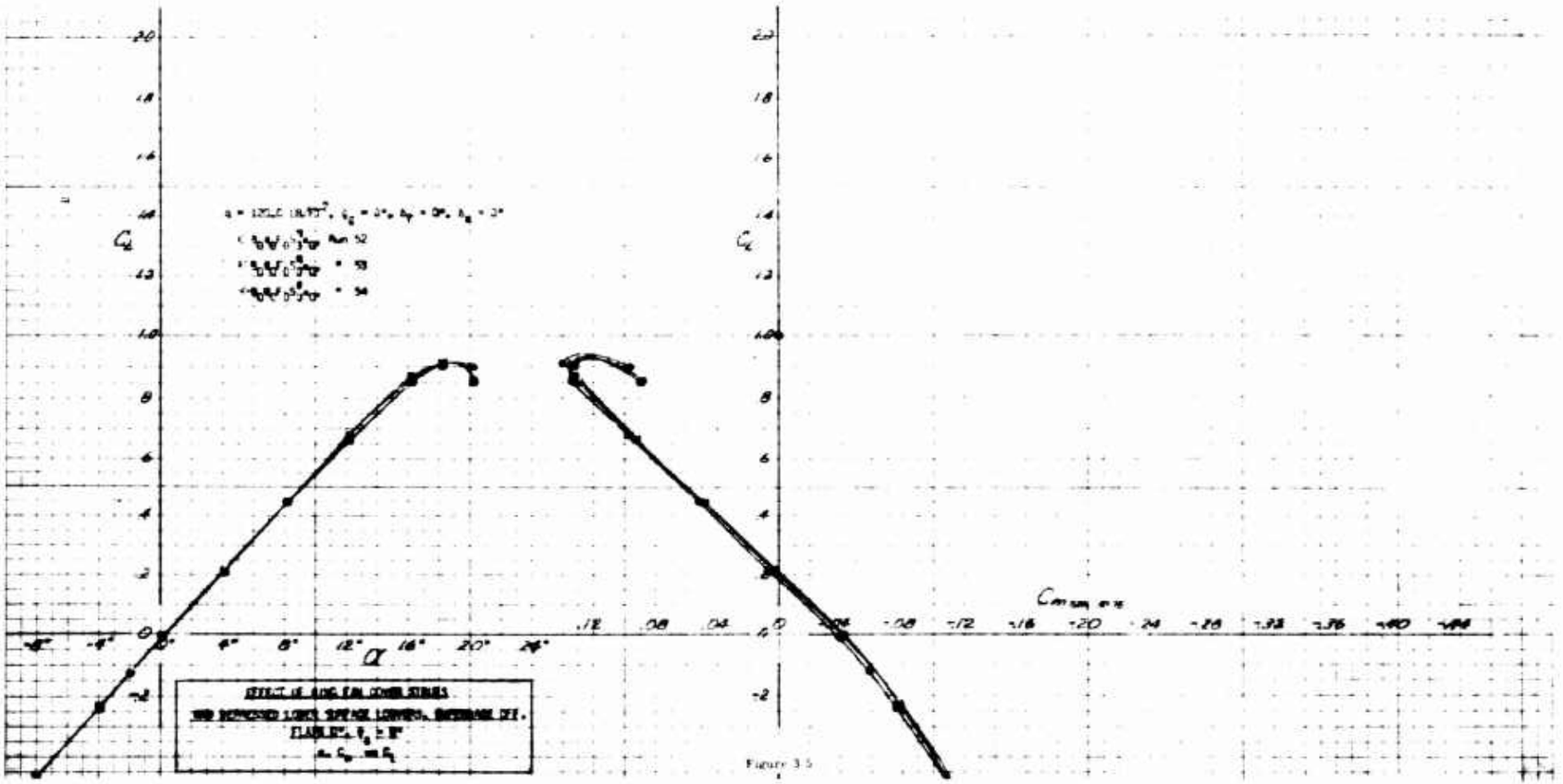


Figure 3.5

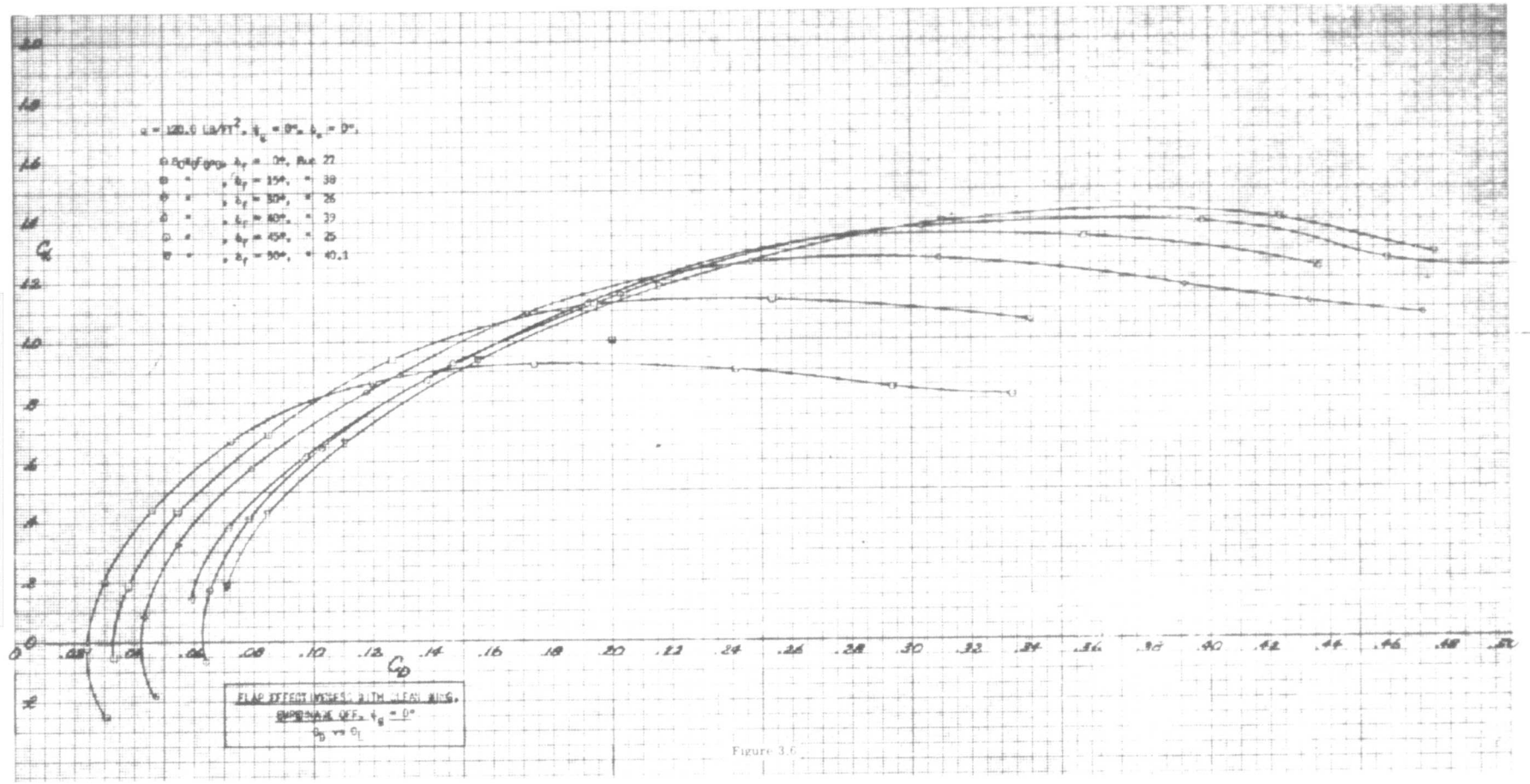

RUN SYM
27 ○
38 □
26 ◇
39 △
25 ○
40 ▽
C_L
C_D
FLAP EFFECTIVENESS WITH CLEAN WING, SWEEPBACK OFF, $\phi_s = 0°$
C_D vs C_L

Figure 3.6

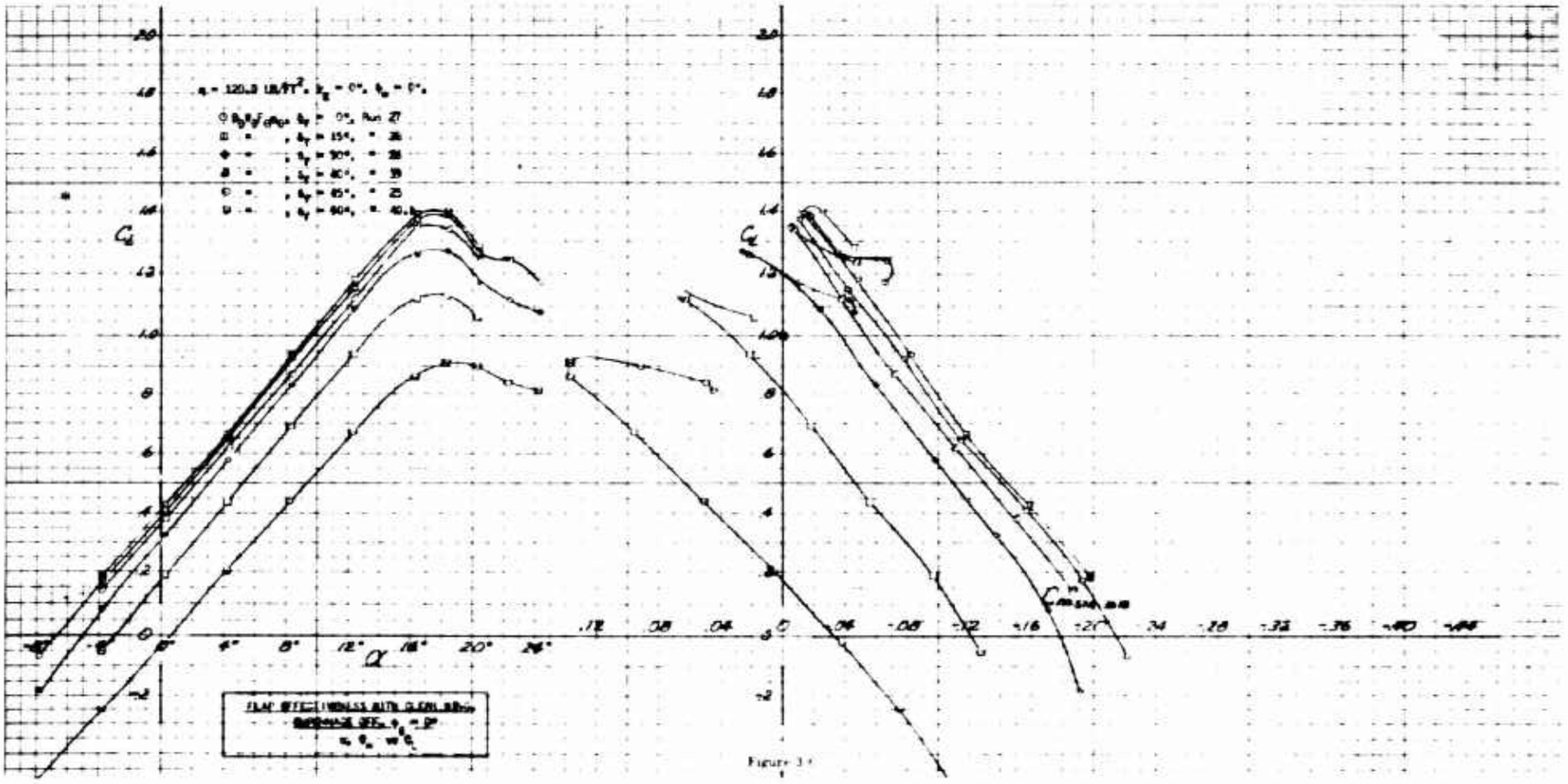


Figure 31

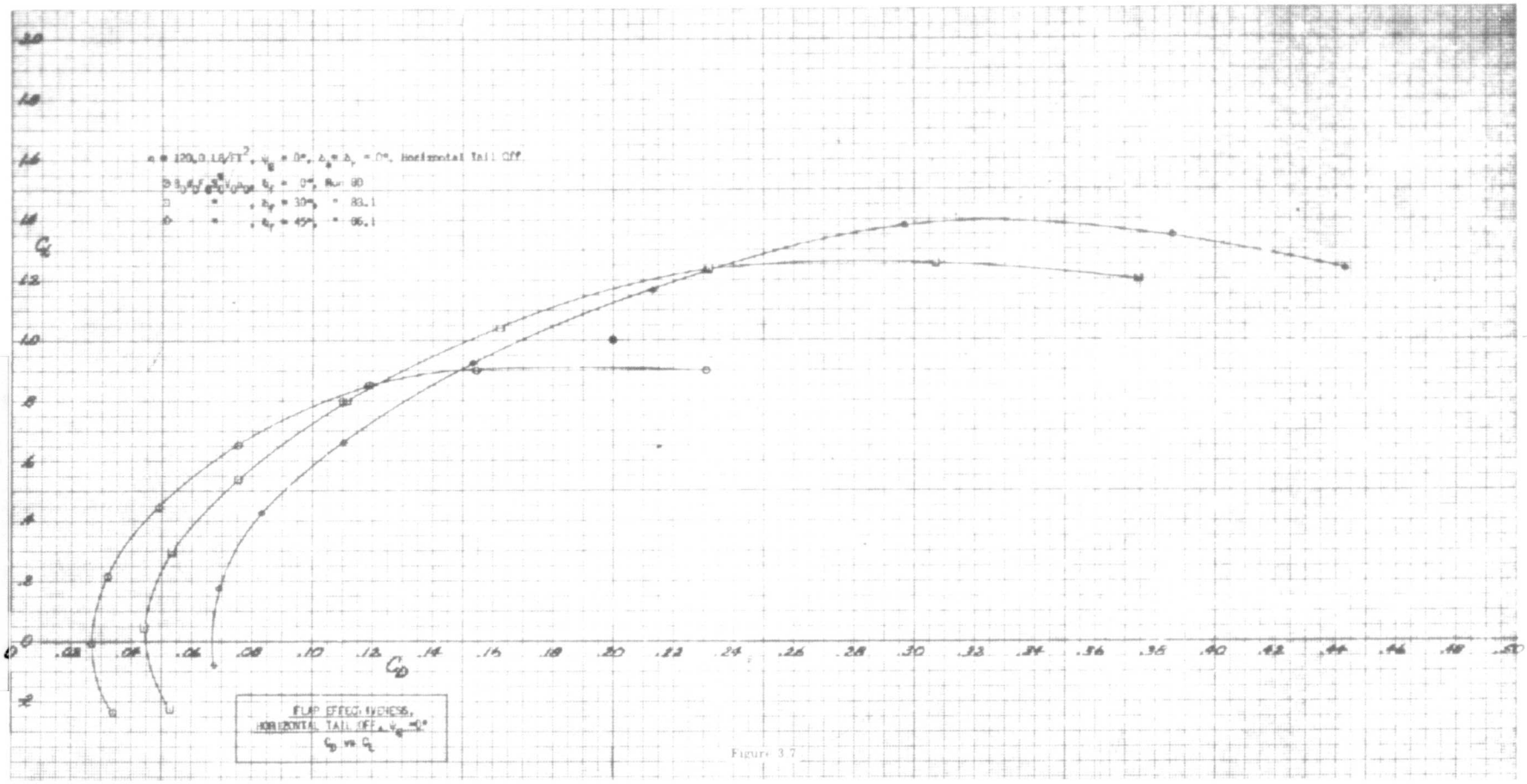

RUN SYM
80
83-1
86
C_L
C_D
FLAP EFFECTIVENESS,
HORIZONTAL TAIL OFF, $i_H = -5°$
C_D vs C_L

Figure 3.7

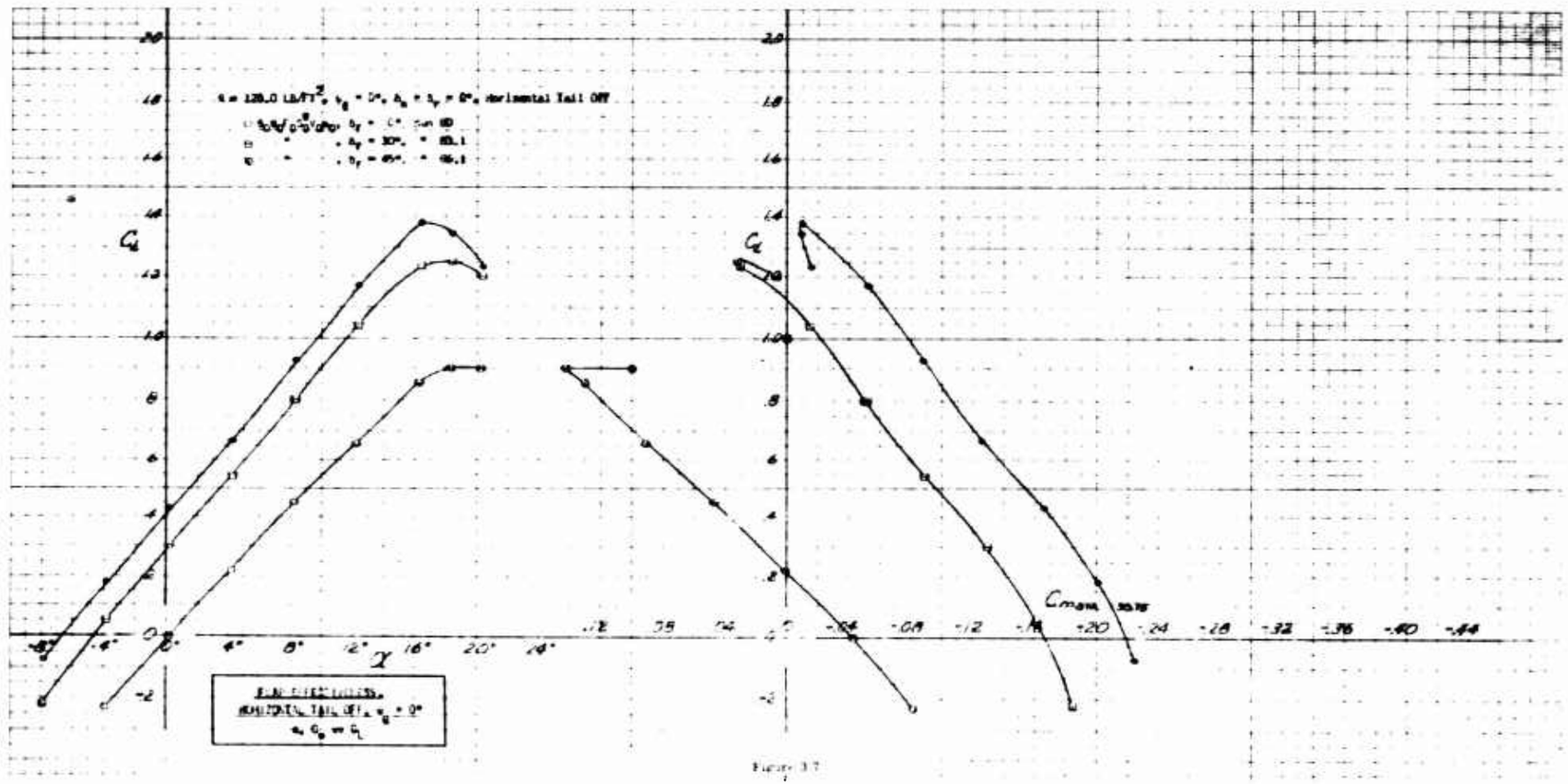
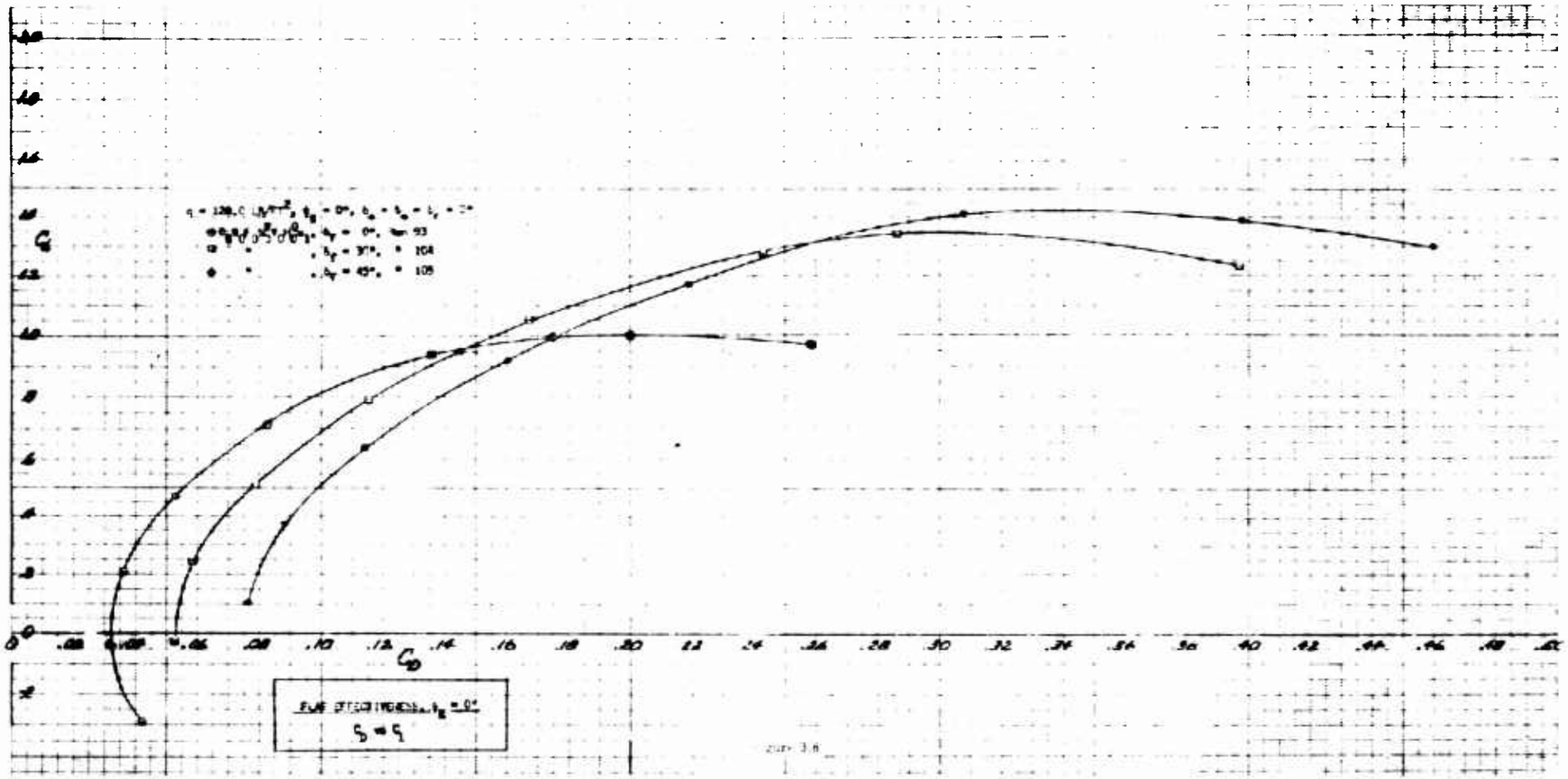


Figure 37


C_L
C_D
$\delta_e = 0°$
$\delta_f = 0°$
$\delta_f = 30°$
$\delta_f = 45°$
$\delta_s = 0°$
$S = S_f$

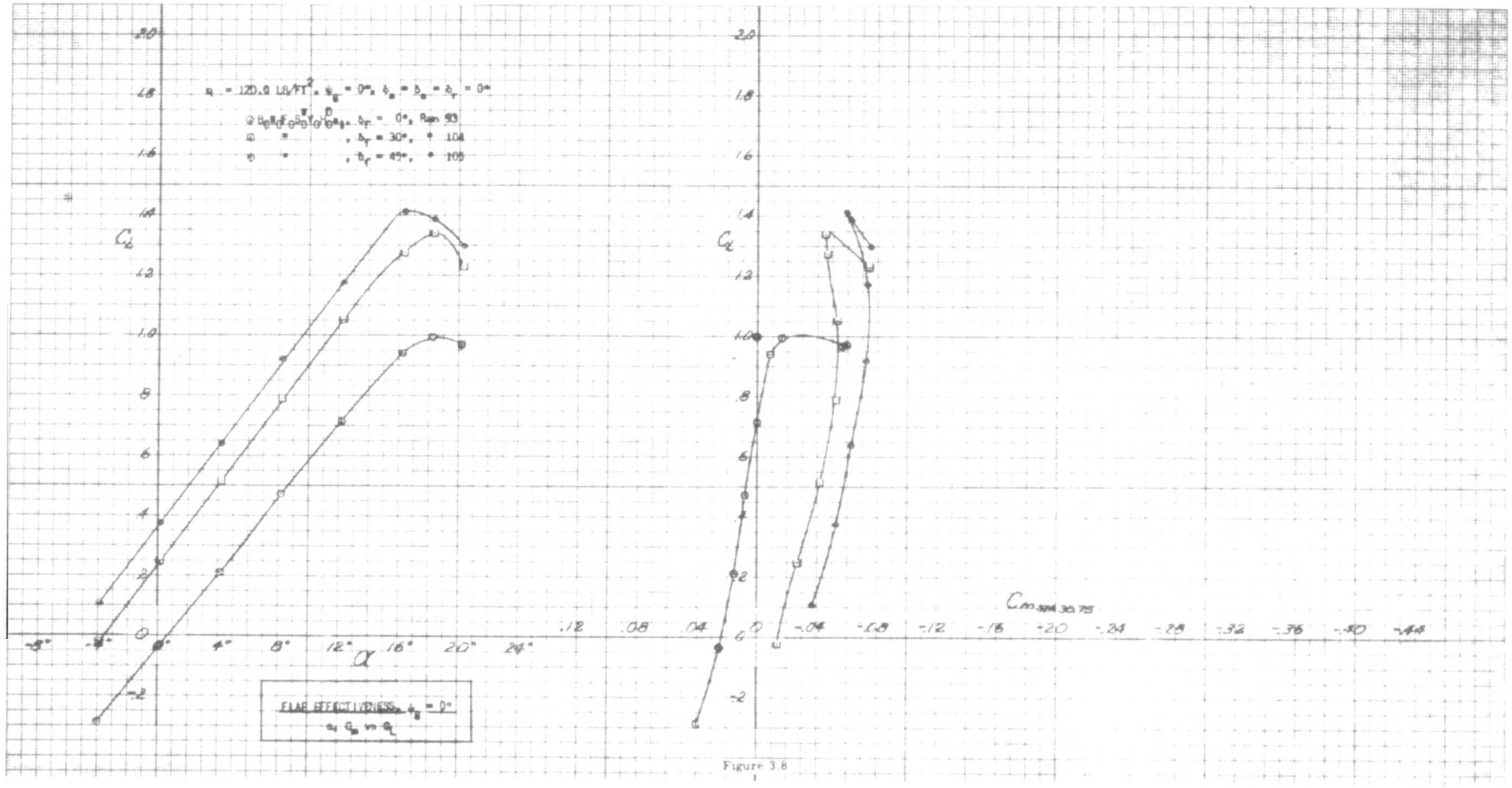

q = 120.0 LB/FT², ψ_g = 0°, δ_a = δ_e = δ_r = 0°
RUN SYM
93 O
104 □
105 ◇
C_L
α
C_m 30.75
FLAP EFFECTIVENESS, ψ_g = 0°
α, C_m vs C_L

Figure 3.8

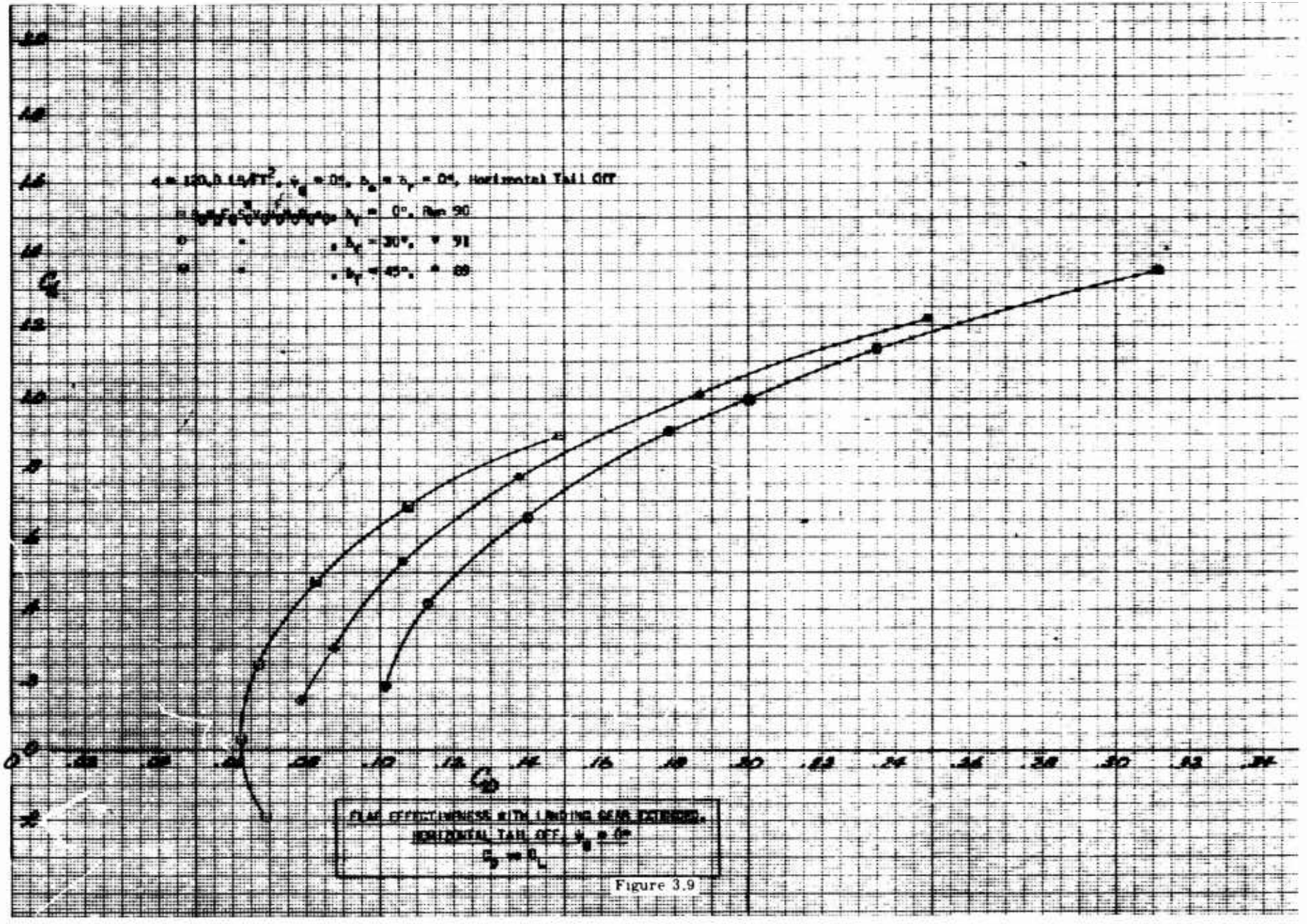


Figure 3.9

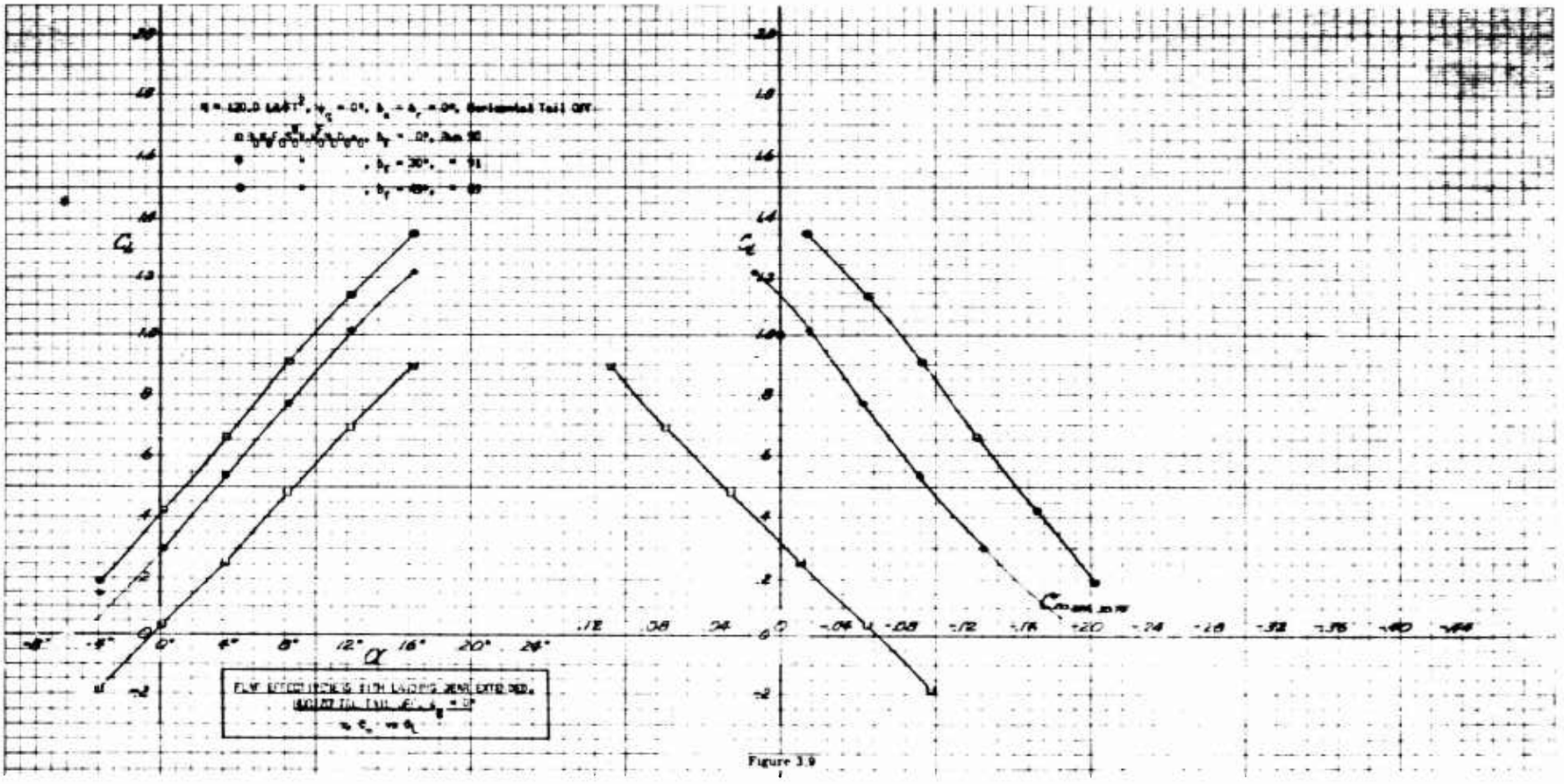


Figure 3.9

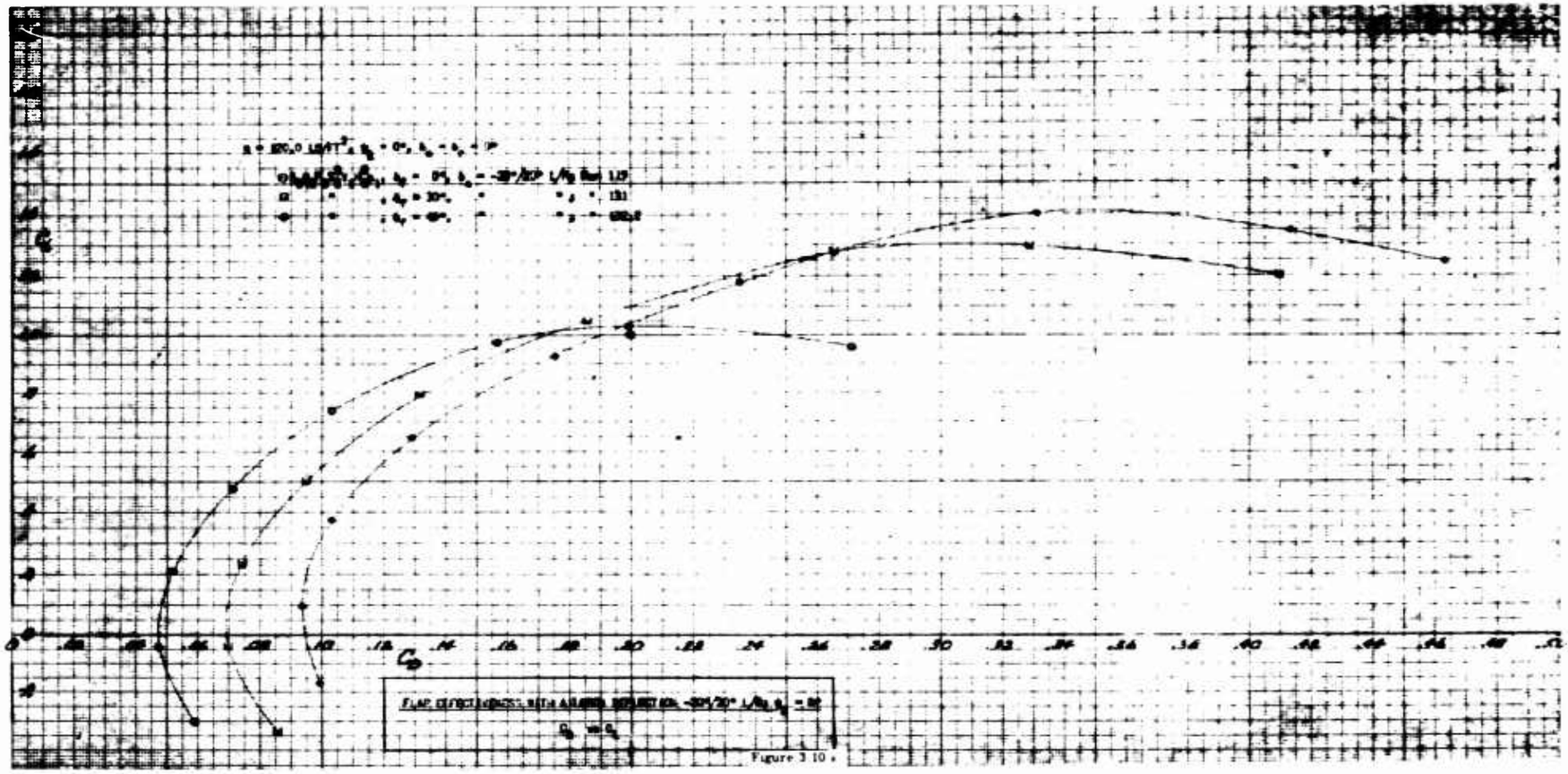


Figure 3.10.

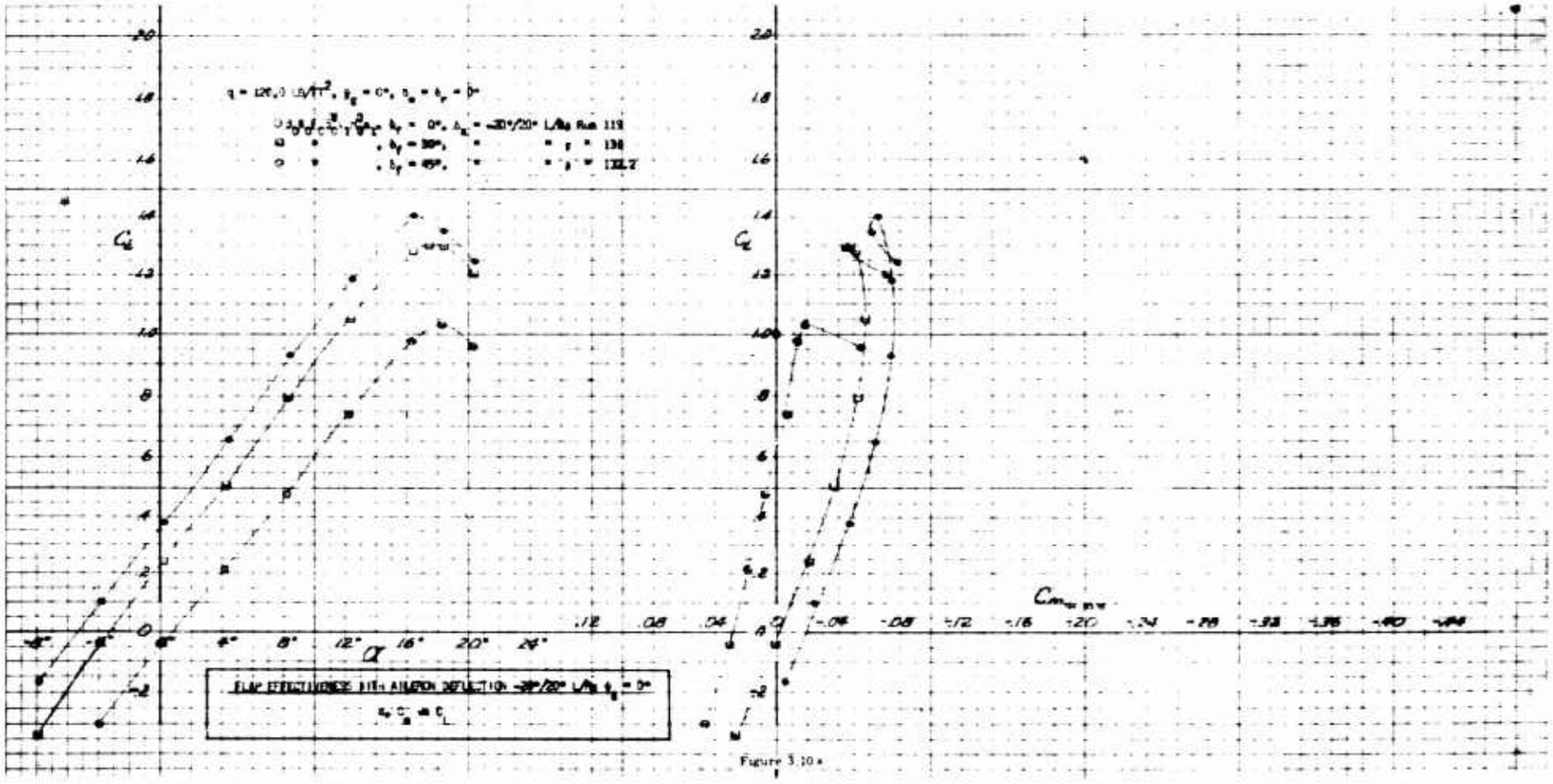
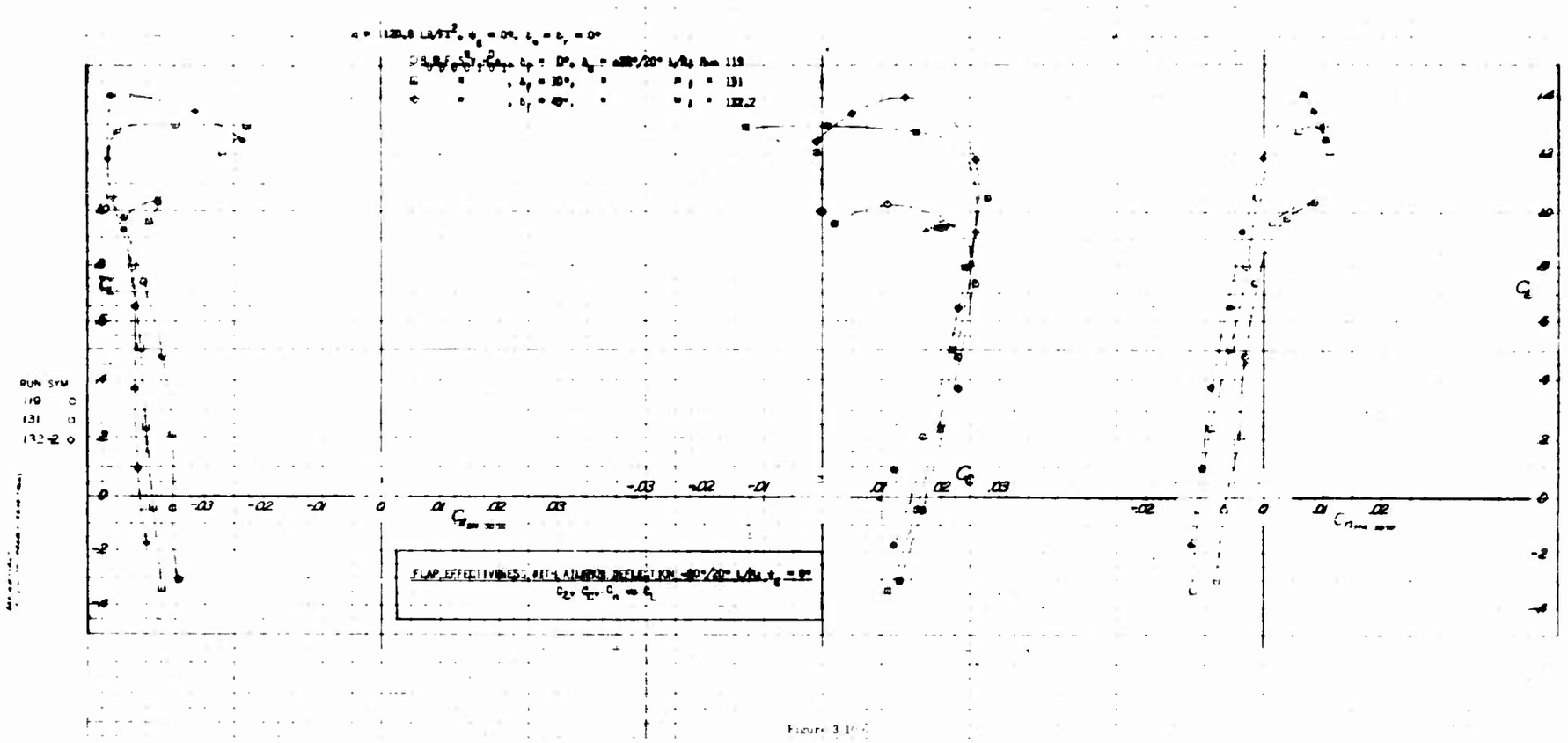


Figure 3.10 a



FLAP EFFECTIVENESS WITH AILERON DEFLECTION

Figure 3.10

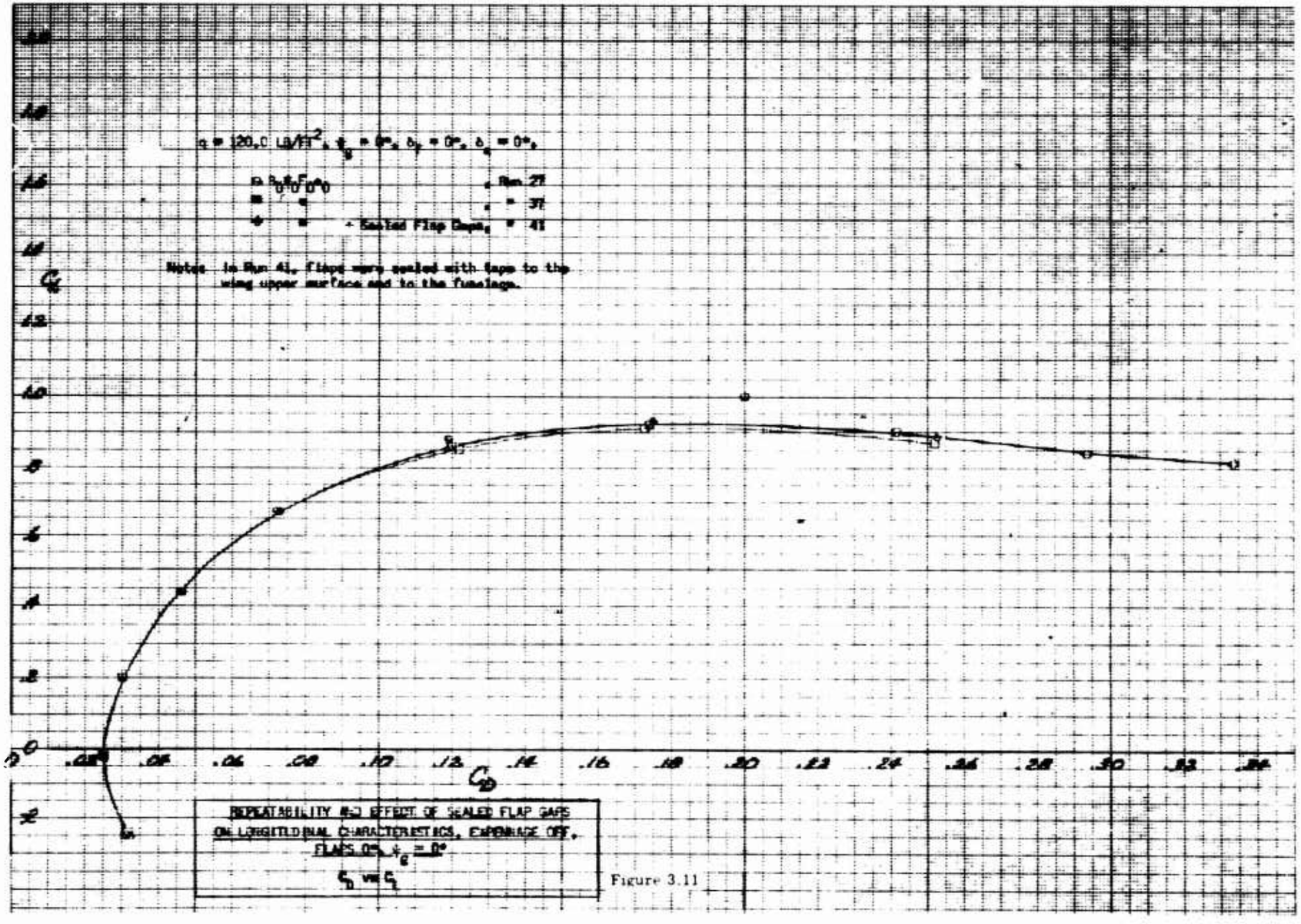

q = 120.0 LB/FT², δf = 0°, δf = 0°, δe = 0°,
Run 27
= 37
= Sealed Flap Gaps, = 41
Notes In Run 41, flaps were sealed with tape to the wing upper surface and to the fuselage.
RUN SYM
27 ○
37 □
41 ◇
CL
CD
.02 .04 .06 .08 .10 .12 .14 .16 .18 .20 .22 .24 .26 .28 .30 .32 .34
REPEATABILITY AND EFFECT OF SEALED FLAP GAPS ON LONGITUDINAL CHARACTERISTICS, EMPENNAGE OFF.
FLAPS OFF, δe = 0°
δf vs δf

Figure 3.11

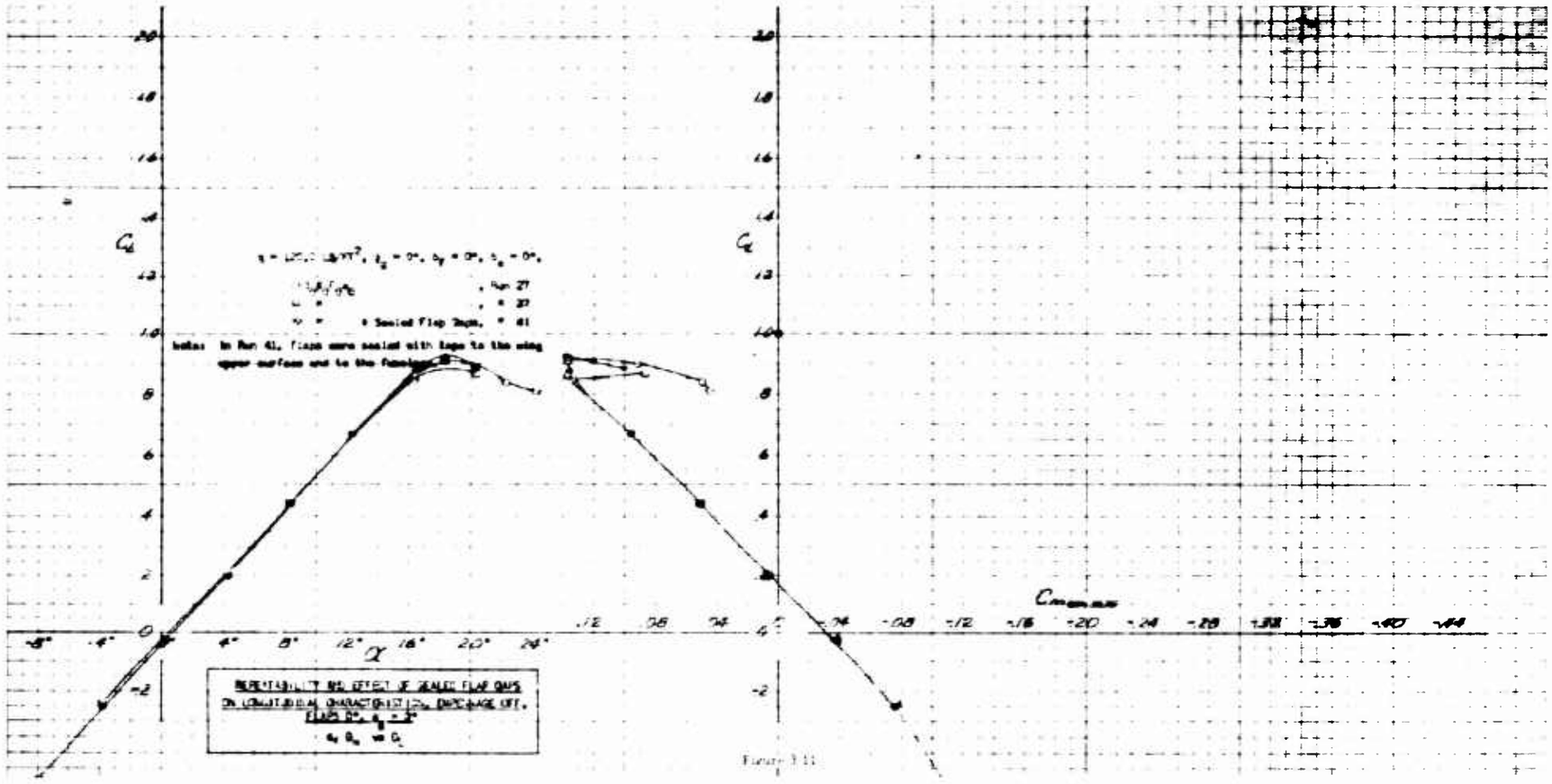

RUN SYM
27 ○
37 □
41 ◇
C_L
α
$C_{m_{c/4}}$
Notes: In Run 41, flaps were sealed with tape to the wing upper surface and to the fuselage.

Figure 3.11

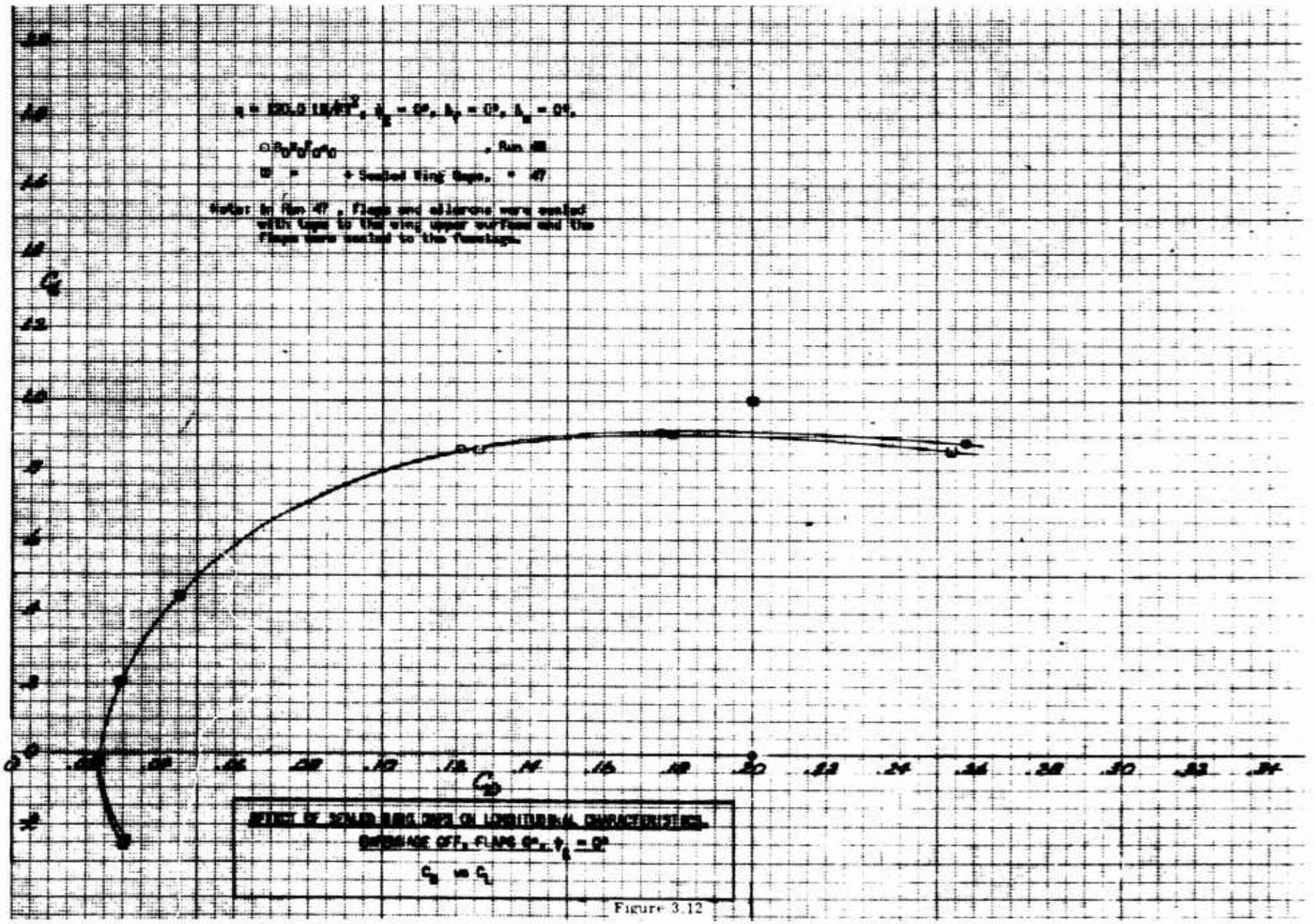


Figure 3.12

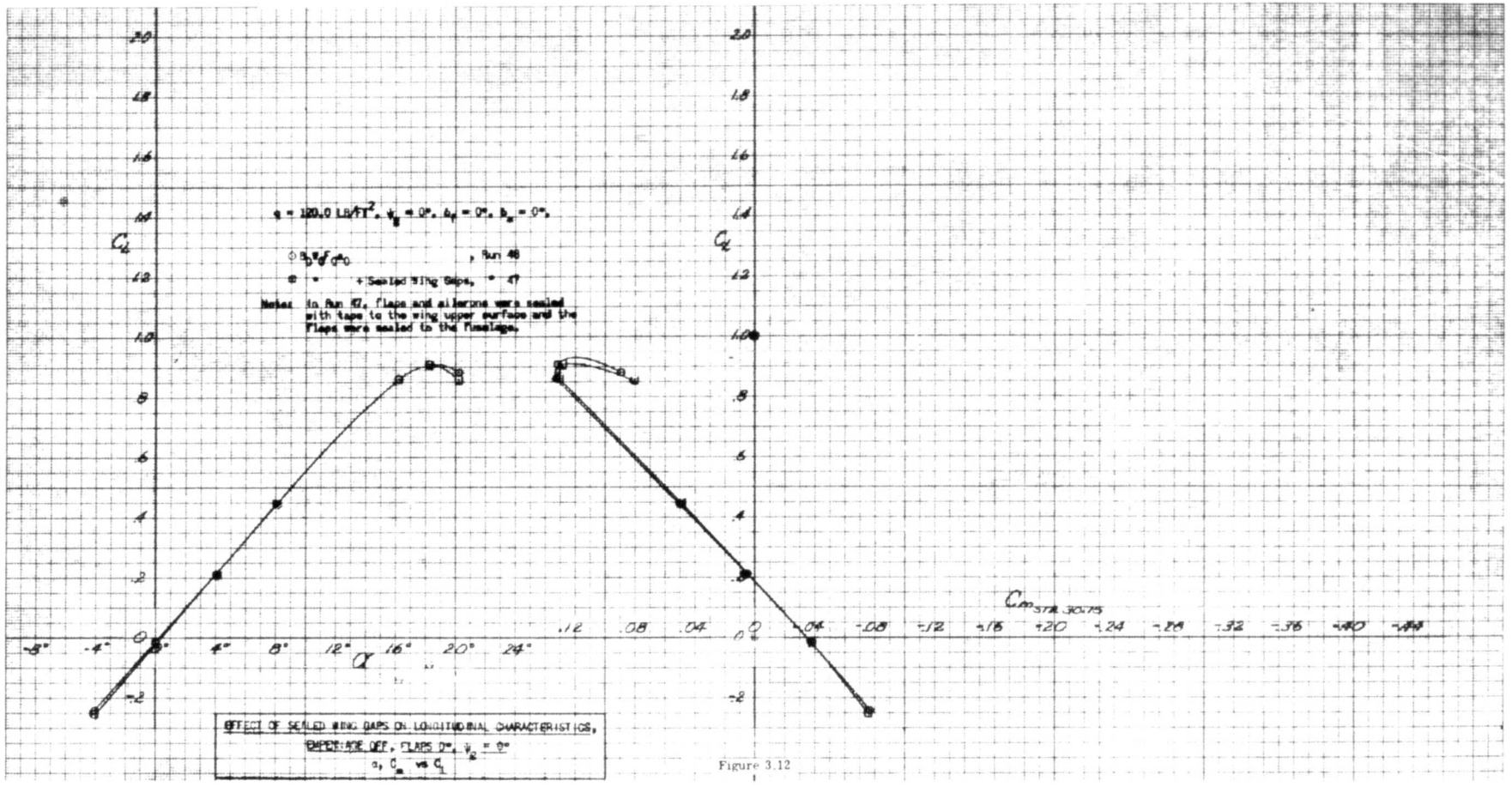

q = 120.0 LB/FT², i_w = 0°, δ_f = 0°, δ_a = 0°,
Run 48
+ Sealed Wing Gaps, Run 47
Notes: In Run 47, flaps and ailerons were sealed with tape to the wing upper surface and the flaps were sealed to the fuselage.
RUN SYM
48 ○
47 □
C_L
C_m STA 30.75
α
EFFECT OF SEALED WING GAPS ON LONGITUDINAL CHARACTERISTICS, POWER OFF, FLAPS 0°, i_w = 0°
α, C_m vs C_L

Figure 3.12

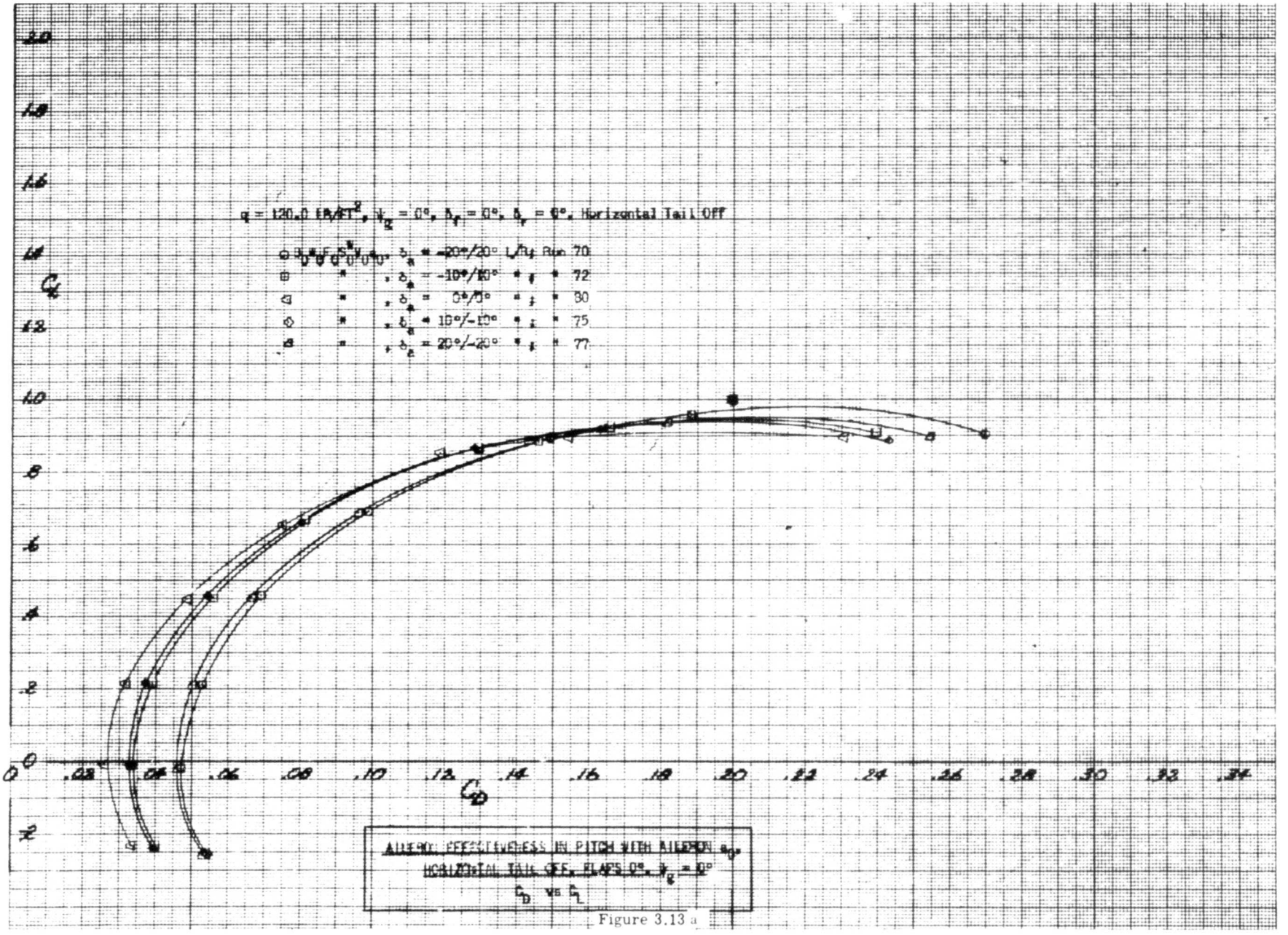
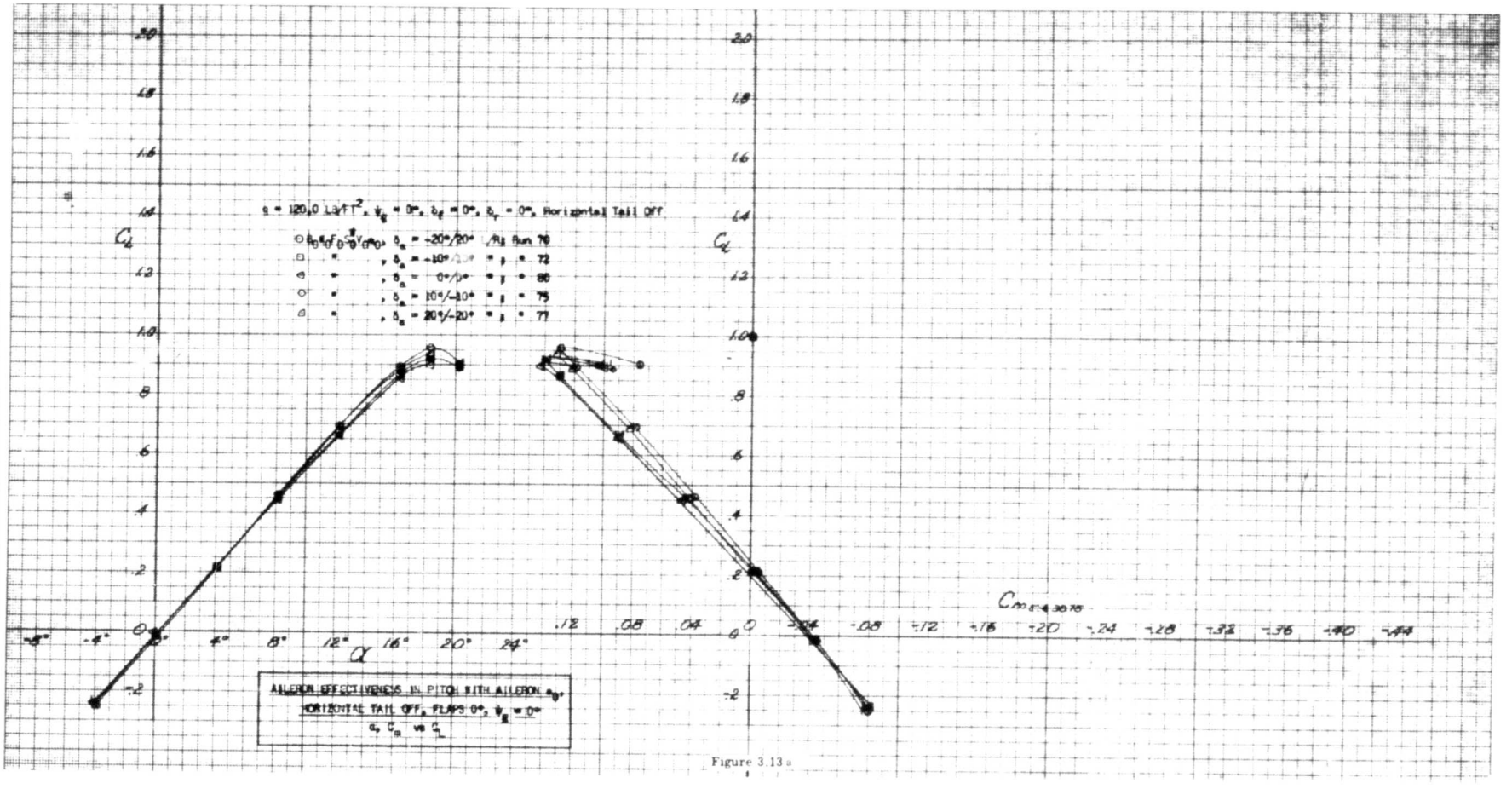
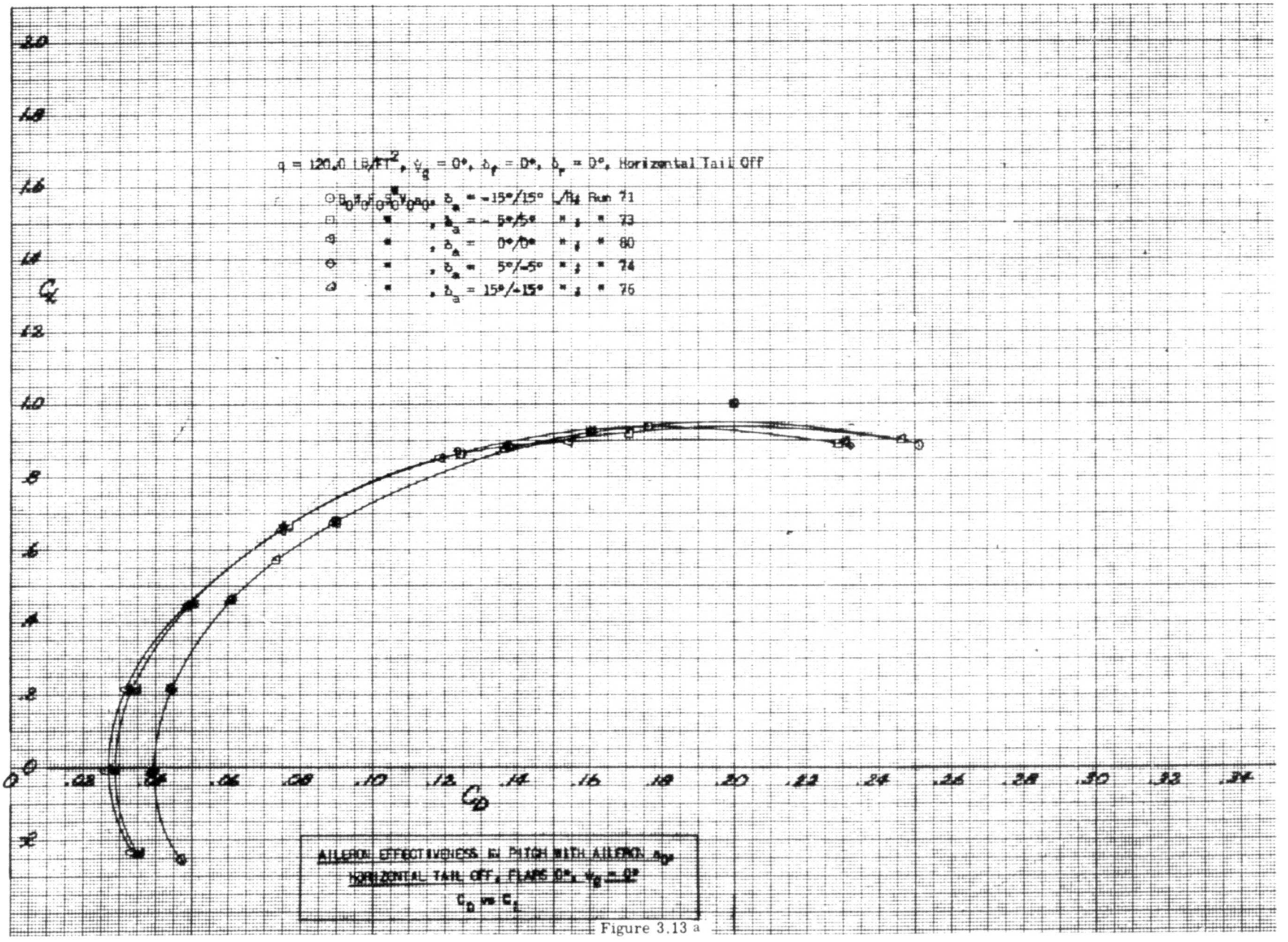

q = 120.0 lb/ft², i_w = 0°, δ_f = 0°, δ_r = 0°, Horizontal Tail Off
○ Run 70
⊕ Run 72
◁ Run 80
◇ Run 75
△ Run 77
C_L
C_D
RUN SYM
70 ○
72 □
75 ◇
77 △
80 △
AILERON EFFECTIVENESS IN PITCH WITH AILERON δ_a
HORIZONTAL TAIL OFF, FLAPS 0°, i_w = 0°
C_D vs C_L

Figure 3.13 a



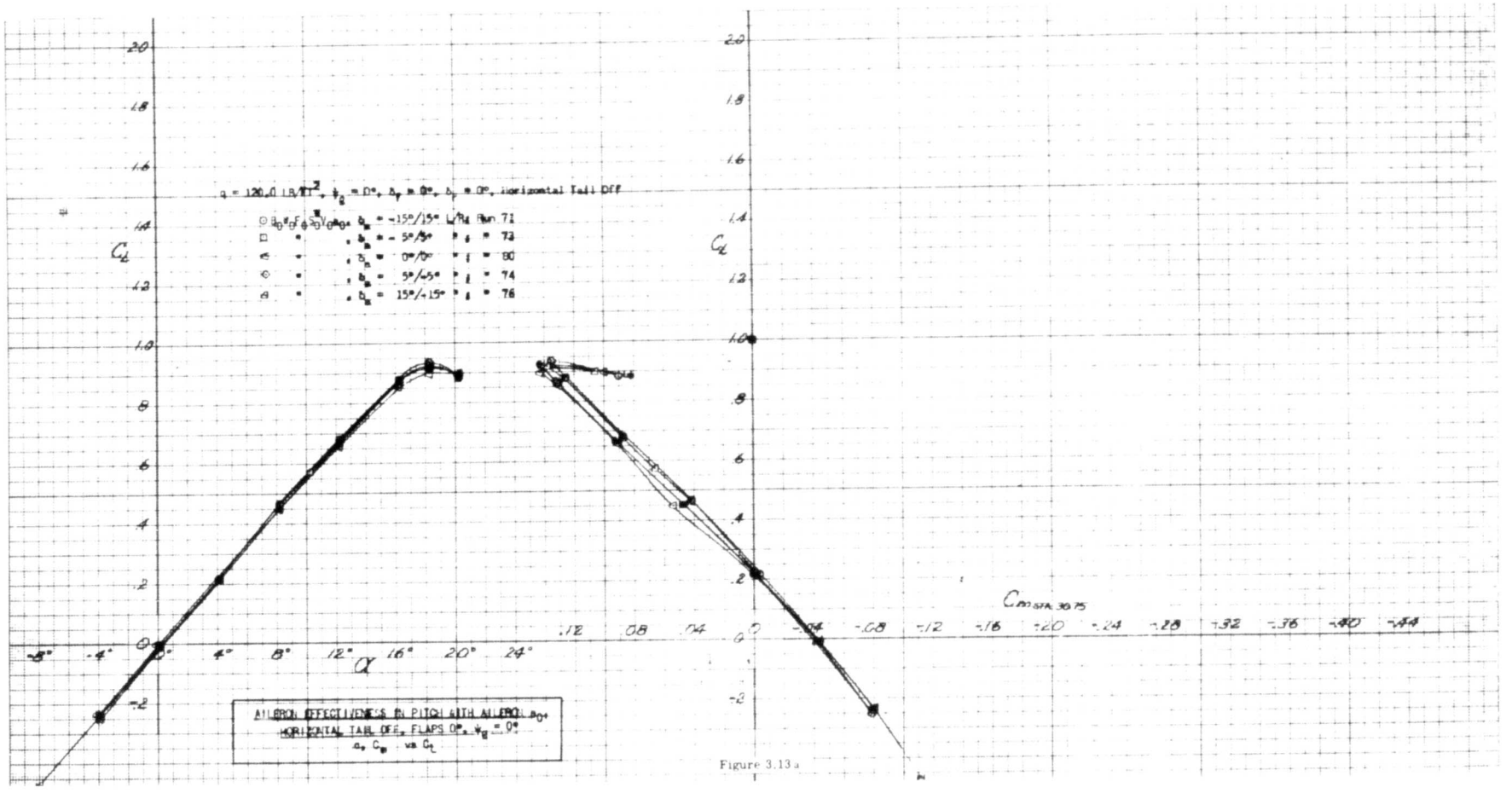
RUN SYM
70 ○
72 □
75 ◇
77 △
80 ◁

Figure 3.13 a



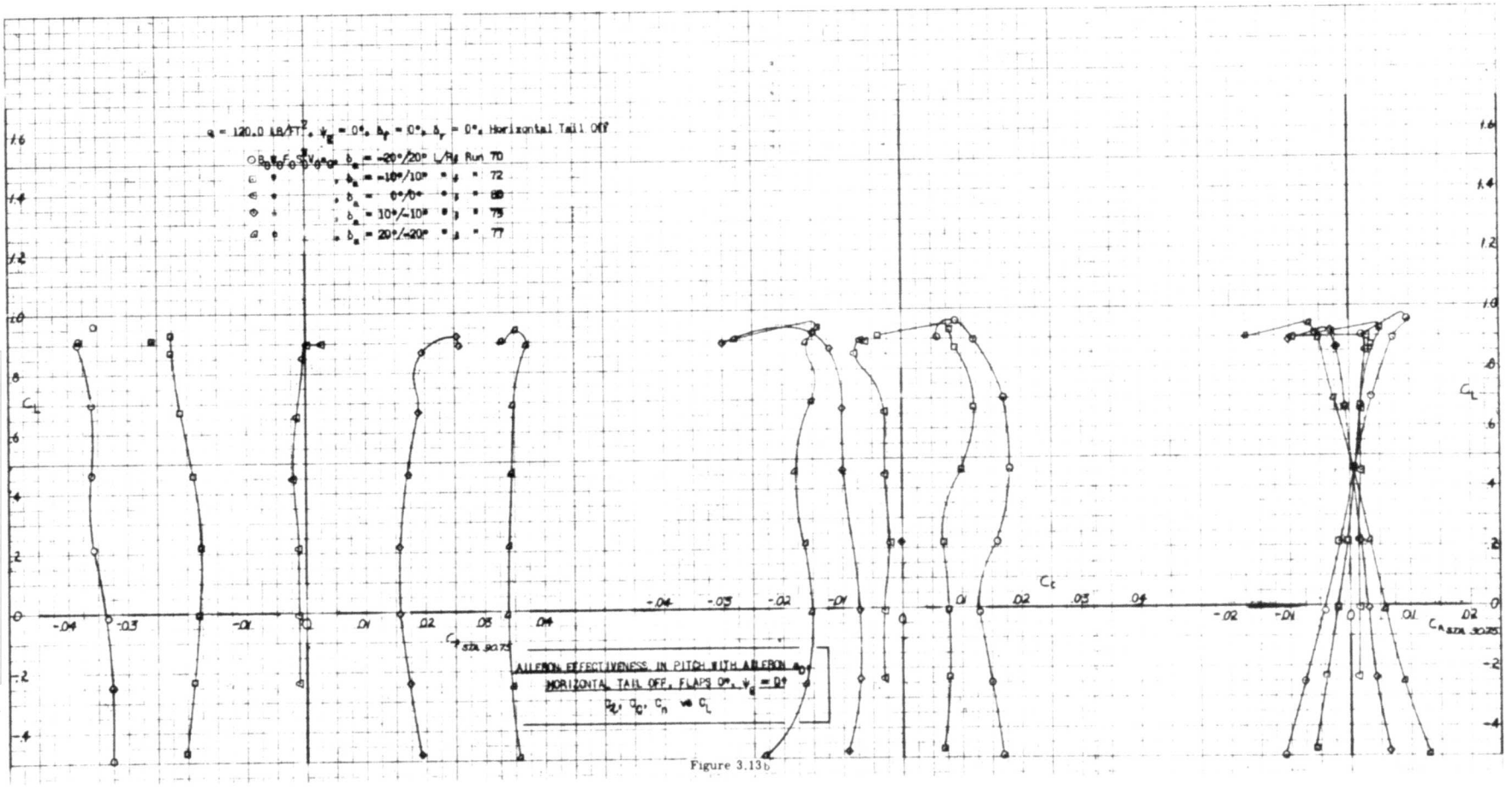
RUN	SYM
71	○
73	□
74	◇
76	△
80	○

Figure 3.13 a



RUN SYM
71 ○
73 □
74 ◇
76 △
80 ○

Figure 3.13a



AILERON EFFECTIVENESS IN PITCH WITH AILERON δ_a
HORIZONTAL TAIL OFF, FLAPS 0°, ψ_g = 0°
C_l, C_n, C_n vs C_L

Figure 3.13b

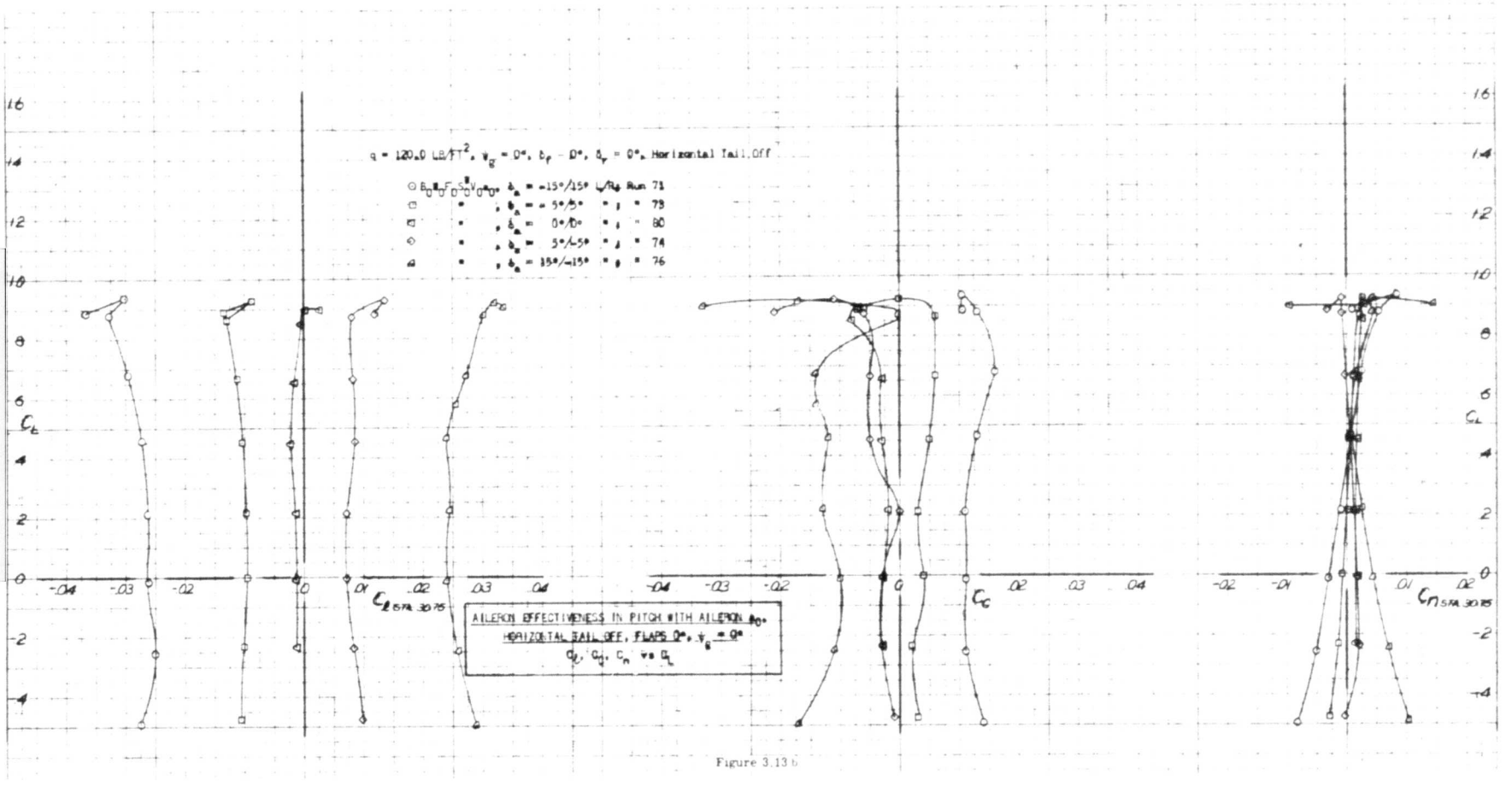
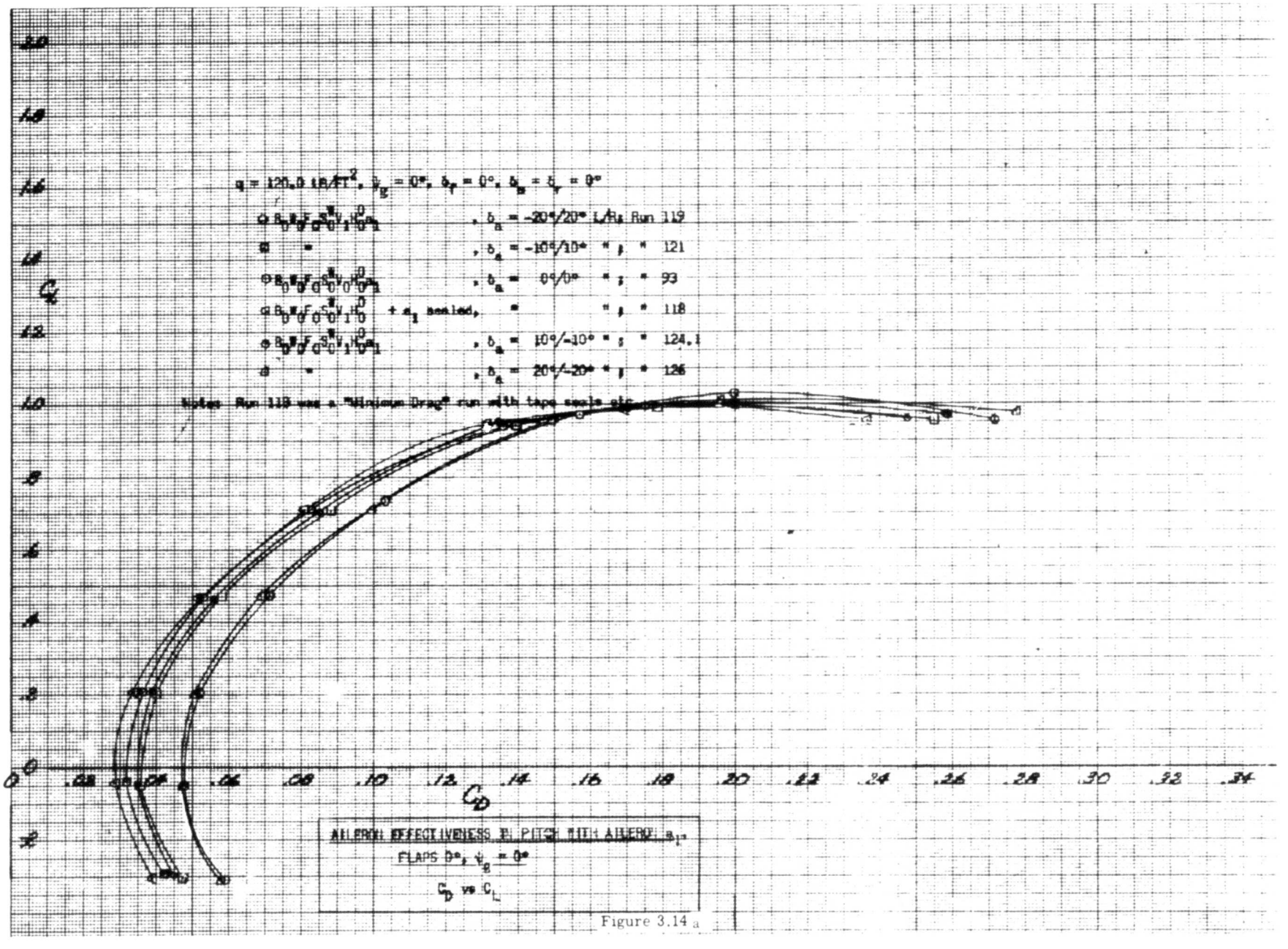

q = 120.0 LB/FT², i_w = 0°, δ_f = 0°, δ_r = 0°, Horizontal Tail Off
δ_a = -15°/15° Run 71
δ_a = -5°/5° Run 73
δ_a = 0°/0° Run 80
δ_a = 5°/-5° Run 74
δ_a = 15°/-15° Run 76
RUN SYM
71 ○
73 □
74 ◇
76 △
80 ◁
C_L
$C_{l_{STA\ 30.75}}$
C_c
$C_{n_{STA\ 30.75}}$
AILERON EFFECTIVENESS IN PITCH WITH AILERON δ_a=0°
HORIZONTAL TAIL OFF, FLAPS 0°, i_w = 0°
C_l, C_{l_1}, C_n vs C_L

Figure 3.13 b



RUN SYM

119	○
121	□
124-1	◇
126	△
93	⬡
118	◁

Figure 3.14 a

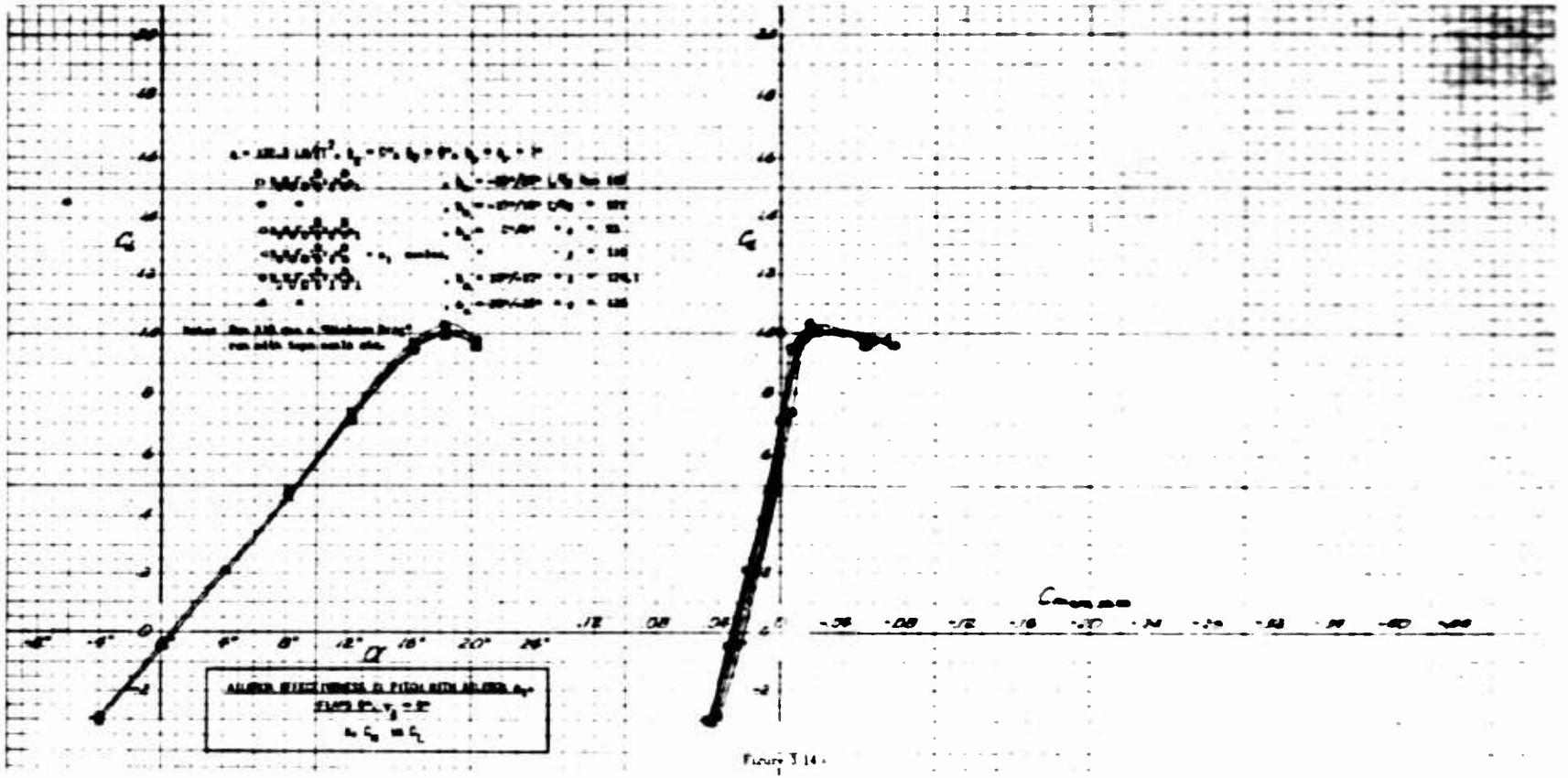
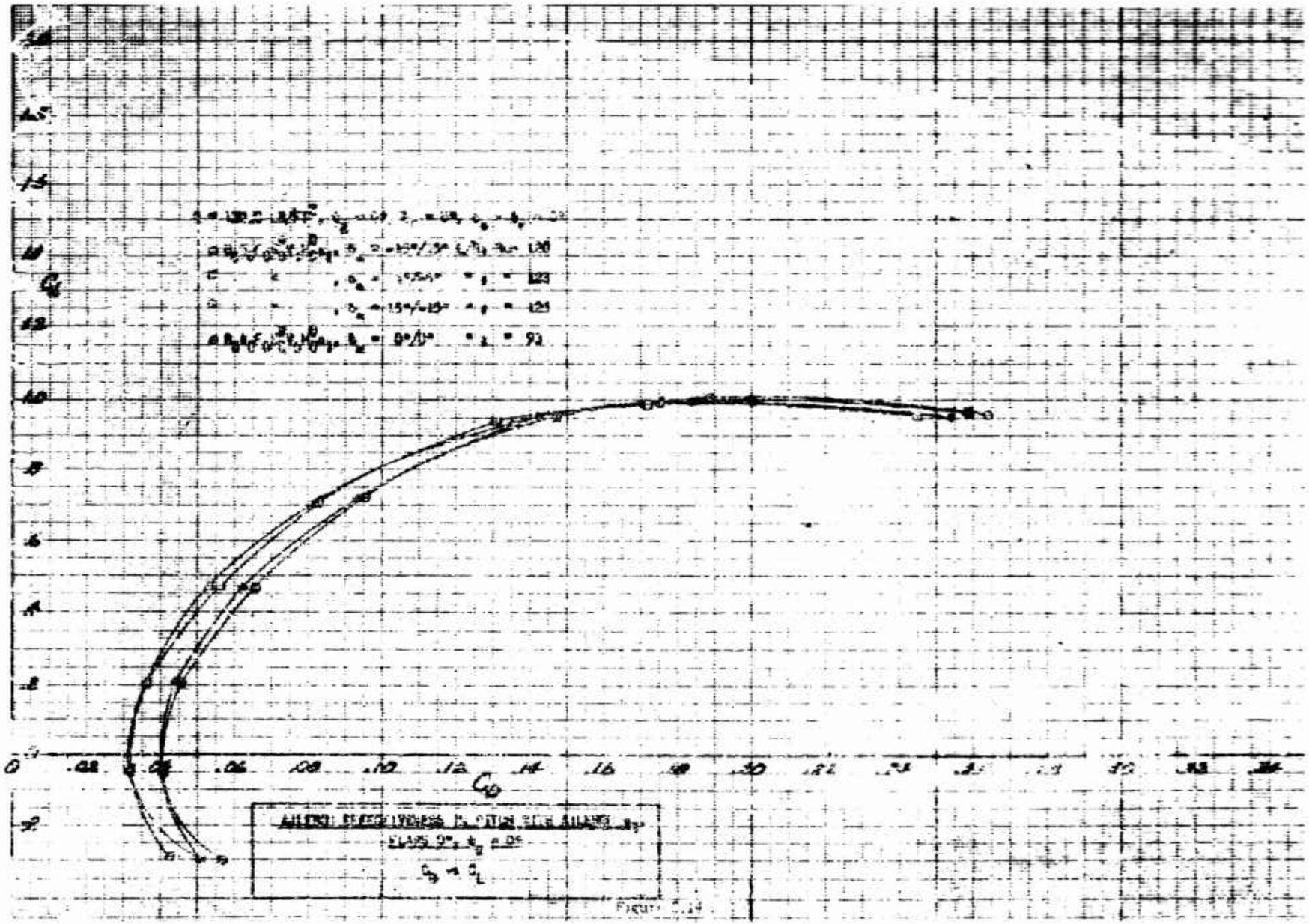


Figure 3.14



Figure

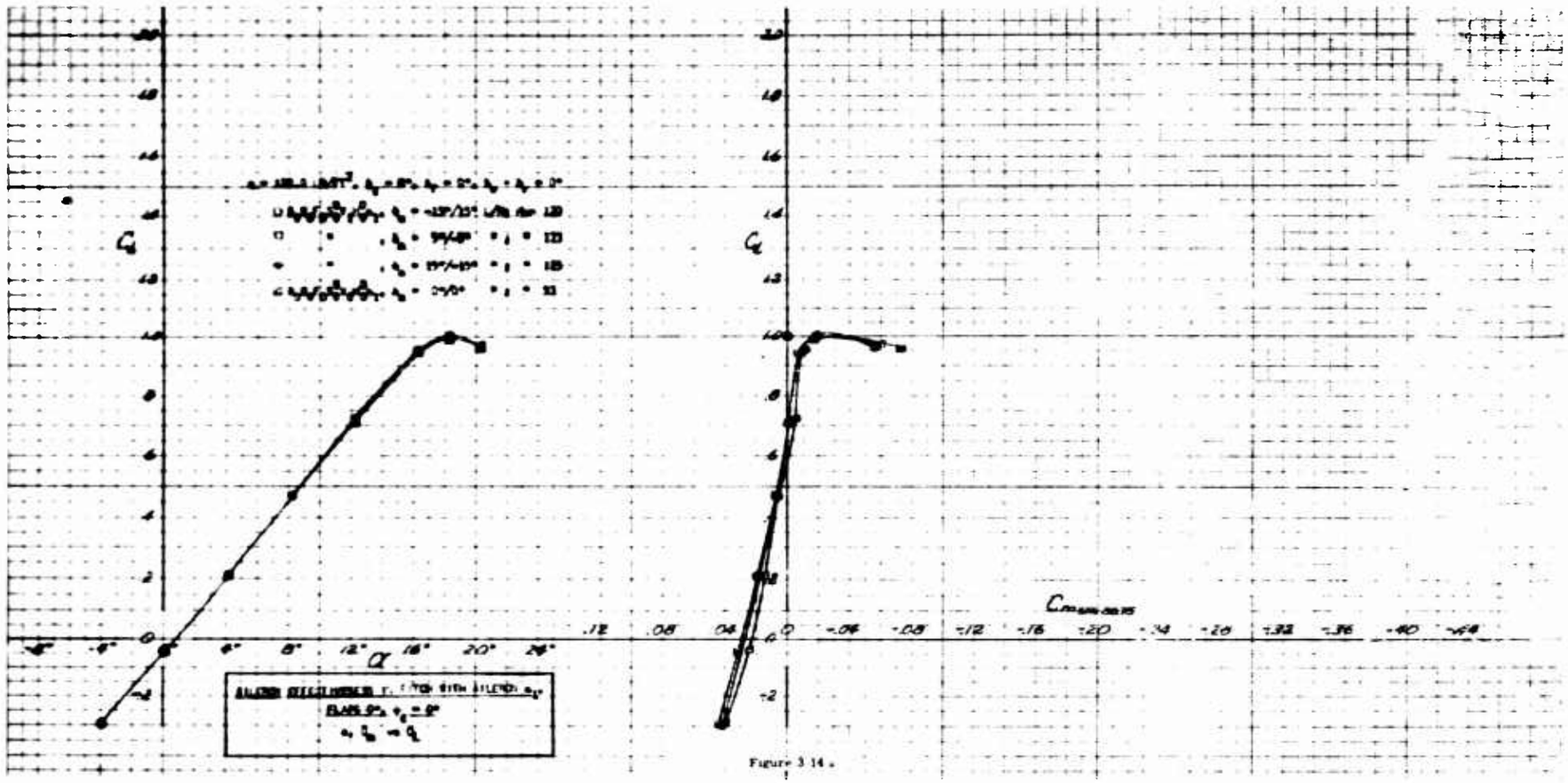
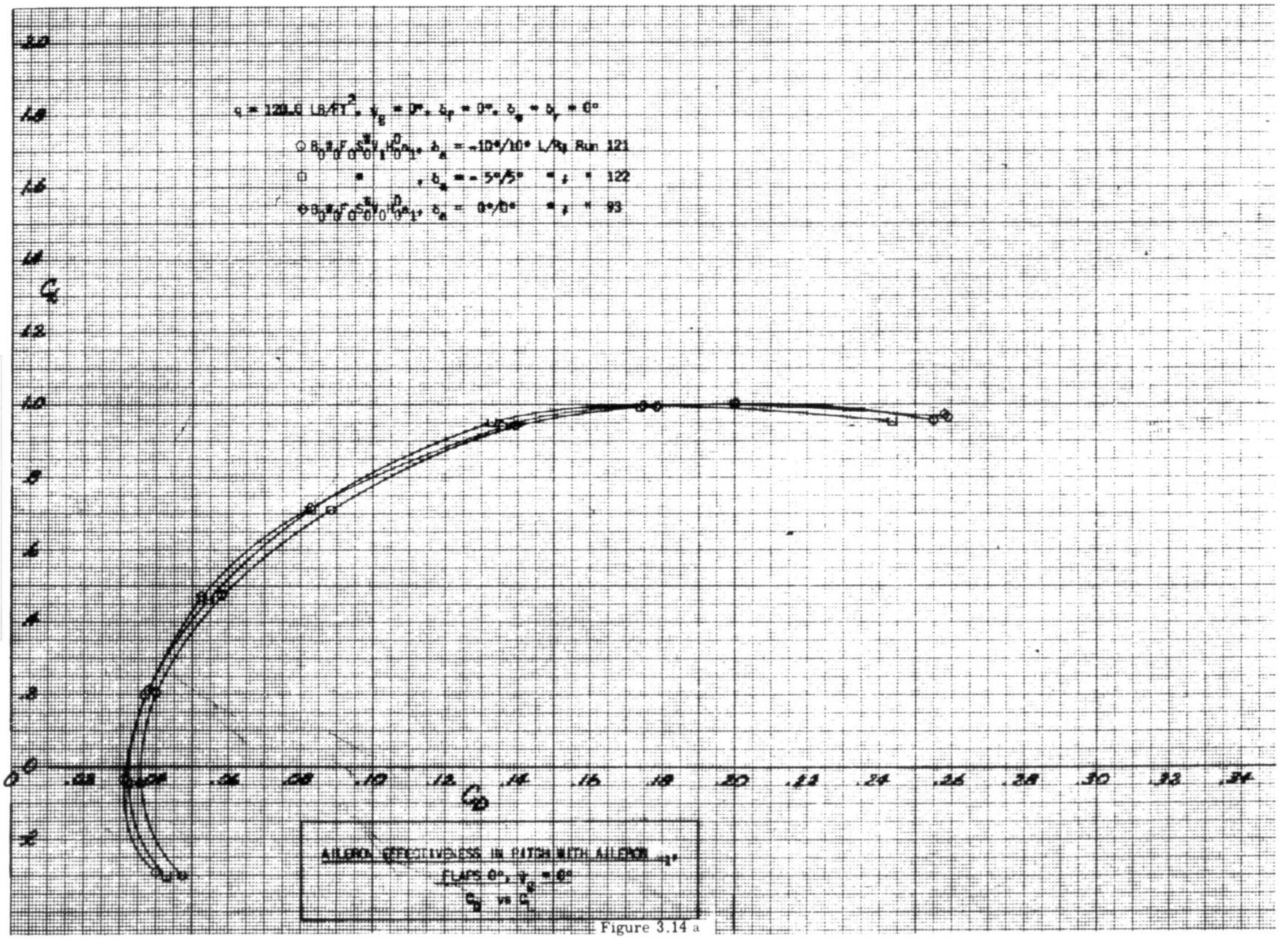


Figure 3.14 .



