REPORT No. 124

AERODYNAMIC CHARACTERISTICS OF AEROFOILS—II.

CONTINUATION OF REPORT No. 93

BY

NATIONAL ADVISORY COMMITTEE
FOR AERONAUTICS

REPORT No. 124.

AERODYNAMIC CHARACTERISTICS OF AEROFOILS—II.

CONTINUATION OF REPORT NO. 93.

By National Advisory Committee for Aeronautics.

INTRODUCTION.

This collection of data on aerofoils has been made from the published reports of a number of the leading aerodynamic laboratories of this country and Europe.[1] The information which was originally expressed according to the different customs of the several laboratories is here presented in a uniform series of charts and tables suitable for the use of designing engineers and for purposes of general reference.

It is a well-known fact that the results obtained in different laboratories, because of their individual methods of testing, are not strictly comparable even if proper scale corrections for size of model and speed of test are supplied. It is, therefore, unwise to compare too closely the coefficients of two wing sections tested in different laboratories. Tests of different wing sections from the same source, however, may be relied on to give true relative values.

The absolute system of coefficients has been used, since it is thought by the National Advisory Committee for Aeronautics that this system is the one most suited for international use and yet is one for which a desired transformation can be easily made. For this purpose a set of transformation constants is included in this report.

Each aerofoil section is given a reference number, and the test data are presented in the form of curves from which the coefficients can be read with sufficient accuracy for design purposes. The dimensions of the profile of each section are given at various stations along the chord in per cent of the chord, using as datum the line shown on the curves. The shape of the section is also shown in reasonable accuracy to enable one to more clearly visualize the section under consideration, together with its characteristics.

The authority for the results here presented is given as the name of the laboratory at which the experiments were conducted, with the size of model, wind velocity, and date of test.

TRANSFORMATION COEFFICIENTS.

For the convenience of those who prefer to use a system of units other than the absolute system, there is given below a table of transformation constants based on the standard condition adopted by the National Advisory Committee for Aeronautics of—

Temperature = 15.6° C.
Pressure = 760 mm. Hg.
Humidity = 0.
Gravity = 9.80 m./sec.^{2} = 32.2 ft./sec.^{2}

thus giving values of specific weight of air

$$W = 0.1223 \text{ kg./m.}^3 = 0.07635 \text{ lbs./ft.}^3$$

and of density

$\rho = 0.01250$ in the French engineering or kilogram, meter, second system.

Or

$= 0.00238$ in the English or foot, pound, second system.

In absolute units	$P = C\rho V^2$.
In kg./m.^{2} (m./sec.)	$P = .1250\ CV^2$.
In kg./m.^{2} (km./hr.)	$P = .009645\ CV^2$.
In lbs./sq. ft. (ft./sec.)	$P = .002378\ CV^2$.
In lbs./sq. ft. (mi./hr.)	$P = .005116\ CV^2$.

[1] A previous collection on aerofoil sections 1 to 214 and charts 1 to 4 may be found in N. A. C. A. Report No. 93.

INDEX.

Three separate types of index are given—chart indexes which make it possible for a designer to select the wing section most suitable for the particular design in which he is interested; a group index which is arranged by countries and laboratories at which tests were conducted, each section also being designated by a reference number; and an alphabetical index.

CHART INDEX.

In order that the designer may easily pick out a wing section which is suited to the type of airplane on which he is working, four index charts are given which classify the wings according to their aerodynamic and structural properties. In the charts of this report a lower case letter is placed adjacent to the reference number giving VL values, so that a comparison can be made without referring to the individual drawings.

In chart No. 5 the minimum drag is plotted against the L/D at one-fourth the maximum lift. This chart should be used in choosing a wing section for a high-speed airplane, the wing sections being more suited for this use the farther they are from the lower left-hand corner.

In chart No. 6 the mean spar depth is plotted against the maximum lift in order to show the possible strength and lightness of the wing structure. The higher the maximum lift coefficient is the smaller will be the wing area and the lighter the structural weight, and in the same way the greater the depth of the spars the lighter will be their weight, so that the sections the greatest distance from the lower left-hand corner will give the lightest and strongest wings.

The maximum L/D is plotted against the maximum lift in chart No. 7, which is of use in choosing the wing section for a slow and efficient airplane. In the same way as before, the sections farthest from the lower left-hand corner are the best for this purpose.

In chart No. 8 the L/D at two-thirds the maximum lift is plotted against the maximum lift, so that this chart can be used for choosing a section that will give an efficient climb or a long range at cruising speed. The best sections for this purpose will be the farthest from the lower lefthand corner of the chart.

CHART INDEX

GROUP INDEX.

Aerofoil.	Wind tunnel.	Report reference number.
UNITED STATES.		
U. S. A. 22	M. I. T.	326
U. S. A. 25	do	327
U. S. A. 26	do	328
U. S. A. 27	do	329
U. S. A. 28	do	330
U. S. A. 29	do	331
U. S. A. 30	do	371
U. S. A. 31	do	372
U. S. A. 32	do	373
U. S. A. 33	do	374
U. S. A. 34	do	375
Glenn Martin 1	do	332
Glenn Martin 2	do	333
Glenn Martin 3	do	334
Glenn Martin 4	do	335
Glenn Martin 5	do	336
Glenn Martin 6	do	337
A. E. G. 1	do	338
A. E. G. 2	do	339
M-80 (Loening)	W. N. Y.	340
Springer 2	do	341
Springer 3	do	342
BRITISH.		
Fage & Collins 1	N. P. L.	343
Fage & Collins 2	do	344
Fage & Collins 3	do	345
Fage & Collins 4	do	346
Fage & Collins 5	do	347
Fage & Collins 6	do	348
Bristol Badger	do	349
Bristol Braemar	do	350
Powell (Plain)	do	351
Searle & Peatfield 1	do	352
Searle & Peatfield 2	do	353
Searle & Peatfield 3	do	354
Searle & Peatfield 4	do	355
FRENCH.		
Eiffel 63	Eiffel	356
Eiffel 64	do	357
Eiffel 65	do	358
Eiffel 66	do	359
A R	do	360
Bleriot	do	361
Coanda 1	do	362
Coanda 2	do	363
Coanda 3	do	364
Juvigny	do	365
Kauffmann 111	do	366
Odier 110	do	367
Turin 3	do	368
Turin 4	do	369
ITALIAN.		
Italian 307	Crocco	370

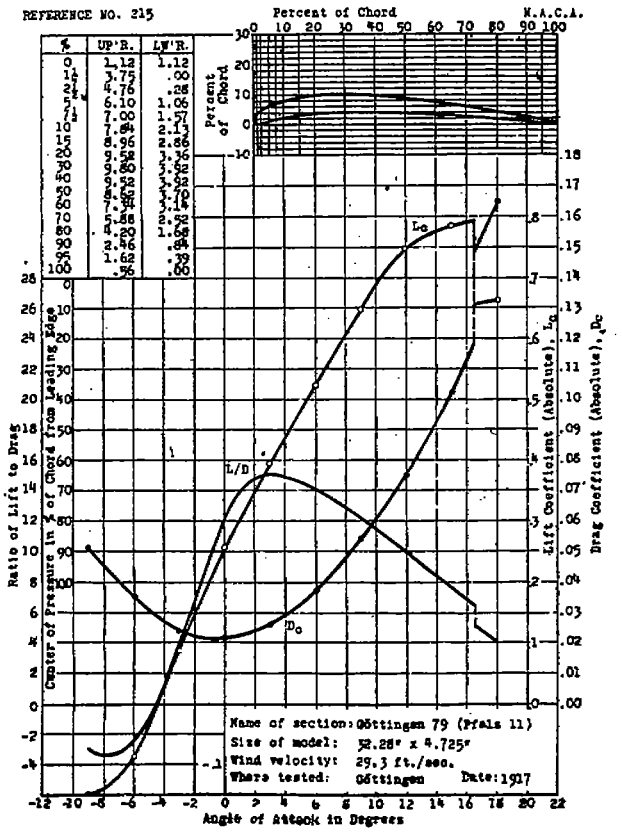
Aerofoil.	Wind tunnel.	Report reference number.
GERMANY.		
Göttingen 79 (Pfalz 11)	Göttingen	215
Göttingen 147 (M. V. A. H. 6)	do	216
Göttingen 164 (M. V. A. Mk. 10)	do	217
Göttingen 165 (M. V. A. Mk. 11)	do	218
Göttingen 173 (Albatros 6u2o)	do	219
Göttingen 174 (Albatros 5u2o)	do	220
Göttingen 176 (Albatros 7u2o)	do	221
Göttingen 184 (M. V. A. H. 29)	do	222
Göttingen 217 (M. V. A. Mk. 12)	do	223
Göttingen 222 (M. V. A. H. 33)	do	224
Göttingen 223 (M. V. A. H. 34)	do	225
Göttingen 224 (M. V. A. Ca 1)	do	226
Göttingen 225 (M. V. A. H. 35)	do	227
Göttingen 226 (M. V. A. H. 36)	do	228
Göttingen 227 (M. V. A. H. 37)	do	229
Göttingen 228 (M. V. A. H. 38)	do	230
Göttingen 229 (M. V. A. H. 39)	do	231
Göttingen 234 (M. V. A. Ca 5)	do	232
Göttingen 239 (M. V. A. H. 31)	do	233
Göttingen 241 (M. V. A. Pr. 1)	do	234
Göttingen 242 (M. V. A. Pr. 2)	do	235
Göttingen 243 (M. V. A. Pr. 3)	do	236
Göttingen 244 (M. V. A. Pr. 4)	do	237
Göttingen 255 (M. V. A. Ca 6)	do	238
Göttingen 256 (Flz. Junkers E)	do	239
Göttingen 265 (Flz. Fr'hafen 41R1)	do	240
Göttingen 281 (Daimler XII)	do	241
Göttingen 284	do	242
Göttingen 285	do	243
Göttingen 288	do	244
Göttingen 289	do	245
Göttingen 290	do	246
Göttingen 298 (Flz. Fokker Dr. 1)	do	247
Göttingen 300 (Fr'hafen G20)	do	248
Göttingen 301 (Fr'hafen G13)	do	249
Göttingen 303 (Fr'hafen G03)	do	250
Göttingen 304 (Fr'hafen G02)	do	251
Göttingen 319 (Hansa-Brandenburg I.1).	do	252
Göttingen 320 (Hansa-Brandenburg II.1).	do	253
Göttingen 321 (Hansa-Brandenburg III.1).	do	254
Göttingen 322 (Hansa-Brandenburg IV.1).	do	255
Göttingen 323 (Hansa-Brandenburg V.1).	do	256
Göttingen 324 (Hansa-Brandenburg).	do	257
Göttingen 325 (Pfalz 54)	do	258
Göttingen 329 (Pfalz 58)	do	259
Göttingen 330 (Pfalz 59)	do	260
Göttingen 331 (Pfalz 60)	do	261
Göttingen 332 (Pfalz 61)	do	262
Göttingen 335 (D. F. W.)	do	263
Göttingen 336 (M. V. A. H. 44)	do	264
Göttingen 344 (Pfalz 71)	do	265
Göttingen 346 (Fr'hafen Staaken)	do	266

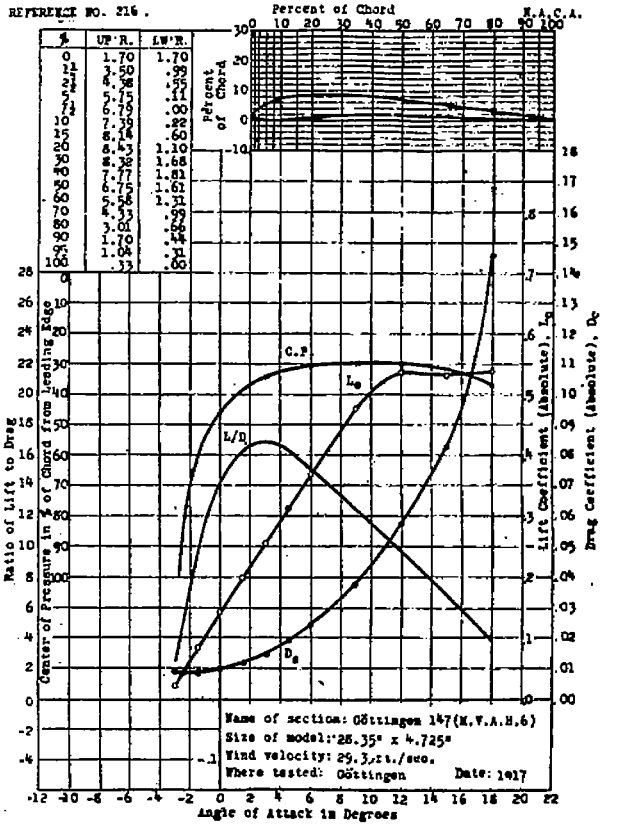
Group index—Continued.

