Supplement to
NASA Technical Memorandum 81336

An Experimental Study of Transonic Flow About a Supercritical Airfoil

Static Pressure and Drag Data Obtained From Tests of a Supercritical Airfoil and an NACA 0012 Airfoil at Transonic Speeds

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**Scientific and Technical
Information Branch**

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SUMMARY

Surface static-pressure and drag data obtained from tests of two slightly modified versions of the original NASA Whitcomb airfoil section and a model of the NACA 0012 airfoil section are presented. Data for the supercritical airfoil were obtained for a free-stream Mach number range of 0.5 to 0.9, and a chord Reynolds number range of 2×10^6 to 4×10^6. The NACA 0012 airfoil was tested at a constant chord Reynolds number of 2×10^6 and a free-stream Mach number range of 0.6 to 0.8.

INTRODUCTION

Data presented in this report were obtained from a cooperative program conducted by McDonnell Douglas Research Laboratories (MDRL), Douglas Aircraft Company (DAC), and Ames Research Center. This program was an experimental study of the steady and nonsteady components of flow about (1) two slightly modified versions of the original NASA Whitcomb integral (unslotted), supercritical airfoil section, designated DSMA 523 (table 1), and (2) the NACA 0012 airfoil section. Although data from this program are presented and analyzed in references 1-7, most of the data presented in this report were excluded from those publications because of space limitations.

SYMBOLS

ALPHA angle of attack, roughly corrected for wind-tunnel-wall interference

AU uncorrected angle of attack

C_p pressure coefficient, $(p - p_\infty)/q_\infty$

c_d airfoil section drag coefficient

c_l airfoil section lift coefficient

MINF free-stream Mach number

p static pressure

q_∞ free-stream dynamic pressure, $1/2\ \rho_\infty U_\infty^2$

REC Reynolds number based on chord

T bead diameter of boundary-layer trip, in.

x/c distance along the chord line from the leading edge, normalized by the chord

FACILITIES AND EQUIPMENT

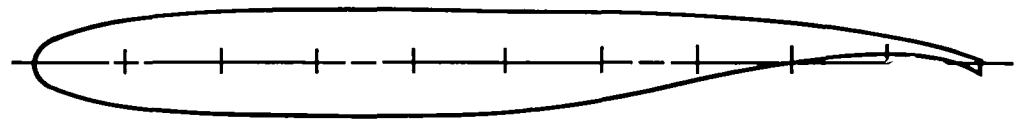
The experiments were conducted in the 2- by 2-Foot Transonic Wind Tunnel at Ames Research Center. This tunnel is a variable-speed, continuous-flow, ventilated-wall, variable-pressure facility, which was reengineered for optional two-dimensional research testing by adding rotating, model-supporting glass side windows mounted in unventilated, plane sidewalls. A unit Reynolds number of 26.3×10^6/m generally can be maintained while a high subsonic Mach number is held to within ±0.002. A remotely actuated 82-tube drag rake is programmed to provide total pressure readings at 1.3-mm intervals and static-pressure readings at 25.4-mm intervals across the wake of a model.

Airfoil models were mounted between the sidewall windows, and a traversing rig or a drag rake was mounted on the tunnel sting. Two 15.24-cm-chord models of the supercritical airfoil were used during these experiments. One model has a nominally sharp trailing edge, and the other has a blunt trailing edge equal to 1% chord, formed by downward rotation of the aft lower-surface contour from 65% chord to the trailing edge. Coordinates for these models are given in table 1. The NACA 0012 model has a chord of 15.24 cm.

DATA PRESENTATION

The data are presented in appendixes A through C in the form of plotted static-pressure distributions; geometric or roughly corrected angle of attack (ALPHA), lift coefficient (c_ℓ), and drag coefficient (c_d) values tabulated on the plots. The data were obtained from several tunnel-occupancy periods over a period of several years; the data are identified by run number and year. Run schedules, tables A1, B1, and C1, are presented at the beginning of each appendix as a guide to the plotted data.

TABLE 1.- DSMA 523 AIRFOIL COORDINATES, SHARP AND BLUNT TRAILING EDGES



x/c	$\frac{z_{upper}}{c}$	$\frac{z_{lower}}{c}$
0.000500	0.005069	−0.005096
0.001000	0.007096	−0.007128
0.002500	0.011063	−0.011078
0.005000	0.015320	−0.015320
0.007500	0.018417	−0.018417
0.010000	0.020716	−0.020671
0.012500	0.022651	−0.022548
0.015000	0.024267	−0.024135
0.020000	0.026918	−0.026744
0.030000	0.030729	−0.030667
0.040000	0.033459	−0.033607
0.060000	0.037407	−0.038087
0.080000	0.040367	−0.041739
0.100000	0.042987	−0.044648
0.120000	0.045198	−0.046796
0.140000	0.047017	−0.048616
0.160000	0.048543	−0.050114
0.180000	0.049828	−0.051348
0.200000	0.050902	−0.052370
0.220000	0.051802	−0.053207
0.240000	0.052563	−0.053890
0.260000	0.053199	−0.054423
0.280000	0.053729	−0.054808
0.300000	0.054161	−0.055056
0.320000	0.054513	−0.055163
0.340000	0.054788	−0.055137
0.360000	0.054998	−0.054978
0.380000	0.055149	−0.054701
0.400000	0.055240	−0.054283
0.420000	0.055272	−0.053719
0.440000	0.055247	−0.053009
0.460000	0.055146	−0.052143
0.480000	0.054973	−0.051136
0.500000	0.054723	−0.049915
0.520000	0.054390	−0.048483
0.540000	0.053976	−0.046780
0.560000	0.053486	−0.044613
0.580000	0.052917	−0.052006
0.600000	0.052269	−0.038885
0.620000	0.051540	−0.035181
0.640000	0.050726	−0.030940
0.660000	0.049826	−0.026087
0.680000	0.048832	−0.020633
0.700000	0.047725	−0.015445
0.720000	0.046494	−0.010574
0.740000	0.045130	−0.006027
0.760000	0.043625	−0.001872
0.780000	0.041942	0.001892
0.800000	0.040043	0.005224
0.820000	0.037907	0.008108
0.840000	0.035502	0.010505
0.860000	0.032780	0.012374
0.880000	0.029666	0.013645
0.900000	0.026155	0.014169
0.920000	0.022185	0.013798
0.950000	0.017708	0.012338
0.960000	0.012642	0.009726
0.980000	0.006842	0.005773
1.000000	(+)0.000308	0.000498

x/c	$\frac{z_{upper}}{c}$	$\frac{z_{lower}}{c}$ (sharp TE)	$\frac{z_{lower}}{c}$ (blunt (TE)
0.440000	0.055247	−0.053009	
0.460000	0.055146	−0.052143	
0.480000	0.054973	−0.051136	
0.500000	0.054723	−0.049915	
0.520000	0.054390	−0.048483	
0.540000	0.053976	−0.046780	
0.560000	0.053486	−0.044613	
0.580000	0.052917	−0.052006	
0.600000	0.052269	−0.038885	
0.620000	0.051540	−0.035181	
0.640000	0.050726	−0.030940	
0.660000	0.049826	−0.026087	−0.026390
0.680000	0.048832	−0.020633	−0.021541
0.700000	0.047725	−0.015445	−0.016958
0.720000	0.046494	−0.010574	−0.012692
0.740000	0.045130	−0.006027	−0.008750
0.760000	0.043625	−0.001872	−0.005200
0.780000	0.041942	0.001892	−0.002041
0.800000	0.040043	0.005224	(+)0.000686
0.820000	0.037907	0.008108	0.002965
0.840000	0.035502	0.010505	0.004757
0.860000	0.032780	0.012374	0.006021
0.880000	0.029666	0.013645	0.006687
0.900000	0.026155	0.014169	0.006606
0.920000	0.022185	0.013798	0.005630
0.950000	0.017708	0.012338	0.003565
0.960000	0.012642	0.009726	(+)0.000348
0.980000	0.006842	0.005773	−0.004210
1.000000	(+)0.000308	0.000498	−0.010109
Leading-edge radius/c = 0.023			

APPENDIX A

DSMA 523 MODEL, SHARP TRAILING EDGE, 1975 AND 1977

The data obtained during 1975 are labeled 02/02/76 or 02/03/76 on each plot, and have run numbers 41-111. Drag data were obtained only during the 1975 occupancy period. Values of T for the 1975 data are bead diameters of the boundary-layer trip, in inches. The quantity ALPHA is the angle of attack, roughly corrected for wind-tunnel-wall interference. At the higher Mach numbers, this correction produces lift-curve slopes for this airfoil that are obviously too large. The data obtained during 1977 have the year in the plot titles, and have run numbers 2-84. The quantity AU is the uncorrected angle of attack.

TABLE A1.- RUN SCHEDULE, DSMA 523 MODEL, SHARP TRAILING EDGE

(1975 data)

Run no.	Nominal M_∞	Nominal Re_c	Boundary-layer trip			
			Upper		Lower	
			x/c	T (in.)	x/c	T (in.)
41-43	0.76	4×10^6	0.35	0.0030	0.18	0.0030
44	.78	4×10^6	↓	↓	↓	↓
45-46	.76	4×10^6				
47	.80	3×10^6				
48	.76	4×10^6				
49	.80	3×10^6				
52-55	.76	4×10^6			.06	.0020
56	.80	3×10^6			.06	.0020
59-60	.76	4×10^6			.35	.0035
61-62	.80	3×10^6			.35	.0035
65	.76	4×10^6			.35	.0035
66	.76	4×10^6			natural	
67	.76	4×10^6			.06	.0020
68	.80	3×10^6			.06	.0020
69	.76	4×10^6			.18	.0038
70	.76	4×10^6		↓	.18	.0049
71	.76	2×10^6		.0049	.35	.0049
72	.80	2×10^6		↓	↓	↓
73-76	.76	2×10^6				
77	.50	2×10^6				
78	.80	2×10^6				
79	.76	2×10^6			.18	.0045
80	.80	2×10^6		↓	↓	.0045
81	.76	4×10^6		.0030		.0035
82	.80	3×10^6		↓		.0035
83-84	.76	4×10^6				.0038
85	.76	4×10^6				.0030
86	.80	3×10^6				.0038
87-88	.76	4×10^6				
89	.80	3×10^6				
90	.50	4×10^6	↓	↓	↓	↓

TABLE A1.- Concluded.

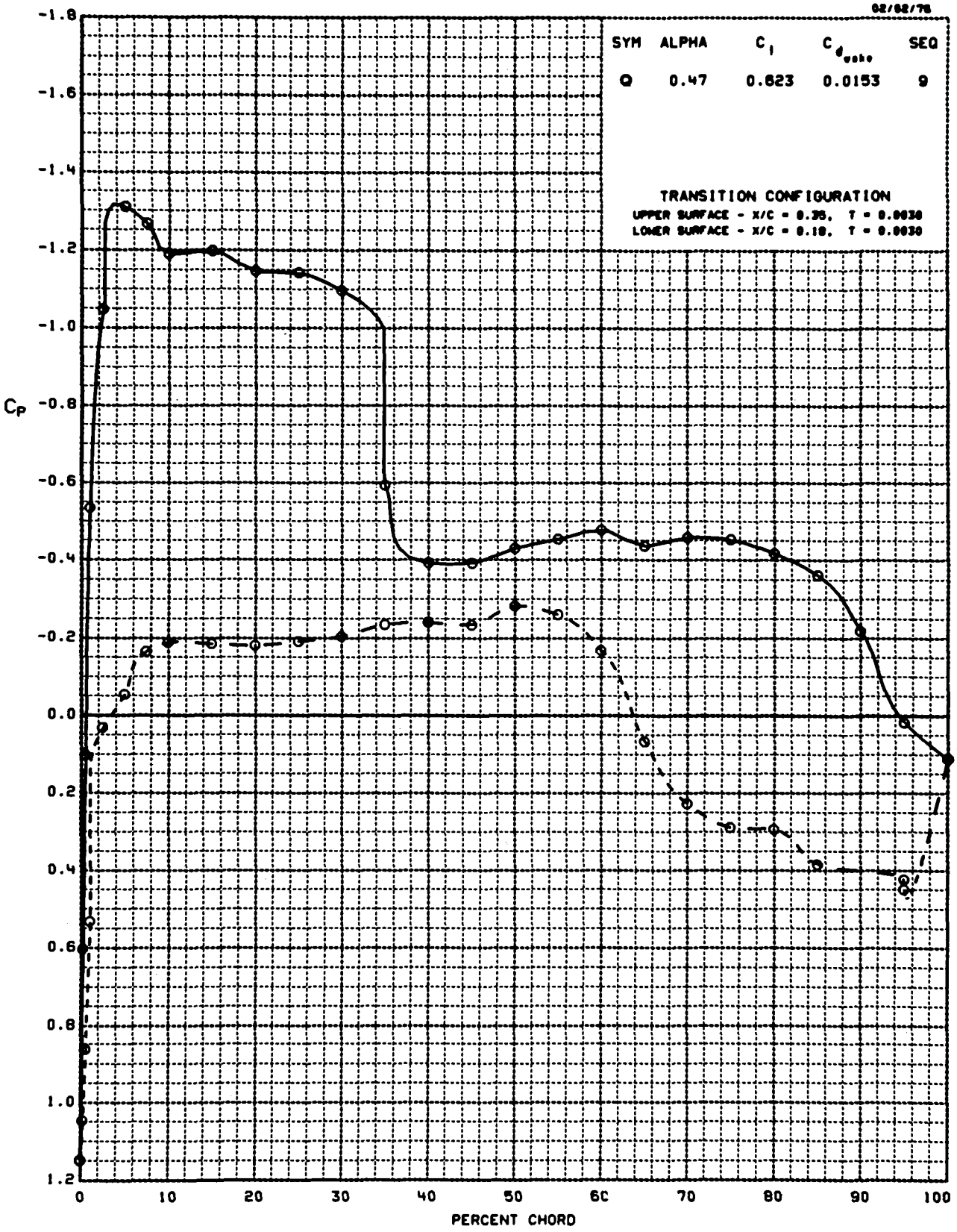
(1975 data)

Run no.	Nominal M_∞	Nominal Re_c	Boundary-layer trip			
			Upper		Lower	
			x/c	T (in.)	x/c	T (in.)
91	0.50	4×10^6	0.35	0.0030	0.18	0.0049
92	.74	4×10^6	↓	↓	↓	↓
93	.60	4×10^6				
94	.74	4×10^6				
95	.78	3×10^6				
97	.50	4×10^6				
98-99	.72	4×10^6				
100	.82	3×10^6				
101	.64	4×10^6				
102	.68	4×10^6				
103	.78	3×10^6				
106	.76	4×10^6			plus tape triangle at x/c = 0.52	
107	.50	4×10^6	.05	.0020	.18	.0049
108	.68	4×10^6	.05	.0020	↓	.0049
109	.76	4×10^6	.35	.0030		.0063
110	.80	3×10^6	.35	.0030		.0063
111	.50	4×10^6	.35	.0030		.0063
		(1977 data)				
2	0.80	2×10^6	0.35	0.0053	0.18	0.0053
38	↓	3×10^6	↓	.0032	.06	.0019
50		3×10^6		↓	.18	.0032
61		3×10^6			.35	.0038
72		3×10^6	↓	↓	.18	.0053
84	.60	4×10^6	.05	.0020	.18	.0053

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.755 REYNOLDS NUMBER = 3.81×10^6 RUN = 41 AMES 22-060-5

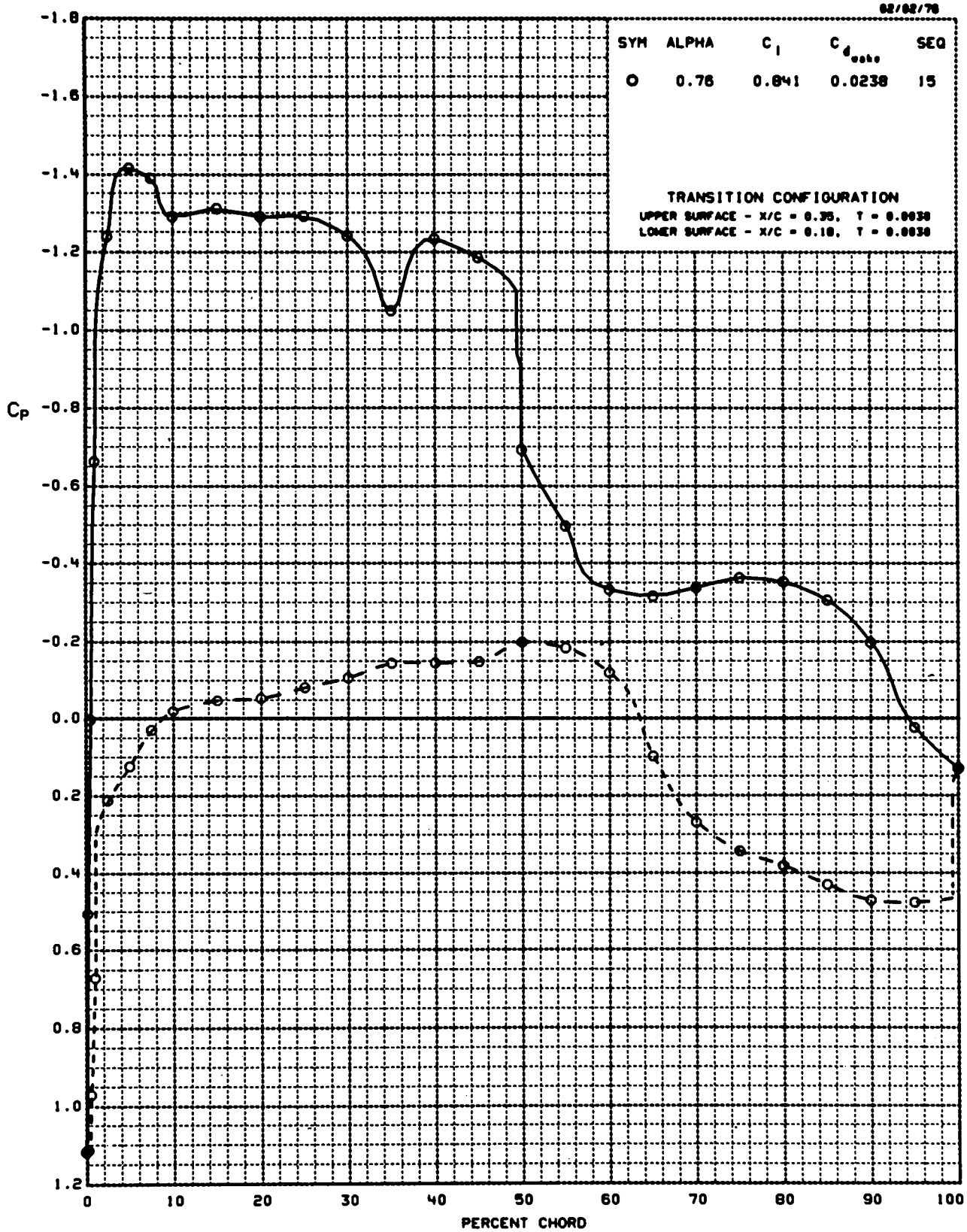
02/02/76

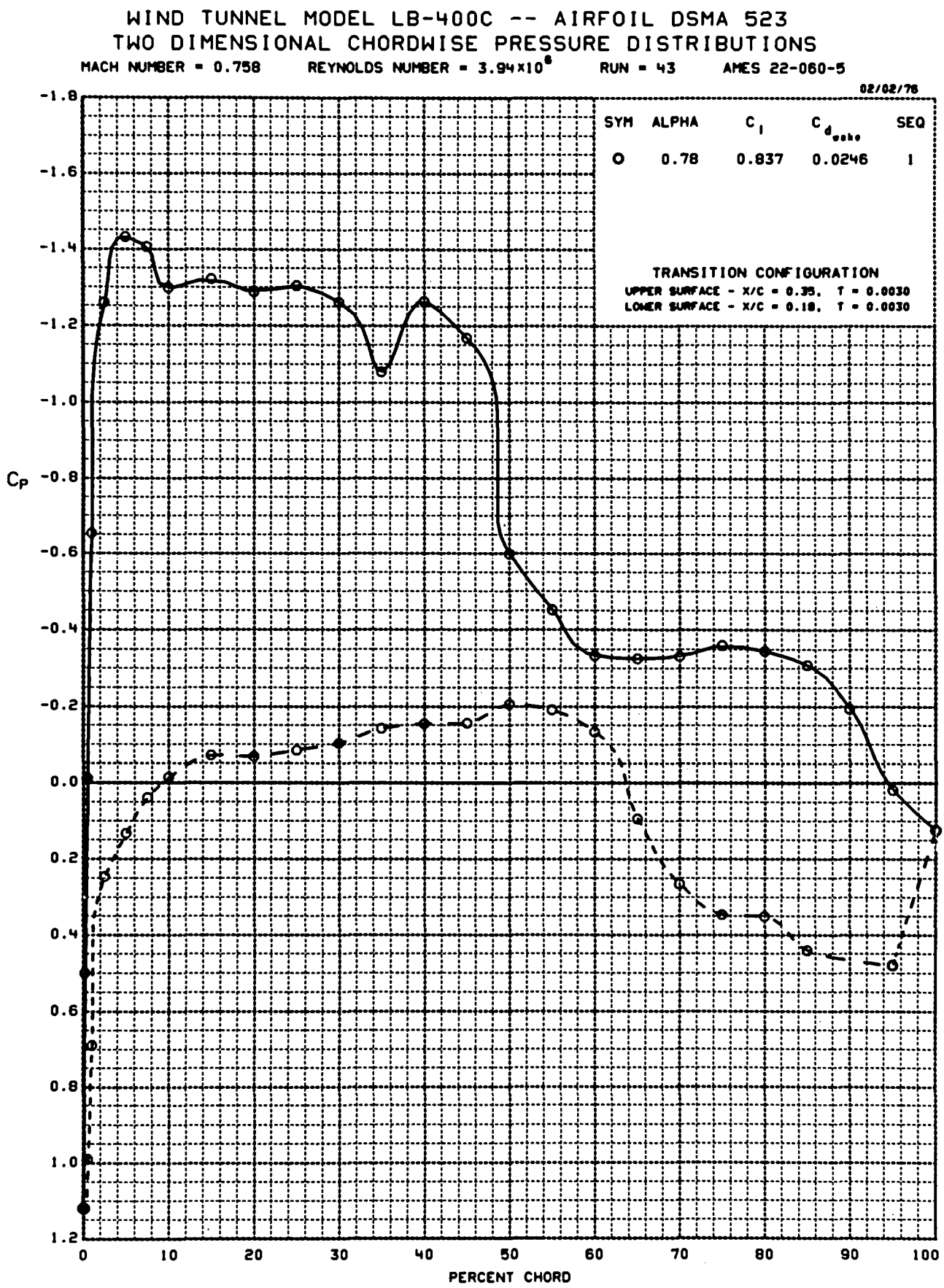


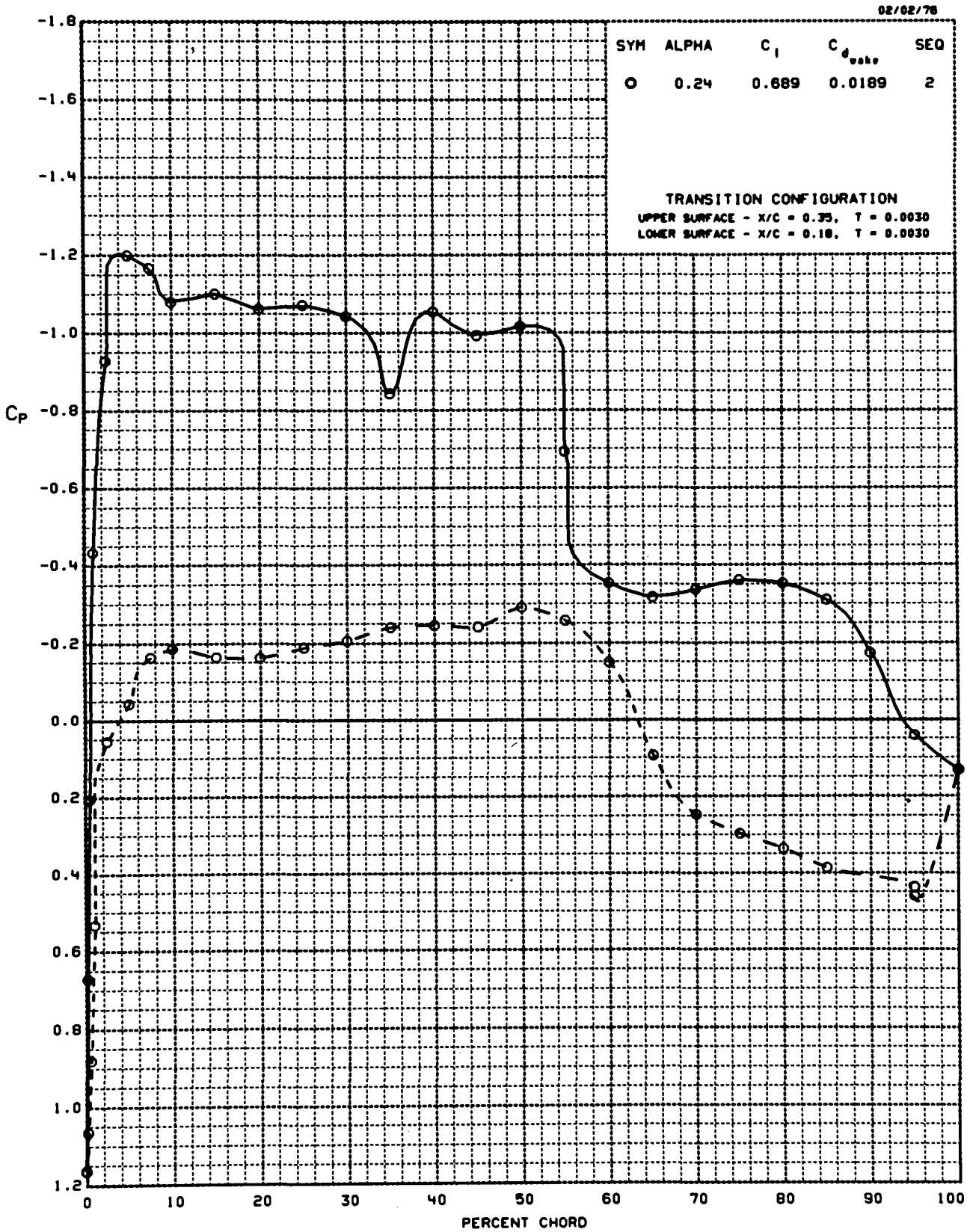
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.93×10^6 RUN = 42 AMES 22-060-5

02/02/76



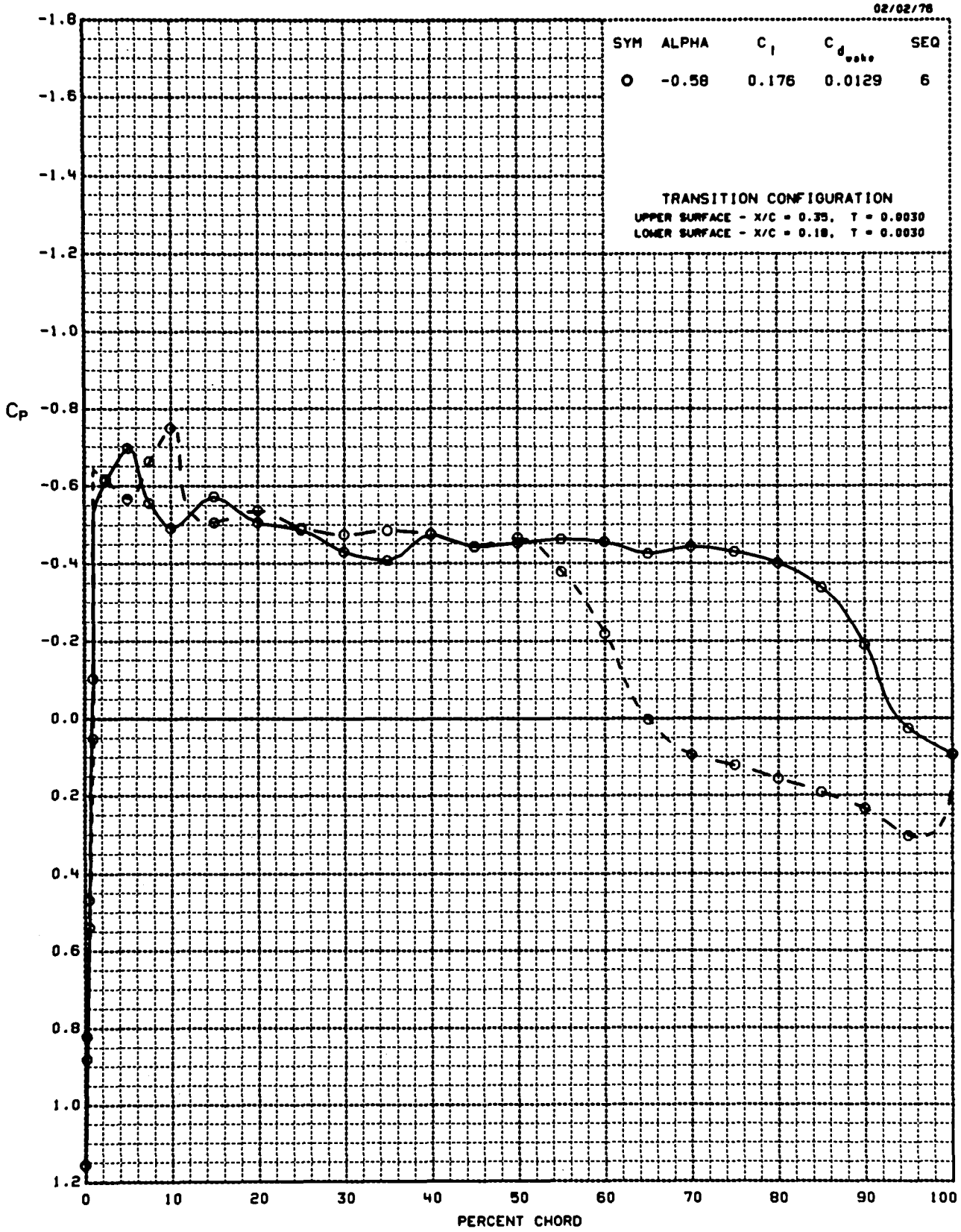

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.94x10^6 RUN = 43 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.78 0.837 0.0246 1
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

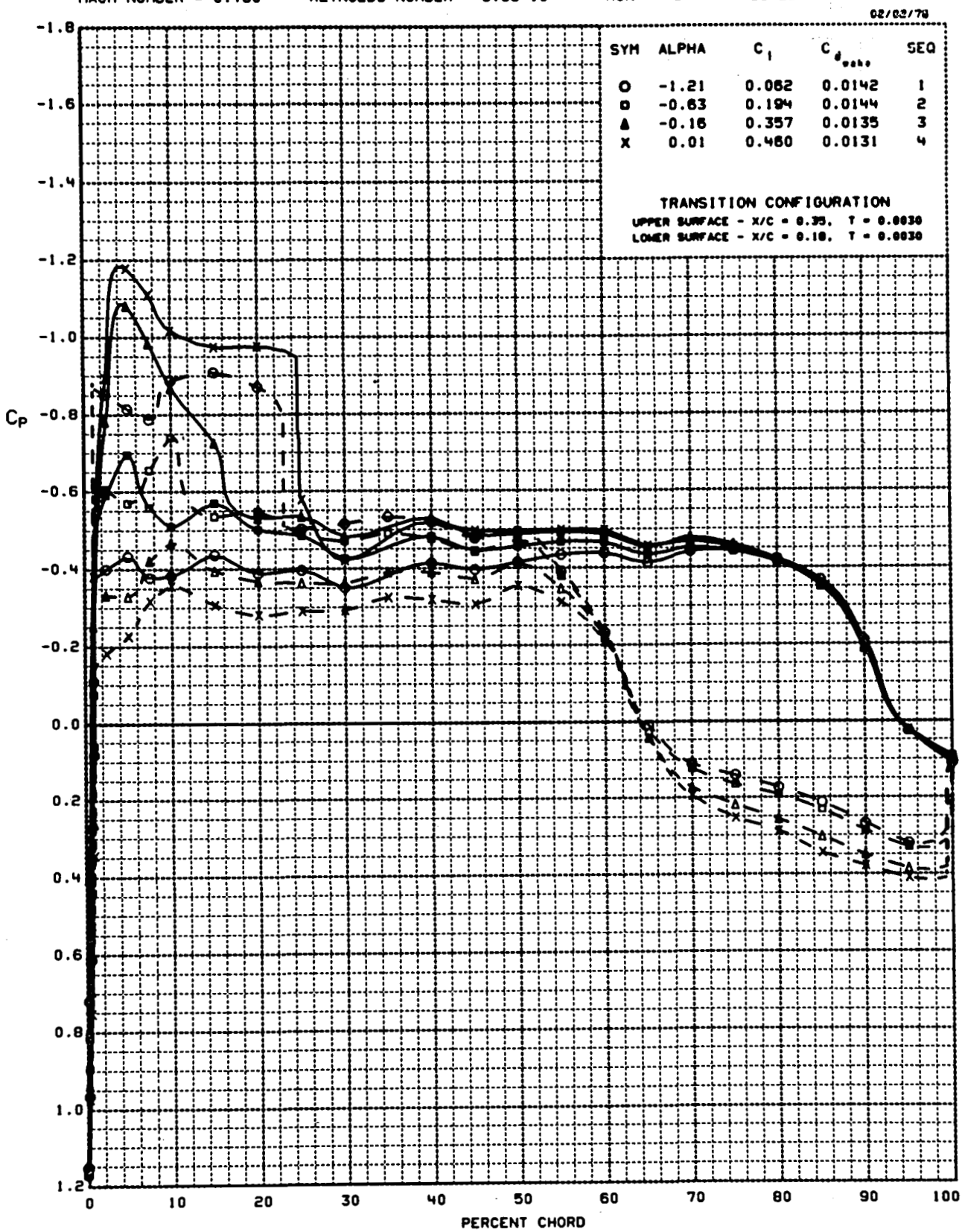

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.784 REYNOLDS NUMBER = 3.91x10^6 RUN = 44 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O 0.24 0.689 0.0189 2
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

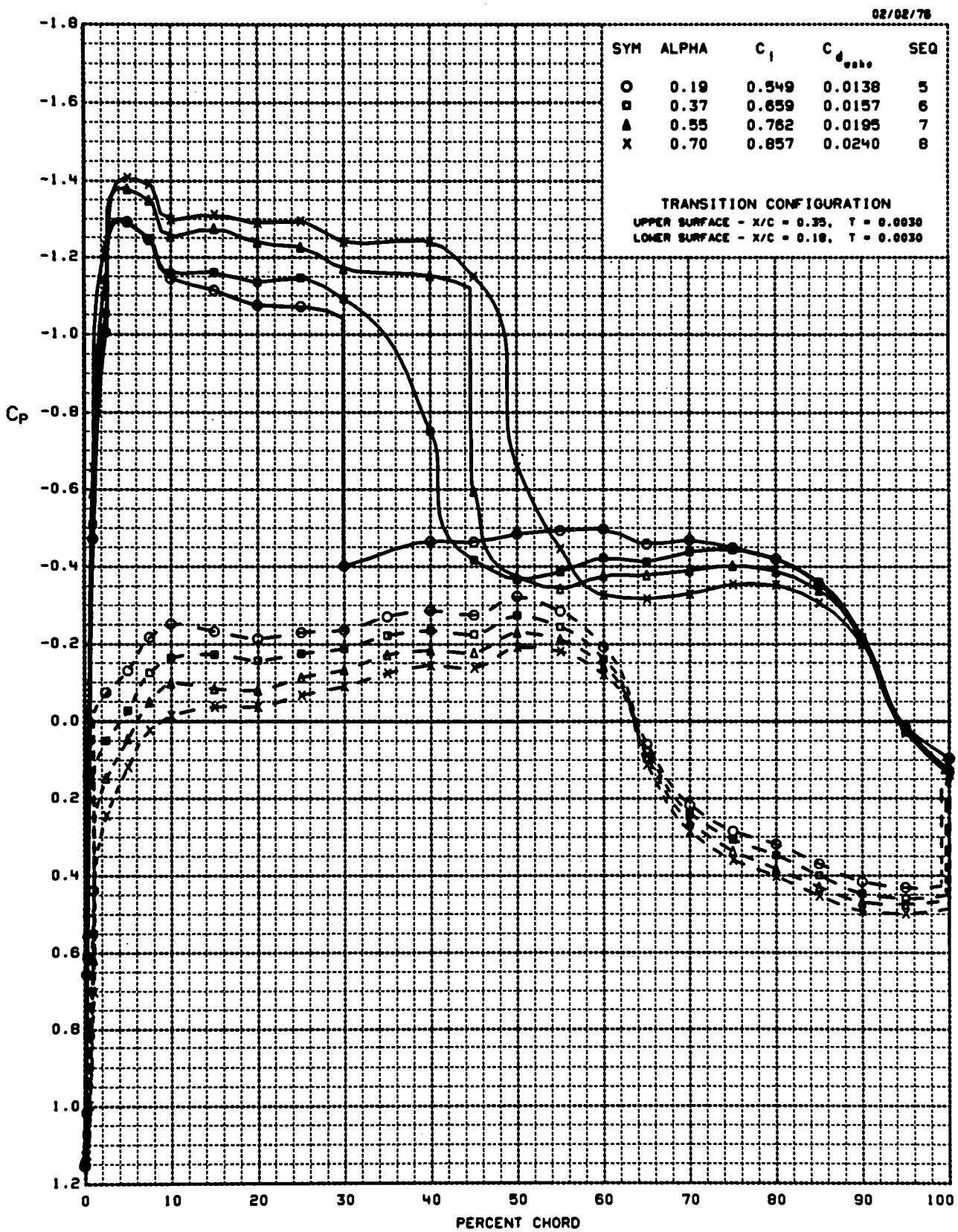
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.759 REYNOLDS NUMBER = 4.03×10^6 RUN = 45 AMES 22-060-5

02/02/76



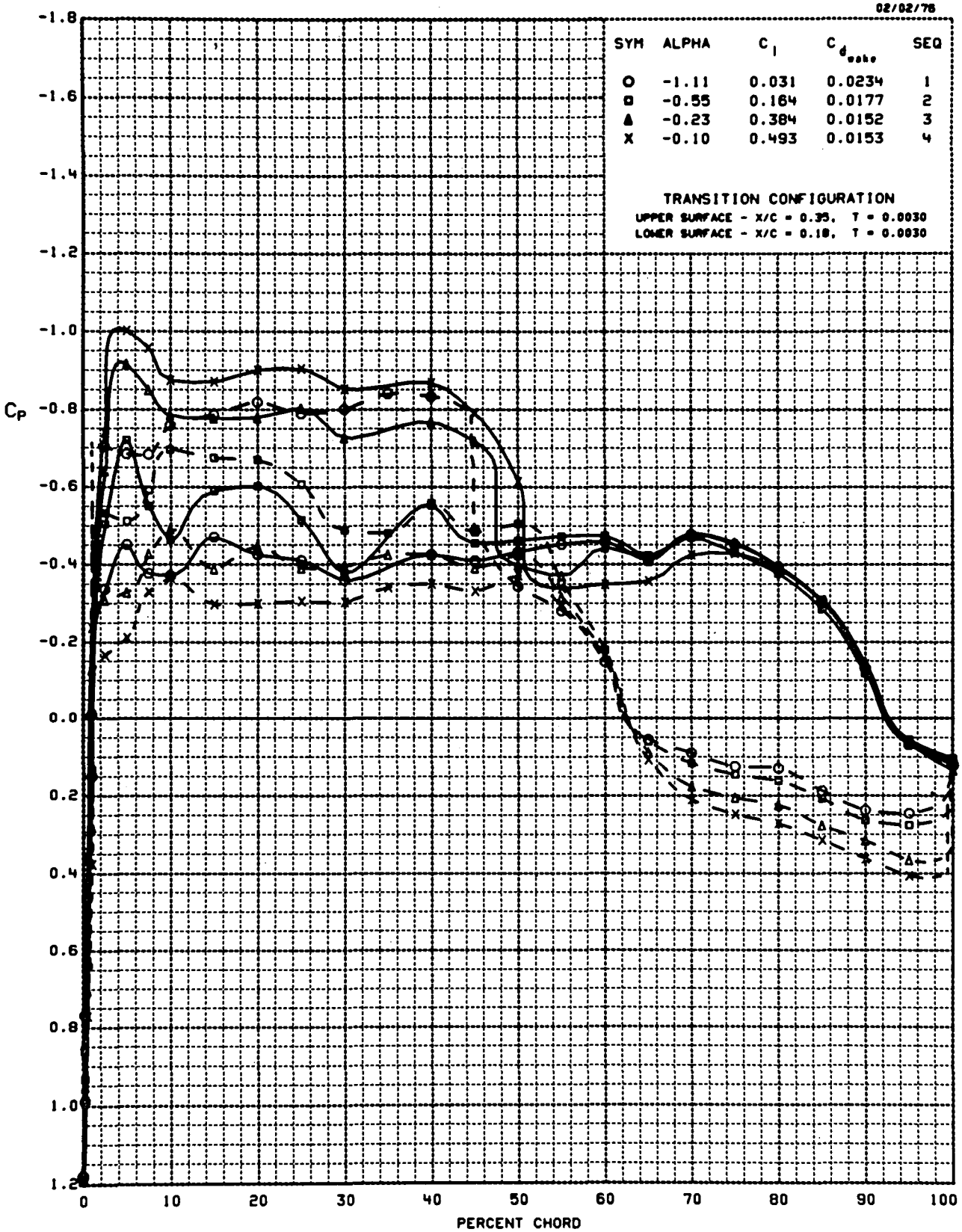

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.96x10^6 RUN = 46 AMES 22-060-5
02/03/78
SYM ALPHA C_l C_d_wake SEQ
O -1.21 0.062 0.0142 1
□ -0.63 0.194 0.0144 2
Δ -0.16 0.357 0.0135 3
X 0.01 0.460 0.0131 4
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

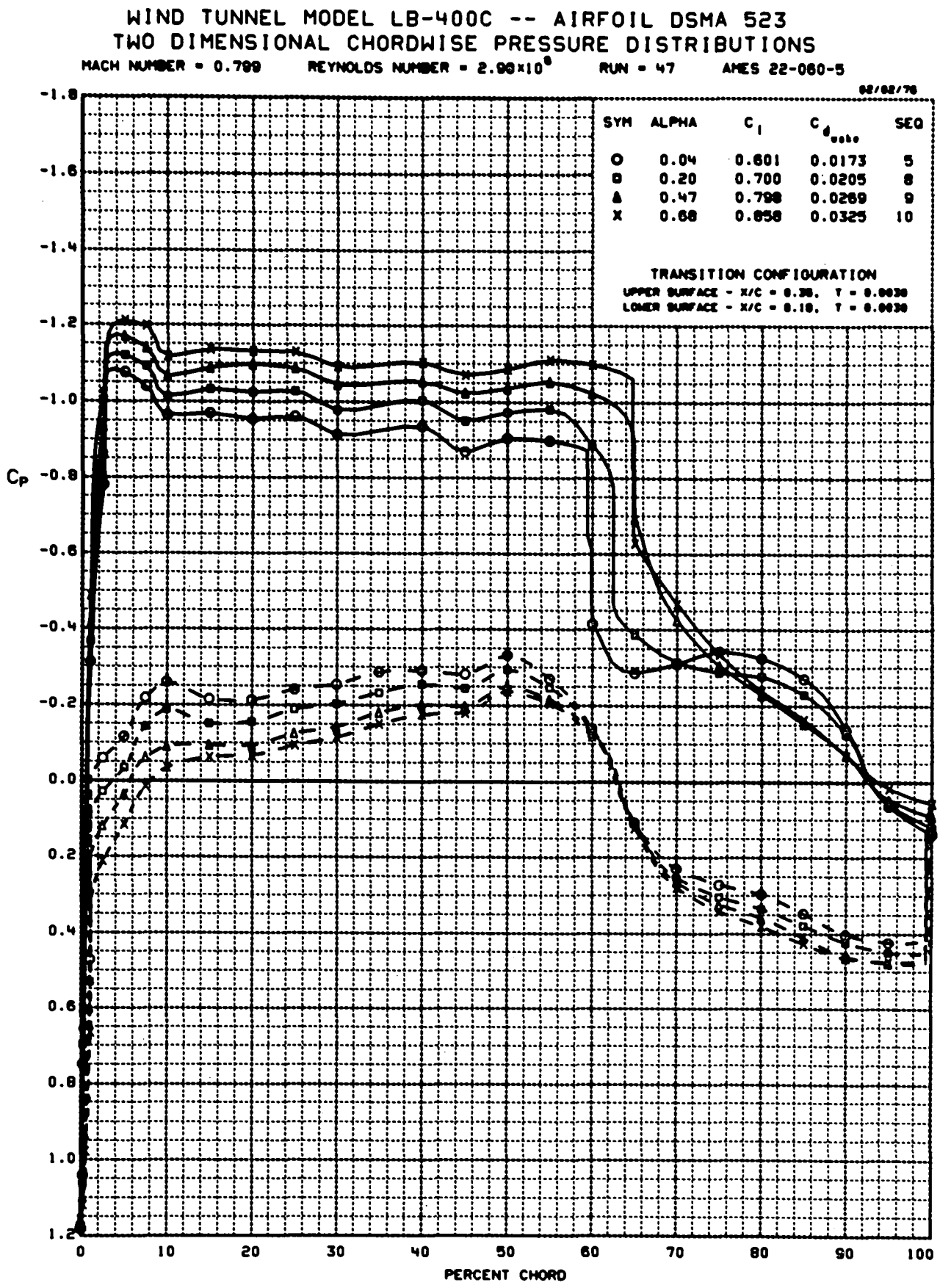

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.92x10^6 RUN = 46 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.19 0.549 0.0138 5
□ 0.37 0.659 0.0157 6
Δ 0.55 0.762 0.0195 7
X 0.70 0.857 0.0240 8
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.10, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

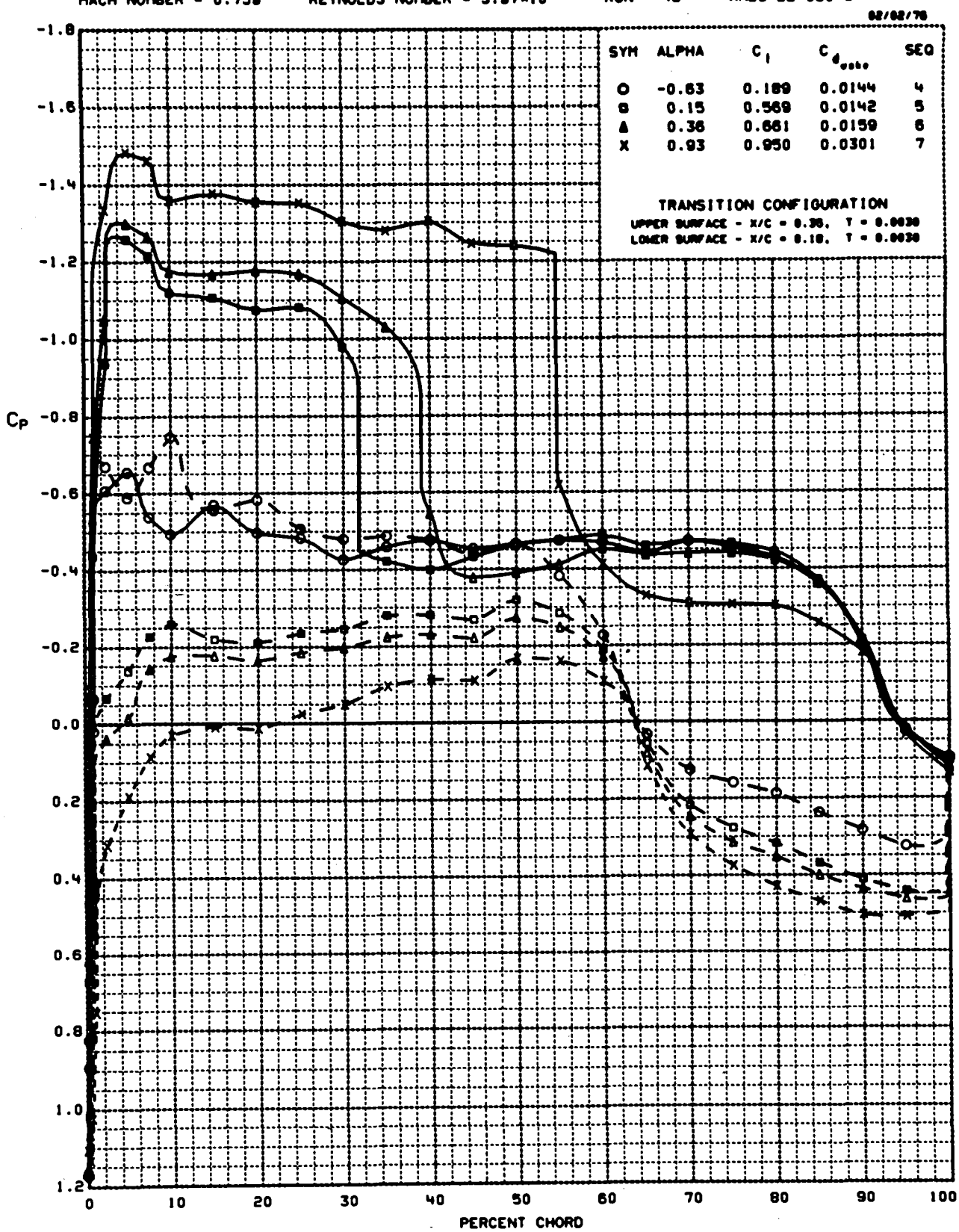
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

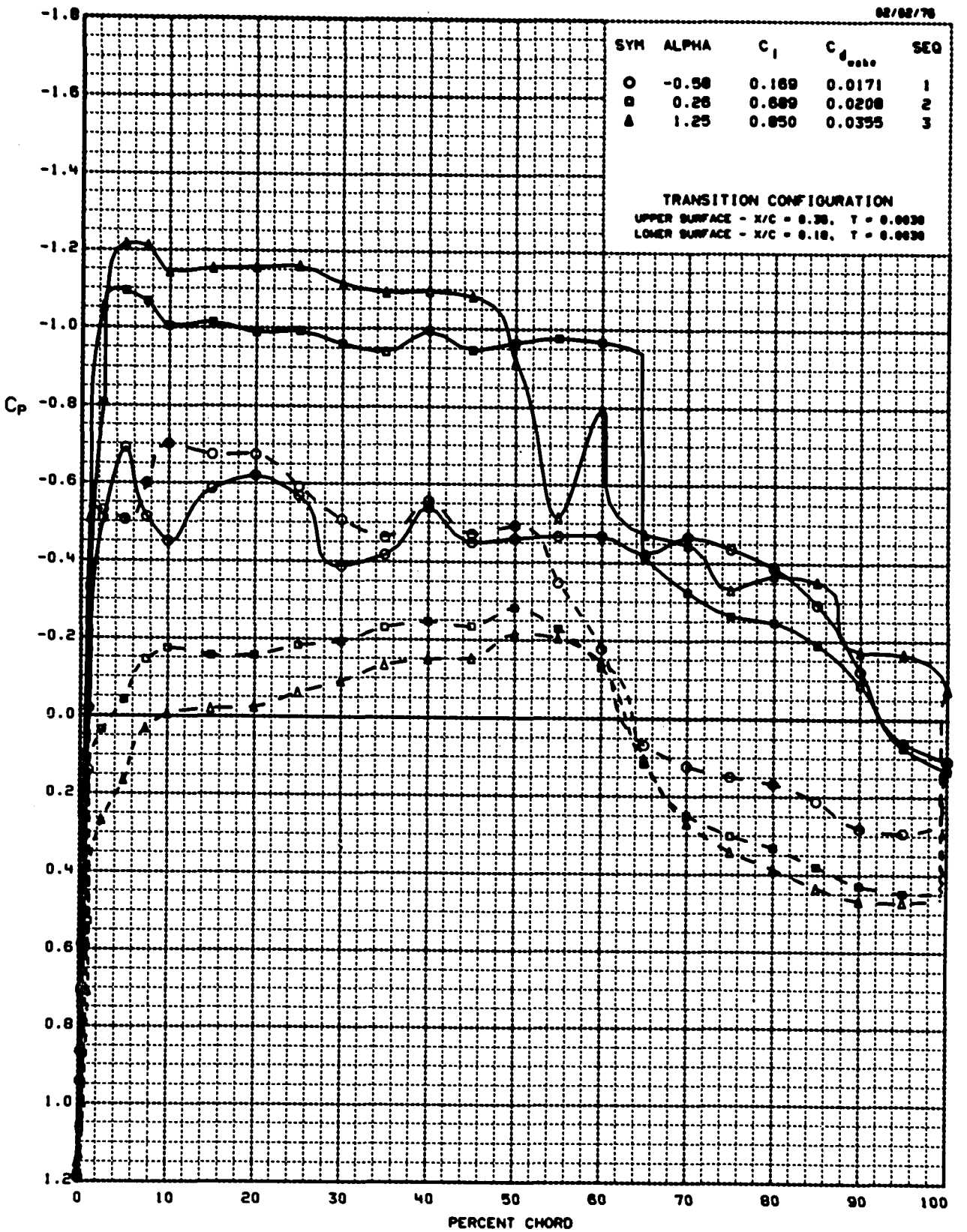
MACH NUMBER = 0.800 REYNOLDS NUMBER = 2.99×10^6 RUN = 47 AMES 22-060-5

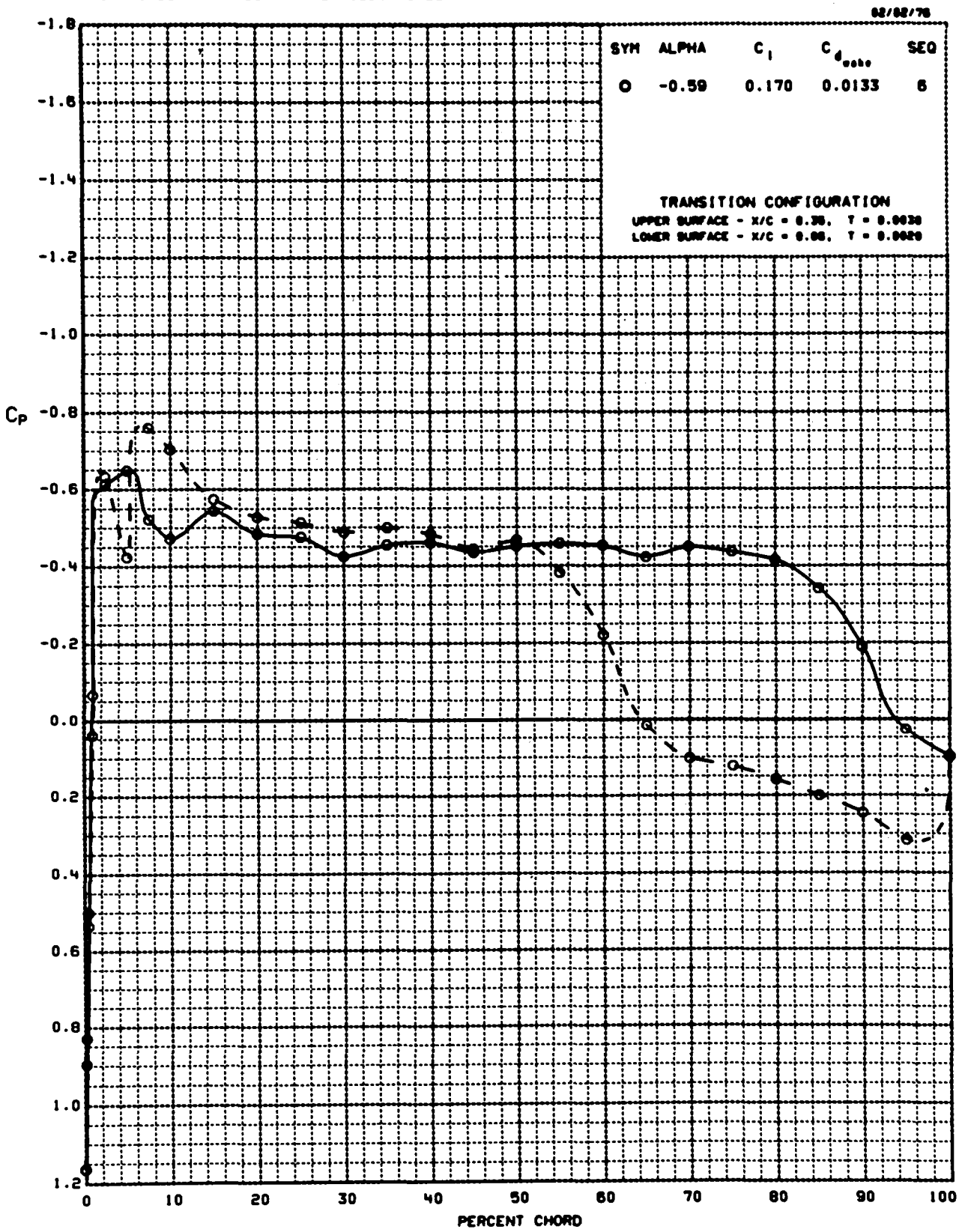
02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.799 REYNOLDS NUMBER = 2.00x10^6 RUN = 47 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.04 0.601 0.0173 5
□ 0.20 0.700 0.0205 8
Δ 0.47 0.798 0.0269 9
X 0.68 0.858 0.0325 10
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.30, T = 0.0030
LOWER SURFACE - X/C = 0.10, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.97x10^6 RUN = 48 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_pres SEQ
O -0.63 0.189 0.0144 4
□ 0.15 0.569 0.0142 5
Δ 0.36 0.661 0.0159 6
X 0.93 0.950 0.0301 7
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.36, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.801 REYNOLDS NUMBER = 2.98x10^6 RUN = 49 AMES 22-060-5
SYM ALPHA C_l C_d_wake SEQ
-0.58 0.169 0.0171 1
0.26 0.689 0.0208 2
1.25 0.850 0.0355 3
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.30, T = 0.0030
LOWER SURFACE - X/C = 0.10, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 4.03x10^6 RUN = 52 AMES 22-060-5
02/02/76
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O -0.59 0.170 0.0133 6
TRANSITION CONFIGURATION
UPPER SURFACE - x/c = 0.30, T = 0.0030
LOWER SURFACE - x/c = 0.08, T = 0.0020
C_p
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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10
20
30
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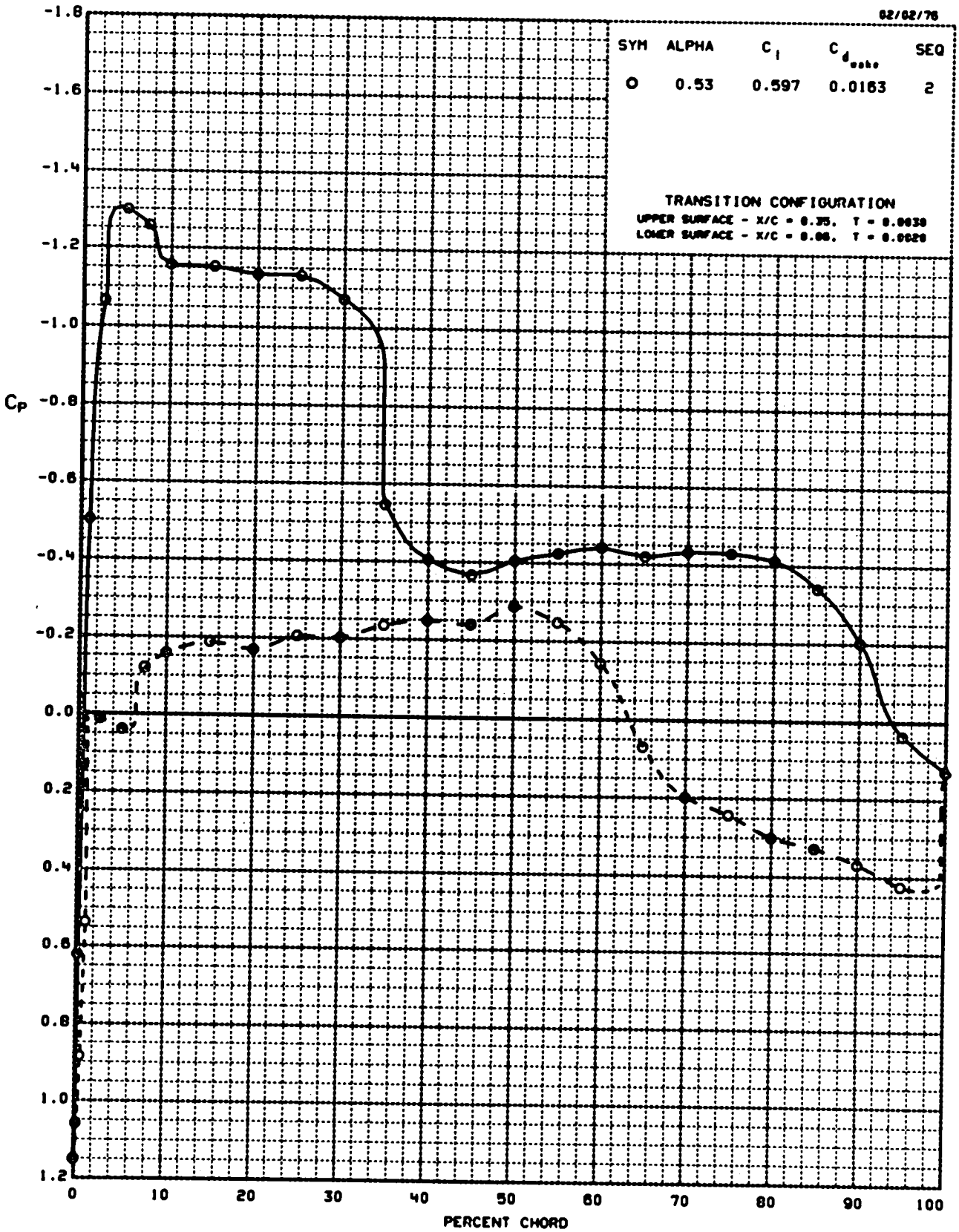
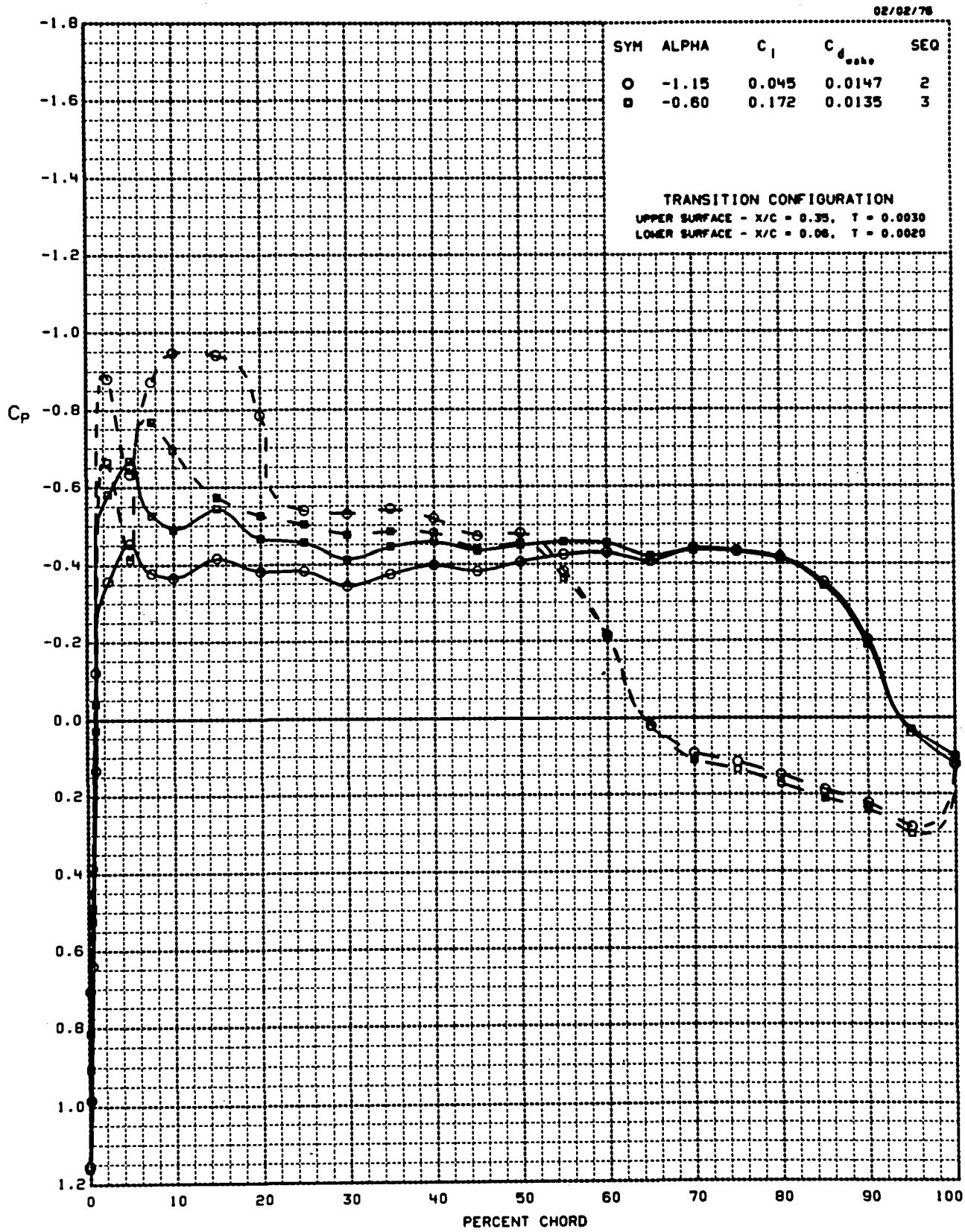
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.94x10^6 RUN = 53 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.53 0.597 0.0163 2
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.08, T = 0.0020
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.761 REYNOLDS NUMBER = 4.00x10^6 RUN = 54 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -1.15 0.045 0.0147 2
□ -0.60 0.172 0.0135 3
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.06, T = 0.0020
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
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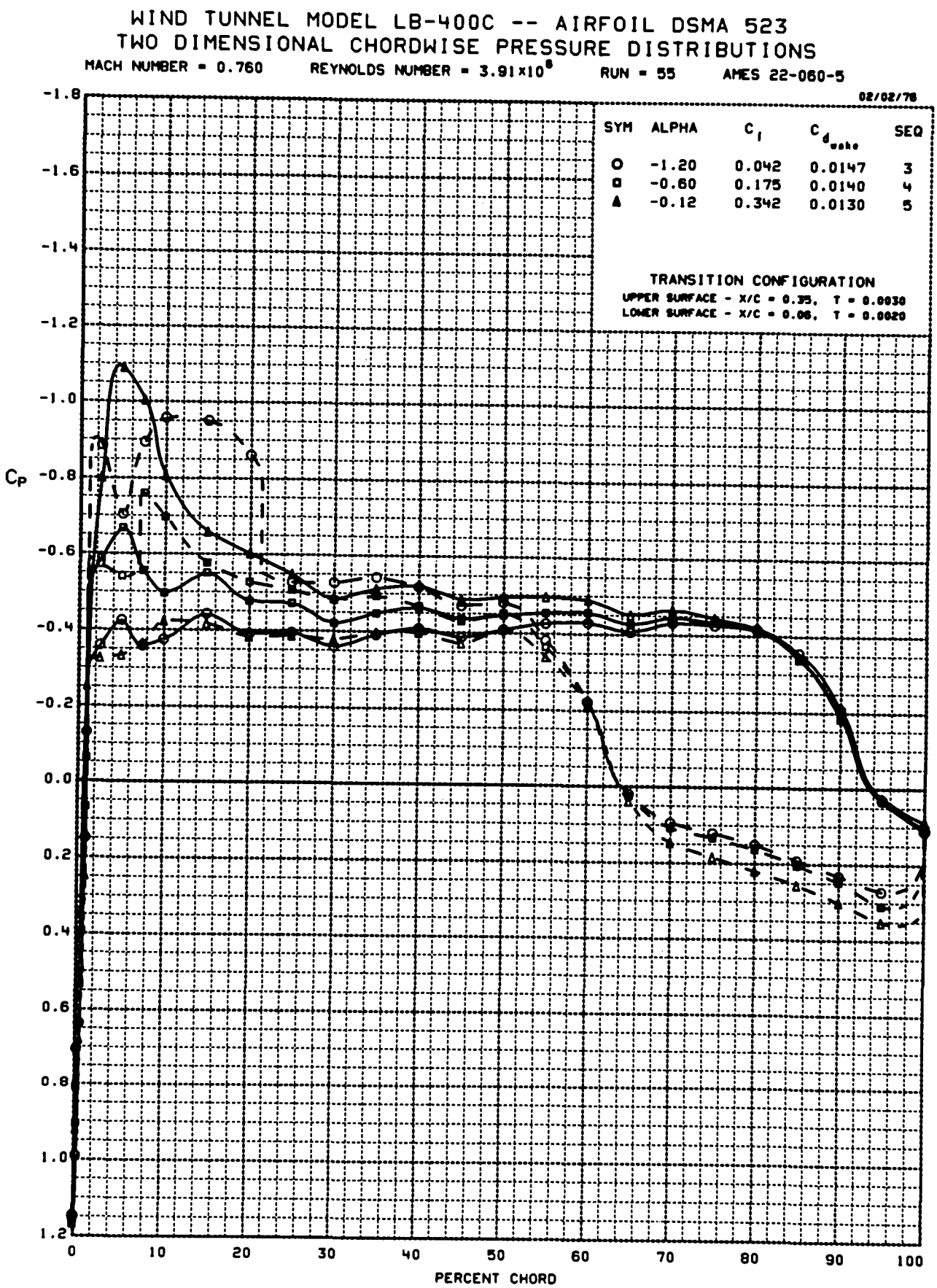
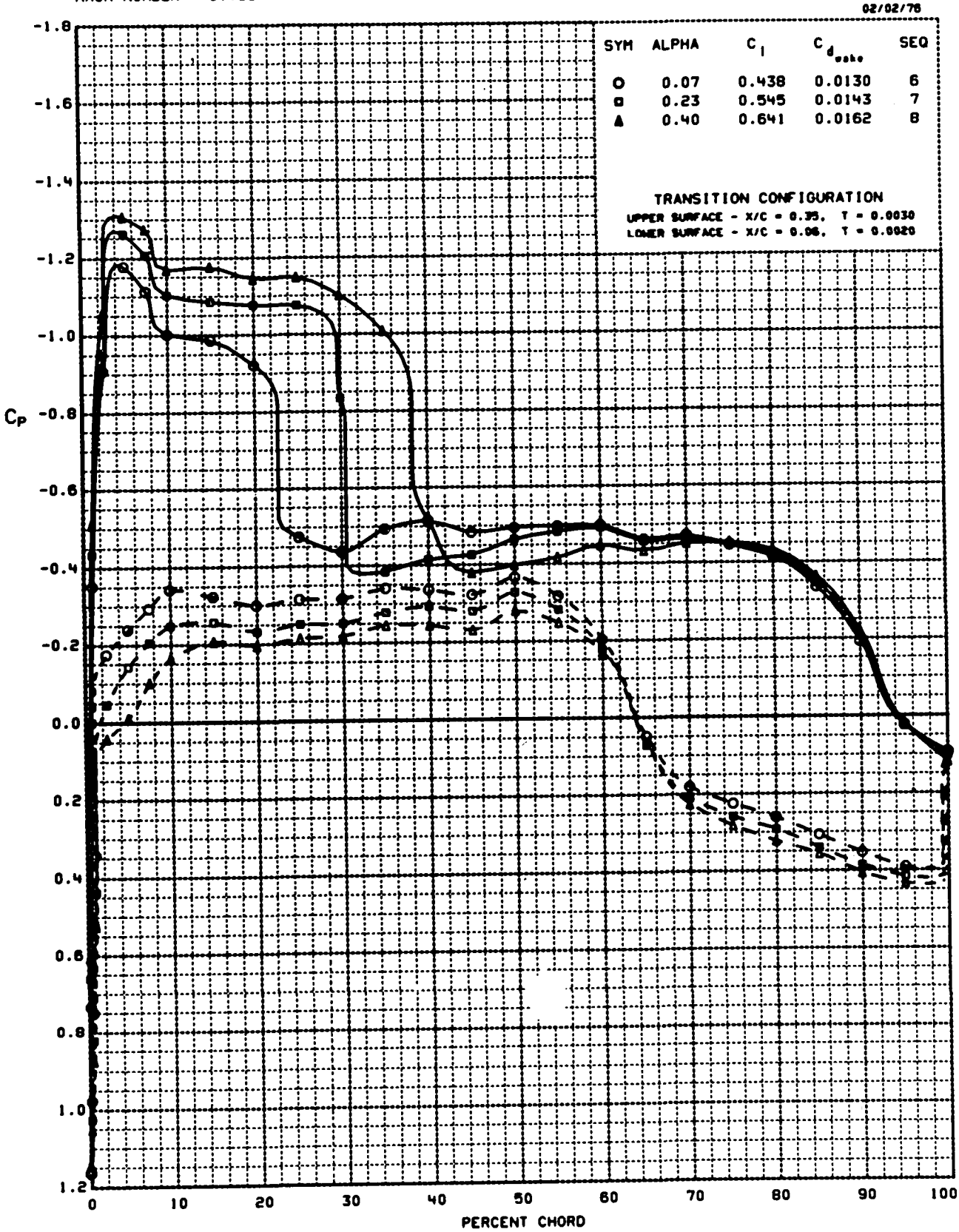
90
100
PERCENT CHORD

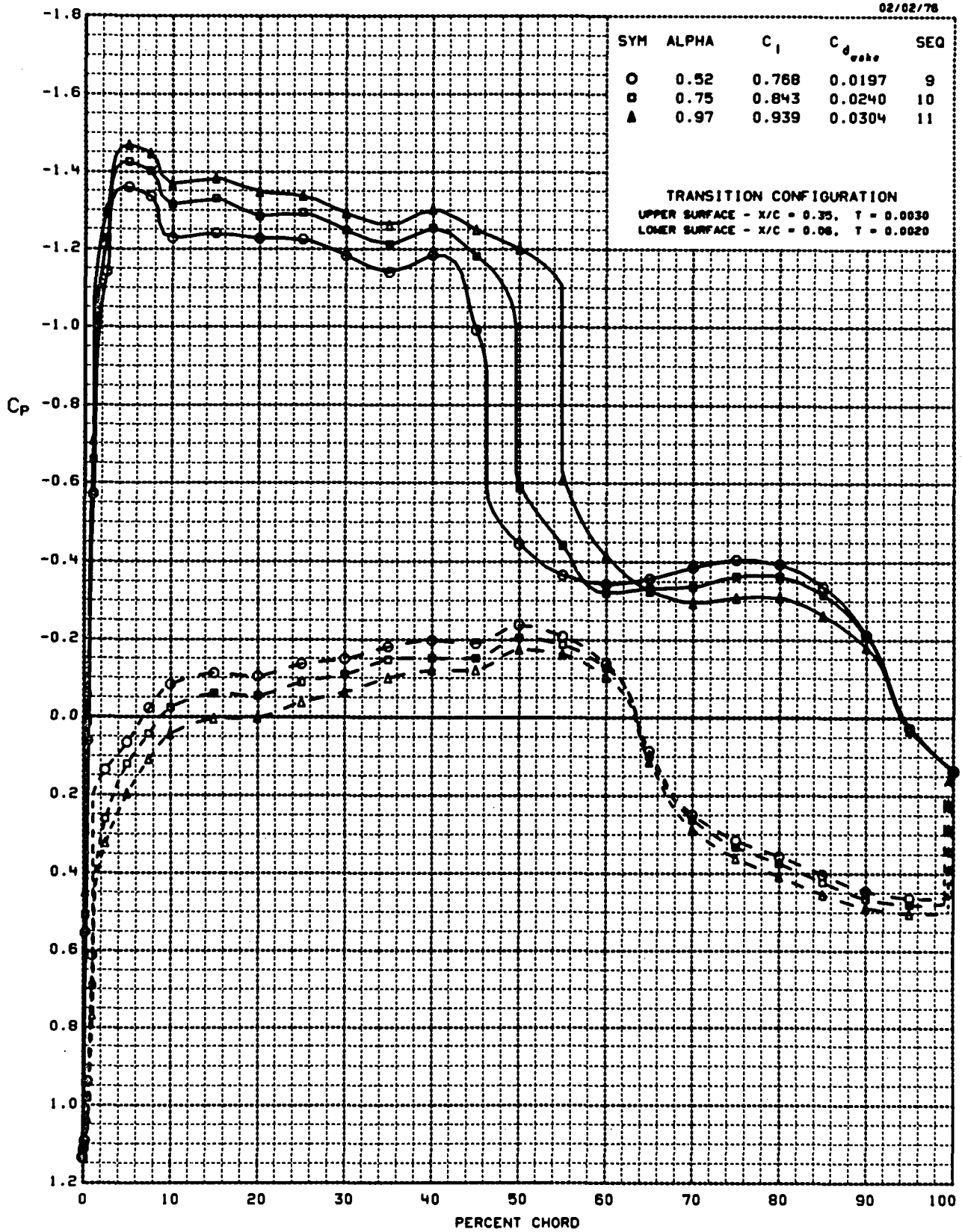

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.760
REYNOLDS NUMBER = 3.91x10^6
RUN = 55
AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -1.20 0.042 0.0147 3
□ -0.60 0.175 0.0140 4
Δ -0.12 0.342 0.0130 5
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.06, T = 0.0020
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.92×10^6 RUN = 55 AMES 22-060-5

02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.95x10^6 RUN = 55 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O 0.52 0.768 0.0197 9
□ 0.75 0.843 0.0240 10
Δ 0.97 0.939 0.0304 11
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.06, T = 0.0020
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
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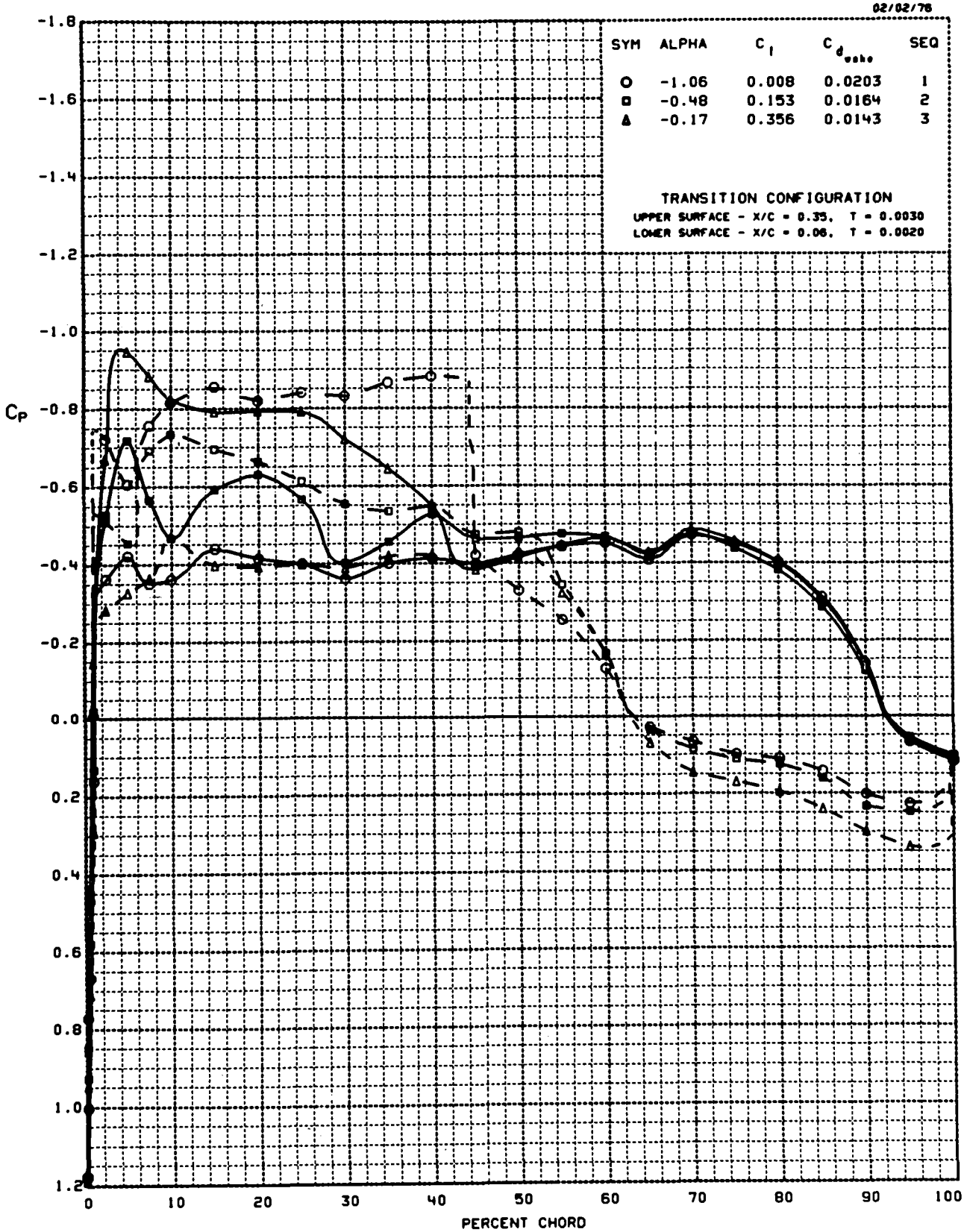
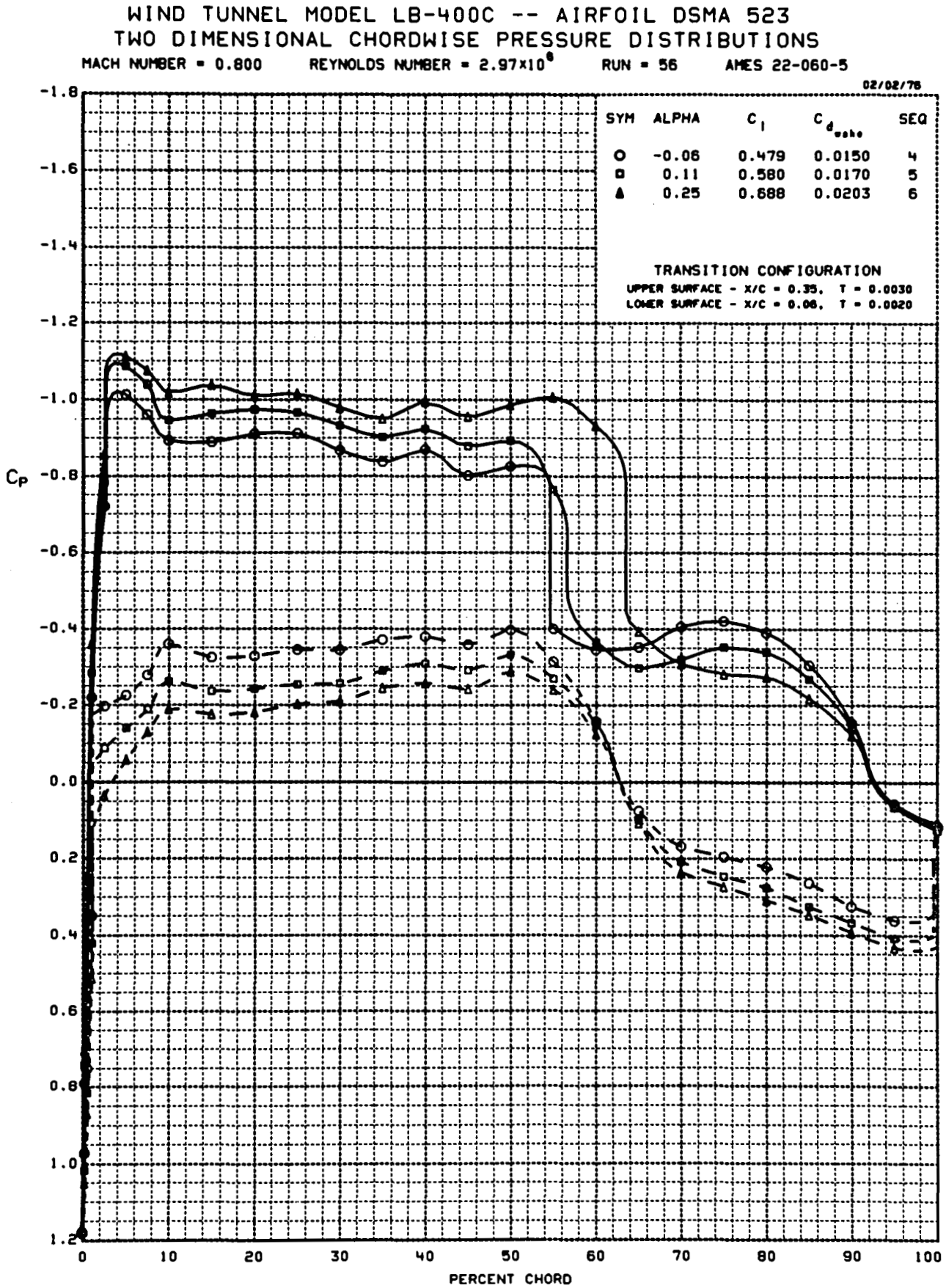
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.801 REYNOLDS NUMBER = 3.03×10^6 RUN = 56 AMES 22-060-5

02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.800 REYNOLDS NUMBER = 2.97x10^6 RUN = 56 AMES 22-060-5
02/02/78
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
-0.06 0.479 0.0150 4
0.11 0.580 0.0170 5
0.25 0.688 0.0203 6
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.06, T = 0.0020
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
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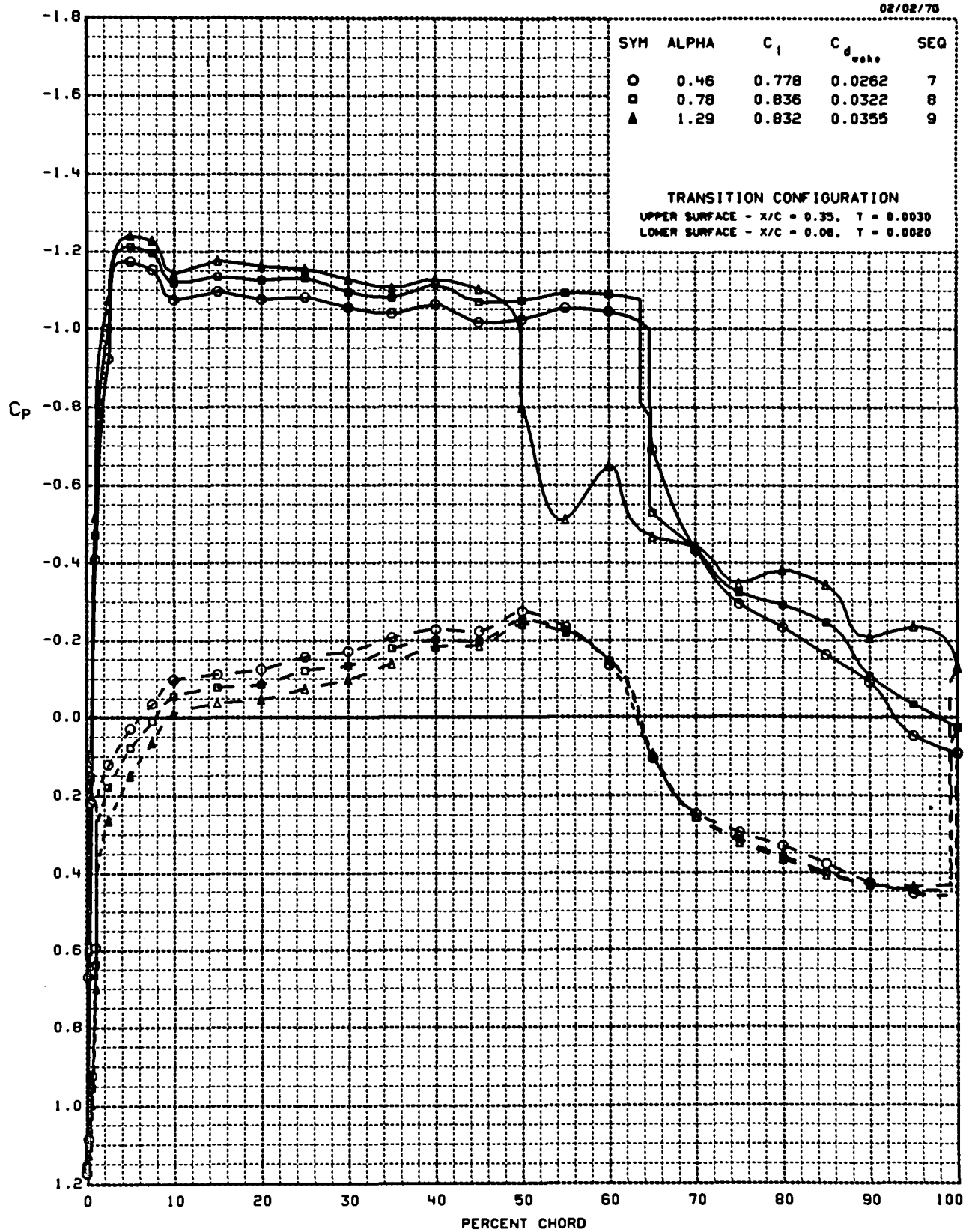
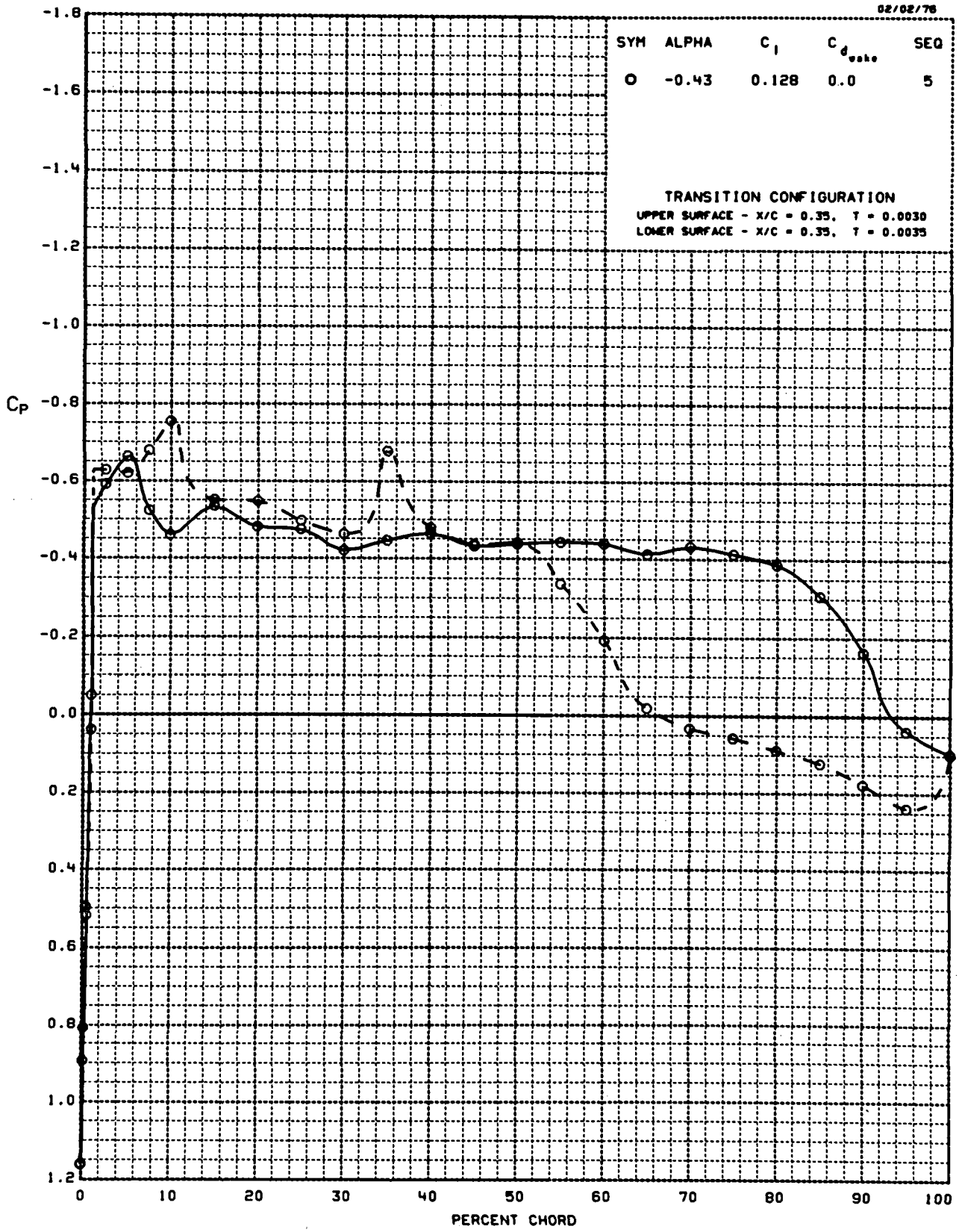
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.800 REYNOLDS NUMBER = 2.95×10^6 RUN = 56 AMES 22-060-5

02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.760 REYNOLDS NUMBER = 4.12x10^6 RUN = 59 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -0.43 0.128 0.0 5
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.35, T = 0.0035
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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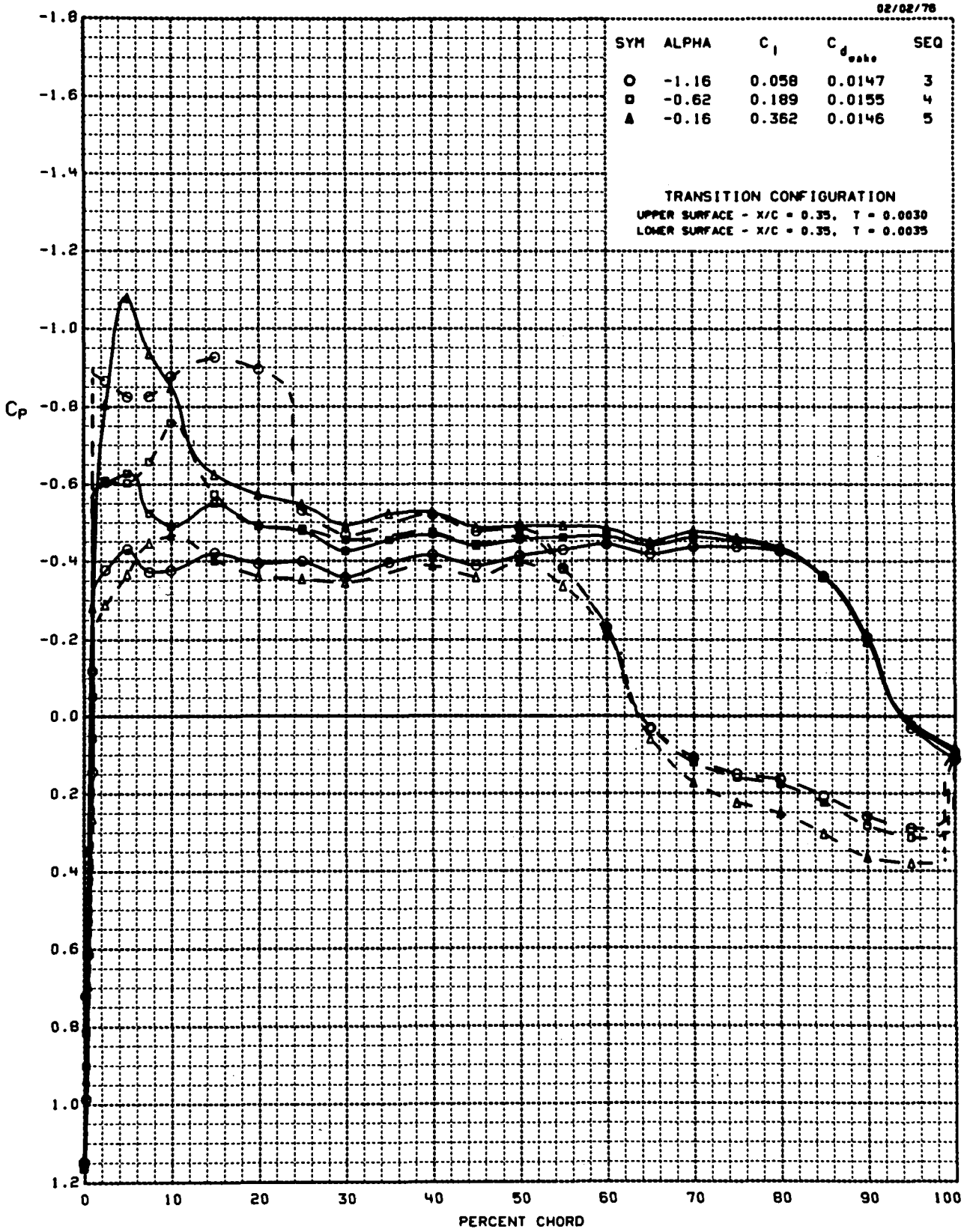
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.761 REYNOLDS NUMBER = 4.04×10^6 RUN = 60 AMES 22-060-5

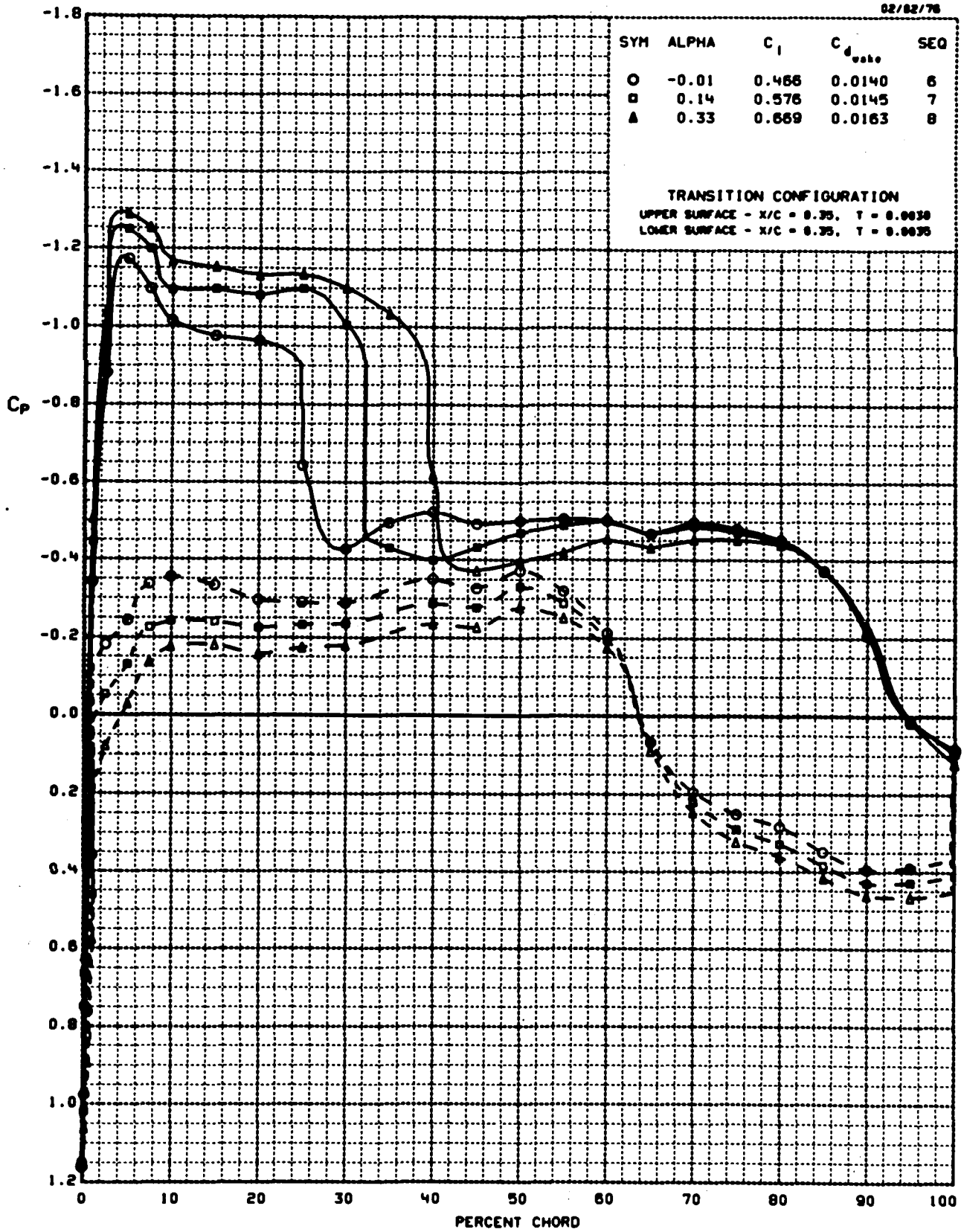
02/02/76

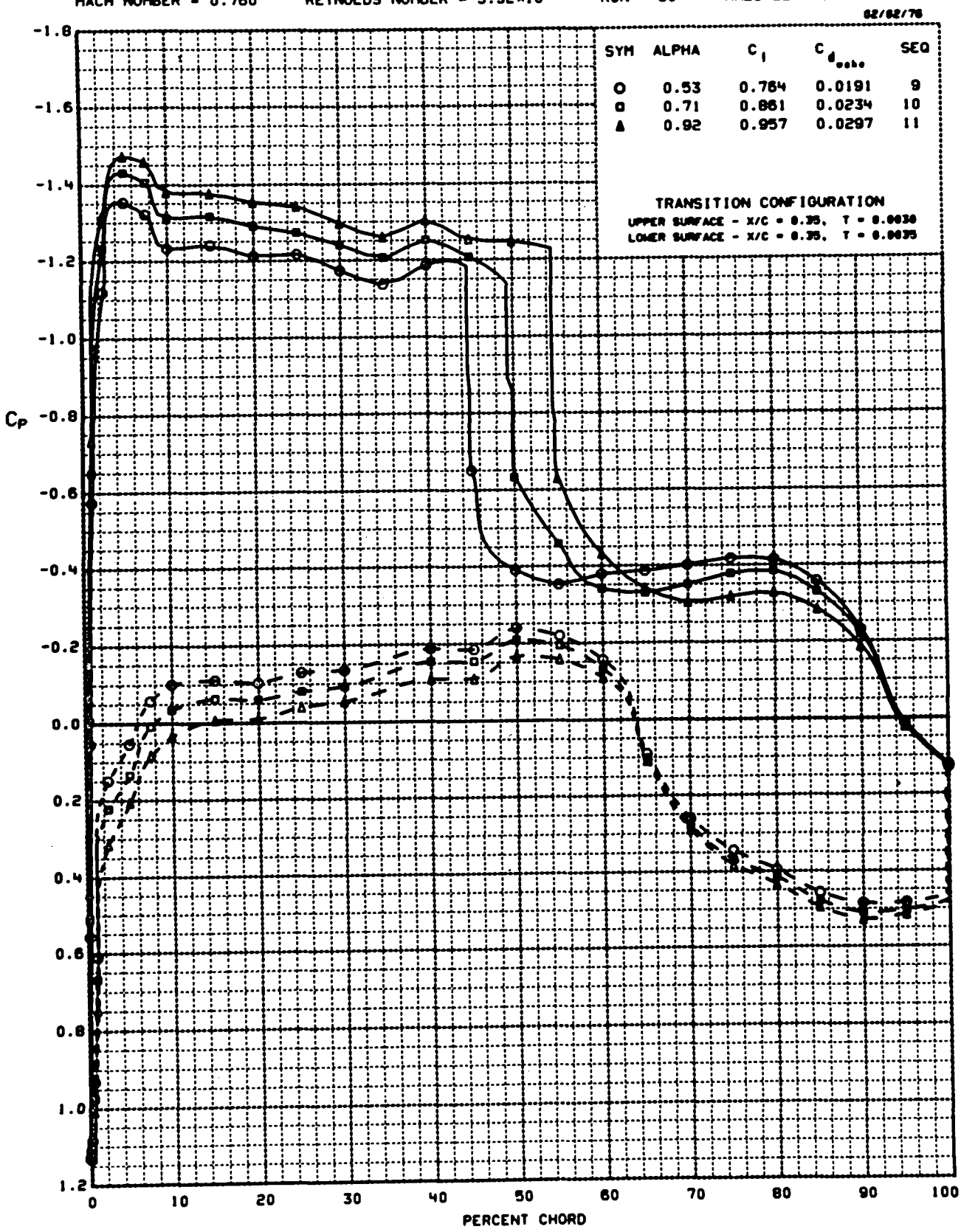


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.761 REYNOLDS NUMBER = 3.97×10^6 RUN = 60 AMES 22-060-5