RUN SYM

121 ○

122 □

93 ◇

Figure 3.14 a

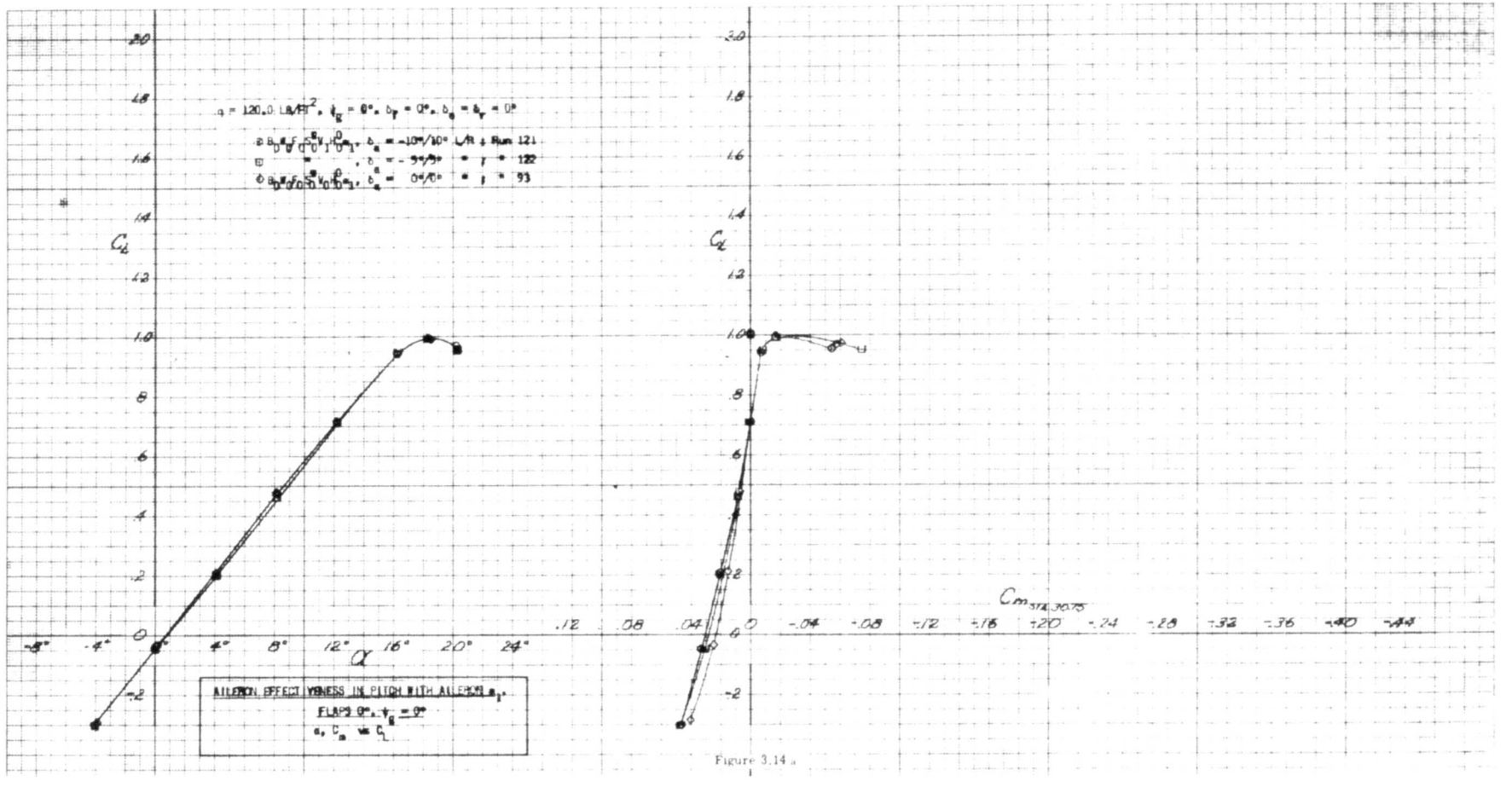

RUN SYM
121 O
122 □
93 ◇
q = 120.0 LB/FT²
CL
α
Cm STA 30.75
AILERON EFFECT WHEN IN PITCH WITH AILERON
FLAPS 0°
α, Cm vs CL

Figure 3.14 a

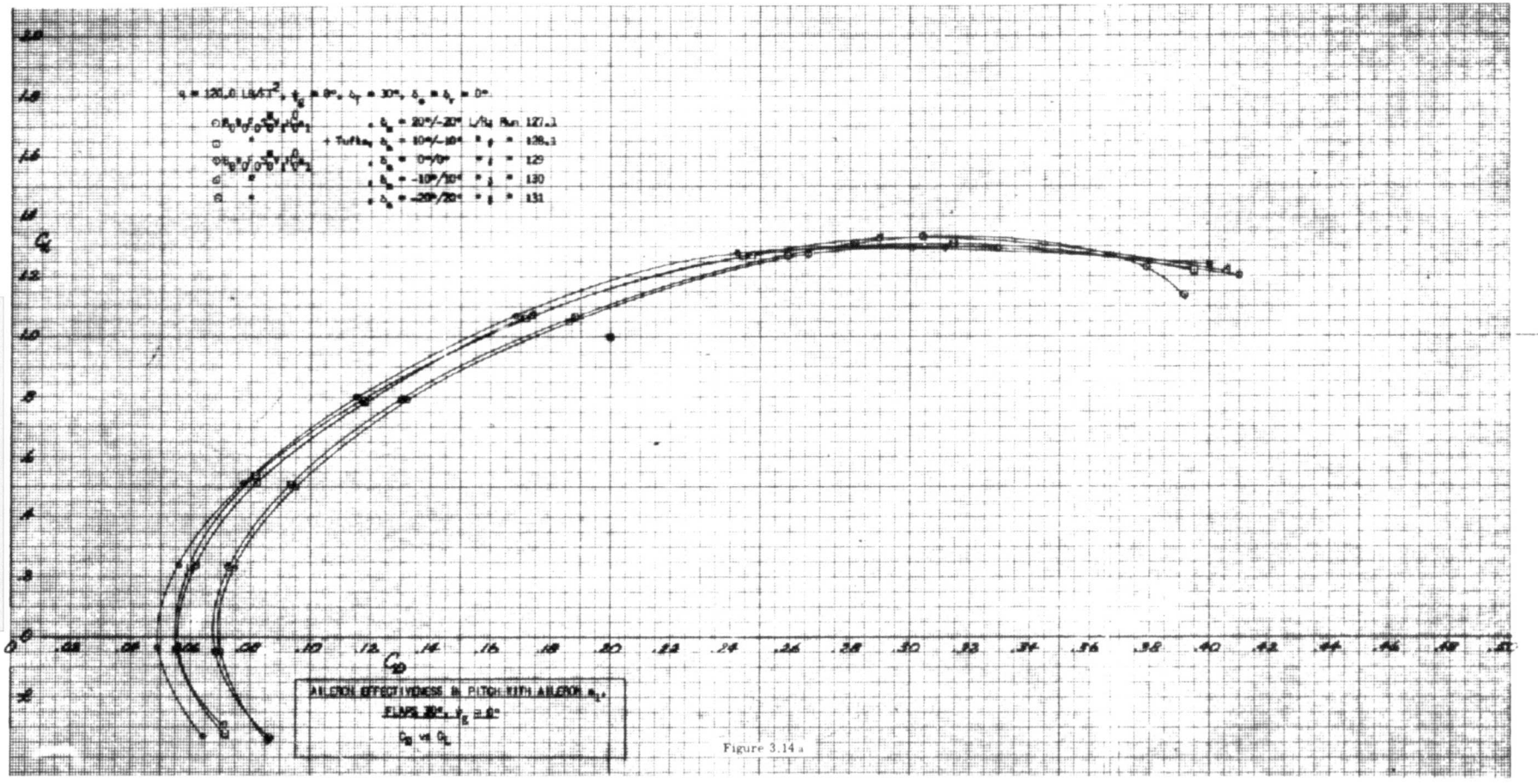

RUN SYM
127-1 O
128-1 □
129 ◇
130 △
131 O
AILERON EFFECTIVENESS IN PITCH WITH AILERON
FLAPS 30°, i_t = 0°
C_m vs C_L
C_L
C_m

Figure 3.14 a

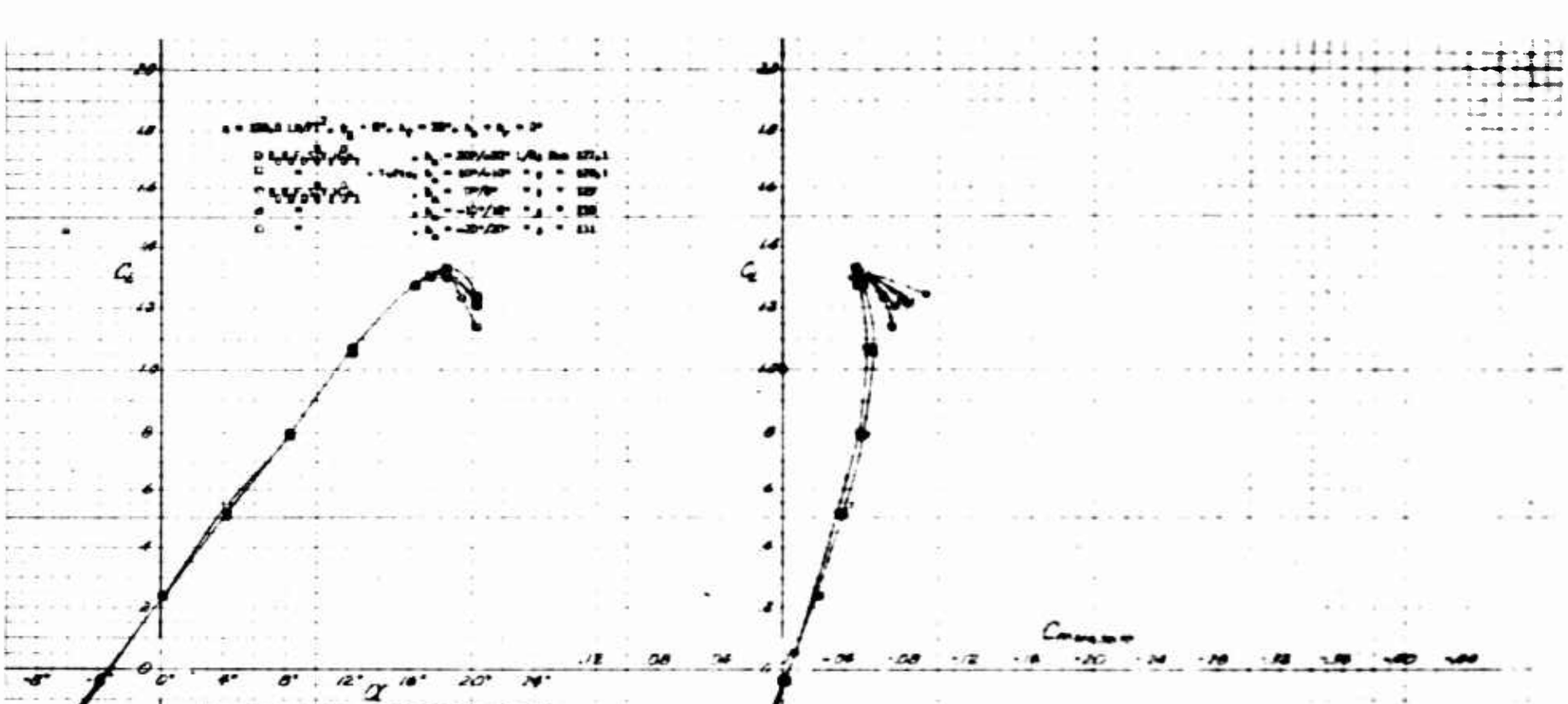


Figure 3.14.

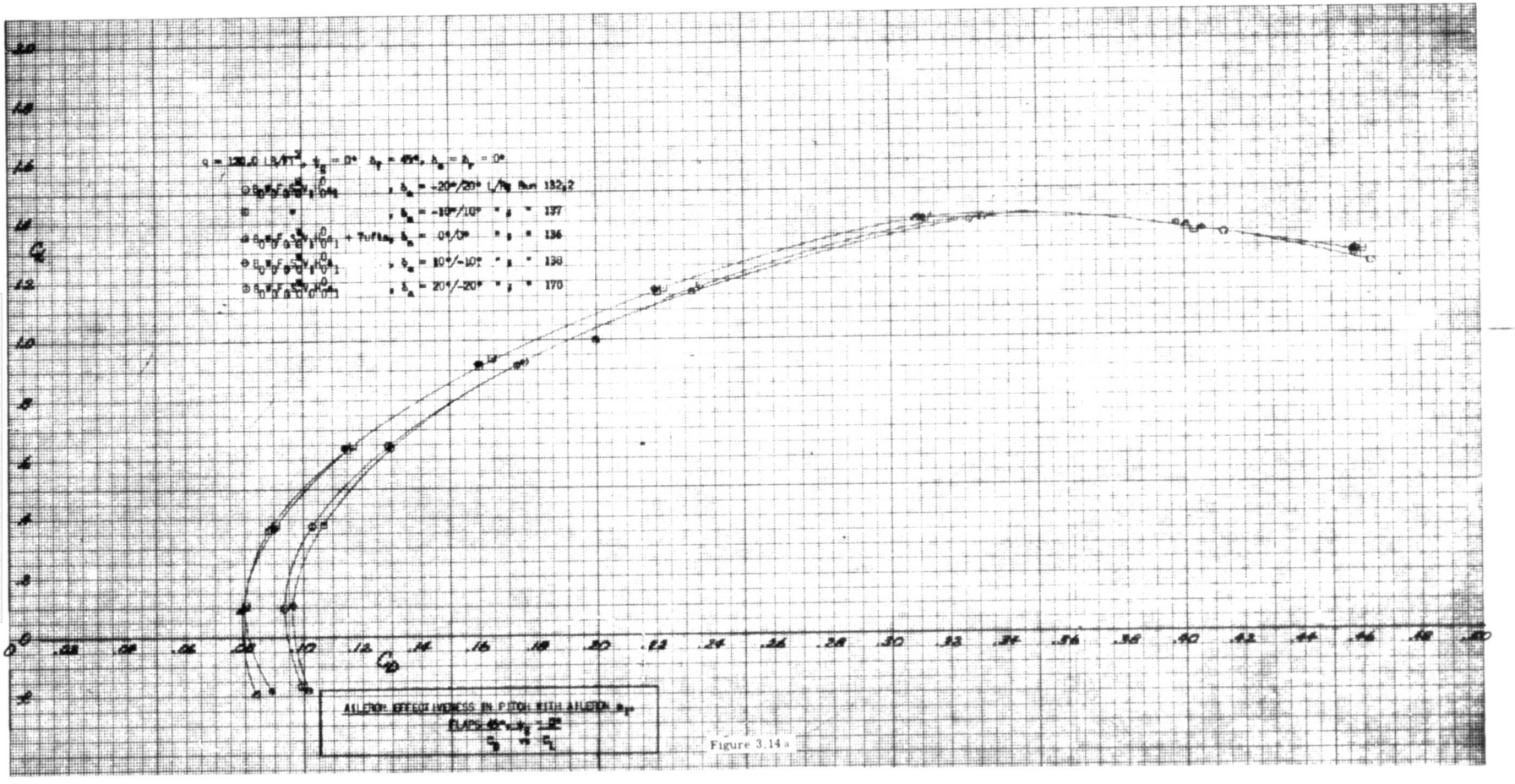


Figure 3.14 a

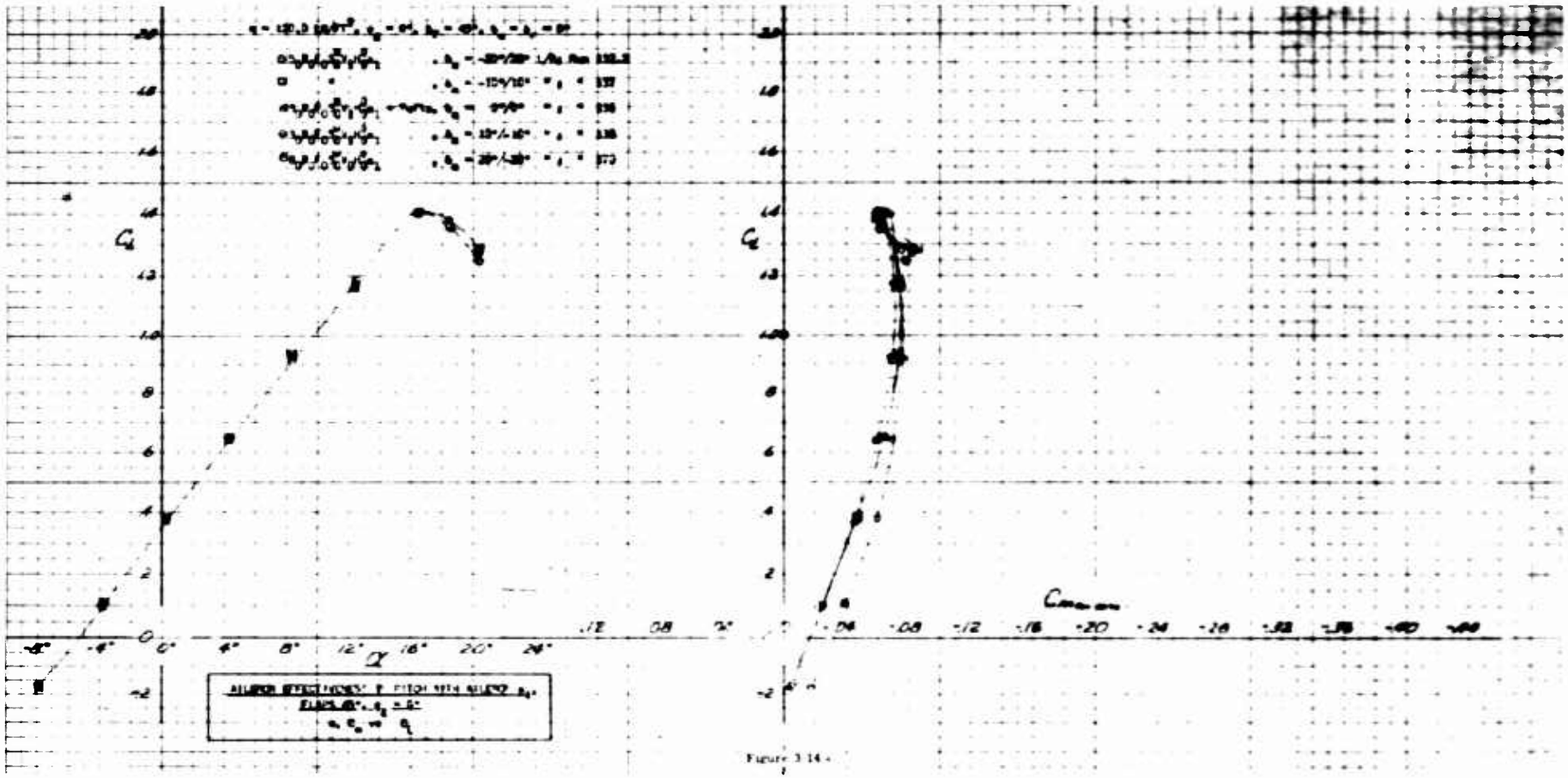


Figure 3.14 -

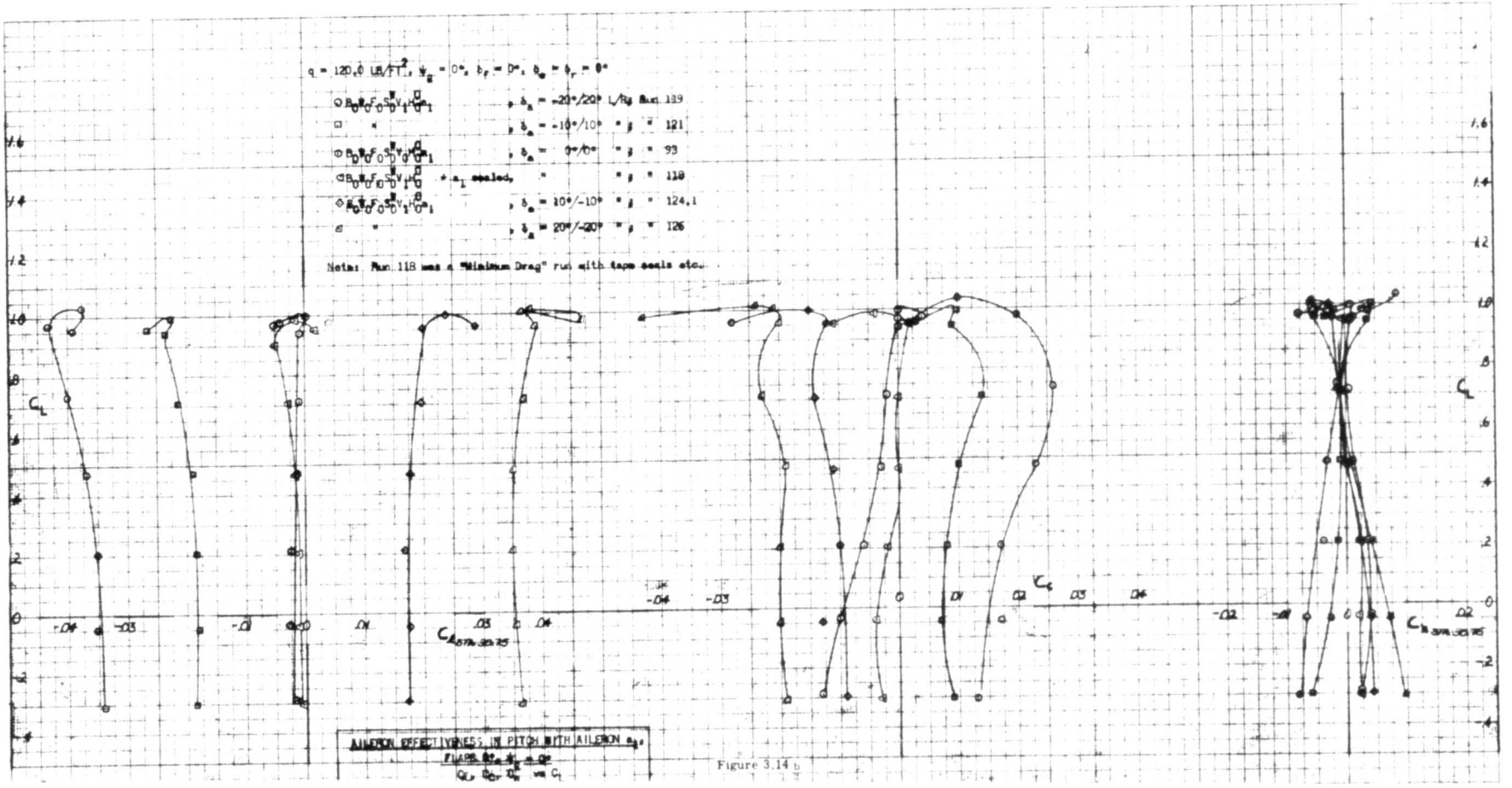

q = 120.0 LB/FT², ψ_g = 0°, δ_f = 0°, δ_e = δ_r = 0°
δ_a = -20°/20° L/R Run 119
δ_a = -10°/10° " " 121
δ_a = 0°/0° " " 93
+ a_L scaled, " " 118
δ_a = 10°/-10° " " 124.1
δ_a = 20°/-20° " " 126
Note: Run 118 was a "Minimum Drag" run with tape seals etc.
RUN SYM
119 ○
121 □
124.1 ◇
126 ▱
93 ○
118 △
C_L
C_l
C_n
C_l
AILERON EFFECTIVENESS IN PITCH WITH AILERON

Figure 3.14 b

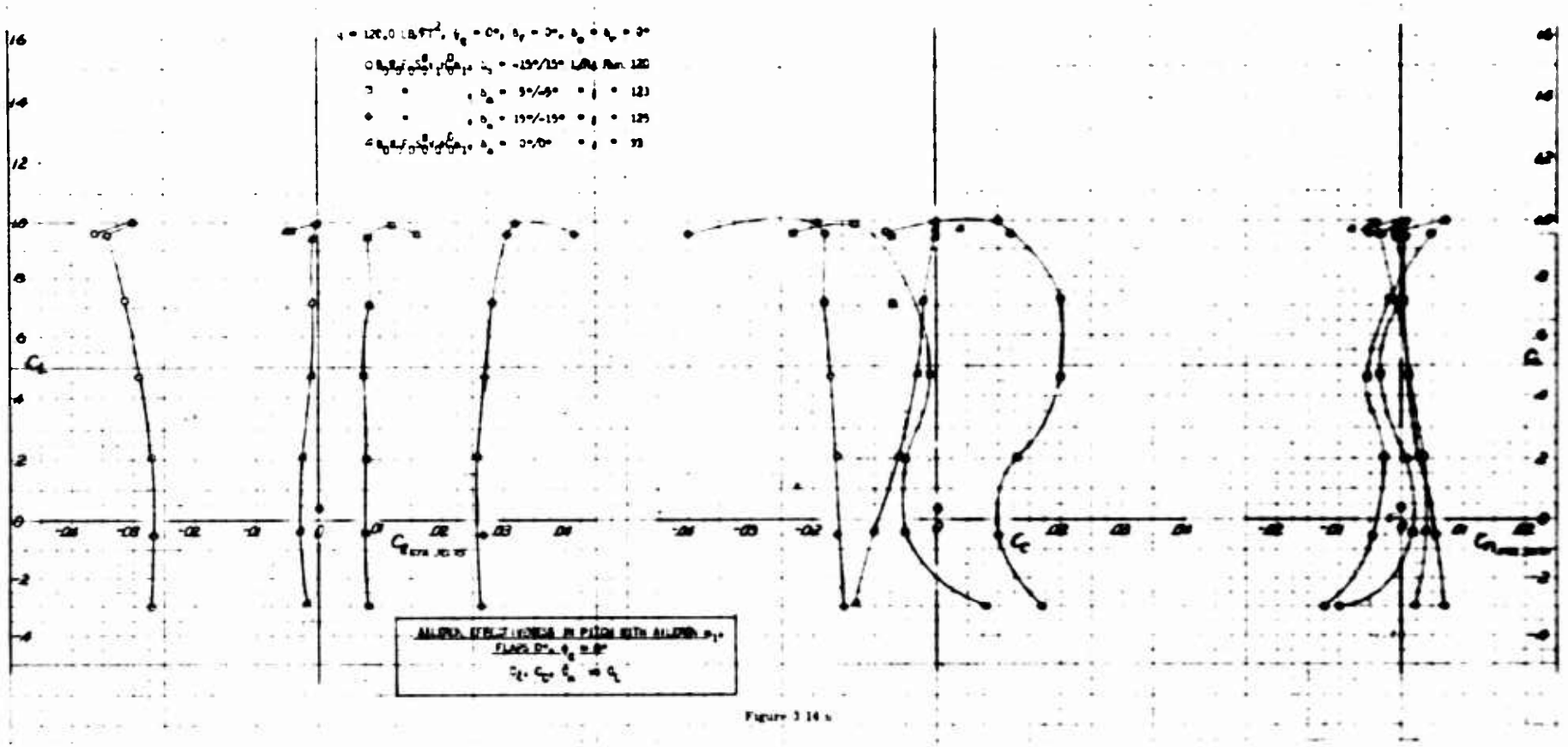
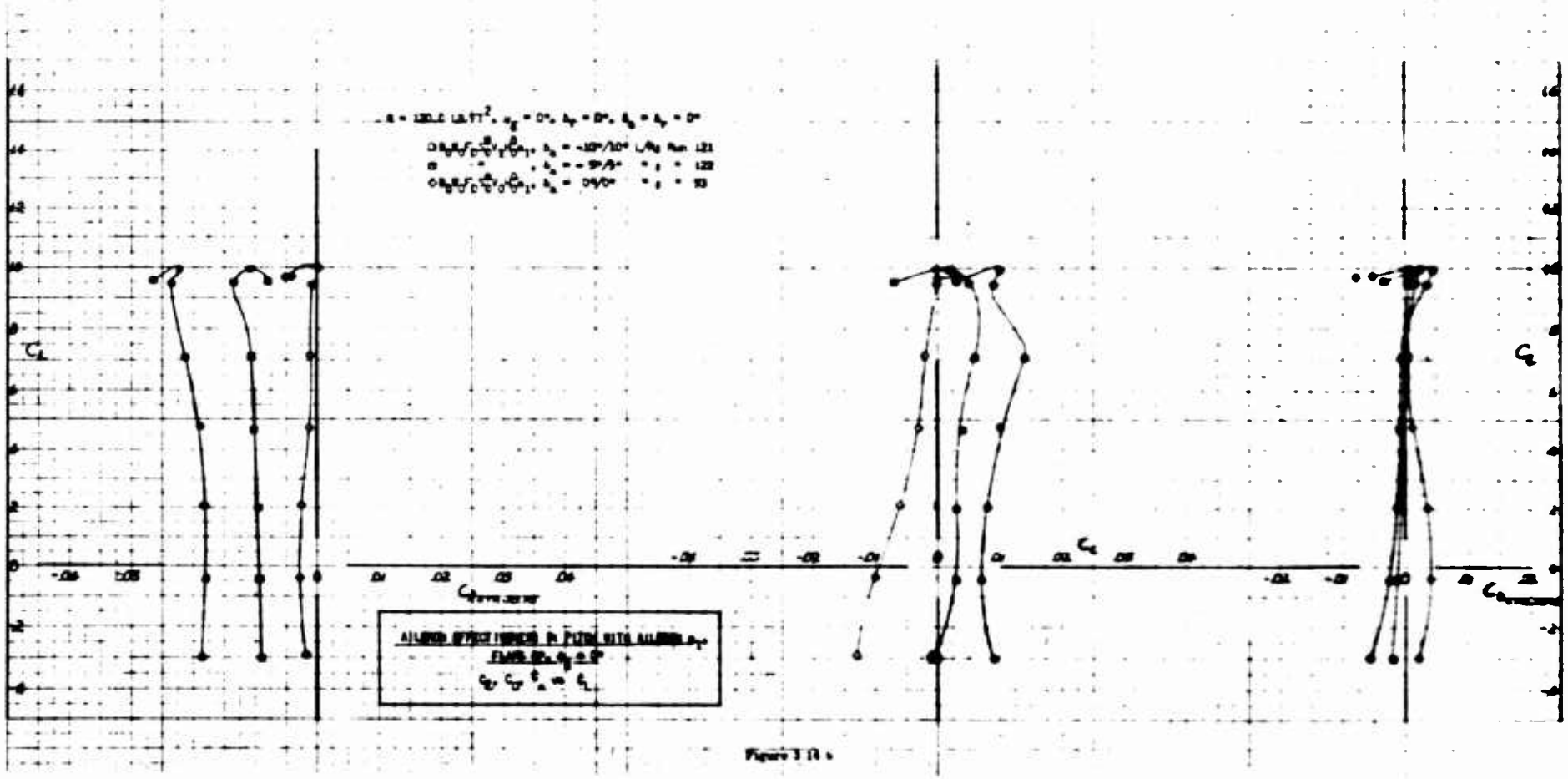


Figure 3.14 a


RUN SYM
121 ○
122 □
93 ◇

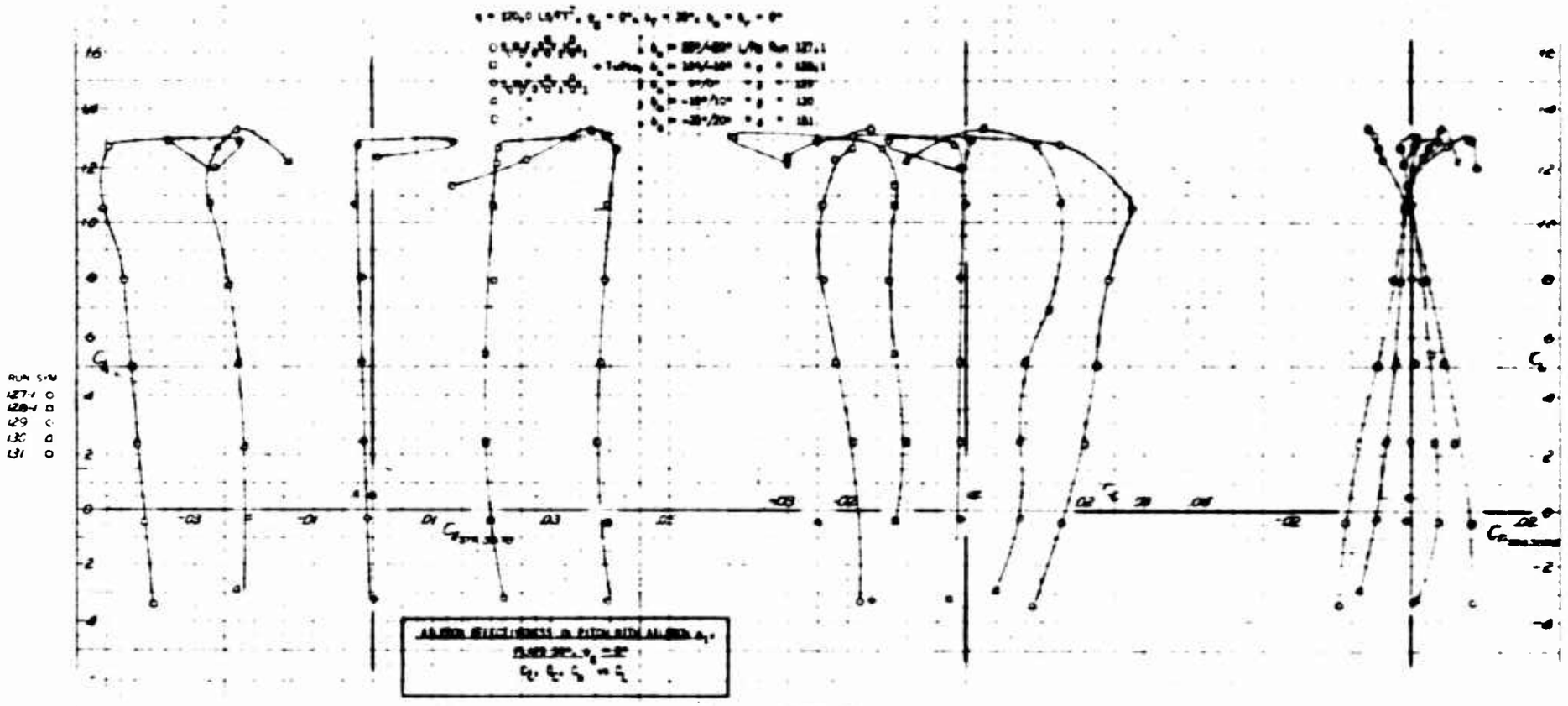


Figure 3.14

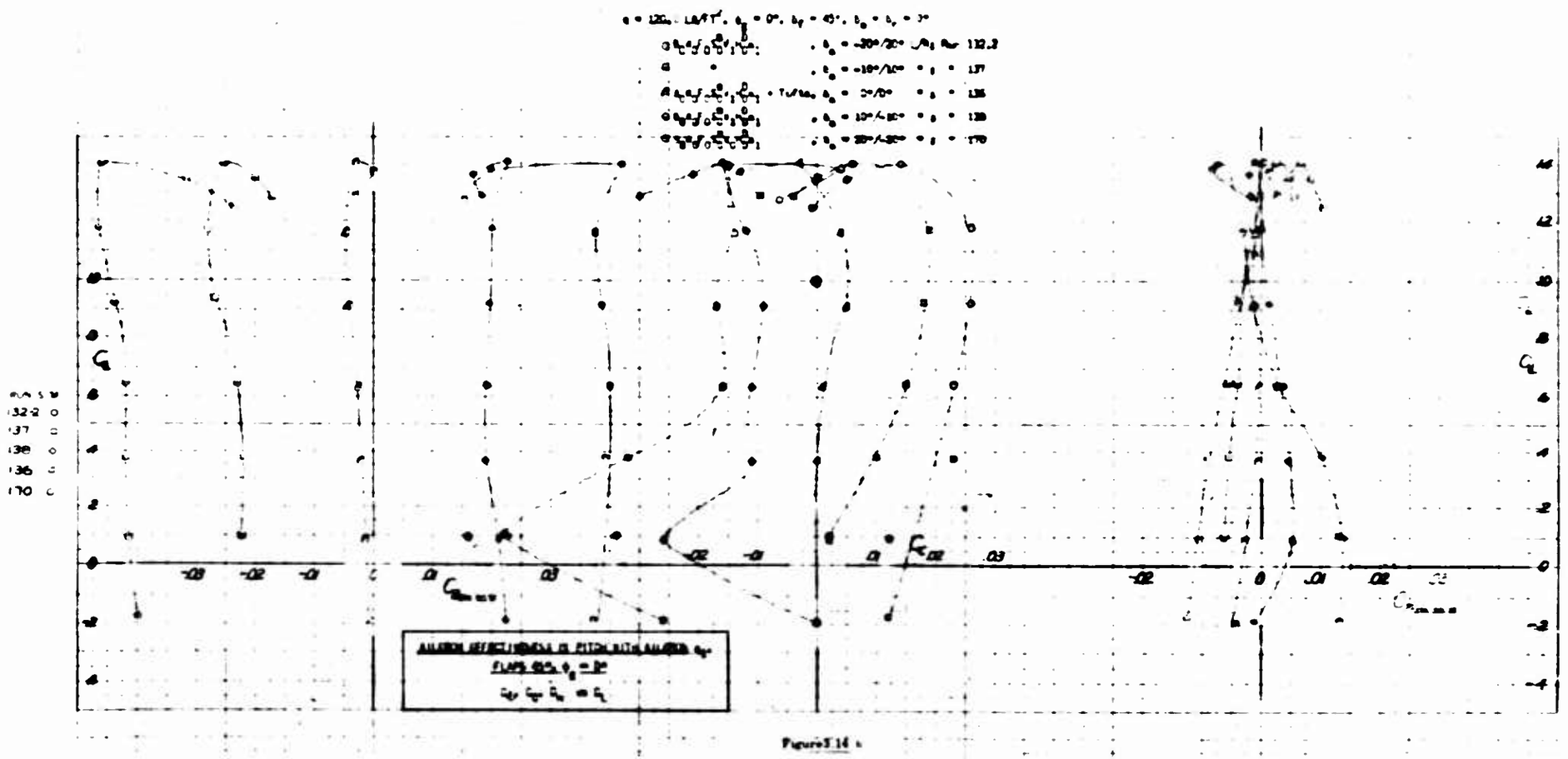


Figure 5.14 a

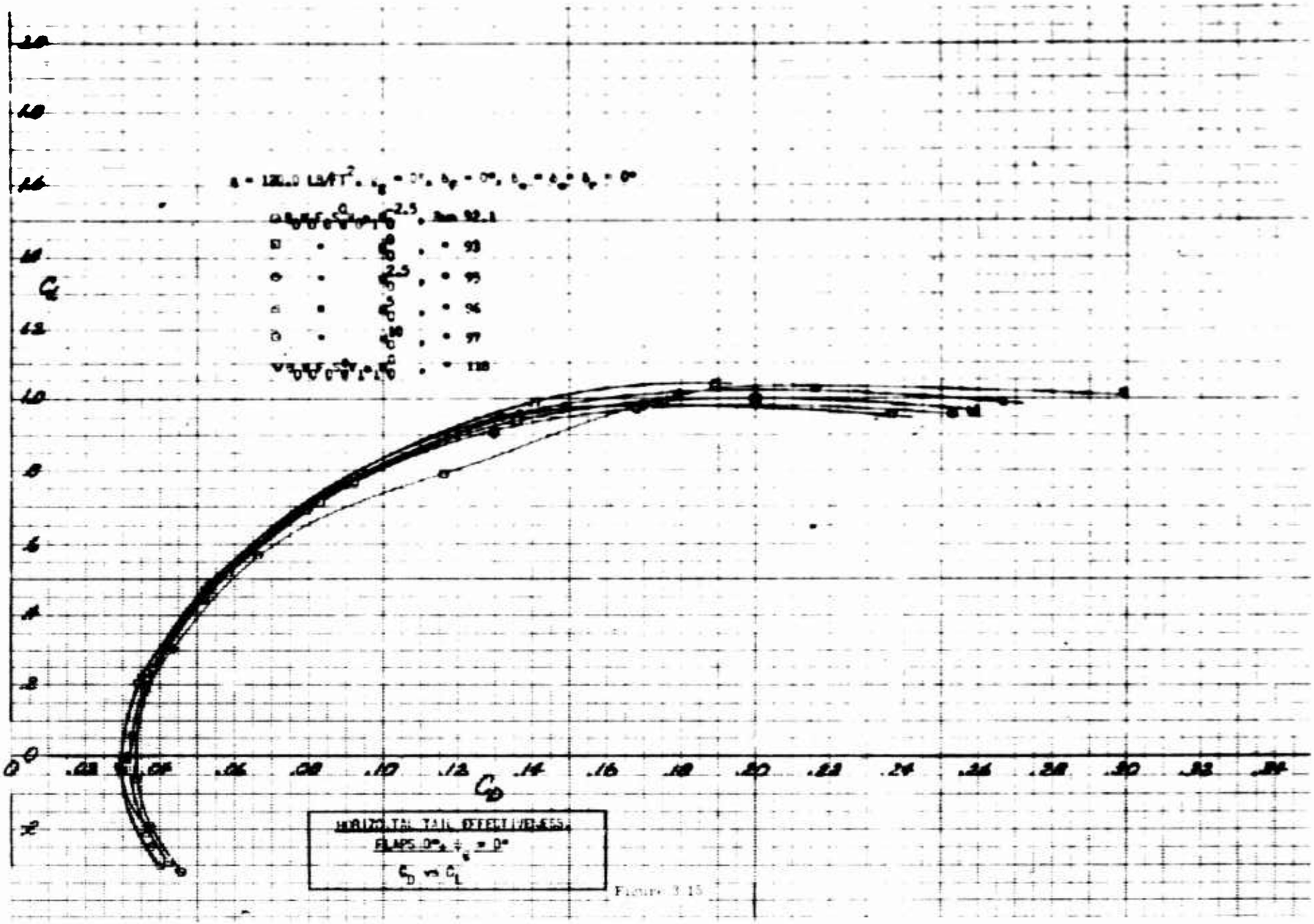


Figure 3.15

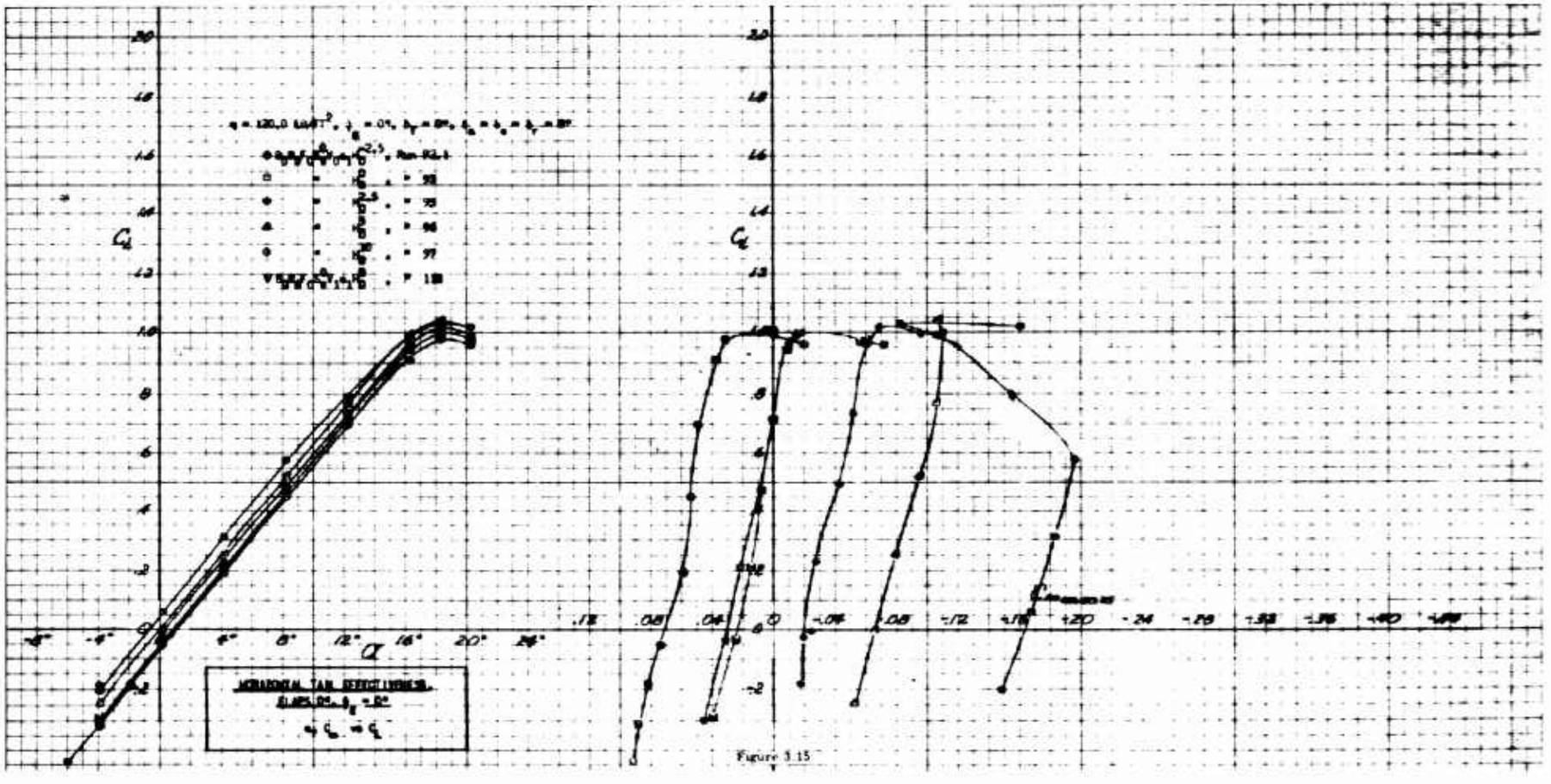


Figure 3.15

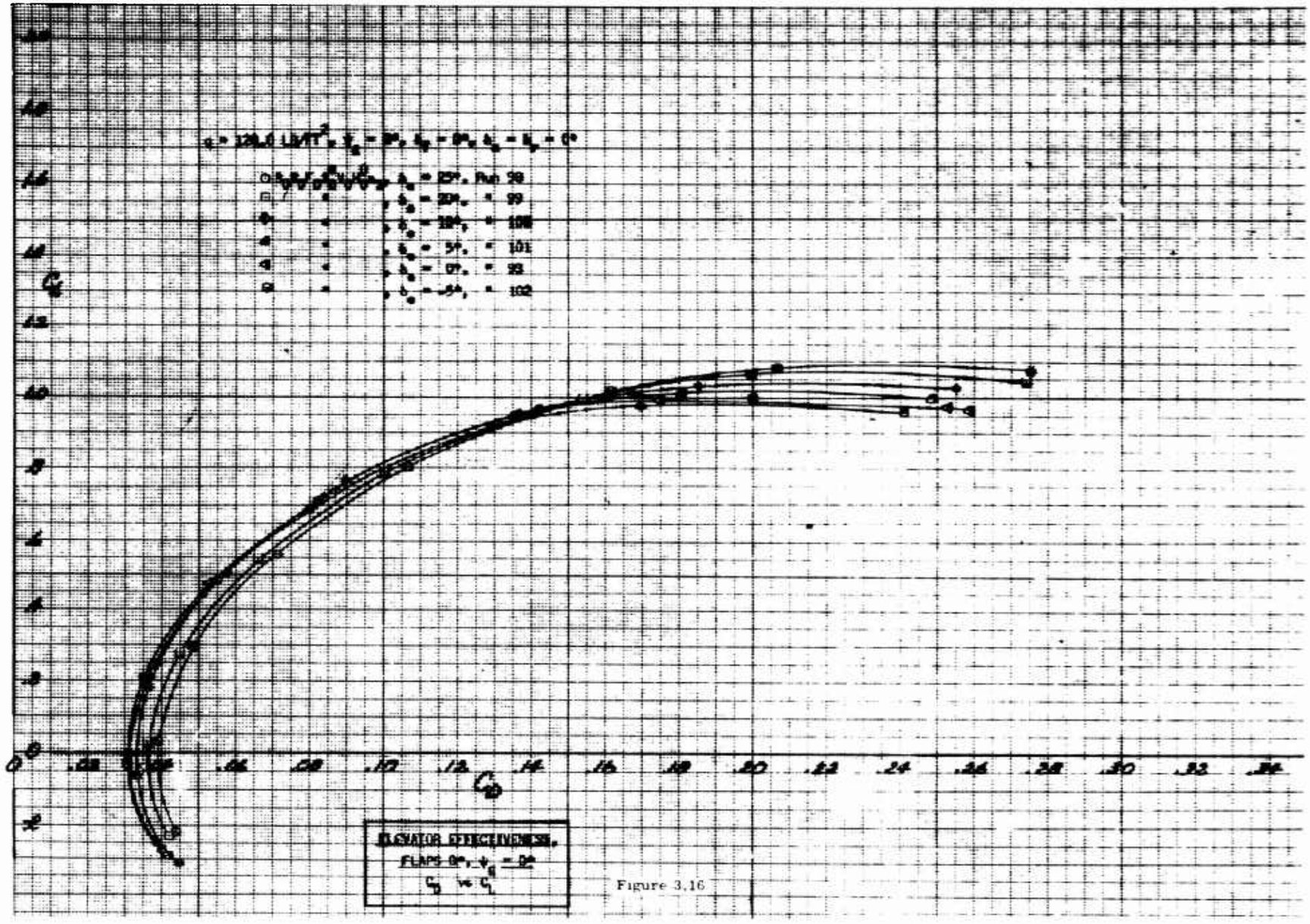


Figure 3.16

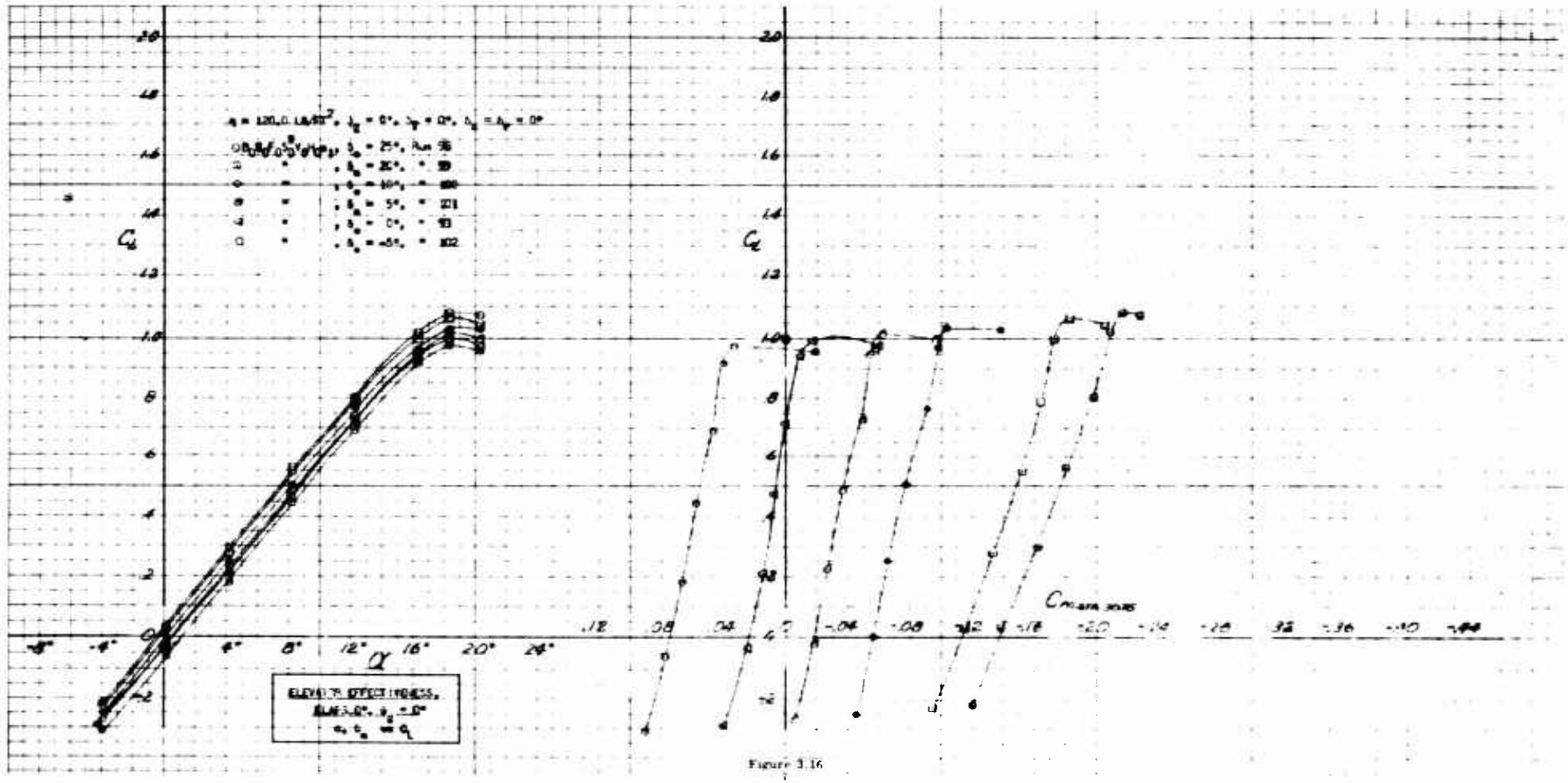


Figure 3.16

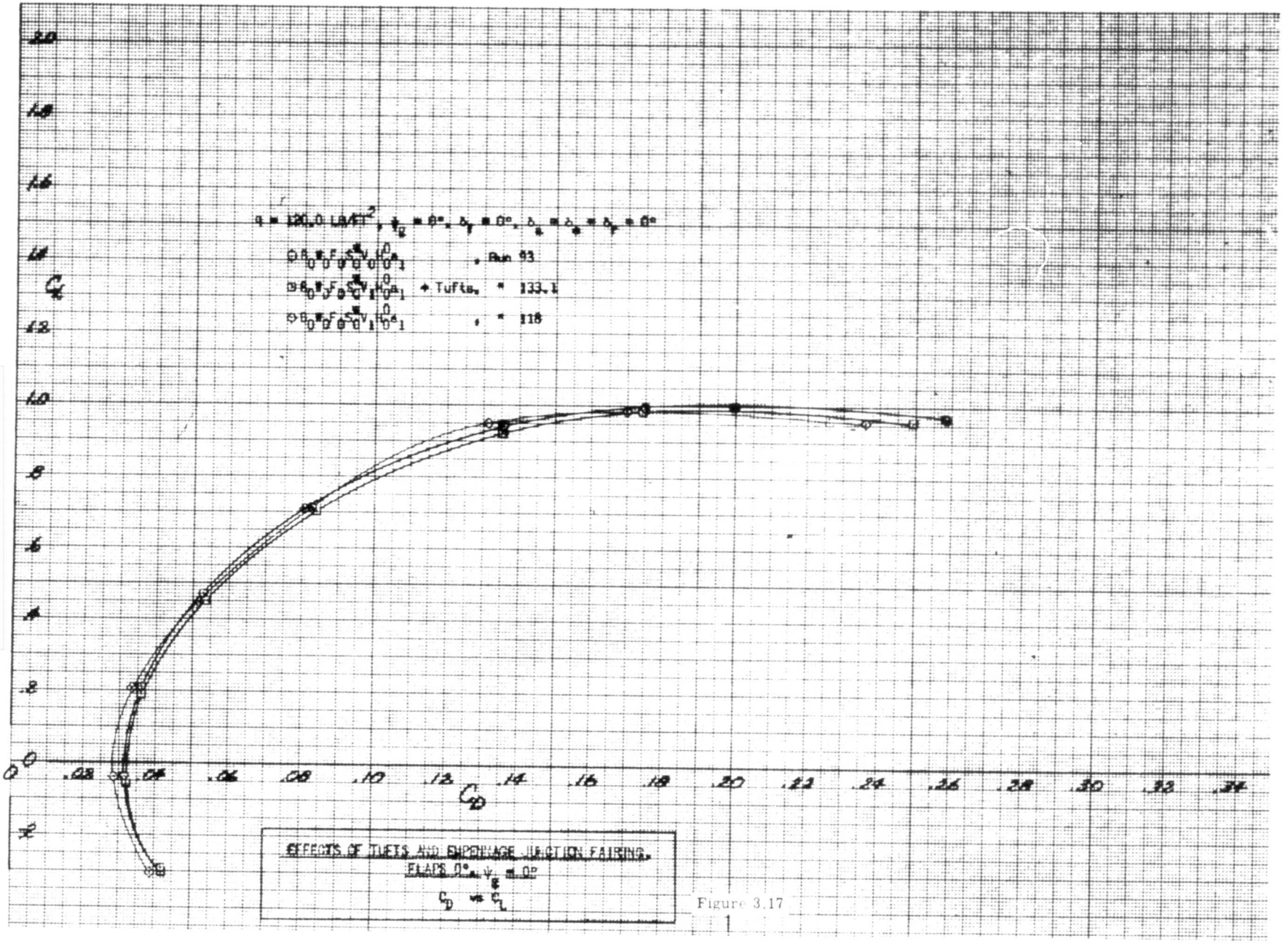

RUN SYM
73
133-1
118
C_L
C_D
Run 93
Tufts, " 133.1
" 118
EFFECTS OF TUFTS AND EMPENNAGE JUNCTION FAIRING.
FLAPS 0°, i_t = 0°

Figure 3.17

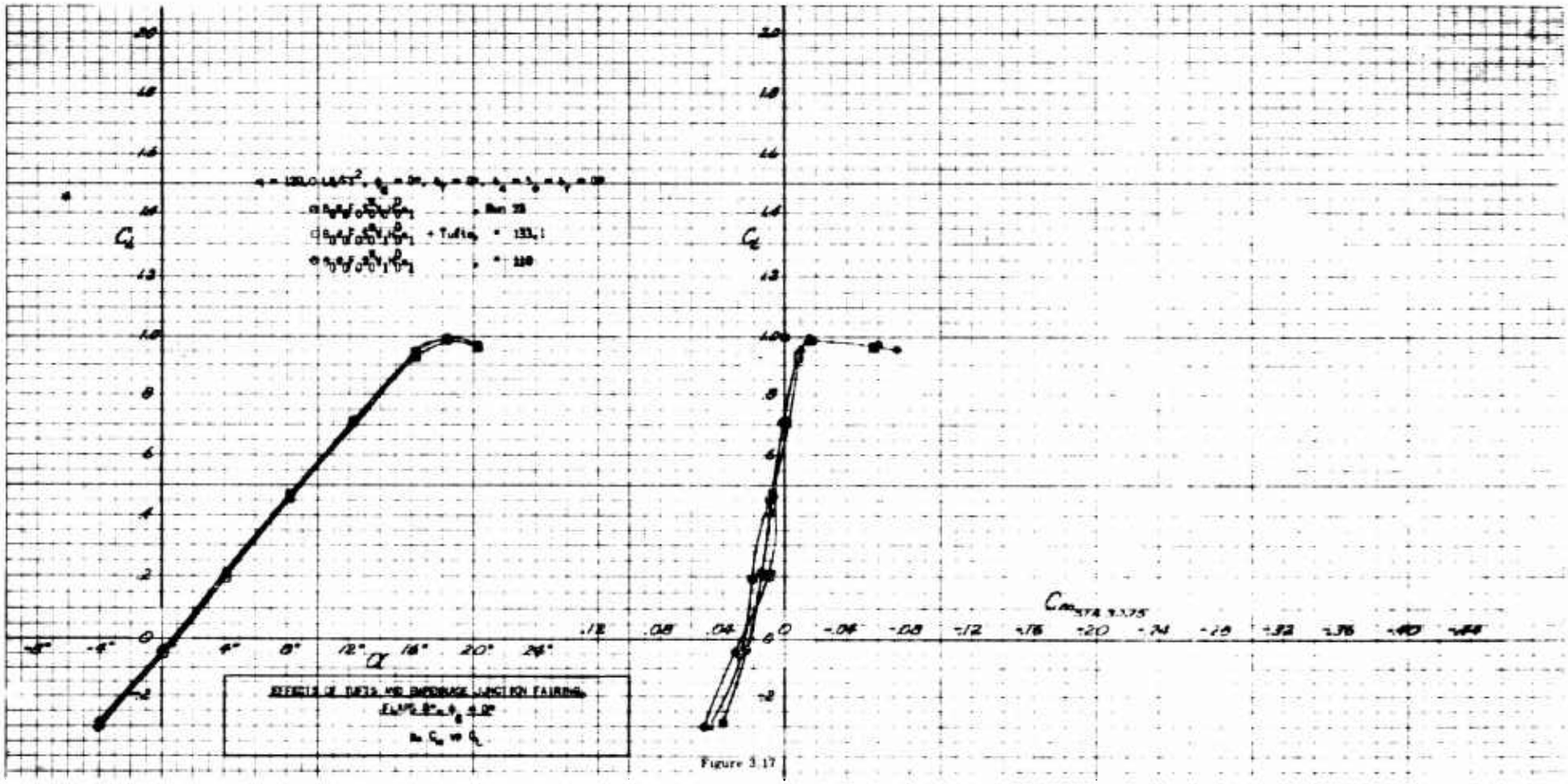

RUN SYM
118
C_L
C_m
α
-4°
0
4°
8°
12°
16°
20°
24°
.12
.08
.04
0
-.04
-.08
-.12
-.16
-.20
-.24
-.28
-.32
-.36
-.40
-.44
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
0
-.2

Figure 3.17

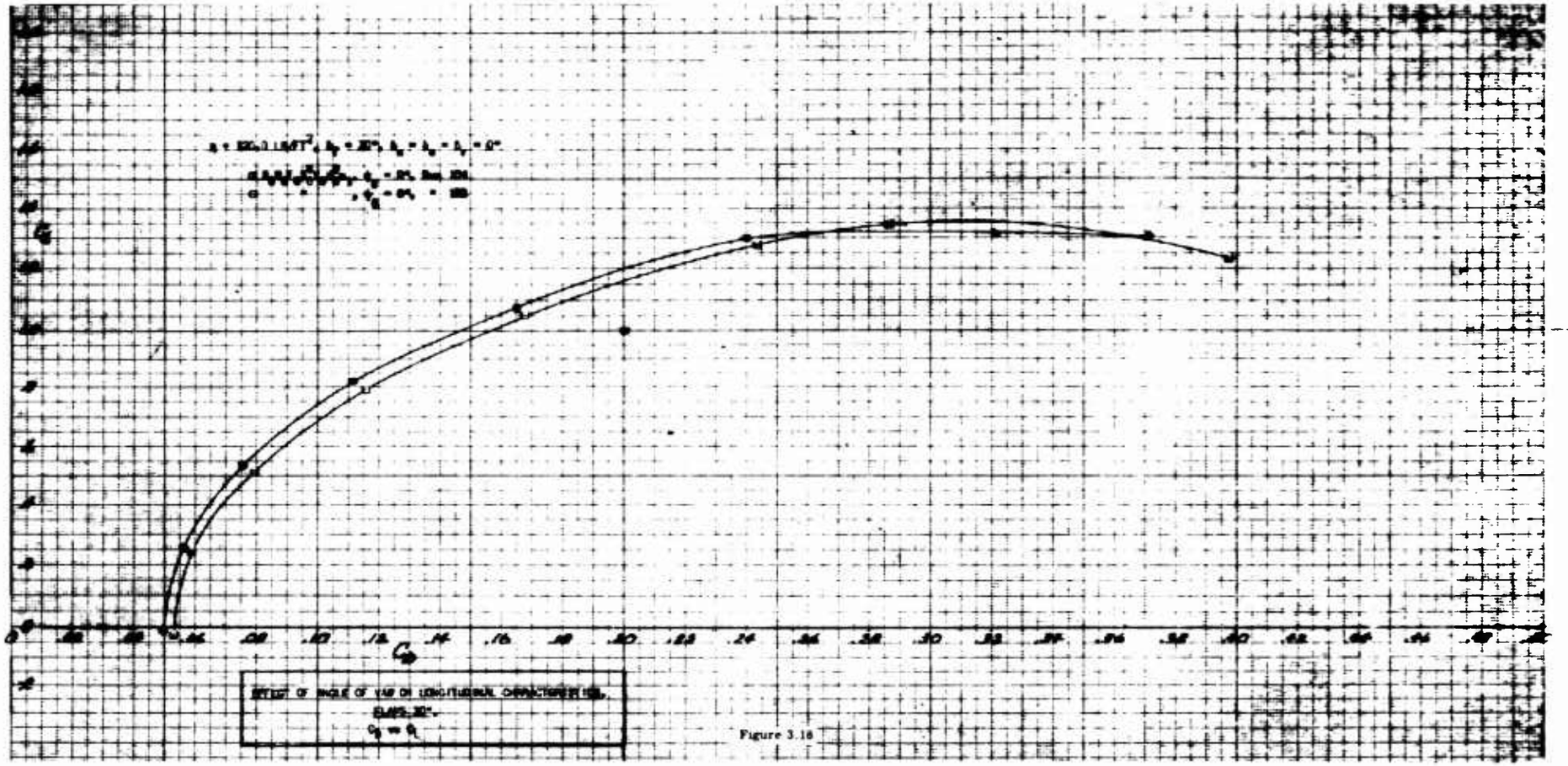


Figure 3.16

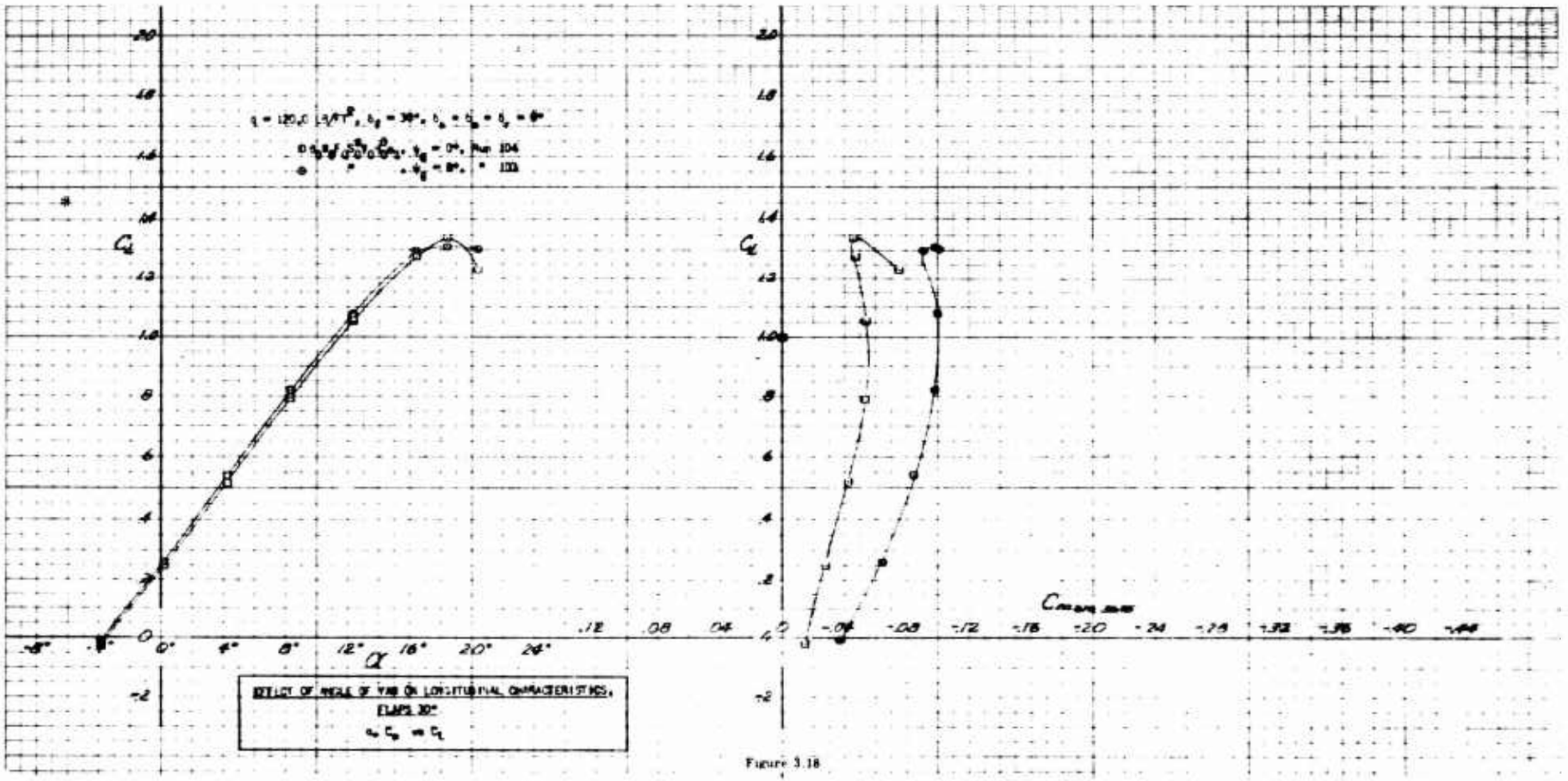
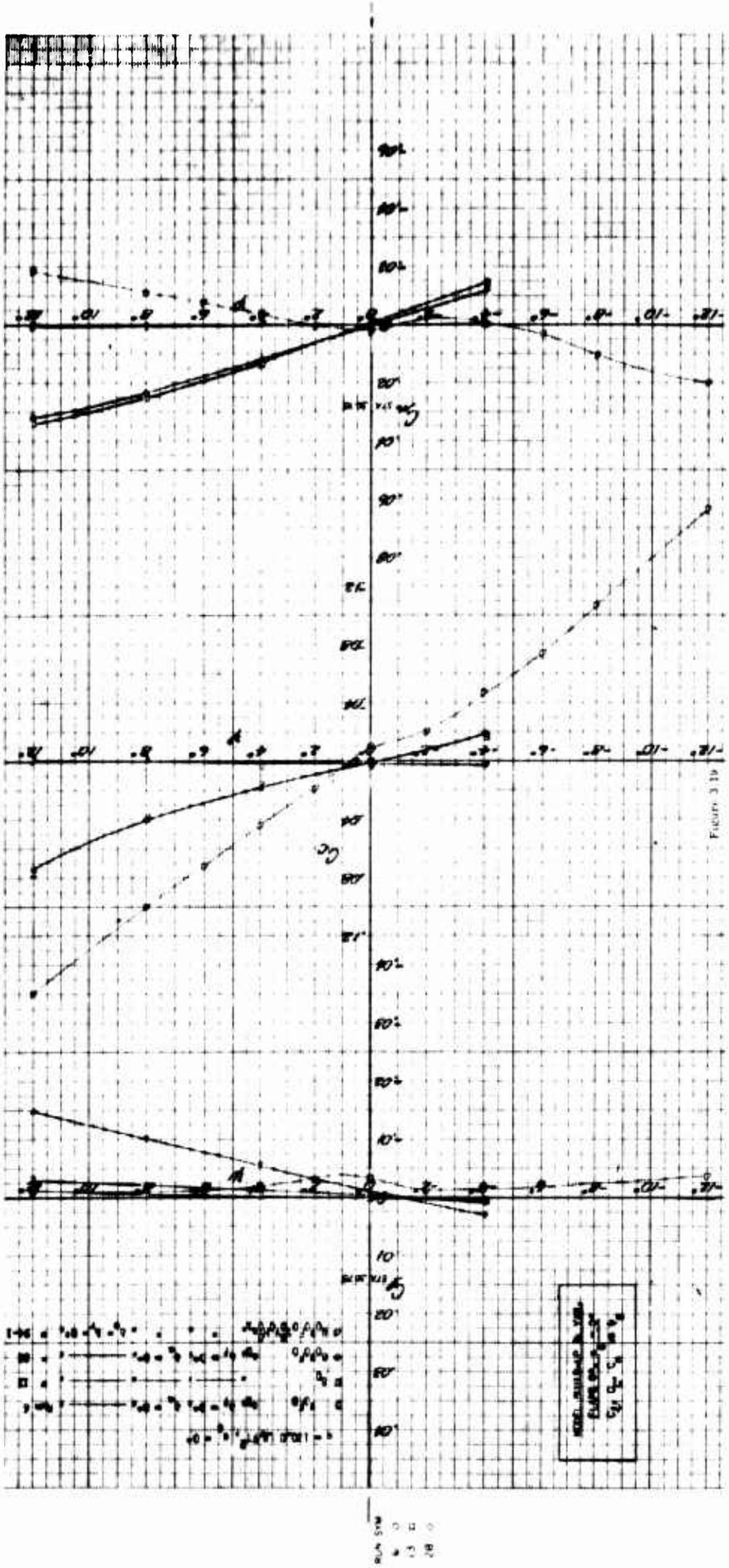


Figure 3.18



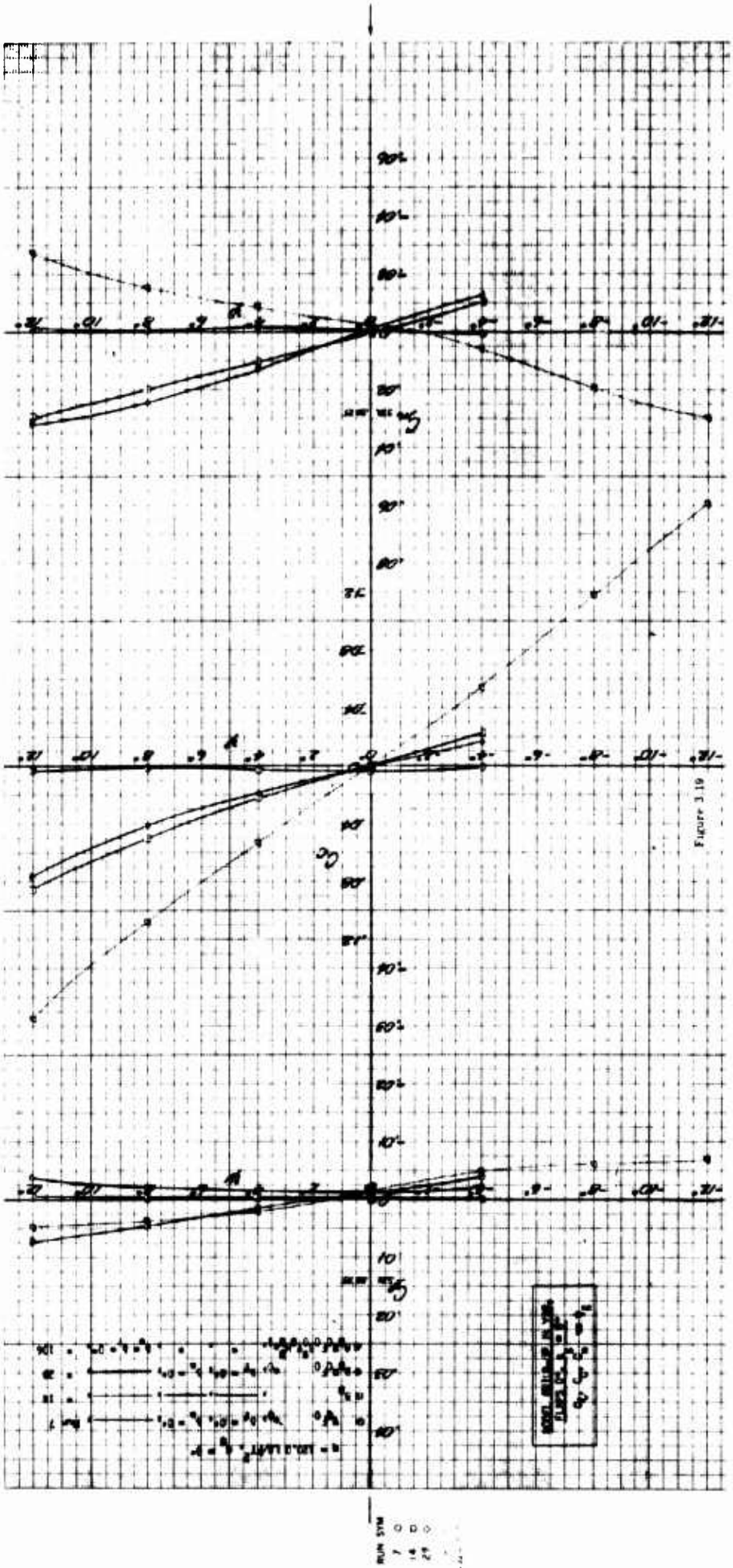


Figure 3.19

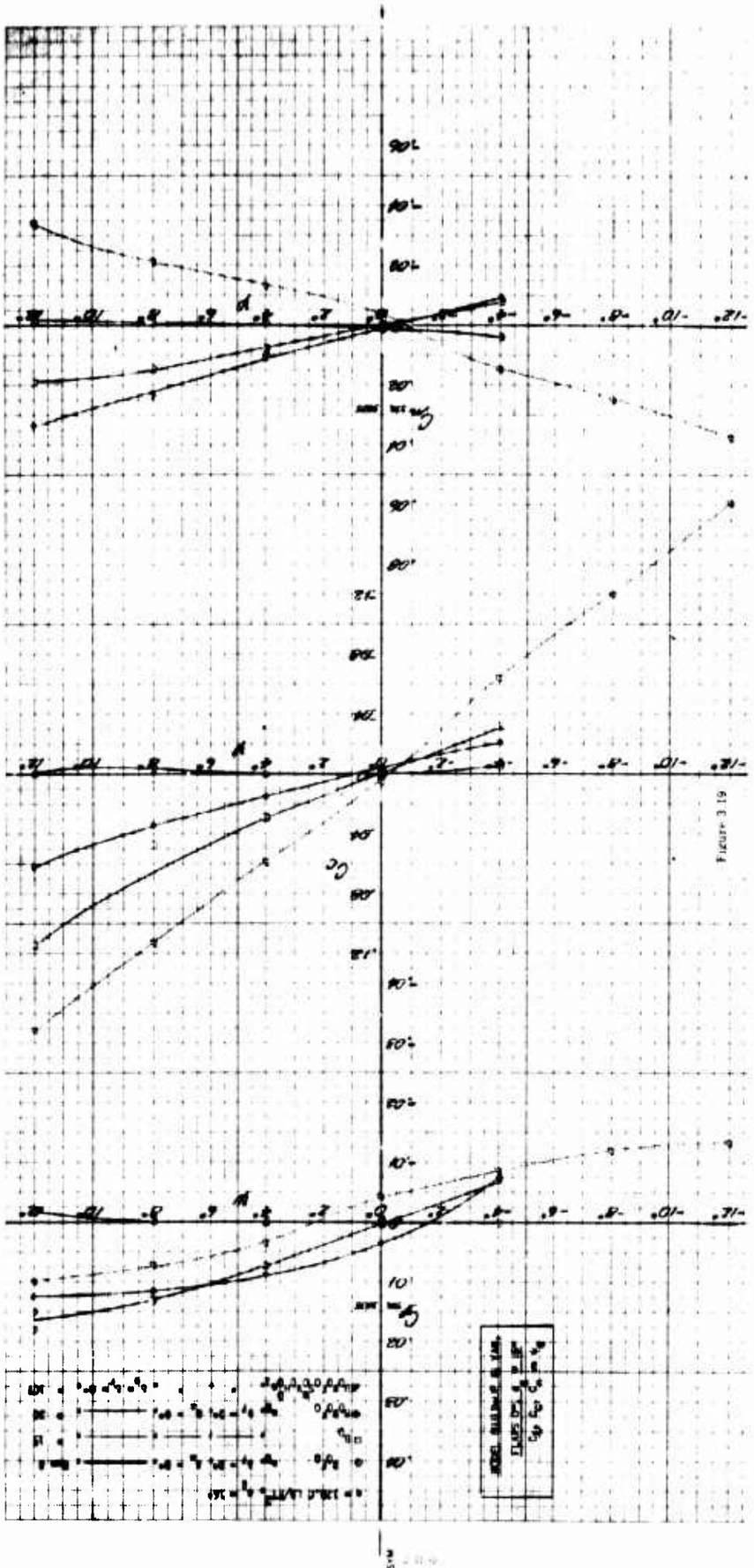


Figure 3.19

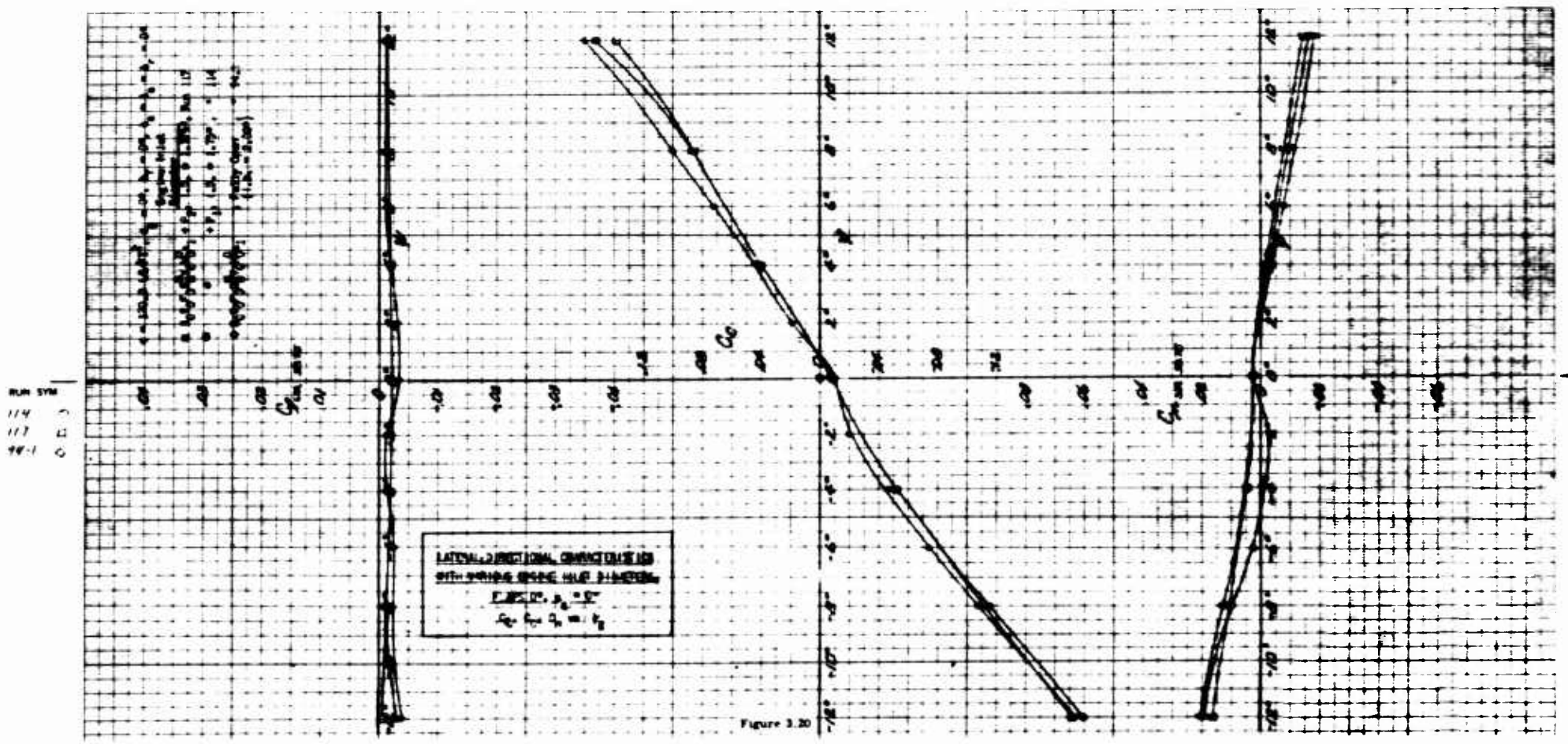
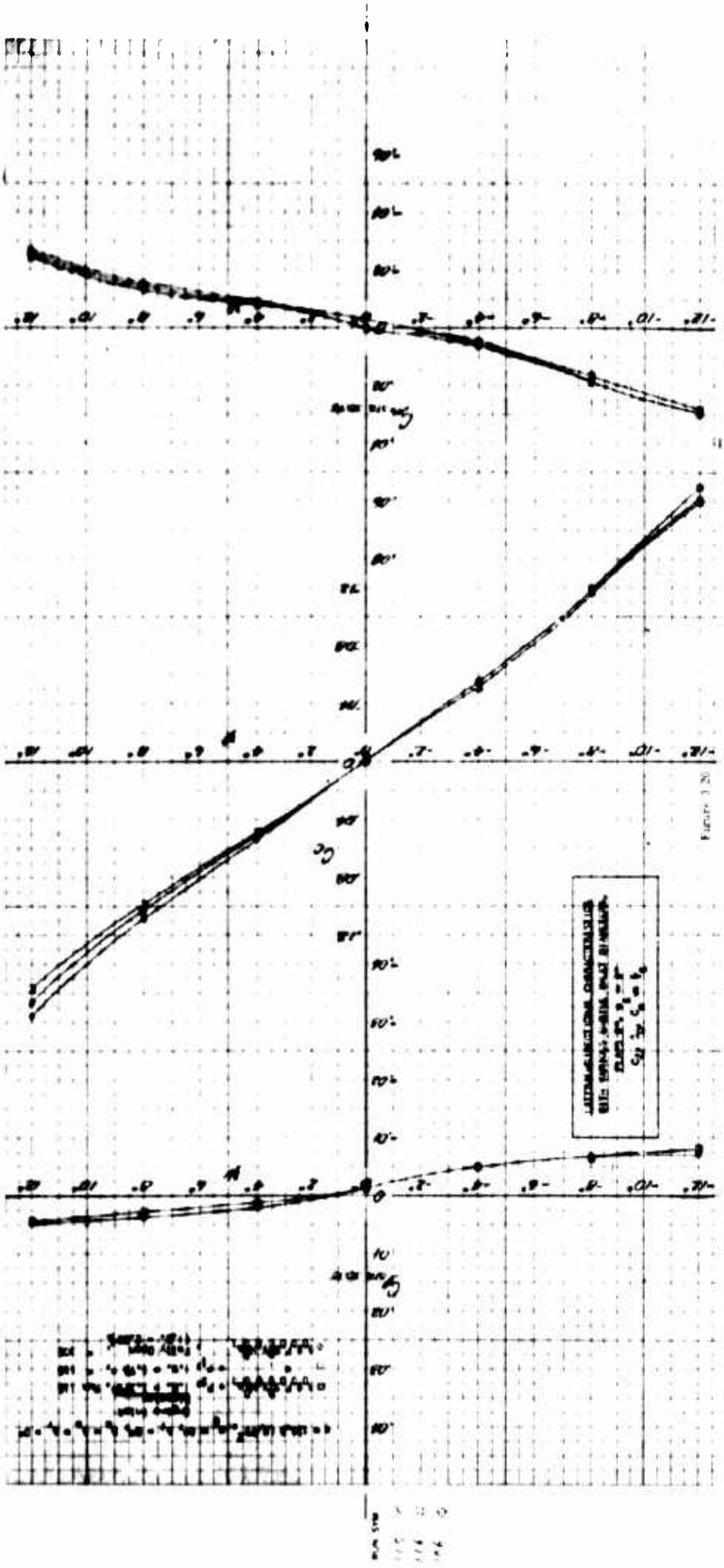
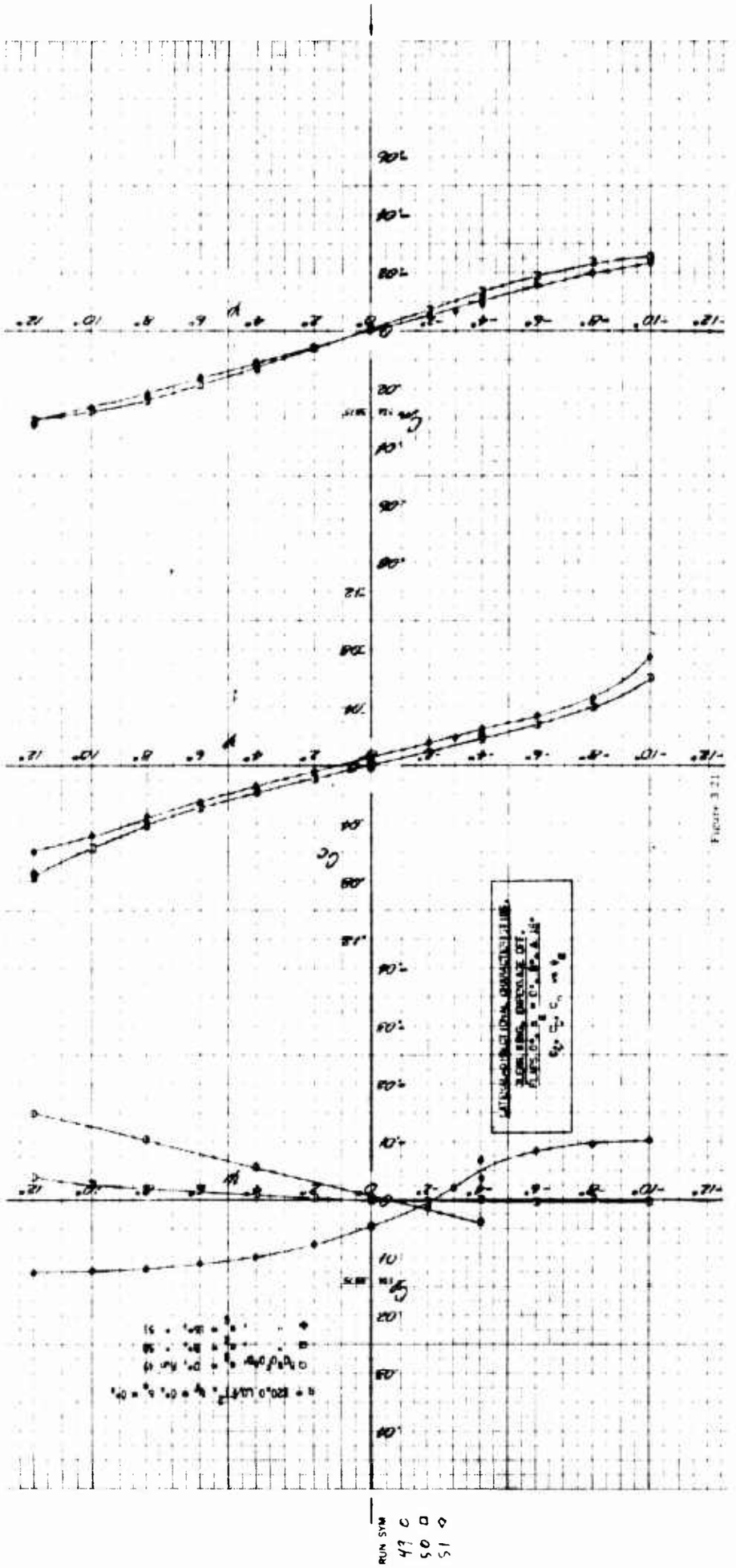