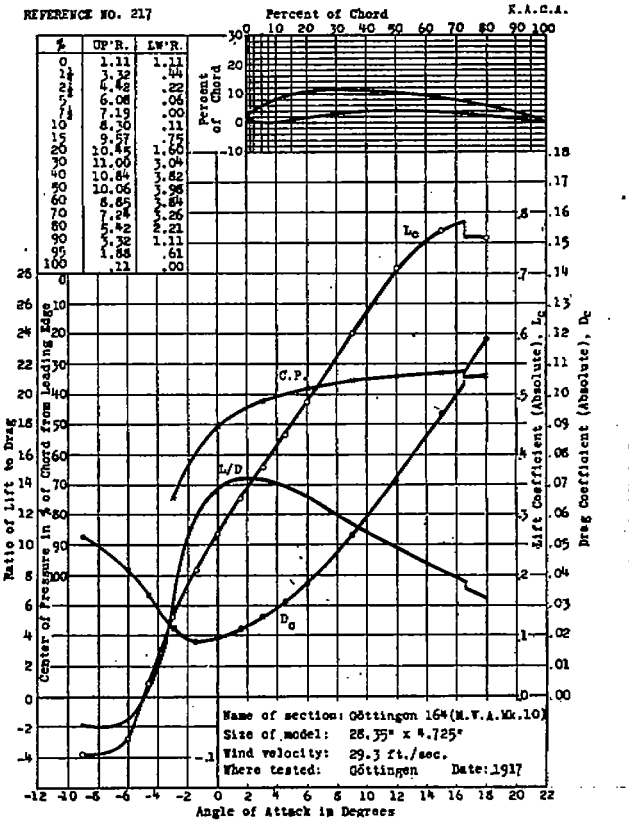
Aerofoil.	Wind tunnel.	Report reference number.
GERMANY—continued.		
Göttingen 358	Göttingen	267
Göttingen 360	do	268
Göttingen 363	do	269
Göttingen 364	do	270
Göttingen 365	do	271
Göttingen 366	do	272
Göttingen 367	do	273
Göttingen 381	do	274
Göttingen 382	do	275
Göttingen 383	do	276
Göttingen 384	do	277
Göttingen 385	do	278
Göttingen 386	do	279
Göttingen 387	do	280
Göttingen 388	do	281
Göttingen 389	do	282
Göttingen 390	do	283
Göttingen 393	do	284
Göttingen 394	do	285
Göttingen 395	do	286
Göttingen 398	do	287
Göttingen 400	do	288
Göttingen 404	do	289
Göttingen 405	do	290
Göttingen 406	do	291
Göttingen 407	do	292
Göttingen 409	do	293
Göttingen 410	do	294
Göttingen 411	do	295
Göttingen 412	do	296
Göttingen 413	Göttingen	297
Göttingen 414	do	298
Göttingen 415	do	299
Göttingen 416	do	300
Göttingen 418	do	301
Göttingen 420	do	302
Göttingen 421	do	303
Göttingen 422	do	304
Göttingen 423	do	305
Göttingen 424	do	306
Göttingen 425	do	307
Göttingen 426	do	308
Göttingen 429	do	309
Göttingen 430	do	310
Göttingen 431	do	311
Göttingen 432	do	312
Göttingen 433	do	313
Göttingen 434	do	314
Göttingen 435	do	315
Göttingen 436	do	316
Göttingen 440	do	317
Göttingen 441	do	318
Göttingen 446	do	319
Göttingen 447	do	320
Göttingen 448	do	321
Göttingen 449	do	322
Göttingen 450	do	323
Göttingen 459	do	324
Göttingen 460	do	325

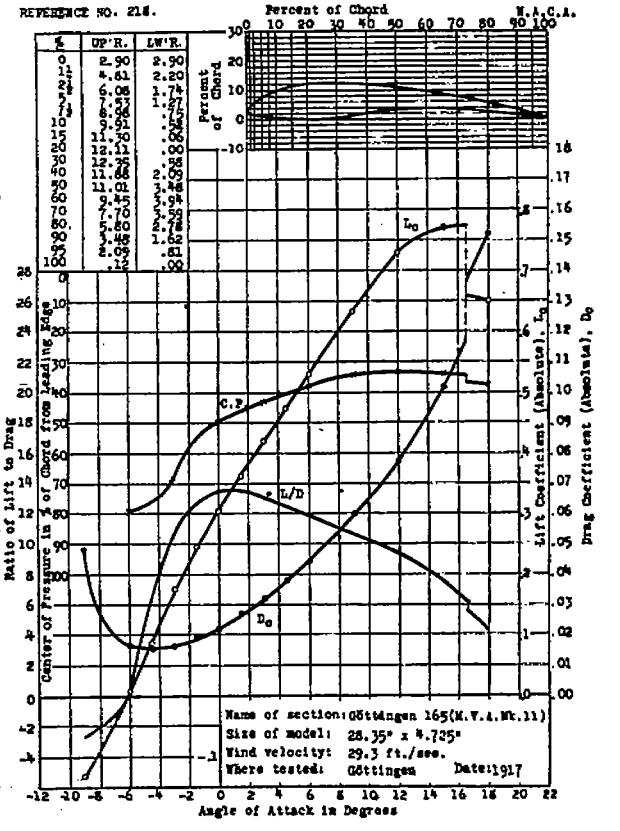
ALPHABETICAL INDEX.

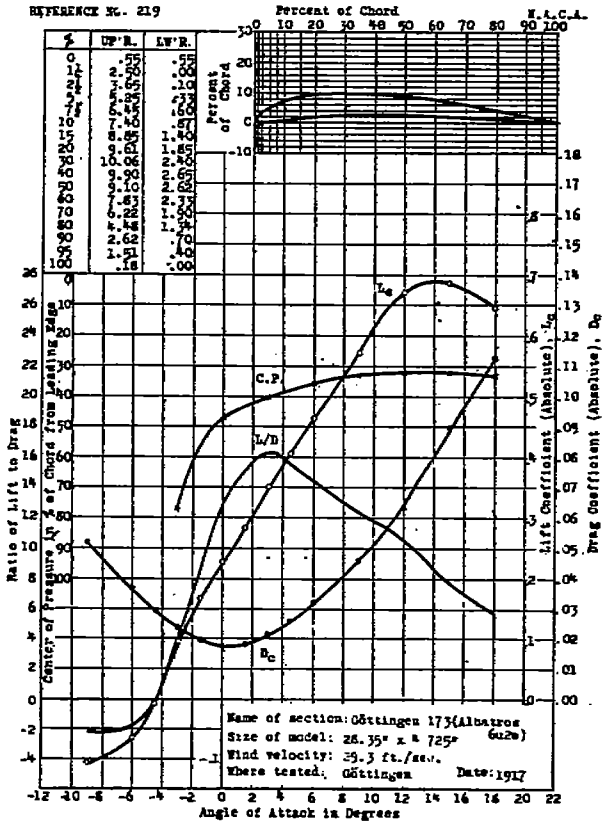
Alphabetical index—Continued.

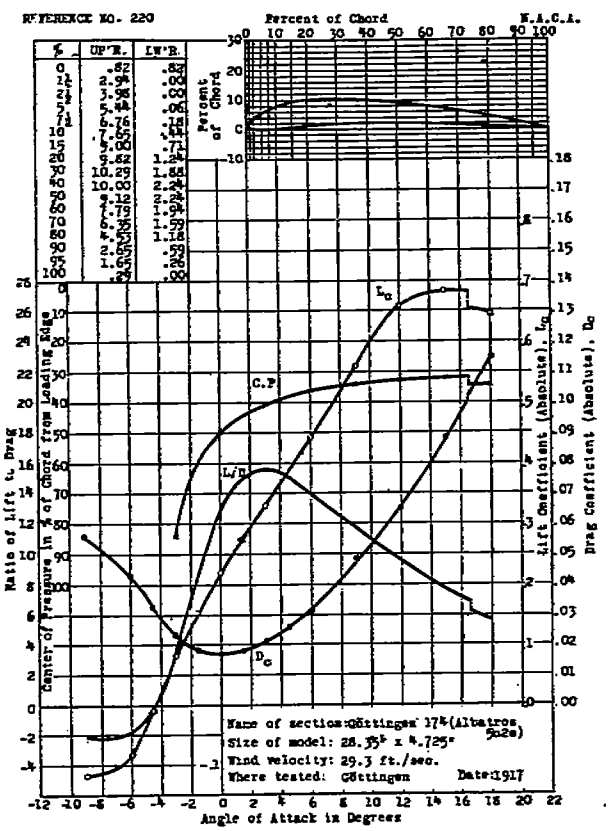

REFERENCE NO. 215
N.A.C.A.
Percent of Chord
Name of section: Göttingen 79 (Prals 11)
Size of model: 32.28" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
L/D
L_c
D_c

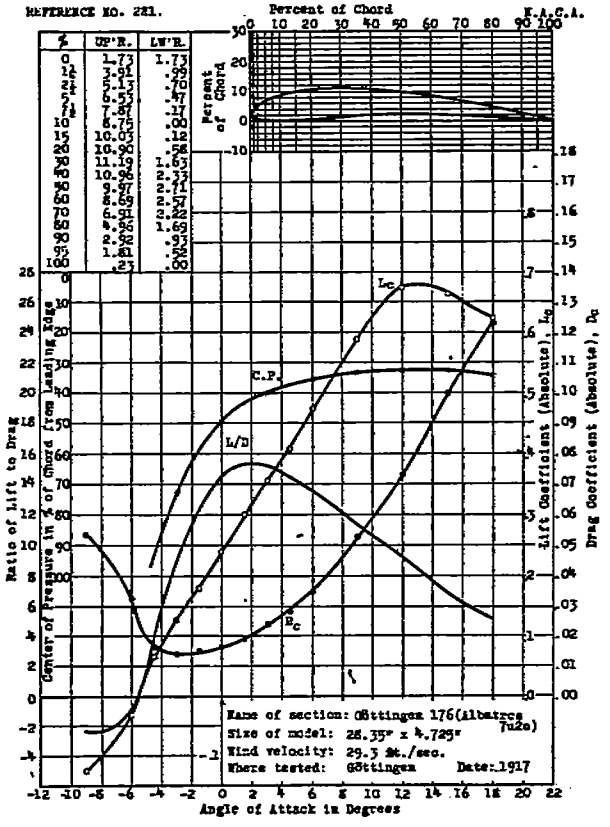

REFERENCE NO. 216.
N.A.C.A.
Percent of Chord
Name of section: Göttingen 147(M.V.A.H.6)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c

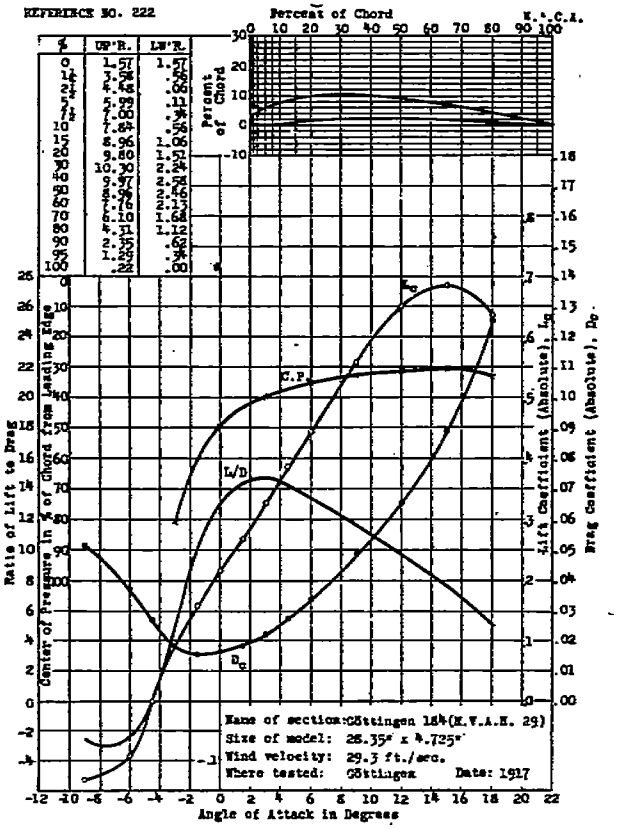

REFERENCE NO. 217
N.A.C.A.
Percent of Chord
Name of section: Göttingen 164(M.V.A.Mk.10)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c

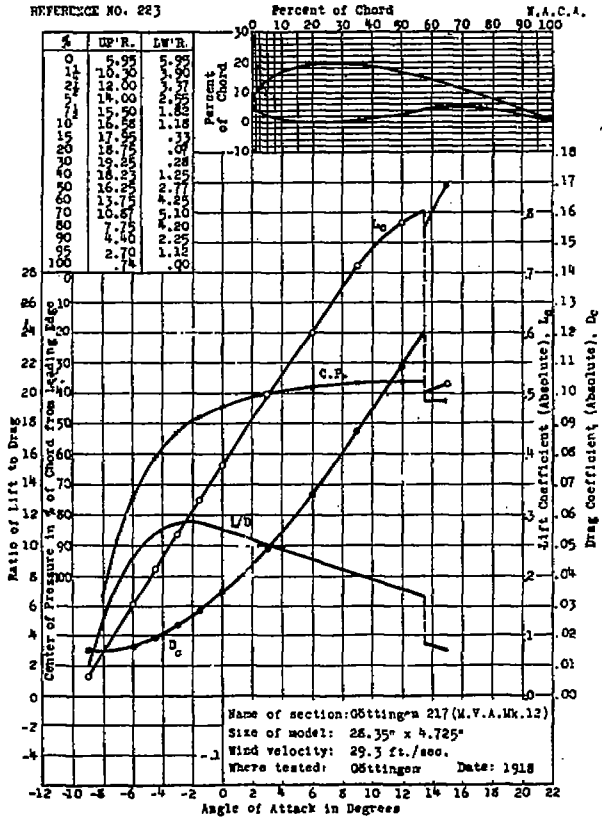

REFERENCE NO. 218.
N.A.C.A.
Percent of Chord
Name of section: Göttingen 165(M.V.A.Mk.11)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c