02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.92x10^6 RUN = 60 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.53 0.764 0.0191 9
0.71 0.861 0.0234 10
0.92 0.957 0.0297 11
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.35, T = 0.0035
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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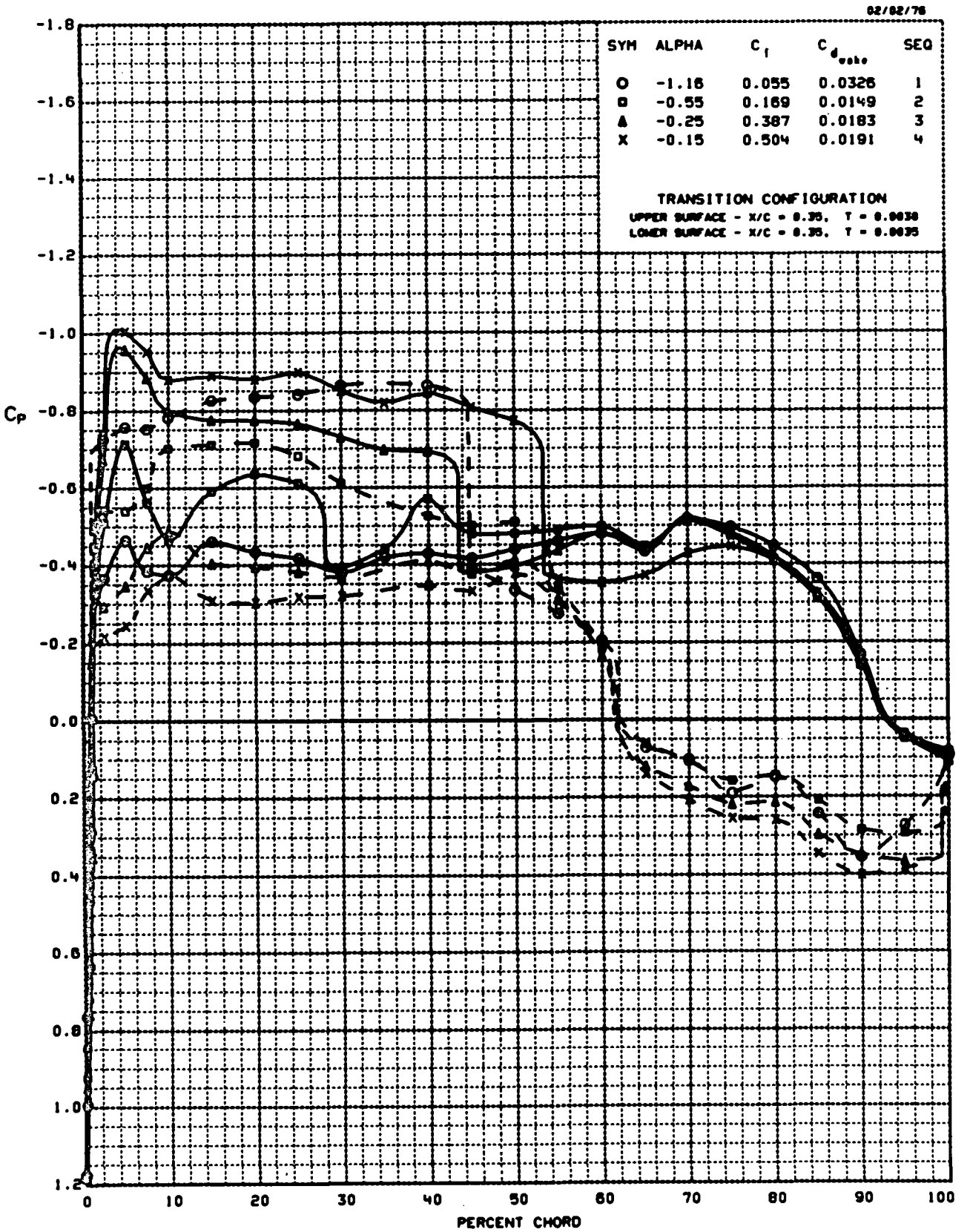
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.801 REYNOLDS NUMBER = 3.01x10^6 RUN = 61 AMES 22-060-5
02/02/76
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O -1.16 0.055 0.0326 1
□ -0.55 0.169 0.0149 2
△ -0.25 0.387 0.0183 3
X -0.15 0.504 0.0191 4
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.35, T = 0.0035
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
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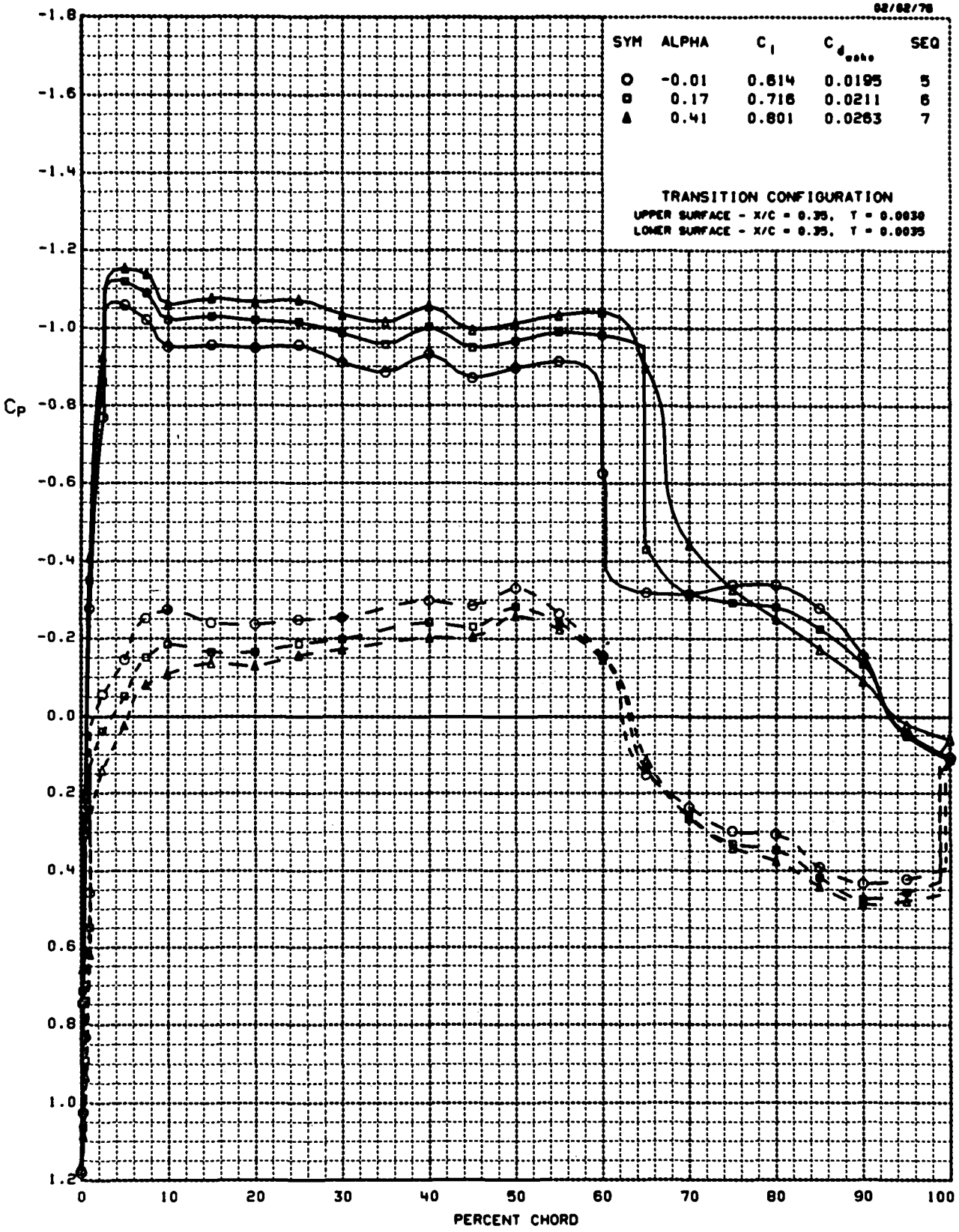
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.802 REYNOLDS NUMBER = 2.98x10^6 RUN = 61 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -0.01 0.614 0.0195 5
□ 0.17 0.716 0.0211 6
△ 0.41 0.801 0.0263 7
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.35, T = 0.0035
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
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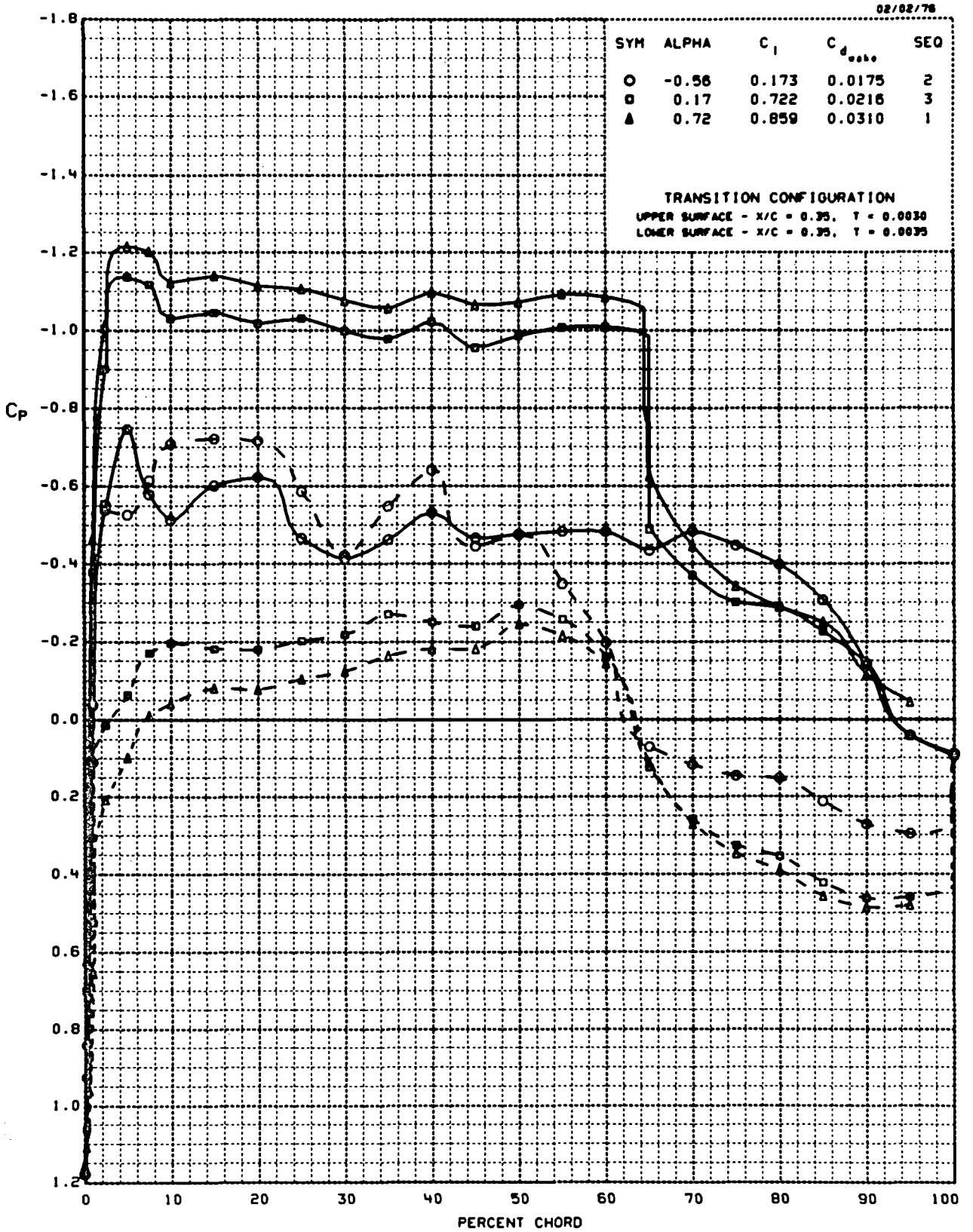
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.798 REYNOLDS NUMBER = 2.99x10^6 RUN = 62 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
-0.56 0.173 0.0175 2
0.17 0.722 0.0216 3
0.72 0.859 0.0310 1
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.35, T = 0.0035
CP
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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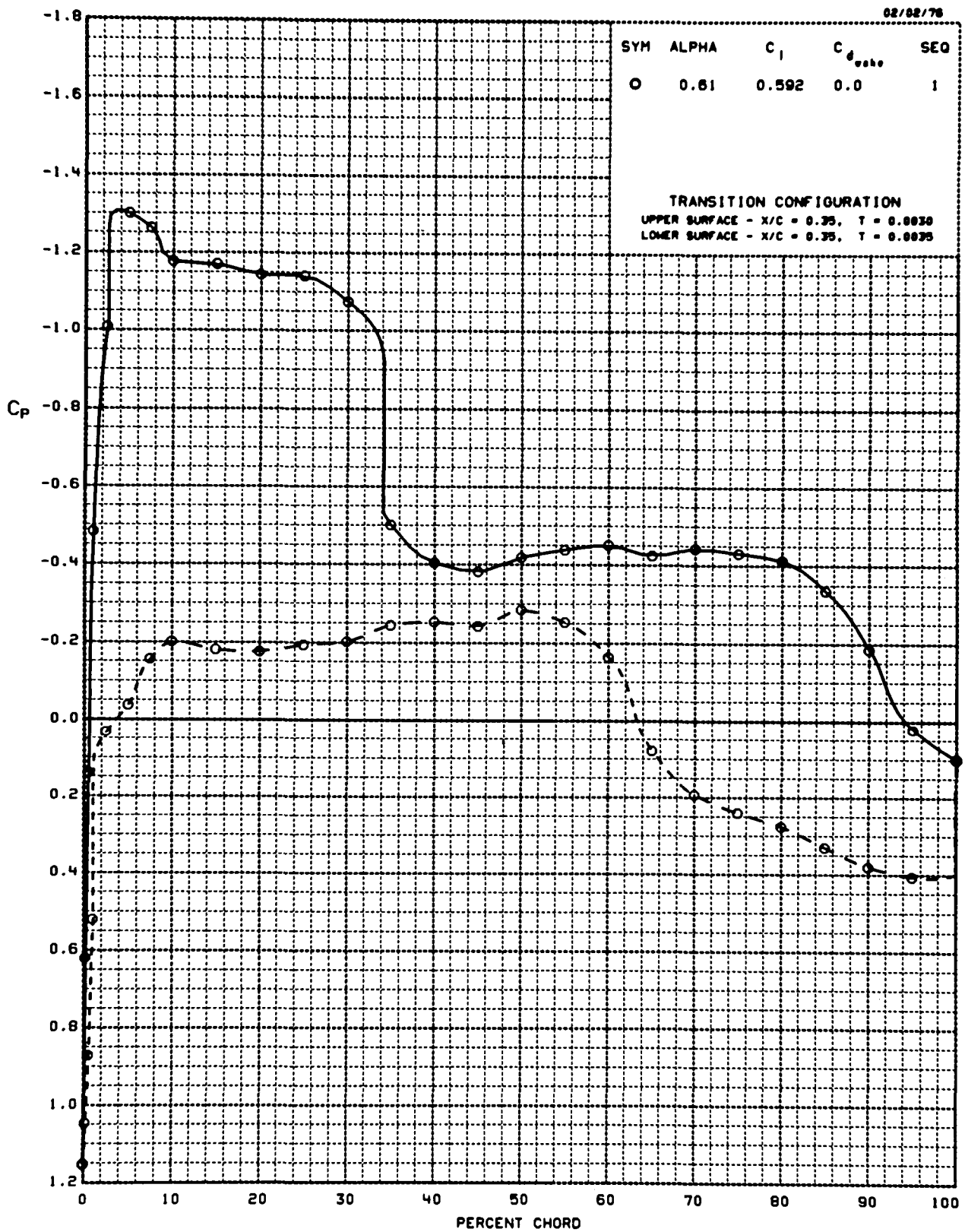
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 4.02x10^6 RUN = 65 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.61 0.592 0.0 1
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.35, T = 0.0035
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
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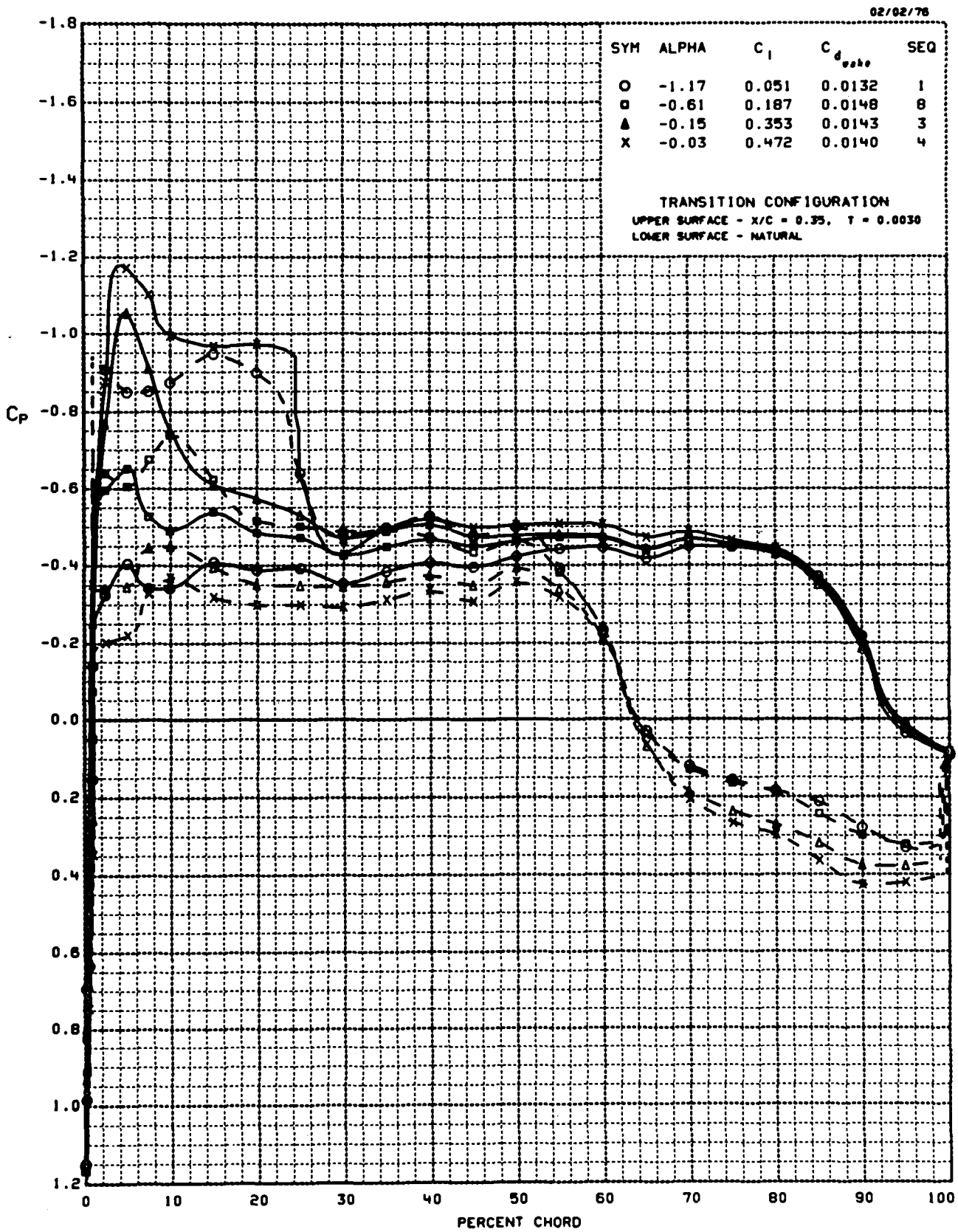
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.761 REYNOLDS NUMBER = 3.98x10^6 RUN = 66 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -1.17 0.051 0.0132 1
□ -0.61 0.187 0.0148 8
△ -0.15 0.353 0.0143 3
X -0.03 0.472 0.0140 4
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - NATURAL
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
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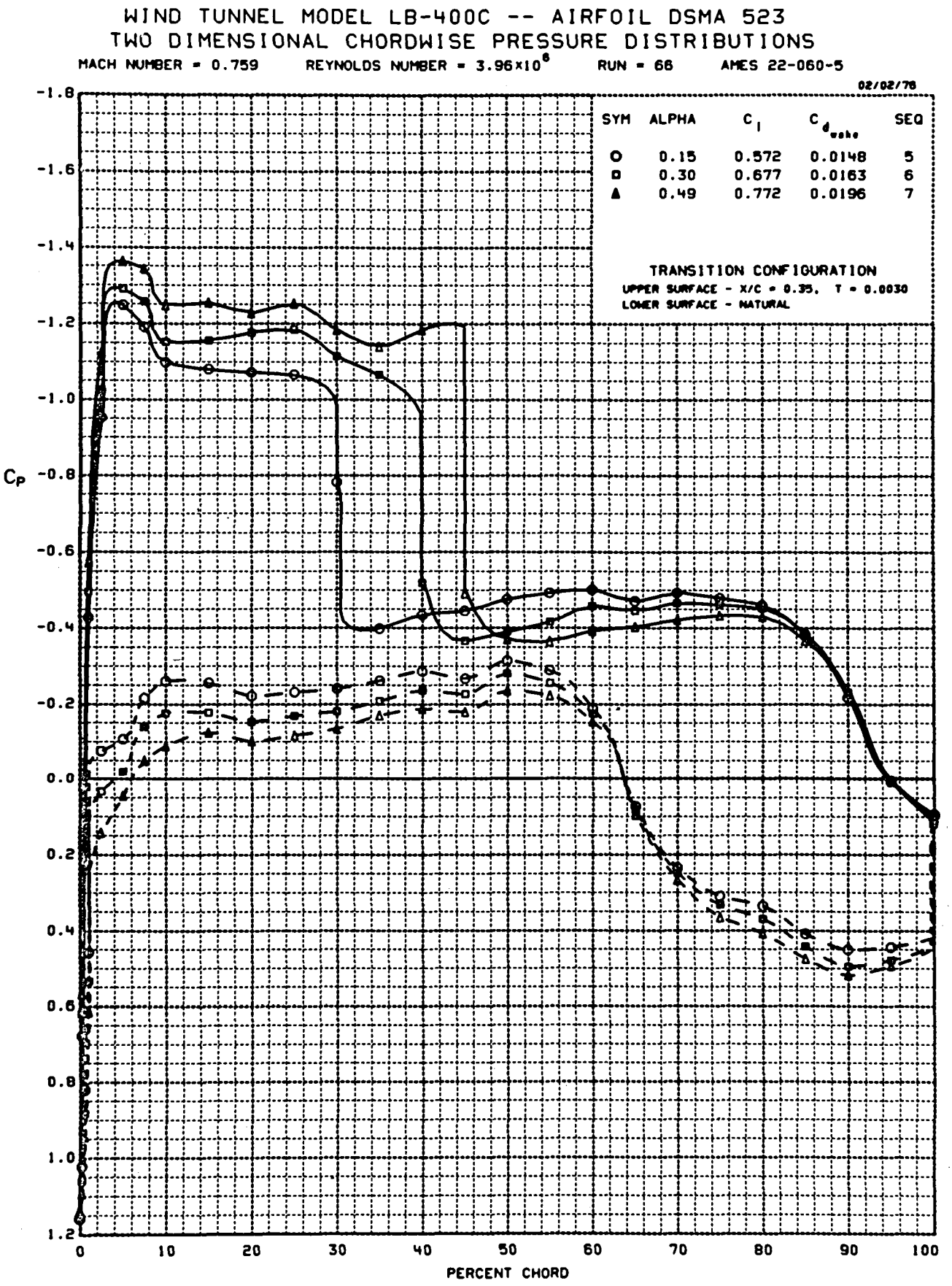
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.96x10^6 RUN = 66 AMES 22-060-5
02/02/76
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O 0.15 0.572 0.0148 5
□ 0.30 0.677 0.0163 6
▲ 0.49 0.772 0.0196 7
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - NATURAL
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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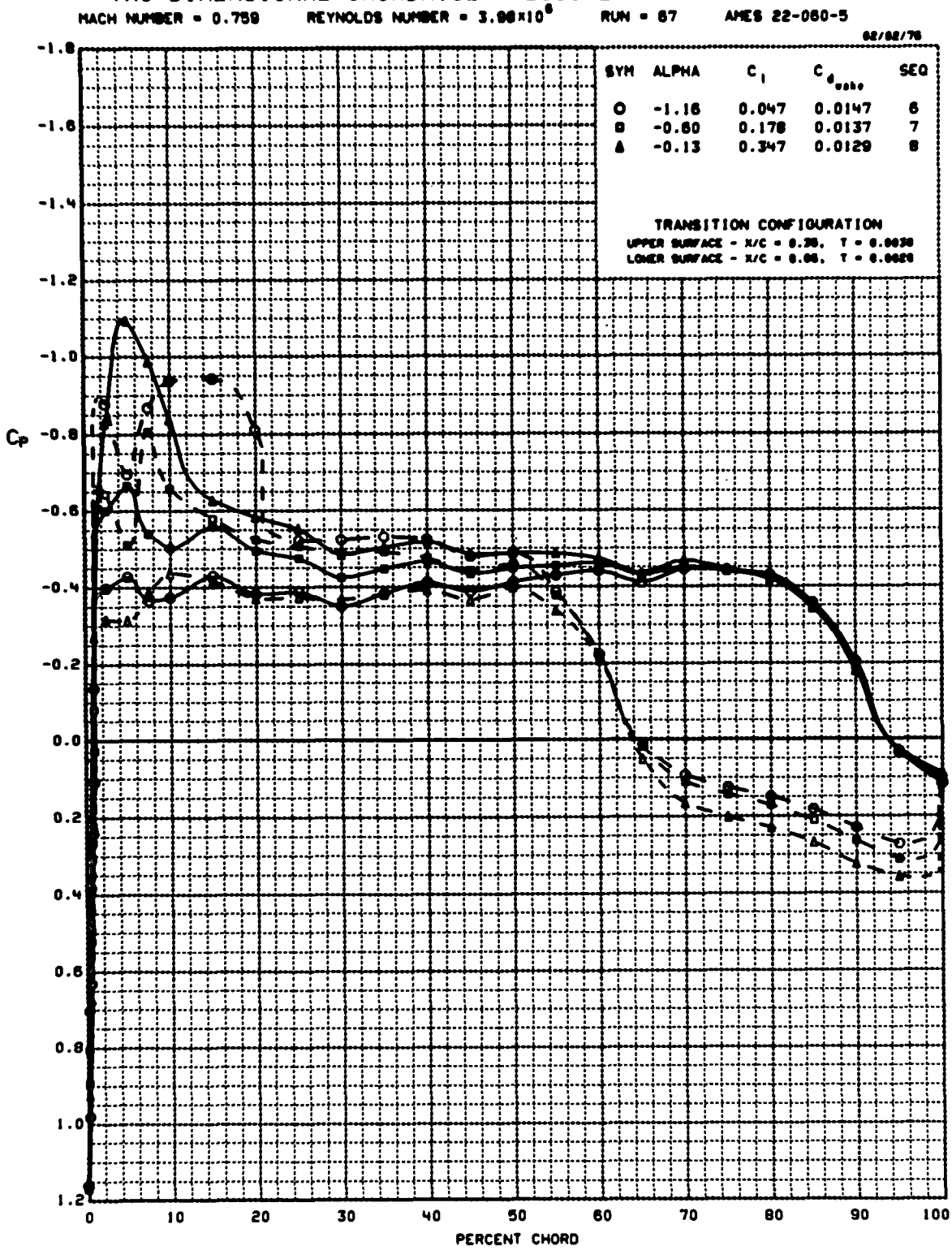
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.98x10^6 RUN = 67 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -1.16 0.047 0.0147 6
B -0.60 0.178 0.0137 7
A -0.13 0.347 0.0129 8
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.20, T = 0.0030
LOWER SURFACE - X/C = 0.06, T = 0.0020
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
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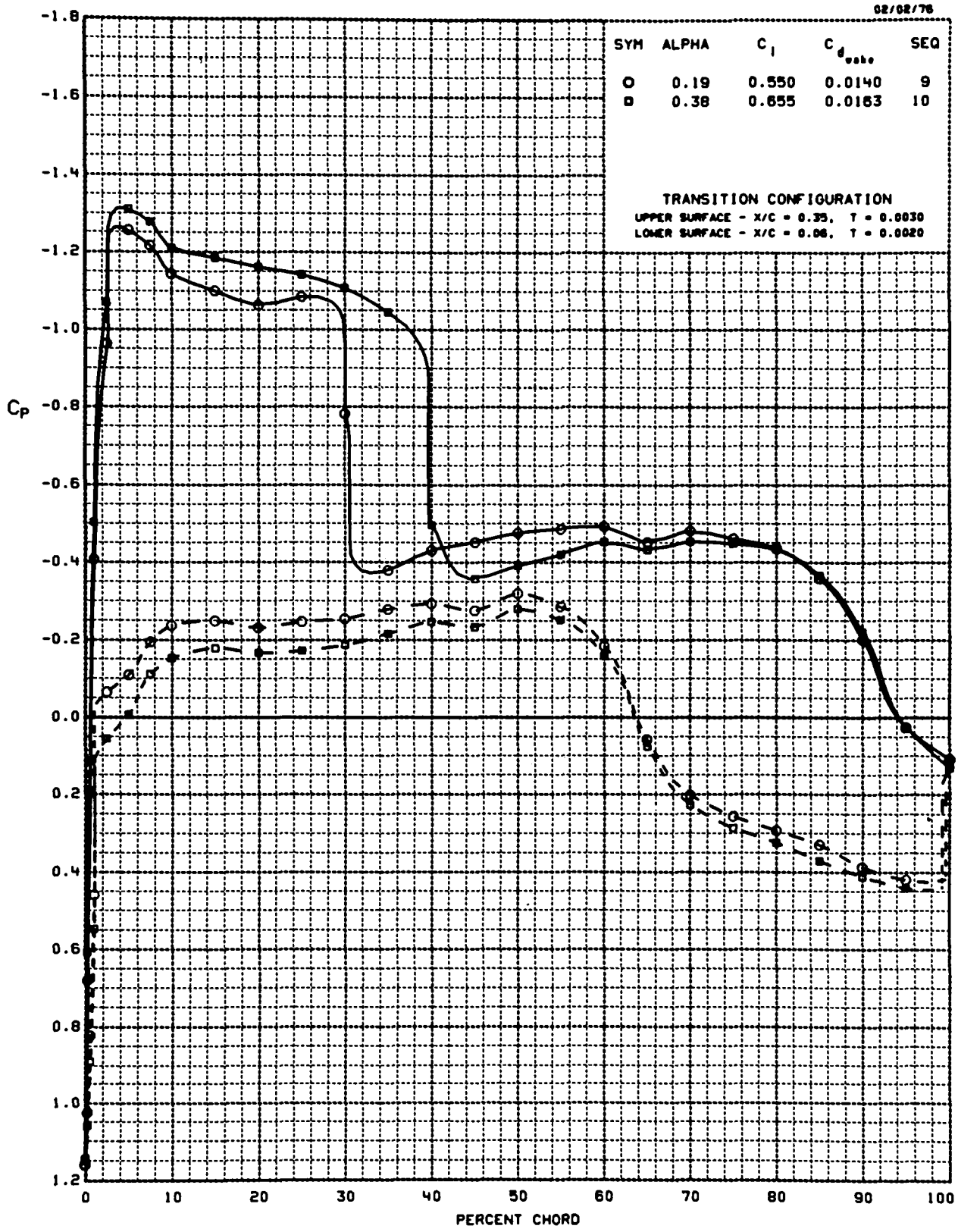
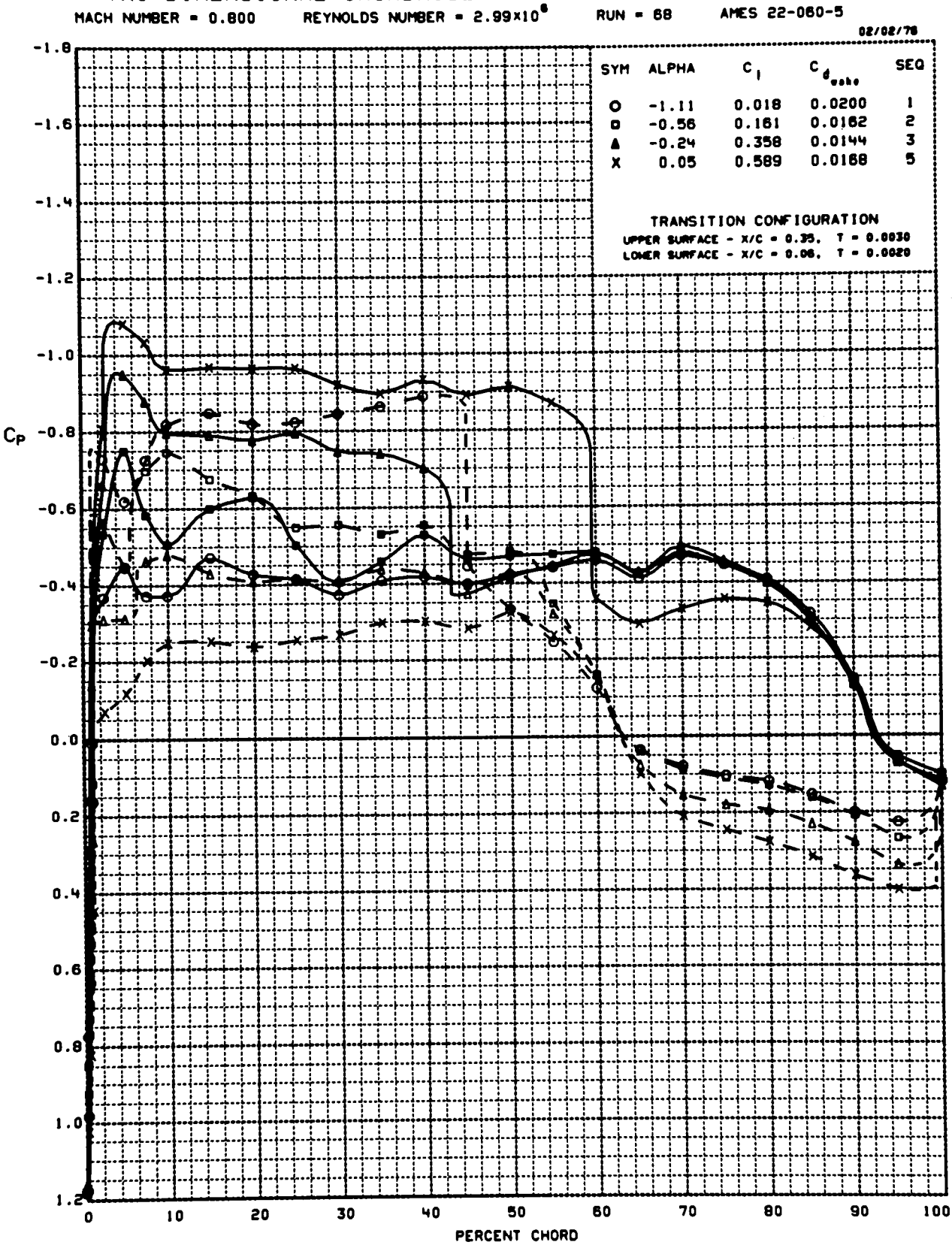
PERCENT CHORD

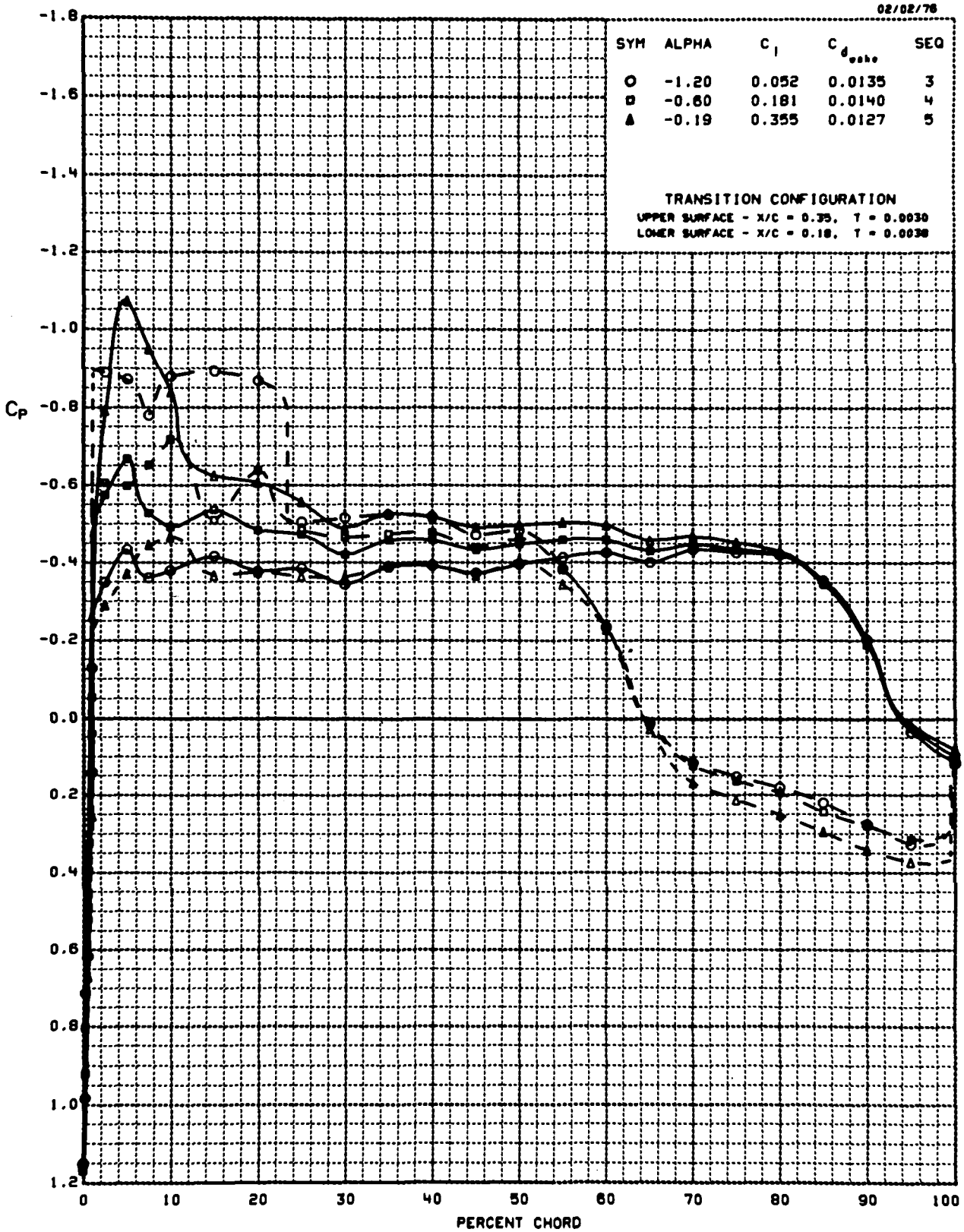

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.94x10^6 RUN = 67 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.19 0.550 0.0140 9
□ 0.38 0.655 0.0163 10
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.06, T = 0.0020
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.800 REYNOLDS NUMBER = 2.99x10^6 RUN = 68 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -1.11 0.018 0.0200 1
□ -0.56 0.161 0.0162 2
Δ -0.24 0.358 0.0144 3
X 0.05 0.589 0.0168 5
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.06, T = 0.0020
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.98×10^6 RUN = 69 AMES 22-060-5

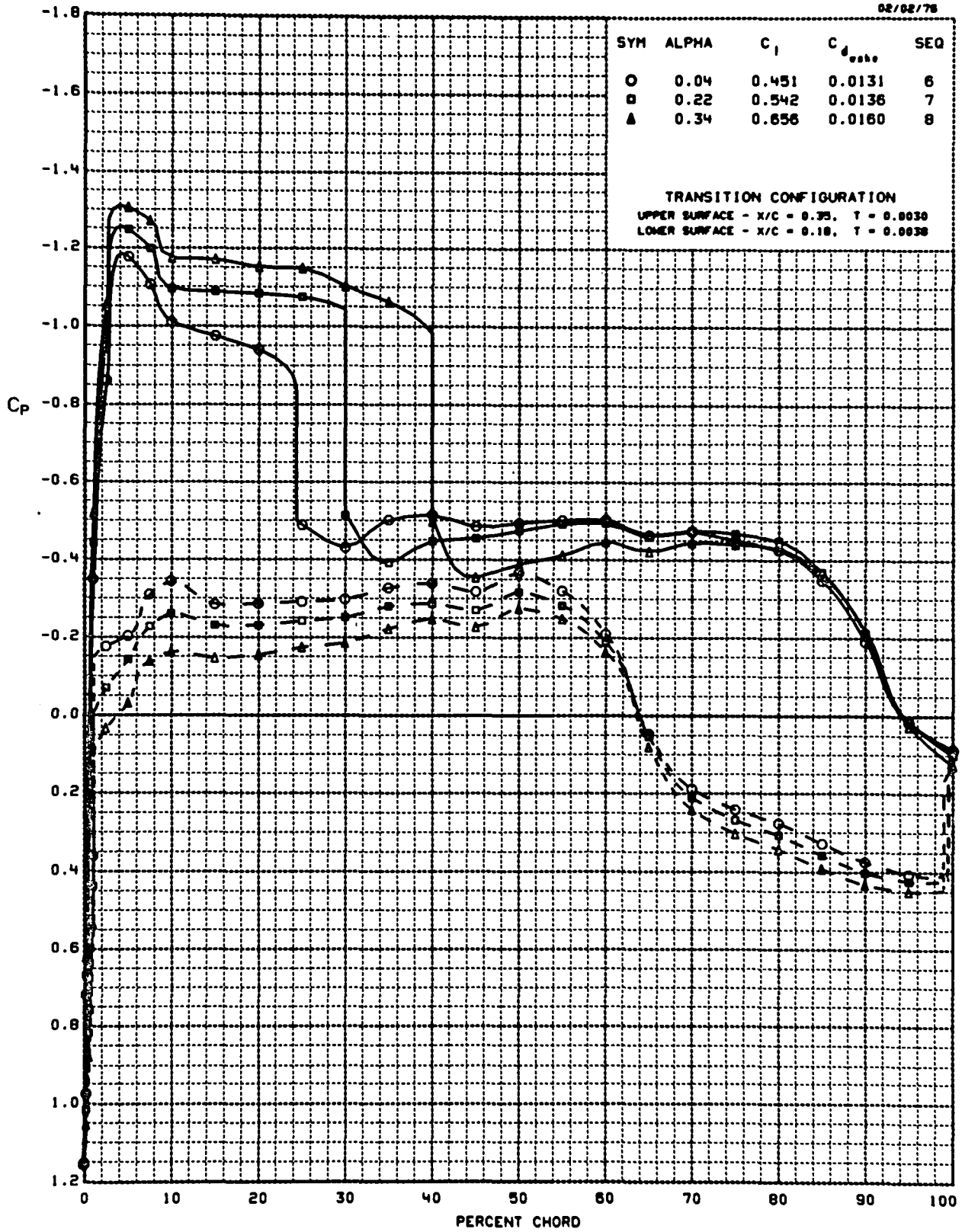
02/02/76

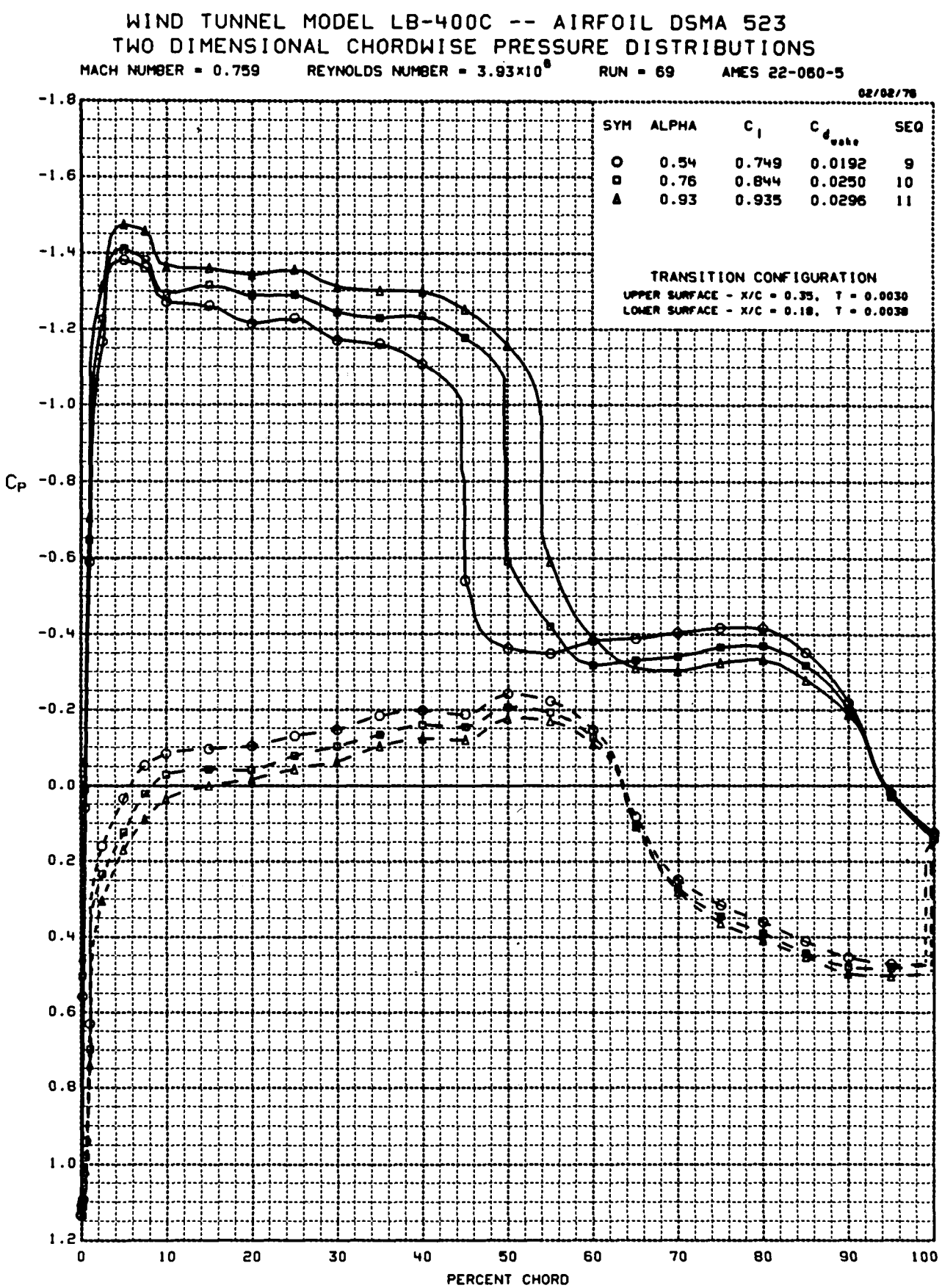


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.91×10^6 RUN = 69 AMES 22-060-5

02/02/76

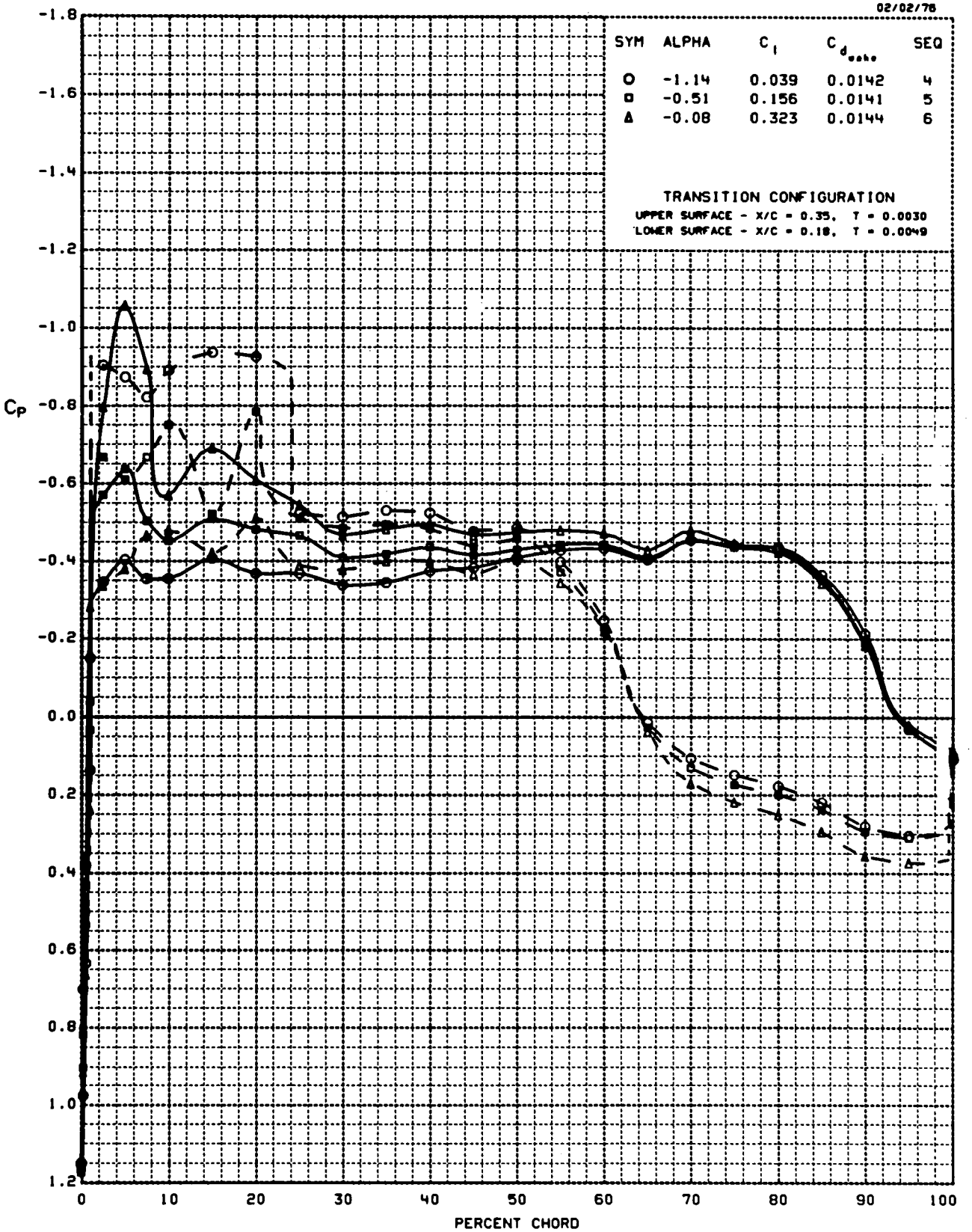



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.93x10^6 RUN = 69 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O 0.54 0.749 0.0192 9
□ 0.76 0.844 0.0250 10
Δ 0.93 0.935 0.0296 11
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.760 REYNOLDS NUMBER = 4.01×10^6 RUN = 70 AMES 22-060-5

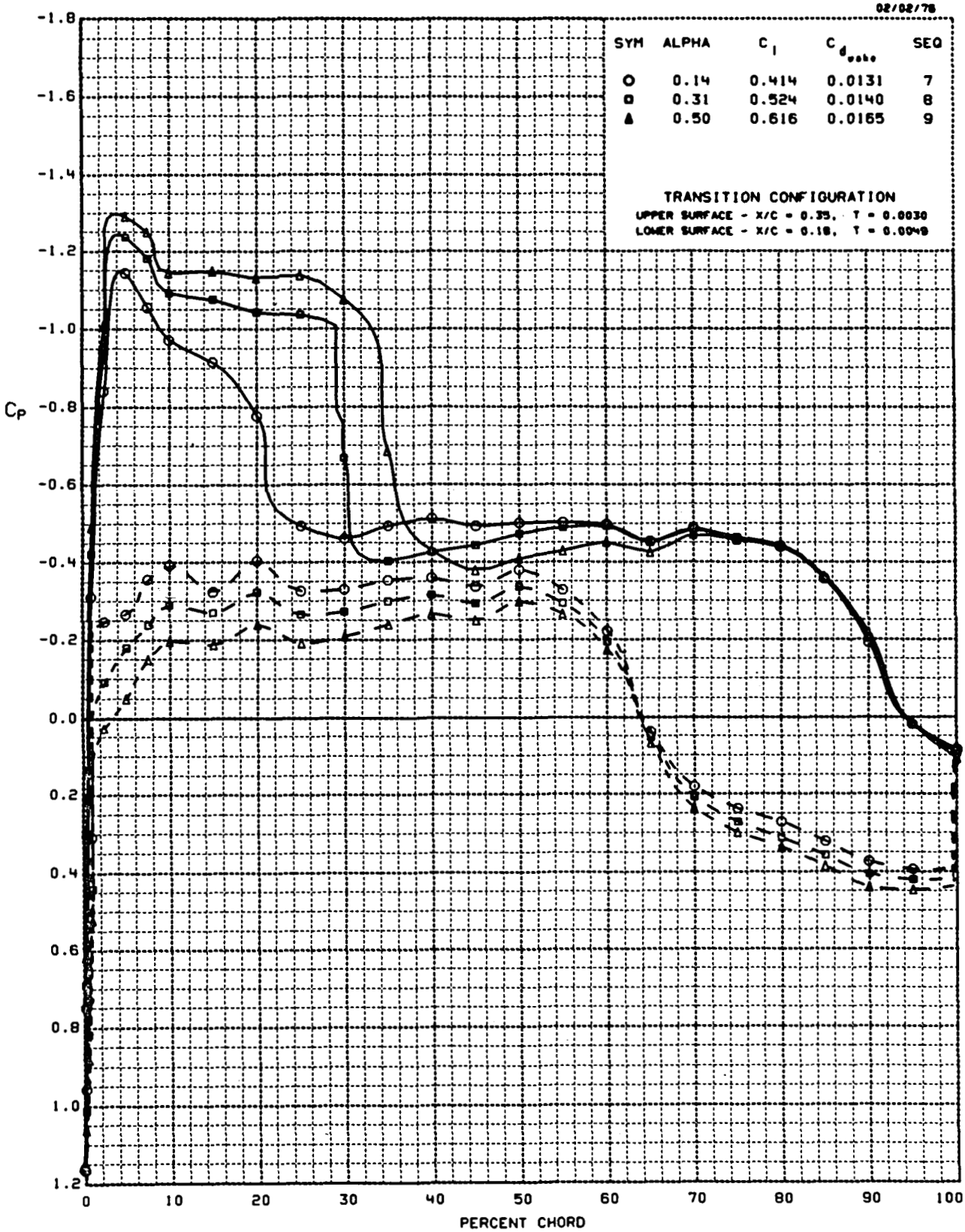
02/02/78

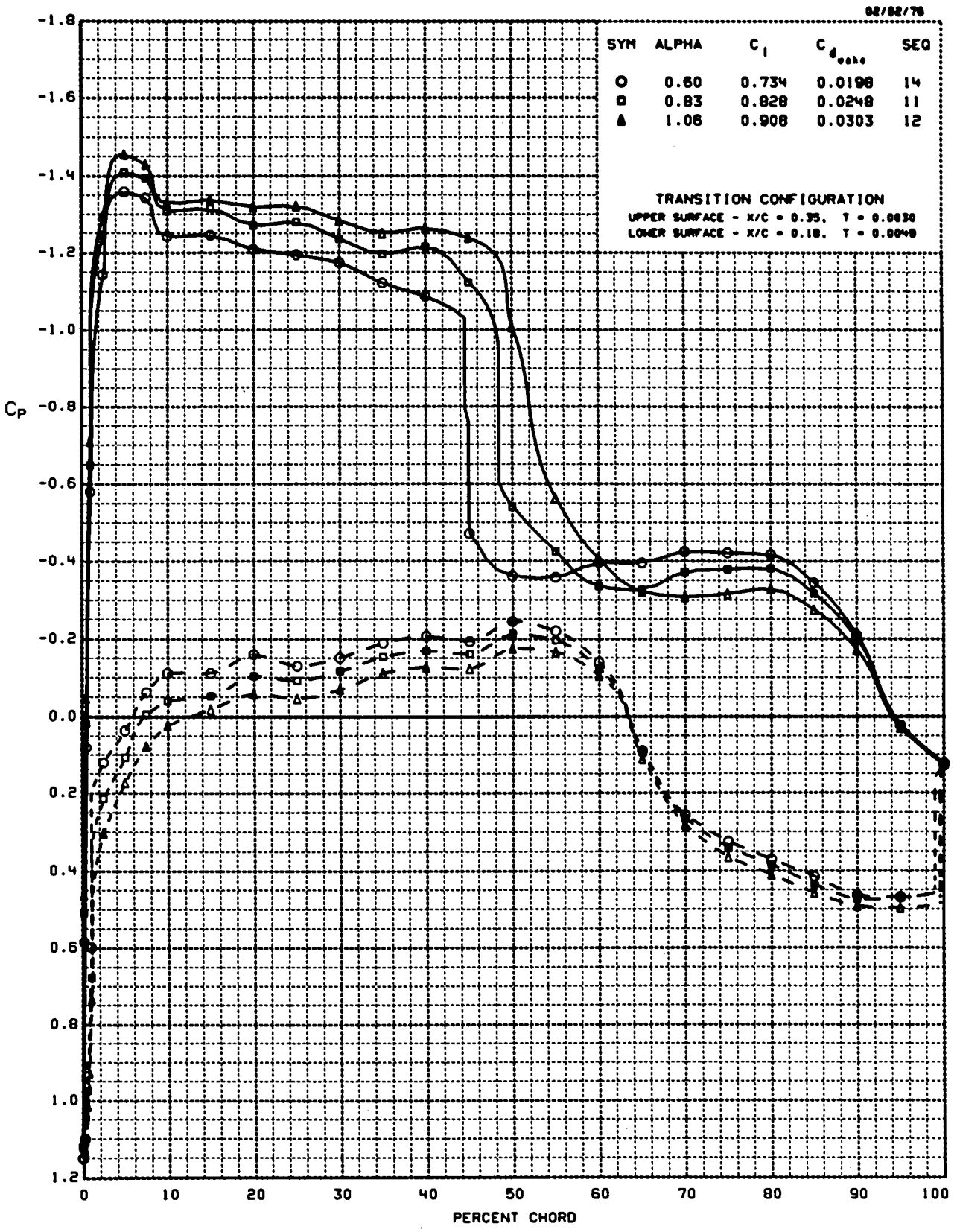


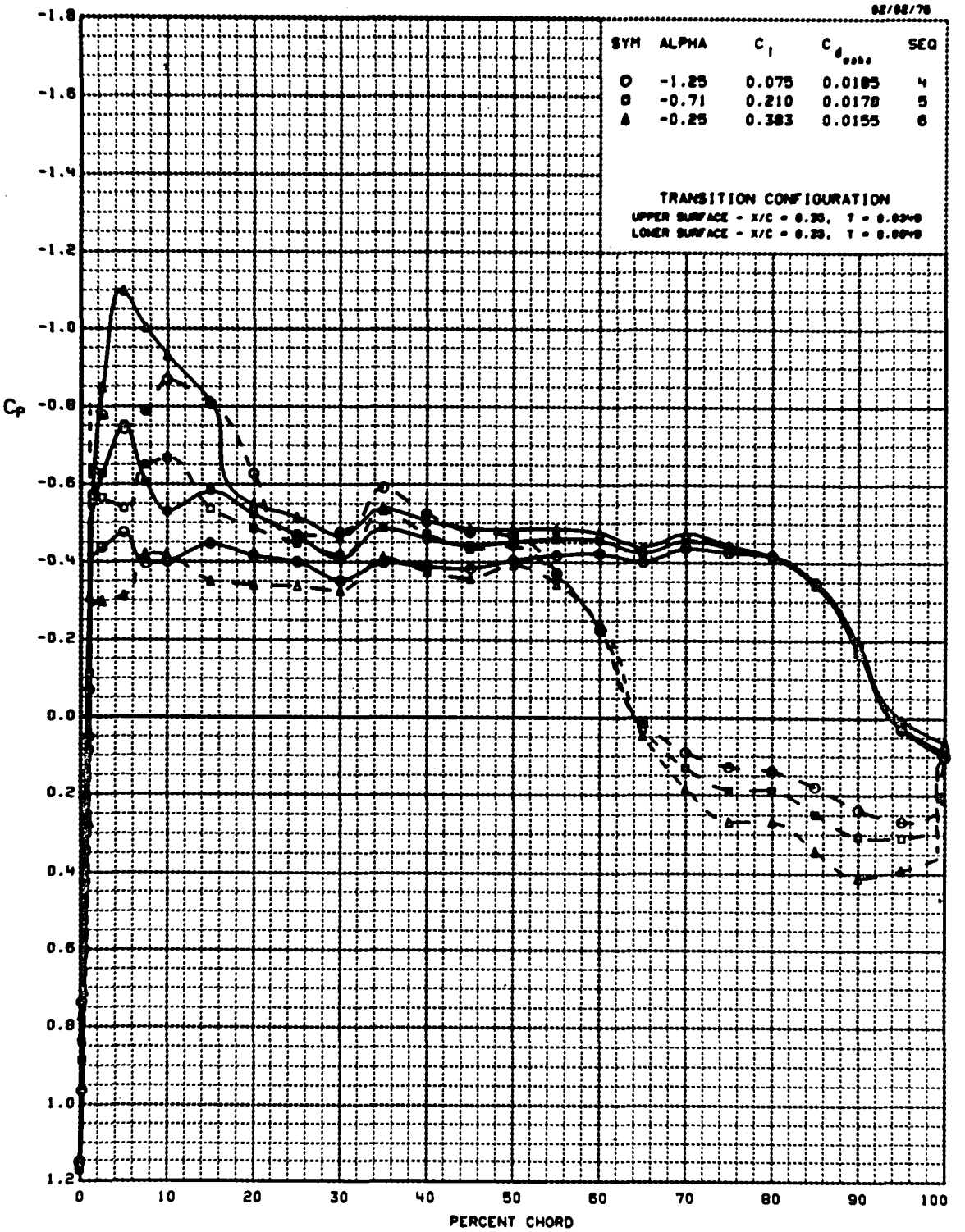
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

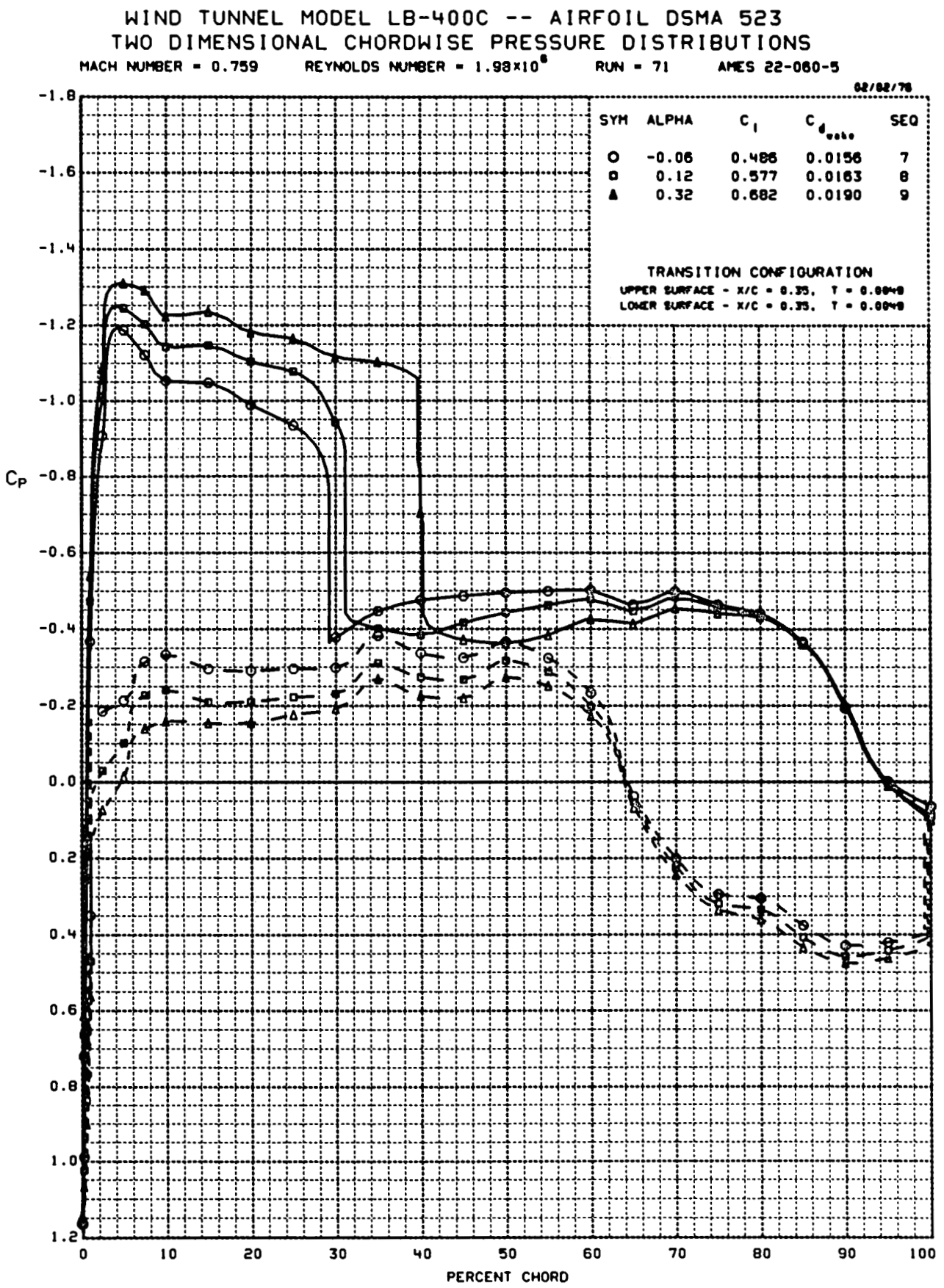
MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.99×10^6 RUN = 70 AMES 22-060-5

02/02/78




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.93x10^6 RUN = 70 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.60 0.734 0.0198 14
□ 0.83 0.828 0.0248 11
△ 1.06 0.908 0.0303 12
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0040
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

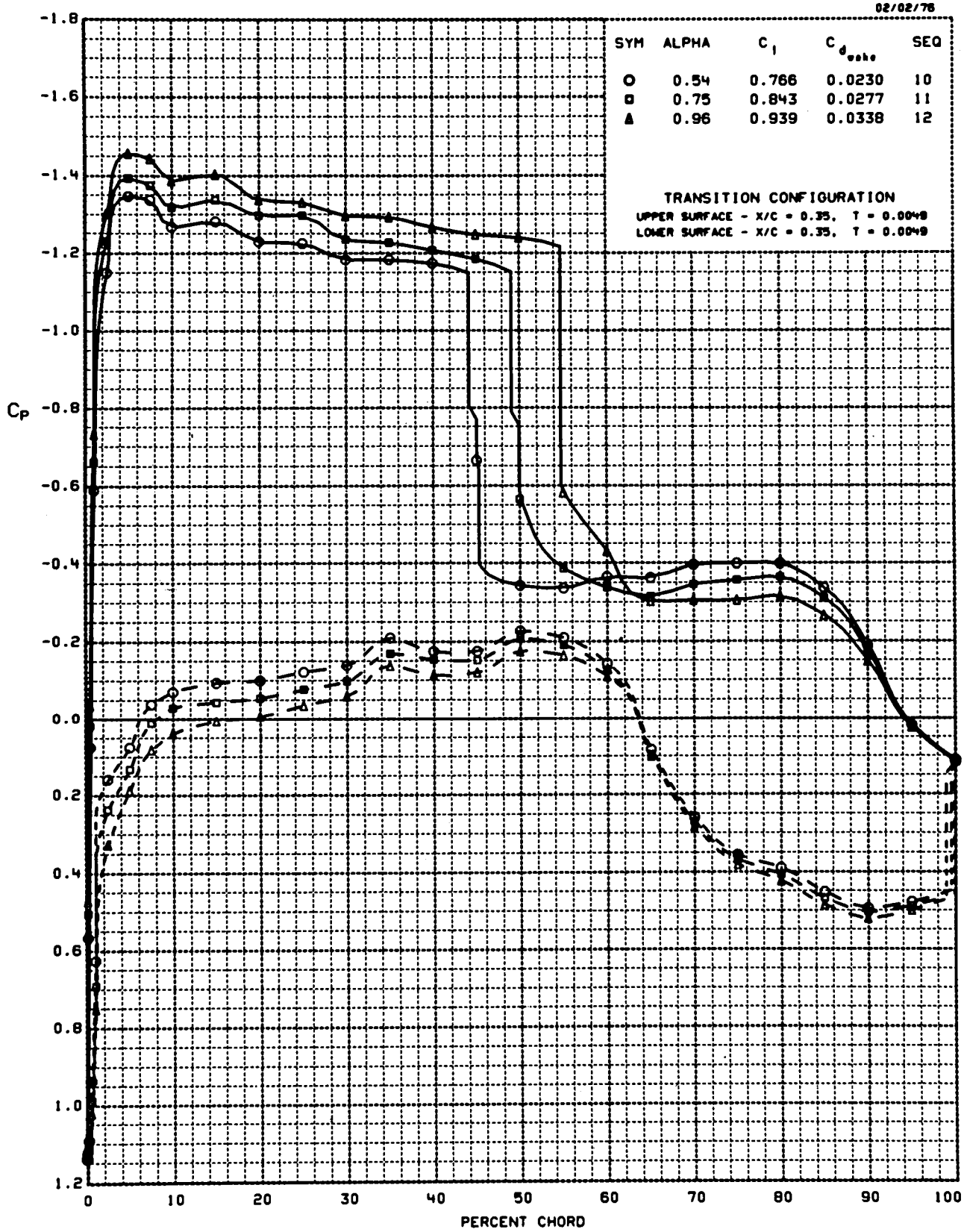

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 2.03x10^6 RUN = 71 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -1.25 0.075 0.0185 4
B -0.71 0.210 0.0178 5
A -0.25 0.383 0.0155 6
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.03+0
LOWER SURFACE - X/C = 0.35, T = 0.06+0
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

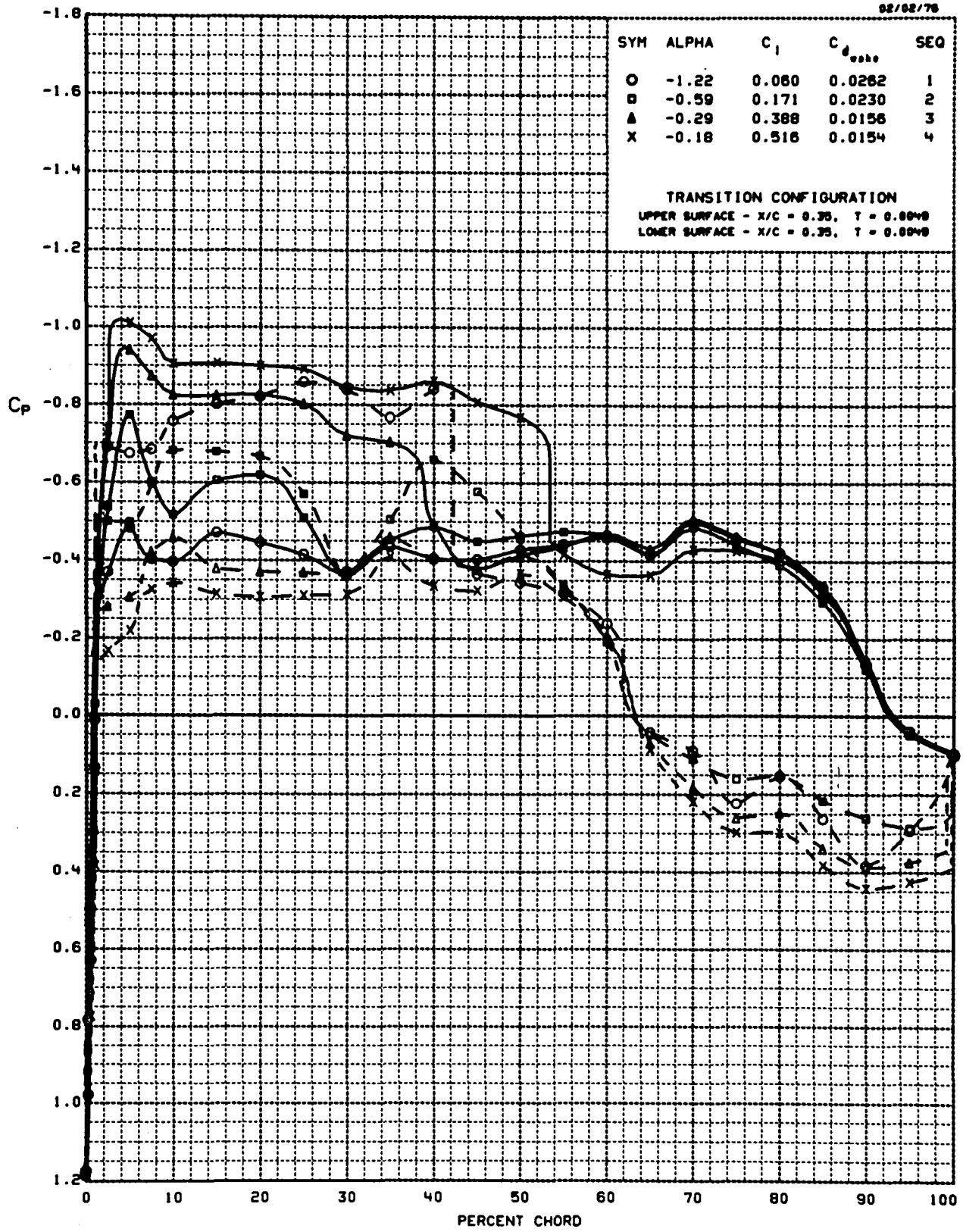

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 1.98x10^6 RUN = 71 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -0.06 0.486 0.0156 7
□ 0.12 0.577 0.0163 8
▲ 0.32 0.682 0.0190 9
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.35, T = 0.0040
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

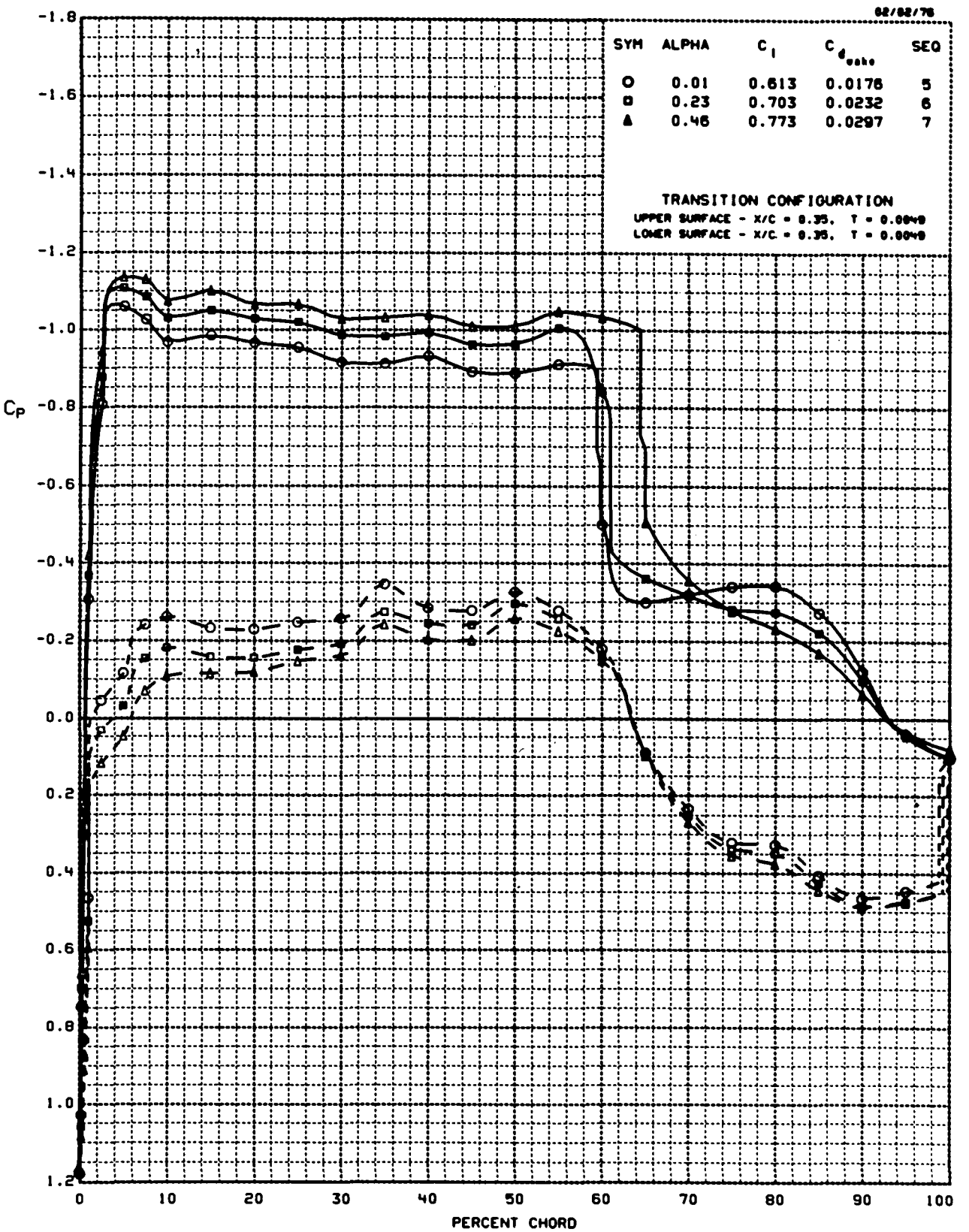
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.761 REYNOLDS NUMBER = 1.98×10^6 RUN = 71 AMES 22-060-5

02/02/76

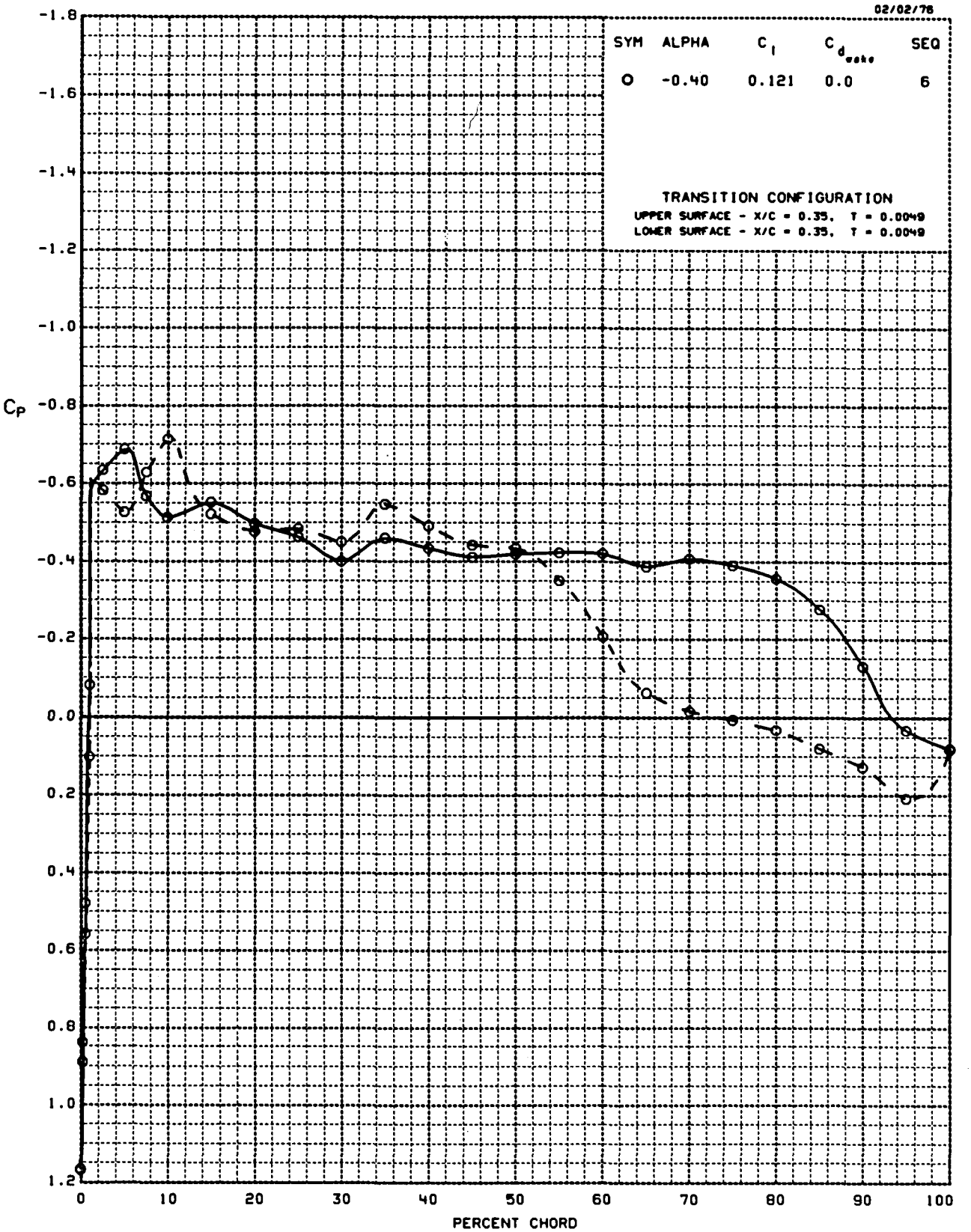


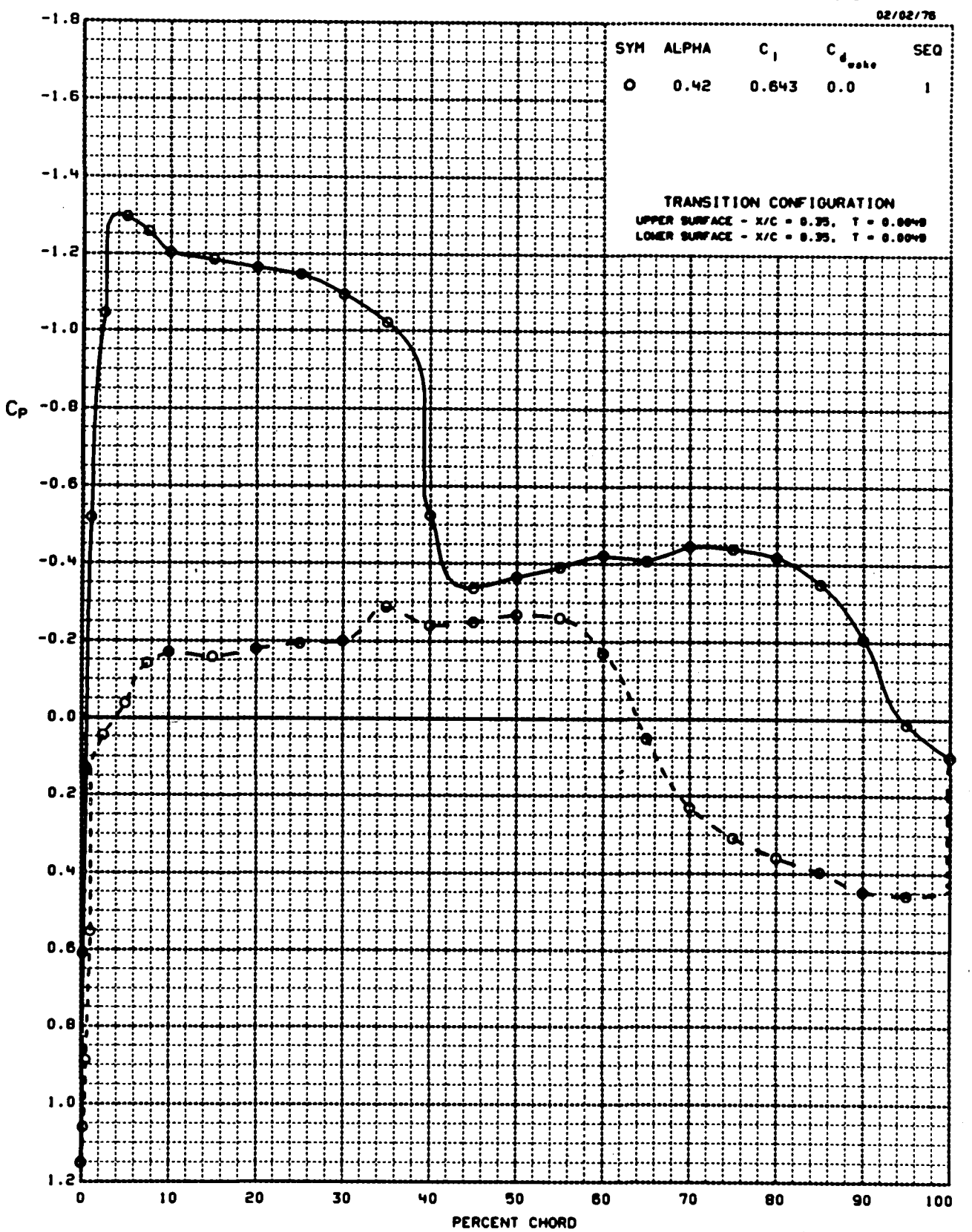

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.800 REYNOLDS NUMBER = 1.99x10^6 RUN = 72 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -1.22 0.060 0.0262 1
□ -0.59 0.171 0.0230 2
Δ -0.29 0.388 0.0156 3
X -0.18 0.516 0.0154 4
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.35, T = 0.0040
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

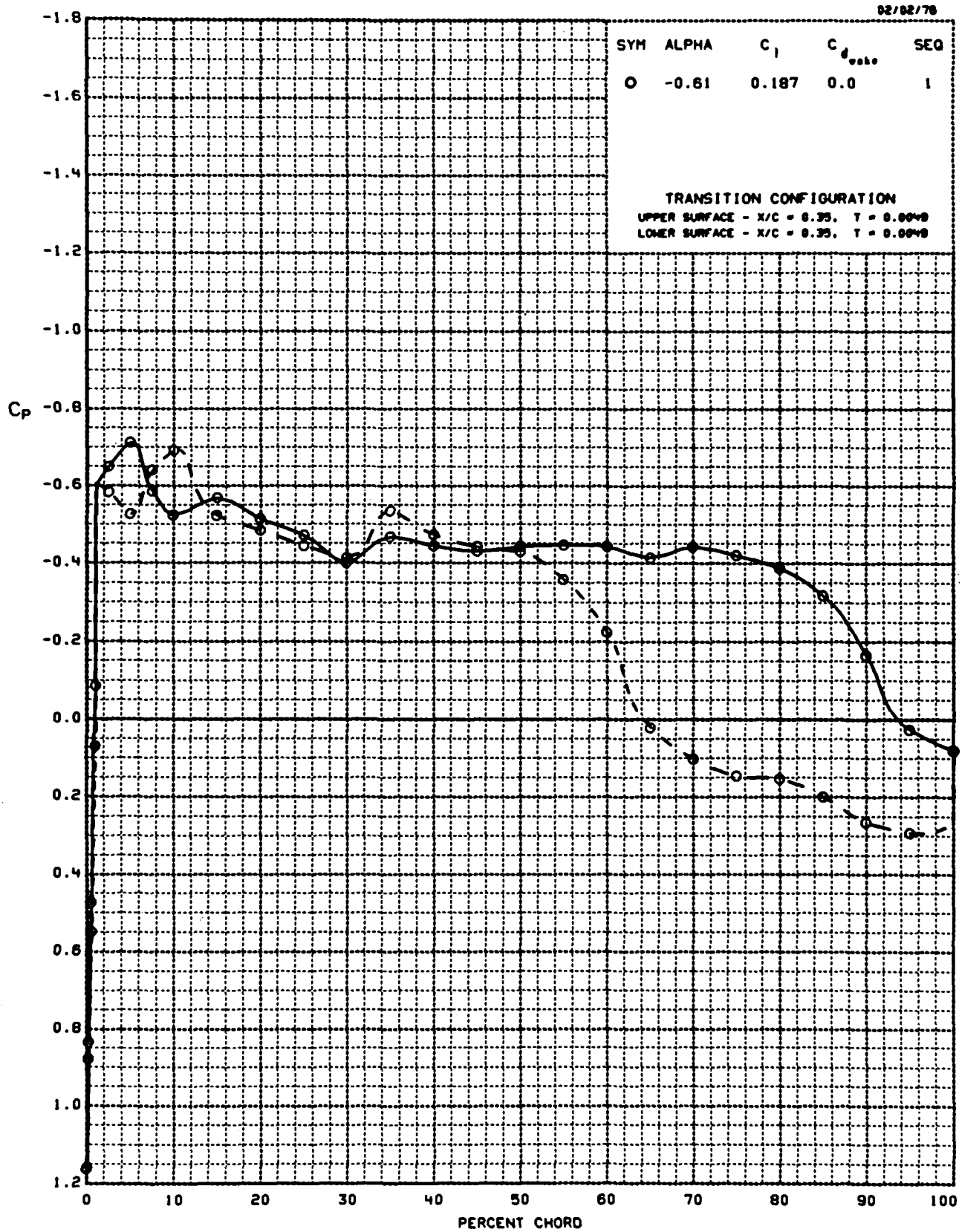

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.801 REYNOLDS NUMBER = 1.98x10^6 RUN = 72 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.01 0.613 0.0176 5
□ 0.23 0.703 0.0232 6
△ 0.46 0.773 0.0297 7
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.35, T = 0.0040
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.764 REYNOLDS NUMBER = 2.05×10^6 RUN = 73 AMES 22-060-5



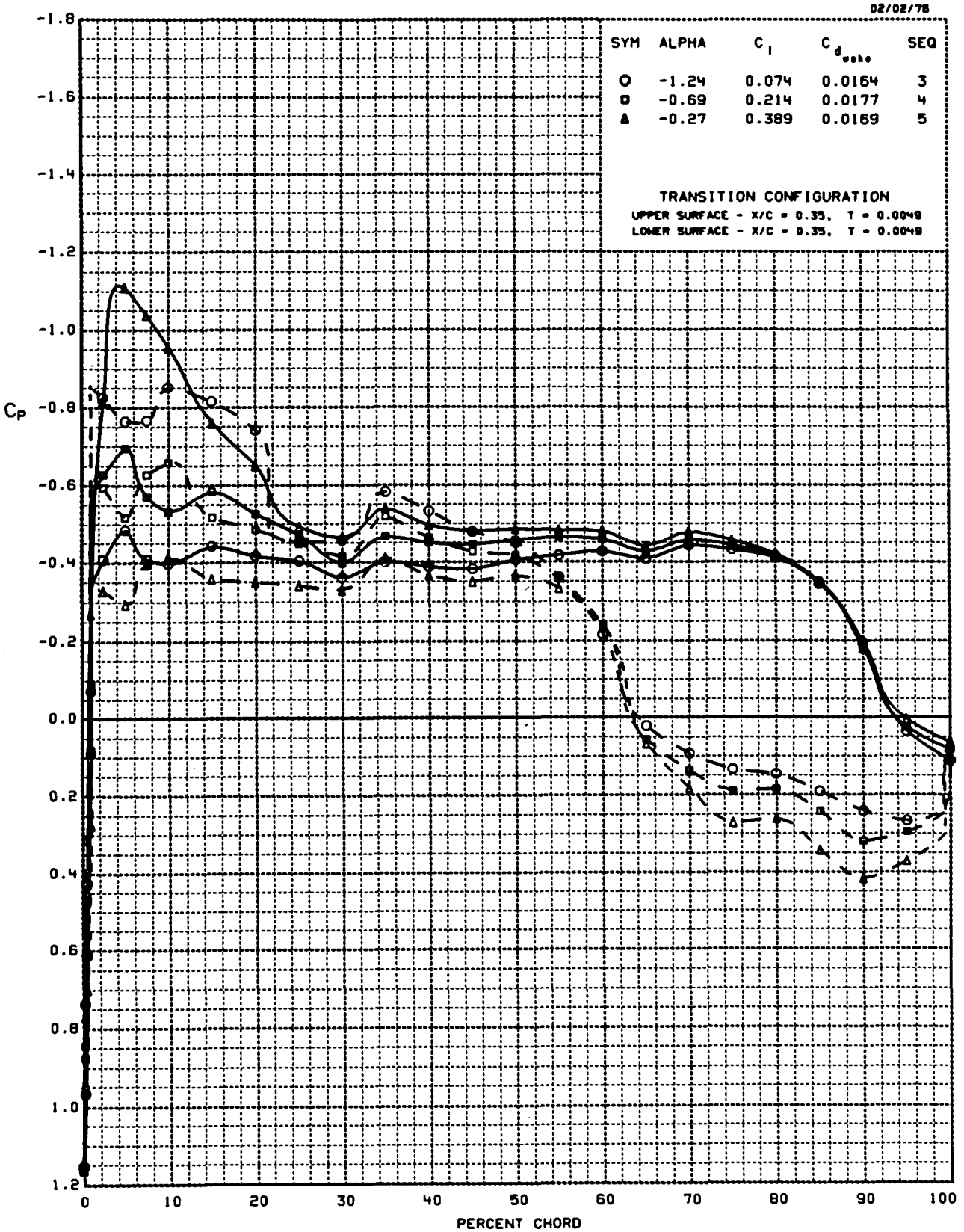

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.761 REYNOLDS NUMBER = 1.97x10^6 RUN = 74 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O 0.42 0.643 0.0 1
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.35, T = 0.0040
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

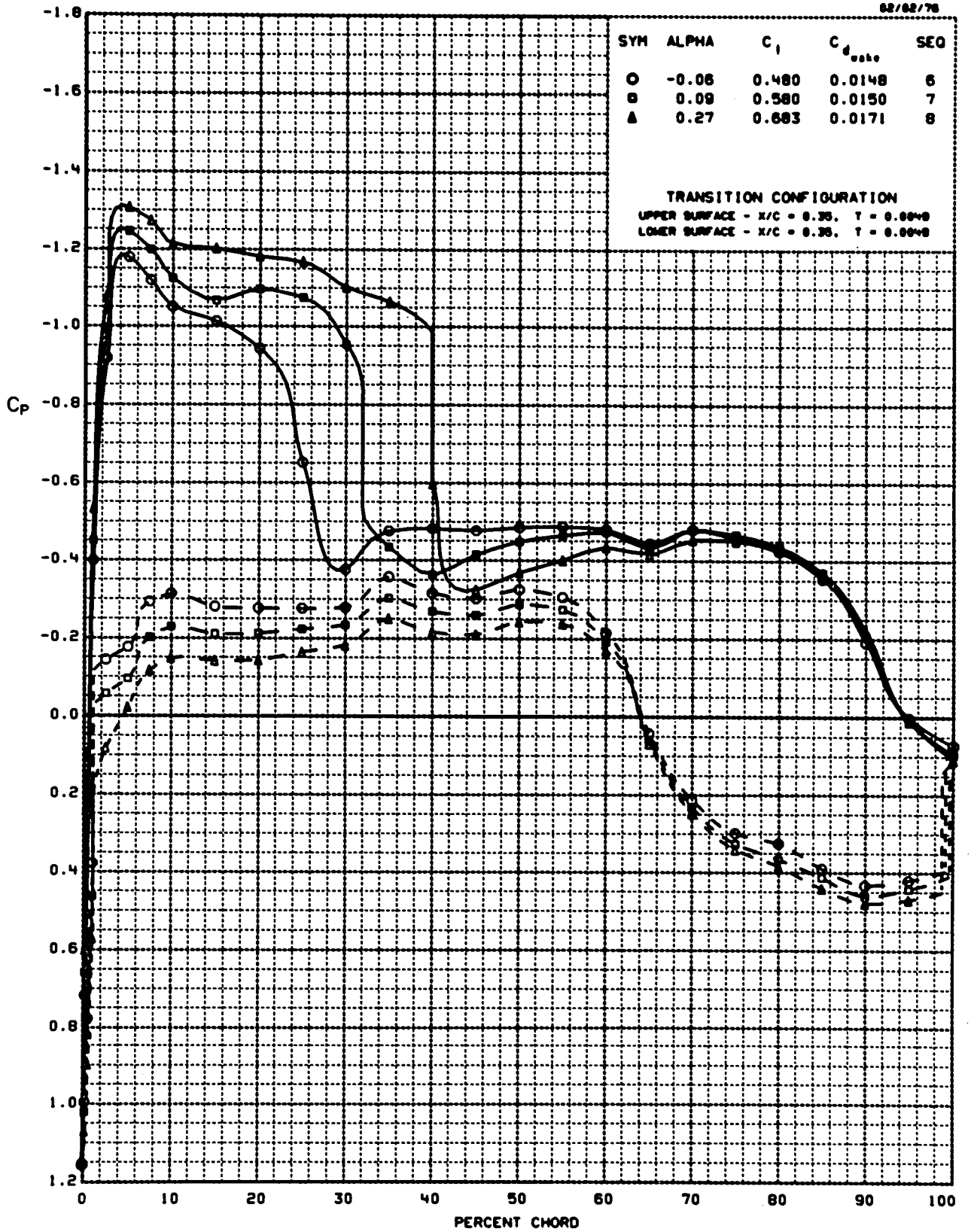

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 1.99x10^6 RUN = 75 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -0.61 0.187 0.0 1
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.35, T = 0.0040
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

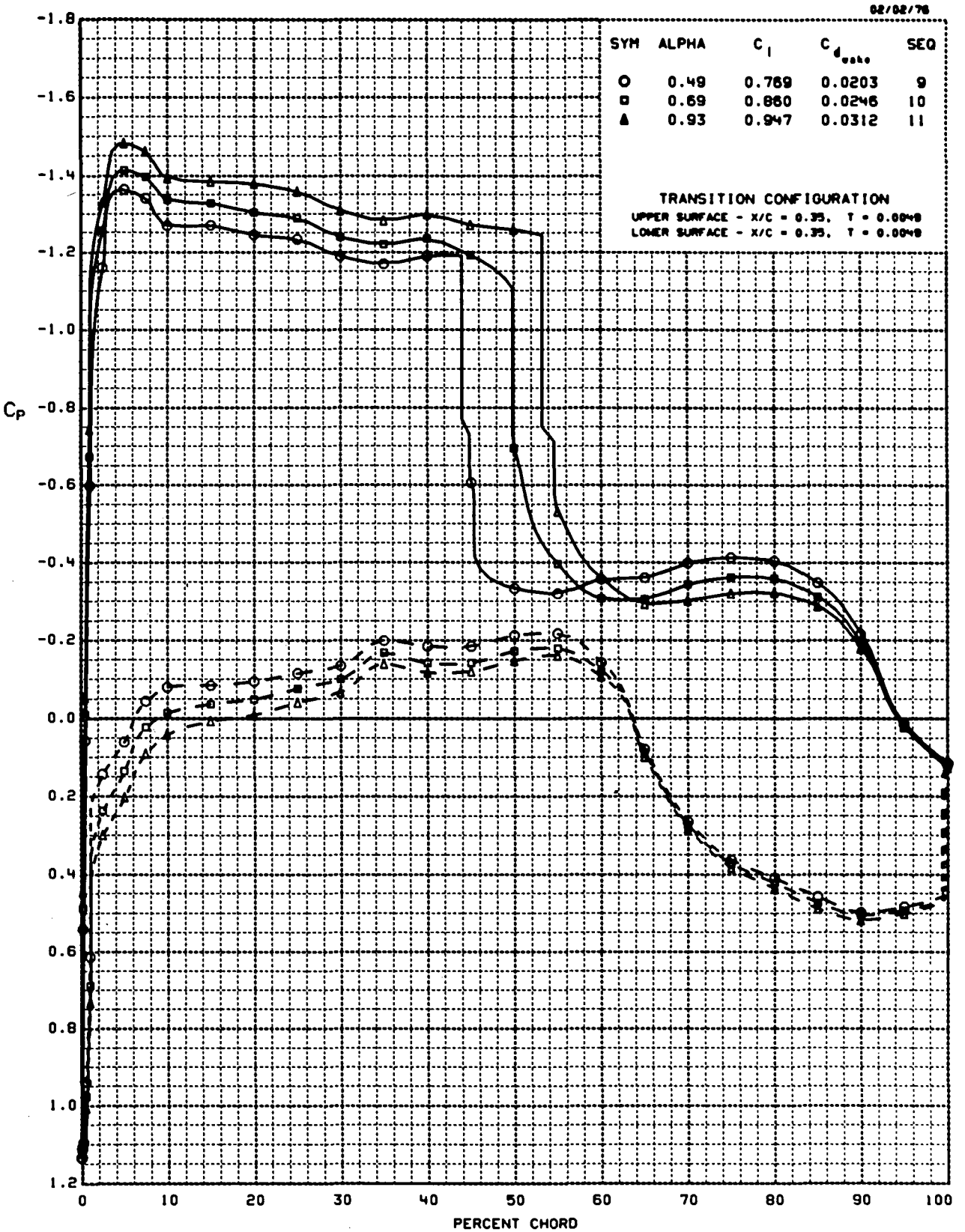
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.761 REYNOLDS NUMBER = 2.01×10^6 RUN = 76 AMES 22-060-5

02/02/78




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 1.99x10^6 RUN = 78 AMES 22-060-5
02/02/78
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O -0.06 0.480 0.0148 6
0.09 0.580 0.0150 7
A 0.27 0.683 0.0171 8
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.35, T = 0.0040
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 1.98x10^6 RUN = 76 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.49 0.769 0.0203 9
□ 0.69 0.860 0.0246 10
△ 0.93 0.947 0.0312 11
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.35, T = 0.0040
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

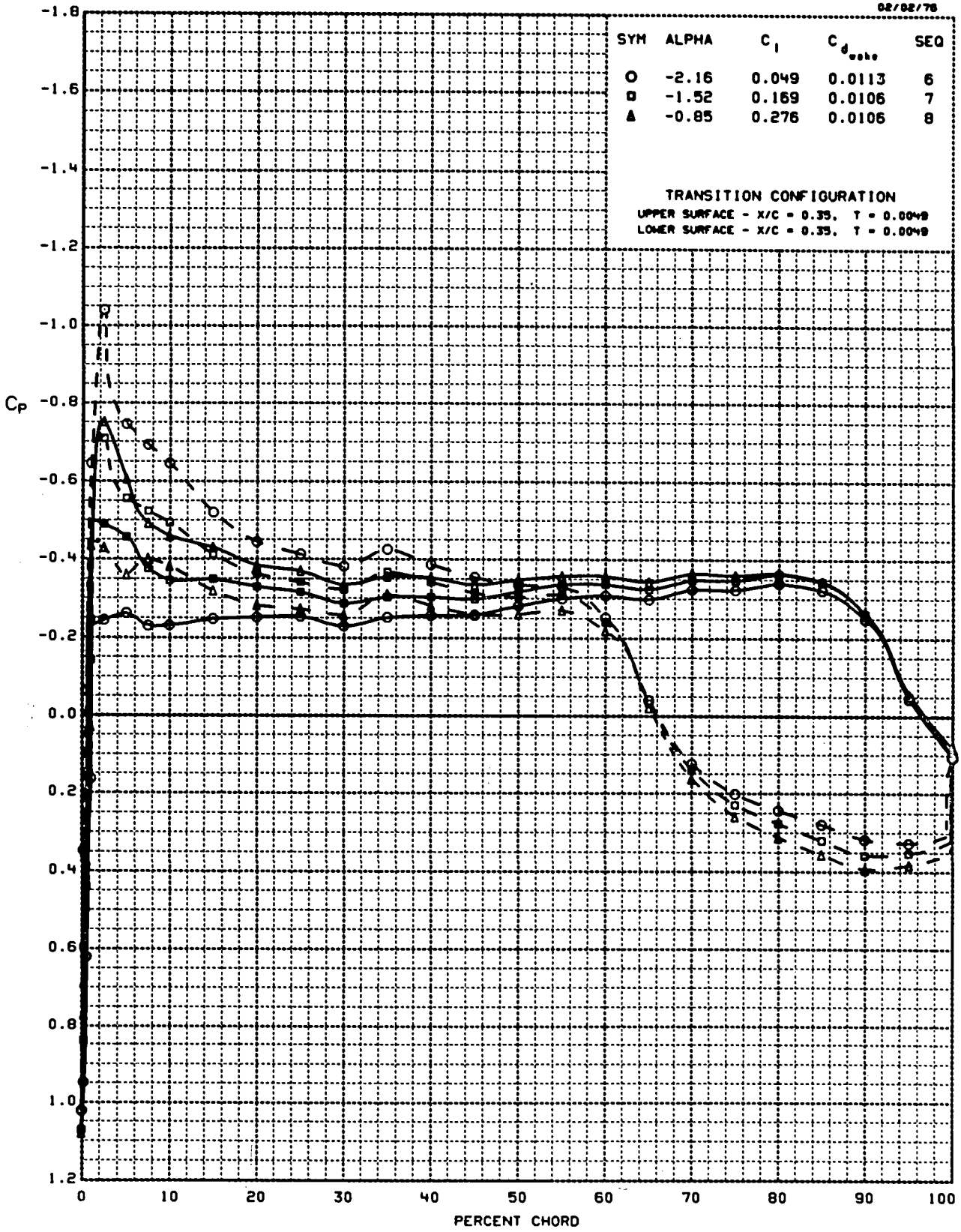
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