Figure 3.20




RUN SYM
43 ○
50 □
51 ◇

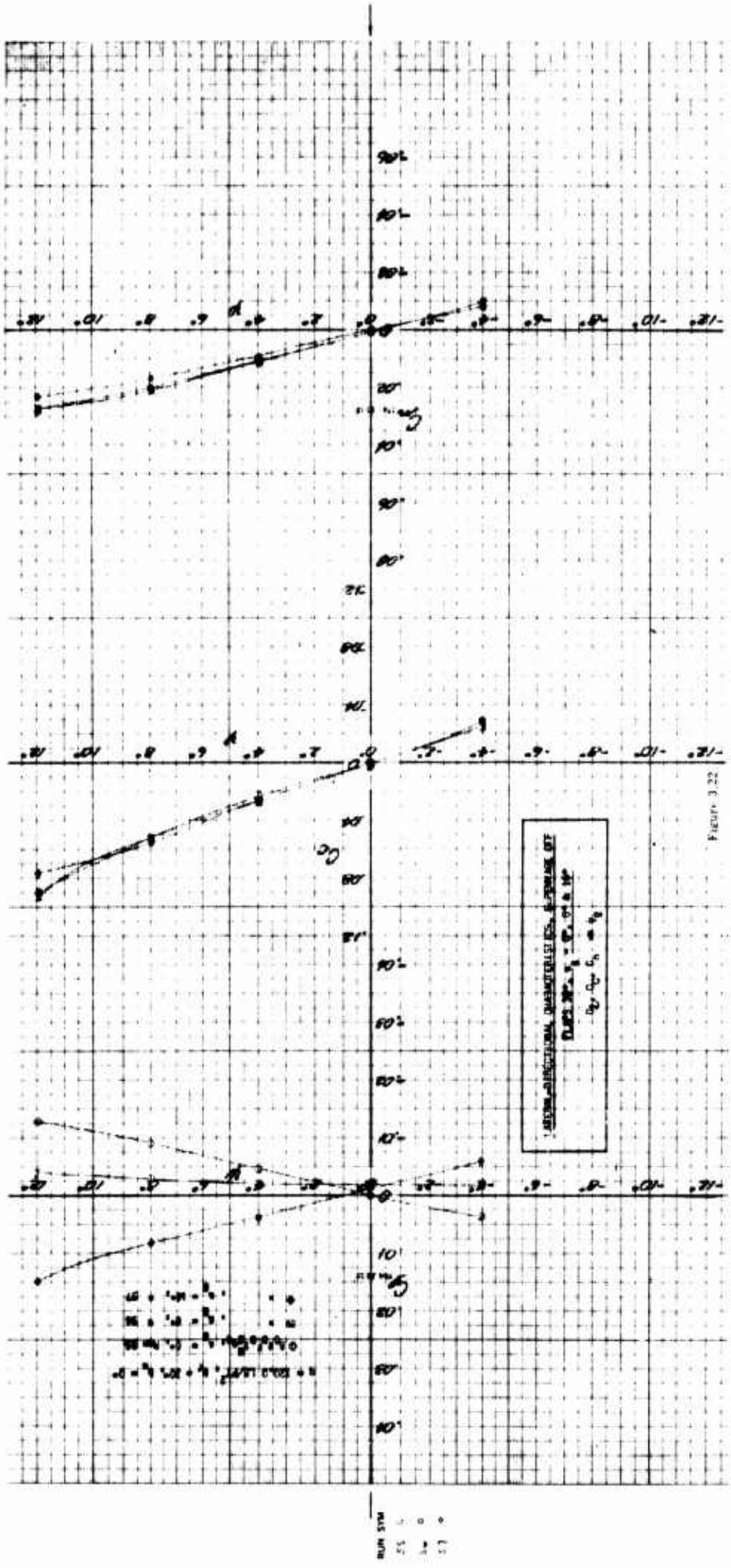


Figure 3.22

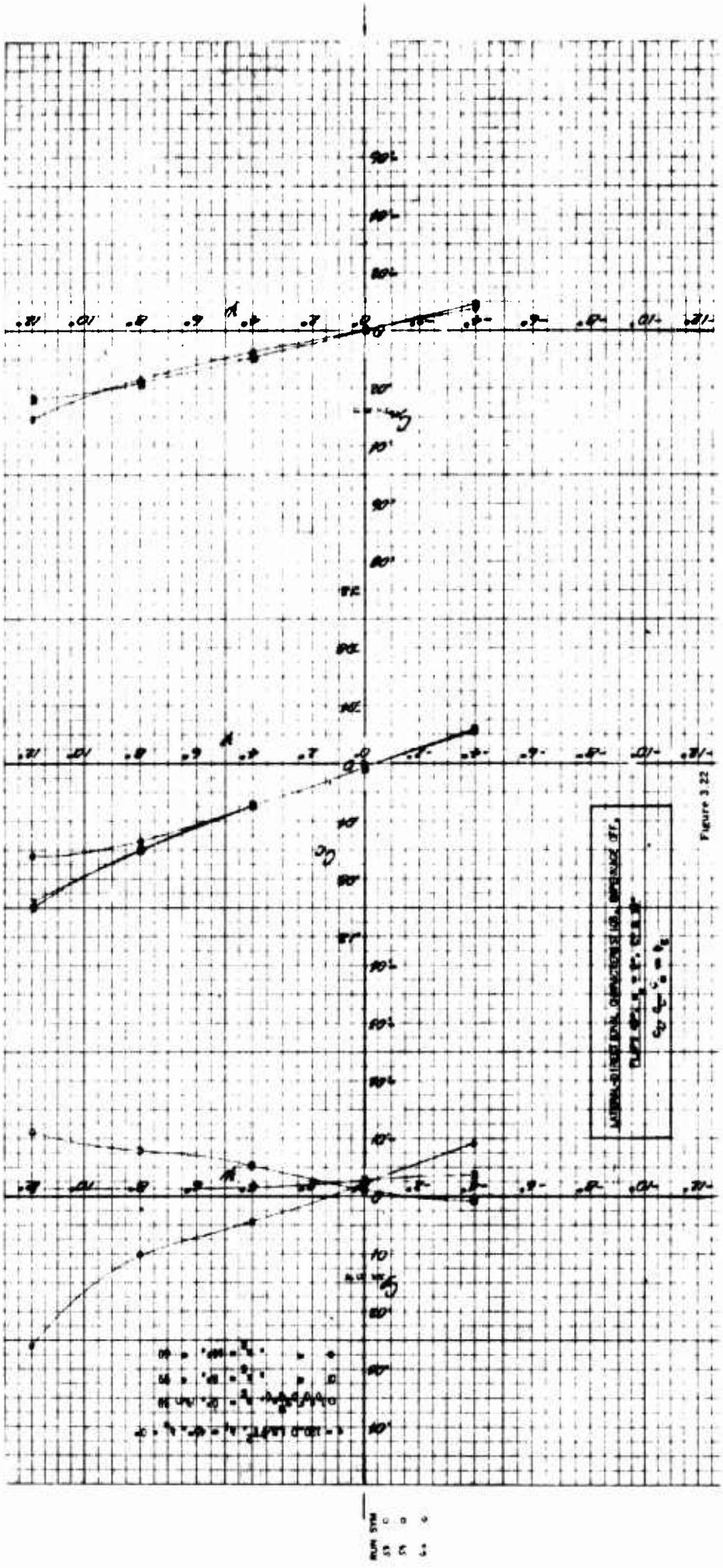


Figure 3.22

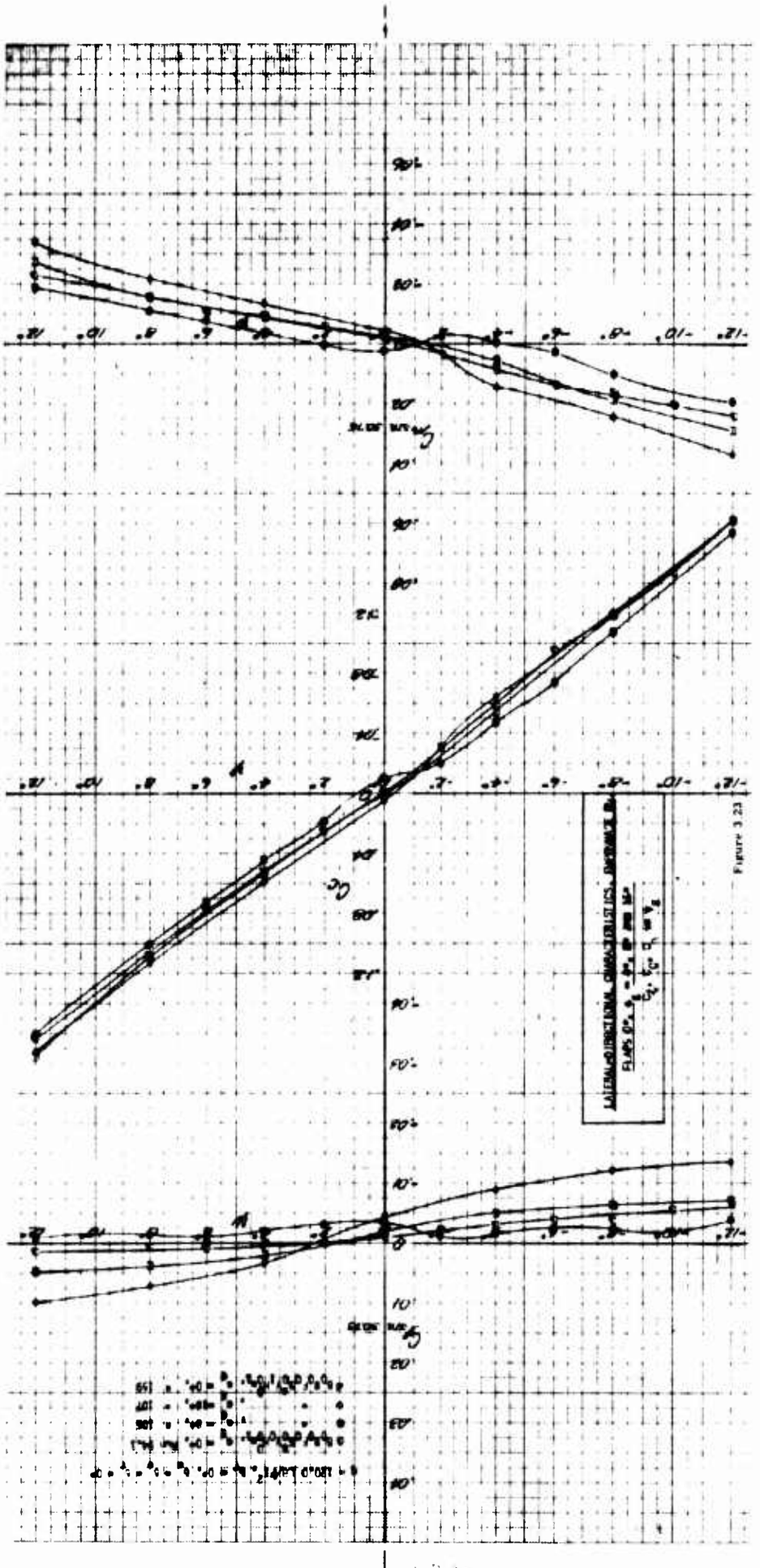


Figure 3.23

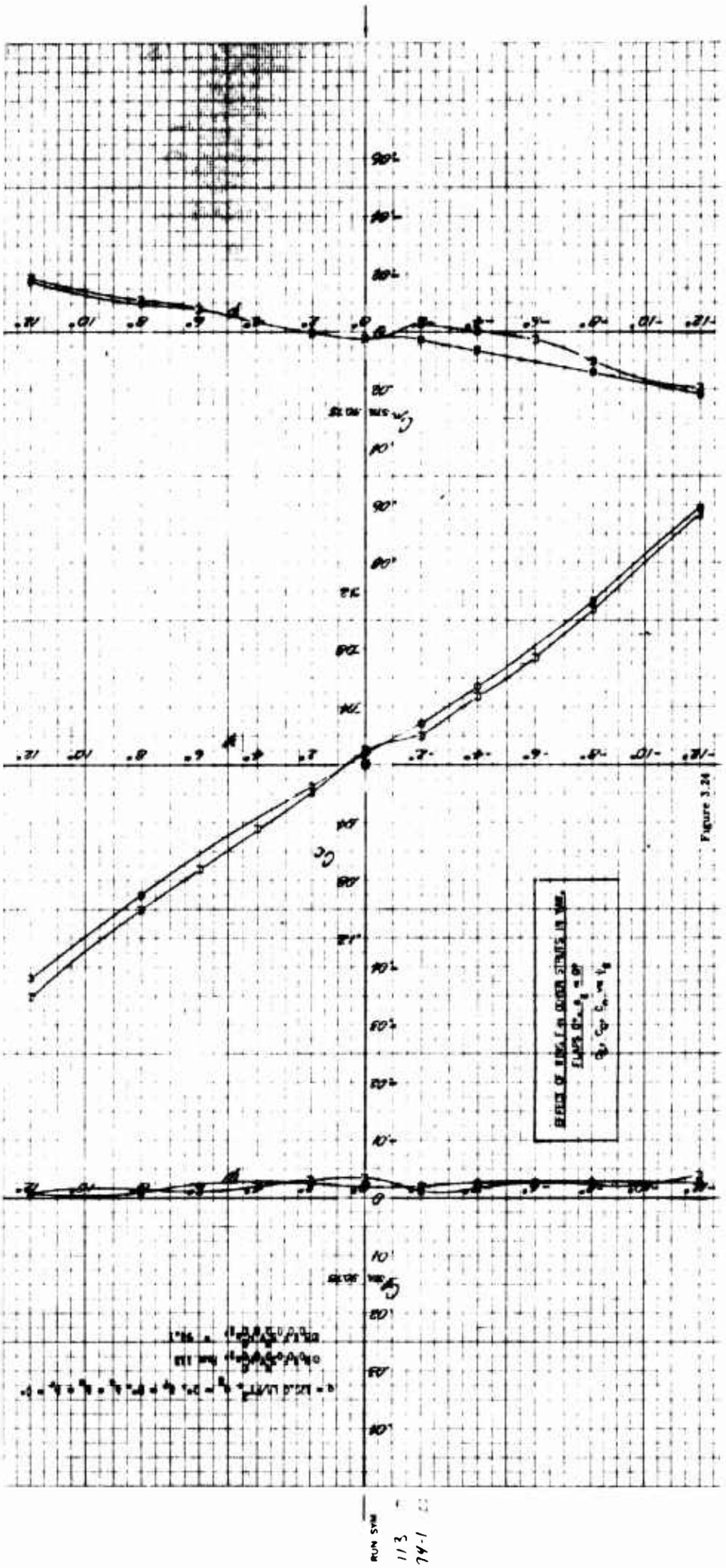


Figure 3.24

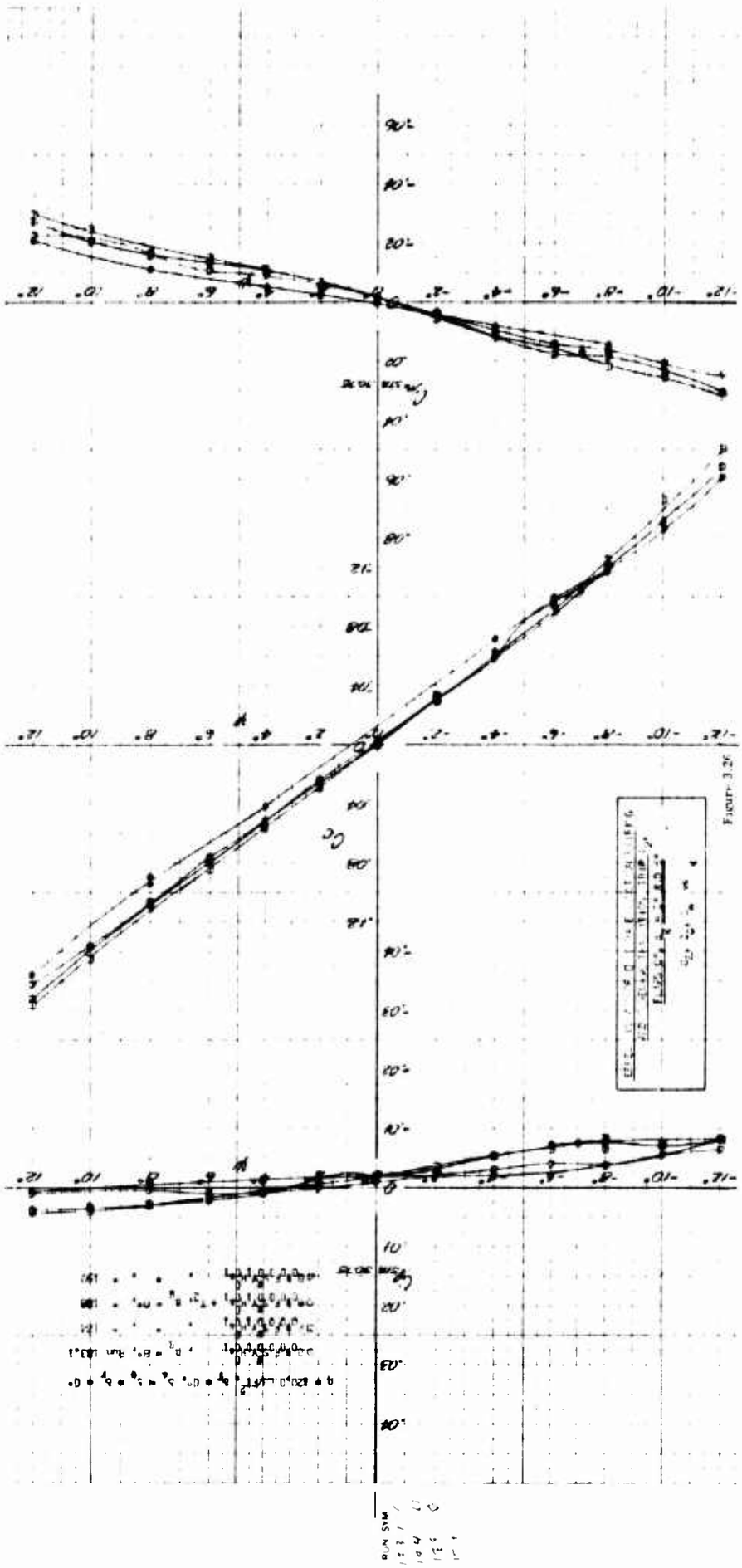


Figure 3.26

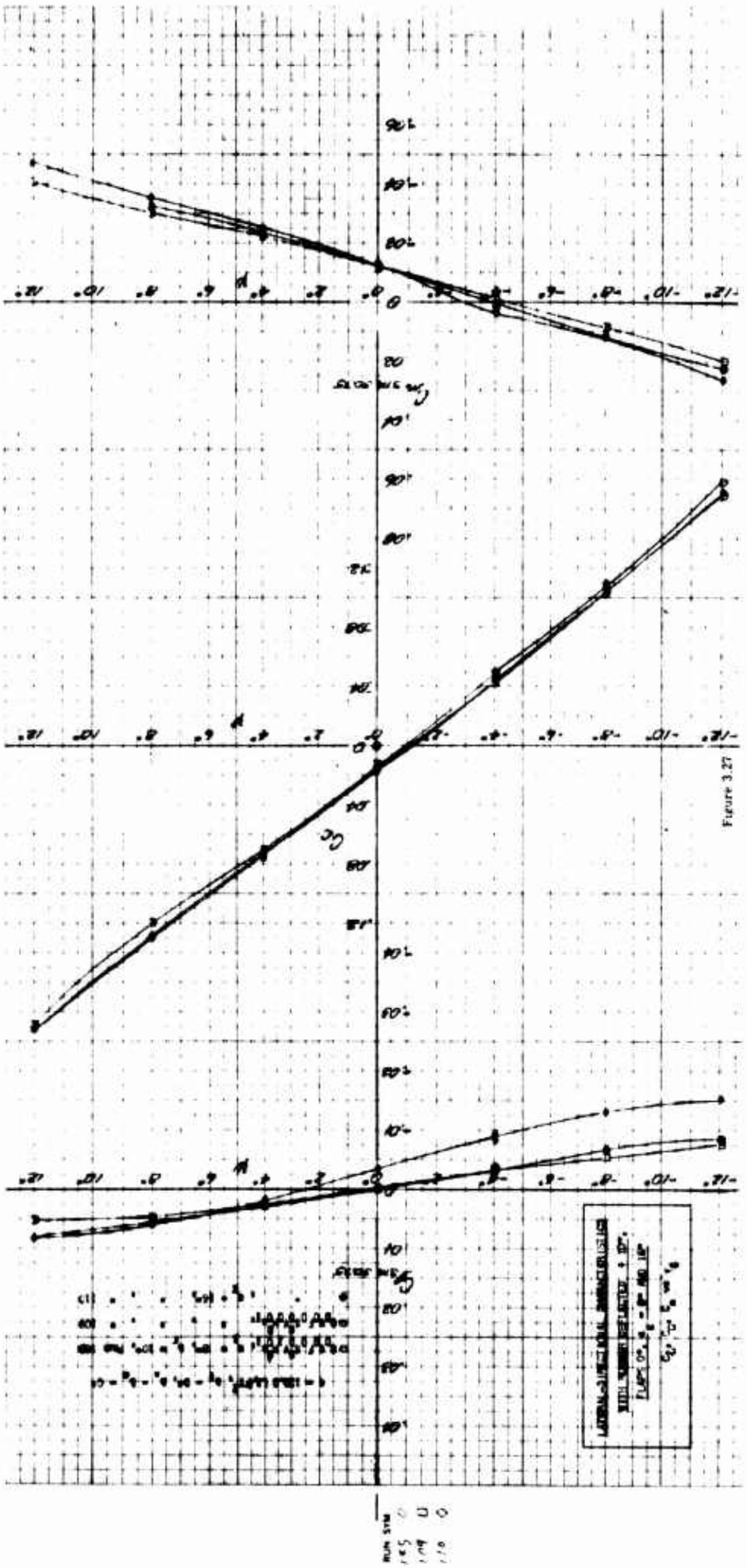


Figure 3.27

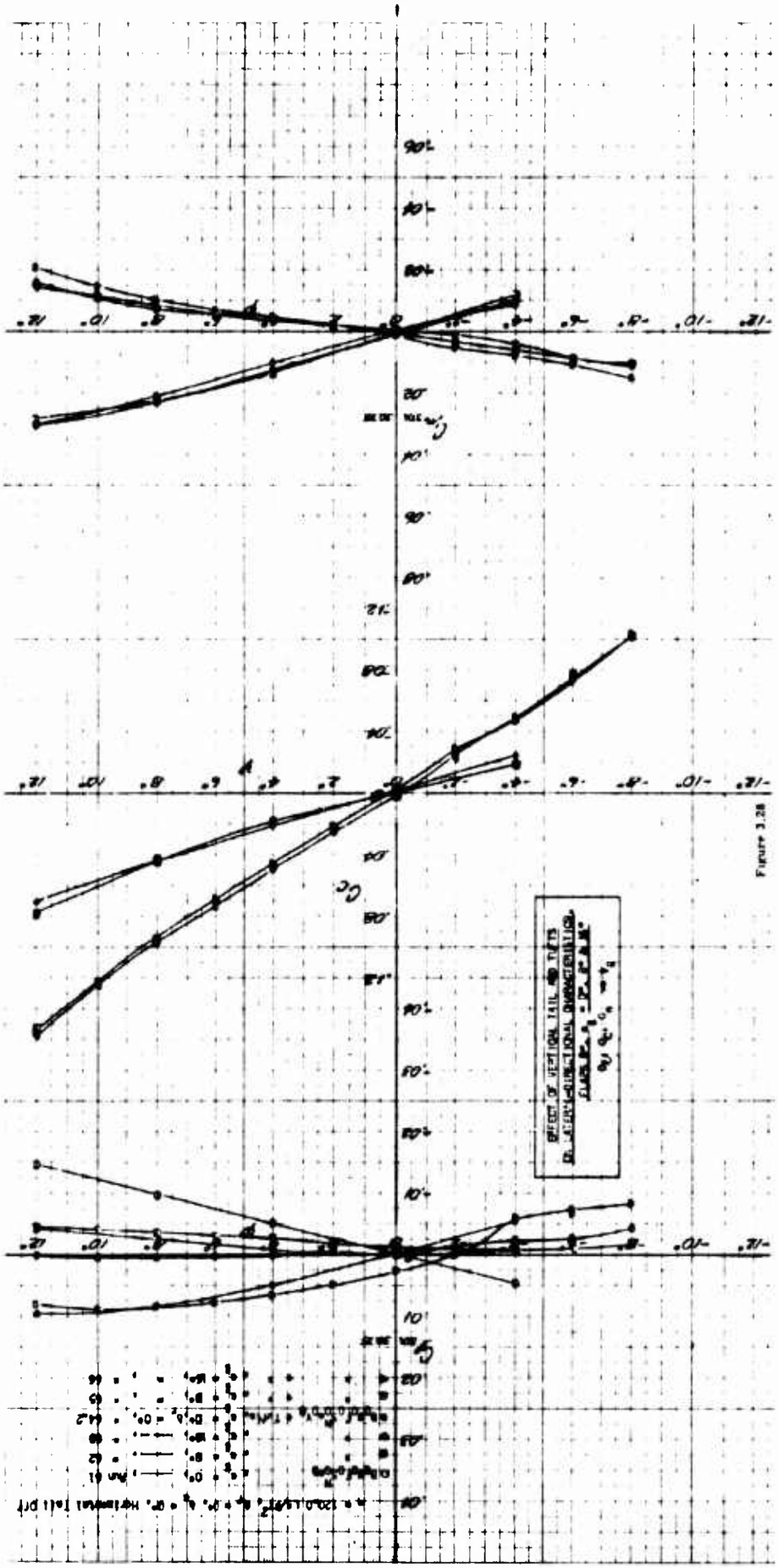
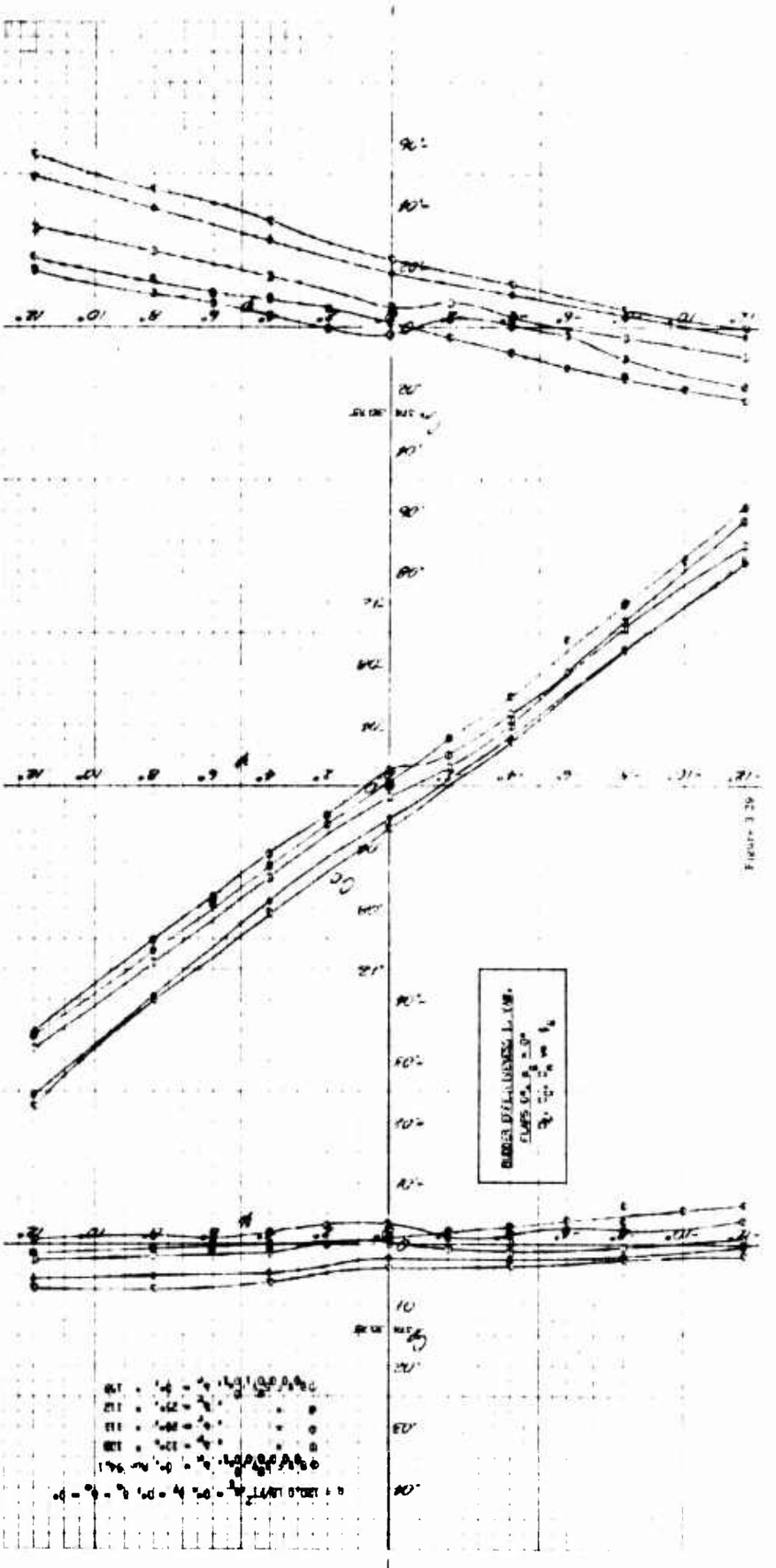
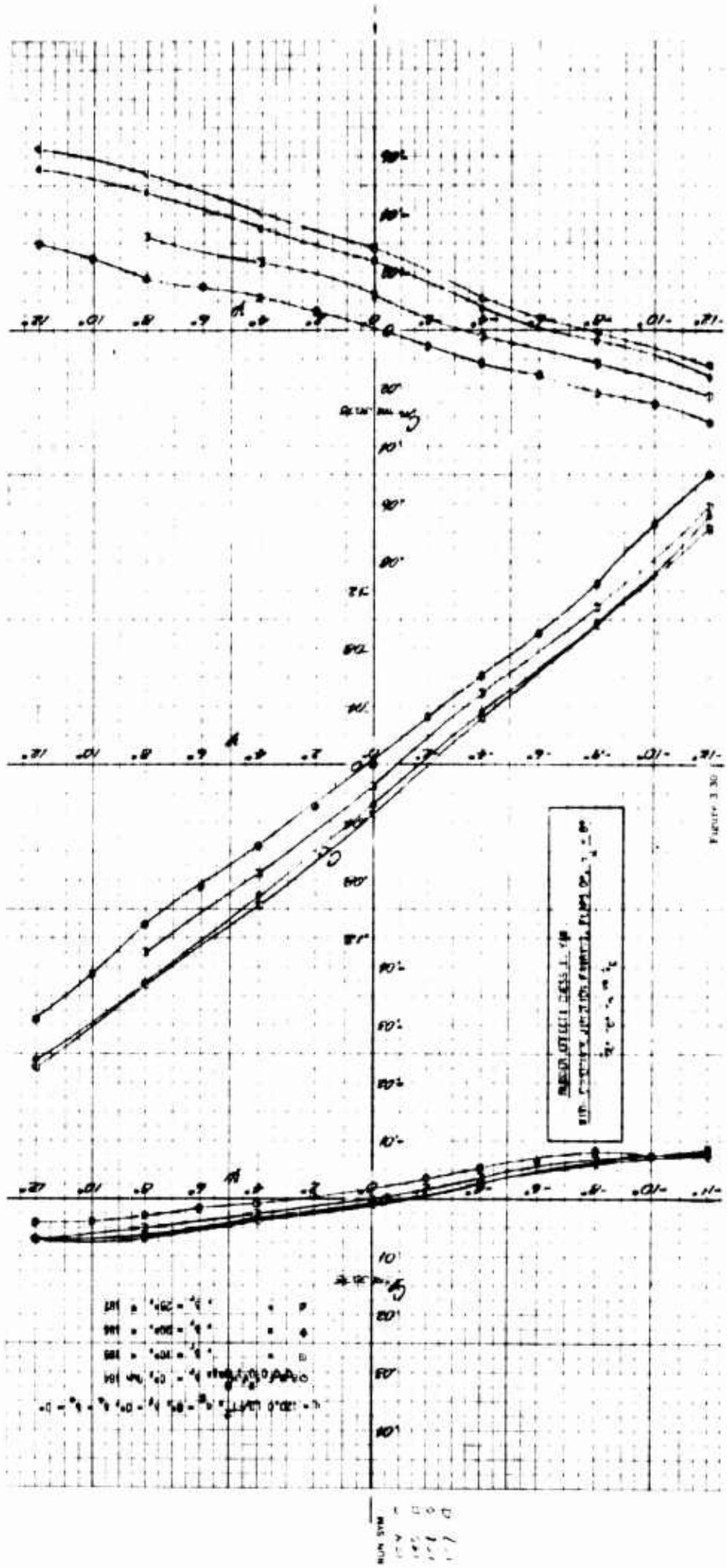


Figure 3.28





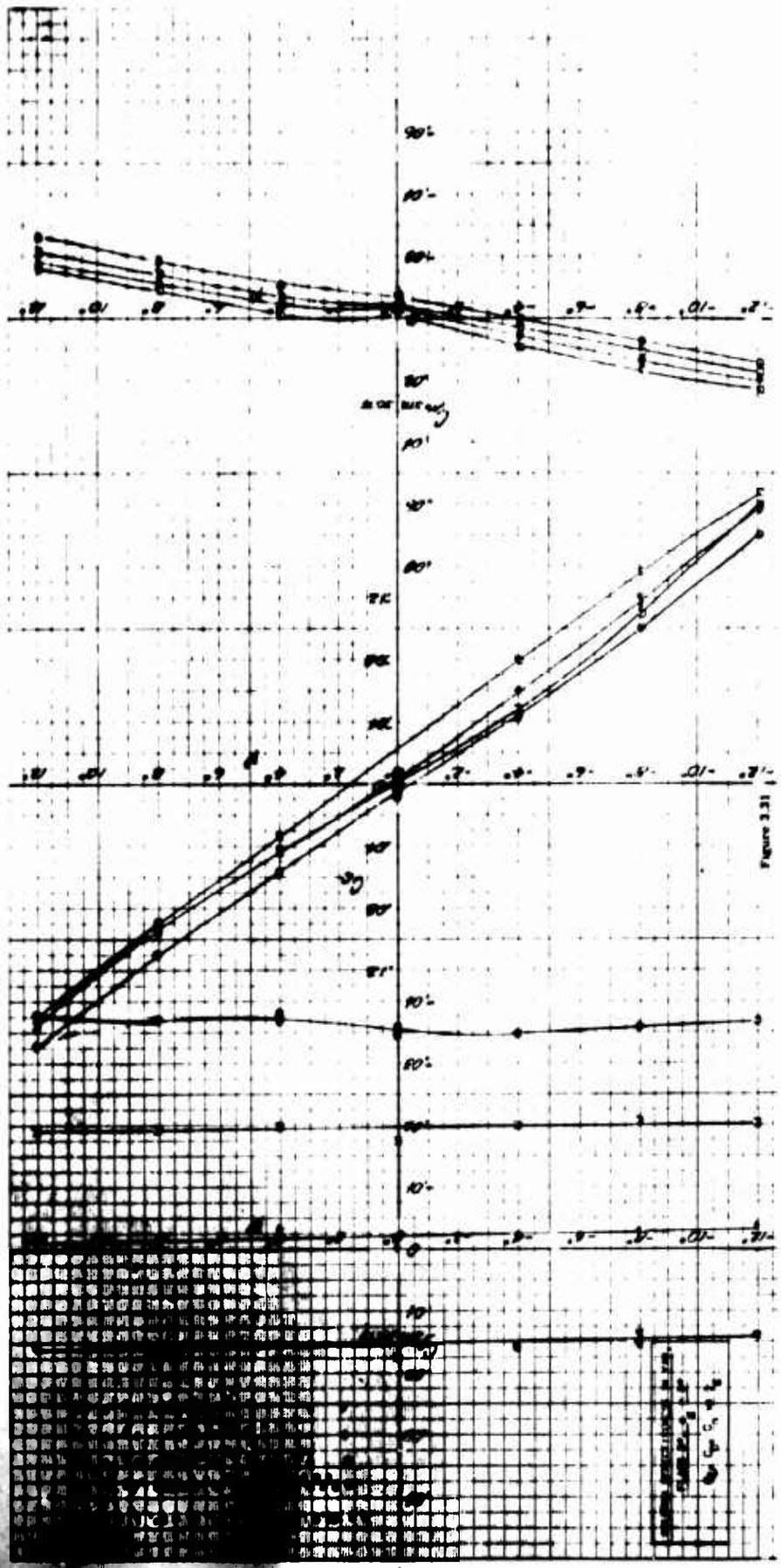


Figure 3.31

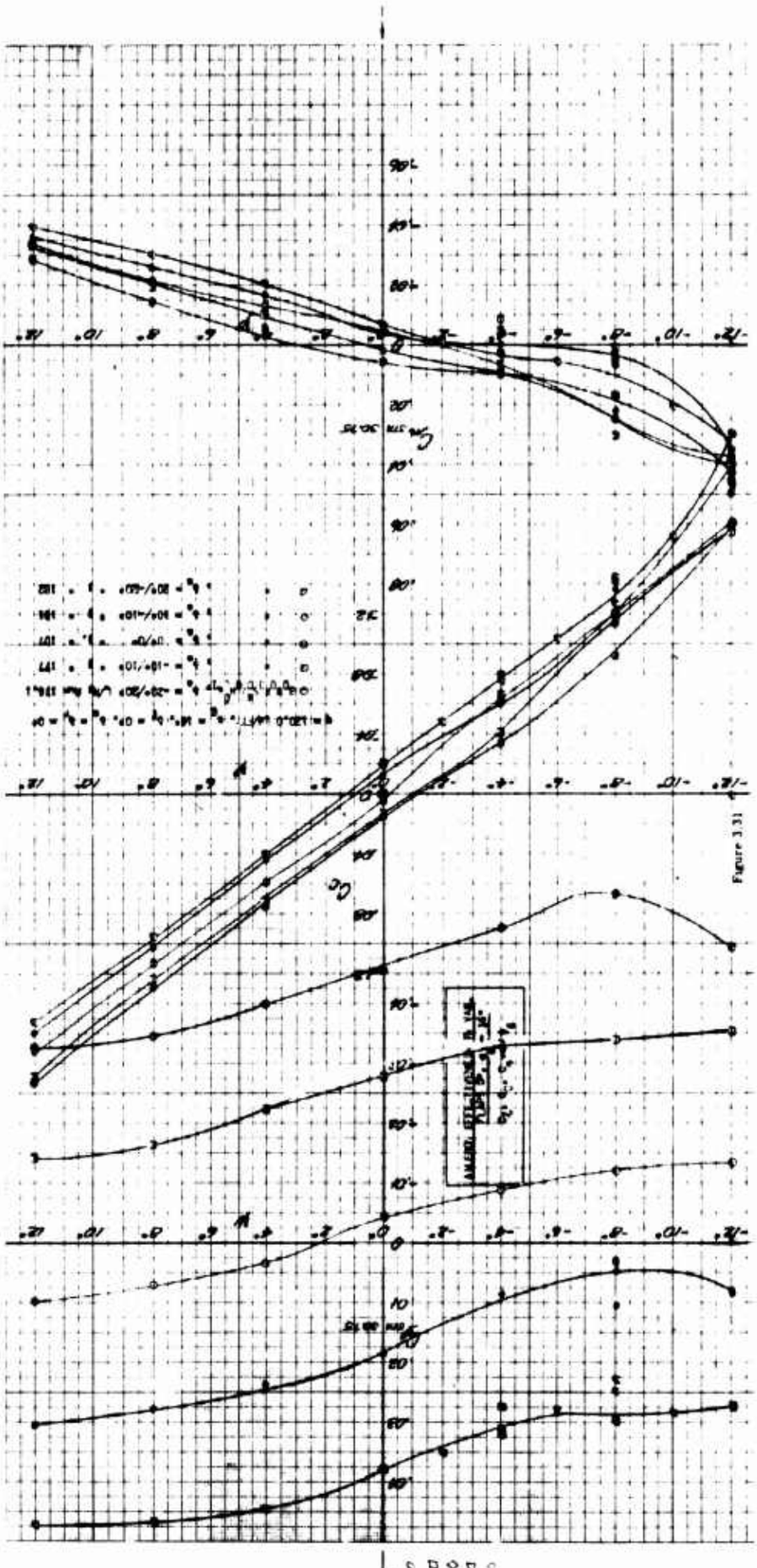


Figure 3.31

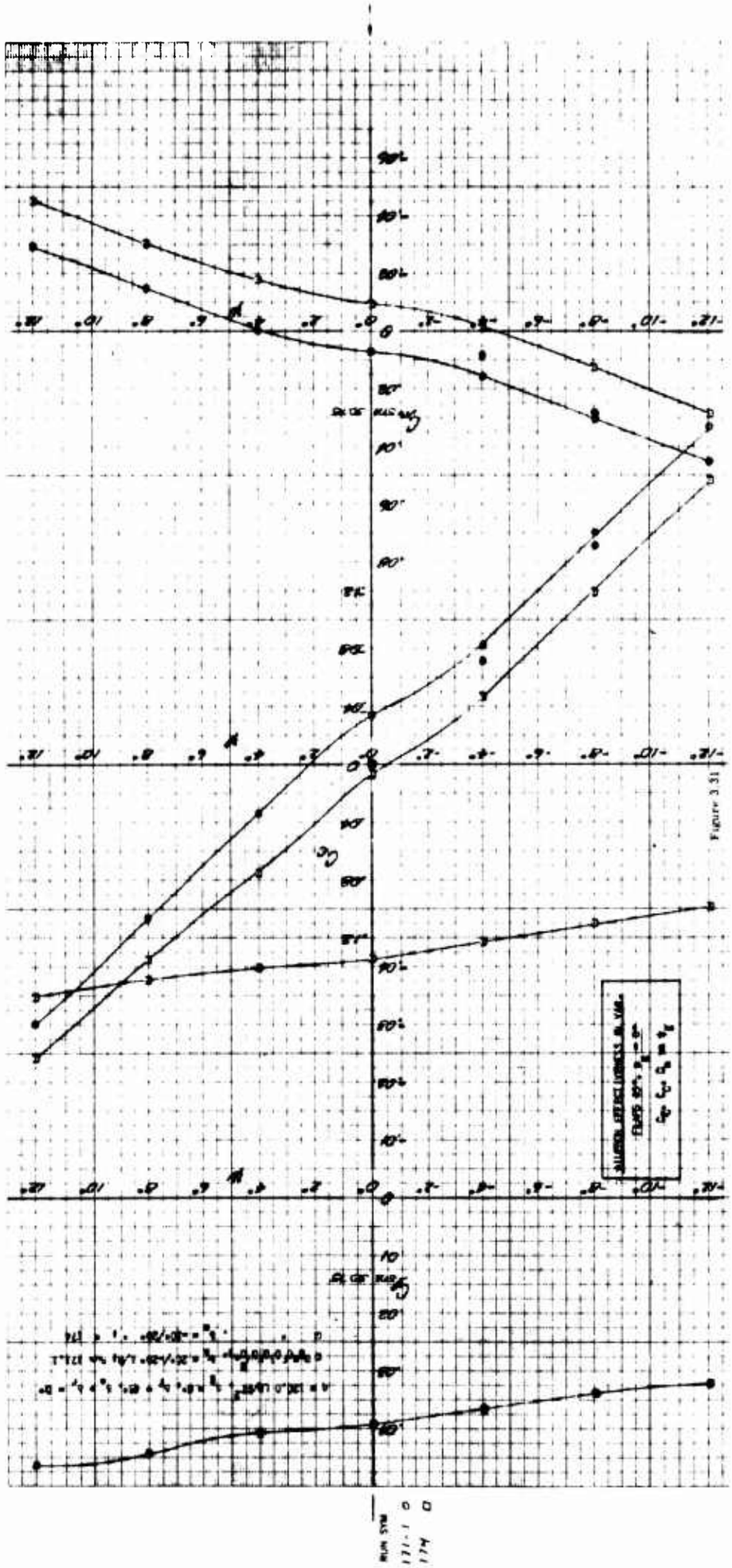


Figure 3.31

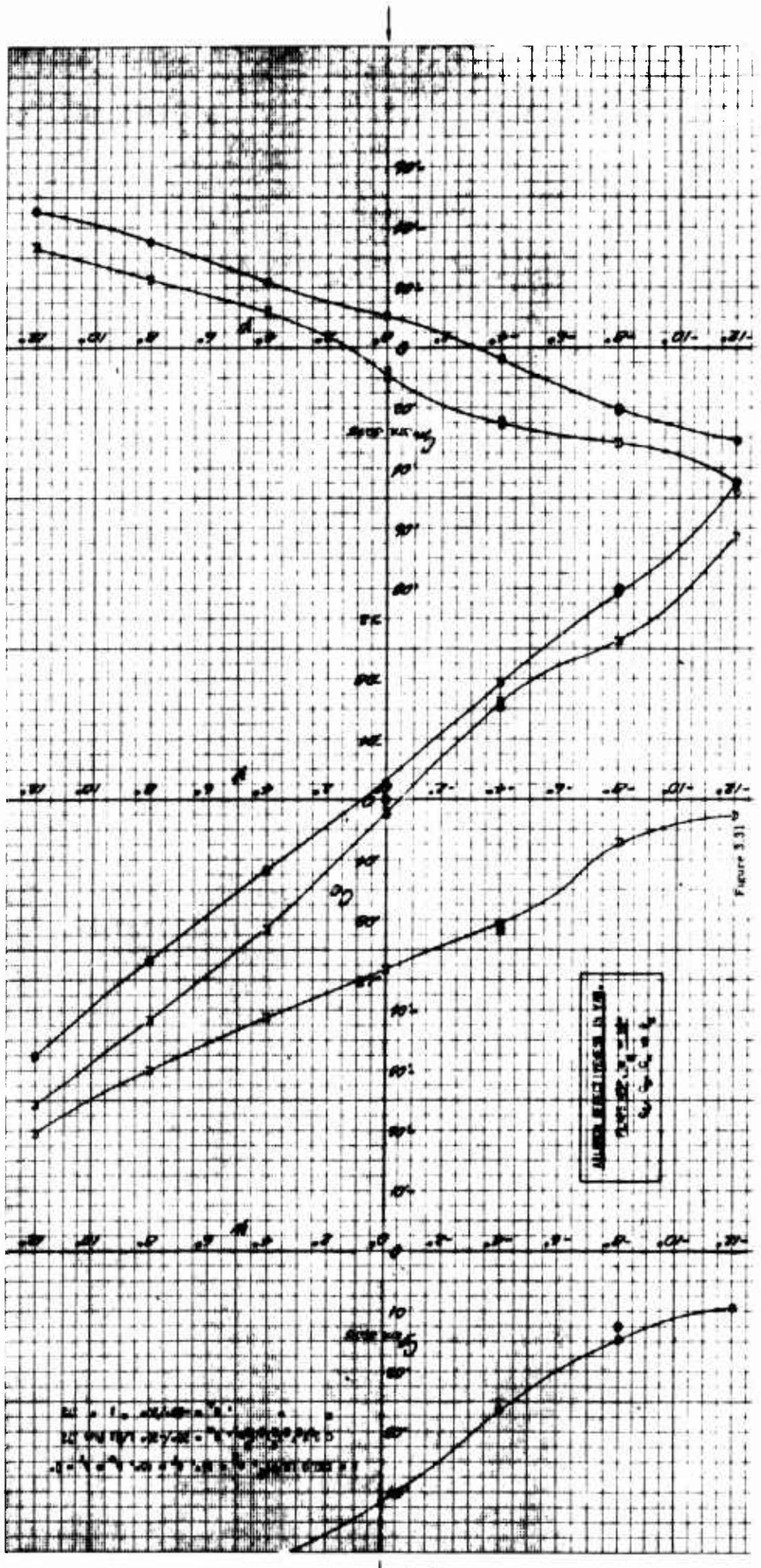
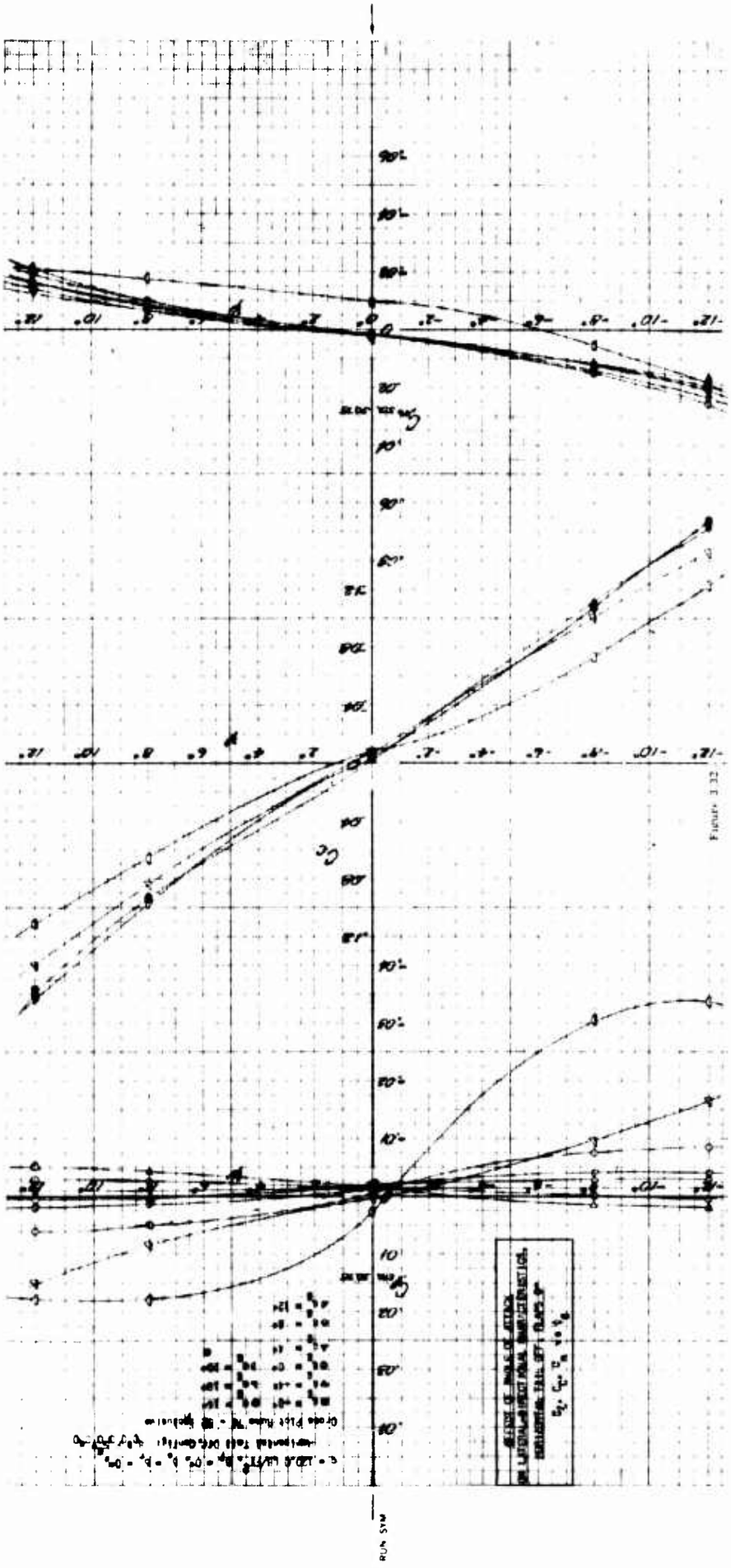


Figure 3.31



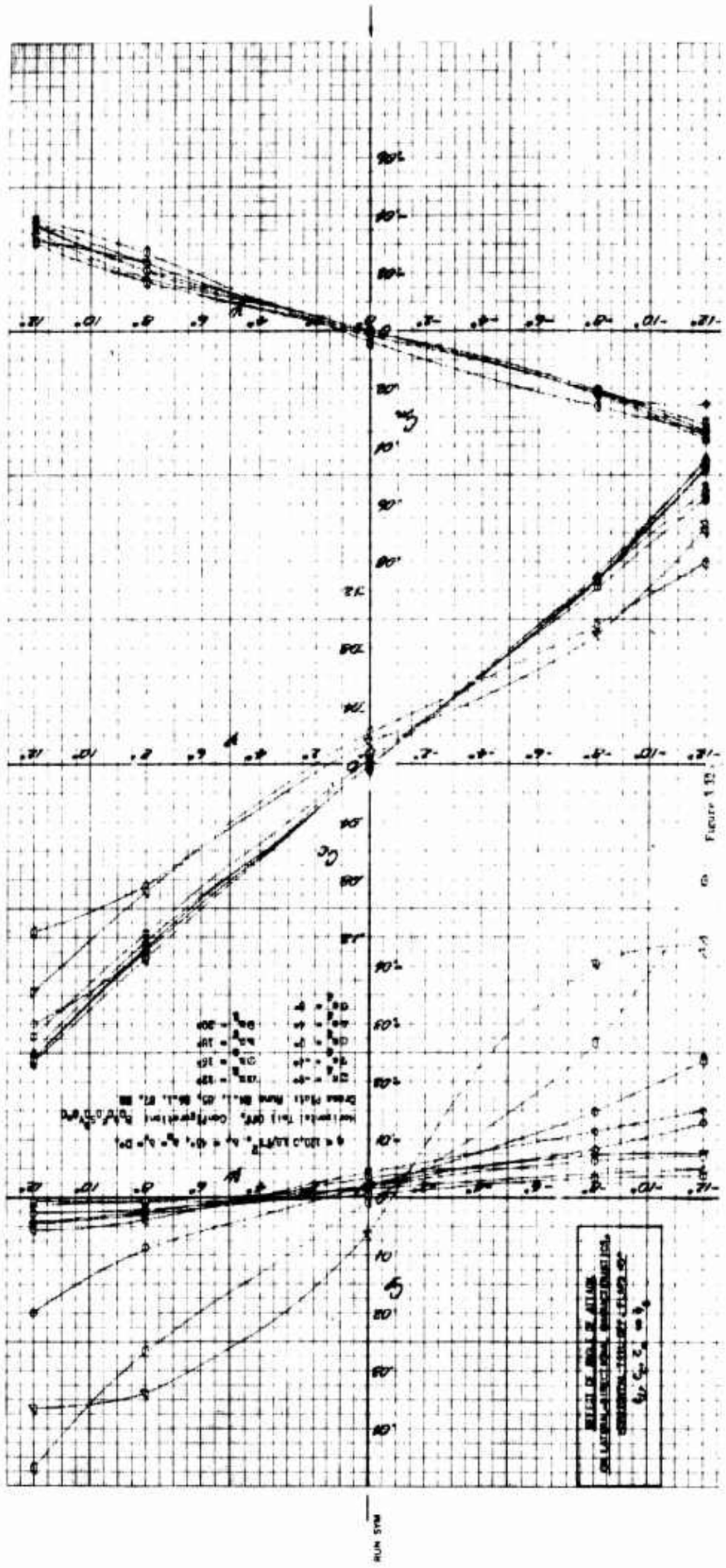


Figure 1.12

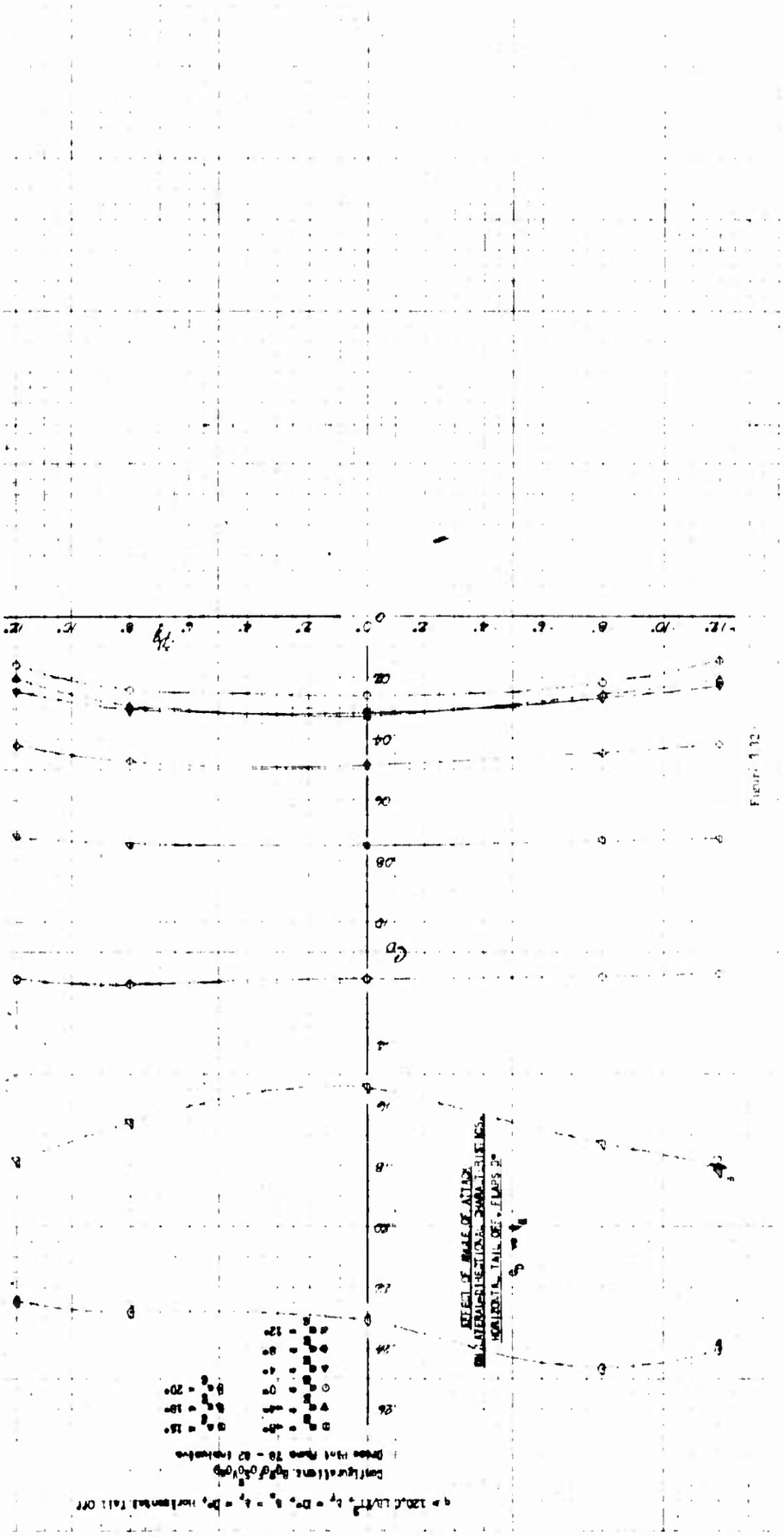


Figure 112

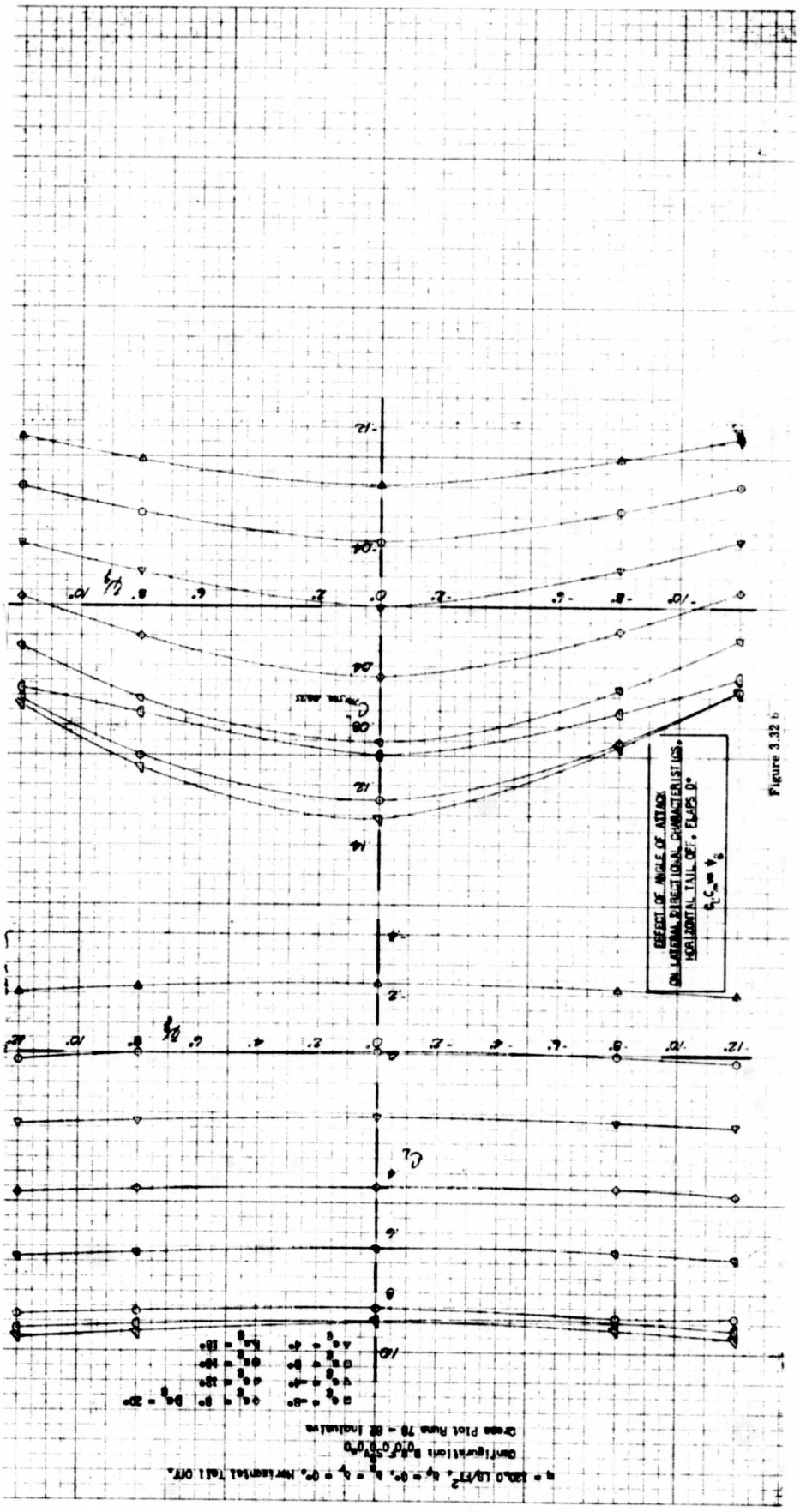

EFFECT OF ANGLE OF ATTACK
ON LATERAL DIRECTIONAL CHARACTERISTICS,
HORIZONTAL TAIL OFF, FLAPS 0°
$\eta_t C_{m_\alpha} = \eta_t$
RUN SYM

Figure 3.32 b

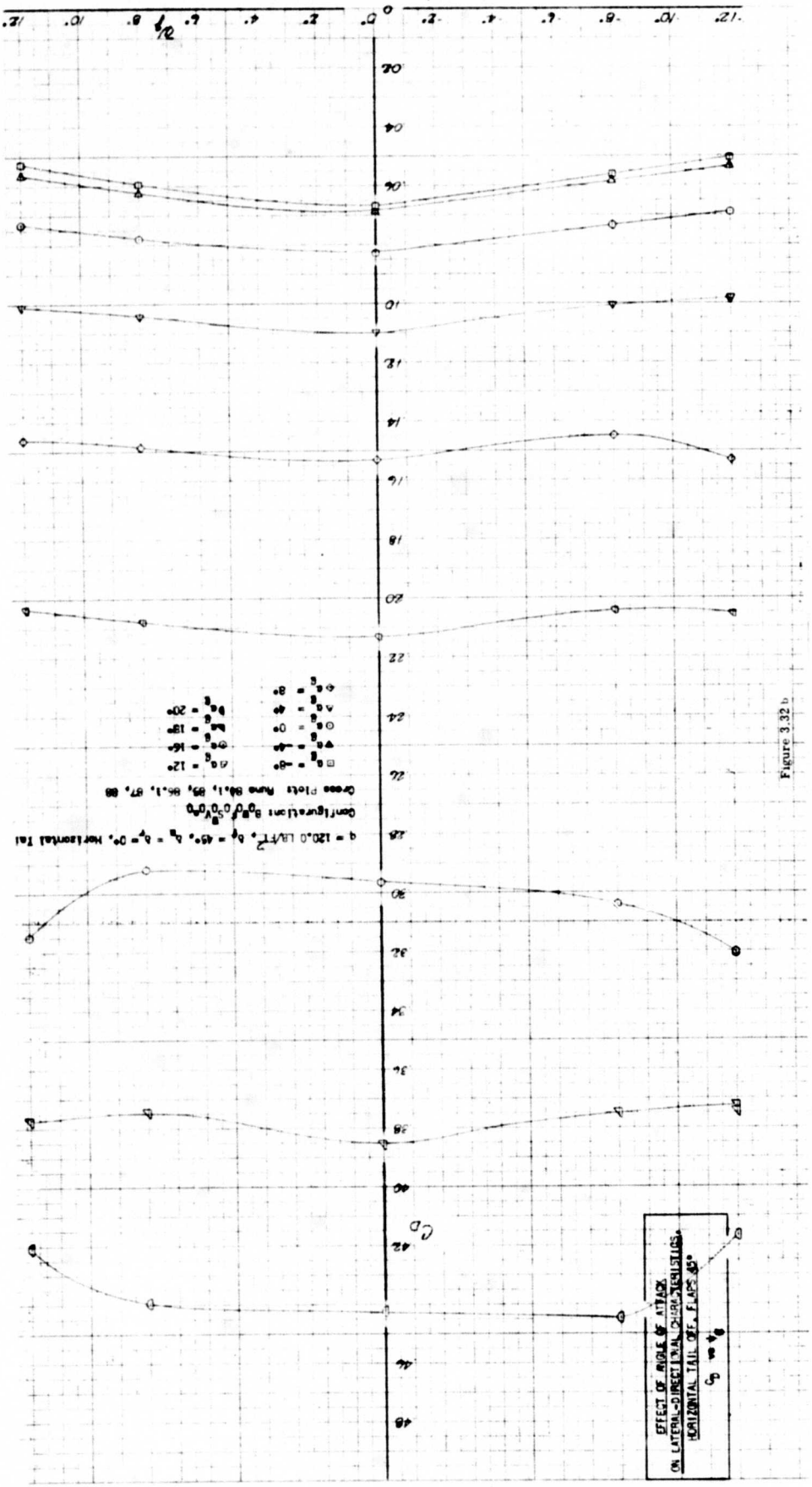

EFFECT OF ANGLE OF ATTACK
ON LATERAL-DIRECTIONAL CHARACTERISTICS
HORIZONTAL TAIL OFF, FLAPS 45°
C_D
RUN SYM

Figure 3.32 b

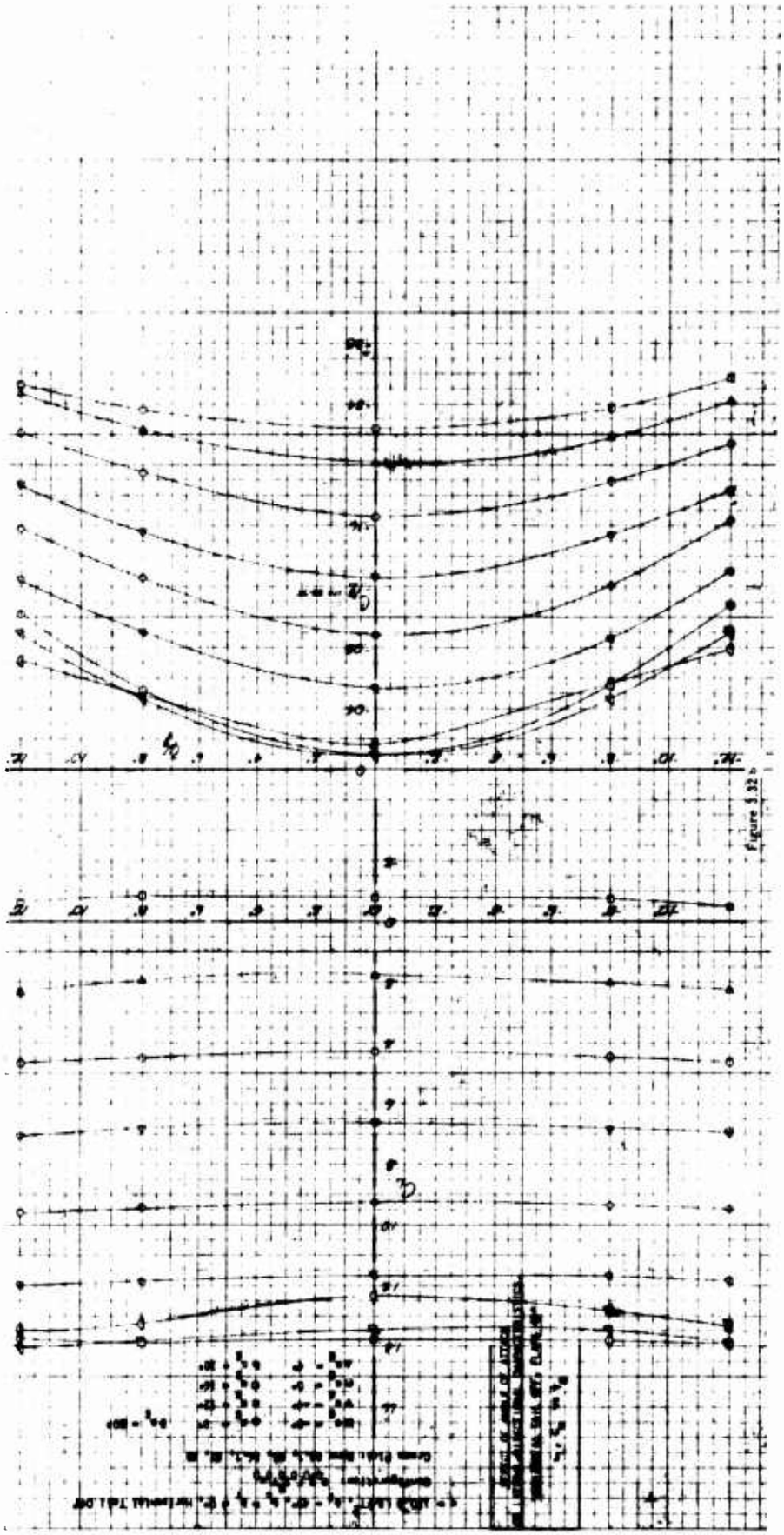


Figure 5.32b

TABLE 3.2
PHASE I TEST

TABULATED FORCE AND MOMENT COEFFICIENTS

STABILITY AXES

Runs 1 to 3, inclusive, were made with the Image System installed for tare determination. These runs are not presented here as tabulated coefficients.

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 4-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
4	6.01	8.13	.411	.0357	.049	.02-	.02-	.0008	.0012-	.000-
5	4.02	4.07	.171	.0204	.035	.02-	.02-	.0006	.0019-	.000-
6	.00-	.01-	.051-	.0188	.016	.02-	.02-	.0005	.0015-	.001-
7	4.01-	4.09-	.269-	.0251	.006-	.02-	.02-	.0007	.0011-	.002-
8	8.02-	8.18-	.521-	.0453	.027-	.01-	.01-	.0006	.0009-	.002-
9	12.00-	12.22-	.729-	.0745	.046-	.01-	.01-	.0002	.0005-	.001-
10	16.02-	16.31-	.944-	.1215	.052-	.01-	.01-	.0001-	.0001	.000-
12	18.00-	18.30-	.982-	.2010	.049-	.02-	.02-	.0007	.0014-	.005-
11	16.02-	16.31-	.940-	.1211	.062-	.01-	.01-	.0001-	.0008-	.001-
13	20.02-	20.31-	.933-	.2720	.035-	.02-	.02-	.0012	.0021	.005-
14	22.00-	22.25-	.819-	.3009	.003	.01-	.01-	.0050	.0010	.004-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE STAB | TEST 343-0 | DATE 7/06/62

MOMENT STAB | RUN 5-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.02-	8.15-	.418-	.0354	.048-	.01-	.01-	.0001-	.0007-	.000
3	4.02-	4.07-	.176-	.0202	.034-	.01-	.01-	.0002	.0007-	.000-
5	.01-	.00-	.051	.0166	.015-	.01-	.01-	.0002	.0007-	.000
7	4.00	4.08	.270	.0240	.007	.01-	.01-	.0002-	.0008-	.001
9	8.01	8.17	.512	.0443	.028	.02-	.02-	.0003-	.0011-	.002
10	12.00	12.23	.746	.0740	.046	.02-	.02-	.0001-	.0009-	.002
11	16.02	16.30	.892	.1410	.054	.02-	.02-	.0022	.0038	.005-
14	18.01	18.29	.917	.2251	.030	.02-	.02-	.0004-	.0022-	.003
15	20.00	20.26	.840	.2813	.016-	.02-	.02-	.0023-	.0019	.000-
16	22.02	22.26	.793	.3237	.030-	.02-	.02-	.0050-	.0004-	.007
18	24.02	24.25	.749	.3496	.029-	.02-	.02-	.0053-	.000	.004

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 6-0
DATE 7/06/62
q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	.00-	.01	.052	.0173	.018-	4.02-	4.02-	.0005-	.0006	.002
3	.00-	.01	.056	.0177	.018-	4.02-	4.02-	.0005-	.0006	.002
4	.00-	.01	.045	.0165	.015-	.00	.00-	.0009-	.0004-	.003
5	.00-	.01	.052	.0176	.017-	4.00	4.00	.0013-	.0019-	.003
6	.00-	.01	.051	.0216	.022-	8.02	8.02	.0000-	.0019-	.002-
7	.00-	.01	.057	.0233	.020-	12.03	12.03	.0001-	.0032-	.002-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 7-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.01	8.17	.513	.0457	.023	4.02-	4.02-	.0006	.0038-	.001
3	8.00	8.16	.511	.0444	.027	.03	.03	.0011-	.0009-	.004
4	8.01	8.17	.510	.0453	.025	4.01	4.01	.0022-	.0016	.003
5	8.01	8.16	.506	.0487	.020	8.01	8.01	.0010-	.0046	.001
6	8.01	8.17	.512	.0496	.020	8.01	8.01	.0010-	.0046	.001
7	8.01	8.16	.491	.0495	.019	12.01	12.01	.0018-	.0073	.003

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 8-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	16.01	16.29	.899	.1343	.059	4.02-	4.02-	.0037	.0071-	.005-
4	16.01	16.29	.905	.1368	.061	.02-	.02-	.0009	.0005	.001
5	16.01	16.29	.912	.1396	.057	4.00	4.00	.0011-	.0074	.000
6	16.01	16.29	.906	.1469	.051	8.01	8.01	.0017-	.0133	.004-
7	16.01	16.29	.903	.1437	.052	11.99	11.99	.0018-	.0151	.001-
9	16.01	16.28	.887	.1449	.049	12.00	12.00	.0039-	.0182	.001-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 9-0 | ℓ 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.00	8.00	.013	.0137	.053	.00	.00	.0004-	.0002	.004-
3	4.02	4.02	.003	.0145	.031	.00	.00	.0000-	.0005	.007-
4	.00	.00	.004-	.0139	.009	.00	.00	.0009-	.0004	.006-
5	4.00-	4.00-	.007-	.0143	.017-	.00	.00	.0011-	.0002	.002-
6	8.02-	8.02-	.017-	.0167	.041-	.00	.00	.0009-	.0004	.003-
7	12.02-	12.02-	.025-	.0192	.061-	.00	.00	.0011-	.0006	.008-
8	14.01-	14.02-	.034-	.0229	.068-	.00	.00	.0015-	.0006	.006-
9	8.01	8.01	.012	.0129	.052	.00	.00	.0005-	.0005	.005-

Runs 10 and 11 were made with the Image System installed for tare determination. These runs are not presented here as tabulated coefficients.

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 12-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.00-	8.00-	.013-	.0142	.051-	.00	.00-	.0017-	.0003	.000
15	4.00-	4.00-	.003-	.0159	.032-	.01	.01	.0010-	.0006	.000
17	4.00-	4.00-	.002-	.0155	.032-	.01	.01	.0011-	.0006	.000
4	4.02-	4.02-	.002-	.0157	.105-	.00	.00-	.0011-	.0003	.000
5	.01-	.01-	.003	.0152	.009-	.01	.01	.0011-	.0003	.000
6	4.00	4.00	.008	.0154	.016	.01	.01	.0010-	.0001	.000
7	8.00	8.00	.016	.0179	.039	.01	.01	.0011-	.0000	.000
8	12.00	12.00	.025	.0197	.056	.01	.01	.0007-	.0000	.001-
9	16.00	16.01	.034	.0214	.072	.01	.01	.0011-	.0001-	.002-
10	18.01	18.02	.040	.0241	.082	.01	.01	.0005-	.0002	.002-
11	20.00	20.01	.045	.0272	.089	.01	.01	.0005-	.0001	.000
12	22.00	22.01	.051	.0300	.095	.01	.01	.0006-	.0000	.000
14	24.01	24.02	.055	.0323	.102	.01	.01	.0007-	.0002	.001

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 13-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	.00-	.00-	.004	.0166	.010-	4.03-	4.03-	.0145-	.0008	.017-
5	.02-	.02-	.002	.0149	.008-	.00-	.00-	.0012-	.0002	.001
6	.00-	.00-	.003	.0165	.010-	4.01	4.01	.0129	.0003-	.016
7	.01-	.01-	.005	.0167	.013-	8.00	8.00	.0247	.0005-	.038
8	.01-	.01-	.008	.0186	.017-	12.03	12.03	.0332	.0014-	.076

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 14-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.01	8.01	.019	.0196	.038	4.02-	4.02-	.0104-	.0002	.023-
4	8.01	8.01	.017	.0166	.042	.01-	.01-	.0014-	.0002-	.000
5	8.01	8.01	.017	.0193	.037	4.01	4.01	.0099	.0002-	.022
6	8.01	8.01	.021	.0206	.032	8.00	8.00	.0195	.0001-	.050
7	8.01	8.01	.027	.0215	.024	12.00	12.00	.0290	.0006-	.085

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 15-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	16.01	16.02	.038	.0236	.070	4.02-	4.02-	.0079-	.0003	.032-
4	16.02	16.03	.036	.0225	.077	.00-	.00	.0018-	.0004-	.001-
9	16.03	16.04	.037	.0218	.077	.02-	.02-	.0004	.0004	.002-
5	16.02	16.03	.037	.0245	.071	4.00	4.00	.0074	.0002-	.029
6	16.02	16.03	.039	.0278	.064	8.00	8.00	.0141	.0001-	.047
7	16.02	16.03	.048	.0275	.057	12.00	12.00	.0187	.0016-	.114

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAd | RUN 16-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_l	C_C
6	8.00	8.15	.486	.0515	.106	.03-	.03-	.0003	.0020-	.008-
7	4.02	4.09	.243	.0299	.076	.03-	.03-	.0002	.0026-	.011-
8	.03	.03	.024	.0246	.037	.03-	.03-	.0004-	.0035-	.010-
10	4.01-	4.07-	.206-	.0316	.007-	.03-	.03-	.0007-	.0024-	.008-
12	8.00-	8.14-	.447-	.0453	.053-	.03-	.03-	.0006-	.0025-	.009-
13	12.00-	12.21-	.672-	.0716	.096-	.03-	.03-	.0007-	.0023-	.010-
15	14.00-	14.24-	.778-	.0931	.112-	.03-	.03-	.0006-	.0028-	.013-
6	8.00	8.10	.344	.0509	.125	.03-	.03-	.0003	.0020-	.008-
7	4.02	4.04	.087	.0296	.096	.03-	.03-	.0002	.0026-	.011-
8	.03	.01-	.132-	.0246	.057	.03-	.03-	.0004-	.0035-	.010-
10	4.01-	4.11-	.348-	.0319	.009	.03-	.03-	.0007-	.0024-	.008-
12	8.00-	8.18-	.573-	.0459	.039-	.03-	.03-	.0006-	.0025-	.009-
13	12.00-	12.24-	.796-	.0724	.084-	.03-	.03-	.0007-	.0023-	.010-
15	14.00-	14.27-	.888-	.0940	.102-	.03-	.03-	.0006-	.0028-	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 17-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
4	8.02	8.07	.185	.0470	.191	.02-	.02-	.0005-	.0024-	.006-
5	4.00	3.98	.074-	.0434	.169	.02-	.02-	.0003-	.0031-	.009-
6	.01	.09-	.320-	.0543	.135	.02-	.02-	.0002-	.0039-	.010-
7	4.00-	4.18-	.577-	.0803	.098	.02-	.02-	.0007-	.0034-	.011-
13	8.00-	8.26-	.840-	.1176	.054	.02-	.02-	.0009-	.0032-	.011-
11	12.01-	12.35-	1.086-	.1717	.021	.02-	.02-	.0008-	.0035-	.012-
12	14.01-	14.38-	1.187-	.2103	.005-	.02-	.02-	.0007-	.0018-	.011-
4	8.02	8.03	.038	.0468	.212	.02-	.02-	.0005-	.0024-	.006-
5	4.00	3.93	.230-	.0436	.190	.02-	.02-	.0003-	.0031-	.009-
6	.01	.14-	.476-	.0549	.155	.02-	.02-	.0002-	.0039-	.010-
7	4.00-	4.22-	.717-	.0812	.115	.02-	.02-	.0007-	.0034-	.011-
13	8.00-	8.30-	.974-	.1188	.069	.02-	.02-	.0009-	.0032-	.011-
11	12.01-	12.39-	1.214-	.1831	.035	.02-	.02-	.0008-	.0035-	.012-
12	14.01-	14.42-	1.317-	.2219	.009	.02-	.02-	.0007-	.0018-	.011-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 18-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.01	8.03	.073	.0637	.218	.02-	.02-	.0001	.0041-	.009-
4	4.02	3.97	.164-	.0667	.192	.02-	.02-	.0005	.0042-	.012-
5	.02	.10-	.400-	.0770	.157	.02-	.02-	.0002	.0040-	.013-
6	4.01-	4.21-	.638-	.1042	.116	.02-	.02-	.0005-	.0039-	.013-
7	8.01-	8.30-	.921-	.1471	.073	.02-	.02-	.0008-	.0029-	.010-
8	12.01-	12.37-	1.144-	.1956	.042	.02-	.02-	.0010-	.0044-	.011-
11	12.00-	12.36-	1.154-	.2008	.045	.02-	.02-	.0010-	.0051-	.012-
12	14.00-	14.39-	1.256-	.2475	.030	.02-	.02-	.0029-	.0049-	.012-
2	8.01	7.99	.077-	.0637	.239	.02-	.02-	.0001	.0041-	.009-
4	4.02	3.98	.320-	.0671	.213	.02-	.02-	.0005	.0042-	.012-
5	.02	.15-	.542-	.0776	.175	.02-	.02-	.0002	.0040-	.013-
6	4.01-	4.25-	.770-	.1051	.131	.02-	.02-	.0005-	.0039-	.013-
7	8.01-	8.33-	1.021-	.1480	.084	.02-	.02-	.0008-	.0029-	.010-
8	12.01-	12.39-	1.234-	.1968	.051	.02-	.02-	.0010-	.0044-	.011-
11	12.00-	12.39-	1.244-	.2018	.054	.02-	.02-	.0010-	.0051-	.012-
12	14.00-	14.42-	1.346-	.2486	.038	.02-	.02-	.0029-	.0049-	.012-

Runs 19 to 24, inclusive, were made with the Image System installed for tare determination. These runs are not presented here as tabulated coefficients.

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 25-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_c
2	8.02-	8.04-	.066-	.0635	.221-	.04-	.04-	.0022-	.0019-	.004
3	4.02-	3.97-	.173	.0649	.193-	.04-	.04-	.0013-	.0021-	.003
4	.00	.12	.409	.0781	.157-	.03-	.03-	.0003-	.0021-	.001-
5	4.01	4.21	.644	.1026	.115-	.04-	.04-	.0007-	.0021-	.002
7	8.02	8.31	.926	.1466	.078-	.04-	.04-	.0005-	.0029-	.003
8	12.00	12.36	1.154	.2027	.042-	.03-	.03-	.0004-	.0036-	.004
9	16.02	16.45	1.374	.3036	.011-	.04-	.04-	.0007	.0011-	.002-
10	20.01	20.40	1.263	.4594	.035-	.04-	.04-	.0040-	.0115-	.009
12	18.01	18.44	1.385	.3976	.018-	.04-	.04-	.0029-	.0160-	.017
13	22.02	22.41	1.238	.5035	.067-	.04-	.04-	.0092-	.0104	.013-
14	24.01	24.38	1.175	.5455	.066-	.03-	.03-	.0140-	.0206	.025-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 26-0 | q 120

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.00-	8.05-	.182-	.0466	.191-	.03-	.03-	.0017-	.0002-	.001-
4	4.01-	3.99-	.084	.0426	.171-	.03-	.03-	.0013-	.0008-	.001
5	.01-	.09	.325	.0541	.137-	.03-	.03-	.0005-	.0017-	.001
6	4.01	4.19	.577	.0788	.098-	.03-	.03-	.0003-	.0017-	.001
7	8.01	8.27	.830	.1175	.060-	.03-	.03-	.0005-	.0014-	.001
8	12.01	12.35	1.090	.1714	.024-	.03-	.03-	.0009-	.0028-	.002
9	16.00	16.39	1.259	.2466	.022	.03-	.03-	.0003-	.0029	.003-
10	20.01	20.37	1.174	.3915	.010-	.03-	.03-	.0074-	.0082-	.004-
11	18.01	18.40	1.267	.3095	.025	.04-	.04-	.0010	.0021	.004-
12	22.01	22.36	1.119	.4330	.043-	.04-	.04-	.0105-	.0092	.015-
13	24.01	24.35	1.079	.4711	.046-	.04-	.04-	.0105-	.0168	.021-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 27-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
2	8.03-	8.18-	.486-	.0520	.105-	.04-	.04-	.0015-	.0002	.001-
3	4.02-	4.09-	.248-	.0300	.075-	.04-	.04-	.0011-	.0001	.001-
4	.01-	.01-	.021-	.0235	.038-	.03-	.03-	.0011-	.0002-	.000-
5	4.00	4.06	.201	.0295	.006	.03-	.03-	.0014-	.0006-	.001
7	8.01	8.14	.440	.0454	.051	.03-	.03-	.0014-	.0007-	.001
8	12.01	12.22	.670	.0721	.096	.03-	.03-	.0010-	.0011-	.001
9	16.00	16.27	.861	.1196	.137	.03-	.03-	.0007-	.0029	.006-
10	16.02	16.30	.920	.1738	.137	.03-	.03-	.0003	.0040	.009-
11	20.03	20.31	.899	.2414	.092	.03-	.03-	.0061-	.0131	.020-
12	22.01	22.27	.839	.2935	.050	.03-	.03-	.0007-	.0119	.020-
15	24.00	24.25	.811	.3336	.045	.04-	.04-	.0015-	.0117	.017-
18	18.01	18.29	.908	.1726	.137	.04-	.04-	.0009	.0037	.011-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-6 | DATE 7/06/52

MOMENT AXES STAB | RUN 28-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	.01-	.01-	.010-	.0259	.039-	4.02-	4.02-	.0121-	.0032	.019-
3	.01-	.01-	.017-	.0242	.038-	.02-	.02-	.0012-	.0002-	.001
4	.01-	.01-	.016-	.0261	.041-	4.00	4.00	.0114	.0055-	.018
5	.01-	.01-	.013-	.0256	.044-	8.01	8.01	.0230	.0101-	.040
6	.01-	.01-	.006-	.0248	.047-	12.00	12.00	.0313	.0146-	.074

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/05/62

MOMENT AXES STAB | RUN 29-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.01	8.15	.445	.0479	.046	4.01-	4.01-	.0127-	.0020-	.016-
5	8.00	8.14	.446	.0457	.051	.00-	.00-	.0012-	.0009-	.002
6	8.01	8.15	.446	.0465	.046	4.00	4.00	.0125	.0013-	.019
7	8.00	8.14	.445	.0474	.036	8.00	8.00	.0242	.0020-	.041
8	8.00	8.14	.457	.0494	.025	12.03	12.03	.0316	.0038-	.075

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 30-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	16.03	16.30	.872	.1167	.127	4.01-	4.01-	.0093-	.0074-	.021-
4	15.02	16.28	.856	.1210	.134	.01	.01	.0004-	.0037	.004-
5	16.03	16.29	.857	.1280	.128	4.00	4.00	.0107	.0090	.015
6	16.03	16.30	.865	.1377	.111	8.01	8.01	.0231	.0117	.034
7	16.03	16.30	.870	.1440	.087	12.03	12.03	.0329	.0125	.062

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 31-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.02-	4.09-	.241-	.0300	.076-	.00	.00-	.0011-	.0000	.007
4	.01-	.01-	.018-	.0231	.039-	.00	.00-	.0009-	.0003	.002
5	4.00	4.06	.205	.0285	.005	.00	.00-	.0015-	.0001	.002
6	8.00	8.14	.447	.0450	.050	.00	.00-	.0012-	.0006-	.003
7	16.00	16.27	.856	.1215	.135	.00	.00	.0002-	.0005	.002-
9	20.02	20.29	.879	.2553	.084	.00	.00	.0061-	.0065	.027-
10	16.01	16.27	.856	.1243	.136	.00	.00	.0009-	.0001	.000-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 32-0 δ 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.01	4.08	.246	.0302	.075	.00	.00	.0011	.0000	.001
4	.01	.01	.018	.0234	.037	.00	.00	.0008	.0005	.001
5	4.01	4.07	.205	.0295	.006	.00	.00	.0011	.0007	.001
6	8.01	8.14	.442	.0456	.051	.00	.00	.0012	.0002	.001
7	16.01	16.28	.870	.1190	.136	.00	.00	.0005	.0036	.004
8	20.02	20.29	.888	.2517	.100	.00	.00	.0008	.0032	.017

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 33-0 | q 130.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	4.02-	4.09-	.246-	.0302	.075-	.00	.00-	.0011-	.0030	.001
3	.02-	.02-	.019-	.0235	.037-	.00	.00	.0010-	.0003-	.000-
4	4.00	4.06	.197	.0291	.005	.00	.00-	.0014-	.0007-	.002
5	8.01	8.14	.441	.0454	.050	.00	.00-	.0012-	.0009-	.002
6	16.01	16.27	.852	.1296	.135	.00	.00	.0001	.0018	.002-
7	20.02	20.29	.878	.2584	.089	.00	.00	.0071-	.0021	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 34-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	4.02-	4.09-	.252-	.0306	.077-	.01	.01	.0012-	.0006	.001
4	.02-	.02-	.021-	.0243	.038-	.01	.01	.0010-	.0004-	.001
5	4.01	4.07	.207	.0295	.005	.01	.01	.0012-	.0006-	.001
6	8.00	8.14	.446	.0456	.051	.01	.01	.0015-	.0009-	.002
7	16.00	16.26	.856	.1247	.135	.00	.00	.0007-	.0007-	.001-
9	20.02	20.30	.897	.2538	.091	.01	.01	.0060-	.0005	.024-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 343-0 — DATE 7/06/62

MOMENT AXES STAB — RUN 35-0 — ℓ 120.

Pt	α_ℓ	α	C_L	C_D	C_m	ψ_ℓ	ψ	C_n	C_ℓ	C_C
2	4.02-	4.09-	.249-	.0312	.076-	.01	.01	.0010-	.0004	.001
3	.02-	.02-	.020-	.0246	.038-	.01	.01	.0010-	.0002-	.001
5	4.00	4.06	.201	.0298	.006	.00	.00-	.0009-	.0006-	.001
6	8.01	8.15	.447	.0464	.052	.01	.01	.0012-	.0011-	.002
7	16.01	16.27	.843	.1284	.134	.01	.01	.0001	.0017	.003-
11	20.02	20.29	.878	.2603	.090	.01	.01	.0053-	.0032	.009-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 36-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.02-	4.09-	.247-	.0312	.077-	.01	.01	.0011-	.0000	.003
4	.02-	.02-	.022-	.0245	.038-	.01	.01	.0010-	.0006-	.000
5	4.02	4.08	.200	.0301	.006	.01	.01	.0013-	.0006-	.002
6	8.00	8.13	.437	.0458	.052	.01	.01	.0011-	.0011-	.003
7	16.00	16.26	.844	.1266	.134	.01	.01	.0001	.0022	.002-
10	20.01	20.27	.837	.2525	.092	.00	.00	.0085-	.0075-	.010-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 37-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.02-	4.09-	.236-	.0307	.076-	.01	.01	.0011-	.0017-	.000-
4	.00-	.00	.023-	.0242	.038-	.01	.01	.0012-	.0003-	.001-
5	4.00	4.06	.207	.0294	.007	.01	.01	.0011-	.0010-	.001
6	8.00	8.13	.441	.0455	.051	.01	.01	.0011-	.0013-	.002
7	16.01	16.27	.851	.1216	.134	.01	.01	.0002	.0030	.006-
8	20.03	20.30	.868	.2519	.087	.00	.00-	.0079-	.0108-	.002
9	.02-	.02-	.014-	.0242	.036-	.01	.01	.0006-	.0010-	.001-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 38-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	4.02-	4.03-	.053-	.0325	.127-	.01	.01	.0012-	.0022-	.000
3	.00	.05	.187	.0374	.097-	.01	.01	.0011-	.0002	.001-
4	4.00	4.13	.435	.0541	.056-	.01	.01	.0008-	.0012-	.001
5	8.00	8.21	.691	.0846	.018-	.01	.01	.0009-	.0010-	.001
6	12.00	12.29	.939	.1263	.021	.01	.01	.0005-	.0021-	.002
7	16.01	16.36	1.124	.1941	.063	.01	.01	.0000-	.0043	.008-
10	18.00	18.35	1.134	.2536	.065	.00	.00	.0027	.0105	.016-
11	20.00	20.33	1.064	.3398	.019	.01	.01	.0072-	.0027-	.005-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/08/62

MOMENT AXES STAB RUN 39-0 q 120.