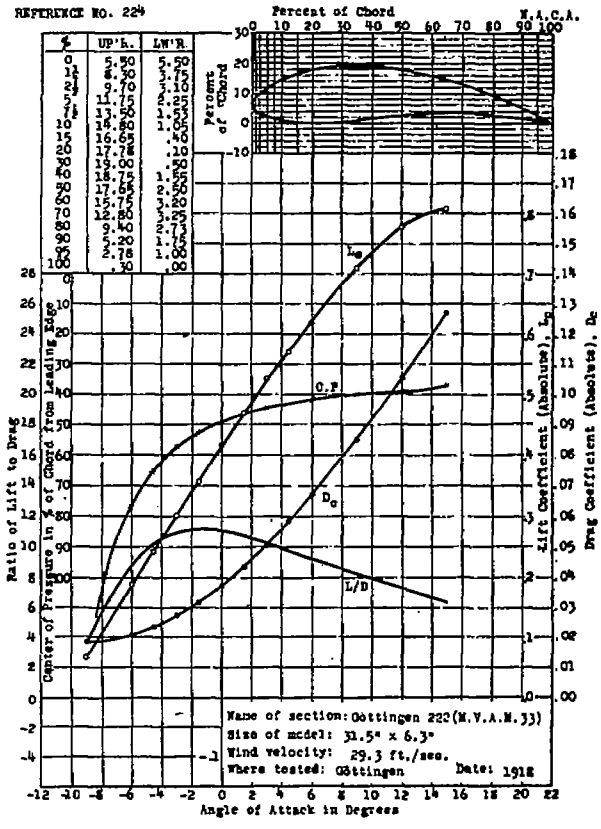

REFERENCE No. 219
Percent of Chord
N.A.C.A.
Name of section: Göttingen 173 (Albatros 6u2e)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

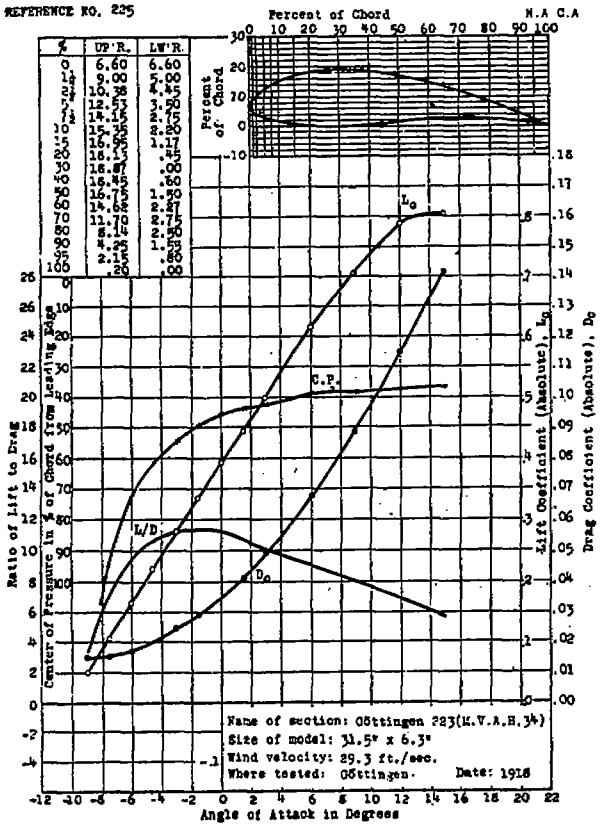

REFERENCE No. 220
Percent of Chord
N.A.C.A.
Name of section: Göttingen 174 (Albatros 5u2e)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

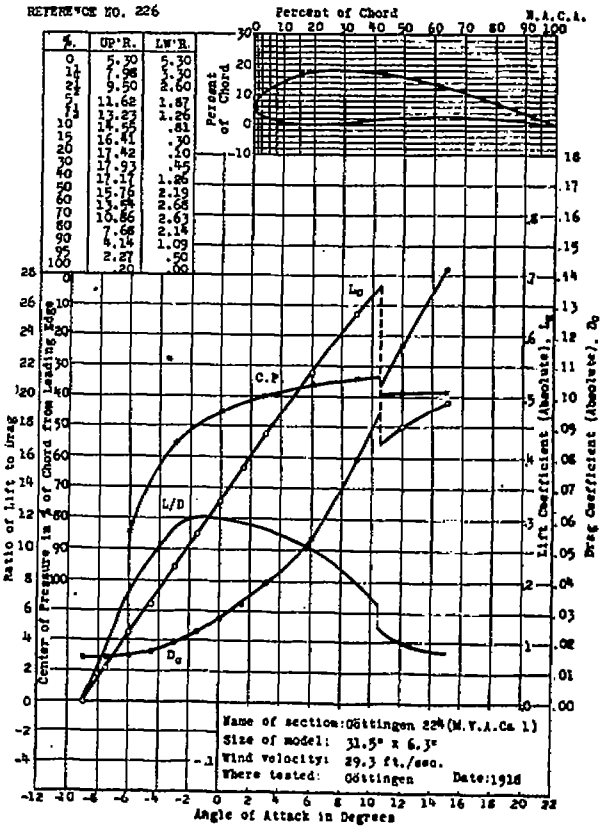

REFERENCE No. 221.
Percent of Chord
N.A.C.A.
Name of section: Göttingen 176 (Albatros 7u2e)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

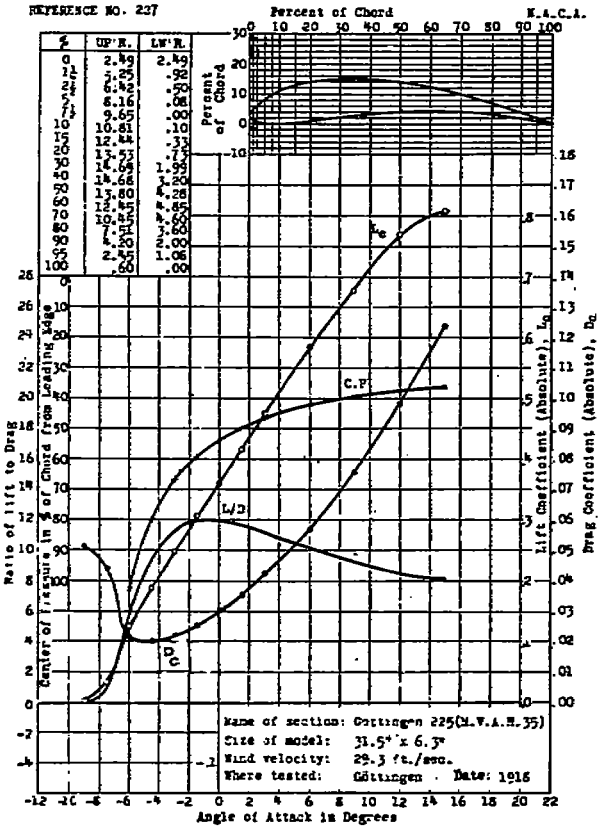

REFERENCE No. 222
Percent of Chord
N.A.C.A.
Name of section: Göttingen 184 (N.P.L.A.H. 29)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

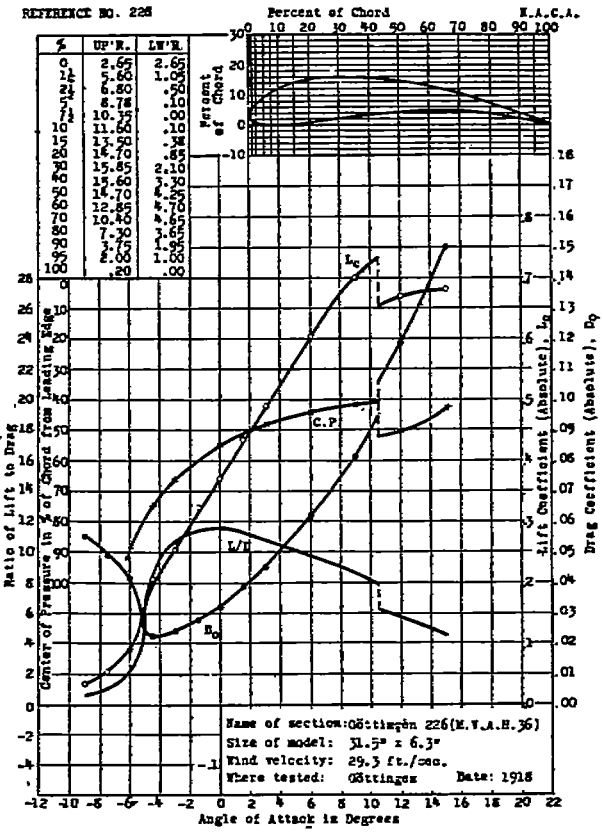

REFERENCE NO. 223
Percent of Chord
N.A.C.A.
Name of section: Göttingen 217 (M.V.A.Wk.12)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

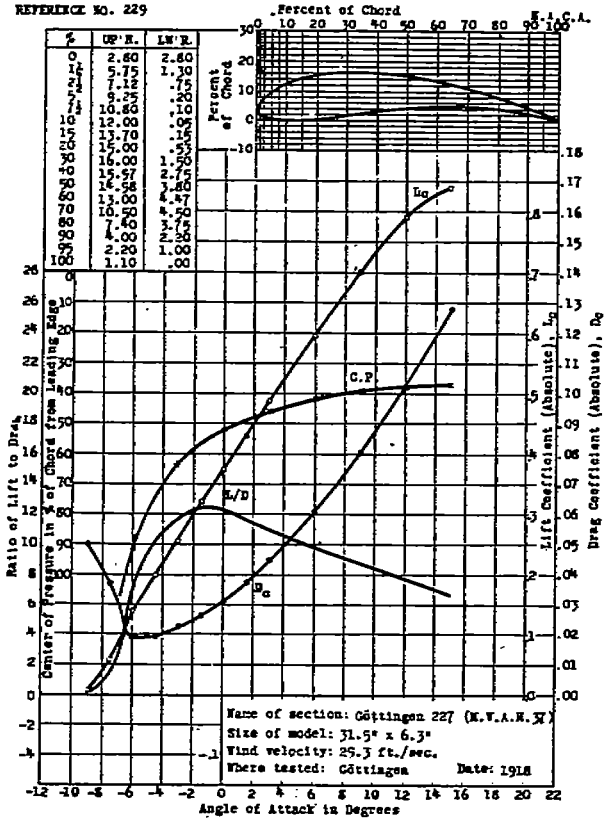

REFERENCE NO. 224
Percent of Chord
N.A.C.A.
Name of section: Göttingen 222 (M.V.A.M.33)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

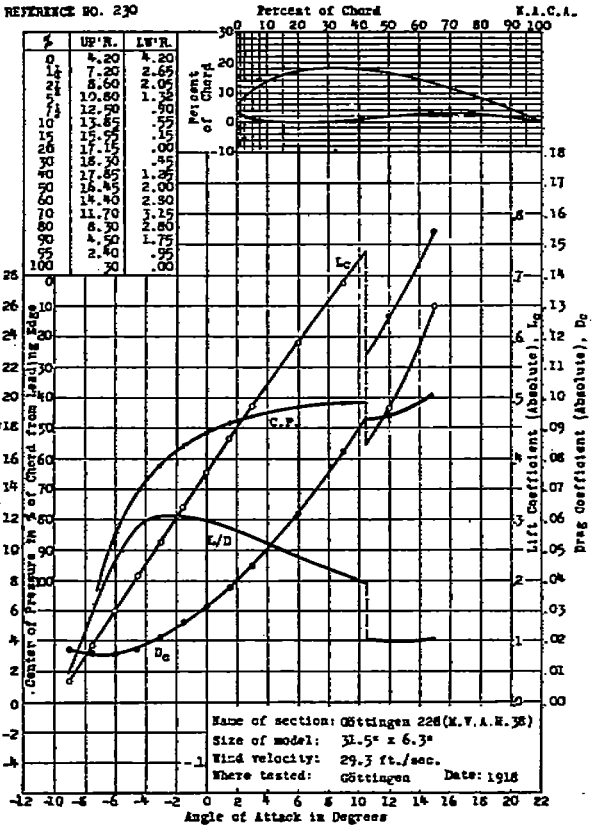

REFERENCE NO. 225
Percent of Chord
N.A.C.A.
Name of section: Göttingen 223 (M.V.A.M.34)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen. Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

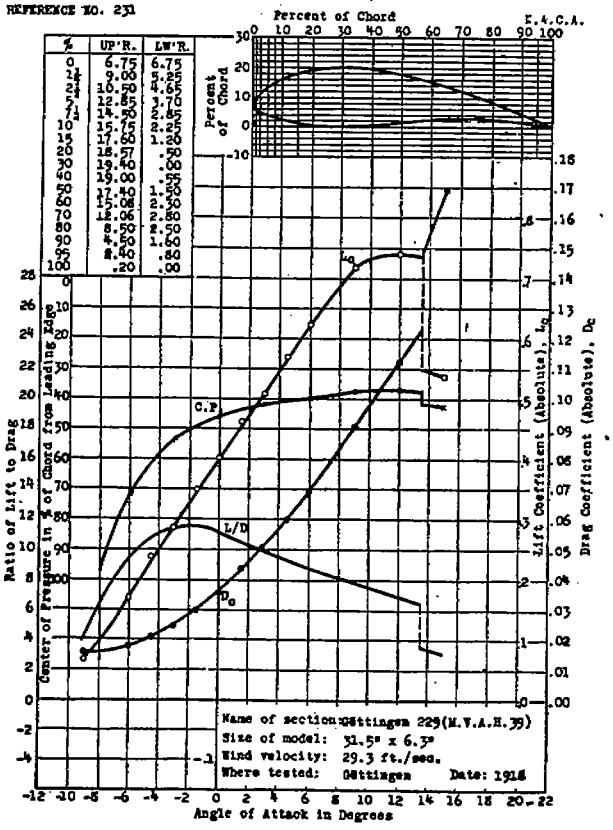

REFERENCE NO. 226
Percent of Chord
N.A.C.A.
Name of section: Göttingen 224 (M.V.A.Ca 1)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