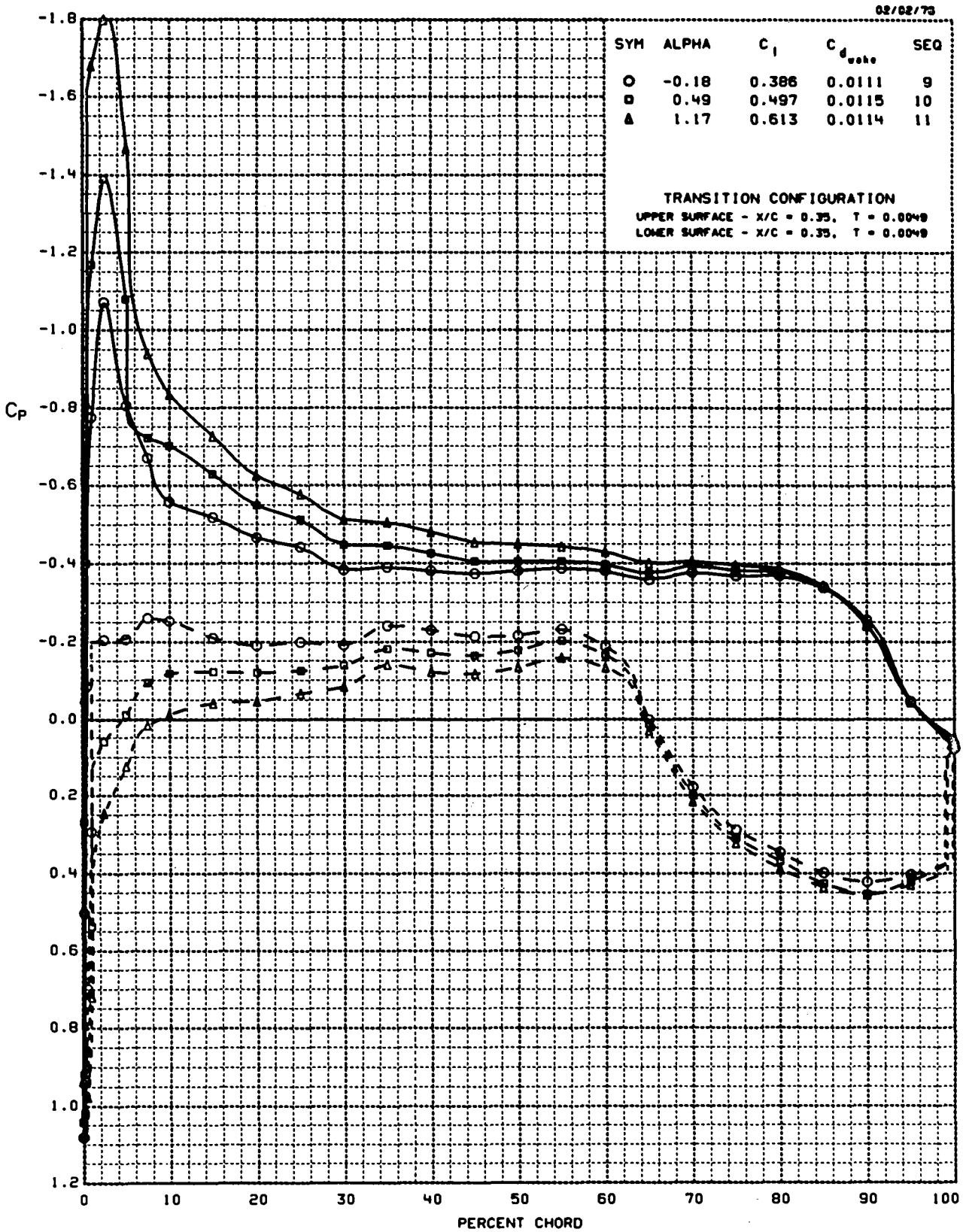
MACH NUMBER = 0.498 REYNOLDS NUMBER = 2.00×10^6 RUN = 77 AMES 22-060-5

02/02/78

SYM	ALPHA	C_l	$C_{d_{wake}}$	SEQ
O	-2.16	0.049	0.0113	6
□	-1.52	0.169	0.0106	7
△	-0.85	0.276	0.0106	8

TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0049
LOWER SURFACE - X/C = 0.35, T = 0.0049

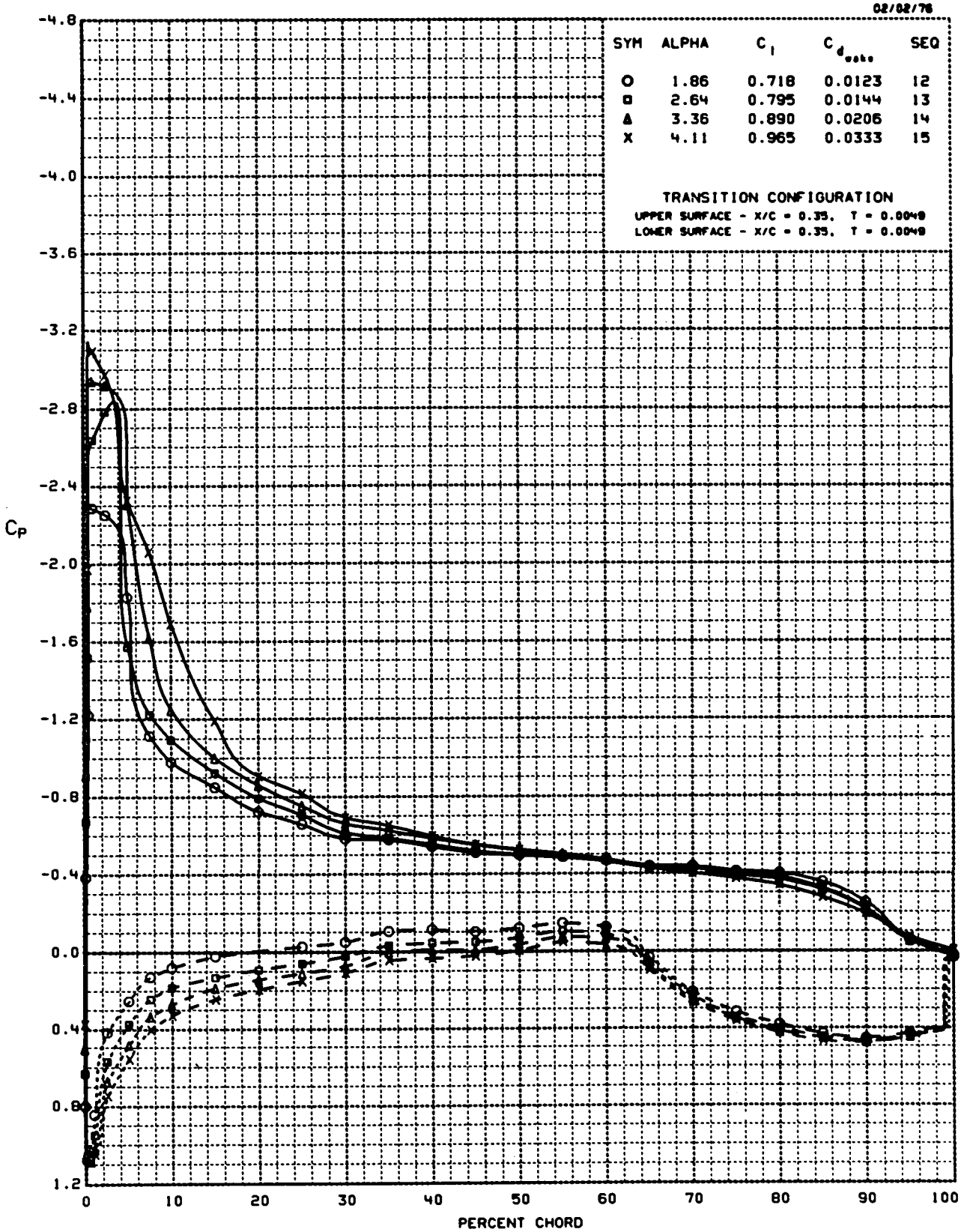



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.501 REYNOLDS NUMBER = 2.01x10^6 RUN = 77 AMES 22-060-5
02/02/73
SYM ALPHA C_l C_d_wake SEQ
O -0.18 0.386 0.0111 9
□ 0.49 0.497 0.0115 10
Δ 1.17 0.613 0.0114 11
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0049
LOWER SURFACE - X/C = 0.35, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.498 REYNOLDS NUMBER = 1.99×10^6 RUN = 77 AMES 22-060-5

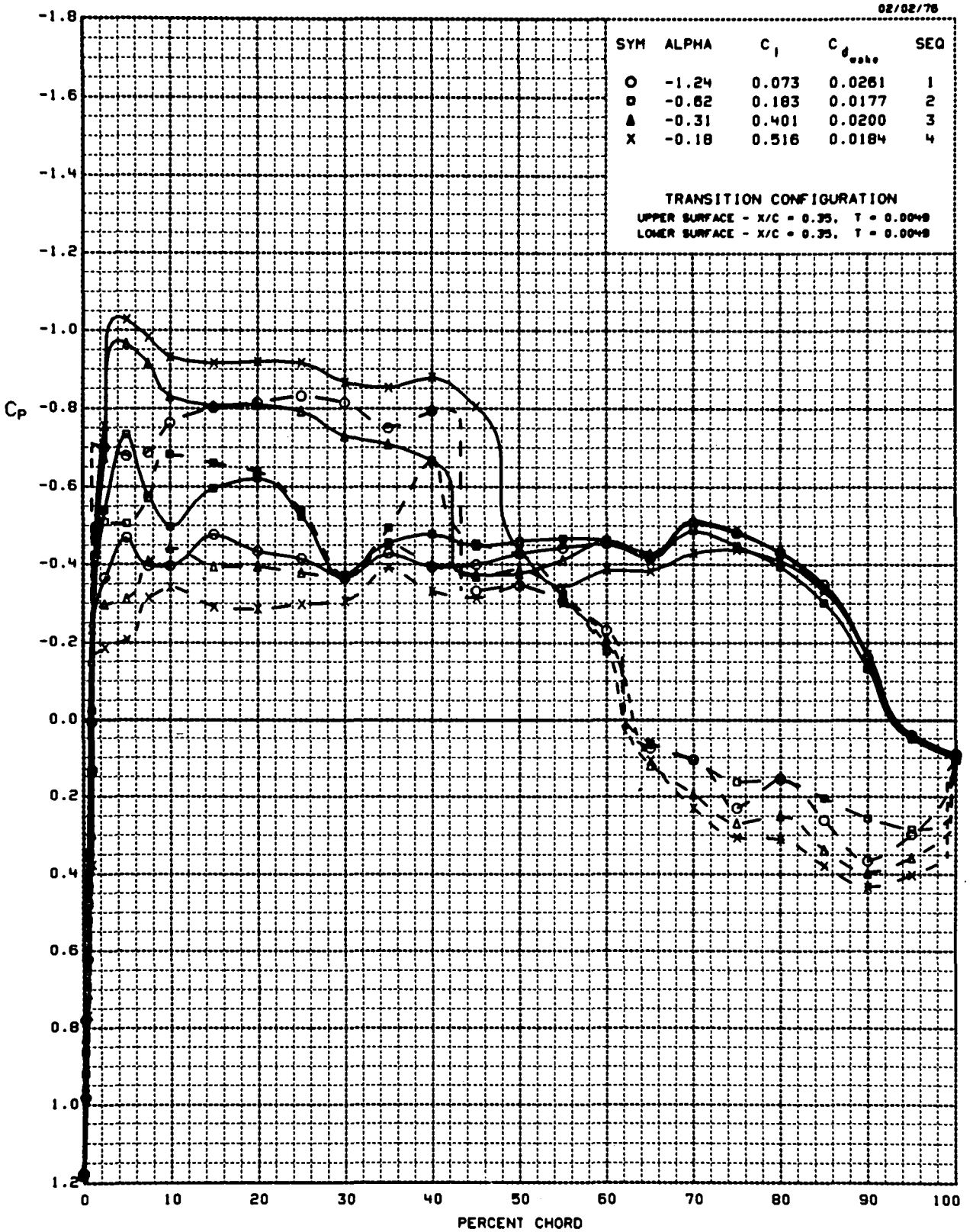
02/02/76

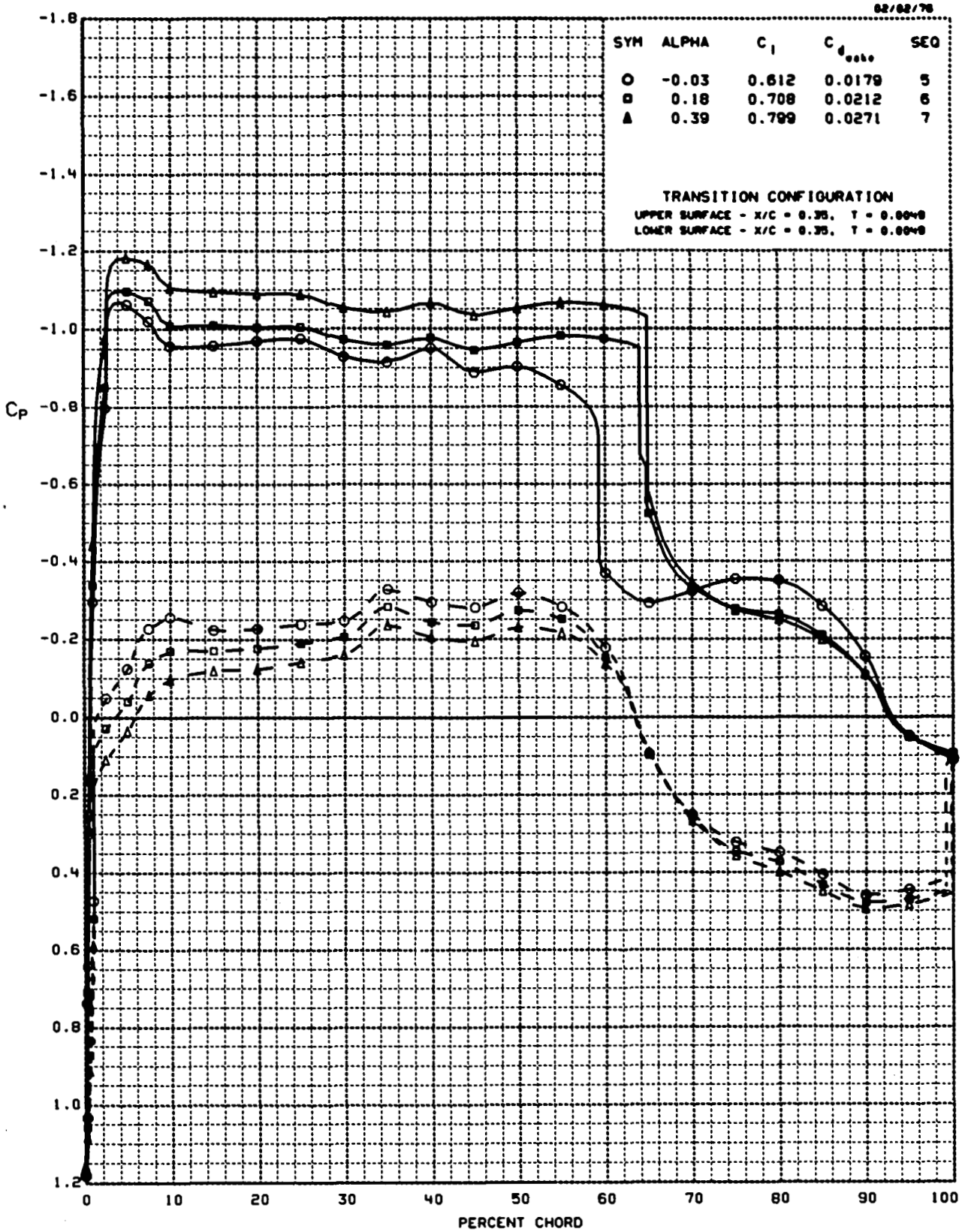


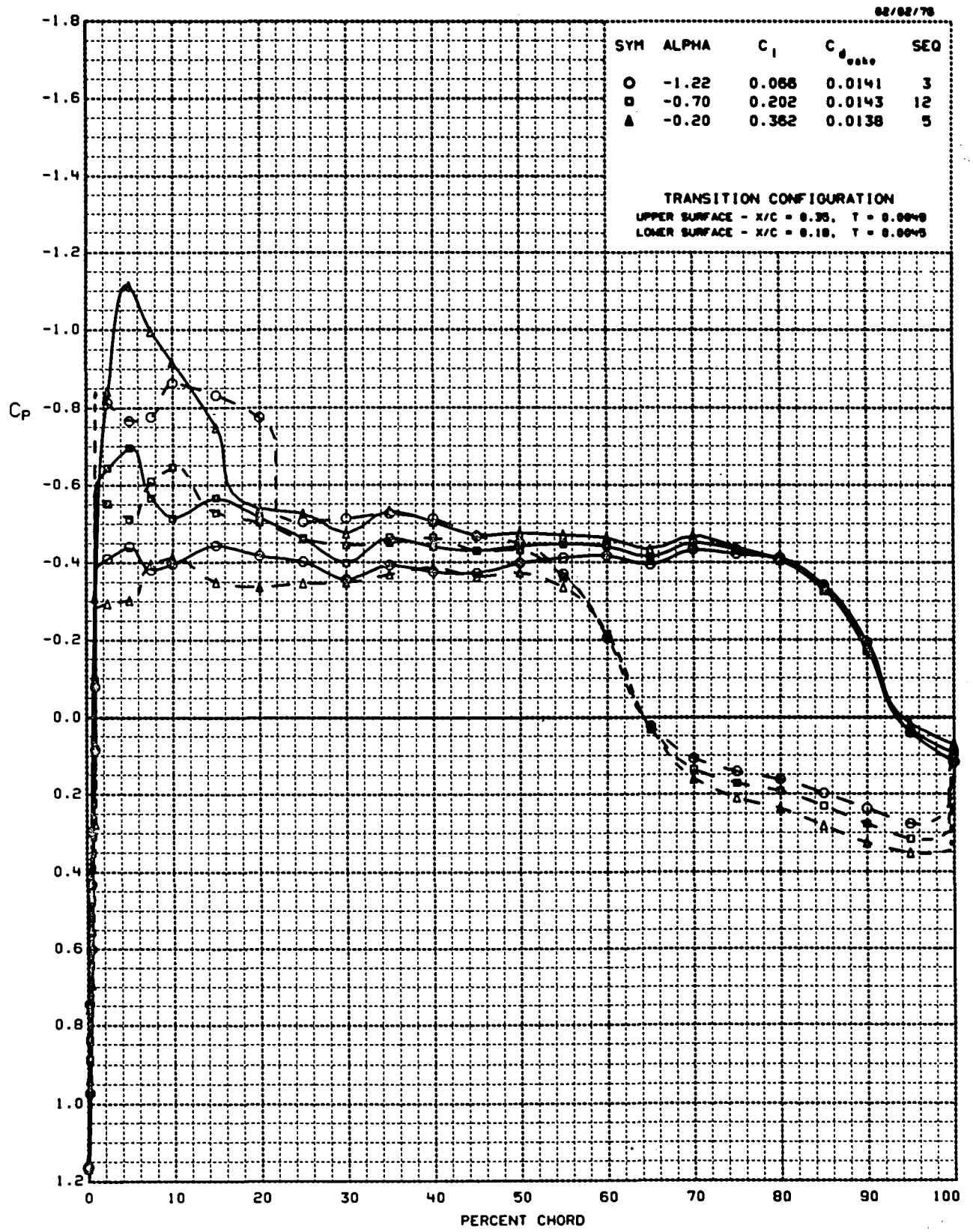
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.799 REYNOLDS NUMBER = 1.98×10^6 RUN = 78 AMES 22-060-5

02/02/78



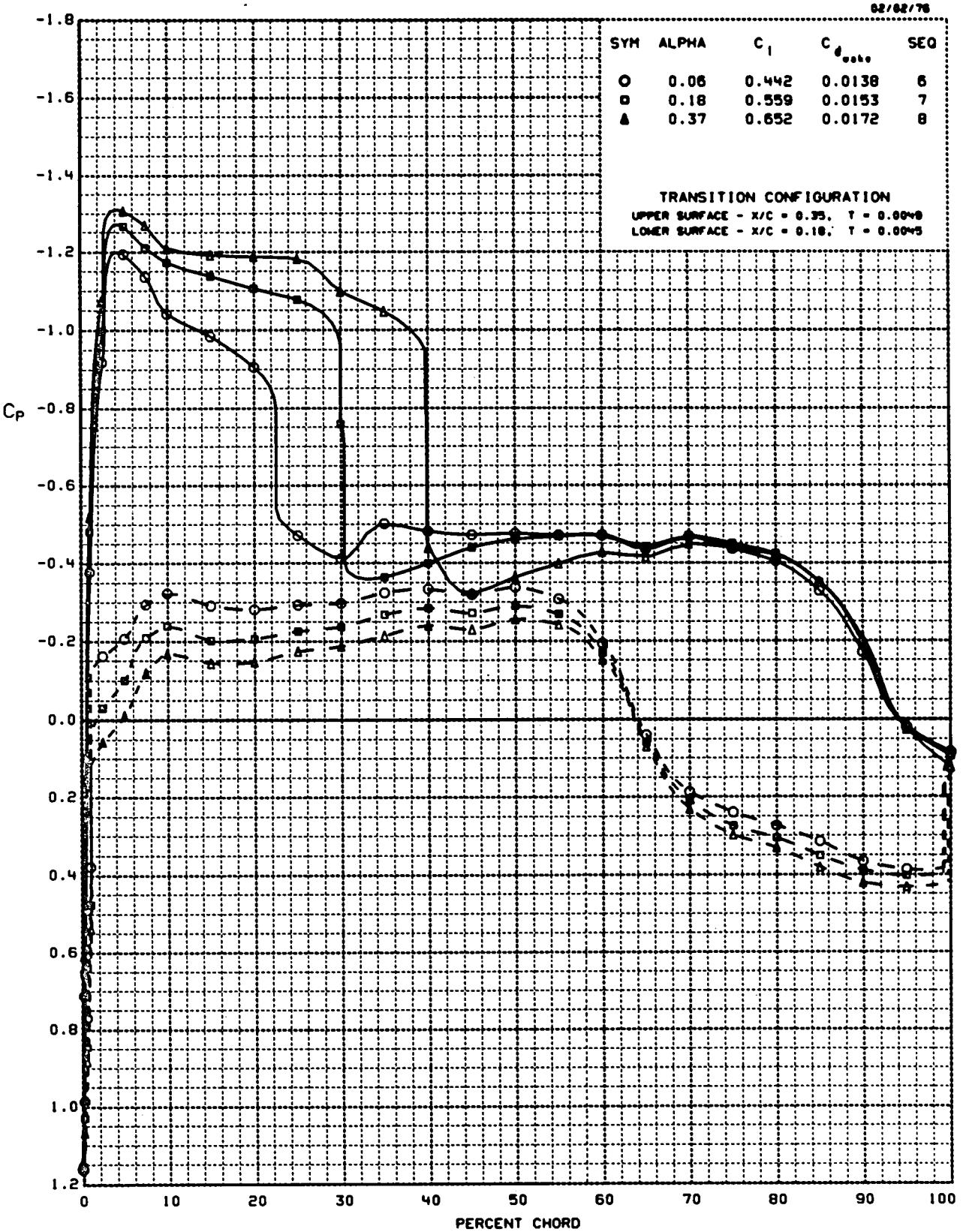

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.801 REYNOLDS NUMBER = 1.96x10^6 RUN = 78 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -0.03 0.612 0.0179 5
□ 0.18 0.708 0.0212 6
△ 0.39 0.799 0.0271 7
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.35, T = 0.0040
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

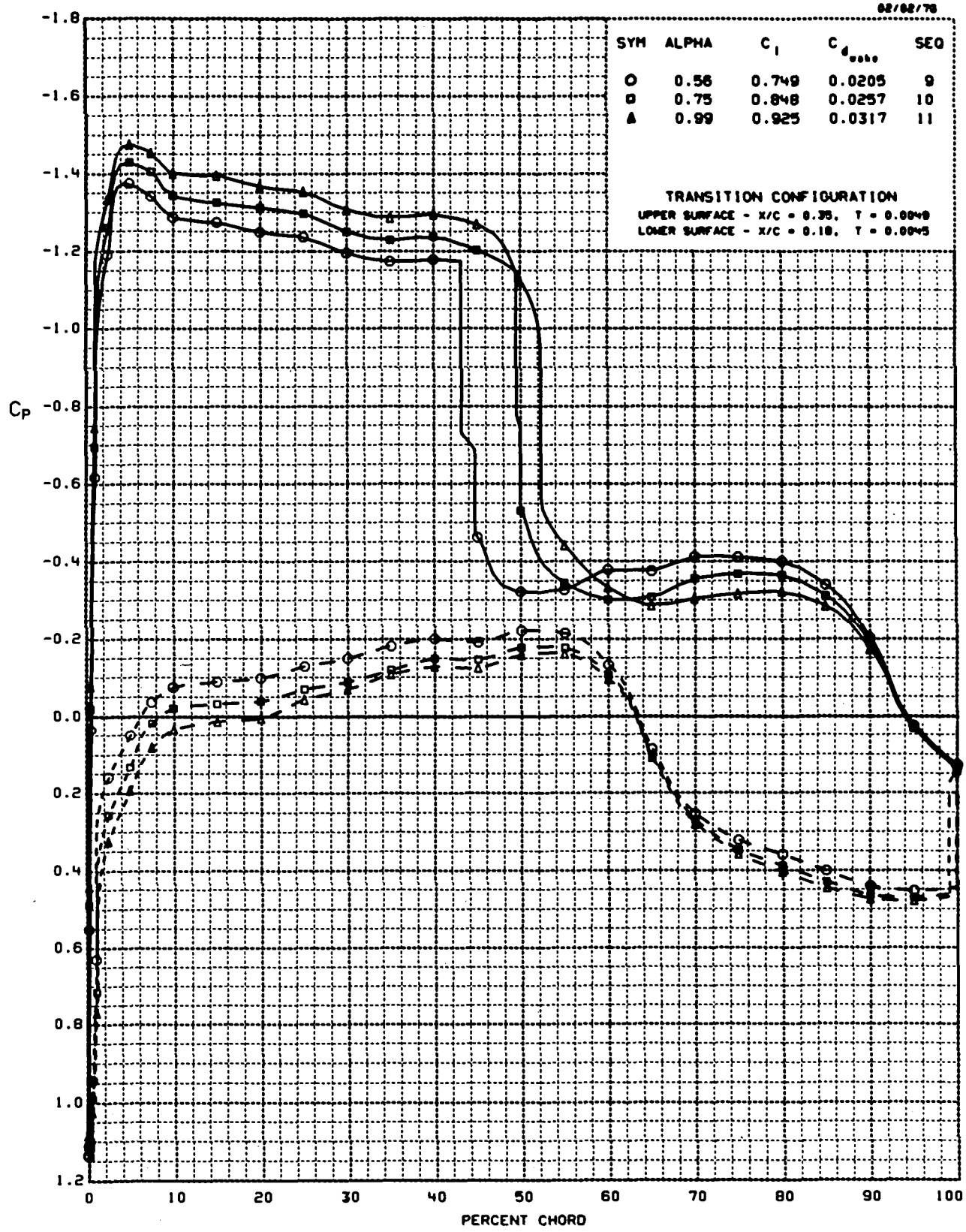

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 2.00x10^6 RUN = 79 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -1.22 0.068 0.0141 3
□ -0.70 0.202 0.0143 12
Δ -0.20 0.382 0.0138 5
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.18, T = 0.0045
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

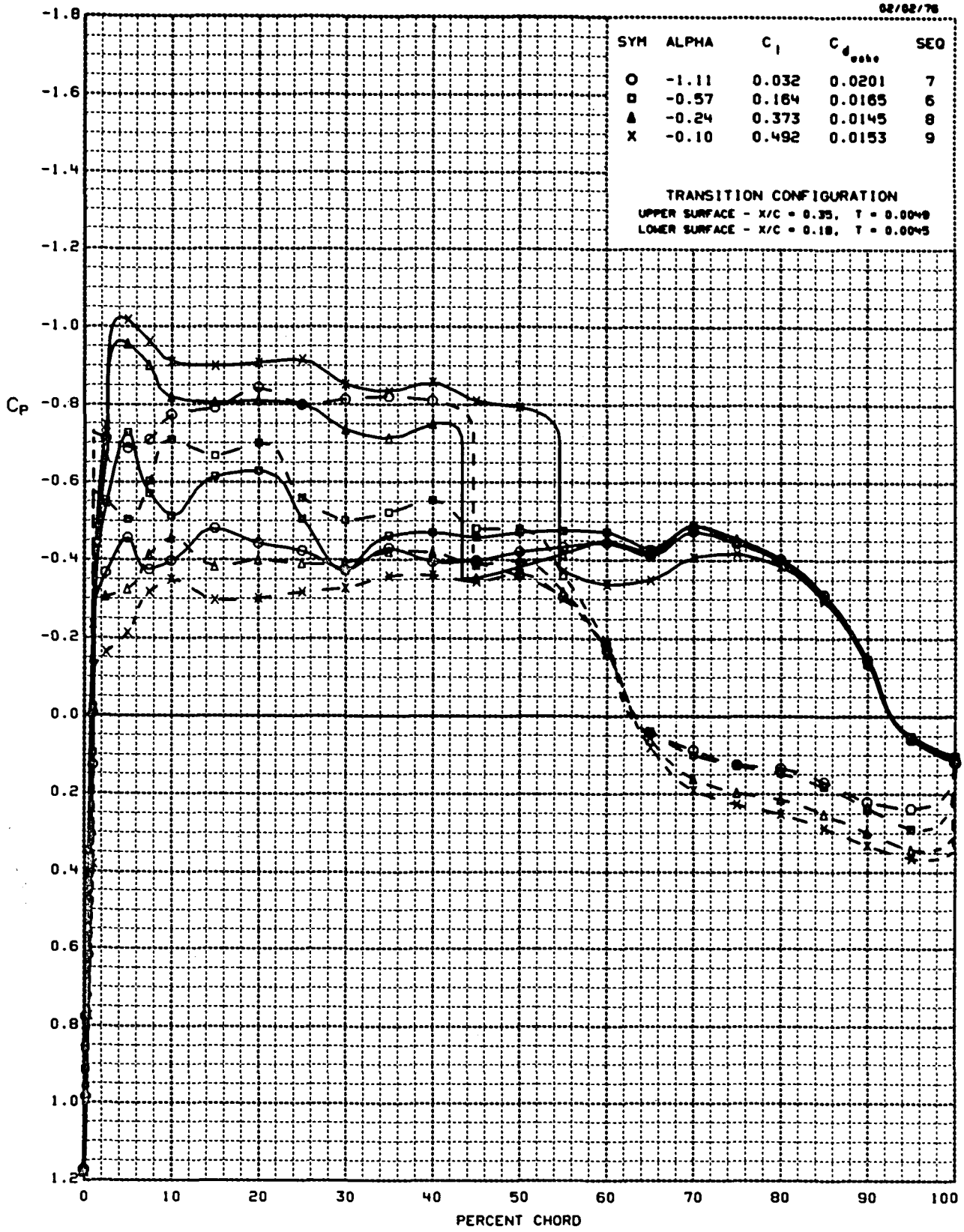
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.757 REYNOLDS NUMBER = 1.98×10^6 RUN = 79 AMES 22-060-5

02/02/76



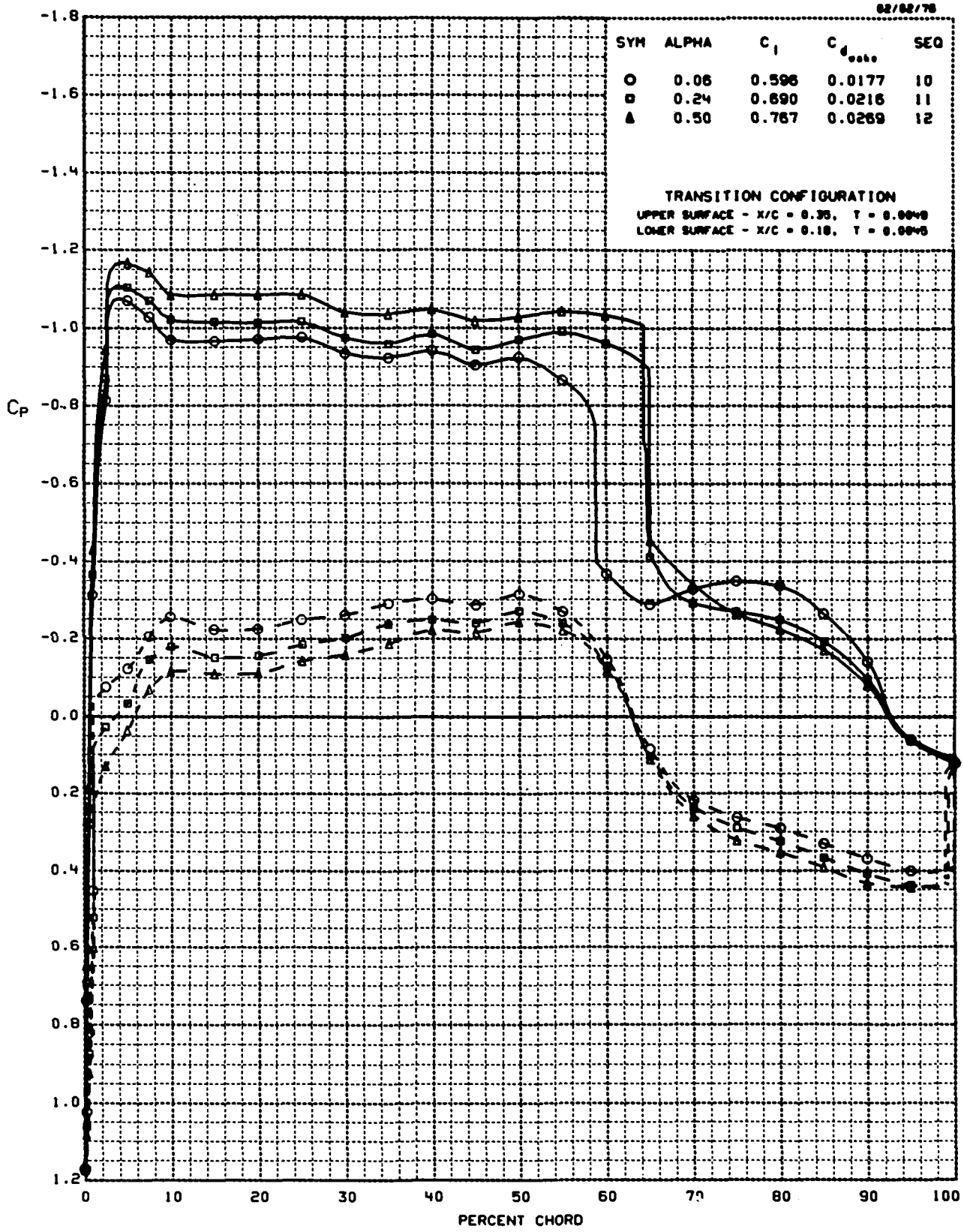

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 1.97x10^6 RUN = 79 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
0.56 0.749 0.0205 9
0.75 0.848 0.0257 10
0.99 0.925 0.0317 11
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0040
LOWER SURFACE - X/C = 0.18, T = 0.0045
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

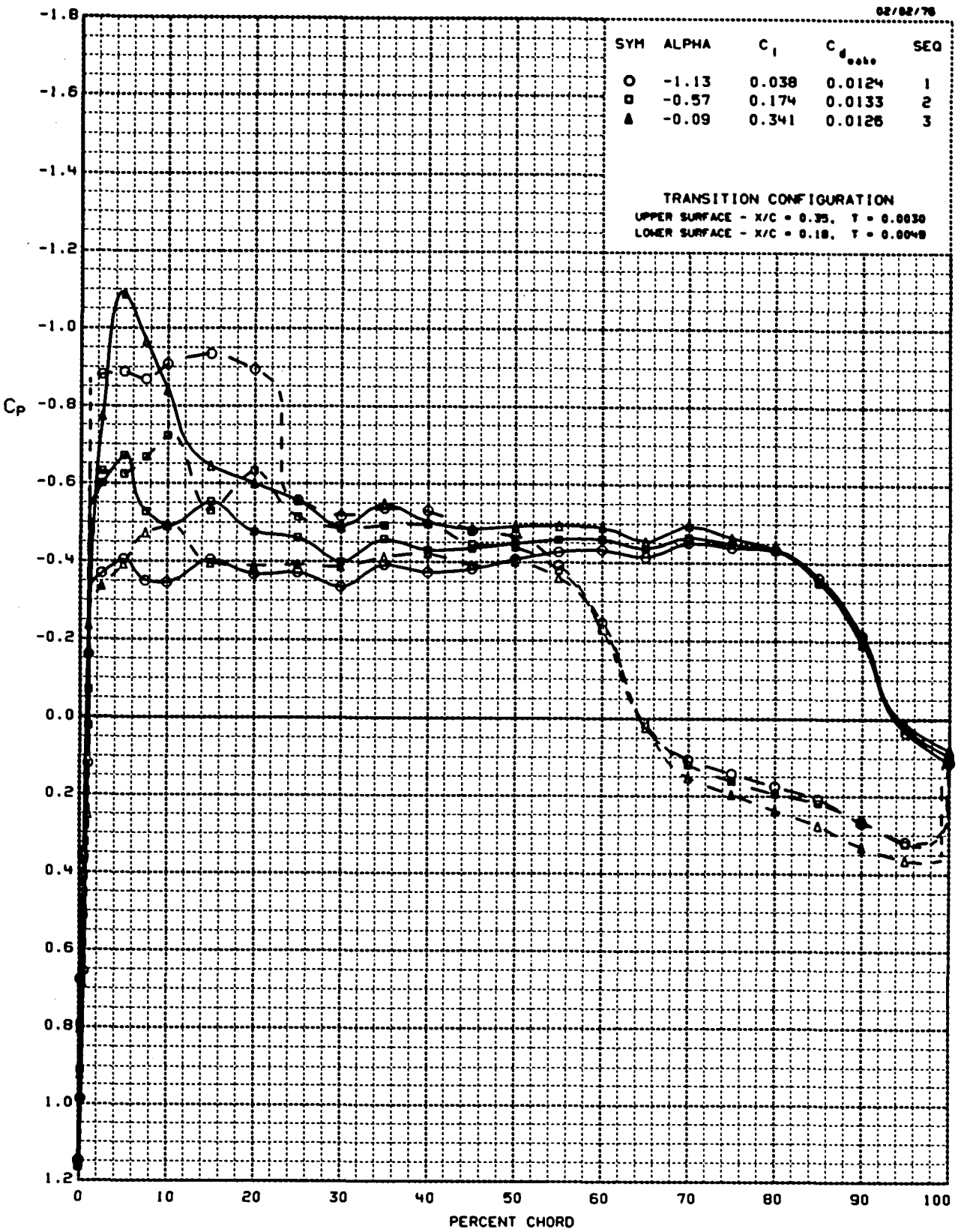

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.799 REYNOLDS NUMBER = 1.99x10^6 RUN = 80 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -1.11 0.032 0.0201 7
□ -0.57 0.164 0.0165 6
△ -0.24 0.373 0.0145 8
X -0.10 0.492 0.0153 9
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0049
LOWER SURFACE - X/C = 0.18, T = 0.0045
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.801 REYNOLDS NUMBER = 1.98×10^6 RUN = 80 AMES 22-060-5

02/02/78

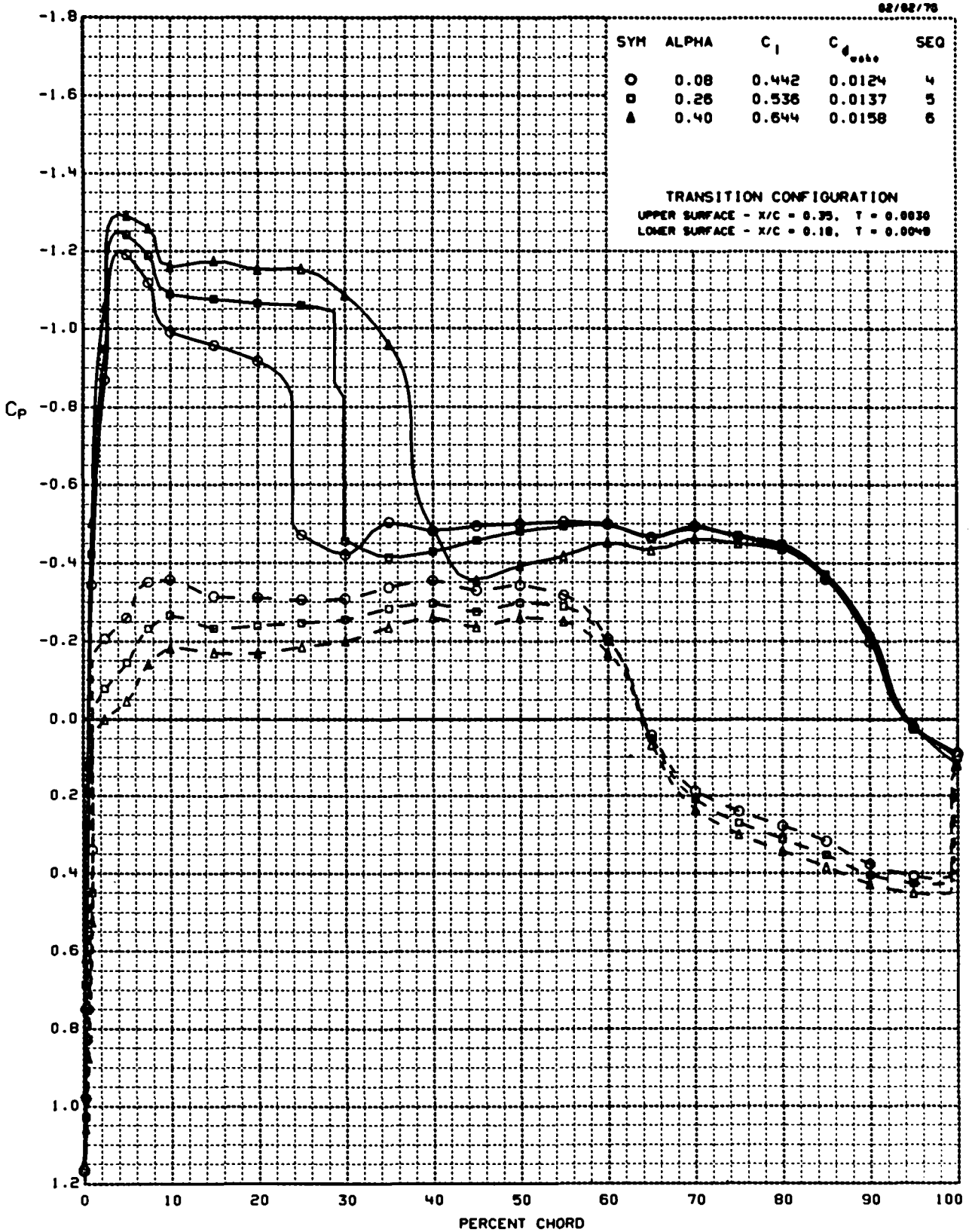



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.97x10^6 RUN = 81 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_cobe SEQ
O -1.13 0.038 0.0124 1
□ -0.57 0.174 0.0133 2
Δ -0.09 0.341 0.0126 3
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.99×10^6 RUN = 81 AMES 22-060-5

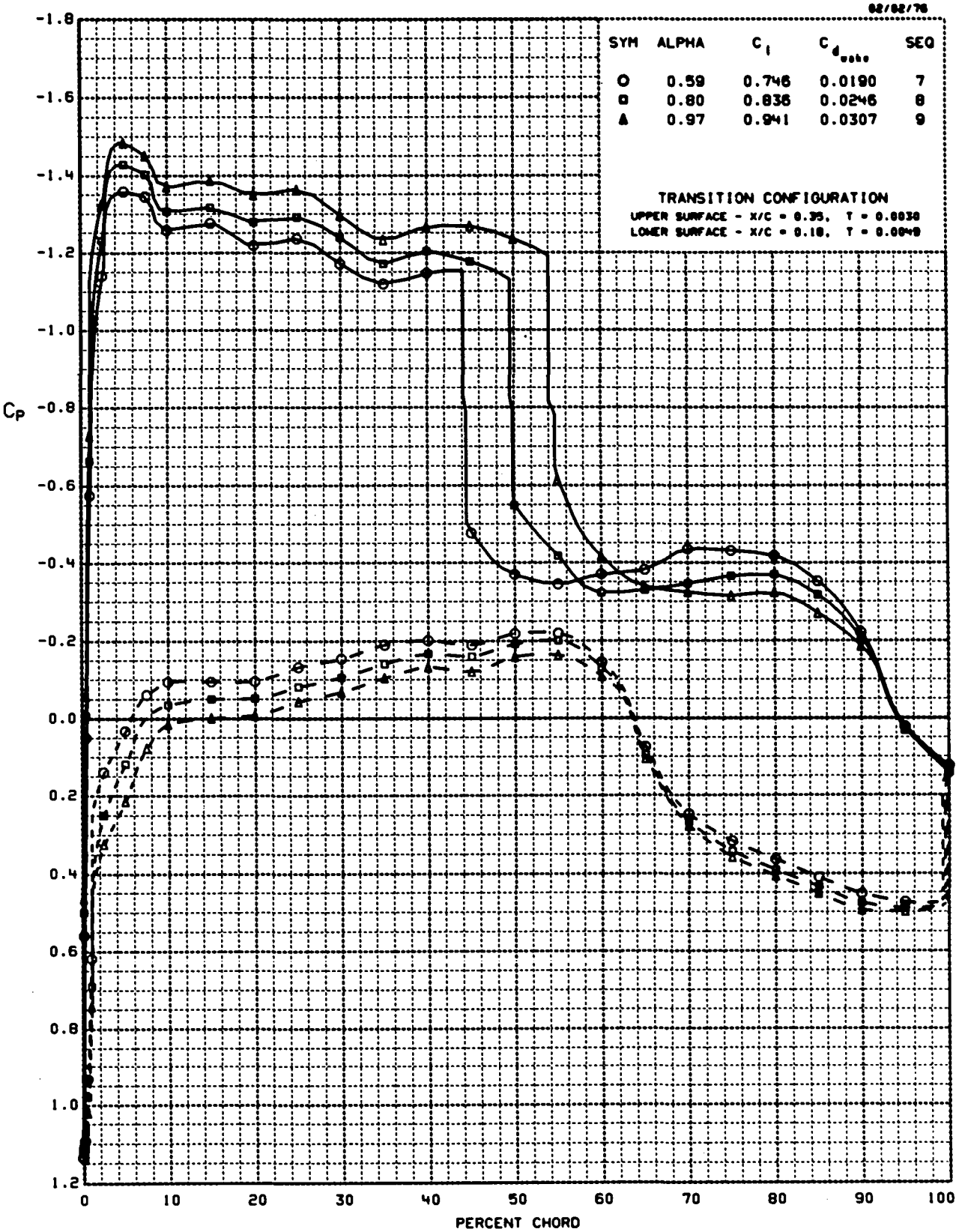
02/02/76

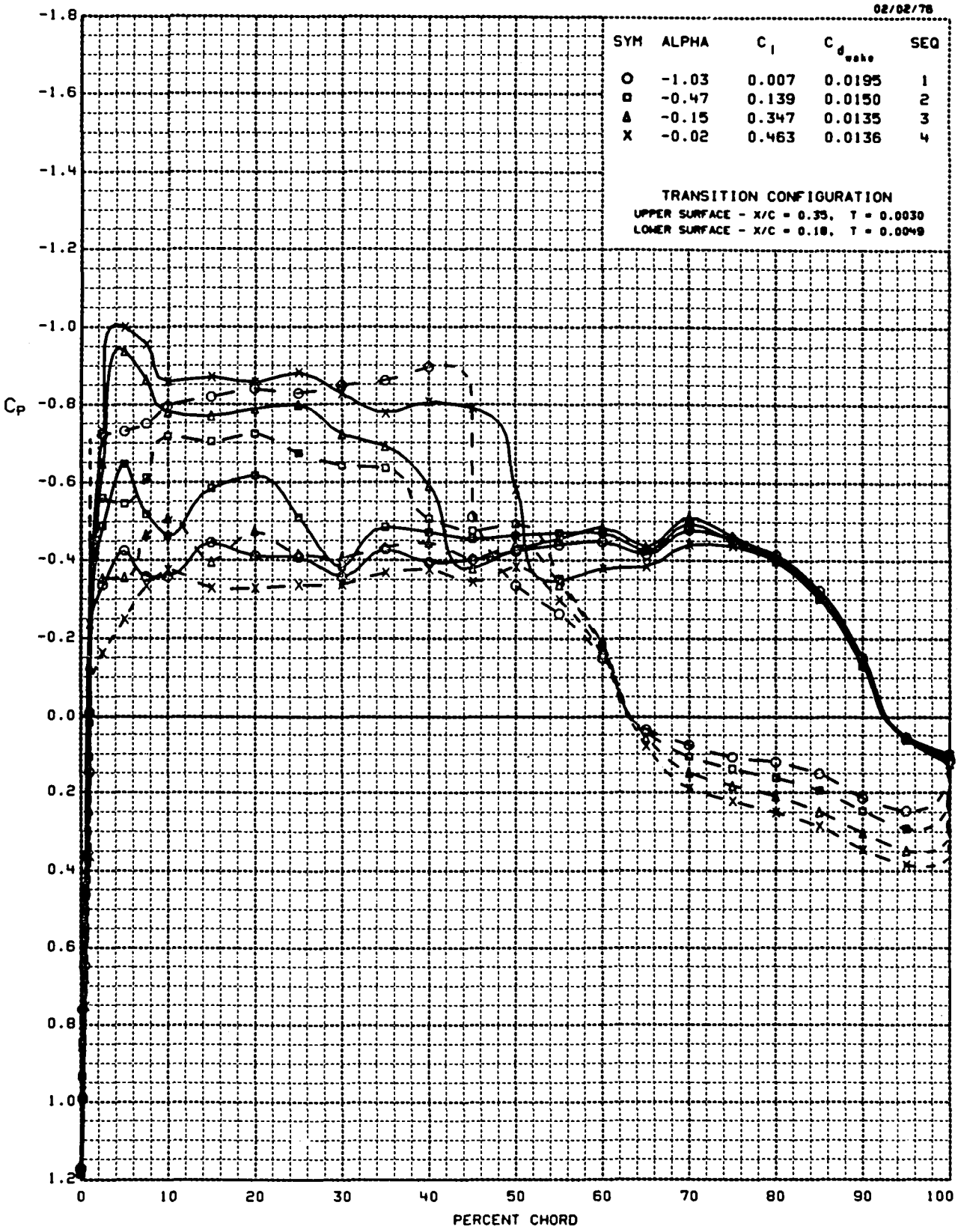


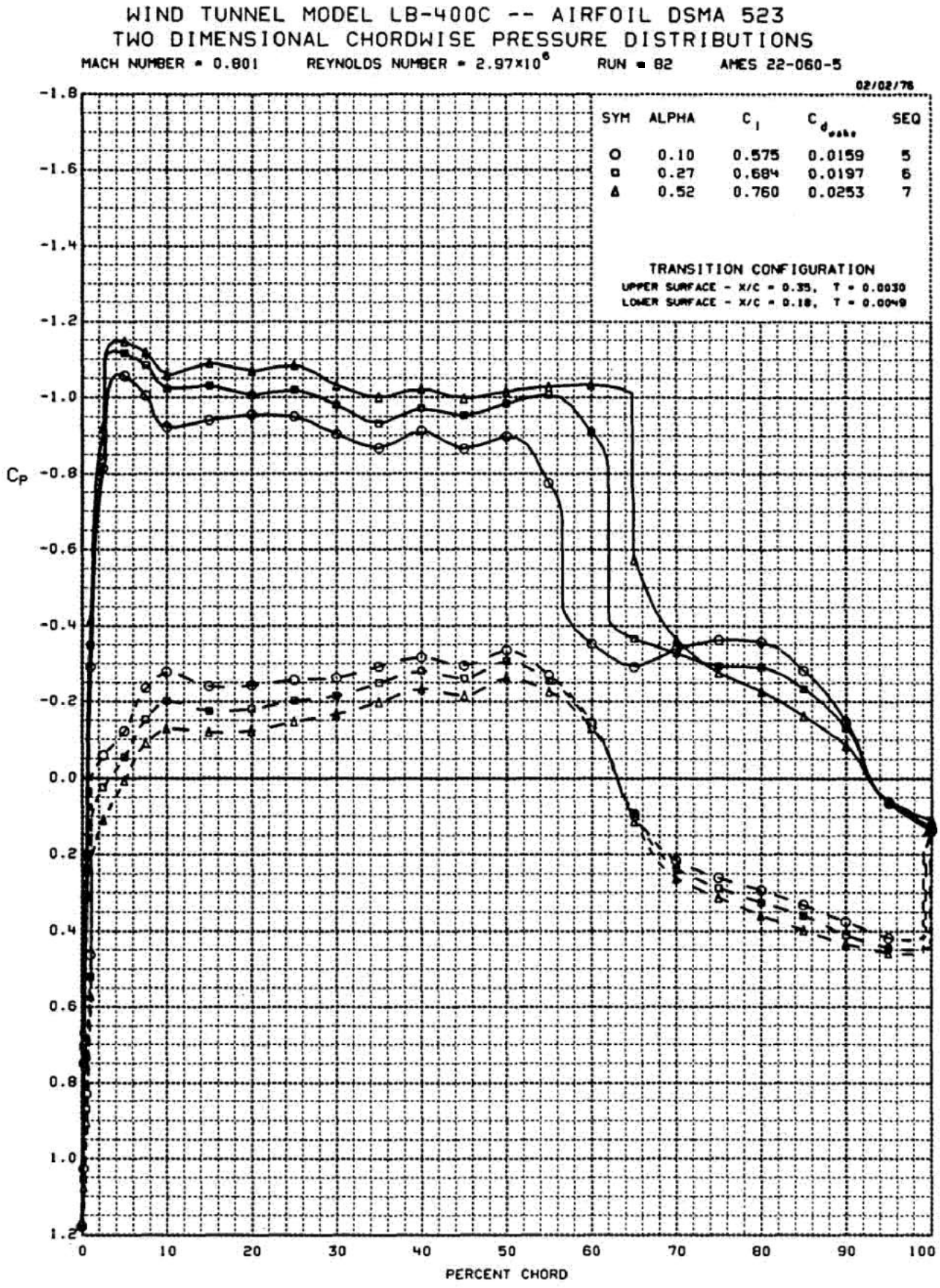
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

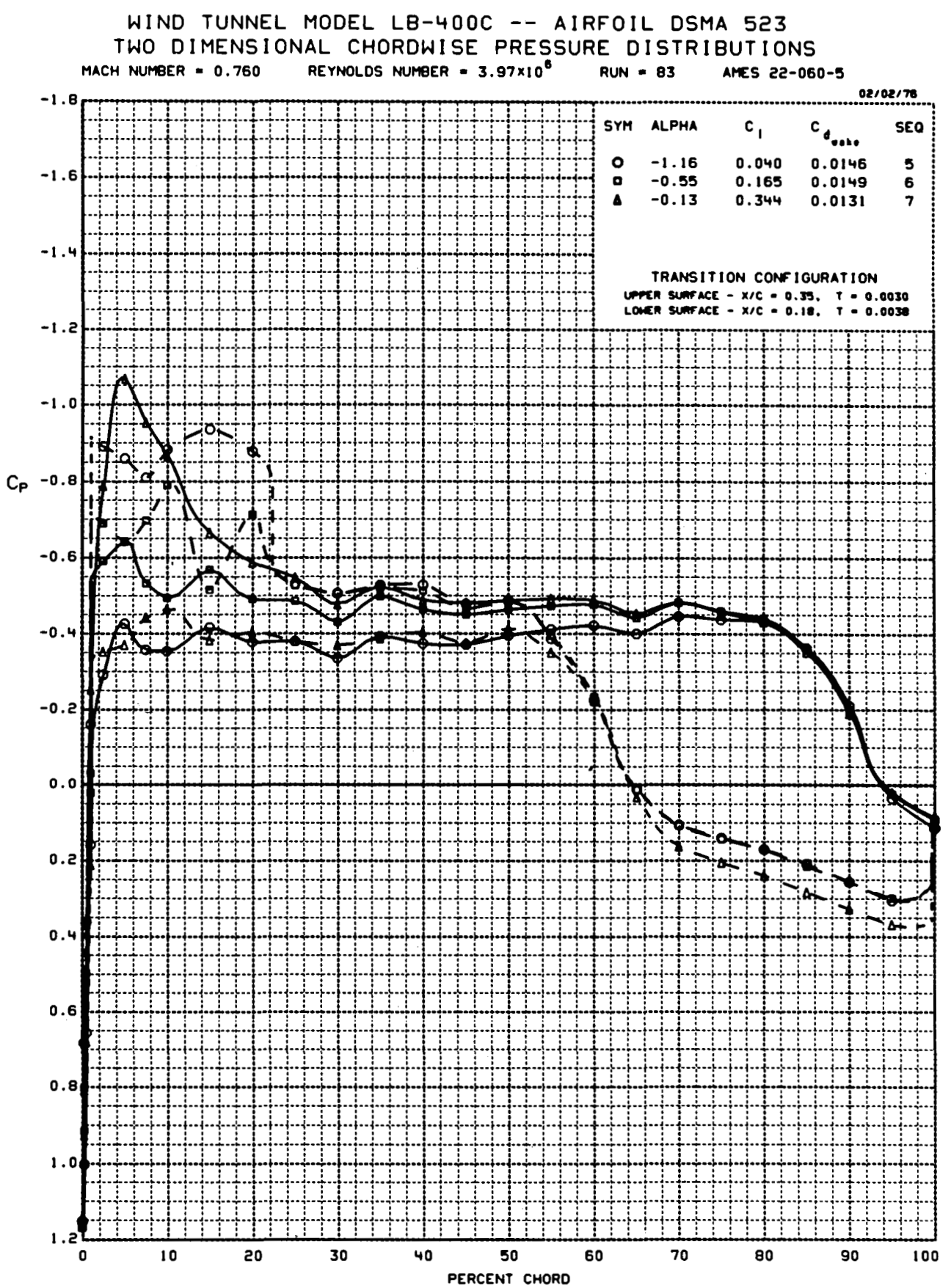
MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.93×10^6 RUN = 81 AMES 22-060-5

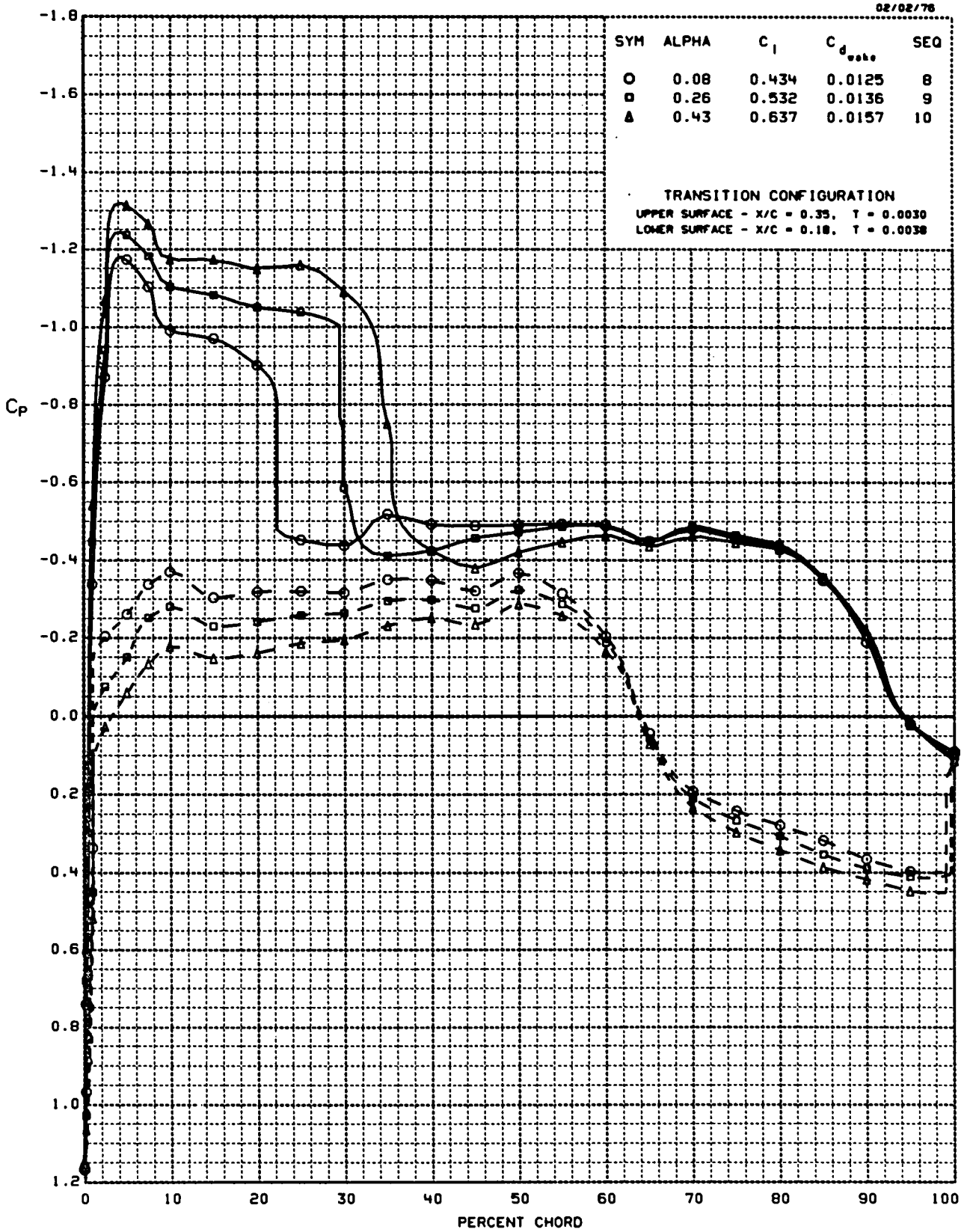
02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.800 REYNOLDS NUMBER = 2.99x10^6 RUN = 82 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -1.03 0.007 0.0195 1
□ -0.47 0.139 0.0150 2
Δ -0.15 0.347 0.0135 3
X -0.02 0.463 0.0136 4
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
CP
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.801 REYNOLDS NUMBER = 2.97x10^6 RUN = 82 AMES 22-060-5
02/02/76
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O 0.10 0.575 0.0159 5
□ 0.27 0.684 0.0197 6
Δ 0.52 0.760 0.0253 7
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.97x10^6 RUN = 83 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -1.16 0.040 0.0146 5
□ -0.55 0.165 0.0149 6
Δ -0.13 0.344 0.0131 7
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0038
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.97x10^6 RUN = 83 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.08 0.434 0.0125 8
□ 0.26 0.532 0.0136 9
Δ 0.43 0.637 0.0157 10
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0038
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

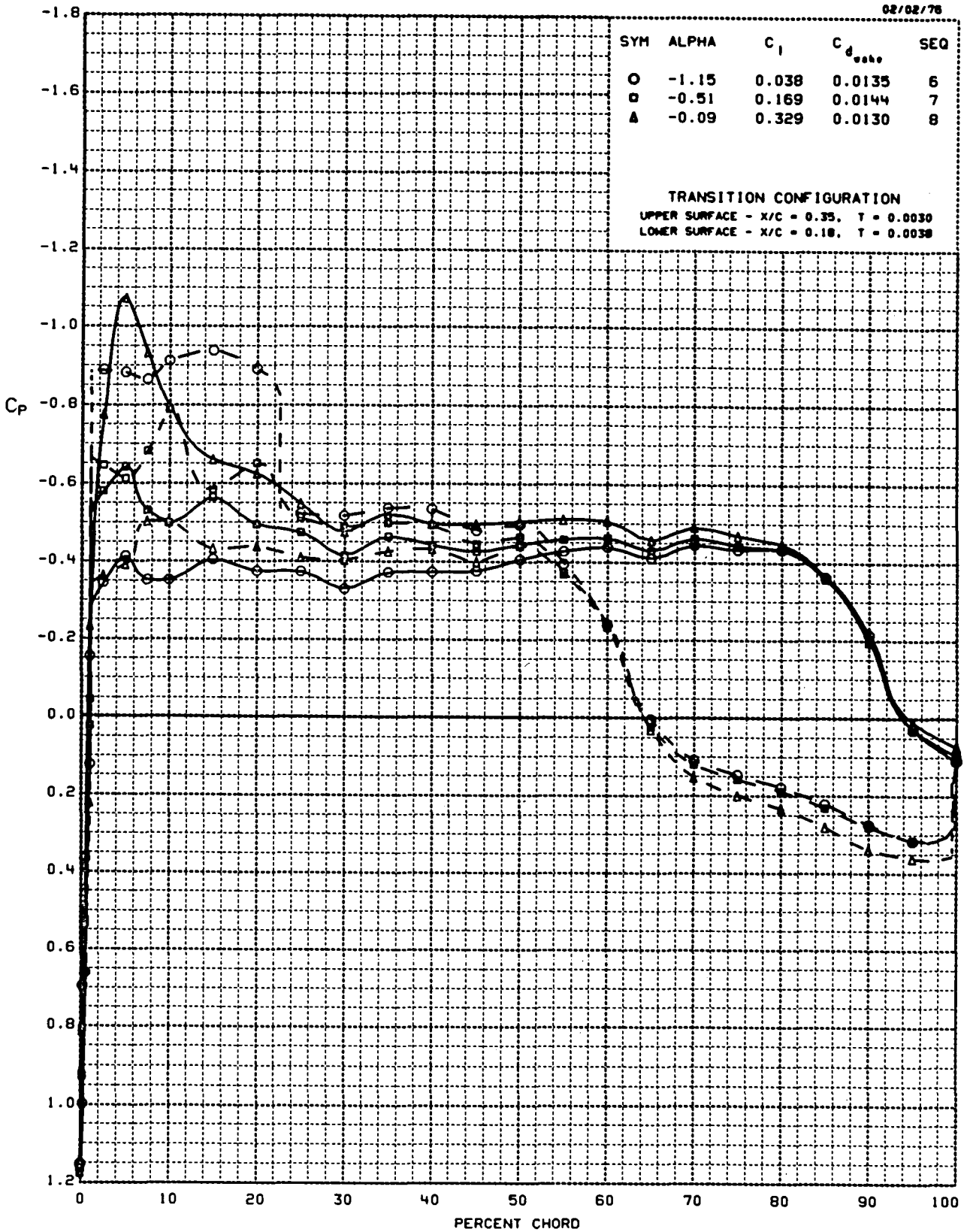
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.98×10^6 RUN = 84 AMES 22-060-5

02/02/76

SYM	ALPHA	C_l	$C_{d_{wake}}$	SEQ
O	-1.15	0.038	0.0135	6
□	-0.51	0.169	0.0144	7
△	-0.09	0.329	0.0130	8

TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0038



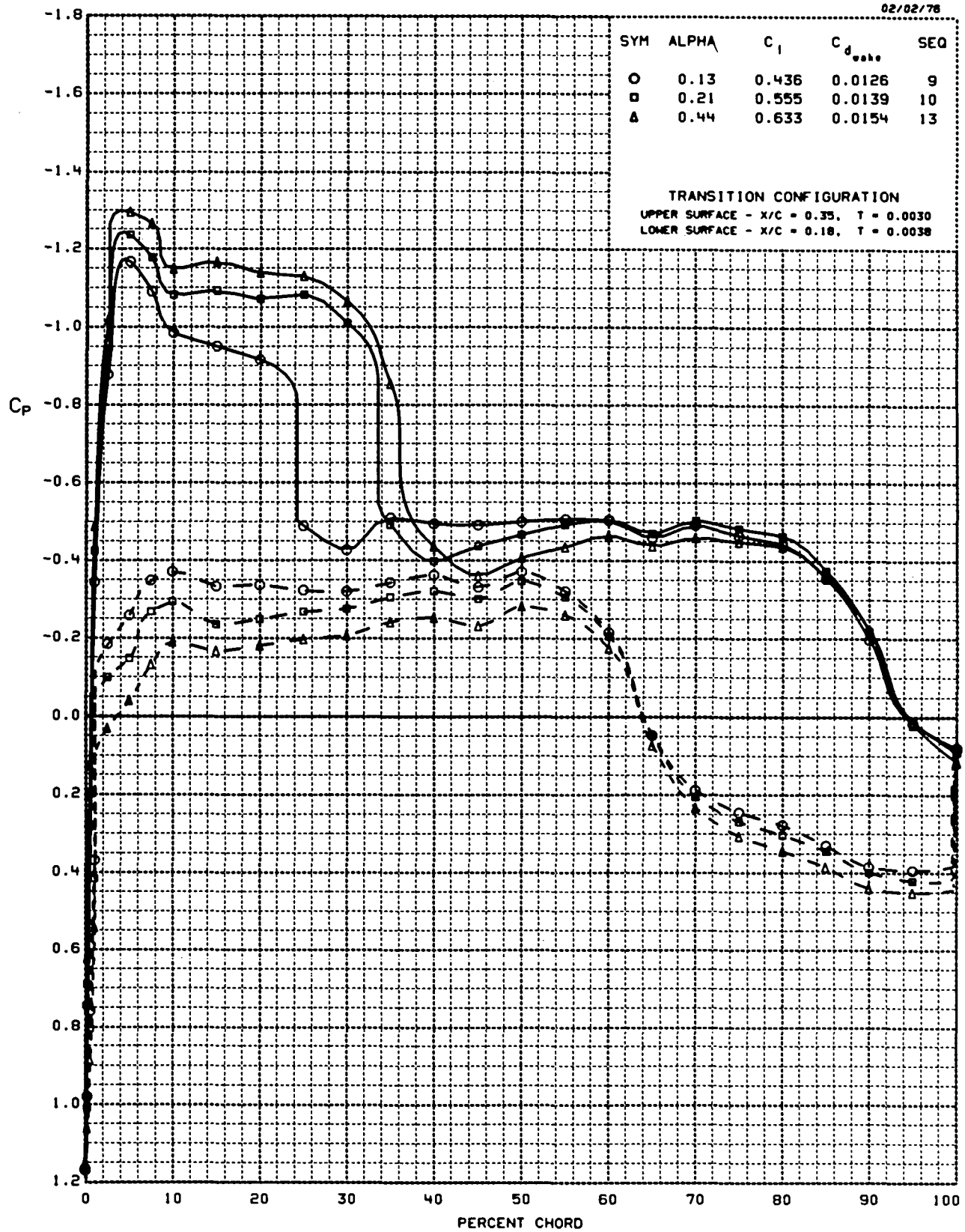
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.96×10^6 RUN = 84 AMES 22-060-5

02/02/78

SYM	ALPHA	C_l	$C_{d_{wake}}$	SEQ
O	0.13	0.436	0.0126	9
□	0.21	0.555	0.0139	10
Δ	0.44	0.633	0.0154	13

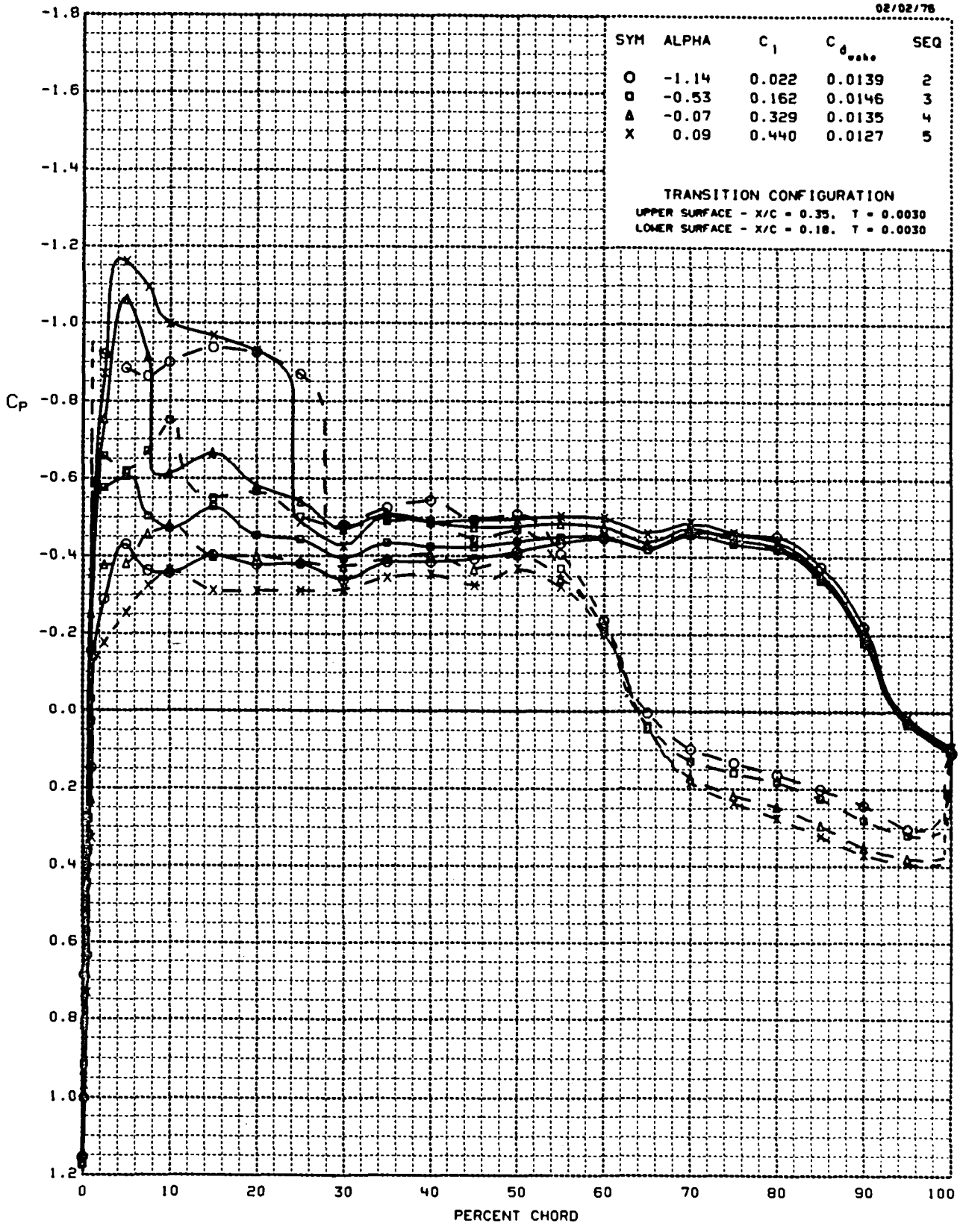
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0038



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.760 REYNOLDS NUMBER = 3.94×10^6 RUN = 85 AMES 22-060-5

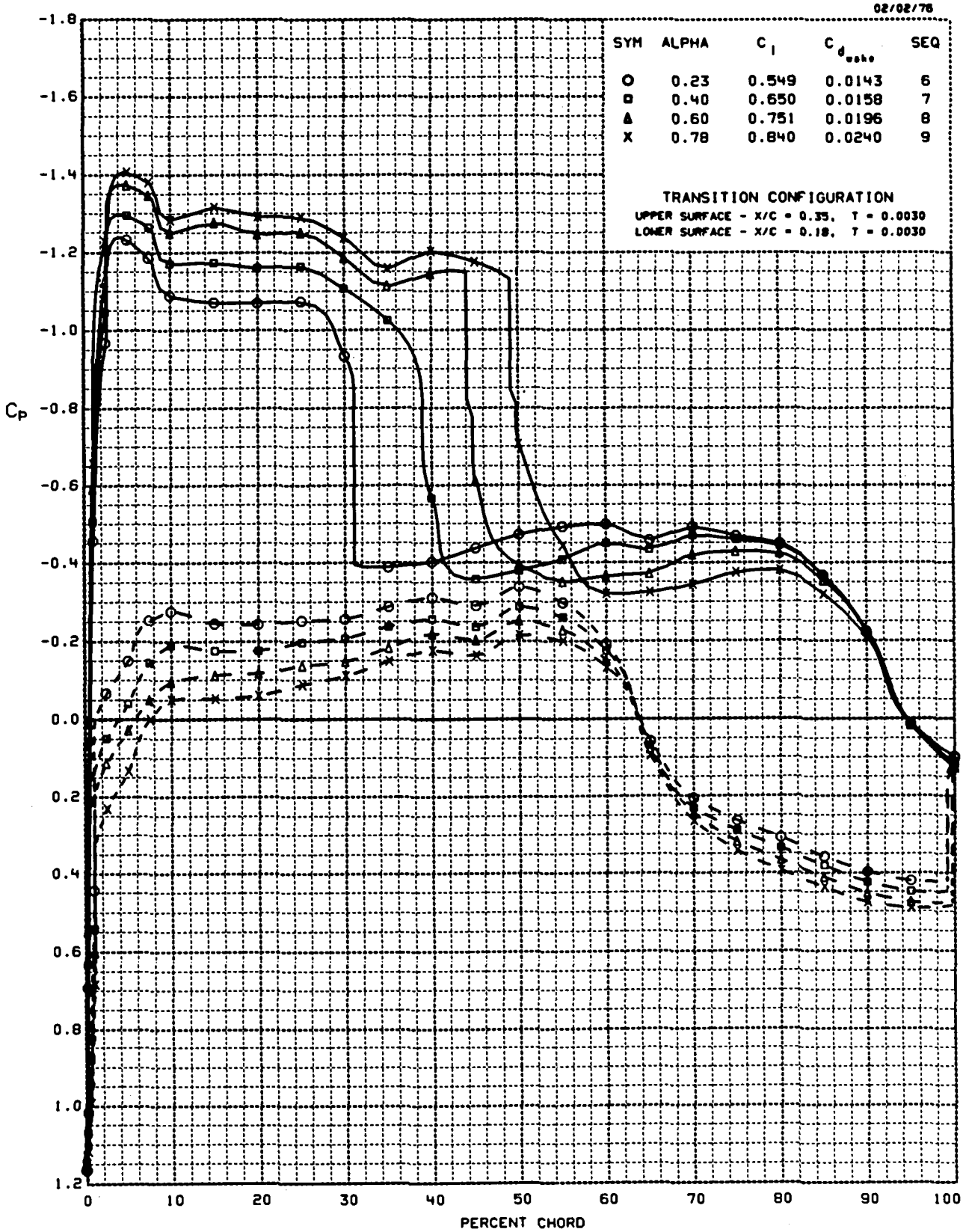
02/02/76



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.91×10^6 RUN = 85 AMES 22-060-5

02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.801 REYNOLDS NUMBER = 2.99x10^6 RUN = 86 AMES 22-060-5
02/02/76
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O -0.48 0.139 0.0175 9
□ -0.09 0.339 0.0155 8
△ -0.02 0.465 0.0160 11
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0038
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

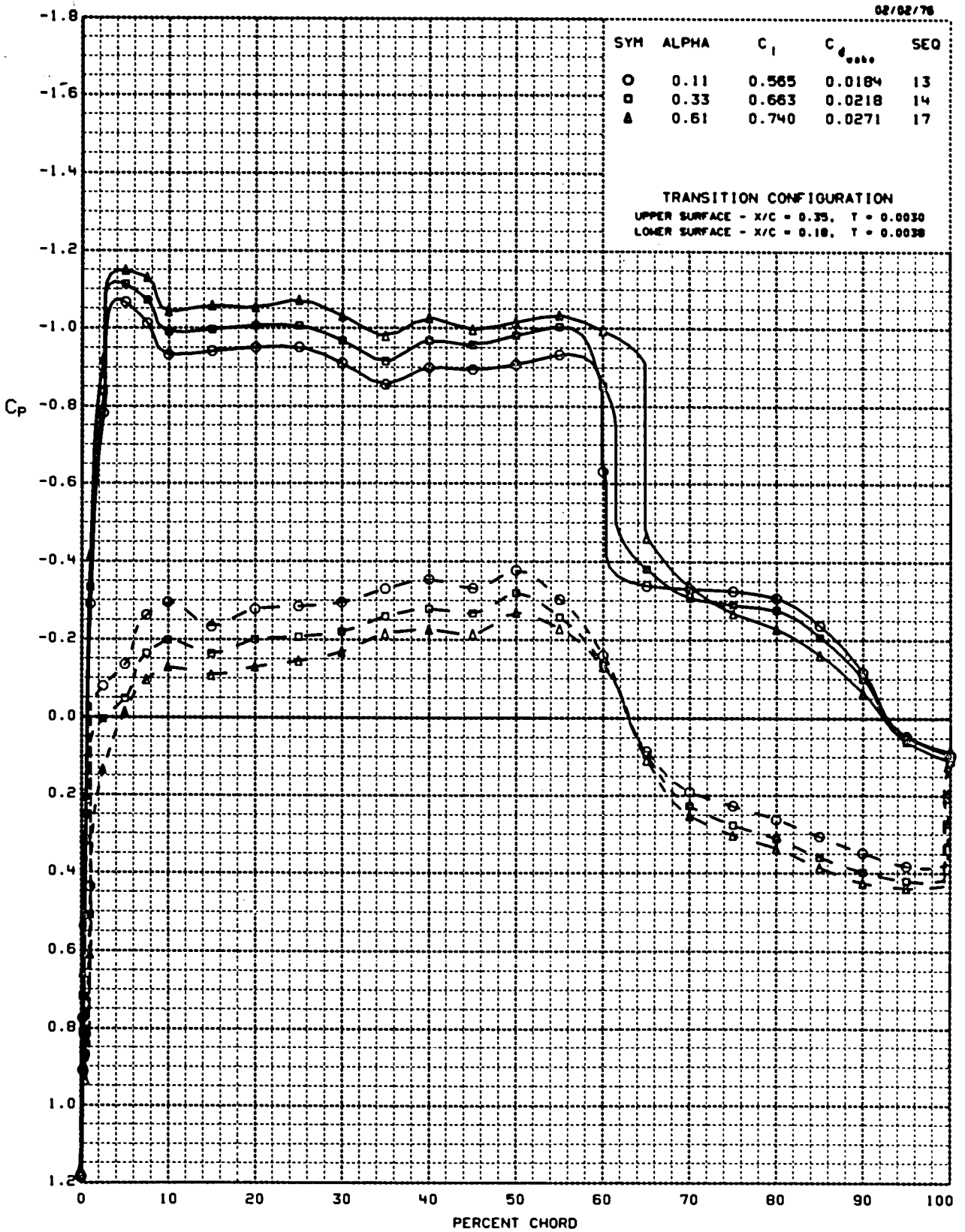
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

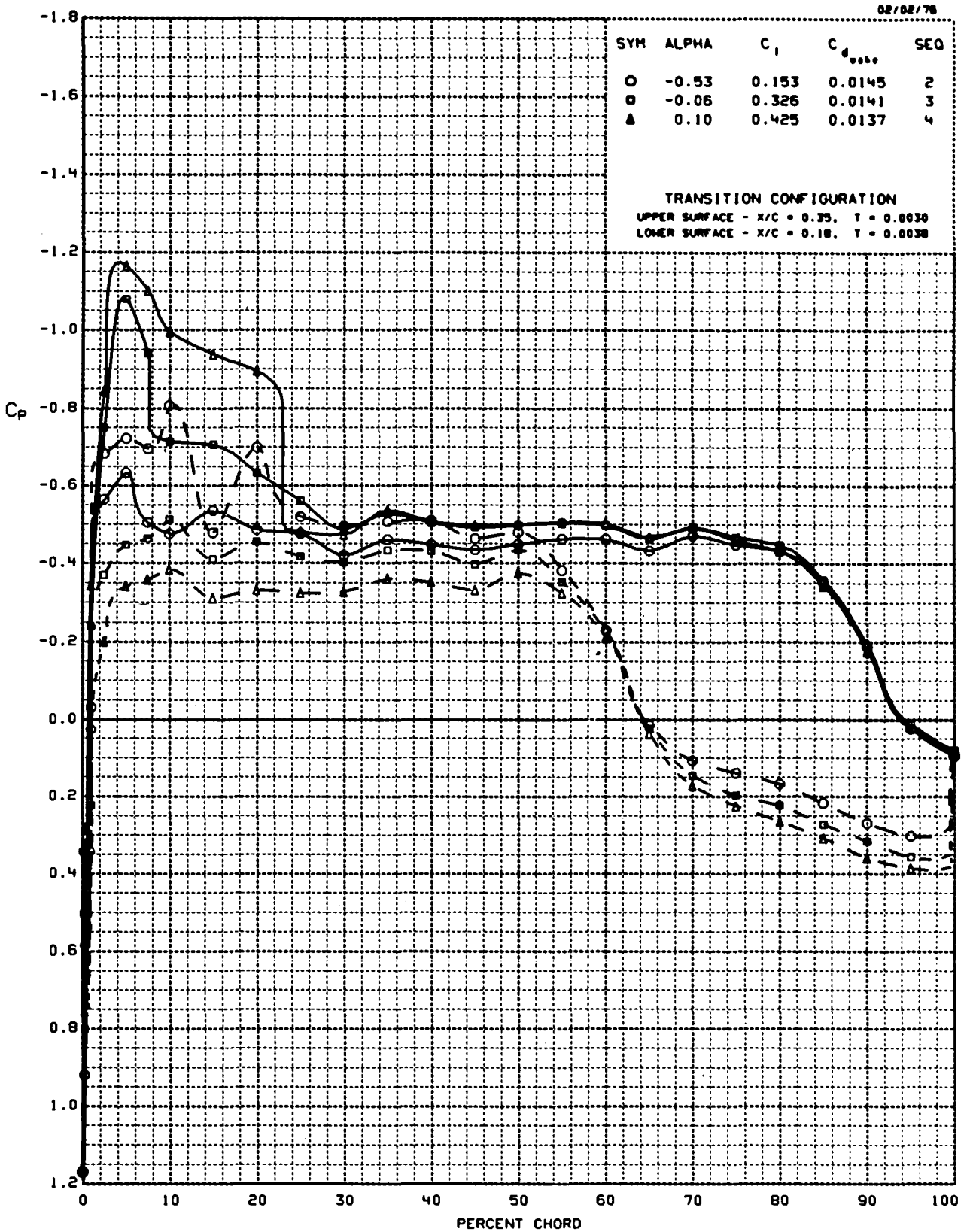
MACH NUMBER = 0.800 REYNOLDS NUMBER = 3.01×10^6 RUN = 86 AMES 22-060-5

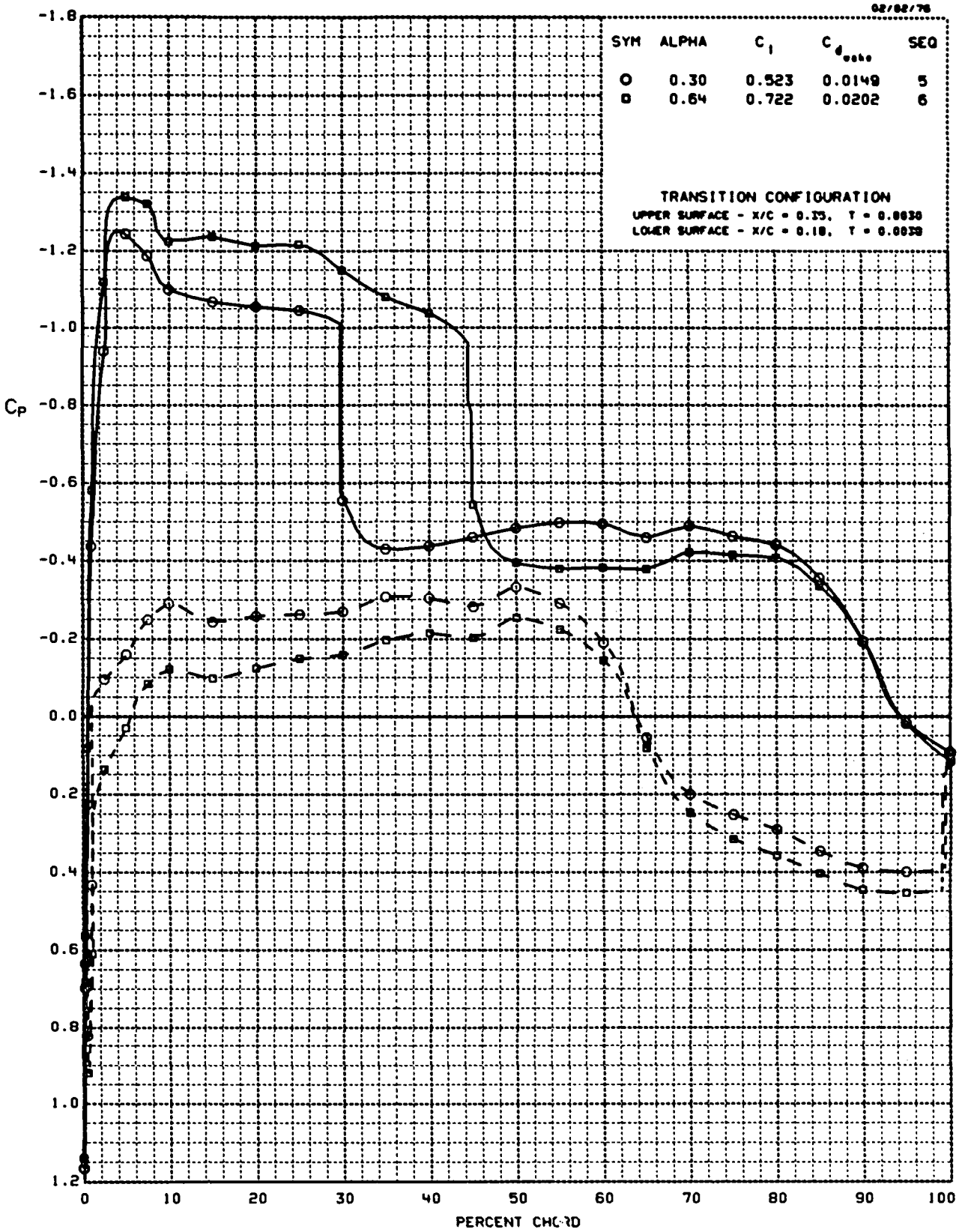
02/02/78

SYM	ALPHA	C_l	$C_{d_{wake}}$	SEQ
O	0.11	0.565	0.0184	13
□	0.33	0.663	0.0218	14
△	0.61	0.740	0.0271	17

TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0038




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.96x10^6 RUN = 87 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -0.53 0.153 0.0145 2
□ -0.06 0.326 0.0141 3
△ 0.10 0.425 0.0137 4
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.93x10^6 RUN = 87 AMES 22-060-5
02/02/78
SYM ALPHA C_l $C_{d_{visc}}$ SEQ
O 0.30 0.523 0.0149 5
□ 0.64 0.722 0.0202 6
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.15, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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10
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30
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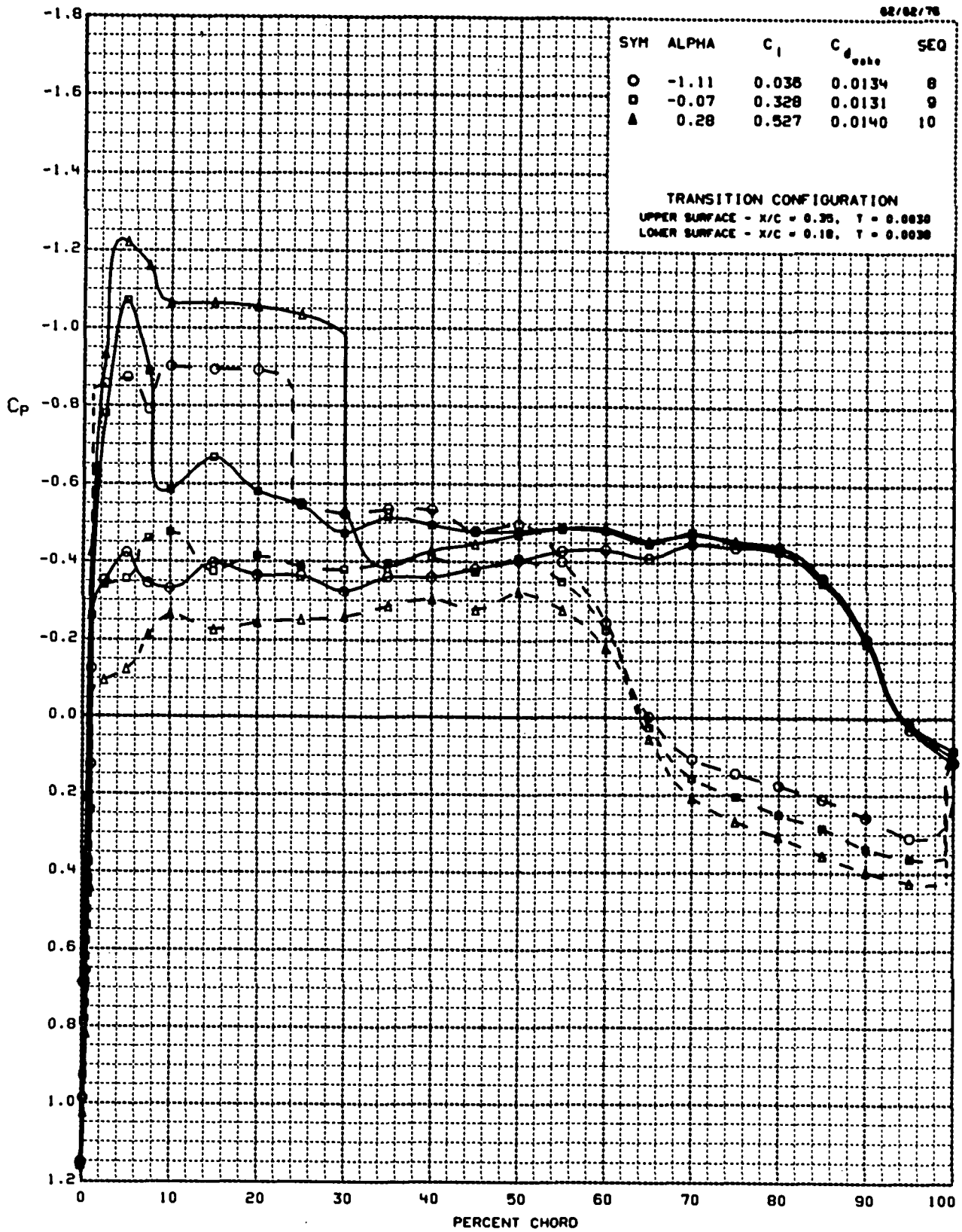
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.94x10^6 RUN = 88 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_code SEQ
○ -1.11 0.038 0.0134 8
□ -0.07 0.328 0.0131 9
△ 0.28 0.527 0.0140 10
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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10
20
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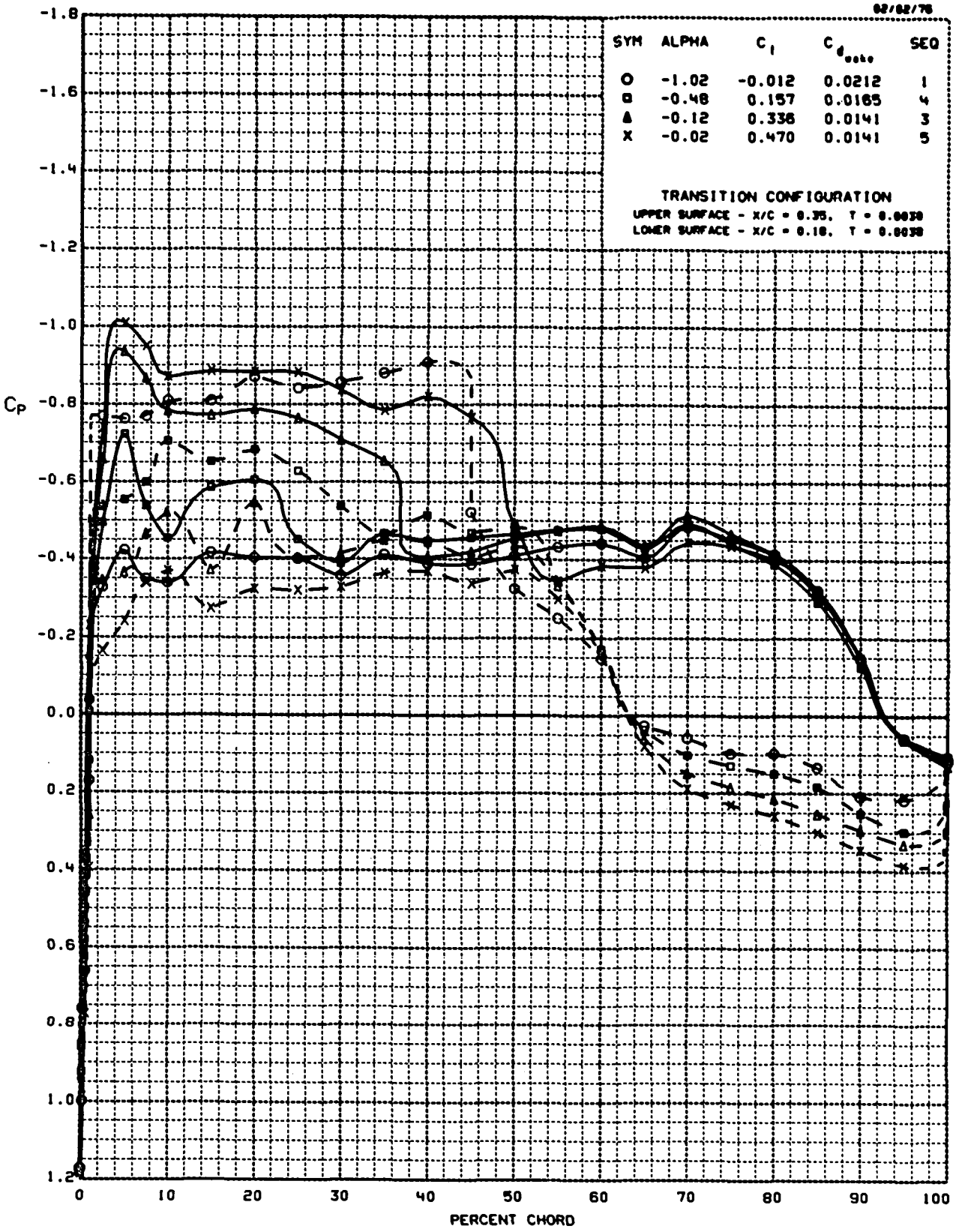
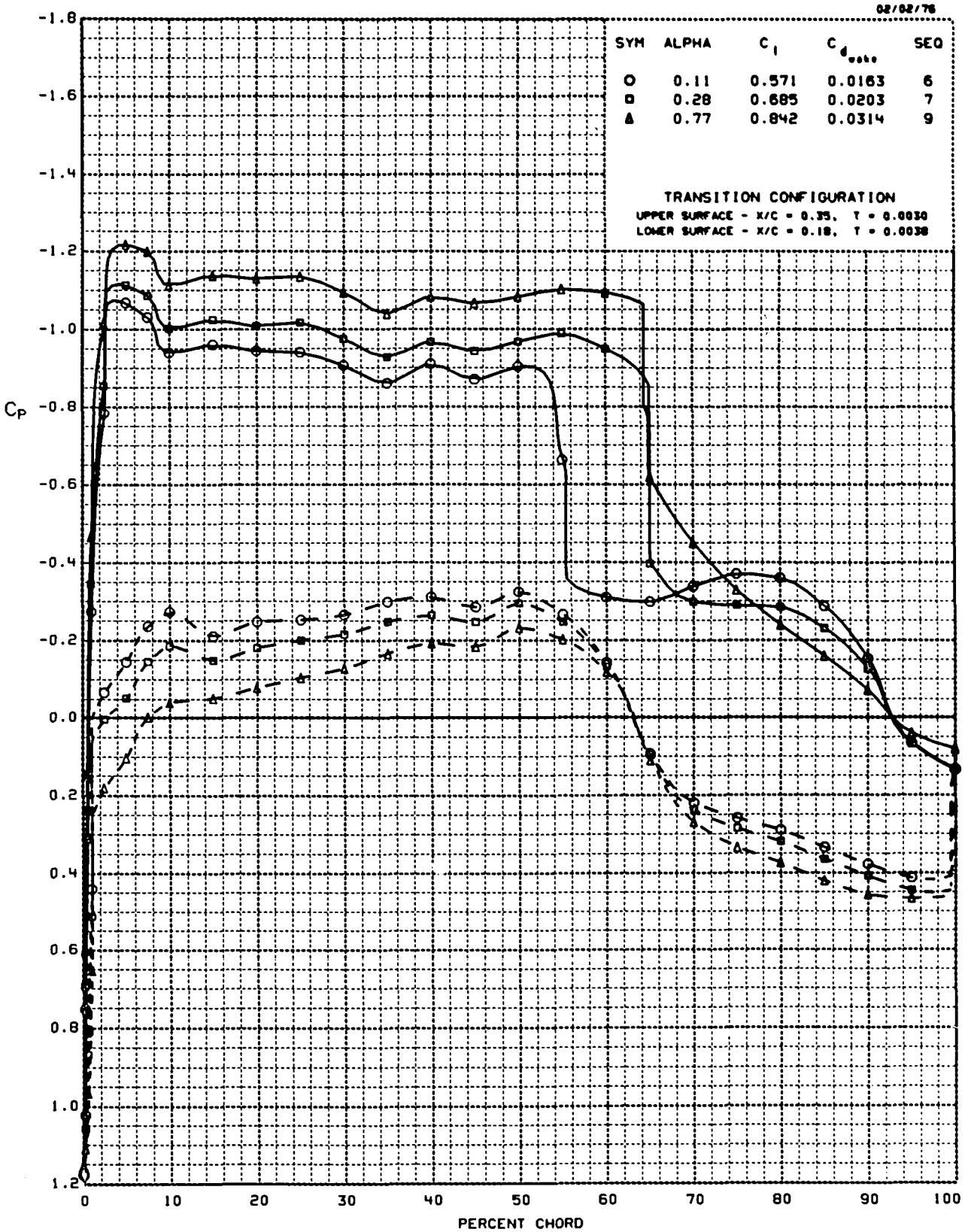
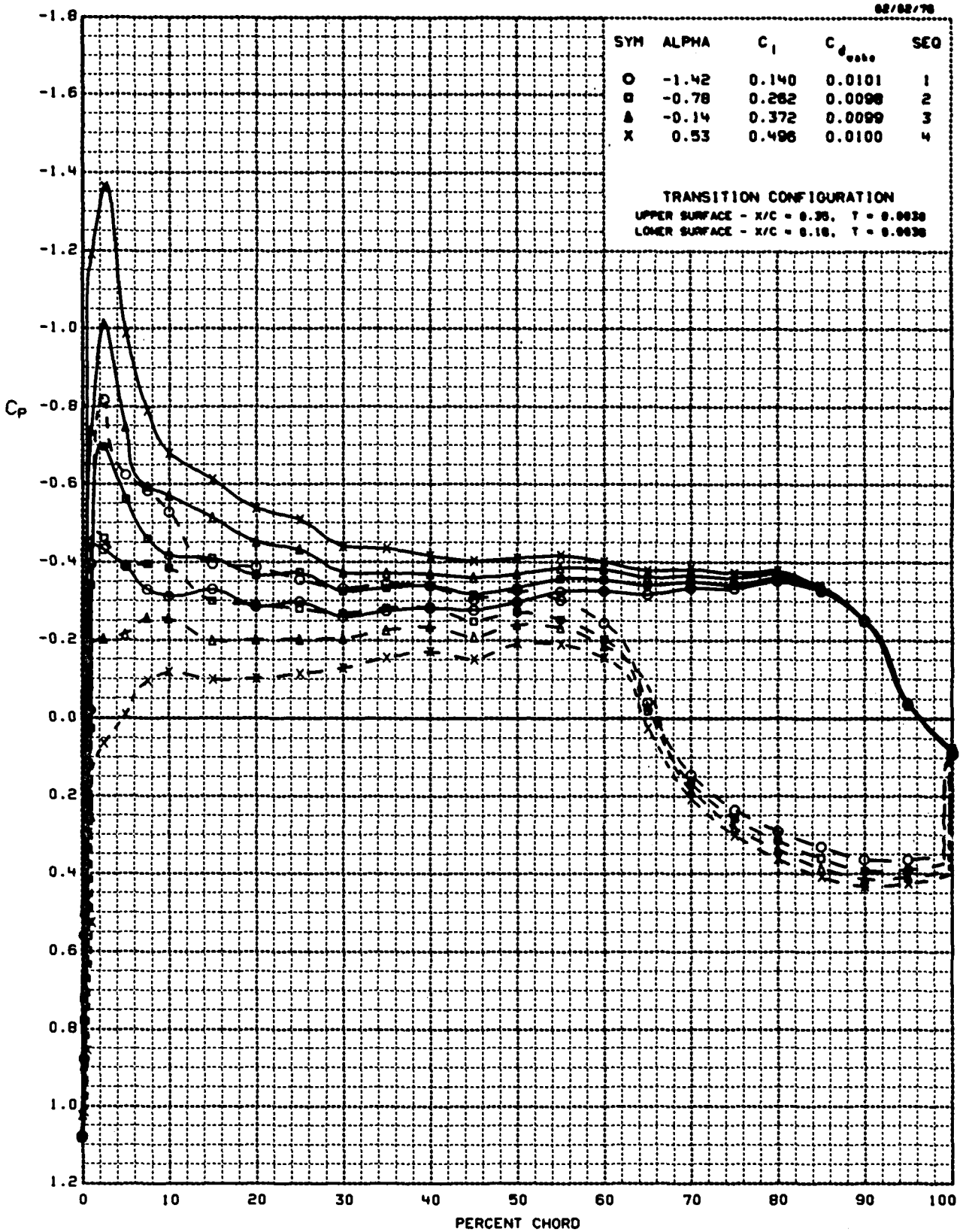
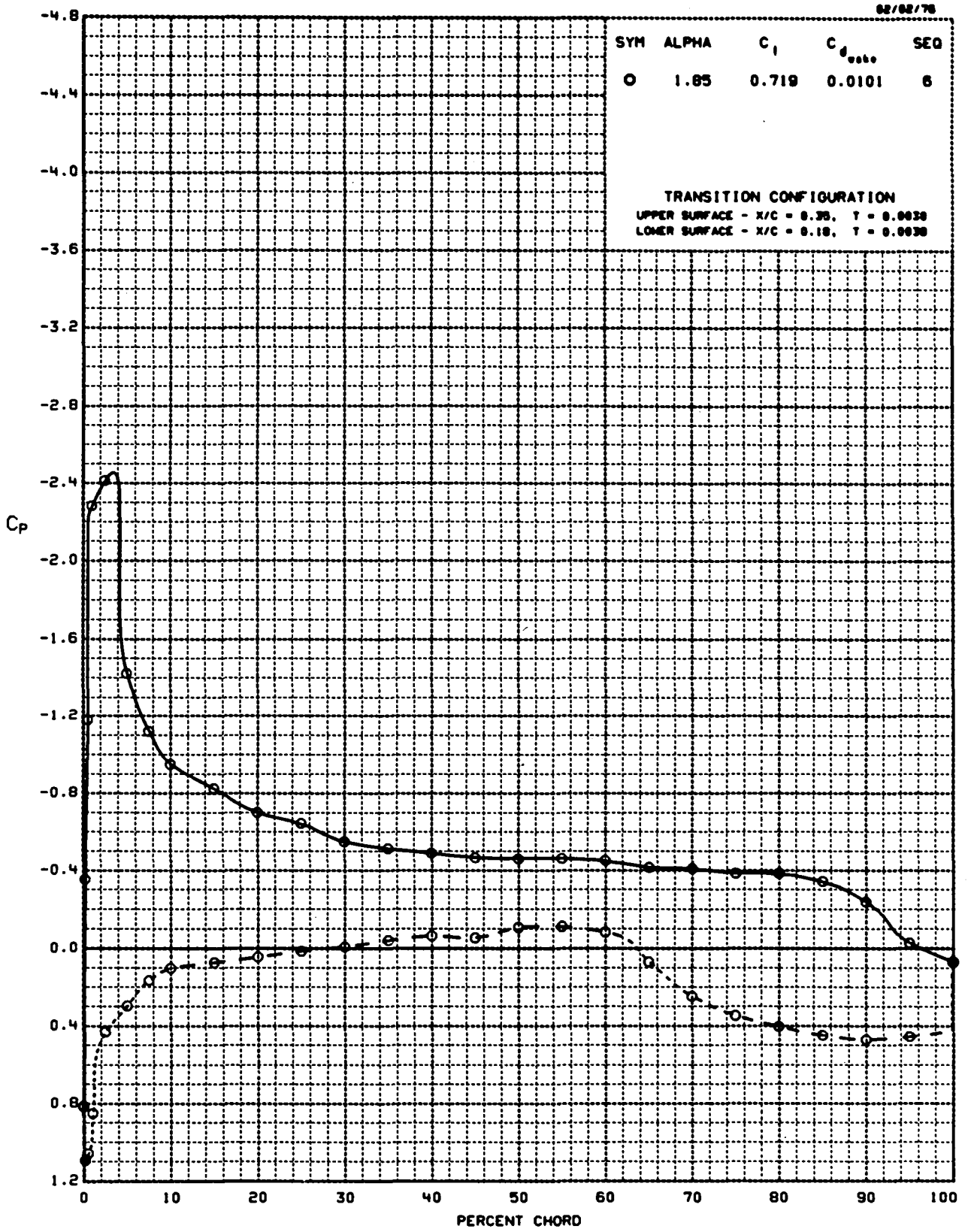
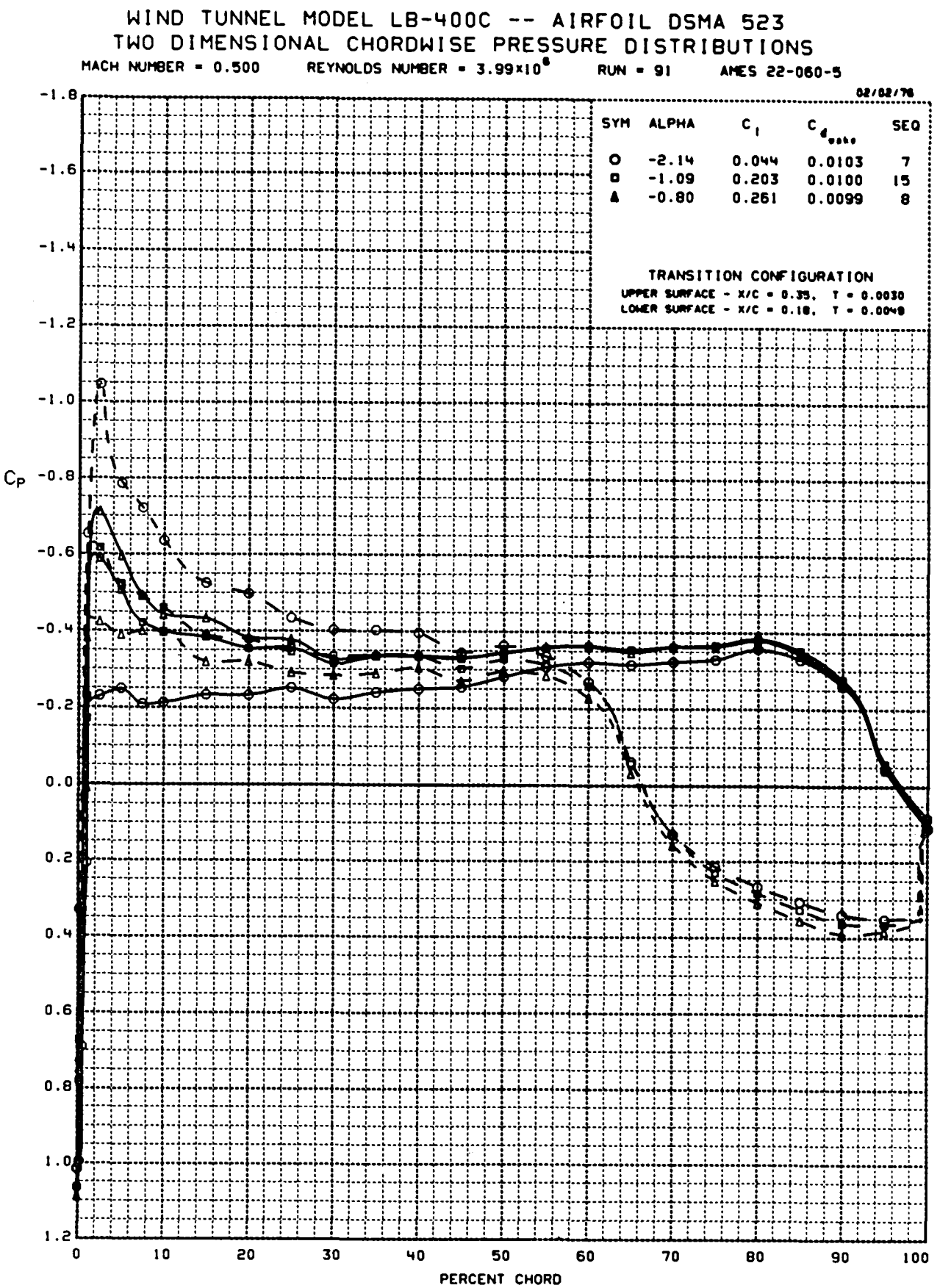
40
50
60
70
80
90
100
PERCENT CHORD