Pt	α_ε	α	C_L	C_D	C_m	ψ_ε	ψ	C_n	C_ℓ	C_C
12	4.00-	3.96-	.145	.0586	.186-	.00	.00-	.0011-	.0012-	.001
13	.02-	.10	.383	.0710	.150-	.00	.00-	.0001-	.0016-	.001
14	4.01	4.20	.619	.0971	.111-	.00	.00-	.0002-	.0017-	.001
15	8.01	8.28	.873	.1377	.072-	.00	.00-	.0001-	.0035-	.002
16	12.00	12.35	1.125	.1916	.038-	.00	.00-	.0004	.0040-	.004
17	16.01	16.43	1.349	.2891	.005-	.00	.00	.0003	.0018	.006-
19	18.01	18.43	1.336	.3576	.007-	.00	.00	.0009-	.0208	.029-
20	20.02	20.40	1.237	.4362	.047-	.00	.00	.0041-	.0035-	.022-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 40-1 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	4.02-	3.97-	.185	.0705	.198-	.00	.00-	.0013-	.0004-	.000
3	.02-	.11	.426	.0843	.159-	.00	.00-	.0006-	.0013-	.001
4	4.02	4.22	.662	.1103	.118-	.00	.00-	.0003-	.0013-	.000
5	8.00	8.29	.933	.1550	.083-	.00	.00-	.0003-	.0029-	.002
6	12.00	12.37	1.179	.2157	.049-	.00	.00-	.0000-	.0036-	.003
7	16.00	16.43	1.391	.3105	.014-	.00	.00-	.0013	.0031-	.000
8	18.00	18.44	1.399	.4234	.026-	.00	.00	.0002	.0042-	.002-
9	20.04	20.44	1.277	.5751	.046-	.00	.00	.0011	.0003	.032-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 41-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	4.03-	4.10-	.252-	.0316	.075-	.00	.00-	.0013-	.0008-	.001
3	.00-	.00	.020-	.0243	.036-	.00	.00-	.0011-	.0006-	.000
4	4.02	4.08	.195	.0293	.007	.00	.00-	.0014-	.0006-	.001
5	8.00	8.13	.439	.0458	.052	.00	.00-	.0011-	.0009-	.002
6	12.01	12.22	.667	.0725	.096	.00	.00-	.0005-	.0011-	.001
7	16.01	16.28	.879	.1187	.136	.00	.00	.0005-	.0003	.002-
8	18.00	18.29	.927	.1748	.138	.00	.00	.0007	.0044	.012-
9	20.01	20.28	.885	.2524	.101	.00	.00-	.0062-	.0101-	.005

Runs 42 to 44, inclusive, no force and moment data were recorded.

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 45-0 | δ 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	4.00-	4.07-	.252-	.0327	.078-	.01-	.01-	.0000-	.0002-	.000
4	.00-	.00	.021-	.0261	.042-	.01-	.01-	.0002	.0011-	.000
5	4.03	4.09	.204	.0322	.000-	.01-	.01-	.0000-	.0010-	.001
7	8.00	8.13	.442	.0475	.042	.01-	.01-	.0004-	.0007-	.000
9	16.02	16.28	.852	.1246	.121	.01-	.01-	.0002	.0039	.006-
10	18.02	18.30	.908	.1767	.123	.01-	.01-	.0010	.0043	.008-
11	20.02	20.28	.849	.2576	.070	.01-	.01-	.0089-	.0010-	.004

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-0
RUN 46-0
DATE 7/06/62
q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	4.03-	4.10-	.251-	.0311	.076-	.02-	.02-	.0003-	.0017	.000-
4	.00-	.00	.022-	.0242	.040-	.01-	.01-	.0001-	.0009-	.000-
5	4.00	4.06	.205	.0296	.004	.01-	.01-	.0002-	.0011-	.001
6	8.02	8.16	.445	.0459	.047	.01-	.01-	.0002-	.0010-	.001
7	16.00	16.27	.862	.1277	.128	.01-	.01-	.0002	.0045	.006-
8	18.01	18.29	.908	.1778	.127	.01-	.01-	.0006	.0048	.010-
9	20.01	20.27	.854	.2533	.077	.01-	.01-	.0035-	.0003-	.014-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 47-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	4.02-	4.09-	.253-	.0293	.075-	.02-	.02-	.0004-	.0000-	.001
3	.00	.00	.021-	.0229	.038-	.03-	.03-	.0003-	.0006-	.001-
4	4.03	4.09	.208	.0296	.006	.02-	.02-	.0005-	.0010-	.001
6	7.99	8.13	.448	.0450	.049	.02-	.02-	.0006-	.0010-	.001
7	16.01	16.28	.858	.1258	.130	.02-	.02-	.0002	.0043	.005-
8	18.02	18.30	.906	.1782	.128	.02-	.02-	.0003	.0045	.009-
9	20.02	20.25	.855	.2534	.080	.02-	.02-	.0084-	.0018	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 48-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
99	4.02-	4.09-	.242-	.0302	.076-	.02-	.02-	.0005-	.0005	.002
48	4.01	4.07	.210	.0293	.005	.02-	.02-	.0000-	.0000-	.003
50	.00-	.00	.016-	.0232	.037-	.02-	.02-	.0003-	.0005-	.001
3	4.02	4.08	.209	.0287	.006	.01-	.01-	.0005-	.0008-	.000-
4	4.02	4.08	.206	.0287	.006	.01-	.01-	.0008-	.0007-	.002
55	8.02	8.15	.443	.0450	.050	.02-	.02-	.0003-	.0010-	.002
4	16.00	16.27	.860	.1210	.132	.01-	.01-	.0003-	.0003	.000-
5	18.00	18.28	.909	.1751	.131	.01-	.01-	.0013	.0042	.009-
54	20.02	20.29	.880	.2574	.049	.01-	.01-	.0046-	.0000-	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 49-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	.01	.01	.011-	.0249	.040-	4.02-	4.02-	.0110-	.0040	.021-
53	.01	.01	.016-	.0234	.039-	.01-	.01-	.0004-	.0003-	.001
2	.01	.01	.015-	.0242	.039-	4.02	4.02	.0120	.0057-	.017
51	.01	.01	.017-	.0245	.045-	8.01	8.01	.0226	.0105-	.041
1	.01	.01	.005-	.0239	.048-	12.01	12.01	.0320	.0151-	.074
2	.02	.02	.004	.0243	.053-	16.00	16.00	.0390	.0208-	.113
53	.02	.02	.010	.0220	.058-	20.02	20.02	.0446	.0259-	.164

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 50-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.01	8.14	.444	.0470	.031	10.01-	10.01-	.0248-	.0006	.060-
4	8.01	8.14	.443	.0472	.036	8.02-	8.02-	.0235-	.0000-	.040-
5	8.01	8.15	.449	.0468	.041	6.01-	6.01-	.0186-	.0005	.028-
6	8.01	8.15	.447	.0450	.045	4.02-	4.02-	.0131-	.0001	.019-
7	8.01	8.14	.443	.0450	.048	2.01-	2.01-	.0071-	.0004	.009-
8	8.00	8.14	.450	.0455	.051	.00-	.00	.0009-	.0001	.001-
9	8.01	8.14	.442	.0463	.050	2.00	2.00	.0060	.0004-	.009
10	8.01	8.15	.452	.0462	.047	4.00	4.00	.0130	.0011-	.018
11	8.01	8.15	.448	.0470	.041	6.01	6.01	.0186	.0018-	.029
12	8.01	8.15	.452	.0473	.036	8.02	8.02	.0240	.0019-	.040
13	8.00	8.14	.450	.0481	.031	10.00	10.00	.0276	.0028-	.056
14	8.01	8.15	.458	.0481	.025	12.01	12.01	.0306	.0041-	.076
15	8.01	8.15	.457	.0470	.017	16.01	16.01	.0294	.0062-	.119
16	8.01	8.14	.442	.0435	.011	20.03	20.03	.0395	.0092-	.171

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 51-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
4	16.02	16.33	.990	.1394	.118	10.02-	10.02-	.0227-	.0100-	.074-
5	16.02	16.29	.873	.1180	.115	8.01-	8.01-	.0193-	.0093-	.046-
6	16.02	16.30	.893	.1193	.125	6.01-	6.01-	.0153-	.0082-	.034-
7	16.02	16.29	.877	.1139	.130	4.02-	4.02-	.0097-	.0066-	.021-
19	16.02	16.28	.856	.1209	.128	4.04-	4.04-	.0068-	.0035-	.025-
18	16.02	16.28	.854	.1213	.130	3.02-	3.02-	.0055-	.0018-	.019-
8	16.02	16.28	.847	.1256	.130	2.01-	2.01-	.0050-	.0013	.016-
9	16.02	16.28	.847	.1269	.131	.00-	.00	.0001-	.0045	.006-
20	16.02	16.29	.829	.1260	.132	.01-	.01-	.0002-	.0046	.005-
10	16.02	16.28	.848	.1255	.130	2.01	2.01	.0056	.0078	.004
11	16.02	16.28	.853	.1272	.127	4.03	4.03	.0109	.0100	.014
12	16.02	16.29	.854	.1306	.120	6.00	6.00	.0162	.0111	.025
13	16.02	16.29	.857	.1353	.109	8.01	8.01	.0218	.0119	.035
14	16.02	16.29	.861	.1368	.099	10.00	10.00	.0266	.0122	.048
15	16.02	16.29	.866	.1427	.085	12.01	12.01	.0313	.0125	.059
16	16.02	16.29	.868	.1491	.066	16.03	16.03	.0367	.0115	.098
17	16.02	16.28	.845	.1313	.055	20.00	20.00	.0403	.0121	.143

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 52-0
DATE 7/05/62
q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.01-	8.15-	.476-	.0570	.106-	.01-	.01-	.0078-	.0006	.008
4	4.02-	4.09-	.240-	.0306	.076-	.01-	.01-	.0001-	.0001	.001
5	2.02-	2.05-	.123-	.0263	.058-	.02-	.02-	.0002	.0005-	.001
6	.00-	.00	.012-	.0241	.039-	.01-	.01-	.0003-	.0002-	.001
8	4.02	4.08	.208	.0297	.006	.01-	.01-	.0004-	.0004-	.001
9	8.02	8.16	.449	.0463	.051	.01-	.01-	.0004-	.0002-	.002
11	12.01	12.22	.679	.0726	.096	.01-	.01-	.0001-	.0005-	.001
12	16.02	16.28	.856	.1257	.133	.01-	.01-	.0000	.0046	.003-
13	18.02	18.30	.904	.1761	.132	.01-	.01-	.0006	.0043	.008-
14	20.02	20.29	.858	.2578	.088	.01-	.01-	.0164-	.0016	.011

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 53-0
DATE 7/06/62
q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
4	8.02-	8.16-	.463-	.0504	.109-	.01-	.01-	.0002-	.0001	.000
6	4.02-	4.09-	.226-	.0299	.077-	.01-	.01-	.0001	.0004-	.000
7	.01-	.01-	.002-	.0239	.041-	.01-	.01-	.0003	.0008-	.001-
8	4.01	4.07	.218	.0297	.004	.01-	.01-	.0002	.0006-	.001
9	8.00	8.14	.449	.0463	.048	.01-	.01-	.0000	.0007-	.001
10	12.00	12.21	.668	.0721	.092	.01-	.01-	.0001	.0011-	.001
11	16.01	16.27	.854	.1253	.129	.01-	.01-	.0004	.0032	.001-
12	18.01	18.29	.916	.1731	.133	.01-	.01-	.0012	.0037	.009-
13	20.03	20.29	.854	.2525	.089	.01-	.01-	.0133-	.0010	.000

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 363-0 DATE 7/06/62

MOMENT AXES STAB RUN 54-0 R 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
23	8.01-	8.15-	.462-	.0510	.107-	.01-	.01-	.0006-	.0003	.000-
25	4.02-	4.09-	.232-	.0314	.078-	.01-	.01-	.0000	.0004	.000-
27	.01	.01	.004-	.0255	.042-	.01-	.01-	.0000	.0001	.000-
29	4.01	4.07	.214	.0310	.003	.01-	.01-	.0001-	.0001	.000-
31	8.03	8.17	.450	.0477	.049	.01-	.01-	.0005-	.0012-	.000-
35	12.01	12.21	.666	.0739	.092	.01-	.01-	.0001-	.0006-	.000
37	16.01	16.28	.873	.1211	.131	.01-	.01-	.0007-	.0006-	.000-
39	18.01	18.29	.913	.1573	.140	.01-	.01-	.0001	.0012-	.000-
41	20.01	20.29	.900	.2465	.096	.01-	.01-	.0159-	.0054-	.011

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-0 DATE 7/06/62
RUN 33-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	.01	.10	.309	.0515	.131-	4.02-	4.02-	.0033-	.0037	.029-
4	.01	.10	.304	.0520	.126-	.00-	.00	.0004	.0001-	.000-
5	.01	.10	.315	.0518	.136-	4.02	4.02	.0100	.0047-	.022
6	.01	.10	.315	.0517	.138-	8.02	8.02	.0200	.0092-	.052
7	.01	.11	.324	.0525	.146-	12.00	12.00	.0278	.0131-	.069

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

POINT AXES	STAB							TEST	343-0	DATE 7/06/62
MOMENT AXES	STAB							RUN	56-0	q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.02	8.27	.807	.1132	.060-	4.02-	4.02-	.0097-	.0018-	.025-
3	8.02	8.27	.907	.1114	.093-	.00-	.00-	.0003	.0020-	.002
4	8.02	8.27	.809	.1121	.059-	4.00	4.00	.0112	.0020-	.026
5	8.02	8.27	.809	.1124	.070-	8.02	8.02	.0207	.0030-	.053
7	8.02	8.27	.917	.1144	.082-	12.01	12.01	.0272	.0040-	.092

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/05/62

MOMENT AXES STAB RUN 57-0 ℓ 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	16.03	16.42	1.255	.2375	.023	4.01-	4.01-	.0033-	.0059-	.029-
3	16.03	16.42	1.254	.2368	.029	.02-	.02-	.0003-	.0014-	.000-
4	16.03	16.42	1.244	.2353	.025	4.02	4.02	.0042	.0038	.026
5	16.03	16.42	1.230	.2407	.010	8.00	8.00	.0167	.0082	.055
6	16.03	16.42	1.258	.2645	.024-	12.01	12.01	.0230	.0148	.075

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 55-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	.03-	.10	.436	.0818	.168-	4.02-	4.02-	.0087-	.0010	.024-
4	.03-	.10	.428	.0811	.162-	.03-	.03-	.0004-	.0010-	.003
5	.03-	.10	.437	.0823	.168-	4.02	4.02	.0091	.0053-	.029
6	.03-	.11	.446	.0819	.177-	8.02	8.02	.0178	.0079-	.059
7	.03-	.11	.456	.0840	.191-	12.00	12.00	.0238	.0112-	.100

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 59-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	8.01	8.30	.933	.1354	.093-	4.02-	4.02-	.0090-	.0035-	.024-
8	8.01	8.30	.935	.1545	.087-	.02-	.02-	.0000	.0023-	.004
9	8.01	8.30	.935	.1349	.094-	4.00	4.00	.0097	.0015-	.029
10	8.01	8.30	.939	.1363	.104-	8.00	8.00	.0182	.0014-	.060
12	8.01	8.30	.939	.1550	.113-	12.01	12.01	.0240	.0013-	.096

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 60-0
DATE 7/06/62
q 140.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	16.01	16.44	1.382	.3018	.016-	4.01-	4.01-	.0073-	.0069-	.022-
3	16.01	16.44	1.388	.2993	.009-	.00-	.00-	.0006-	.0023-	.001
4	16.01	16.44	1.361	.2985	.013-	4.00	4.00	.0075	.0045	.028
5	16.01	16.44	1.334	.3046	.030-	8.01	8.01	.0171	.0102	.054
7	16.01	16.43	1.349	.3313	.060-	12.02	12.02	.0307	.0260	.063

LOW SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB RUN 343-0 DATE 8/17/62

MOMENT AXES STAB RUN 61-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	.00-	.00	.004-	.0255	.042-	4.02-	4.02-	.0100-	.0047	.019-
3	.00-	.00	.006-	.0235	.039-	.01-	.01-	.0001	.0001-	.002
4	.00-	.00	.006-	.0239	.039-	.01-	.01-	.0002	.0001-	.002
5	.00-	.00	.009-	.0255	.042-	4.01	4.01	.0126	.0051-	.018
6	.00-	.00	.003	.0251	.045-	8.00	8.00	.0227	.0097-	.042
7	.00-	.00	.006	.0260	.050-	12.00	12.00	.0299	.0148-	.076

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 8/17/62

MOMENT AXES STAB RUN 62-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
2	8.00	8.14	.452	.0483	.043	4.03-	4.03-	.0118-	.0005-	.018-
3	8.01	8.15	.452	.0465	.048	.02-	.02-	.0003-	.0001-	.002
6	8.02	8.16	.453	.0476	.045	4.02	4.02	.0133	.0008-	.019
7	8.02	8.16	.454	.0506	.034	8.01	8.01	.0217	.0026-	.043
8	8.02	8.16	.458	.0511	.023	12.02	12.02	.0284	.0044-	.077

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 63-0
DATE 8/17/62
q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	16.02	16.29	.871	.1243	.128	4.01-	4.01-	.0085-	.0054-	.023-
3	16.02	16.29	.865	.1223	.133	.00-	.00-	.0001	.0003-	.000
4	16.02	16.28	.856	.1199	.128	4.02	4.02	.0102	.0051	.020
5	16.02	16.29	.862	.1256	.114	8.02	8.02	.0211	.0084	.042
6	16.02	16.29	.870	.1325	.090	12.01	12.01	.0301	.0096	.067

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB RUN 3434-0 DATE 7/05/62

MOMENT AXES STAB CONF 64-2 q 170.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
22	.00-	.00	.001-	.0217	.060-	8.02-	8.02-	.0119	.0019-	.102-
23	.00-	.00	.007-	.0237	.053-	6.02-	6.02-	.0089	.0008-	.077-
24	.00-	.00	.006-	.0257	.047-	4.01-	4.01-	.0043	.0007-	.043-
26	.00-	.00	.007-	.0269	.046-	2.00-	2.00-	.0016	.0007-	.013-
27	.00-	.00	.013-	.0265	.044-	.01-	.01-	.0003-	.0012-	.000-
29	.00-	.00	.022-	.0266	.047-	2.00	2.00	.0017-	.0017-	.023
30	.00-	.00	.013-	.0270	.050-	4.01	4.01	.0036-	.0027-	.047
31	.00-	.00	.011-	.0286	.053-	6.01	6.01	.0079-	.0030-	.080
32	.00-	.00	.005-	.0330	.064-	8.02	8.02	.0132-	.0036-	.094
34	.00-	.00	.008	.0206	.072-	10.02	10.04	.0114-	.0041-	.124
35	.00-	.00	.013	.0152	.062-	12.01	12.01	.0146-	.0049-	.152

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — RUN 343-0 — DATE 7/06/62

MOMENT AXES STAB — TUNN 66-0 — q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
2	15.01	16.25	.860	.1177	.092	8.02-	8.02-	.0158	.0092-	.103-
3	16.02	16.27	.868	.1180	.105	6.01-	6.01-	.0139	.0072-	.075-
15	16.02	16.27	.865	.1220	.103	6.02-	6.02-	.0107	.0065-	.073-
4	15.02	16.27	.865	.1179	.118	4.02-	4.02-	.0079	.0050-	.047-
16	16.02	16.27	.861	.1277	.116	4.01-	4.01-	.0073	.0060-	.049-
5	16.02	16.26	.851	.1250	.127	2.02-	2.02-	.0052	.0001	.024-
17	16.02	16.29	.847	.1309	.124	2.01-	2.01-	.0043	.0005-	.027-
6	16.01	16.27	.846	.1276	.128	.02-	.02-	.0011	.0027	.003-
7	16.02	16.25	.843	.1291	.126	2.00	2.00	.0022-	.0049	.021
8	16.02	16.28	.843	.1281	.118	4.01	4.01	.0046-	.0066	.043
9	16.02	16.28	.841	.1296	.107	6.01	6.01	.0063-	.0070	.063
10	16.02	16.28	.950	.1306	.090	8.02	8.02	.0104-	.0084	.094
12	16.02	16.29	.851	.1337	.069	10.00	10.00	.0145-	.0087	.122
14	16.02	16.29	.846	.1371	.049	12.01	12.01	.0208-	.0079	.154

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
BOOM AXES STAB | RUN 65-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.01	8.15	.432	.0447	.017	6.02-	6.02-	.0114	.0041-	.101-
3	8.01	8.15	.443	.0470	.027	6.01-	6.01-	.0059	.0025-	.076-
4	8.02	8.16	.448	.0491	.035	4.01-	4.01-	.0042	.0023-	.049-
6	8.01	8.14	.444	.0439	.041	2.02-	2.02-	.0031	.0011-	.028-
7	8.01	8.13	.447	.0465	.046	.00-	.00	.0004	.0007-	.000-
9	8.01	8.15	.451	.0439	.044	2.00	2.00	.0012-	.0003-	.025
10	8.01	8.15	.447	.0491	.037	4.02	4.02	.0045-	.0001	.049
11	8.01	8.15	.448	.0481	.026	6.02	6.02	.0050-	.0002	.073
12	8.01	8.15	.453	.0481	.017	8.02	8.02	.0072-	.0004	.095
13	8.01	8.15	.461	.0453	.005	10.01	10.01	.0100-	.0002	.124
15	8.01	8.15	.457	.0435	.005-	12.00	12.00	.0139-	.0000	.156

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | RUN 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 67-0 | q 100.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_c
23	8.03-	8.18-	.480-	.0554	.111-	.00-	.00	.0001	.0006-	.001-
25	4.03-	4.11-	.255-	.0345	.081-	.00-	.00	.0005	.0004-	.001-
27	.02-	.02-	.026-	.0284	.043-	.00-	.00-	.0002-	.0013-	.002
29	4.01	4.07	.196	.0340	.001	.00-	.00	.0001	.0015-	.001-
33	8.02	8.15	.433	.0311	.043	.00-	.00	.0003	.0010-	.001-
37	12.01	12.21	.661	.0772	.092	.00-	.00-	.0005-	.0020-	.004
39	14.02	14.26	.775	.0943	.114	.00-	.00-	.0007-	.0026-	.005
41	16.02	16.30	.917	.1307	.130	.00-	.00	.0004-	.0015	.001-
43	18.01	18.30	.995	.1612	.133	.00-	.00	.0006-	.0006	.000-
45	20.02	20.30	.856	.2472	.093	.00-	.00	.0074-	.0063	.003-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/05/62

MOMENT AXES STAB RUN 33-0 q 130.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
7	8.01-	8.16-	.484-	.0538	.111-	.00-	.00-	.0001	.0005-	.000
9	4.03-	4.11-	.256-	.0351	.080-	.00-	.00	.0002	.0002-	.001-
11	.00	.01-	.034-	.0286	.043-	.00-	.00-	.0000	.0007-	.000
13	4.02	4.08	.197	.0336	.003	.00-	.00	.0004	.0002-	.002-
15	8.02	8.15	.432	.0499	.049	.00-	.00	.0008	.0009-	.002-
17	12.03	12.27	.664	.0763	.093	.00-	.00-	.0005	.0011-	.002
19	14.00	14.24	.771	.0916	.114	.00-	.00-	.0005	.0026-	.002
21	16.02	16.29	.859	.1220	.133	.01-	.01-	.0007	.0006-	.000-
23	18.02	18.30	.895	.1727	.138	.01-	.01-	.0016	.0043	.005-
25	20.03	20.30	.867	.2501	.077	.01-	.01-	.0025-	.0058	.011-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 69-0 q 130.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
7	8.02-	8.17-	.489-	.0569	.111-	.01-	.01-	.0009-	.0024-	.001
9	4.03-	4.11-	.264-	.0360	.079-	.01-	.01-	.0010-	.0037-	.000
11	.01	.09	.036-	.0295	.040-	.01-	.01-	.0014-	.0050-	.003
13	4.02	4.07	.183	.0356	.004	.01-	.01-	.0004-	.0046-	.002
15	8.02	8.15	.423	.0519	.049	.01-	.01-	.0003-	.0055-	.003
17	12.01	12.21	.653	.0777	.095	.01-	.01-	.0004-	.0062-	.006
19	14.03	14.26	.757	.0975	.114	.01-	.01-	.0002-	.0074-	.006
21	16.02	16.28	.833	.1215	.132	.01-	.01-	.0007	.0012-	.001-
23	18.01	18.29	.892	.1758	.132	.01-	.01-	.0017	.0008-	.004-
25	20.03	20.29	.941	.2456	.084	.01-	.01-	.0013-	.0044	.010-

WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/25/62

MOMENT AXES STAB | RUN 70-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
3	8.02-	8.17-	.497-	.0790	.106-	.01-	.01-	.0109-	.0325-	.017
5	4.02-	4.09-	.254-	.0540	.060-	.01-	.01-	.0076-	.0326-	.015
7	.02-	.02-	.020-	.0466	.045-	.01-	.01-	.0042-	.0345-	.013
9	4.02	4.06	.211	.0525	.005-	.01-	.01-	.0019-	.0357-	.015
11	8.01	8.15	.[illegible]	.0699	.033	.01-	.01-	.0007	.0341-	.015
13	12.00	12.21	.692	.0987	.079	.01-	.01-	.0037	.0360-	.017
17	16.01	16.29	.893	.1492	.118	.01-	.01-	.0073	.0383-	.012
19	18.01	18.31	.958	.1555	.129	.01-	.01-	.0096	.0376-	.009
21	20.02	20.30	.903	.2697	.076	.01-	.01-	.0320	.0313-	.010

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/26/62
MOMENT AXES STAB | RUN 71-3 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	3.03-	3.18-	.494-	.0692	.103-	.01-	.01-	.0034-	.0274-	.014
5	4.02-	4.10-	.256-	.0466	.079-	.01-	.01-	.0051-	.0250-	.011
7	.02-	.02-	.013-	.0388	.044-	.01-	.01-	.0032-	.0262-	.011
9	4.02	4.06	.214	.0441	.004-	.01-	.01-	.0010-	.0263-	.011
13	8.00	8.14	.464	.0507	.041	.01-	.01-	.0007	.0273-	.013
15	12.02	12.23	.650	.0896	.087	.01-	.01-	.0025	.0297-	.016
17	16.01	16.26	.803	.1376	.125	.01-	.01-	.0054	.0328-	.013
21	18.02	18.31	.936	.1762	.138	.01-	.01-	.0084	.0302-	.008
23	20.03	20.30	.883	.2509	.090	.01-	.01-	.0007	.0365-	.008

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 72-9 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_c
5	8.00	7.86	.474	.0757	.110	.01	.01	.0035	.0230	.007
7	4.00	4.07	.234	.0394	.072	.01	.01	.0040	.0136	.003
9	.02	.02	.011	.0327	.044	.01	.01	.0020	.0150	.008
11	4.01	4.07	.214	.0307	.073	.01	.01	.0008	.0176	.007
13	8.02	8.16	.454	.0755	.042	.01	.01	.0003	.0190	.010
15	12.00	12.21	.668	.0811	.089	.01	.01	.0018	.0211	.012
17	16.02	16.29	.866	.1293	.129	.01	.01	.0036	.0225	.009
19	18.02	18.21	.924	.1656	.139	.01	.01	.0051	.0227	.008
21	20.02	20.30	.908	.2396	.093	.01	.01	.0050	.0259	.004

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/26/62

MOMENT AXES STAB RUN 73-0 q 1.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.01-	8.15-	.473-	.0560	.111-	.01-	.01-	.0020-	.0105-	.003
5	4.02-	4.09-	.234-	.0347	.080-	.01-	.01-	.0014-	.0100-	.002
7	.00-	.00	.005-	.0260	.043-	.01-	.01-	.0002-	.0095-	.004
9	4.02	4.03	.216	.0340	.000	.01-	.01-	.0007	.0098-	.004
10	8.02	8.16	.452	.0500	.047	.01-	.01-	.0003	.0104-	.003
15	12.01	12.21	.656	.0754	.092	.01-	.01-	.0011	.0112-	.005
17	16.00	16.27	.863	.1241	.131	.01-	.01-	.0023	.0130-	.010
21	18.03	18.34	.925	.1601	.142	.01-	.01-	.0027	.0087-	.010
23	20.07	20.31	.881	.2286	.158	.01-	.01-	.0026	.0119-	.007

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB RUN 343-0 DATE 7/25/62

MOMENT AXES STAB CONF 74-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
5	8.03	8.17	.474	.0588	.111	.01	.01	.0003	.0078	.001
7	4.01	4.05	.237	.0343	.080	.01	.01	.0023	.0034	.003
9	.00	.03	.000	.0273	.042	.01	.01	.0016	.0072	.000
11	4.02	4.01	.213	.0326	.001	.01	.01	.0013	.0072	.000
13	8.02	8.16	.451	.0405	.047	.01	.01	.0003	.0076	.001
15	12.01	12.20	.664	.0749	.092	.01	.01	.0002	.0083	.005
17	16.02	16.23	.871	.1233	.132	.01	.01	.0003	.0090	.006
19	18.03	18.32	.926	.1601	.143	.01	.01	.0007	.0135	.011
21	20.02	20.34	.932	.2320	.092	.01	.01	.0033	.0119	.021

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 75-0
DATE 7/26/62
q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_c
3	8.03-	8.10-	.432-	.0505	.110-	.01-	.01-	.0066	.0194	.002-
5	4.04-	4.11-	.240-	.0370	.079-	.01-	.01-	.0043	.0175	.00?-
7	.01	.01	.011-	.0320	.043-	.01-	.01-	.0031	.0154	.007-
9	4.02	4.08	.216	.0357	.001-	.01-	.01-	.0017	.0157	.002-
11	8.02	8.15	.458	.0539	.044	.01-	.01-	.0000	.0173	.010-
13	12.02	12.22	.661	.0800	.083	.01-	.01-	.0009-	.0187	.010-
15	16.03	16.30	.866	.1202	.129	.01-	.01-	.0022-	.0193	.012-
17	18.02	18.30	.913	.1629	.140	.01-	.01-	.0032-	.0204	.010-
19	20.02	20.32	.896	.2431	.094	.01-	.01-	.0102-	.0207	.00?-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-9 | DATE 7/25/62
MOMENT AXES STAB | RUN 76-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.03-	8.18-	.497-	.0606	.108-	.01-	.01-	.0131	.0249	.017-
5	4.00-	4.07-	.248-	.0460	.073-	.01-	.01-	.0071	.0260	.011-
7	.02	.02	.012-	.0378	.041-	.01-	.01-	.0043	.0239	.010-
9	4.03	4.09	.252	.0493	.090-	.01-	.01-	.0026	.0245	.013-
11	8.02	8.16	.484	.0601	.162	.01-	.01-	.0007	.0240	.012-
13	10.02	10.20	.574	.0728	.066	.01-	.01-	.0030-	.0256	.014-
15	12.00	12.21	.677	.0887	.067	.01-	.01-	.0016-	.0272	.014-
27	12.00	12.21	.675	.0897	.058	.01-	.01-	.0012-	.0270	.014-
29	16.01	16.28	.673	.1363	.126	.01-	.01-	.0044-	.0302	.020-
17	13.03	13.31	.819	.1707	.133	.01-	.01-	.0043-	.0320	.017-
21	20.01	20.29	.701	.2451	.106	.01-	.01-	.0146-	.0337	.031-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 77-0
DATE 7/09/62
q [illegible]

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_c
3	8.02-	8.17-	.495-	.0778	.107-	.01-	.01-	.0131	.0379	.003-
5	4.00-	4.07-	.253-	.0525	.078-	.01-	.01-	.0090	.0347	.016-
7	.00-	.03	.019-	.0454	.043-	.01-	.01-	.0060	.0336	.016-
9	4.01	4.07	.212	.0490	.001-	.01-	.01-	.0033	.0341	.016-
11	8.01	8.15	.456	.0662	.042	.01-	.01-	.0037	.0363	.010-
13	12.03	12.24	.680	.0958	.092	.01-	.01-	.0029-	.0348	.015-
15	16.02	16.29	.887	.1453	.121	.01-	.01-	.0052-	.0371	.014-
17	18.02	18.31	.933	.1815	.132	.01-	.01-	.0067-	.0353	.014-
19	20.02	20.30	.999	.2543	.102	.01-	.01-	.0174-	.0334	.028-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXIS STAB — RUN 343-0 — DATE 7/06/82

MOMENT AXIS STAB — δ_e 7.5-0 — q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	-4.02	-4.08	-.203	.0201	-.013	12.01	12.01	-.0136	-.0053	.160
9	.00	.00	.022	.0139	-.060	12.02	12.02	-.0142	-.0029	.157
11	4.02	4.09	.237	.0244	-.042	12.02	12.02	-.0135	-.0011	.157
13	8.01	8.15	.462	.0421	-.006	12.02	12.02	-.0142	.0003	.161
15	12.02	12.23	.693	.0718	.027	12.02	12.02	-.0103	.0019	.164
17	16.01	16.28	.877	.1163	.062	12.01	12.01	-.0260	.0062	.159
19	18.02	18.32	.995	.1783	.066	12.02	12.02	-.0160	.0191	.139
21	20.03	20.32	.926	.2244	.055	12.02	12.02	-.0212	.0179	.111

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-0 DATE 7/06/62
RUN 77-0 q 120.

Pt	α_ℓ	α	C_L	C_D	C_m	ψ_ℓ	ψ	C_n	C_ℓ	C_C
7	4.02-	4.08-	.222-	.0296	.048-	0.03	0.03	.0079-	.0042-	.094
9	.00-	.00	.001-	.0240	.003-	0.02	0.02	.0072-	.0028-	.093
11	4.00	4.07	.229	.0304	.023-	0.03	0.03	.0067-	.0011-	.094
13	8.02	8.16	.454	.0472	.020	0.02	0.02	.0074-	.0005	.095
17	12.02	12.23	.687	.0749	.062	0.03	0.03	.0094-	.0009	.098
19	16.01	16.28	.893	.1205	.100	0.03	0.03	.0099-	.0050	.094
21	18.03	18.32	.942	.1619	.108	0.02	0.02	.0035-	.0085	.084
23	20.03	20.31	.911	.2282	.072	0.02	0.02	.0179-	.0138	.066

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXIS STA 0 | RUN 343-0 | DATE 7/06/62
MOMENT AXIS STA 0 | RUN 00-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
8	4.02-	4.03-	.234-	.0330	.081-	.00	.00	.0013	.0013-	.003-
10	.01	.01	.007-	.0239	.043-	.00	.00	.0016	.0013-	.003-
12	4.02	4.06	.218	.0314	.001	.00	.00	.0015	.0013-	.002-
14	8.00	8.14	.448	.0465	.047	.00	.00	.0017	.0021-	.003-
16	12.00	12.20	.654	.0749	.091	.00	.00	.0019	.0016-	.003-
18	16.01	16.27	.852	.1105	.140	.00	.00	.0026	.0005-	.008-
20	18.02	18.30	.899	.1543	.143	.00	.00	.0029	.0003	.007-
22	20.01	20.29	.697	.2307	.100	.00	.00	.0093-	.0026	.006-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 31-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
5	4.02-	4.08-	.219-	.0236	.099-	0.02-	0.02-	.0127	.0014	.111-
7	.00-	.09	.038	.0214	.084-	0.02-	0.02-	.0122	.0002	.109-
9	4.02	4.09	.228	.0237	.025-	0.02-	0.02-	.0125	.0016-	.109-
11	8.01	8.13	.450	.0447	.016	0.02-	0.02-	.0123	.0028-	.107-
13	12.01	12.21	.663	.0732	.055	0.02-	0.02-	.0142	.0041-	.108-
15	16.02	16.29	.863	.1180	.091	0.03-	0.03-	.0149	.0076-	.108-
17	18.01	18.30	.927	.1727	.094	0.02-	0.02-	.0123	.0095-	.101-
21	20.02	20.30	.894	.2467	.071	0.02-	0.02-	.0032	.0305-	.073-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-D DATE 7/06/62
MOMENT AXES STAB RUN 32-D q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	-.03-	-.01-	.230-	.0209	.113-	12.01-	12.01-	.0104	.0020	.163-
5	.01	.01	.025	.0145	.031-	12.02-	12.02-	.0175	.0006	.165-
7	-.01	-.01	.241	.0229	.044-	12.01-	12.01-	.0109	.0015-	.163-
11	-.01	-.01	.472	.0418	.010-	12.01-	12.01-	.0211	.0050-	.168-
13	12.01	12.22	.683	.0727	.022	12.01-	12.01-	.0227	.0039-	.168-
15	16.02	16.29	.842	.1171	.036	12.01-	12.01-	.0237	.0085-	.167-
17	18.01	18.30	.949	.1734	.037	12.01-	12.01-	.0193	.0145-	.146-
19	18.01	18.30	.952	.1822	.036	12.01-	12.01-	.0193	.0166-	.146-
21	20.03	20.32	.925	.2404	.047	12.02-	12.02-	.0201	.0336-	.123-
23	20.03	20.32	.925	.2301	.048	12.02-	12.02-	.0204	.0331-	.135-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA3 TEST 343-0 DATE 7/06/62

MOMENT AXES STA3 RUN 3-1 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
27	-3.92	-3.89	-.223	.0520	-.164	.00	.00	-.0016	.0002	.001
3	-4.01	-4.00	-.047	.0434	-.161	.00	.00	-.0000	.0000	.000
5	.00	.09	.300	.0526	-.129	.00	.00	-.0004	.0003	.001
13	4.02	4.18	.539	.0749	-.089	.00	.00	.0003	.0004	.001
15	8.93	9.28	.798	.1111	-.052	.00	.00	-.0001	.0013	.002
17	8.93	9.28	.797	.1101	-.030	.00	.00	-.0000	.0022	.001
19	12.93	12.35	1.042	.1623	-.015	.00	.00	-.0002	.0024	.002
21	16.02	16.40	1.233	.2316	.030	.00	.00	.0005	.0014	.001
23	18.02	18.41	1.282	.3069	.032	.00	.00	.0027	.0093	.020
25	20.01	20.38	1.200	.3740	.007	.00	.00	-.0026	.0034	.036

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-D | DATE 7/06/62

MOMENT AXES STAB | RUN 34-1 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	3.02-	3.03-	.049-	.0305	.257-	12.01-	12.01-	.0349	.0038-	.204-
5	4.02-	3.93-	.228	.0334	.242-	12.00-	12.00-	.0373	.0049-	.212-
7	.00-	.14	.433	.0389	.214-	12.02-	12.02-	.0378	.0070-	.209-
9	4.01	4.22	.634	.0931	.183-	12.00-	12.00-	.0370	.0075-	.206-
11	8.01	8.22	.834	.0936	.183-	12.00-	12.00-	.0379	.0075-	.204-
13	8.00	8.29	.947	.1031	.104-	12.01-	12.01-	.0374	.0129-	.189-
15	12.01	12.33	1.124	.2057	.130-	12.01-	12.01-	.0416	.0149-	.193-
17	15.01	15.44	1.311	.3201	.108-	12.01-	12.01-	.0389	.0236-	.183-
19	16.02	16.45	1.387	.3205	.108-	12.00-	12.00-	.0347	.0241-	.185-
23	19.00	19.41	1.524	.3744	.069-	12.01-	12.01-	.0364	.0445-	.161-
25	19.00	19.43	1.588	.3734	.091-	12.01-	12.01-	.0363	.0423-	.156-
27	20.00	20.44	1.533	.4164	.079-	12.01-	12.01-	.0349	.0548-	.139-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA3 TEST 243-3 DATE 7/06/62

MOMENT AXES STA3 RUN 33-3 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	3.02-	3.04-	.273-	.0361	.237-	3.03-	3.03-	.0204	.0033-	.126-
5	4.02-	3.93-	.232	.0333	.218-	3.03-	3.03-	.0217	.0039-	.129-
7	.02-	.12	.446	.0736	.189-	3.02-	3.02-	.0224	.0063-	.130-
9	4.01	4.22	.653	.1008	.154-	3.03-	3.03-	.0216	.0071-	.128-
11	8.02	8.31	.933	.1450	.121-	3.03-	3.03-	.0223	.0092-	.129-
13	12.00	12.36	1.169	.2046	.086-	3.03-	3.03-	.0226	.0113-	.127-
15	16.01	16.44	1.352	.3041	.035-	3.03-	3.03-	.0207	.0148-	.123-
17	18.01	18.43	1.347	.3738	.046-	3.03-	3.03-	.0214	.0403-	.090-
19	20.01	20.41	1.260	.4445	.056-	3.03-	3.03-	.0263	.0268-	.116-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA3 TEST 343-0 DATE 7/06/62

MOMENT AXES STA3 RUN 3[illegible]-1 q 120.

Pt	α_ℓ	α	C_L	C_D	C_m	ψ_ℓ	ψ	C_n	C_ℓ	C_C
3	3.02-	3.04-	.077-	.0068	.024-	.01-	.01-	.0008	.0003-	.003-
5	4.02-	3.97-	.177	.0034	.001-	.01-	.01-	.0003	.0014-	.001
7	.02-	.11	.023	.0027	.006-	.01-	.01-	.0003	.0019-	.001-
9	8.00	8.20	.328	.0101	.026-	.01-	.01-	.0002	.0019-	.003
11	8.01	8.30	.925	.0531	.088-	.01-	.01-	.0003-	.0033-	.004
13	12.01	12.27	1.107	.0734	.053-	.01-	.01-	.0002	.0042-	.005
15	16.01	16.44	1.377	.1055	.010-	.01-	.01-	.0011	.0018-	.004-
17	18.00	18.42	1.344	.1334	.009-	.01-	.01-	.0018	.0064	.015-
19	20.02	20.49	1.232	.1424	.016-	.01-	.01-	.0044	.0009	.022-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 243-0 DATE 7/06/62

MOMENT AXES STAB RUN 27-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	-3.02	-3.24	-.383	.0596	-.236	0.02	0.02	-.0108	.0008	.117
5	-1.02	-1.26	.193	.0623	-.223	0.03	0.03	-.0131	.0007	.123
7	.03	-.11	.447	.0776	-.195	0.02	0.02	-.0211	.0022	.129
9	1.01	.82	.633	.1041	-.156	0.03	0.03	-.0203	.0033	.126
11	3.00	2.79	.946	.1485	-.126	0.02	0.02	-.0236	.0025	.134
13	12.00	11.87	1.187	.2077	-.090	0.03	0.03	-.0236	.0040	.136
15	16.01	16.44	1.305	.2918	-.052	0.03	0.03	-.0257	.0087	.129
17	13.00	13.43	1.341	.3745	-.046	0.03	0.03	-.0175	.0340	.088
19	20.01	20.42	1.324	.4393	-.049	0.02	0.02	-.0273	.0266	.065

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA9 | RUN 343-0 | DATE 7/06/62
MOMENT AXES STA3 | [illegible] 00-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	6.02	8.03	.062	.0525	.253	12.02	12.02	.0304	.0007	.189
7	4.00	3.93	.233	.0584	.247	12.01	12.01	.0340	.0013	.200
11	.02	.12	.464	.0750	.221	12.01	12.01	.0366	.0027	.205
13	4.01	4.23	.708	.1011	.187	12.01	12.01	.0370	.0046	.204
15	8.01	8.31	.961	.1461	.158	12.01	12.01	.0330	.0044	.207
17	12.01	12.38	1.199	.2033	.125	12.01	12.01	.0383	.0057	.208
19	16.01	16.44	1.375	.3147	.102	12.01	12.01	.0315	.0199	.180
21	18.01	18.45	1.406	.3776	.089	12.01	12.01	.0324	.0366	.157
23	20.01	20.43	1.342	.4209	.071	12.01	12.01	.0344	.0470	.116

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA5 TEST 343-6 DATE 7/06/62
MOMENT AXES STA3 RUN 69-5 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	4.02-	3.97-	.189	.1007	.203-	.02-	.02-	.0020	.0027-	.006-
5	.01-	.12	.420	.1124	.166-	.02-	.02-	.0026	.0026-	.005-
13	4.01	4.21	.656	.1396	.127-	.02-	.02-	.0023	.0024-	.004-
7	8.02	8.30	.906	.1781	.092-	.02-	.02-	.0017	.0023-	.004-
12	12.00	12.35	1.136	.2347	.057-	.02-	.02-	.0016	.0039-	.003-
9	16.00	16.42	1.353	.3112	.018-	.02-	.02-	.0025	.0027-	.005-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA5 — RUN 343-0 — DATE 7/06/62

MOMENT AXES STA3 — RUN 343-0 — q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	4.03	4.04	.187	.0680	.047	.02	.02	.0012	.0035	.002
3	.02	.01	.034	.0612	.056	.02	.02	.0013	.0028	.002
4	4.02	4.10	.254	.0633	.013	.02	.02	.0012	.0032	.002
5	8.00	8.15	.481	.0819	.032	.02	.02	.0010	.0040	.001
6	12.02	12.23	.689	.1072	.074	.02	.02	.0012	.0043	.001
7	16.02	16.30	.893	.1485	.109	.02	.02	.0019	.0046	.000

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — RUN 342-0 — DATE 7/06/62

MOMENT AXES STAB — RUN 21-0 — q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.03-	3.99-	.144	.0733	.176-	.02-	.02-	.0025	.0017-	.006-
2	.00	.09	.299	.0860	.131-	.02-	.02-	.0036	.0015-	.010-
5	4.00	4.16	.534	.1056	.090-	.03-	.03-	.0033	.0011-	.012-
6	8.01	8.25	.770	.1371	.054-	.03-	.03-	.0033	.0014-	.010-
7	12.01	12.32	1.015	.1864	.019-	.03-	.03-	.0033	.0020-	.010-
8	16.01	16.39	1.220	.2484	.016	.03-	.03-	.0037	.0006-	.011-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES: STAB | RUN: 343-0 | DATE: 7/08/82
MOMENT AXES: STAB | CONF: 22-1 | q: 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	6.02-	6.15-	.441-	.0620	.092	.00	.00	.0034-	.0033-	.001-
7	4.00-	4.09-	.315-	.0447	.069	.00	.00	.0002	.0038-	.015-
9	2.00-	2.08-	.153-	.0364	.082	.00	.00	.0064	.0039-	.018-
11	.01-	.02-	.057-	.0327	.074	.00	.00	.0053	.0035-	.011-
13	4.02	4.07	.190	.0354	.059	.00	.00	.0001-	.0004-	.001-
15	8.03	8.17	.447	.0512	.054	.00	.00	.0020	.0017-	.004-
17	12.01	12.22	.694	.0790	.049	.00	.00	.0001-	.0010-	.001-
19	16.00	16.23	.907	.1294	.037	.00	.00	.0031	.0018-	.000-
21	18.01	18.31	.976	.1677	.031	.00	.00	.0035	.0016	.001-
23	20.01	20.31	.959	.2526	.020-	.00	.00	.0053-	.0050-	.001-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/05/62
MOMENT AXES STAB | RUN 43-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	4.02-	4.11-	.289-	.0414	.040	.00	.00	.0023	.0018-	.013-
7	.01-	.02-	.036-	.0310	.025	.00	.00	.0040	.0029-	.010-
9	4.02	4.08	.210	.0336	.019	.00	.00	.0036	.0025-	.006-
11	8.02	8.16	.472	.0525	.008	.00	.00	.0011	.0013-	.003-
13	12.03	12.25	.714	.0824	.000	.00	.00	.0003	.0010-	.002-
15	16.01	16.30	.941	.1356	.009-	.00	.00	.0007	.0009-	.000-
17	16.01	18.32	.997	.1749	.017-	.00	.00	.0008	.0002	.000-
19	20.01	20.31	.973	.2380	.060-	.00	.00-	.0033-	.0042-	.004
25	20.01	20.31	.968	.2536	.057-	.00	.00	.0079-	.0052-	.000-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — WING 343-0 — DATE 7/06/62

MOMENT AXES STAB — RUN 94-1 — q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
7	.00	.00	.007	.0217	.042-	12.00-	12.00-	.0139	.0037-	.173-
9	.00	.00	.012-	.0310	.009-	8.02-	8.02-	.0106	.0021-	.107-
11	.00	.00	.024-	.0353	.005	6.03-	6.03-	.0030	.0024-	.074-
15	.00	.00	.030-	.0354	.015	4.01-	4.01-	.0001-	.0014-	.047-
17	.00	.01-	.035-	.0341	.024	2.01-	2.01-	.0024-	.0011-	.020-
19	.00	.01-	.038-	.0313	.025	.02	.02	.0027	.0034-	.010-
21	.00	.01-	.043-	.0321	.026	2.03	2.03	.0036	.0031-	.019
26	.00	.01-	.042-	.0330	.021	4.01	4.01	.0033-	.0019-	.044
28	.00	.01-	.037-	.0323	.011	6.00	6.00	.0078-	.0012-	.072
30	.00	.00	.027-	.0316	.004-	8.02	8.02	.0110-	.0014-	.100
32	.00	.00	.003	.0251	.036-	12.00	12.00	.0185-	.0010-	.160

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA3 TEST 343-0 DATE 7/30/62

MOMENT AXES STA3 RUN 93-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
28	4.02-	4.07-	.187-	.0356	.017-	.00-	.00	.0047	.0014-	.006-
24	.01	.01	.009-	.0296	.024-	.01-	.01-	.0031	.0010-	.006-
10	.00-	.00	.029-	.0280	.019-	.01-	.01-	.0026	.0000-	.004-
12	4.02	4.09	.226	.0345	.027-	.01-	.01-	.0020	.0003-	.004-
14	8.02	8.17	.490	.0528	.043-	.01-	.01-	.0013	.0011-	.002-
16	12.01	12.24	.731	.0836	.052-	.01-	.01-	.0012	.0012-	.001-
18	16.02	16.32	.962	.1364	.062-	.01-	.01-	.0015	.0014-	.003-
20	18.03	18.35	1.016	.1792	.069-	.01-	.01-	.0014	.0002	.003-
22	20.01	20.32	.992	.2662	.096-	.01-	.01-	.0078-	.0066-	.002-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA3 | RUN 343-3 | DATE 7/06/62
MOMENT AXES STA3 | DWN 96-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
38	4.00-	4.07-	.243-	.0364	.052-	.00-	.00	.0015	.0009-	.003-
40	.02-	.02-	.002-	.0296	.065-	.00-	.00	.0011	.0000-	.002-
42	4.02	4.09	.253	.0373	.079-	.00-	.00	.0011	.0000	.003-
44	8.02	8.18	.523	.0577	.095-	.00-	.00	.0003	.0003-	.001-
46	12.01	12.25	.770	.0916	.106-	.00-	.00	.0000	.0010-	.001-
48	16.02	16.33	.994	.1402	.110-	.00-	.00-	.0001	.0018-	.000
50	18.02	18.34	1.043	.1858	.107-	.00-	.00	.0009	.0004	.003-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/82

MOMENT AXES STAB RUN 37-3 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ϵ	C_n	C_ℓ	C_C
7	4.01-	4.07-	.205-	.0334	.148-	.04-	.04-	.0005	.0002-	.003-
9	.03	.04	.059	.0317	.167-	.02-	.02-	.0004	.0002-	.001-
11	4.00	4.09	.307	.0427	.183-	.01-	.01-	.0003	.0001-	.001-
13	8.03	8.21	.573	.0639	.196-	.01-	.01-	.0005	.0009-	.002-
15	12.03	12.27	.791	.1158	.136-	.00-	.00-	.0003-	.0020-	.001
17	16.00	16.31	.986	.1697	.197-	.00-	.00-	.0002	.0023-	.000
19	18.02	18.34	1.029	.2162	.083-	.00-	.00	.0011	.0000-	.005-
23	20.00	20.32	1.018	.2986	.161-	.02	.02	.0010	.0001-	.023-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 93-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_c
3	4.02	4.08	.217	.0431	.120	.01	.01	.0000	.0013	.001
5	.00	.01	.032	.0361	.138	.01	.01	.0013	.0011	.006
7	4.01	4.10	.297	.0476	.162	.02	.02	.0010	.0011	.001
9	8.01	8.18	.560	.0707	.180	.02	.02	.0009	.0004	.002
11	12.00	12.25	.803	.1063	.198	.02	.02	.0005	.0024	.000
13	16.01	16.33	1.021	.1613	.209	.02	.02	.0009	.0017	.000
15	18.01	18.35	1.083	.2066	.217	.02	.02	.0011	.0011	.005
17	20.03	20.36	1.075	.2749	.228	.02	.02	.0059	.0038	.016

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 99-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
5	4.02-	4.09-	.228-	.0412	.094-	.02	.02	.0017	.0016-	.000
7	.00	.00	.027	.0354	.115-	.02	.02	.0015	.0016-	.000
9	4.02	4.10	.277	.0442	.133-	.02	.02	.0013	.0006-	.001-
11	8.00	8.17	.547	.0656	.152-	.02	.02	.0015	.0010-	.003-
13	12.02	12.26	.787	.1000	.164-	.02	.02	.0030	.0020-	.000-
15	16.02	16.33	.999	.1538	.173-	.02	.02	.0010	.0014-	.003-
17	16.02	18.35	1.068	.1996	.183-	.02	.02	.0009	.0020	.005-
19	20.01	20.33	1.046	.2737	.205-	.02	.02	.0029-	.0021	.007-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 100-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	4.02-	4.09-	.250-	.0376	.045-	.02	.02	.0049	.0030-	.015-
7	.01-	.01-	.001	.0304	.056-	.02	.02	.0033	.0027-	.006-
9	4.02	4.09	.250	.0380	.065-	.02	.02	.0021	.0016-	.006-
11	8.02	8.17	.504	.0570	.077-	.02	.02	.0008	.0016-	.002-
13	12.03	12.27	.758	.0894	.091-	.02	.02	.0003	.0025-	.001-
17	16.03	16.33	.970	.1419	.098-	.02	.02	.0008	.0016-	.000
19	18.02	18.34	1.033	.1851	.104-	.01	.01	.0019	.0014	.003-
21	20.01	20.33	1.029	.2547	.136-	.02	.02	.0037-	.0034	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STA5 TEST 343-0 DATE 7/06/62

MOMENT AXES STA5 RUN 101-C q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.01-	4.09-	.267-	.0389	.005-	.03	.03	.0042	.0032-	.000
5	.01-	.01-	.018-	.0298	.018-	.03	.03	.0046	.0031-	.007-
7	4.02	4.09	.228	.0363	.026-	.03	.03	.0031	.0021-	.005-
9	8.02	8.17	.490	.0545	.036-	.03	.03	.0033	.0016-	.000
11	12.01	12.24	.733	.0854	.049-	.03	.03	.0002	.0023-	.000
13	16.01	16.31	.954	.1358	.054-	.03	.03	.0011	.0015-	.000
15	18.00	18.32	1.020	.1804	.062-	.03	.03	.0011	.0006	.005-
19	20.02	20.33	1.003	.2479	.096-	.03	.03	.0070-	.0028	.010-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | RUN 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 102-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	4.02	4.11	.311	.0437	.091	.00	.00	.0033	.0019	.015
7	.00	.01	.061	.0325	.078	.00	.00	.0042	.0022	.009
9	4.03	4.08	.162	.0356	.067	.00	.00	.0035	.0018	.007
11	8.02	8.16	.446	.0504	.058	.00	.00	.0009	.0008	.002
15	12.02	12.23	.690	.0796	.047	.00	.00	.0001	.0009	.001
17	16.03	16.31	.918	.1287	.040	.00	.00	.0009	.0006	.004
19	16.00	18.30	.979	.1694	.033	.00	.00	.0010	.0015	.006
21	20.02	20.32	.961	.2407	.019	.00	.00	.0026	.0018	.013

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 103-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	-4.01	-4.01	-.011	.0468	-.036	8.01	8.01	-.0141	-.0011	.109
7	-.03	.05	.259	.0554	-.064	8.00	8.00	-.0170	.0621	.112
11	4.00	4.16	.537	.0730	-.084	8.01	8.01	-.0137	.0032	.117
13	8.01	8.26	.819	.1110	-.098	8.01	8.01	-.0217	.0043	.122
15	12.02	12.36	1.075	.1646	-.100	8.01	8.01	-.0240	.0058	.128
17	16.01	16.41	1.298	.2398	-.091	8.02	8.02	-.0261	.0114	.127
21	18.01	18.42	1.312	.3206	-.099	8.01	8.01	-.0207	.0314	.093
25	20.02	20.43	1.303	.3708	-.101	8.01	8.01	-.0247	.0429	.075

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — RUN 343-0 — DATE 7/06/62

MOMENT AXES STAB — RUN 104-0 — q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
2	4.01	4.01	.023	.0526	.014	.00	.00	.0042	.0033	.010
3	.01	.36	.246	.0578	.027	.00	.00	.0049	.0022	.015
4	4.02	4.16	.514	.0786	.042	.00	.00	.0060	.0026	.011
5	8.01	8.25	.789	.1152	.053	.00	.00	.0049	.0026	.008
6	12.00	12.33	1.053	.1673	.054	.00	.00	.0032	.0026	.005
7	16.03	16.43	1.277	.2430	.047	.00	.00	.0033	.0009	.006
8	18.00	18.42	1.342	.2801	.045	.00	.00	.0041	.0024	.015
9	20.01	20.39	1.231	.3965	.075	.00	.00	.0071	.0036	.020

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/05/62

MOMENT AXES STAB RUN 103-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
13	4.01-	3.96-	.107	.0759	.037-	.00-	.00	.0040	.0044-	.019-
14	.00-	.11	.375	.0876	.053-	.00-	.00	.0040	.0037-	.023-
15	4.01	4.21	.609	.1139	.063-	.00-	.00	.0052	.0037-	.026-
16	8.01	8.29	.919	.1601	.073-	.00-	.00	.0042	.0034-	.005-
18	12.00	12.37	1.175	.2168	.074-	.00-	.00	.0031	.0040-	.001-
19	16.02	16.46	1.414	.3077	.060-	.01-	.01-	.0029	.0010-	.006-
20	18.02	18.45	1.389	.3974	.063-	.00-	.00	.0036	.0023-	.012-
21	20.02	20.42	1.299	.4588	.076-	.00-	.00	.0062	.0009	.019-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 0-0 DATE 7/

MOMENT AXES STAB RUN 100-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
2	8.02	8.17	.502	.0458	.069-	12.02-	12.02-	.0026	.0069-	.181-
6	8.02	8.17	.479	.0458	.008-	4.02-	4.02-	.0068	.0048-	.054-
8	8.02	8.16	.466	.0433	.006	.01	.01	.0024-	.0016-	.000
10	8.03	8.17	.469	.0422	.006-	4.01	4.01	.0057-	.0021	.053
12	8.02	8.17	.486	.0513	.037-	8.00	8.00	.0154-	.0038	.108
14	8.02	8.17	.506	.0491	.069-	12.01	12.01	.0273-	.0047	.172
16	8.02	8.17	.478	.0487	.034-	8.02	8.02	.0191	.0062-	.118-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — WBF 343-0 — DATE 7/06/62

MOMENT AXES STAB — BWB 107-0 — q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	16.01	16.30	.933	.1284	.031-	12.01-	12.01-	.0376	.0133-	.151-
5	16.02	16.31	.929	.1286	.047-	8.01-	8.01-	.0249	.0119-	.120-
9	16.02	16.31	.929	.1374	.013-	.01-	.01-	.0041-	.0040-	.005
11	16.02	16.31	.928	.1313	.020-	4.02	4.02	.0131-	.0035	.039
13	16.02	16.31	.940	.1317	.044-	8.00	8.00	.0214-	.0072	.113
15	16.02	16.32	.953	.1355	.076-	12.00	12.00	.0307-	.0099	.172
17	16.02	16.32	.973	.1408	.025-	4.02-	4.02-	.0147	.0067-	.034-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 105-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_c
3	.01-	.01-	.004	.0228	.040-	12.02-	12.02-	.0101	.0007-	.157-
5	.01-	.01-	.021-	.0230	.004-	8.03-	8.03-	.0036	.0007	.103-
7	.01-	.02-	.035-	.0325	.018	4.02-	4.02-	.0034-	.0014	.043-
9	.01-	.02-	.038-	.0319	.025	.00-	.00-	.0064-	.0001-	.007
11	.01-	.02-	.041-	.0337	.019	4.01	4.01	.0163-	.0015	.060
13	.01-	.01-	.023-	.0317	.002-	8.02	8.02	.0246-	.0019	.115
15	.01-	.01-	.004-	.0273	.033-	12.00	12.00	.0322-	.0024	.171
17	.01-	.02-	.037-	.0319	.026	.02-	.02-	.0031-	.0014-	.031-
19	.01-	.01-	.031-	.0321	.019	4.02-	4.02-	.0023-	.0002-	.039-
21	.01-	.02-	.040-	.0317	.025	2.03-	2.03-	.0077-	.0009	.012-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 109-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.00	8.15	.469	.0460	.068-	12.02-	12.02-	.0207	.0074-	.168-
7	8.01	8.15	.469	.0534	.004-	4.01-	4.01-	.0009-	.0033-	.042-
9	8.00	8.14	.470	.0531	.006	.02-	.02-	.0111-	.0004-	.015
11	8.01	8.15	.475	.0553	.007-	4.01	4.01	.0216-	.0027	.070
13	8.01	8.16	.483	.0532	.035-	8.00	8.00	.0295-	.0047	.119
15	8.01	8.16	.503	.0511	.072-	12.00	12.00	.0394-	.0060	.188
17	8.01	8.16	.480	.0503	.033-	8.01-	8.01-	.0270	.0054-	.103-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 110-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_l	C_C
3	16.01	16.30	.952	.1298	.078-	12.01-	12.01-	.0274	.0151-	.170-
5	16.01	16.30	.943	.1306	.044-	8.01-	8.01-	.0122	.0131-	.102-
7	16.01	16.30	.932	.1322	.021-	4.02-	4.02-	.0020	.0094-	.044-
11	16.01	16.30	.924	.1353	.008-	.01-	.01-	.0124-	.0036-	.017
13	16.01	16.30	.929	.1317	.017-	4.00	4.00	.0244-	.0016	.072
15	16.01	16.30	.937	.1336	.044-	8.00	8.00	.0347-	.0059	.128
17	16.01	16.31	.953	.1373	.078-	12.01	12.01	.0464-	.0081	.191
19	16.01	16.30	.923	.1351	.020-	4.03-	4.03-	.0045	.0083-	.049-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-0
RUN 111-0

DATE 7/06/62
q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
3	.01-	.01-	.004	.0256	.038-	12.03-	12.03-	.0037	.0008	.145-
7	.01-	.01-	.018-	.0317	.004-	8.03-	8.03-	.0029-	.0021	.089-
9	.01-	.01-	.029-	.0348	.017	4.03-	4.03-	.0102-	.0026	.031-
11	.01-	.02-	.043-	.0352	.029	.02-	.02-	.0172-	.0023	.021
13	.01-	.02-	.050-	.0366	.021	4.00	4.00	.0281-	.0047	.075
15	.01-	.01-	.020-	.0343	.004-	8.02	8.02	.0385-	.0052	.137
17	.01-	.01-	.001	.0283	.033-	12.03	12.03	.0489-	.0056	.202

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — RUN 343-0 — DATE 7/06/62

MOMENT AXES STAB — RUN 112-0 — q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	.01-	.01-	.003	.0265	.035-	12.03-	12.03-	.0008	.0022	.147-
5	.01-	.01-	.014-	.0325	.003-	8.03-	8.03-	.0052-	.0028	.088-
7	.01-	.02-	.038-	.0361	.019	4.02-	4.02-	.0135-	.0037	.028-
9	.01-	.02-	.044-	.0372	.028	.01	.01	.0219-	.0040	.028
11	.01-	.02-	.044-	.0390	.021	4.01	4.01	.0342-	.0063	.083
13	.01-	.01-	.019-	.0378	.003-	8.01	8.01	.0446-	.0073	.140
15	.01-	.01-	.004	.0314	.035-	12.01	12.01	.0561-	.0071	.209

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 113-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	.01-	.01-	.004	.0216	.042-	12.03-	12.03-	.0824	.0023-	.177-
11	.01-	.02-	.033-	.0306	.017	4.02-	4.02-	.0067	.0025-	.054-
7	.01-	.02-	.047-	.0300	.025	.02-	.02-	.0024	.0019-	.010-
9	.01-	.02-	.036-	.0307	.001	8.00	8.00	.0098-	.0009-	.090
10	.01-	.01-	.010-	.0272	.031-	12.01	12.01	.0175-	.0010-	.147
12	.01-	.01-	.021-	.0271	.005-	8.03-	8.03-	.0141	.0026-	.113-
13	.01-	.02-	.040-	.0316	.024	2.01	2.01	.0004	.0024-	.015
14	.01-	.02-	.044-	.0307	.027	2.02-	2.02-	.0028	.0020-	.028-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | LAB 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 114-0 | q 120.

Pt	α_E	α	C_L	C_D	C_m	ψ_E	ψ	C_n	C_ℓ	C_C
2	.01-	.01-	.008	.0229	.047-	12.02-	12.02-	.0209	.0029-	.179-
3	.01-	.01-	.009-	.0298	.013-	8.02-	8.02-	.0134	.0010-	.115-
4	.01-	.01-	.028-	.0326	.013	4.01-	4.01-	.0051	.0012-	.052-
6	.01-	.02-	.035-	.0327	.022	.00	.00	.0026	.0021-	.008-
7	.01-	.02-	.043-	.0337	.020	4.00	4.00	.0026-	.0017-	.040
8	.01-	.01-	.028-	.0337	.002-	8.00	8.00	.0093-	.0009-	.086
9	.01-	.01-	.006-	.0270	.033-	12.01	12.01	.0165-	.0012-	.152

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 115-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.01	8.16	.501	.0473	.077-	12.02-	12.02-	.0303	.0079-	.189-
4	8.02	8.16	.470	.0566	.009-	4.02-	4.02-	.0065	.0050-	.055-
5	8.01	8.15	.461	.0537	.007	.01-	.01-	.0004	.0016-	.002-
6	8.02	8.16	.475	.0544	.006-	4.00	4.00	.0087-	.0012	.051
7	8.02	8.17	.480	.0540	.035-	8.02	8.02	.0144-	.0032	.102
8	8.02	8.17	.498	.0513	.069-	12.01	12.01	.0260-	.0044	.165
9	8.02	8.17	.478	.0516	.037-	8.01-	8.01-	.0184	.0065-	.119-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 116-0 | q 120.

Pt	α_ℓ	α	C_L	C_D	C_m	ψ_ℓ	ψ	C_n	C_ℓ	C_C
2	8.02	8.17	.498	.0506	.078-	12.02-	12.02-	.0290	.0079-	.179-
10	8.02	8.16	.476	.0536	.040-	8.03-	8.03-	.0173	.0063-	.117-
4	8.02	8.16	.468	.0591	.014-	4.02-	4.02-	.0052	.0049-	.051-
6	8.01	8.15	.457	.0545	.001-	.01-	.01-	.0005	.0013-	.003-
7	8.02	8.16	.471	.0572	.013-	4.02	4.02	.0078-	.0014	.049
8	8.02	8.17	.476	.0557	.035-	8.00	8.00	.0130-	.0026	.098
9	8.02	8.17	.497	.0535	.070-	12.00	12.00	.0245-	.0043	.156

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/82

MOMENT AXES STAB | RUN 117-C | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	.03-	.03-	.000	.0257	.040-	12.03-	12.03-	.0171	.0004-	.171-
3	.02-	.02-	.018-	.0322	.012-	8.01-	8.01-	.0110	.0010-	.111-
5	.02-	.03-	.049-	.0349	.022	.00	.00	.0029	.0021-	.009-
6	.02-	.03-	.052-	.0365	.018	4.01	4.01	.0016-	.0020-	.040
7	.02-	.02-	.031-	.0356	.002-	8.00	8.00	.0076-	.0015-	.085
8	.02-	.02-	.009-	.0321	.034-	12.00	12.00	.0144-	.0016-	.138
10	.02-	.03-	.036-	.0354	.015	4.03-	4.03-	.0050	.0019-	.052-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 118-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.02-	8.17-	.501-	.0689	.058	.02-	.02-	.0076-	.0006-	.007
3	4.02-	4.11-	.304-	.0390	.046	.02-	.02-	.0023	.0005-	.003-
4	.01-	.02-	.043-	.0286	.032	.02-	.02-	.0020	.0011-	.004-
5	4.00	4.06	.205	.0332	.022	.02-	.02-	.0022	.0011-	.003-
6	8.00	8.14	.467	.0516	.008	.02-	.02-	.0001-	.0017-	.000-
7	12.01	12.23	.709	.0806	.001	.02-	.02-	.0009-	.0029-	.000-
8	16.03	15.32	.950	.1313	.010-	.02-	.02-	.0005-	.0050-	.002
10	18.01	18.32	.985	.1696	.015-	.02-	.02-	.0027	.0016-	.004-
11	20.02	20.32	.956	.2364	.072-	.02-	.02-	.0007	.0017	.011-
12	8.03-	8.18-	.502-	.0715	.061	.03	.03	.0097-	.0018-	.009

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 119-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
7	4.02-	4.11-	.307-	.0583	.047	.03	.03	.0081-	.0342-	.013
9	.02-	.03-	.047-	.0470	.031	.03	.03	.0068-	.0353-	.017
11	4.00	4.06	.207	.0514	.019	.03	.03	.0038-	.0353-	.017
13	8.00	8.14	.476	.0709	.007	.03	.03	.0032-	.0370-	.023
15	12.00	12.23	.735	.1030	.007-	.03	.03	.0015-	.0401-	.026
17	16.01	16.31	.973	.1568	.014-	.03	.03	.0039	.0433-	.020
19	18.01	18.33	1.031	.1996	.019-	.03	.03	.0086	.0377-	.011
21	20.00	20.30	.955	.2714	.055-	.03	.03	.0014	.0391-	.002

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 120-0
DATE 7/06/62
q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	4.02-	4.11-	.301-	.0561	.042	.03	.03	.0124-	.0271-	.017
5	.00-	.01-	.053-	.0400	.032	.03	.03	.0045-	.0267-	.010
7	4.02	4.08	.205	.0451	.020	.03	.03	.0028-	.0271-	.013
9	8.03	8.17	.467	.0654	.006	.03	.03	.0053-	.0291-	.020
11	12.00	12.22	.722	.0952	.006-	.03	.03	.0017-	.0314-	.020
13	16.00	16.30	.953	.1470	.012-	.03	.03	.0048	.0341-	.012
17	18.01	18.32	1.006	.1887	.019-	.03	.03	.0071	.0300-	.010
19	20.00	20.30	.959	.2638	.056-	.03	.03	.0008-	.0363-	.006-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 121-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	4.02	4.11	.301	.0465	.047	.00	.00	.0058	.0186	.009
7	.02	.03	.048	.0349	.034	.00	.00	.0026	.0181	.007
9	4.03	4.09	.205	.0393	.021	.01	.01	.0013	.0184	.008
11	8.01	8.15	.474	.0576	.008	.02	.02	.0008	.0189	.010
15	12.01	12.23	.708	.0879	.000	.02	.02	.0005	.0214	.014
17	16.00	16.29	.942	.1393	.007	.02	.02	.0036	.0236	.009
19	18.01	18.32	.993	.1783	.017	.02	.02	.0045	.0224	.010
21	20.03	20.33	.955	.2548	.054	.02	.02	.0034	.0266	.003

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 122-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
5	4.03-	4.12-	.303-	.0420	.048	.02	.02	.0020-	.0090-	.001-
7	.00	.01-	.047-	.0314	.031	.02	.02	.0013-	.0093-	.003
9	4.01	4.07	.199	.0362	.021	.02	.02	.0008-	.0095-	.003
11	8.02	8.16	.463	.0539	.009	.02	.02	.0009-	.0102-	.004
13	12.00	12.22	.709	.0824	.001	.02	.02	.0004	.0107-	.006
15	16.01	16.30	.949	.1326	.008-	.02	.02	.0016	.0135-	.005
17	18.01	18.32	.993	.1738	.017-	.02	.02	.0025	.0107-	.002
21	20.03	20.32	.952	.2433	.074-	.02	.02	.0005	.0080-	.007-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 123-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	4.03-	4.12-	.296-	.0500	.044	.01	.01	.0100-	.0083	.008
7	.01-	.02-	.043-	.0306	.032	.01	.01	.0019	.0076	.005-
9	4.00	4.06	.206	.0355	.019	.01	.01	.0009	.0078	.005-
11	8.03	8.17	.472	.0556	.007	.01-	.01-	.0034-	.0072	.001-
13	12.00	12.22	.706	.0822	.001-	.01-	.01-	.0002-	.0083	.007-
15	16.01	16.30	.941	.1307	.007-	.01-	.01-	.0006-	.0082	.007-
17	18.00	18.31	.987	.1717	.017-	.01-	.01-	.0004-	.0120	.013-
19	20.01	20.31	.956	.2446	.073-	.01-	.01-	.0033-	.0160	.023-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 124-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	4.02-	4.11-	.296-	.0440	.044	.01-	.01-	.0054	.0181	.019-
5	.01-	.02-	.044-	.0342	.030	.01-	.01-	.0037	.0166	.010-
7	4.02	4.08	.207	.0385	.020	.01-	.01-	.0021	.0165	.011-
9	8.00	8.14	.471	.0559	.008	.01-	.01-	.0005	.0177	.011-
11	12.00	12.22	.702	.0852	.003	.01-	.01-	.0010-	.0191	.012-
13	16.02	16.31	.940	.1342	.007-	.01-	.01-	.0023-	.0197	.013-
15	18.02	18.33	1.005	.1782	.017-	.01-	.01-	.0031-	.0231	.017-
17	20.01	20.31	.964	.2486	.074-	.01-	.01-	.0050-	.0289	.032-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 124-1 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_c
3	4.02-	4.11-	.294-	.0440	.044	.01-	.01-	.0042	.0171	.009-
5	.00-	.01-	.045-	.0341	.032	.01-	.01-	.0040	.0175	.013-
7	4.01	4.07	.211	.0382	.019	.01-	.01-	.0021	.0167	.010-
9	8.00	8.14	.467	.0553	.008	.01-	.01-	.0004	.0176	.011-
13	12.00	12.22	.705	.0846	.001	.01-	.01-	.0007-	.0195	.014-
15	16.00	16.30	.953	.1343	.006-	.01-	.01-	.0021-	.0200	.012-
17	18.02	18.33	.999	.1778	.016-	.01-	.01-	.0028-	.0238	.015-
19	20.01	20.31	.959	.2474	.074-	.01-	.01-	.0052-	.0287	.028-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 125-0 | 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.01-	4.10-	.298-	.0496	.042	.01-	.01-	.0068	.0264	.015-
5	.00-	.01-	.052-	.0397	.032	.01-	.01-	.0056	.0266	.016-
7	4.02	4.08	.210	.0435	.018	.01-	.01-	.0030	.0258	.016-
9	8.00	8.14	.468	.0618	.006	.01-	.01-	.0011	.0269	.017-
11	12.01	12.23	.717	.0930	.001-	.01-	.01-	.0010-	.0283	.018-
13	16.01	16.31	.955	.1420	.010-	.01-	.01-	.0036-	.0306	.018-
15	18.00	18.31	.995	.1836	.020-	.01-	.01-	.0041-	.0319	.019-
17	20.00	20.30	.954	.2536	.073-	.01-	.01-	.0051-	.0416	.040-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 126-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	4.02-	4.11-	.308-	.0568	.044	.01-	.01-	.0097	.0364	.019-
7	.01	.00	.048-	.0466	.029	.01-	.01-	.0073	.0355	.020-
9	4.01	4.07	.207	.0498	.018	.01-	.01-	.0042	.0349	.020-
11	8.01	8.16	.478	.0683	.004	.01-	.01-	.0009	.0351	.019-
13	12.01	12.23	.714	.0999	.002-	.01-	.01-	.0016-	.0369	.023-
15	16.01	16.31	.958	.1491	.012-	.01-	.01-	.0052-	.0389	.020-
17	18.00	18.31	1.004	.1952	.023-	.01-	.01-	.0058-	.0365	.021-
23	20.01	20.31	.979	.2773	.068-	.01-	.01-	.0018-	.0469	.043-
25	18.00	18.31	1.013	.1957	.024-	.01-	.01-	.0059-	.0380	.024-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 127-1 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.02-	8.12-	.332-	.0857	.021	.02	.02	.0104	.0395	.018-
5	4.02-	4.03-	.045-	.0680	.001-	.02	.02	.0102	.0396	.025-
7	.01-	.06	.237	.0721	.023-	.02	.02	.0073	.0378	.019-
9	4.01	4.17	.511	.0931	.039-	.02	.02	.0056	.0384	.022-
11	8.00	8.24	.793	.1302	.051-	.02	.02	.0027	.0391	.024-
15	12.01	12.34	1.069	.1881	.058-	.02	.02	.0009-	.0376	.024-
17	16.00	16.46	1.271	.2591	.052-	.02	.02	.0054-	.0411	.019-
19	17.01	17.42	1.312	.2813	.046-	.02	.02	.0062-	.0394	.019-
21	18.02	18.44	1.334	.3042	.047-	.02	.02	.0073-	.0369	.015-
23	20.02	20.37	1.137	.2912	.070-	.02	.02	.0006-	.0138	.012-
25	19.01	19.39	1.231	.3789	.065-	.02	.02	.0047-	.0260	.022-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 123-1 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
33	8.01-	8.11-	.319-	.0708	.023	.02	.02	.0009	.0223	.003-
35	4.02-	4.03-	.037-	.0546	.002-	.02	.02	.0046	.0198	.012-
37	.02-	.05	.237	.0594	.023-	.02	.02	.0038	.0190	.010-
39	4.00	4.17	.542	.0813	.042-	.02	.02	.0034	.0190	.012-
41	8.01	8.25	.789	.1176	.050-	.02	.02	.0018	.0203	.013-
43	12.01	12.34	1.065	.1716	.056-	.02	.02	.0005-	.0203	.012-
45	16.01	16.41	1.271	.2442	.048-	.02	.02	.0017-	.0211	.014-
49	18.02	18.43	1.309	.3144	.053-	.02	.02	.0009	.0337	.039-
51	20.00	20.38	1.219	.3945	.081-	.02	.02	.0013-	.0210	.030-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 129-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
7	8.03-	8.13-	.325-	.0635	.019	.02	.02	.0004	.0001	.018-
9	4.02-	4.02-	.021-	.0483	.001	.02	.02	.0009-	.0010-	.001-
11	.03-	.04	.242	.0556	.022-	.02	.02	.0001-	.0016-	.001-
13	4.01	4.17	.516	.0772	.035-	.02	.02	.0008	.0016-	.001-
15	8.00	8.25	.802	.1146	.049-	.02	.02	.0002	.0016-	.001-
17	12.01	12.34	1.071	.1681	.054-	.02	.02	.0000-	.0032-	.000
19	16.01	16.41	1.281	.2422	.048-	.02	.02	.0008	.0025-	.002-
21	18.03	18.43	1.296	.3115	.050-	.02	.02	.0045	.0136	.025-
23	20.01	20.40	1.241	.3996	.092-	.02	.02	.0019	.0009	.030-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 130-0 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
7	8.03-	8.12-	.266-	.0702	.013	.02	.02	.0087-	.0229-	.005
11	4.01-	4.01-	.028-	.0549	.000-	.02	.02	.0059-	.0210-	.009
15	4.01	4.17	.517	.0815	.038-	.02	.02	.0024-	.0226-	.010
17	8.03	8.27	.788	.1179	.050-	.02	.02	.0016-	.0241-	.014
19	12.02	12.35	1.073	.1735	.056-	.02	.02	.0007-	.0274-	.016
21	16.01	16.41	1.275	.2471	.049-	.02	.02	.0030	.0261-	.012
23	18.01	18.42	1.331	.2893	.047-	.02	.02	.0050	.0230-	.003
25	20.02	20.40	1.224	.4051	.076-	.02	.02	.0081	.0141-	.010-
27	.02-	.05	.244	.0609	.024-	.02	.02	.0041-	.0216-	.009

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 131-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.08-	8.12-	.341-	.0850	.027	.02	.02	.0121-	.0371-	.011
5	4.02-	4.03-	.043-	.0693	.001	.02	.02	.0112-	.0386-	.016
7	.01	.08	.234	.0738	.021-	.02	.02	.0089-	.0398-	.020
9	4.03	4.18	.503	.0947	.037-	.02	.02	.0057-	.0407-	.022
11	8.01	8.25	.793	.1317	.053-	.02	.02	.0030-	.0420-	.024
13	12.01	12.34	1.051	.1861	.058-	.02	.02	.0010-	.0456-	.028
15	16.01	16.41	1.278	.2659	.052-	.02	.02	.0060	.0445-	.016
17	18.01	18.41	1.296	.3289	.045-	.02	.02	.0102	.0225-	.013-
19	20.00	20.37	1.204	.4096	.072-	.02	.02	.0112	.0266-	.001-
21	17.02	17.42	1.298	.3006	.048-	.02	.02	.0096	.0344-	.001

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 8/17/62

MOMENT AXES STAB | RUN 132-2 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.00-	8.05-	.175-	.0989	.005-	.00	.00-	.0125-	.0397-	.012
5	4.02-	4.00-	.092	.0933	.024-	.00	.00-	.0106-	.0412-	.012
7	.00-	.11	.372	.1030	.047-	.00	.00-	.0091-	.0416-	.023
9	4.00	4.20	.644	.1290	.064-	.00	.00-	.0058-	.0416-	.023
11	8.01	8.30	.924	.1757	.074-	.00	.00-	.0038-	.0435-	.026
13	12.01	12.38	1.181	.2356	.075-	.00	.00-	.0002-	.0461-	.026
15	16.01	16.45	1.403	.3315	.066-	.00	.00-	.0067	.0455-	.014
19	18.00	18.42	1.347	.4133	.062-	.00	.00-	.0084	.0312-	.005
23	20.01	20.40	1.244	.4629	.078-	.00-	.00	.0104	.0233-	.001-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-C | DATE 7/06/82

MOMENT AXES STAB | RUN 133-1 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	4.01-	4.10-	.300-	.0415	.049	.02	.02	.0006-	.0009-	.001-
3	.00-	.01-	.055-	.0316	.029	.02	.02	.0002	.0009-	.002-
4	4.01	4.07	.191	.0355	.021	.02	.02	.0003	.0009-	.001-
5	8.01	8.15	.453	.0531	.010	.02	.02	.0000-	.0011-	.000-
6	12.00	12.22	.705	.0837	.001-	.02	.02	.0001-	.0024-	.000
7	16.00	16.29	.922	.1354	.009-	.02	.02	.0005	.0027-	.001-
8	18.00	18.31	.987	.1743	.017-	.02	.02	.0009	.0010	.005-
9	20.00	20.30	.959	.2492	.057-	.02	.02	.0046-	.0006-	.000-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 134-1 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	.01	.01	.012-	.0233	.033-	12.01-	12.01-	.0220	.0050-	.180-
3	.01	.00	.035-	.0280	.007-	8.00-	8.00-	.0157	.0042-	.123-
4	.01	.00	.043-	.0334	.018	4.01-	4.01-	.0056	.0024-	.055-
5	.01	.00	.055-	.0327	.029	.00-	.00	.0005	.0017-	.006-
6	.01	.01-	.066-	.0324	.027	4.03	4.03	.0078-	.0008	.050
8	.01	.00	.045-	.0290	.003	8.01	8.01	.0144-	.0014	.104
9	.01	.01	.018-	.0267	.031-	12.01	12.01	.0191-	.0001	.158

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 136-0 | q 140.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	8.01	8.16	.485	.0479	.067-	12.03-	12.03-	.0322	.0093-	.188-
12	8.02	8.16	.461	.0498	.033-	8.01-	8.01-	.0198	.0082-	.117-
7	8.02	8.16	.460	.0576	.008-	4.03-	4.03-	.0052	.0068-	.058-
8	8.02	8.16	.454	.0539	.009	.02-	.02-	.0003-	.0016-	.003-
9	8.02	8.16	.453	.0529	.001	4.02	4.02	.0117-	.0015	.056
10	8.02	8.16	.457	.0488	.024-	8.01	8.01	.0194-	.0034	.112
11	8.02	8.17	.464	.0480	.061-	12.00	12.00	.0267-	.0036	.175

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-C | DATE 7/06/62
MOMENT AXES STAB | RUN 136-C | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	8.01-	8.07-	.198-	.0834	.001-	.00-	.00-	.0045-	.0005-	.000
13	4.01-	3.99-	.069	.0784	.023-	.00-	.00-	.0030-	.0014-	.002
15	.01-	.10	.365	.0881	.045-	.00-	.00	.0006-	.0021-	.000-
17	4.00	4.19	.633	.1151	.059-	.00-	.00-	.0006-	.0024-	.001
19	8.01	8.29	.914	.1603	.069-	.00-	.00-	.0015-	.0040-	.005
21	12.00	12.36	1.163	.2210	.072-	.00-	.00-	.0010-	.0045-	.004
23	16.03	16.47	1.406	.3087	.062-	.00	.00	.0002	.0029-	.003-
25	18.00	18.43	1.372	.4002	.063-	.00-	.00	.0012	.0002	.013-
27	20.00	20.40	1.288	.4569	.075-	.00-	.00	.0026	.0030-	.009-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 137-0 | q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	4.01-	3.98-	.100	.0800	.024-	.00-	.00-	.0063-	.0222-	.002
7	.01-	.10	.378	.0907	.047-	.00-	.00-	.0056-	.0217-	.010
9	4.02	4.22	.646	.1171	.053-	.00-	.00-	.0041-	.0228-	.015
11	8.02	8.31	.939	.1647	.073-	.00-	.00-	.0036-	.0265-	.018
13	12.02	12.38	1.173	.2232	.073-	.00-	.00-	.0013-	.0276-	.019
15	16.01	16.45	1.403	.3120	.060-	.00-	.00-	.0025	.0249-	.005
17	18.01	18.43	1.354	.4033	.062-	.00-	.00	.0048	.0197-	.000-
19	20.02	20.42	1.284	.4601	.086-	.00-	.00	.0056	.0169-	.004-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 138-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	8.03-	8.08-	.190-	.0888	.003-	.00-	.00	.0013-	.0224	.000-
7	4.02-	4.00-	.088	.0789	.022-	.00-	.00	.0052	.0213	.026-
23	.00-	.11	.363	.0900	.046-	.00	.00	.0044	.0191	.011-
11	4.01	4.21	.636	.1142	.059-	.00-	.00	.0037	.0194	.011-
13	8.03	8.31	.919	.1596	.068-	.00-	.00	.0013	.0199	.009-
15	12.00	12.36	1.171	.2201	.070-	.00-	.00	.0000-	.0203	.012-
17	16.01	16.45	1.407	.3112	.060-	.00-	.00	.0011-	.0230	.016-
19	18.00	18.42	1.362	.4061	.064-	.00-	.00	.0021-	.0172	.021-
21	20.01	20.41	1.286	.4570	.083-	.00	.00	.0017-	.0167	.030-

Runs 139 to 158, inclusive, and 160 to 169, inclusive; no force and moment data were recorded.

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 159-Q | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
23	.01-	.01-	.001	.0194	.035-	12.01-	12.01-	.0249	.0063-	.181-
25	.01-	.01-	.009-	.0213	.021-	10.01-	10.01-	.0210	.0055-	.145-
27	.01-	.01-	.013-	.0248	.006-	8.00-	8.00-	.0166	.0036-	.118-
29	.00-	.00	.026-	.0260	.010	6.02-	6.02-	.0141	.0039-	.095-
31	.00-	.01-	.034-	.0285	.022	4.00-	4.00-	.0090	.0030-	.058-
33	.00-	.01-	.039-	.0294	.030	2.02-	2.02-	.0040	.0023-	.031-
35	.00-	.01-	.048-	.0292	.033	.00-	.00	.0010-	.0010-	.001-
37	.00-	.01-	.054-	.0294	.032	2.01	2.01	.0056-	.0001	.025
39	.00-	.01-	.055-	.0293	.030	4.00	4.00	.0091-	.0007	.052
41	.00-	.01-	.047-	.0281	.019	6.03	6.03	.0108-	.0009	.076
43	.00-	.01-	.035-	.0262	.006	8.02	8.02	.0154-	.0005	.107
45	.00-	.00	.010-	.0233	.028-	12.01	12.01	.0224-	.0012	.163
47	.00-	.01-	.032-	.0285	.015	6.01	6.01	.0104-	.0002-	.073
49	.00-	.01-	.039-	.0291	.025	4.00	4.00	.0086-	.0003-	.052
51	.00-	.00	.021-	.0247	.000-	8.02-	8.02-	.0178	.0062-	.119-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 343-0 — DATE 7/06/62

MOMENT AXES STAB — RUN 170-0 — q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.02-	8.07-	.186-	.1015	.017-	.01	.01	.0131	.0373	.026-
5	4.02-	3.99-	.096	.0956	.039-	.01	.01	.0137	.0409	.059-
7	.00-	.11	.376	.1069	.060-	.01	.01	.0101	.0394	.032-
9	4.01	4.21	.636	.1300	.069-	.01	.01	.0024	.0402	.016-
11	8.01	8.29	.916	.1731	.077-	.01	.01	.0011-	.0389	.017-
13	12.00	12.36	1.162	.2329	.076-	.01	.01	.0032-	.0378	.014-
15	16.01	16.45	1.399	.3271	.068-	.01	.01	.0073-	.0423	.015-
17	18.02	18.45	1.381	.3973	.059-	.01	.01	.0083-	.0200	.004
19	20.02	20.42	1.273	.4573	.083-	.01	.01	.0014-	.0157	.007-
21	4.01-	3.98-	.103	.0962	.039-	.01	.01	.0129	.0413	.053-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-0
RUN 171-1
DATE 7/06/62
q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	.00	.13	.417	.0936	.149-	12.01-	12.01-	.0461	.0324	.232-
5	.00	.12	.389	.0996	.101-	8.03-	8.03-	.0290	.0339	.150-
7	.00	.11	.374	.1074	.069-	4.01-	4.01-	.0091	.0364	.071-
11	.00	.11	.374	.1074	.064-	.00-	.00	.0078	.0391	.034-
13	.00	.11	.380	.1061	.061-	4.02	4.02	.0003	.0407	.034
15	.00	.12	.399	.1019	.083-	8.02	8.02	.0141-	.0441	.106
17	.00	.13	.419	.1005	.122-	12.01	12.01	.0286-	.0460	.179
19	.00	.11	.373	.1043	.072-	4.02-	4.02-	.0164	.0368	.082-
21	.00	.12	.389	.0982	.106-	8.03-	8.03-	.0313	.0339	.159-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 172-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ'_g	ψ	C_n	C_ℓ	C_C
5	16.01	16.44	1.375	.3478	.129-	8.04-	8.04-	.0211	.0127	.139-
7	16.01	16.44	1.389	.3504	.184-	12.02-	12.02-	.0317	.0097	.202-
9	16.01	16.44	1.367	.3444	.126-	8.00-	8.00-	.0209	.0126	.137-
11	16.01	16.44	1.396	.3366	.064-	4.01-	4.01-	.0044	.0265	.077-
13	16.01	16.43	1.406	.3317	.067-	.01	.01	.0099-	.0416	.011-
15	16.01	16.45	1.408	.3315	.071-	4.02	4.02	.0211-	.0515	.047
17	16.01	16.44	1.389	.3313	.104-	8.01	8.01	.0346-	.0600	.107
19	16.01	16.44	1.394	.3361	.153-	12.01	12.01	.0445-	.0612	.170
21	16.01	16.43	1.362	.3463	.129-	8.01-	8.01-	.0217	.0148	.136-
23	16.01	16.44	1.379	.3449	.134-	12.02-	12.02-	.0320	.0096	.208-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 173-0 | q 120.