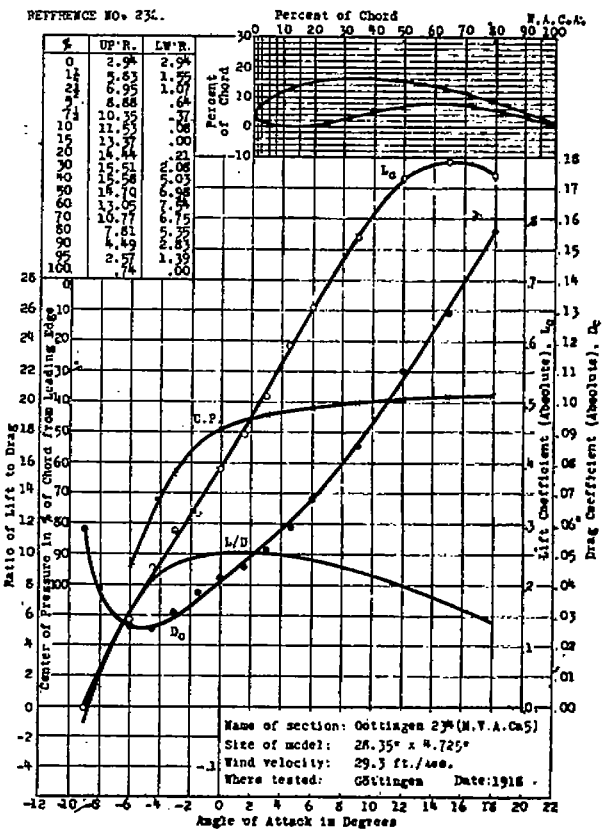

REFERENCE NO. 227
Percent of Chord
N.A.C.A.
Name of section: Göttingen 225(N.V.A.H.35)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Drag Coefficient (Absolute)
C.P.
L/D

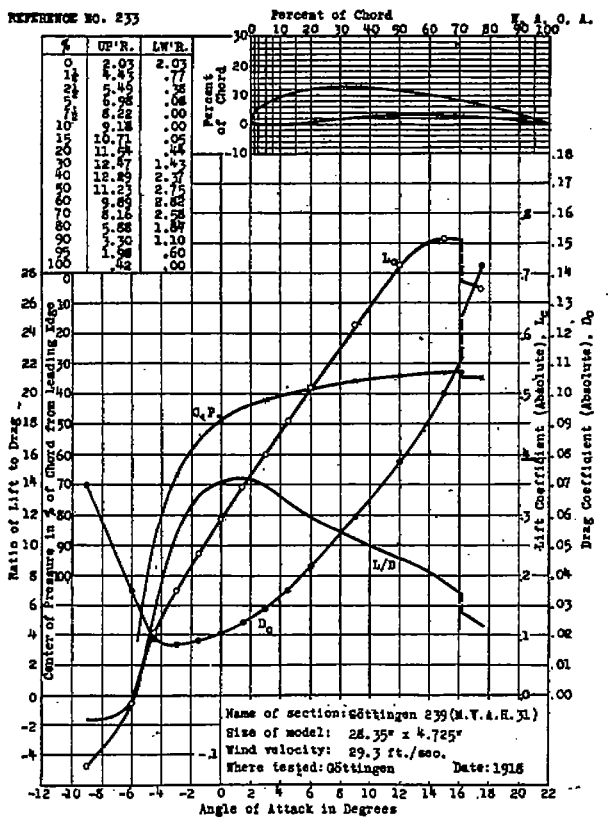

REFERENCE NO. 228
Percent of Chord
N.A.C.A.
Name of section: Göttingen 226(N.V.A.H.36)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Drag Coefficient (Absolute)
C.P.
L/D

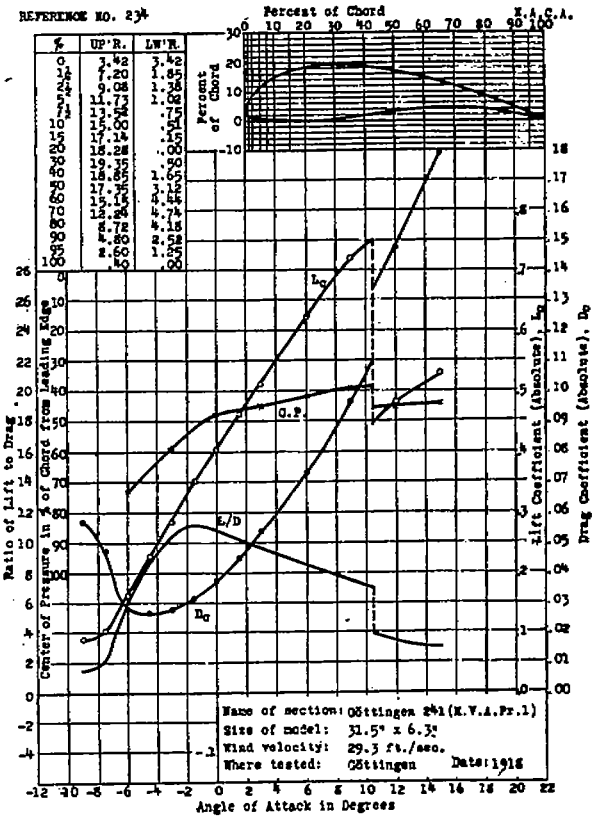

REFERENCE NO. 229
Percent of Chord
N.A.C.A.
Name of section: Göttingen 227 (N.V.A.H.37)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Drag Coefficient (Absolute)
C.P.
L/D

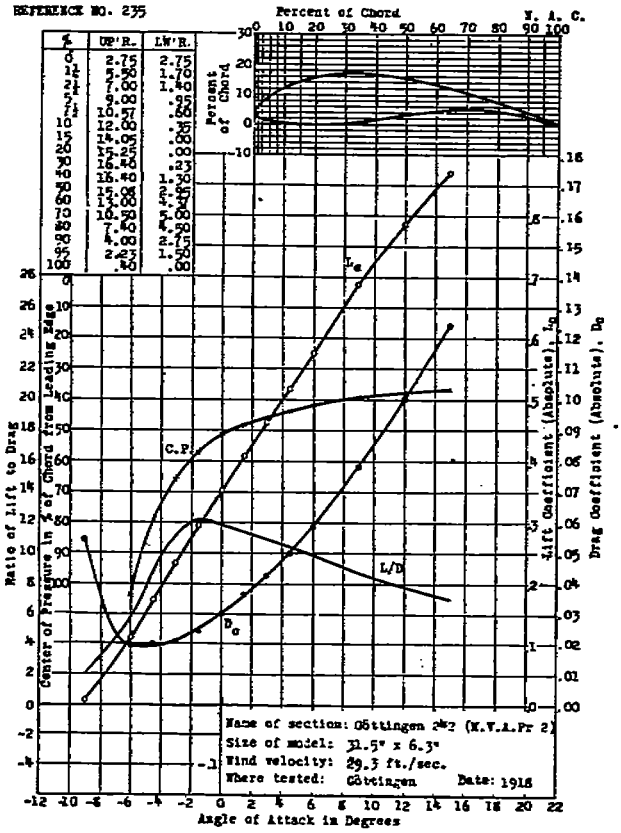

REFERENCE NO. 230
Percent of Chord
N.A.C.A.
Name of section: Göttingen 228(N.V.A.H.38)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Drag Coefficient (Absolute)
C.P.
L/D

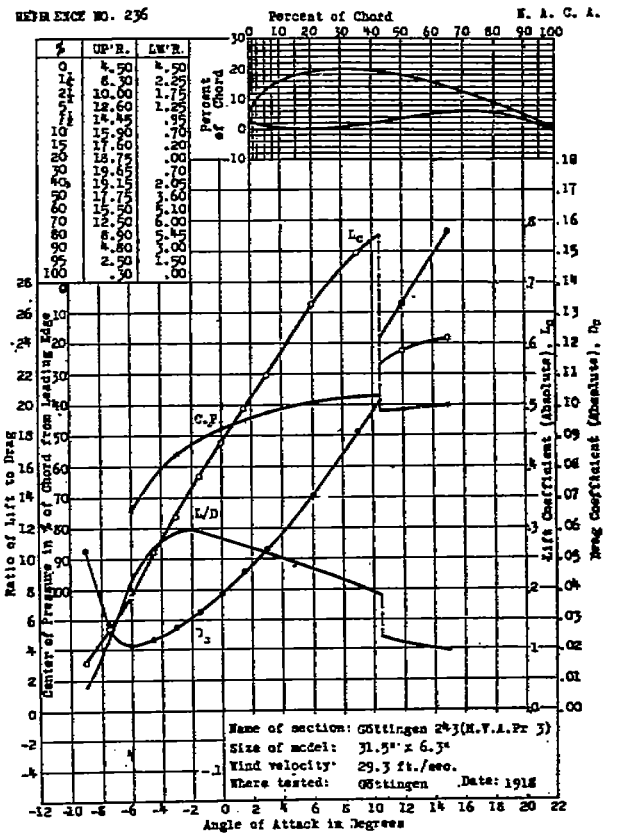

REFERENCE NO. 231
Percent of Chord
N.A.C.A.
% UP'R. LW'R.
Name of section: Göttingen 229 (M.V.A.H. 39)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
C.P.
L/D
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
Angle of Attack in Degrees

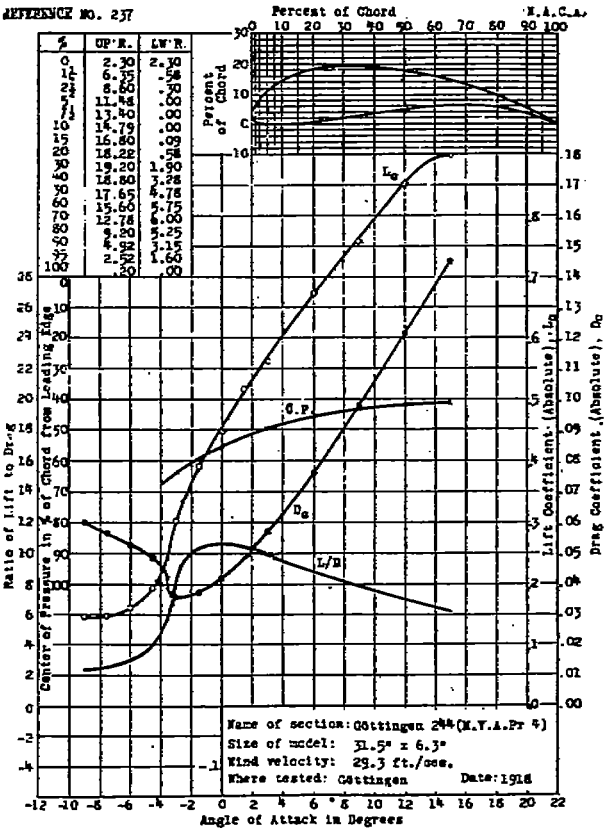

REFERENCE NO. 232
Percent of Chord
N.A.C.A.
% UP'R. LW'R.
Name of section: Göttingen 238 (N.V.A.Ca5)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
C.P.
L/D
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
Angle of Attack in Degrees

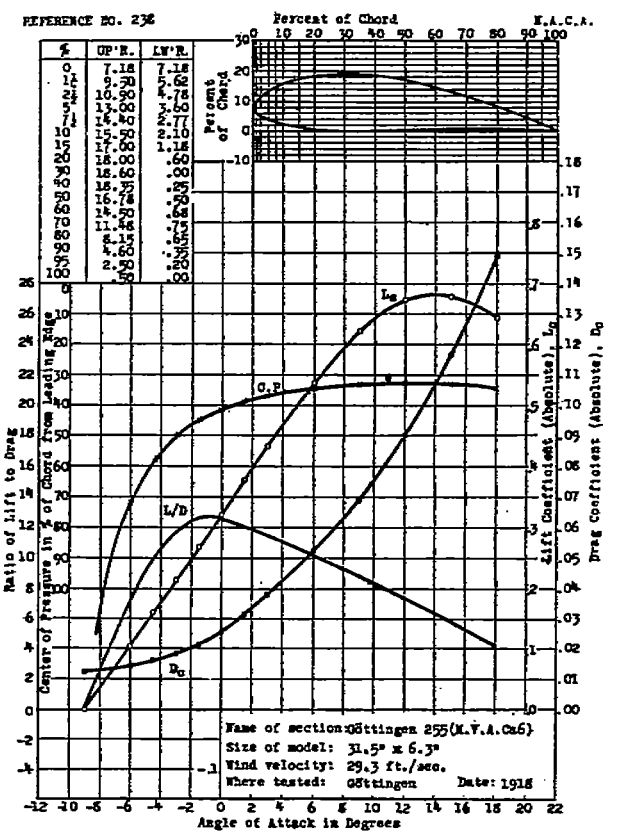

REFERENCE NO. 233
Percent of Chord
N.A.C.A.
% UP'R. LW'R.
Name of section: Göttingen 239 (N.V.A.H. 31)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
C.P.
L/D
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
Angle of Attack in Degrees

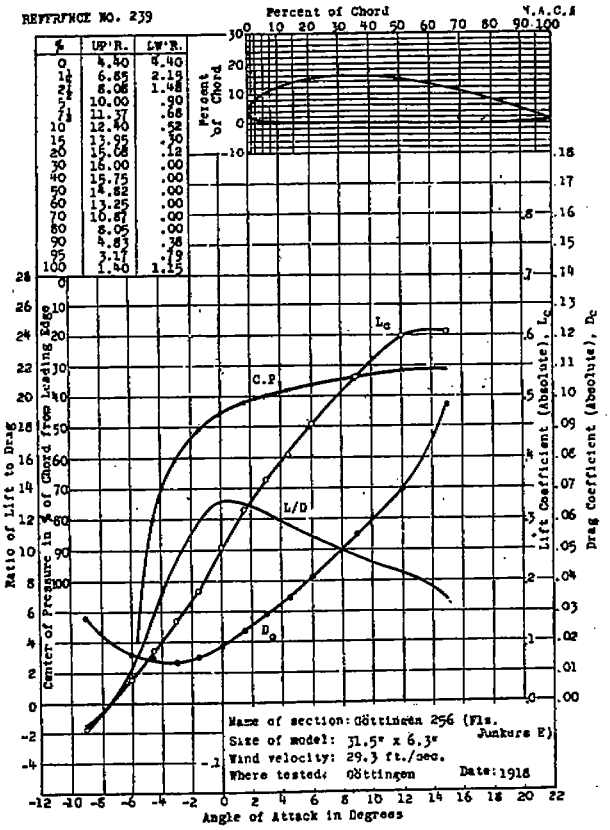

REFERENCE NO. 234
Percent of Chord
N.A.C.A.
% UP'R. LW'R.
Name of section: Göttingen 241 (N.V.A.Fr.1)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
C.P.
L/D
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
Angle of Attack in Degrees