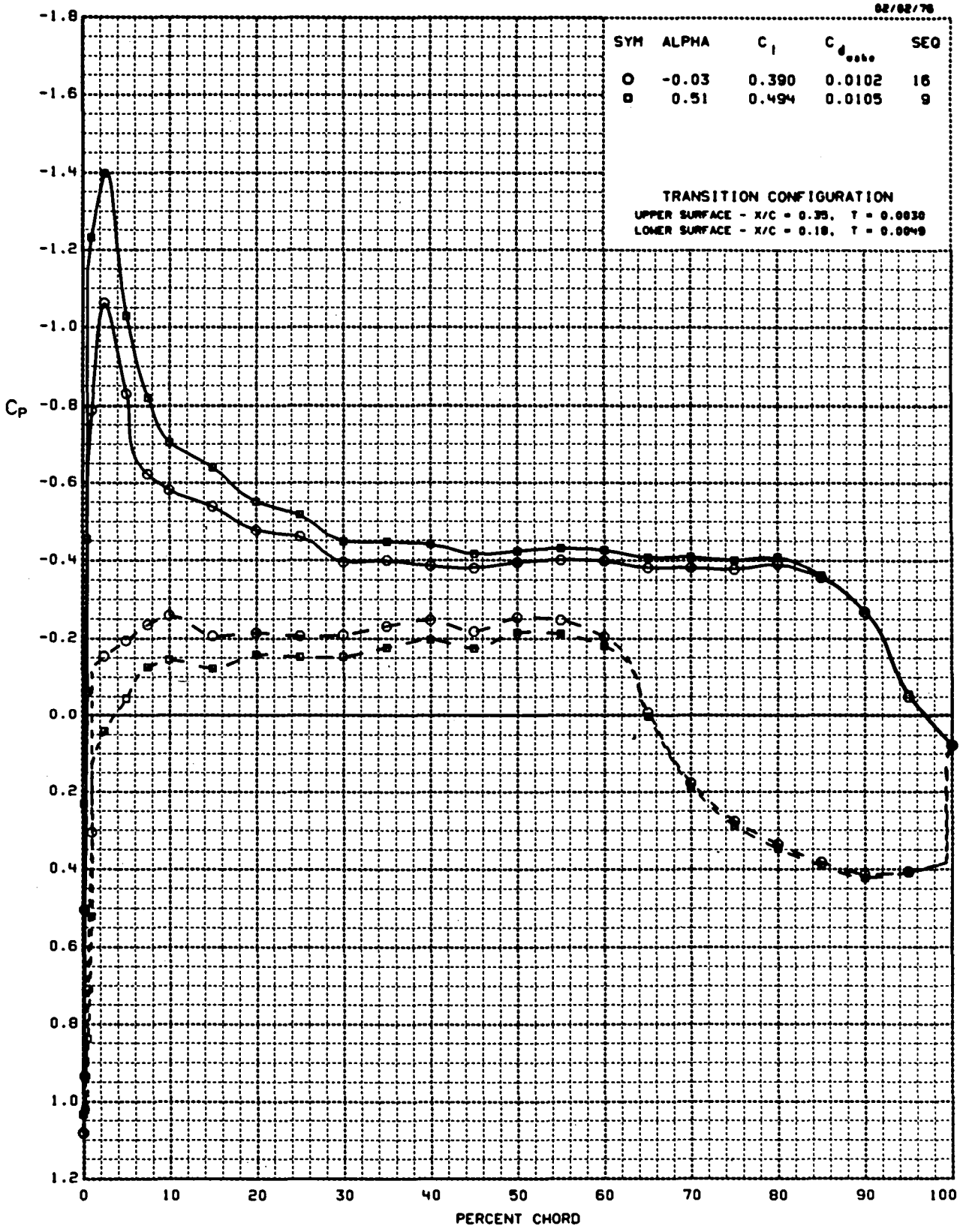

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.800 REYNOLDS NUMBER = 2.99x10^6 RUN = 89 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -1.02 -0.012 0.0212 1
□ -0.48 0.157 0.0165 4
Δ -0.12 0.336 0.0141 3
X -0.02 0.470 0.0141 5
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.799 REYNOLDS NUMBER = 2.99x10^6 RUN = 89 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wave SEQ
O 0.11 0.571 0.0163 6
□ 0.28 0.685 0.0203 7
Δ 0.77 0.842 0.0314 9
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0030
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.500 REYNOLDS NUMBER = 3.99x10^6 RUN = 90 AMES 22-060-5
SYM ALPHA C_l $C_{d_{cobe}}$ SEQ
O -1.42 0.140 0.0101 1
□ -0.78 0.262 0.0098 2
Δ -0.14 0.372 0.0099 3
X 0.53 0.496 0.0100 4
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.10, T = 0.0030
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.500 REYNOLDS NUMBER = 3.98x10^6 RUN = 90 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 1.85 0.719 0.0101 6
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.10, T = 0.0030
C_P
-4.8
-4.4
-4.0
-3.6
-3.2
-2.8
-2.4
-2.0
-1.6
-1.2
-0.8
-0.4
0.0
0.4
0.8
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

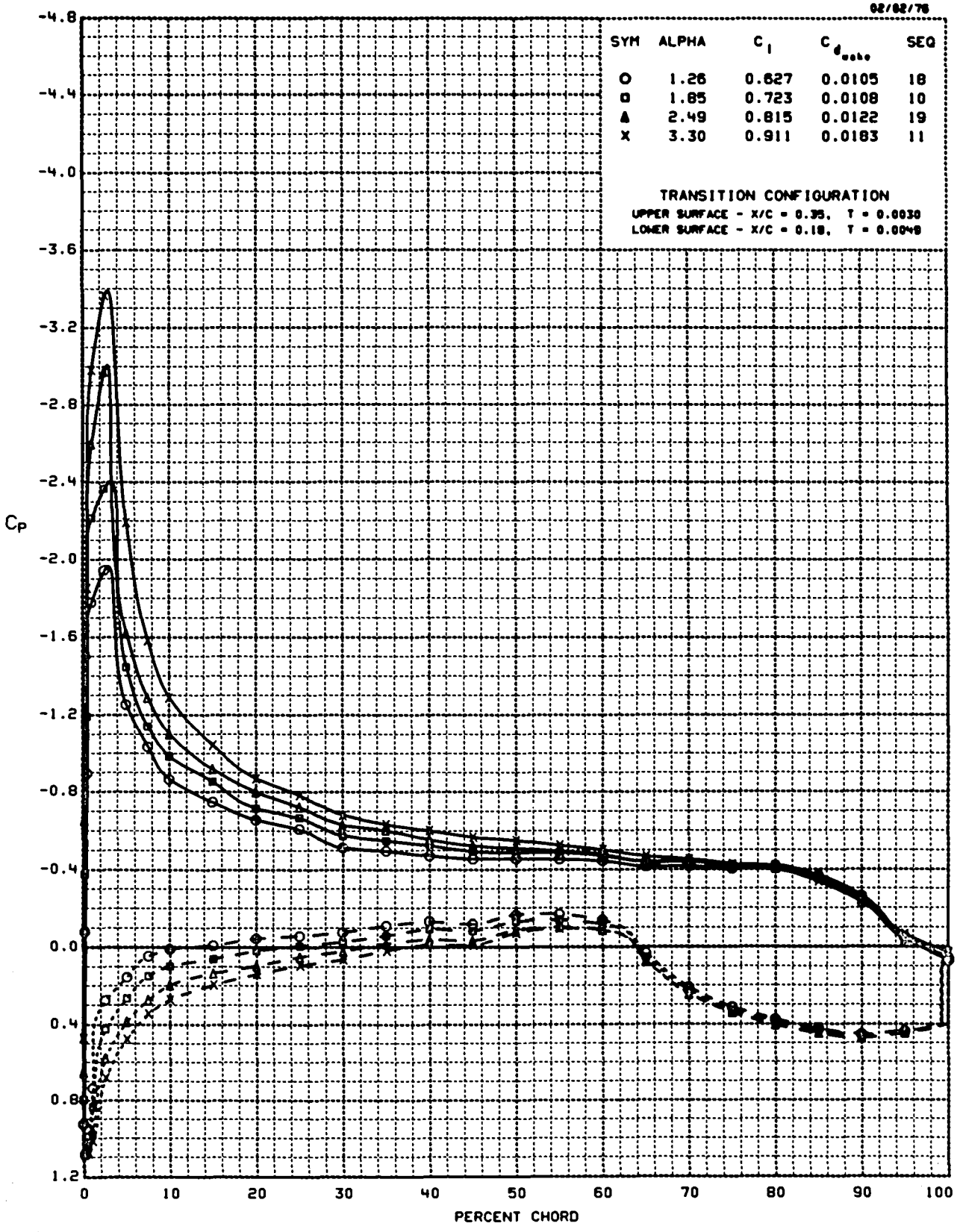

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.500 REYNOLDS NUMBER = 3.99x10^6 RUN = 91 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
-2.14 0.044 0.0103 7
-1.09 0.203 0.0100 15
-0.80 0.261 0.0099 8
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.500 REYNOLDS NUMBER = 4.01x10^6 RUN = 91 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_cdp SEQ
O -0.03 0.390 0.0102 16
□ 0.51 0.494 0.0105 9
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.499 REYNOLDS NUMBER = 3.99×10^6 RUN = 91 AMES 22-060-5

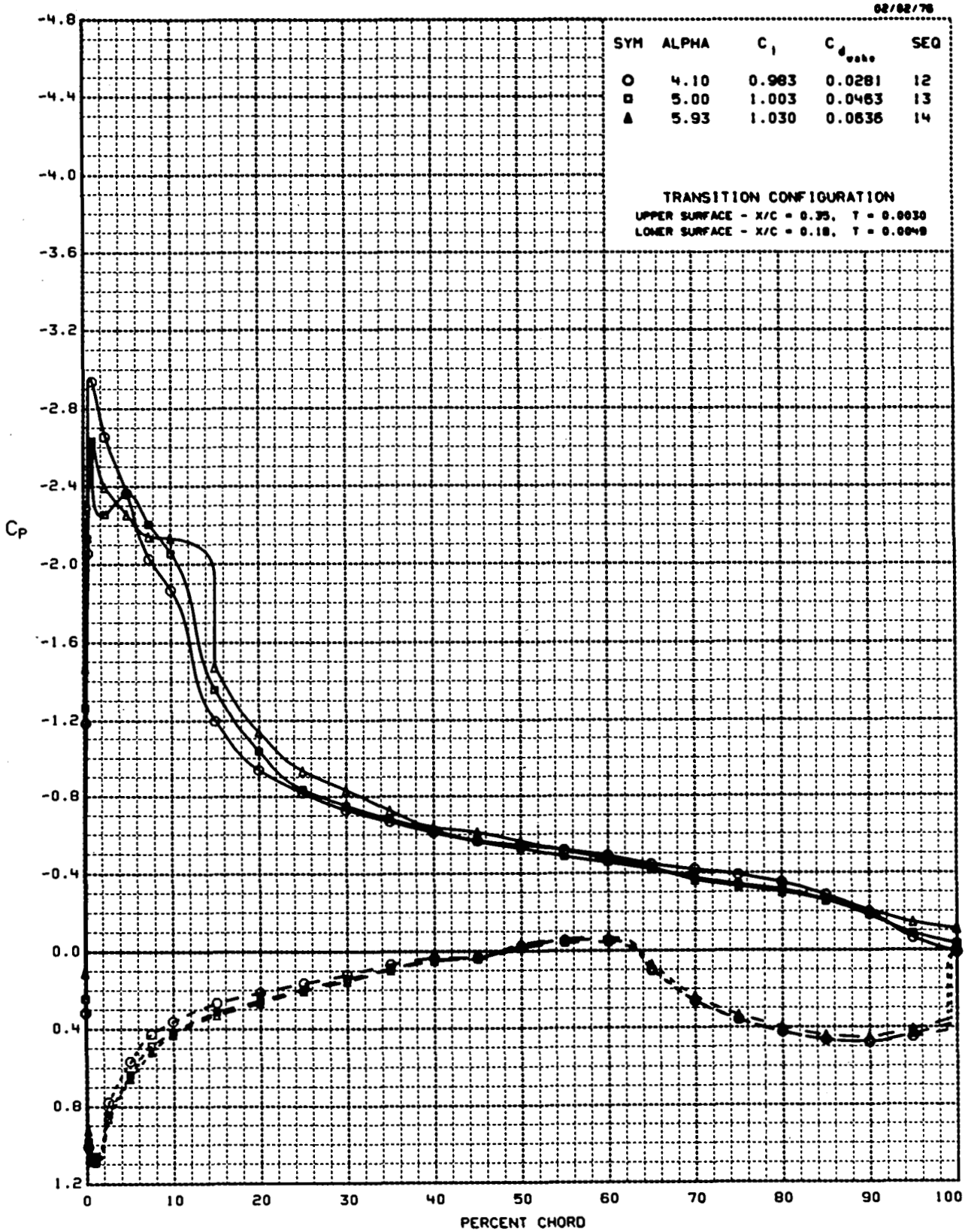
02/02/76



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.498 REYNOLDS NUMBER = 3.98×10^6 RUN = 91 AMES 22-060-5

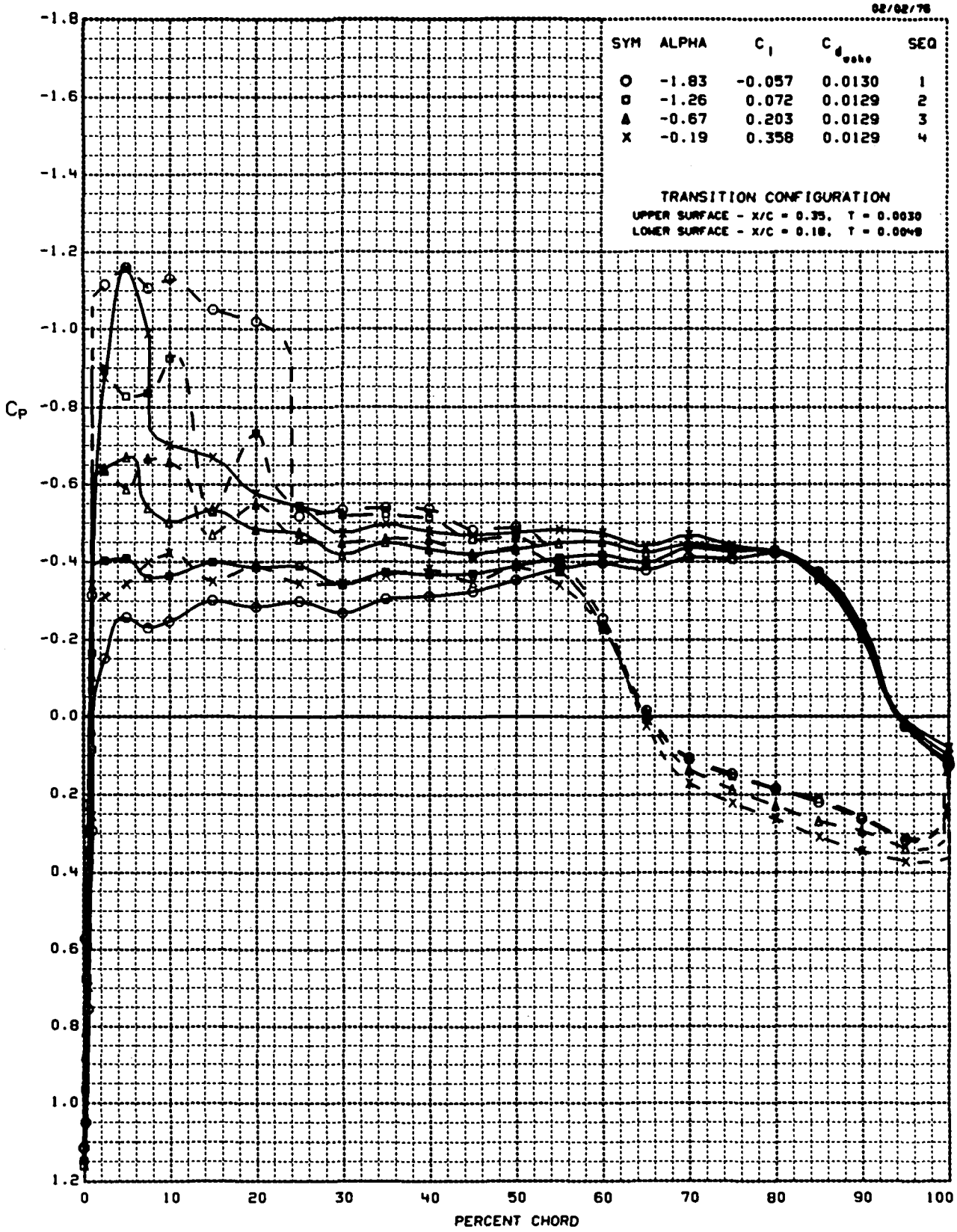
02/02/76



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.739 REYNOLDS NUMBER = 3.96×10^6 RUN = 92 AMES 22-060-5

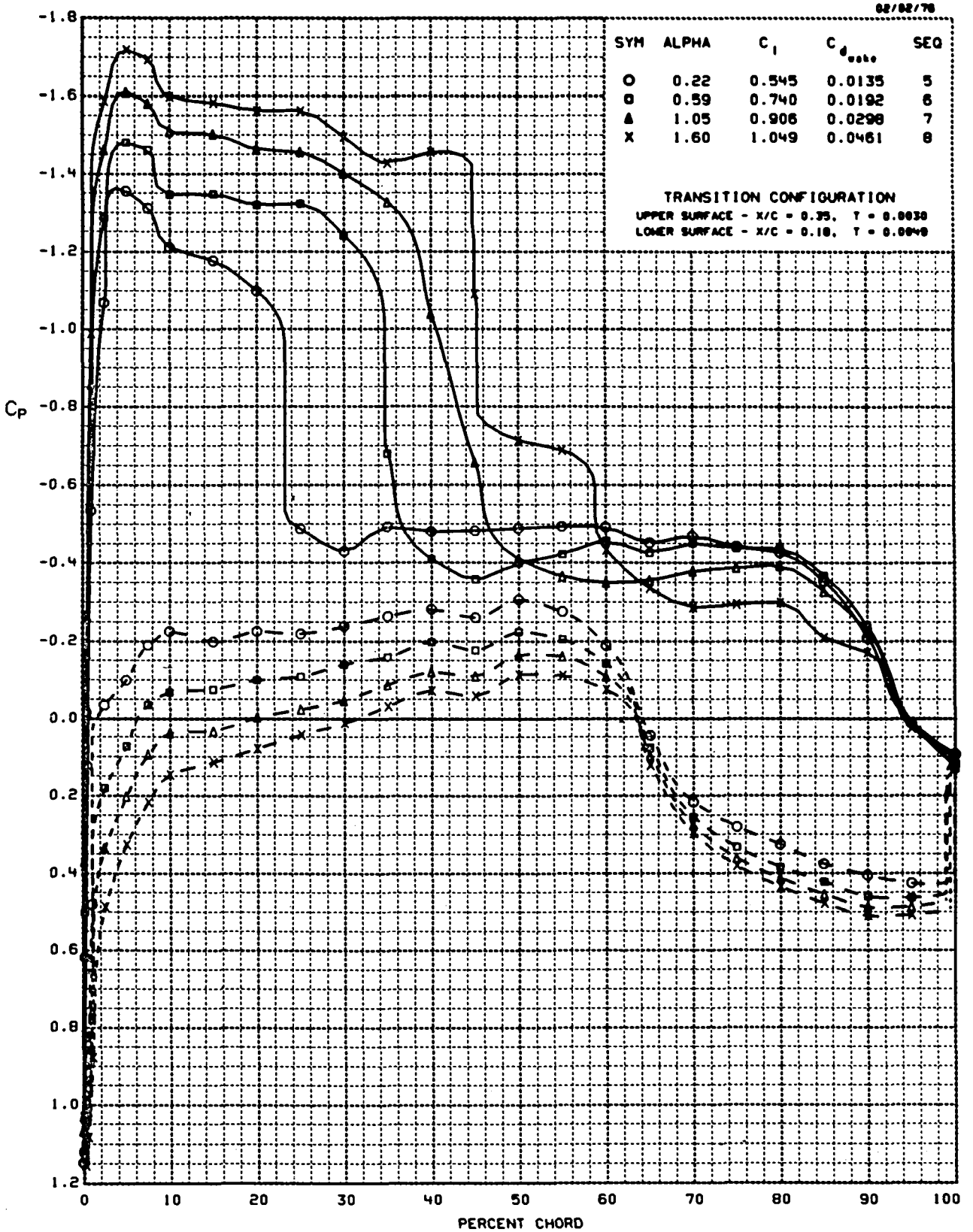
02/02/76

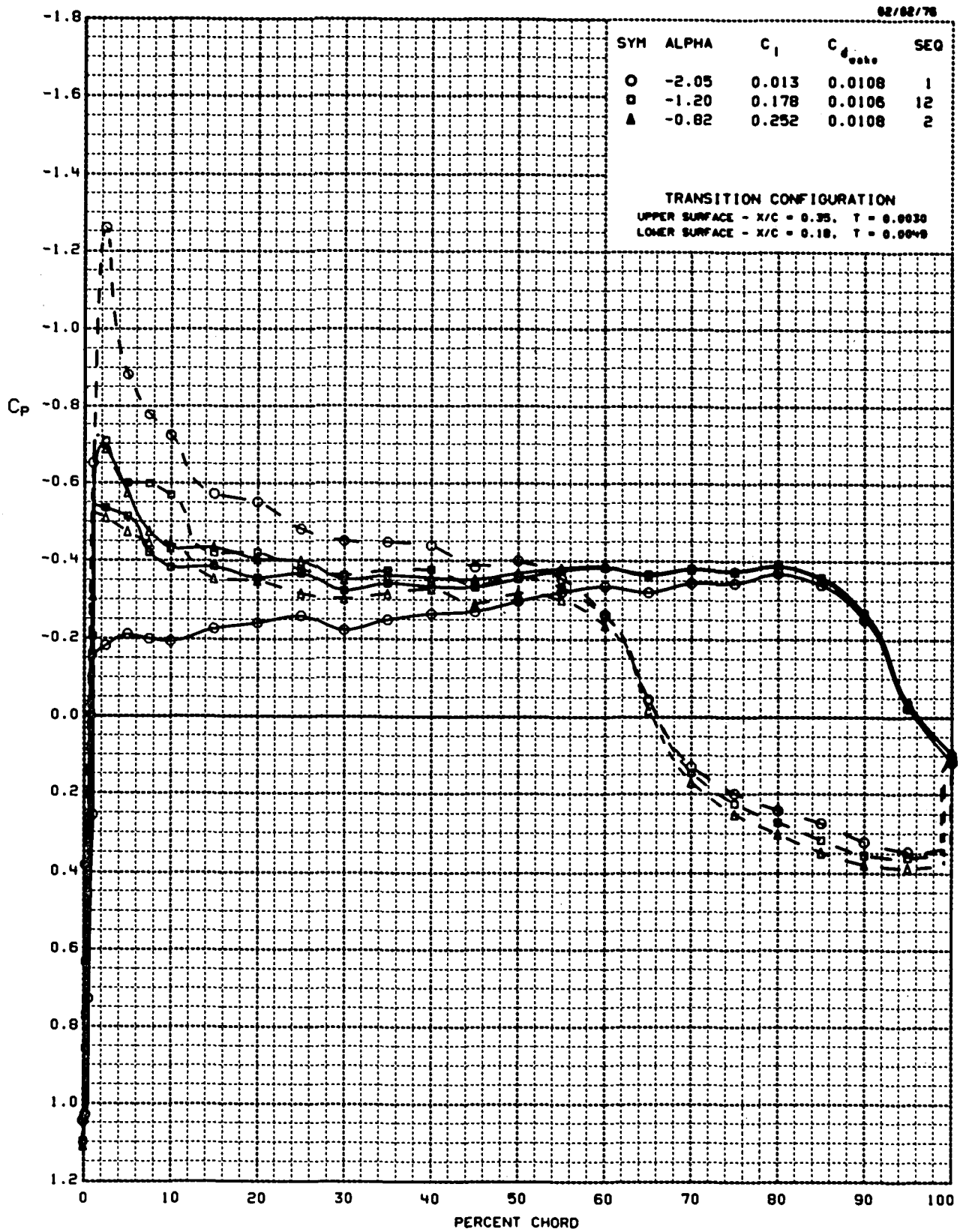


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.738 REYNOLDS NUMBER = 3.92×10^6 RUN = 92 AMES 22-060-5

02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.599 REYNOLDS NUMBER = 4.02x10^6 RUN = 93 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -2.05 0.013 0.0108 1
□ -1.20 0.178 0.0106 12
Δ -0.82 0.252 0.0108 2
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0040
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
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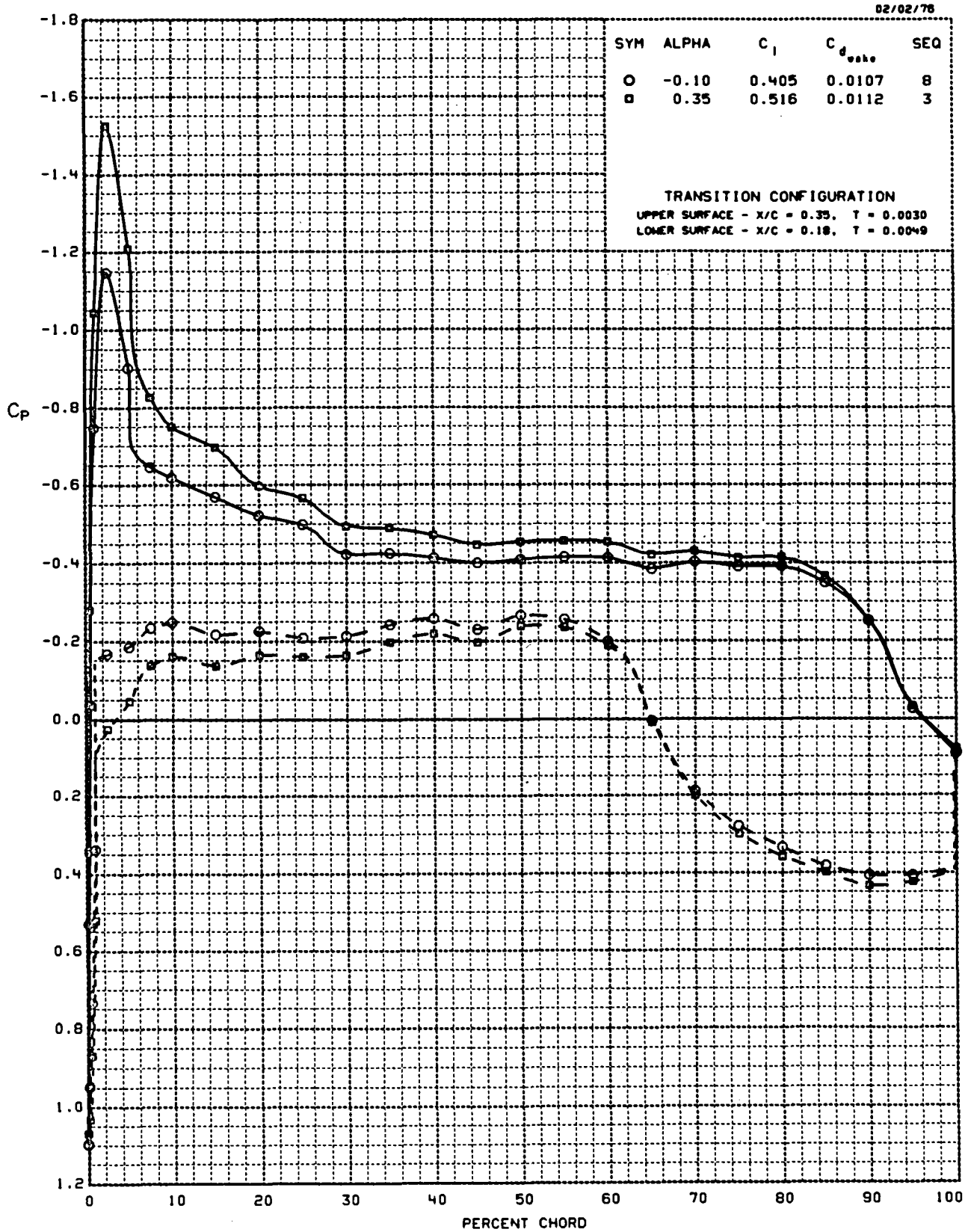
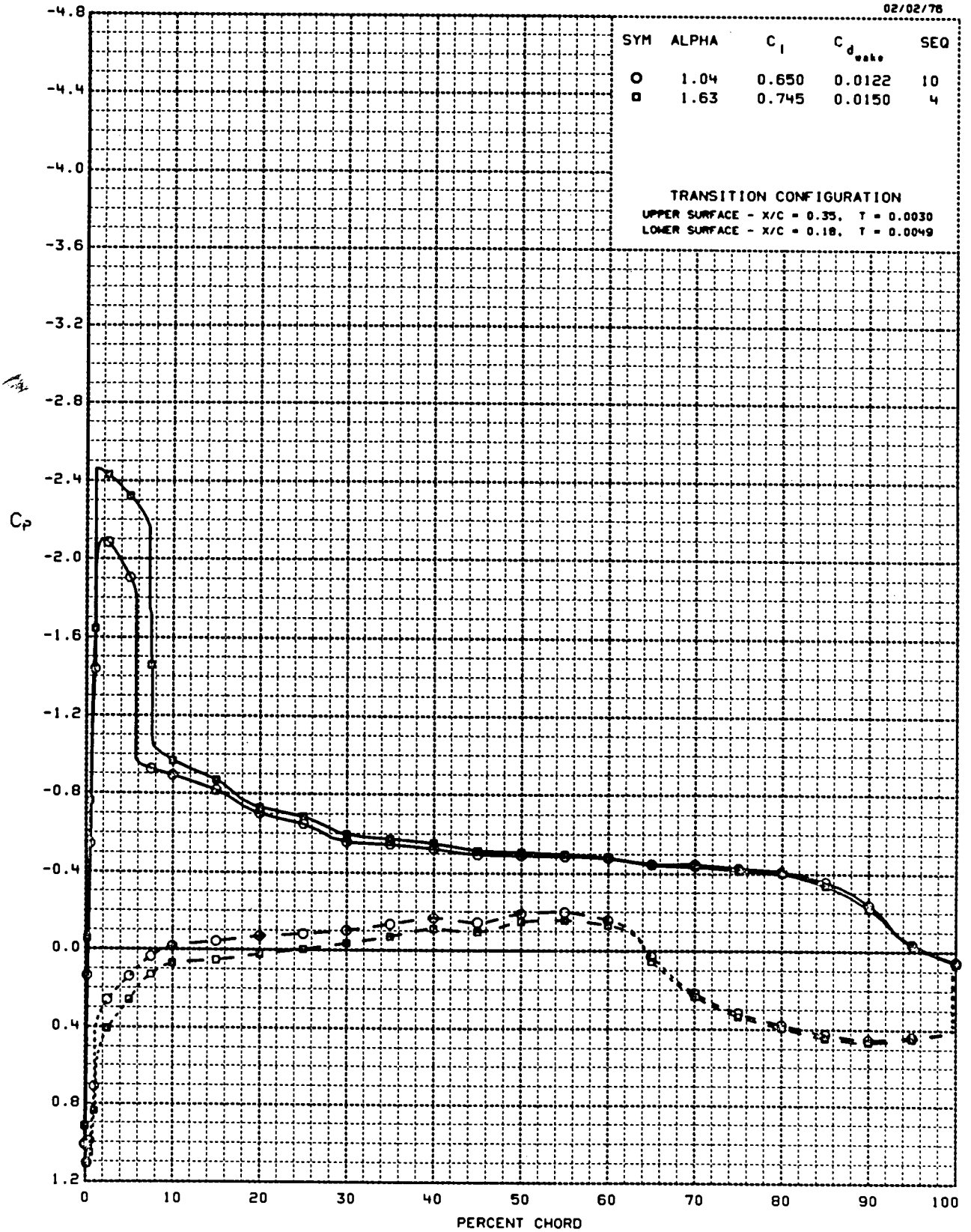
50
60
70
80
90
100
PERCENT CHORD

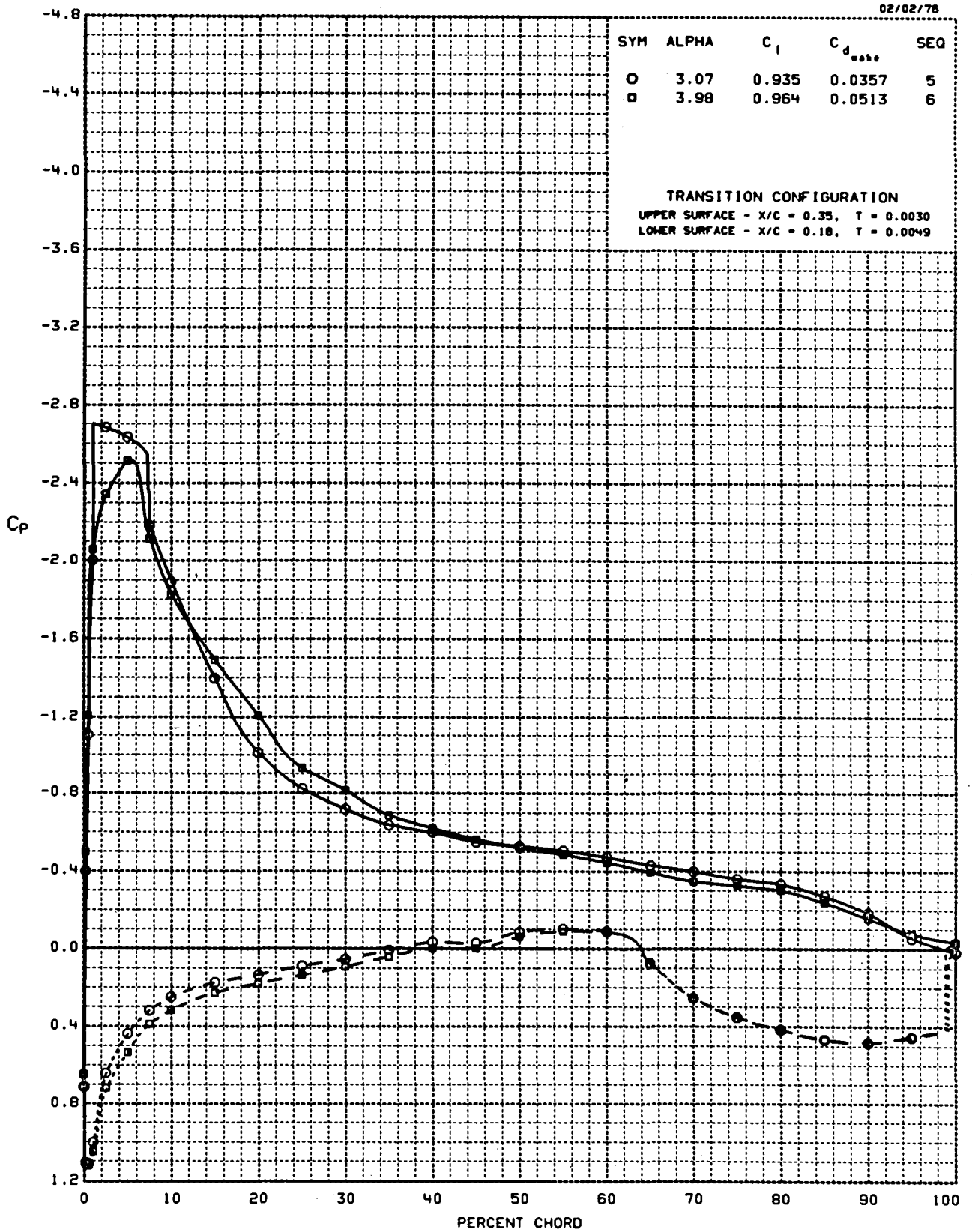

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.601 REYNOLDS NUMBER = 4.02x10^6 RUN = 93 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -0.10 0.405 0.0107 8
□ 0.35 0.516 0.0112 3
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.597 REYNOLDS NUMBER = 4.01×10^6 RUN = 93 AMES 22-060-5

02/02/78

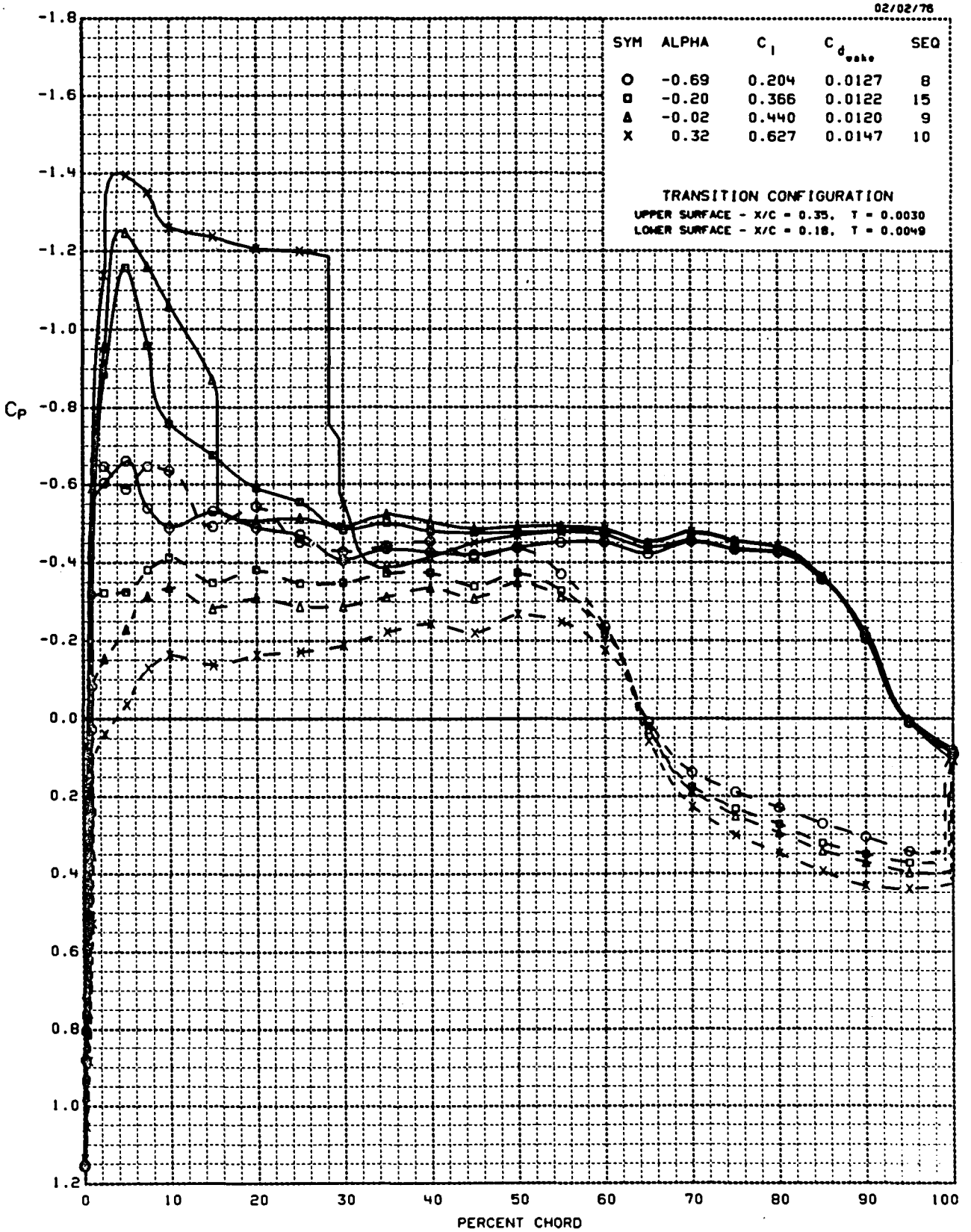



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.600 REYNOLDS NUMBER = 4.00x10^6 RUN = 93 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O 3.07 0.935 0.0357 5
□ 3.98 0.964 0.0513 6
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-4.8
-4.4
-4.0
-3.6
-3.2
-2.8
-2.4
-2.0
-1.6
-1.2
-0.8
-0.4
0.0
0.4
0.8
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.740 REYNOLDS NUMBER = 3.98×10^6 RUN = 94 AMES 22-060-5

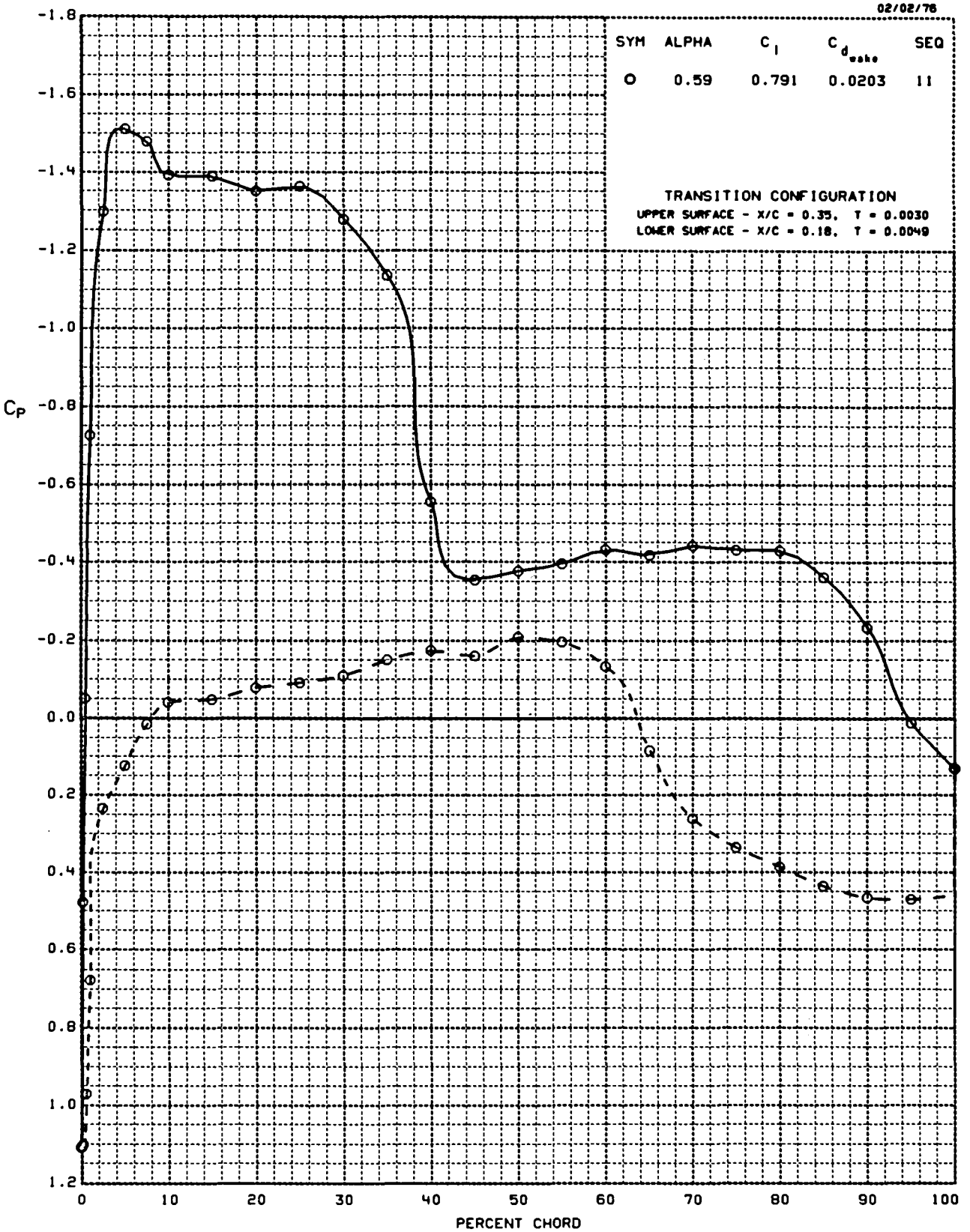
02/02/78



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.741 REYNOLDS NUMBER = 3.95×10^6 RUN = 94 AMES 22-060-5

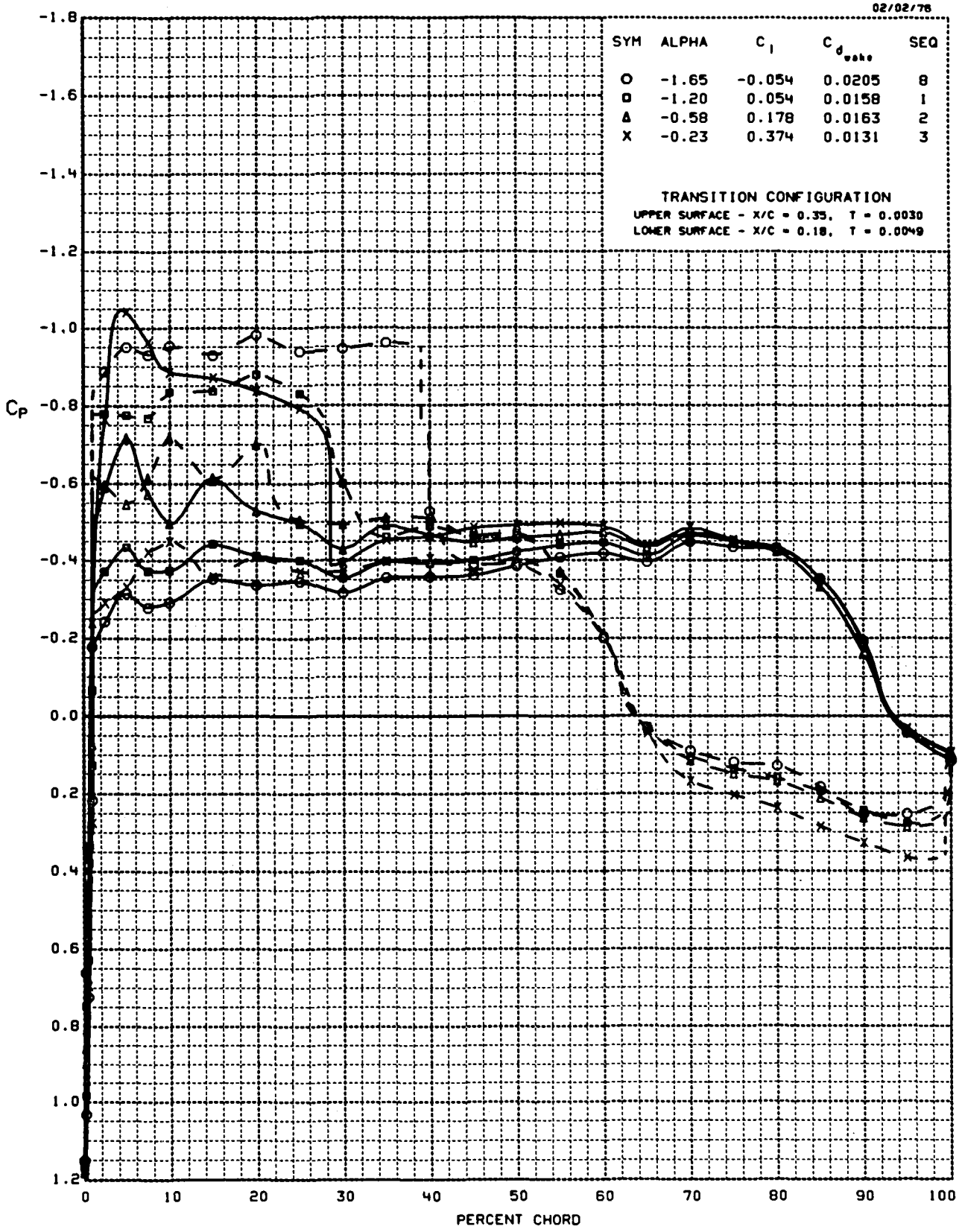
02/02/76

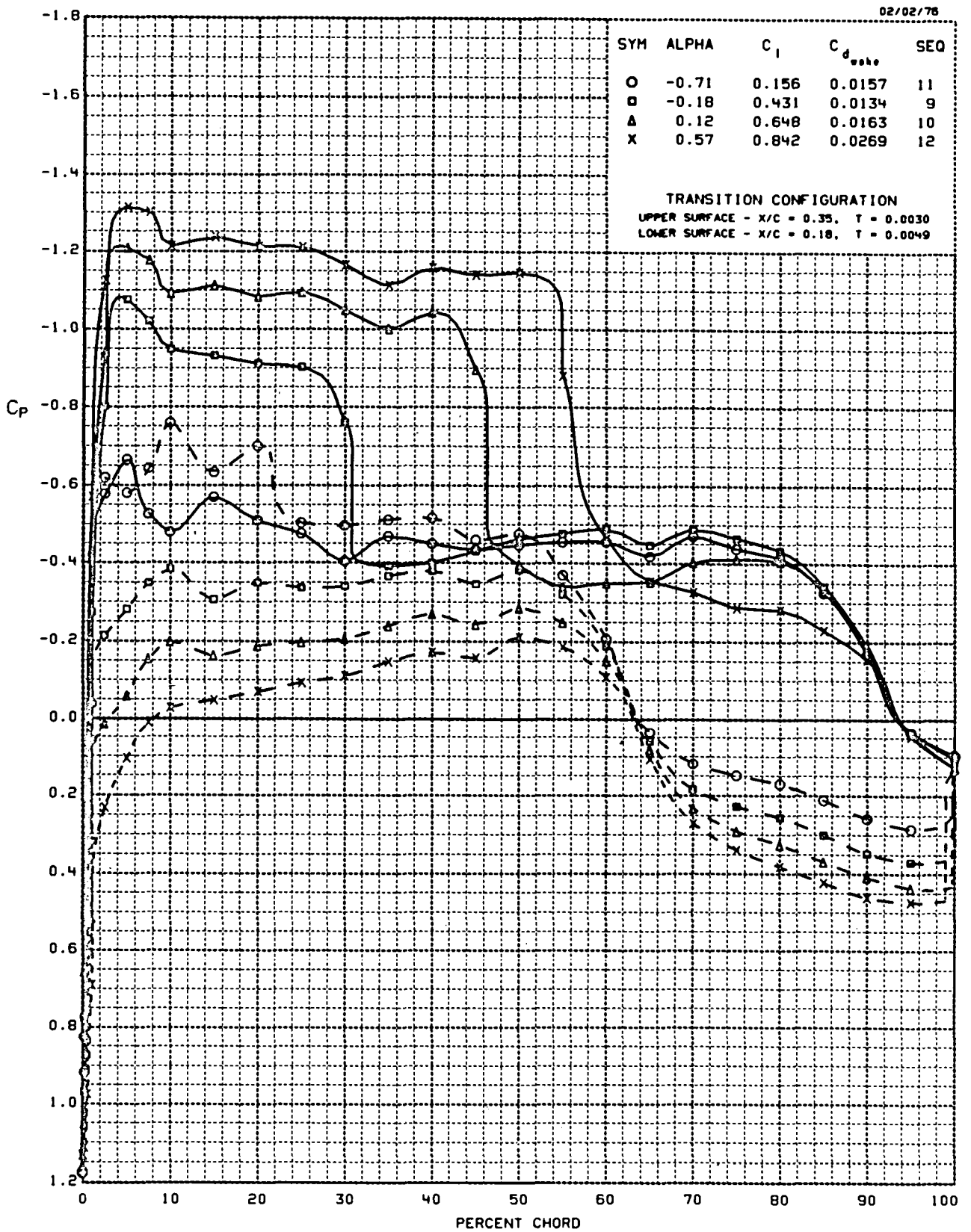


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.778 REYNOLDS NUMBER = 2.98×10^6 RUN = 95 AMES 22-060-5

02/02/78

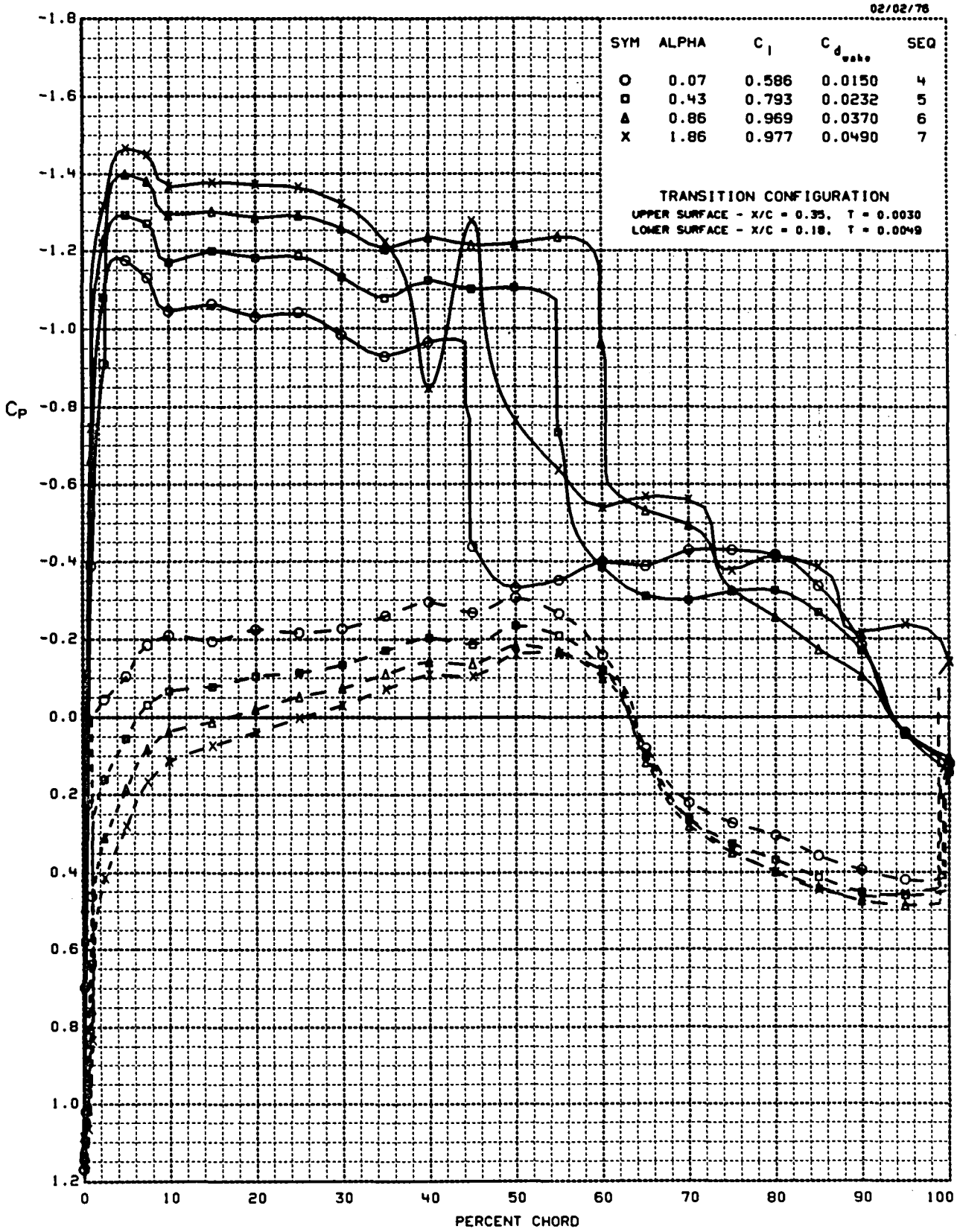



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.777 REYNOLDS NUMBER = 2.96x10^6 RUN = 95 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -0.71 0.156 0.0157 11
□ -0.18 0.431 0.0134 9
Δ 0.12 0.648 0.0163 10
X 0.57 0.842 0.0269 12
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

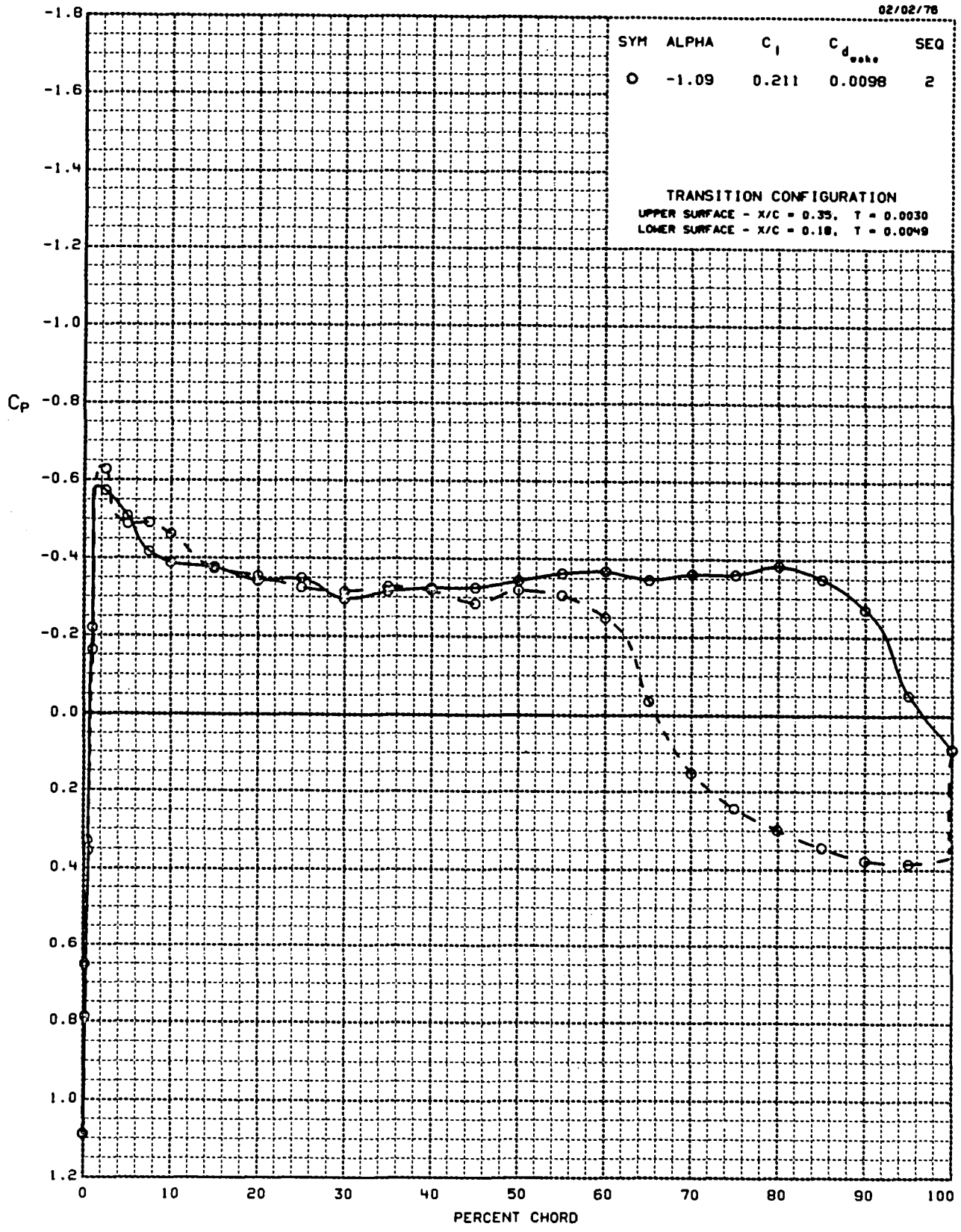
MACH NUMBER = 0.778 REYNOLDS NUMBER = 2.95×10^6 RUN = 95 AMES 22-060-5

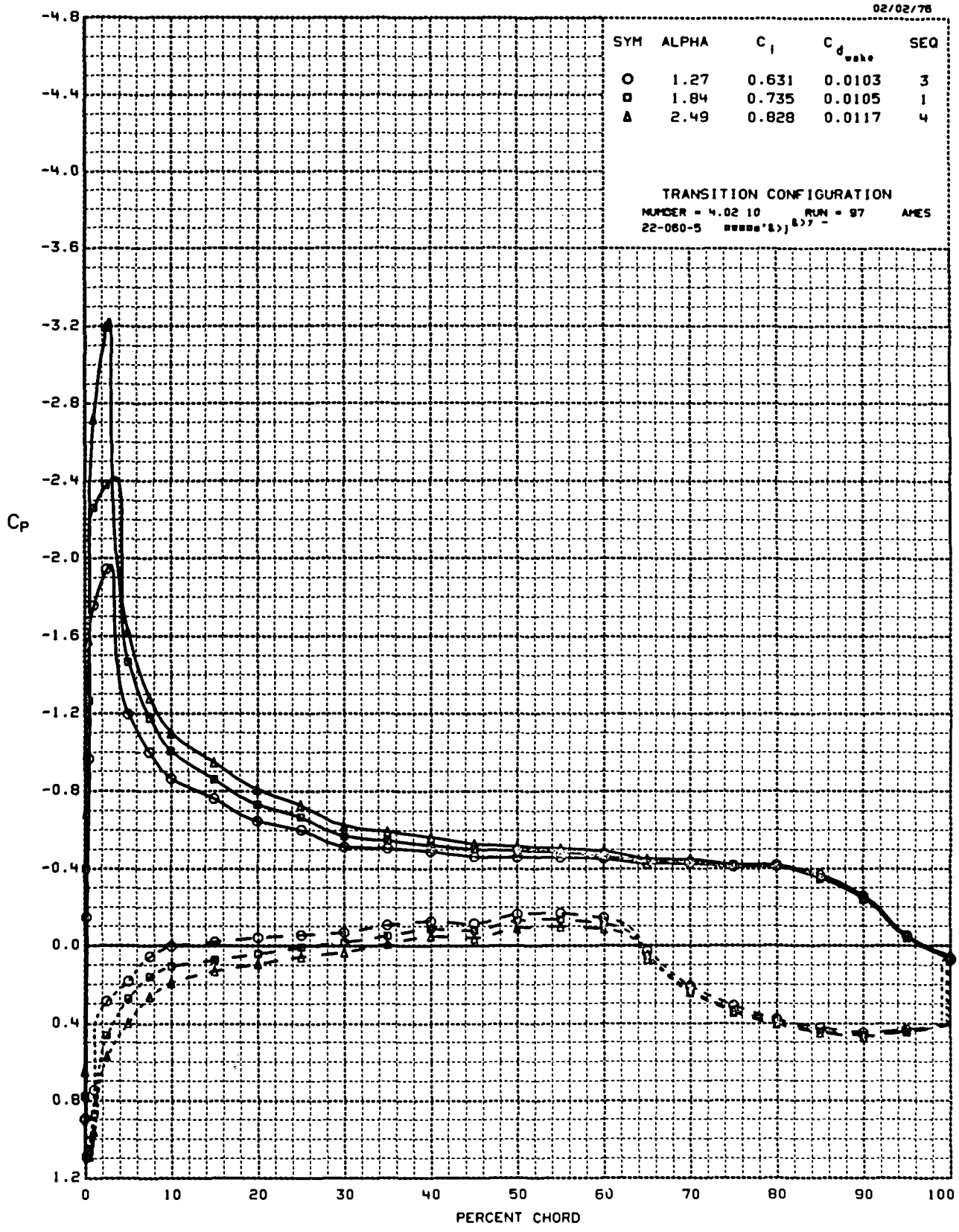
02/02/78



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.500 REYNOLDS NUMBER = 4.05×10^6 RUN = 97 AMES 22-060-5

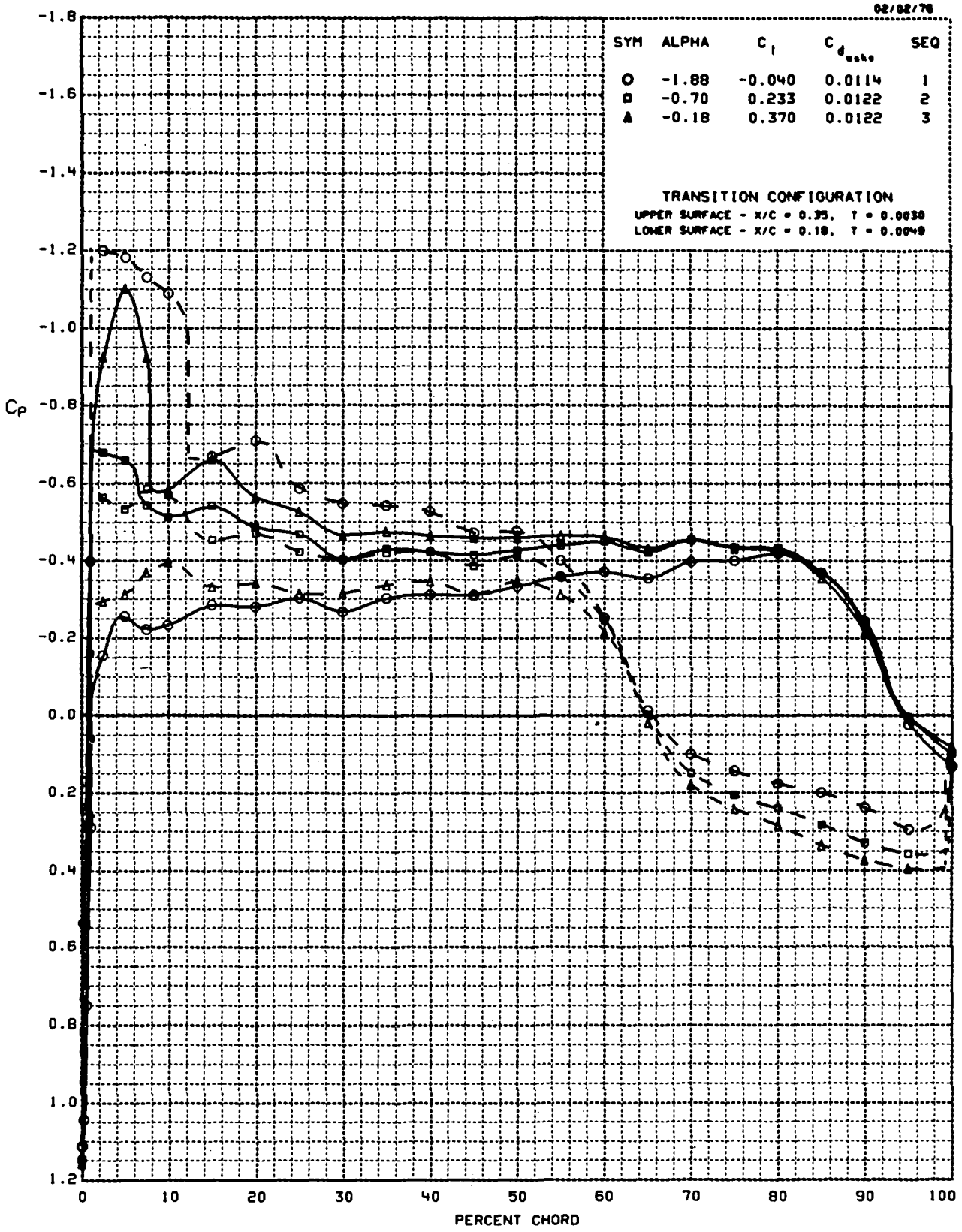


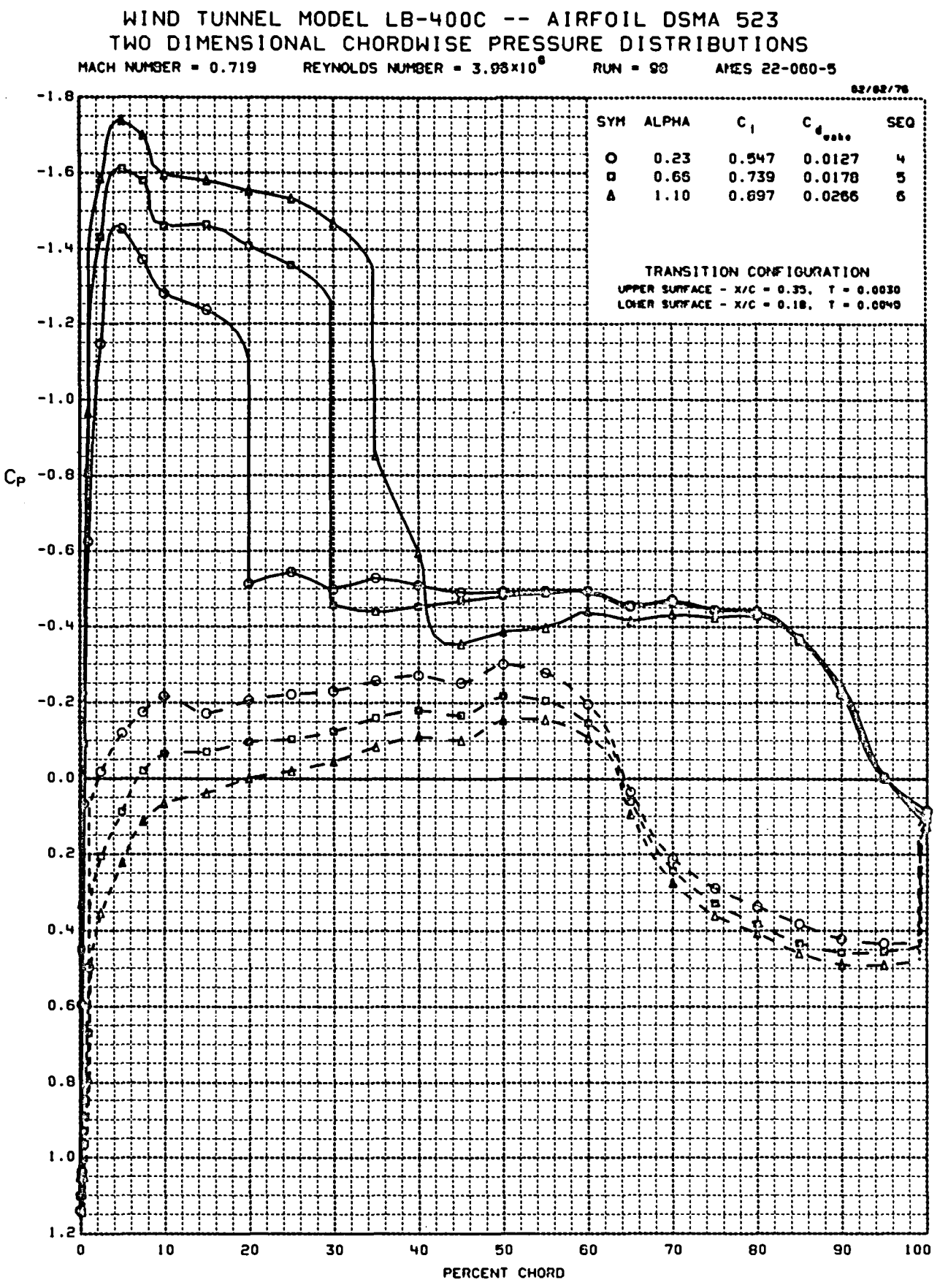

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.500 REYNOLDS NUMBER = 4.02x10^6 RUN = 97 AMES 22-060-5
02/02/78
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O 1.27 0.631 0.0103 3
□ 1.84 0.735 0.0105 1
Δ 2.49 0.828 0.0117 4
TRANSITION CONFIGURATION
NUMBER = 4.02 10 RUN = 97 AMES
22-060-5
C_P
-4.8
-4.4
-4.0
-3.6
-3.2
-2.8
-2.4
-2.0
-1.6
-1.2
-0.8
-0.4
0.0
0.4
0.8
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.720 REYNOLDS NUMBER = 3.91×10^6 RUN = 98 AMES 22-060-5

02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.719 REYNOLDS NUMBER = 3.98x10^6 RUN = 98 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O 0.23 0.547 0.0127 4
□ 0.66 0.739 0.0178 5
Δ 1.10 0.697 0.0266 6
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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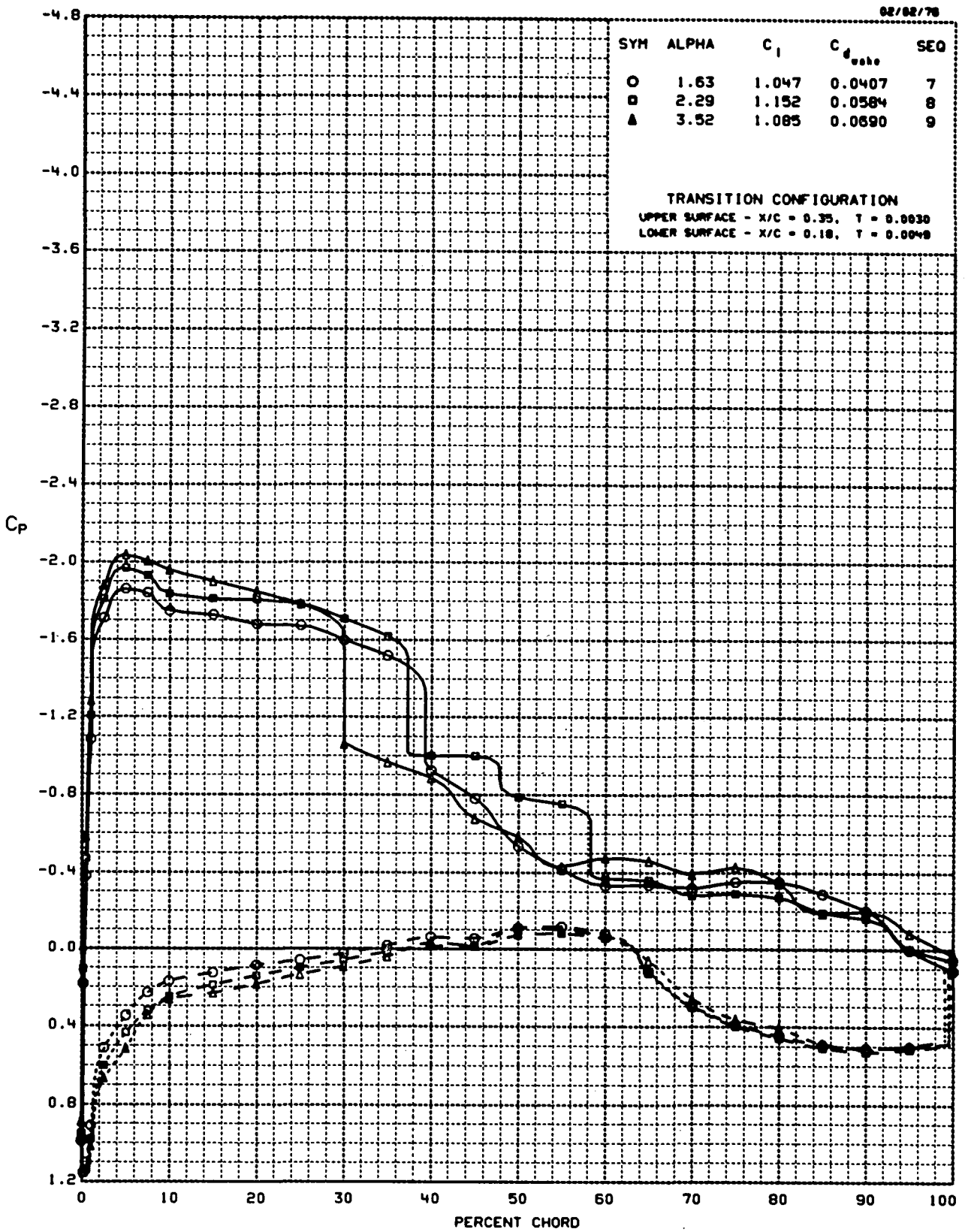
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.718 REYNOLDS NUMBER = 3.95x10^6 RUN = 98 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
1.63 1.047 0.0407 7
2.29 1.152 0.0584 8
3.52 1.085 0.0690 9
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-4.8
-4.4
-4.0
-3.6
-3.2
-2.8
-2.4
-2.0
-1.6
-1.2
-0.8
-0.4
0.0
0.4
0.8
1.2
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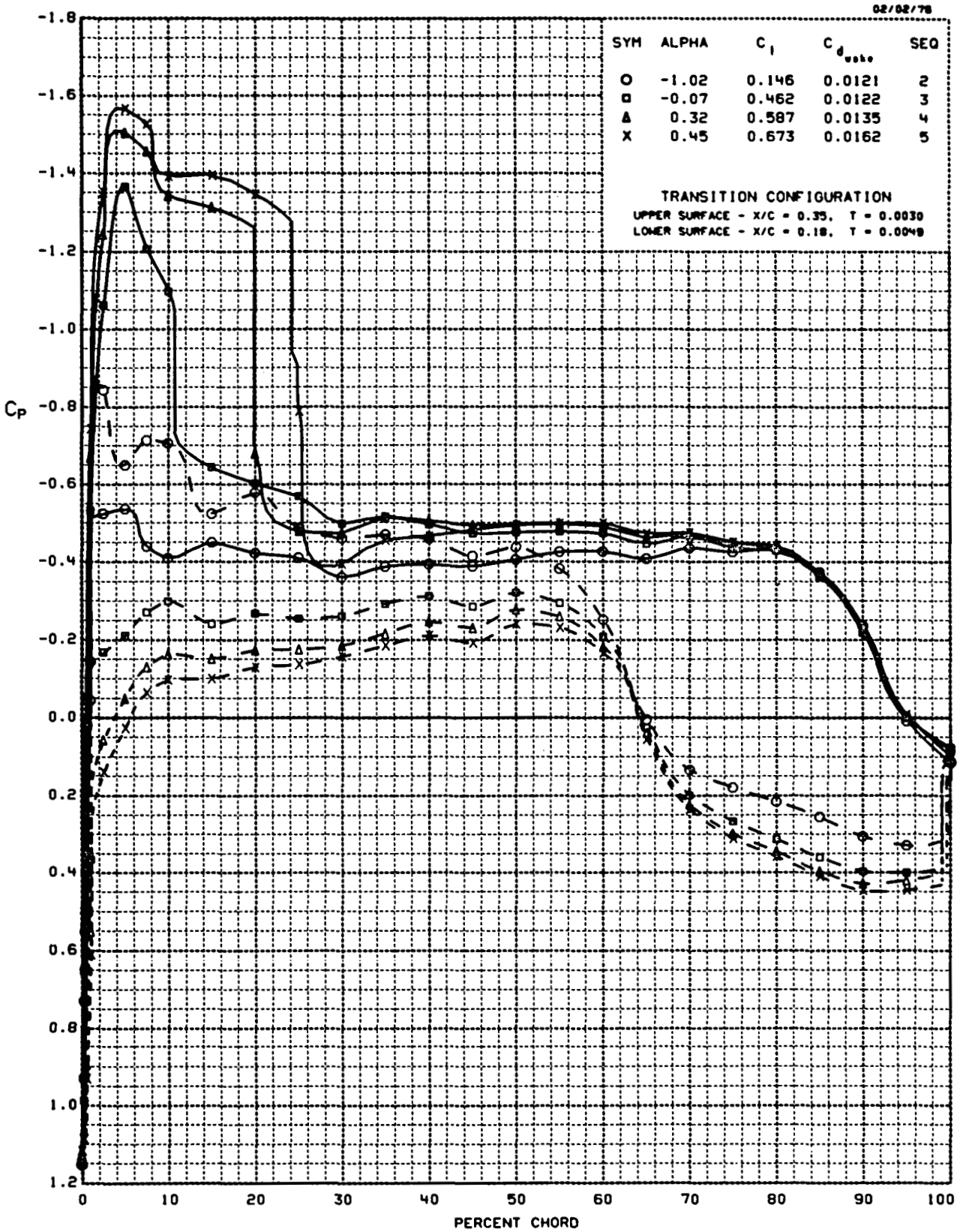
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.719 REYNOLDS NUMBER = 3.95x10^6 RUN = 99 AMES 22-060-5
02/02/78
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O -1.02 0.146 0.0121 2
□ -0.07 0.462 0.0122 3
Δ 0.32 0.587 0.0135 4
X 0.45 0.673 0.0162 5
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
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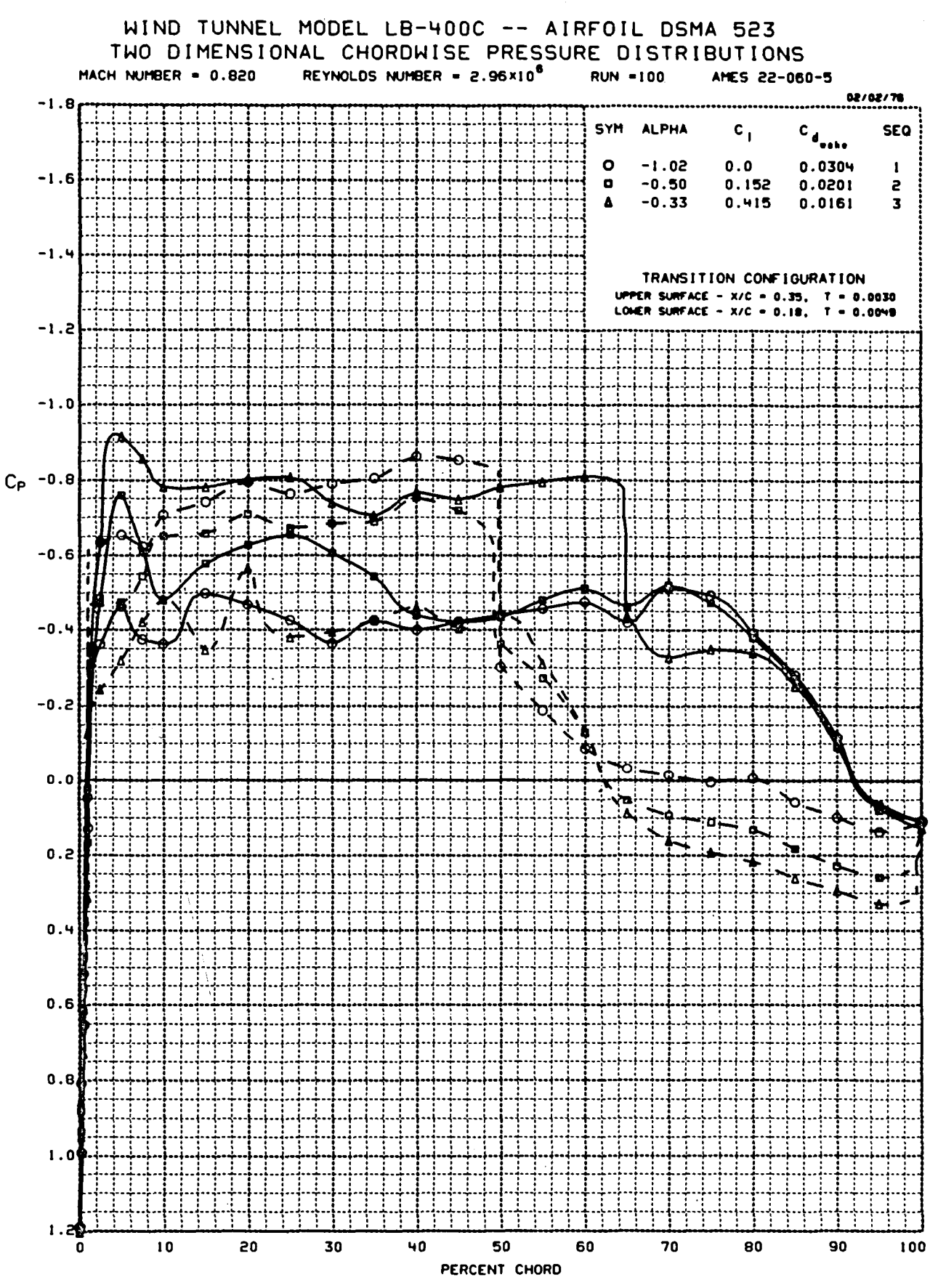
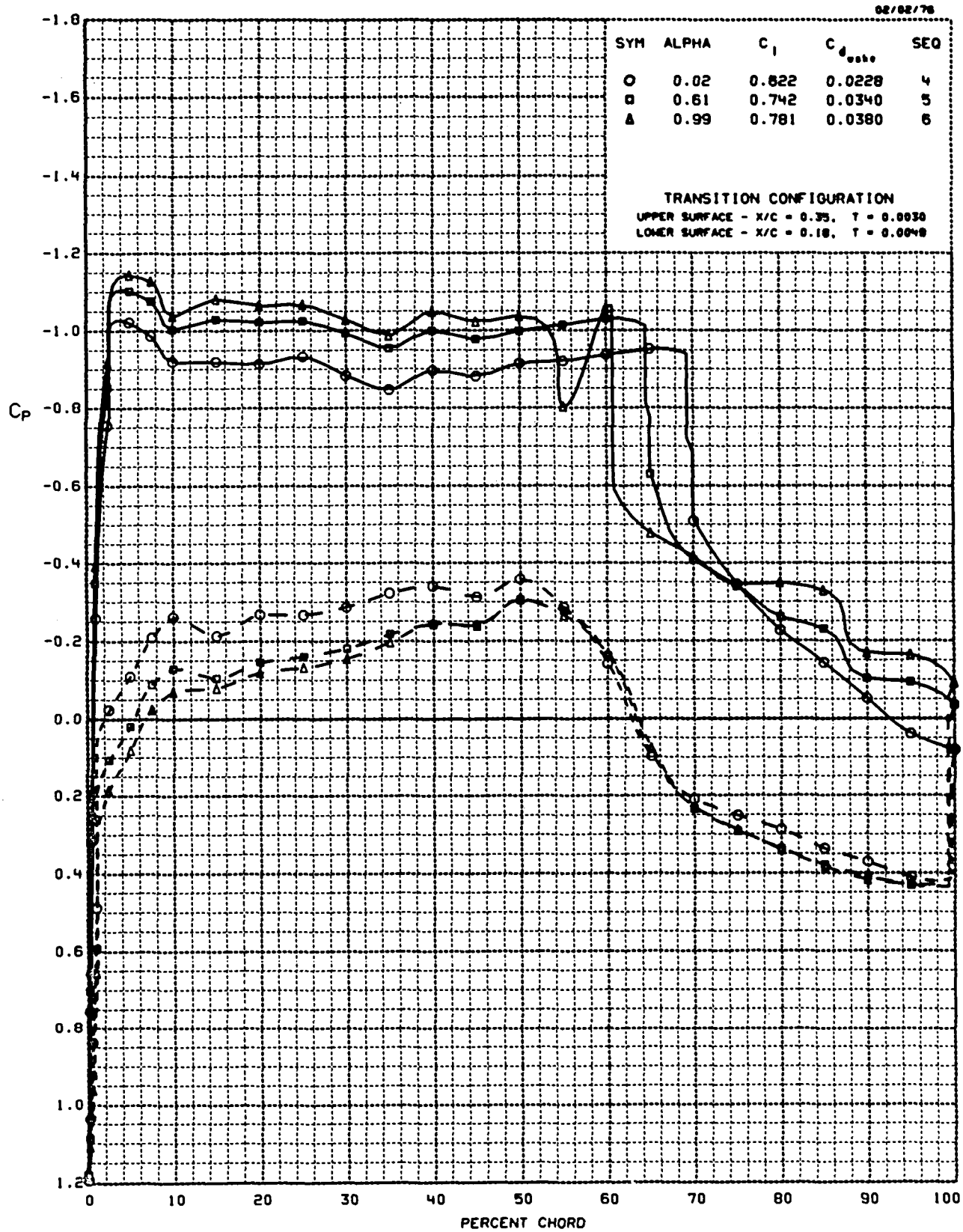
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.820 REYNOLDS NUMBER = 2.96x10^6 RUN =100 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -1.02 0.0 0.0304 1
□ -0.50 0.152 0.0201 2
Δ -0.33 0.415 0.0161 3
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0048
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.819 REYNOLDS NUMBER = 2.96x10^6 RUN =100 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_visc SEQ
O 0.02 0.822 0.0228 4
□ 0.61 0.742 0.0340 5
Δ 0.99 0.781 0.0380 6
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0040
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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10
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30
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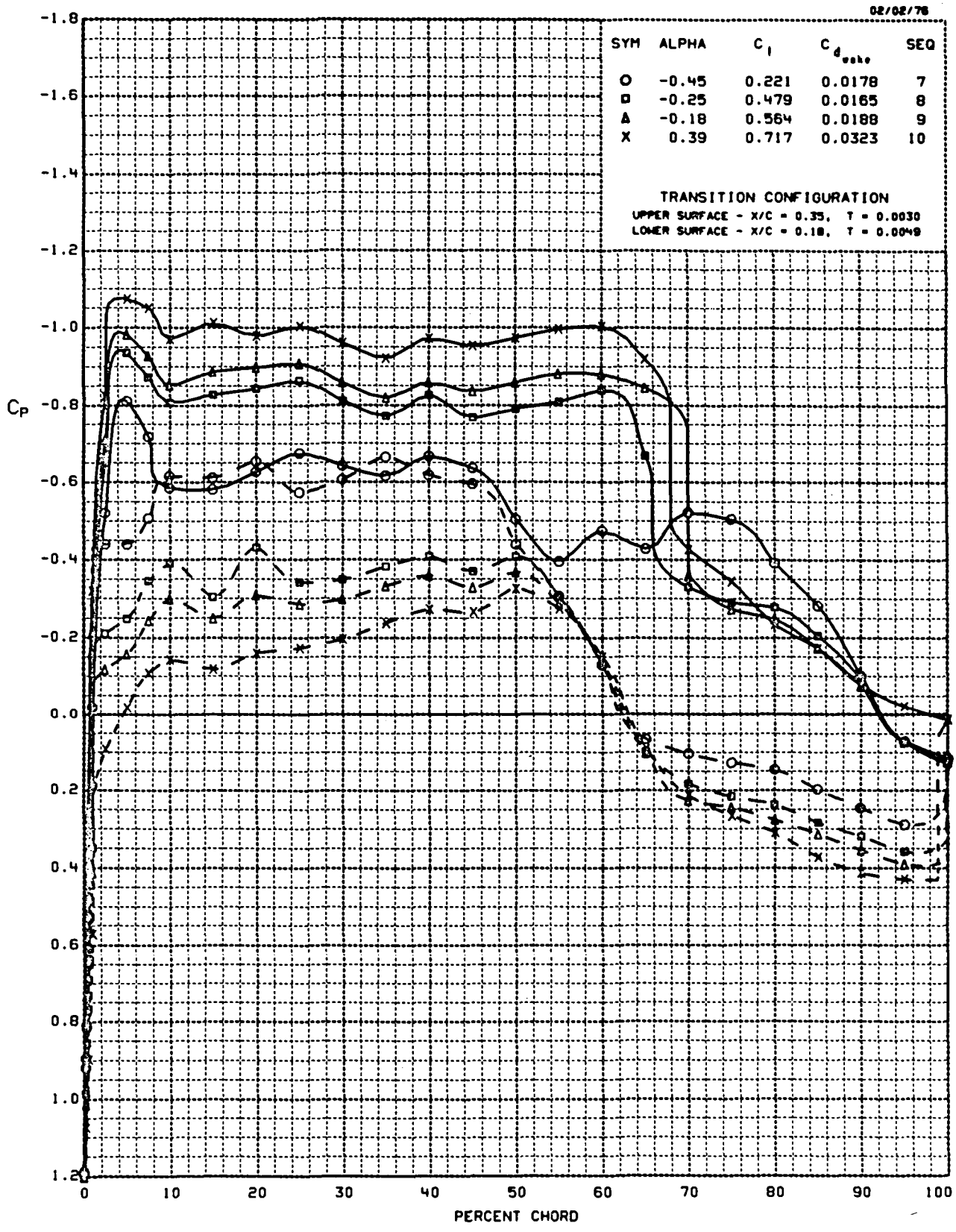
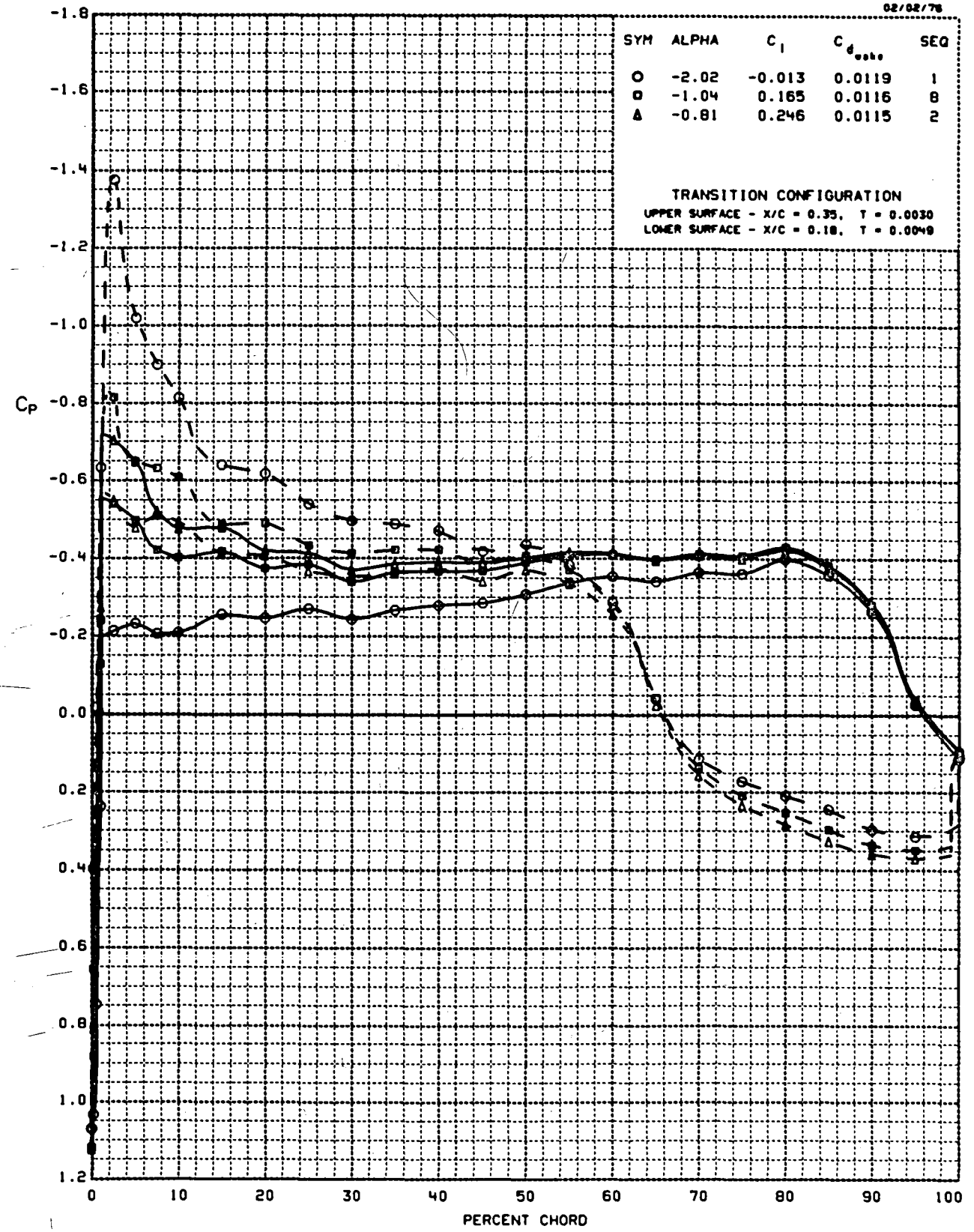
60
70
80
90
100
PERCENT CHORD