Pt	α_ℓ	α	C_L	C_D	C_m	ψ_ℓ	ψ	C_n	C_ℓ	C_C
5	16.01	16.44	1.380	.3476	.163-	12.00-	12.00-	.0454	.0721-	.173-
7	16.01	16.44	1.384	.3445	.111-	8.01-	8.01-	.0324	.0578-	.104-
9	16.01	16.45	1.417	.3301	.075-	4.00-	4.00-	.0248	.0540-	.061-
11	16.01	16.45	1.407	.3334	.071-	.00	.00-	.0083	.0469-	.010
13	16.01	16.45	1.408	.3350	.084-	4.02	4.02	.0115-	.0389-	.086
15	16.01	16.45	1.403	.3440	.128-	8.02	8.02	.0220-	.0301-	.146
19	16.01	16.44	1.389	.3445	.179-	12.01	12.01	.0328-	.0197-	.202
21	16.01	16.45	1.410	.3328	.072-	.01	.01	.0102	.0467-	.008
23	16.02	16.46	1.418	.3304	.074-	4.02-	4.02-	.0259	.0532-	.062-
25	16.01	16.45	1.415	.3288	.074-	4.02-	4.02-	.0258	.0535-	.064-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 8/17/62

MOMENT AXES STAB | RUN 174-0 | q 120

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	.01	.14	.425	.0988	.124-	12.03-	12.03-	.0296	.0500-	.196-
5	.01	.13	.399	.1013	.083-	8.00-	8.00-	.0136	.0474-	.118-
9	.01	.13	.387	.1045	.061-	4.02-	4.02-	.0006-	.0442-	.046-
11	.01	.12	.376	.1064	.062-	.00	.00-	.0085-	.0414-	.007
13	.01	.13	.388	.1080	.072-	4.02	4.02	.0172-	.0399-	.076
15	.01	.13	.403	.1046	.103-	8.02	8.02	.0297-	.0378-	.136
17	.01	.14	.424	.1015	.148-	12.00	12.00	.0442-	.0349-	.204

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/05/62

MOMENT AXES STAB | RUN 175-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	.01	.01	.005-	.0384	.024-	12.02-	12.02-	.0149	.0368-	.160-
5	.01	.01	.025-	.0443	.005	8.02-	8.02-	.0079	.0359-	.100-
7	.01	.00	.045-	.0477	.024	4.02-	4.02-	.0006	.0348-	.044-
9	.01	.00	.047-	.0487	.022	.00	.00-	.0070-	.0344-	.005
11	.01	.00	.041-	.0480	.016	4.01	4.01	.0098-	.0367-	.057
13	.01	.01	.021-	.0458	.013-	8.02	8.02	.0176-	.0369-	.110
15	.01	.01	.003	.0412	.047-	12.00	12.00	.0250-	.0376-	.169
17	.01	.00	.038-	.0481	.015	4.02	4.02	.0099-	.0381-	.057
19	.01	.00	.041-	.0484	.021	.00	.00-	.0063-	.0339-	.008

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 176-1 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	16.01	16.31	.975	.1495	.083-	12.03-	12.03-	.0437	.0491-	.178-
5	16.01	16.31	.964	.1612	.054-	8.02-	8.02-	.0180	.0382-	.092-
7	16.01	16.31	.953	.1620	.034-	4.02-	4.02-	.0096	.0526-	.034-
11	16.01	16.31	.964	.1574	.021-	.02-	.02-	.0001	.0455-	.015
13	16.01	16.31	.970	.1526	.026-	4.03	4.03	.0050-	.0400-	.075
15	16.01	16.31	.964	.1567	.058-	8.00	8.00	.0138-	.0347-	.128
17	16.01	16.31	.975	.1574	.091-	12.00	12.00	.0277-	.0329-	.192

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 177-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	16.01	16.31	.959	.1338	.082-	12.02-	12.02-	.0411	.0351-	.174-
5	16.01	16.30	.942	.1330	.040-	8.01-	8.01-	.0311	.0338-	.115-
7	16.01	16.30	.931	.1390	.026-	4.00-	4.00-	.0104	.0332-	.041-
9	16.01	16.30	.949	.1372	.014-	.00-	.00-	.0025	.0278-	.013
11	16.01	16.31	.955	.1324	.019-	4.00	4.00	.0095-	.0224-	.071
15	16.01	16.31	.953	.1374	.049-	8.01	8.01	.0188-	.0165-	.123
17	16.01	16.31	.964	.1376	.079-	12.01	12.01	.0324-	.0143-	.188

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-0
RUN 178-0

DATE 7/06/62
q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
3	.01	.01	.001	.0229	.029-	12.02-	12.02-	.0175	.0202-	.179-
5	.01	.01	.022-	.0321	.002-	8.02-	8.02-	.0112	.0207-	.109-
9	.01	.00	.036-	.0354	.019	4.01-	4.01-	.0036	.0200-	.048-
11	.01	.00	.045-	.0360	.023	.01-	.01-	.0052-	.0175-	.006
13	.01	.00	.047-	.0369	.028	4.00	4.00	.0062-	.0197-	.044
15	.01	.01	.025-	.0345	.004-	8.02	8.02	.0135-	.0192-	.094
17	.01	.01	.003-	.0301	.036-	12.01	12.01	.0203-	.0190-	.156

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/05/62

MOMENT AXES STAB RUN 179-0 q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	.01	.01	.007	.0211	.036-	12.01-	12.01-	.0202	.0038-	.176-
7	.01	.01	.015-	.0279	.007-	8.02-	8.02-	.0138	.0029-	.115-
9	.02	.02	.026-	.0306	.017	4.02-	4.02-	.0064	.0023-	.060-
11	.01	.01	.031-	.0308	.023	.01-	.01-	.0027-	.0002-	.001-
13	.02	.01	.036-	.0323	.023	4.02	4.02	.0029-	.0023-	.042
15	.01	.01	.030-	.0305	.002	8.00	8.00	.0107-	.0016-	.097
17	.01	.01	.004-	.0267	.028-	12.00	12.00	.0167-	.0012-	.150
19	.01	.00	.034-	.0325	.019	4.00	4.00	.0027-	.0033-	.042
21	.01	.00	.037-	.0321	.024	.00	.00-	.0021-	.0016-	.001

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62
MOMENT AXES STAB | RUN 180-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	.01	.01	.002-	.0251	.042-	12.02-	12.02-	.0236	.0140	.187-
7	.00	.00	.019-	.0336	.011-	8.01-	8.01-	.0148	.0155	.119-
9	.00	.01-	.035-	.0338	.016	4.00-	4.00-	.0100	.0161	.079-
11	.00	.01-	.038-	.0354	.023	.00	.00	.0004-	.0174	.005-
13	.00	.01-	.041-	.0369	.024	4.02	4.02	.0000	.0184	.034
15	.00-	.00	.031-	.0348	.006	8.01	8.01	.0079-	.0165	.090
17	.00-	.00	.013-	.0302	.020-	12.00	12.00	.0144-	.0159	.150
19	.00-	.00	.028-	.0298	.010-	8.01-	8.01-	.0174	.0137	.136-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 181-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	16.00	16.30	.964	.1335	[illegible]	12.00-	12.00-	.0362	.0064	.199-
5	16.00	16.29	.949	.1448	[illegible]	8.02-	8.02-	.0047	.0036	.114-
7	16.01	16.30	.931	.1411	.0[illegible]4-	4.02-	4.02-	.0007	.0087	.060-
9	16.00	16.29	.927	.1398	.012-	.01-	.01-	.0027-	.0186	.013-
11	16.01	16.30	.929	.1380	.013-	4.00	4.00	.0159-	.0237	.044
13	16.00	16.29	.937	.1354	.036-	8.00	8.00	.0252-	.0277	.102
15	16.00	16.29	.949	.1371	.068-	12.00	12.00	.0354-	.0304	.159
17	16.00	16.29	.945	.1333	.052-	8.02-	8.02-	.0228	.0108	.136-
19	16.00	16.30	.953	.1329	.086-	12.02-	12.02-	.0361	.0088	.201-
21	16.00	16.29	.944	.1465	.068-	8.01-	8.01-	.0032	.0032	.112-
23	16.00	16.29	.949	.1430	.064-	8.02-	8.02-	.0077	.0051	.118-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 343-0 — DATE 7/06/62

MOMENT AXES STA3 — RUN 132-0 — q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	16.00	16.30	.965	.1529	.096-	12.02-	12.02-	.0308	.0275	.205-
7	16.00	16.30	.959	.1593	.070-	8.02-	8.02-	.0016	.0232	.120-
9	16.01	16.30	.951	.1577	.038-	4.02-	4.02-	.0042-	.0276	.066-
11	16.03	16.32	.938	.1549	.014-	.02-	.02-	.0056-	.0379	.021-
13	16.03	16.33	.954	.1567	.015-	4.02	4.02	.0196-	.0445	.040
15	16.03	16.33	.956	.1510	.036-	8.01	8.01	.0292-	.0466	.095
17	16.03	16.33	.966	.1511	.072-	12.01	12.01	.0385-	.0470	.152
19	16.03	16.33	.958	.1506	.061-	8.01-	8.01-	.0178	.0299	.144-
21	16.03	16.33	.969	.1584	.068-	8.01-	8.01-	.0073	.0252	.126-
23	16.01	16.02	.051	.0073-	.01	12.02-	12.02-	.0001-	.0001-	.002
27	16.01	16.31	.963	.1526	.0.	12.01-	12.01-	.0307	.0279	.207-
29	16.01	16.31	.960	.1512	.081-	10.01-	10.01-	.0217	.0288	.170-
31	16.01	16.30	.951	.1498	.060-	8.00-	8.00-	.0177	.0302	.141-
33	16.01	16.31	.958	.1535	.044-	6.01-	6.01-	.0065	.0282	.103-
35	16.01	16.30	.952	.1326	.029-	4.02-	4.02-	.0039	.0316	.075-
37	16.01	16.30	.941	.1556	.021-	2.00-	2.00-	.0002-	.0352	.048-
39	16.01	16.30	.939	.1361	.014-	.02	.02	.0063-	.0380	.019-
41	16.01	16.30	.940	.1510	.026-	4.01-	4.01-	.0074	.0323	.079-
43	16.01	16.30	.946	.1564	.031-	4.01-	4.01-	.0033	.0313	.076-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 183-C q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.01	8.16	.503	.0440	.066-	12.02-	12.02-	.0201	.0078-	.192-
5	8.00	8.15	.480	.0530	.034-	8.02-	8.02-	.0123	.0081-	.109-
7	8.01	8.16	.476	.0521	.003-	4.01-	4.01-	.0108	.0057-	.061-
9	8.00	8.15	.479	.0532	.004	.02-	.02-	.0017-	.0019-	.002
11	8.02	8.16	.475	.0525	.007-	4.02	4.02	.0107-	.0009	.057
13	8.02	8.17	.483	.0506	.031-	8.00	8.00	.0161-	.0027	.107
15	8.02	8.17	.502	.0489	.067-	12.01	12.01	.0269-	.0036	.171
17	8.02	8.16	.475	.0534	.000	2.02-	2.02-	.0046	.0025-	.029-
19	8.02	8.16	.475	.0485	.011-	6.00-	6.00-	.0186	.0076-	.094-
21	8.01	8.16	.481	.0483	.031-	8.02-	8.02-	.0163	.0074-	.119-
23	8.00	8.15	.491	.0476	.051-	10.00-	10.00-	.0239	.0082-	.151-
25	8.02	8.17	.476	.0493	.022-	7.02-	7.02-	.0177	.0075-	.103-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB. TEST 343-0 DATE 7/06/62

MOMENT AXES STAB RUN 103-1 q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.02	8.18	.508	.0459	.071-	12.02-	12.02-	.0312	.0061-	.187-
5	8.02	8.17	.494	.0474	.052-	10.01-	10.01-	.0238	.0069-	.150-
7	8.02	8.17	.485	.0485	.034-	8.02-	8.02-	.0185	.0064-	.119-
9	8.02	8.17	.482	.0485	.015-	6.02-	6.02-	.0162	.0072-	.094-
11	8.02	8.16	.475	.0508	.003-	4.01-	4.01-	.0124	.0053-	.062-
13	8.02	8.16	.468	.0527	.001	2.06-	2.06-	.0040	.0028-	.029-
15	8.01	8.15	.472	.0531	.004	.00	.00-	.0012-	.0019-	.000
17	8.02	8.16	.476	.0534	.001	2.00	2.00	.0030-	.0010-	.025
19	8.02	8.17	.481	.0528	.003-	4.01	4.01	.0102-	.0009	.054
21	8.02	8.16	.473	.0526	.014-	6.01	6.01	.0130-	.0020	.078
23	8.02	8.17	.485	.0512	.032-	8.02	8.02	.0158-	.0026	.107
25	8.01	8.16	.489	.0506	.050-	10.01	10.01	.0201-	.0031	.136
27	8.01	8.16	.501	.0493	.065-	12.02	12.02	.0268-	.0035	.171
29	8.02	8.16	.473	.0542	.003	2.02	2.02	.0018-	.0019-	.024
31	8.02	8.17	.483	.0492	.033-	8.00-	8.00-	.0191	.0077-	.121-
33	8.02	8.17	.481	.0496	.023-	7.02-	7.02-	.0178	.0075-	.104-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-C DATE 7/06/62

MOMENT AXES STAB RUN 134-C q 120.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.01	8.16	.500	.0433	.068-	12.03-	12.03-	.0328	.0091-	.199-
5	8.02	8.17	.488	.0445	.051-	10.02-	10.02-	.0262	.0072-	.165-
7	8.02	8.17	.477	.0449	.028-	8.02-	8.02-	.0225	.0082-	.124-
9	8.02	8.17	.478	.0489	.015-	6.02-	6.02-	.0161	.0065-	.090-
11	8.02	8.16	.467	.0502	.001-	4.00-	4.00-	.0121	.0053-	.061-
13	8.02	8.16	.467	.0510	.006	2.02-	2.02-	.0061	.0036-	.033-
21	8.02	8.16	.475	.0528	.006	2.02	2.02	.0061-	.0006-	.029
23	8.02	8.16	.472	.0514	.001-	4.01	4.01	.0108-	.0008	.056
25	8.02	8.16	.476	.0497	.012-	6.01	6.01	.0145-	.0015	.084
27	8.02	8.17	.484	.0498	.031-	8.02	8.02	.0174-	.0028	.110
29	8.02	8.17	.494	.0481	.048-	10.02	10.02	.0242-	.0038	.144
31	8.02	8.17	.504	.0481	.065-	12.01	12.01	.0293-	.0039	.175

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 243-0 DATE 7/06/52
MOMENT AXES STAB RUN 185-C q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.02	8.17	.503	.0452	.068-	12.02-	12.02-	.0235	.0084-	.177-
5	8.01	8.16	.480	.0462	.028-	8.02-	8.02-	.0124	.0066-	.108-
7	8.01	8.15	.474	.0513	.002-	4.02-	4.02-	.0027	.0038-	.049-
9	8.00	8.14	.469	.0530	.027	.00	.00-	.0116-	.0000-	.015
11	8.01	8.15	.469	.0524	.062-	4.02	4.02	.0228-	.0025	.075
13	8.01	8.16	.481	.0498	.029-	8.01	8.01	.0318-	.0049	.129

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-0 DATE 7/06/82

MOMENT AXES STAB RUN 136-0 q 140.

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	8.01	8.16	.498	.0467	.066-	12.02-	12.02-	.0172	.0076-	.171-
7	8.00	8.15	.477	.0487	.029-	8.02-	8.02-	.0043	.0061-	.097-
9	8.01	8.15	.470	.0540	.002-	4.02-	4.02-	.0007-	.0031-	.026-
11	8.00	8.14	.468	.0558	.006	.02-	.02-	.0022-	.0009	.025
13	8.02	8.16	.475	.0546	.003-	4.01	4.01	.0345-	.0034	.090
15	8.01	8.16	.483	.0511	.029-	8.00	8.00	.0469-	.0061	.150
17	8.01	8.16	.500	.0531	.066-	12.00	12.00	.0549-	.0066	.203

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 157-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_{D_0}	C_{D_i}	C_C
3	8.01	8.16	.505	.0490	.069−	12.02−	12.02−	.0132	.0070−	.162−
5	8.01	8.16	.481	.0498	.028−	8.02−	8.02−	.0016	.0058−	.095−
7	8.01	8.15	.471	.0554	.001−	4.01−	4.01−	.0102−	.0027−	.031−
9	8.00	8.14	.471	.0572	.007	.01	.01	.0274−	.0010	.035
11	8.02	8.16	.471	.0561	.002−	4.01	4.01	.0396−	.0078	.097
13	8.01	8.16	.482	.0546	.028−	8.01	8.01	.0531−	.0068	.152
15	8.02	8.17	.502	.0553	.067−	12.01	12.01	.0615−	.0070	.209

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-0 | DATE 7/06/62

MOMENT AXES STAB | RUN 166-0 | q 120.

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
5	.00-	.00	.014-	.0377	.005-	8.03-	8.03-	.0152	.0036-	.116-
7	.00-	.01-	.034-	.0405	.023	4.02-	4.02-	.0089	.0020-	.071-
9	.00	.01-	.030-	.0413	.033	.01	.01	.0011	.0020-	.000-
11	.00-	.01-	.045-	.0425	.031	4.00	4.00	.0047-	.0011-	.042
13	.00-	.00	.031-	.0407	.008	8.00	8.00	.0105-	.0003-	.089
15	.00-	.00	.003-	.0381	.025-	12.02	12.02	.0202-	.0004	.155
17	.00-	.00	.024-	.0404	.006	8.00	8.00	.0107-	.0010-	.094

FORM 4-536

MODEL CONDITION Good	PREVIOUS TESTS CVAL 343
BAYONETS	WINDSHIELDS Power Off St'd
TRUNNION SPACING None	BOOM TAIL LENGTH 42.27"

RYAN MODEL 143 (VERTIFAN)
1/8-SCALE CONVENTIONAL MODEL
$\delta_a = \delta_e = \delta_r = 0°$ for the entire test

DATE 1962	RUN	CONFIGURATION	TEST	q_m in.	$\alpha_g°$	$\psi_g°$	$\delta_f°$					FIGURE NO.
8-21	1	$3_0W_2F_0S_4^WV_1H_1^0$	Y_6	29.1	0	A**	0				Set M_δ's	Not presented
	1-1	"	"	"	"	"	"					3.51, 3.53, 3.55
	2	"	"	"	-4	"	"					3.51
	3	"	"	"	4	"	"					3.51
	4	"	"	"	8	"	"					3.51, 3.53
	5	"	"	"	16	"	"					3.51, 353
	6	"	"	"	-2	"	"					3.51
	7	"	P_6	"	A***	0	"					3.39, 3.42 3.47
	8	"	Y_6	"	2	A	"					3.51
8-22	9	"	"	"	12	"	"					3.51
	10	"	"	"	0	-A	"					3.42

REMARKS Run 1: Static tare before run
" : Zero shift in M, R & L
* q_m set with manometer containing alcohol, Sp. Gr. = .785
29.1" Alcohol = 118.3 q_m = 120q
Run 10: Run 1 repeated with ψ_g sched. run in reverse direction
** Yaw Schedule "A" : ψ_g = -12° to +12° by 2's.
*** Pitch Schedule "A": α_g = -8° to +20° by 2's.

NOTES: 1. Consistent with Test 343 on this model, control surface gaps were not sealed.

2. Wings W_1, W_2, and W_3 were constructed without deflectible ailerons. Although there were movable ailerons on wing W_0, they were never deflected.

DATE 1952	RUN	CONFIGURATION	TEST	q_{min}	α_g°	ψ_g°	δ_f°					FIGURE NO.
8-22	11	$B_0W_2F_0S_4^WV_1H_1^0$	P_6	29.1	A	0	45					3.37, 3.39
	12	"	Y_6	"	0	A	"					Not presented
	12-1	"	"	"	"	"	"					3.51, 3.53 3.54
	13	"	"	"	-4	"	"					3.51
	14	"	"	"	4	"	"					3.51
	15	"	"	"	8	"	"					3.51, 3.53
	16	"	"	"	16	"	"					3.51
	17	$B_0W_2F_0S_4^WV_0H_1^{2.5}$	P_6	"	A	0	"					3.39
	18	" H_1^5	"	"	"	"	"					3.39
	19	" H_1^{10}	"	"	"	"	"					3.39
8-23	20	" H_1^{10}	"	"		"	0					3.39, 3.42
	21	" H_1^5	"	"	"	"	"					3.39
	22	" $H_1^{2.5}$	"	"	"	"	"					3.39
	23	" $H_1^{-2.5}$	"	"	"	"	"					3.39
	24	" $H_1^{-5.0}$	"	"	"	"	"					3.39
	25	$B_0W_2F_0S_4^WV_0H_0^0$	"	"	"	"	"					3.42

REMARKS Run 12, Zero shift in M & R

DATE 1964	RUN	CONFIGURATION	TEST	q_{m} lb/in.²	α_g°	Ψ_g°	δ_f°					FIGURE NO.
8-23	26	$B_0W_2F_0S_4^WV_0H_0^{10}$	P_6	29.1	A	0	0					3.42
	27	$B_0W_2F_0S_4^W$	"	"	"	"	"				Set M_2's	3.34, 3.39 3.43, 3.44
	28	"	Y_6	"	0	A	"					3.50, 3.53
	29	"	"	"	8	"	"					3.50, 3.53
	30	"	"	"	16	"	"					3.50, 3.53
	31	"	"	"	0	"	45					Not presented
	31-1	"	"	"	"	"	"					3.50, 3.53
	32	"	"	"	8	"	"					3.50, 3.53
	33	"	P_6	"	A	0	"					3.36, 3.39, 3.41
	34	$B_0W_2F_4S_4^W$	"	"	"	"	45					3.36
	35	$B_0W_2F_3S_4^W$	"	"	"	"	"					3.36
	36	$B_0W_2F_0S_4^W + f_3$ + TUFTS	P_6 + TUFT PIX	"	"	"	0				*	3.43
	37	" + f_2 + "	"	"	"	"	"					3.43
	38	" + f_1 + "	"	"	"	"	"					3.43
	39	" + c_0 + "	"	"	"	"	"					3.44
8-24	40	$B_0W_2F_0S_4^W + c_1$	P_6	"	"	"	"					3.45

REMARKS * TUFT PIX α_g = 0° to 20° by 2's

Run 31: Zero shift in M

FORM 555A

DATE 1952	RUN	CONFIGURATION	TEST	q_{m_c}	α_g°	ψ_g°	δ_f°					FIGURE NO.
8-24	41	$B_0W_3F_0S_4^W$	P_6	23.1	A	0	0					3.34, 3.45
	42	"	Y_6	"	0	A	"					Not presented
	42-1	"	"	"	"	"	"					3.52
	43	"	"	"	8	"	"					3.52
	44	"	"	"	16	"	"					3.52
	45	$B_0W_1F_1S_4^W$	P_6	"	A	0	"					3.35
	46	"	Y_6	"	0	A	"					3.49
	47	"	"	"	8	"	"					3.49
	48	"	P_6	"	A	0	45					3.35, 3.38 3.40
	49	"	Y_6	"	8	A	"					Not presented
	49-1	"	"	"	"	"	"					3.49
	50	$B_0W_1F_5S_4^W$	P_6	"	A	0	"					3.38
	51	" F_6 "	"	"	"	"	"					3.38
	52	" F_7 "	"	"	"	"	"					3.38
	53	$B_0W_1F_1S_4^WV_0H_1^{10}$	"	"	"	"	"				Set M_3's	3.40
	54	" H_1^5	"	"	"	"	"					3.40

REMARKS Run 42 - Zero shift
Run 49 - Zero shift

DATE	RUN	CONFIGURATION	TEST	$q_{in.}$	α_g°	Ψ_g°	δ_f°					FIGURE NO.
8-24	55	$B_0W_1F_1S^W_0V_0H^0_1$	P_6	35.1	A	0	45					3.40
	56	$B_0W_2F_1S^W_1V_0H^0_1$	"	"	"	"	"					3.37
	57	$B_0W_2F_0S^W_1V_0H^{-2.5}_1$	"	"	"	"	"					3.39
	58	$B_0W_2F_0S^W_1V_0H^0_1$	"	"	"	"	C					3.34, 3.42 3.47 ot presented
8-27	59	$B_0W_0F_0S^W_1V_0H^0_0$	"	"	"	"	"					
	59-1	"	"	"	"	"	"					3.33, 3.46
	60	"	Y_6	"	C	A	"					3.48
	61	$B_0W_0F_0S^L_1V_0H^0_0$	P_6	"	A	0	"					3.46
	62	$B_0W_0F_0S^L_1V_0H^0_0$ ***	"		"	"	"					3.46
	63	$B_0W_2F_0S^W_1V_0H^0_2$ **	"	"	"	"	45					3.41
	64	"	Y_6	"	0	A	"					3.54
	65	" $H_2^{-2.5}$	P_6	"	A	0	"					3.41
	66	" $H_2^{2.5}$	"	"	"	"	"					3.41

REMARKS Run 58 - Rerun of 7 except for duratite fairing on V

Run 59 - Zero shift in M

** Flat-plate horizontal tail, H_2, was constructed without elevators.

*** In the absence of the simulated wing fan covers, filler blocks were substituted which made a smooth air foil section.

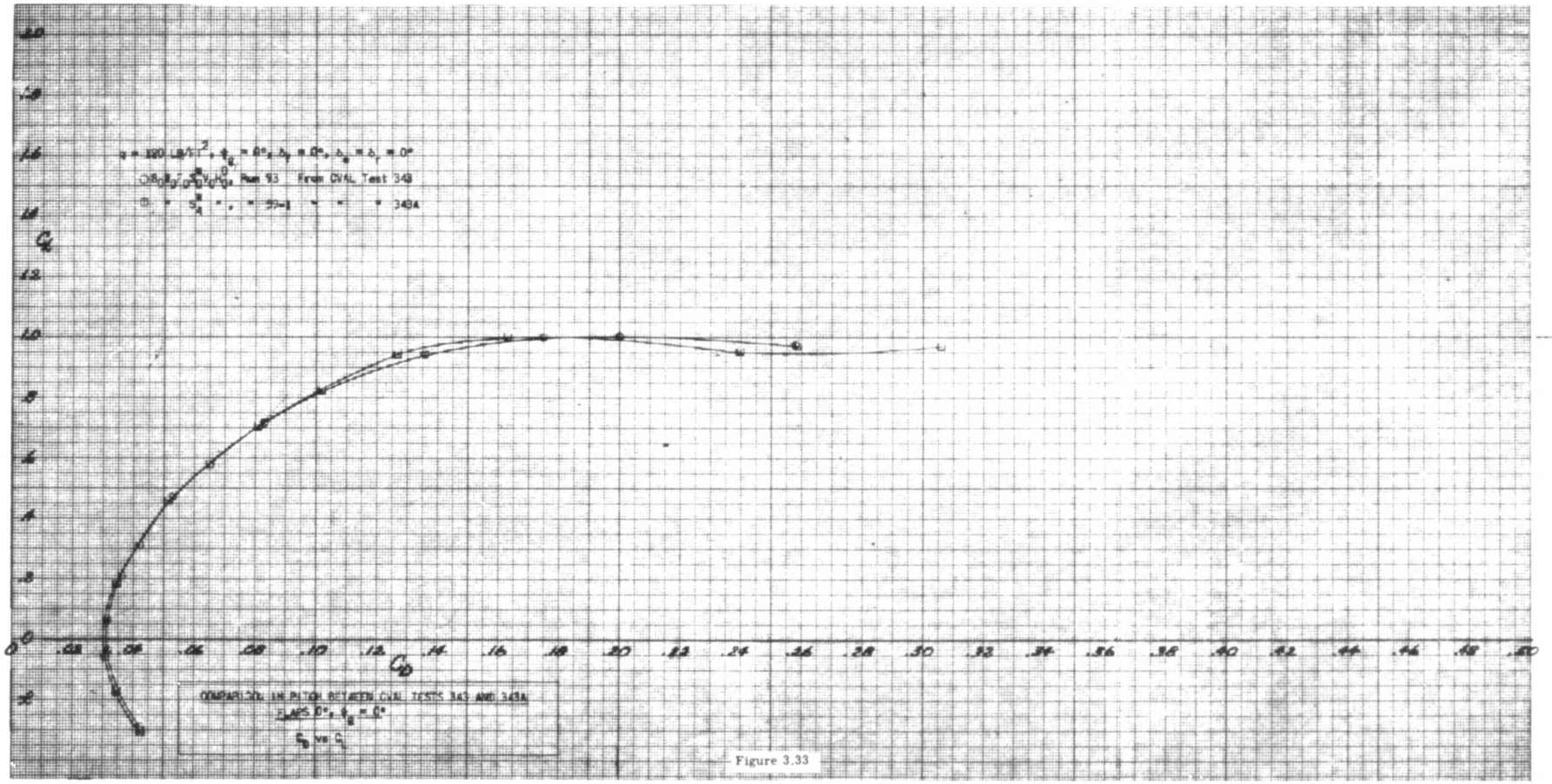
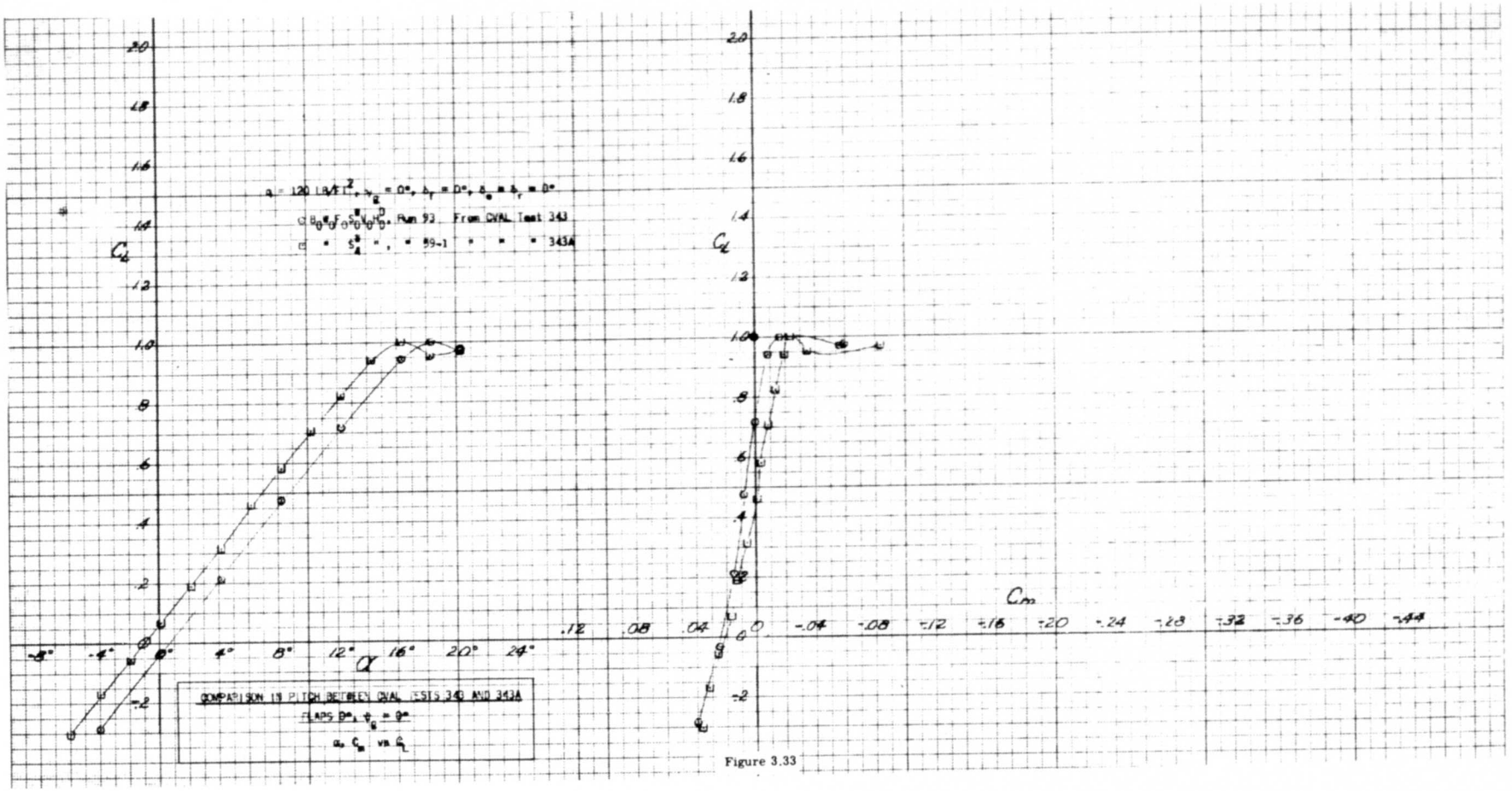

RUN SYM
93* ○
59-1 □
C_L
C_D
COMPARISON OF PITCH BETWEEN CVAL TESTS 343 AND 343A
FLAPS 0°, δ_s = 0°
C_L vs C_D

Figure 3.33



RUN SYM
93° ○
59-1 □

Figure 3.33

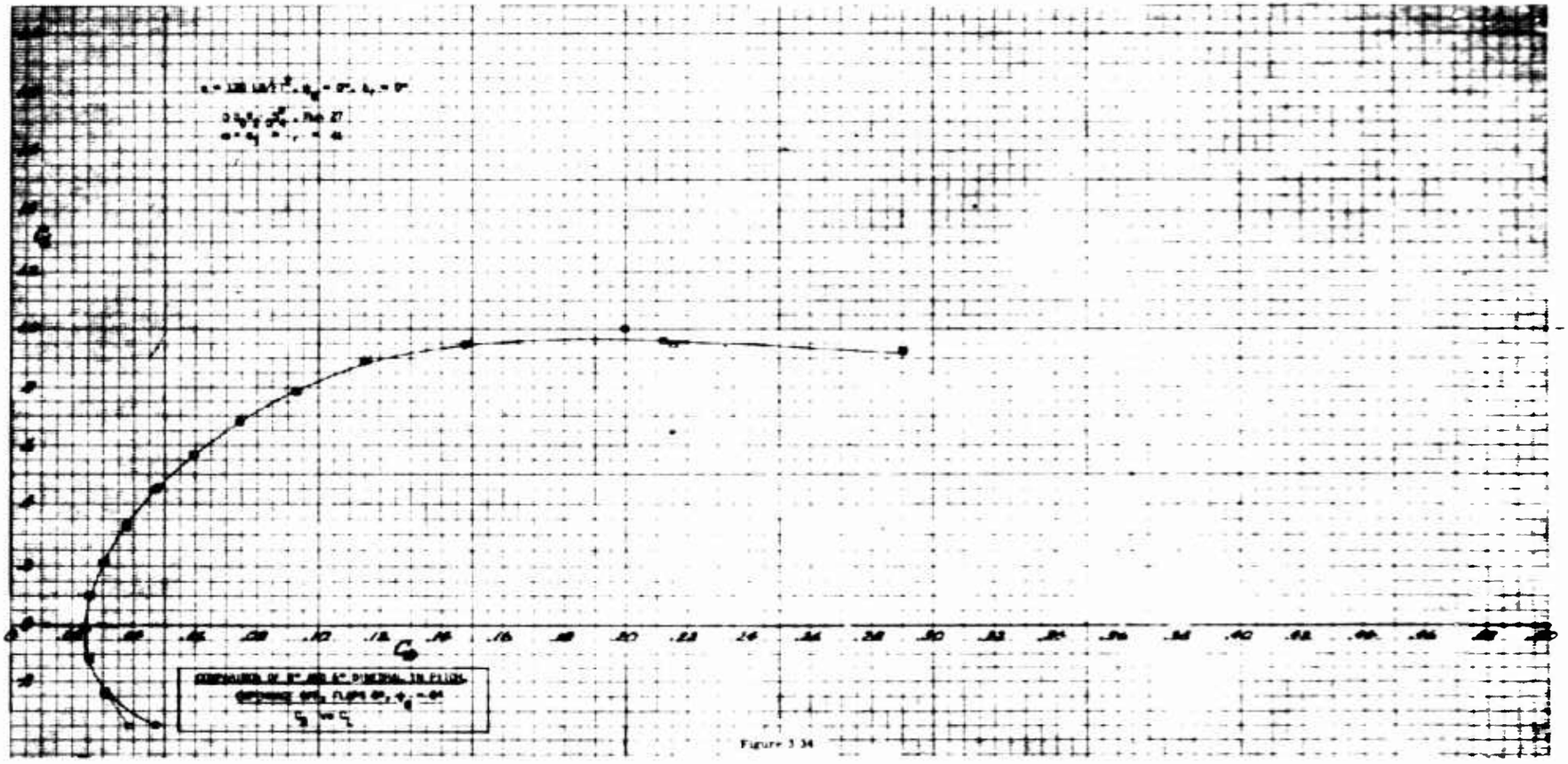


Figure 3.34

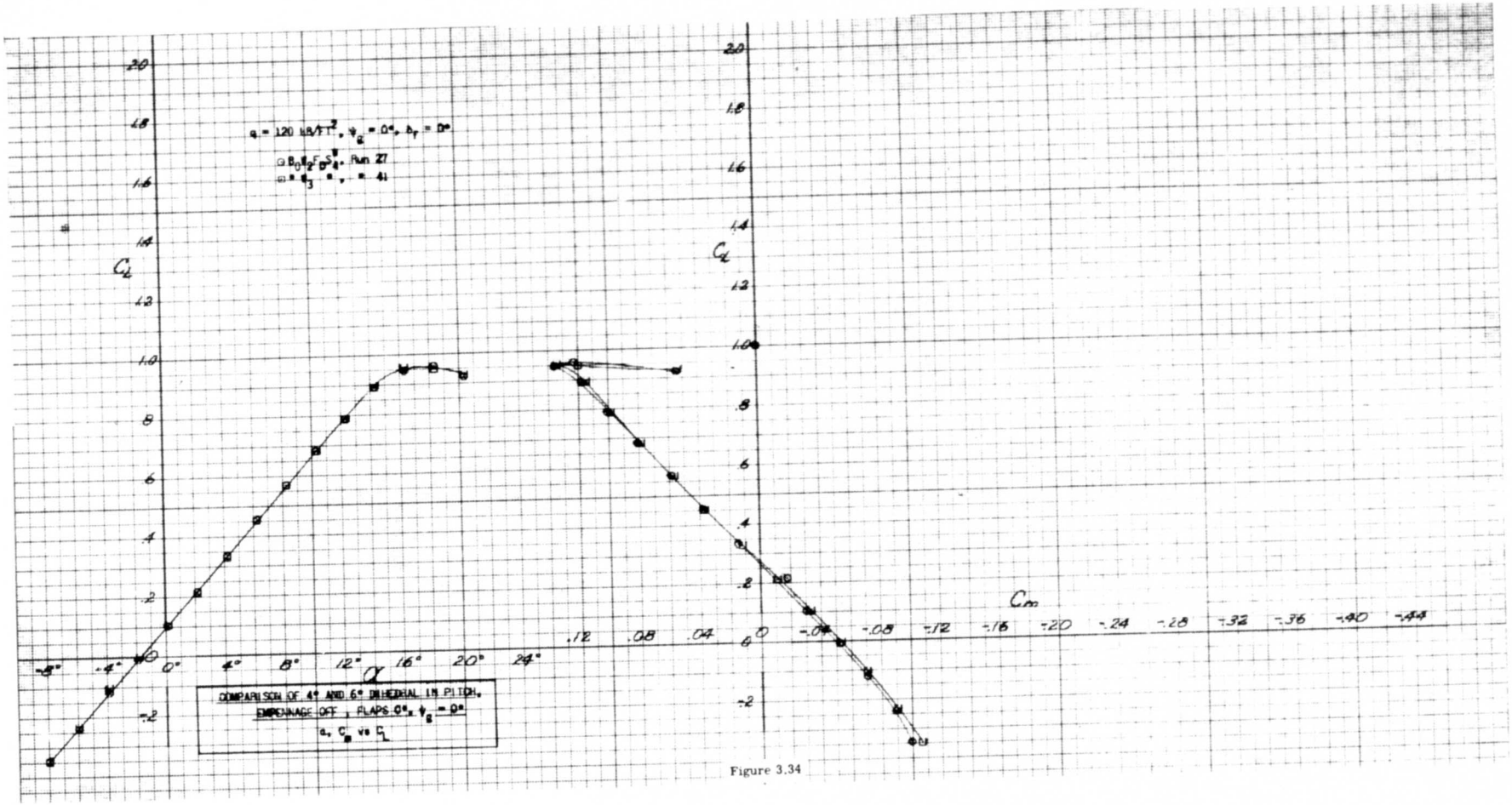

q = 120 LB/FT², ψ_g = 0°, δ_T = 0°
□ B₀E₂F₀S⁴₄°, Run 27
□ = 41
RUN SYM
27 ○
41 □
C_L
C_m
α
COMPARISON OF 4° AND 6° DIHEDRAL IN PITCH,
EMPENNAGE OFF ; FLAPS 0°, ψ_g = 0°
α, C_m vs C_L

Figure 3.34

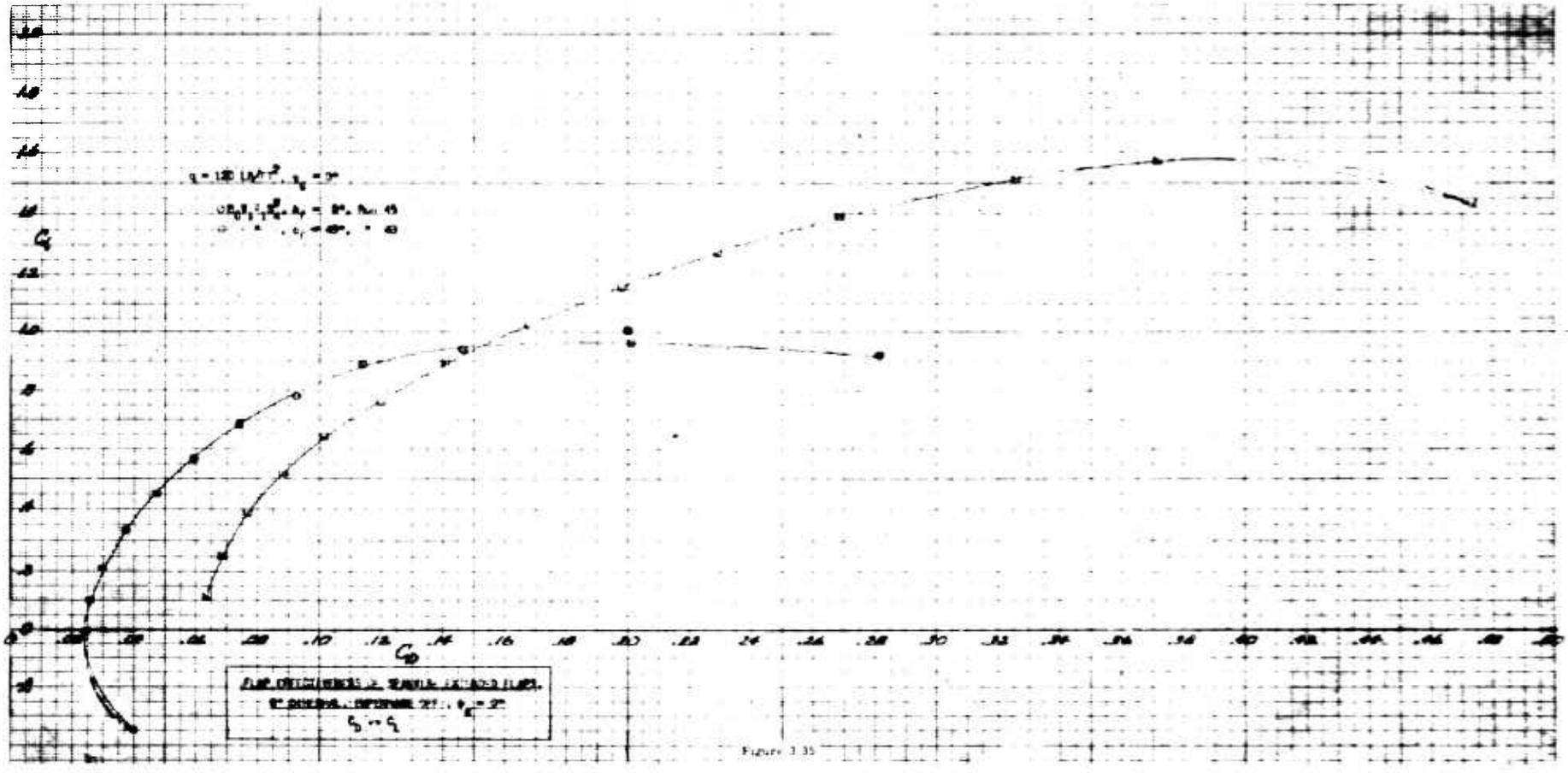


Figure 3.35

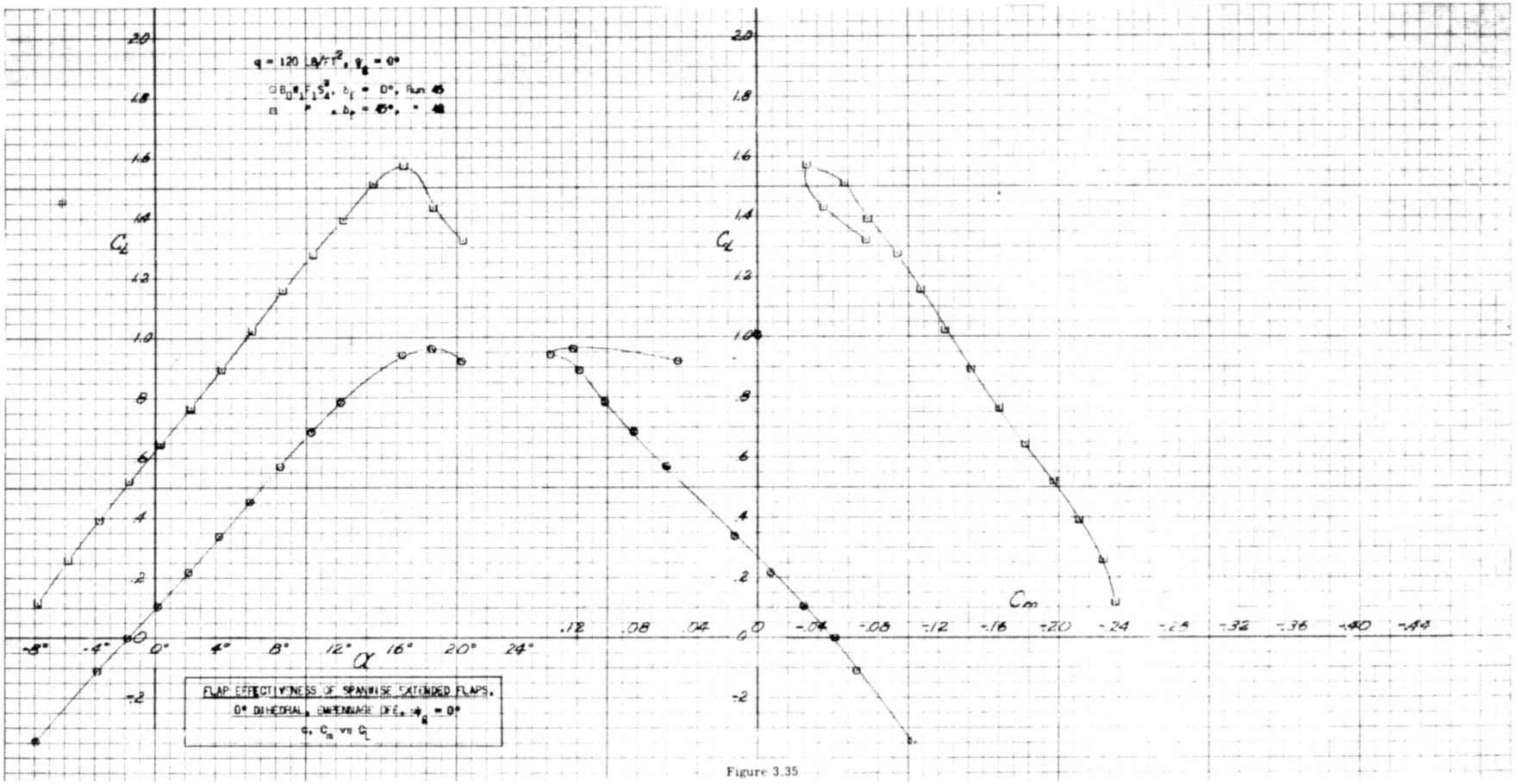

q = 120 lb/ft²
RUN SYM
45 ○
48 □
FLAP EFFECTIVENESS OF SPANWISE EXTENDED FLAPS,
0° DIHEDRAL, EMPENNAGE OFF
c, Cm vs CL
CL
Cm
α

Figure 3.35

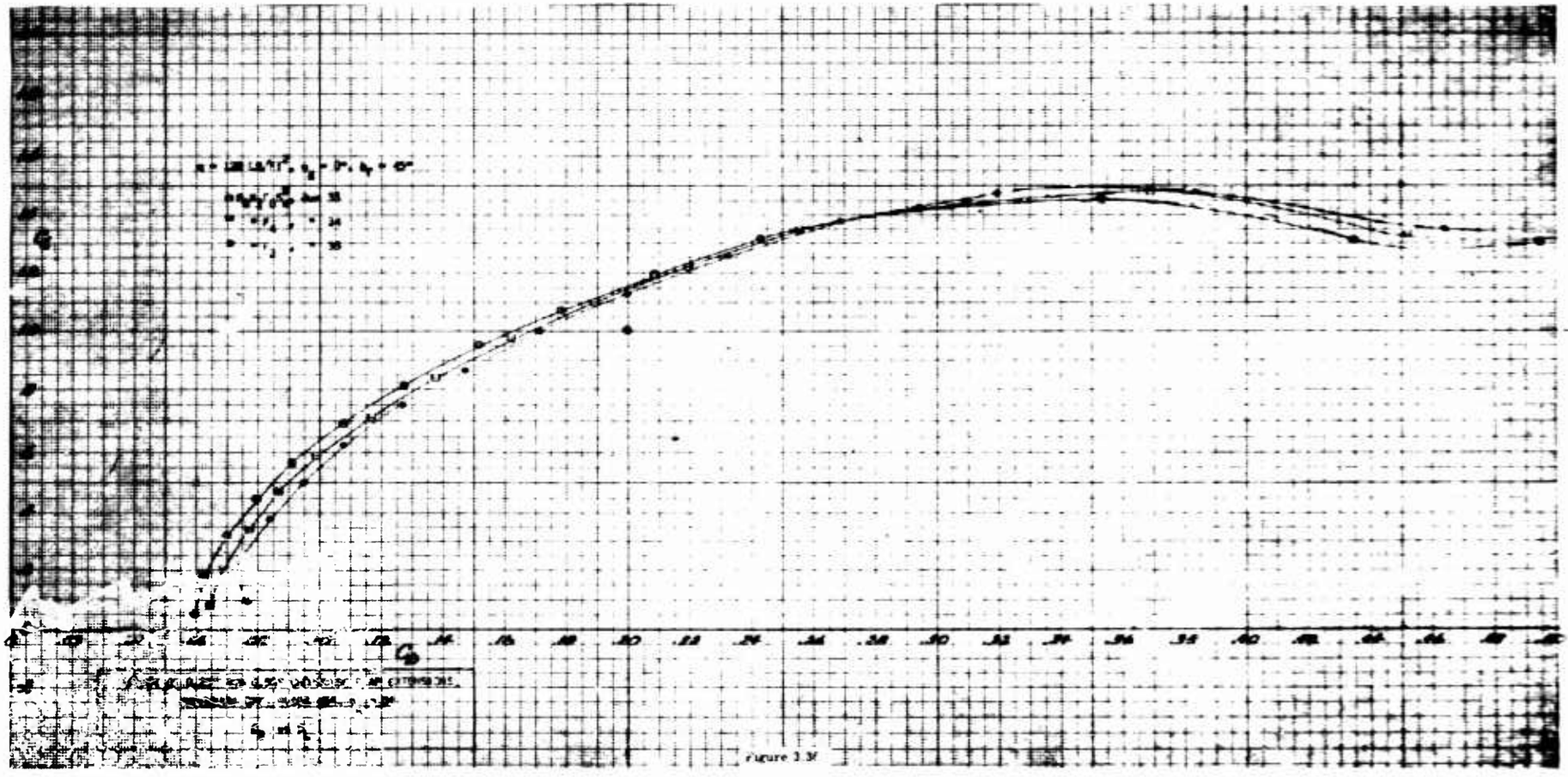


Figure 3.3f

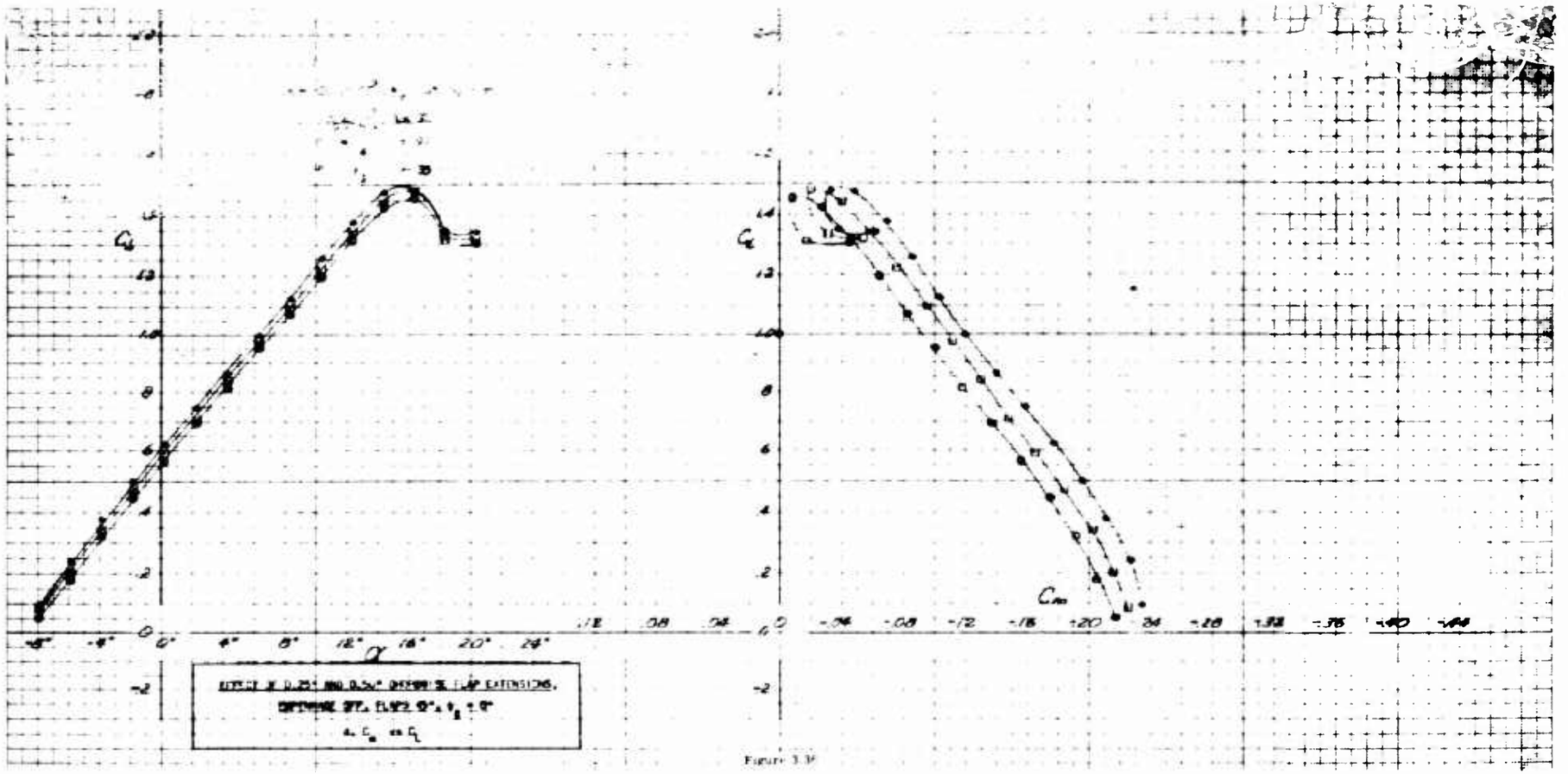

RUN SYM
33
34
35
C_L
C_m
α
-8°
-4°
0°
4°
8°
12°
16°
20°
24°
2
4
6
8
10
12
-2
-.12
-.08
-.04
0
-.04
-.08
-.12
-.16
-.20
.24
.28
.32
.36
.40
.44

Figure 3.39

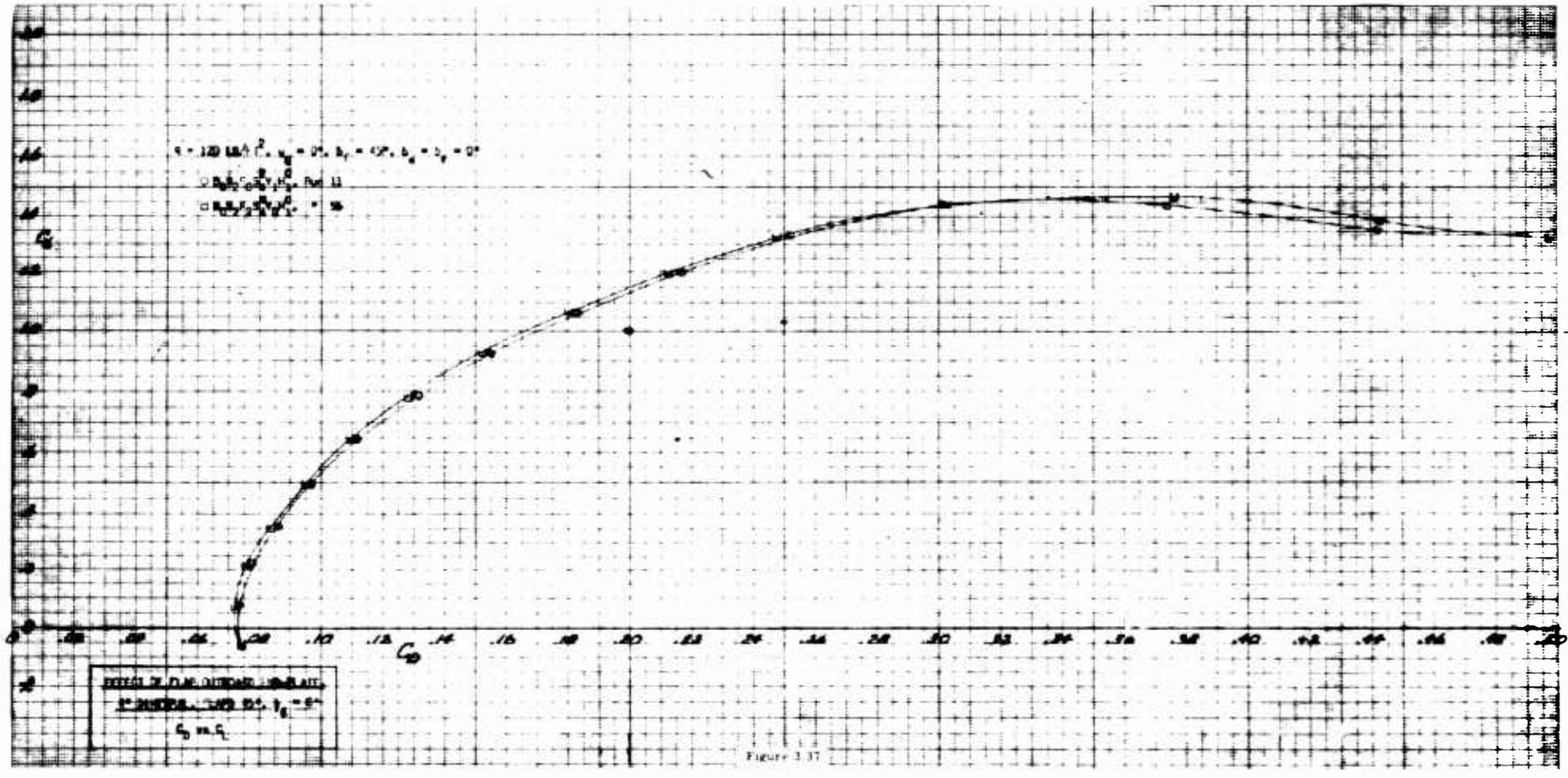


Figure 3.37

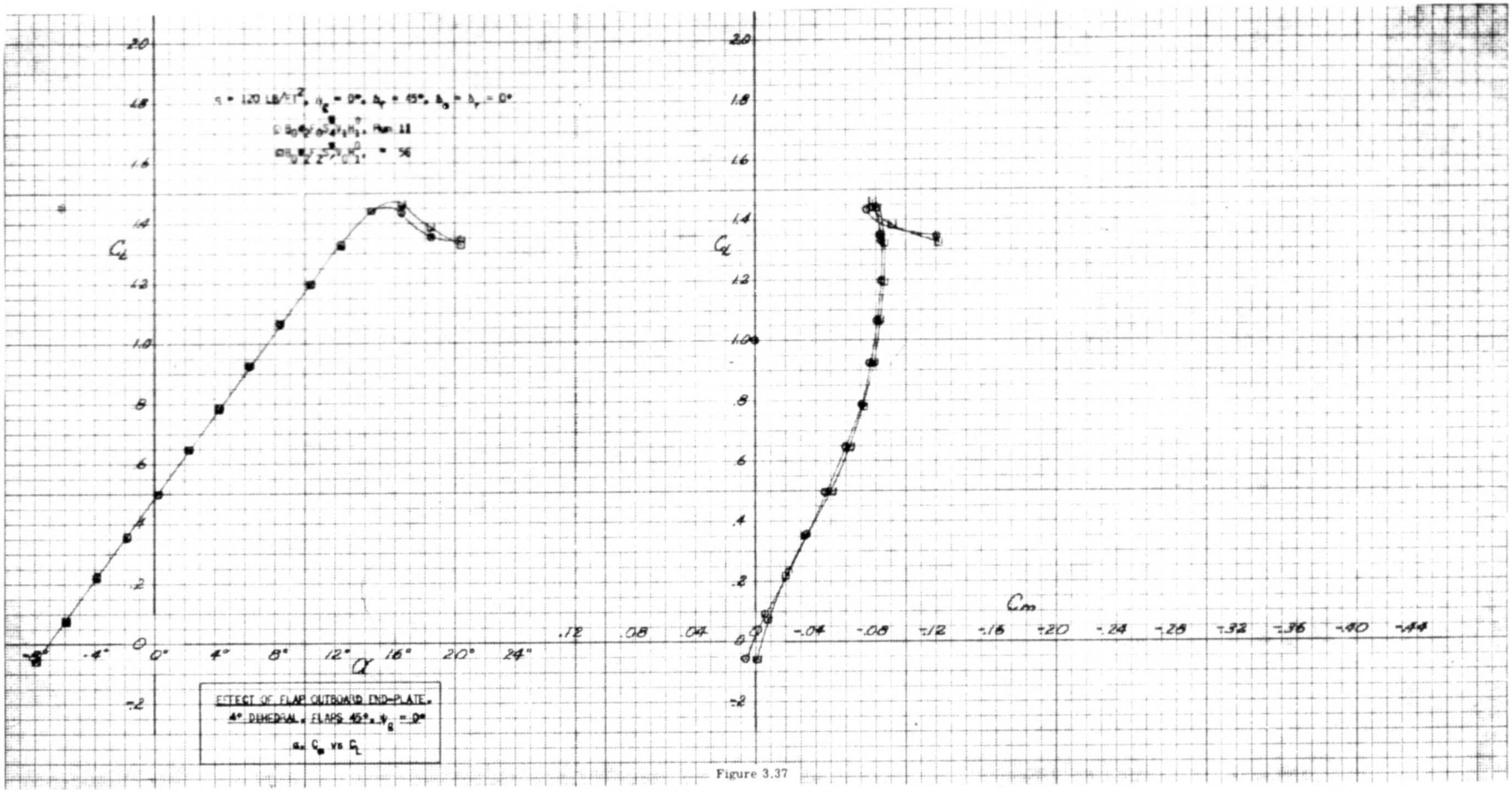
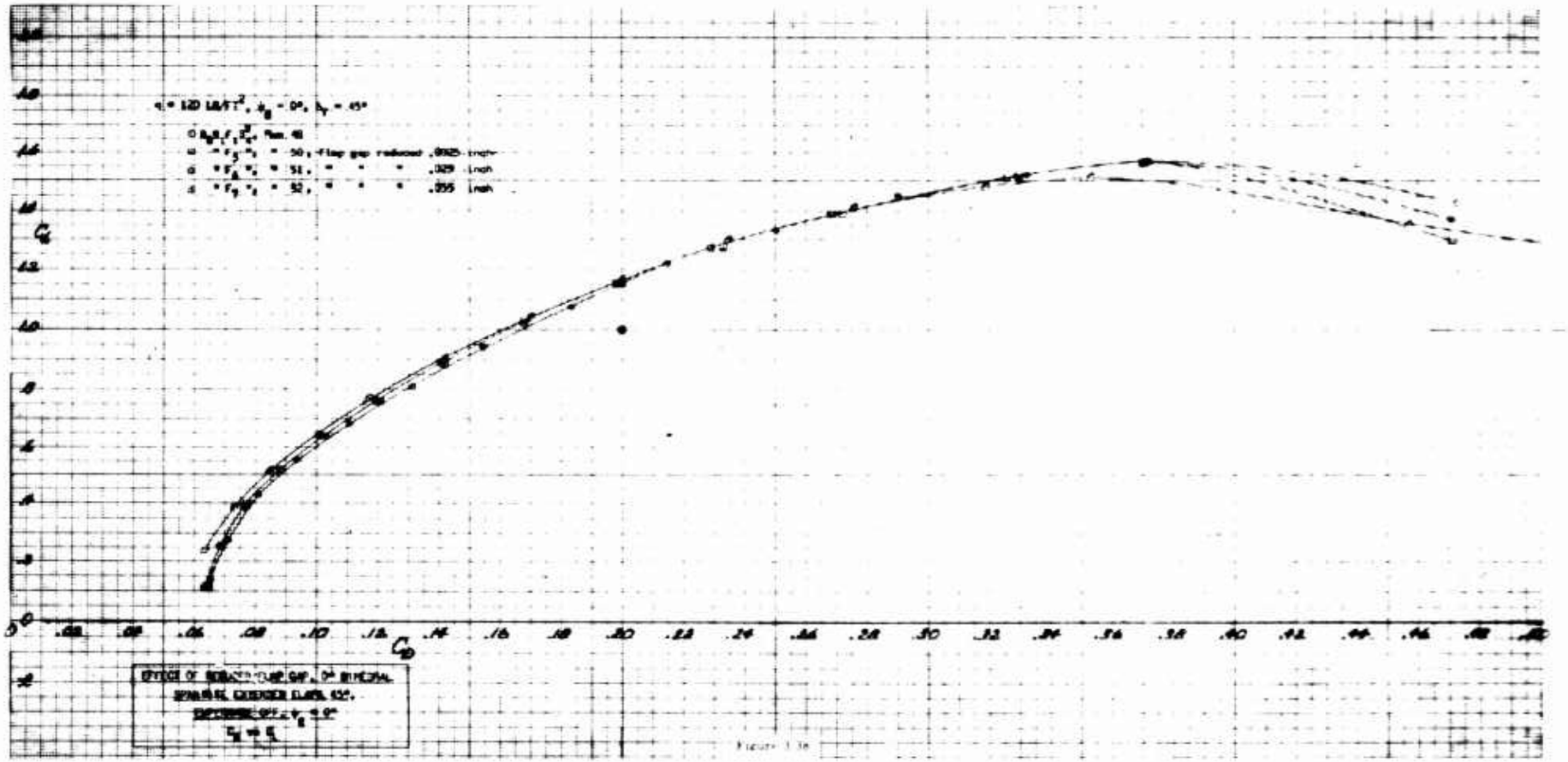

RUN SYM
11 ○
56 □
q = 120 LB/FT², δf = 0°, δs = 45°, δa = δr = 0°
Run 11
Run 56
CL
α
Cm
EFFECT OF FLAP OUTBOARD END-PLATE,
4° DIHEDRAL, FLAPS 45°, δa = 0°
a, CL vs CL

Figure 3.37


RUN SYM
4P
50
52
.08
.12
.16
.20
.24
.28
.32
.36
.40
.44
.48

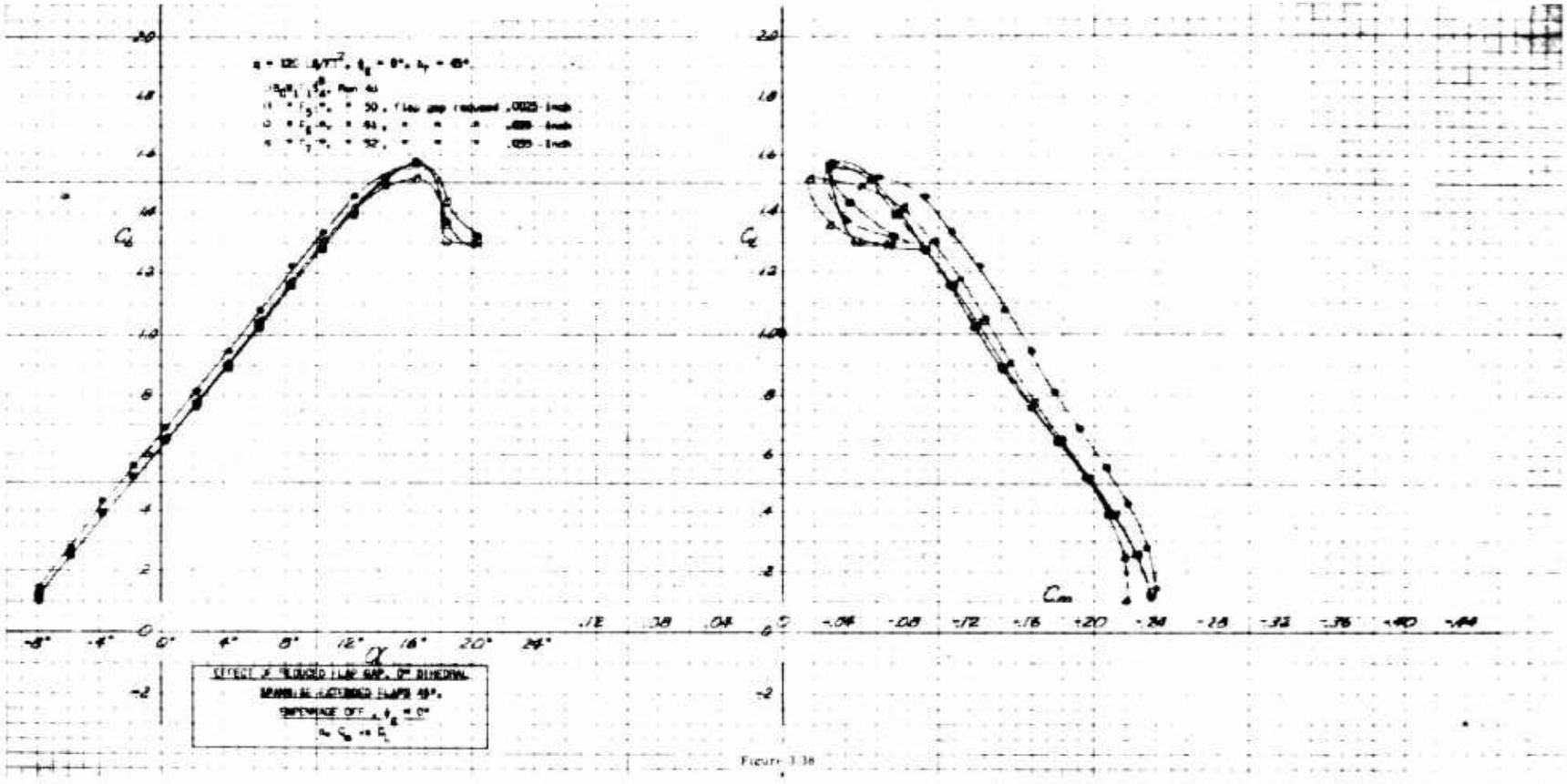


Figure 3.38

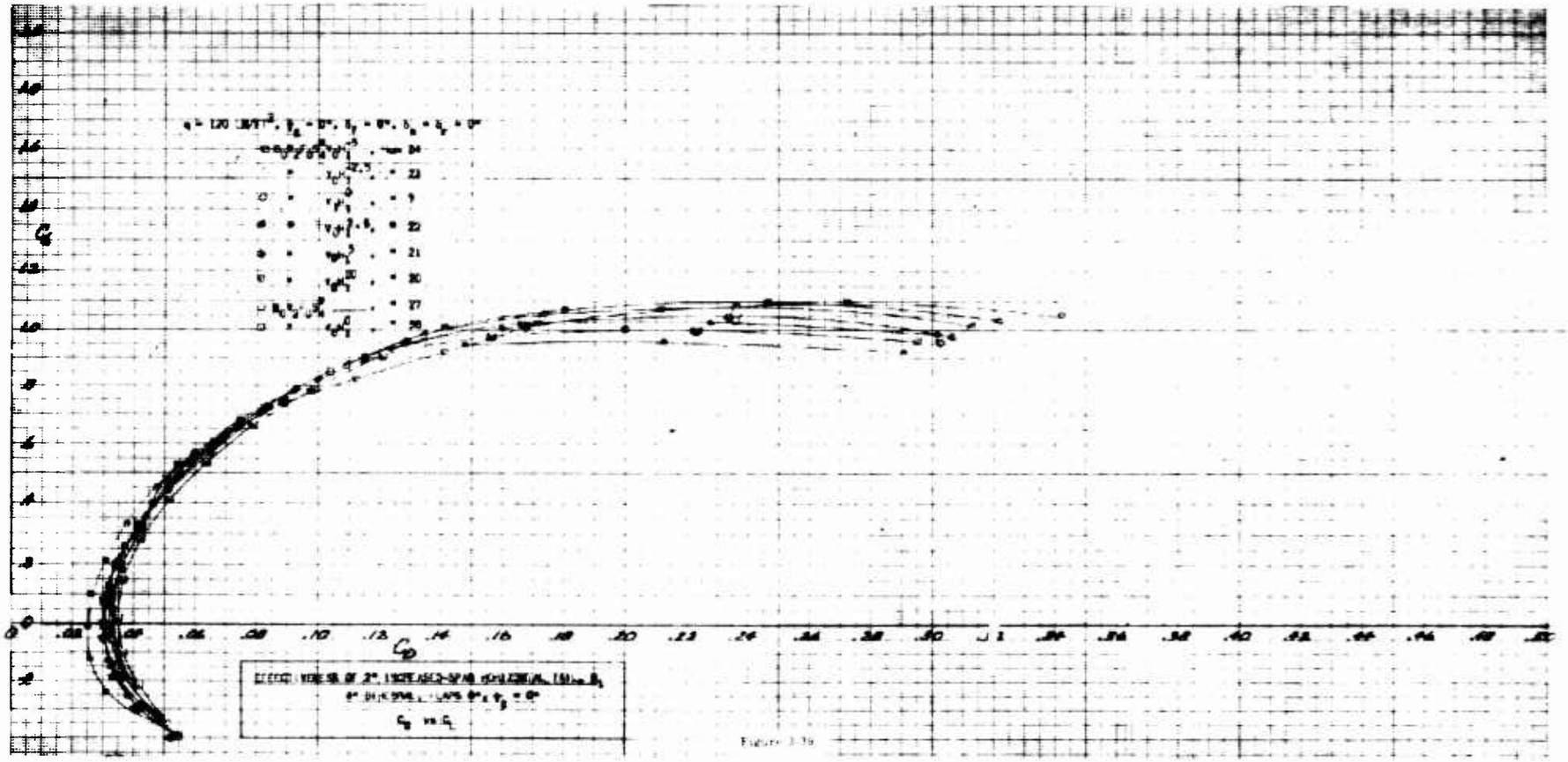


Figure 3.3b

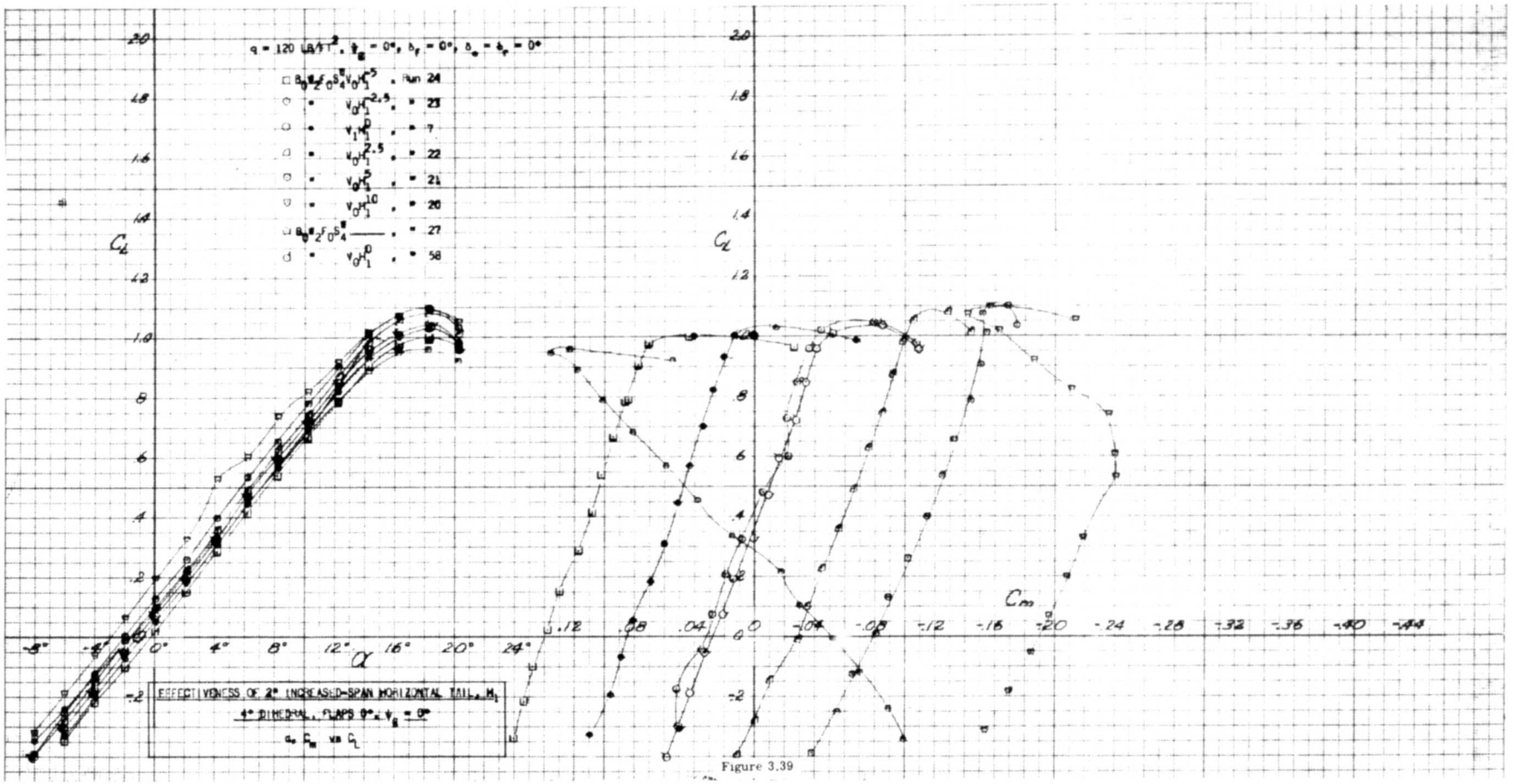

q = 120 LB/FT²
RUN SYM
7 ○
24 □
23 ◇
22 ◁
21 ○
20 ▽
27 ◇
58 ▽
EFFECTIVENESS OF 2" INCREASED-SPAN HORIZONTAL TAIL, H₁
4° DIHEDRAL, FLAPS 0° x i_B = 0°
α, C_m vs C_L
C_L
C_m
α

Figure 3.39

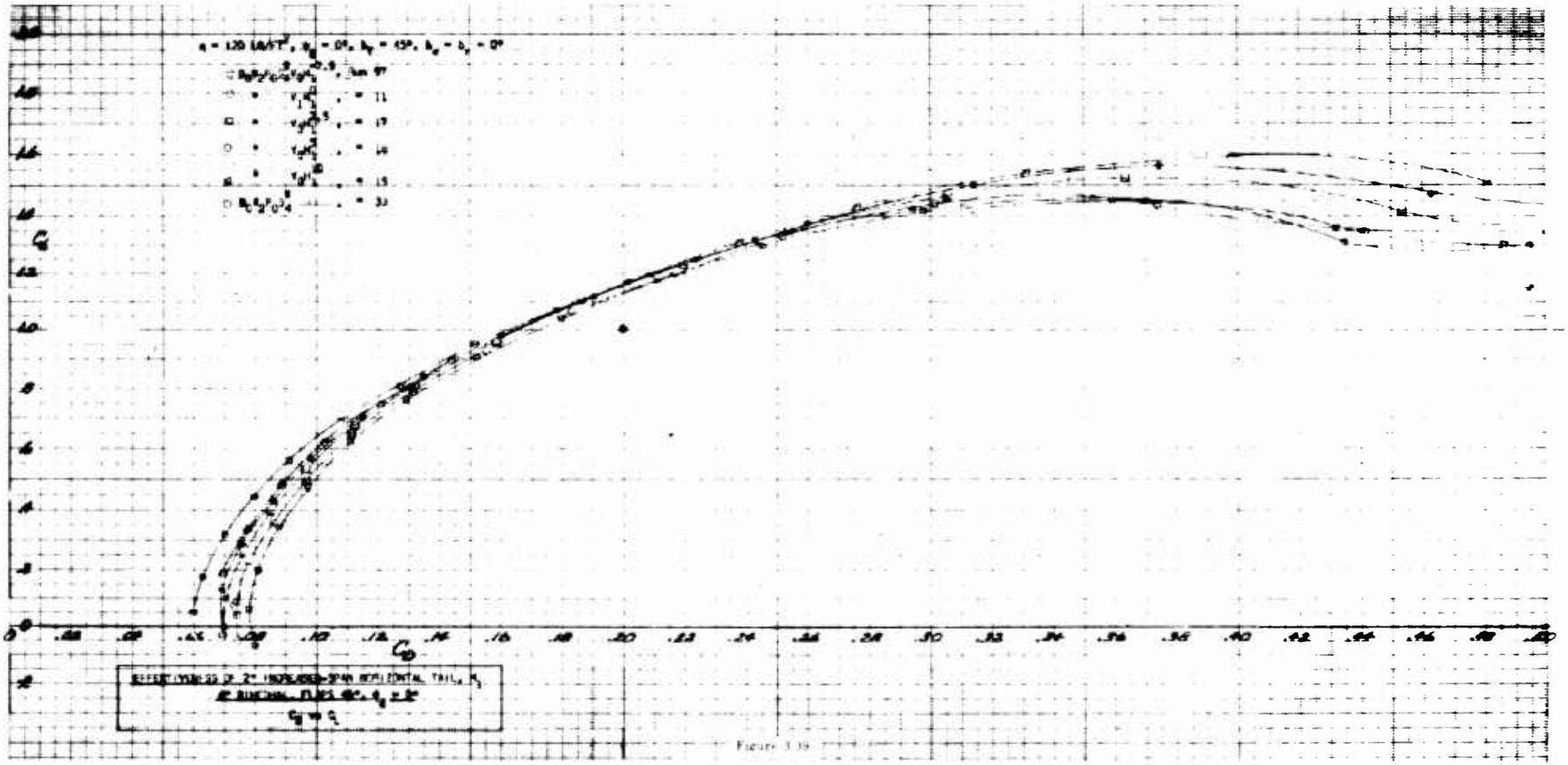


Figure 3.19

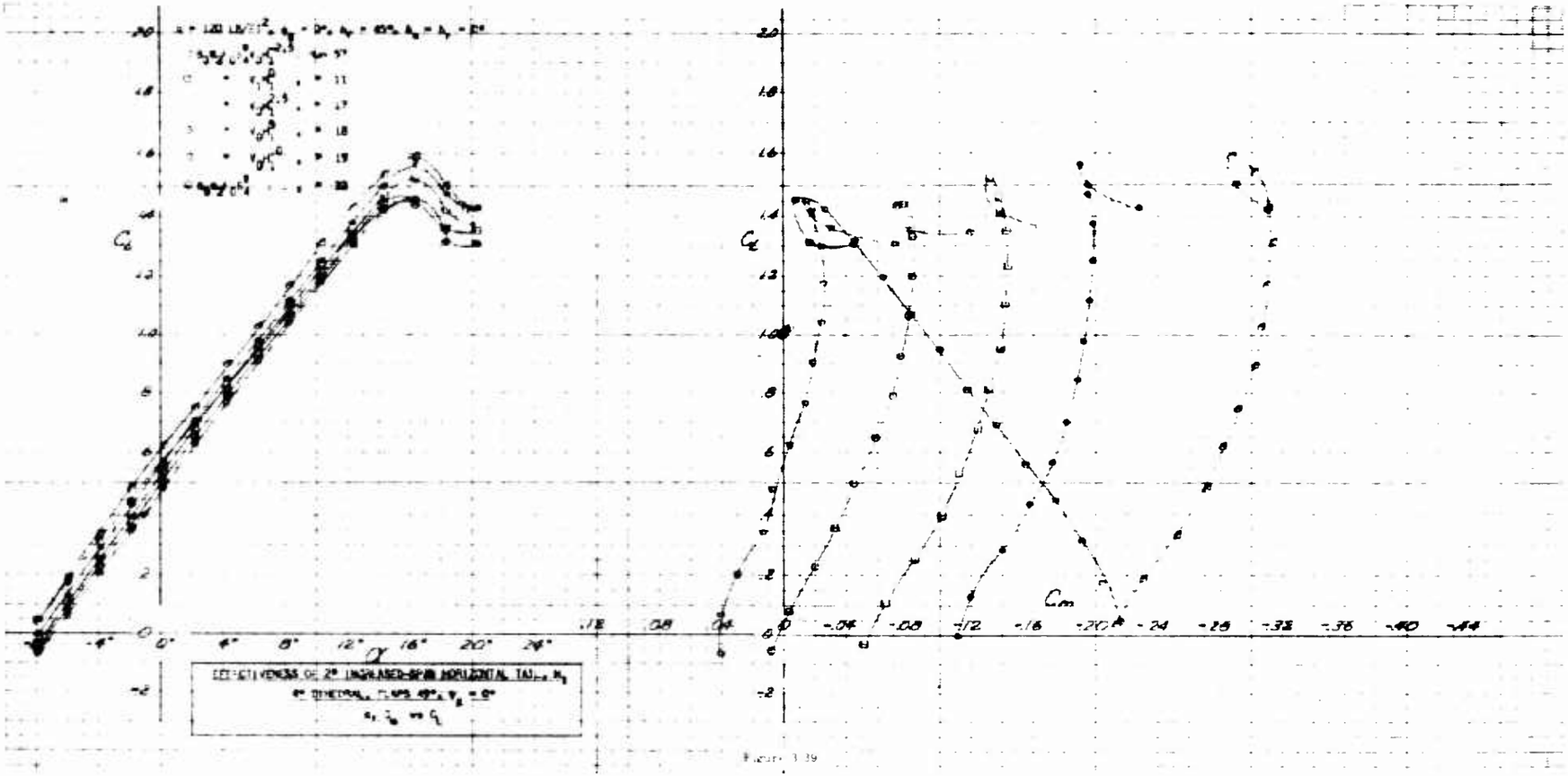


Figure 3.39

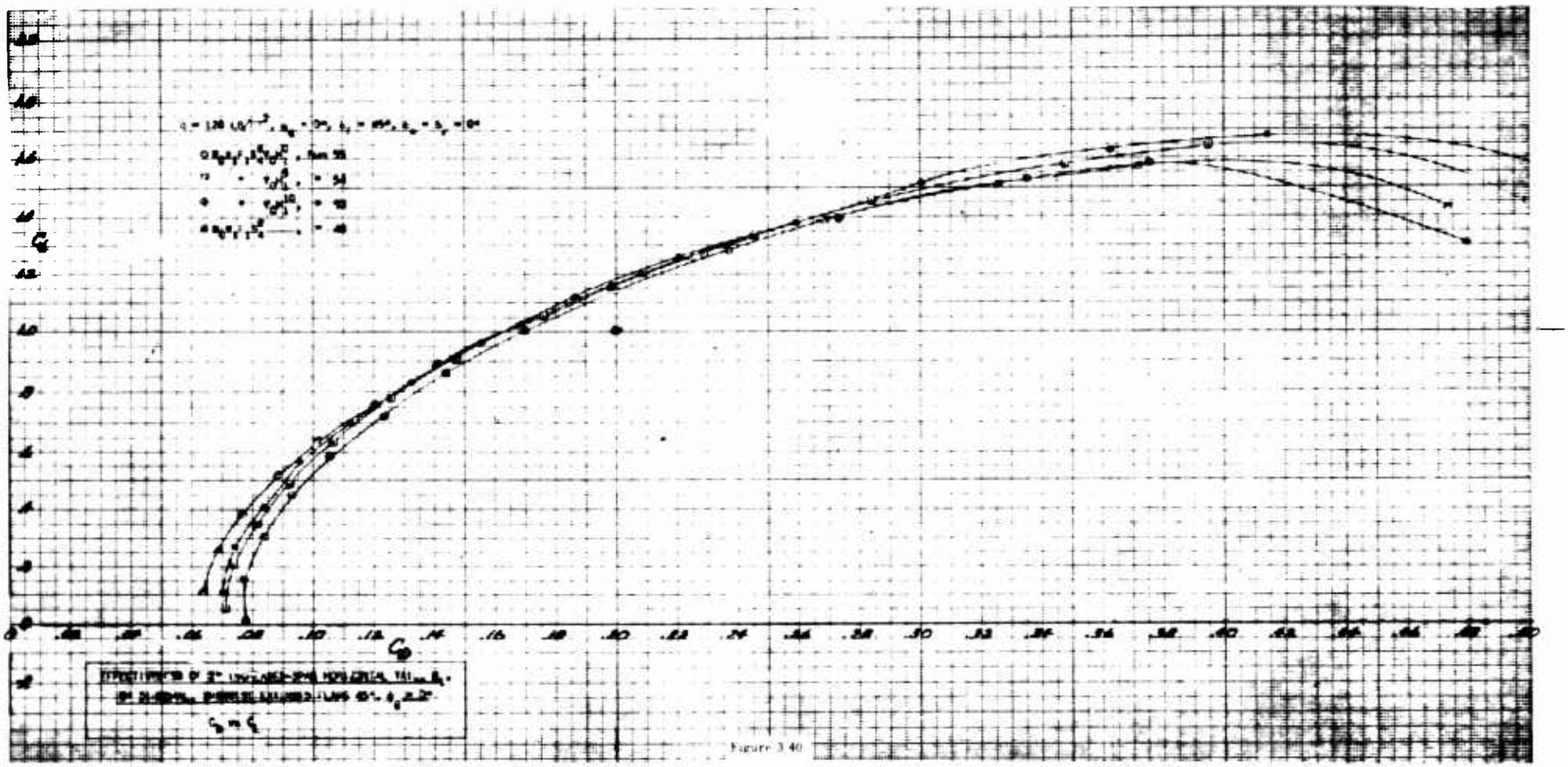


Figure 3.40

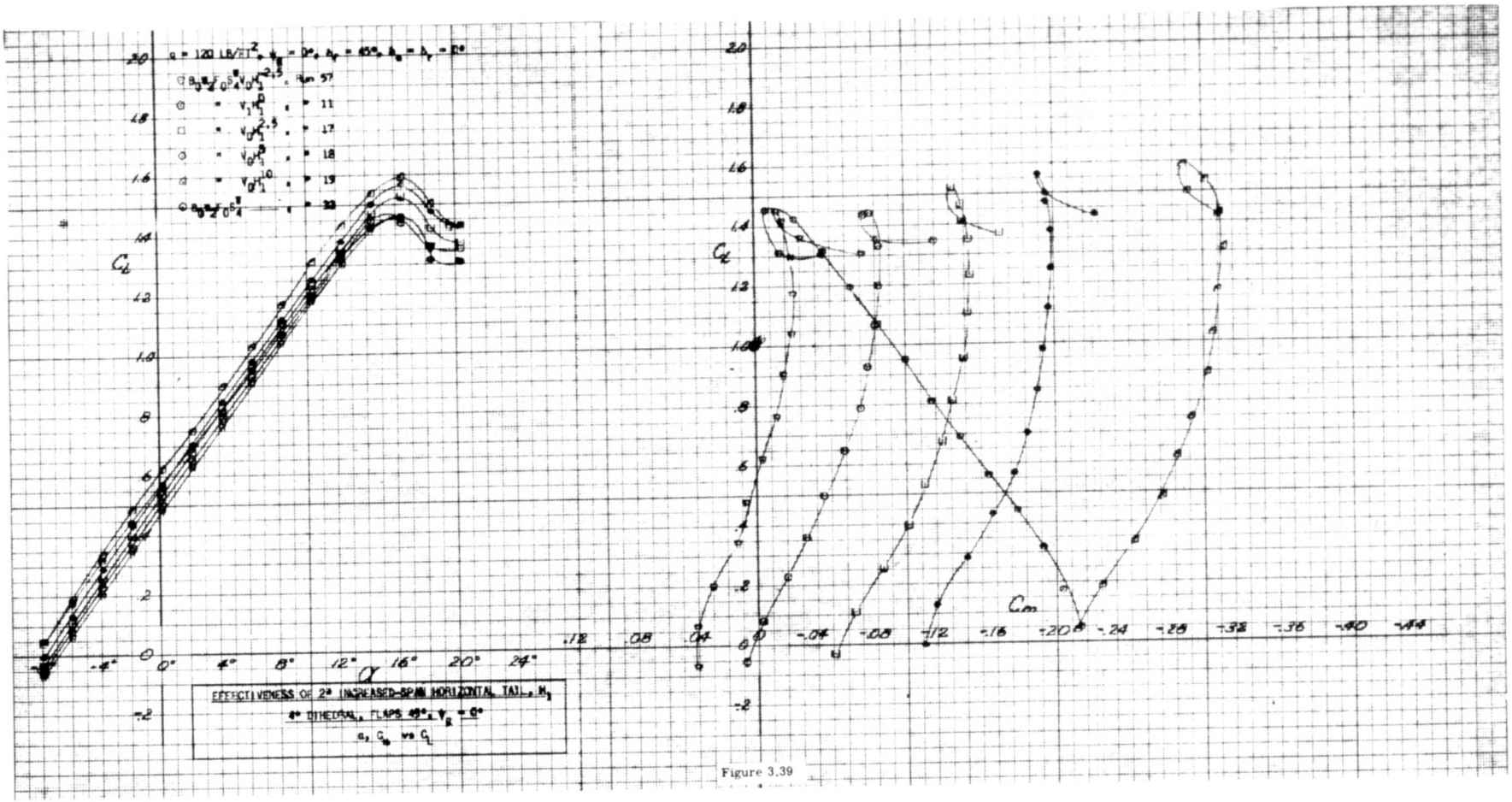
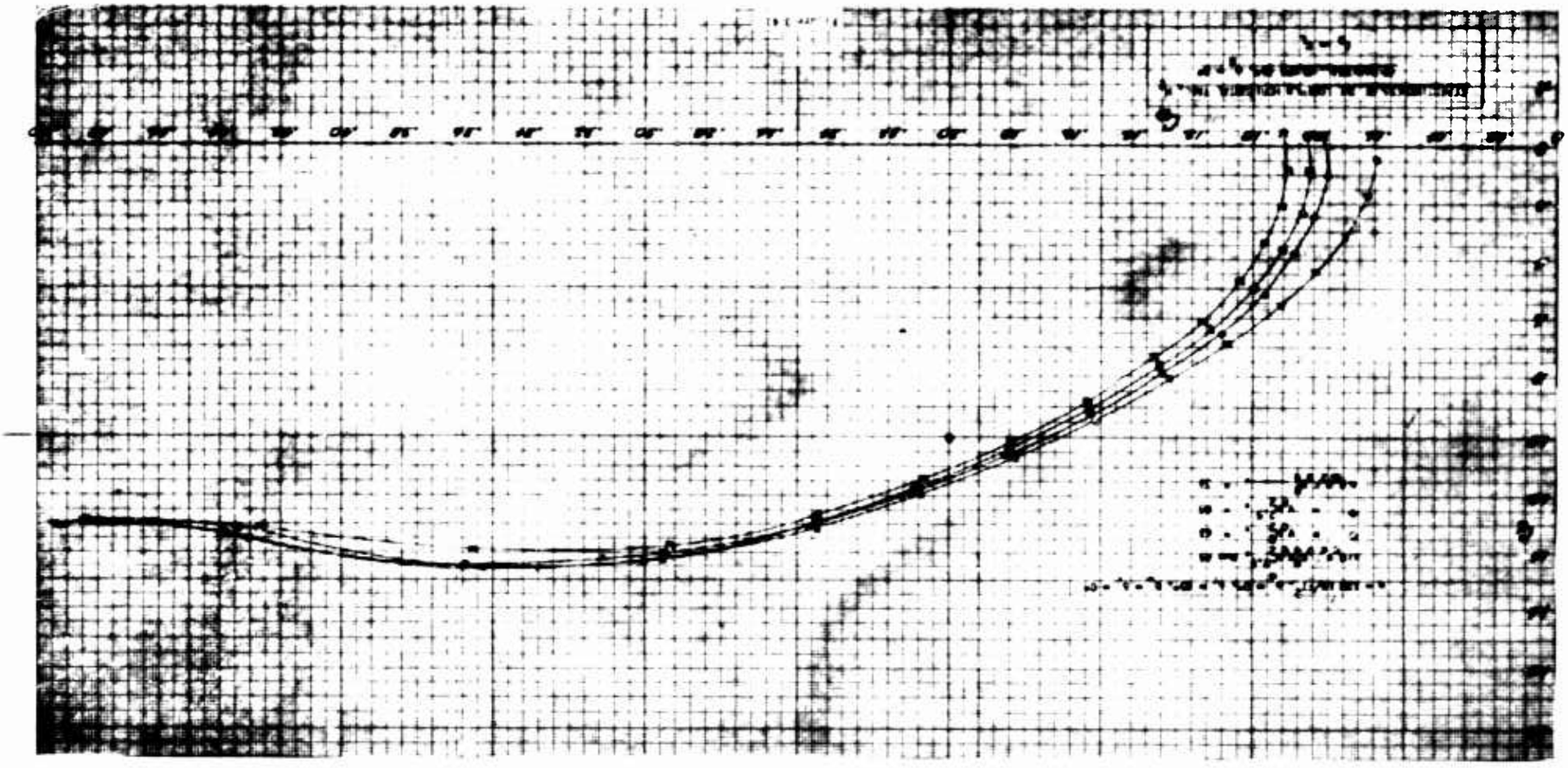

q = 120 LB/FT²
RUN SYM
11 ○
17 □
18 ◇
19 △
33 ○
57 ▽
C_L
C_m
α
EFFECTIVENESS OF 2ª INCREASED-SPAN HORIZONTAL TAIL, H_2
4° DIHEDRAL, FLAPS 45°, η_E = 0°
α, C_m vs C_L

Figure 3.39



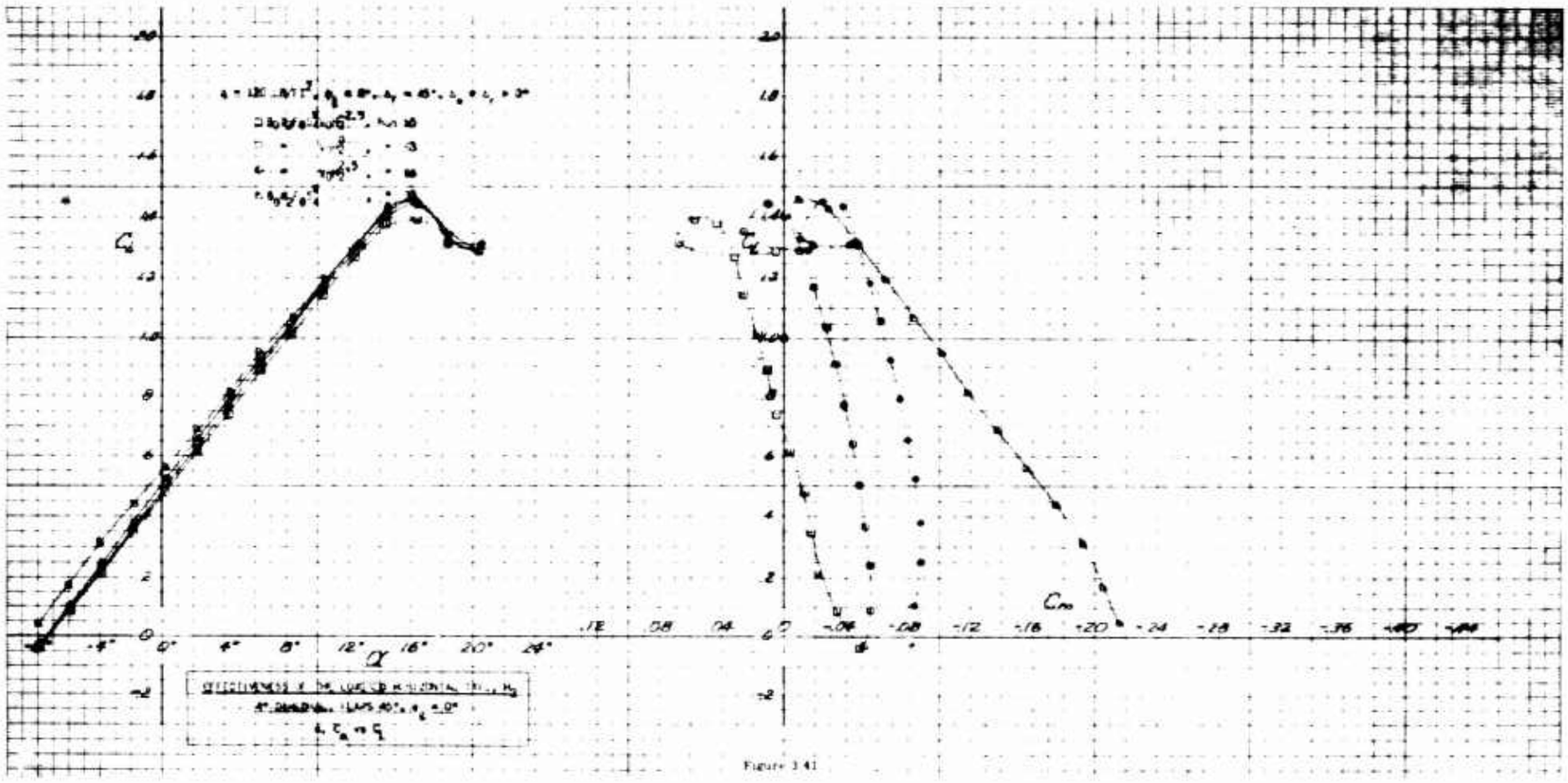


Figure 3.41

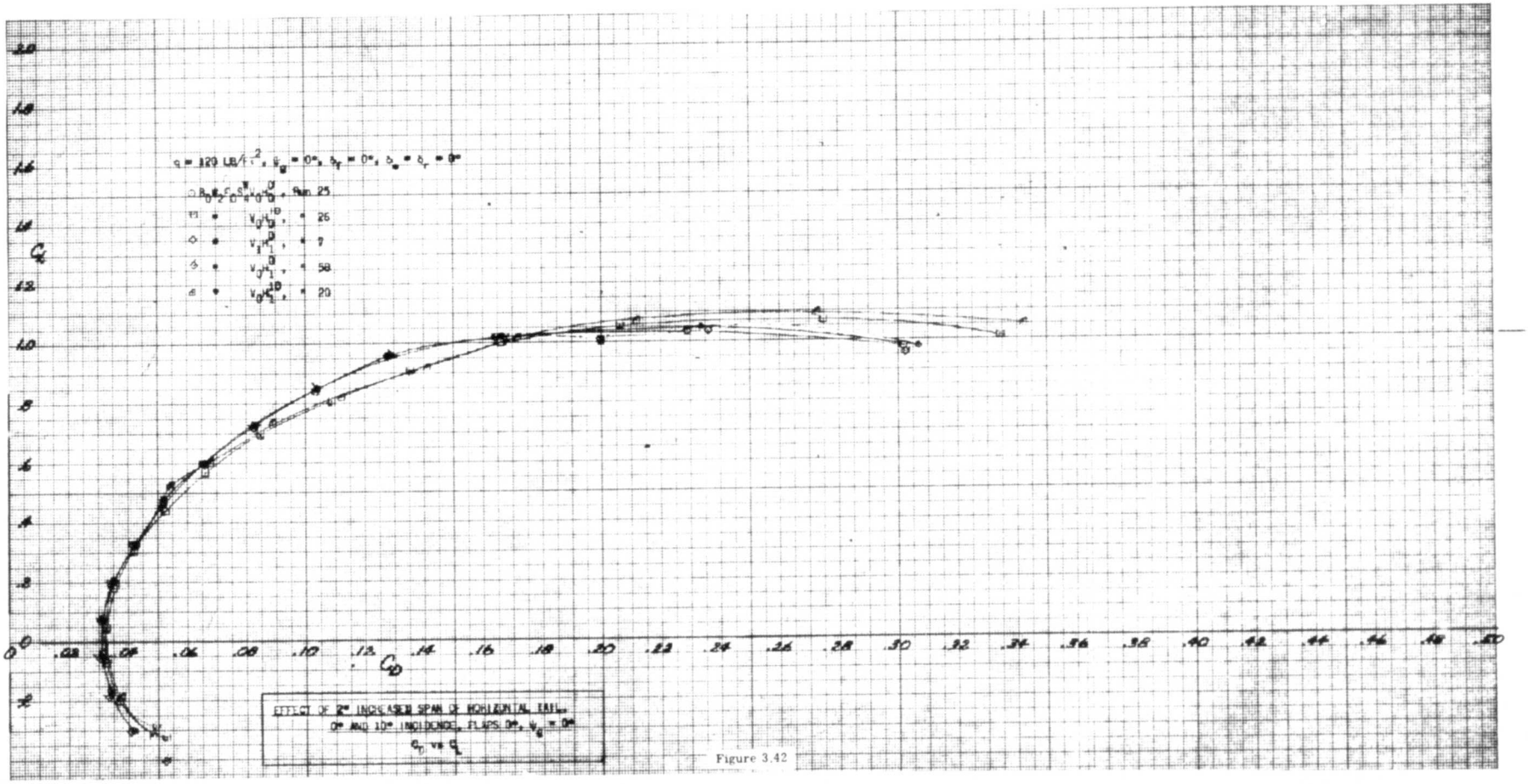

q = 329 LB/FT², i_H = 0°, δ_f = 0°, δ_e = δ_r = 0°
RUN SYM
25 ○
26 □
7 ◇
20 △
C_L
C_D
EFFECT OF 2" INCREASED SPAN OF HORIZONTAL TAIL, 0° AND 10° INCIDENCE, FLAPS 0°, i_H = 0°
C_D vs C_L