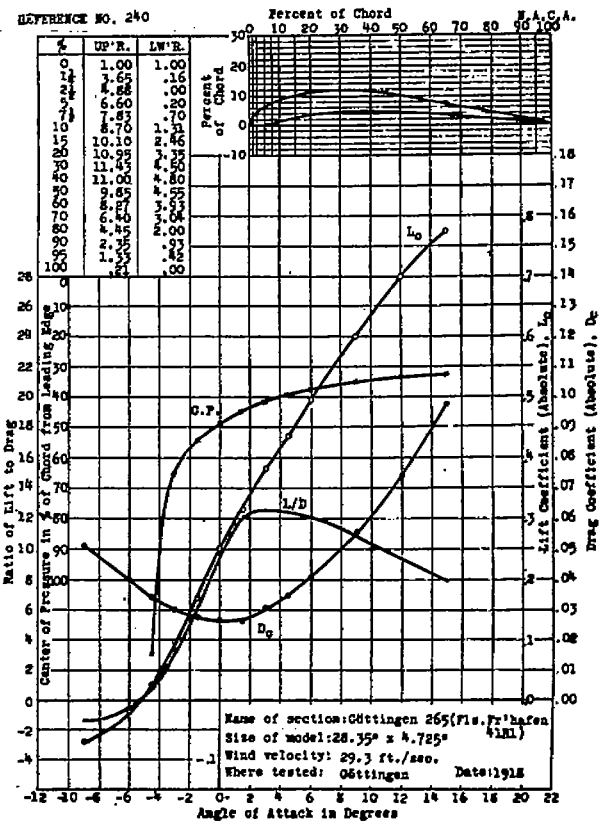

REFERENCE NO. 235
Percent of Chord
N. A. C.
Name of section: Göttingen 262 (N.V.A.Pr 2)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D


REFERENCE NO. 236
Percent of Chord
N. A. C. A.
Name of section: Göttingen 243(N.V.A.Pr 3)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

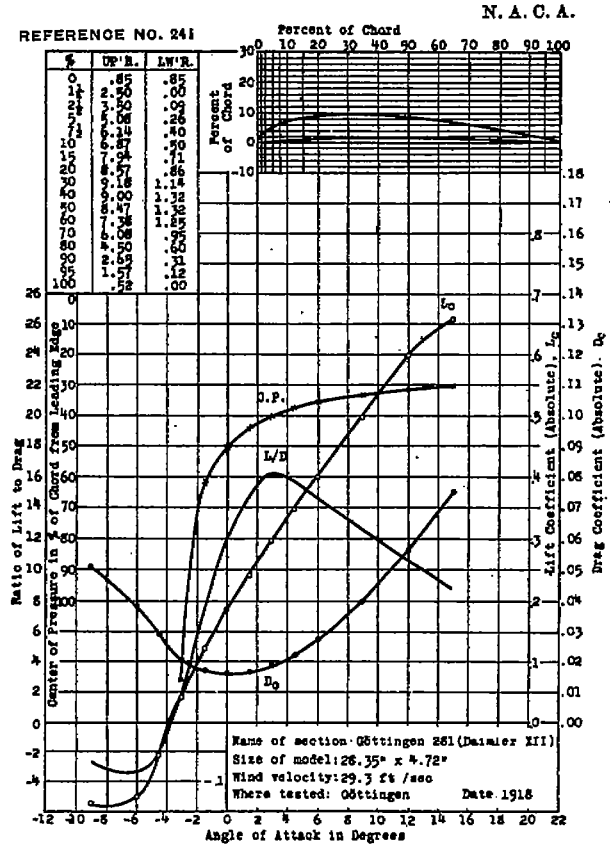

REFERENCE NO. 237
Percent of Chord
N.A.C.A.
Name of section: Göttingen 244(N.V.A.Pr 4)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

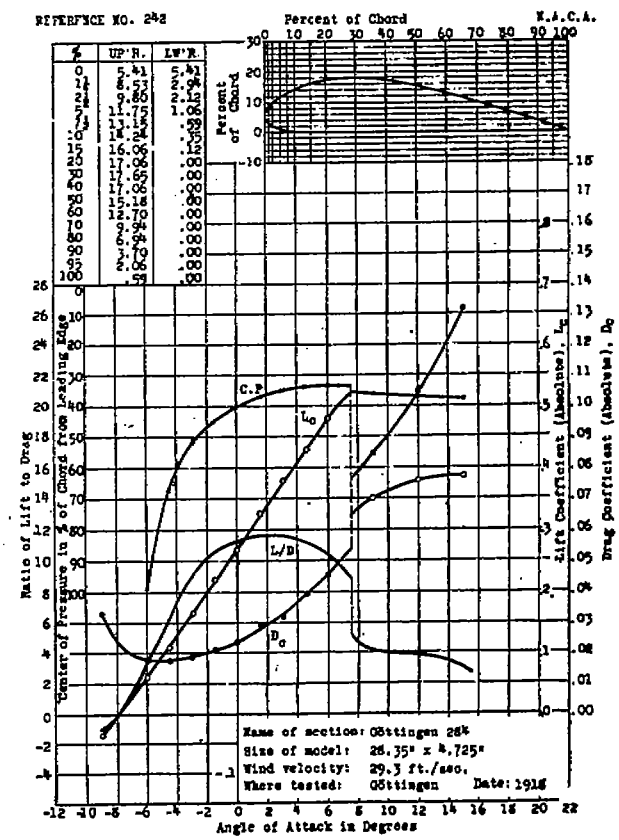

REFERENCE NO. 238
Percent of Chord
N.A.C.A.
Name of section: Göttingen 255(N.V.A.Ca6)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

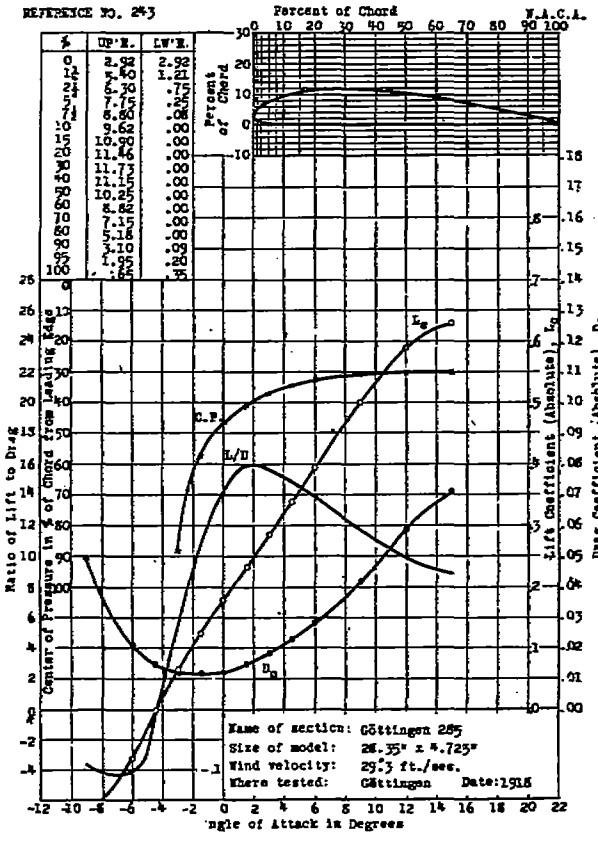

REFERENCE NO. 239
Percent of Chord
N.A.C.A.
Name of section: Göttingen 256 (Fls. Junkers E)
Size of model: 31.5" x 6.3"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Lc
Drag Coefficient (Absolute), Dc
C.P.
L/D

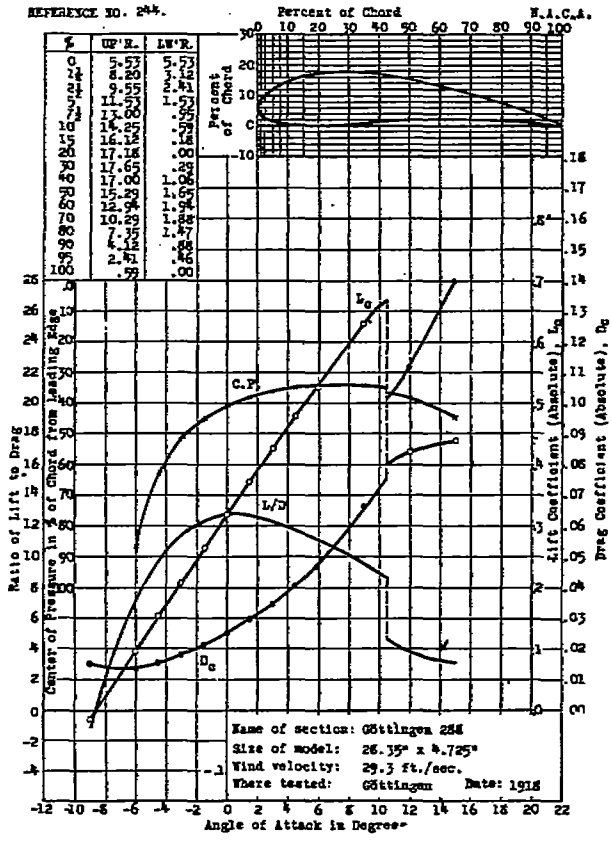

REFERENCE NO. 240
Percent of Chord
N.A.C.A.
Name of section: Göttingen 265 (Fls. Fr'hafen 4181)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Lc
Drag Coefficient (Absolute), Dc
C.P.
L/D

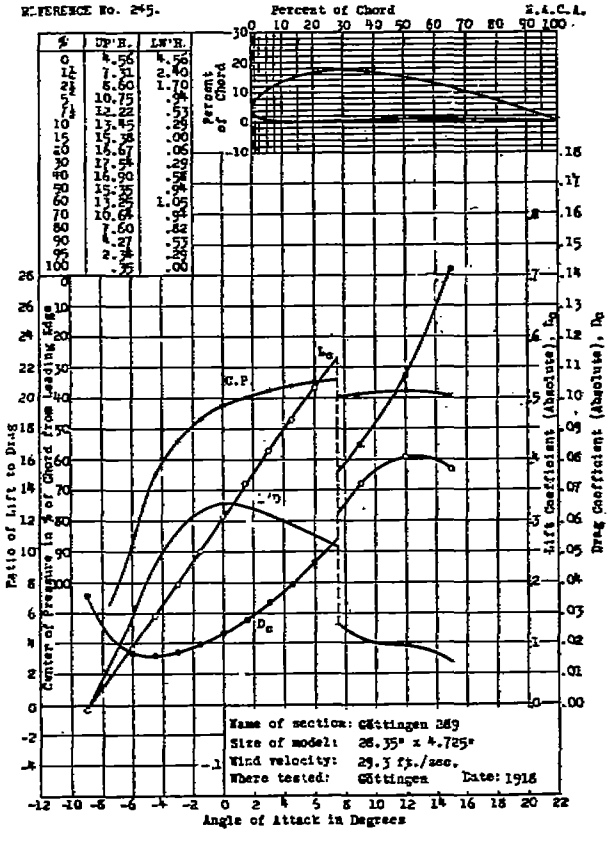
N. A. C. A.

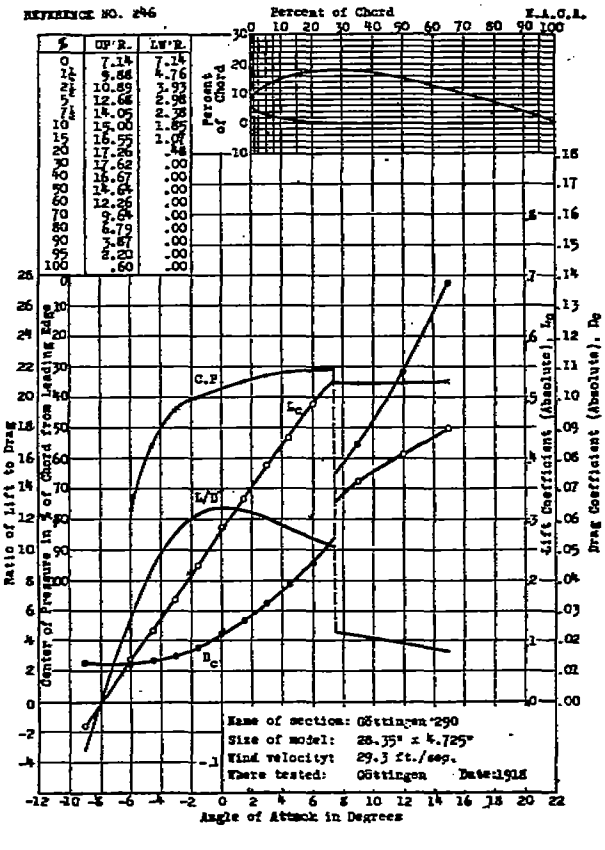

REFERENCE NO. 241
Percent of Chord
Name of section: Göttingen 281 (Daimler XII)
Size of model: 28.35" x 4.72"
Wind velocity: 29.3 ft /sec
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Lc
Drag Coefficient (Absolute), Dc
C.P.
L/D