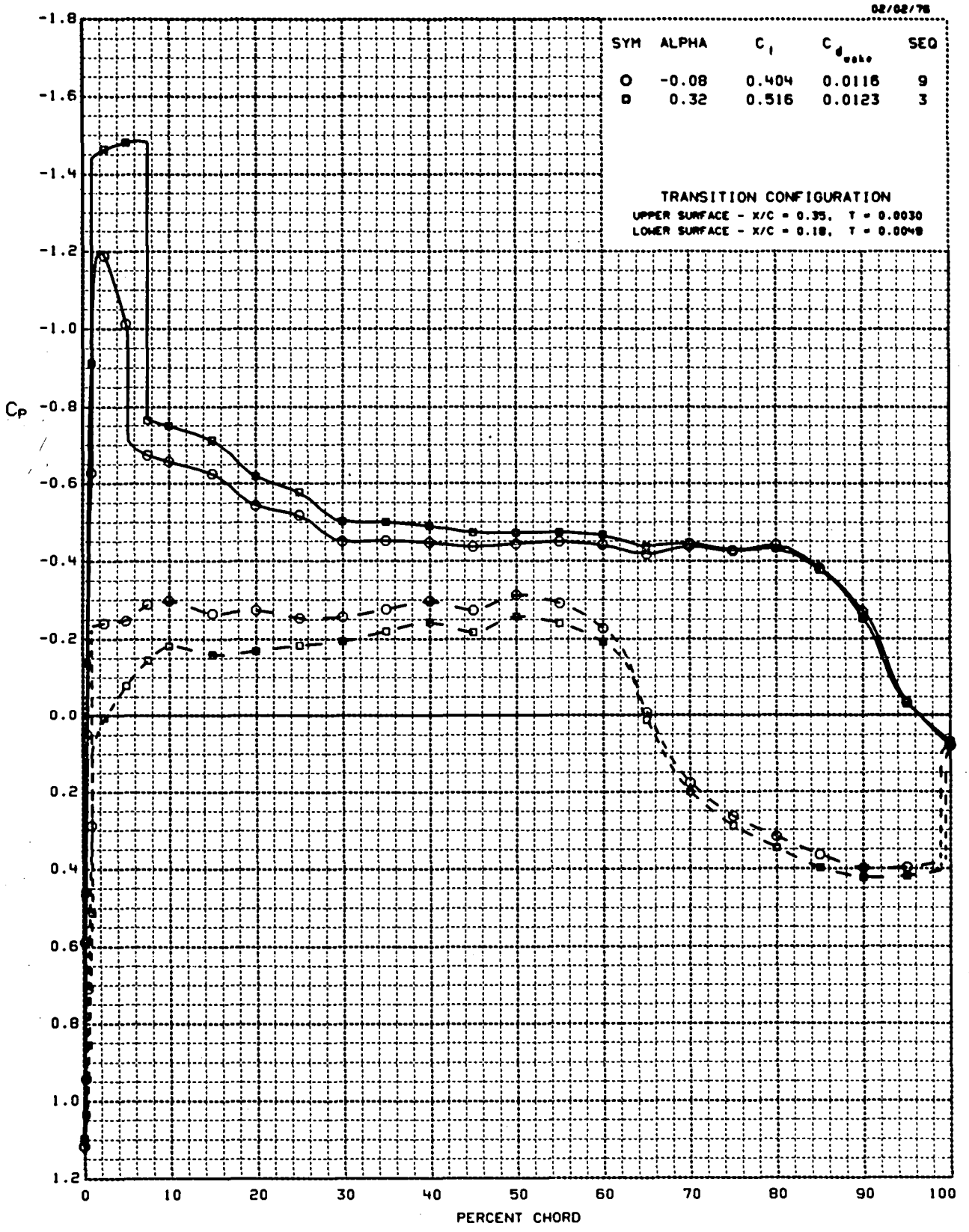

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.820 REYNOLDS NUMBER = 2.99x10^6 RUN =100 AMES 22-060-5
02/02/76
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O -0.45 0.221 0.0178 7
□ -0.25 0.479 0.0165 8
Δ -0.18 0.564 0.0188 9
X 0.39 0.717 0.0323 10
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.639 REYNOLDS NUMBER = 4.01×10^6 RUN =101 AMES 22-060-5

02/02/78




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.639 REYNOLDS NUMBER = 4.00x10^6 RUN =101 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -0.08 0.404 0.0116 9
□ 0.32 0.516 0.0123 3
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0048
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

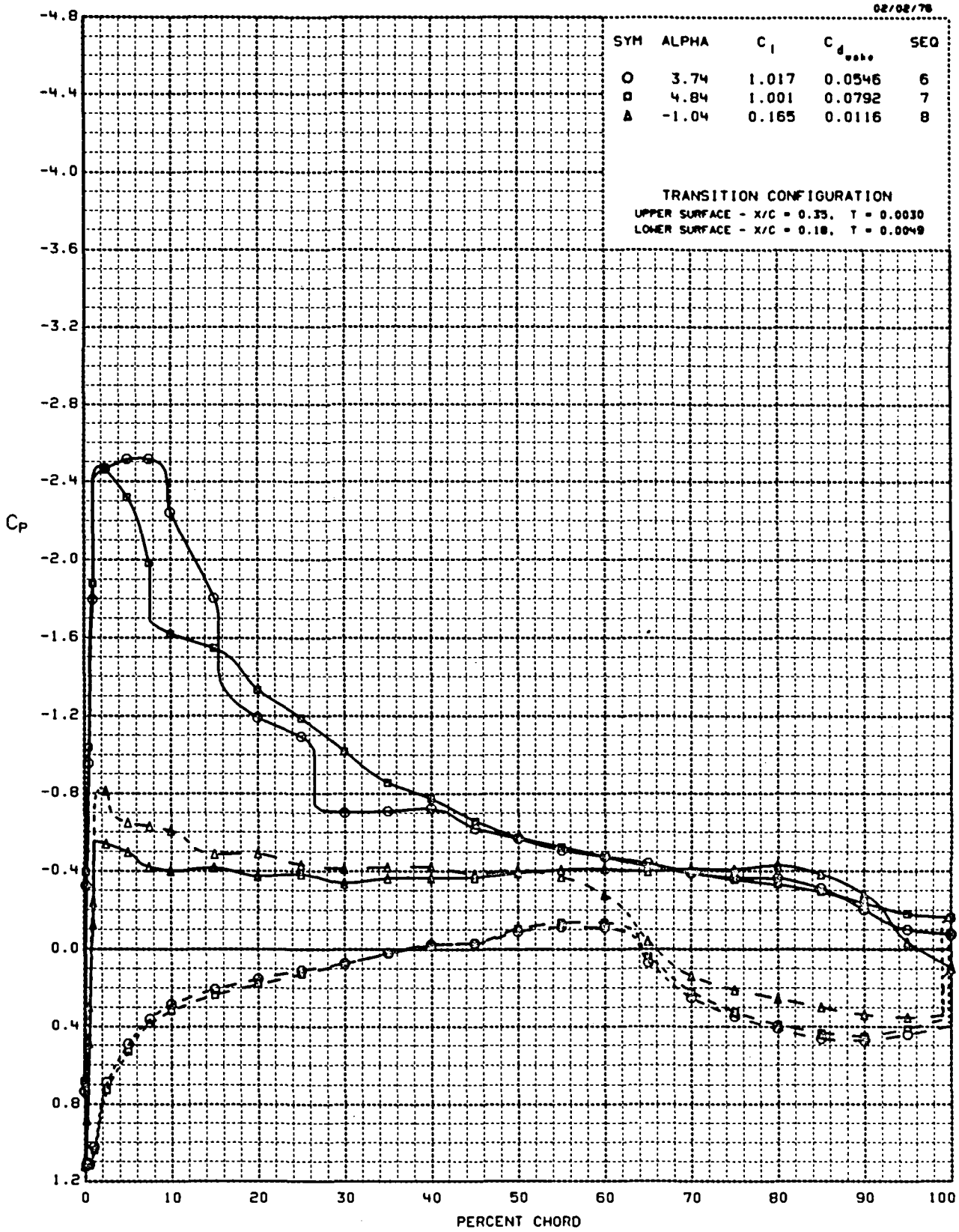
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.639 REYNOLDS NUMBER = 3.95×10^6 RUN =101 AMES 22-060-5

02/08/78

SYM	ALPHA	C_l	$C_{d_{wake}}$	SEQ
O	3.74	1.017	0.0546	6
□	4.84	1.001	0.0792	7
Δ	-1.04	0.165	0.0116	8

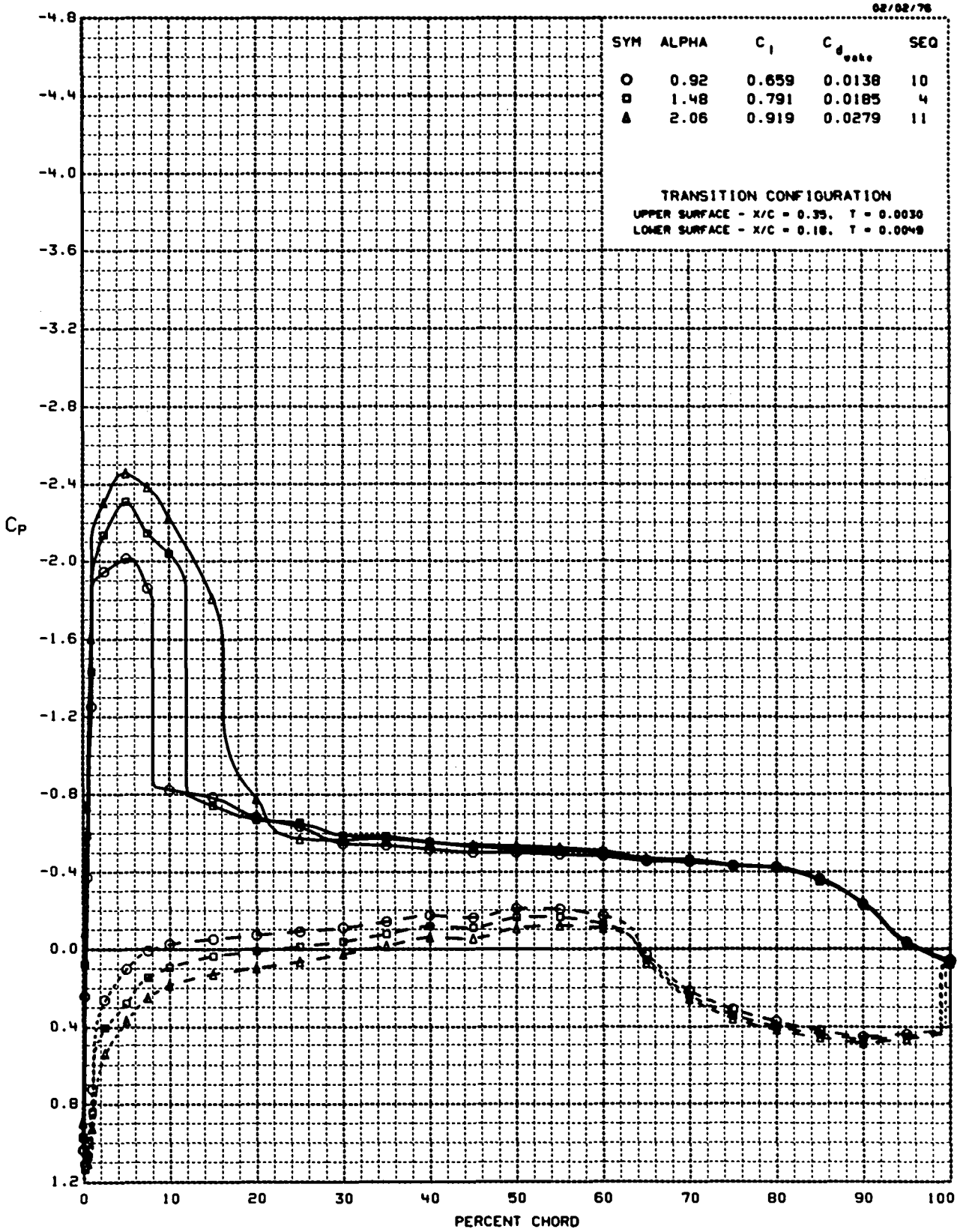
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.33, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.639 REYNOLDS NUMBER = 3.97×10^6 RUN =101 AMES 22-060-5

02/02/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.681 REYNOLDS NUMBER = 3.97x10^6 RUN =102 AMES 22-060-5
02/02/76
SYM ALPHA C_l C_d_wake SEQ
O -1.94 -0.026 0.0114 1
□ -1.04 0.151 0.0119 6
Δ -0.73 0.224 0.0119 2
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
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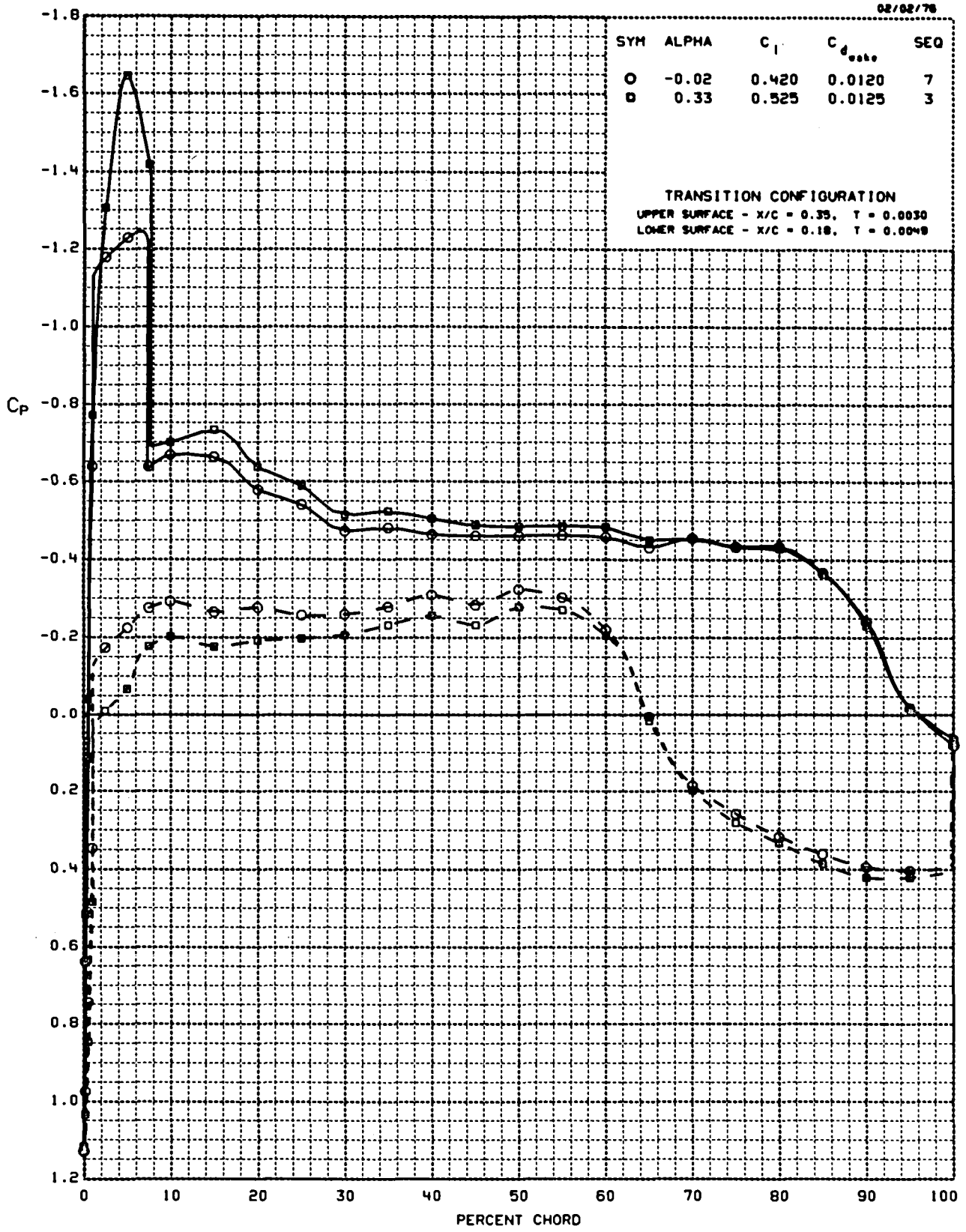
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.680 REYNOLDS NUMBER = 3.94x10^6 RUN =102 AMES 22-060-5
02/02/76
SYM ALPHA C_l $C_{d_{wake}}$ SEQ
O -0.02 0.420 0.0120 7
□ 0.33 0.525 0.0125 3
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
C_P
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

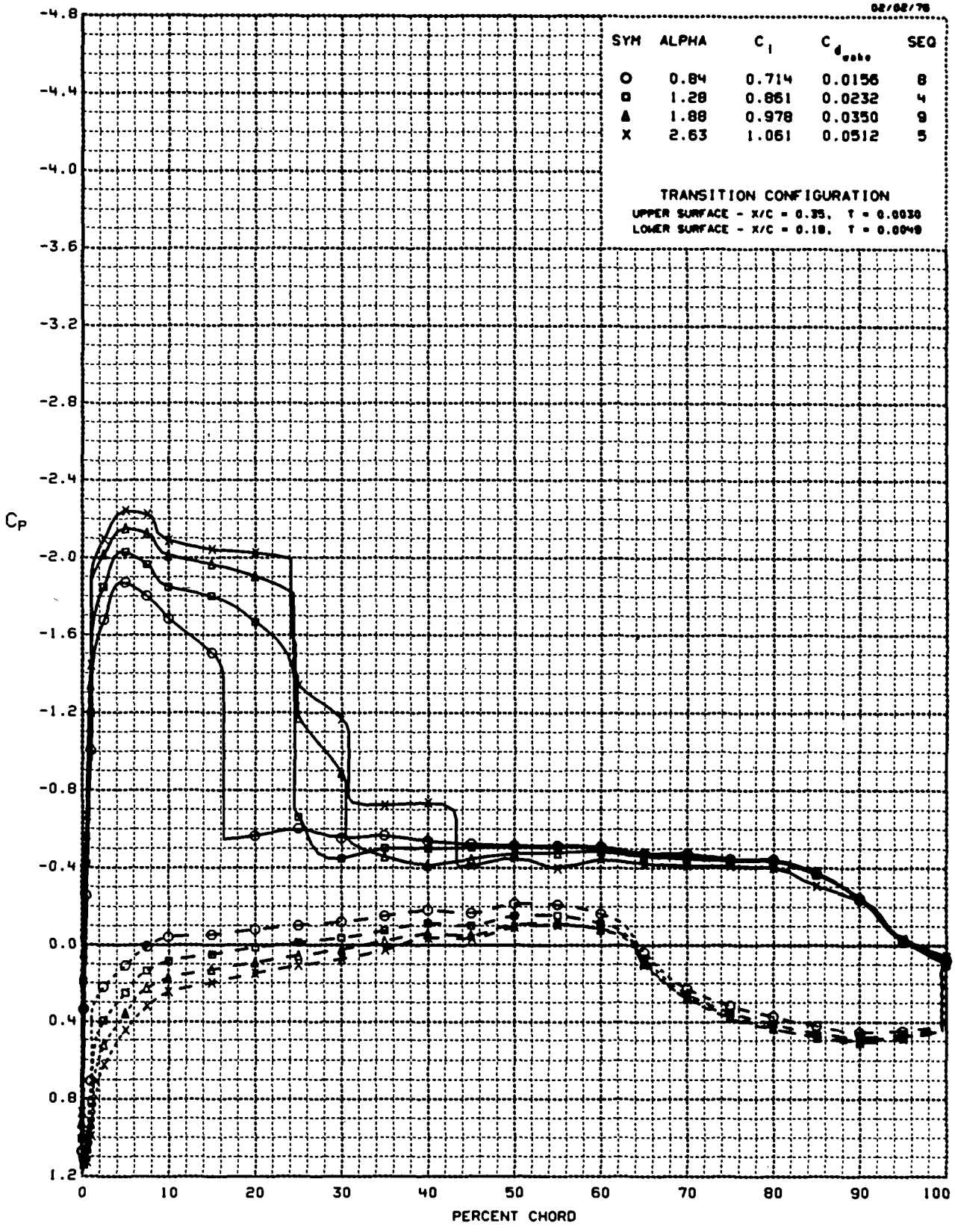
WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

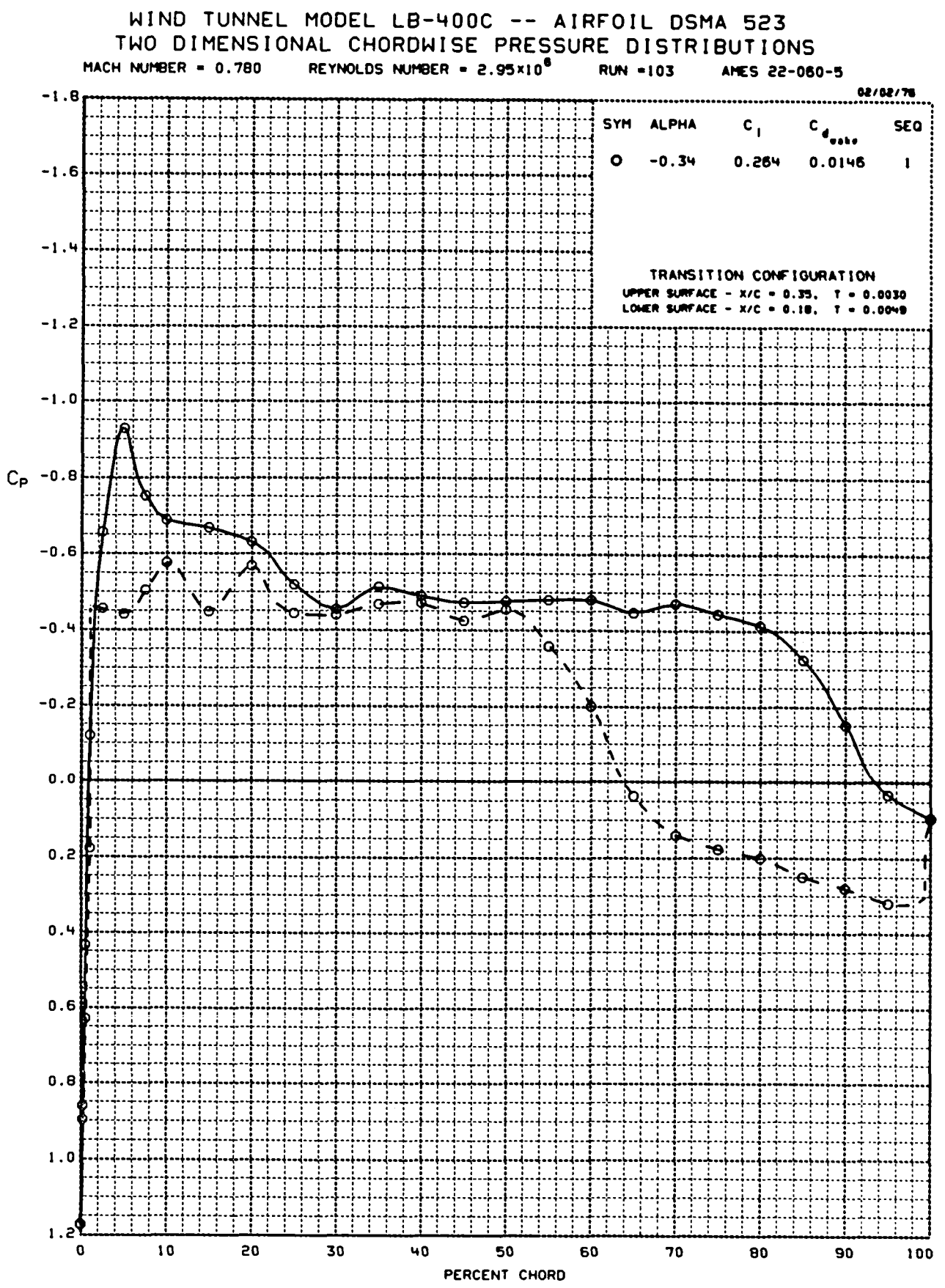
MACH NUMBER = 0.679 REYNOLDS NUMBER = 3.94×10^6 RUN =102 AMES 22-060-5

02/02/76

SYM	ALPHA	C_l	$C_{d_{wake}}$	SEQ
O	0.84	0.714	0.0156	8
□	1.28	0.861	0.0232	4
△	1.88	0.978	0.0350	9
X	2.63	1.061	0.0512	5

TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.780 REYNOLDS NUMBER = 2.95x10^6 RUN =103 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -0.34 0.264 0.0146 1
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0049
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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10
20
30
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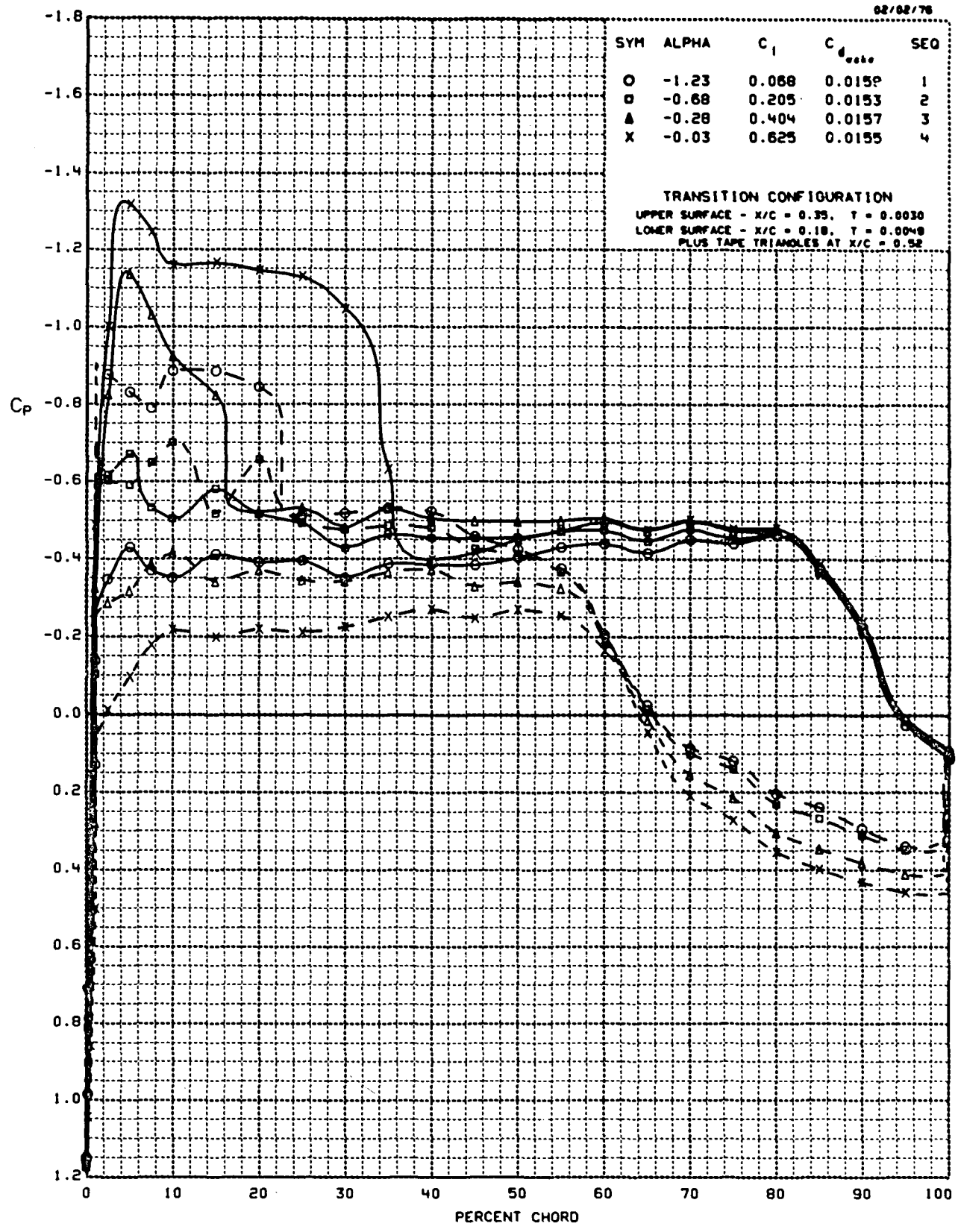
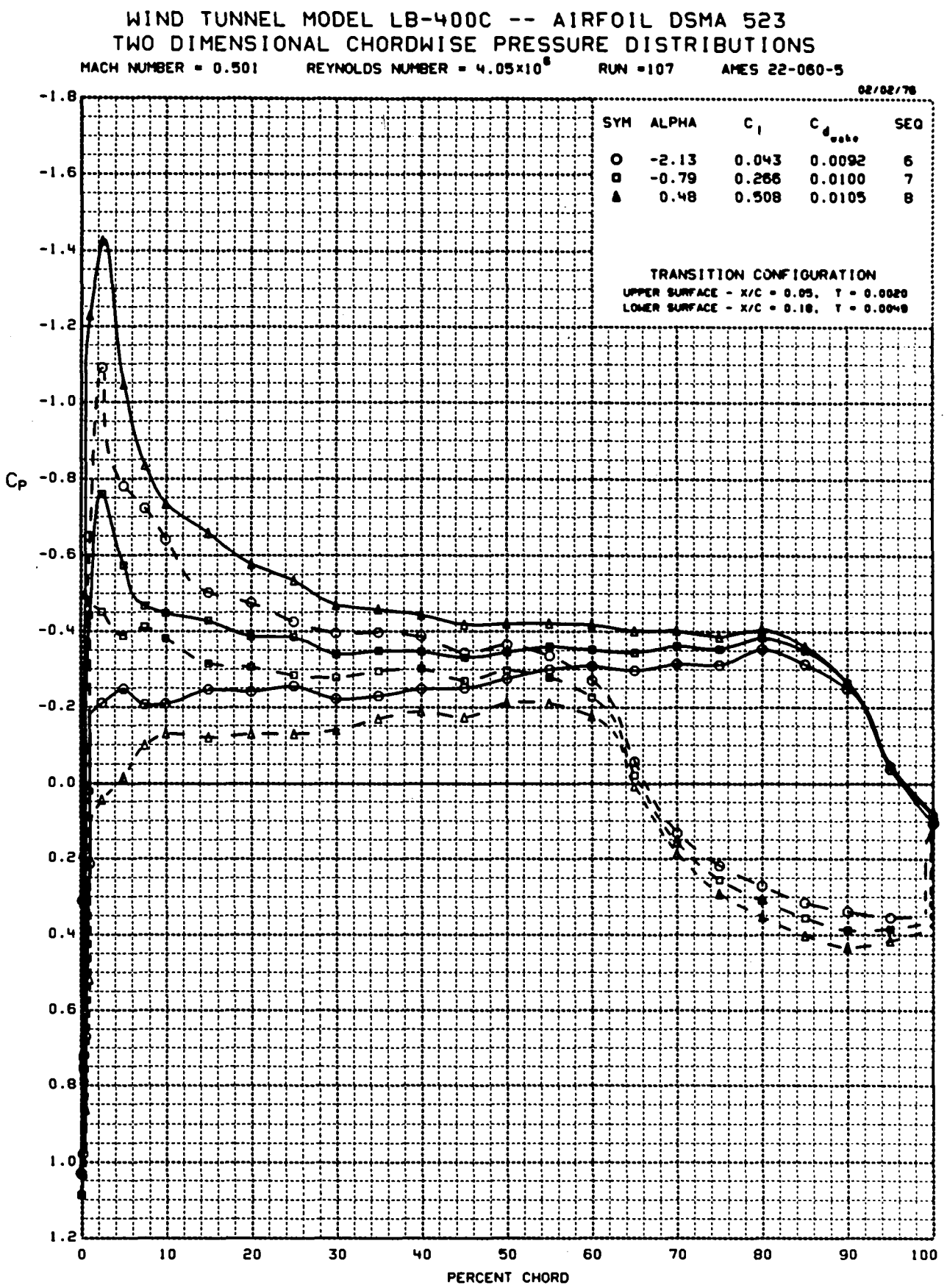
70
80
90
100
PERCENT CHORD

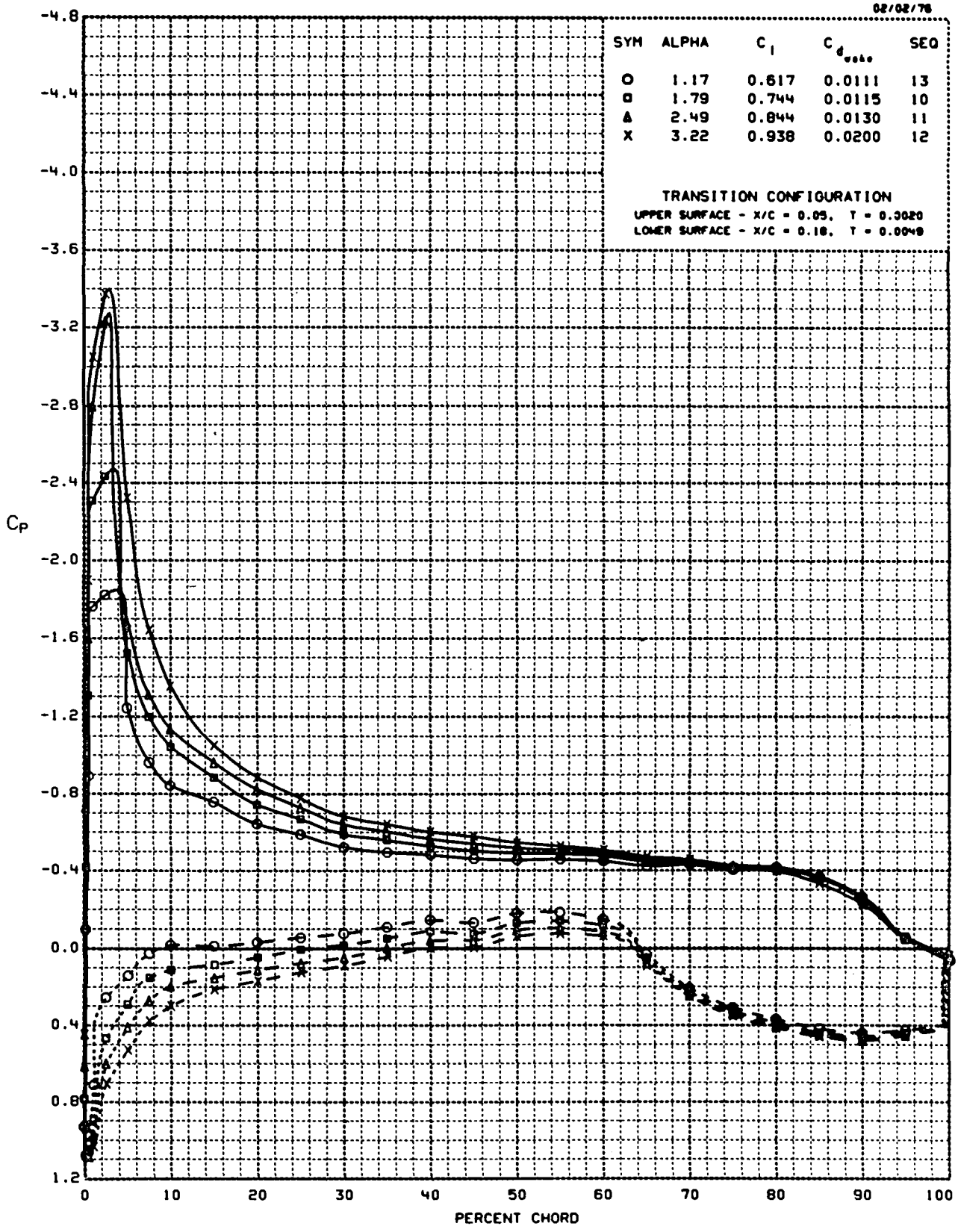

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.758 REYNOLDS NUMBER = 3.97x10^6 RUN =106 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -1.23 0.068 0.015? 1
□ -0.68 0.205 0.0153 2
Δ -0.28 0.404 0.0157 3
X -0.03 0.625 0.0155 4
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0048
PLUS TAPE TRIANGLES AT X/C = 0.52
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.501 REYNOLDS NUMBER = 4.05x10^6 RUN =107 AMES 22-060-5
02/02/78
SYM ALPHA C_l C_d_wake SEQ
O -2.13 0.043 0.0092 6
□ -0.79 0.266 0.0100 7
△ 0.48 0.508 0.0105 8
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.05, T = 0.0020
LOWER SURFACE - X/C = 0.18, T = 0.0048
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.500 REYNOLDS NUMBER = 3.97×10^6 RUN =107 AMES 22-060-5

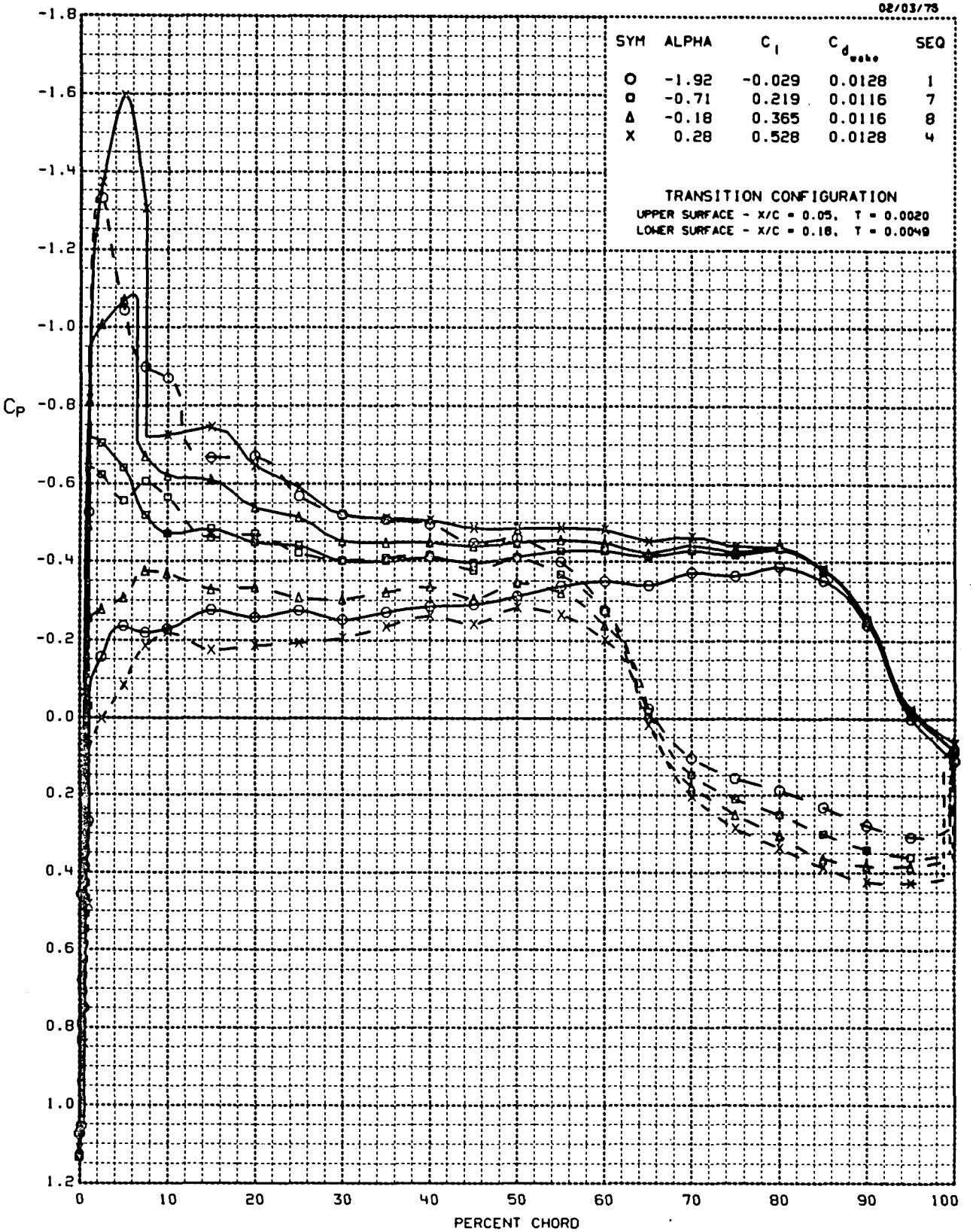
02/02/76



WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.679 REYNOLDS NUMBER = 3.97×10^6 RUN =108 AMES 22-060-5

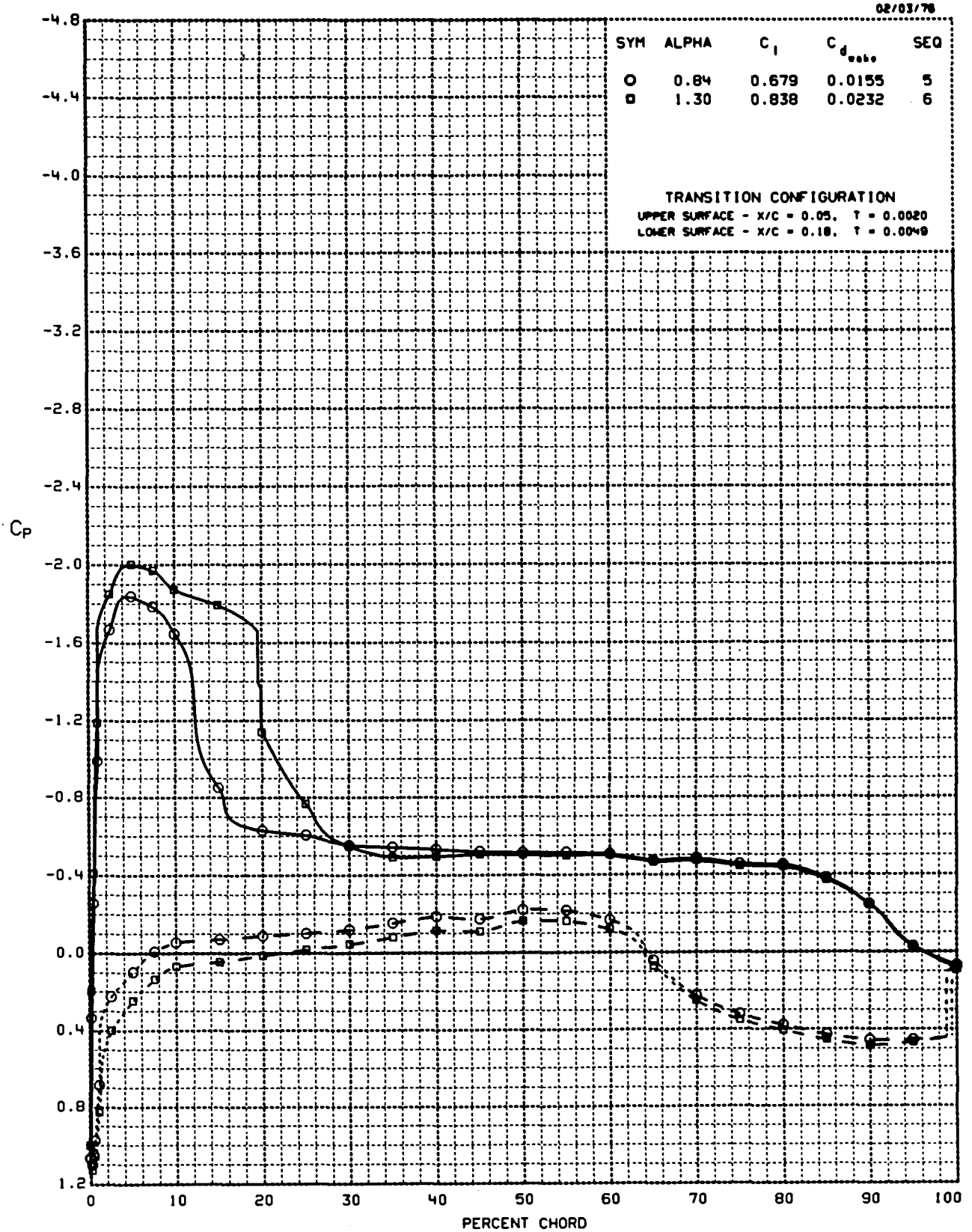
02/03/73

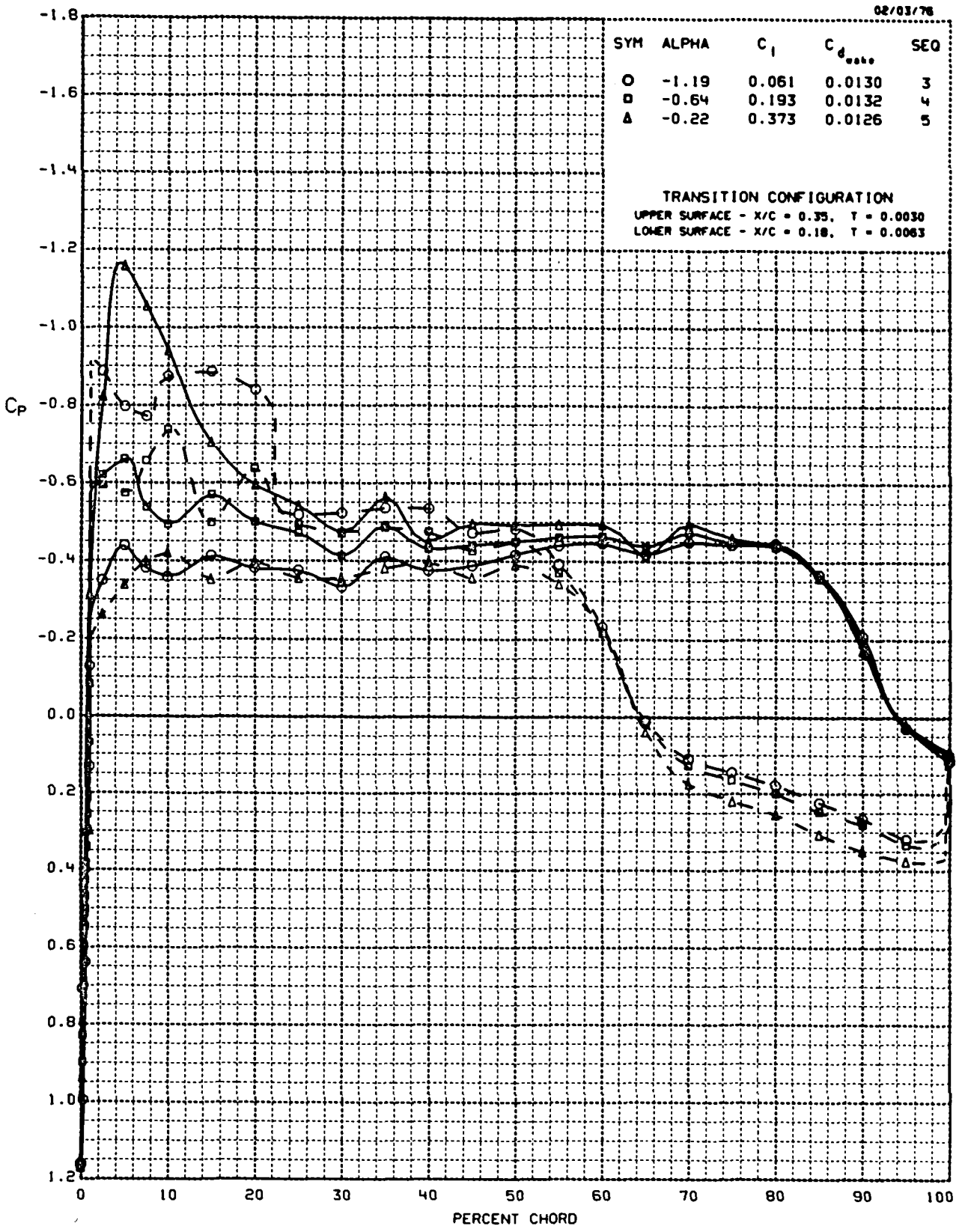


WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.679 REYNOLDS NUMBER = 3.95×10^6 RUN =108 AMES 22-060-5

02/03/78

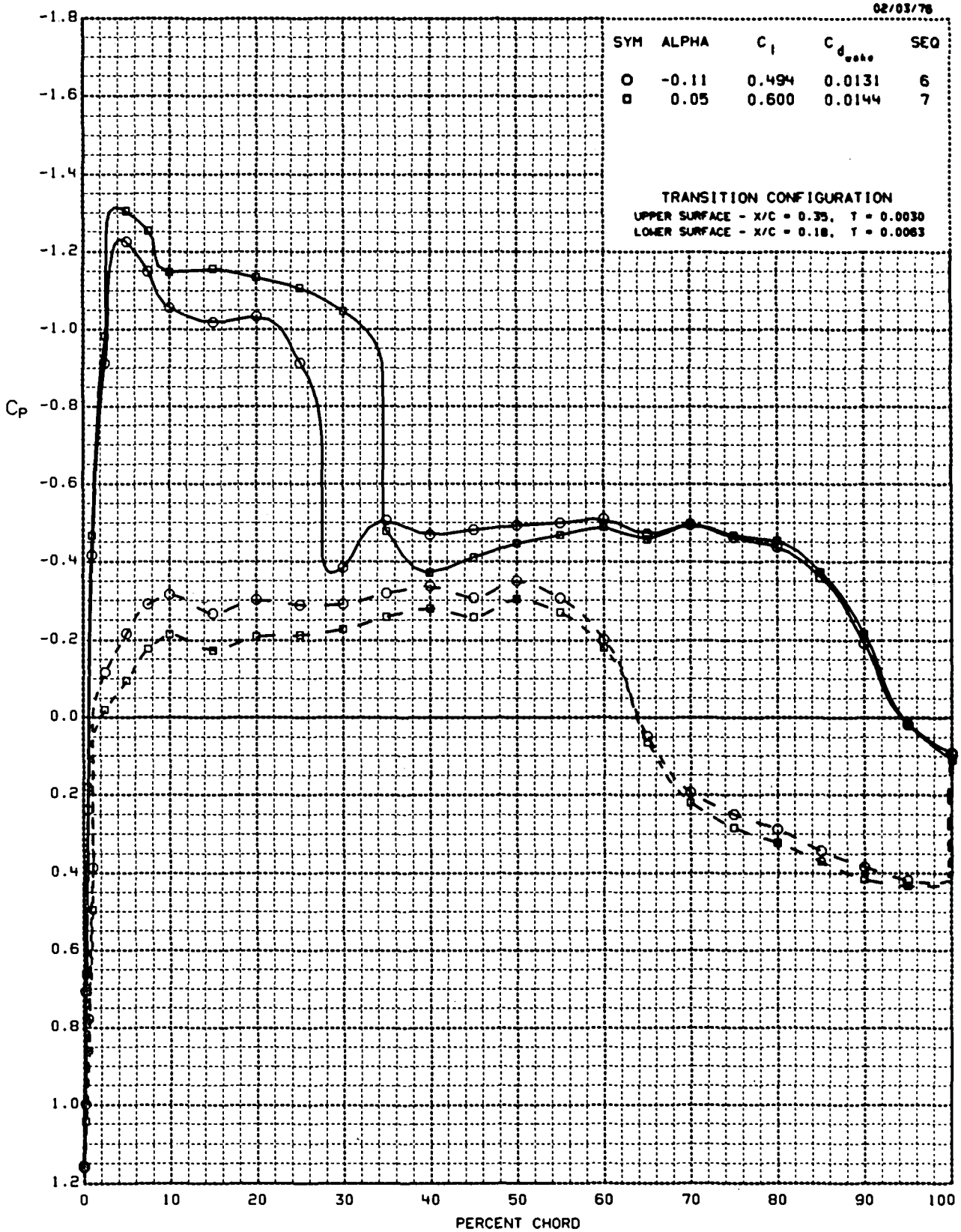


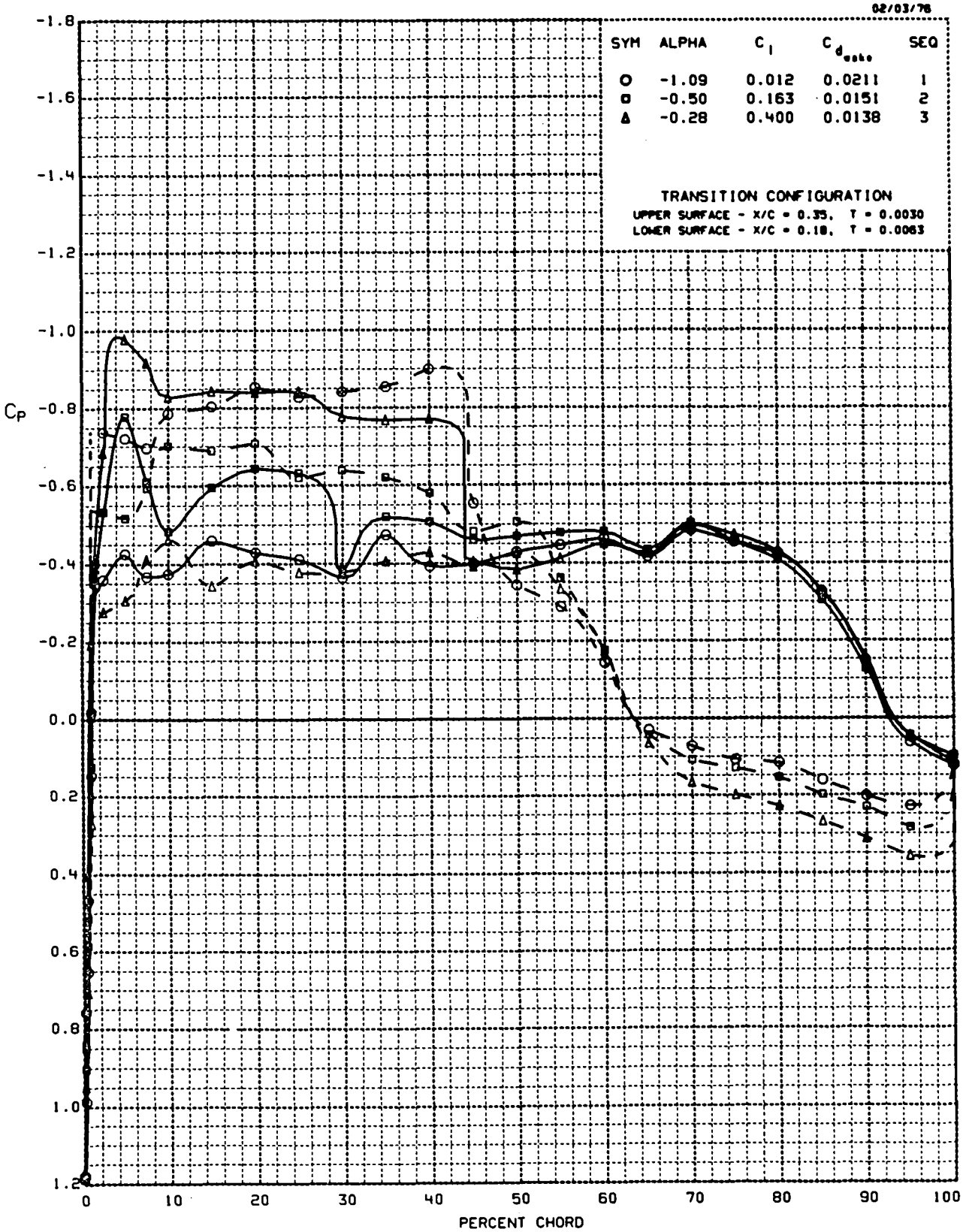

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.759 REYNOLDS NUMBER = 4.00x10^6 RUN =109 AMES 22-060-5
02/03/76
SYM ALPHA C_l C_d_wake SEQ
O -1.19 0.061 0.0130 3
□ -0.64 0.193 0.0132 4
Δ -0.22 0.373 0.0126 5
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0063
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.759 REYNOLDS NUMBER = 3.93×10^6 RUN =109 AMES 22-060-5

02/03/76

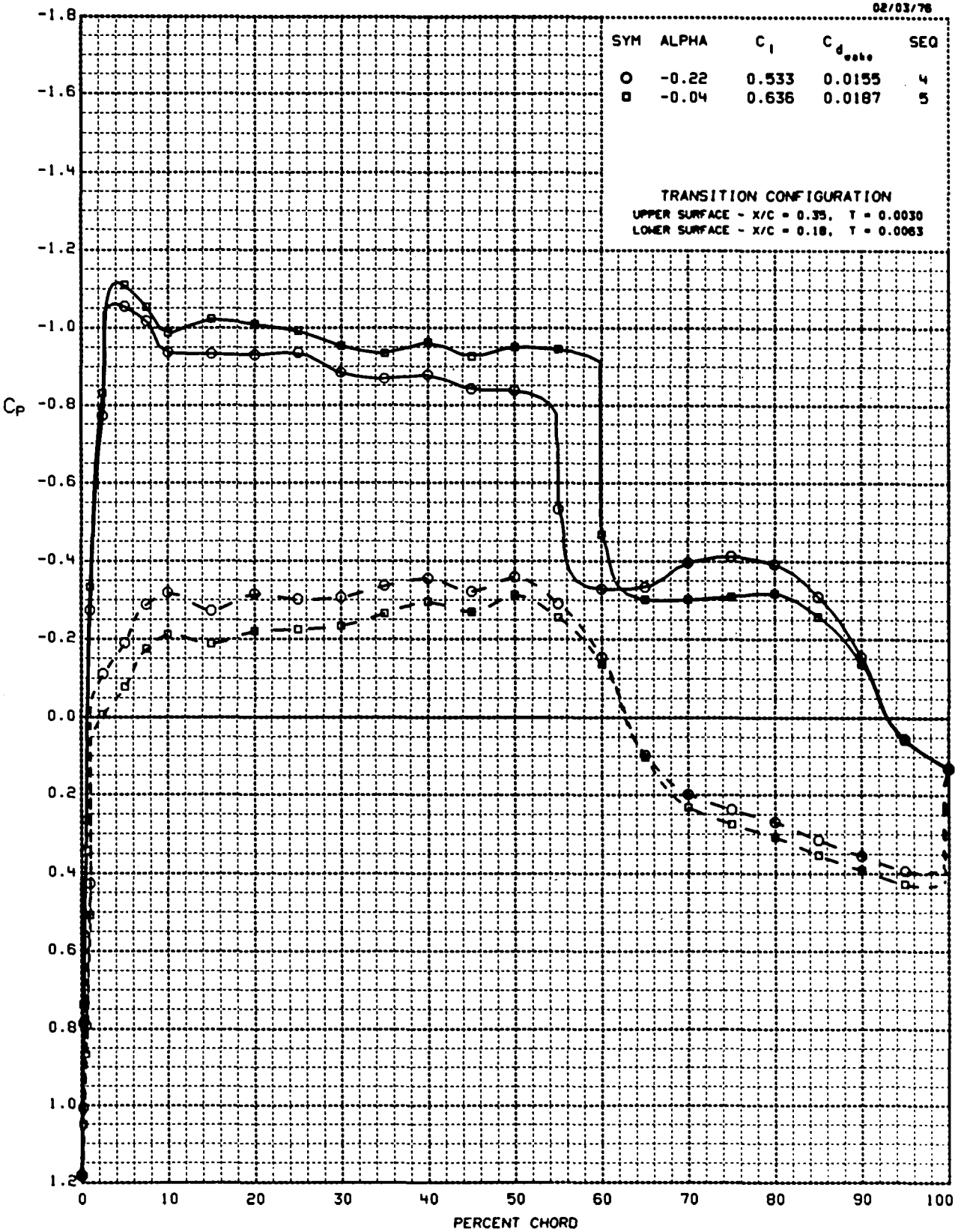


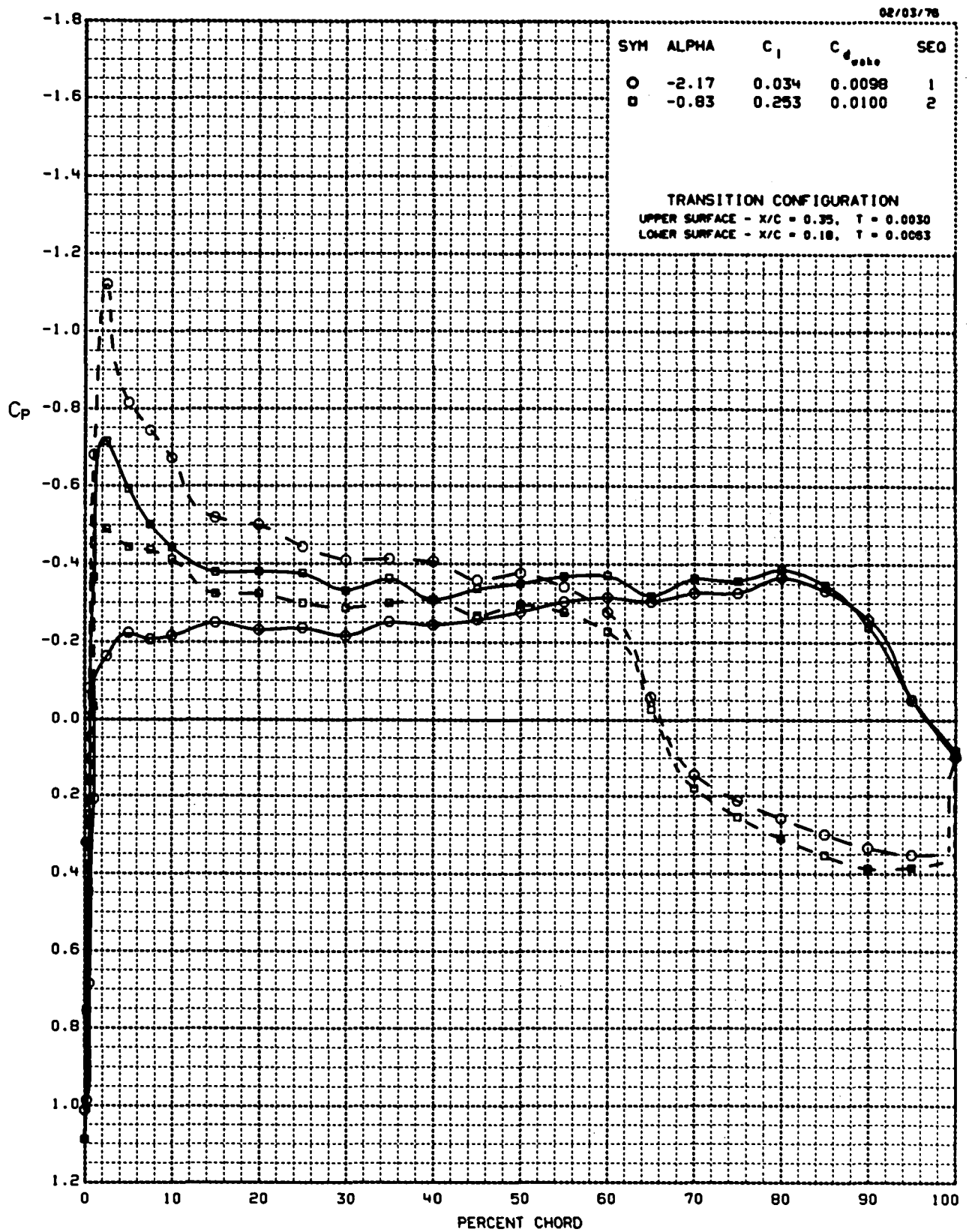

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.799 REYNOLDS NUMBER = 2.99x10^6 RUN =110 AMES 22-060-5
02/03/76
SYM ALPHA C_l C_d_wake SEQ
O -1.09 0.012 0.0211 1
□ -0.50 0.163 0.0151 2
Δ -0.28 0.400 0.0138 3
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0063
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
0
10
20
30
40
50
60
70
80
90
100
PERCENT CHORD

WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS

MACH NUMBER = 0.799 REYNOLDS NUMBER = 2.97×10^6 RUN =110 AMES 22-060-5

02/03/76




WIND TUNNEL MODEL LB-400C -- AIRFOIL DSMA 523
TWO DIMENSIONAL CHORDWISE PRESSURE DISTRIBUTIONS
MACH NUMBER = 0.500 REYNOLDS NUMBER = 4.07x10^6 RUN =111 AMES 22-060-5
02/03/76
SYM ALPHA C_l C_d_wake SEQ
O -2.17 0.034 0.0098 1
□ -0.83 0.253 0.0100 2
TRANSITION CONFIGURATION
UPPER SURFACE - X/C = 0.35, T = 0.0030
LOWER SURFACE - X/C = 0.18, T = 0.0083
Cp
-1.8
-1.6
-1.4
-1.2
-1.0
-0.8
-0.6
-0.4
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
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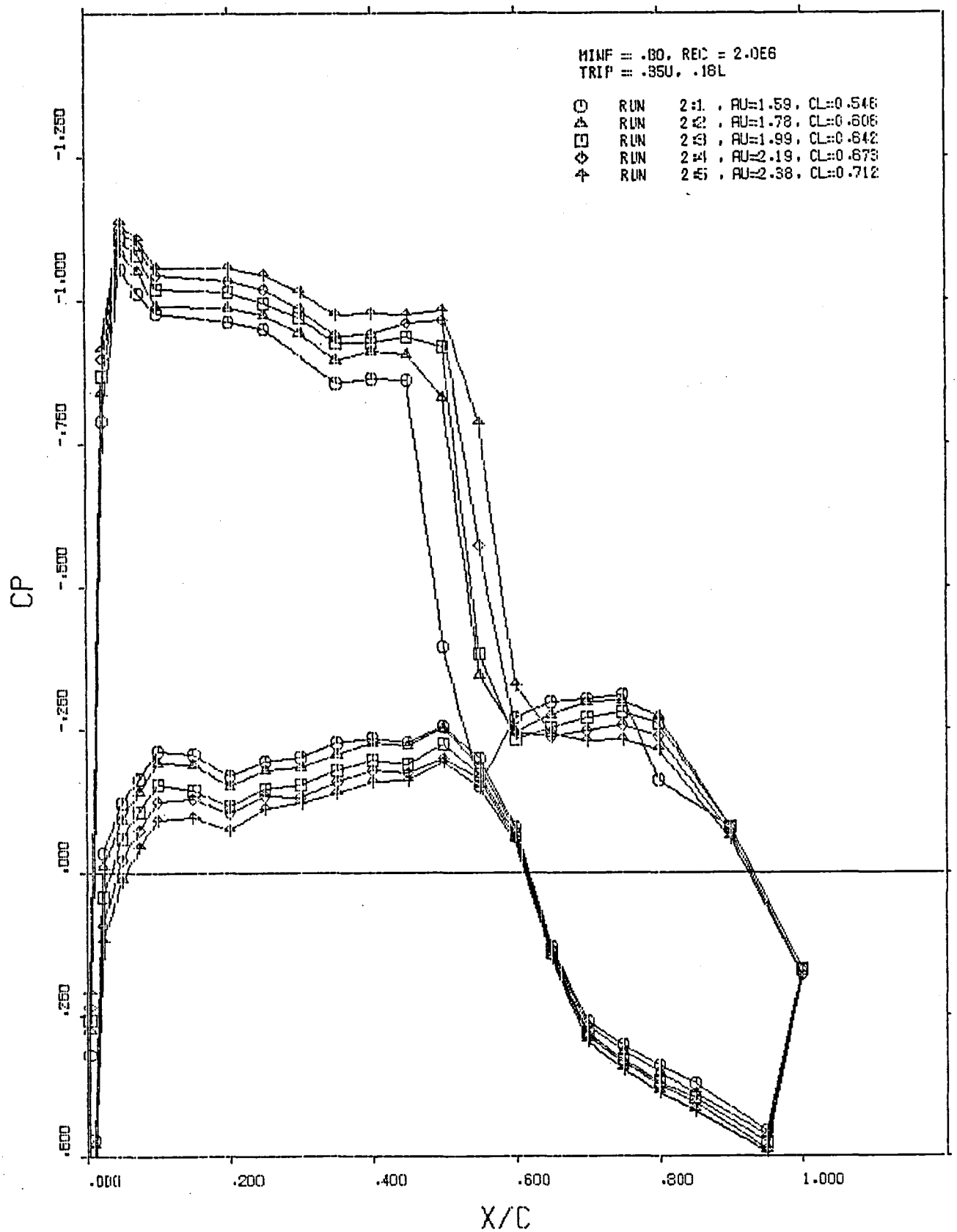
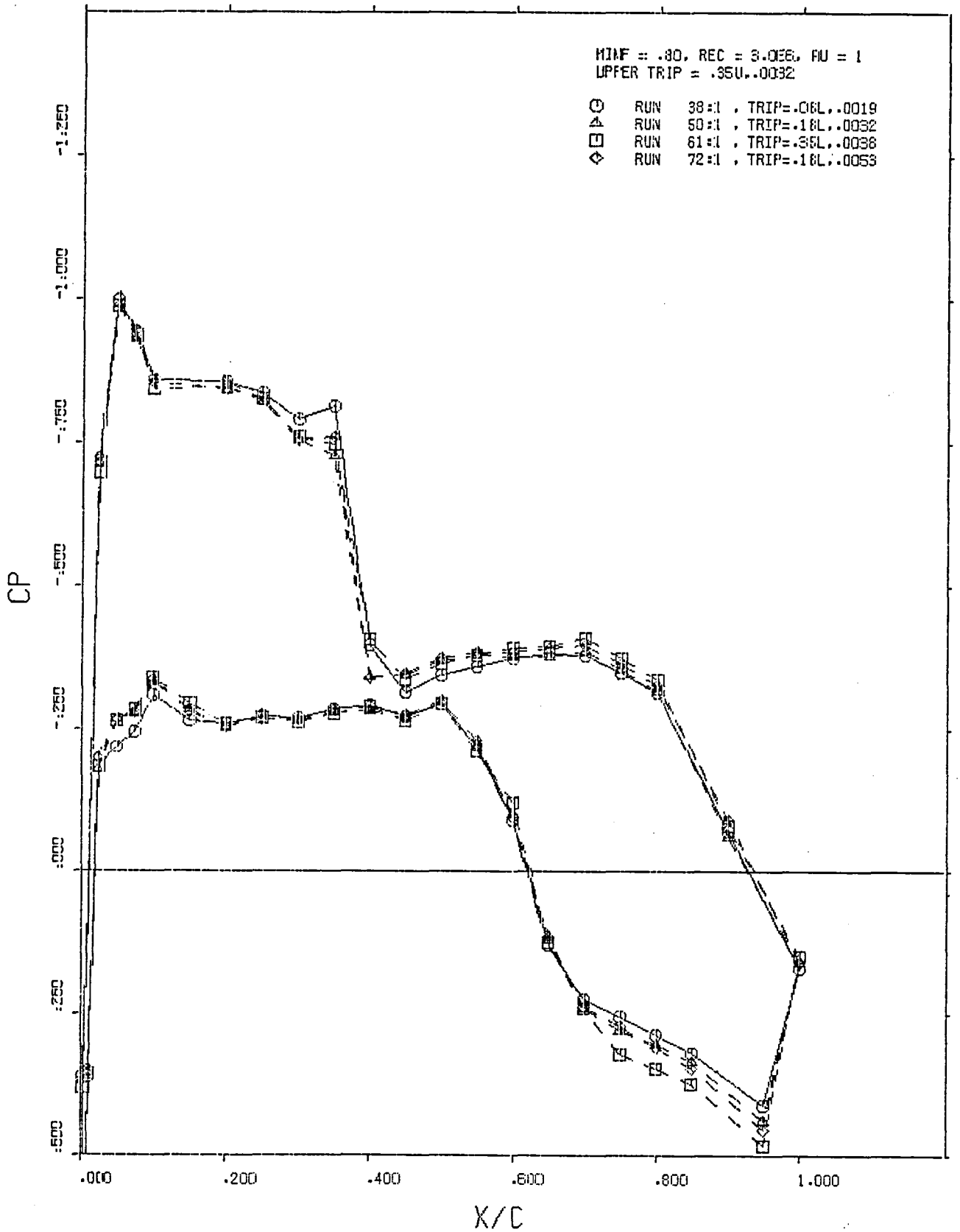
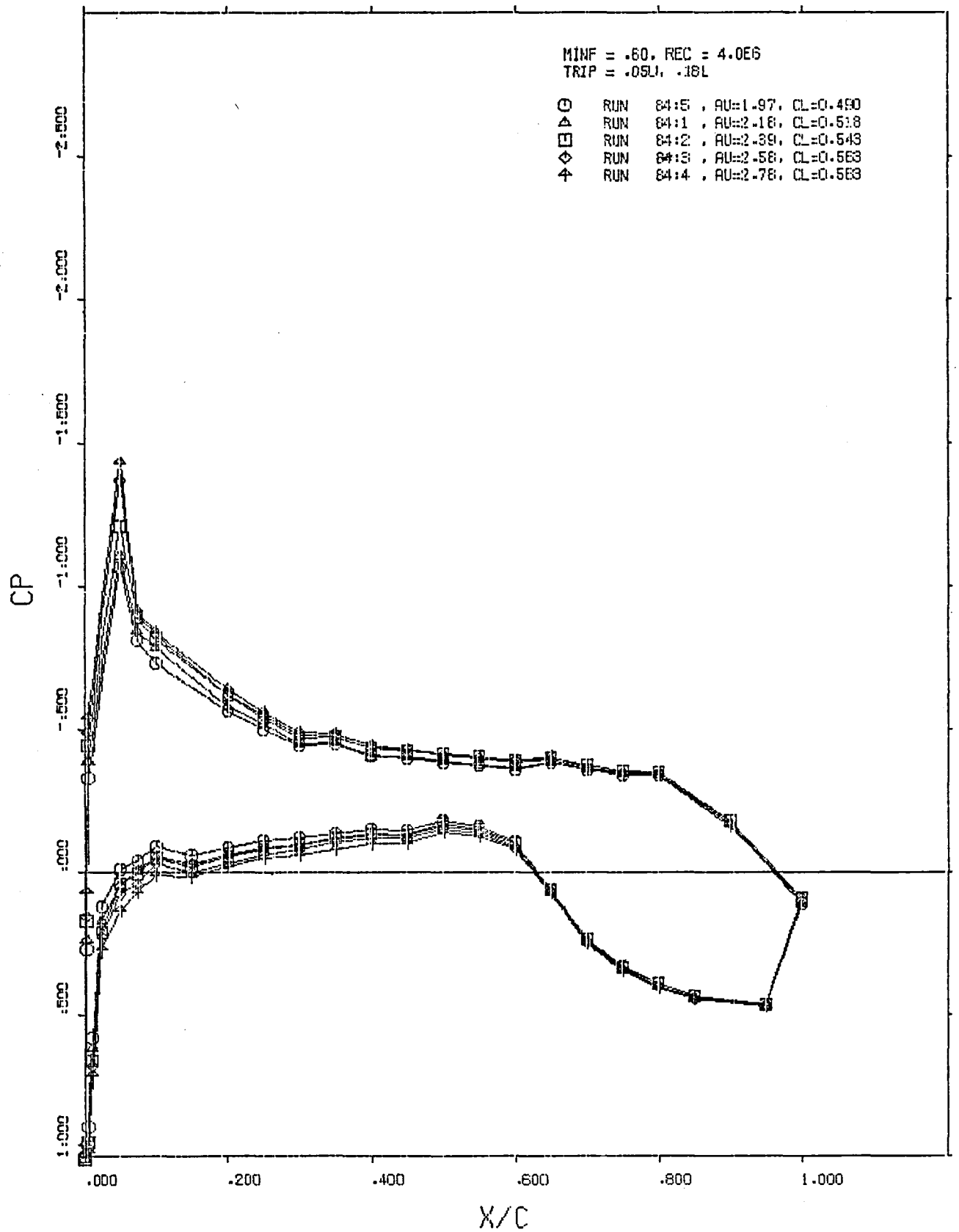
100
PERCENT CHORD


MINF = .80, REC = 2.0E6
TRIP = .35U, .18L
RUN 2 1, AU=1.59, CL=0.546
RUN 2 2, AU=1.78, CL=0.606
RUN 2 3, AU=1.99, CL=0.642
RUN 2 4, AU=2.19, CL=0.673
RUN 2 5, AU=2.38, CL=0.712
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 3.0E6, AU = 1
UPPER TRIP = .35U,.0032
RUN 38:1 , TRIP=.06L,.0019
RUN 50:1 , TRIP=.18L,.0032
RUN 61:1 , TRIP=.35L,.0038
RUN 72:1 , TRIP=.18L,.0053
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .60, REC = 4.0E6
TRIP = .05U, .18L
RUN 84:5 , AU=1.97, CL=0.490
RUN 84:1 , AU=2.16, CL=0.518
RUN 84:2 , AU=2.39, CL=0.543
RUN 84:3 , AU=2.58, CL=0.563
RUN 84:4 , AU=2.78, CL=0.583
CP
-2.500
-2.000
-1.500
-1.000
-.500
.000
.500
1.000
.000
.200
.400
.600
.800
1.000
X/C

APPENDIX B

DSMA 523 MODEL, BLUNT TRAILING EDGE, 1975, 1976, AND 1977

The trip configuration designation "L.E. - 0.002" means a leading-edge trip with a bead diameter of 0.002 in. For data taken during 1976 (runs 22-56) and 1977 (runs 4-80) the year is shown in the plot titles. The year is omitted from the plots of the 1975 data, which have run numbers of 112-130.

TABLE B1. RUN SCHEDULE, DSMA 523 MODEL, BLUNT TRAILING EDGE

(1975 data)

Run no.	Nominal M_∞	Nominal Re_c	Boundary-layer trip			
			Upper		Lower	
			x/c	T(in.)	x/c	T(in.)
112	0.75	2×10^6	leading edge	0.002	leading edge	0.002
113	.80	2×10^6	↓	↓	↓	↓
114	.75	2×10^6				
115	.80	2×10^6				
116	.83	2×10^6				
117	.75	4×10^6				
118	.83	2×10^6				
119, 120	.75	2×10^6	0.35	.0049	0.18	.0053
121	.80	2×10^6	↓	.0049	↓	.0053
122	.83	2×10^6		.0049		.0053
123	.80	4×10^6		.0030		.0049
124	.83	4×10^6		.0030		.0049
125	.80	2×10^6		.0049	.35	.0075
126	.83	2×10^6		↓	↓	↓
127	.75	2×10^6				
128	.60	2×10^6				
129	.60	2×10^6	.05	.0035	.18	.0049
130	.70	2×10^6	.05	.0035	.18	.0049

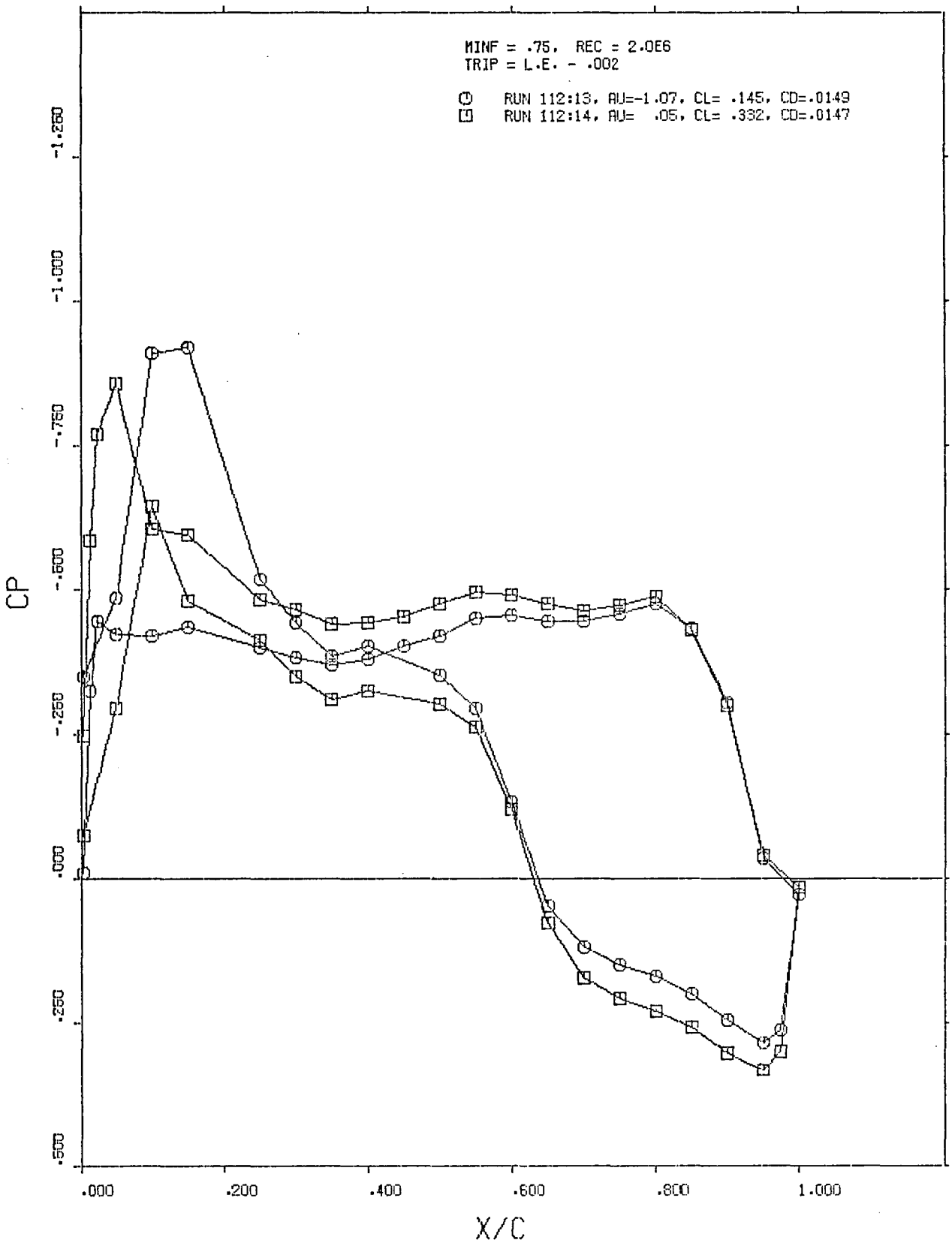
TABLE B1. CONCLUDED.

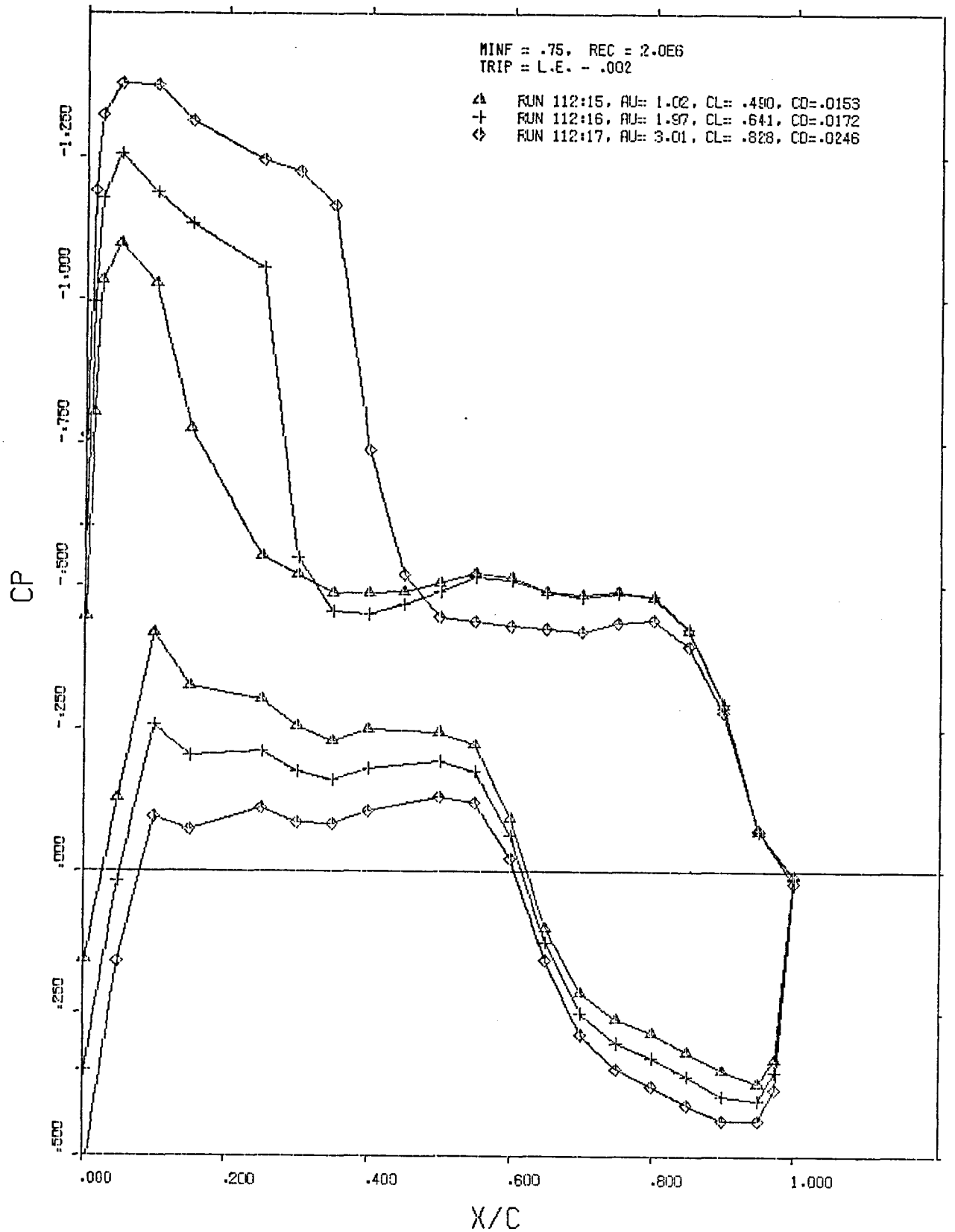
(1976 data)

Run no.	Nominal M_∞	Nominal Re_c	Boundary-layer trip			
			Upper		Lower	
			x/c	T(in.)	x/c	T(in.)
22	0.60	2×10^6	0.05	0.0035	0.18	0.0053
26	.75	2×10^6	.05	.0035	↓	↓
43	.80	2×10^6	.35	.0053		
44	.82	2×10^6	↓	↓		
45	.84	2×10^6				
46	.87	2×10^6				
47	.90	2×10^6				
48	.80	2×10^6				
49	.82	2×10^6				
50	.84	2×10^6				
51	.84	2×10^6				
52	.874	2×10^6				
53	.90	2×10^6				
54	.75	2×10^6				
55	.70	2×10^6				
56	.60	2×10^6	↓	↓	↓	↓

(1977 data)

Run no.	Nominal M_∞	Nominal Re_c	Boundary-layer trip			
			Upper		Lower	
			x/c	T(in.)	x/c	T(in.)
4	0.60	2×10^6	0.05	0.0038	0.18	0.0053
44,45	.75	2×10^6	.05	.0038	↓	↓
77	.83	2×10^6	.35	.0053		
78	.80	2×10^6	↓	↓		
79	.83	2×10^6				
80	.80	2×10^6	↓	↓	↓	↓


MINF = .75, REC = 2.0E6
TRIP = L.E. - .002
RUN 112:13, AU=-1.07, CL= .145, CD=.0149
RUN 112:14, AU= .05, CL= .332, CD=.0147
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .75, REC = 2.0E6
TRIP = L.E. - .002
RUN 112:15, AU= 1.02, CL= .490, CD=.0153
RUN 112:16, AU= 1.97, CL= .641, CD=.0172
RUN 112:17, AU= 3.01, CL= .828, CD=.0246
CP
-1.250
-1.000
-.750
-.500
-.250
.000
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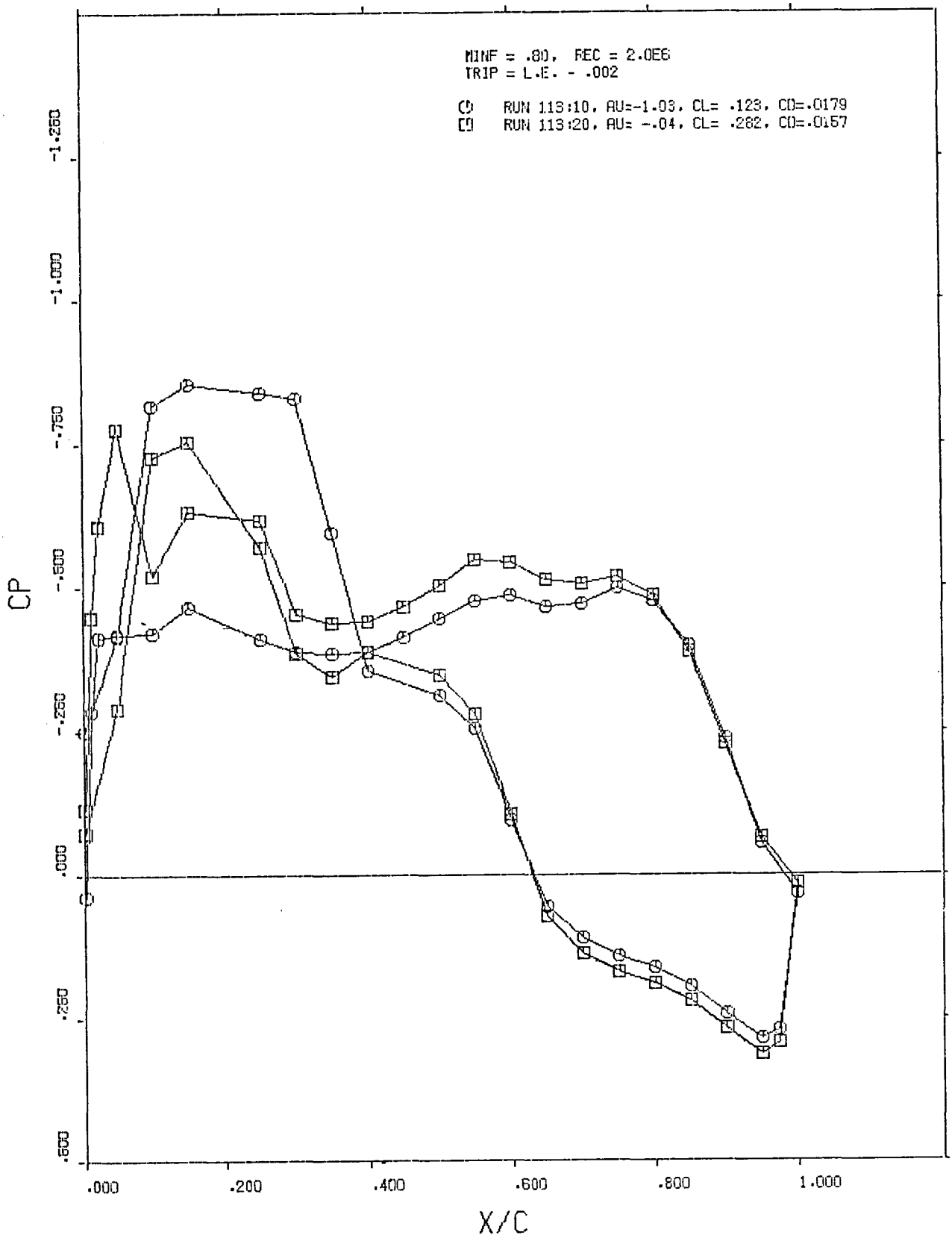
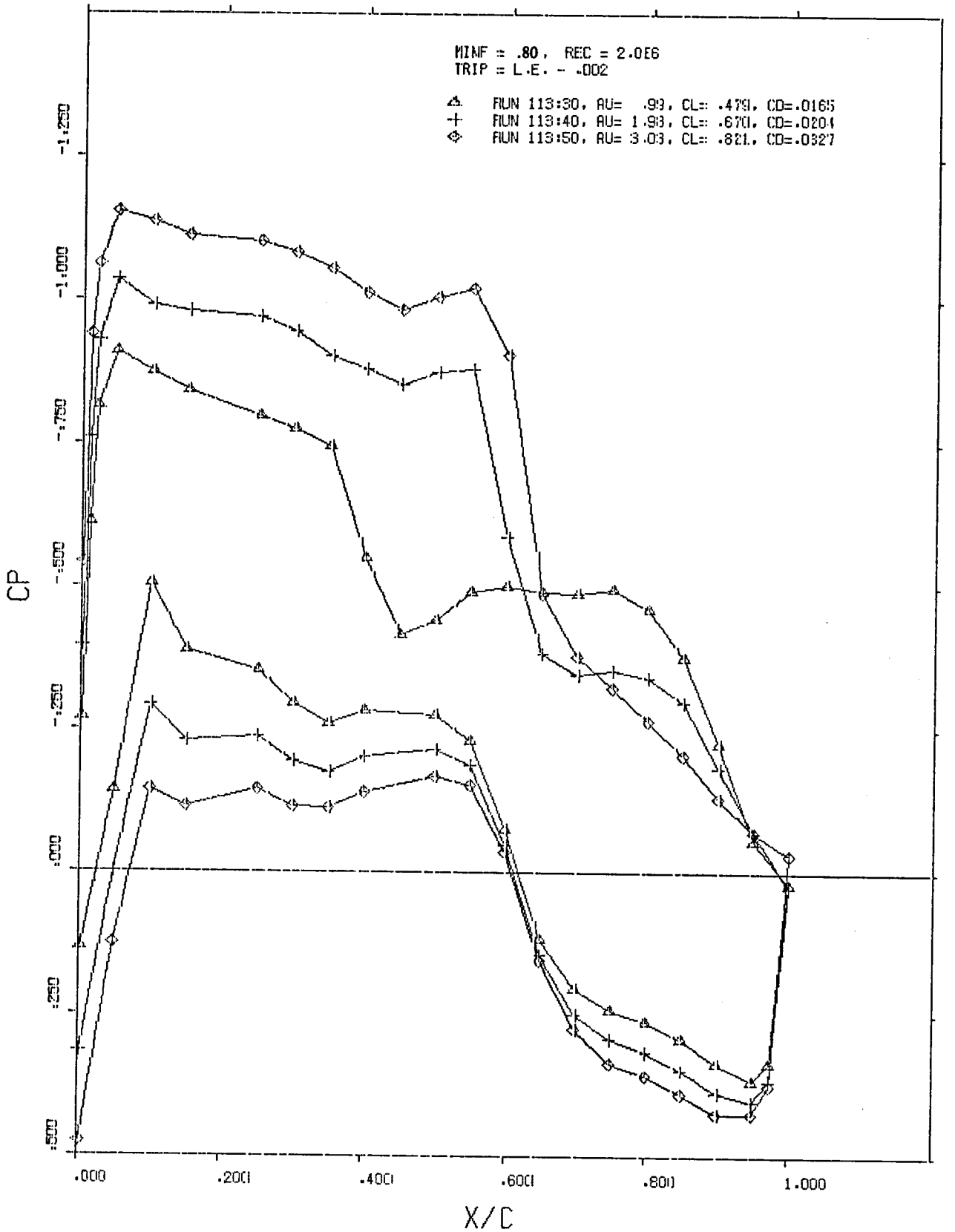
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = L.E. - .002
RUN 113:10, AU=-1.03, CL= .123, CD=.0179
RUN 113:20, AU= -.04, CL= .282, CD=.0157
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = L.E. - .002
RUN 113:30, AU= .93, CL= .479, CD=.0165
RUN 113:40, AU= 1.93, CL= .670, CD=.0204
RUN 113:50, AU= 3.03, CL= .821, CD=.0327
CP
-1.250
-1.000
-.750
-.500
-.250
.000
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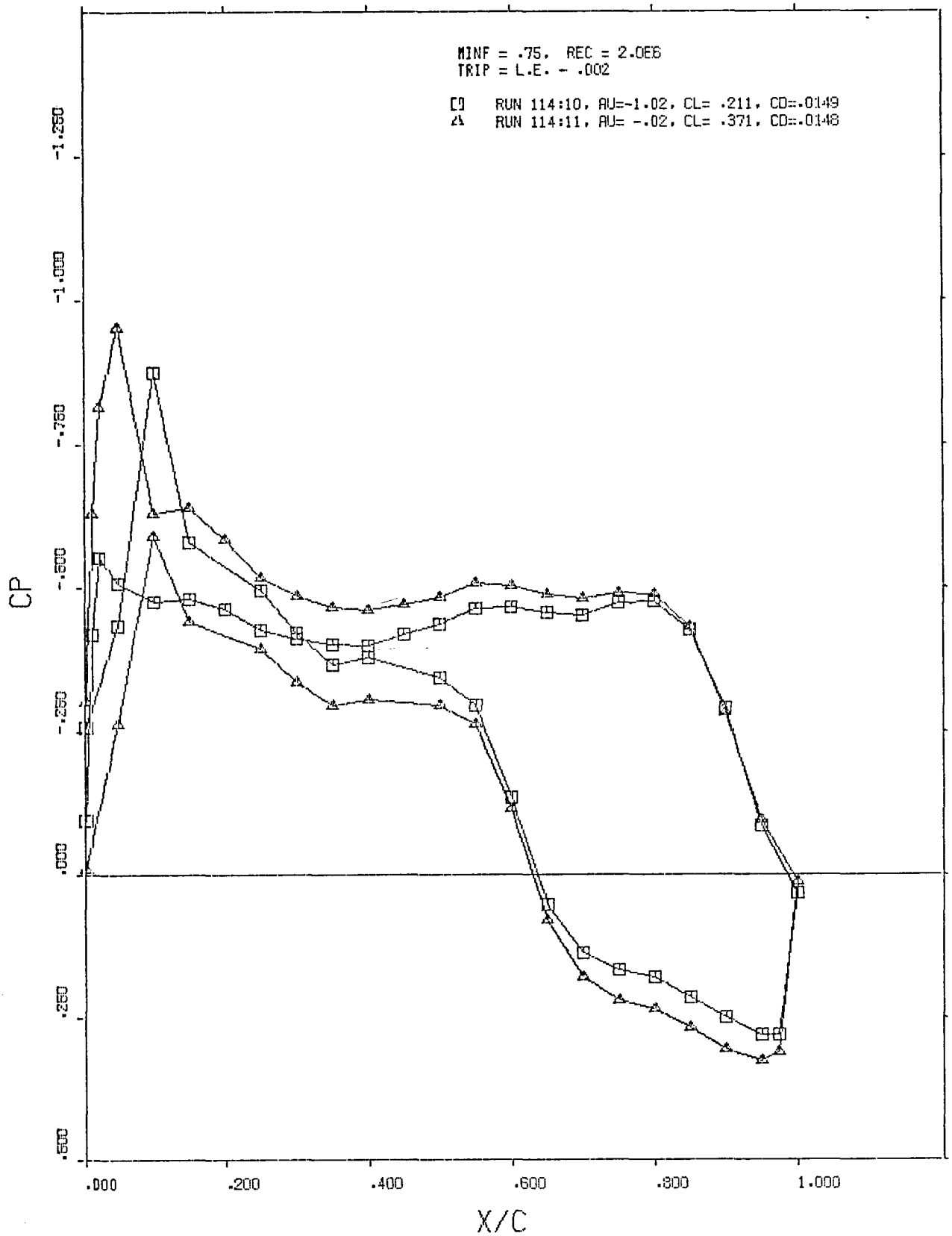
.000
.200
.400
.600
.800
1.000
X/C