Figure 3.42

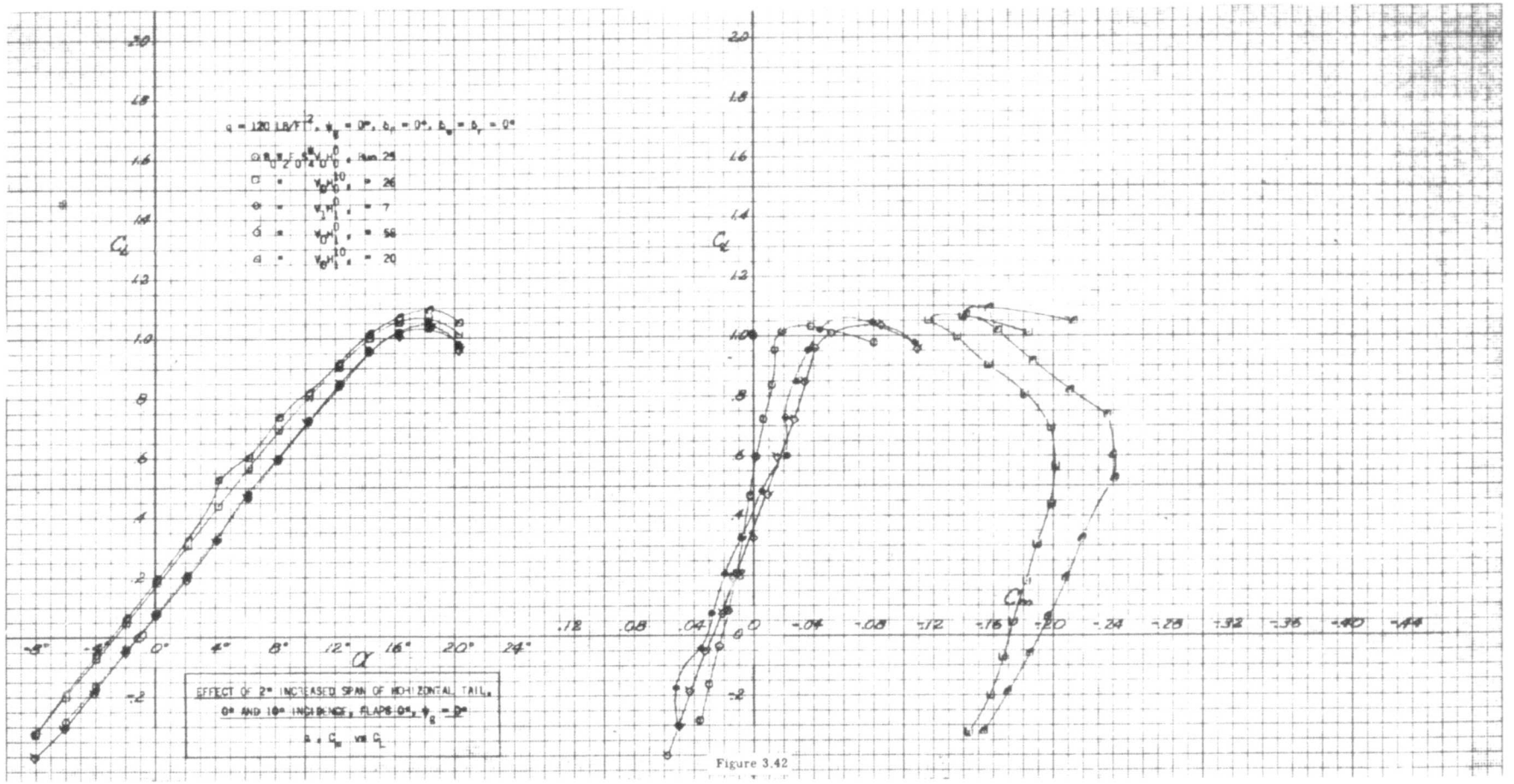
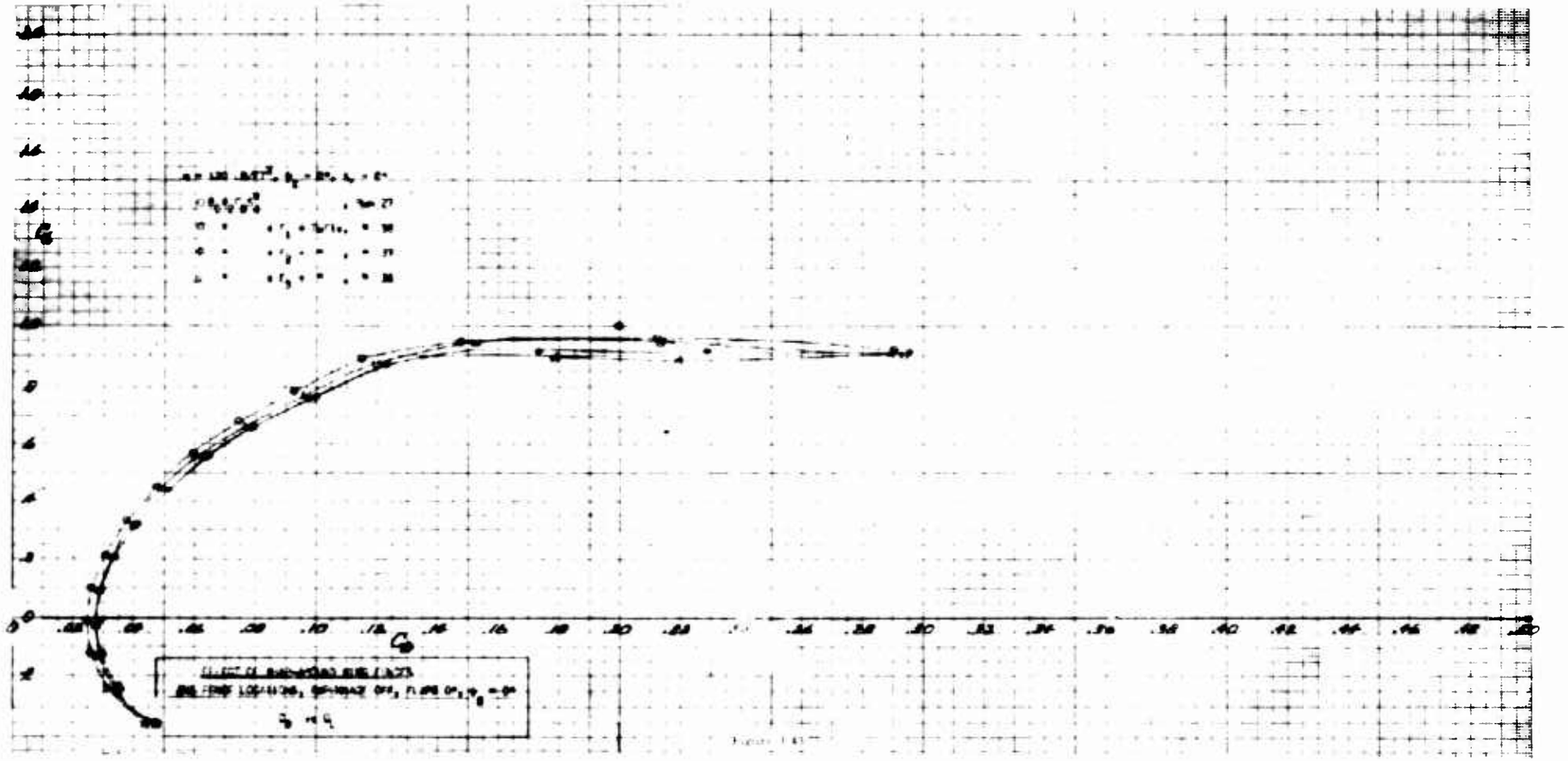

q = 120 LB/FT²
RUN SYM
25
26
7
20
58
EFFECT OF 2" INCREASED SPAN OF HIGH HORIZONTAL TAIL
0° AND 10° INCIDENCE, FLAPS 0°
Cm vs CL
α
Cm
CL

Figure 3.42



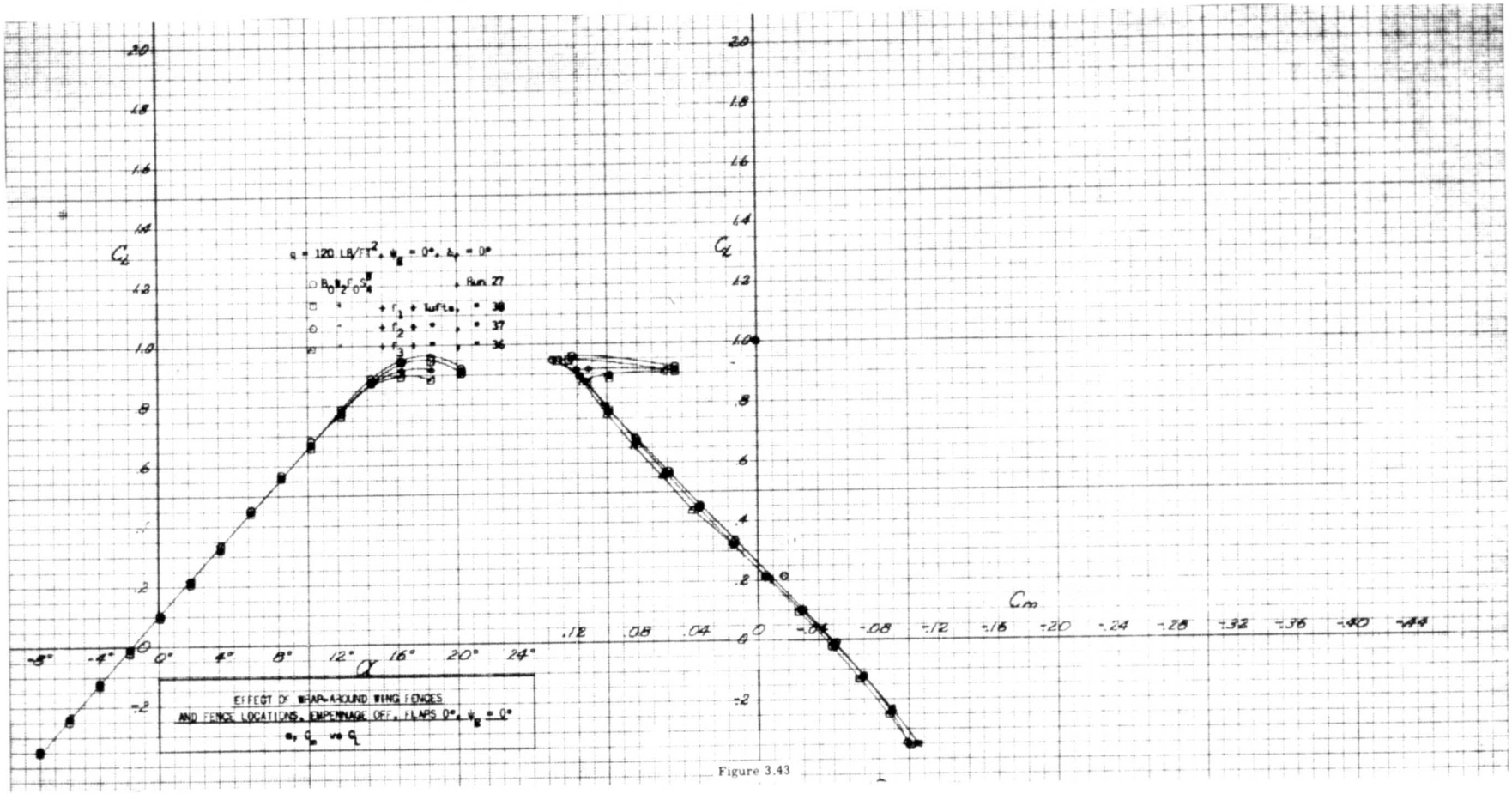

RUN SYM
27 ○
38 □
37 ◇
36 △
C_L
C_m
α
q = 120 LB/FT²
Run 27
EFFECT OF WRAP-AROUND WING FENCES
AND FENCE LOCATIONS, EMPENNAGE OFF, FLAPS 0°
α, C_m vs C_L

Figure 3.43

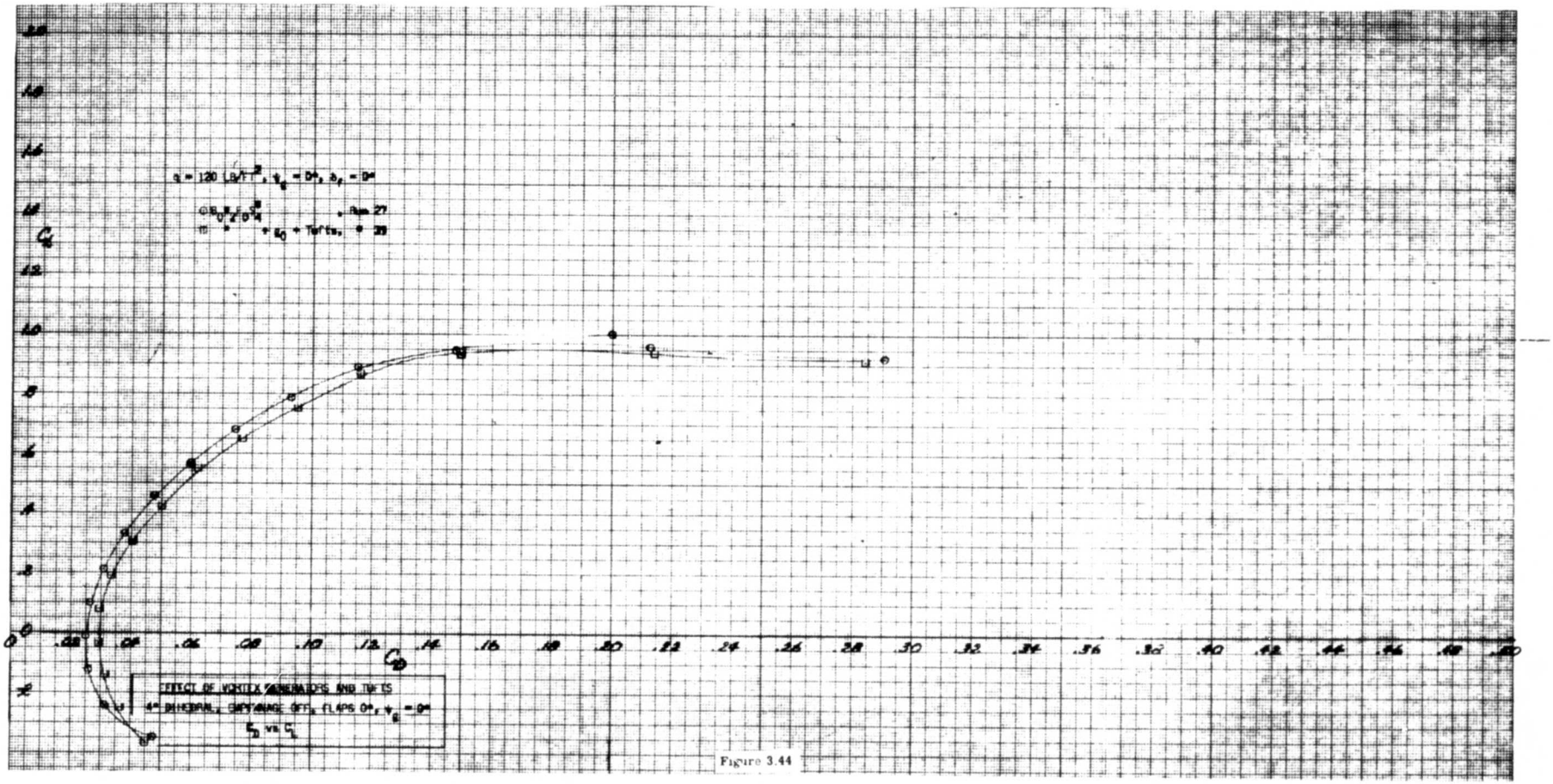


Figure 3.44

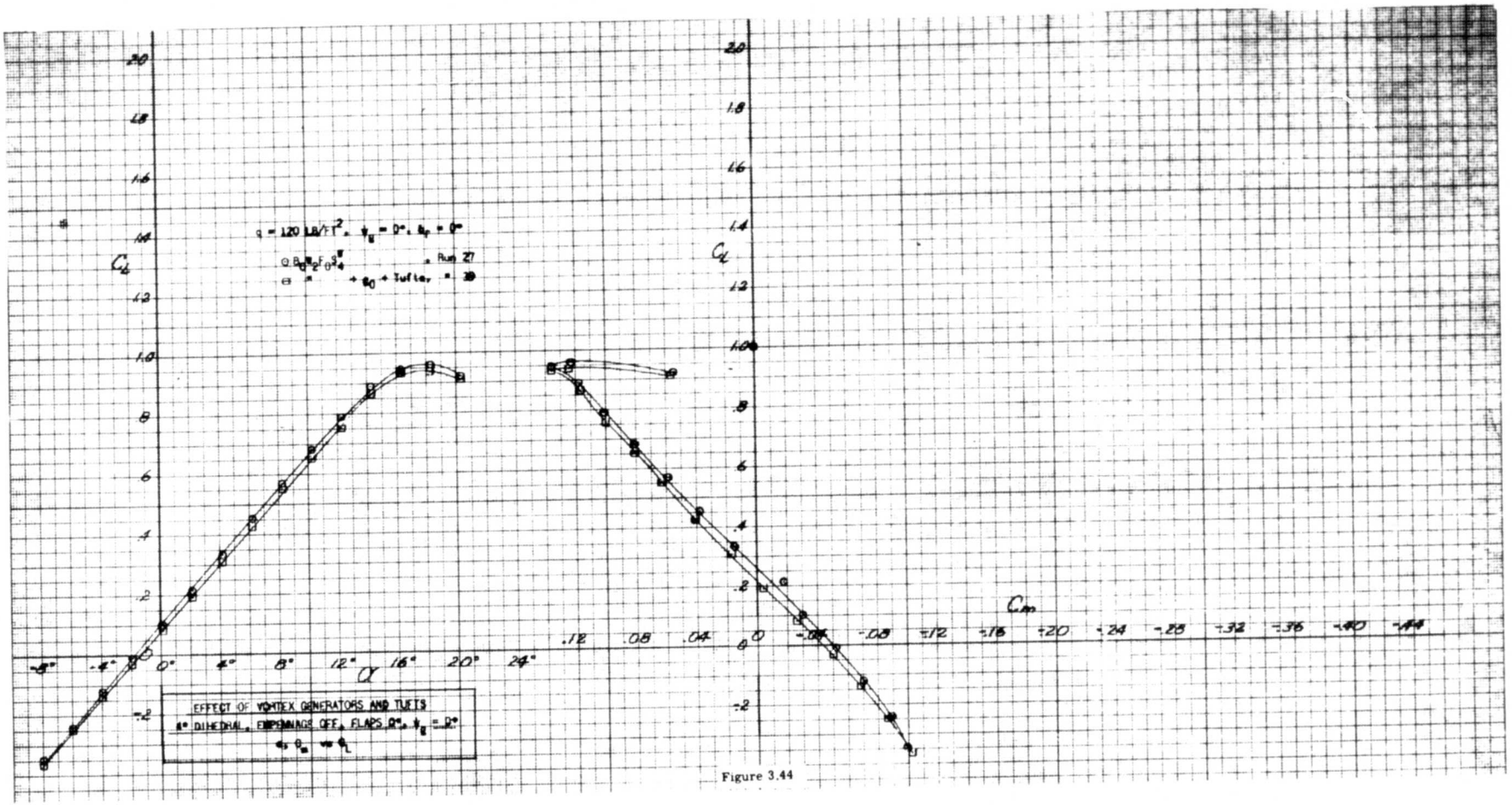
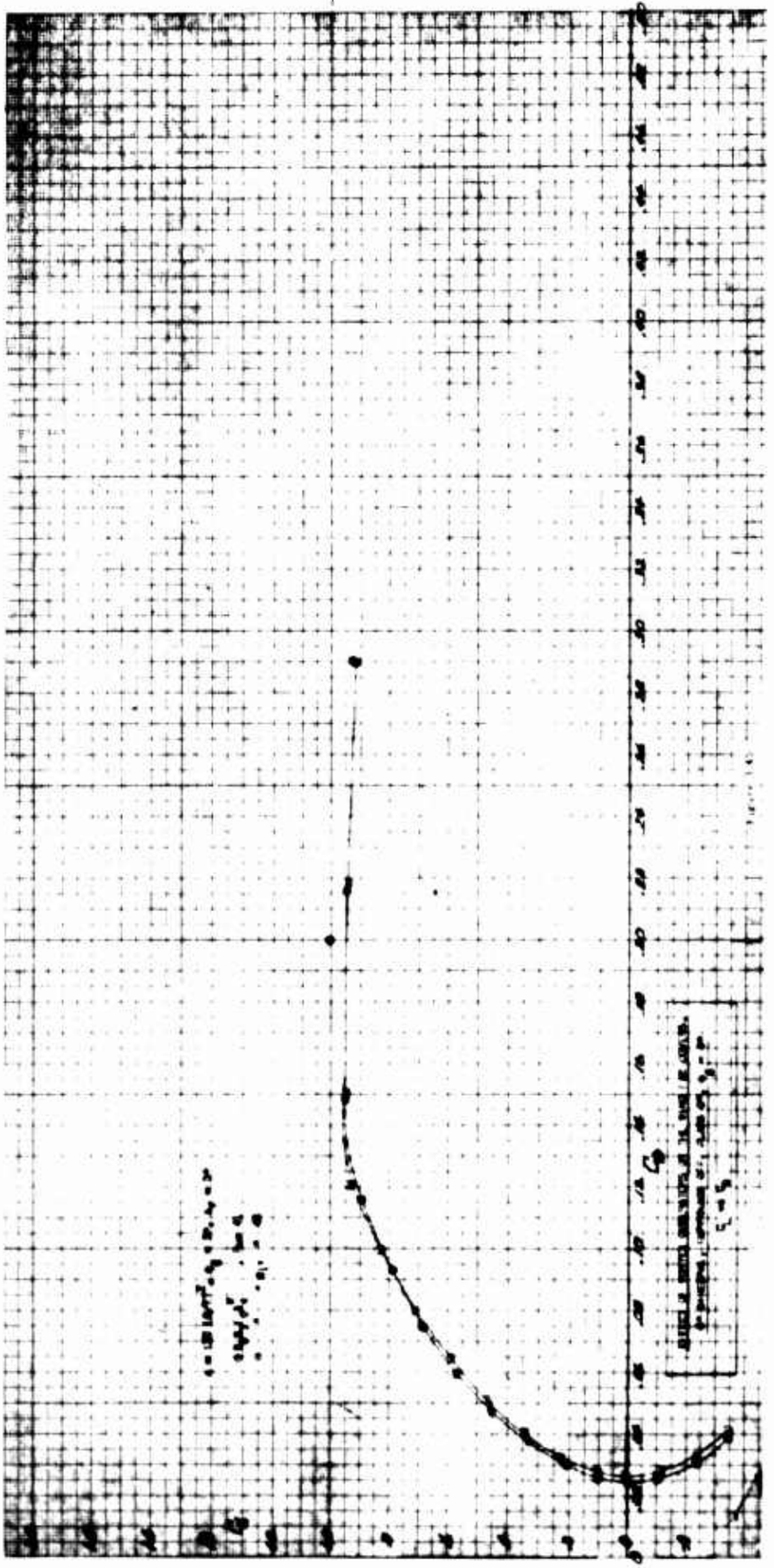
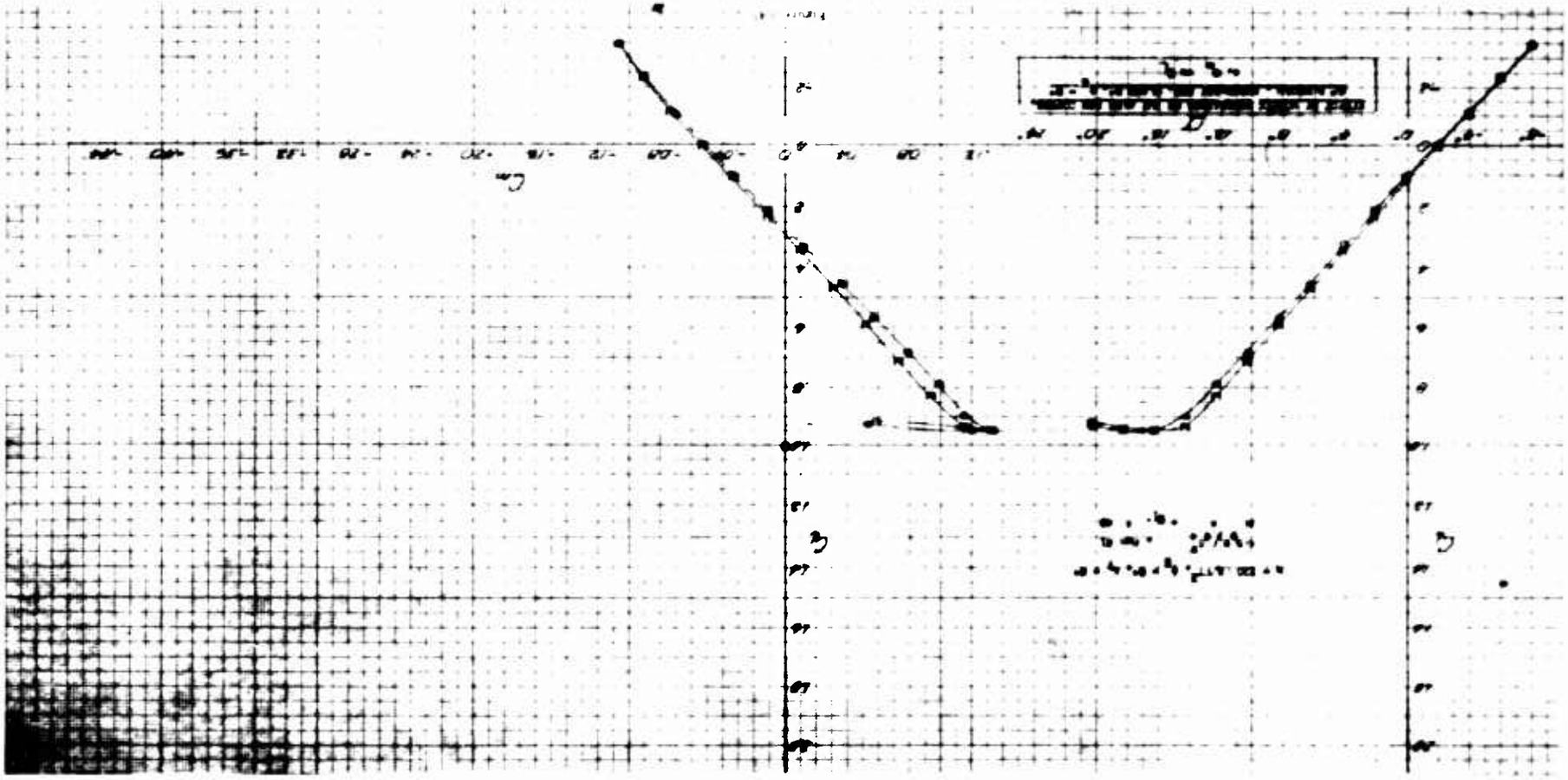
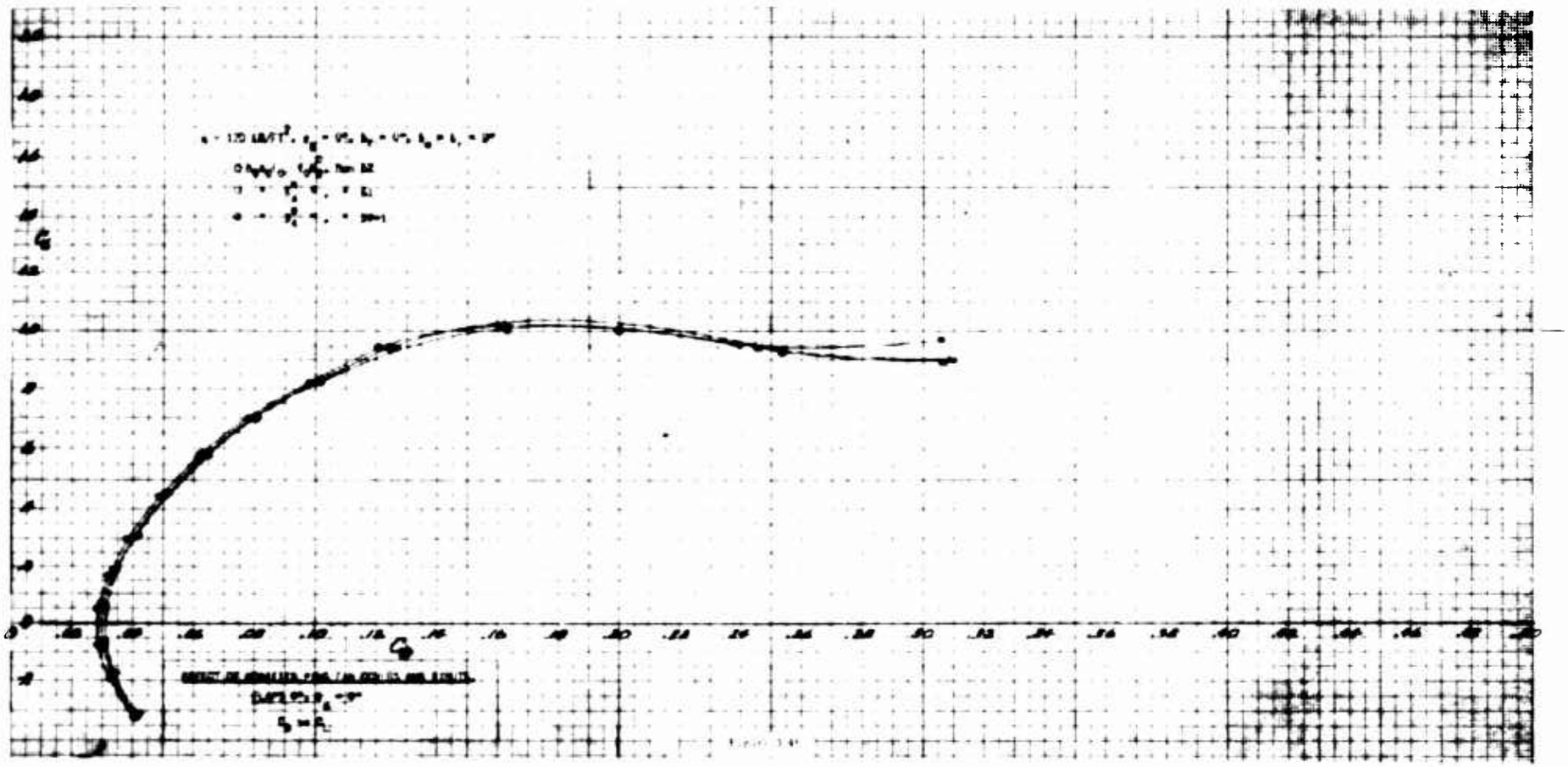
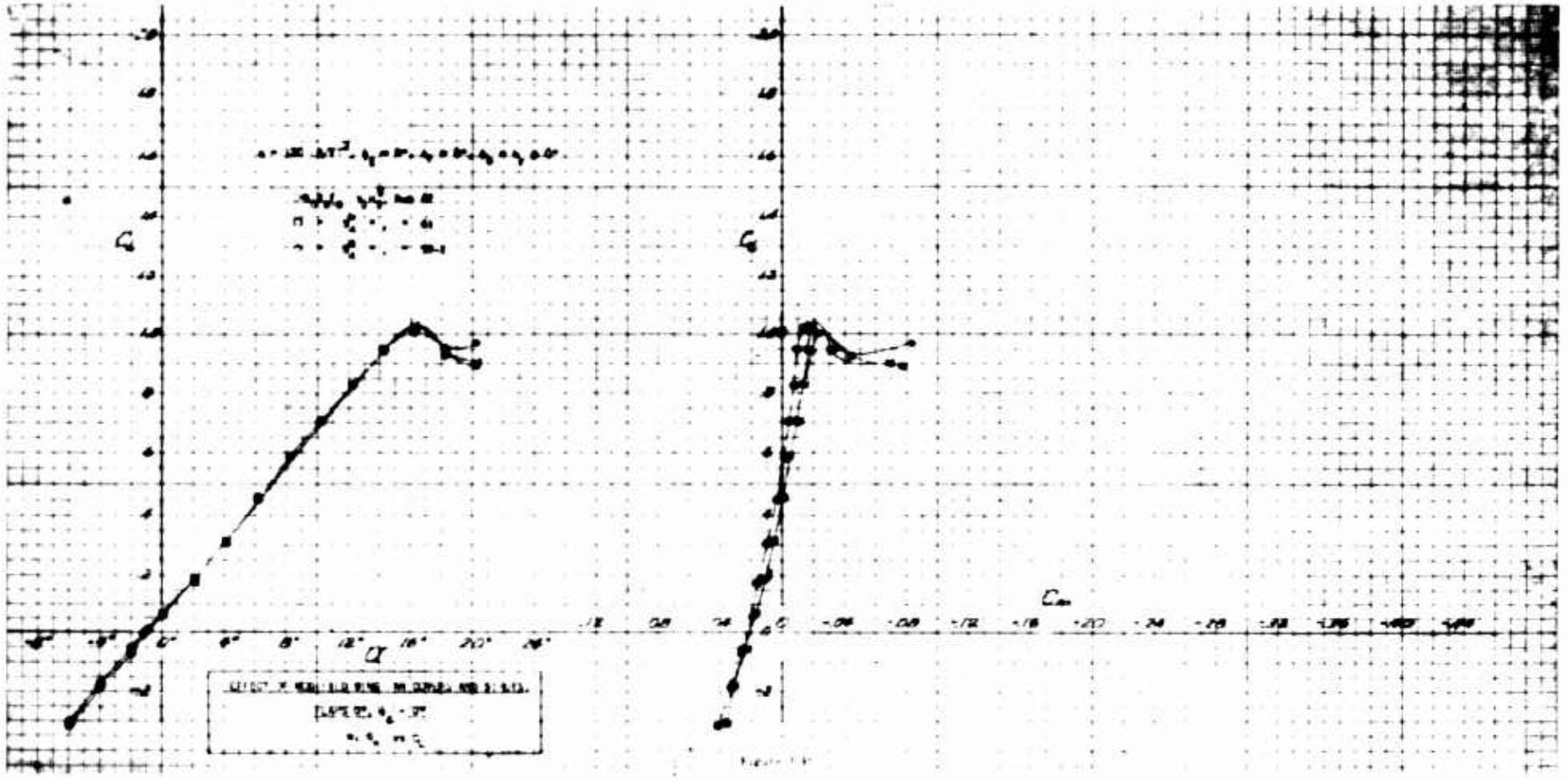

RUN SYM
27 ○
39 □
C_L
C_m
α
EFFECT OF VORTEX GENERATORS AND TUFTS
4° DIHEDRAL, EMPENNAGE OFF, FLAPS 0°, i_t = 0°

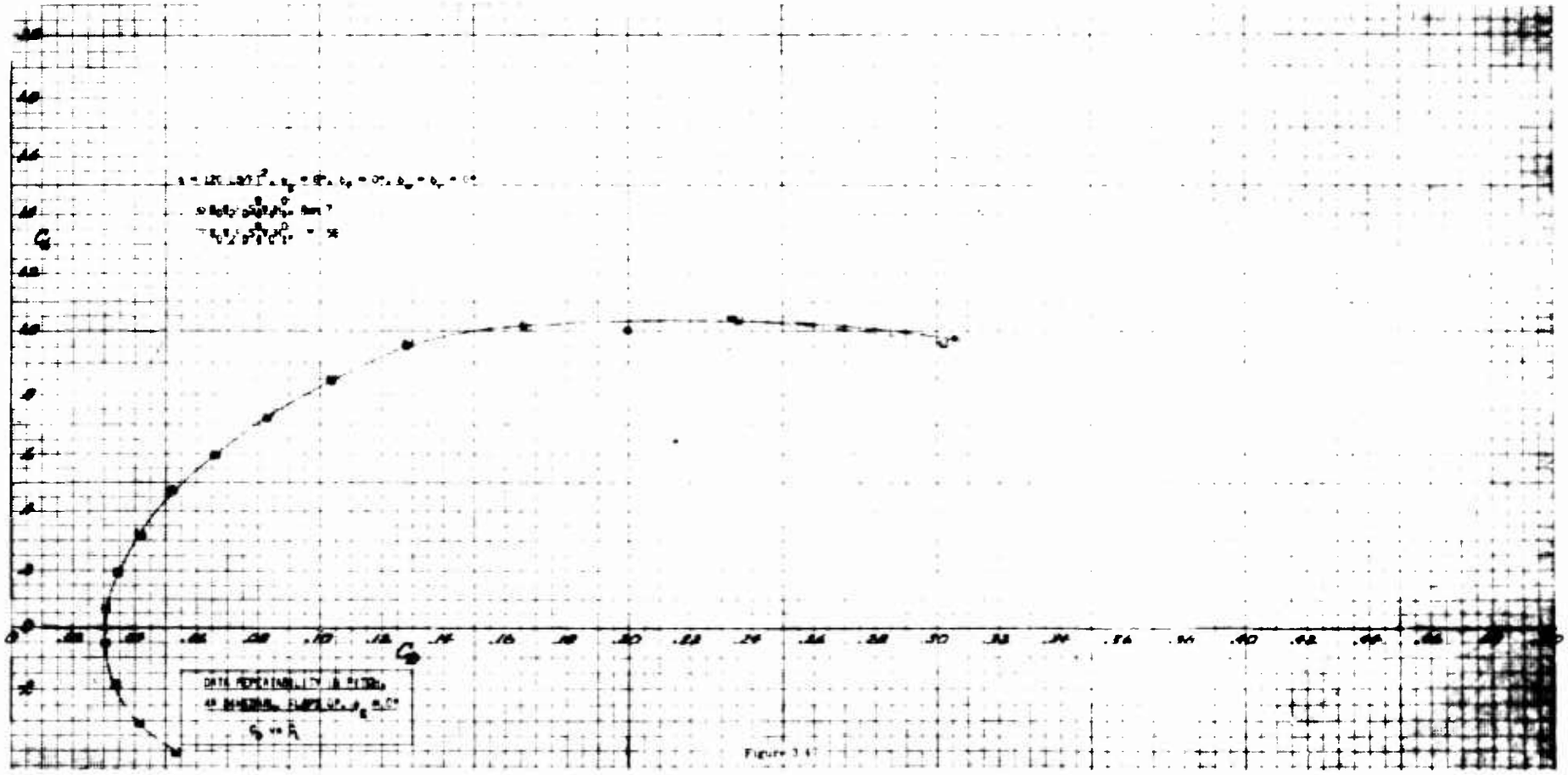
Figure 3.44











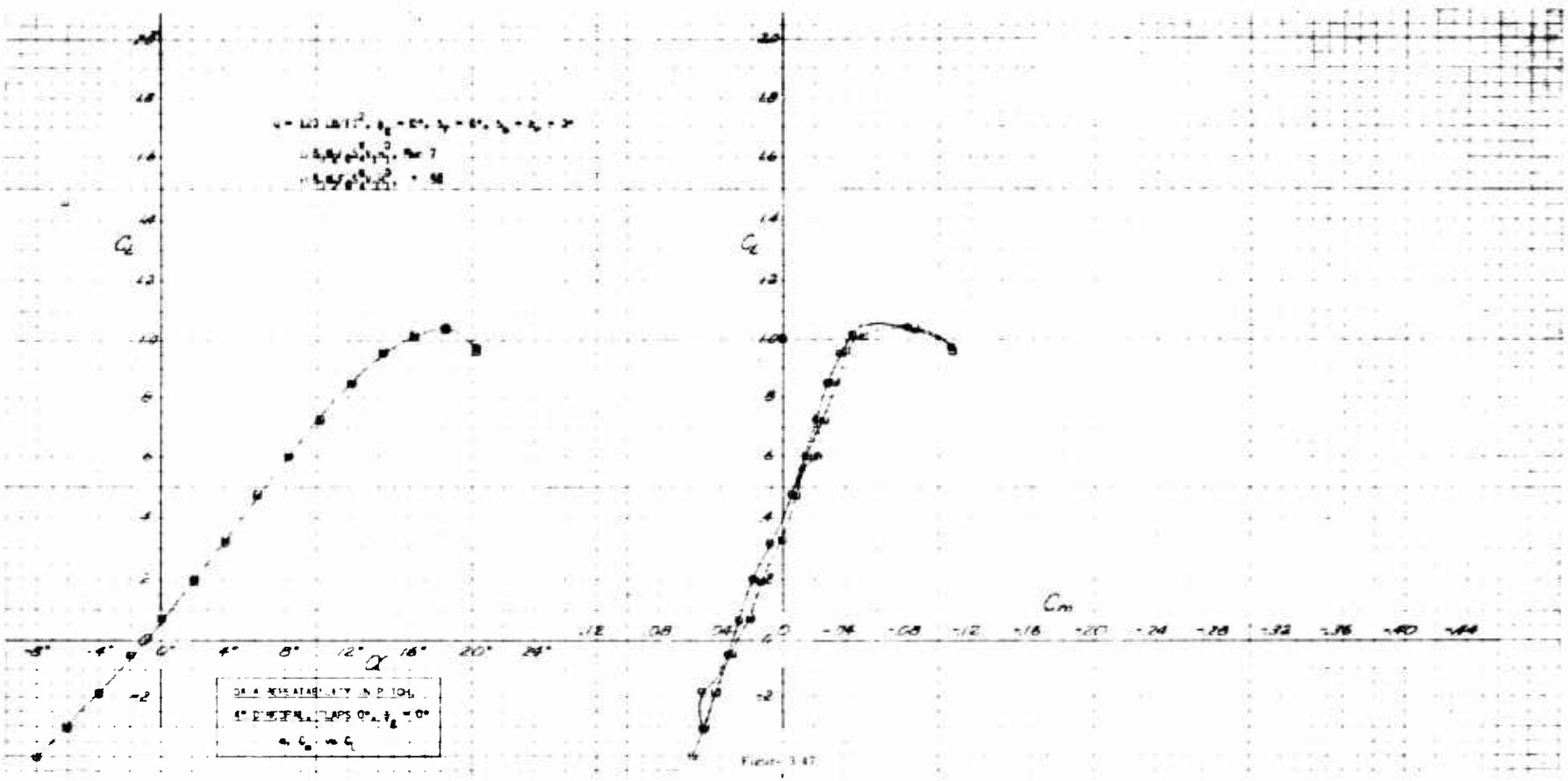
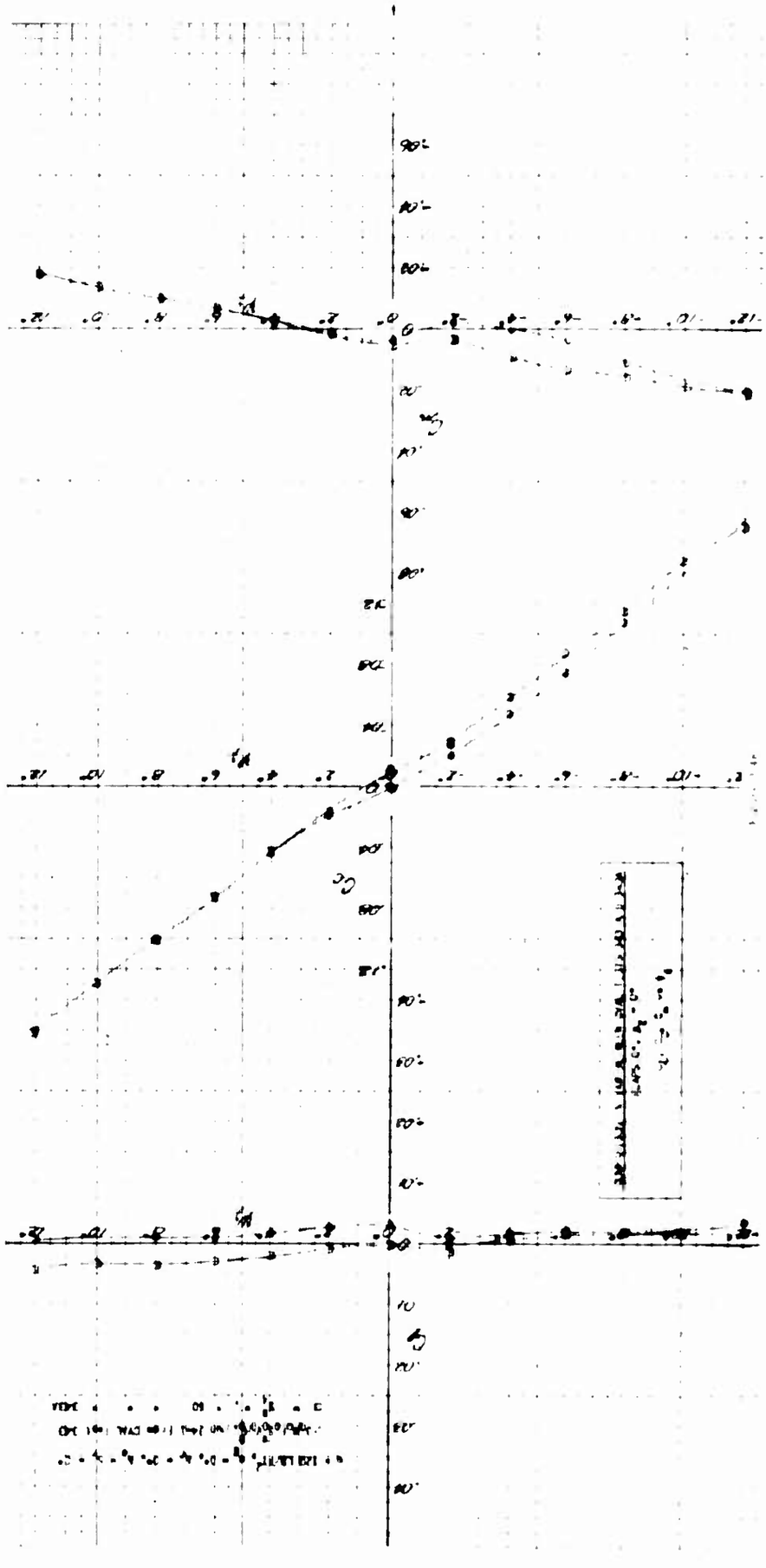
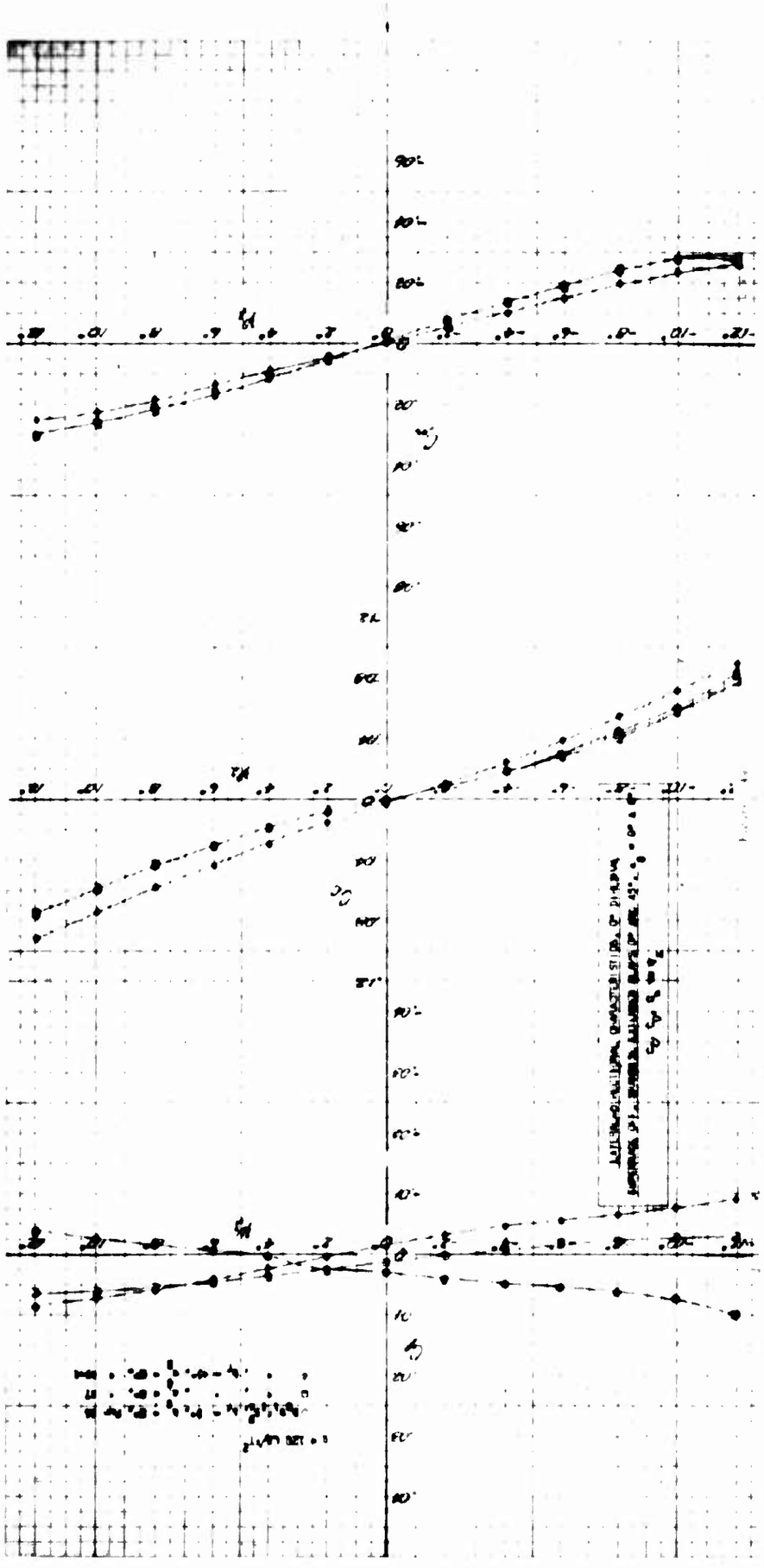
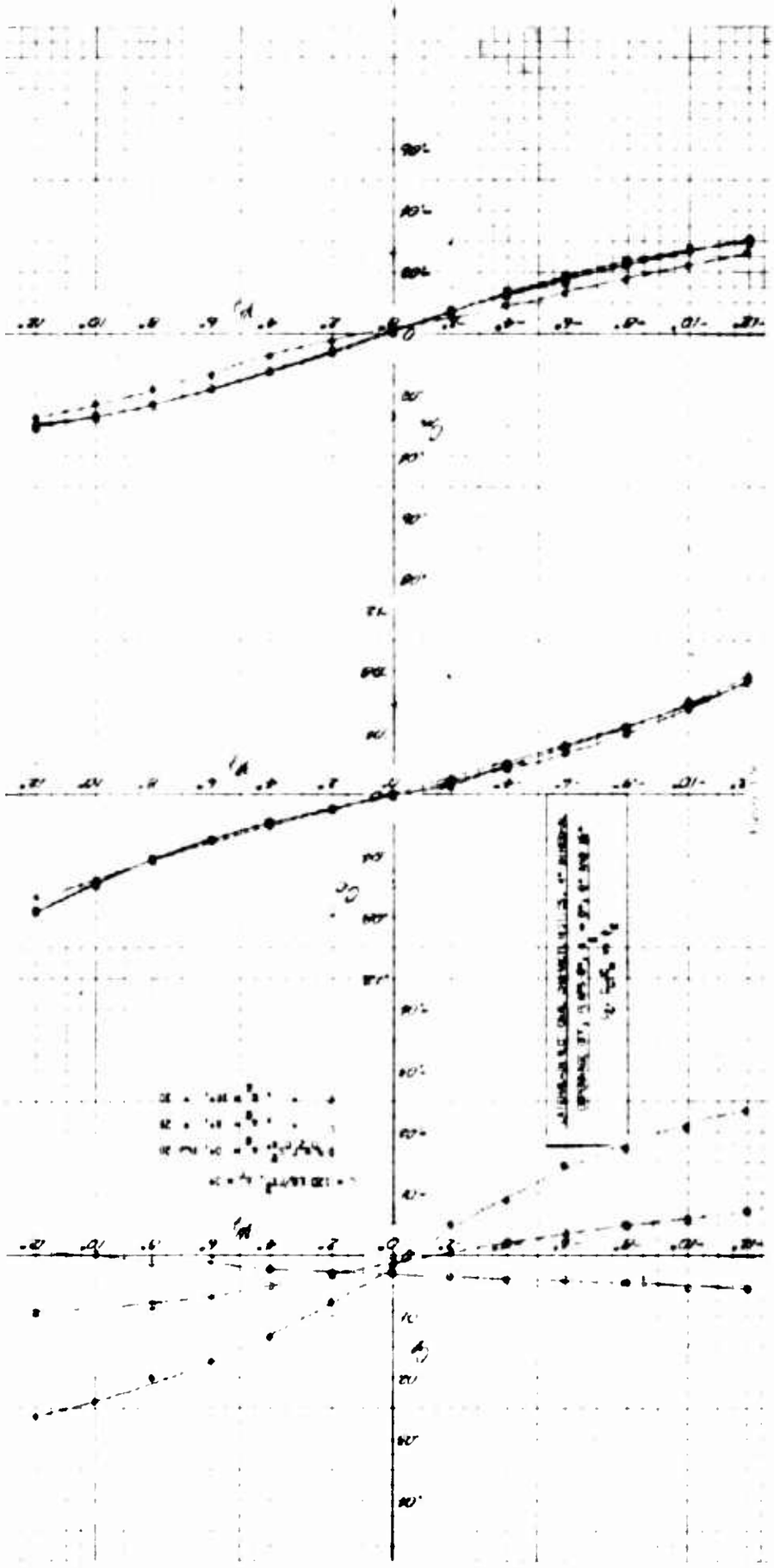
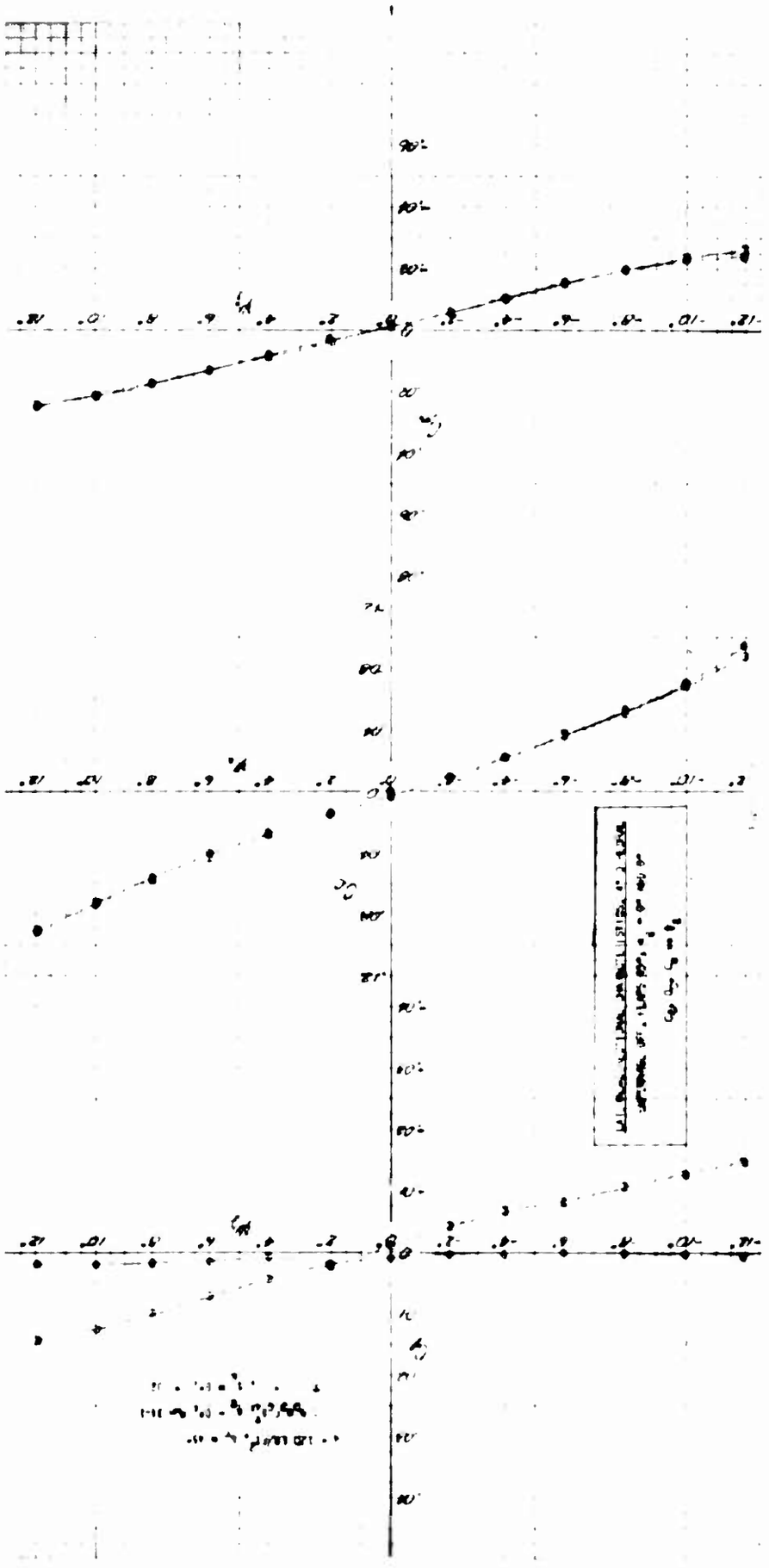


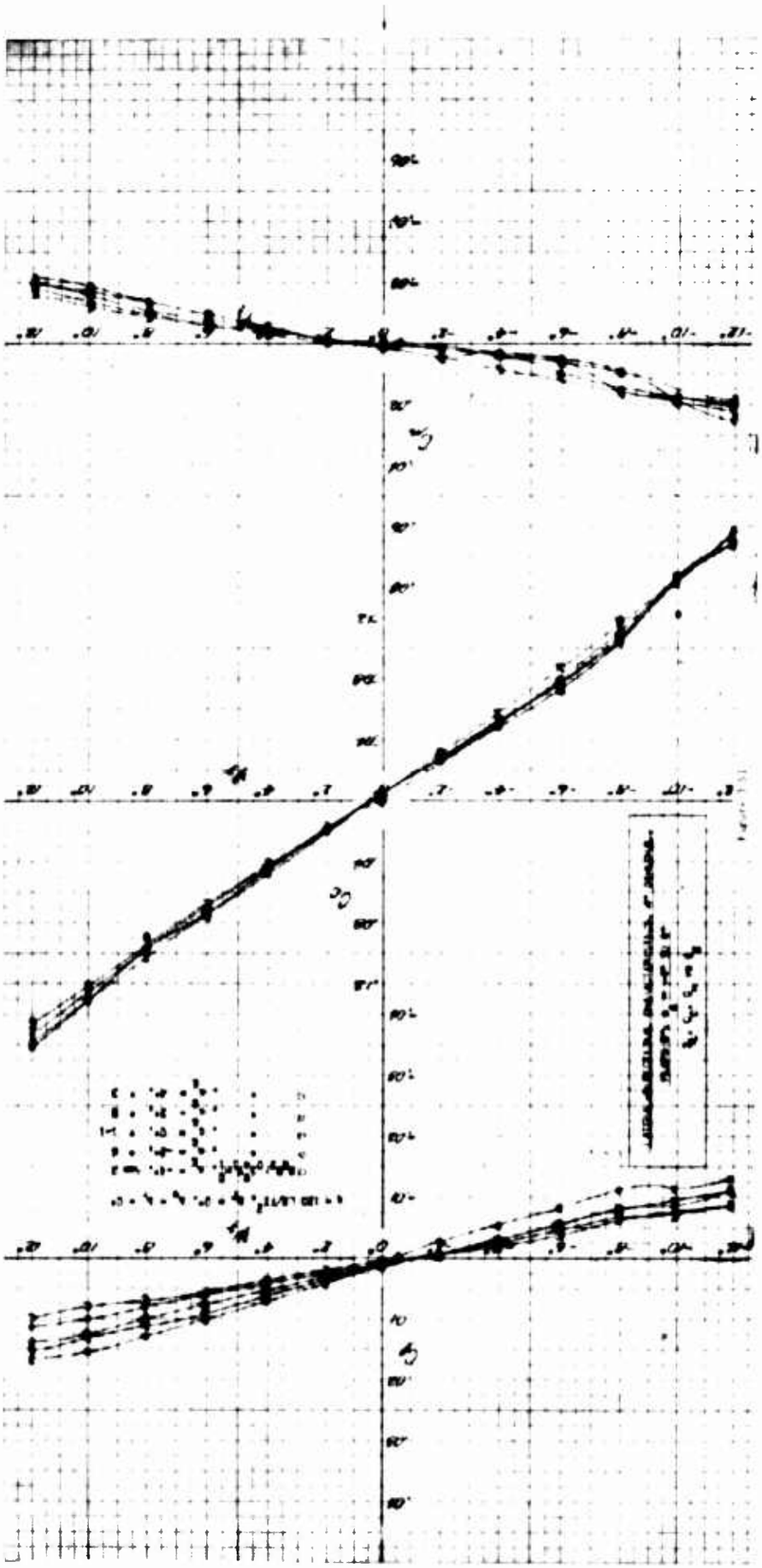
Figure 3.47

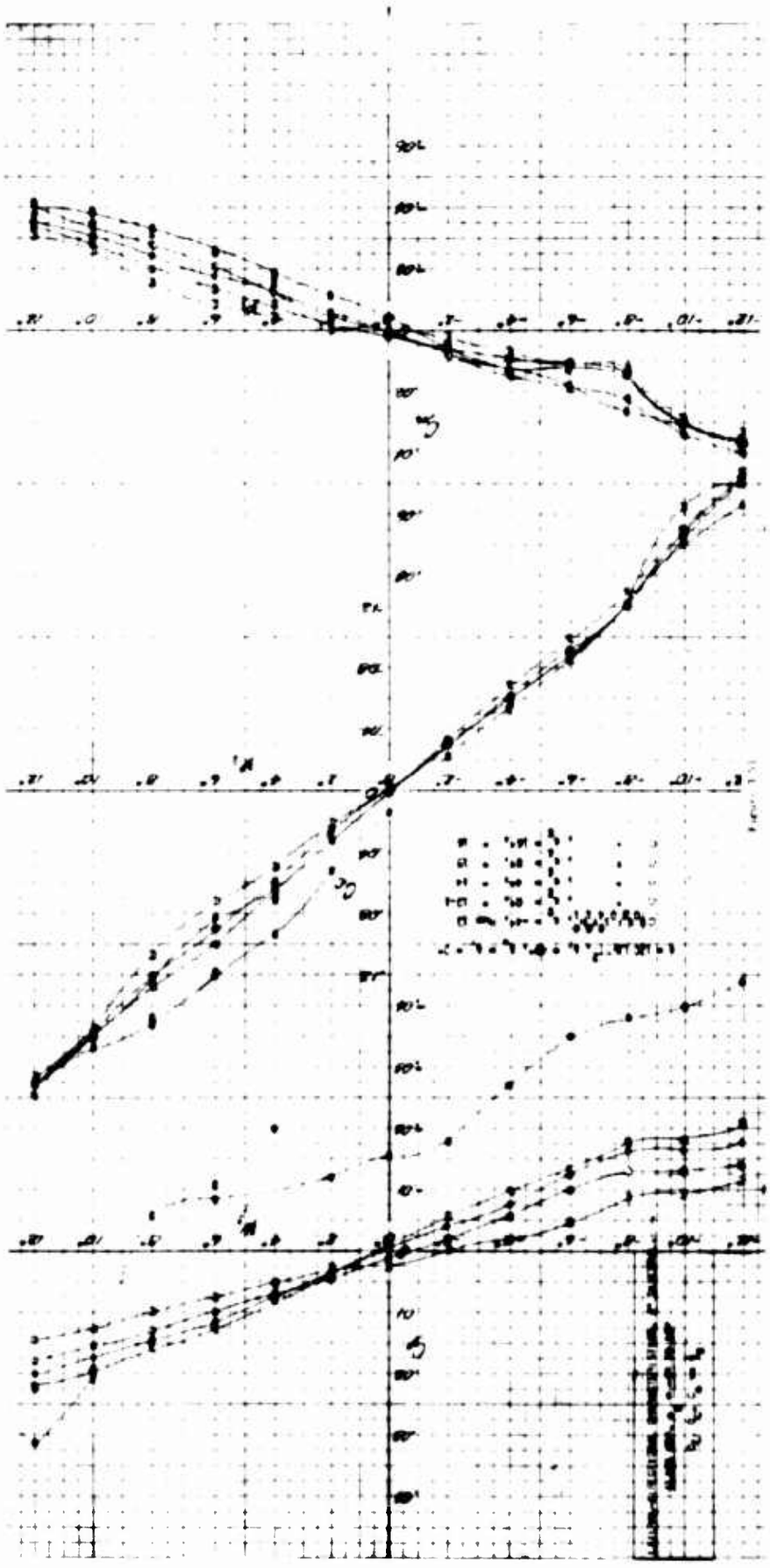


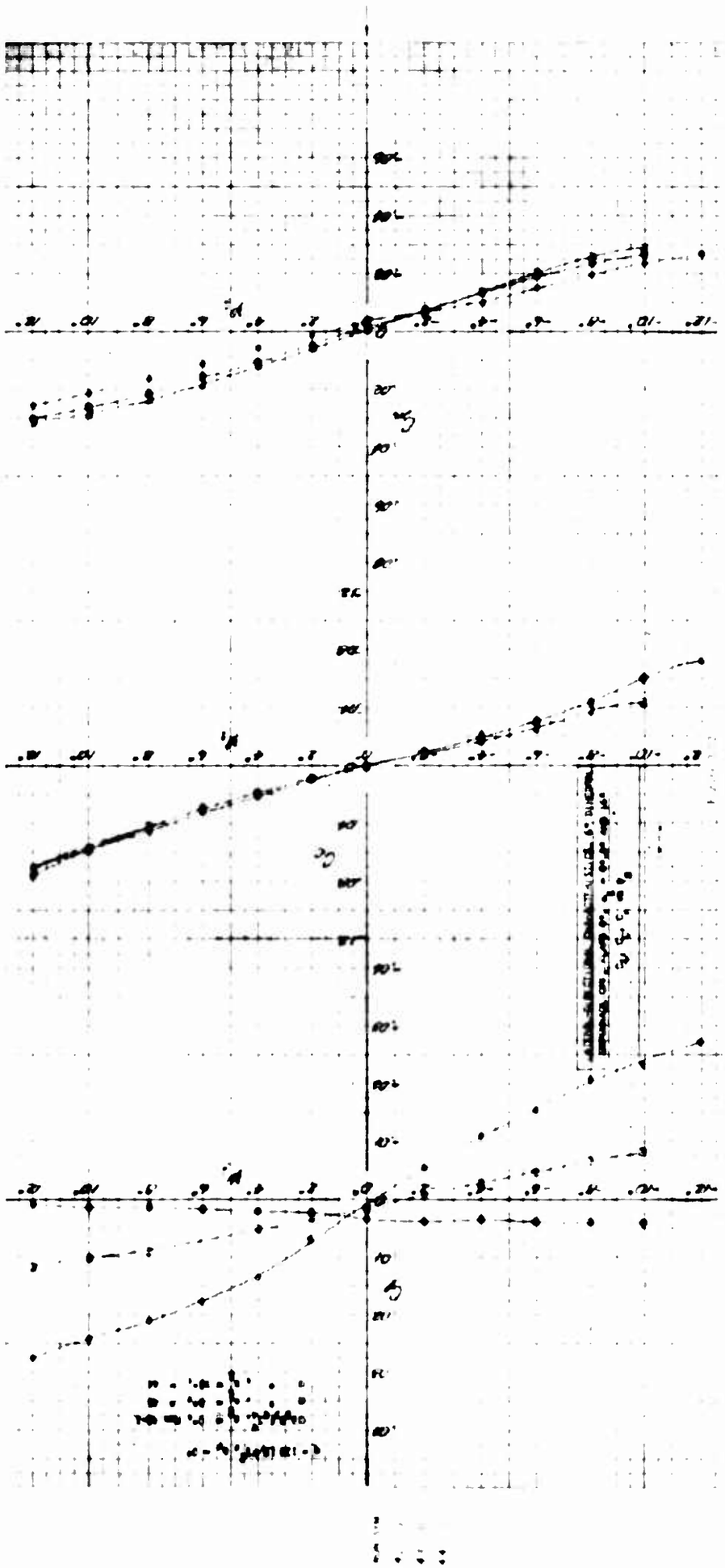


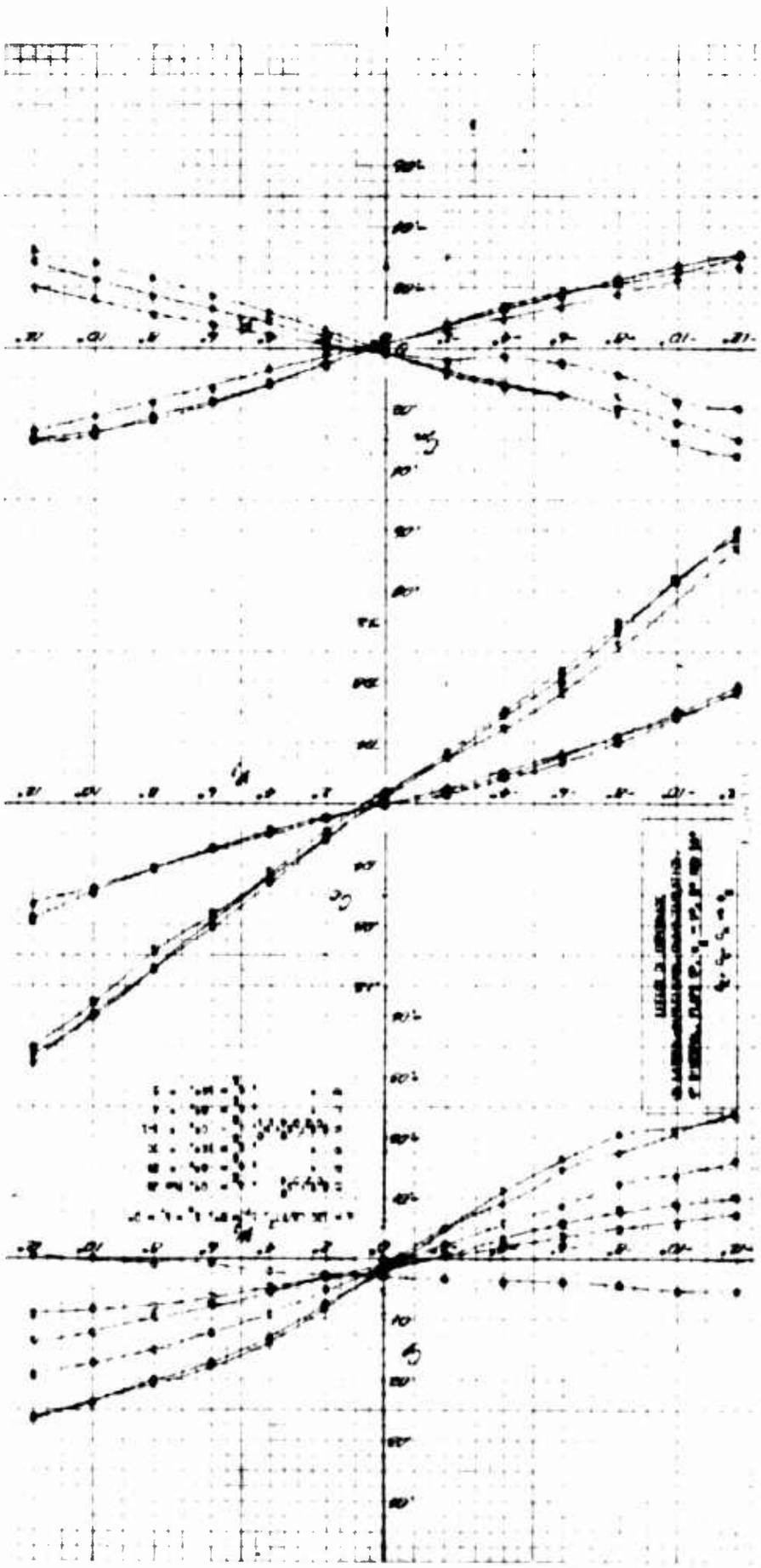


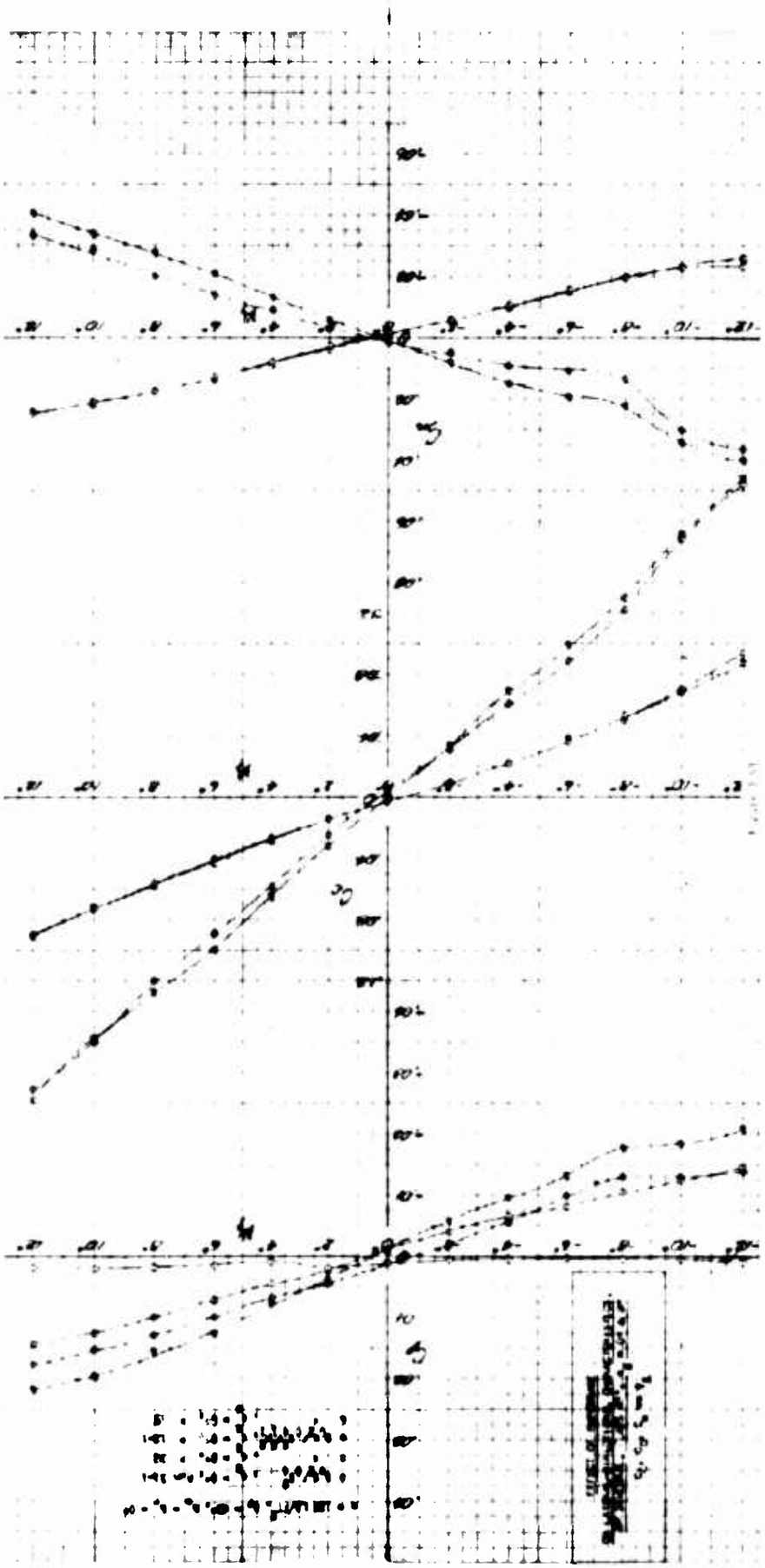


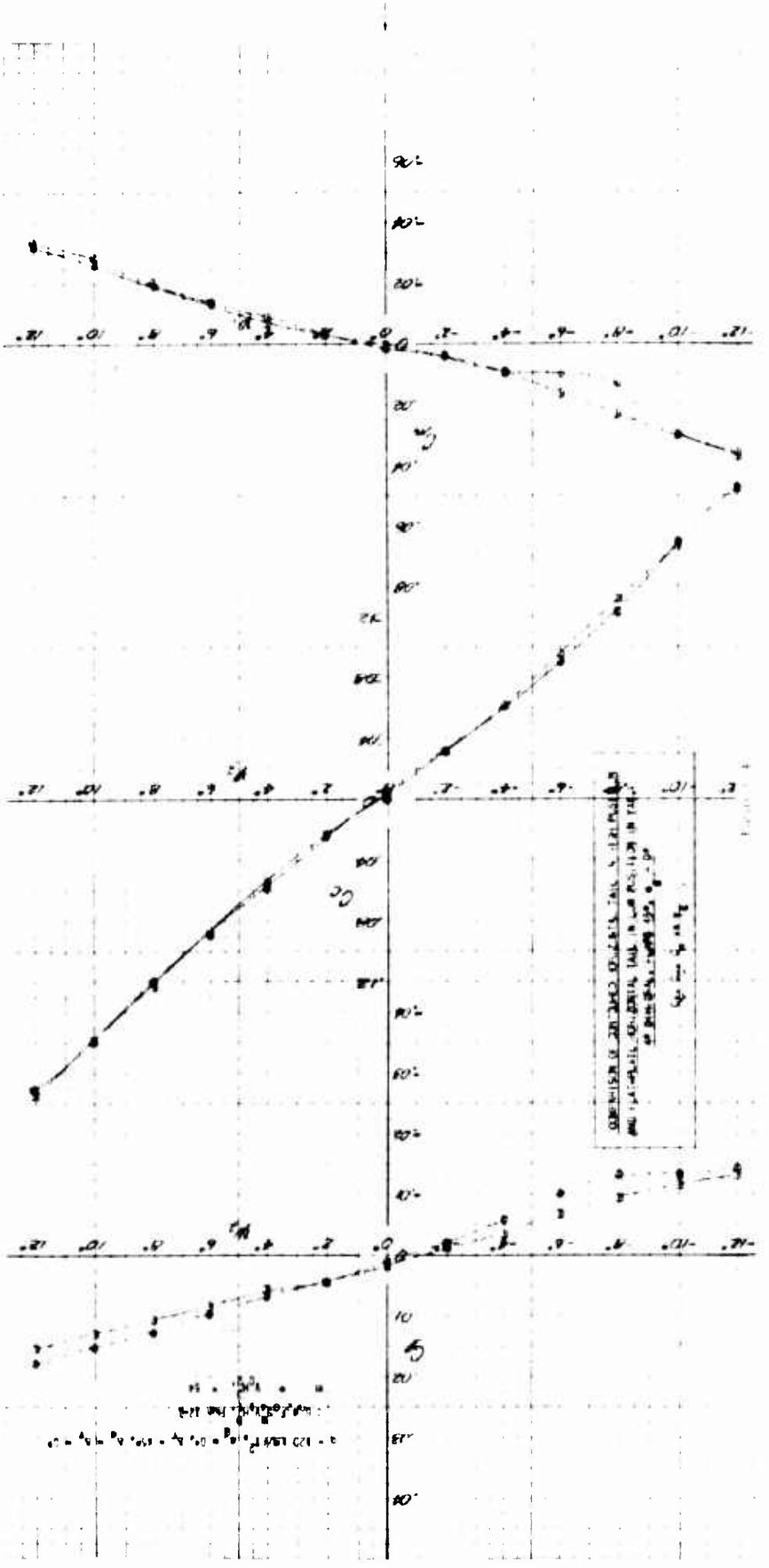












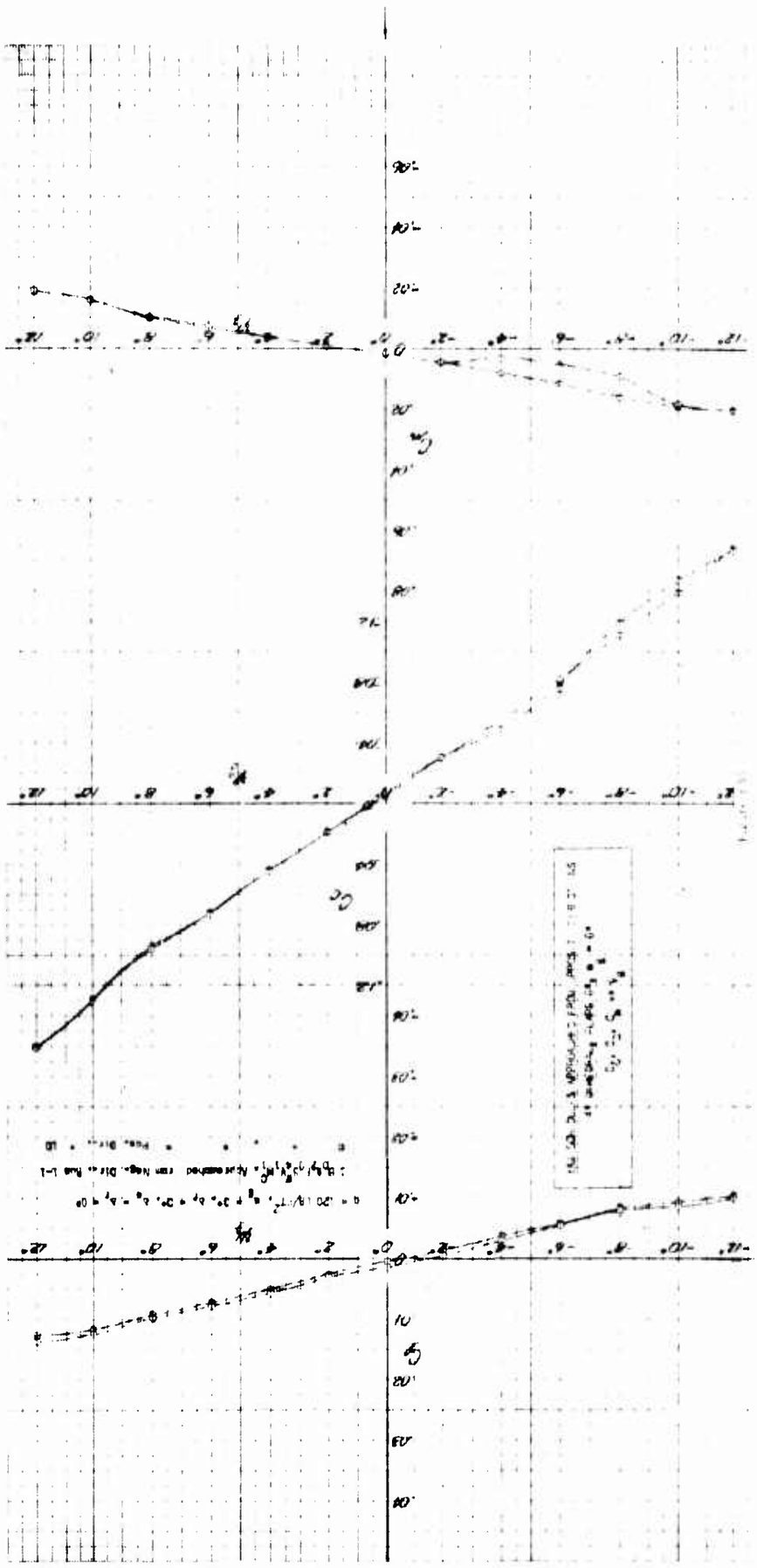


TABLE 3.4

PHASE 2 TESTS

TABULATED FORCE AND MOMENT COEFFICIENTS

STABILITY AXES

FORM 1813 (REV 12/61)

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | RUN 1-1 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
3	.00	.03	.120	.0232	.037-	12.02-	12.02-	.0202	.0098-	.167-
4	.00	.03	.104	.0248	.022-	10.02-	10.02-	.0180	.0085-	.147-
5	.00	.03	.097	.0325	.010-	8.03-	8.03-	.0090	.0079-	.104-
6	.00	.02	.089	.0343	.003	6.02-	6.02-	.0050	.0055-	.076-
7	.00	.02	.082	.0348	.001	6.02-	6.02-	.0048	.0056-	.072-
8	.00	.02	.090	.0264	.005-	8.03-	8.03-	.0162	.0074-	.119-
9	.00	.02	.093	.0337	.007-	6.02-	6.02-	.0058	.0055-	.077-
10	.00	.02	.078	.0340	.014	4.02-	4.02-	.0030	.0030-	.049-
11	.00	.02	.065	.0309	.027	2.03-	2.03-	.0043	.0005-	.030-
12	.00	.02	.065	.0311	.027	.00	.00	.0014	.0014	.006-
13	.00	.02	.068	.0310	.030	2.00	2.00	.0009-	.0030	.019
14	.00	.02	.069	.0308	.030	2.00	2.00	.0008-	.0030	.019
15	.00	.01	.062	.0312	.027	4.03	4.03	.0039-	.0057	.045
17	.00	.02	.076	.0304	.015	6.01	6.01	.0075-	.0078	.073
18	.00	.02	.087	.0296	.006-	8.00	8.00	.0107-	.0098	.096
19	.00	.03	.095	.0276	.011-	10.03	10.03	.0160-	.0124	.131
22	.00	.03	.115	.0251	.029-	12.01	12.01	.0194-	.0137	.161

LOW SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/82
MOMENT AXES STAB | RUN 2-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.02-	4.06-	.130-	.0243	.010-	12.02-	12.02-	.0181	.0086-	.168-
4	4.02-	4.06-	.143-	.0740	.000-	10.00	10.00	.0154	.0069-	.122-
5	4.02-	4.06-	.146-	.0330	.014	8.02-	8.02-	.0095	.0063-	.105-
6	4.02-	4.07-	.159-	.0348	.020	6.03-	6.03-	.0063	.0037-	.077-
8	4.02-	4.07-	.164-	.0353	.039	4.02-	4.02-	.0036	.0015-	.052-
10	4.02-	4.07-	.168-	.0348	.044	2.03-	2.03-	.0013	.0002-	.027-
11	4.02-	4.07-	.176-	.0345	.049	.00	.00	.0000	.0005	.004-
12	4.02-	4.07-	.183-	.0338	.049	2.02	2.02	.0002-	.0020	.016
13	4.02-	4.07-	.177-	.0341	.046	4.01	4.01	.0029-	.0037	.040
14	4.02-	4.07-	.170-	.0336	.037	6.01	6.01	.0061-	.0056	.067
16	4.02-	4.07-	.166-	.0336	.026	8.02	8.02	.0085-	.0070	.089
17	4.02-	4.06-	.157-	.0304	.014	10.01	10.01	.0120-	.0080	.121
20	4.02-	4.06-	.146-	.0283	.004	12.01	12.01	.0162-	.0099	.146

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-1
RUN 3-0
DATE 11/19/82
q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	4.03	4.14	.361	.0347	.060-	12.03-	12.03-	.0253	.0129-	.177-
4	4.03	4.14	.354	.0373	.045-	10.00-	10.00-	.0198	.0112-	.142-
5	4.03	4.13	.340	.0455	.037-	8.03-	8.03-	.0091	.0111-	.107-
6	4.03	4.13	.340	.0466	.024-	6.02-	6.02-	.0060	.0082-	.078-
7	4.03	4.13	.332	.0460	.009-	4.03-	4.03-	.0039	.0052-	.054-
8	4.03	4.13	.330	.0465	.002-	2.02-	2.02-	.0010	.0027-	.028-
9	4.03	4.13	.328	.0435	.002	.00	.00	.0014-	.0009	.002-
10	4.03	4.13	.332	.0410	.003	2.01	2.01	.0017-	.0044	.020
11	4.03	4.13	.327	.0411	.001-	4.03	4.03	.0060-	.0072	.048
12	4.03	4.13	.327	.0399	.011-	6.01	6.01	.0096-	.0103	.074
15	4.03	4.13	.338	.0387	.026-	8.01	8.01	.0134-	.0129	.103
16	4.03	4.14	.353	.0371	.042-	10.01	10.01	.0186-	.0154	.131
17	4.03	4.14	.363	.0374	.059-	12.01	12.01	.0213-	.0167	.159

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62

MOMENT AXES STAB | RUN 4-0 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_Q
3	8.03	8.22	.616	.0600	.086-	12.03-	12.03-	.0304	.0158-	.180-
4	8.03	8.22	.609	.0620	.068-	10.03-	10.03-	.0247	.0134-	.145-
5	8.04	8.23	.614	.0623	.049-	8.02-	8.02-	.0199	.0121-	.117-
6	8.05	8.23	.602	.0633	.042-	6.00-	6.00-	.0154	.0084-	.087-
8	8.05	8.23	.599	.0637	.033-	4.03-	4.03-	.0123	.0058-	.061-
9	8.04	8.22	.602	.0645	.016-	2.02-	2.02-	.0074	.0022-	.034-
11	8.03	8.21	.590	.0656	.020-	.01	.01	.0020	.0010	.004-
12	8.04	8.22	.597	.0655	.024-	2.01	2.01	.0033-	.0053	.023
15	8.03	8.21	.597	.0652	.025-	4.01	4.01	.0089-	.0093	.052
16	8.03	8.21	.599	.0631	.031-	6.01	6.01	.0129-	.0123	.081
17	8.03	8.21	.600	.0625	.046-	8.01	8.01	.0172-	.0151	.109
18	8.03	8.22	.613	.0621	.068-	10.01	10.01	.0224-	.0172	.138
19	8.04	8.23	.623	.0636	.082-	12.02	12.02	.0284-	.0192	.171

LOW SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

RUN 343-1
CONF S-0

DATE 11/19/62
q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
4	16.04	16.37	1.050	.1646	.097-	12.02-	12.02-	.0357	.0237-	.174-
5	16.03	16.35	1.040	.1645	.084-	10.00-	10.00-	.0314	.0210-	.148-
6	16.04	16.36	1.037	.1673	.077-	8.04-	8.04-	.0215	.0204-	.112-
7	16.04	16.36	1.030	.1723	.073-	6.02-	6.02-	.0158	.0163-	.082-
8	16.04	16.36	1.016	.1683	.066-	4.03-	4.03-	.0120	.0111-	.058-
9	16.04	16.36	1.021	.1670	.051-	2.02-	2.02-	.0086	.0048-	.032-
10	16.03	16.35	1.019	.1657	.045-	.00	.00	.0008	.0024	.004-
11	16.04	16.36	1.019	.1661	.045-	2.02	2.02	.0065-	.0083	.024
12	16.04	16.36	1.026	.1644	.048-	4.00	4.00	.0119-	.0141	.049
13	16.04	16.36	1.031	.1633	.055-	6.01	6.01	.0172-	.0177	.078
14	16.04	16.36	1.033	.1618	.062-	8.01	8.01	.0231-	.0207	.108
15	16.04	16.36	1.040	.1608	.075-	10.01	10.01	.0281-	.0238	.140
16	16.04	16.37	1.048	.1674	.089-	12.01	12.01	.0324-	.0264	.168

LOW SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | RUN 6-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
4	2.02-	2.02-	.004-	.0210	.037-	12.02-	12.02-	.0197	.0083-	.168-
5	2.02-	2.02-	.022-	.0247	.009-	10.03-	10.03-	.0175	.0072-	.144-
6	2.02-	2.02-	.024-	.0266	.003	8.02-	8.02-	.0153	.0067-	.111-
7	2.02-	2.03-	.036-	.0294	.015	6.00-	6.00-	.0097	.0045-	.080-
9	2.01-	2.02-	.047-	.0315	.027	4.05-	4.05-	.0044	.0025-	.049-
10	2.02-	2.03-	.058-	.0319	.036	2.02-	2.02-	.0017	.0000-	.026-
11	2.02-	2.03-	.056-	.0308	.035	.00	.00	.0003	.0012	.003-
12	2.02-	2.03-	.059-	.0301	.040	2.01	2.01	.0008-	.0025	.020
13	2.02-	2.03-	.059-	.0301	.035	4.02	4.02	.0034-	.0046	.043
14	2.02-	2.03-	.053-	.0297	.027	6.02	6.02	.0068-	.0062	.070
15	2.02-	2.03-	.049-	.0300	.015	8.02	8.02	.0093-	.0082	.089
16	2.03-	2.04-	.034-	.0260	.006	10.00	10.00	.0136-	.0100	.125
17	2.02-	2.02-	.018-	.0248	.015-	12.01	12.01	.0177-	.0114	.153

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

[illegible] STAB
[illegible] STAB

[illegible] 343-1
[illegible] 7-0

[illegible] 11/19/42
[illegible] 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
2	6.02-	6.11-	.311-	.0413	.051	.00-	.00	.0002	.0027	.008-
4	4.00-	4.05-	.185-	.0333	.052	.00-	.00	.0010	.0027	.019-
5	2.02-	2.03-	.052-	.0301	.035	.00-	.00	.0010	.0016	.004-
6	.00	.02	.065	.0302	.028	.00-	.00	.0017	.0019	.005-
7	2.04	2.10	.197	.0340	.019	.00-	.00	.0015	.0014	.005-
8	4.04	4.13	.315	.0421	.008	.00-	.00	.0019	.0016	.006-
9	6.05	6.19	.474	.0517	.006-	.00-	.00	.0017	.0015	.005-
10	8.03	8.21	.594	.0656	.023-	.00-	.00	.0016	.0014	.004-
11	10.04	10.26	.721	.0829	.022-	.00-	.00	.0014	.0011	.002-
12	12.04	12.30	.843	.1037	.029-	.02-	.02-	.0011	.0005-	.003-
13	14.03	14.32	.951	.1281	.037-	.02-	.02-	.0013	.0005-	.002-
14	16.03	16.35	1.017	.1663	.045-	.02-	.02-	.0009	.0025	.009-
15	18.04	18.36	1.043	.2337	.080-	.02-	.02-	.0036-	.0021-	.015-
17	20.03	20.33	.973	.3066	.108-	.02-	.02-	.0013-	.0027-	.013-