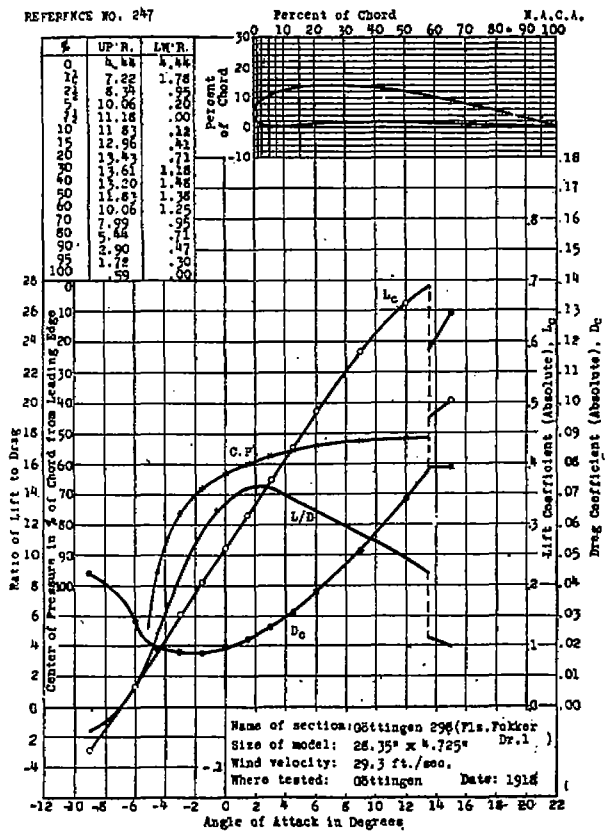

REFERENCE NO. 242
Percent of Chord
N.A.C.A.
Name of section: Göttingen 284
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Lc
Drag Coefficient (Absolute), Dc
C.P.
L/D

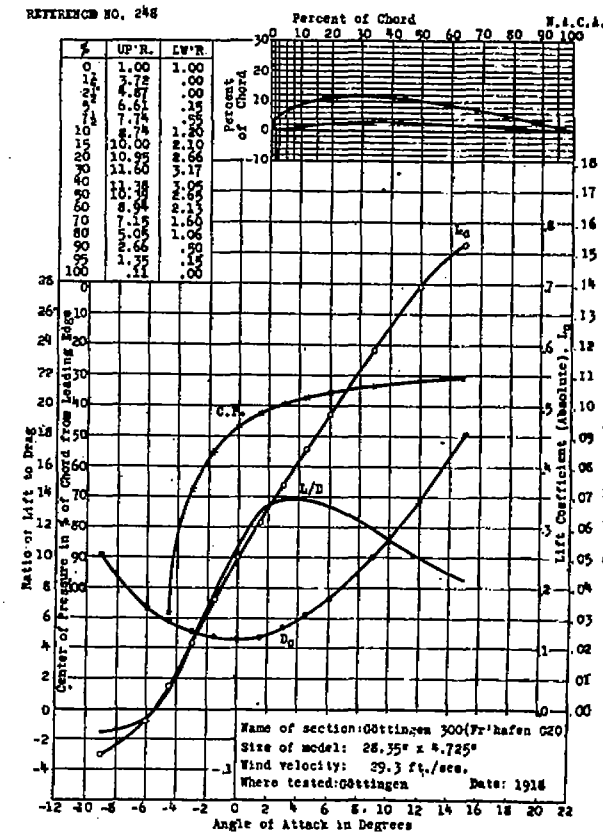

REFERENCE NO. 243
Percent of Chord
N.A.C.A.
Name of section: Göttingen 285
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), Dc
Lift Coefficient (Absolute), Lc
C.P.
L/D

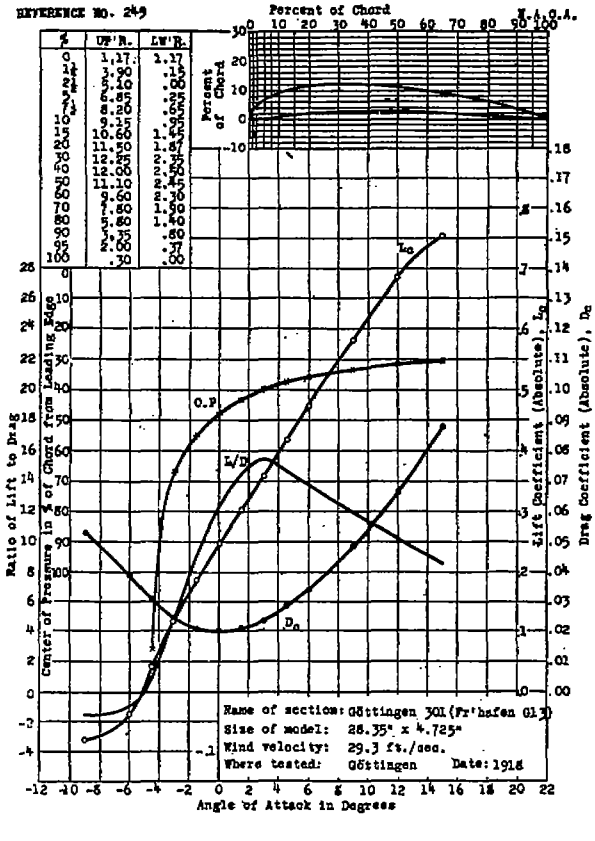

REFERENCE NO. 244.
Percent of Chord
N.A.C.A.
Name of section: Göttingen 284
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), Dc
Lift Coefficient (Absolute), Lc
C.P.
L/D

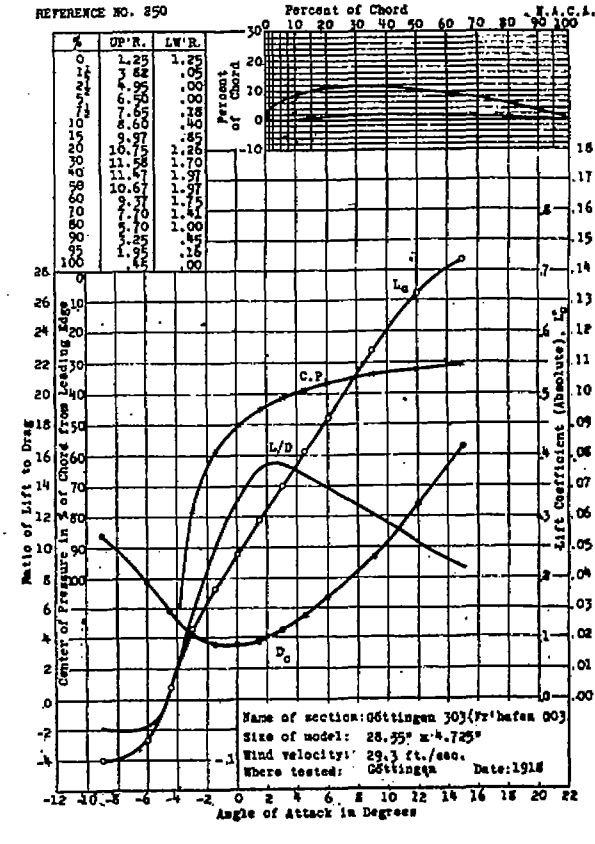

REFERENCE No. 245.
Percent of Chord
N.A.C.A.
Name of section: Göttingen 289
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), Dc
Lift Coefficient (Absolute), Lc
C.P.
L/D

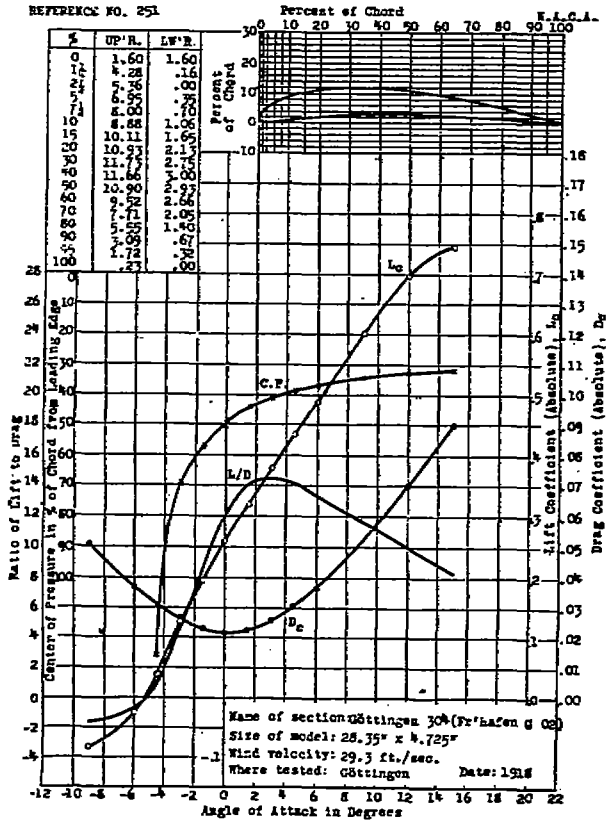

REFERENCE NO. 246
Percent of Chord
N.A.C.A.
Name of section: Göttingen 290
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), Dc
Lift Coefficient (Absolute), Lc
C.P.
L/D

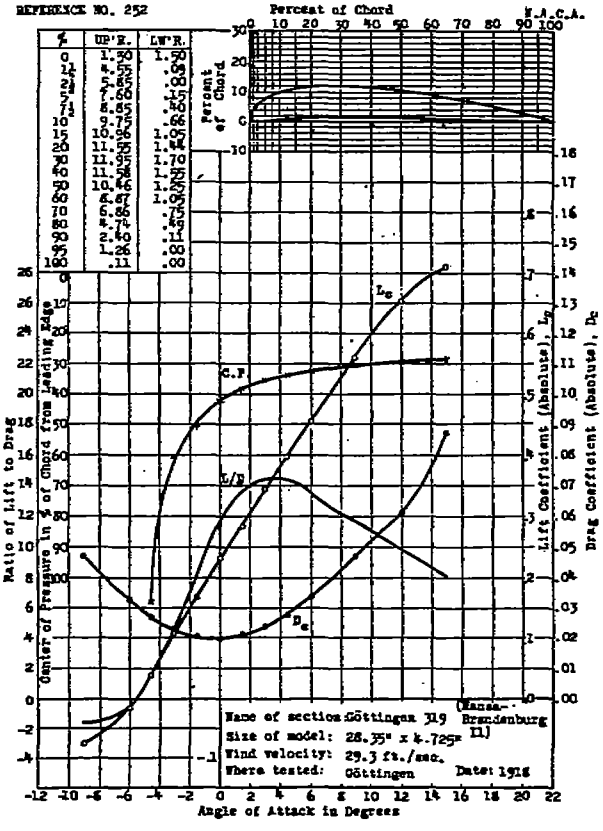

REFERENCE NO. 247
Percent of Chord
N.A.C.A.
Percent of Chord
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c
Name of section: Göttingen 298 (Fls. Fokker Dr.1)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees

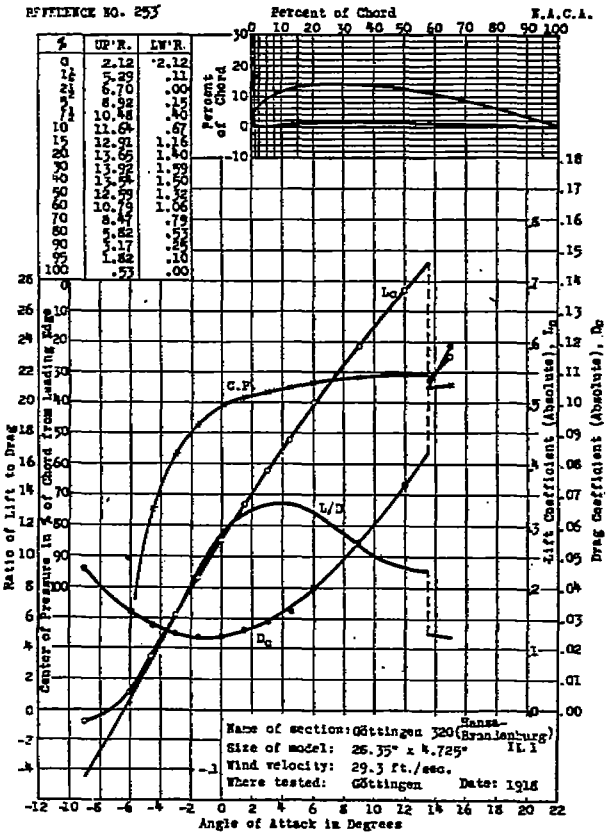

REFERENCE NO. 248
Percent of Chord
N.A.C.A.
Percent of Chord
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c
Name of section: Göttingen 300 (Fr'hafen G20)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees

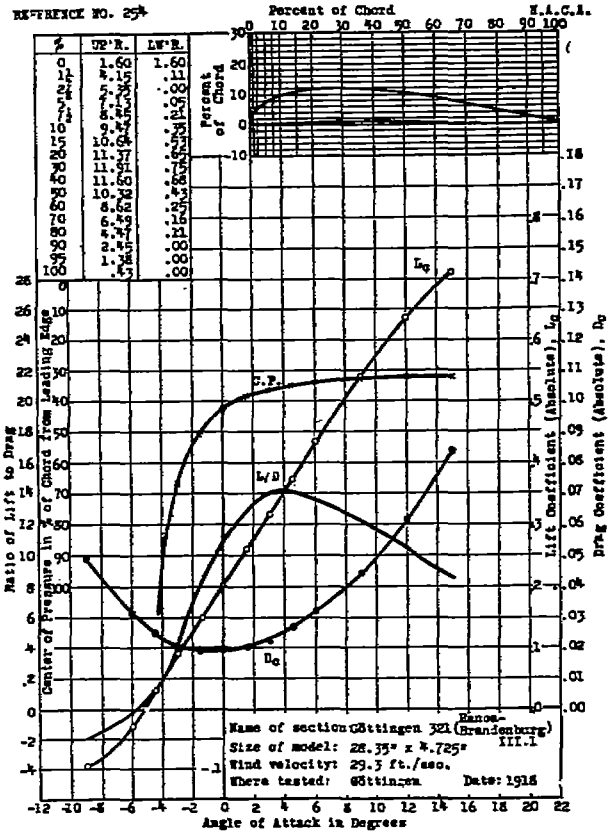

REFERENCE NO. 249
Percent of Chord
N.A.C.A.
Percent of Chord
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c
Name of section: Göttingen 301 (Fr'hafen 013)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees


REFERENCE NO. 250
Percent of Chord
N.A.C.A.
Percent of Chord
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c
Name of section: Göttingen 303 (Fr'hafen 003)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees

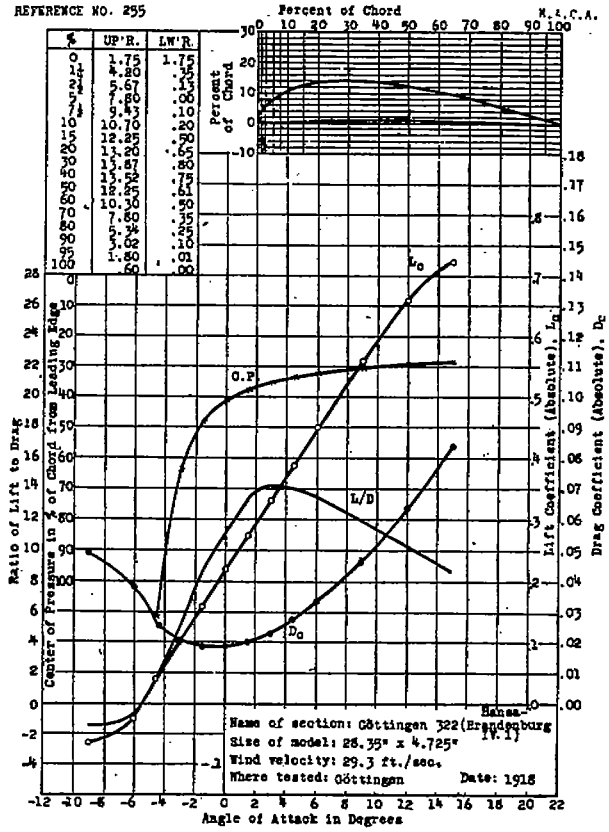

REFERENCE NO. 251
Percent of Chord
N.A.C.A.
Name of section: Göttingen 304 (Fr'hafen g 02)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P.
L/D


REFERENCE NO. 252
Percent of Chord
N.A.C.A.
Name of section: Göttingen 319 (Hanse-Brandenburg II)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P.
L/D


REFERENCE NO. 253
Percent of Chord
N.A.C.A.
Name of section: Göttingen 320 (Hanse-Brandenburg II.1)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P.
L/D

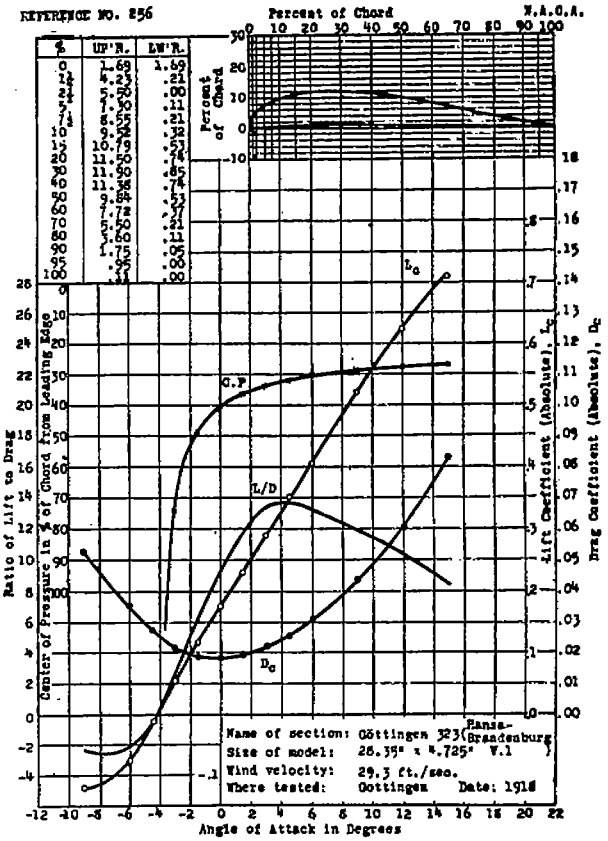

REFERENCE NO. 254
Percent of Chord
N.A.C.A.
Name of section: Göttingen 321 (Hanse-Brandenburg III.1)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P.
L/D

REFERENCE NO. 255



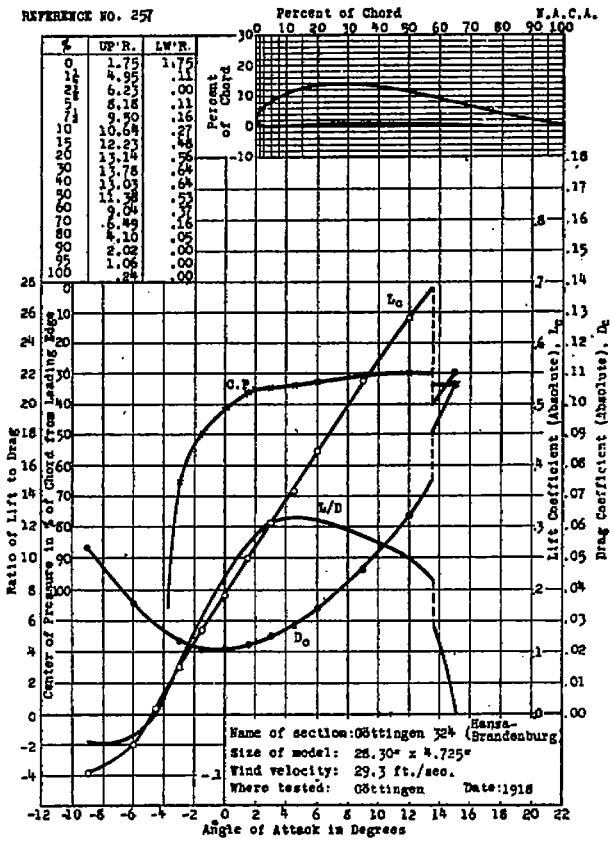
%	UP'R.	LW'R.
0	1.75	1.75
1¼	4.80	.15
2½	5.67	.13
5	7.80	.06
7½	9.43	.10
10	10.70	.20
15	12.25	.50
20	13.20	.65
30	13.87	.80
40	13.52	.75
50	12.25	.61
60	10.30	.50
70	7.60	.35
80	5.34	.25
90	3.02	.10
95	1.80	.01
100	.60	.00

REFERENCE NO. 256



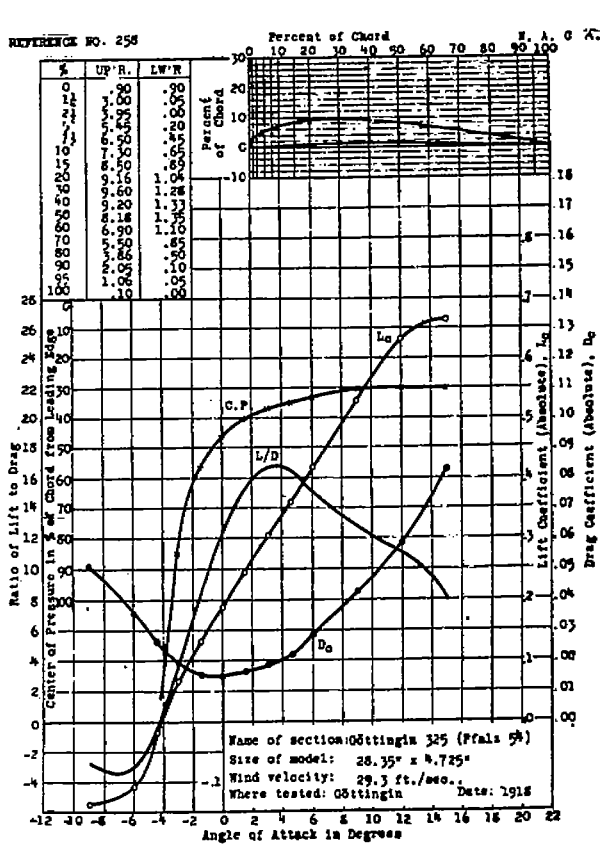
%	UP'R.	LW'R.
0	1.69	1.69
1¼	4.25	.21
2½	5.50	.00
5	7.50	.11
7½	9.50	.21
10	10.75	.32
15	11.50	.53
20	11.90	.65
30	11.45	.74
40	9.84	.53
50	7.72	.37
60	5.50	.21
70	3.60	.11
80	1.75	.05
90	.95	.00
95	.54	.00
100	.14	.00

REFERENCE NO. 257

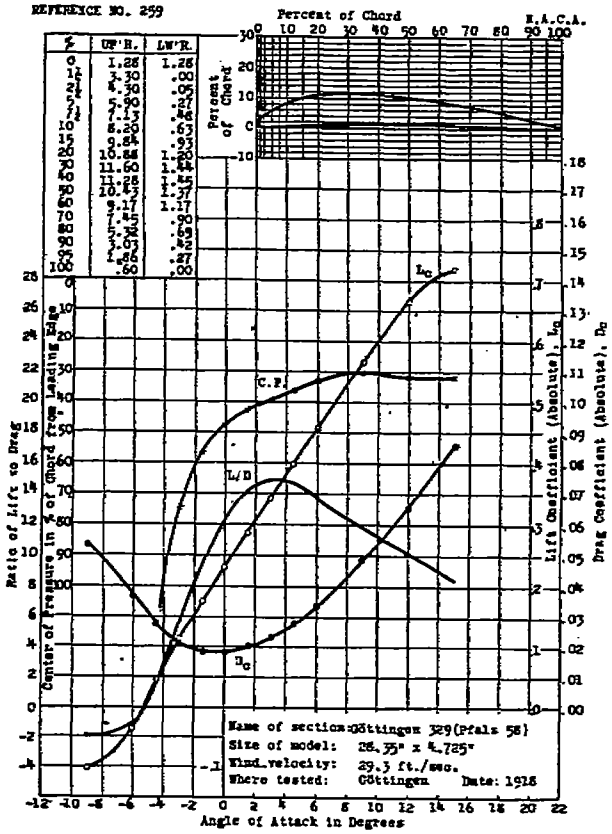


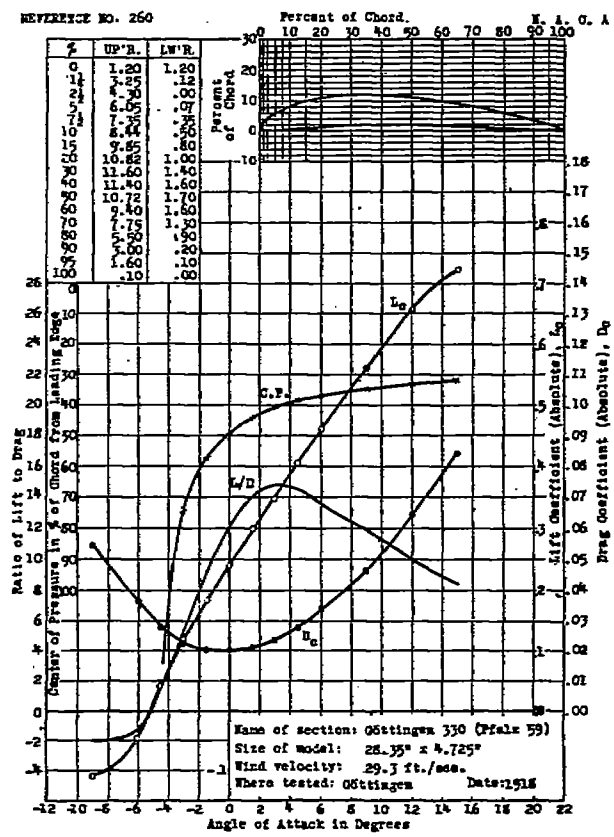
%	UP'R.	LW'R.
0	1.75	1.75
1¼	4.95	.11
2½	6.23	.00
5	8.18	.11
7½	9.50	.16
10	10.64	.27
15	12.23	.44
20	13.14	.58
30	13.78	.64
40	13.03	.64
50	11.38	.51
60	9.04	.37
70	6.49	.16
80	4.10	.05
90	2.02	.00
95	1.06	.00
100	.24	.00