MINF = .75, REC = 2.0E6
TRIP = L.E. - .002
RUN 114:10, AU=-1.02, CL= .211, CD=.0149
RUN 114:11, AU= -.02, CL= .371, CD=.0148
CP
-1.250
-1.000
-.750
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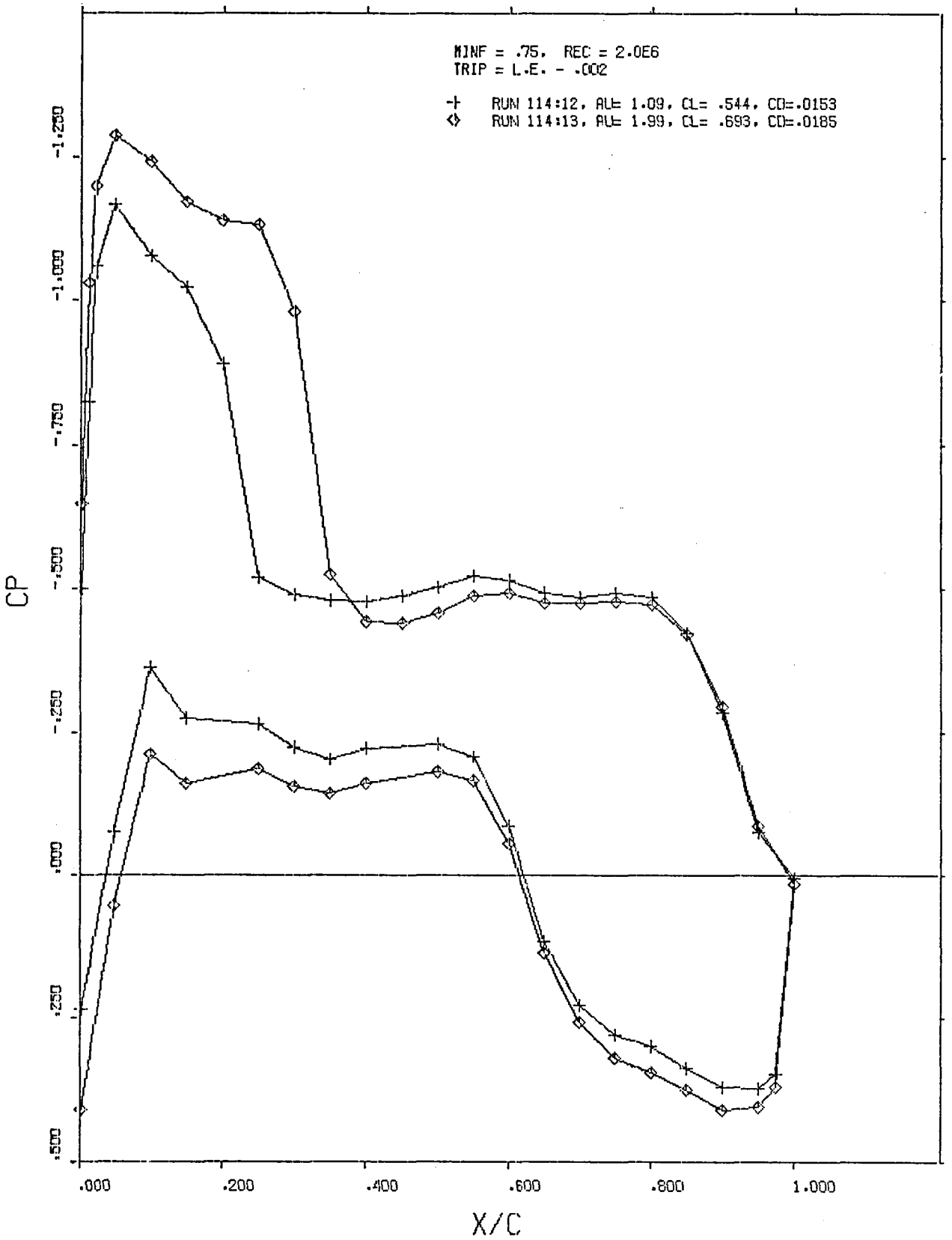
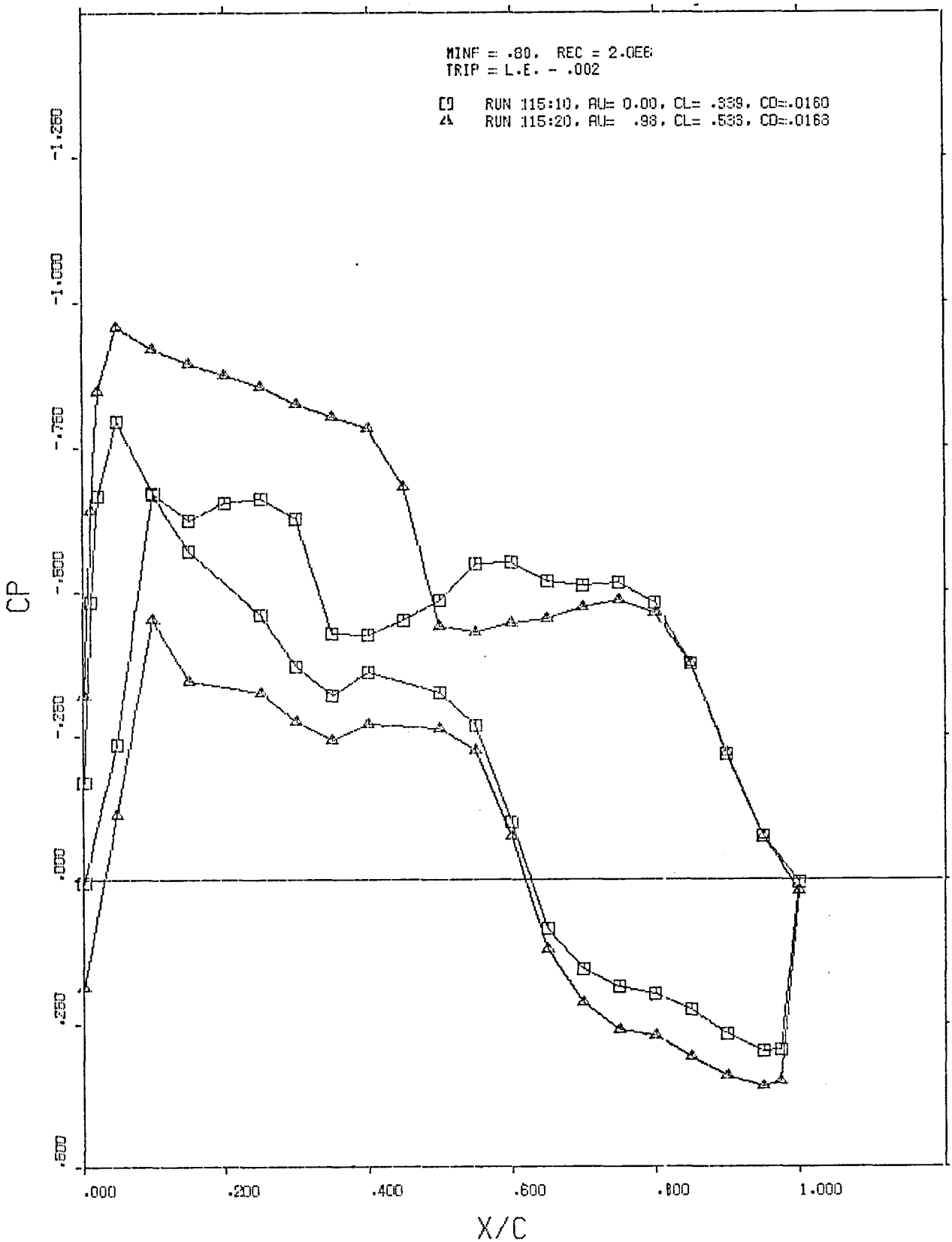
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .75, REC = 2.0E6
TRIP = L.E. - .002
RUN 114:12, ALE 1.09, CL= .544, CD=.0153
RUN 114:13, ALE 1.99, CL= .693, CD=.0185
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = L.E. - .002
RUN 115:10, AU= 0.00, CL= .339, CD=.0160
RUN 115:20, AU= .98, CL= .533, CD=.0168
CP
-1.250
-1.000
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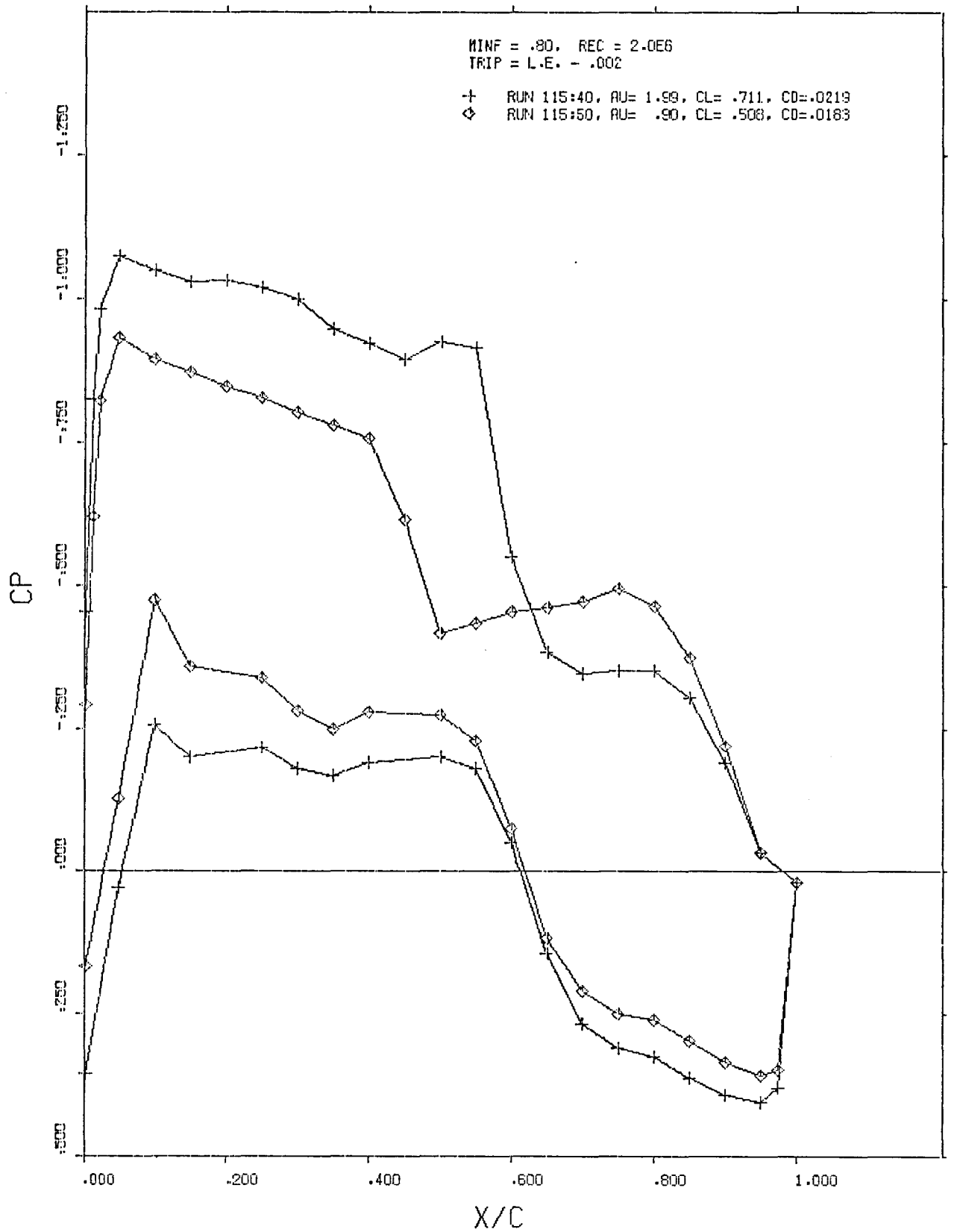
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = L.E. - .002
RUN 115:40, AU= 1.99, CL= .711, CD=.0219
RUN 115:50, AU= .90, CL= .508, CD=.0183
CP
-1.250
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-.500
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.000
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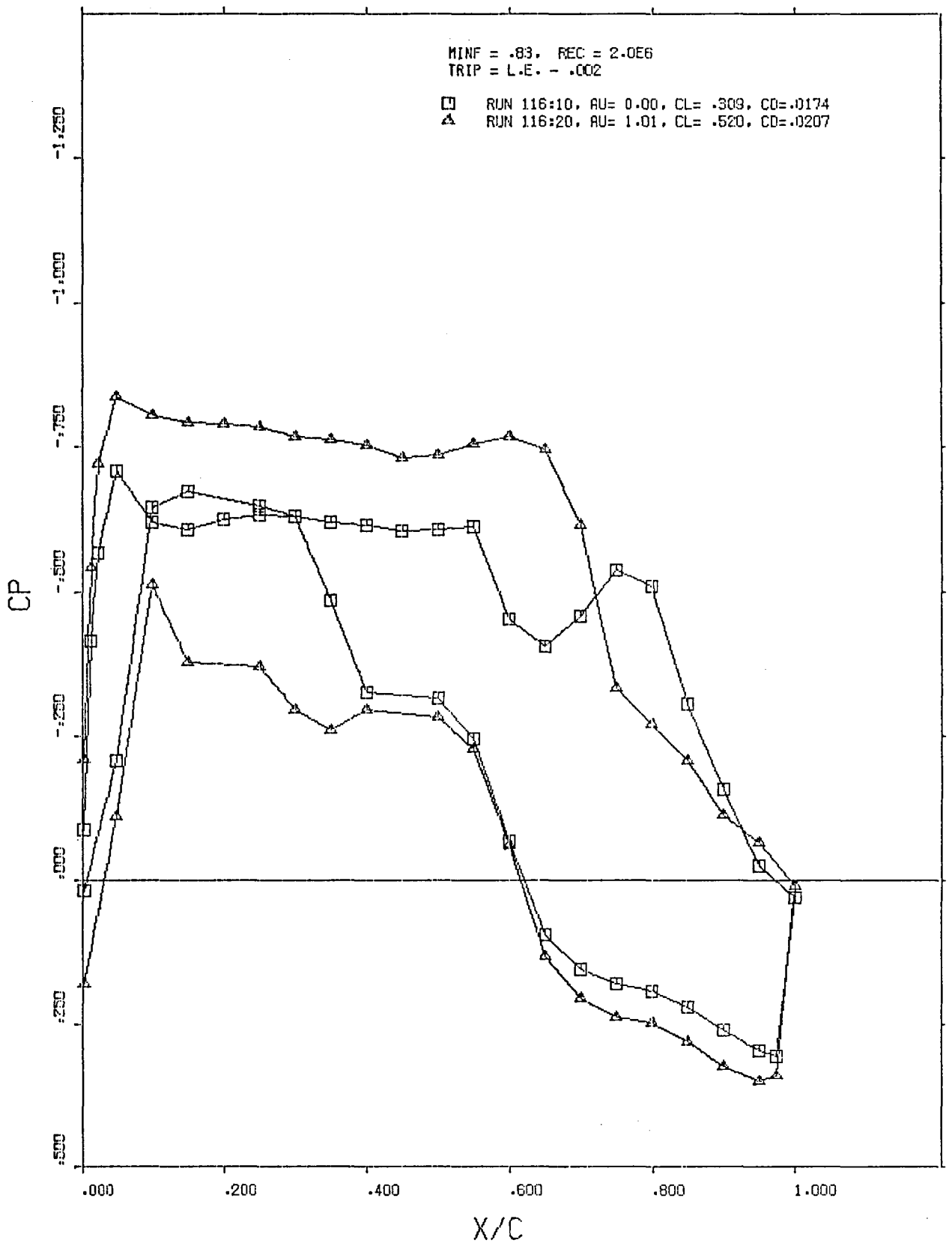
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = L.E. - .002
RUN 116:10, AU= 0.00, CL= .309, CD=.0174
RUN 116:20, AU= 1.01, CL= .520, CD=.0207
CP
-1.250
-1.000
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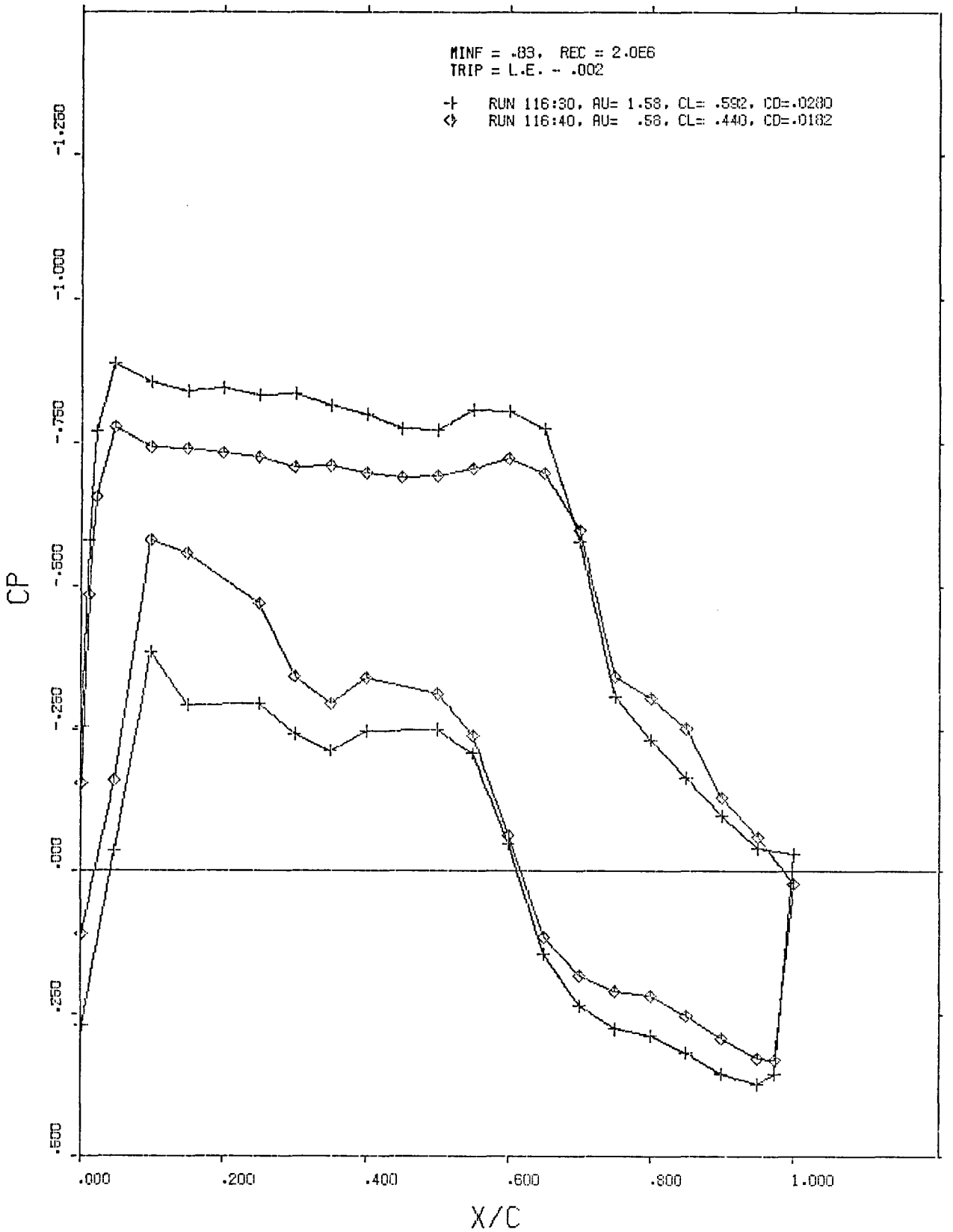
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = L.E. - .002
RUN 116:30, AU= 1.58, CL= .592, CD=.0280
RUN 116:40, AU= .58, CL= .440, CD=.0182
CP
-1.250
-1.000
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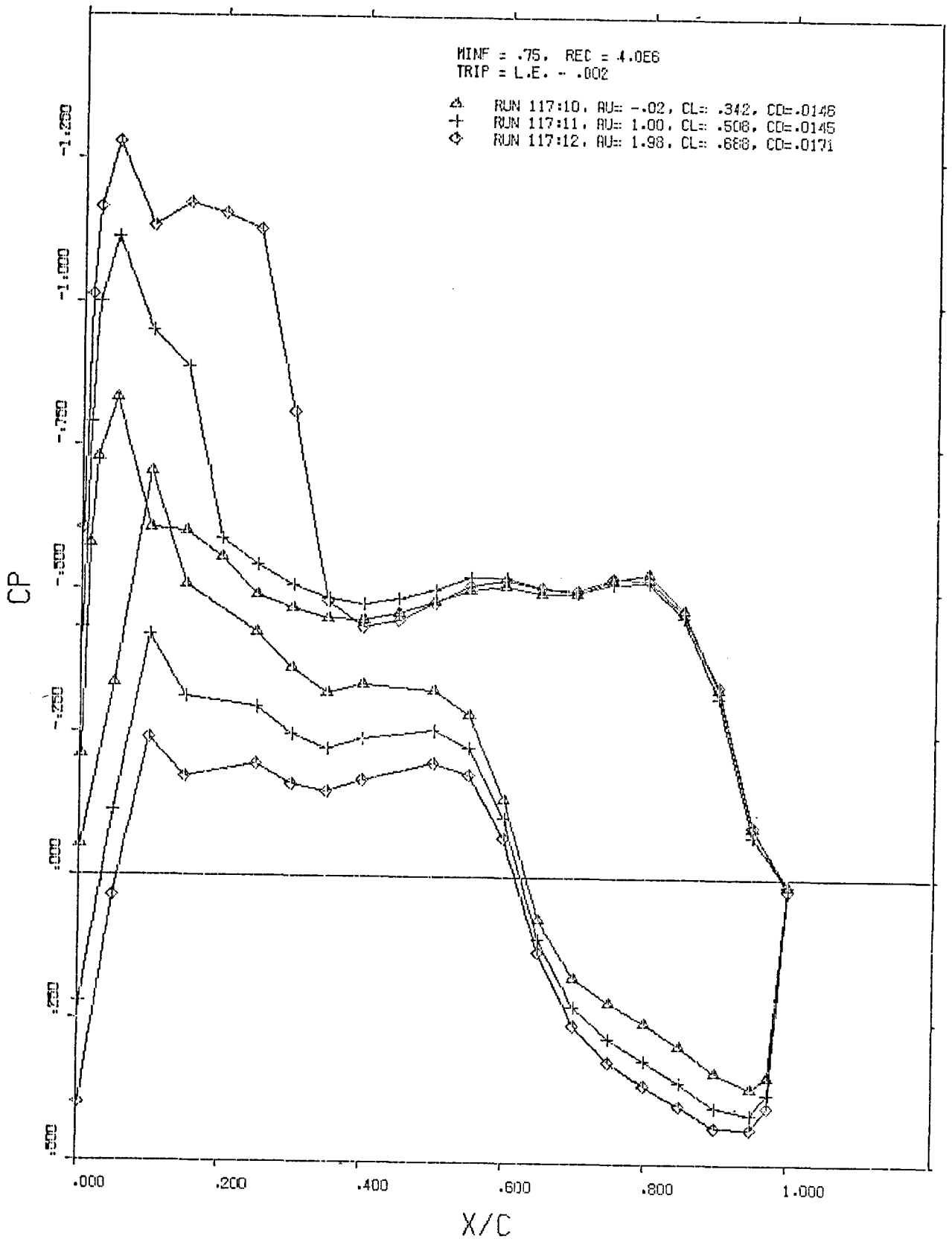
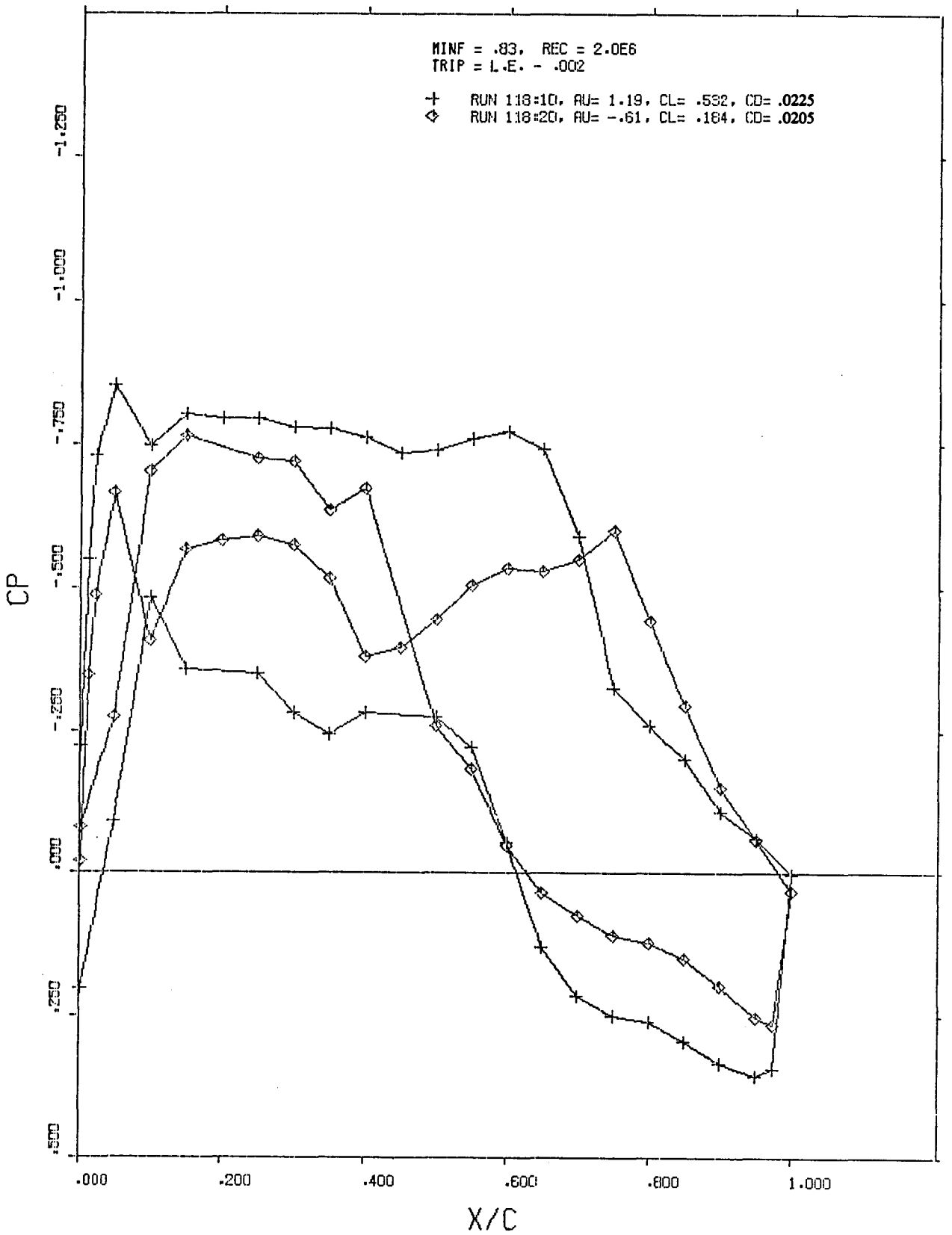
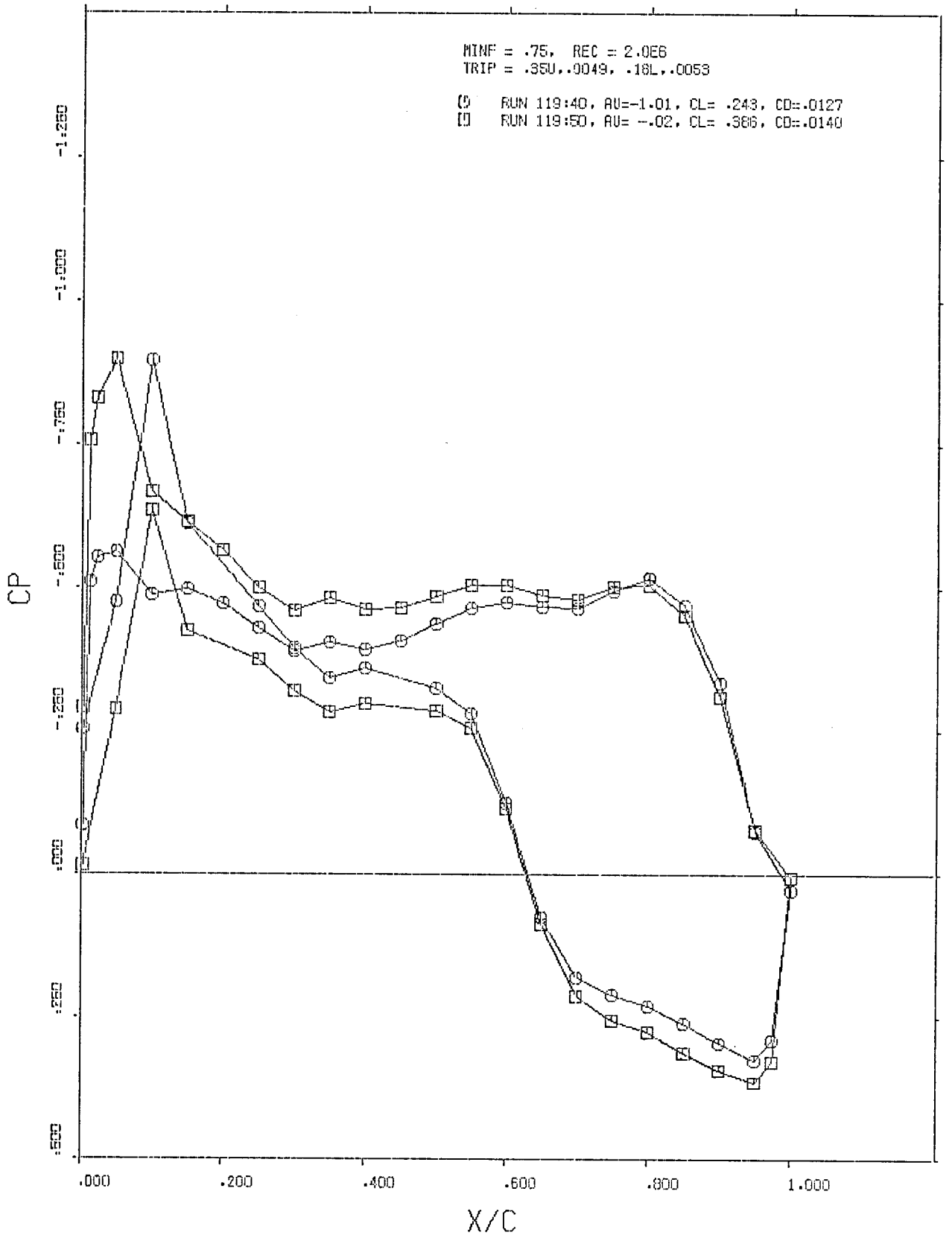
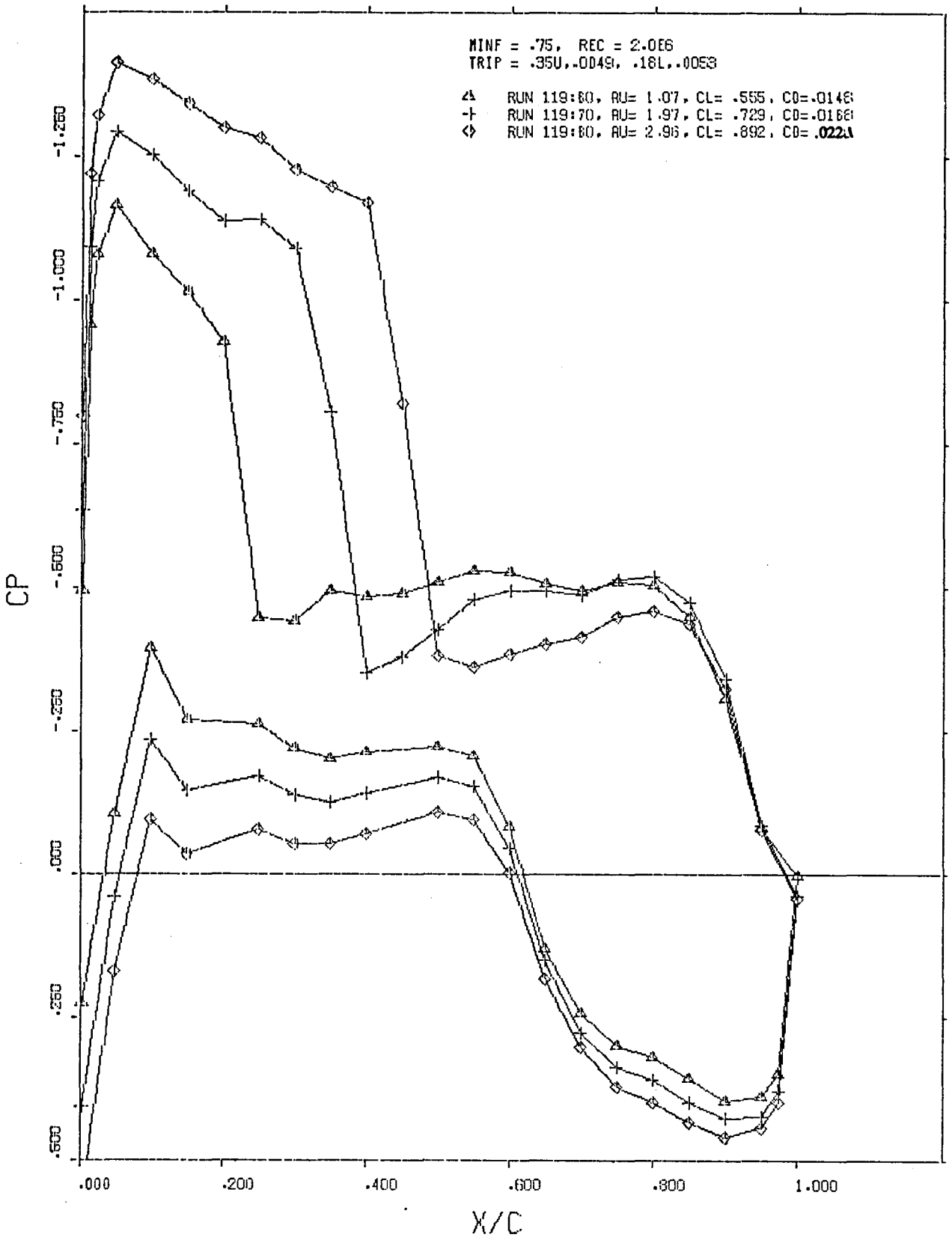
.000
.200
.400
.600
.800
1.000
X/C


MINF = .75, REC = 4.0E6
TRIP = L.E. - .002
RUN 117:10, AU= -.02, CL= .342, CD=.0146
RUN 117:11, AU= 1.00, CL= .506, CD=.0145
RUN 117:12, AU= 1.98, CL= .688, CD=.0171
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = L.E. - .002
RUN 118:10, AU= 1.19, CL= .532, CD= .0225
RUN 118:20, AU= -.61, CL= .184, CD= .0205
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
CP
.000
.200
.400
.600
.800
1.000
X/C


MINF = .75, REC = 2.0E6
TRIP = .35U,.0049, .18L,.0053
RUN 119:40, AU=-1.01, CL= .243, CD=.0127
RUN 119:50, AU= -.02, CL= .386, CD=.0140
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .75, REC = 2.0E6
TRIP = .35U,.0049, .18L,.0053
RUN 119:80, AU= 1.07, CL= .555, CD=.0148
RUN 119:70, AU= 1.97, CL= .729, CD=.0168
RUN 119:80, AU= 2.96, CL= .892, CD= .022
CP
-1.250
-1.000
-.750
-.500
-.250
.000
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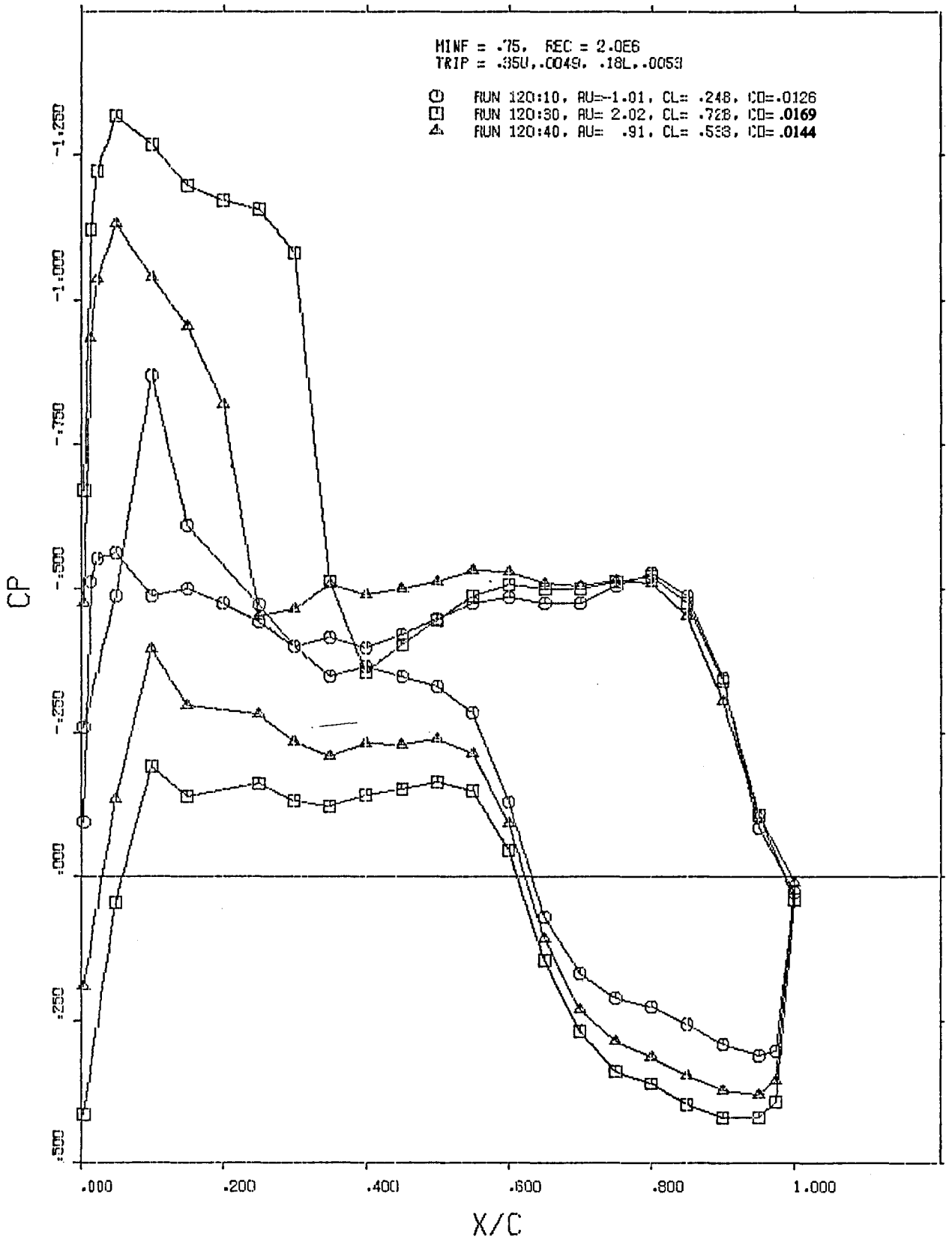
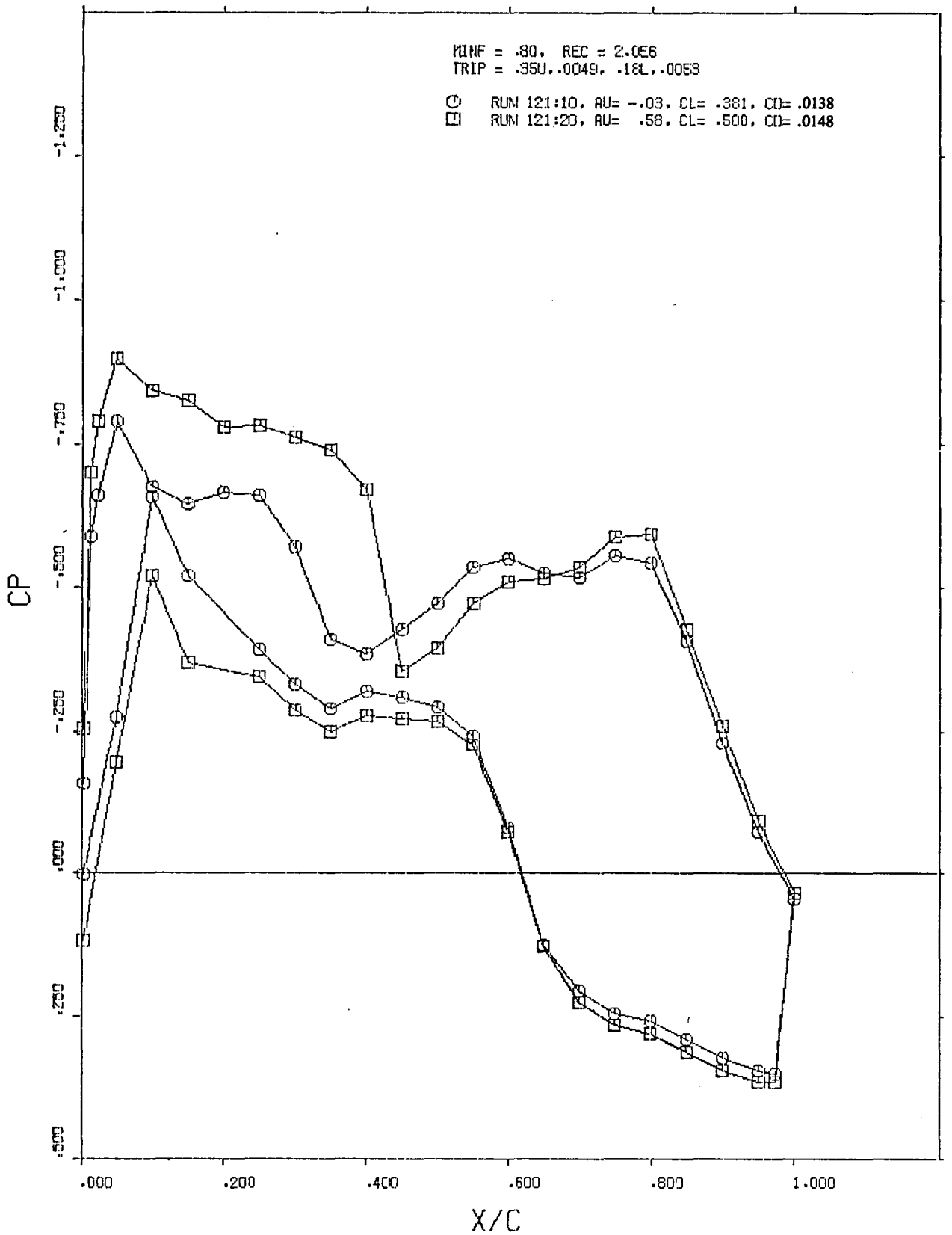
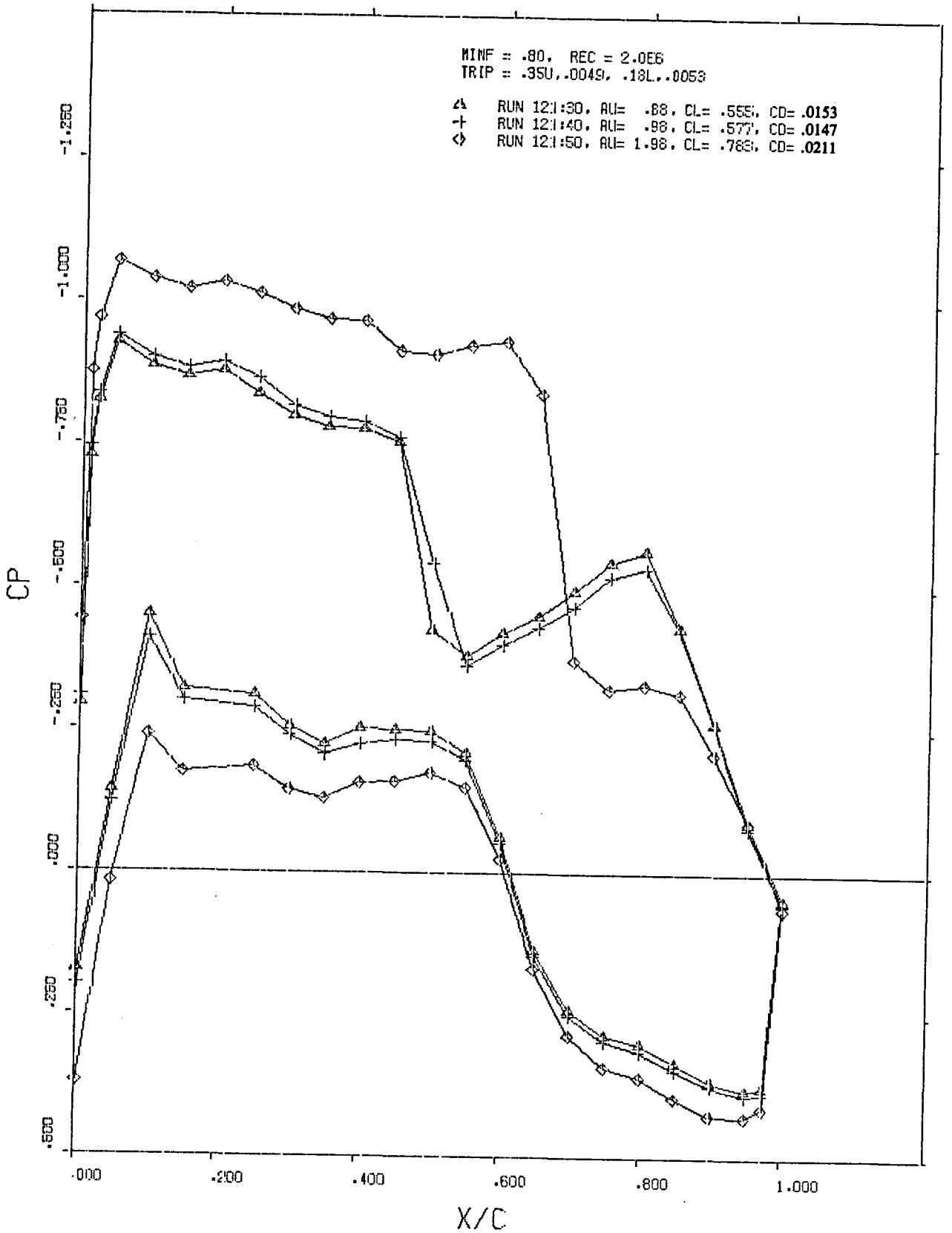
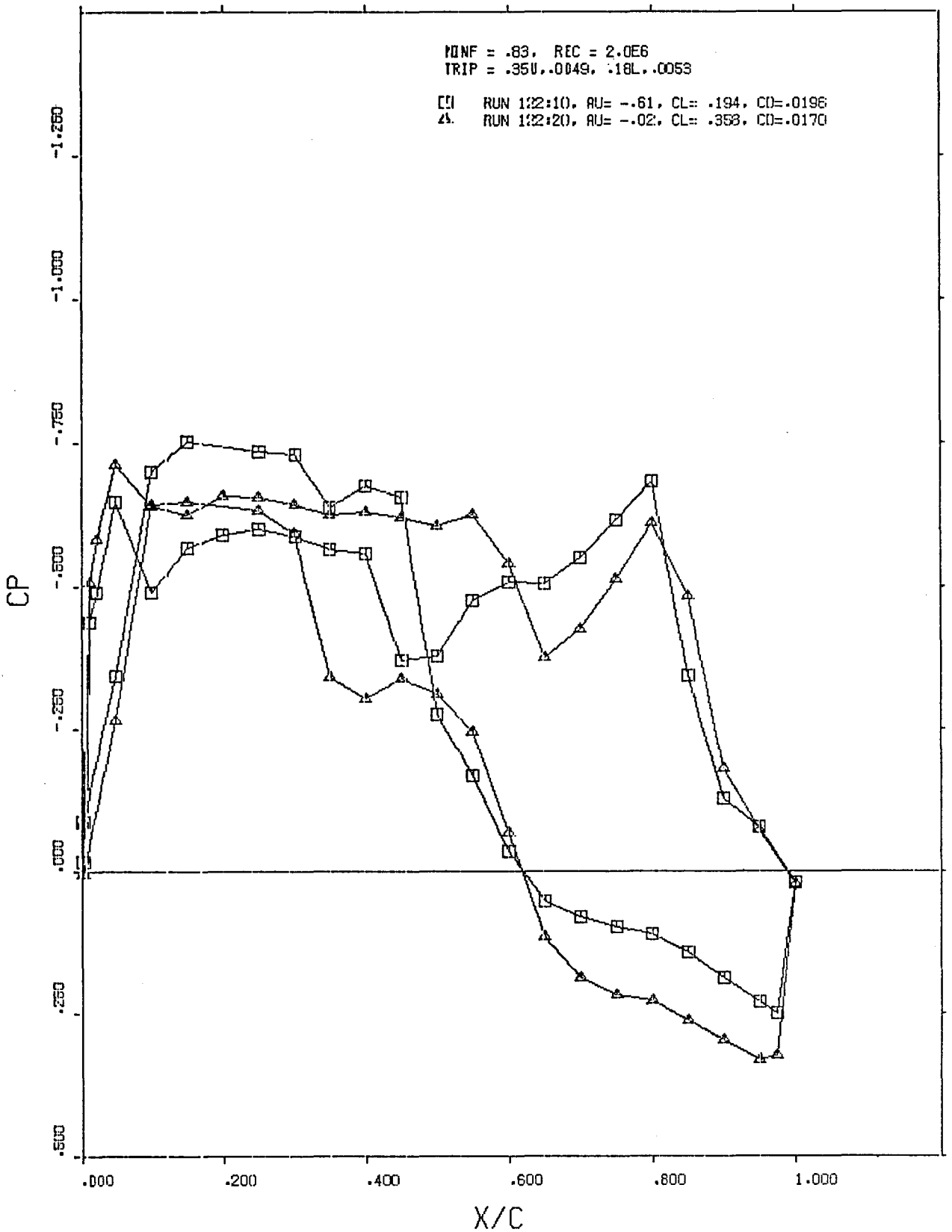
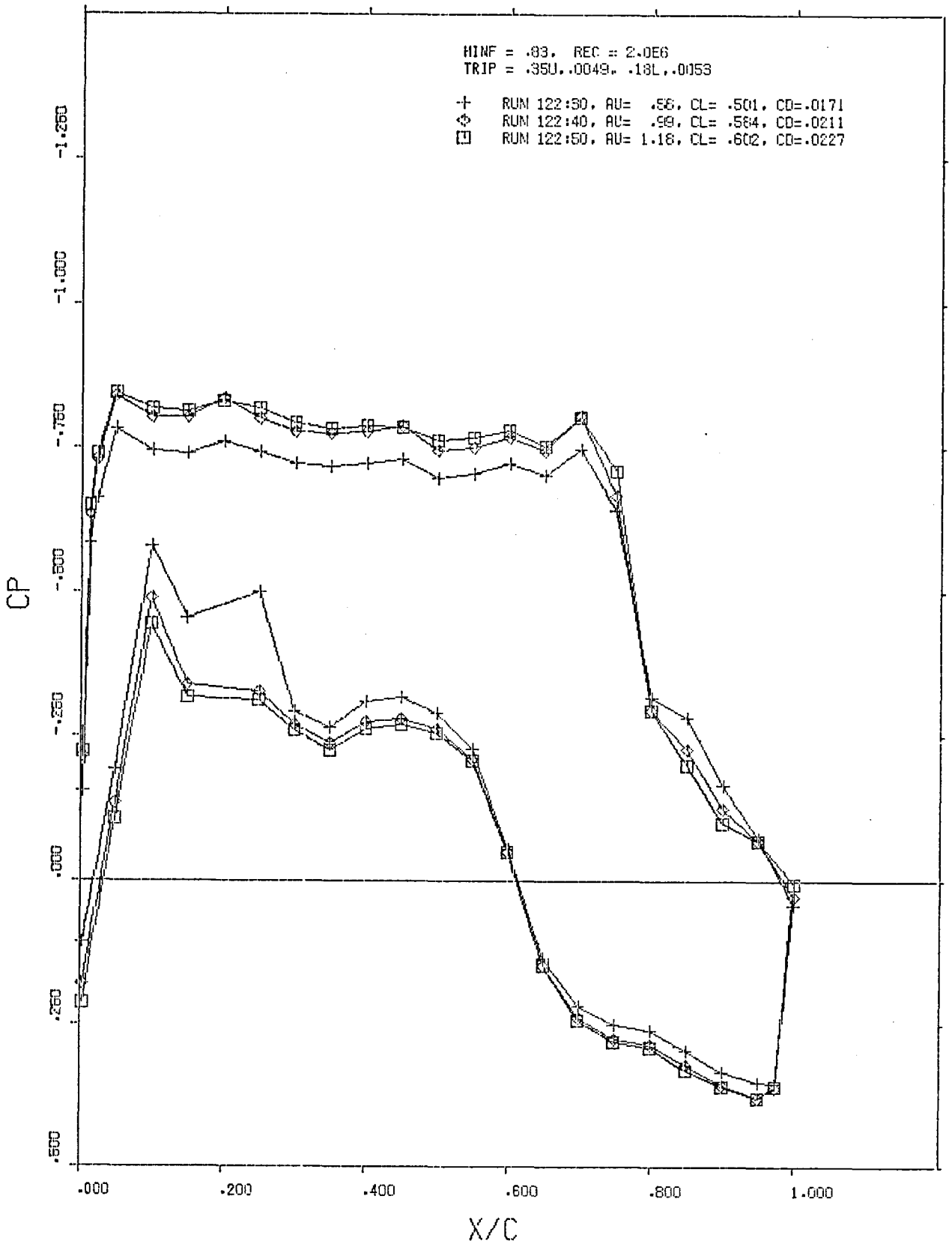
.000
.200
.400
.600
.800
1.000
X/C

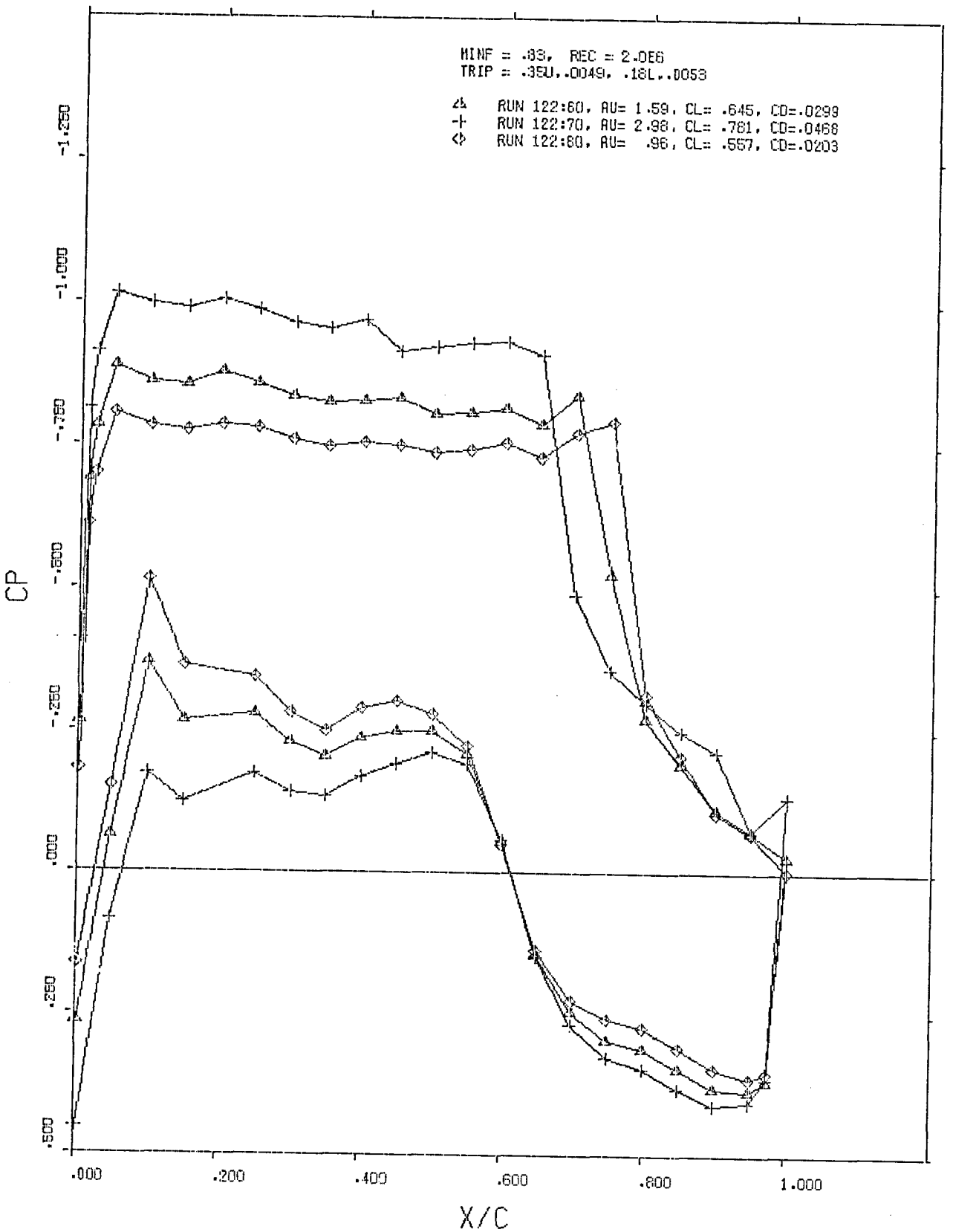

MINF = .75, REC = 2.0E6
TRIP = .35U,.0049, .18L,.0053
RUN 120:10, AU=-1.01, CL= .248, CD=.0126
RUN 120:30, AU= 2.02, CL= .728, CD=.0169
RUN 120:40, AU= .91, CL= .538, CD=.0144
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = .35U..0049, .18L..0053
RUN 121:10, AU= -.03, CL= .381, CD= .0138
RUN 121:20, AU= .58, CL= .500, CD= .0148
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = .35U,.0049, .18L,.0053
RUN 121:30, AU= .88, CL= .555, CD= .0153
RUN 121:40, AU= .98, CL= .577, CD= .0147
RUN 121:50, AU= 1.98, CL= .788, CD= .0211
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = .350,.0049, .18L,.0053
RUN 122:10, AU= -.61, CL= .194, CD=.0196
RUN 122:20, AU= -.02, CL= .358, CD=.0170
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
CP
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = .35U,.0049, .18L,.0053
RUN 122:50, AU= .56, CL= .501, CD=.0171
RUN 122:40, AU= .59, CL= .584, CD=.0211
RUN 122:50, AU= 1.18, CL= .602, CD=.0227
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = .35U,.0049, .18L,.0053
RUN 122:60, AU= 1.59, CL= .645, CD=.0299
RUN 122:70, AU= 2.98, CL= .761, CD=.0468
RUN 122:80, AU= .96, CL= .557, CD=.0203
CP
-1.250
-1.000
-.750
-.500
-.250
.000
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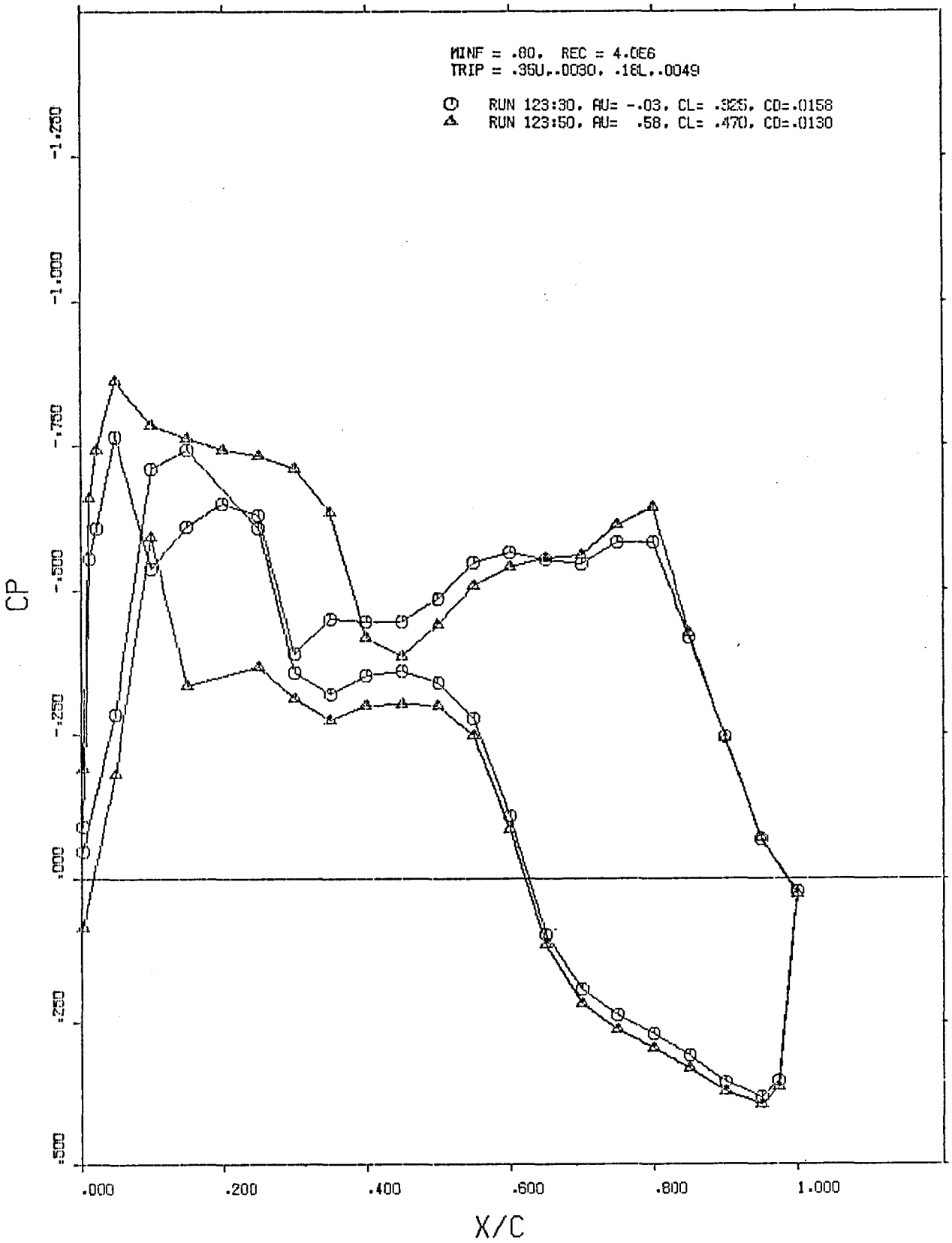
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 4.0E6
TRIP = .35U,.0030, .18L,.0049
RUN 123:30, AU= -.03, CL= .325, CD=.0158
RUN 123:50, AU= .58, CL= .470, CD=.0130
CP
-1.250
-1.000
-.750
-.500
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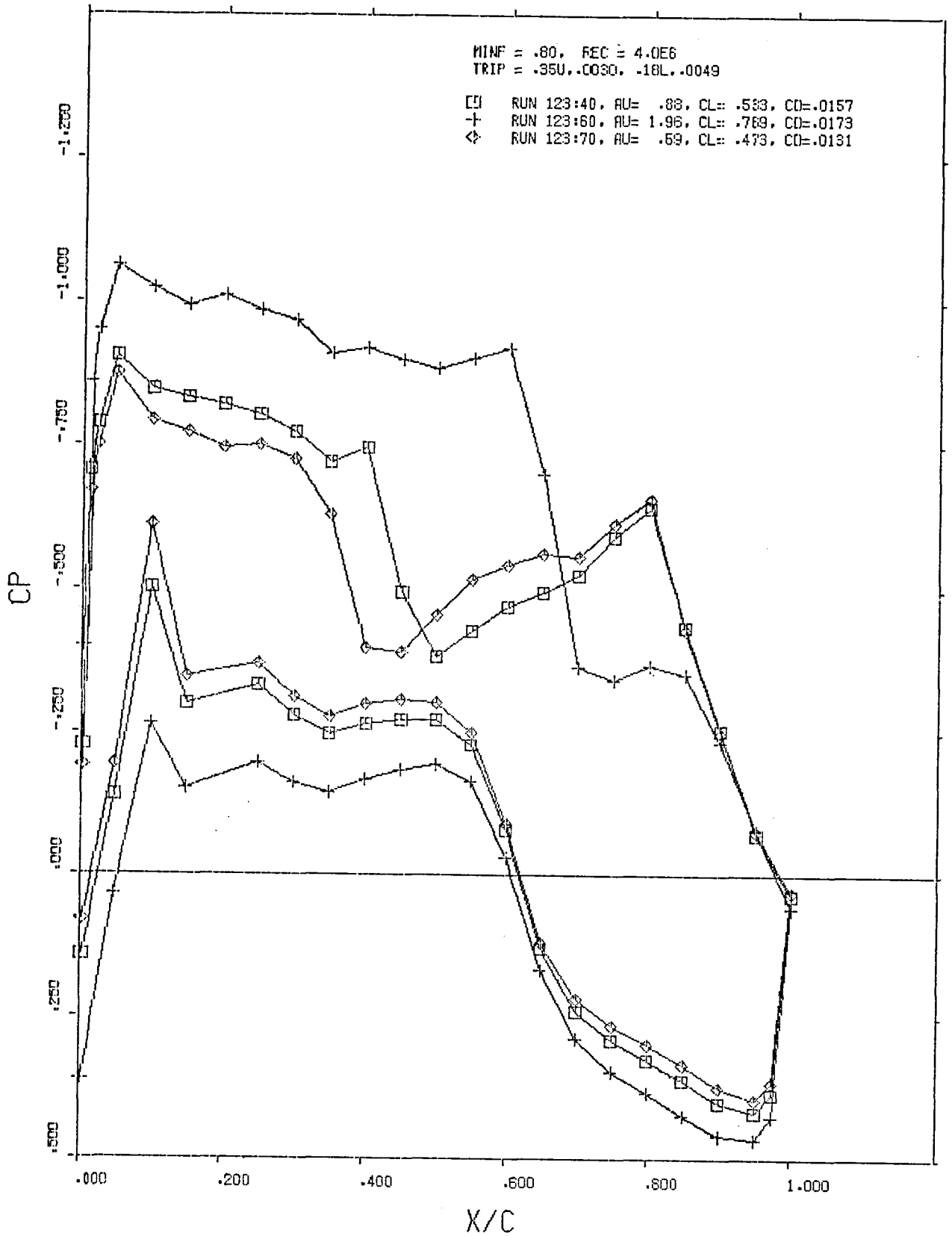
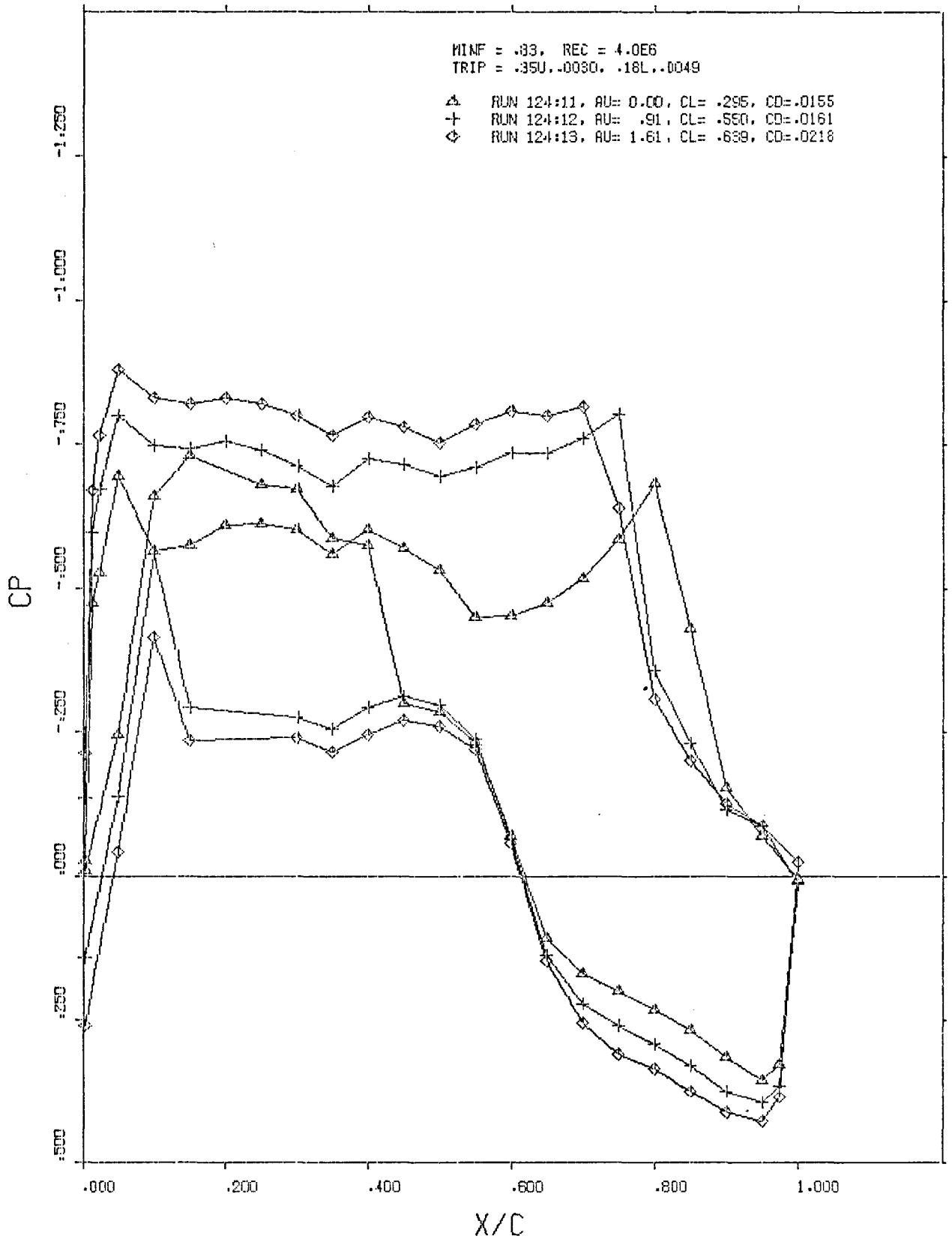
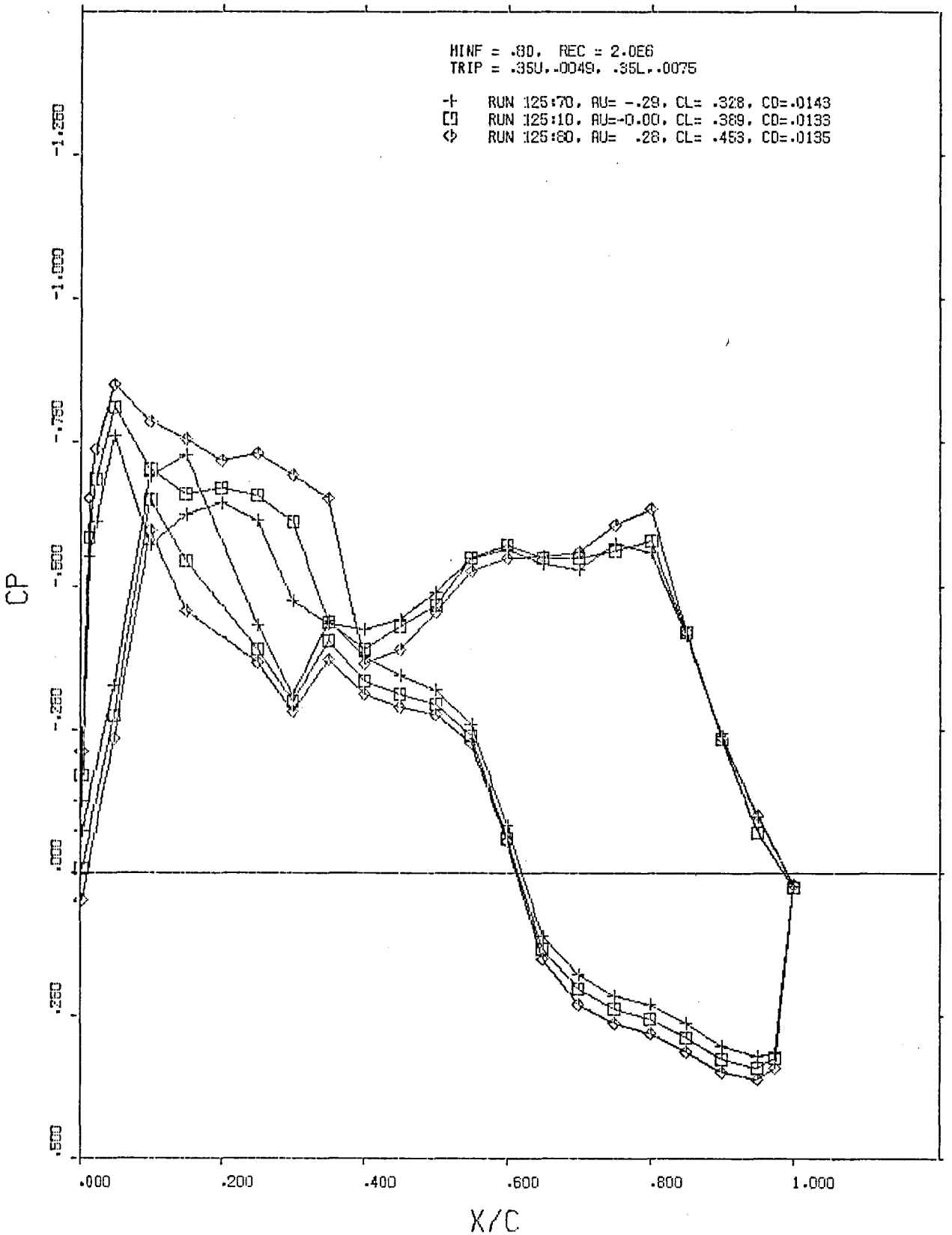
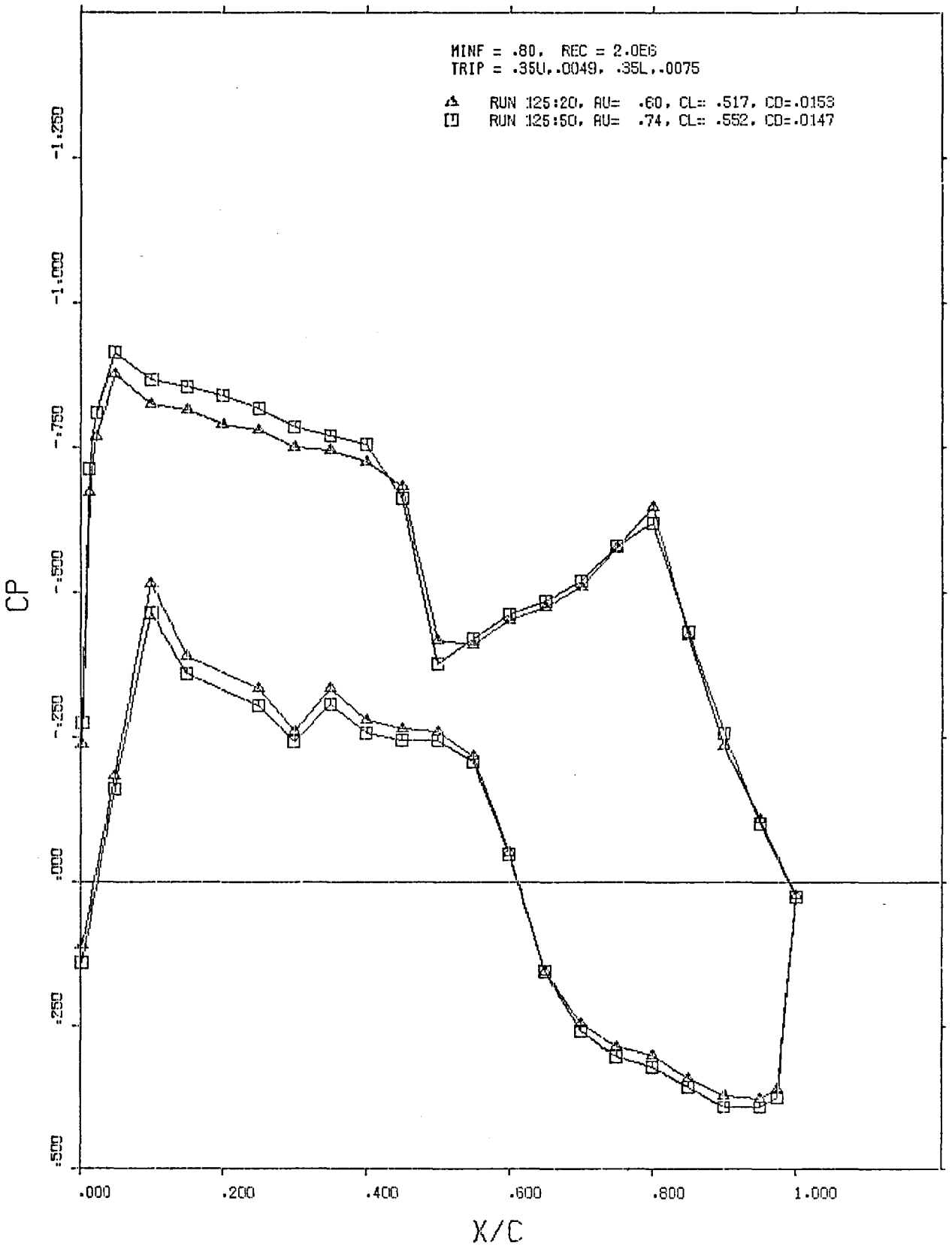
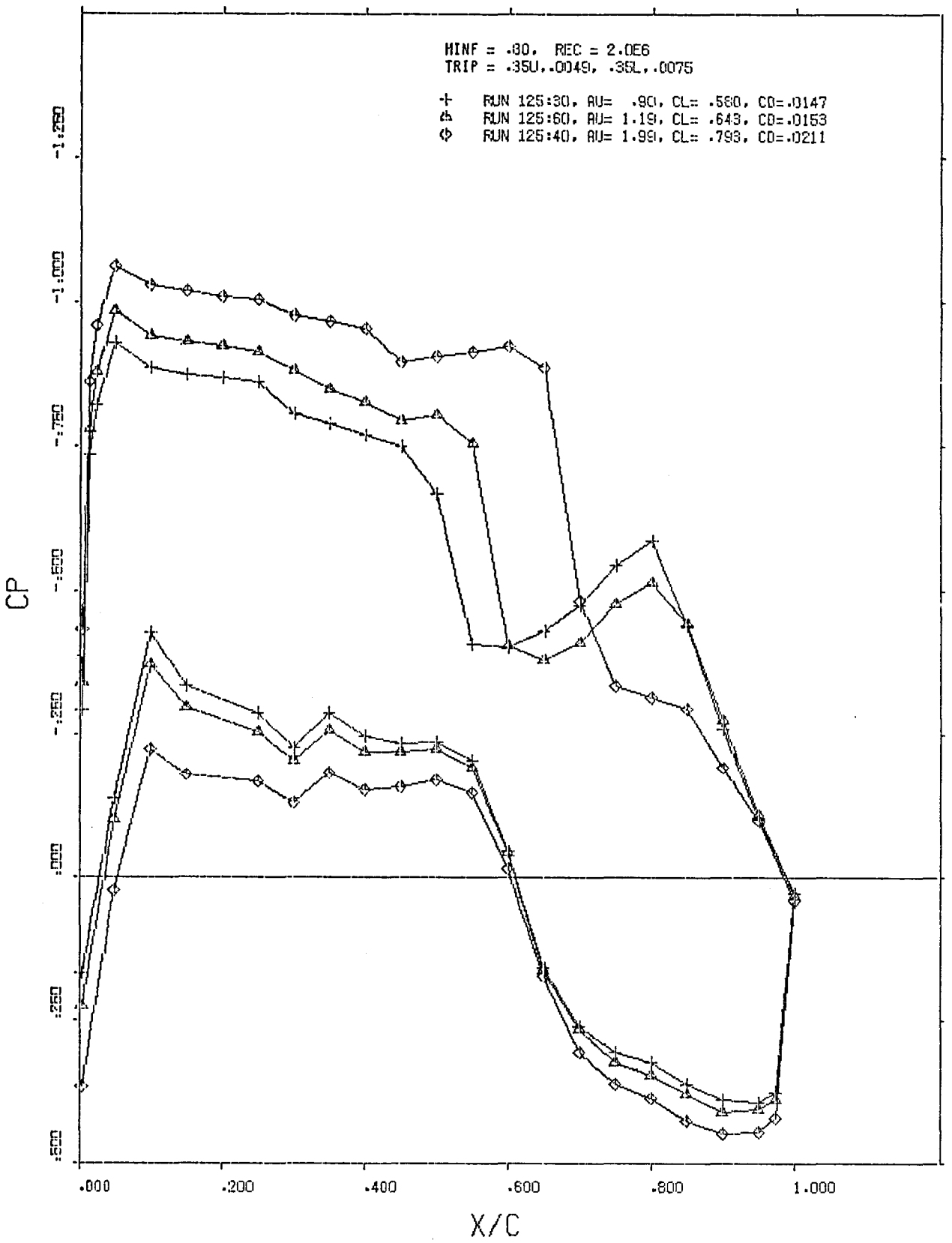
.500
.000
.200
.400
.600
.800
1.000
X/C

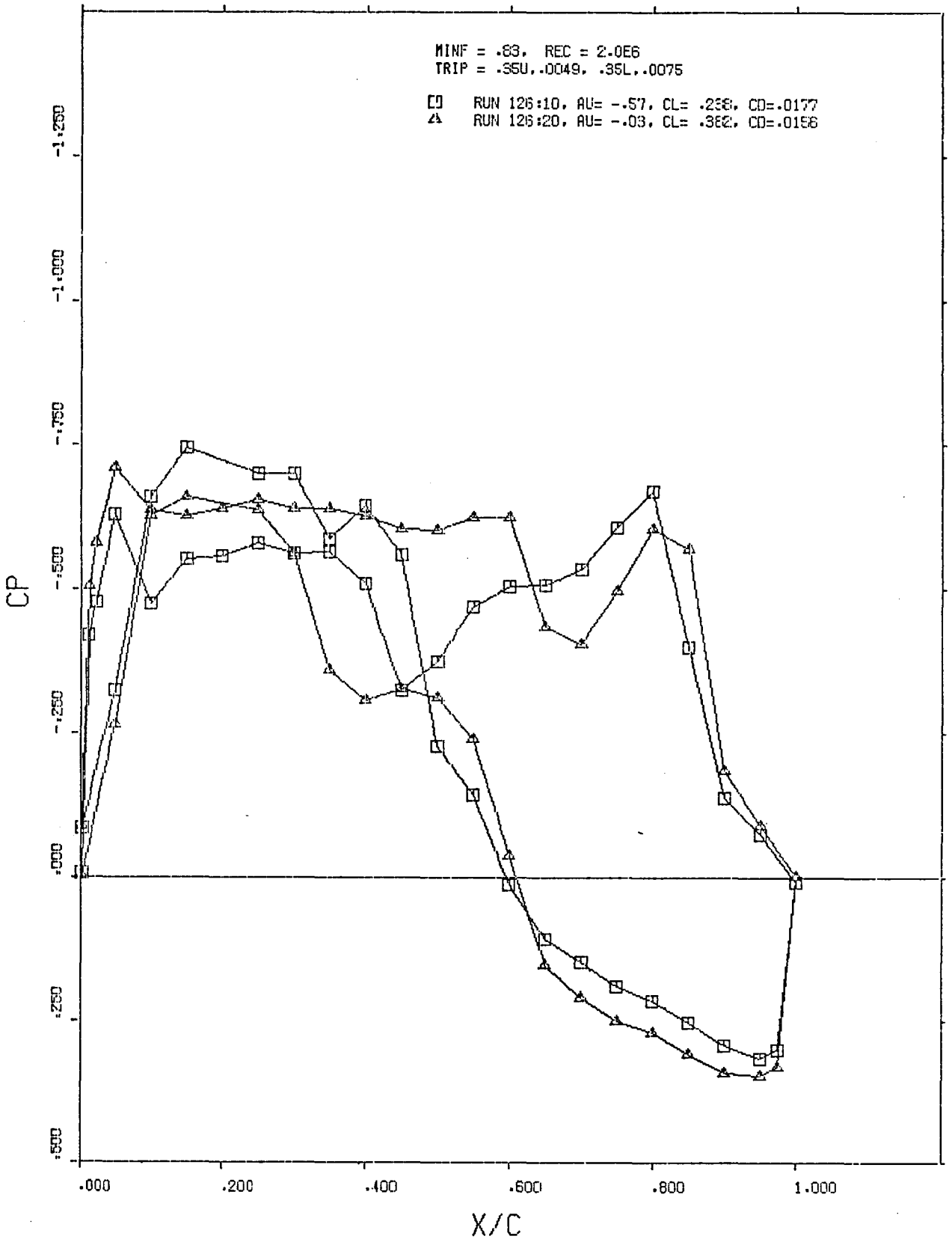

MINF = .80, REC = 4.0E6
TRIP = .35U,.0030, .18L,.0049
RUN 123:40, AU= .88, CL= .583, CD=.0157
RUN 123:60, AU= 1.96, CL= .769, CD=.0173
RUN 123:70, AU= .69, CL= .473, CD=.0131
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

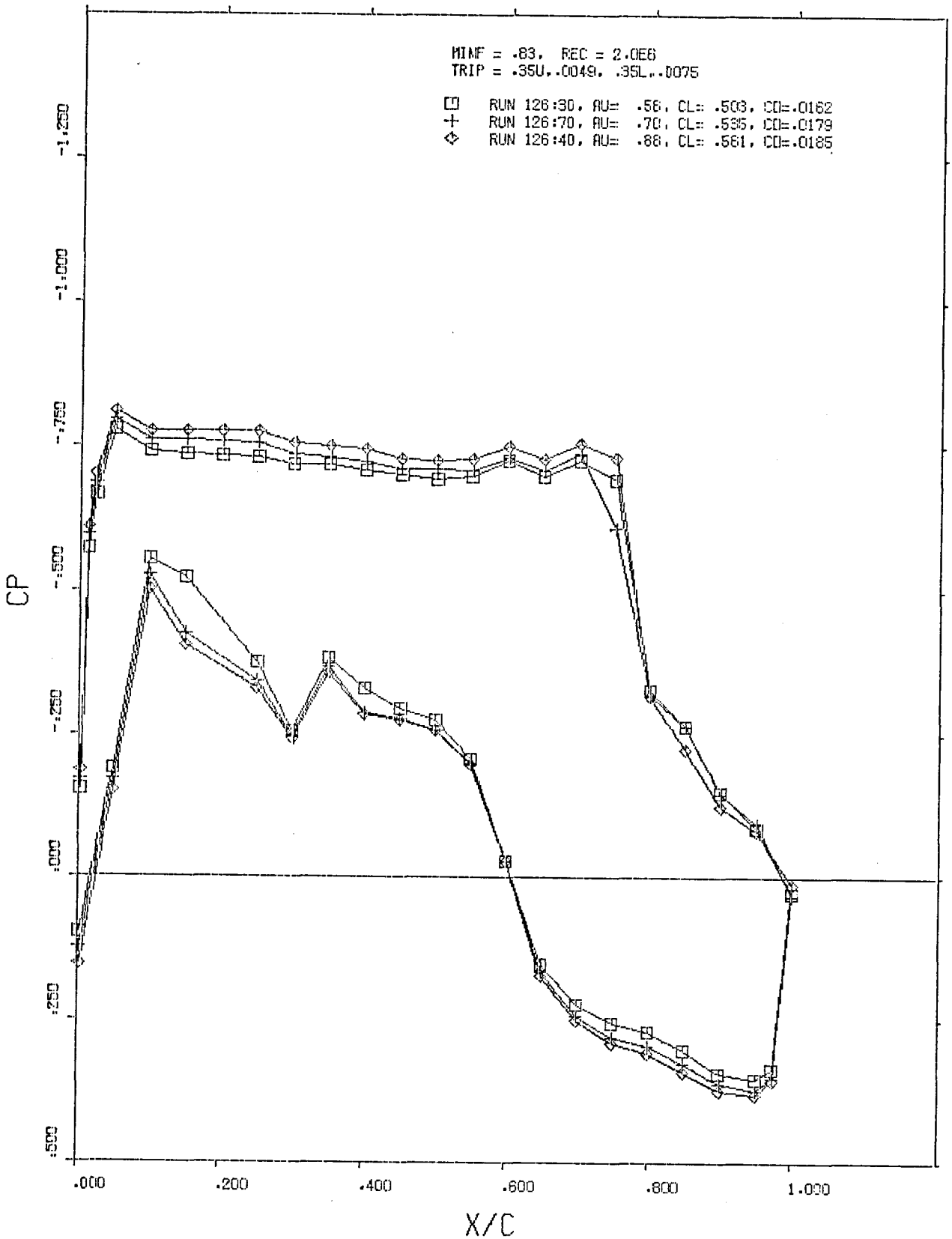

MINF = .83, REC = 4.0E6
TRIP = .35U..0030, .18L..0049
RUN 124:11, AU= 0.00, CL= .295, CD=.0155
RUN 124:12, AU= .91, CL= .560, CD=.0161
RUN 124:13, AU= 1.61, CL= .639, CD=.0218
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

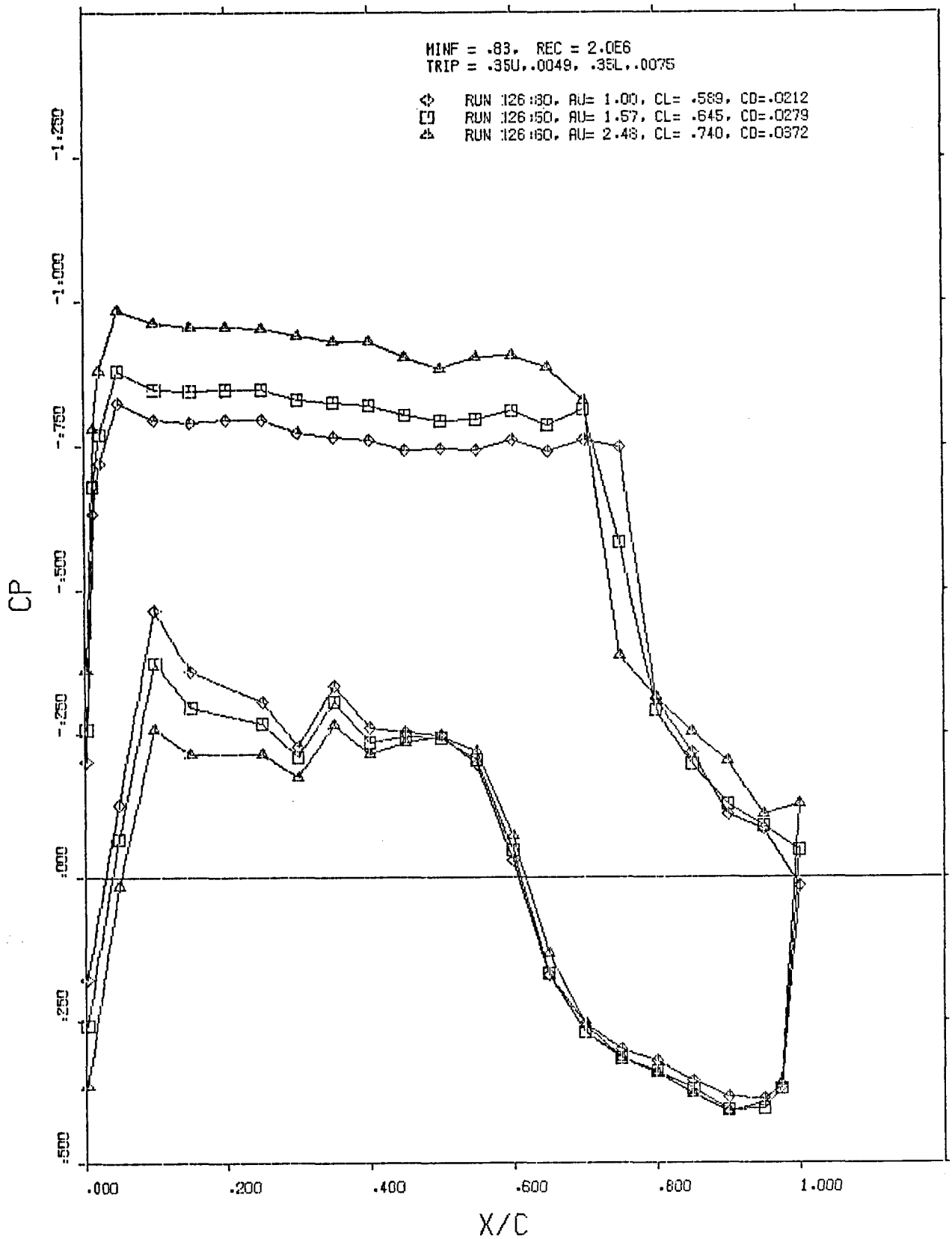

MINF = .80, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 125:70, AU= -.29, CL= .328, CD=.0143
RUN 125:10, AU=-0.00, CL= .389, CD=.0133
RUN 125:80, AU= .28, CL= .453, CD=.0135
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 125:20, AU= .60, CL= .517, CD=.0153
RUN 125:50, AU= .74, CL= .552, CD=.0147
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
CP
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 125:30, AU= .90, CL= .580, CD=.0147
RUN 125:60, AU= 1.19, CL= .643, CD=.0153
RUN 125:40, AU= 1.99, CL= .793, CD=.0211
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 126:10, AU= -.57, CL= .238, CD=.0177
RUN 126:20, AU= -.03, CL= .382, CD=.0156
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = .35U..0049, .35L..0075
RUN 126:30, AU= .56, CL= .503, CD=.0162
RUN 126:70, AU= .70, CL= .535, CD=.0179
RUN 126:40, AU= .68, CL= .561, CD=.0185
CP
X/C
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000


MINF = .83, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 126:30, AU= 1.00, CL= .589, CD=.0212
RUN 126:50, AU= 1.57, CL= .645, CD=.0279
RUN 126:60, AU= 2.48, CL= .740, CD=.0372
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
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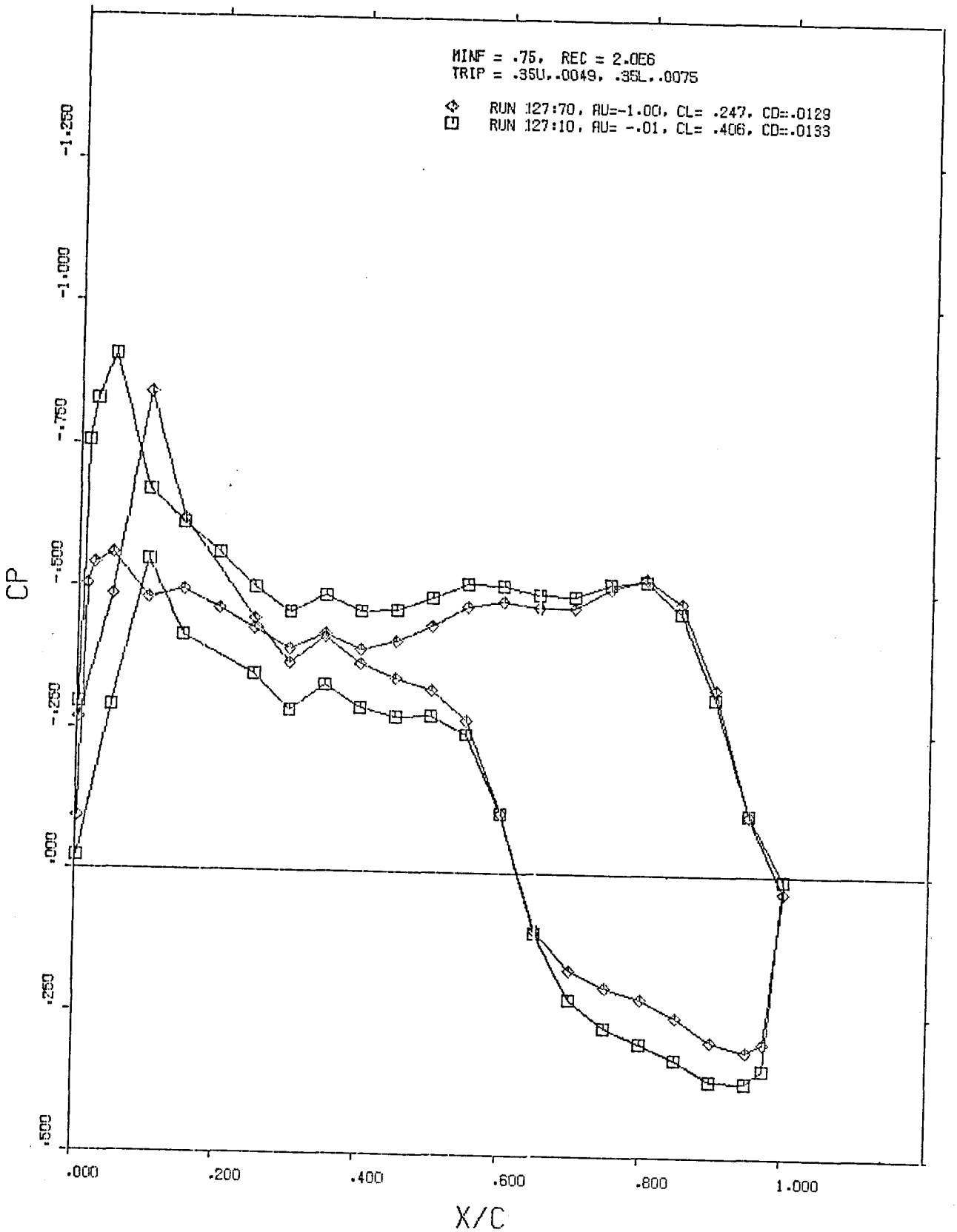
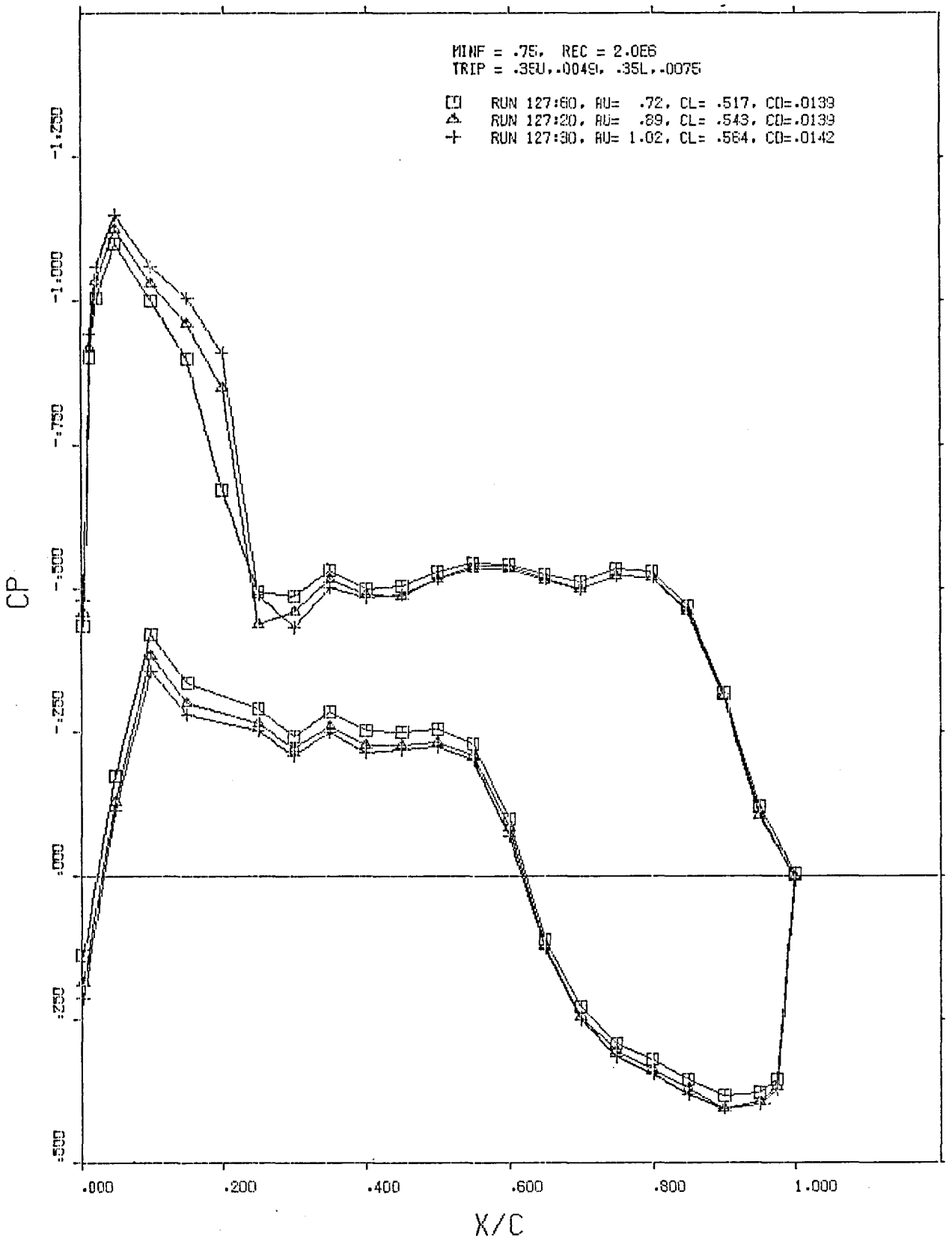
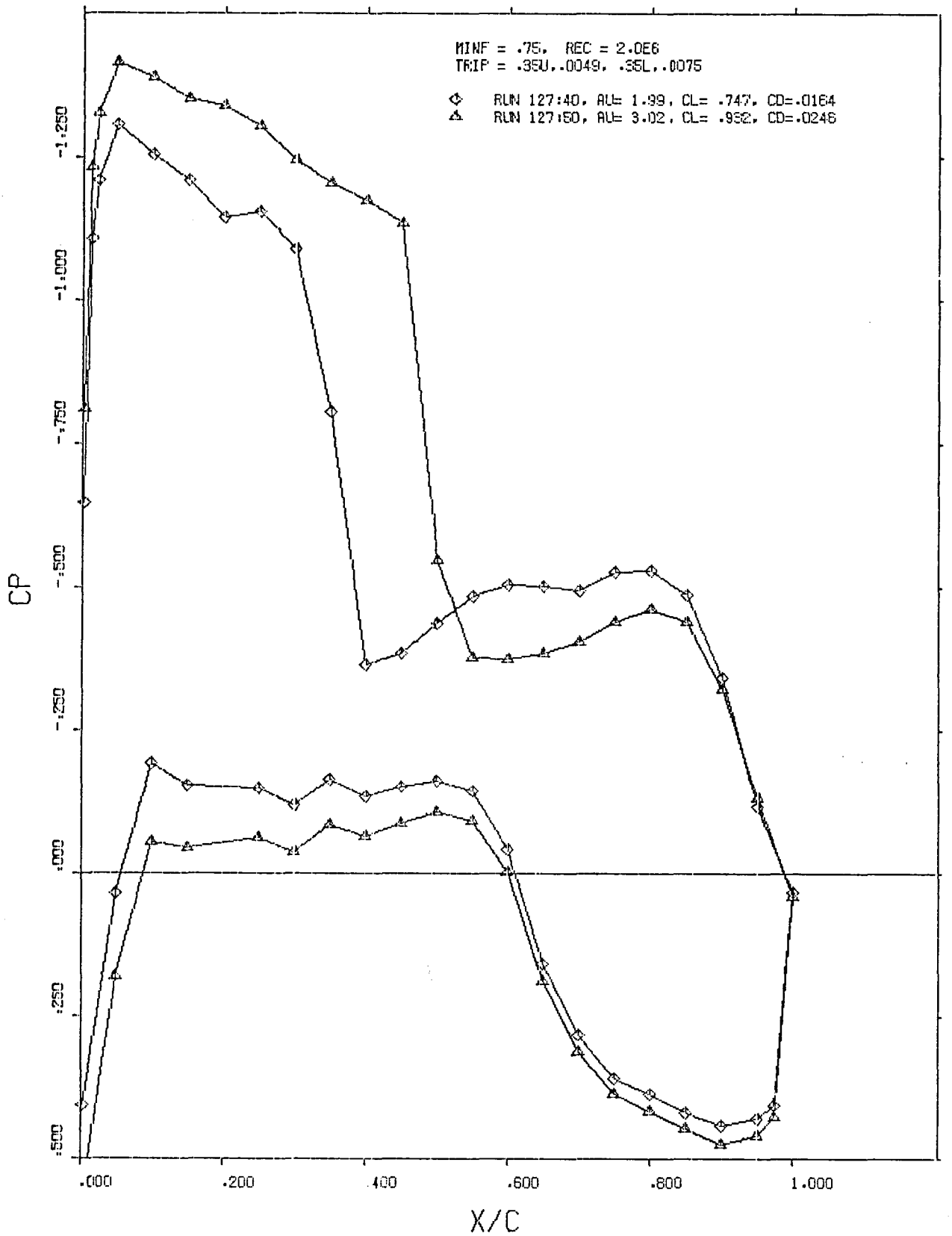
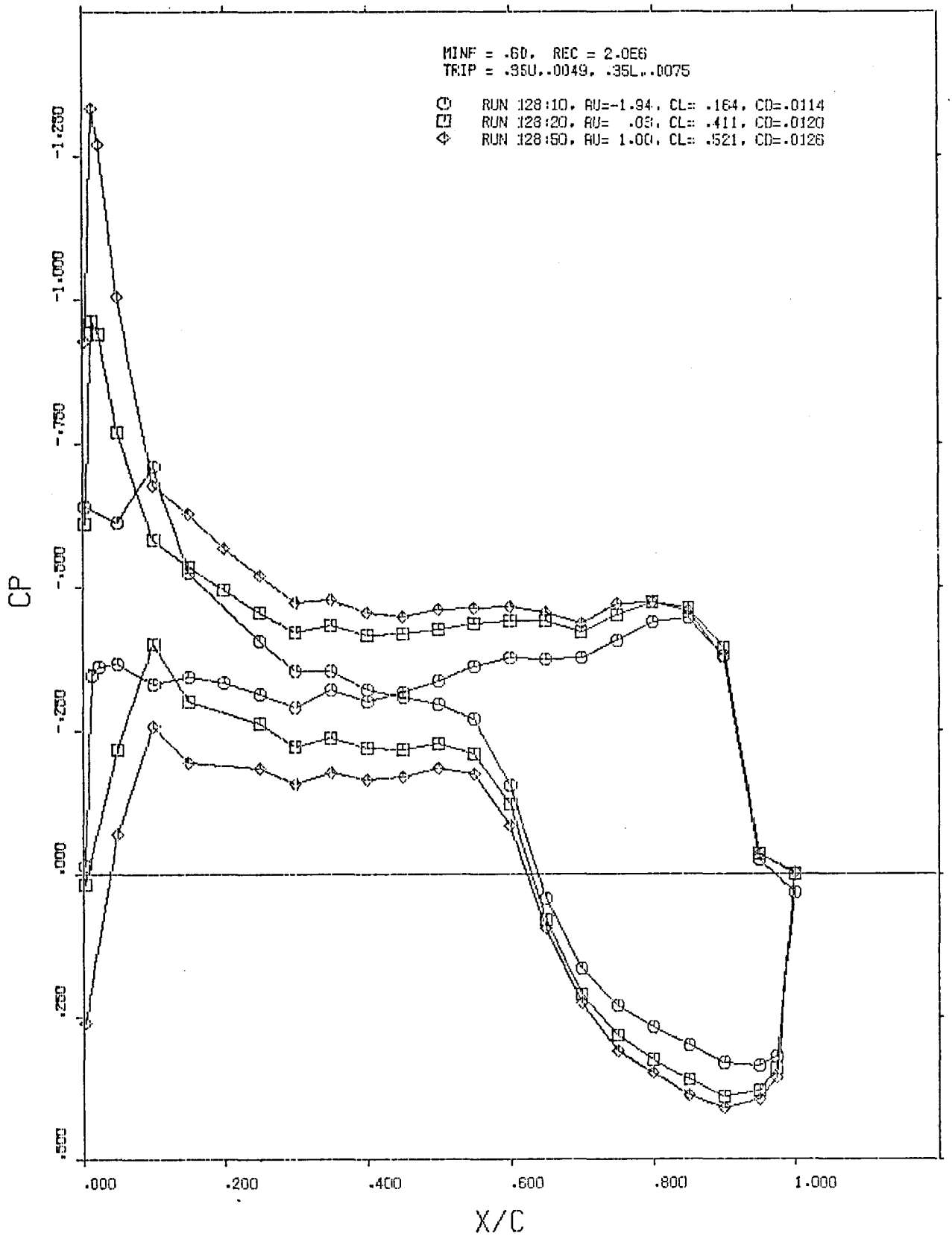
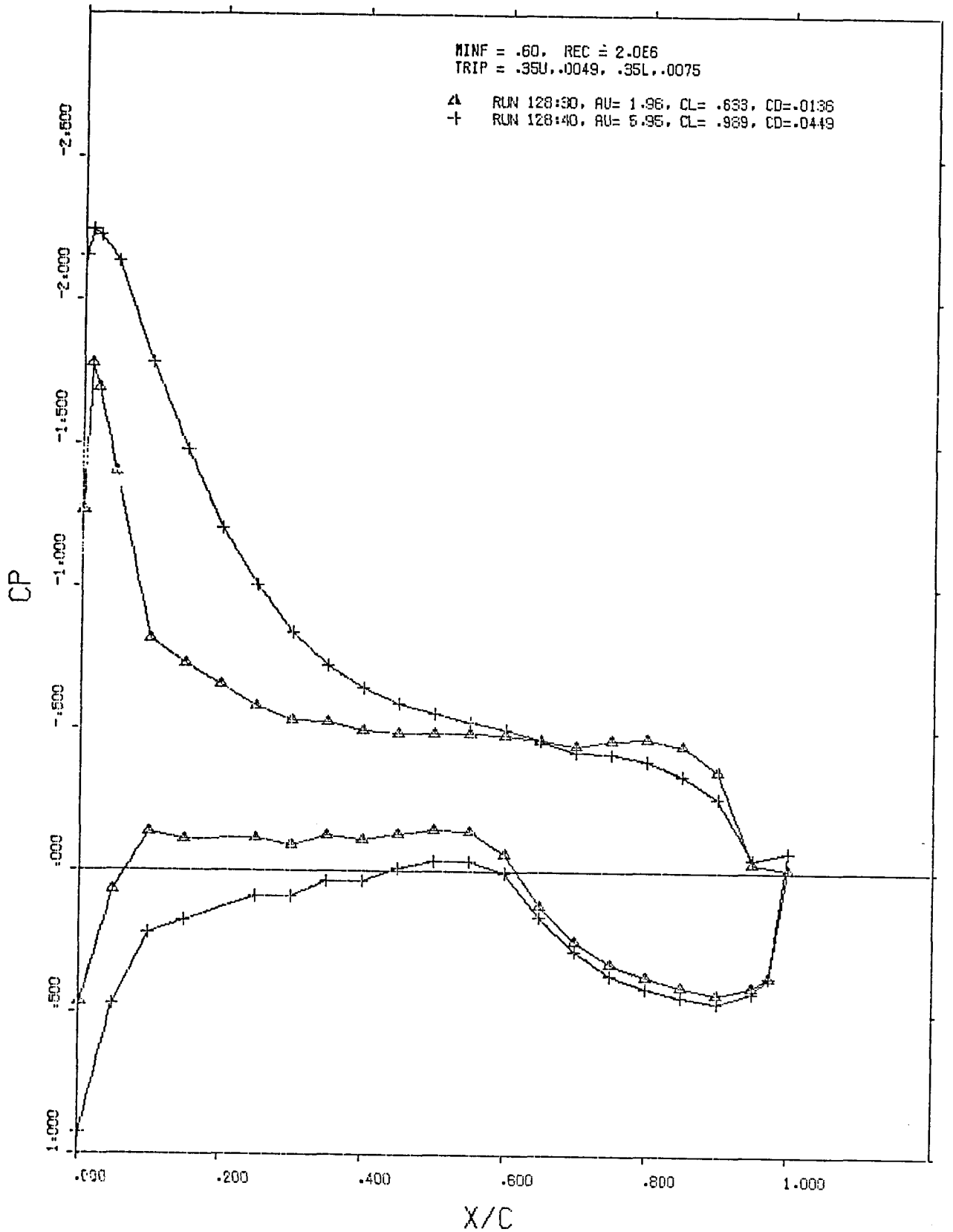
.000
.200
.400
.600
.800
1.000
X/C