LOW SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-1
RUN 8-0
DATE 11/19/82
q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
4	2.04	2.11	.238	.0265	.049-	12.03-	12.03-	.0225	.0107-	.174-
5	2.05	2.12	.232	.0309	.037-	10.00-	10.00-	.0201	.0093-	.143-
6	2.05	2.12	.222	.0312	.022-	8.03-	8.03-	.0167	.0081-	.115-
8	2.04	2.10	.208	.0333	.005-	6.02-	6.02-	.0117	.0055-	.087-
10	2.04	2.10	.205	.0346	.004-	4.02-	4.02-	.0083	.0030-	.057-
11	2.04	2.09	.189	.0351	.016	2.03-	2.03-	.0054	.0003-	.032-
13	2.05	2.11	.191	.0344	.020	.00-	.00	.0012	.0014	.005-
15	2.05	2.10	.190	.0344	.018	2.01	2.01	.0019-	.0039	.019
17	2.04	2.10	.198	.0352	.009	4.03	4.03	.0053-	.0068	.044
18	2.04	2.10	.204	.0336	.001	6.00	6.00	.0096-	.0093	.076
19	2.04	2.10	.214	.0334	.014-	8.02	8.02	.0130-	.0112	.099
20	2.05	2.12	.223	.0326	.028-	10.01	10.01	.0172-	.0133	.123
21	2.04	2.11	.242	.0345	.049-	12.01	12.01	.0194-	.0152	.145

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | CONF 9-9 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	12.03	12.30	.872	.1012	.102-	12.02-	12.02-	.0335	.0191-	.181-
4	12.04	12.31	.861	.1006	.083-	10.01-	10.01-	.0278	.0160-	.148-
6	12.04	12.30	.844	.1002	.061-	8.03-	8.03-	.0245	.0151-	.128-
5	12.03	12.29	.847	.1020	.052-	6.02-	6.02-	.0169	.0120-	.099-
7	12.03	12.29	.849	.1027	.041-	4.02-	4.02-	.0126	.0089-	.041-
8	12.03	12.29	.841	.1038	.033-	2.03-	2.03-	.0072	.0052-	.033-
9	12.04	12.30	.839	.1041	.030-	.02	.02	.0004	.0014-	.001-
10	12.04	12.30	.838	.1034	.032-	2.00	2.00	.0056-	.0025	.027
11	12.03	12.29	.840	.1032	.039-	4.01	4.01	.0113-	.0058	.057
12	12.04	12.30	.840	.1024	.048-	6.03	6.03	.0152-	.0096	.085
13	12.03	12.29	.849	.1002	.059-	8.01	8.01	.0211-	.0118	.116
14	12.04	12.31	.861	.1004	.077-	10.01	10.01	.0250-	.0153	.145
15	12.03	12.30	.871	.1021	.092-	12.01	12.01	.0310-	.0177	.177

LOW SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB
TEST 343-1
RUN 10-0
DATE 11/19/62
q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
5	.01-	.05	.208	.0240	.011-	12.02	12.02	.0180-	.0125	.160
6	.01-	.06	.244	.0201	.011-	10.00	10.00	.0161-	.0117	.131
8	.01-	.01	.080	.0296	.002	8.00	8.00	.0101-	.0092	.094
9	.01-	.01	.068	.0296	.017	6.02	6.02	.0069-	.0073	.072
11	.01-	.01	.072	.0307	.022	4.03	4.03	.0037-	.0050	.044
12	.01-	.01	.070	.0306	.024	2.02	2.02	.0009-	.0033	.019
13	.01-	.01	.074	.0308	.024	.02-	.02-	.0017	.0005	.005-
14	.01-	.01	.078	.0308	.021	2.02-	2.02-	.0051	.0012-	.030-
15	.01-	.01	.082	.0305	.014	4.01-	4.01-	.0079	.0037-	.055-
16	.01-	.01	.085	.0296	.006	6.01-	6.01-	.0115	.0056-	.082-
17	.01-	.02	.096	.0279	.007-	8.02-	8.02-	.0165	.0092-	.111-
18	.01-	.02	.104	.0270	.021-	10.01-	10.01-	.0184	.0092-	.139-
19	.01-	.02	.117	.0236	.039-	12.03-	12.03-	.0203	.0103-	.166-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | RUN 11-0 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.00-	8.01-	.060-	.0737	.007	.00	.00	.0031-	.0042	.000-
3	6.03-	6.01-	.077	.0730	.004-	.00	.00	.0018-	.0034	.003-
5	4.01-	3.94-	.224	.0775	.021-	.00	.00	.0000	.0029	.005-
6	2.01-	1.90-	.359	.0860	.034-	.00	.00	.0007	.0027	.002-
7	.02-	.13	.494	.0967	.046-	.00	.00	.0016	.0019	.003-
8	2.01	2.21	.644	.1116	.060-	.01	.01	.0021	.0011	.004-
9	4.02	4.26	.785	.1318	.071-	.01	.01	.0020	.0018	.004-
10	6.00	6.29	.924	.1555	.076-	.01	.01	.0016	.0003	.001-
12	8.01	8.34	1.065	.1634	.081-	.00	.00	.0015	.0000-	.001-
13	10.01	10.38	1.197	.2173	.084-	.00	.00	.0018	.0003-	.002-
14	12.01	12.42	1.339	.2524	.084-	.00	.00	.0021	.0003-	.003-
15	14.02	14.47	1.440	.3017	.078-	.00	.00	.0020	.0007	.005-
16	16.01	16.46	1.435	.3741	.074-	.00	.00-	.0029-	.0213-	.019
17	18.02	18.44	1.351	.4418	.083-	.00	.00-	.0095	.0307-	.019
18	20.02	20.44	1.345	.5000	.121-	.00	.00	.0010	.0103-	.018-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62

MOMENT AXES STAB | RUN 12-1 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
4	.01-	.16	.541	.0896	.137-	12.02-	12.02-	.0364	.0138-	.204-
5	.01-	.16	.541	.0908	.113-	10.02-	10.02-	.0302	.0130-	.168-
6	.01-	.15	.532	.0993	.095-	8.03-	8.03-	.0135	.0130-	.122-
8	.01-	.15	.526	.0981	.082-	6.03-	6.03-	.0104	.0099-	.089-
9	.01-	.15	.514	.0946	.062-	4.02-	4.02-	.0092	.0056-	.061-
10	.01-	.14	.502	.0965	.060-	2.02-	2.02-	.0044	.0018-	.031-
11	.01-	.14	.494	.0965	.046-	.00	.00	.0019	.0011	.025-
12	.01-	.14	.506	.0964	.051-	2.02	2.02	.0031-	.0046	.025
13	.01-	.15	.512	.0950	.057-	4.01	4.01	.0087-	.0068	.059
14	.01-	.15	.520	.0946	.063-	6.02	6.02	.0135-	.0099	.089
15	.01-	.15	.528	.0935	.083-	8.01	8.01	.0202-	.0129	.120
16	.01-	.15	.538	.0915	.104-	10.00	10.00	.0285-	.0153	.160
17	.01-	.16	.551	.0919	.129-	12.02	12.02	.0333-	.0178	.191

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-1
RUN 13-0

DATE 11/19/62
q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	4.02-	3.94-	.283	.0695	.[illegible]-	12.00-	12.00-	.0329	.0113-	.200-
3	4.02-	3.94-	.271	.0675	.081-	10.00-	10.00-	.0286	.0091-	.195-
4	4.02-	3.94-	.263	.0801	.066-	8.03-	8.03-	.0122	.0086-	.121-
5	4.02-	3.95-	.243	.0775	.046-	6.03-	6.03-	.0108	.0046-	.090-
6	4.02-	3.95-	.232	.0765	.034-	4.00-	4.00-	.0069	.0016-	.047-
7	4.02-	3.[illegible]-	.222	.0774	.023-	2.03-	2.03-	.0020	.0003-	.030-
9	4.03-	3.97-	.217	.0777	.018-	.02	.02	.0010-	.0026	.003-
10	4.02-	3.96-	.220	.0763	.018-	2.00	2.00	.0002-	.0027	.020
11	4.02-	3.96-	.220	.0767	.023-	4.00	4.00	.0045-	.0051	.049
13	4.02-	3.95-	.235	.0780	.039-	6.01	6.01	.0084-	.0074	.071
14	4.02-	3.95-	.244	.0762	.054-	8.02	8.02	.015[illegible]-	.0097	.106
15	4.03-	3.98-	.258	.073[illegible]	.072-	10.00	10.00	.0261-	.0125	.154
16	4.02-	3.94-	.275	.0732	.095-	12.01	12.01	.0309-	.0144	.195

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62

MOMENT AXES STAB | RUN 14-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	4.01	4.26	.816	.1251	.148-	12.02-	12.02-	.0373	.0176-	.202-
4	4.01	4.26	.811	.1250	.138-	10.02-	10.02-	.0301	.0163-	.164-
6	4.01	4.26	.800	.1332	.120-	8.02-	8.02-	.0151	.0162-	.132-
7	4.01	4.25	.791	.1308	.100-	6.00-	6.00-	.0132	.0123-	.092-
8	4.01	4.25	.783	.1284	.081-	4.03-	4.03-	.0126	.0076-	.062-
9	4.01	4.25	.781	.1307	.073-	2.00-	2.00-	.0063	.0039-	.030-
10	4.01	4.25	.781	.1307	.069-	.00-	.00	.0008	.0001-	.001-
11	4.01	4.25	.783	.1303	.072-	2.01	2.01	.0051-	.0034	.031
12	4.01	4.25	.783	.1292	.078-	4.03	4.03	.0124-	.0078	.064
13	4.01	4.25	.789	.1280	.091-	6.01	6.01	.0177-	.0115	.092
14	4.01	4.26	.797	.1264	.106-	8.01	8.01	.0242-	.0143	.125
15	4.01	4.26	.810	.1253	.128-	10.02	10.02	.0308-	.0173	.160
16	4.01	4.25	.817	.1265	.149-	12.01	12.01	.0357-	.0199	.191

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | RUN 15-0 | q 120.0

Pt	α_ℓ	α	C_L	C_D	C_m	ψ_ℓ	ψ	C_n	C_ℓ	C_C
2	8.01	8.35	1.094	.1748	.172-	12.03-	12.03-	.0403	.0207-	.208-
3	8.01	8.35	1.086	.1757	.149-	10.03-	10.03-	.0341	.0183-	.171-
4	8.01	8.29	.995	.1791	.108-	8.02-	8.02-	.0223	.0177-	.130-
5	8.02	8.35	1.065	.1787	.105-	6.02-	6.02-	.0192	.0132-	.099-
7	8.02	8.35	1.066	.1805	.091-	4.03-	4.03-	.0149	.0097-	.069-
8	8.01	8.34	1.063	.1822	.082-	2.03-	2.03-	.0081	.0057-	.033-
10	8.00	8.33	1.063	.1915	.080-	.02-	.02-	.0005	.0011-	.000-
11	8.01	8.34	1.058	.1821	.084-	2.01	2.01	.0057-	.0040	.032
12	8.02	8.35	1.069	.1792	.089-	4.02	4.02	.0132-	.0091	.065
13	8.02	8.35	1.070	.1762	.100-	6.02	6.02	.0209-	.0125	.100
15	8.01	8.35	1.082	.1768	.116-	8.01	8.01	.0276-	.0158	.127
18	8.01	8.35	1.089	.1772	.140-	10.03	10.03	.0333-	.0197	.197
19	8.01	8.35	1.110	.1760	.186-	12.01	12.01	.0406-	.0218	.120

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62

MOMENT AXES STAB | RUN 16-3 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	16.02	16.49	1.497	.3753	.160-	12.02-	12.02-	.0370	.0438-	.186-
3	16.02	16.48	1.489	.3711	.139-	10.03-	10.03-	.0316	.0377-	.161-
4	16.02	16.48	1.464	.3663	.113-	8.02-	8.02-	.0269	.0381-	.120-
5	16.02	16.48	1.464	.3727	.107-	6.03-	6.03-	.0176	.0350-	.095-
6	16.02	16.47	1.460	.3683	.092-	4.00-	4.00-	.0132	.0269-	.054-
7	16.02	16.48	1.470	.3642	.080-	2.03-	2.03-	.0054	.0178-	.023-
8	16.02	16.48	1.454	.3657	.073-	.00-	.00-	.0047-	.0156-	.014
9	16.02	16.46	1.413	.3582	.082-	2.03	2.03	.0117-	.0120-	.080
11	16.02	16.49	1.497	.3520	.070-	4.01	4.01	.0187-	.0073	.070
12	16.02	16.46	1.413	.3549	.113-	6.02	6.02	.0265-	.0109-	.120
13	16.02	15.47	1.440	.3564	.129-	8.01	8.01	.0334-	.0059-	.152
14	16.02	16.50	1.527	.3541	.125-	10.00	10.00	.0391-	.0130	.155
15	16.02	16.50	1.539	.3570	.147-	12.02	12.02	.0417-	.0224	.191
16	16.02	16.45	1.392	.3584	.101-	4.02	4.02	.0157-	.0250-	.033
17	16.03	16.47	1.411	.3583	.112-	6.00	6.00	.0255-	.0085-	.117
19	16.02	16.47	1.442	.3592	.127-	8.01	8.01	.0319-	.0073	.147
20	16.02	16.48	1.514	.3641	.124-	10.02	10.02	.0351-	.0209	.157
21	16.02	16.51	1.555	.3609	.151-	12.01	12.01	.0380-	.0313	.187

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/82
MOMENT AXES STAB | RUN 17-0 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.01-	8.02-	.035-	.0691	.052-	.00	.00	.0026	.0001	.011-
3	6.03-	6.00-	.104	.0699	.066-	.00	.00	.0035	.0003	.015-
4	4.01-	3.94-	.251	.0762	.085-	.00	.00	.0032	.0015	.014-
5	2.03-	1.91-	.393	.0849	.102-	.00	.00	.0033	.0016	.009-
6	.00-	.16	.528	.0966	.117-	.00	.00	.0030	.0015	.009-
7	2.01	2.22	.673	.1127	.125-	.02	.02	.0023	.0012	.007-
8	4.00	4.25	.809	.1324	.132-	.02	.02	.0013	.0003	.005-
9	6.01	6.31	.953	.1539	.140-	.02	.02	.0007	.0007-	.000-
10	8.01	8.35	1.104	.1866	.143-	.02	.02	.0011	.0004-	.006-
11	10.02	10.40	1.229	.2200	.145-	.02	.02	.0008	.0011-	.001-
12	12.00	12.42	1.348	.2541	.144-	.02	.02	.0008	.0005-	.001-
13	14.03	14.49	1.464	.3057	.139-	.02	.02	.0010	.0009-	.002-
14	16.02	16.49	1.521	.3636	.133-	.02	.02	.0019-	.0032-	.003
17	18.01	18.45	1.413	.4533	.140-	.02	.02	.0024	.0051-	.009
18	20.01	20.44	1.367	.5097	.165-	.02	.02	.0016	.0022-	.031-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-1
RUN 19-0
DATE 11/19/62
q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.02-	8.02-	.009-	.0696	.112-	.01	.01	.0007	.0008	.006-
3	6.03-	5.99-	.125	.0698	.120-	.00	.00	.0032	.0010	.021-
4	4.02-	3.94-	.282	.0756	.141-	.00	.00	.0027	.0016	.010-
5	2.00-	1.87-	.426	.0859	.159-	.02	.02	.0026	.0016	.007-
6	.00-	.17	.564	.0978	.173-	.02	.02	.0018	.0013	.004-
7	2.04	2.25	.698	.1151	.182-	.02	.02	.0015	.0006	.003-
8	4.00	4.26	.840	.1351	.189-	.02	.02	.0005	.0001	.001-
9	6.02	6.32	.975	.1605	.193-	.02	.02	.0003	.0003-	.001
10	8.01	8.36	1.115	.1906	.197-	.02	.02	.0006	.0008-	.000
11	10.00	10.39	1.247	.2239	.199-	.02	.02	.0006	.0013-	.002
12	12.00	12.43	1.374	.2604	.199-	.02	.02	.0006	.0007-	.000
13	14.01	14.48	1.498	.3141	.196-	.02	.02	.0006	.0011-	.003-
14	16.02	16.51	1.560	.3745	.191-	.02	.02	.0023-	.0032-	.002
15	18.03	18.49	1.470	.4627	.196-	.02	.02	.0042	.0201-	.011
16	20.01	20.45	1.425	.5155	.229-	.02	.02	.0008	.0059-	.049-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-1
RUN 19-2

DATE 11/19/62
q 122.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.02-	8.01-	.039	.0735	.214-	.02	.02	.0045-	.0011	.001
3	6.03-	5.98-	.188	.0689	.231-	.02	.02	.0010	.0008	.003-
4	4.02-	3.92-	.334	.0773	.253-	.02	.02	.0009	.0022	.002-
5	2.02-	1.87-	.493	.0883	.272-	.02	.02	.0003	.0021	.001-
6	.01-	.18	.619	.1023	.282-	.02	.02	.0008	.0019	.001-
7	2.02	2.25	.746	.1210	.292-	.00	.00	.0010	.0013	.001-
8	4.01	4.29	.896	.1439	.303-	.02	.02	.0004	.0002	.000-
9	6.01	6.33	1.029	.1705	.307-	.02	.02	.0000	.0001-	.000
10	8.00	8.36	1.159	.2016	.310-	.02	.02	.0006	.0006-	.001
11	10.01	10.42	1.310	.2381	.314-	.02	.02	.0005	.0007-	.001
12	12.00	12.44	1.428	.2762	.312-	.02	.02	.0005	.0007-	.001
13	14.02	14.50	1.537	.3312	.303-	.02	.02	.0010	.0008-	.001-
14	16.01	16.51	1.590	.3976	.284-	.02	.02	.0023-	.0040-	.003
15	18.00	18.47	1.501	.4806	.291-	.02	.02	.0045	.0136-	.001-
16	20.02	20.46	1.424	.5360	.311-	.02	.02	.0007-	.0088-	.004-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-1 DATE 11/13/62
RUN 20-0 q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	3.02-	8.12-	.329-	.0472	.153-	.00	.00	.0020-	.0016	.004-
4	6.03-	6.03-	.195-	.0363	.149-	.01	.01	.0001	.0013	.003-
5	4.03-	4.05-	.065-	.0324	.184-	.01	.01	.0009	.0013	.004-
6	2.02-	2.01-	.059	.0316	.195-	.01	.01	.0007	.0009	.003-
7	.02-	.03	.195	.0351	.209-	.00	.00	.0011	.0009	.005-
8	2.00	2.10	.318	.0480	.219-	.00	.00	.0010	.0008	.004-
10	4.01	4.17	.522	.0539	.241-	.00	.00	.0011	.0009	.004-
11	5.02	6.20	.597	.0675	.240-	.00	.00	.0015	.0011	.005-
12	8.02	8.25	.732	.0886	.236-	.00	.00	.0016	.0009	.004-
14	10.01	10.26	.816	.1121	.211-	.00-	.00	.0017	.0003-	.003-
15	12.01	12.29	.914	.1410	.186-	.00	.00	.0017	.0009-	.002-
16	14.01	14.32	1.013	.1716	.159-	.00	.00	.0017	.0011-	.003-
17	16.02	16.35	1.069	.2133	.140-	.00	.00	.0015	.0022	.007-
18	18.01	18.35	1.093	.2525	.157-	.00	.00	.0027-	.0003	.011-
19	20.01	20.34	1.049	.3421	.214-	.00	.00	.0017-	.0019-	.023-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-1 DATE 11/19/82
RUN 21-0 q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.03-	8.15-	.399-	.0527	.039-	.00-	.00	.0010-	.0005-	.004-
4	6.03-	6.11-	.251-	.0373	.055-	.00-	.00	.0038	.0002-	.007-
5	4.03-	4.07-	.134-	.0312	.060-	.00-	.00	.0030	.0002	.006-
6	2.03-	2.03-	.000-	.0296	.081-	.00-	.00	.0028	.0002	.007-
7	.01-	.02	.123	.0314	.089-	.00-	.00	.0024	.0009	.006-
9	2.01	2.09	.254	.0366	.102-	.00-	.00	.0021	.0011	.006-
10	4.01	4.13	.393	.0459	.115-	.00-	.00	.0016	.0019	.005-
11	6.00	6.16	.529	.0573	.125-	.00-	.00	.0014	.0009	.004-
12	8.00	8.20	.651	.0733	.133-	.00-	.00	.0010	.0011	.003-
13	10.02	10.25	.780	.0920	.144-	.00-	.00	.0010	.0007	.002-
14	12.02	12.30	.901	.1150	.151-	.00-	.00	.0010	.0010-	.000-
15	14.01	14.32	1.009	.1413	.159-	.00-	.00	.0010	.0007-	.001-
16	16.01	16.34	1.071	.1804	.152-	.00-	.00	.0013	.0021	.005-
17	18.02	18.36	1.098	.2458	.169-	.00-	.00-	.0015-	.0007	.000
18	20.01	20.33	1.[illegible]	.3217	.175-	.00-	.00	.0017-	.0019-	.011-

LOW SPEED WIND TUNNEL FINAL DATA SHEET

force axes STAB run 343-1 date 11/19/62

moment axes STAB cws 22-0 q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.01-	8.13-	.403-	.0539	.012	.00-	.00	.0013	.0009-	.004-
3	6.03-	6.12-	.239-	.0413	.000-	.00-	.00	.0022	.0003-	.003-
4	4.01-	4.03-	.153-	.0321	.010-	.00-	.00	.0046	.0004-	.002-
5	2.01-	2.01-	.015-	.0297	.02 -	.00-	.00	.0037	.0003	.004-
6	.01-	.01	.093	.0308	.033-	.00-	.00	.0034	.0007	.004-
7	2.00	2.06	.220	.0353	.045-	.00-	.00	.0029	.0008	.007-
8	4.01	4.12	.354	.0434	.056-	.00-	.00	.0022	.0011	.004-
9	6.00	6.15	.487	.0546	.069-	.00-	.00	.0019	.0013	.007-
10	8.01	8.20	.626	.0692	.07 -	.00-	.00	.0017	.0012	.007-
11	10.01	10.24	.743	.0879	.085-	.00-	.00	.0012	.0011	.008-
13	12.03	12.30	.873	.1090	.092-	.00-	.00	.0008	.0006-	.001-
14	14.01	14.31	.991	.1341	.099-	.00-	.00	.0008	.0006-	.001-
15	16.02	16.33	1.083	.1730	.106-	.00-	.00	.0009	.0025	.003-
16	18.01	18.35	1.081	.2361	.129-	.00-	.00	.0042-	.0008-	.007-
17	20.03	20.34	1.013	.3124	.144-	.00-	.00	.0013-	.0005-	.031-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | RUN 243-1 | DATE 11/13/62
MOMENT AXES STAB | CONF 23-0 | q 129.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	6.02-	6.12-	.338-	.0473	.110	.00-	.00	.0006	.0015	.006-
3	4.02-	4.08-	.204-	.0378	.096	.00-	.00	.0014	.0018	.014-
4	2.03-	2.05-	.077-	.0339	.089	.00-	.00	.0013	.0020	.013-
5	.02	.03	.046	.0326	.081	.00-	.00	.0010-	.0023	.01?-
6	2.00	2.05	.175	.0354	.069	.00-	.00	.0019-	.0017	.01?-
7	4.01	4.10	.301	.0416	.060	.00-	.00	.0004-	.0028	.00?-
8	6.01	6.14	.438	.0509	.031	.00-	.00	.0001-	.0022	.006-
9	8.03	8.20	.562	.0646	.043	.00-	.00	.0009	.0016	.00?-
10	10.01	10.22	.695	.0804	.034	.00-	.00	.0017	.0027	.00?-
11	12.00	12.25	.817	.0998	.027	.00-	.00	.0014	.0030	.000-
13	14.01	14.30	.928	.1233	.020	.00-	.00	.0012	.0034-	.002-
14	15.01	16.32	1.001	.1600	.013	.00-	.00	.0010	.0025	.00?-
15	18.01	18.33	1.025	.2279	.015-	.00-	.00	.0040-	.0016-	.00?-
16	20.02	20.32	.982	.3015	.068-	.00-	.00	.0012-	.0001-	.02?-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | WTR 343-1 | DATE 11/19/62

MOMENT AXES STAB | RUN 24-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	6.01-	6.12-	.336-	.0498	.161	.00-	.00	.0053	.0002-	.010-
3	4.02-	4.09-	.227-	.0407	.154	.00-	.00	.0063	.0009	.032-
4	2.01-	2.04-	.109-	.0357	.148	.00-	.00	.0059	.0006-	.012-
5	.01-	.01-	.014	.0343	.139	.00-	.00	.0056	.0001-	.010-
6	2.01	2.05	.143	.0362	.130	.00-	.00	.0050	.0001	.010-
7	4.03	4.11	.278	.0418	.117	.00-	.00	.0048	.0003	.00 -
8	6.03	6.15	.407	.0509	.108	.00-	.00	.0036	.0003	.009-
9	8.01	8.17	.532	.0630	.102	.02-	.02-	.0042	.0010	.007-
10	10.00	10.20	.660	.0784	.094	.02-	.02-	.0021	.0005	.005-
11	12.00	12.24	.779	.0973	.086	.02-	.02-	.0014	.0005	.003-
17	14.01	14.29	.901	.1209	.077	.00-	.00	.0010	.0002-	.007-
13	16.01	16.31	.970	.1562	.070	.02-	.02-	.0012	.0027	.006-
14	18.01	18.32	.996	.2229	.043	.02-	.02-	.0037-	.0023-	.000-
15	20.00	20.30	.961	.2951	.027-	.00-	.00	.0020-	.0024-	.007-
16	12.01	12.25	.786	.0985	.084	.00-	.00	.0013	.0002-	.002-
15	16.02	16.32	.974	.1567	.070	.00-	.00	.0010	.0040	.006-
17	18.03	18.34	.991	.2233	.041	.03-	.02-	.0045-	.0023-	.000-
20	18.03	18.34	.999	.2239	.040	.00-	.00	.0035-	.0011-	.010-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — RUN 343-1 — DATE 11/13/62

MOMENT AXES STAB — CONF 20-0 — q 100.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_l	C_c
2	6.00-	6.09-	.295-	.0486	.035	.02-	.02-	.0011-	.0017-	.003-
3	4.02-	4.07-	.175-	.0332	.030	.02-	.02-	.0000	.0006-	.010-
4	2.03-	2.04-	.045-	.0304	.023	.02-	.02-	.0051	.0007-	.009-
5	.01-	.01	.073	.0306	.017	.02-	.02-	.0060	.0001	.010-
6	2.03	2.09	.199	.0347	.011	.02-	.02-	.0043	.0007	.000-
7	4.01	4.11	.321	.0422	.007	.02-	.02-	.0036	.0009	.003-
8	6.00	6.14	.459	.0515	.002	.02-	.02-	.0026	.0009	.007-
9	8.03	8.21	.591	.0648	.002-	.02-	.02-	.0018	.0013	.005-
10	10.01	10.23	.717	.0820	.007-	.02-	.02-	.0013	.0019	.006-
11	12.01	12.27	.833	.1032	.013-	.02-	.02-	.0007	.0002-	.001-
12	14.01	14.30	.951	.1276	.015-	.02-	.02-	.0007	.0002-	.001-
13	16.02	16.33	1.011	.1642	.020-	.02-	.02-	.0007	.0023	.005-
14	18.00	18.32	1.029	.2291	.039-	.02-	.02-	.0030-	.0035-	.004
15	20.02	20.32	.973	.3015	.081-	.02-	.02-	.0010-	.0018-	.037-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | CONF 26-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.03-	8.13-	.335-	.0518	.143-	.04-	.04-	.0037-	.0003	.001-
3	6.02-	6.03-	.211-	.0362	.133-	.02-	.02-	.0028	.0003	.007-
4	4.01-	4.03-	.082-	.0317	.166-	.02-	.02-	.0023	.0012	.007-
5	2.03-	2.02-	.038	.0319	.173-	.00	.00	.0024	.0014	.009-
6	.00-	.05	.173	.0345	.182-	.02-	.02-	.0015	.0013	.005-
7	2.01	2.10	.298	.0413	.189-	.02-	.02-	.0014	.0013	.004-
8	4.01	4.14	.431	.0521	.199-	.02-	.02-	.0018	.0015	.007-
9	6.01	6.18	.560	.0657	.202-	.02-	.02-	.0019	.0015	.004-
10	8.02	8.23	.699	.0844	.199-	.02-	.02-	.0019	.0019	.003-
11	10.01	10.25	.830	.1036	.181-	.02-	.02-	.0022	.0005	.004-
12	12.01	12.29	.900	.1353	.157-	.02-	.02-	.0023	.0000	.004-
13	14.01	14.32	.995	.1661	.136-	.02-	.02-	.0022	.0000	.004-
14	16.00	16.33	1.049	.2064	.117-	.02-	.02-	.0022	.0004	.009-
15	18.00	18.33	1.064	.2748	.140-	.02-	.02-	.0042-	.0017-	.003-
16	20.01	20.32	1.008	.3342	.184-	.02-	.02-	.0039-	.0021-	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 343-1 — DATE 11/19/62

MOMENT AXES STAB — RUN 27-0 — q 100.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_s	C_ℓ	C_c
3	5.01-	5.12-	.354-	.0466	.090-	.00-	.00-	.0073-	.0023	.006
4	6.03-	6.10-	.249-	.0305	.089-	.00-	.00-	.0019-	.0029	.001
5	4.02-	4.06-	.129-	.0252	.070-	.00	.00-	.0015-	.0032	.000
6	2.01-	2.01-	.018-	.0242	.052-	.00-	.00-	.0015-	.0028	.001
7	.01-	.02	.096	.0257	.030-	.00-	.00-	.0017-	.0024	.000
8	2.01	2.07	.203	.0302	.013-	.00-	.00-	.0020-	.0025	.001
9	4.03	4.13	.328	.0373	.015	.00-	.00-	.0017-	.0027	.000
10	6.03	6.17	.448	.0471	.038	.02-	.02-	.0012-	.0023	.000-
11	8.01	8.18	.564	.0593	.059	.02-	.02-	.0014-	.0018	.000-
12	10.01	10.22	.678	.0741	.081	.02-	.02-	.0009-	.0013	.000-
13	12.01	12.25	.785	.0927	.101	.00-	.00-	.0010-	.0009	.001
14	14.00	14.27	.888	.1150	.118	.02-	.02-	.0009-	.0004-	.000-
16	16.01	16.30	.943	.1473	.136	.02-	.02-	.0027-	.0027	.000-
17	18.00	18.30	.957	.2128	.123	.02-	.02-	.0038-	.0037-	.012
19	20.02	20.38	.919	.2906	.054	.02-	.02-	.0040-	.0031-	.006

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/12/62
MOMENT AXES STAB | RUN 28-0 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	.00-	.03	.123	.0252	.030-	12.02-	12.02-	.0303-	.0056	.077-
3	.00-	.03	.117	.0262	.037-	10.03-	10.03-	.0270-	.0053	.051-
4	.00-	.03	.116	.0267	.035-	8.02-	8.02-	.0223-	.0045	.044-
5	.00-	.03	.114	.0271	.033-	6.03-	6.03-	.0169-	.0040	.031-
6	.00-	.03	.108	.0272	.031-	4.02-	4.02-	.0126-	.0040	.019-
7	.00-	.03	.100	.0251	.029-	2.02-	2.02-	.0073-	.0035	.003-
8	.00-	.03	.105	.0255	.028-	.00	.00-	.0013-	.0029	.000
9	.00-	.03	.100	.0255	.030-	2.00	2.00	.0031	.0027	.007
10	.00-	.03	.102	.0271	.031-	4.02	4.02	.0113	.0021	.017
11	.00-	.03	.110	.0261	.034-	6.01	6.01	.0173	.0007	.029
12	.00-	.03	.107	.0262	.035-	8.02	8.02	.0221	.0010	.040
13	.00-	.03	.112	.0259	.038-	10.02	10.02	.0270	.0001-	.059
15	.00-	.03	.117	.0247	.041-	12.02	12.02	.0306	.0005-	.075

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB
MOMENT AXES STAB

TEST 343-1
RUN 29-3

DATE 11/19/62
q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
3	8.02	8.19	.569	.0639	.031	12.02-	12.02-	.0293-	.0067-	.073-
4	8.02	8.19	.571	.0622	.040	10.00-	10.00-	.0275-	.0058-	.068-
5	8.02	8.19	.567	.0611	.046	8.02-	8.02-	.0234-	.0047-	.060-
6	8.02	8.19	.566	.0611	.051	6.02-	6.02-	.0155-	.0035-	.028-
7	8.02	8.19	.570	.0601	.053	4.03-	4.03-	.0134-	.0019-	.013-
8	8.02	8.19	.569	.0594	.059	2.03-	2.03-	.0077-	.0006-	.006-
9	8.02	8.19	.569	.0584	.061	.00	.00-	.0004-	.0011	.003
10	8.02	8.19	.571	.0592	.060	2.02	2.02	.0066	.0030	.009
11	8.02	8.19	.565	.0599	.056	4.01	4.01	.0119	.0049	.018
13	8.02	8.19	.567	.0610	.053	6.01	6.01	.0173	.0064	.029
14	8.00	8.17	.566	.0609	.047	8.01	8.01	.0232	.0090	.042
15	8.00	8.18	.574	.0627	.039	10.00	10.00	.0266	.0086	.053
16	8.00	8.18	.580	.0649	.032	12.00	12.00	.0299	.0092	.076

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 343-1 — DATE 11/19/62

MOMENT AXES STAB — RUN 30-0 — q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	16.02	16.32	.972	.1563	.093	12.02-	12.02-	.0262-	.0234-	.072-
3	16.02	16.32	.963	.1547	.095	10.02-	10.02-	.0221-	.0207-	.058-
4	16.02	16.32	.961	.1544	.119	8.00-	8.00-	.0179-	.0172-	.044-
5	16.02	16.32	.934	.1512	.125	6.00-	6.00-	.0131-	.0143-	.033-
6	15.02	15.31	.948	.1519	.132	4.00-	4.00-	.0092-	.0099-	.021-
8	16.02	16.31	.942	.1484	.134	2.03-	2.03-	.0037-	.0050-	.011-
9	16.02	16.31	.948	.1476	.133	.01	.01	.0027-	.0023	.001-
11	16.02	16.31	.949	.1492	.136	2.02	2.02	.0120	.0076	.001
12	16.02	16.31	.950	.1509	.132	4.02	4.02	.0173	.0132	.020
13	16.02	16.32	.955	.1506	.128	6.00	6.00	.0132	.0172	.030
14	16.02	16.32	.957	.1531	.122	8.01	8.01	.0178	.0199	.042
15	16.02	16.32	.960	.1559	.111	10.03	10.03	.0223	.0237	.053
16	15.02	15.32	.967	.1597	.101	12.02	12.02	.0269	.0260	.065

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — RUN 343-1 — DATE 11/19/62

MOMENT AXES STAB — CONF 31-1 — q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
2	.01-	.16	.571	.0932	.174-	12.00-	12.00-	.0232-	.0011	.034-
3	.01-	.16	.570	.0915	.171-	10.03-	10.03-	.0225-	.0006	.070-
4	.01-	.16	.570	.0912	.166-	8.03-	8.03-	.0193-	.0003	.053-
5	.01-	.16	.569	.0907	.164-	6.03-	6.03-	.0154-	.0003	.035-
6	.01-	.16	.568	.0913	.160-	4.00-	4.00-	.0104-	.0006	.021-
7	.01-	.16	.569	.0916	.158-	2.03-	2.03-	.0034-	.0006	.009-
8	.00-	.17	.565	.0909	.156-	.00-	.00-	.0015-	.0012	.000
9	.01-	.16	.570	.0925	.159-	2.01	2.01	.0028	.0020	.013
10	.00-	.17	.567	.0910	.162-	4.01	4.01	.0080	.0009	.027
12	.00-	.17	.571	.0910	.168-	6.00	6.00	.0139	.0016	.040
13	.01-	.17	.572	.0906	.169-	8.02	8.02	.0175	.0018	.055
14	.01-	.17	.574	.0905	.173-	10.03	10.03	.0212	.0020	.073
15	.01-	.17	.578	.0909	.176-	12.00	12.00	.0249	.0019	.091

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | CONF 32-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.02	8.35	1.063	.1783	.104-	12.02-	12.02-	.0237-	.0144-	.037-
3	8.02	8.35	1.071	.1784	.105-	10.02-	10.02-	.0229-	.0124-	.063-
4	8.02	8.33	1.072	.1784	.098-	8.03-	8.03-	.0193-	.0105-	.050-
5	8.02	8.33	1.074	.1767	.093-	6.02-	6.02-	.0150-	.0081-	.037-
6	8.02	8.34	1.077	.1779	.088-	4.03-	4.03-	.0099-	.0065-	.022-
9	8.02	8.35	1.079	.1781	.083-	2.03-	2.03-	.0058-	.0041-	.011-
10	8.02	8.35	1.076	.1777	.083-	.00	.00-	.0018-	.0009-	.003
11	8.02	8.36	1.080	.1786	.085-	2.01	2.01	.0040	.0024	.014
12	8.02	8.35	1.076	.1779	.087-	4.01	4.01	.0086	.0045	.022
14	8.03	8.36	1.079	.1778	.094-	6.03	6.03	.0131	.0072	.043
15	8.02	8.36	1.084	.1778	.101-	8.01	8.01	.0174	.0100	.037
16	8.02	8.36	1.086	.1795	.110-	10.01	10.01	.0216	.0126	.072
17	8.02	8.36	1.094	.1792	.114-	12.00	12.00	.0245	.0143	.090

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES : STAB TEST 343-1 DATE 11/19/62

MOMENT AXES STAB RUN 33-9 q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.03-	8.02-	.046	.0572	.217-	.00-	.00	.0016-	.0028	.000-
3	6.01-	5.98-	.172	.0644	.236-	.00-	.00-	.0015-	.0033	.001
4	4.01-	3.92-	.314	.0698	.192-	.00-	.00-	.0014-	.0026	.002
5	2.02-	1.89-	.440	.0774	.175-	.00-	.00-	.0015-	.0028	.003
6	.01-	.18	.559	.0909	.156-	.00-	.00-	.0009-	.0017	.003
7	2.02	2.25	.696	.1079	.137-	.00-	.00-	.0011-	.0022-	.003
8	4.01	4.26	.808	.1274	.118-	.00-	.00-	.0012-	.0021	.003
9	6.01	6.30	.930	.1518	.101-	.00-	.00-	.0011-	.0023-	.004
10	8.01	8.34	1.073	.1785	.083-	.00-	.00-	.0009-	.0019-	.004
11	10.01	10.38	1.194	.2090	.068-	.00-	.00-	.0007-	.0014-	.003
12	12.00	12.41	1.315	.2433	.057-	.00-	.00-	.0010-	.0006-	.003
13	14.02	14.46	1.423	.2949	.028-	.00-	.00-	.0011-	.0008-	.001
14	16.01	16.48	1.455	.3531	.009-	.00-	.00-	.0072-	.0069-	.015
15	18.01	18.42	1.319	.4345	.018-	.00-	.00-	.0022	.0063-	.003
16	20.03	20.44	1.302	.4942	.046-	.00-	.00-	.0004-	.0072-	.003

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/62

MOMENT AXES STAB RUN 34-0 q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_c
3	8.00-	8.01-	.077	.0043	.225-	.00	.00	.0009-	.0021	.000-
4	6.00-	5.99-	.193	.0088	.216-	.00	.00	.0008-	.0031	.000-
5	4.00-	3.98-	.337	.0771	.203-	.00	.00-	.0007-	.0029	.000
6	2.00-	1.98-	.459	.0866	.134-	.00	.00-	.0005-	.0022	.001
7	.01-	.17	.504	.0989	.103-	.00	.00-	.0004-	.0016	.001
8	2.00	2.22	.706	.1169	.148-	.00	.00-	.0004-	.0010	.002
9	4.01	4.27	.835	.1376	.130-	.00	.00-	.0003-	.0003	.003
10	6.00	6.30	.973	.1624	.122-	.00	.00-	.0007-	.0003-	.003
11	8.02	8.38	1.093	.1894	.096-	.00	.00-	.0006-	.0005-	.003
12	10.00	10.38	1.220	.2200	.076-	.00	.00-	.0001-	.0014-	.003
13	12.01	12.43	1.346	.2559	.059-	.00-	.00-	.0003-	.0013-	.002
14	14.01	14.46	1.444	.3096	.041-	.00-	.00-	.0004-	.0009-	.003
15	16.02	16.48	1.482	.3691	.021-	.00	.00-	.0076-	.0085-	.016
16	18.00	18.41	1.332	.4518	.032-	.00	.00-	.0025	.0012-	.002
19	20.00	20.41	1.318	.5031	.050-	.00-	.00	.0003-	.0059-	.001-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 343-1 — DATE 11/19/62

MOMENT AXES STAB — CONF 35-0 — q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
2	8.01-	7.99-	.089	.0763	.234-	.00	.00-	.0049-	.0032	.001
3	6.02-	5.95-	.234	.0743	.227-	.00-	.00	.0009-	.0033	.000-
4	4.01-	3.90-	.373	.0836	.211-	.00-	.00-	.0008-	.0033	.001
5	2.01-	1.86-	.495	.0945	.196-	.00-	.00-	.0007-	.0029	.000
6	.02-	.17	.619	.1077	.177-	.00-	.00-	.0005-	.0023	.001
7	2.01	2.24	.745	.1269	.159-	.00	.00-	.0006-	.0016	.002
8	4.00	4.27	.869	.1473	.140-	.00-	.00-	.0010-	.0005	.003
9	6.01	6.32	.997	.1715	.120-	.00	.00-	.0009-	.0001-	.003
10	8.01	8.36	1.125	.1995	.104-	.00	.00-	.0007-	.0004-	.003
11	10.01	10.40	1.254	.2327	.086-	.00-	.00-	.0007-	.0010-	.003
14	12.01	12.44	1.377	.2691	.070-	.00-	.00-	.0009-	.0008-	.003
15	14.01	14.47	1.474	.3195	.049-	.00-	.00-	.0006-	.0006-	.001
16	16.01	16.47	1.483	.3834	.034-	.00-	.00-	.0036-	.0137-	.002
17	18.01	18.43	1.350	.4634	.039-	.00-	.00-	.0004	.0044-	.002
18	20.01	20.43	1.342	.5216	.063-	.00-	.00-	.0004	.0083-	.001

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62

MOMENT AXES STAB | RUN 36-3 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.03-	8.14-	.361-	.0436	.136-	.00-	.00	.0014-	.0026	.001-
3	6.02-	6.09-	.240-	.0339	.088-	.00-	.00	.0012-	.0023	.001-
4	4.03-	4.07-	.129-	.0287	.069-	.00-	.00	.0011-	.0021	.001-
5	2.03-	2.03-	.029-	.0273	.051-	.00-	.00	.0014-	.0026	.001-
6	.00	.02	.091	.0285	.030-	.00-	.00	.0014-	.0020	.000-
7	2.01	2.07	.199	.0328	.007-	.00-	.00	.0015-	.0020	.000-
8	4.02	4.11	.313	.0399	.016	.00-	.00	.0012-	.0019	.001-
10	8.01	8.18	.552	.0630	.063	.00-	.00	.0006-	.0018	.001-
11	10.01	10.21	.653	.0787	.082	.00-	.00	.0007-	.0011	.001-
12	12.01	12.24	.761	.0987	.100	.00-	.00	.0010-	.0007-	.000-
13	14.00	14.27	.871	.1229	.116	.00-	.00-	.0010-	.0011-	.000
15	16.01	16.29	.892	.1768	.099	.00-	.00	.0020-	.0025	.000-
16	18.01	18.23	.801	.2196	.098	.00-	.00-	.0042-	.0025	.000
17	20.01	20.29	.904	.2694	.061	.00-	.00-	.0033-	.0077-	.013

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | RUN 37-3 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
4	8.02-	8.13-	.336-	.0436	.105-	.00	.00-	.0012-	.0025	.000
5	6.02-	6.09-	.248-	.0351	.089-	.00	.00	.0011-	.0024	.000-
6	4.01-	4.05-	.136-	.0296	.070-	.00	.00	.0012-	.0026	.000-
7	2.02-	2.02-	.016-	.0279	.060-	.00	.00	.0010-	.0022	.000-
8	.02	.04	.093	.0289	.050-	.00	.00	.0010-	.0022	.000-
9	2.04	2.07	.207	.0330	.035-	.00	.00-	.0014-	.0014	.000
10	4.01	4.10	.315	.0411	.017	.00	.00-	.0012-	.0017	.001
11	6.01	6.14	.437	.0510	.030	.00	.00-	.0011-	.0016	.000
12	8.03	8.20	.557	.0646	.061	.00	.00-	.0011-	.0012	.000
13	10.02	10.22	.681	.0793	.081	.00	.00-	.0008-	.0007-	.001
14	12.02	12.26	.796	.0969	.099	.00	.00-	.0006-	.0005-	.002
16	14.01	14.28	.870	.1233	.113	.00	.00-	.0009-	.0009-	.001
17	16.02	16.30	.911	.1734	.120	.00	.00-	.0025-	.0006	.001
18	18.03	18.31	.913	.2290	.112	.00	.00-	.0041-	.0019-	.003
19	20.01	20.29	.911	.2956	.084	.00	.00	.0016-	.0020-	.003-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | RUN 30-0 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.01-	8.12-	.301-	.0470	.101-	.00	.00-	.0045-	.0032	.002
3	6.03-	6.11-	.239-	.0340	.087-	.00	.00	.0013-	.0033	.001-
4	4.01-	4.05-	.139-	.0282	.067-	.00	.00	.0012-	.0030	.000-
5	2.03-	2.03-	.030-	.0269	.049-	.00	.00	.0014-	.0030	.000-
6	.02-	.00-	.068	.0278	.027-	.00	.00-	.0016-	.0024	.000
7	2.04	2.10	.208	.0322	.005-	.00	.00	.0015-	.0019	.000-
10	6.00	6.13	.443	.0467	.039	.00-	.00	.0011-	.0019	.000-
11	8.02	8.19	.556	.0613	.059	.00-	.00	.0009-	.0017	.000-
12	10.00	10.20	.666	.0775	.080	.00	.00-	.0006-	.0011-	.001
15	12.02	12.26	.773	.0955	.099	.00-	.00-	.0006-	.0009-	.001
16	14.01	14.25	.871	.1196	.113	.00-	.00-	.0008-	.0006-	.000
18	16.02	16.31	.941	.1526	.133	.00-	.00	.0023-	.0010	.001-
19	18.00	18.29	.942	.2137	.145	.00-	.00-	.0057-	.0015-	.003
20	20.03	20.31	.901	.2938	.054	.00-	.00	.0018	.0035-	.018-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | RUN 34-0 | q 16.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.02-	8.13-	.372-	.0439	.102-	.00	.00	.0014-	.0037	.000-
4	6.00-	6.08-	.256-	.0354	.068-	.00	.00	.0013-	.0033	.001-
5	4.02-	4.06-	.145-	.0307	.064-	.00	.00	.0011-	.0030	.000-
6	2.02-	2.03-	.038-	.0285	.050-	.00	.00	.0012-	.0030	.000-
7	.02	.04	.075	.0284	.026-	.00	.00	.0017-	.0029	.000-
9	2.01	2.06	.187	.0327	.004-	.00	.00	.0016-	.0029	.000-
10	4.02	4.11	.302	.0399	.017	.00	.00	.0014-	.0025	.000-
11	6.02	6.15	.420	.0496	.041	.00	.00	.0012-	.0019	.001-
12	8.03	8.20	.547	.0616	.063	.00	.00	.0011-	.0013	.000-
13	10.03	10.23	.648	.0765	.081	.00	.00	.0004-	.0009	.000-
14	12.03	12.26	.751	.0949	.100	.00	.00-	.0010-	.0004-	.000
15	14.01	14.28	.862	.1159	.117	.00-	.00-	.0009-	.0001-	.000
19	18.00	18.29	.935	.2141	.124	.00-	.00-	.0079-	.0040-	.011
20	20.02	20.30	.908	.2842	.056	.00-	.00	.0019-	.0040-	.000-
21	16.02	16.31	.931	.1444	.136	.00-	.00	.0029-	.0040	.001-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 343-1 — DATE 11/19/62

MOMENT AXES STAB — RUN 40-0 — q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	8.02-	8.13-	.352-	.0412	.107-	.00	.00-	.0014-	.0025	.000
4	6.03-	6.10-	.244-	.0318	.091-	.00	.00-	.0015-	.0026	.001
5	4.02-	4.05-	.120-	.0279	.074-	.00	.00-	.0011-	.0021	.001
6	2.02-	2.02-	.001	.0259	.053-	.00	.00-	.0011-	.0015	.001
7	.02-	.01	.100	.0273	.034-	.00	.00-	.0016-	.0025	.001
8	2.01	2.08	.224	.0316	.011-	.00	.00-	.0014-	.0019	.001
9	4.02	4.12	.338	.0399	.010	.00	.00-	.0014-	.0017	.001
10	6.01	6.15	.464	.0507	.031	.00	.00-	.0014-	.0019	.000
11	8.01	8.19	.584	.0641	.052	.00	.00	.0015-	.0017	.000-
12	10.02	10.24	.709	.0797	.073	.00	.00-	.0019-	.0013	.000
13	12.01	12.26	.824	.0993	.094	.00	.00-	.0011-	.0015-	.002
14	14.01	14.30	.932	.1205	.115	.00	.00-	.0012-	.0035-	.001
15	16.02	16.31	.946	.1504	.133	.00	.00	.0030-	.0037	.000-
16	18.01	18.30	.940	.2188	.117	.00	.00-	.0131-	.0079-	.014
17	20.01	20.29	.915	.2899	.054	.00	.00-	.0041-	.0054-	.009

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 343-1 — DATE 11/19/5[illegible]

MOMENT AXES STAB — RUN 41-0 — q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_c
2	8.03-	8.14-	.354-	.0380	.106-	.00	.00	.0014-	.0031	.007-
3	6.00-	6.07-	.241-	.0[illegible]	.090-	.00	.00	.0013-	.0034	.009-
4	4.02-	4.05-	.113-	.0249	.070-	.00	.00-	.0009-	.0017	.009
5	2.01-	2.01-	.010-	.0234	.053-	.00	.00-	.0011-	.0024	.009
6	.02	.05	.098	.0251	.033-	.00	.00-	.0019-	.0027	.009
7	2.00	2.06	.206	.0275	.011-	.00	.00-	.0015-	.0024	.009
8	4.01	4.11	.323	.0373	.012	.00	.00-	.0015-	.0023	.001
9	6.01	6.15	.447	.0476	.037	.00	.00-	.0014-	.0022	.000
11	8.01	8.18	.569	.0591	.057	.00	.00-	.0012-	.0015	.001
12	10.01	10.22	.677	.0742	.079	.00	.00	.0010-	.0011	.003-
14	12.02	12.26	.783	.0929	.099	.00	.00-	.0010-	.0005	.001
15	14.01	14.29	.892	.1158	.115	.00	.00-	.0009-	.0006-	.001
16	16.01	16.30	.948	.1454	.134	.00	.00-	.0027-	.0028	.000
17	18.01	18.30	.946	.2160	.120	.00	.00-	.0115-	.0099-	.016
18	20.01	20.30	.924	.2904	.053	.00	.00-	.0026-	.0057-	.009

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 34[illegible] DATE 11/19/6[illegible]

MOMENT AXES STAB RUN 42[illegible] q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	.01-	.02	.115	.0266	.039-	10.02-	10.02-	.0264-	.0043	.061-
4	.01-	.02	.113	.0264	.037-	8.03-	8.03-	.0217-	.0041	.044-
5	.01-	.02	.111	.0265	.036-	6.02-	6.02-	.0194-	.0040	.031-
6	.01-	.02	.108	.0266	.034-	4.03-	4.03-	.0146-	.0036	.021-
7	.01-	.02	.099	.0253	.032-	2.03-	2.03-	.0077-	.0040	.010-
8	.01-	.02	.100	.0245	.031-	.01-	.01-	.0020-	.0036	.000-
9	.01-	.02	.110	.0251	.030-	2.02	2.02	.0045	.0023	.009
10	.01-	.02	.107	.0257	.033-	4.03	4.03	.0104	.0021	.019
11	.01-	.02	.107	.0270	.035-	6.01	6.01	.0153	.0014	.030
12	.01-	.02	.105	.0257	.037-	8.01	8.01	.0213	.0013	.043
13	.01-	.02	.109	.0252	.039-	10.02	10.02	.0247	.0013	.055
14	.01-	.02	.111	.0254	.041-	12.02	12.02	.0290	.0008	.075

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/48

MOMENT AXES STAB RUN 43-2 q 120.9

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.02	8.19	.561	.0028	.048	10.00-	10.00-	.0299-	.0070-	.044-
5	8.02	8.19	.569	.0615	.049	8.03-	8.03-	.0292-	.0054-	.033-
6	8.03	8.20	.567	.0604	.053	6.01-	6.01-	.0202-	.0044-	.024-
7	8.03	8.20	.571	.0595	.059	4.00-	4.00-	.0139-	.0027-	.019-
8	8.02	8.19	.569	.0594	.060	2.02-	2.02-	.0077-	.0006-	.009-
9	8.02	8.19	.570	.0594	.062	.00-	.00-	.0004-	.0015	.000
10	8.02	8.20	.572	.0587	.061	2.00	2.00	.0059	.0034	.009
11	8.03	8.20	.573	.0601	.057	4.01	4.01	.0117	.0051	.019
13	8.03	8.20	.565	.0601	.054	6.02	6.02	.0180	.0075	.025
14	8.03	8.20	.567	.0607	.050	8.02	8.02	.0234	.0090	.041
15	8.02	8.20	.574	.0615	.043	10.01	10.01	.0290	.0101	.055
16	8.02	8.20	.575	.0637	.034	12.02	12.02	.0315	.0115	.073

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 347-1 DATE 11/19/69

MOMENT AXES STAB RUN 44-0 q 120.9

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	16.02	16.32	.971	.1569	.095	12.03-	12.03-	.0257-	.0270-	.073-
3	16.02	16.32	.963	.1554	.109	10.00-	10.00-	.0233-	.0232-	.059-
4	16.02	16.32	.960	.1554	.119	8.03-	8.03-	.0195-	.0207-	.044-
5	16.02	16.31	.949	.1545	.121	6.02-	6.02-	.0152-	.0153-	.032-
6	16.02	16.31	.949	.1519	.129	4.03-	4.03-	.0099-	.0179-	.023-
7	16.02	16.31	.946	.1499	.135	2.03-	2.03-	.0049-	.0093-	.011-
8	16.02	16.31	.952	.1496	.137	.00	.00	.0033-	.0027	.001-
10	16.02	16.31	.947	.1494	.135	2.01	2.01	.0013	.0059	.007
11	16.02	16.32	.957	.1501	.131	4.01	4.01	.0097	.0134	.021
12	16.02	16.31	.952	.1517	.125	6.01	6.01	.0113	.0189	.032
13	16.02	16.32	.954	.1534	.119	8.00	8.00	.0162	.0217	.045
14	16.02	16.32	.957	.1561	.111	10.01	10.01	.0212	.0241	.057
15	16.02	16.32	.963	.1594	.103	12.01	12.01	.0254	.0274	.069

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/52

MOMENT AXES STAB RUN 49-3 q 120.9

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_c
2	8.01-	8.12-	.356-	.0357	.102-	.01	.01	.0017-	.0029	.000
4	4.02-	4.05-	.122-	.0136-	.065-	.01	.01	.0015-	.0029	.000-
5	2.02-	2.02-	.012-	.0235	.041-	.01	.01	.0015-	.0024	.000
6	.00	.02	.094	.0251	.031-	.01	.01	.0020-	.0029	.000
7	2.01	2.07	.207	.0291	.009-	.01	.01	.0019-	.0026	.000
8	4.01	4.11	.325	.0369	.015	.01	.01	.0017-	.0020	.000
9	6.02	6.16	.445	.0459	.039	.01	.01	.0017-	.0022	.000
10	8.01	8.18	.561	.0549	.081	.01	.01	.0014-	.0019	.000
11	10.03	10.24	.677	.0734	.083	.01	.01	.0013-	.0016	.000
12	12.00	12.24	.775	.0923	.102	.01	.01	.0012-	.0011	.001
13	14.01	14.28	.883	.1138	.119	.01	.01	.0011-	.0009	.000
14	16.01	16.30	.938	.1454	.138	.01	.01	.0027-	.0039	.002-
15	18.00	18.30	.946	.2012	.123	.01	.01	.0011-	.0041	.003-
16	20.01	20.29	.913	.2817	.053	.01	.01	.0010	.0015	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/82

MOMENT AXES STAB RUN 46-3 q 120.9

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	.01-	.02	.115	.0237	.03-	12.00-	12.00-	.0264-	.0101	.08-
3	.01-	.02	.110	.0265	.038-	10.03-	10.03-	.0275-	.0075	.060-
4	.01-	.02	.112	.0269	.036-	8.00-	8.00-	.0237-	.0065	.045-
5	.01-	.02	.113	.0271	.034-	6.00-	6.00-	.0192-	.0056	.030-
6	.01-	.02	.107	.0271	.032-	4.02-	4.02-	.0138-	.0050	.019-
7	.01-	.02	.102	.0250	.029-	2.02-	2.02-	.0075-	.0042	.010-
8	.01-	.02	.101	.0253	.029-	.00	.00	.0016-	.0031	.002-
9	.01-	.02	.097	.0256	.030-	2.00	2.00	.0043	.0025	.009
10	.02-	.01	.100	.0256	.031-	4.01	4.01	.0103	.0029	.019
11	.01-	.02	.099	.0271	.034-	6.01	6.01	.0147	.0037-	.030
12	.01-	.02	.100	.0263	.035-	8.02	8.02	.0220	.0018-	.043
13	.01-	.02	.108	.0259	.037-	10.01	10.01	.0253	.0027-	.059
14	.02-	.01	.112	.0260	.043-	12.01	12.01	.0297	.0039-	.075

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | RUN 343-1 | DATE 11/19/49
MOMENT AXES STAB | RUN 47-0 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_l	C_C
2	8.02	8.19	.560	.0645	.031	12.03-	12.03-	.0235-	.0028-	.077-
4	8.01	8.18	.559	.0623	.039	10.03-	10.03-	.0277-	.0027-	.057-
5	8.01	8.18	.557	.0610	.046	8.03-	8.03-	.0243-	.0020-	.040-
6	8.02	8.19	.562	.0602	.053	6.03-	6.03-	.0186-	.0013-	.028-
7	8.02	8.19	.562	.0594	.057	4.03-	4.03-	.0136-	.0007-	.019-
8	8.01	8.18	.563	.0584	.060	2.04-	2.04-	.0077-	.0004	.009-
9	8.01	8.18	.562	.0581	.062	.02	.02	.0013-	.0014	.001
10	8.01	8.18	.565	.0590-	.068	2.01	2.01	.0051	.0028	.006
11	8.02	8.19	.563	.0597	.057	4.02	4.02	.0111	.0038	.018
12	8.02	8.19	.541	.0599	.056	6.02	6.02	.0166	.0047	.030
14	8.02	8.19	.559	.0602	.049	8.01	8.01	.0219	.0054	.042
15	8.01	8.18	.567	.0612	.042	10.01	10.01	.0263	.0060	.057
16	8.02	8.20	.572	.0620	.035	12.02	12.02	.0300	.0061	.074

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62
MOMENT AXES STAB | RUN 49-3 | q 120.7

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.[illegible]-	7.99-	.107	.0629	.237-	.00	.00	.0014-	.0029	.000-
3	6.03-	5.96-	.259	.0683	.229-	.00	.00	.0013-	.0022	.000-
4	4.00-	3.88-	.383	.0764	.213-	.00	.00	.0009-	.0016	.000-
5	2.03-	1.87-	.514	.0877	.196-	.00	.00-	.0008-	.0010	.001
6	.00-	.20	.637	.1011	.177-	.00	.00	.0006-	.0014	.001-
7	2.01	2.24	.757	.1190	.150-	.00	.00-	.0006-	.0008-	.001
9	4.02	4.29	.888	.1407	.141-	.00	.00-	.0007-	.0011-	.002
10	6.00	6.32	1.010	.1679	.124-	.00	.00-	.0005-	.0015-	.002
11	8.02	8.38	1.154	.1982	.108-	.00	.00-	.0003-	.0016-	.002
13	10.03	10.43	1.273	.2294	.093-	.00	.00-	.0001-	.0018-	.003
15	12.01	12.44	1.390	.2687	.073-	.00	.00-	.0006-	.0001	.000
16	14.00	14.47	1.510	.3257	.058-	.00	.00	.0016-	.0021	.001-
17	16.00	16.49	1.571	.3717	.033-	.00	.00	.0024-	.0071	.006-
18	18.01	18.46	1.429	.4726	.044-	.00	.00-	.0011-	.0054-	.005
19	20.01	20.42	1.319	.5275	.072-	.00	.00	.0028-	.0019	.015-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/69

MOMENT AXES STAB RUN 49-1 q 120.2

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.01	8.36	1.132	.1941	.131-	12.02-	12.02-	.0251-	.0059-	.049-
3	8.00	8.35	1.142	.1943	.129-	10.03-	10.03-	.0233-	.0075-	.071-
4	8.00	8.36	1.141	.1945	.124-	8.03-	8.03-	.0197-	.0063-	.055-
5	8.01	8.37	1.145	.1949	.119-	6.02-	6.02-	.0147-	.0056-	.039-
6	8.01	8.37	1.147	.1957	.111-	4.01-	4.01-	.0100-	.0049-	.025-
7	8.00	8.36	1.153	.1963	.109-	2.02-	2.02-	.0054-	.0032-	.011-
8	8.00	8.36	1.154	.1972	.108-	.00-	.00-	.0007-	.0012-	.003
10	8.01	8.37	1.157	.1978	.109-	2.02	2.02	.0045	.0006	.015
11	8.01	8.37	1.154	.1948	.112-	4.02	4.02	.0085	.0023	.029
12	8.02	8.38	1.149	.1932	.116-	6.00	6.00	.0131	.0040	.043
13	8.01	8.36	1.141	.1921	.119-	8.01	8.01	.0180	.0060	.057
14	8.01	8.36	1.141	.1913	.126-	10.01	10.01	.0232	.0072	.073
15	8.01	8.36	1.143	.1925	.132-	12.00	12.00	.0278	.0085	.091

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES ST19 TEST 343-1 DATE 11/19/59
MOMENT AXES ST18 RUN 50-3 q 120.7

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.02-	7.99-	.119	.0638	.237-	.00	.00-	.0013-	.0031	.000
3	6.02-	5.99-	.263	.0643	.228-	.00	.00	.0013-	.0030	.000-
4	4.02-	3.99-	.394	.0757	.214-	.00	.00-	.0010-	.0029	.001
5	2.02-	1.97-	.516	.0874	.195-	.00	.00-	.0008-	.0022	.001
6	.01-	.19	.630	.1023	.173-	.00	.00-	.0007-	.0023	.001
7	2.00	2.24	.761	.1205	.160-	.00	.00-	.0007-	.0025	.002
8	4.02	4.29	.895	.1417	.142-	.00	.00-	.0005-	.0002-	.002
9	6.01	6.33	1.032	.1680	.123-	.00	.00-	.0007-	.0007-	.003
10	8.01	8.37	1.156	.2001	.110-	.00	.00-	.0005-	.0003-	.003
11	10.01	10.41	1.277	.2333	.092-	.00	.00-	.0002-	.0015-	.002
12	12.00	12.43	1.396	.2722	.075-	.00	.00-	.0007-	.0001	.001
14	14.01	14.48	1.519	.3249	.059-	.00	.00	.0013-	.0035	.001-
15	16.00	16.49	1.566	.3705	.031-	.00	.00	.0010-	.0001	.004-
16	18.03	18.49	1.290	.4711	.043-	.00	.00	.0007-	.0131	.004-
17	20.01	20.41	1.207	.5276	.079-	.00	.00	.0043-	.0041	.019-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/62

MOMENT AXES STAB | RUN 51-0 | q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.03-	7.99-	.135	.0646	.240-	.00	.00	.0014-	.0043	.001-
4	6.02-	5.94-	.272	.0705	.234-	.00	.00	.0008-	.0045	.002-
5	4.02-	3.89-	.425	.0803	.222-	.00	.00-	.0008-	.0023	.001
6	2.03-	1.86-	.553	.0929	.208-	.00	.00-	.0006-	.0024	.000
7	.00-	.21	.683	.1104	.191-	.00	.00-	.0005-	.0026	.000
8	2.01	2.26	.807	.1312	.175-	.00	00-	.0005-	.0020	.000
9	4.02	4.31	.942	.1544	.160-	.00	.00-	.0007-	.0008	.001
10	6.01	6.34	1.076	.1833	.143-	.00	.00-	.0006-	.0001	.001
11	8.01	8.39	1.218	.2147	.127-	.00	.00-	.0002-	.0002-	.003
13	10.03	10.44	1.333	.2506	.109-	.00	.00-	.0008-	.0004	.002
14	12.01	12.46	1.452	.2903	.092-	.00	.00-	.0013-	.0017	.000
15	14.02	14.49	1.521	.3323	.063-	.00	.00	.0018-	.0034	.002-
16	16.01	16.50	1.567	.3726	.031-	.00	.00	.0015-	.0063	.007-
17	18.02	18.45	1.371	.4707	.042-	.00	.00-	.0063	.0178-	.011
18	20.01	20.42	1.316	.5326	.072-	.00	.00	.0011-	.0008	.016-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-I | DATE 11/19/62

MOMENT AXES STAB | RUN 52-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.01-	7.99-	.091	.0028-	.221-	.00	.00	.0009-	.0094	.009-
4	6.03-	5.96-	.238	.0633	.220-	.00	.00	.0006-	.0086	.009-
5	4.03-	3.91-	.384	.0724	.209-	.00	.00	.0004-	.0087	.009-
6	2.03-	1.87-	.514	.0841	.195-	.00	.00	.0007-	.0080	.009-
7	.00-	.20	.646	.1002	.179-	.00	.00	.0010-	.0072	.008-
8	2.00	2.24	.773	.1168	.162-	.00	.00	.0013-	.0067	.007-
9	4.01	4.29	.904	.1415	.146-	.00	.00	.0016-	.0063	.007-
10	6.01	6.33	1.043	.1699	.130-	.00	.00	.0021-	.0066	.007-
11	8.00	8.36	1.171	.2000	.114-	.00	.00	.0022-	.0066	.007-
12	10.01	10.42	1.302	.2348	.097-	.00	.00	.0029-	.0067	.008-
13	12.03	12.47	1.417	.2757	.078-	.00	.00	.0035-	.0078	.009-
14	14.00	14.46	1.488	.3186	.051-	.00	.00	.0044-	.0107	.012-
16	18.00	18.42	1.356	.4565	.031-	.00	.00-	.0023	.0116-	.006
17	20.01	20.41	1.285	.5062	.068-	.00	.00	.0055-	.0009-	.014-
19	16.00	16.47	1.516	.3527	.018-	.00	.00	.0046-	.0145	.016-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/62

MOMENT AXES STAB RUN 43-3 q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
3	8.02-	7.70-	.121	.0597	.293-	.00	.00	.0013	.0012	.000-
4	6.03-	5.04-	.265	.0737	.264-	.00	.00	.0031	.0004	.003-
5	4.03-	3.01-	.402	.0834	.272-	.00	.00	.0039	.0003	.007-
6	2.00-	1.33-	.561	.0952	.284-	.00	.00	.0021	.0005	.008-
7	.01	.24	.693	.1121	.304-	.00	.00	.0017	.0009	.005-
8	2.01	2.26	.827	.1324	.317-	.00	.00	.0006	.0010-	.001-
9	4.02	4.34	.954	.1507	.328-	.00	.00-	.0005	.0011-	.000
10	6.03	6.39	1.117	.1763	.352-	.00	.00-	.0001-	.0013-	.001
11	8.02	8.41	1.257	.2213	.337-	.00	.00-	.0006	.0013-	.000
12	10.02	10.45	1.377	.2607	.304-	.00	.00-	.0008	.0021-	.001
13	12.00	12.17	1.513	.3007	.340-	.00	.00	.0000	.0004-	.002-
14	14.00	14.31	1.626	.3426	.332-	.00	.00	.0013	.0020	.004-
15	16.02	16.54	1.681	.4142	.309-	.00	.00	.0024	.0063	.013-
16	18.01	18.47	1.491	.5105	.321-	.00	.00	.0065	.0124-	.013-
17	20.00	20.45	1.433	.5732	.333-	.00	.00	.0007	.0013-	.004-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/82
MOMENT AXES STAB RUN 56-3 q 130.7

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	8.02-	8.01-	.947	.0705	.119-	.00	.00	.0003	.0028	.005-
3	6.02-	5.97-	.293	.0723	.138-	.00	.00	.0030	.0012	.017-
4	4.02-	3.92-	.346	.0812	.154-	.00	.00	.0041	.0033	.017-
5	2.01-	1.88-	.481	.0921	.169-	.00	.00	.0040	.0002-	.018-
6	.00	.13	.629	.1066	.154-	.00	.00	.0027	.0000	.032-
7	2.03	2.27	.775	.1259	.194-	.00	.00	.0024	.0016-	.034-
8	4.03	4.31	.903	.1479	.204-	.00	.00	.0017	.0014-	.031-
9	6.01	6.34	1.053	.1768	.214-	.00	.00	.0018	.0017-	.031-
11	8.02	8.39	1.203	.2093	.213-	.00	.00	.0018	.0021-	.030-
12	10.02	10.43	1.333	.2460	.222-	.00	.00-	.0016	.0032-	.030
13	12.02	12.47	1.457	.2843	.221-	.00	.00	.0013	.0025-	.027-
14	14.00	14.49	1.577	.3478	.218-	.00	.00	.0015	.0021	.027-
15	16.01	15.33	1.647	.3978	.212-	.00	.00	.0017	.0026	.018-
16	18.01	18.46	1.482	.4936	.213-	.00	.00	.0039	.0145-	.006-
17	20.02	20.46	1.373	.5477	.220-	.00	.00	.0021	.0017-	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/15/82

MOMENT AXES STAB RUN [illegible] q 130.7

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.02-	8.03-	.995	.0772	.020-	.00	.00	.0041	.0003-	.013-
3	6.03-	5.99-	.159	.0766	.023-	.00	.00	.0056	.0005-	.020-
4	4.02-	3.93-	.300	.0837	.043-	.00	.00	.0066	.0012-	.021-
6	2.02-	1.89-	.444	.0927	.058-	.00	.00	.0055	.0014-	.010-
7	.00	.18	.578	.1053	.070-	.00	.00	.0053	.0004-	.009-
8	2.02	2.24	.715	.1232	.081-	.00	.00	.0049	.0012-	.007-
9	4.03	4.29	.856	.1436	.089-	.00	.00	.0038	.0018-	.006-
10	6.02	6.33	1.000	.1703	.097-	.00	.00	.0032	.0022-	.003-
11	8.01	8.36	1.140	.1999	.102-	.00	.00	.0033	.0022-	.002-
12	10.02	10.42	1.280	.2376	.106-	.00	.00	.0032	.0024-	.002-
13	12.01	12.44	1.395	.2735	.106-	.00	.00	.0025	.0008-	.005-
15	14.02	14.50	1.528	.3354	.103-	.00	.00	.0026	.0017	.009-
16	16.01	16.50	1.582	.3757	.096-	.00	.00	.0027	.0049	.015-
17	18.02	18.43	1.308	.4789	.106-	.00	.00	.0006-	.0025	.022-
18	20.00	20.42	1.349	.5326	.136-	.00	.00	.0022	.0009-	.050-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 943-1 DATE 11/19/62
MOMENT AXES STAB RUN 56-0 q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	8.02-	8.03-	.061-	.0737	.001-	.00	.00	.0036	.0005-	.011-
3	6.02-	6.00-	.072	.0717	.008-	.00	.00	.0066	.0003-	.027-
4	4.02-	3.96-	.217	.0754	.020-	.00	.00	.0066	.0012-	.015-
5	2.03-	1.92-	.350	.0836	.033-	.00	.00	.0065	.0016-	.016-
6	.02	.17	.496	.0949	.051-	.00	.00	.0053	.0006-	.009-
7	2.02	2.22	.644	.1094	.063-	.00	.00	.0052	.0006-	.011-
8	4.01	4.25	.778	.1265	.072-	.00	.00	.0036	.0011-	.006-
10	6.02	6.31	.926	.1525	.079-	.00	.00	.0033	.0014-	.004-
11	8.01	8.34	1.069	.1805	.082-	.00	.00	.0029	.0018-	.003-
12	10.01	10.36	1.195	.2129	.086-	.00	.00	.0022	.0020-	.003-
13	12.01	12.42	1.324	.2481	.086-	.00	.00	.0021	.0015-	.003-
14	14.02	14.47	1.440	.3029	.081-	.00	.00	.0023	.0016-	.007-
15	16.02	16.48	1.465	.3765	.078-	.00	.00-	.0024-	.0142-	.005
16	18.00	18.43	1.385	.4425	.091-	.00	.00	.0017	.0160-	.000-
17	20.01	20.42	1.324	.4973	.122-	.00	.00	.0005-	.0108-	.031-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/62

MOMENT AXES STAB RUN 57-0 q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	3.02-	3.04-	.076-	.0794	.040	.00	.00	.0005	.0029	.012-
3	5.00-	5.99-	.057	.0775	.040	.00	.00	.0007	.0028	.031-
4	4.02-	3.96-	.194	.0805	.029	.00	.00	.0021	.0025	.019-
5	2.02-	1.92-	.337	.0875	.012	.00	.00	.0024	.0017	.017-
6	.02-	.12	.472	.0969	.006	.00	.00	.0032	.0008	.016-
8	2.01	2.20	.618	.1110	.005-	.00	.00	.0027	.0003	.017-
9	4.02	4.25	.758	.1293	.015-	.00	.00	.0019	.0003	.008-
10	6.02	6.30	.901	.1522	.020-	.00	.00	.0005	.0001-	.012-
11	8.00	8.32	1.036	.1800	.026-	.00	.00	.0002-	.0006-	.008-
12	10.00	10.36	1.170	.2116	.027-	.00	.00	.0004	.0009-	.016-
13	12.00	12.40	1.292	.2456	.026-	.00	.00	.0017	.0021-	.004-
14	14.01	14.45	1.412	.2977	.020-	.00	.00	.0032	.0016-	.007-
15	16.02	16.48	1.446	.3593	.016-	.00	.00-	.0014-	.0024-	.004
16	18.02	18.45	1.356	.4318	.032-	.00	.00-	.0005	.0219-	.004
17	20.01	20.41	1.301	.4860	.072-	.00	.00	.0014-	.0091-	.018-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/67
MOMENT AXES STAB | RUN 5E-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	0.00-	0.12-	.403-	.0526	.058	.00	.00	.0016	.0015	.017-
3	2.03-	2.12-	.304-	.0409	.050	.00	.00	.0034	.0014	.025-
4	4.02-	4.07-	.182-	.0335	.043	.00	.00	.0046	.0013	.024-
5	2.02-	2.03-	.052-	.0301	.033	.00	.00	.0053	.0001-	.015-
6	.01-	.01	.072	.0303	.021	.00	.00	.0051	.0003	.014-
8	2.04	2.10	.191	.0342	.014	.00	.00	.0043	.0005	.006-
9	4.01	4.11	.326	.0416	.000	.00	.00	.0034	.0007	.008-
10	6.03	6.17	.470	.0521	.009-	.00	.00	.0022	.0008	.005-
11	8.03	8.21	.596	.0662	.016-	.00	.00	.0016	.0006	.004-
12	10.01	10.23	.720	.0824	.027-	.00	.00	.0010	.0005	.003-
13	12.00	12.26	.847	.1038	.034-	.00	.00	.0005	.0006-	.002-
14	14.01	14.31	.959	.1289	.041-	.00	.00	.0006	.0010-	.001-
15	15.01	16.32	1.009	.1674	.052-	.00	.00	.0002	.0012	.002-
16	18.03	18.36	1.036	.2360	.085-	.00	.00	.0041-	.0013-	.008-
17	20.01	20.31	.927	.3023	.109-	.00	.00	.0002	.0017-	.030-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 342-1 DATE 11/19/62

MOMENT AXES STAB RUN 56-1 q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
3	6.02-	6.11-	.307-	.0414	.037	.00	.00	.0029	.0006-	.011-
4	4.02-	4.07-	.172-	.0336	.032	.00	.00	.0051	.0015-	.010-
5	2.02-	2.03-	.060-	.0301	.026	.00	.00	.0052	.0009-	.011-
7	.00	.02	.064	.0304	.017	.00	.00	.0046	.0002-	.008-
8	2.03	2.08	.186	.0338	.013	.00	.00	.0042	.0001	.009-
9	4.01	4.10	.310	.0414	.006	.00	.00	.0034	.0007	.008-
10	6.01	6.15	.457	.0506	.001-	.00	.00	.0020	.0006	.003-
11	8.03	8.21	.577	.0646	.004-	.00	.00	.0016	.0013	.004-
12	10.00	10.22	.703	.0805	.009-	.00	.00	.0009	.0014	.001-
13	12.00	12.25	.822	.1016	.014-	.00	.00	.0005	.0004	.000-
14	14.01	14.30	.940	.1266	.020-	.00	.00	.0004	.0006	.000-
15	15.01	15.32	1.000	.1630	.024-	.00	.00	.0002	.0033	.004-
16	18.00	18.29	.952	.2398	.035-	.00	.00-	.0056	.0246-	.008
17	20.02	20.32	.967	.3057	.084-	.00	.00	.0021	.0015	.010-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB. TEST 343-1 DATE 11/19/67
MOMENT AXES STAB. RUN 60-0 q 120.0

Pt	α_ℓ	α	C_L	C_D	C_m	ψ_ℓ	ψ	C_n	C_ℓ	C_C
2	.00	.03	.111	.0226	.046-	10.03-	10.03-	.0210	.0019-	.169-
3	.00	.03	.105	.0250	.033-	10.02-	10.02-	.0188	.0016-	.147-
4	.00	.02	.095	.0281	.016-	8.03-	8.03-	.0153	.0018-	.114-
5	.00	.02	.089	.0280	.002-	6.00-	6.00-	.0128	.0017-	.087-
6	.00	.02	.078	.0307	.008	4.02-	4.02-	.0086	.0008-	.058-
7	.00	.02	.078	.0306	.014	2.02-	2.02-	.0027	.0006	.027-
8	.00	.01	.062	.0306	.020	.01	.01	.0049	.0000	.011-
9	.00	.02	.075	.0315	.015	2.02	2.02	.0011	.0007	.017
10	.00	.02	.071	.0316	.012	4.01	4.01	.0027-	.0017	.042
11	.00	.02	.077	.0303	.004	6.01	6.01	.0076-	.0027	.073
12	.00	.02	.084	.0289	.011-	8.00	8.00	.0103-	.0035	.101
13	.00	.03	.097	.0276	.028-	10.01	10.01	.0142-	.0030	.129
14	.00	.03	.112	.0249	.046-	12.03	12.03	.0186-	.0040	.162
15	.00	.02	.071	.0310	.014	2.02-	2.02-	.0030	.0012	.020-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAP | TEST 342-1 | DATE 11/19/6P
MOMENT AXES STAF | RUN 61-0 | q 12C.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	6.01-	6.10-	.312-	.0403	.036	.01	.01	.0054	.0037-	.013-
3	4.03-	4.08-	.182-	.0320	.031	.01	.01	.0050	.0014-	.009-
5	2.03-	2.04-	.060-	.0294	.023	.01	.01	.0050	.0012-	.009-
7	.03-	.01-	.066	.0291	.017	.01	.01	.0041	.0000-	.006-
8	2.02	2.07	.186	.0331	.011	.01	.01	.0045	.0002	.010-
9	4.00	4.09	.310	.0402	.005	.01	.01	.0032	.0010	.007-
10	6.02	6.16	.452	.0501	.001-	.01	.01	.0020	.0008	.005-
11	8.04	8.22	.582	.0634	.005-	.01	.01	.0017	.0019	.004-
14	10.01	10.23	.700	.0799	.011-	.01	.01	.0010	.0019	.003-
15	12.03	12.29	.827	.1011	.015-	.00	.00	.0004	.0008	.000-
16	14.02	14.31	.945	.1246	.018-	.00	.00	.0005	.0006	.000-
17	16.01	16.33	1.027	.1610	.019-	.00	.00	.0005	.0051	.007-
18	18.00	18.29	.945	.2457	.032-	.00	.00-	.0071	.0226-	.006
19	20.03	20.31	.902	.3094	.070-	.00	.00-	.0015-	.0010-	.000

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB | TEST 343-1 | DATE 11/19/69
MOMENT AXES STAB | RUN 62-0 | q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_R	C_ℓ	C_C
2	5.98-	6.12-	.321-	.0397	.042	.00	.00	.0049	.0009-	.025-
3	4.03-	4.08-	.190-	.0319	.033	.00	.00	.0052	.0010-	.015-
4	2.03-	2.04-	.076-	.0280	.026	.00	.00	.0052	.0005-	.012-
6	.03-	.02-	.051	.0270	.019	.00	.00	.0043	.0004-	.009-
7	2.02	2.07	.169	.0312	.016	.00	.00	.0041	.0003	.008-
8	4.00	4.09	.300	.0379	.010	.00	.00	.0034	.0006	.009-
9	6.01	6.14	.444	.0482	.003	.00	.00	.0021	.0013	.004-
10	8.02	8.20	.578	.0616	.002-	.00	.00	.0015	.0016	.003-
11	10.00	10.21	.698	.0779	.005-	.00	.00	.0010	.0021	.001-
12	12.03	12.26	.821	.0978	.008-	.00	.00	.0006	.0026	.001-
14	14.01	14.30	.947	.1206	.010-	.00	.00	.0004	.0007	.000-
15	15.02	15.34	1.017	.1631	.015-	.00	.00	.0006	.0060	.004-
16	15.00	15.29	.924	.2536	.045-	.00	.00	.0016-	.0078-	.006-
17	20.00	20.20	.889	.3064	.078-	.00	.00	.0027-	.0016	.012-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/62
MOMENT AXES STAB RUN 63-0 q 12[illegible]

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	[illegible]	[illegible]	[illegible]	.0818	-.051	-.00	.00	[illegible]	[illegible]	[illegible]
3	-3.03	-3.01	-.083	.0811	-.05[illegible]	-.00	.00	-.0018	-.0020	-.007
4	-4.03	-3.96	-.225	.0832	-.05[illegible]	-.00	.00	-.0009	-.0021	-.00[illegible]
5	-2.00	-1.8[illegible]	-.362	.0896	-.052	-.00	.00	-.0008	-.0027	-.00[illegible]
6	.01	.16	-.499	.0993	-.048	-.00	.00	-.0007	-.0025	-.002
7	2.04	2.24	-.636	.1139	-.044	-.00	.00	-.0006	-.0014	-.00[illegible]
8	4.00	4.24	-.763	.1308	-.038	-.00	.00	-.0004	-.0017	-.000
9	6.03	6.30	-.904	.1535	-.033	-.00	.00	-.0002	-.0009	-.000
10	8.01	8.37	-1.036	.1803	-.027	-.00	.00	-.0003	-.0003	-.002
11	10.01	10.37	-1.166	.2115	-.019	-.00	.00	-.0001	-.0006	-.001
12	12.00	12.40	-1.289	.2457	-.011	-.00	.00	-.0001	-.0007	-.000
13	14.02	14.46	-1.400	.2935	-.000	-.00	.00	-.0002	-.0002	-.00[illegible]
14	16.02	16.47	-1.442	.3508	-.010	-.00	.00	-.0061	-.0109	-.017
15	18.02	18.44	-1.352	.4001	-.026	-.00	.00	-.0030	-.0164	-.01[illegible]
16	20.02	20.42	-1.292	.4637	-.016	-.00	.00	-.0002	-.0096	-.017

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

SOURCE AXES STAB TEST 342-1 DATE 11/19/6?

MOMENT AXES STAB RUN 64-0 q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_C
2	.0[illegible]	.16	.5[illegible]	.08[illegible]	.11?-	[illegible]	[illegible]	.03?-	.012?-	.20?-
3	.0[illegible]	.16	.527	.08?-	.09?-	10.01-	10.01-	.030-	.011?-	.16?-
4	.0[illegible]	.16	.52?	.09??	.08?-	8.03-	8.03-	.02?-	.009?-	.13?-
5	.0[illegible]	.16	.51?	.09??	.07?-,	6.04-	6.02-	.01?-	.006?-	.09?-
6	.0[illegible]	.1[illegible]	.50?	.09?-	.06?-	4.03-	4.03-	.00?-	.00?-	.06?-
7	.0[illegible]	.15	.50?	.09?1	.05?-	2.02-	2.02-	.004	.001?-	.03?-
8	.0[illegible]	.15	.49?	.09?4	.04?-	.01-	.01-	.00?7	.001?	.00?-
10	.0[illegible]	.15	.4[illegible]	.09?1	.05?-	2.01	2.01	.002?-	.00??	.02?
11	.0[illegible]	.15	.50?	.09??	.05?-	4.00	4.00	.00??-	.00??	.05?
12	.0[illegible]	.16	.51[illegible]	.09??	.07?-	6.00	6.00	.012?-	.00??	.08?
14	.0[illegible]	.16	.51?	.09?6	.08?-	8.00	8.00	.019?-	.01??	.12?
15	.0[illegible]	.16	.52?	.09?5	.09?-	10.00	10.00	.026?-	.01??	.15?
16	.0[illegible]	.16	.53[illegible]	.08?[illegible]	.11?-	12.00	12.00	.032?-	.01??	.19?

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB — TEST 342-7 — DATE 11/19/62

MOMENT AXES STAB — RUN 65-0 — q 120.0

Pt	α_t	α	C_L	C_D	C_m	ψ_t	ψ	C_n	C_ℓ	C_C
2	3.01-	8.02-	.042-	.0807	.048-	.00-	.00	.0016-	.0041	.008-
3	6.03-	6.01-	.081	.0882	.036-	.00-	.00	.0002-	.0026	.011-
4	4.02-	1.96-	.210	.0903	.022-	.00-	.00	.0019	.0018	.004-
5	2.03-	1.93-	.341	.0959	.017-	.00-	.00	.0014	.0022	.004-
6	.01-	.10	.472	.1047	.013-	.00-	.00	.0006	.0010	.004-
7	2.01	2.20	.611	.1164	.004-	.00-	.00	.0004	.0013	.004-
8	4.01	4.24	.734	.1326	.009	.00-	.00	.0006	.0014	.001-
9	6.02	6.29	.881	.1504	.011	.00-	.00-	.0001-	.0004-	.001
10	8.02	8.33	1.012	.1795	.017	.00-	.00-	.0001-	.0001-	.001
11	10.01	10.38	1.142	.2084	.026	.00-	.00-	.0003	.0013-	.000
12	12.03	12.42	1.266	.2403	.038	.00-	.00-	.0004	.0018-	.001
13	14.01	14.44	1.378	.2916	.043	.00-	.00	.0002	.0016-	.002-
14	16.01	16.44	1.392	.3562	.057	.00-	.00-	.0002-	.0170-	.018
17	18.02	18.42	1.317	.4264	.067	.00-	.00-	.0020	.0158-	.011
18	20.01	20.41	1.260	.4823	.075	.00-	.00	.0006-	.0063-	.013-

LOW-SPEED WIND TUNNEL FINAL DATA SHEET

FORCE AXES STAB TEST 343-1 DATE 11/19/62

MOMENT AXES STAB RUN 66-0 q 120.0

Pt	α_g	α	C_L	C_D	C_m	ψ_g	ψ	C_n	C_ℓ	C_Q
2	3.02-	3.02-	.028-	.0762	.081-	.00-	.00	.0007	.0013	.004-
3	5.02-	5.00-	.102	.0748	.083-	.00-	.00	.0014	.0019	.006-
4	4.02-	3.99-	.240	.0794	.087-	.00-	.00	.0024	.0024	.007-
5	2.01-	1.98-	.376	.0861	.087-	.00-	.00	.0018	.0024	.008-
7	.00	.16	.520	.0957	.084-	.00-	.00	.0011	.0021	.009-
9	2.00	2.20	.652	.1100	.079-	.00-	.00	.0006	.0018	.001-
10	4.02	4.26	.784	.1298	.074-	.00-	.00-	.0001	.0016	.006
11	6.00	6.29	.922	.1531	.068-	.00-	.00-	.0002-	.0012-	.011
12	8.05	8.36	1.060	.1812	.062-	.00-	.00-	.0006-	.0009-	.016
13	10.04	10.39	1.179	.2116	.055-	.00-	.00-	.0009	.0011-	.021
14	12.02	12.43	1.305	.2465	.047-	.00-	.00-	.0009	.0015-	.026
15	14.00	14.48	1.432	.3004	.038-	.00-	.00	.0001-	.0009-	.030-
16	15.01	15.46	1.451	.3603	.029-	.00-	.00-	.0006-	.0012-	.034
17	13.01	13.48	1.327	.4379	.018-	.00-	.00-	.0020	.0006-	.041
18	11.01	11.42	1.208	.4914	.042-	.00-	.00	.0004	.0006-	.046-

4.0 APPENDIX

4.1 NOMENCLATURE

Definition of Tests

P	Pitch Test; pitch angle variation (ψ_g = constant). Subscript 6 indicates that six-component force and moment data were recorded.
Y	Yaw Test; yaw angle variation (α_g = constant). Subscript 6 indicates that six-component force and moment data were recorded.
HM	Hinge Moment; denotes that hinge moment data were recorded at each model test point. The left flap, left aileron, left elevator and the rudder were instrumented.
Press	Pressure; denotes that pressure data were recorded at each model test point. The model was instrumented with orifices, five 48-port Scanivalves, and pressure transducers for digitized punched card output.
Duct Press	Duct Pressure; denotes that duct exit pressure data were recorded at each model test point from a rake and wall static orifices at the duct exit. These data also were read through the Scanivalve and transducer system.
Pix	Tuft Pix; visible flow patterns recorded photographically at each model test angle. Flow patterns were made visible by affixing two strand floss tufts to the model by means of cellophane tape.

Coefficients

NOTE: Model force and moment coefficients presented on the figures in this report are referred to stability axes through the model moment reference center as shown in Figure 4.15

C_L Lift coefficient, Lift/qS to stability axes, or normal force coefficient on body axes tabulations.

C_D Drag coefficient, Drag/qS to stability axes, or axial force coefficient on body axes tabulations.

C_m Pitching moment coefficient, Pitching moment/qS$\bar{c}$.

C_ℓ Rolling moment coefficient, Rolling moment/qSb.

C_C Side-force coefficient, Side-force/qS to stability axes and on body axes tabulations.

C_n Yawing moment coefficient, Yawing moment/qSb.

Sta. 30.75 Subscript "Sta. 30.75" on moment coefficients indicates that the longitudinal location of the model moment reference center is at model station 30.75 with the vertical location as shown in the moment reference diagram in Figure 4.15.

NOTE: A_f, c_f, A_a, c_a, A_e, c_e, A_r and c_r are explicitly defined in "Data Reduction Reference Dimensions" in Section 4.4.

C_{h_f} Flap hinge moment coefficient, Flap hinge moment/qA_fc_f, identified on tabulations as CH. M F.

C_{h_a} Aileron hinge moment coefficient, Aileron hinge moment/qA_ac_a, identified on tabulations as CH. M A.

C_{h_e} Elevator Hinge moment coefficient, Elevator hinge moment/qA_ec_e, identified on tabulations as CH. M E.

C_{h_r} Rudder hinge moment coefficient, Rudder hinge moment/ $qA_r c_r$, identified on tabulations as CH. M R.

$\frac{p - p_o}{q_o}$ Pressure coefficient where p is the measured local pressure and p_o is the test-section free-stream static pressure, and q_o equals q; on the tabulated pressure coefficients this is noted as PR; also noted as $\Delta p/q$.

Symbols

α_g Geometric angle of attack of the model wing reference plane relative to the tunnel axis. (Degrees); noted as ALF. G on tabulated hinge moment coefficients and tabulated pressure coefficients.

α Angle of attack of the model wing reference plane relative to the equivalent free air stream (Degrees).

ψ_g Geometric angle of yaw of the model plane of symmetry relative to the tunnel axis. (Degrees); noted as PSI. G on tabulated hinge moment coefficients and tabulated pressure coefficients.

δ_f° Flap deflection in degrees relative to the wing reference plane.

δ_a° Aileron deflection in degrees relative to the wing reference plane, positive when the trailing edge is down and noted individually L/R, Left/Right.

δ_e° Elevator deflection in degrees relative to the horizontal tail reference plane, positive when the trailing edge is down.

δ_r° Rudder deflection in degrees relative to the vertical tail reference plane, positive when the trailing edge is to the left.

q_m Uncorrected dynamic pressure.

q Dynamic pressure, $\rho V^2/2$.

R. N. Reynolds Number (2.21 million for this test) = $\rho V\bar{c}/\mu$ where ρ is the mass density of air, μ is the absolute viscosity of air, and V and $\bar{c}$ are as defined elsewhere in this report.

x/c — Symbol denoting wing orifice location, the distance aft from the wing leading edge expressed as a decimal fraction of the local chord; on the tabulated pressure coefficients x/c is noted under column heading K 1., K 2., and K 3., and is expressed as a percent of the local chord.

V — Average airstream velocity, $\sqrt{2q/\rho}$.

4.2 DESCRIPTION OF MODEL COMPONENTS

Symbol

a_0 — Aileron

a_1 — Aileron: Same as a_0 except rounded (in chordwise section) at leading edge of outboard end.

B_0 — Fuselage: With canopy and overhead jet intake with simulated ducts.

D_0 — All landing gear doors.

M_0^f — Main Landing Gear: Superscript f denotes forward location, Fuselage Station 34.40.

N_0 — Nose Landing Gear: Located at Fuselage Station 17.10.

F_0 — Trailing Edge Flaps: Fowler-type flaps extending spanwise from Wing Station 3.00 to Wing Station 12.594.

F_1 — Wing Trailing Edge Flaps: Same as F_0 except with a 1.875 inch spanwise extension at the outboard end with the same constant section as F_0. The constant section creates a discontinuity with the wing planform at the outboard end of the flap; there was also a discontinuity with the airfoil section at the outboard end of the flap because the wing was decreasing in thickness. Flap F_1 is accommodated only by Wing W_1.

F_2 — Wing Trailing Edge Flaps: Same as F_0 except with an end plate at the outboard end of the deflected flap; the end-plate extended approximately .5-inch above the flap upper surface and .5-inch below the flap lower surface.

F_3 Wing Trailing Edge Flaps: Same as F_0 except with a constant 0.50-inch chordwise extension of sheet metal attached to the flap lower surface and faired to the flap with wax on both the upper and lower surfaces.

F_4 Wing Trailing Edge Flaps: Same as F_0 except with a constant 0.25-inch chordwise extension of sheet metal attached to the flap lower surface and faired to the flap with wax on both the upper and lower surfaces.

F_5 Wing Trailing Edge Flaps: Same as F_1 (extended spanwise) except with the flap gap reduced 0.0025-inch. This was accomplished by covering the flaps entirely with one thickness of cellophane tape, thus, the flap section is also slightly thickened.

F_6 Wing Trailing Edge Flaps: Same as F_1 except with the flap gap reduced 0.029-inch. The additional layers of green fabric and cellophane tape were affixed only to the flap leading edge.

F_7 Wing Trailing Edge Flaps: Same as F_1 except with the flap gap reduced 0.055-inch.

f_1 Wing Fences: Wrap-around type, from wing trailing edge, around leading edge and back to trailing edge. Fence located at 94.5% wing semispan. The fence minimum height, 5% of the wing local chord, extended from the wing point of maximum thickness around the leading edge and back to the wing point of maximum thickness; from that point aft, the top and bottom edges were extended parallel to the wing chord plane. Designed on wing W_0 (outboard sections bent downward 6°) but tested on wing W_2 (bent upward 4°).

f_2 Wing Fences: Same as f_1 except located at 73% wing semispan, and consequently larger.

f_3 Wing Fences: Same as f_1 except located at 56.75% wing semispan, and consequently larger.

g_0 Vortex Generators: Made in strips of vertical flat plate fins mounted at 16° to the chord of the strips. The individual fins had a height of 0.2-inch and a chord of 0.3-inch. Strips of vortex generators were mounted from the fuselage

to the wing tip junction. At the flap the trailing edge of the fins was approximately .07-inch forward of the flap cover plate trailing edge. From the break chord to the wing tip junction, the strip of vortex generators was swept forward so that at the wing tip junction, the trailing edge of the fins was approximately 1.45-inches forward of the wing trailing edge.

g_1 Vortex Generators: Made in strips as described in g_0, but mounted spanwise across the wing fan covers with the fin leading edges in line with Fuselage Station 32.0 (F.S. 256, full scale).

H_0^x Horizontal Tail of tapered planform mounted for a "tee" tail at the top of the vertical tail; the pivot point for horizontal tail incidence is at Fuselage Station 62.073 and Water Line 25.125. The superscript denotes incidence, positive when the trailing edge is down, relative to the wing reference plane.

H_1^x Horizontal Tail: Same as H_0 except with a straight lined 1.0-inch spanwise extension on each side for a total increase in span of 2.0 inches.

H_2^x Horizontal Tail: Similar to H_0 except for section and location. Made o .25-inch flat plate with radius leading edge and tips and beveled trailing edge. H_2 was located at Water Line 19.325 (MAC of the vertical tail) with the trailing edges of the vertical and horizontal tails coincident at 0° incidence. The incidence pivot point was approximately in line with Fuselage Station 61.6 and Water Line 18.6. H_2 was tested without transition grit.

IMAGE Reflection image of the two-strut support for tare evaluation. For the "wing alone" configuration the image included a center-mounted image sting.

IMAGE STING Image Sting - Center mounted image sting for the "wing alone" configuration used in tare evaluation.

INV Inverted: to denote model inverted in the test section.

P_1 Orifice Plate inserted at the engine intake with twin side-by-side orifices of 1.750-inch internal diameter.

P_2 Orifice Plate: Same as P_1 except orifice internal diameter was 1.375 inch.

R_0 Pressure Rake : Inserted at the aft end of the right-hand duct and instrumented with total head orifices. Static orifices were provided in the duct wall. The center of the rake was located at Fuselage Station 49.80.

S_0^x Symbol designating simulated Wing Fan Cover configurations, on the wing upper surface, the simulated wing fan covers, when closed, form a bump that protrudes above the surface of the wing; on the lower surface the cover is characterized by the spanwise corrugations of retracted or closed louvers. The superscript denotes: W, with support struts, and N, without support struts.

S_1^x Simulated Wing Fan Cover configuration, with superscripts as defined for S_0. S_1 was tested only as S_1^N, without struts. S_1 denotes "bumps" on the upper surface and depressed louvers on the lower surface. The outboard edges of the louvers were depressed .10-inch below the wing surface.

S_2^x Simulated Wing Fan Cover configuration, with superscripts as defined for S_0. S_2 was tested only as S_2^N, without struts. S_2 denotes the "bumps" depressed condition on the wing upper surface and louvers on the lower surface depressed as per S_1; the outboard edges only of the upper surface bumps were depressed 0.10-inch below the wing surface.

S_3^x Simulated Wing Fan Cover configuration, with superscripts as defined for S_0. S_3 was tested only as S_3^N, without struts. S_3 denotes the absence of bumps on the wing upper surface and the presence of retracted louvers on the lower surface.

S_4^x Simulated Wing Fan Covers: "Bumps" on the wing upper surface and simulated closed louvers on the wing lower surface. The height of the upper surface "bumps" was the same as S_0 of the first test phase, but the contour was altered to be a modified rectangle with a flat on the top; the edges and corners of the rectangular bump were faired; the chordwise to spanwise ratio was approximately 3:2. The superscript W denotes with struts, and superscript N denotes without struts.

TUFTS Tufts of two-strand floss affixed to the model with cellophane tape to observe and/or record visible flow patterns.

T_1 Transition Grit (Carborundum) on designated model parts except H_2 at all times. The superscript denotes fineness and varied only during the grit studies. During most of the test #150 grit was used exclusively. The pattern was as follows:

Transition Grit Strip	Width	Location
Wing at Root	1/2"	1/2" from L. E.
Wing at Break Chord	3/8"	3/8" from L. E.
Wing at Tip	1/4"	1/4" from L. E.
Vertical Tail at Root	3/8"	3/8" from L. E.
Vertical Tail at Tip	1/4"	1/4" from L. E.
Horizontal Tail at Root	3/8"	3/8" from L. E.
Horizontal Tail at Tip	1/4"	1/4" from L. E.
Duct	3/8"	3/8" from L. E.
Nose	1/2"	1-1/2" from Fus. Sta. Zero

T_2 Transition Strip of sheet aluminum .35-inch high mounted normal to the surface at Fuselage Station 26.47. The strip extended over the fuselage and duct intake on each side to the wing upper surface.

V_0 Vertical Tail of tapered planform with the rudder hinge line at the 82% chord line. The horizontal tail was attached to a vertical plate which inserted into the vertical tail in such a way that a portion of the vertical mounting plate was left exposed as a section of flat plate when the horizontal tail was on the model.

V_1 Vertical Tail: Same as V_0 except the horizontal tail mounting plate was faired with model wax to match the vertical tail airfoil section.

W_0 Wing: Generally tapered with rounded tips, the leading edge and trailing edge sweeps are increased at wing midsemispan. The wing was designed to accommodate a vertical lift fan on each side of the fuselage and was equipped with ailerons and Fowler-type flaps, outboard of the wing break chord, the wing panels were bent downward 6°. The outboard panels were twisted (leading edge down) 3° from the break chord to the tip chord about the quarter-chord with non-linear distribution.

W_1 Wing: Same as W_0 except outboard panels are 0°, or "not bent downward", and it had no deflectable ailerons. This wing accommodates the spanwise extended flaps F_1.

W_2 Wing: Same as W_0 except outboard panels were bent upward 4°; there were no deflectable ailerons.

W_3 Wing: Same as W_2 except with outboard panels shimmed upward to 6°.

TABLE 4.1

MODEL DIMENSIONAL DATA

1/8 SCALE RYAN CONVENTIONAL MODEL 143

Area (Theoretical)		4.068 sq. ft.
Root Chord (Theoretical)		18.125 in.
Tip Chord (Theoretical)		5.375 in.
Span		44.650 in.
Aspect Ratio		3.42
Mean Aerodynamic Chord		14.115 in.
Spanwise Location of Mean Aerodynamic Chord	B. L.	9.419
Leading Edge Sweep (Inboard Panel)		19°40' (Ref)
Leading Edge Sweep (Outboard Panel)		37° "
Flap Area of Two Flaps		0.395 sq. ft.
Aileron Area Aft of the Hinge Line, of Two Ailerons		0.320 sq. ft.
Incidence		0°
Dihedral (Outboard Panels Only)		
W_0		6° Tips Down
W_1		0°
W_2		4° Tips Up
W_3		6° Tips Up

Fuselage

Length		64.375 in.
Maximum Height		11.52 in.

Horizontal Tail - H_0

Area (Theoretical)		.792 sq. ft.
Root Chord		8.205 in.
Tip Chord		4.104 in.
Span		18.526 in.
Aspect Ratio		3.01
Mean Aerodynamic Chord		6.382 in.
Spanwise Location of Mean Aerodynamic Chord	B. L.	4.117
Leading Edge Sweep		14°41' (Ref)
Elevator Area Aft of the Hinge Line, of Two Elevators		0.190 sq. ft.
Incidence		Variable
Horizontal Tail Incidence Pivot Point	Water Line	25.125
	Fuselage Sta.	62.073
Leading Edge Sweep		14°41' (Ref.)
Elevator Area Aft of the Hinge Line of Two Elevators		0.190 sq. ft.

Horizontal Tail - H_1

Area (Theoretical)		.846 sq. ft.
Root Chord		8.205 in.
Tip Chord		3.662 in.
Span		20.526 in.
Aspect Ratio		3.46
Mean Aerodynamic Chord		6.223 in.
Spanwise Location of Mean Aerodynamic Chord	B. L.	4.477
Leading Edge Sweep		14°14'
Elevator Area Aft of the Hinge Line of Two Elevators		0.190 sq. ft.
Incidence		0°
Horizontal Tail Incidence Pivot Point- Water Line		25.125
Fuselage Sta.		62.073

Horizontal Tail - H_2

Tabulated Statistics are the same as H_0 except

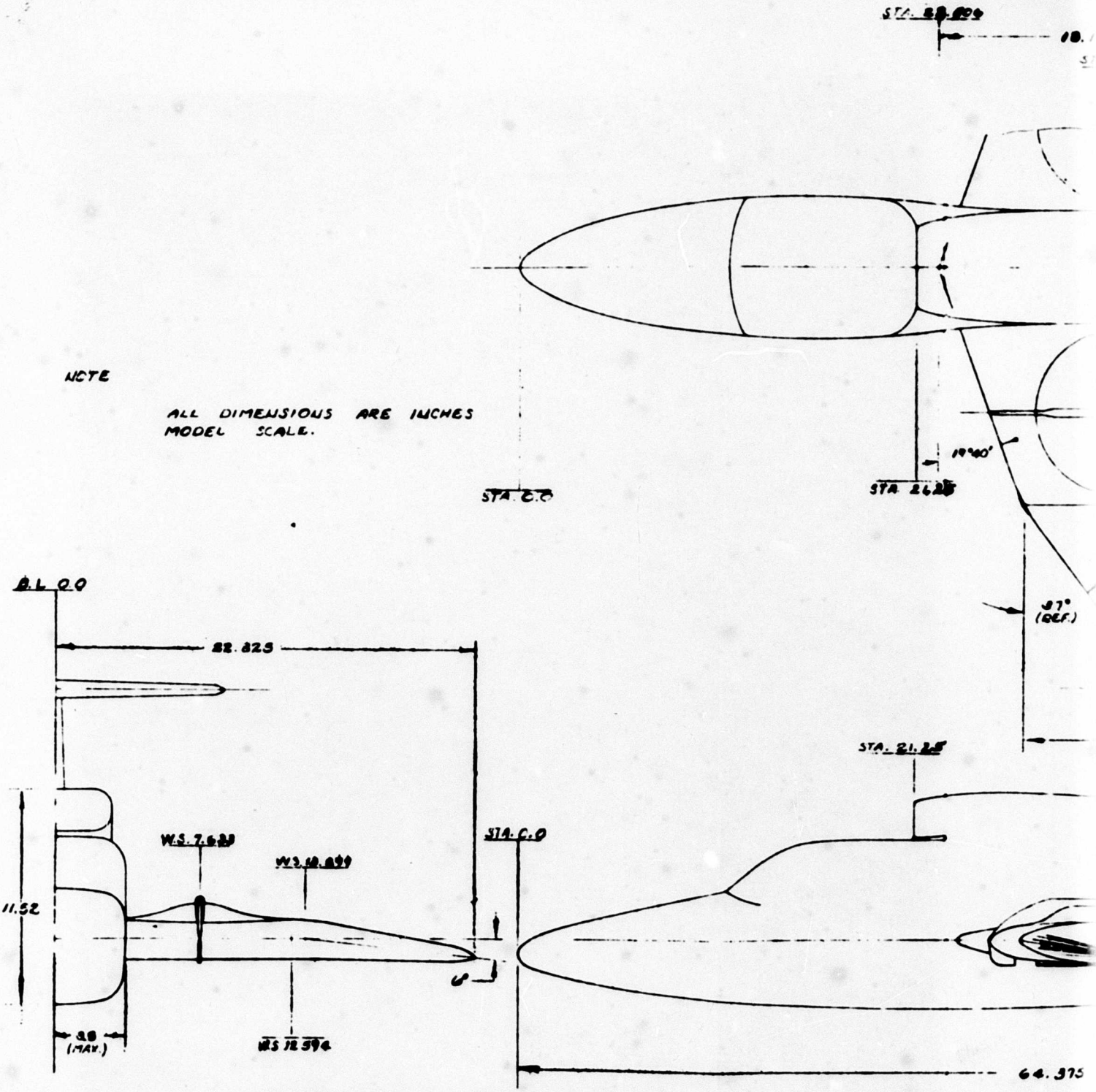
Horizontal Tail Incidence Pivot Point - Water Line	18.6
Fuselage Sta.	61.6

And H_2 had no elevator. H_2 was made of .25-inch sheet aluminum.

Vertical Tail (Without Dorsal Fin)

Area		.797 sq. ft.
Root Chord (At Water Line 14.125)		12.990
Tip Chord (At Water Line 25.750)		6.750 in.
Span (Above Water Line 14.125)		11.625 in.
Aspect Ratio		1.18
Mean Aerodynamic Chord		10.199 in.
Spanwise Location of Mean Aerodynamic Chord	W. L.	19.325
Leading Edge Sweep		35°
Rudder Area Aft of the Hinge Line (82% Chord)		0.087 sq. ft.

4.3 MODEL GEOMETRY



NOTE

ALL DIMENSIONS ARE INCHES MODEL SCALE.

CONFIGURATION: B. W. F. S.^{W} V. H.°
RYAN MODEL 143 (VERTIFAN)
1/6 - SCALE CONVENTIONAL MODEL

A.

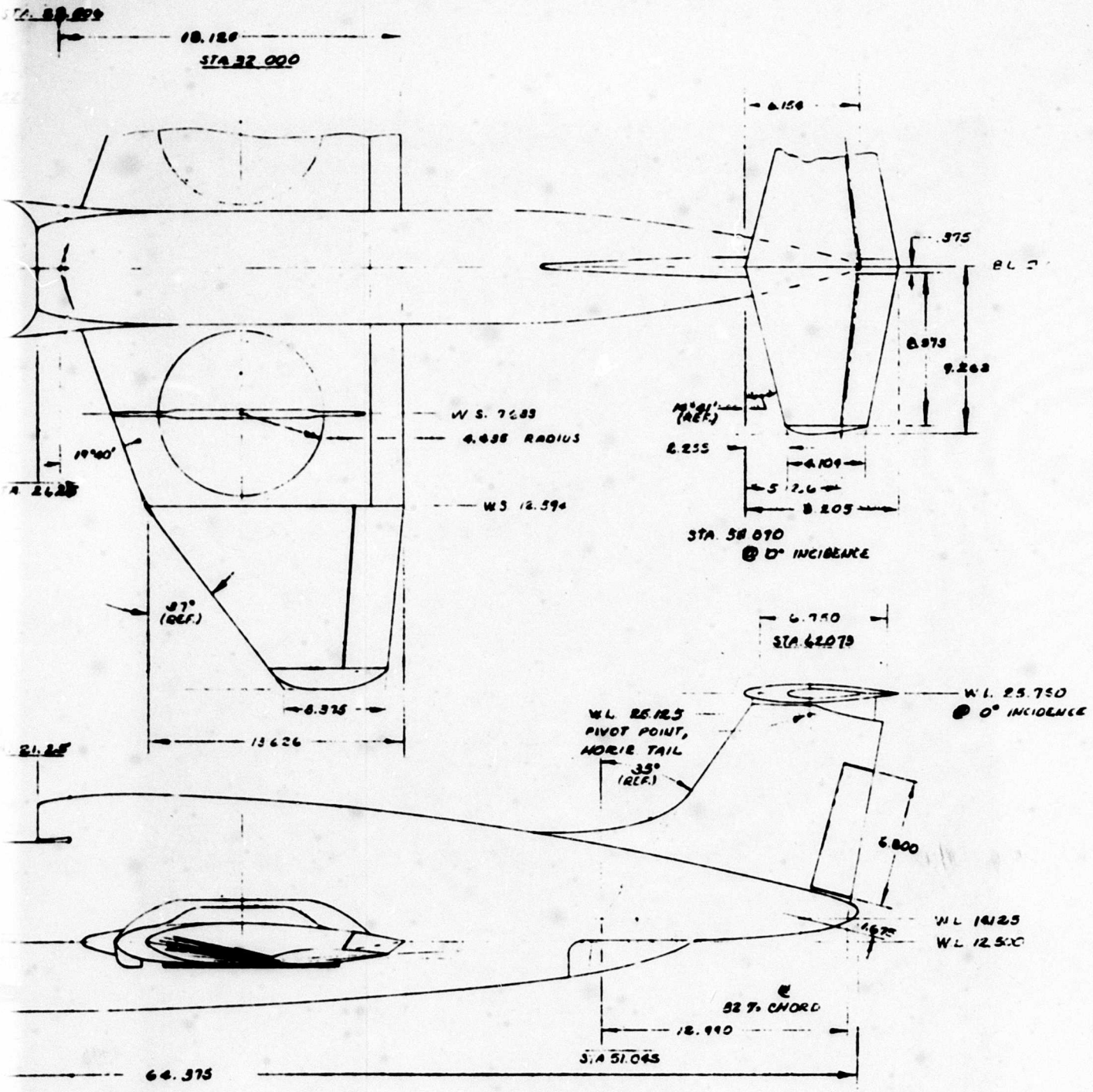

18.120
STA 32.000
.375
B.L. 0
9.268
W.S. 7.283
4.656 RADIUS
W.S. 12.594
19.90°
37°
(REF.)
8.975
13.626
STA. 58.090
@ 0° INCIDENCE
6.750
STA. 62.079
W.L. 25.750
@ 0° INCIDENCE
W.L. 25.125
PIVOT POINT,
MORIE TAIL
35°
(REF.)
6.800
W.L. 18.125
W.L. 12.500
@
32 % CHORD
18.990
STA 51.045
64.375

Figure 4.1

B.

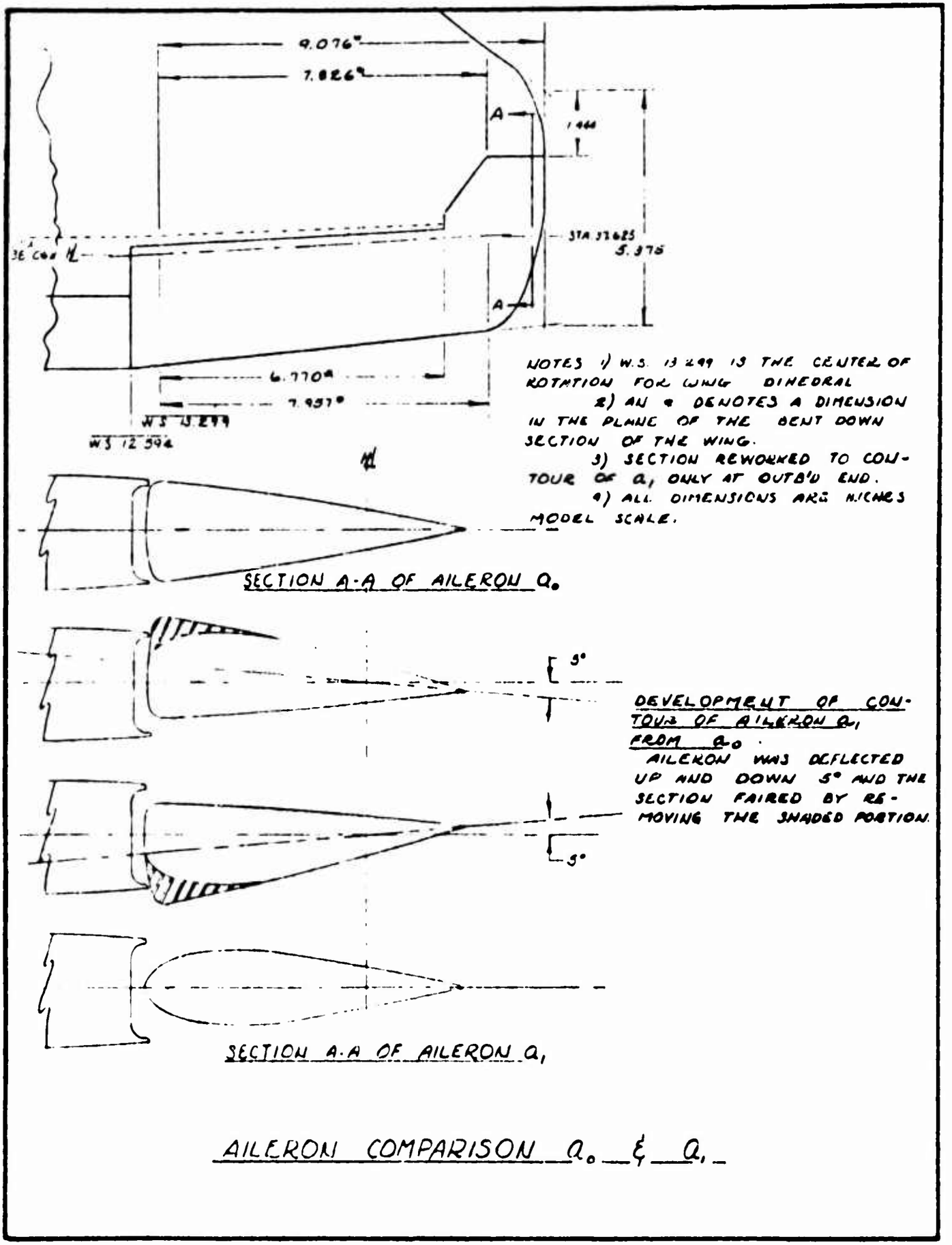

9.076"
7.826"
A
1.444
STA 37.625
5.375
3E Con ℄
A
6.770*
7.957*
W.S. 13.299
W.S. 12.594
NOTES 1) W.S. 13.299 IS THE CENTER OF ROTATION FOR WING DIHEDRAL
2) AN * DENOTES A DIMENSION IN THE PLANE OF THE BENT DOWN SECTION OF THE WING.
3) SECTION REWORKED TO CONTOUR OF a1 ONLY AT OUTB'D END.
4) ALL DIMENSIONS ARE INCHES MODEL SCALE.
SECTION A-A OF AILERON a0
5°
5°
DEVELOPMENT OF CONTOURS OF AILERON a1 FROM a0.
AILERON WAS DEFLECTED UP AND DOWN 5° AND THE SECTION FAIRED BY REMOVING THE SHADED PORTION.
SECTION A-A OF AILERON a1
AILERON COMPARISON a0 & a1

Figure 4.2

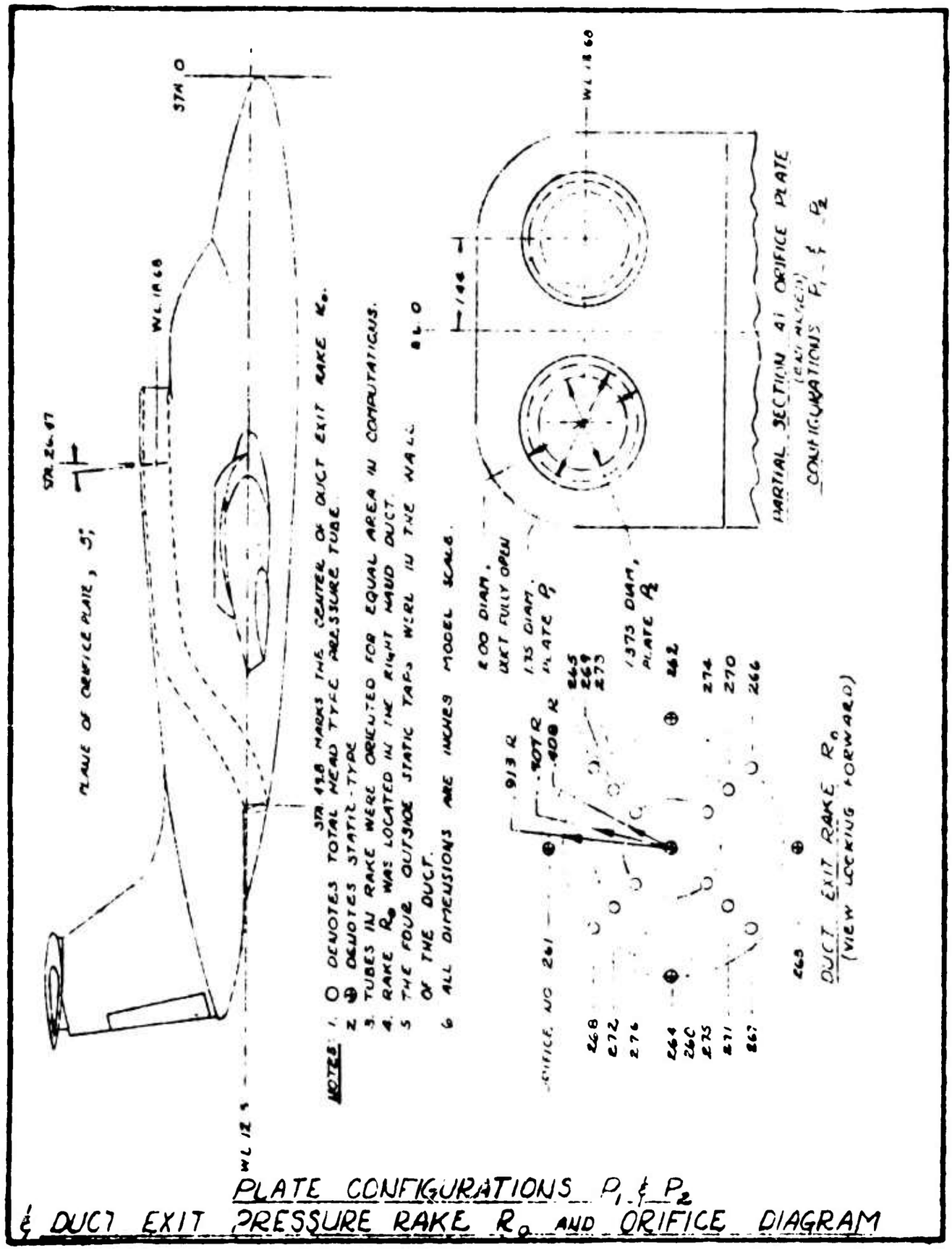
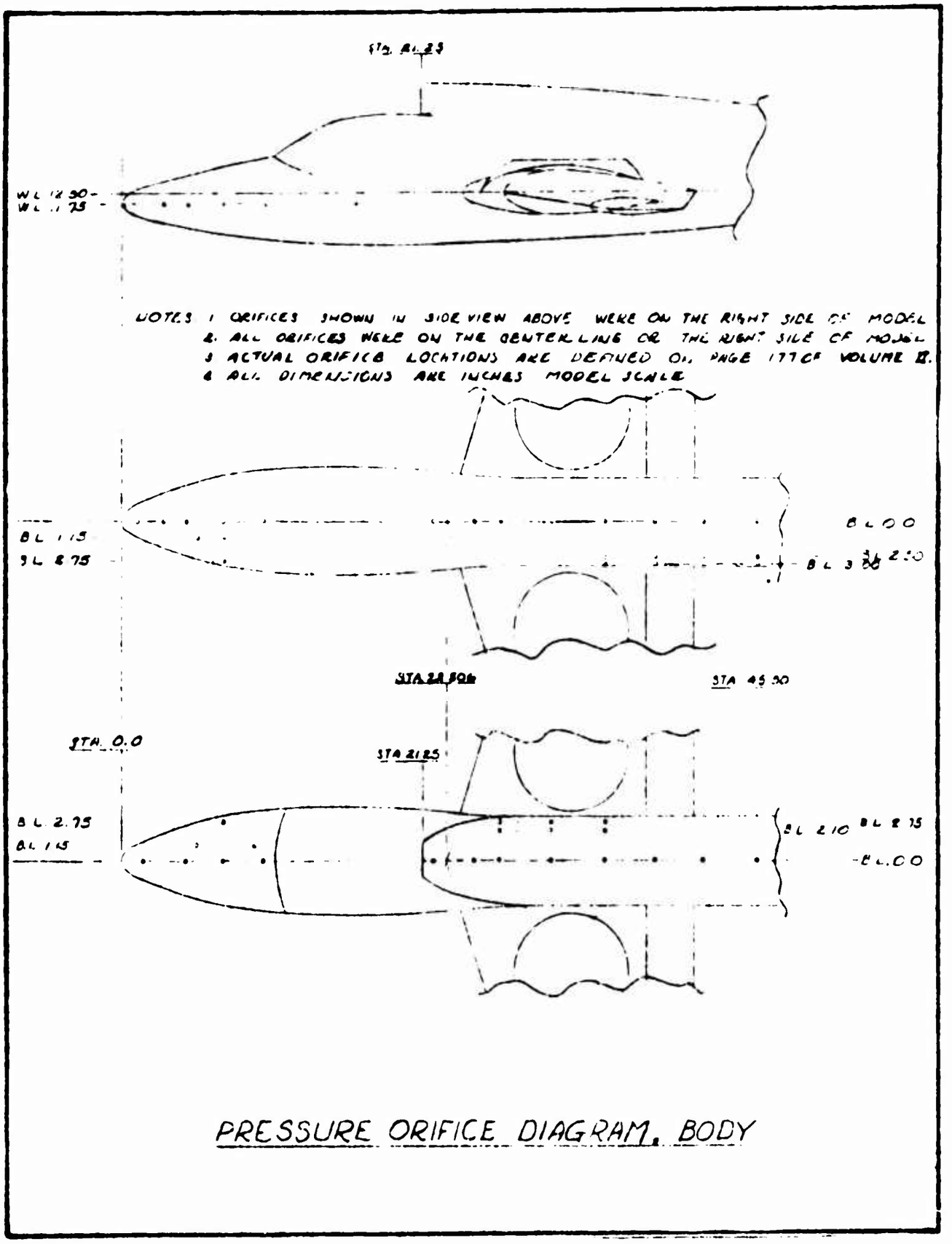


PLATE CONFIGURATIONS P_1 & P_2
& DUCT EXIT PRESSURE RAKE R_o AND ORIFICE DIAGRAM

Figure 4.3



PRESSURE ORIFICE DIAGRAM, BODY

Figure 4.4

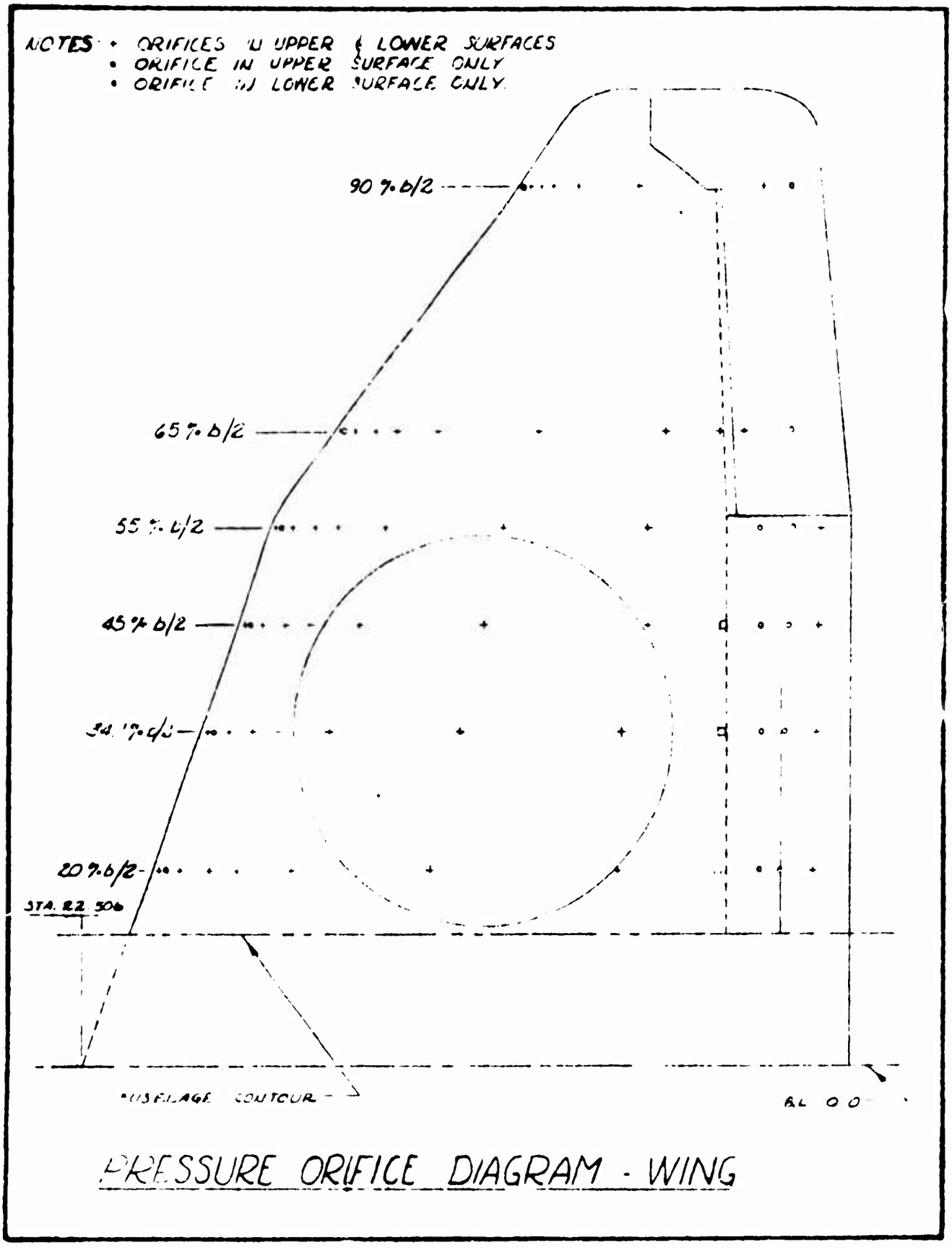
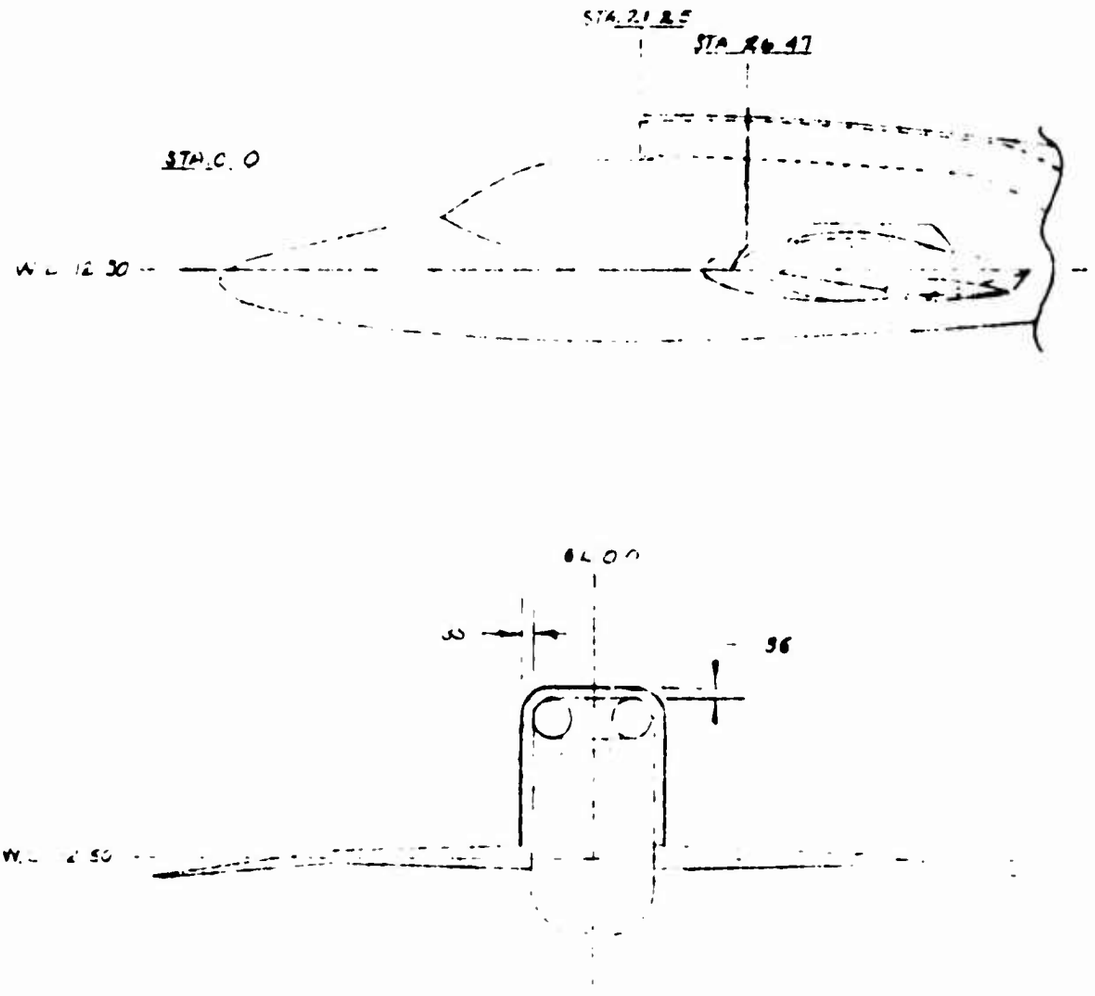

NOTES • ORIFICES IN UPPER & LOWER SURFACES
• ORIFICE IN UPPER SURFACE ONLY
• ORIFICE IN LOWER SURFACE ONLY
90 % b/2
65 % b/2
55 % b/2
45 % b/2
20 % b/2
STA. 22.306
FUSELAGE CONTOUR
BL 0.0
PRESSURE ORIFICE DIAGRAM - WING

Figure 4.5



SECTION AT STATION 26.41

NOTES: ALL DIMENSIONS ARE INCHES MODEL SCALE
MADE OF 1/16 INCH SHEET ALUMINUM.

TRANSITION STRIP T_2

Figure 4.6

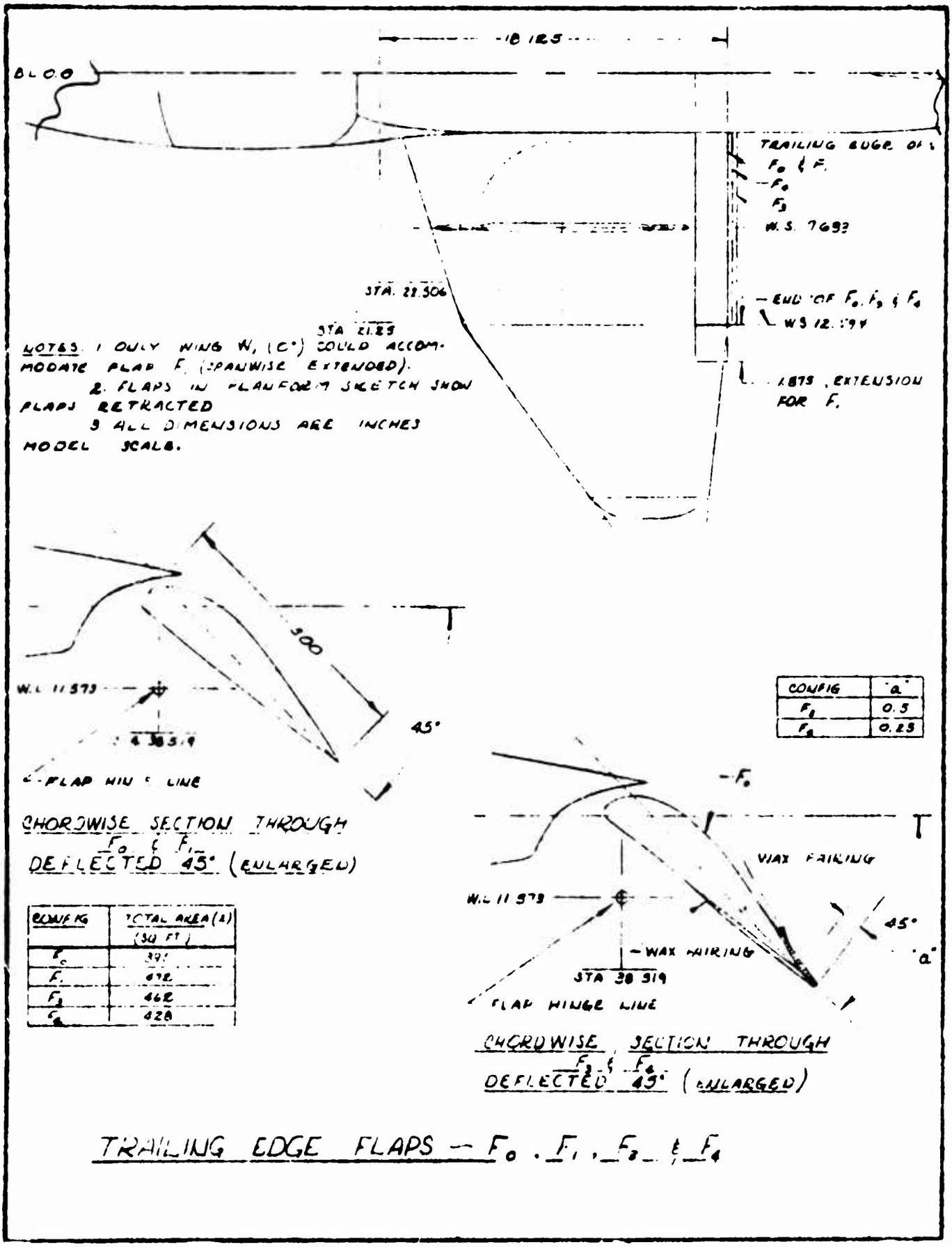

-18 125
BLOO
TRAILING EDGE OF
F₀ & F₁
F₀
F₃
W.S. 769?
STA. 22.306
END OF F₀, F₃ & F₄
W.S 12.794
STA 21.25
NOTES. 1 ONLY WING W, (C°) COULD ACCOM-
MODATE FLAP F (SPANWISE EXTENDED).
2. FLAPS IN PLANFORM SKETCH SHOW
FLAPS RETRACTED
3 ALL DIMENSIONS ARE INCHES
MODEL SCALE.
18?9 , EXTENSION
FOR F₁
.500
45°
W.L 11 573
FLAP HIN E LINE
CHORDWISE SECTION THROUGH
F₀ & F₁
DEFLECTED 45° (ENLARGED)
CONFIG
'a°
F₀
0.5
F₃
0.25
CONFIG
TOTAL AREA (2)
(SQ FT)
F₀
F₁
F₃
F₄
-F₀
WAX FAIRING
W.L 11 573
45°
'a°
-WAX FAIRING
STA 38 319
FLAP HINGE LINE
CHORDWISE SECTION THROUGH
F₃ & F₄
DEFLECTED 45° (ENLARGED)
TRAILING EDGE FLAPS — F₀ . F₁ , F₃ & F₄

Figure 4.7

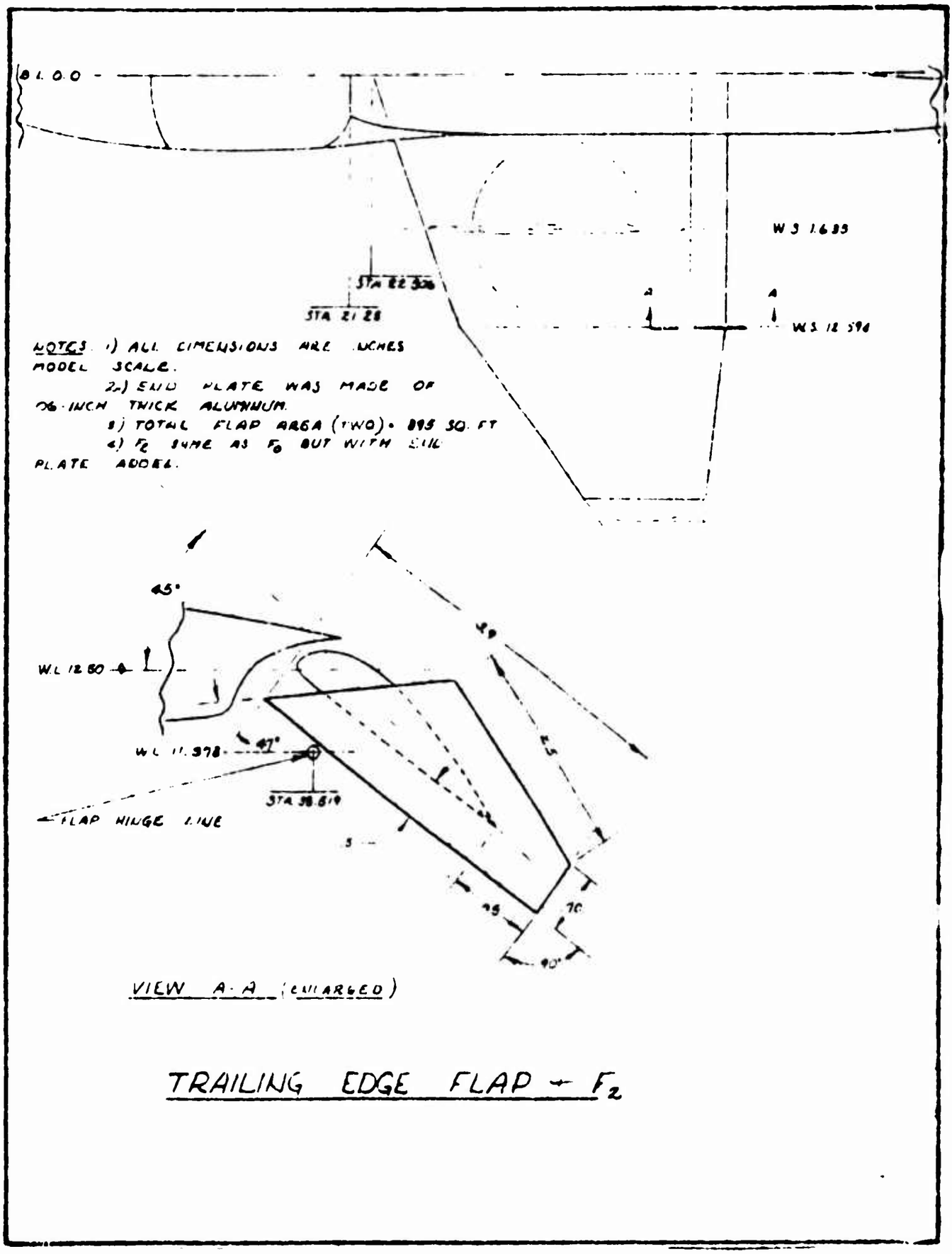
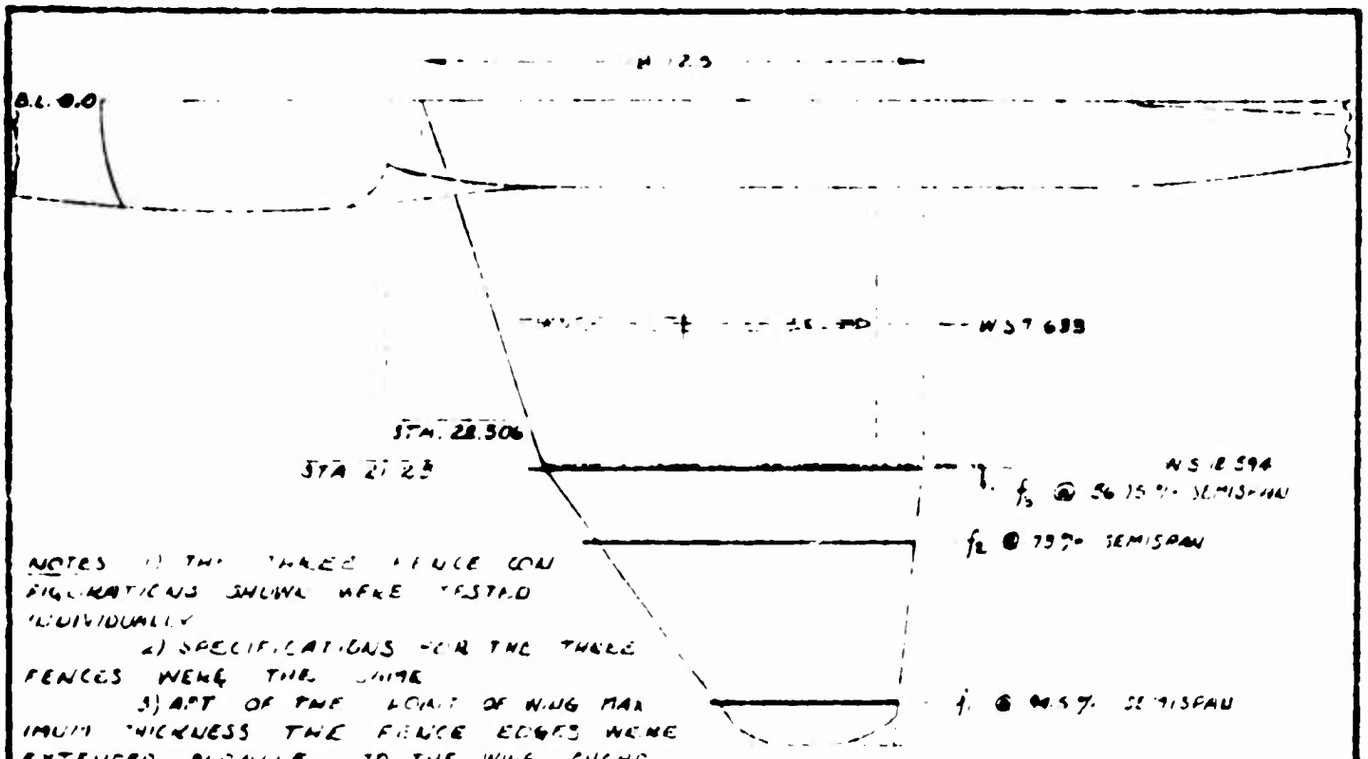

B.L. 0.0
W.S. 16.83
STA 22.36
STA 21.28
W.S. 12.596
NOTES: 1) ALL DIMENSIONS ARE INCHES MODEL SCALE.
2) END PLATE WAS MADE OF .06 INCH THICK ALUMINUM.
3) TOTAL FLAP AREA (TWO) = 895 SQ. FT
4) F_2 SAME AS F_0 BUT WITH END PLATE ADDED.
45°
W.L. 12.80
W.L. 11.978
47°
STA 38.619
FLAP HINGE LINE
49
45
70
90°
VIEW A-A (ENLARGED)
TRAILING EDGE FLAP - F_2

Figure 4.8



NOTES (UNLESS): 1) ALL DIMENSIONS ARE INCHES MODEL SCALE.

CONFIG	LOCATION % SEMI SPAN	CHORD	FENCE LENGTH	FENCE MIN HT
f_1	94.5	6.4	6.72	35
f_2	79	10.5	11.04	58
f_3	56.75	13.0	14.28	68

WING FENCES – f_1, f_2 AND f_3

Figure 4.9

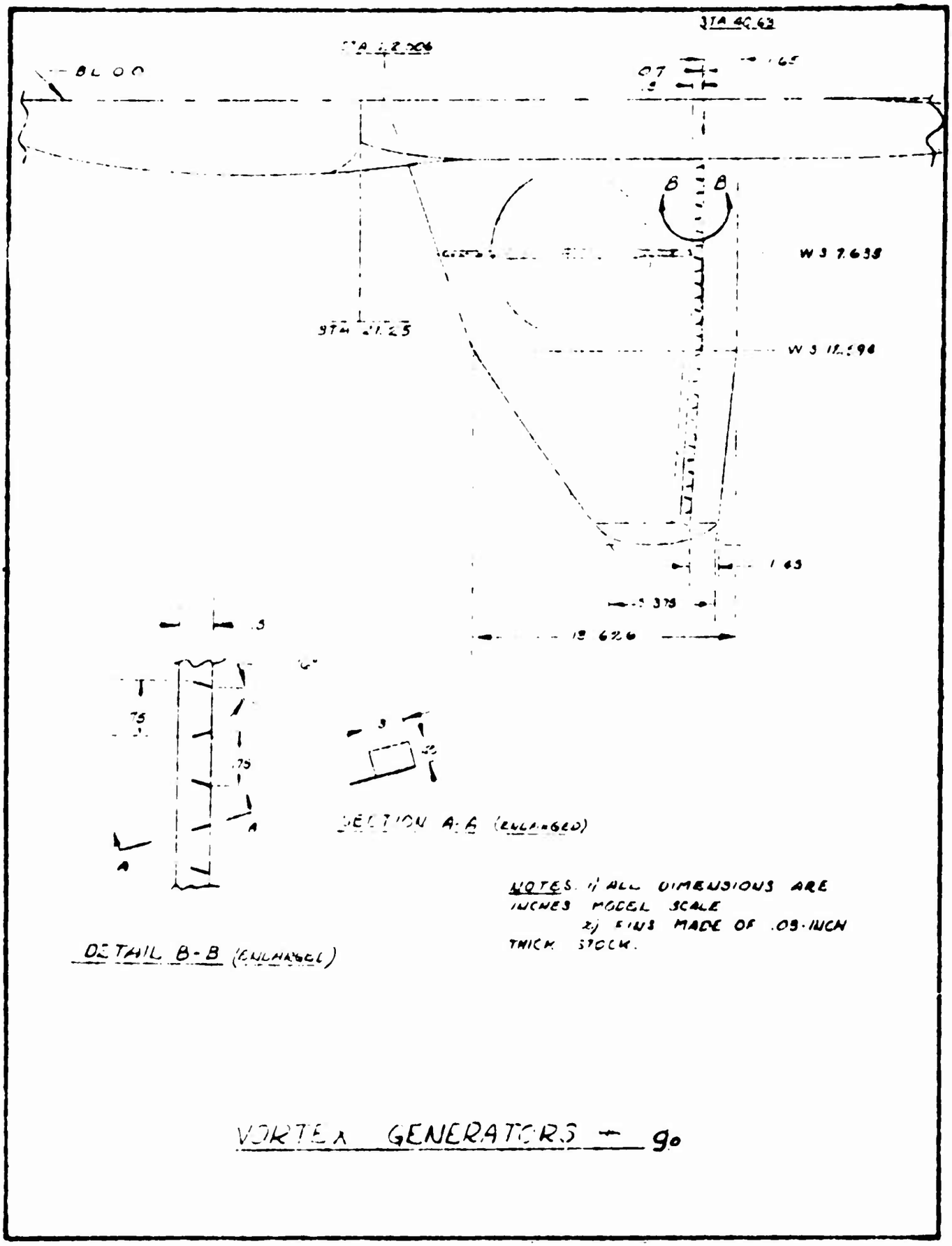
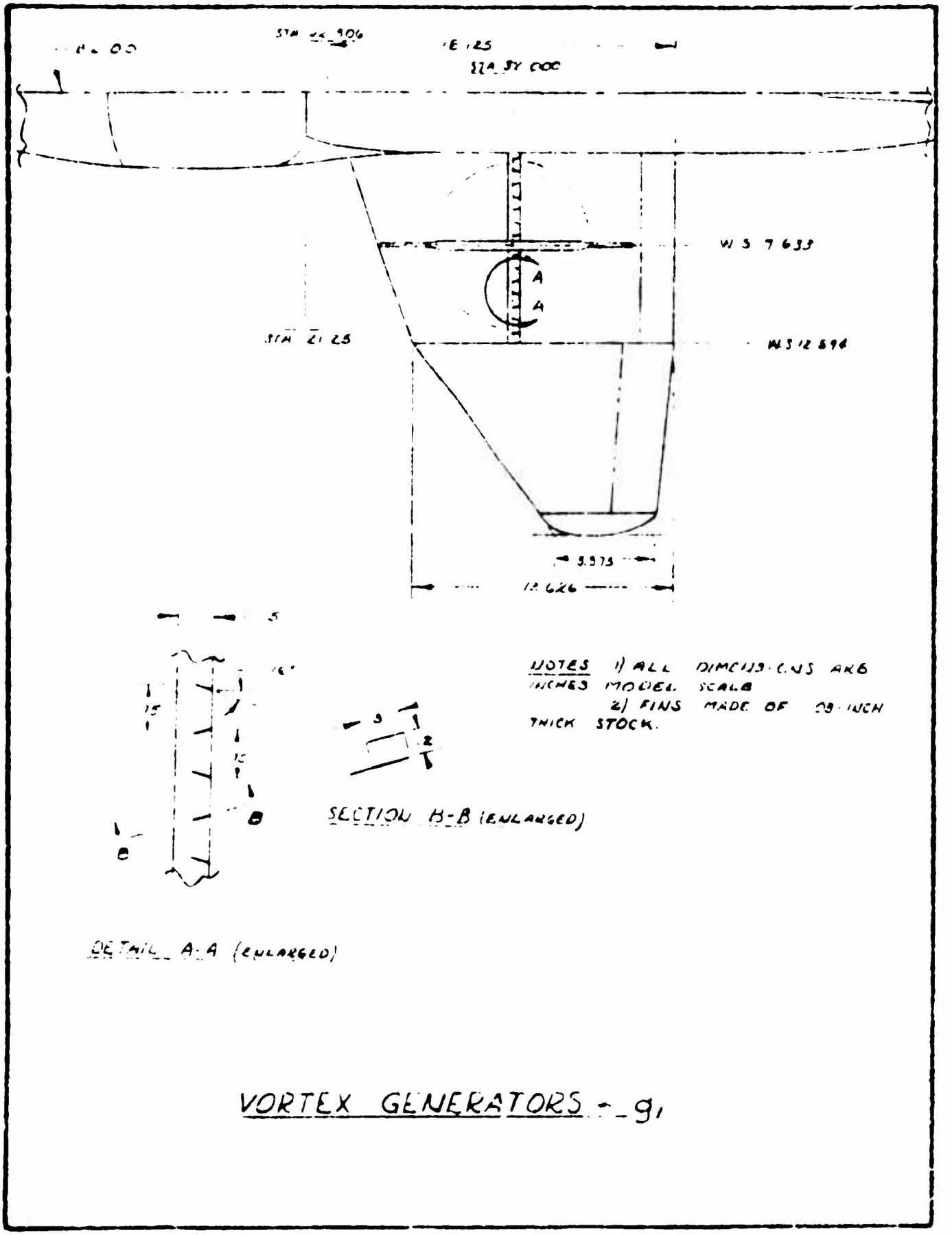
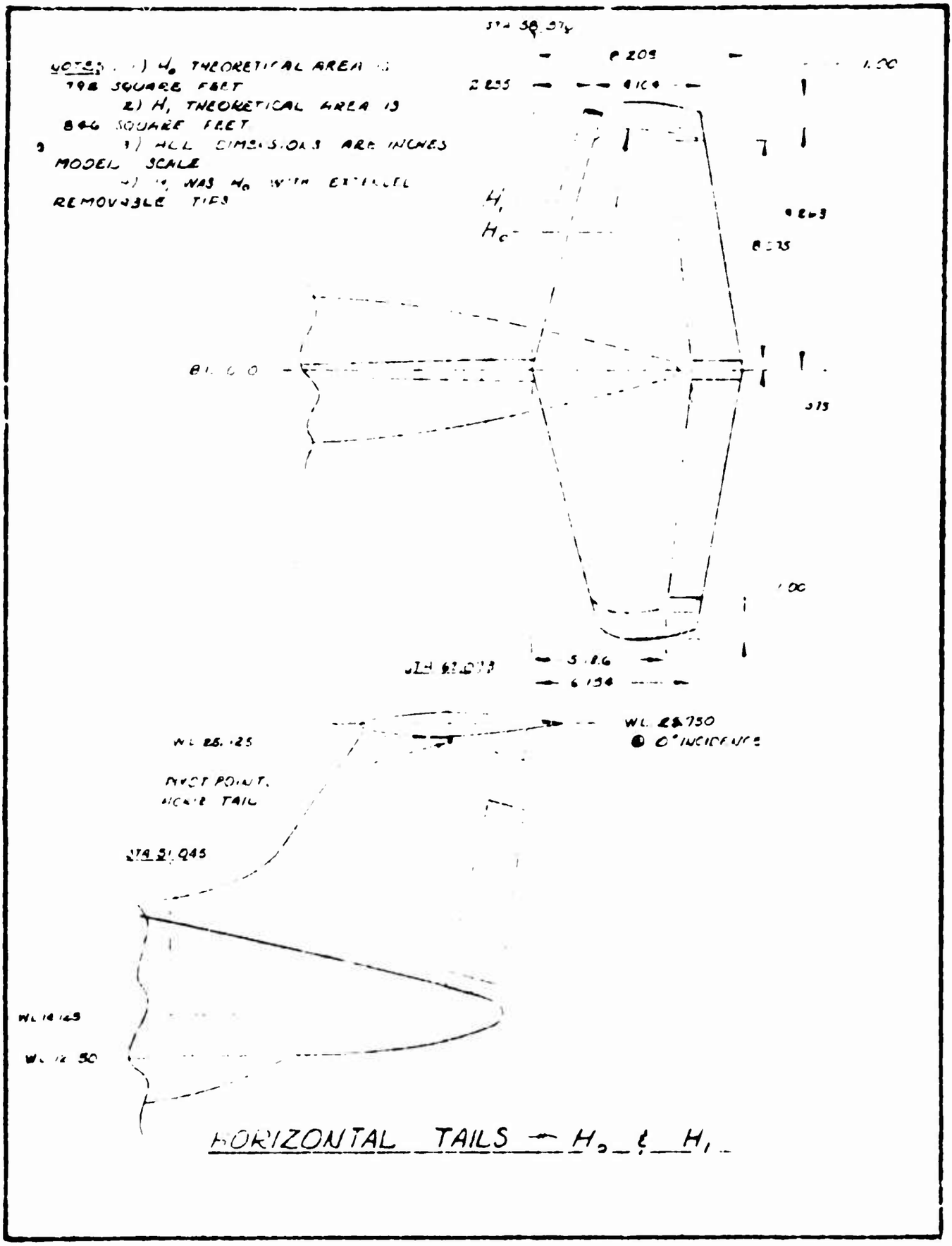

STA 40.62
STA 12.206
BLOC
B B
W S 7.638
STA 21.25
W S 12.596
1.63
.5
.75
.75
A
A
SECTION A-A (ENLARGED)
NOTES. 1) ALL DIMENSIONS ARE INCHES MODEL SCALE
2) FINS MADE OF .09-INCH THICK STOCK.
DETAIL B-B (ENLARGED)
VORTEX GENERATORS — go

Figure 4.10



VORTEX GENERATORS - 9,

Figure 4.11



HORIZONTAL TAILS — H_o & H_1

Figure 4.12

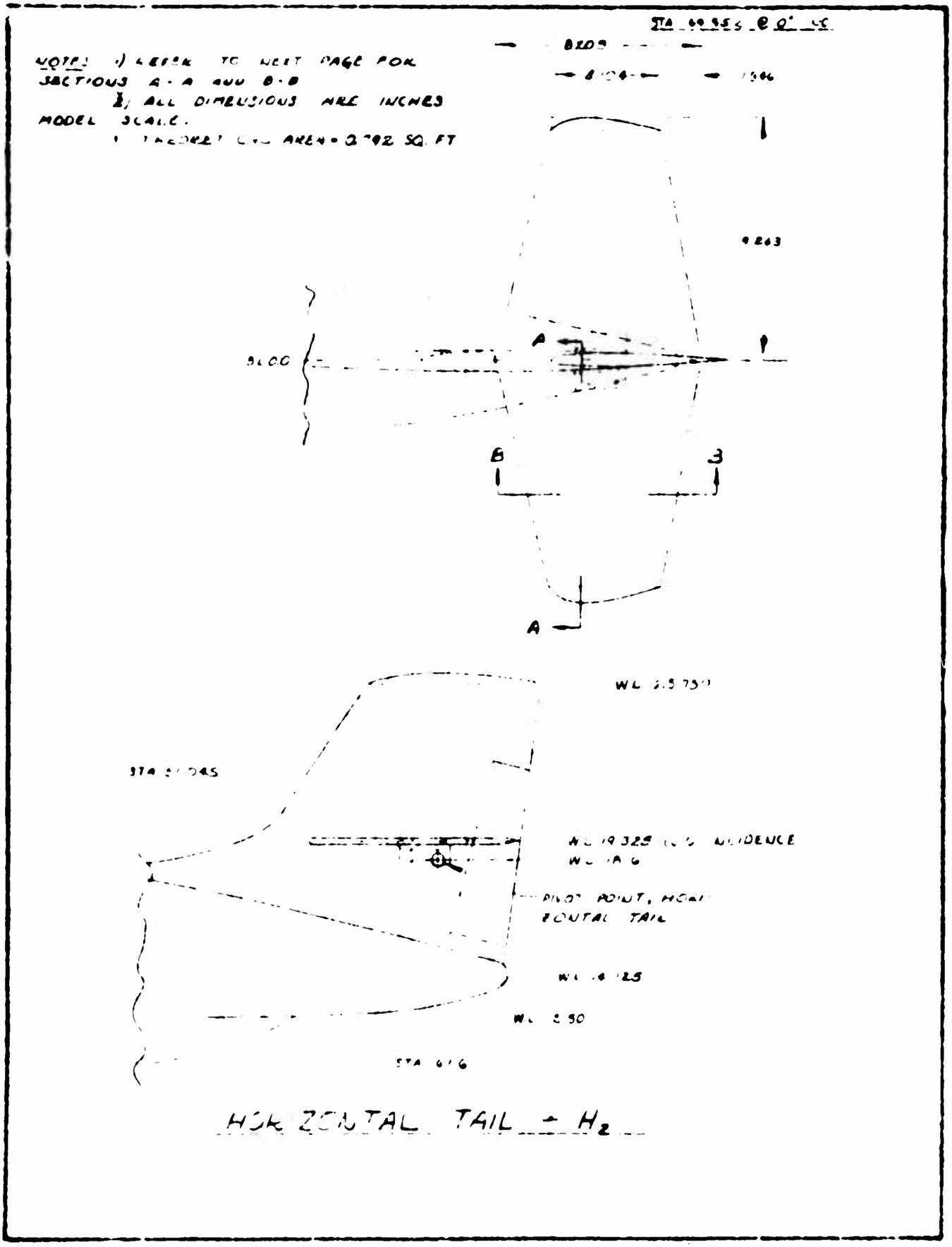
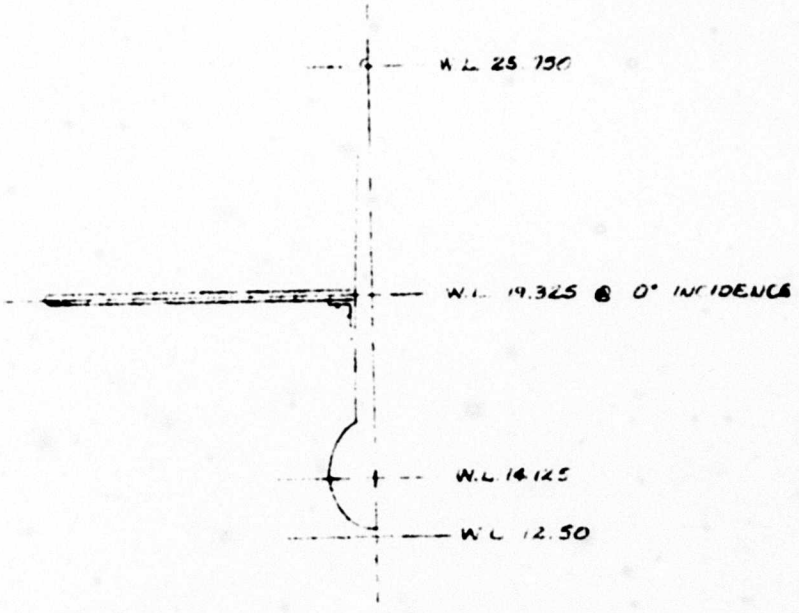
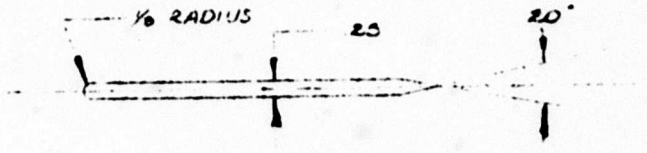

NOTES: 1) REFER TO NEXT PAGE FOR SECTIONS A-A AND B-B
2) ALL DIMENSIONS ARE INCHES MODEL SCALE.
A
B
B
A
WL
STA
PIVOT POINT, HORIZONTAL TAIL
STA 616
HORIZONTAL TAIL - H_2

Figure 4.13



SECTION A · A

NOTES: 1) PLANFORM VIEW AND SIDE VIEW OF THIS CONFIGURATION ARE ON THE PRECEDING PAGE.
2) ALL DIMENSIONS ARE INCHES MODEL SCALE.



SECTION B · B

HORIZONTAL TAIL – H_2 (CONT'D)

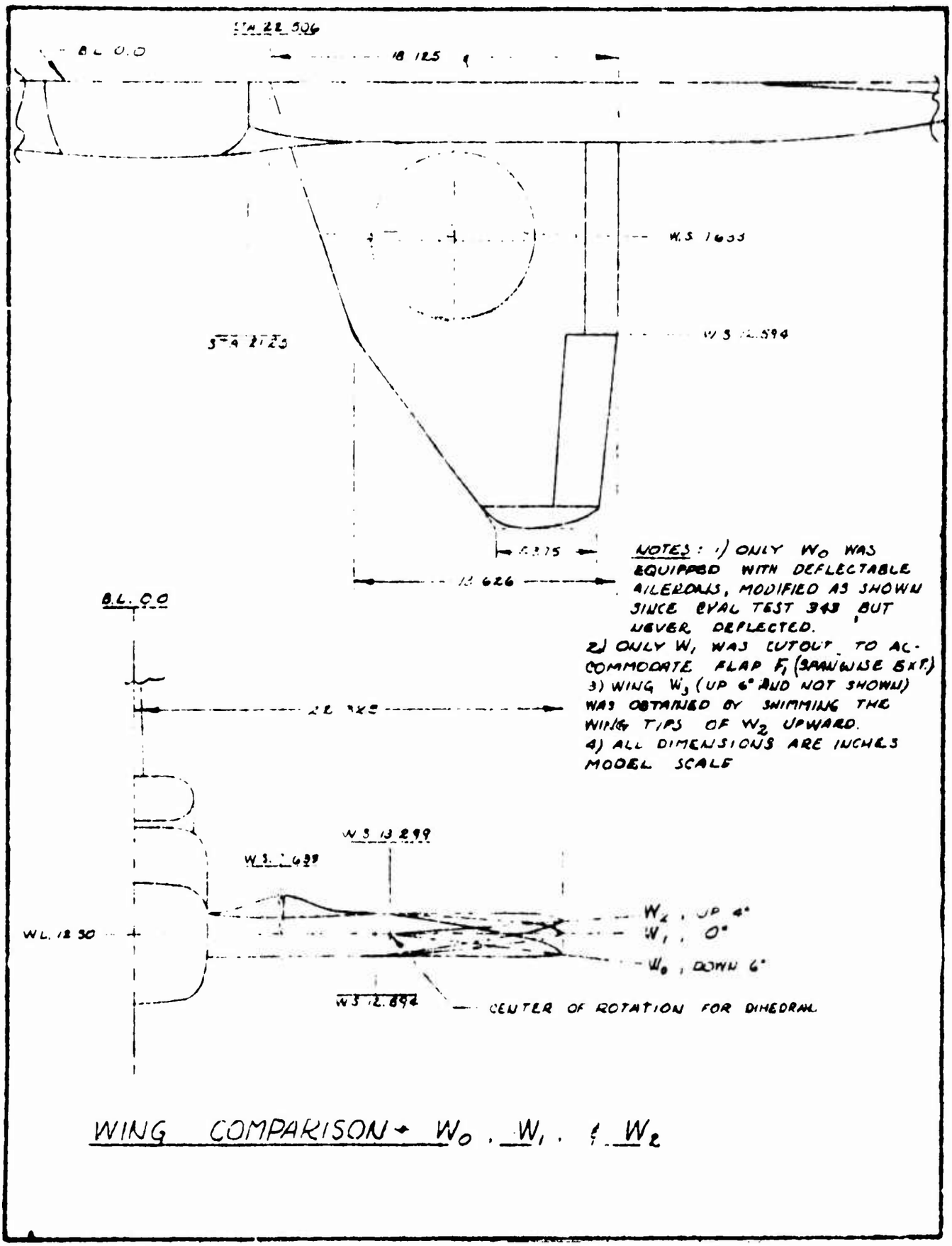
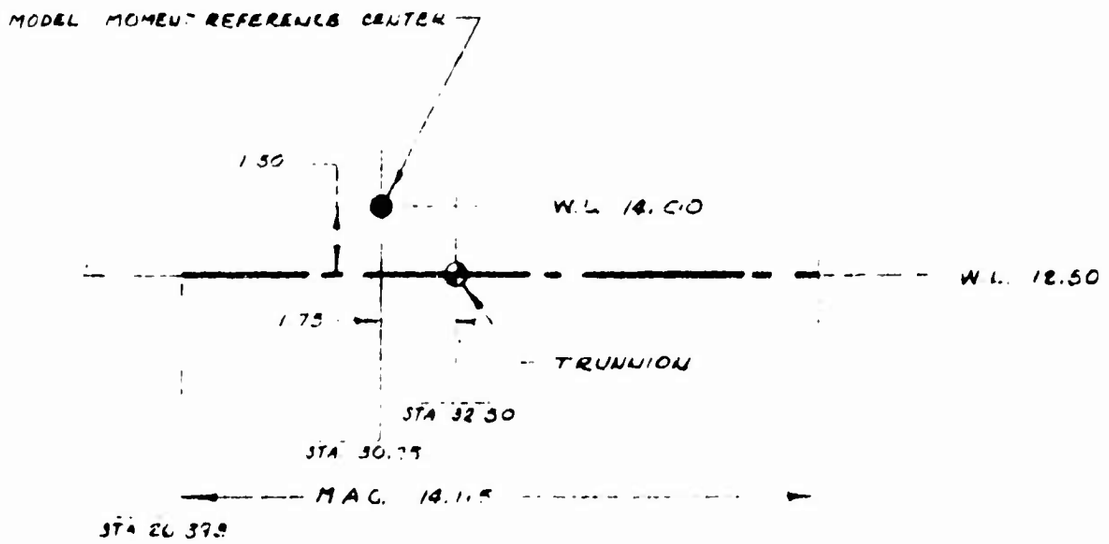

STN 22.506
B.L. 0.0
18.125
W.S. 1.633
STA 27.25
W.S. 12.594
4.375
12.626
B.L. 0.0
22.250
W.S. 13.299
W.S. 12.699
W.L. 12.30
W2 , UP 4°
W1 , 0°
W0 , DOWN 6°
W.S. 12.894
CENTER OF ROTATION FOR DIHEDRAL
NOTES: 1) ONLY W0 WAS EQUIPPED WITH DEFLECTABLE AILERONS, MODIFIED AS SHOWN SINCE EVAL TEST 343 BUT NEVER DEFLECTED.
2) ONLY W1 WAS CUTOUT TO ACCOMMODATE FLAP F1 (SPANWISE 6 x 1.)
3) WING W3 (UP 6° AND NOT SHOWN) WAS OBTAINED BY SWIMMING THE WING TIPS OF W2 UPWARD.
4) ALL DIMENSIONS ARE INCHES MODEL SCALE
WING COMPARISON - W0 . W1 . & W2

Figure 4.14



NOTE ALL DIMENSIONS ARE INCHES MODEL SCALE.

MOMENT REFERENCE DIAGRAM
RYAN MODEL 145 (VERTIFAN)
⅛ SCALE CONVENTIONAL MODEL

Figure 4.15

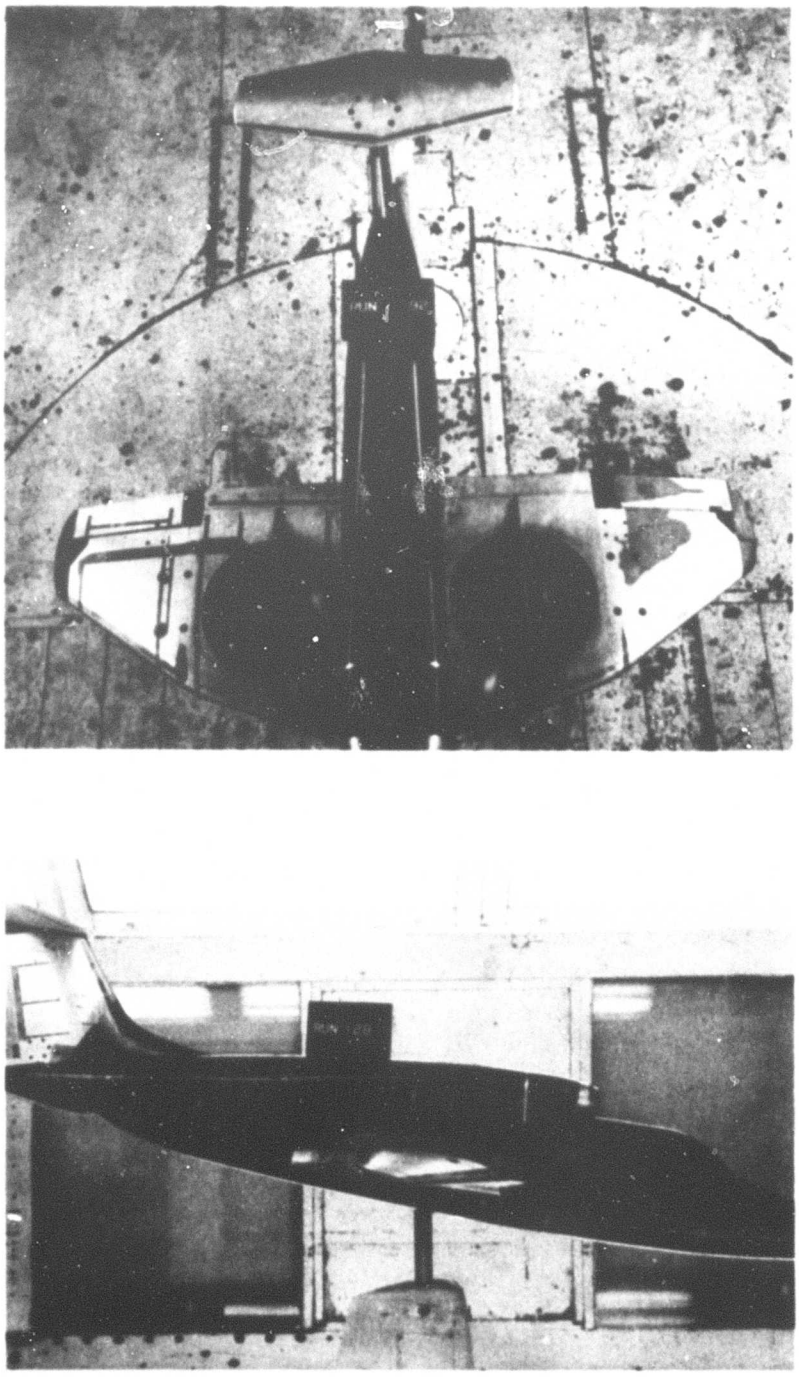
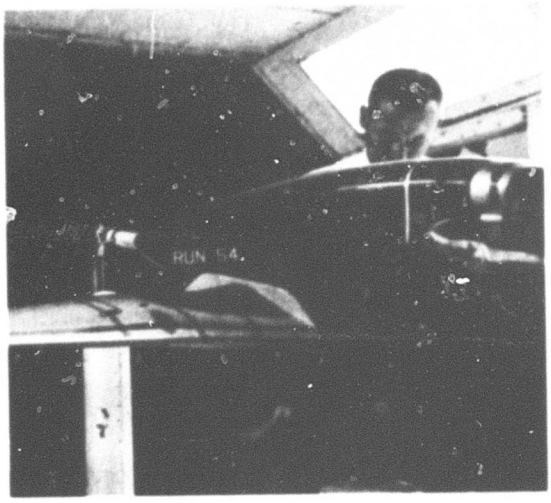
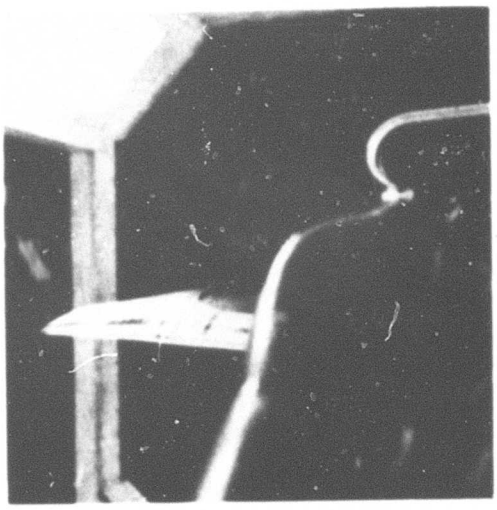


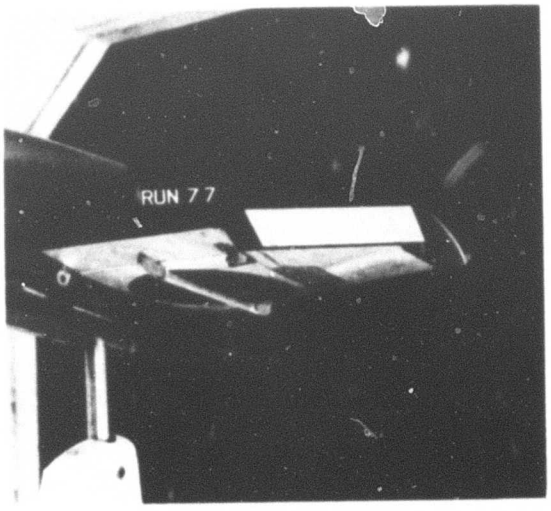
Figure 4.16 Basic Model with Empennage



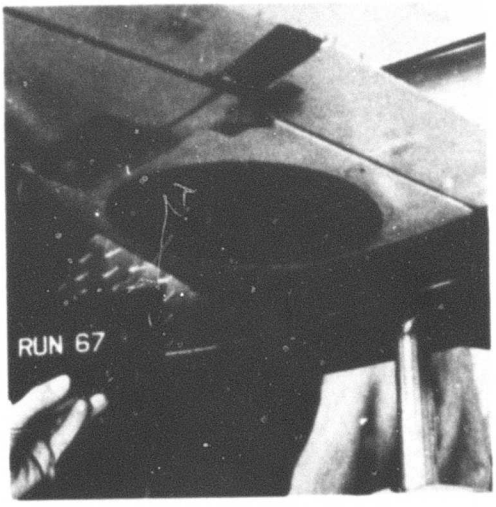
Wing Upper Surface
With "Bump" and Strut



Depressed "Bump"
Of Configuration S_2

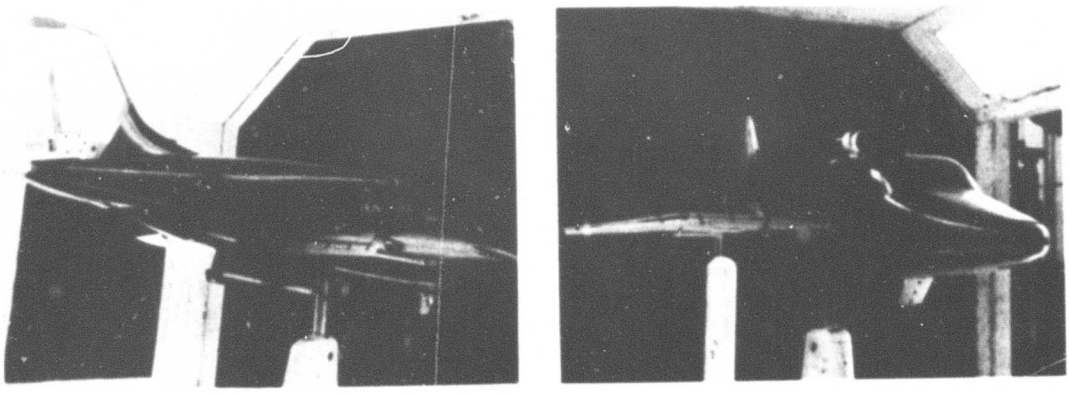


Wing Lower Surface
With Retracted Louvers and Strut

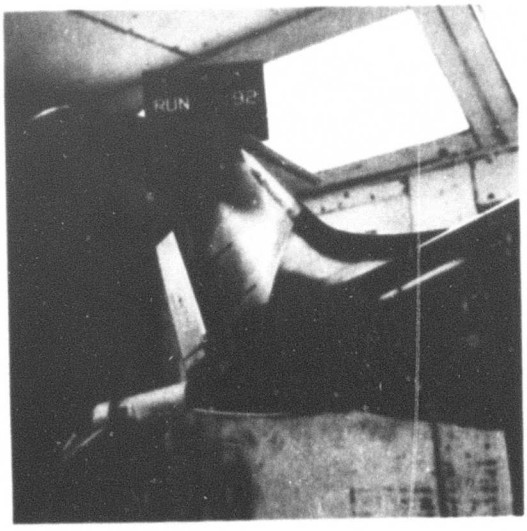


Depressed Louvers
Of Configurations S_1 and S_2

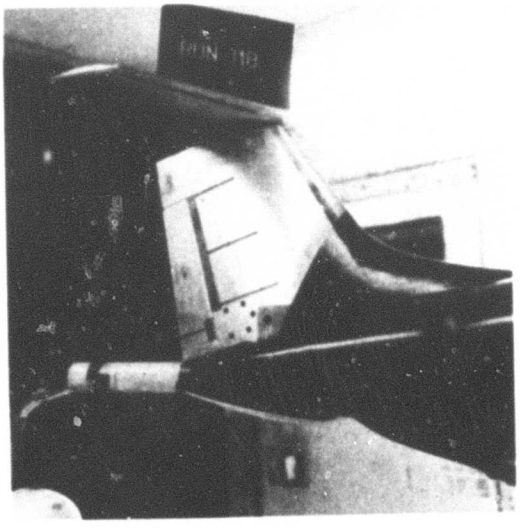
Figure 4.17 Wing Fan Covers, Louvers and Struts



Model With Landing Gear and Without Horizontal Tail

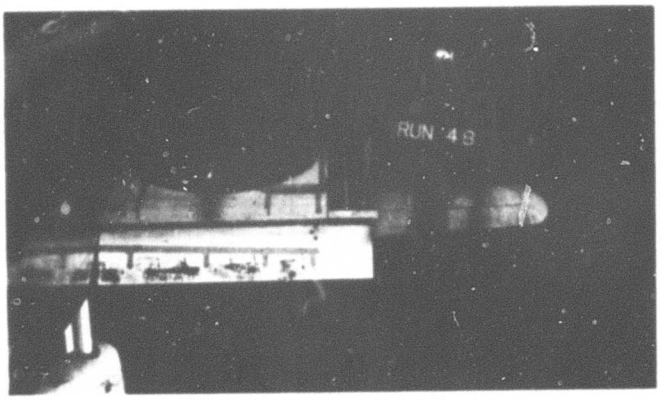


Note the Exposed Mounting Plate

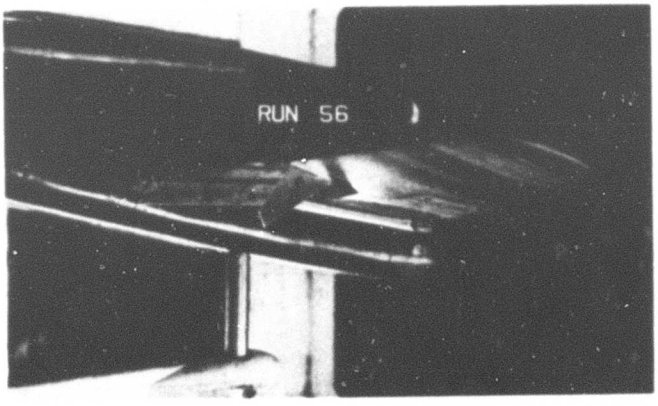


Note the Wax Fairing of V_1

Figure 4.18 Landing Gear and Empennage Details



Spanwise Extended Flap F_1

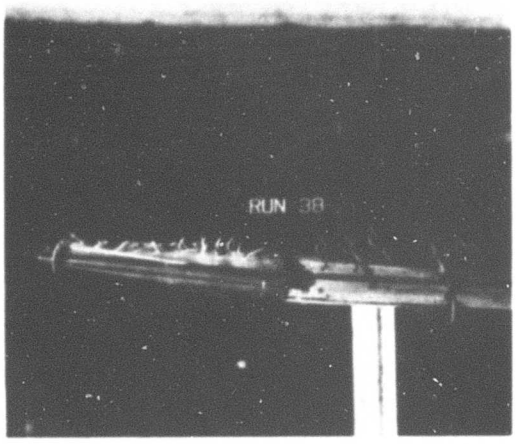


Flap With Outboard End Plate F_2

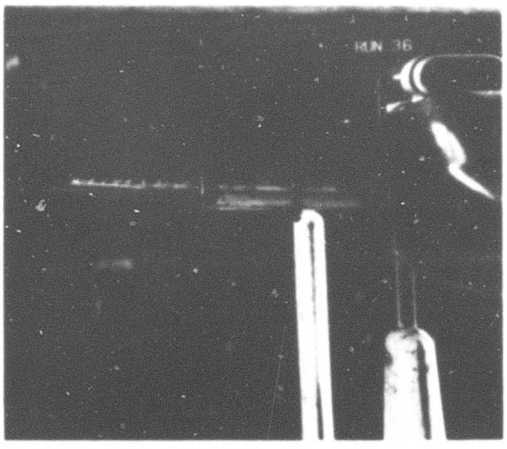


.25-Inch Chordwise Extended Flap F_4

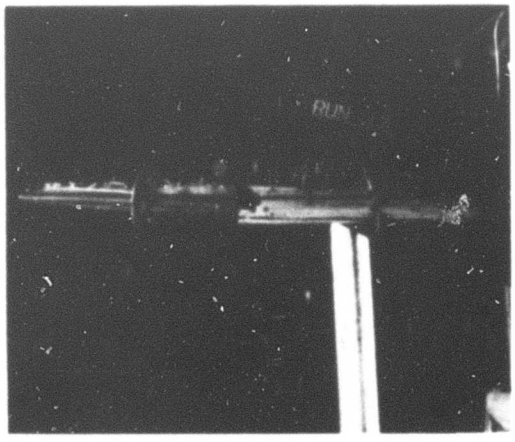
Figure 4.19 Modified Flaps F_1, F_2 and F_4

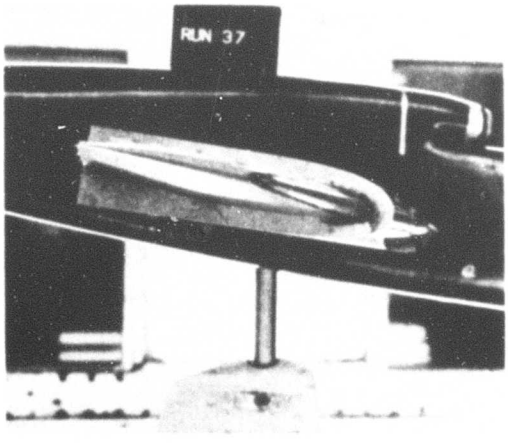


Fence f_1: 94.5% Wing Semispan



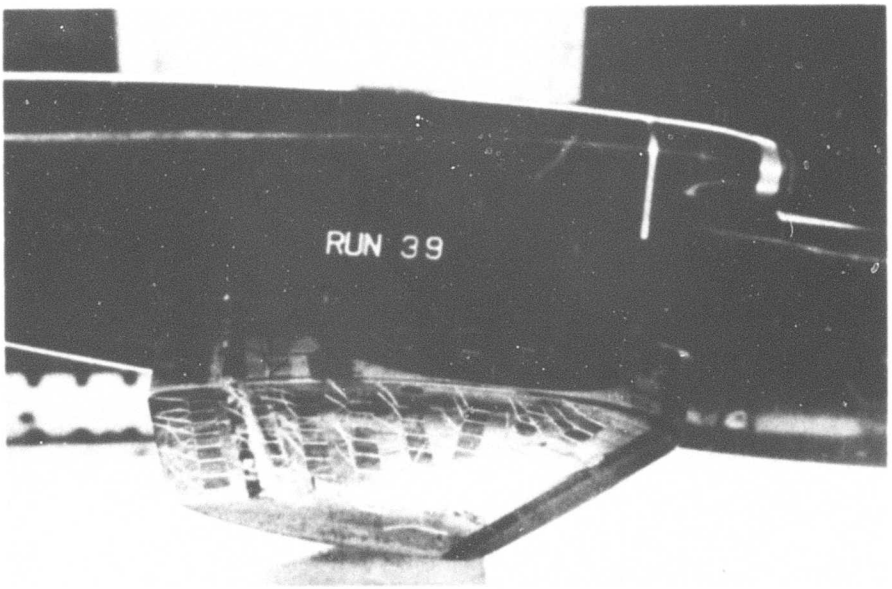
Fence f_3: 56.75% Wing Semispan





Fence f_2: 73% Wing Semispan

Figure 4.20 Wing Fences f_1, f_2, and f_3



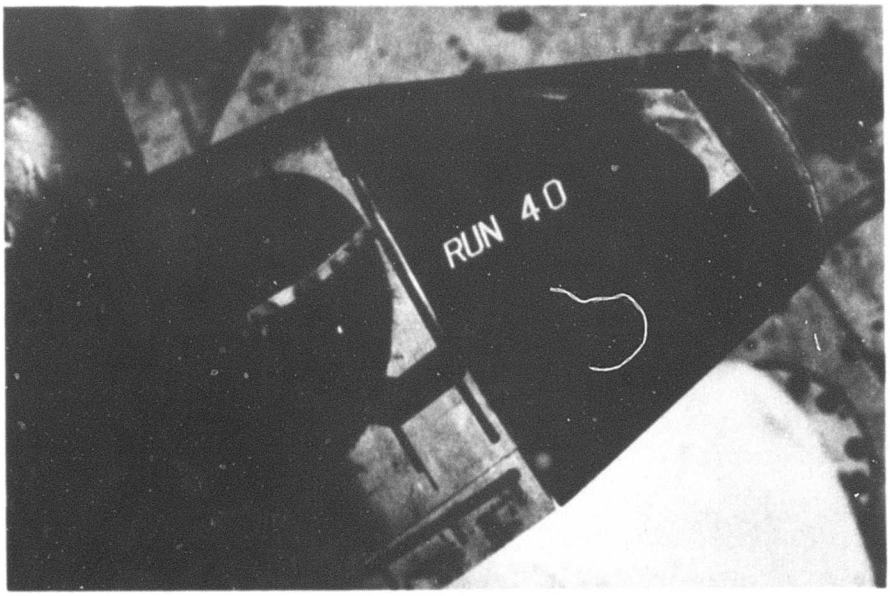
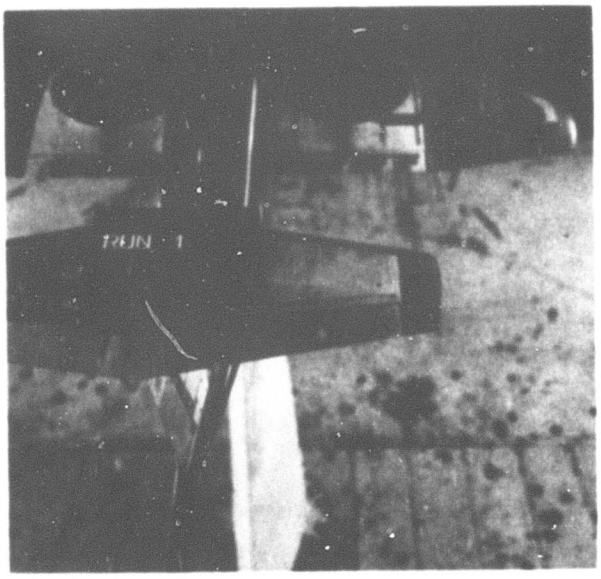
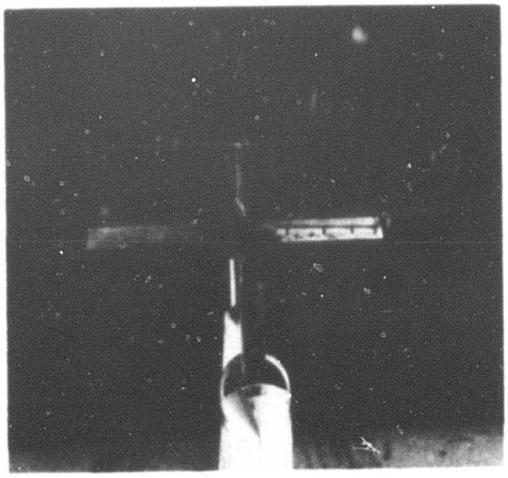


Figure 4.21 Wing with Vortex Generators g_0 and g_1





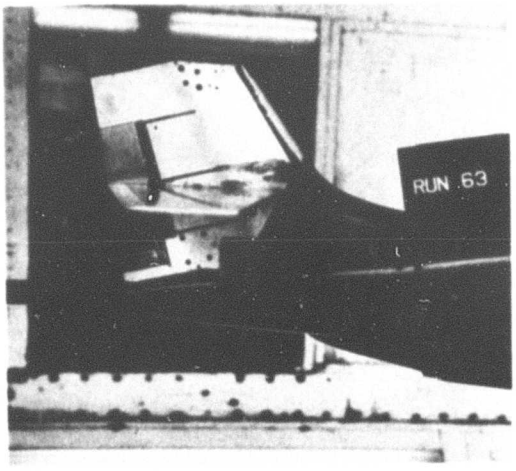


Figure 4.22 Horizontal Tails H_1 and H_2

4.4 DATA REDUCTION REFERENCE DIMENSIONS

External Balance

S	Wing Area: 4.068 square feet
$\bar{c}$	Wing Mean Aerodynamic Chord: 14.115 inches
b	Wing Span: 44.750 inches
AR	Aspect Ratio: 3.42

Hinge Moments

A_f	Flap Area (one only): 0.1975 square feet
c_f	Flap Root Mean Square Chord: 2.965 inches
A_a	Aileron Area Aft of Hinge Line (A_0 configuration) (one only): 0.160 square feet
c_a	Aileron Root Mean Square Chord Aft of Hinge Line (A_0 configuration): 2.353 inches
A_e	Elevator Area Aft of hinge Line (one only: 0.0951 square feet
c_e	Elevator Root Mean Square Chord Aft of Hinge Line: 1.661 inches
A_r	Rudder Area Aft of Hinge Line: 0.087 square feet
c_r	Rudder Root Mean Square Chord Aft of Hinge Line: 1.869 inches

4.3 REFERENCES

1. Liggett, H. G.: Low Speed Wind Tunnel Tests of a 1/8 Scale Conventional Model of the Ryan Vertifan Airplane to Determine Longitudinal and Direction of Characteristics, Duct Internal Flow, Wing and Fuselage Pressures, and Control Surface Cavity Pressures and Hinge Moments, General Dynamics/Convair Report CVAL 343 (Two Volumes), April 12, 1963.

2. Liggett, H. G.: Additional Low Speed Wind Tunnel Tests of the 1/8 Scale Ryan Model 143 (Vertifan) to Determine the Aerodynamic Effects of Wing Dihedral, Flap Modifications, Wing Fences, Vortex Generators and Horizontal Tail Variations, General Dynamics/Convair Report CVAL 343A, June 1, 1963.