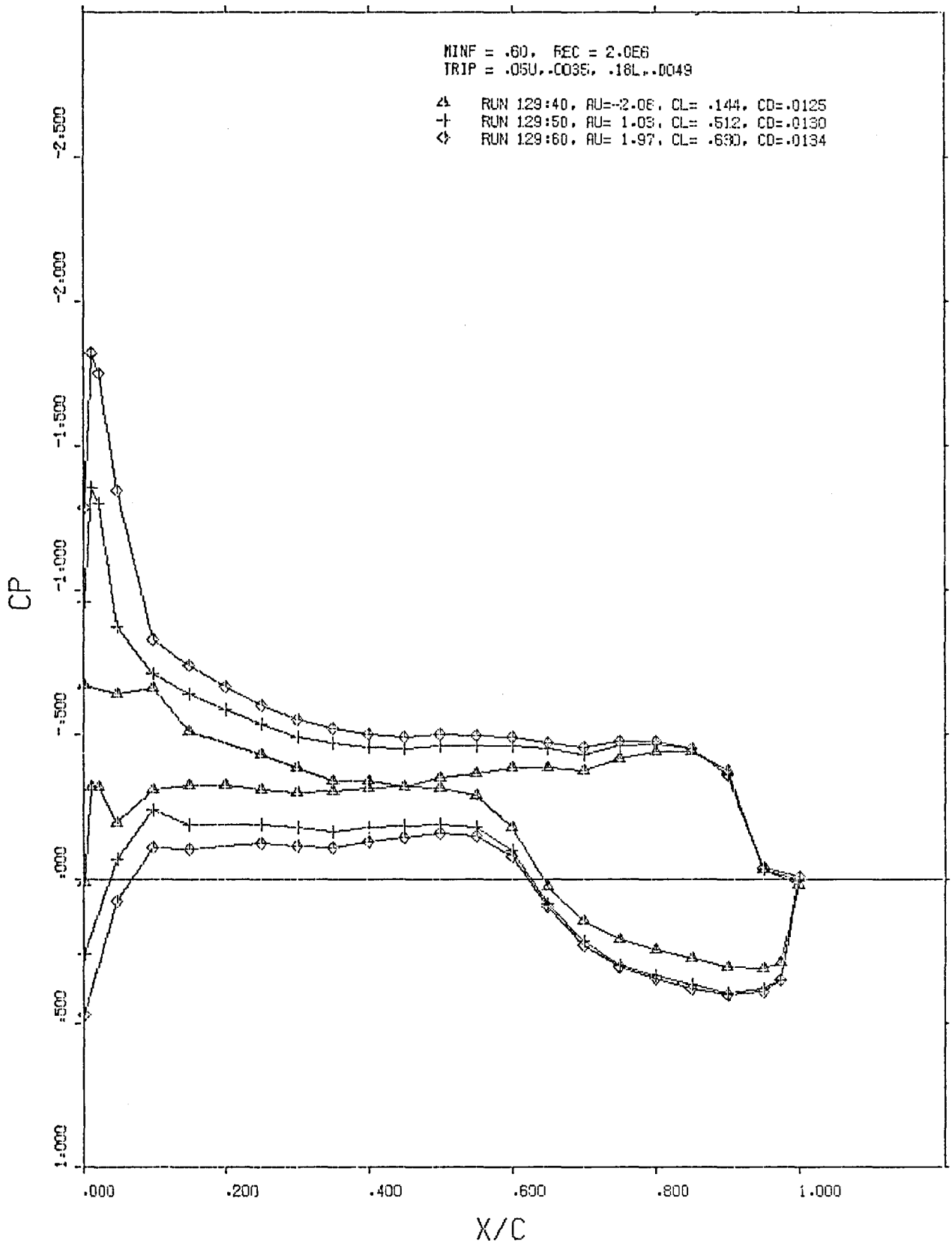

MINF = .75, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 127:70, AU=-1.00, CL= .247, CD=.0129
RUN 127:10, AU= -.01, CL= .406, CD=.0133
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

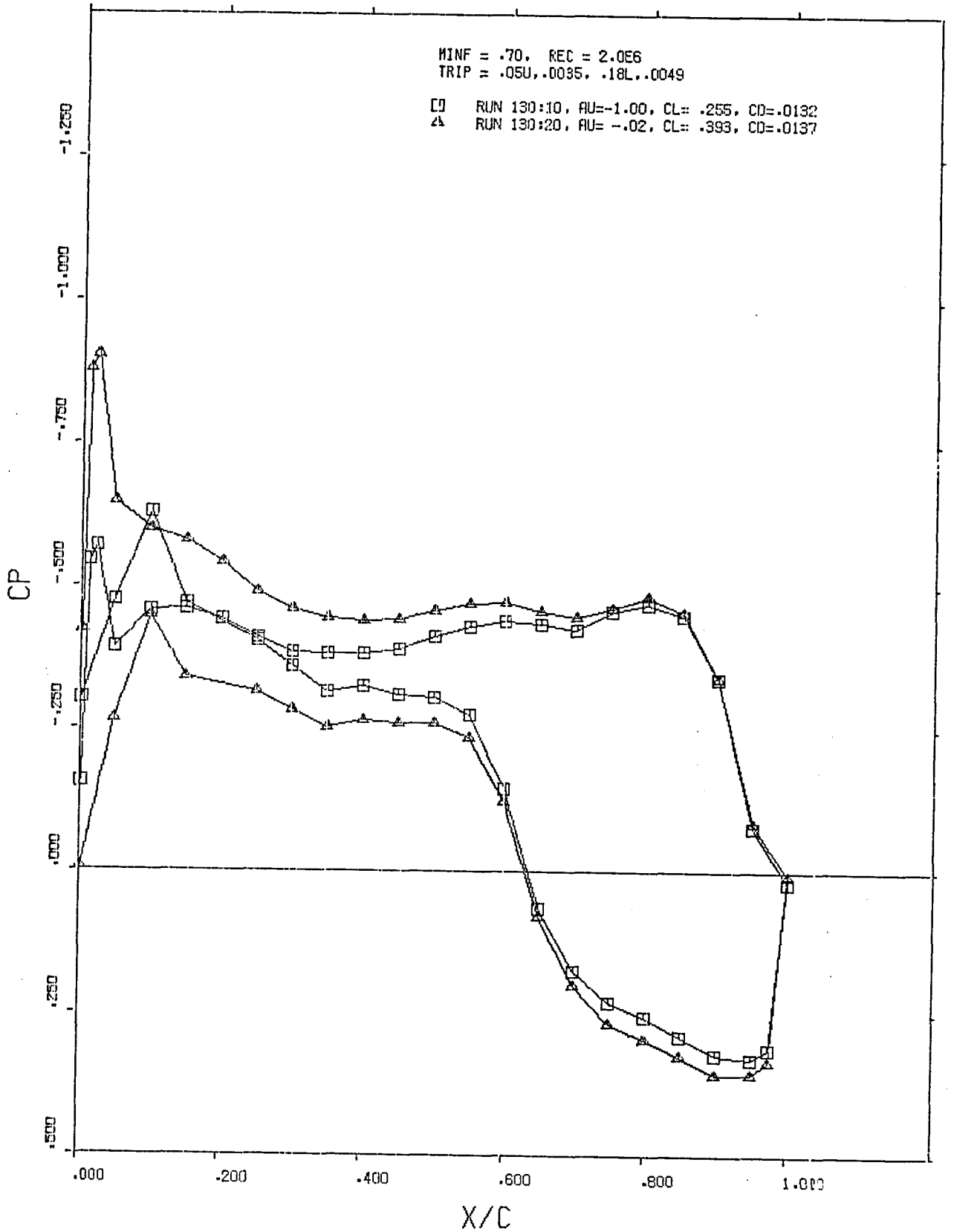

MINF = .75, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 127:60, AU= .72, CL= .517, CD=.0139
RUN 127:20, AU= .89, CL= .543, CD=.0139
RUN 127:30, AU= 1.02, CL= .564, CD=.0142
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

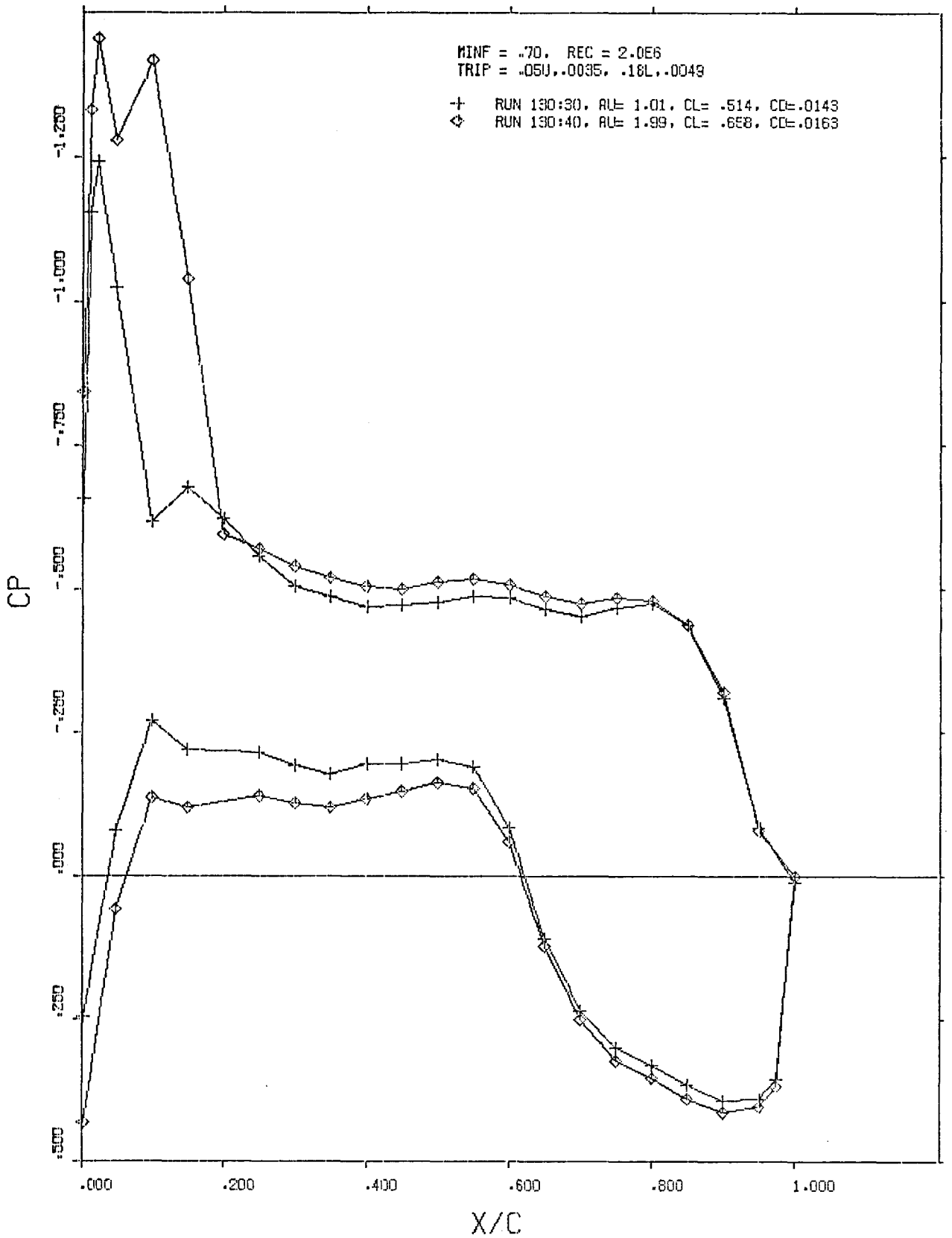

MINF = .75, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 127:40, AUE 1.99, CL= .747, CD=.0164
RUN 127:60, AUE 3.02, CL= .932, CD=.0246
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

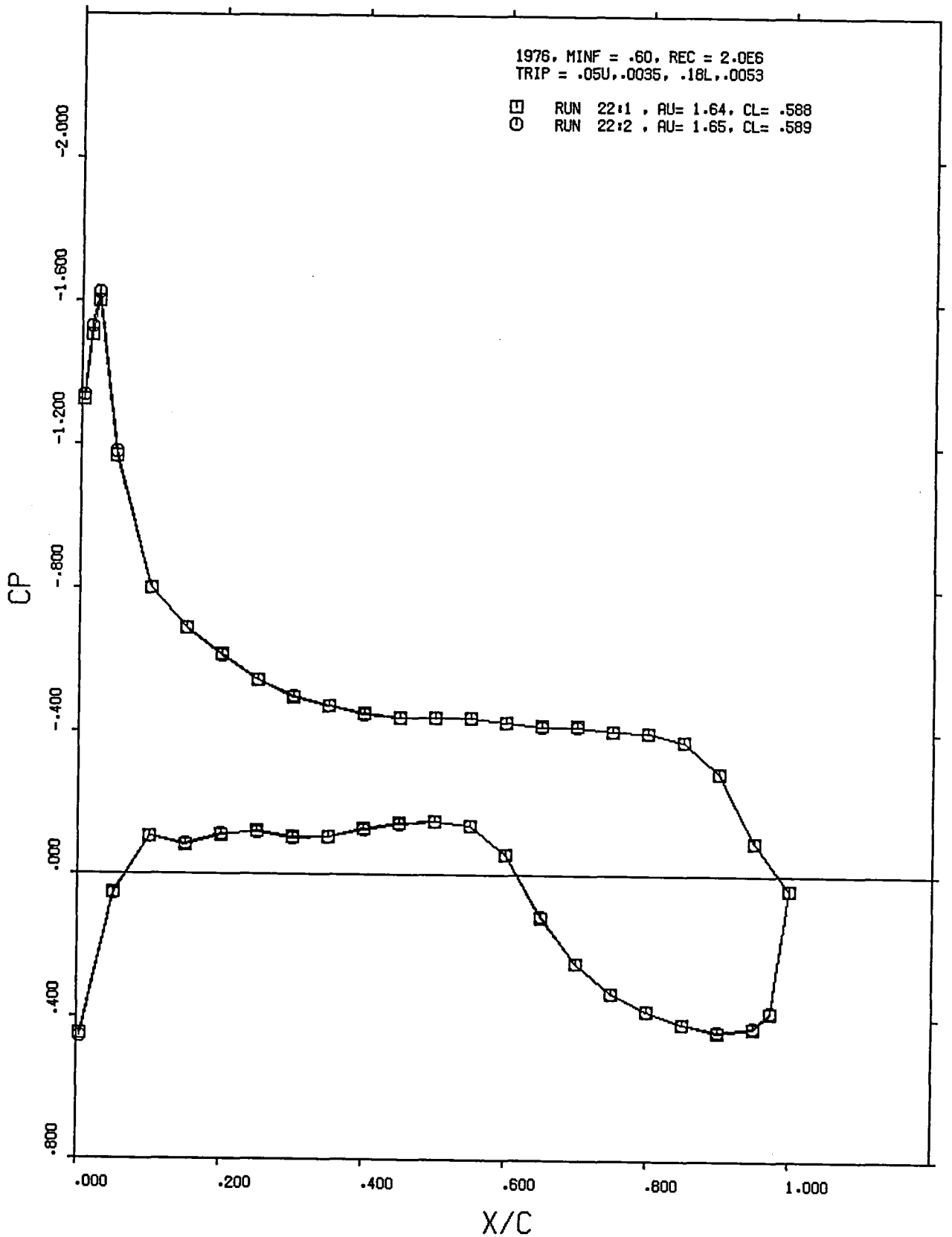

MINF = .60, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 128:10, AU=-1.94, CL= .164, CD=.0114
RUN 128:20, AU= .03, CL= .411, CD=.0120
RUN 128:50, AU= 1.00, CL= .521, CD=.0126
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

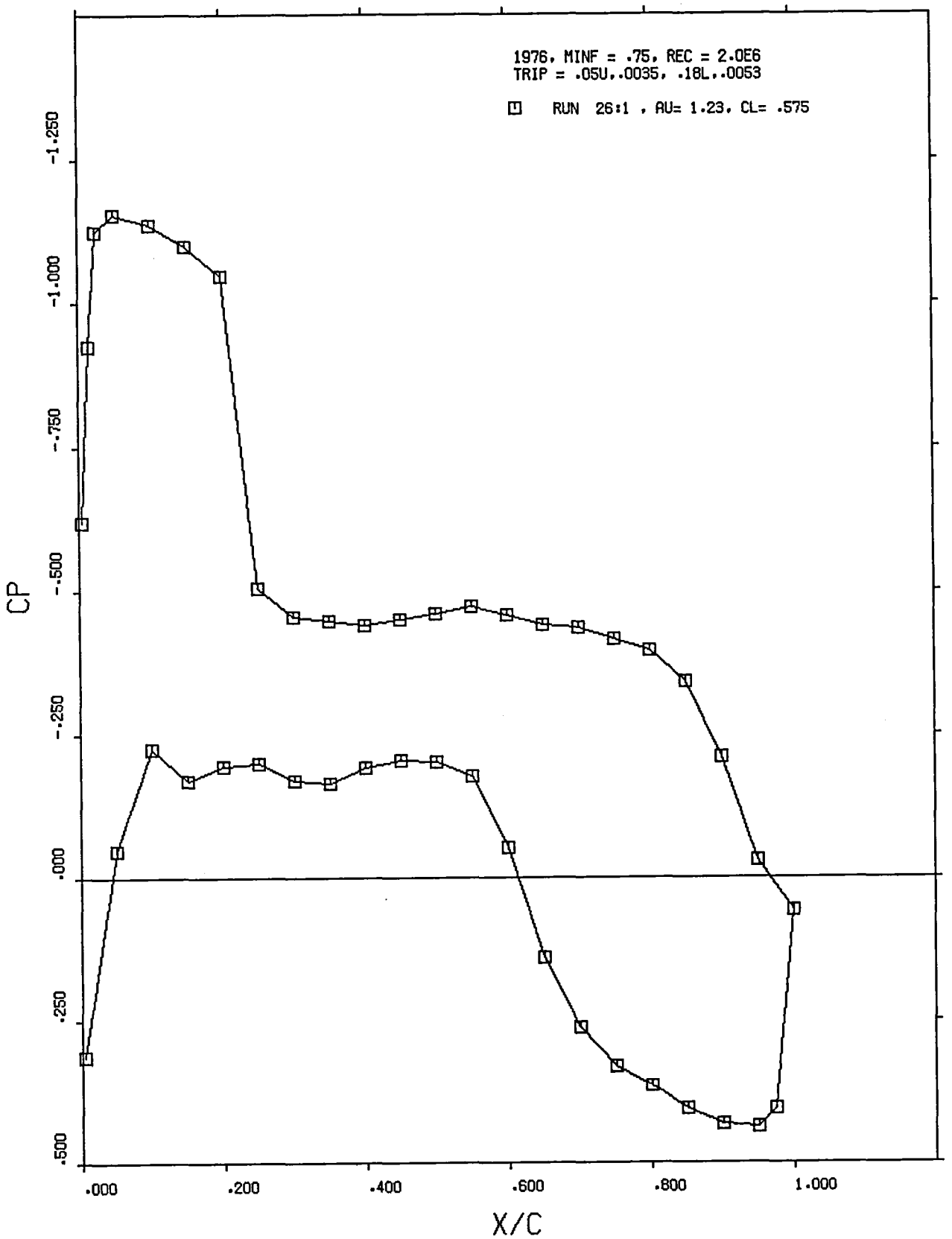

MINF = .60, REC = 2.0E6
TRIP = .35U,.0049, .35L,.0075
RUN 128:30, AU= 1.96, CL= .633, CD=.0136
RUN 128:40, AU= 5.95, CL= .989, CD=.0449
CP
-2.500
-2.000
-1.500
-1.000
-.500
.000
.500
1.000
.000
.200
.400
.600
.800
1.000
X/C

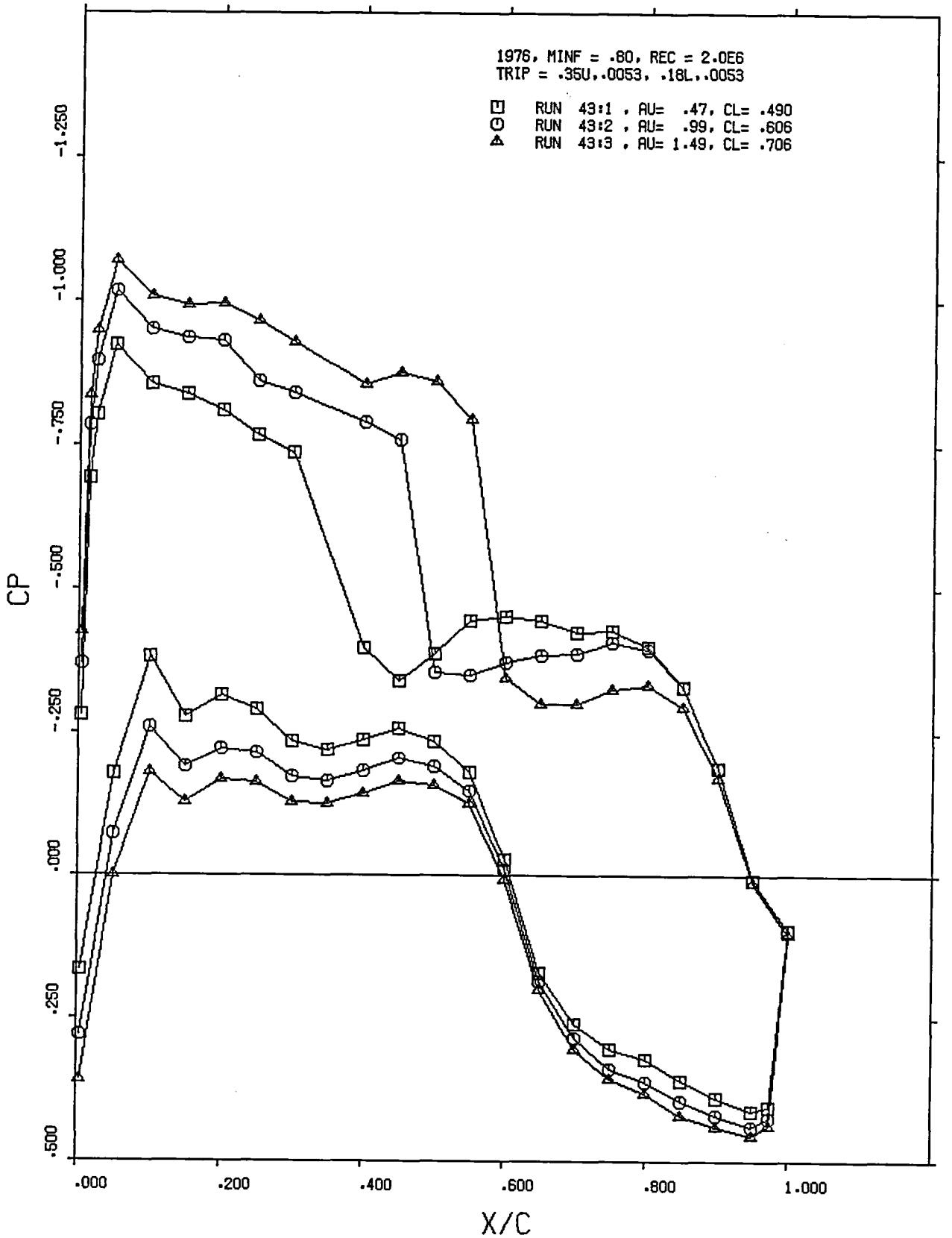

MINF = .60, REC = 2.0E6
TRIP = .05U,.C03S, .16L,.0049
RUN 129:40, AU=-2.08, CL= .144, CD=.0125
RUN 129:50, AU= 1.03, CL= .512, CD=.0130
RUN 129:60, AU= 1.97, CL= .630, CD=.0134
CP
-2.500
-2.000
-1.500
-1.000
-.500
.000
.500
1.000
.000
.200
.400
.600
.800
1.000
X/C

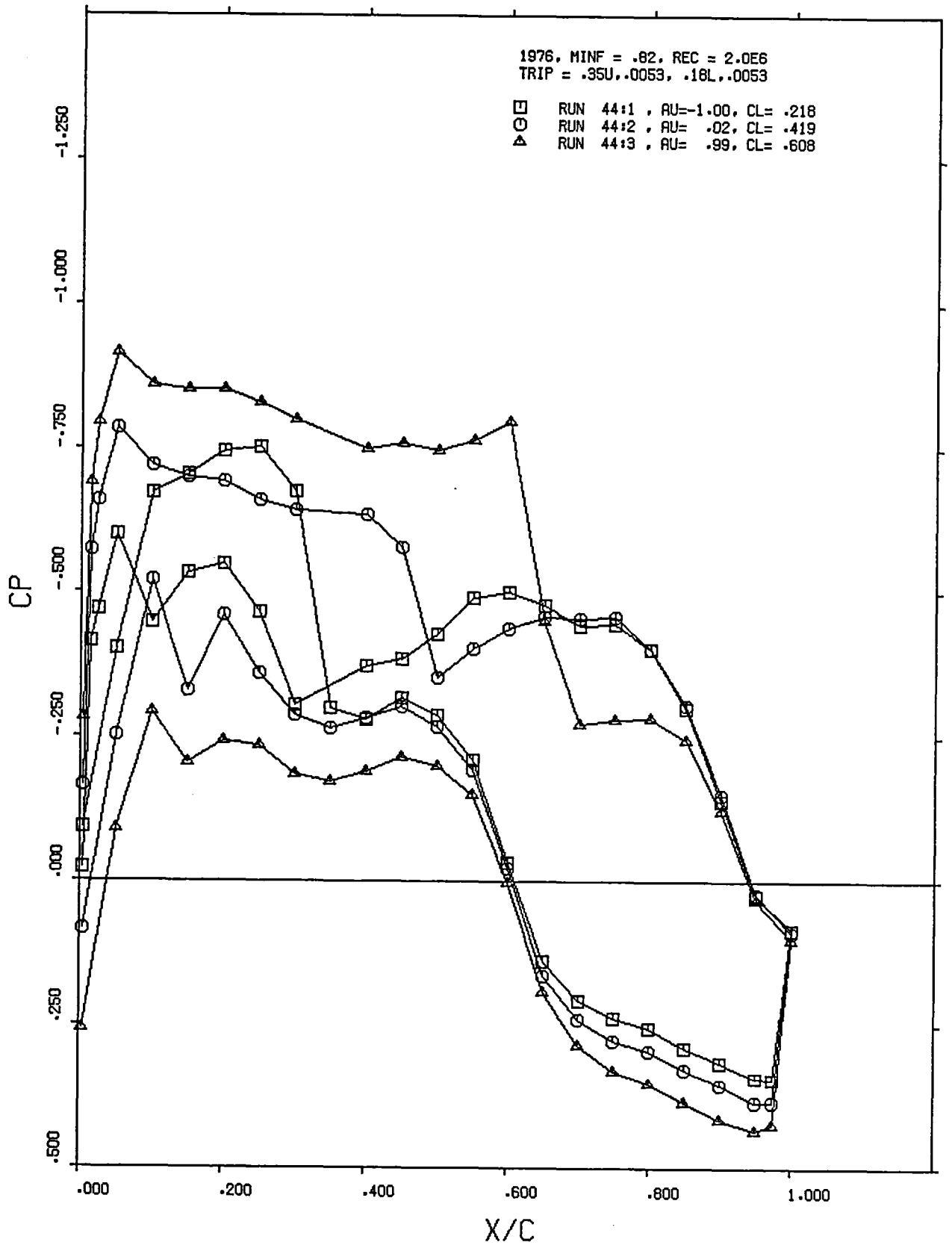

MINF = .70, REC = 2.0E6
TRIP = .05U,.0035, .18L,.0049
RUN 130:10, AU=-1.00, CL= .255, CD=.0132
RUN 130:20, AU= -.02, CL= .393, CD=.0137
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

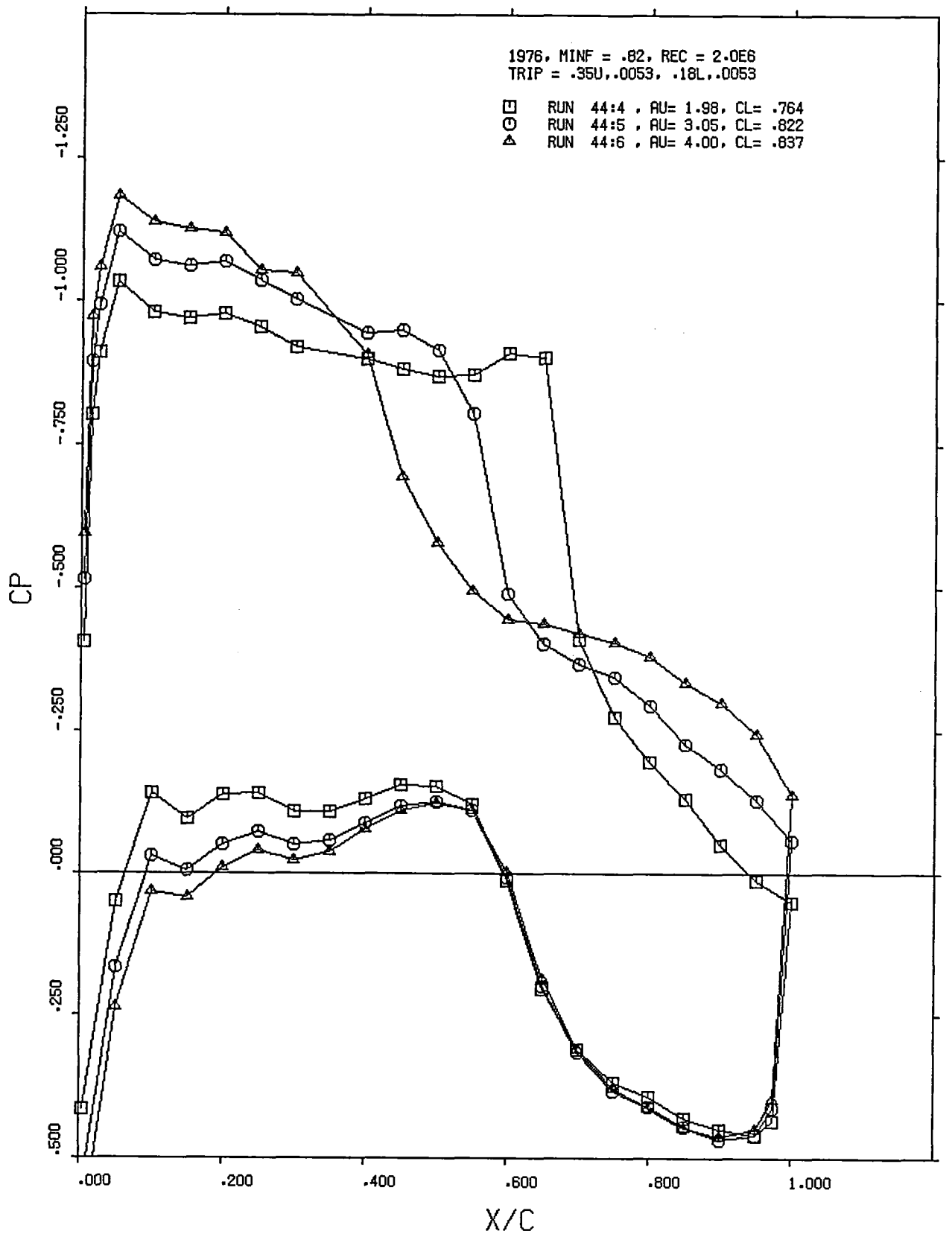

MINF = .70, REC = 2.0E6
TRIP = .05U,.0035, .18L,.0049
RUN 130:30, AL= 1.01, CL= .514, CD=.0143
RUN 130:40, AL= 1.99, CL= .658, CD=.0163
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

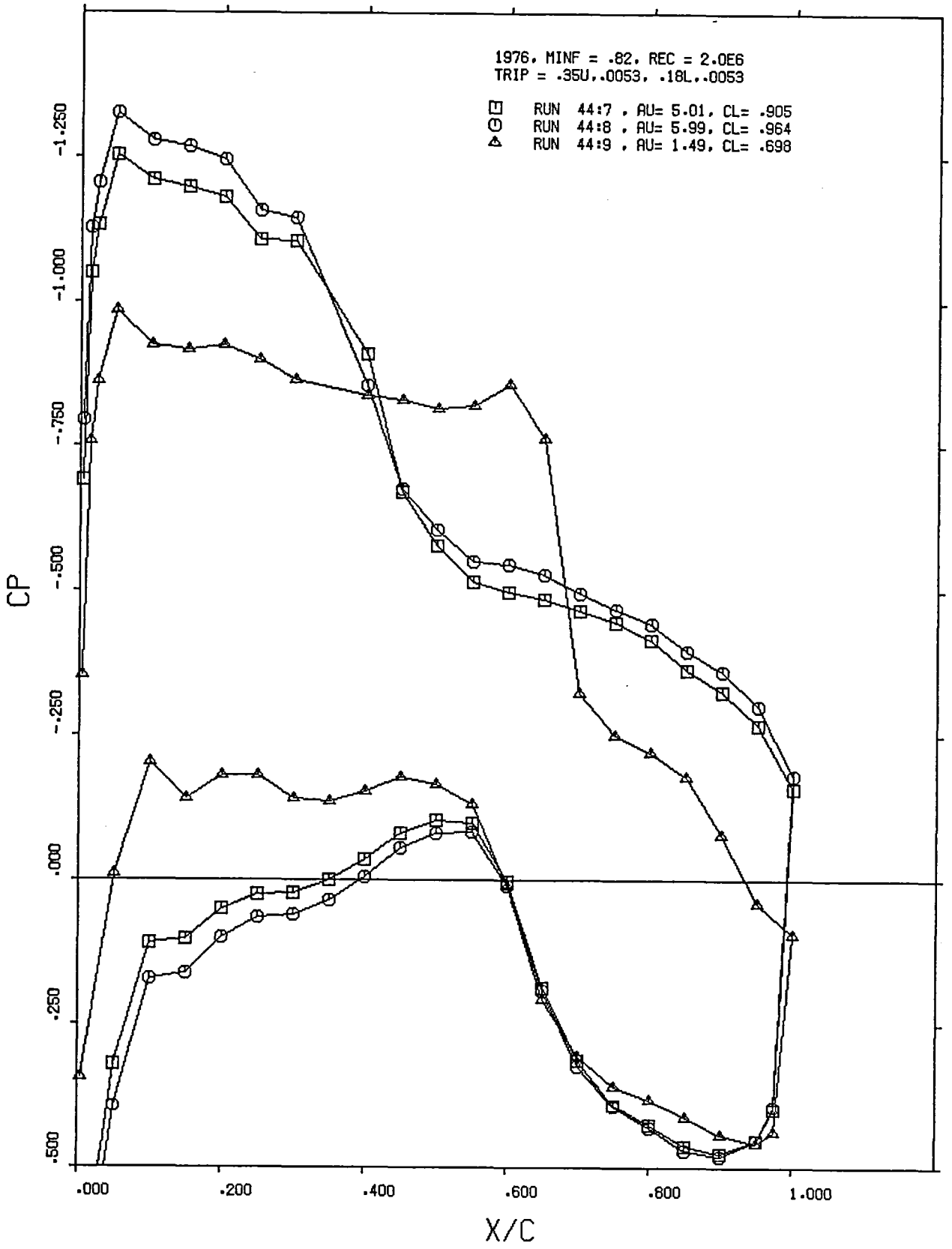

1976, MINF = .60, REC = 2.0E6
TRIP = .05U,.0035, .18L,.0053
RUN 22:1 , AU= 1.64, CL= .588
RUN 22:2 , AU= 1.65, CL= .589
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C

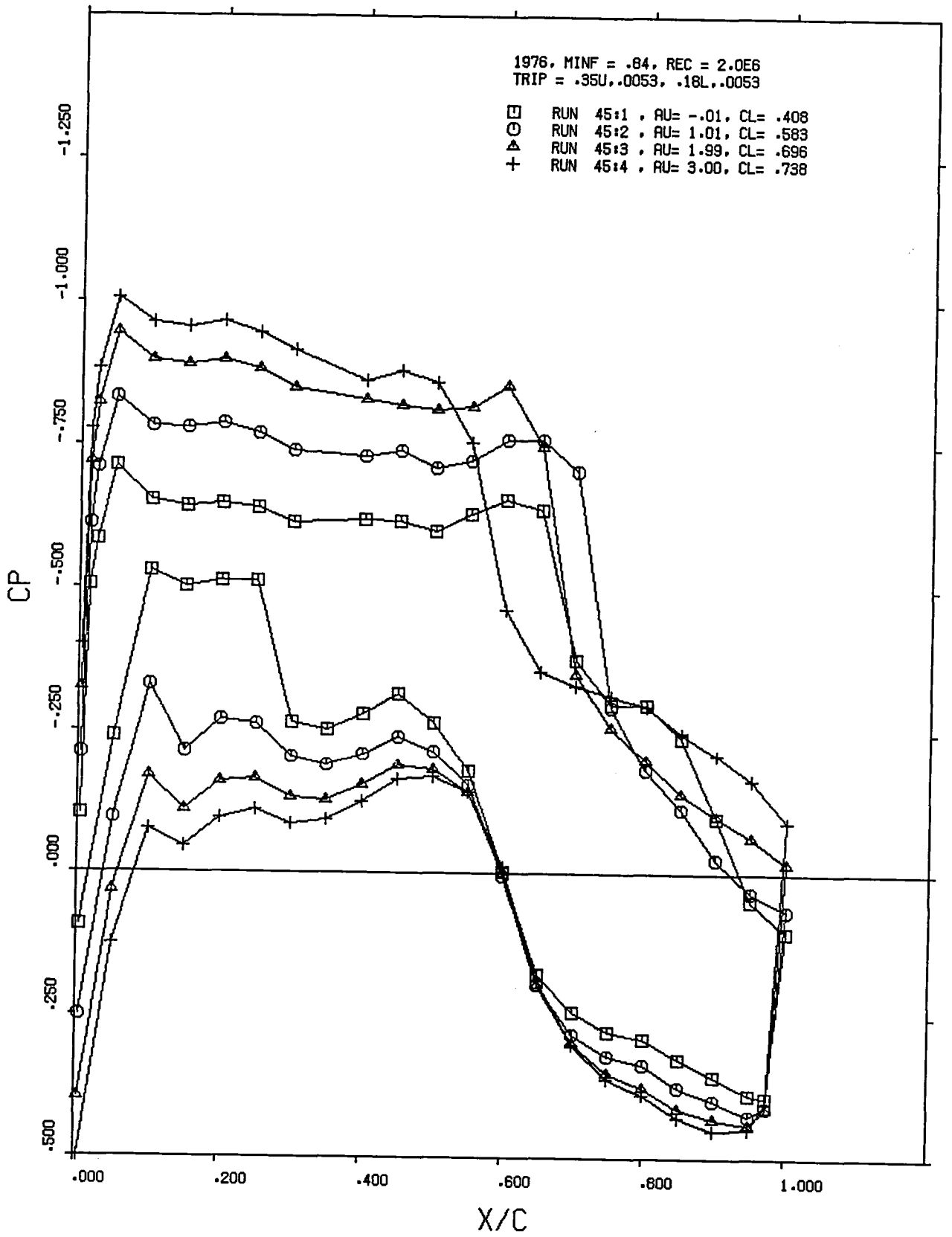

1976, MINF = .75, REC = 2.0E6
TRIP = .05U,.0035, .18L,.0053
RUN 26:1 , AU= 1.23, CL= .575
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

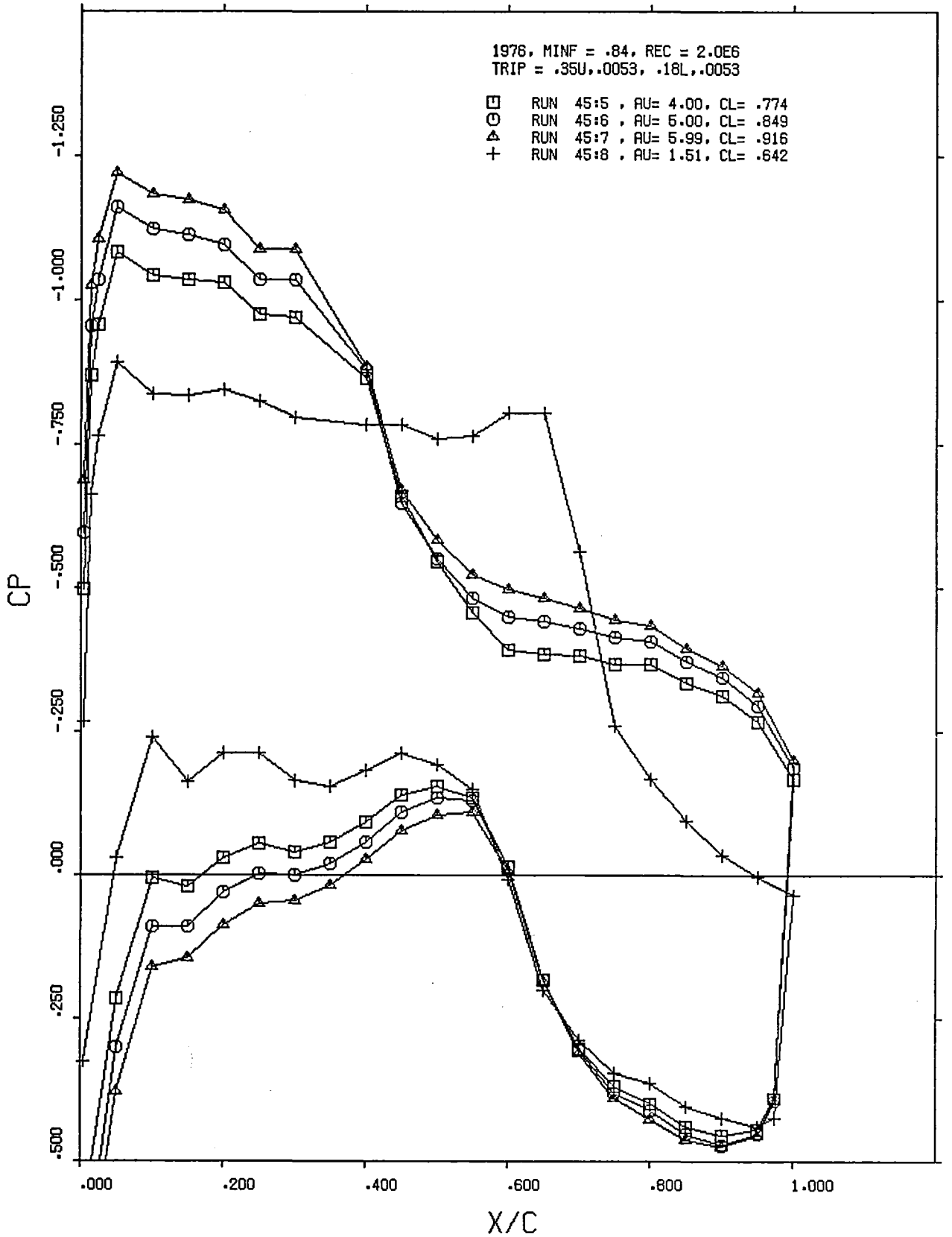

1976, MINF = .80, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 43:1 , AU= .47, CL= .490
RUN 43:2 , AU= .99, CL= .606
RUN 43:3 , AU= 1.49, CL= .706
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

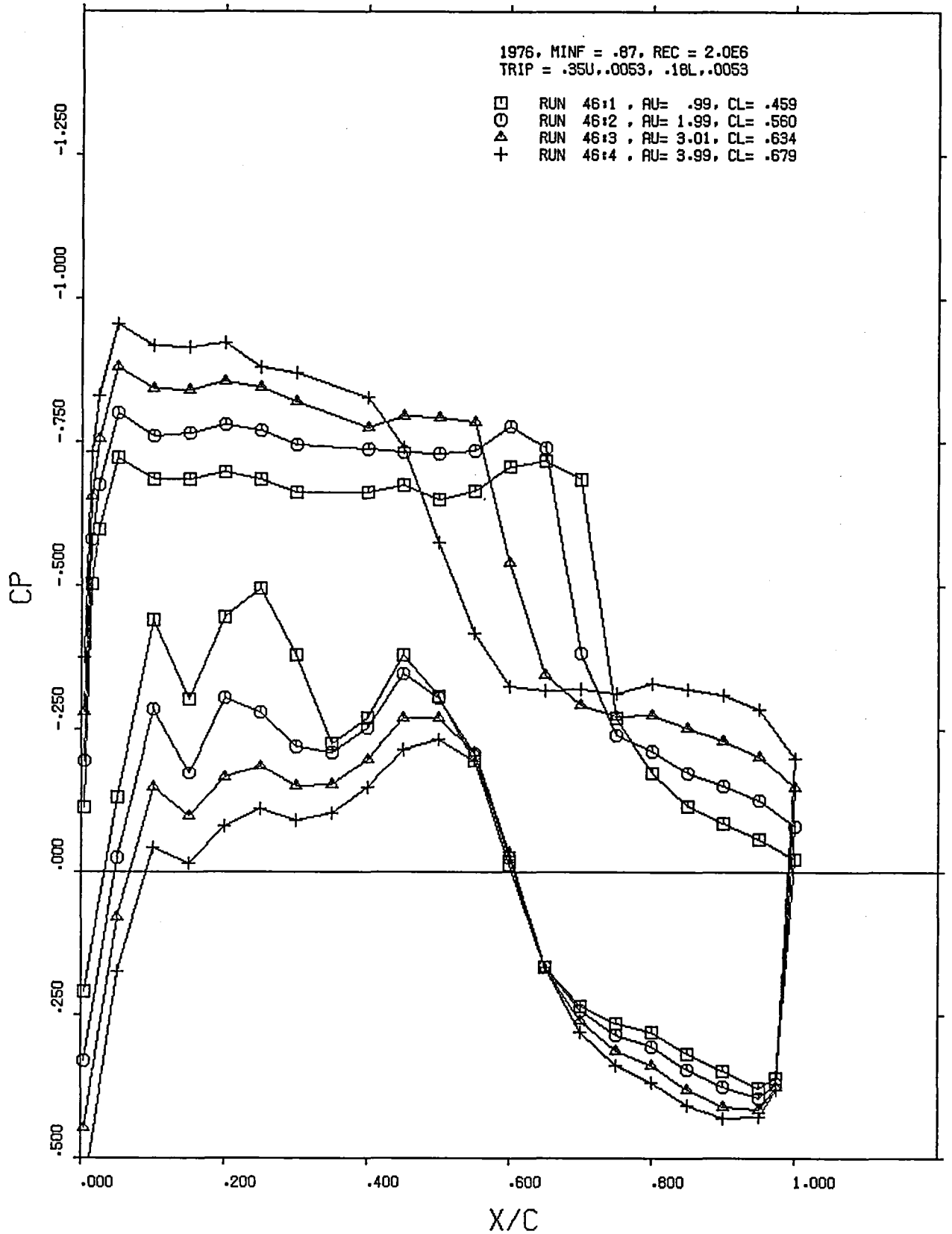

1976, MINF = .82, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 44:1 , AU=-1.00, CL= .218
RUN 44:2 , AU= .02, CL= .419
RUN 44:3 , AU= .99, CL= .608
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

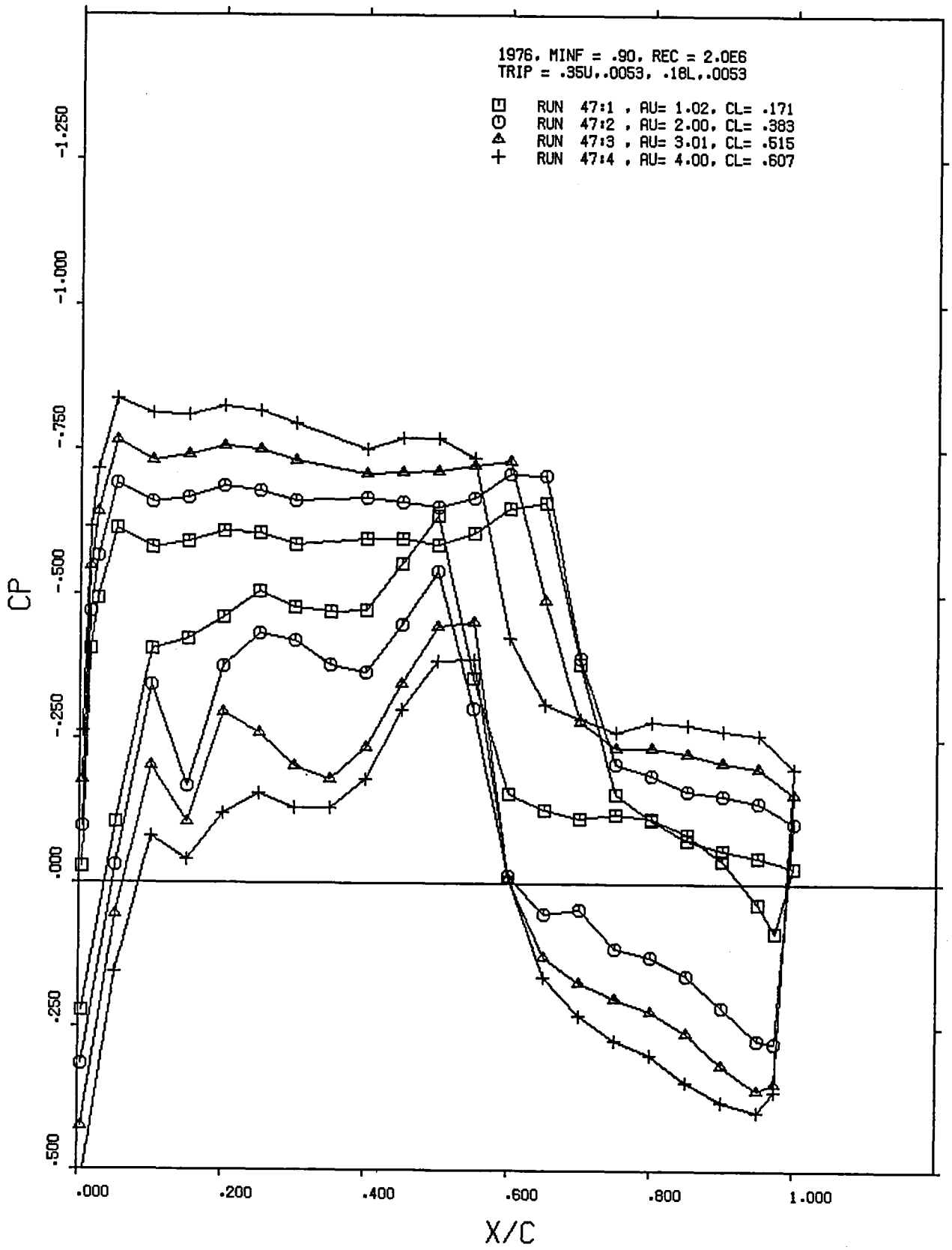

1976, MINF = .82, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 44:4 , AU= 1.98, CL= .764
RUN 44:5 , AU= 3.05, CL= .822
RUN 44:6 , AU= 4.00, CL= .837
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

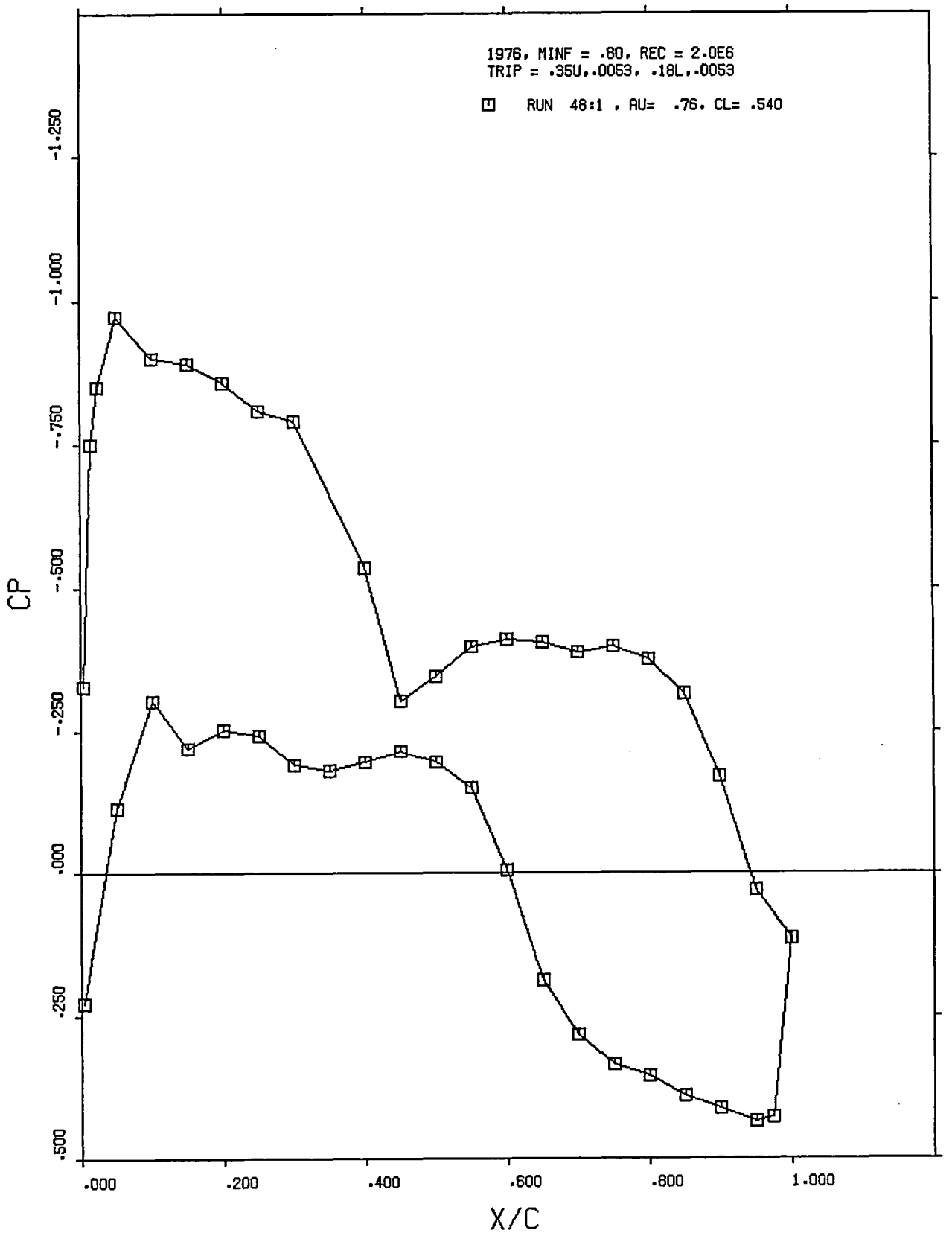

1976. MINF = .82. REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 44:7 , AU= 5.01, CL= .905
RUN 44:8 , AU= 5.99, CL= .964
RUN 44:9 , AU= 1.49, CL= .698
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

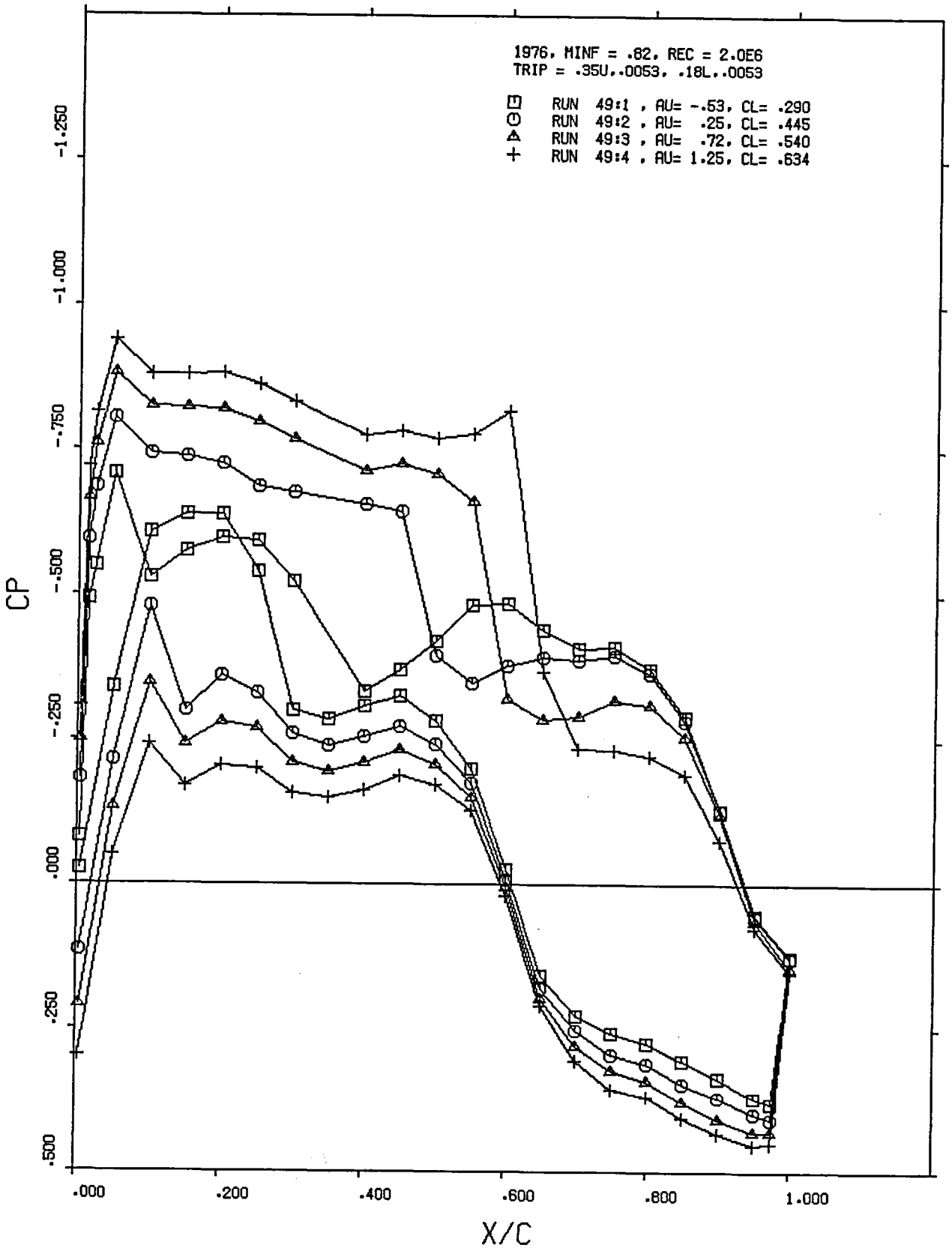

1976, MINF = .84, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 45:1 , AU= -.01, CL= .408
RUN 45:2 , AU= 1.01, CL= .583
RUN 45:3 , AU= 1.99, CL= .696
RUN 45:4 , AU= 3.00, CL= .738
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

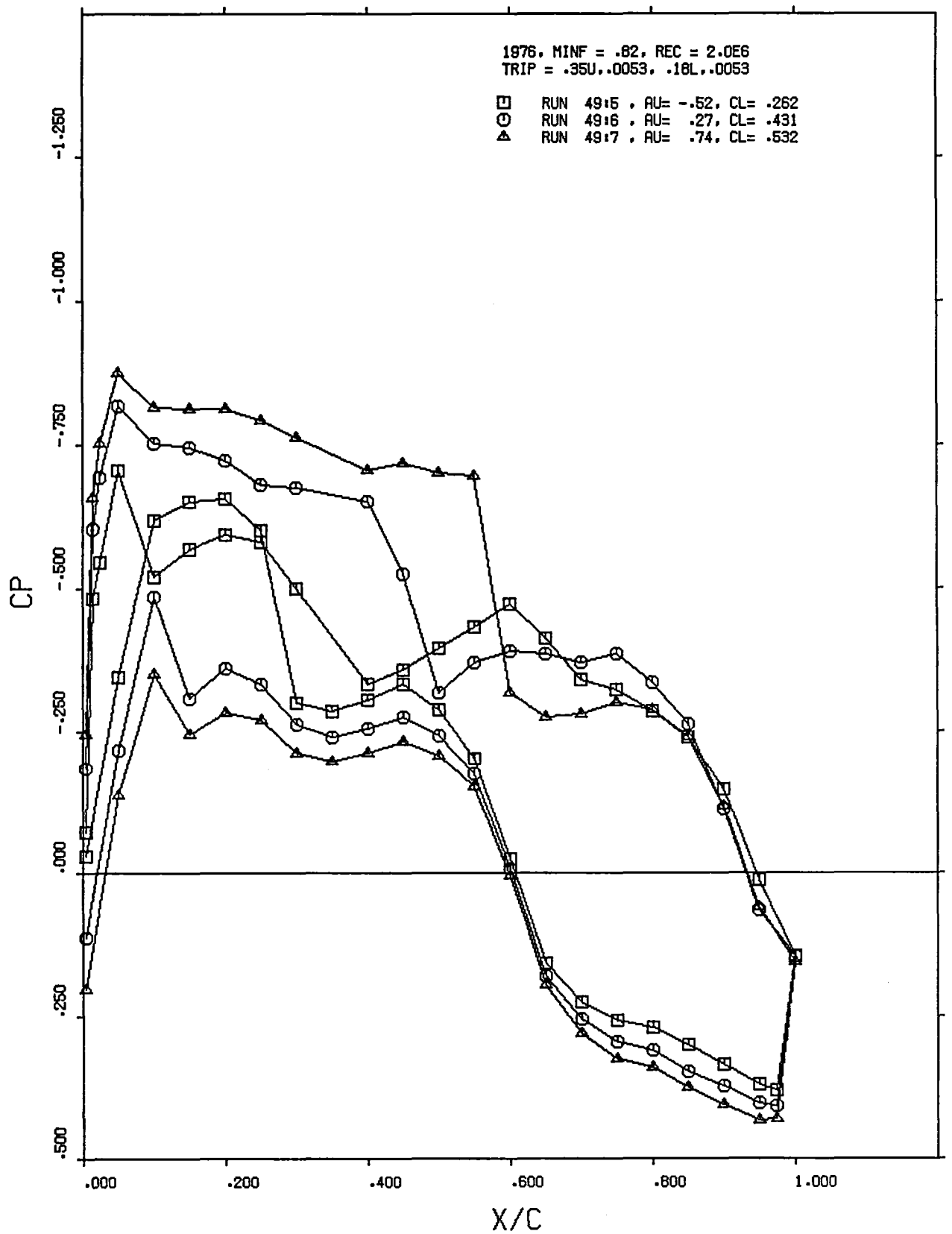

1976, MINF = .84, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 45:5 , AU= 4.00, CL= .774
RUN 45:6 , AU= 5.00, CL= .849
RUN 45:7 , AU= 5.99, CL= .916
RUN 45:8 , AU= 1.51, CL= .642
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

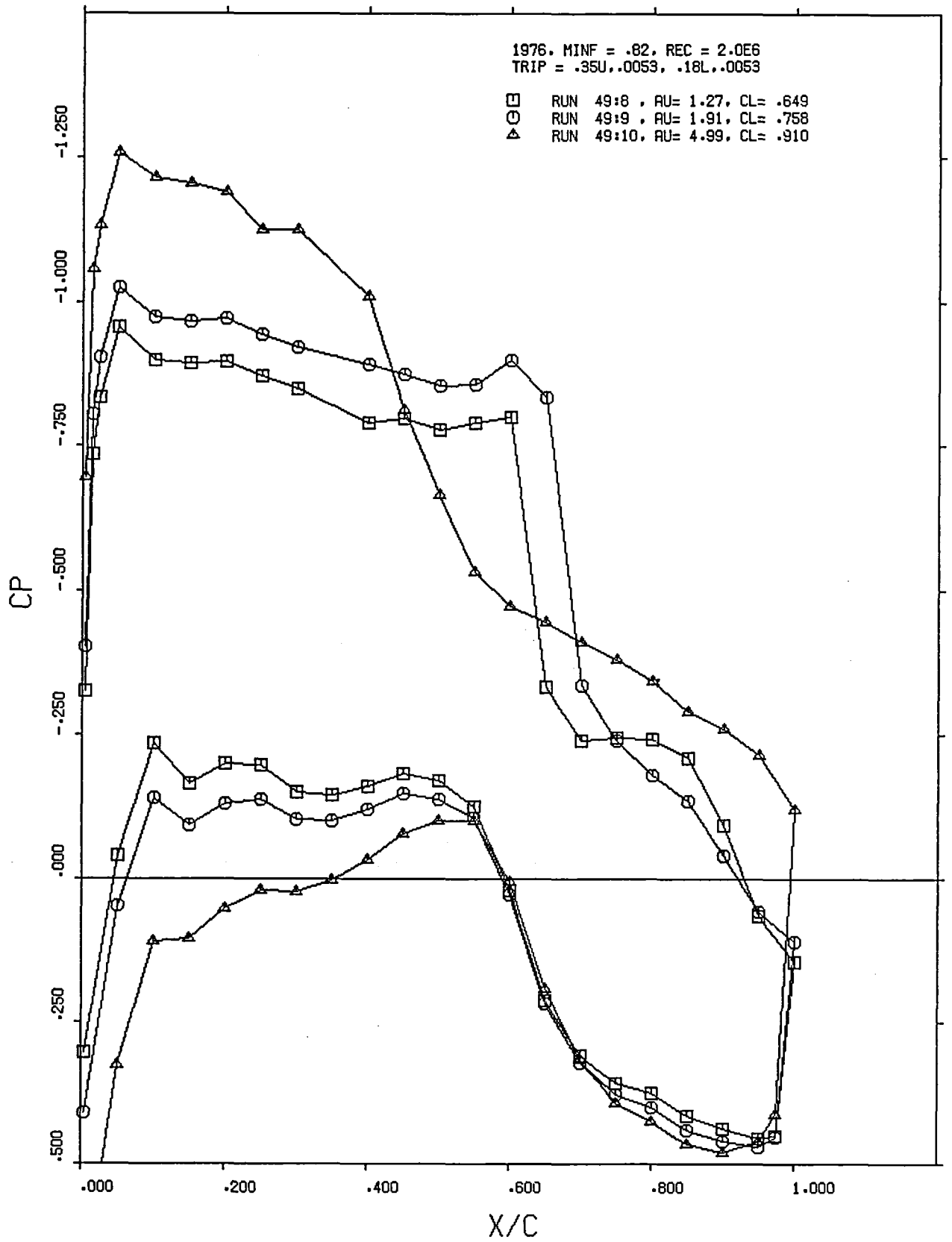

1976, MINF = .87, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 46:1 , AU= .99, CL= .459
RUN 46:2 , AU= 1.99, CL= .560
RUN 46:3 , AU= 3.01, CL= .634
RUN 46:4 , AU= 3.99, CL= .679
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

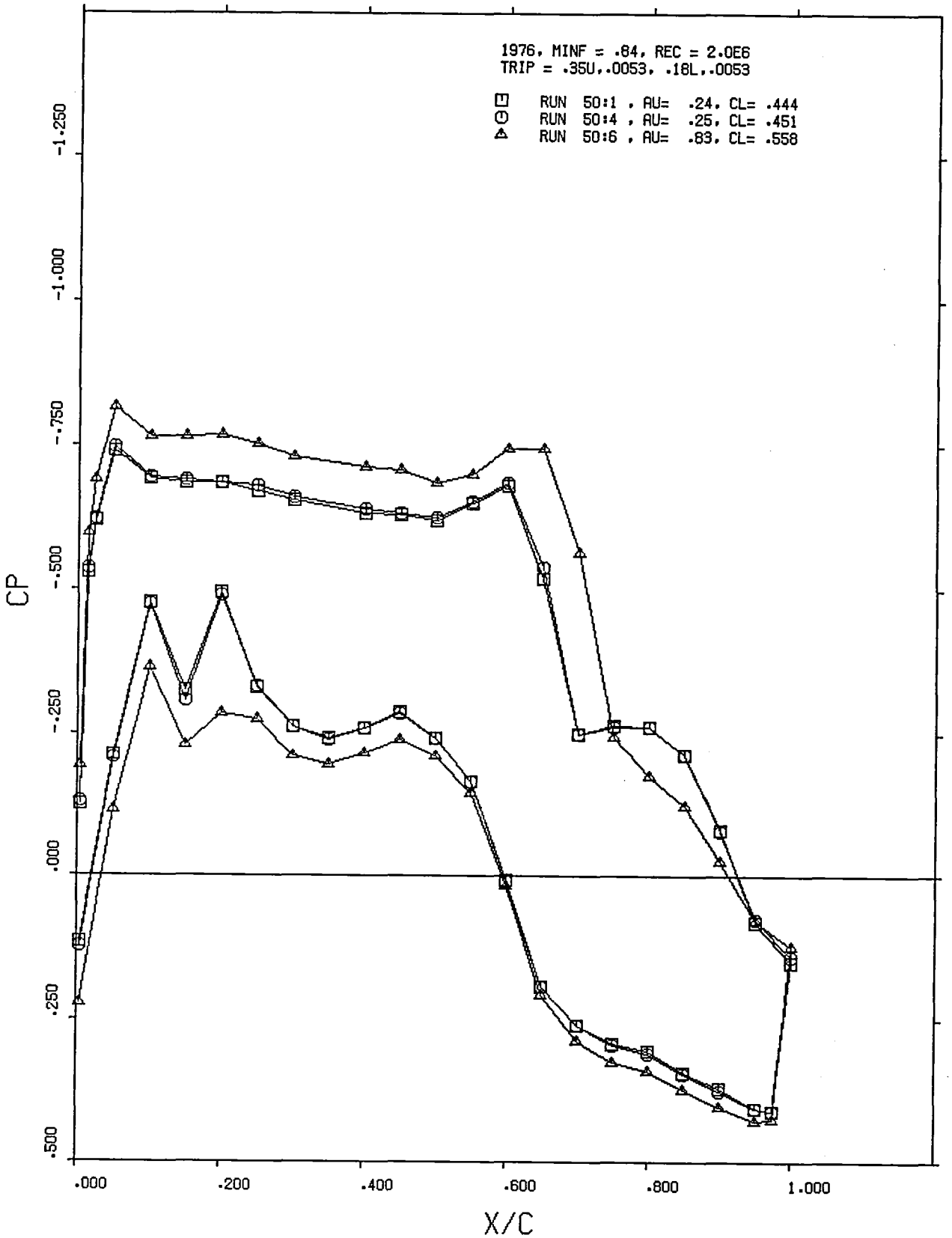

1976. MINF = .90. REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 47:1 , AU= 1.02, CL= .171
RUN 47:2 , AU= 2.00, CL= .383
RUN 47:3 , AU= 3.01, CL= .615
RUN 47:4 , AU= 4.00, CL= .607
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
CP
.000
.200
.400
.600
.800
1.000
X/C

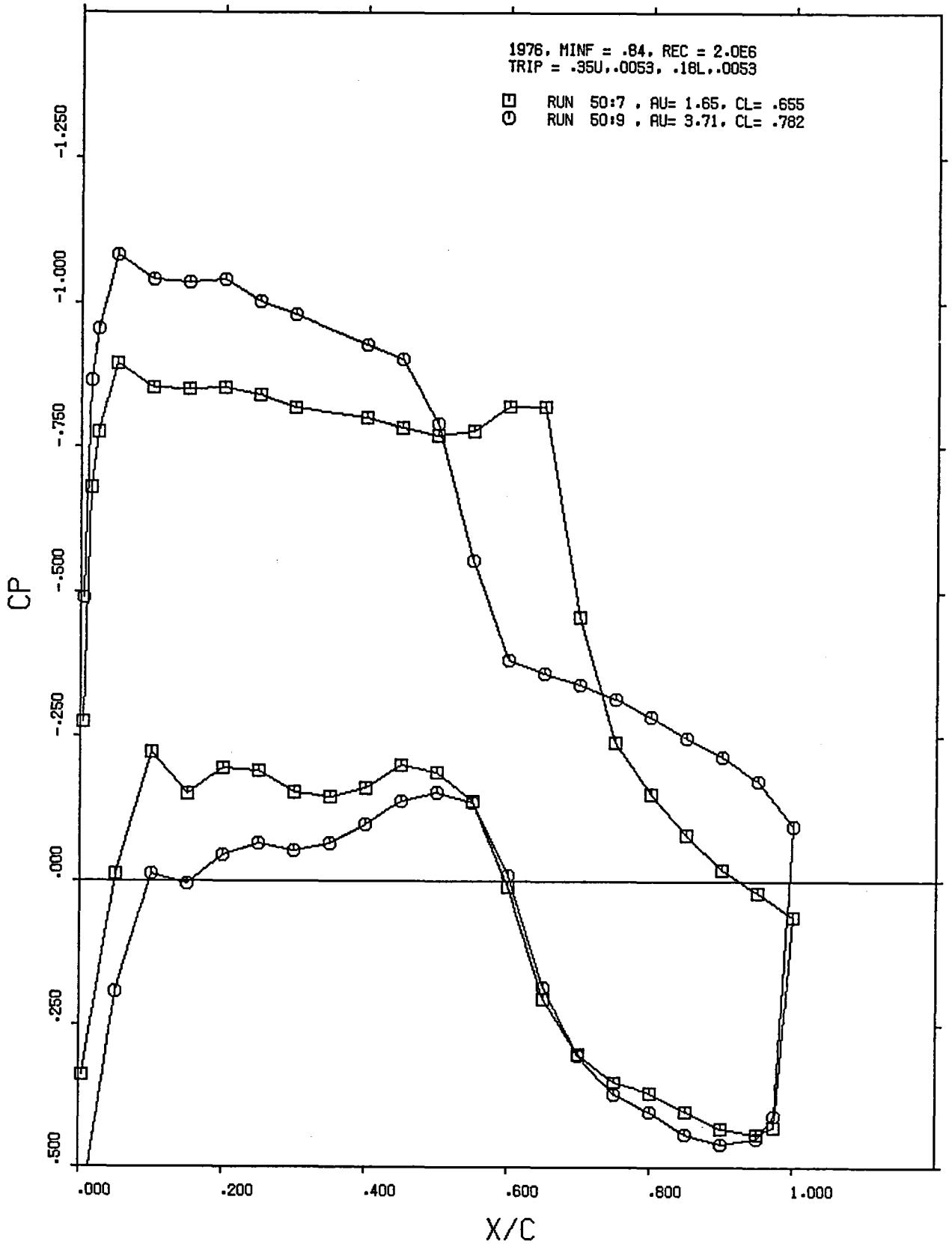

1976, MINF = .80, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 48:1 , AU= .76, CL= .540
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

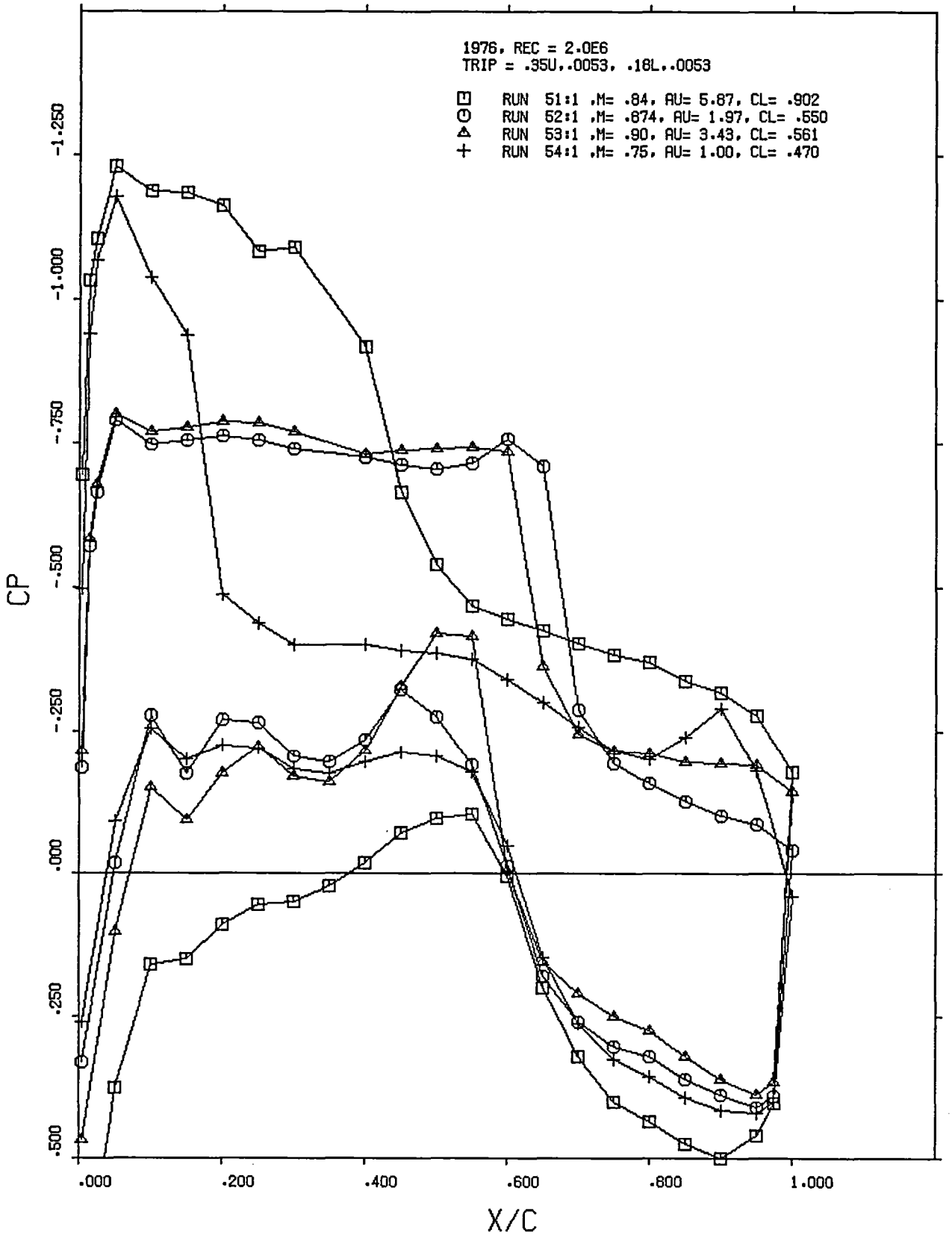

1976, MINF = .82, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 49:1 , AU= -.53, CL= .290
RUN 49:2 , AU= .25, CL= .445
RUN 49:3 , AU= .72, CL= .540
RUN 49:4 , AU= 1.25, CL= .634
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

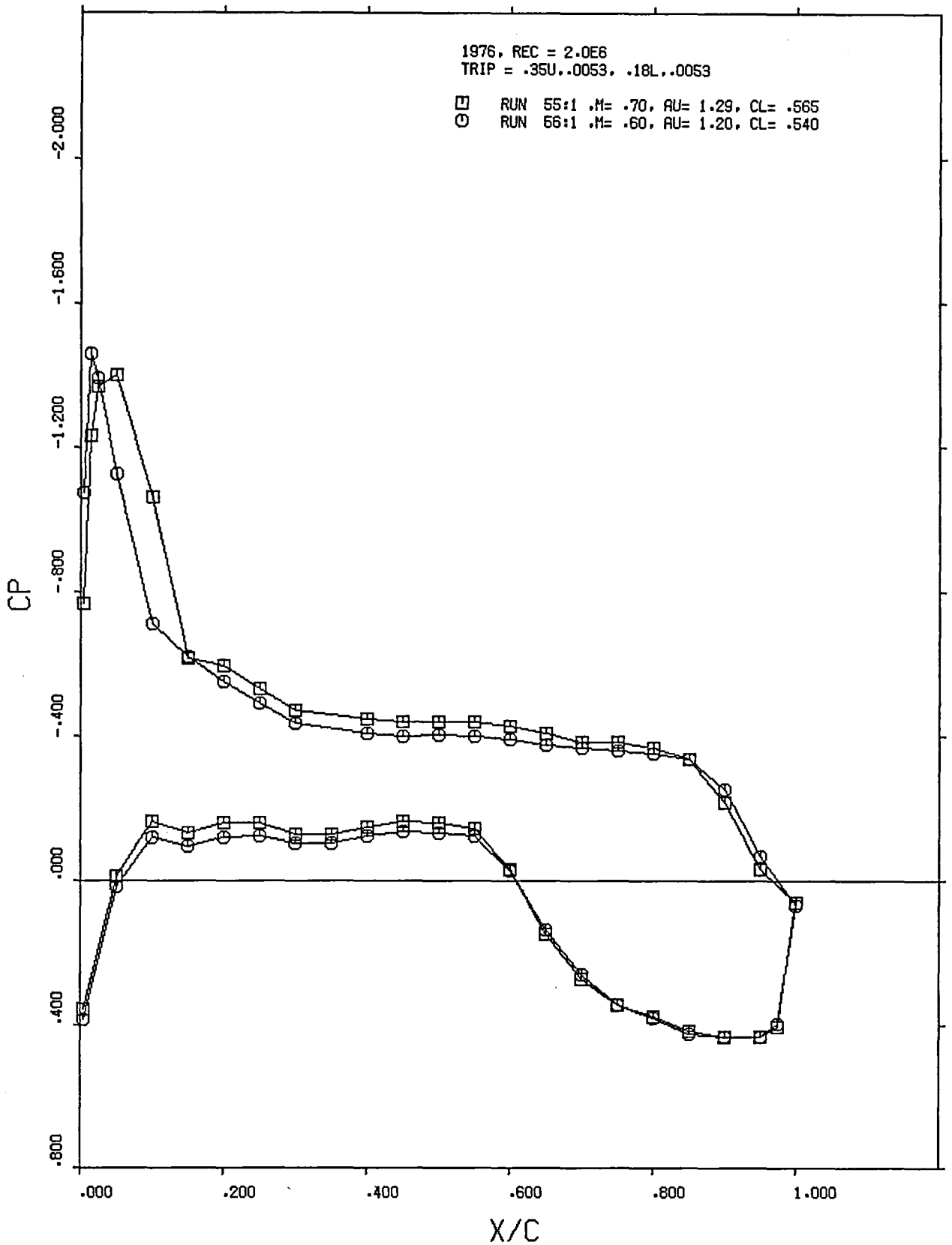

1976, MINF = .82, REC = 2.0E6
TRIP = .35U,.0053, .16L,.0053
RUN 49:5 , AU= -.52, CL= .262
RUN 49:6 , AU= .27, CL= .431
RUN 49:7 , AU= .74, CL= .532
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
CP
.000
.200
.400
.600
.800
1.000
X/C

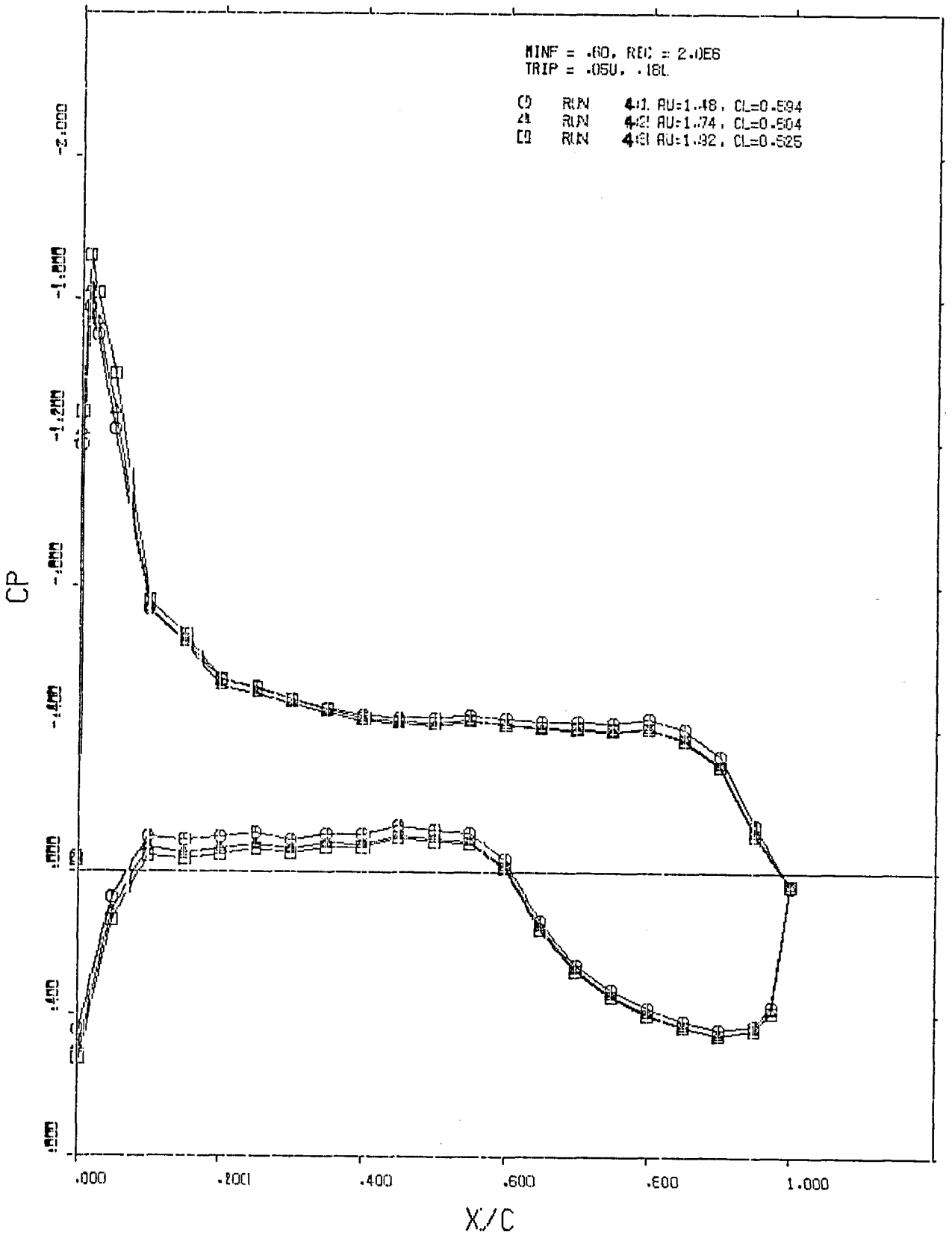

1976. MINF = .82, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 49:8 , AU= 1.27, CL= .649
RUN 49:9 , AU= 1.91, CL= .758
RUN 49:10, AU= 4.99, CL= .910
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

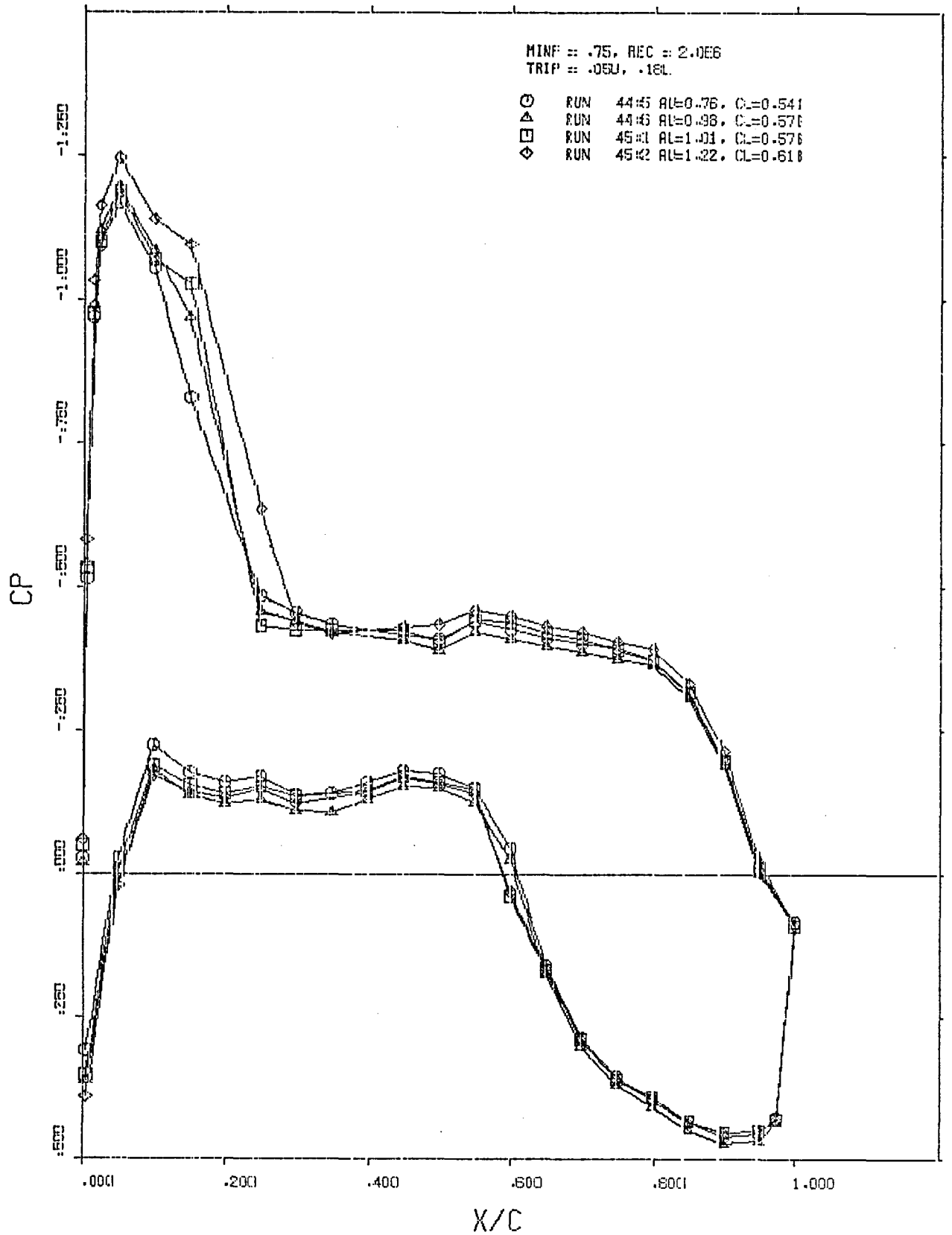

1976, MINF = .84, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 50:1 , AU= .24, CL= .444
RUN 50:4 , AU= .25, CL= .451
RUN 50:6 , AU= .83, CL= .558
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

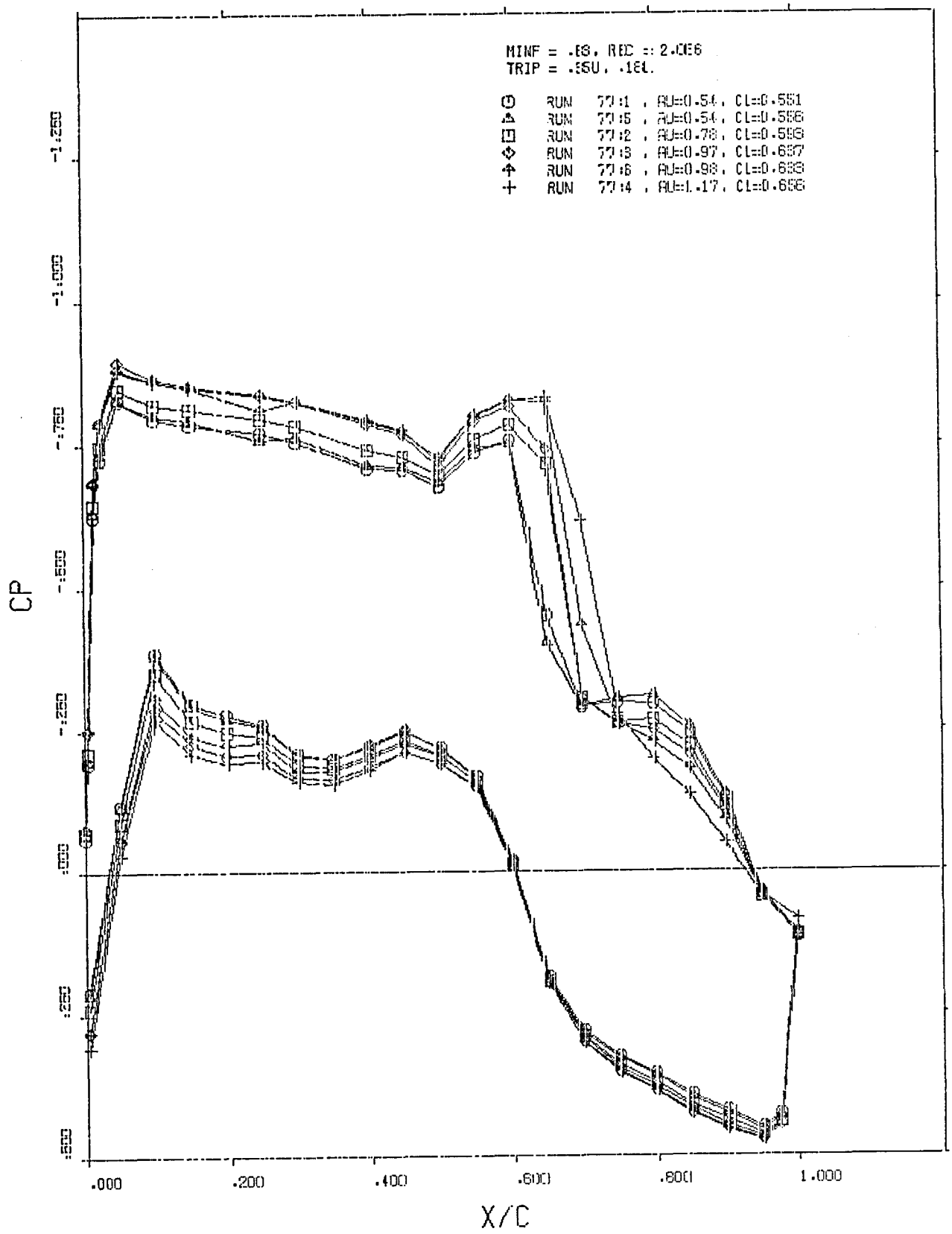

1976. MINF = .84. REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 50:7 . AU= 1.65. CL= .655
RUN 50:9 . AU= 3.71. CL= .782
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

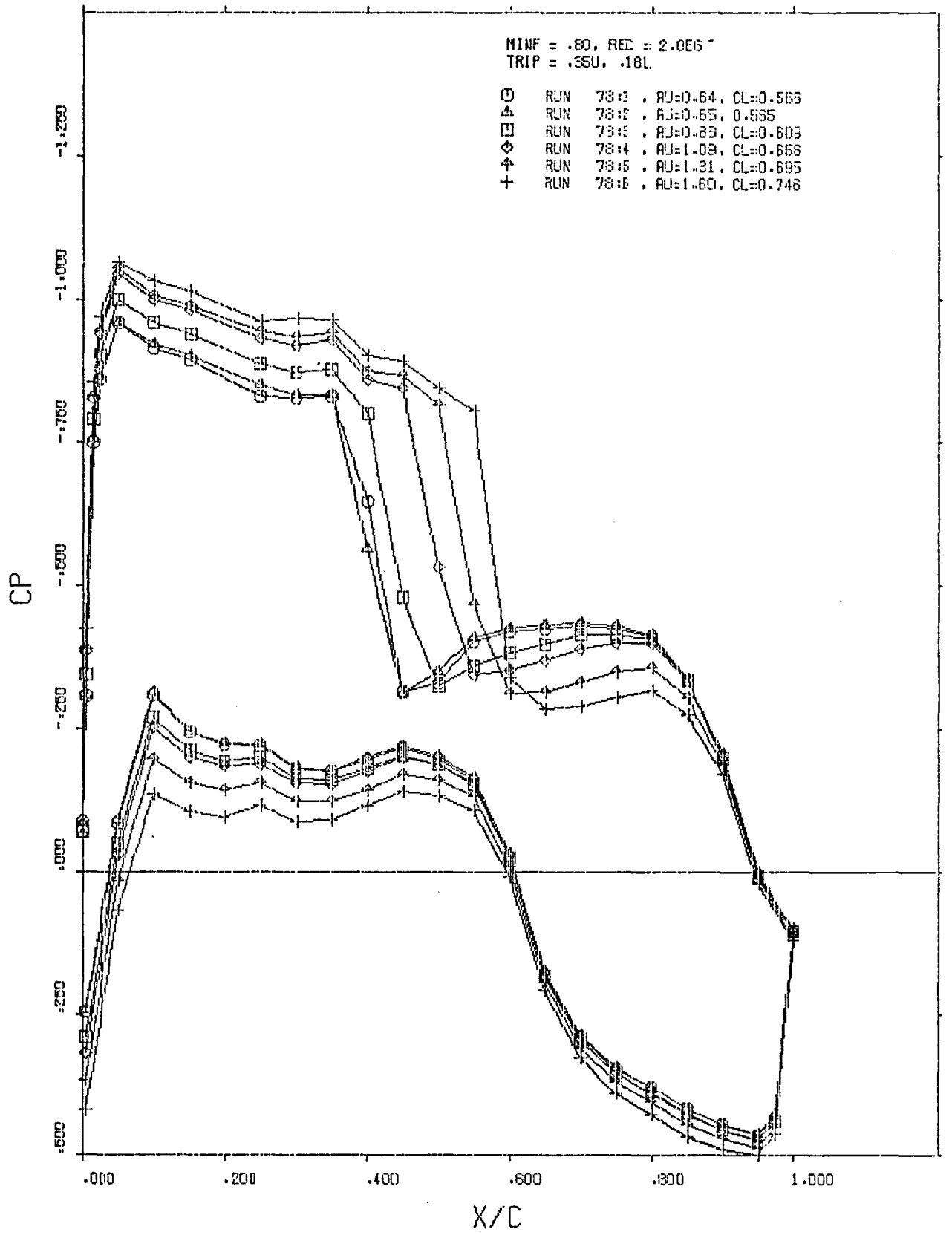

1976, REC = 2.0E6
TRIP = .35U,.0053, .18L,.0053
RUN 51:1 ,M= .84, AU= 5.87, CL= .902
RUN 52:1 ,M= .874, AU= 1.97, CL= .550
RUN 53:1 ,M= .90, AU= 3.43, CL= .561
RUN 54:1 ,M= .75, AU= 1.00, CL= .470
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C

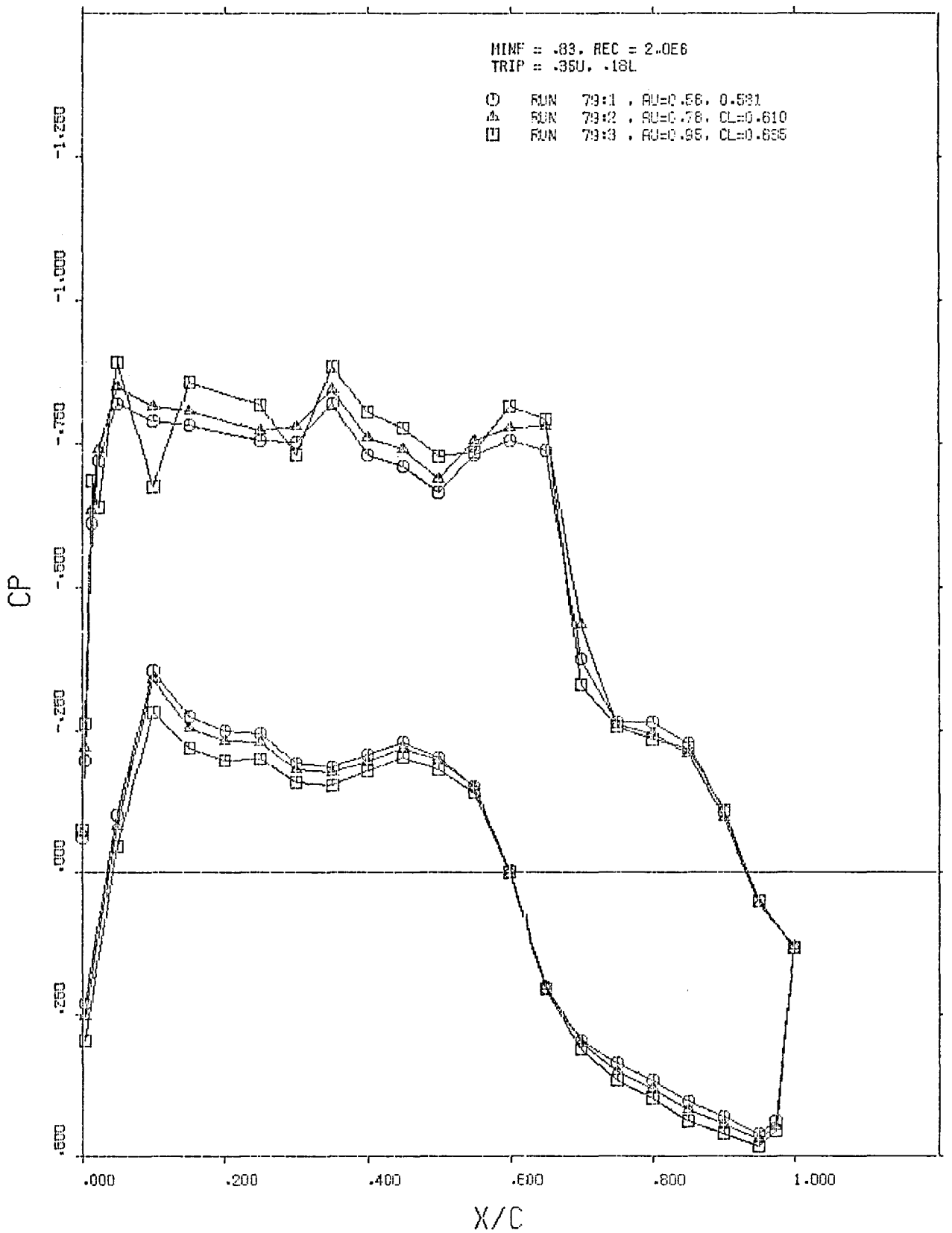

1976. REC = 2.0E6
TRIP = .35U..0053. .18L..0053
RUN 55:1 .M= .70. AU= 1.29. CL= .565
RUN 66:1 .M= .60. AU= 1.20. CL= .540
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C

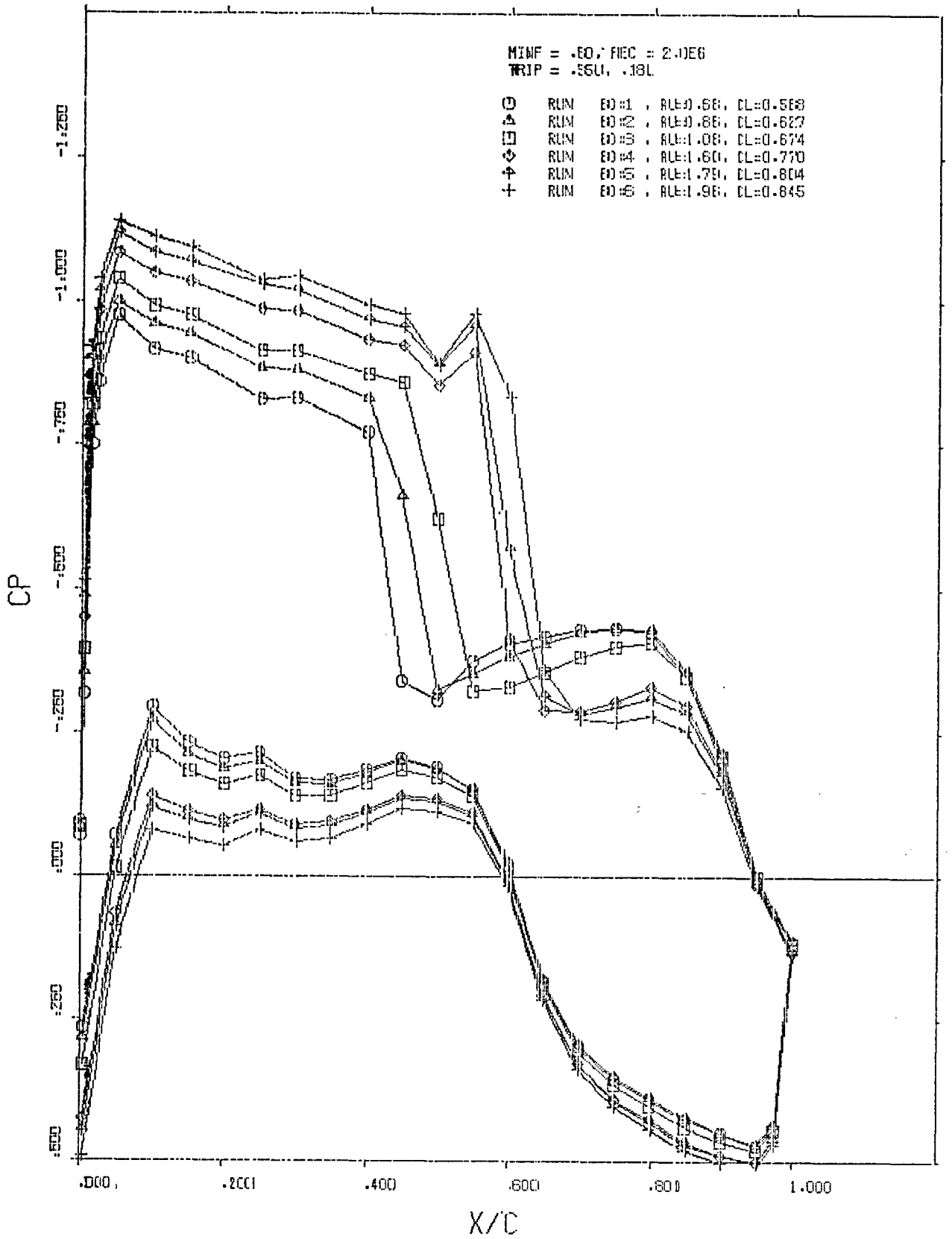

MINF = .60, REC = 2.0E6
TRIP = .05U, .18L
RUN 41 AU=1.48, CL=0.594
RUN 42 AU=1.74, CL=0.604
RUN 43 AU=1.82, CL=0.525
CP
X/C
.000
.200
.400
.600
.800
1.000


MINF = .75, REC = 2.0E6
TRIP = .05U, .18L
RUN 44:5 AL=0.76, CL=0.541
RUN 44:6 AL=0.98, CL=0.578
RUN 45:1 AL=1.01, CL=0.576
RUN 45:2 AL=1.22, CL=0.618
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .68, REC = 2.0E6
TRIP = .ESU, .1EL.
RUN 77:1 , AU=0.54, CL=0.551
RUN 77:5 , AU=0.54, CL=0.556
RUN 77:2 , AU=0.78, CL=0.596
RUN 77:3 , AU=0.97, CL=0.637
RUN 77:6 , AU=0.98, CL=0.638
RUN 77:4 , AU=1.17, CL=0.656
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .80, REC = 2.0E6
TRIP = .35U, .18L
RUN 78:1 , AU=0.64, CL=0.566
RUN 78:2 , AU=0.65, 0.565
RUN 78:3 , AU=0.83, CL=0.606
RUN 78:4 , AU=1.09, CL=0.656
RUN 78:5 , AU=1.31, CL=0.695
RUN 78:6 , AU=1.60, CL=0.746
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .83, REC = 2.0E6
TRIP = .35U, .18L
RUN 79:1 , AU=0.86, 0.581
RUN 79:2 , AU=0.78, CL=0.610
RUN 79:3 , AU=0.95, CL=0.685
CP
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
.000
.200
.400
.600
.800
1.000
X/C


MINF = .60, REC = 2.0E6
TRIP = .SSU, .18L
RUN 60=1 , ALE=0.68, CL=0.568
RUN 60=2 , ALE=0.86, CL=0.627
RUN 60=3 , ALE=1.08, CL=0.674
RUN 60=4 , ALE=1.60, CL=0.770
RUN 60=5 , ALE=1.79, CL=0.804
RUN 60=6 , ALE=1.96, CL=0.845
-1.250
-1.000
-.750
-.500
-.250
.000
.250
.500
CP
.000
.200
.400
.600
.800
1.000
X/C

APPENDIX C

NACA 0012 MODEL, 1975 AND 1976

The tunnel-occupancy years are given on the plots. The trip configurations were the same on both upper and lower surfaces. The 1975 data have run numbers 131-140, and the 1976 data have run numbers 57-65.

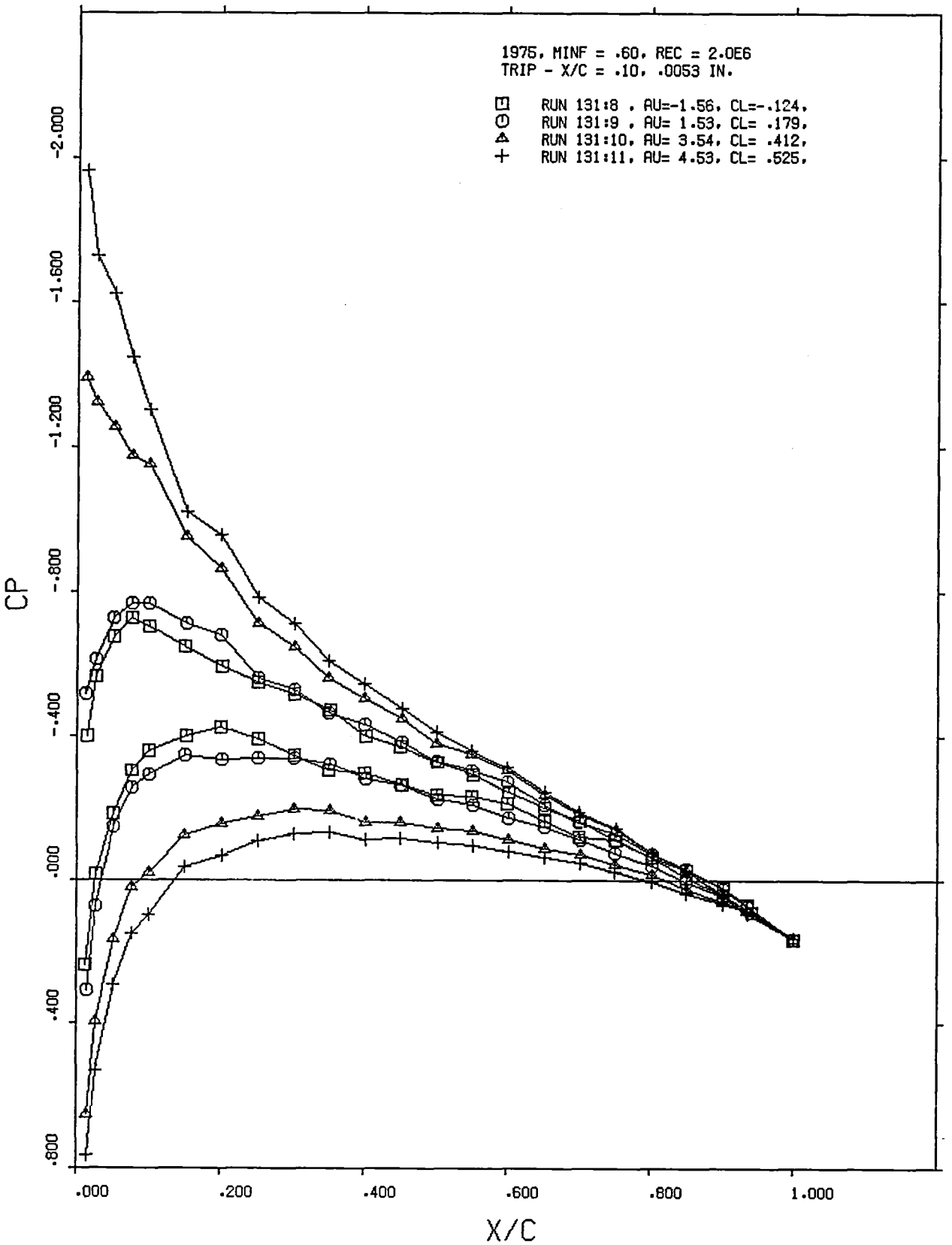
TABLE C1. RUN SCHEDULE, NACA 0012 MODEL, $Re_c = 2\times10^6$

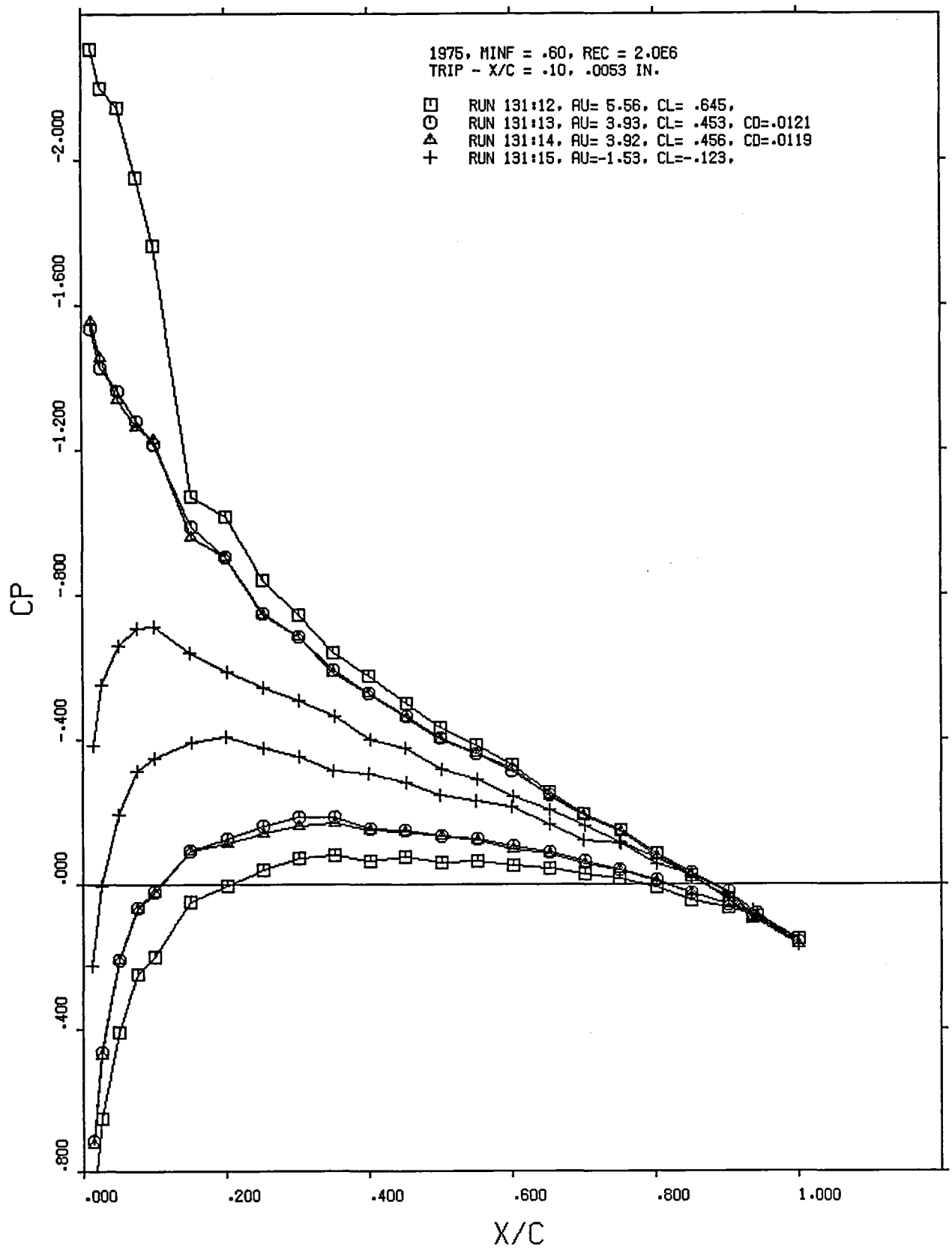
(1975 data)
Boundary-Layer Trip
x/c = 0.10, T = 0.0053 in.

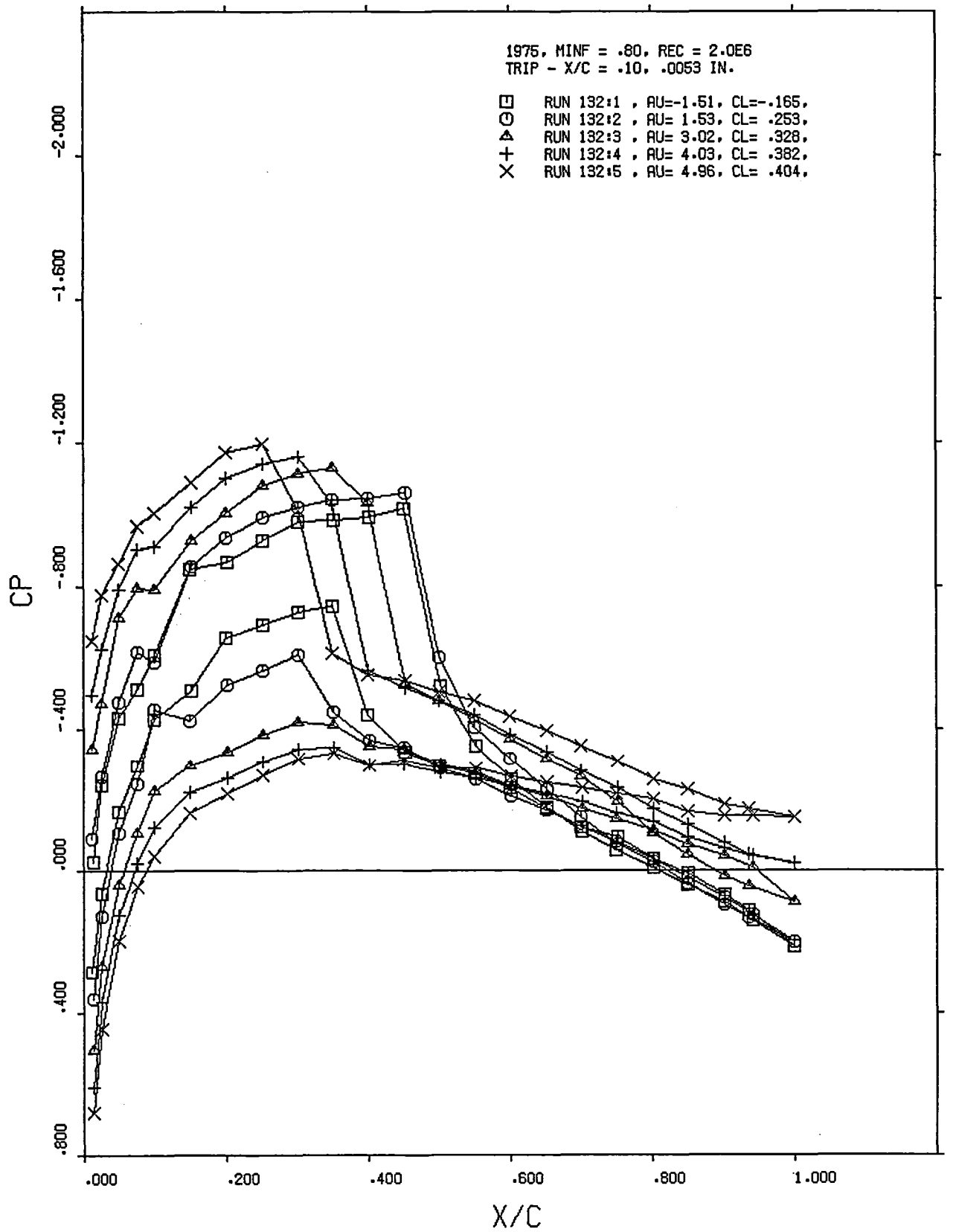
Run no.	Nominal M_∞
131	0.60
132	0.80
133	0.74
134	0.65
135, 136	0.68
137	0.71
138	0.77
139	0.68
140	0.80

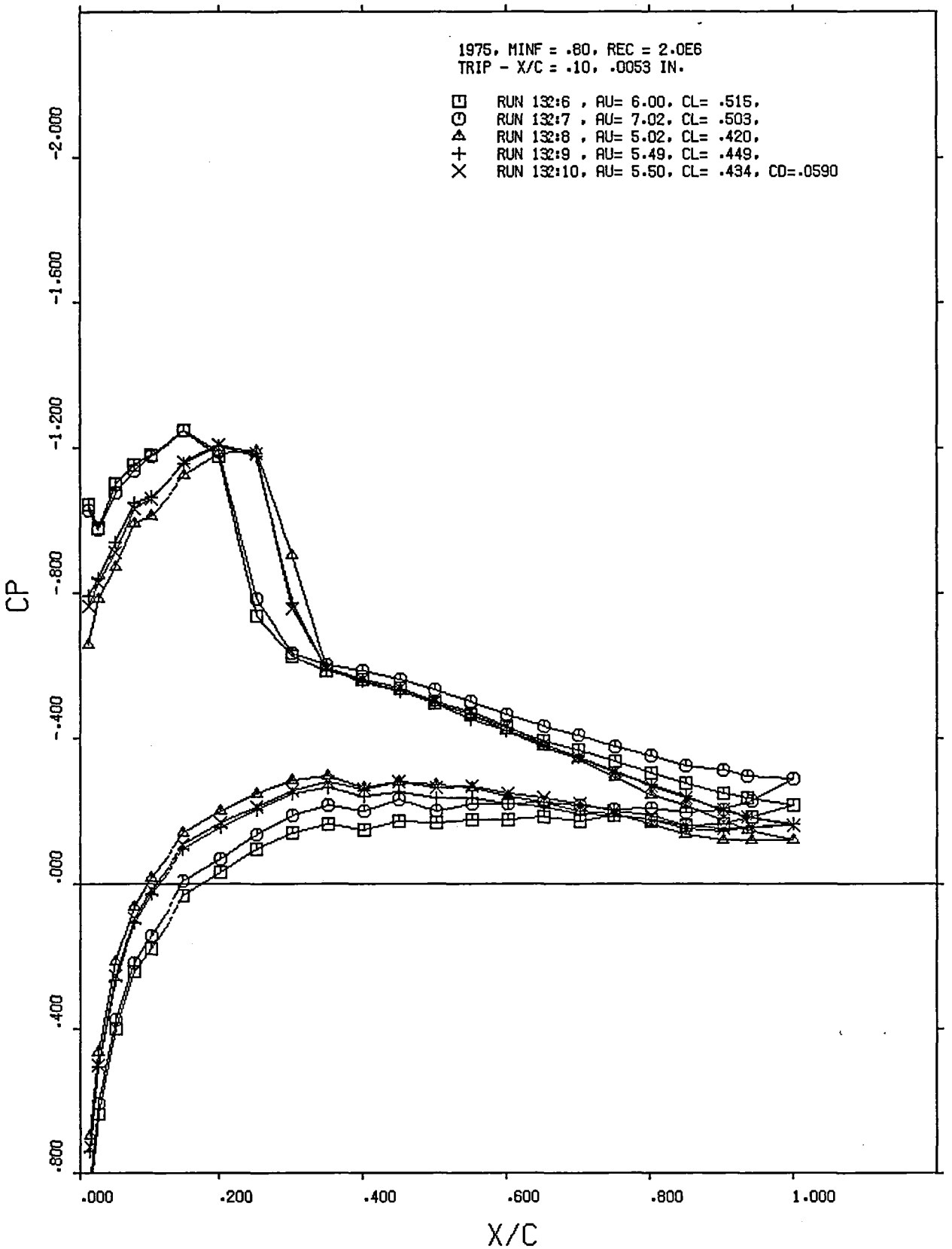
(1976 data)
Boundary-layer Trip
x/c = 0.18, T = 0.0053 in.

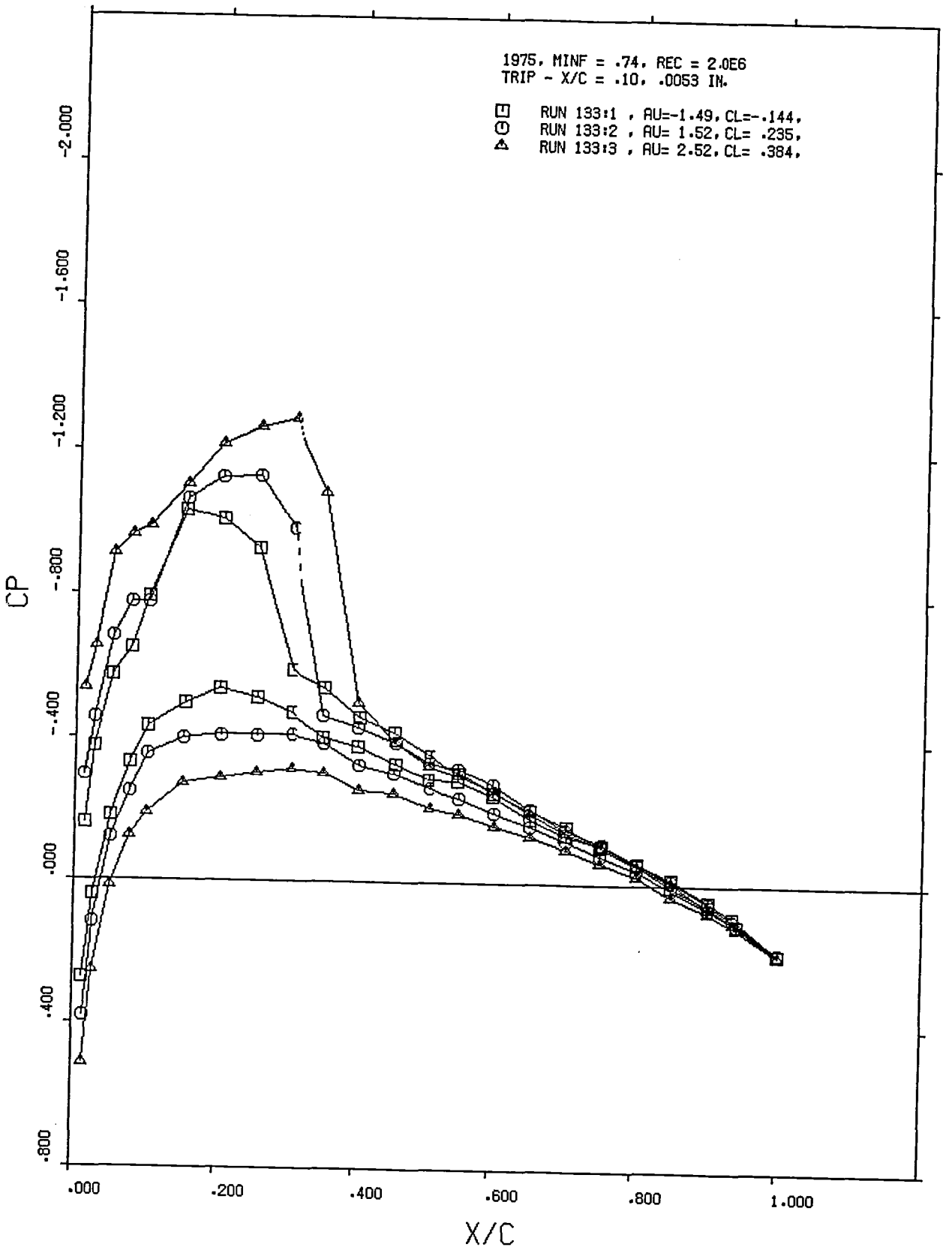
Run no.	Nominal M_∞
57	0.68
58	0.74
59	0.80
60	0.77
61	0.71
62	0.65
63	0.60
64	0.68
65	0.71

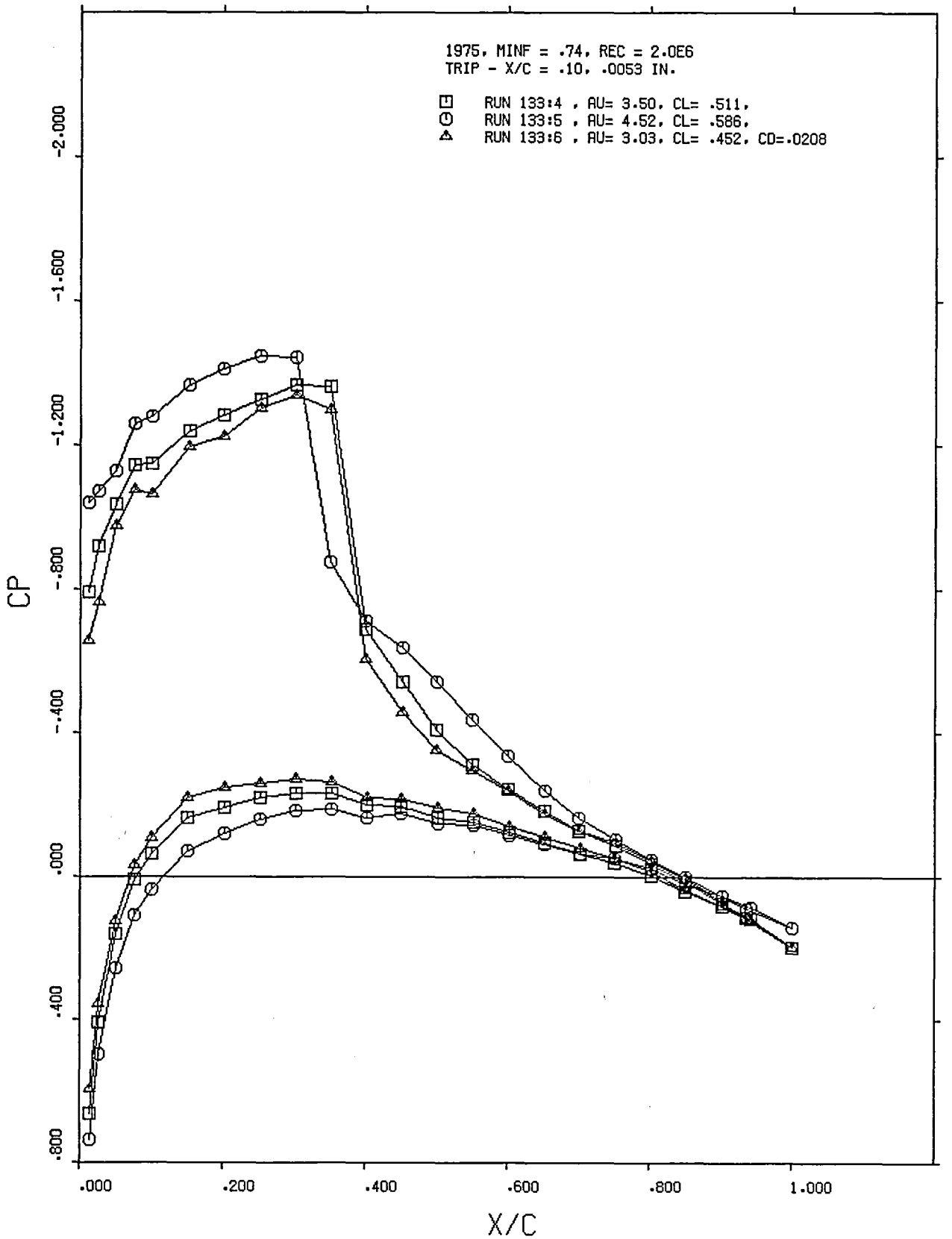

1975, MINF = .60, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 131:8 , AU=-1.56, CL=-.124,
RUN 131:9 , AU= 1.53, CL= .179,
RUN 131:10, AU= 3.54, CL= .412,
RUN 131:11, AU= 4.53, CL= .525,
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

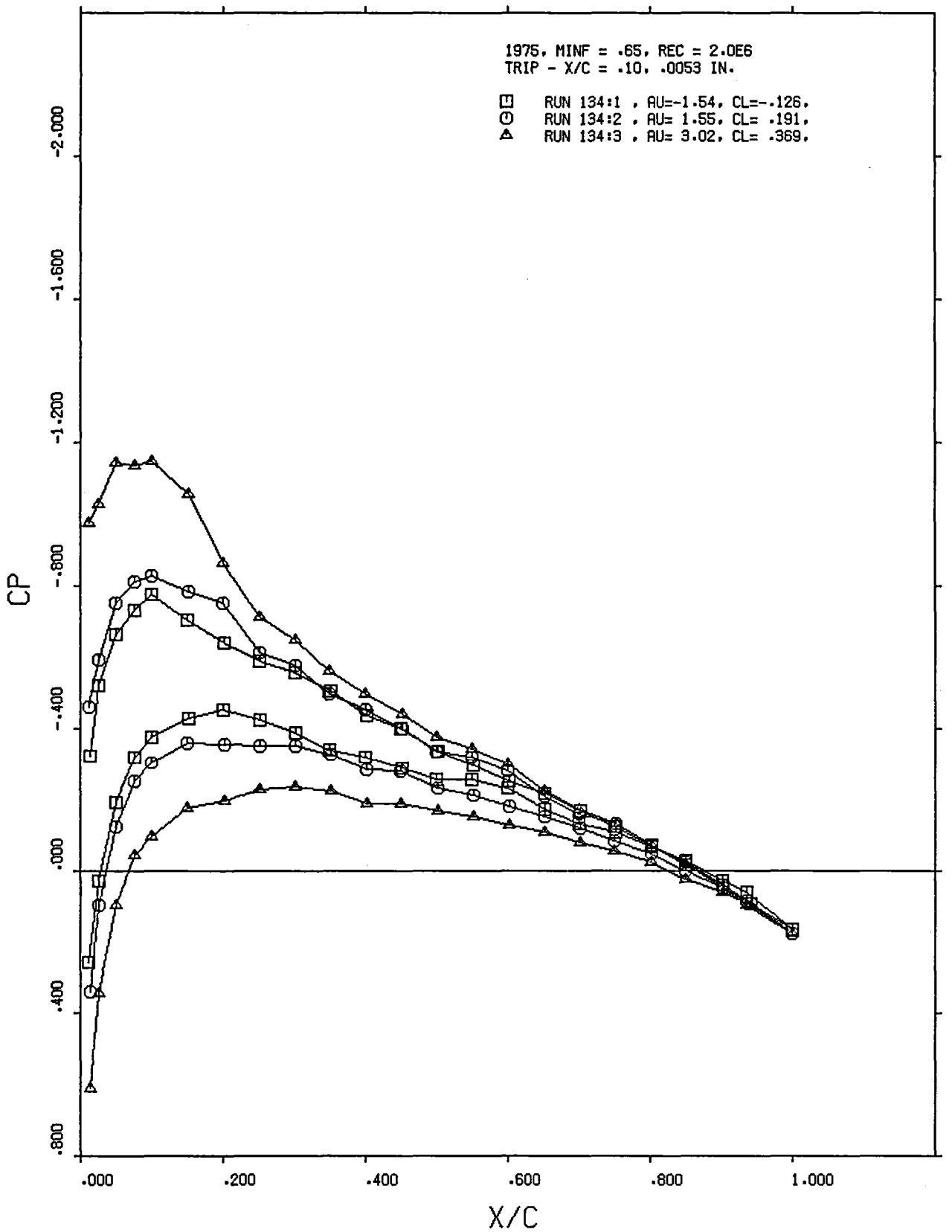

1975, MINF = .60, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 131:12, AU= 5.56, CL= .645,
RUN 131:13, AU= 3.93, CL= .453, CD=.0121
RUN 131:14, AU= 3.92, CL= .456, CD=.0119
RUN 131:15, AU=-1.53, CL=-.123,
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

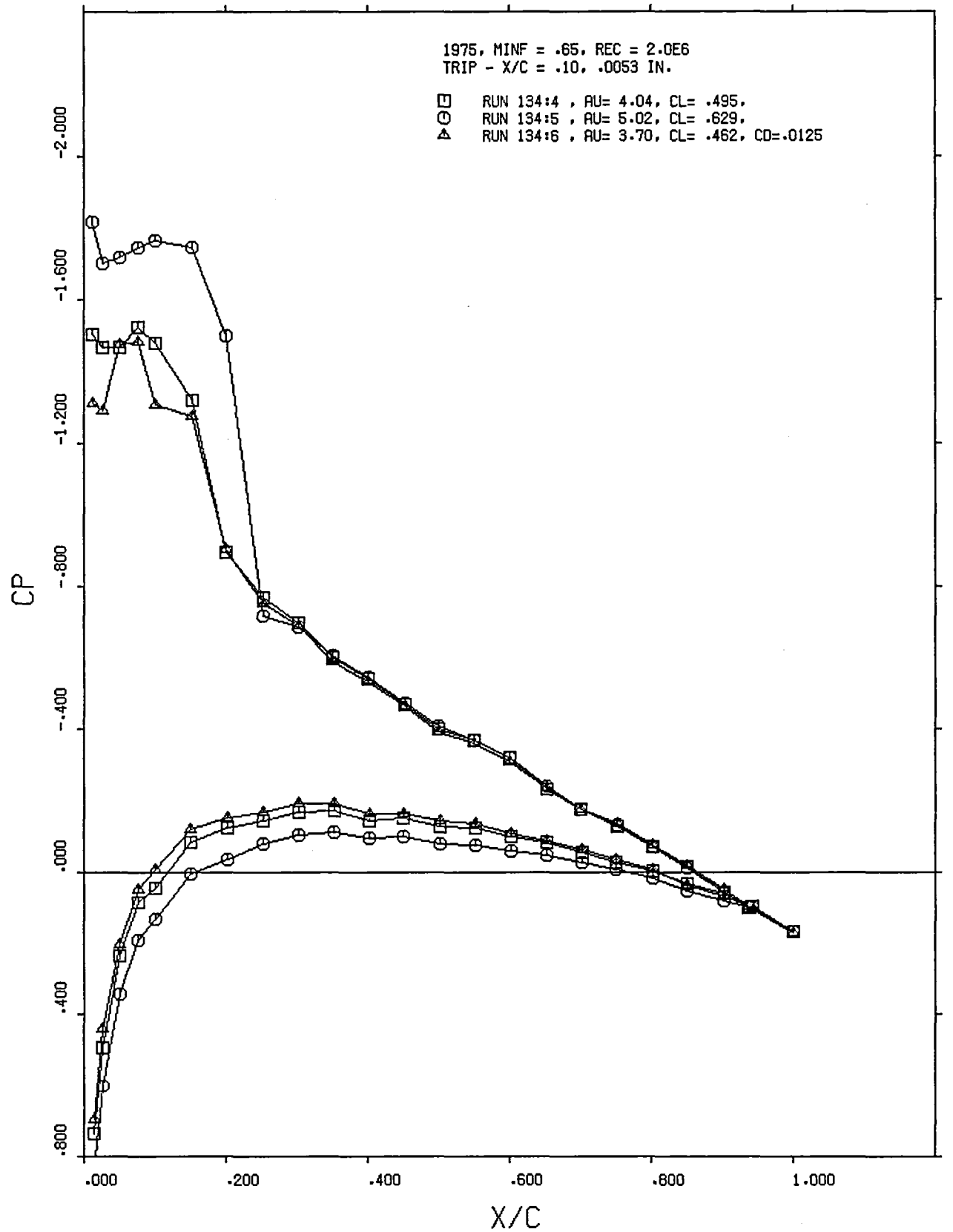

1975, MINF = .80, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 132:1 , AU=-1.51, CL=-.165,
RUN 132:2 , AU= 1.53, CL= .253,
RUN 132:3 , AU= 3.02, CL= .328,
RUN 132:4 , AU= 4.03, CL= .382,
RUN 132:5 , AU= 4.96, CL= .404,
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C

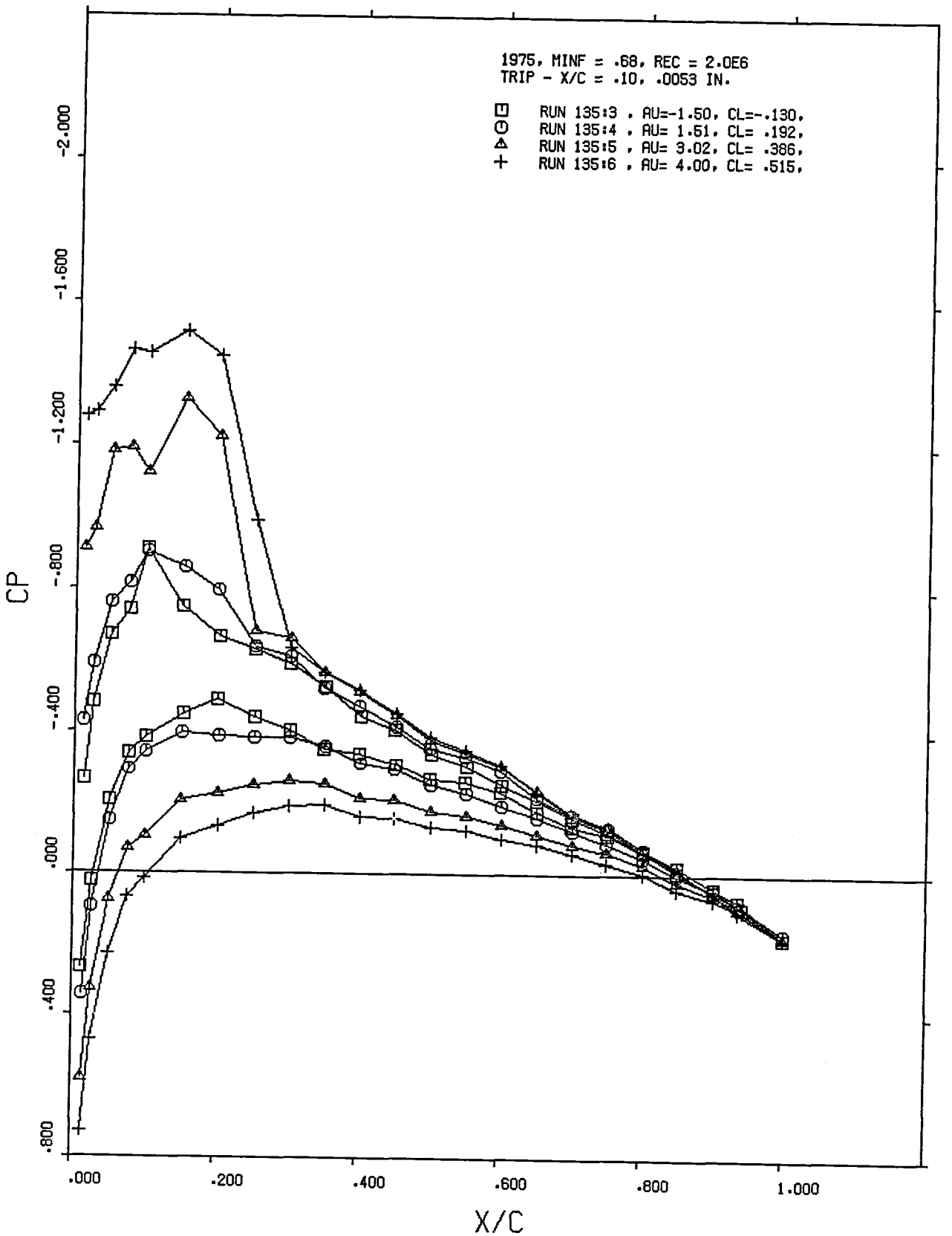

1975, MINF = .80, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 132:6 , AU= 6.00, CL= .515,
RUN 132:7 , AU= 7.02, CL= .503,
RUN 132:8 , AU= 5.02, CL= .420,
RUN 132:9 , AU= 5.49, CL= .449,
RUN 132:10, AU= 5.50, CL= .434, CD=.0590
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C

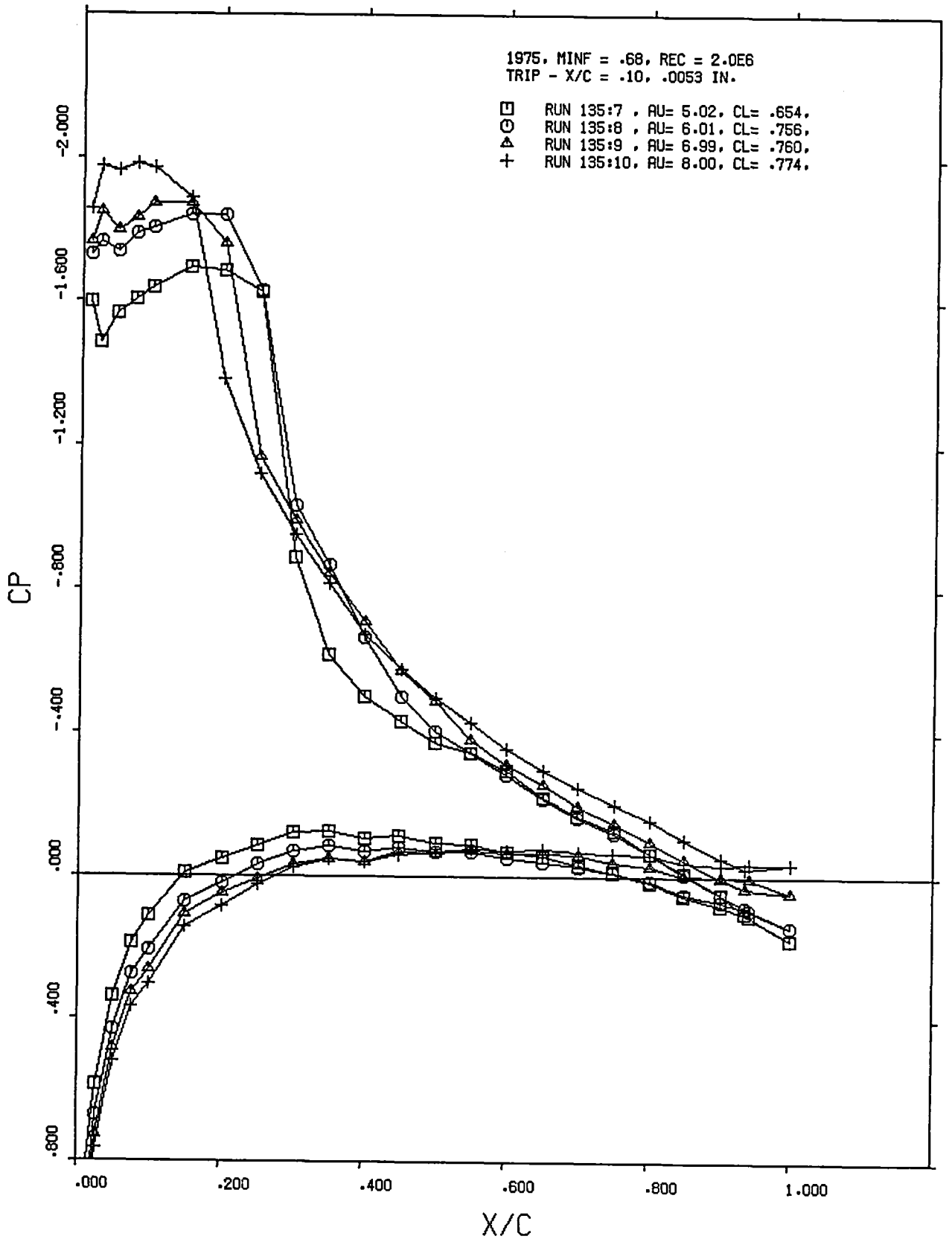

1975, MINF = .74, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 133:1 , AU=-1.49, CL=-.144,
RUN 133:2 , AU= 1.52, CL= .235,
RUN 133:3 , AU= 2.52, CL= .384,
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

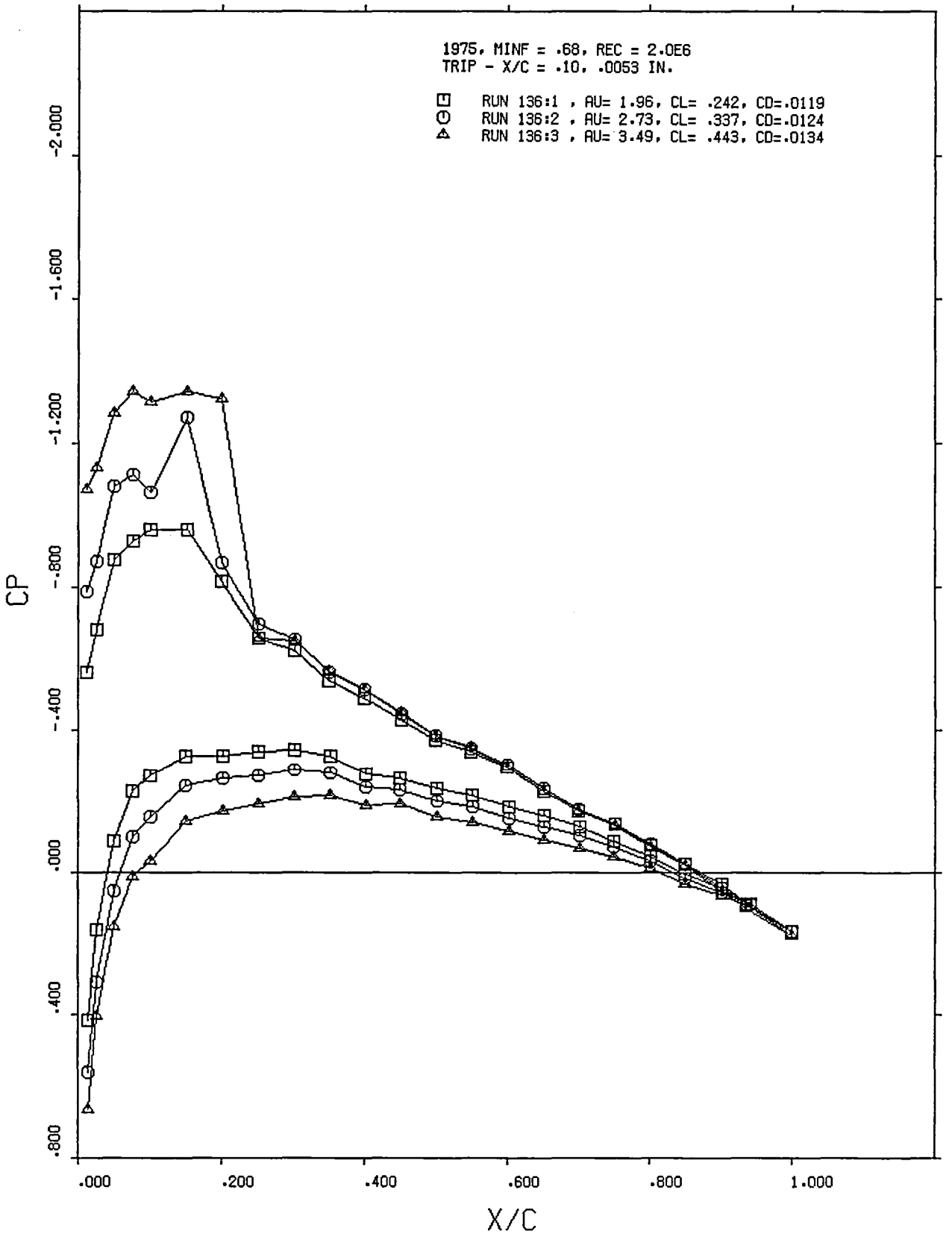

1975, MINF = .74, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 133:4 , AU= 3.50, CL= .511,
RUN 133:5 , AU= 4.52, CL= .586,
RUN 133:6 , AU= 3.03, CL= .452, CD=.0208
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C

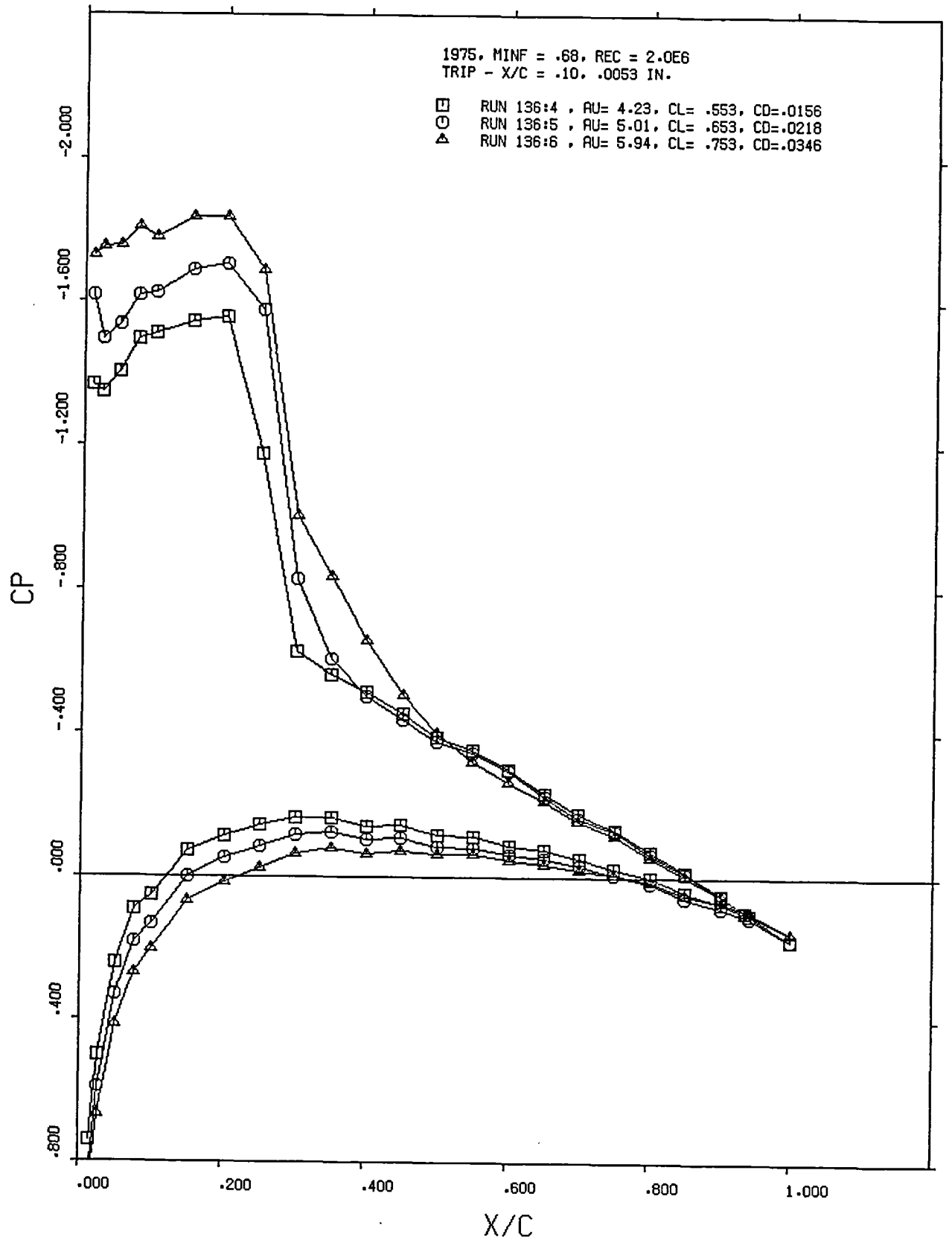

1975. MINF = .65. REC = 2.0E6
TRIP - X/C = .10. .0053 IN.
RUN 134:1 . AU=-1.54. CL=-.126.
RUN 134:2 . AU= 1.55. CL= .191.
RUN 134:3 . AU= 3.02. CL= .369.
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C

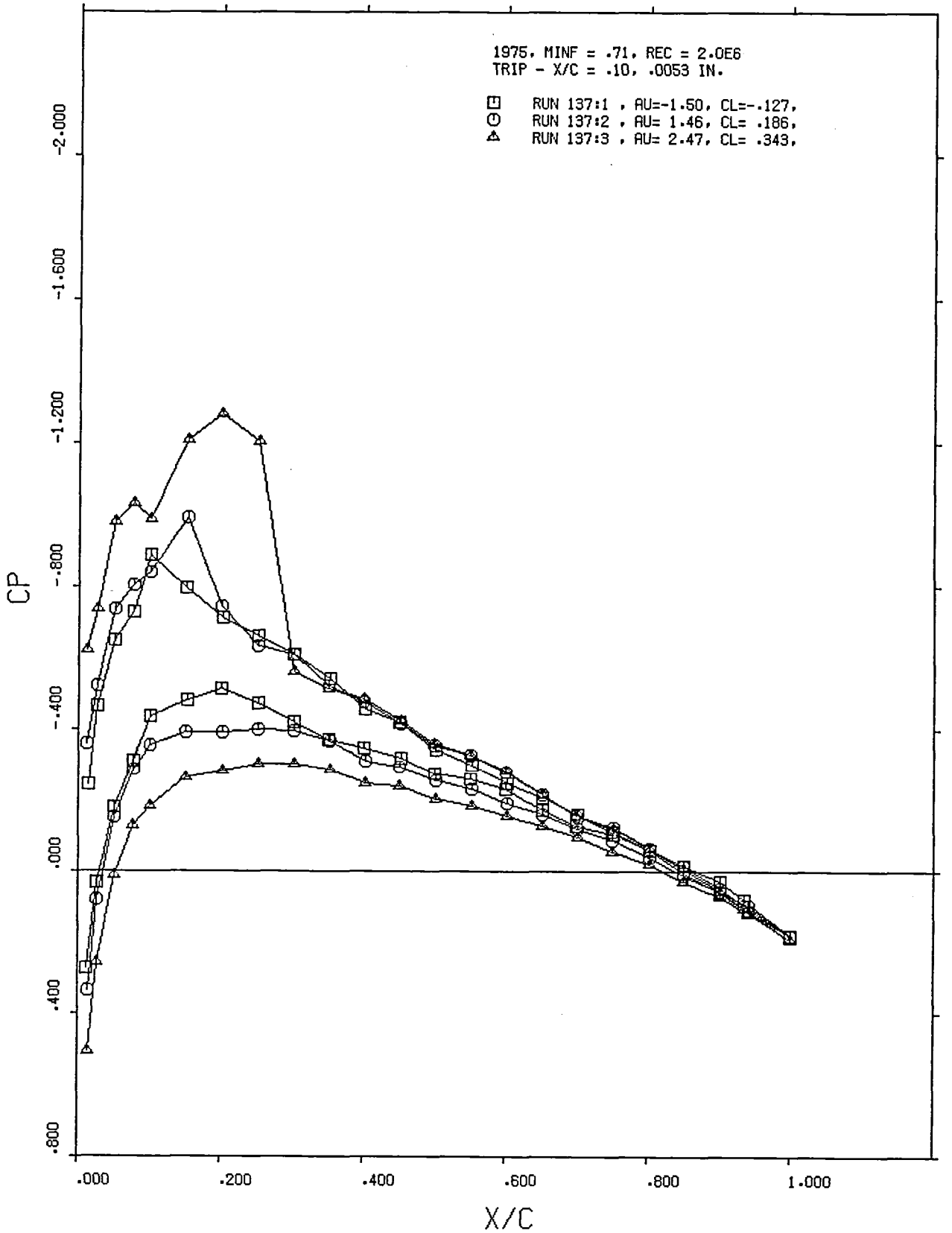

1975, MINF = .65, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 134:4 , AU= 4.04, CL= .495,
RUN 134:5 , AU= 5.02, CL= .629,
RUN 134:6 , AU= 3.70, CL= .462, CD=.0125
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

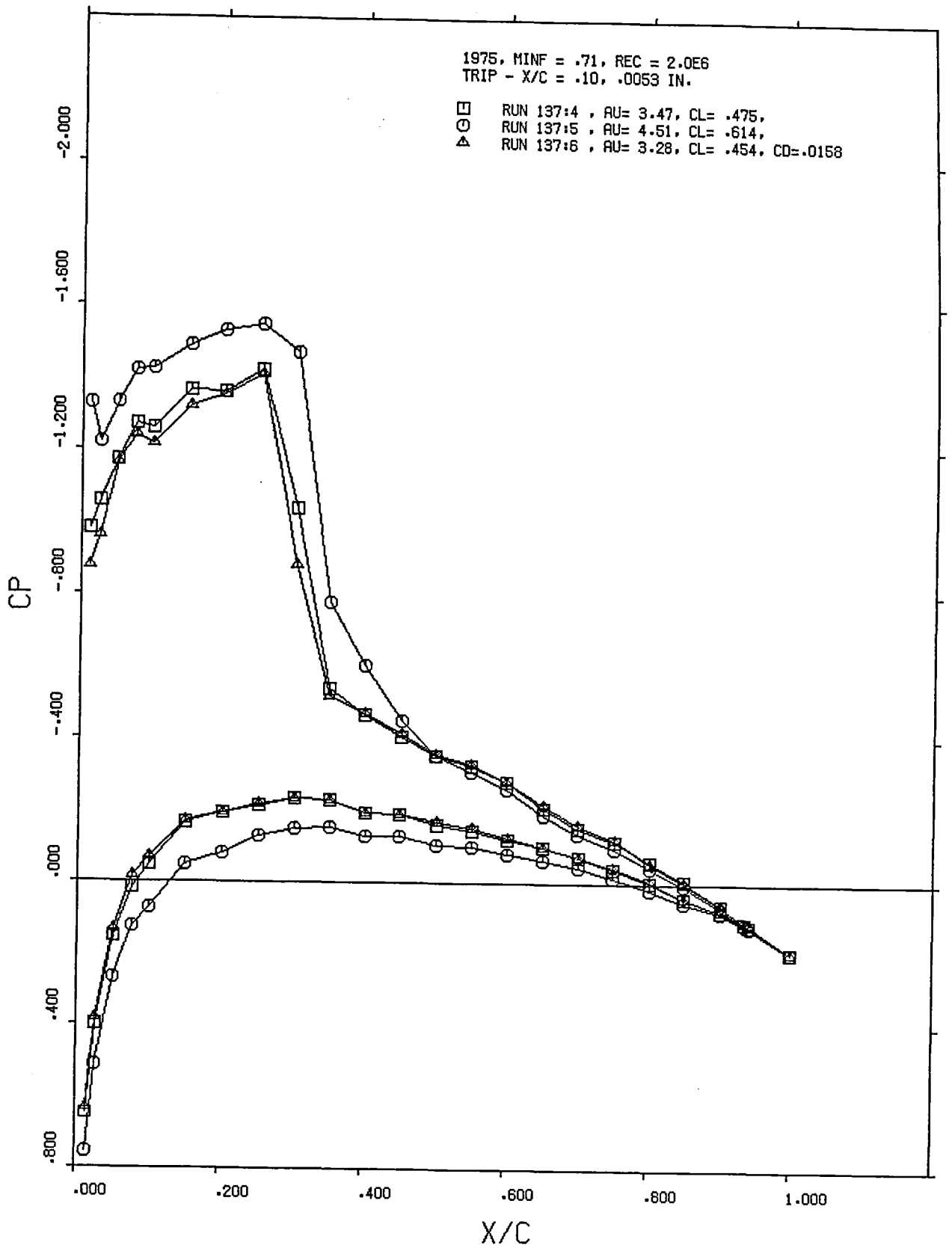

1975, MINF = .68, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 135:3 , AU=-1.50, CL=-.130,
RUN 135:4 , AU= 1.51, CL= .192,
RUN 135:5 , AU= 3.02, CL= .386,
RUN 135:6 , AU= 4.00, CL= .515,
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

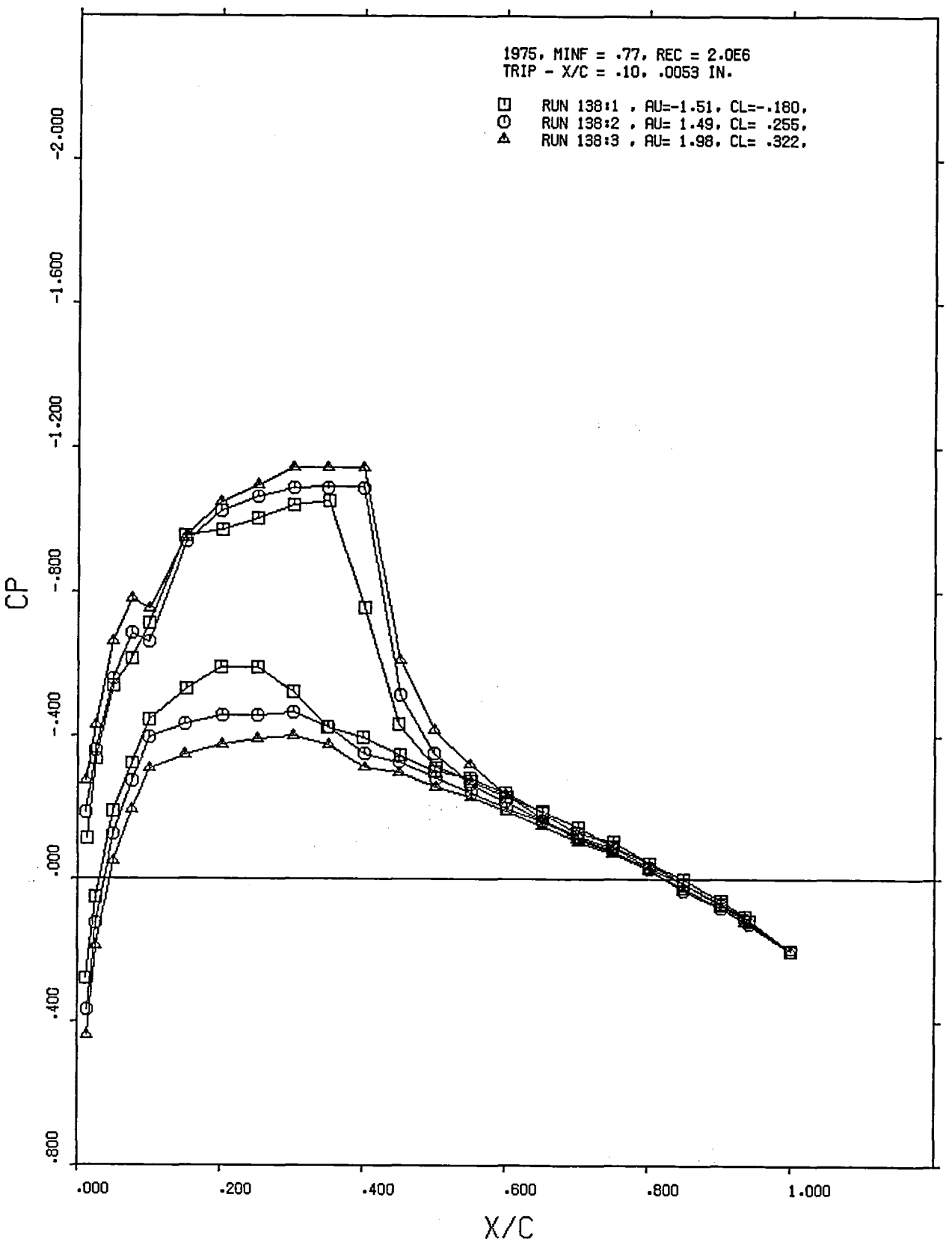

1975, MINF = .68, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 135:7 , AU= 5.02, CL= .654,
RUN 135:8 , AU= 6.01, CL= .756,
RUN 135:9 , AU= 6.99, CL= .760,
RUN 135:10, AU= 8.00, CL= .774,
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

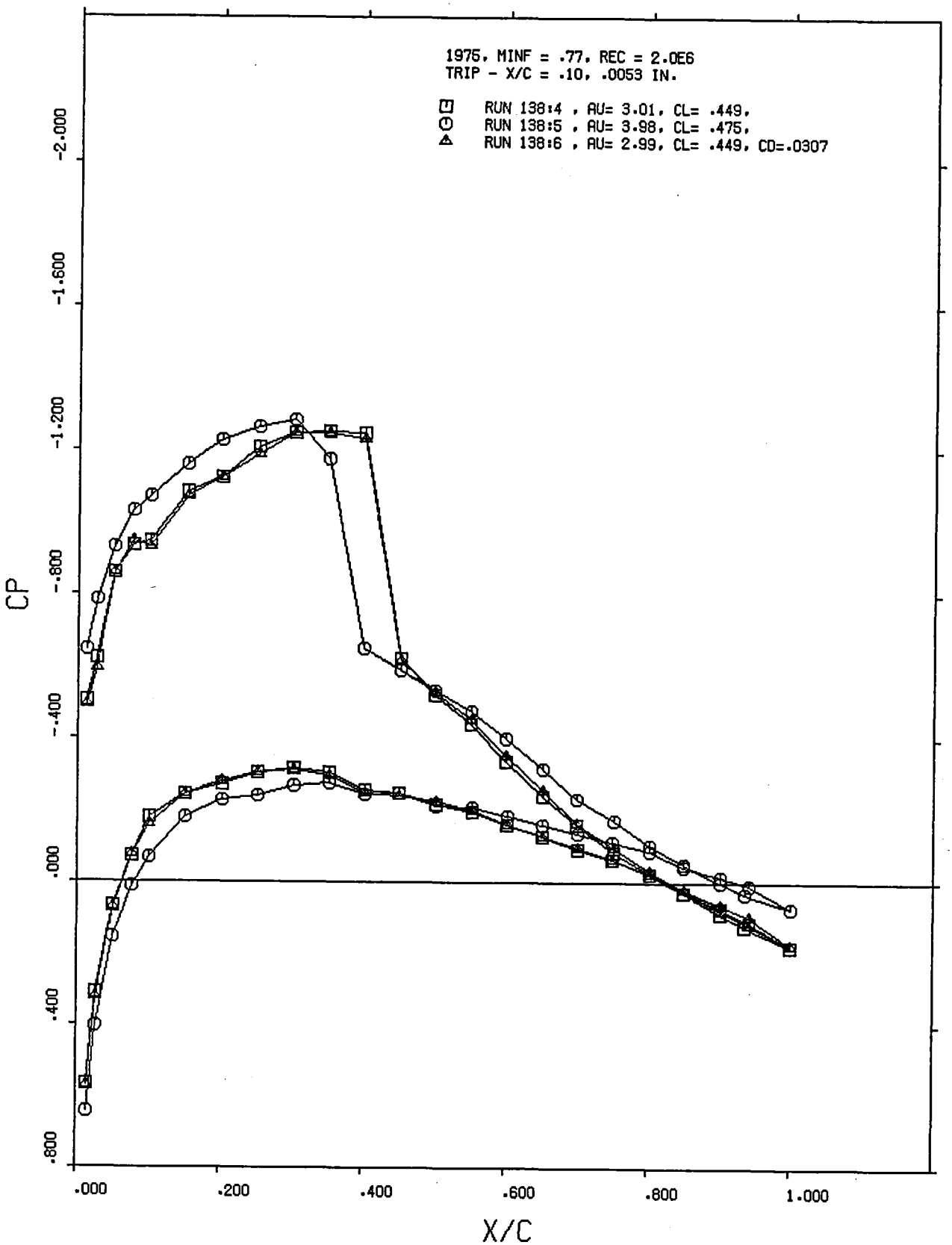

1975, MINF = .68, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 136:1 , AU= 1.96, CL= .242, CD=.0119
RUN 136:2 , AU= 2.73, CL= .337, CD=.0124
RUN 136:3 , AU= 3.49, CL= .443, CD=.0134
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C

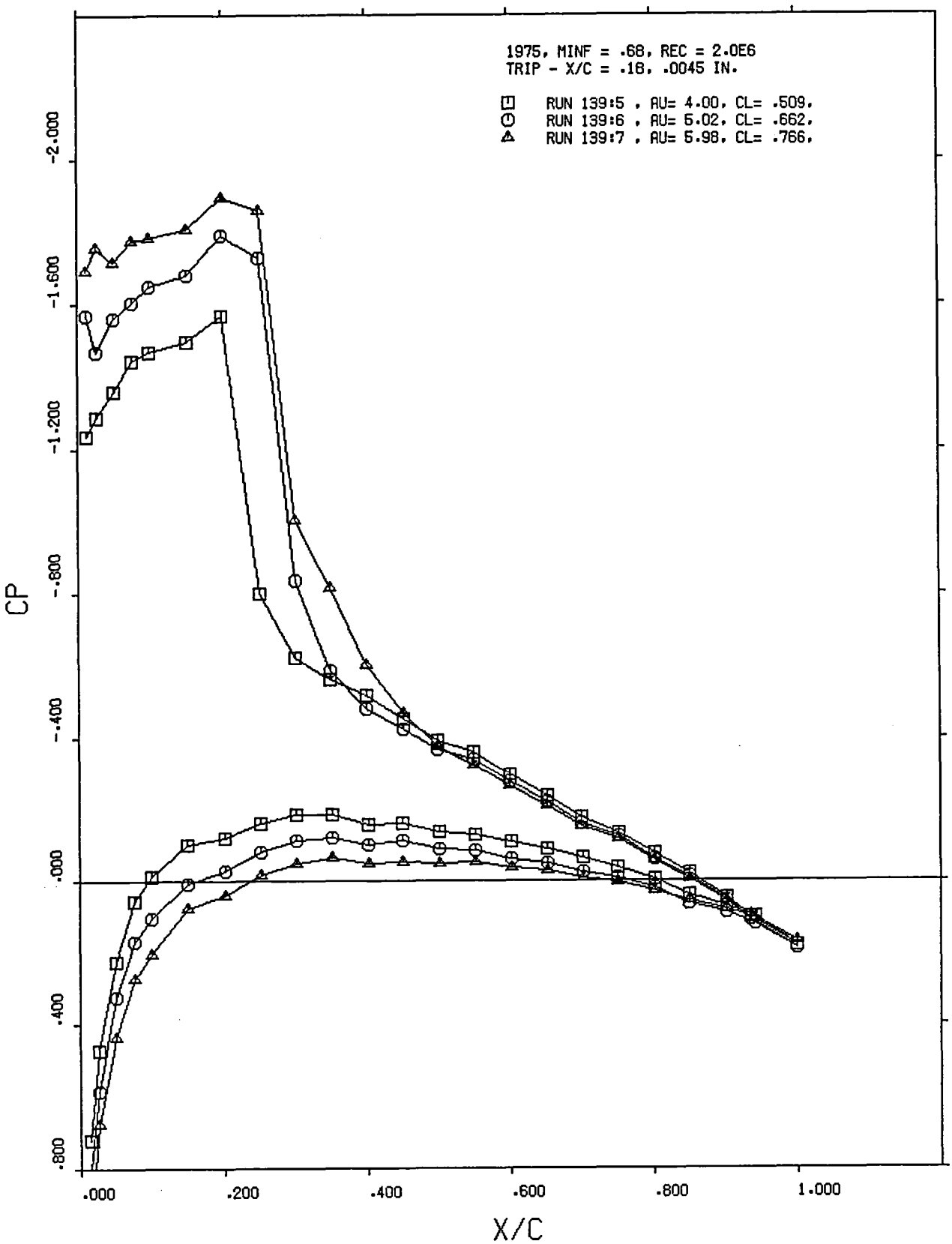

1975. MINF = .68. REC = 2.0E6
TRIP - X/C = .10. .0053 IN.
RUN 136:4 . AU= 4.23. CL= .553. CD=.0156
RUN 136:5 . AU= 5.01. CL= .653. CD=.0218
RUN 136:6 . AU= 5.94. CL= .753. CD=.0346
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

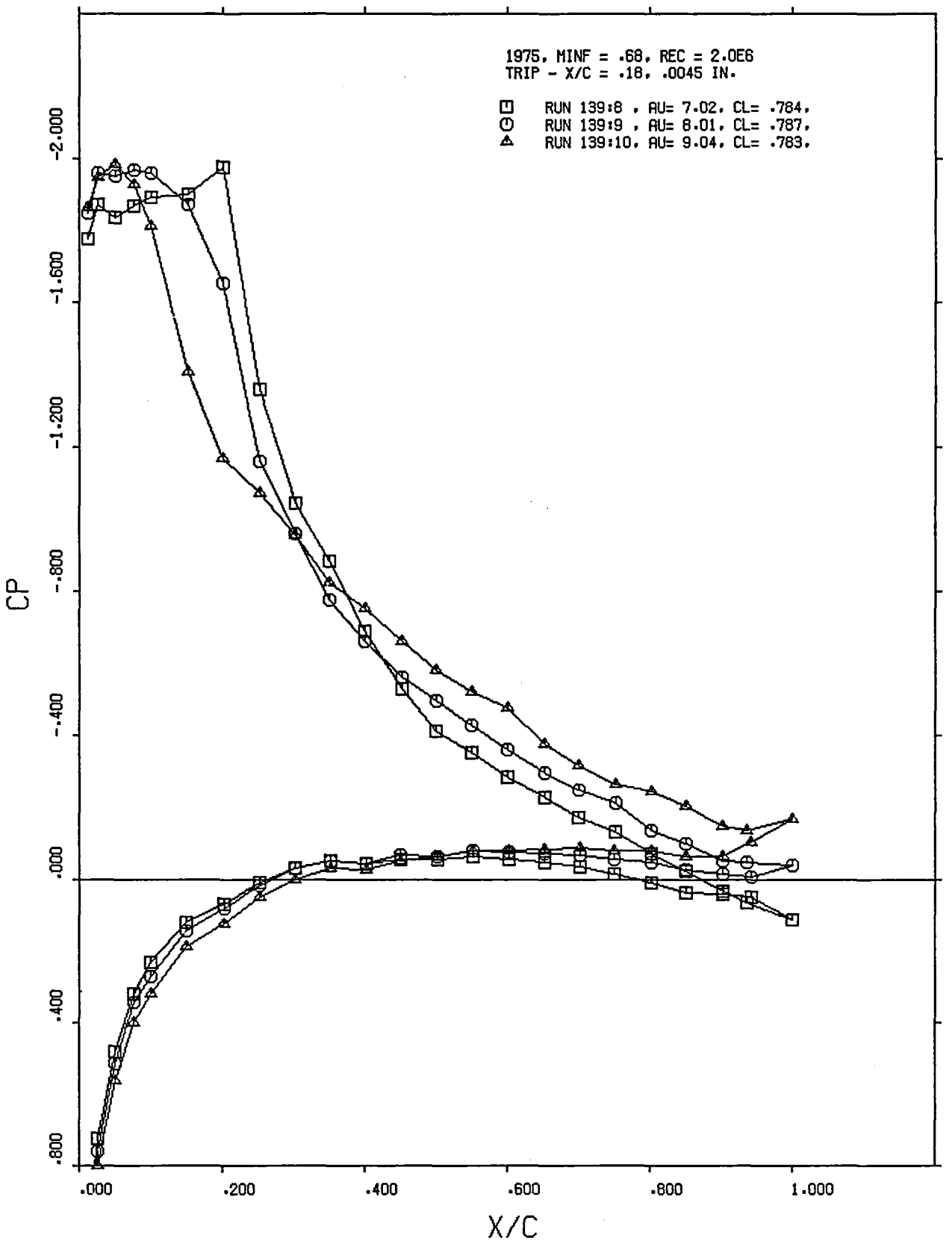

1975, MINF = .71, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 137:1 , AU=-1.50, CL=-.127,
RUN 137:2 , AU= 1.46, CL= .186,
RUN 137:3 , AU= 2.47, CL= .343,
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

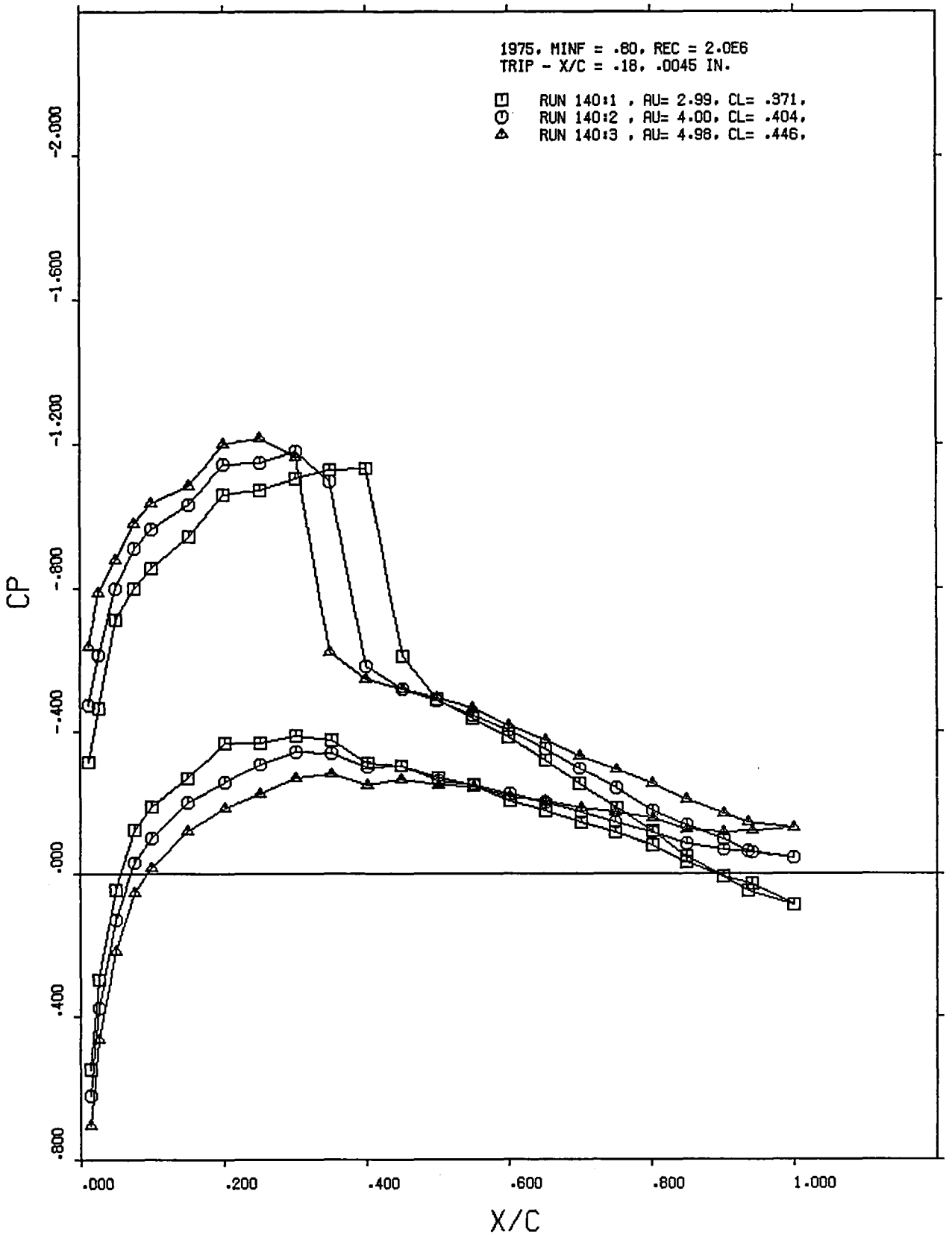

1975, MINF = .71, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 137:4 , AU= 3.47, CL= .475,
RUN 137:5 , AU= 4.51, CL= .614,
RUN 137:6 , AU= 3.28, CL= .454, CD=.0158
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C


1975, MINF = .77, REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 138:1 , AU=-1.51, CL=-.180,
RUN 138:2 , AU= 1.49, CL= .255,
RUN 138:3 , AU= 1.98, CL= .322,
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C


1975. MINF = .77. REC = 2.0E6
TRIP - X/C = .10, .0053 IN.
RUN 138:4 , AU= 3.01, CL= .449,
RUN 138:5 , AU= 3.98, CL= .475,
RUN 138:6 , AU= 2.99, CL= .449, CD=.0307
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C


1975, MINF = .68, REC = 2.0E6
TRIP - X/C = .18, .0045 IN.
RUN 139:5 , AU= 4.00, CL= .509,
RUN 139:6 , AU= 5.02, CL= .662,
RUN 139:7 , AU= 5.98, CL= .766,
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C


1975, MINF = .68, REC = 2.0E6
TRIP - X/C = .18, .0045 IN.
RUN 139:8 , AU= 7.02, CL= .784,
RUN 139:9 , AU= 8.01, CL= .787,
RUN 139:10, AU= 9.04, CL= .783,
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C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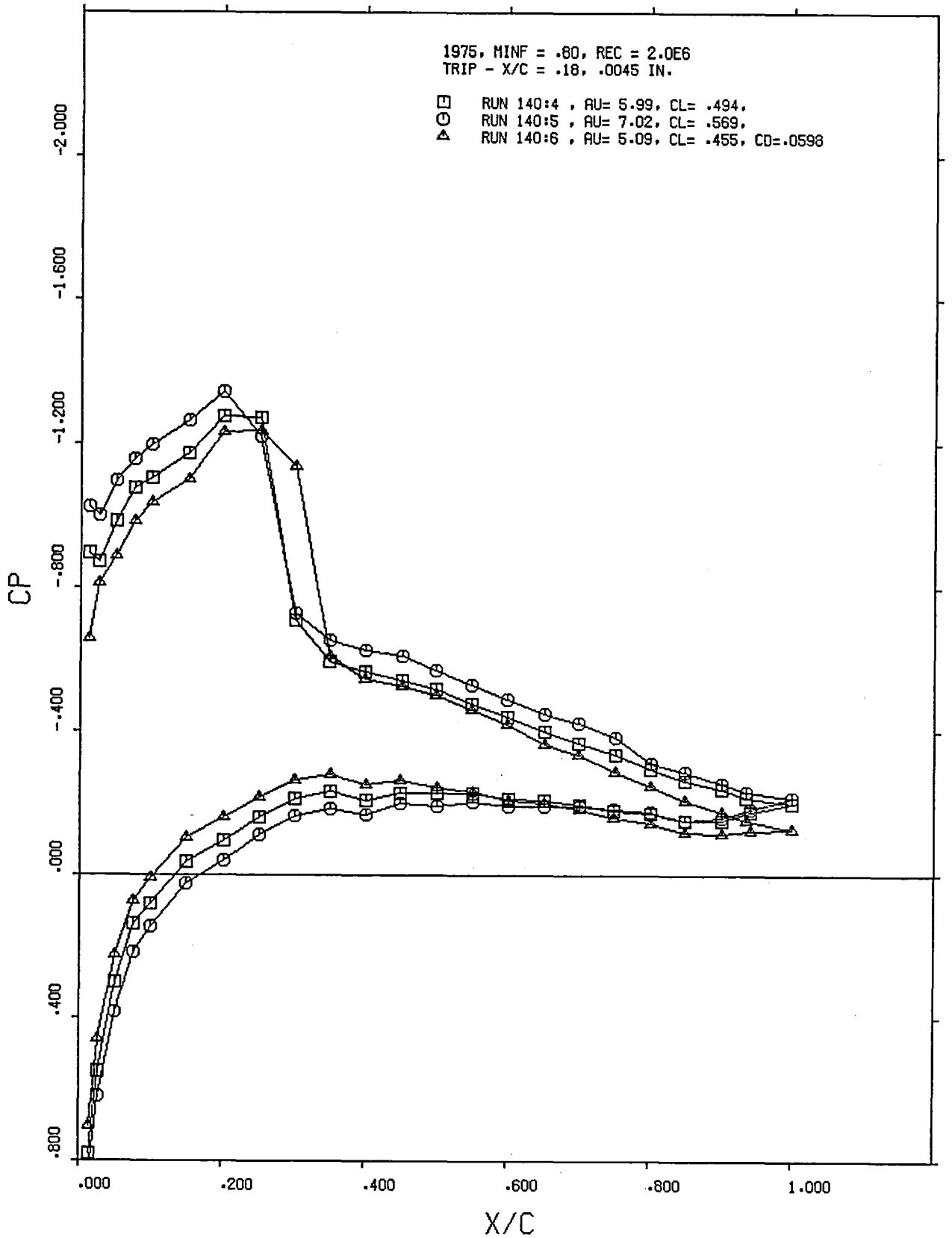
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C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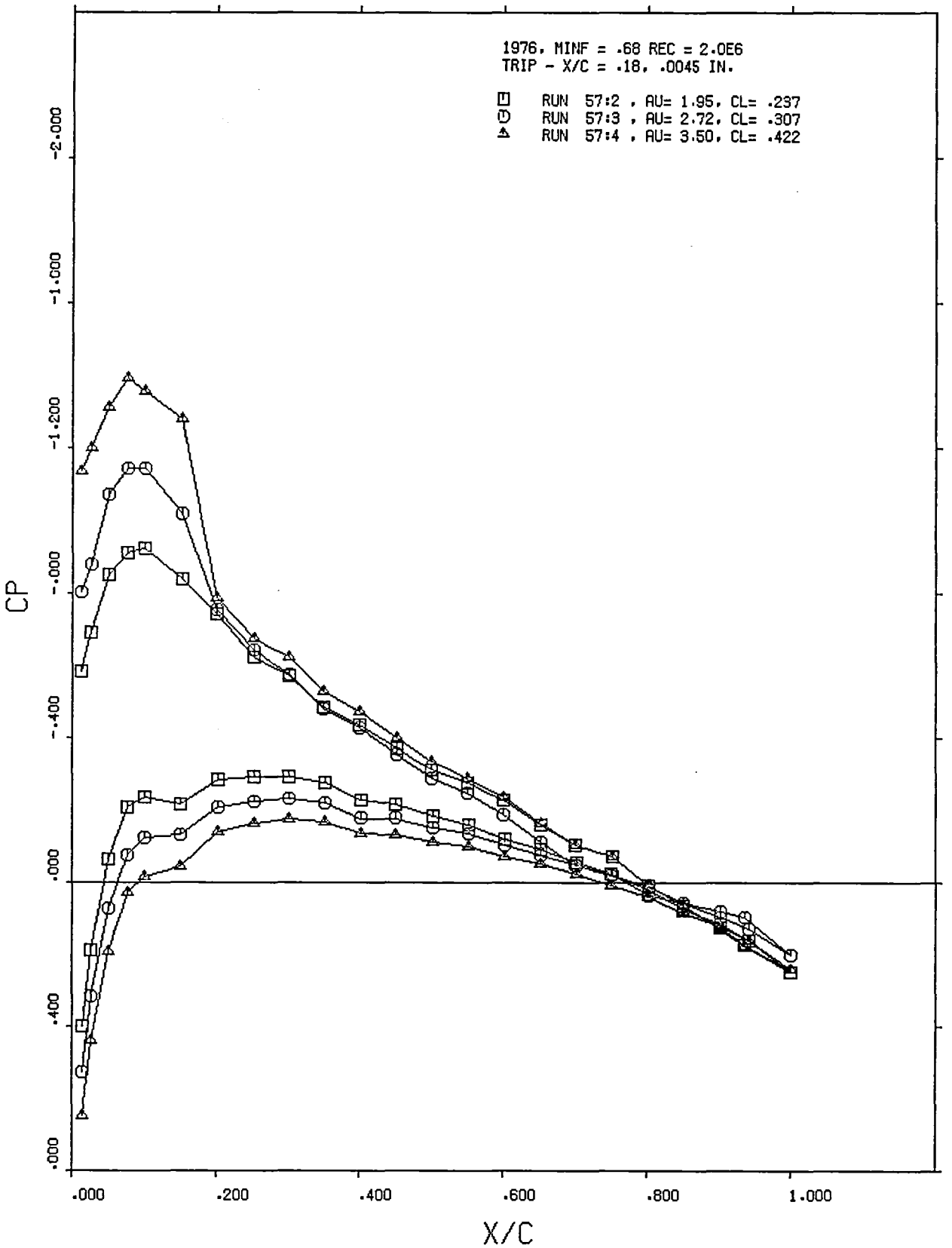
TRIP - X/C = .18, .0045 IN.
RUN 140:4 , AU= 5.99, CL= .494,
RUN 140:5 , AU= 7.02, CL= .569,
RUN 140:6 , AU= 5.09, CL= .455, CD=.0598
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
CP
.000
.200
.400
.600
.800
1.000
X/C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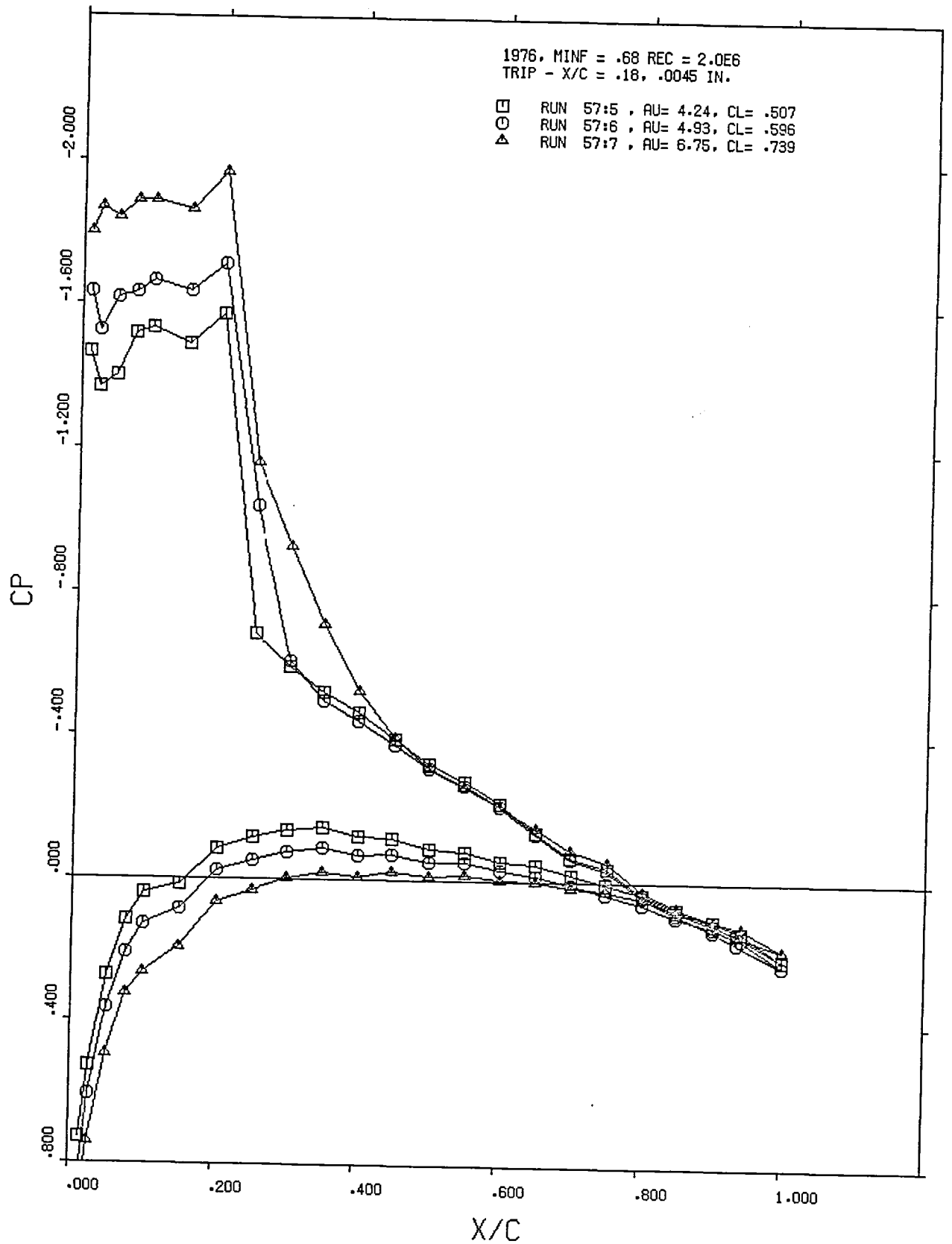
TRIP - X/C = .18, .0045 IN.
RUN 57:2 , AU= 1.95, CL= .237
RUN 57:3 , AU= 2.72, CL= .307
RUN 57:4 , AU= 3.50, CL= .422
CP
-2.000
-1.000
-1.200
-.000
-.400
.000
.400
.000
.200
.400
.600
.800
1.000
X/C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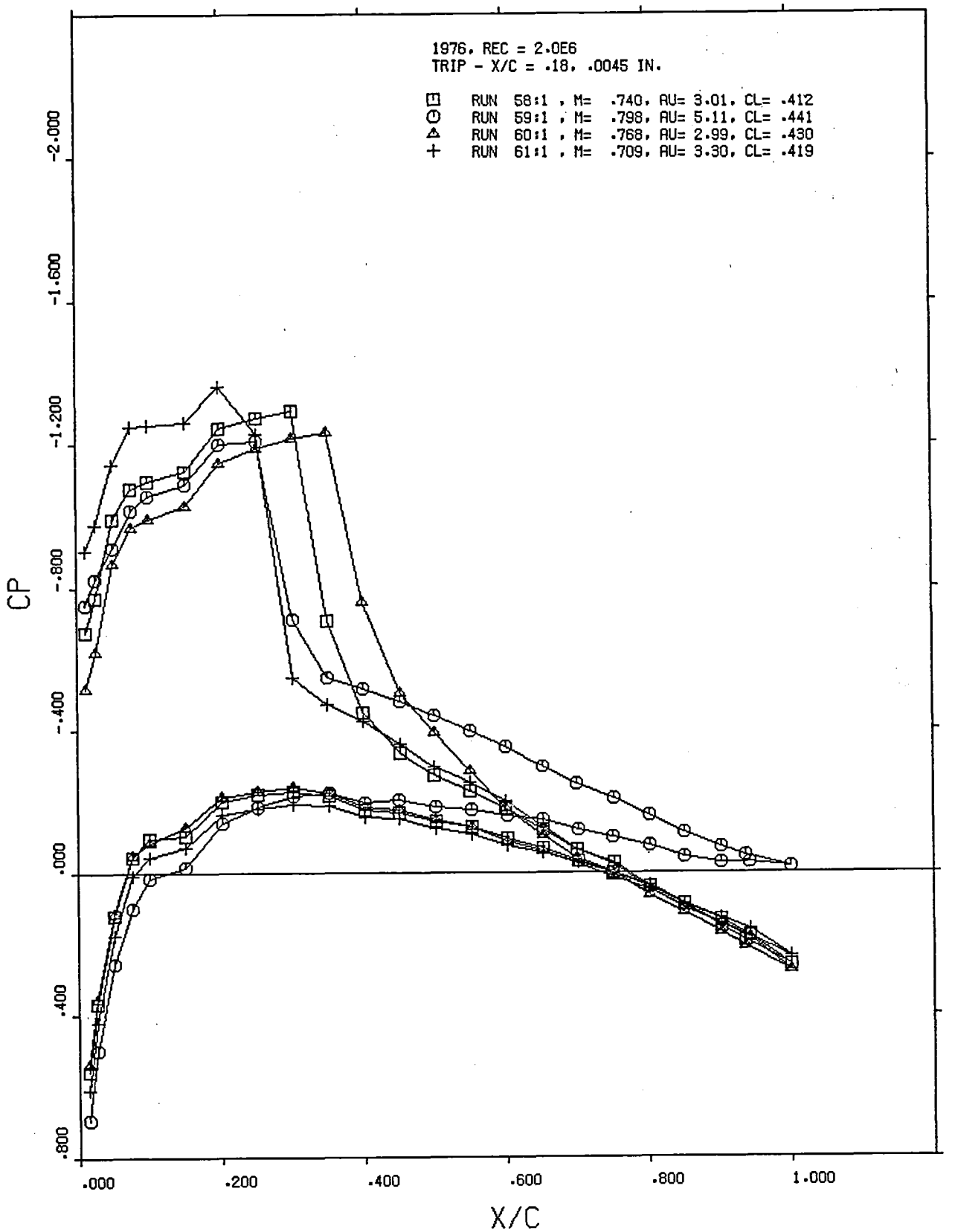
RUN 57:5 , AU= 4.24, CL= .507
RUN 57:6 , AU= 4.93, CL= .596
RUN 57:7 , AU= 6.75, CL= .739
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C


1976. REC = 2.0E6
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RUN 59:1 , M= .798, AU= 5.11, CL= .441
RUN 60:1 , M= .768, AU= 2.99, CL= .430
RUN 61:1 , M= .709, AU= 3.30, CL= .419
CP
-2.000
-1.600
-1.200
-.800
-.400
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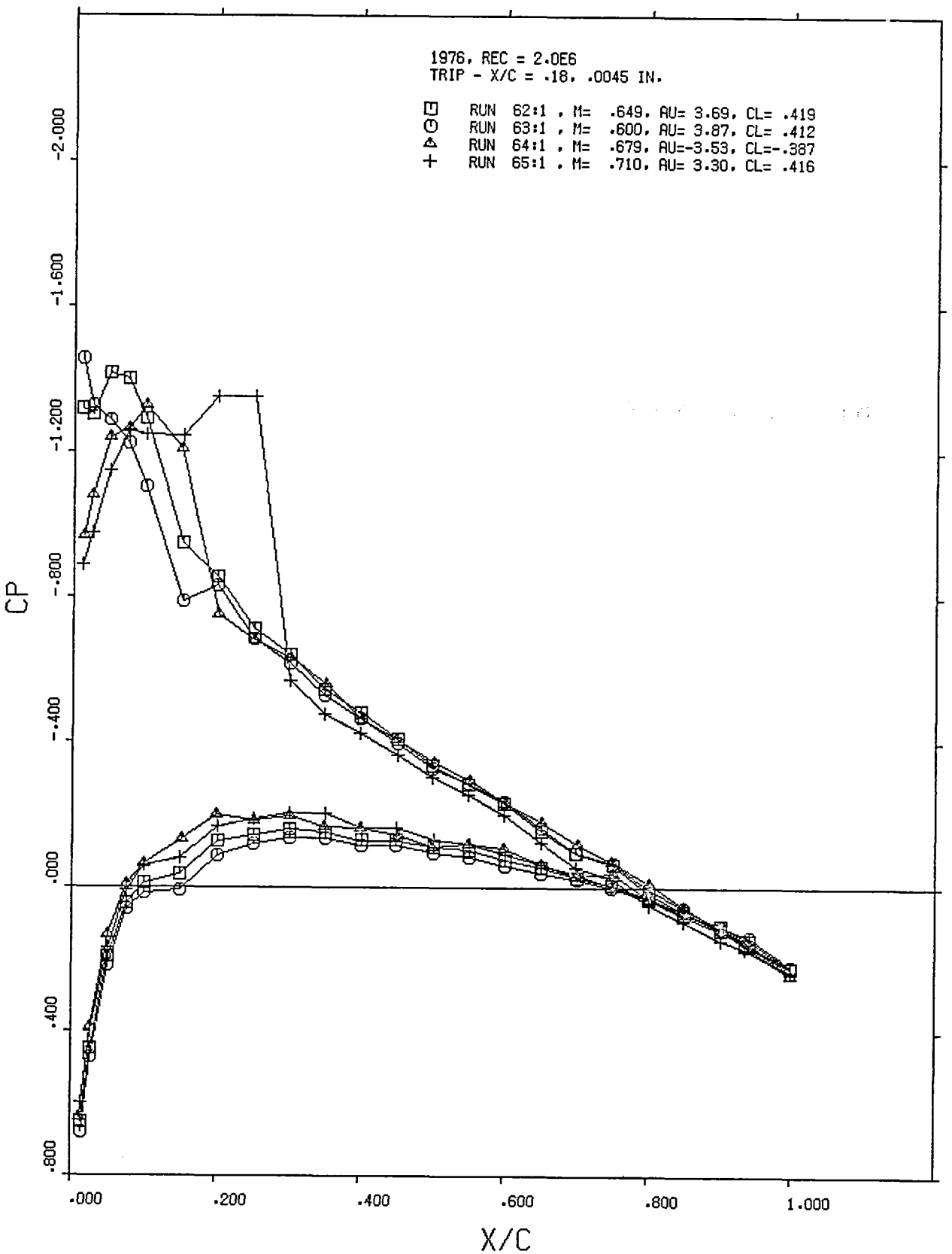
.400
.800
.000
.200
.400
.600
.800
1.000
X/C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RUN 63:1 , M= .600, AU= 3.87, CL= .412
RUN 64:1 , M= .679, AU=-3.53, CL=-.387
RUN 65:1 , M= .710, AU= 3.30, CL= .416
CP
-2.000
-1.600
-1.200
-.800
-.400
.000
.400
.800
.000
.200
.400
.600
.800
1.000
X/C

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16. Abstract

Surface static-pressure and drag data obtained from tests of two slightly modified versions of the original NASA Whitcomb airfoil section and a model of the NACA 0012 airfoil section are presented. Data for the supercritical airfoil were obtained for a free-stream Mach number range of 0.5 to 0.9, and a chord Reynolds number range of 2×10^6 to 4×10^6. The NACA 0012 airfoil was tested at a constant chord Reynolds number of 2×10^6 and a free-stream Mach number range of 0.6 to 0.8.

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