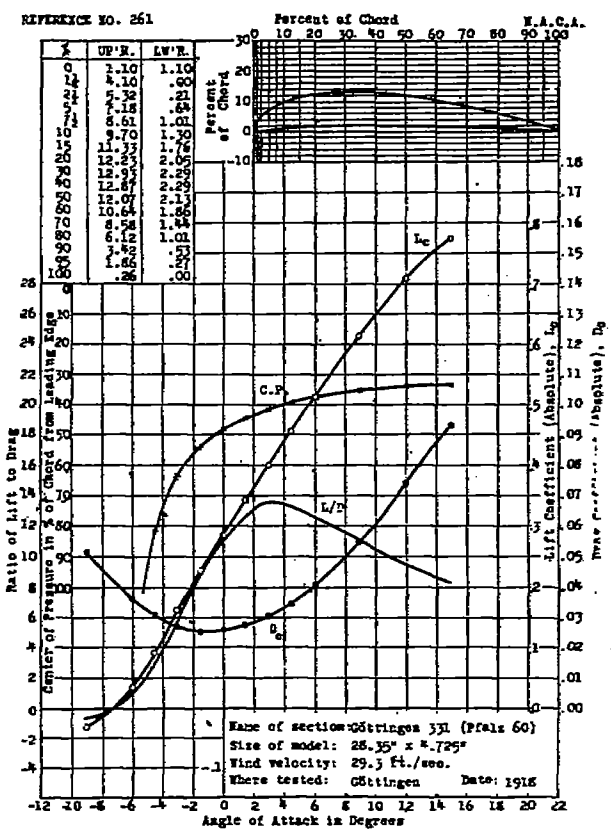
REFERENCE NO. 258

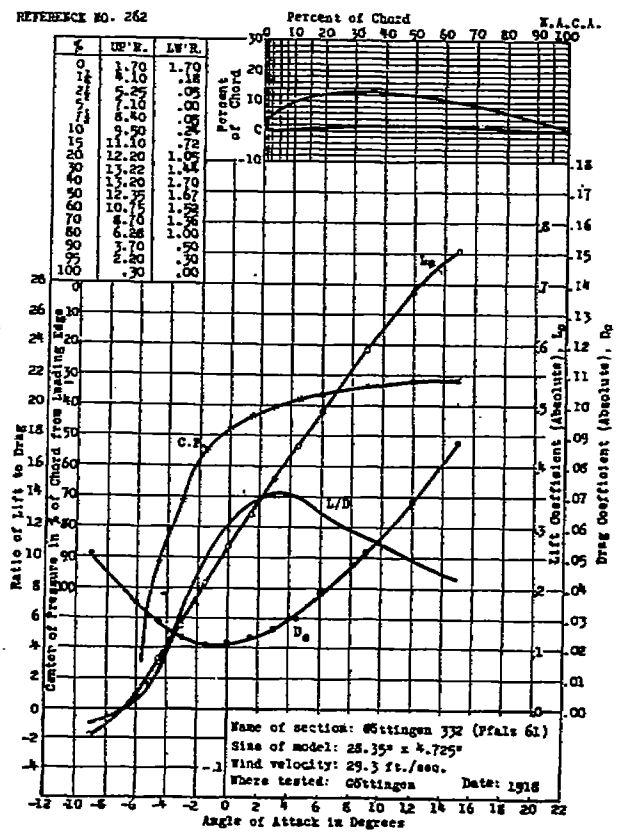


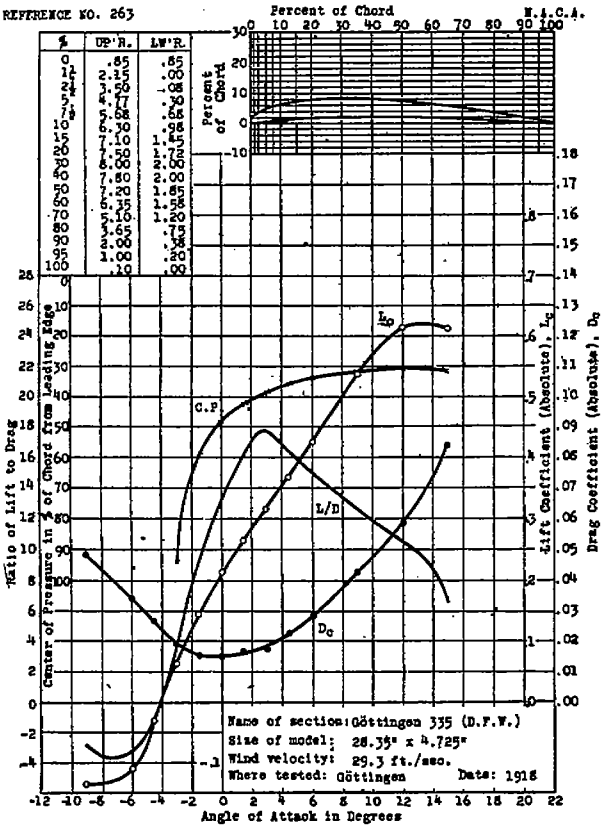
%	UP'R.	LW'R.
0	5.90	.58
1¼	7.00	.65
2½	7.62	.65
5	8.20	.65
7½	7.50	.65
10	8.50	.65
15	9.16	1.04
20	9.60	1.28
30	9.20	1.33
40	8.18	1.35
50	6.90	1.10
60	5.50	.85
70	3.86	.56
80	2.08	.10
90	1.08	.06
95	.10	.00
100	.10	.00

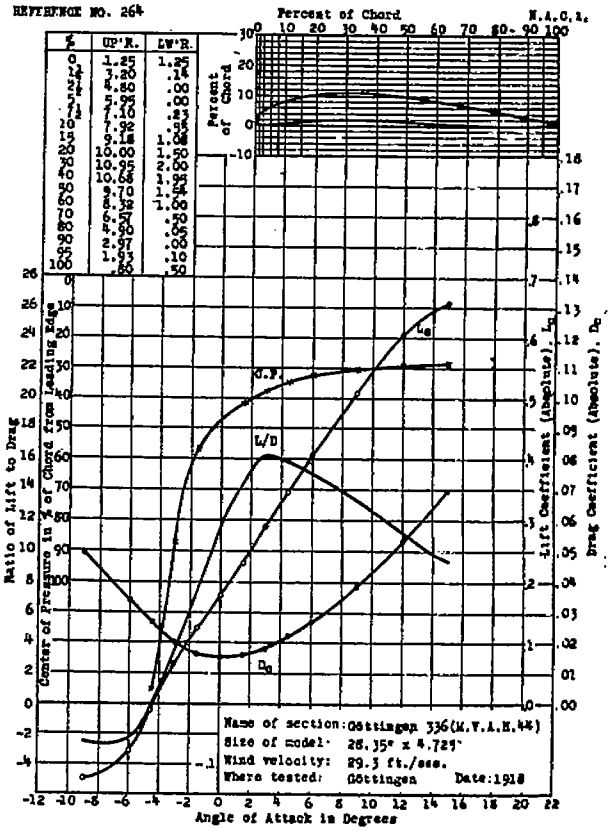

REFERENCE NO. 259
Percent of Chord
N.A.C.A.
Name of section: Göttingen 329 (Pfalz 58)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

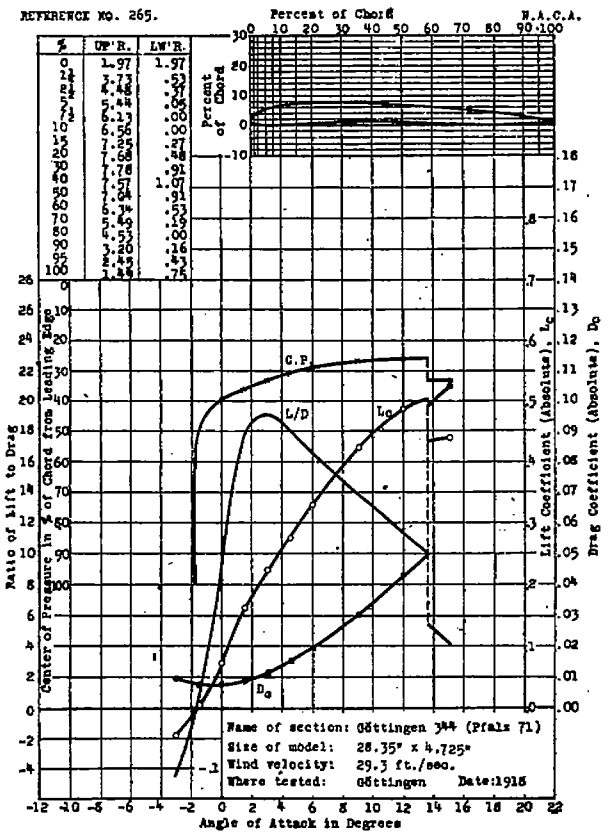

REFERENCE NO. 260
Percent of Chord.
N. A. C. A.
Name of section: Göttingen 330 (Pfalz 59)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

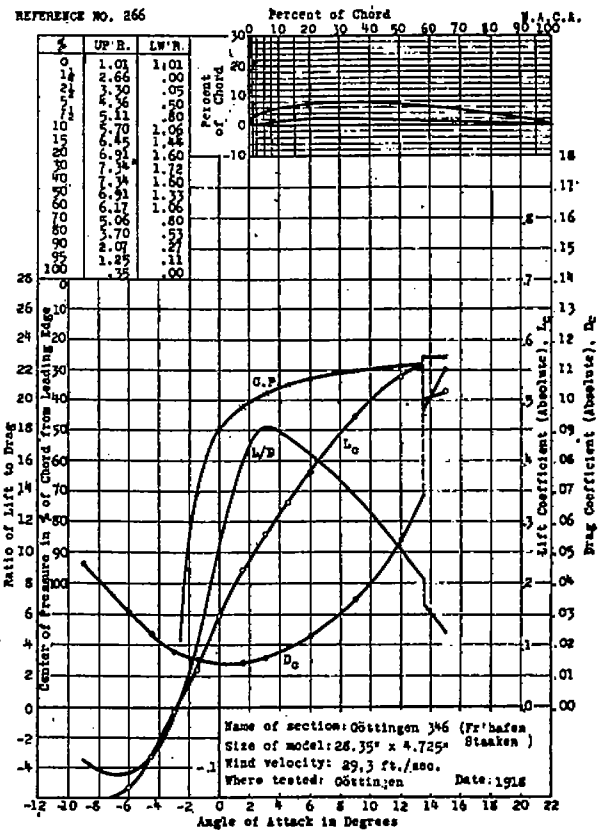

REFERENCE NO. 261
Percent of Chord
N.A.C.A.
Name of section: Göttingen 331 (Pfalz 60)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
C.P.
L/D


REFERENCE NO. 262
Percent of Chord
N.A.C.A.
Name of section: Göttingen 332 (Pfalz 61)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D


REFERENCE NO. 263
Percent of Chord
N.A.C.A.
Name of section: Göttingen 335 (D.F.W.)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c


REFERENCE NO. 264
Percent of Chord
N.A.C.A.
Name of section: Göttingen 336 (M.V.A.V.44)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c


REFERENCE NO. 265.
Percent of Chord
N.A.C.A.
Name of section: Göttingen 344 (Pfalz 71)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c


REFERENCE NO. 266
Percent of Chord
N.A.C.A.
Name of section: Göttingen 346 (Fr'hafen Staaken)
Size of model: 28.35" x 4.725"
Wind velocity: 29.3 ft./sec.
Where tested: Göttingen Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
C.P.
L/D
L_c
D_c

REFERENCE NO. 267

%	UP'R.	LW'R.
0	2.65	2.65
1¼	5.01	1.05
2½	6.80	.85
5	7.12	.47
7½	8.18	.21
10	8.57	.00
15	10.13	.00
20	11.03	.16
30	11.96	1.18
40	11.78	2.59
50	10.40	3.64
60	9.13	3.96
70	7.84	3.69
80	5.52	2.80
90	3.17	1.46
95	1.76	.63
100	.32	.00

Percent of Chord 0 10 20 30 40 50 60 70 80 90 100 N.A.C.A.

Name of section: Göttingen 358
Size of model: 39.37" x 7.87½"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919

Ratio of Lift to Drag — Center of Pressure in % of Chord from Leading Edge — Lift Coefficient (Absolute), L_c — Drag Coefficient (Absolute), D_c — Angle of Attack in Degrees

REFERENCE NO. 268

%	UP'R.	LW'R.
0	1.06	1.06
1¼	3.17	.00
2½	4.23	.05
5	5.93	.48
7½	7.20	.80
10	8.26	1.05
15	9.87	1.40
20	10.86	1.63
30	11.48	1.80
40	11.11	1.85
50	10.11	1.55
60	8.57	1.22
70	6.83	1.01
80	4.71	.63
90	2.36	.42
95	1.32	.16
100	.21	.00

Percent of Chord 0 10 20 30 40 50 60 70 80 90 100 N.A.C.A.

Name of section: Göttingen 360
Size of model: 39.37" x 7.87½"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919

Ratio of Lift to Drag — Center of Pressure in % of Chord from Leading Edge — Lift Coefficient (Absolute), L_c — Drag Coefficient (Absolute), D_c — Angle of Attack in Degrees

REFERENCE NO. 269.

%	UP'R.	LW'R.
0	1.61	1.61
1¼	4.02	.64
2½	5.47	.38
5	7.51	.11
7½	9.02	.00
10	9.93	.05
15	11.22	.43
20	11.81	.75
30	12.13	1.34
40	11.81	1.61
50	10.84	1.62
60	9.55	1.40
70	7.73	1.18
80	5.40	.95
90	2.90	.54
95	1.50	.27
100	.11	.00

Percent of Chord 0 10 20 30 40 50 60 70 80 90 100 N.A.C.A.

Name of section: Göttingen 363
Size of model: 39.37" x 7.87½"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919

Ratio of Lift to Drag — Center of Pressure in % of Chord from Leading Edge — Lift Coefficient (Absolute), L_c — Drag Coefficient (Absolute), D_c — Angle of Attack in Degrees.

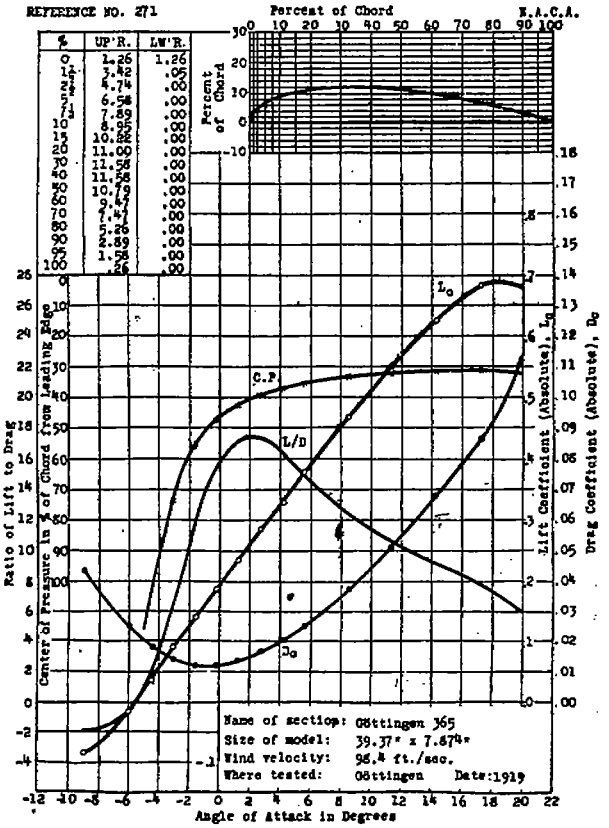
REFERENCE NO. 270

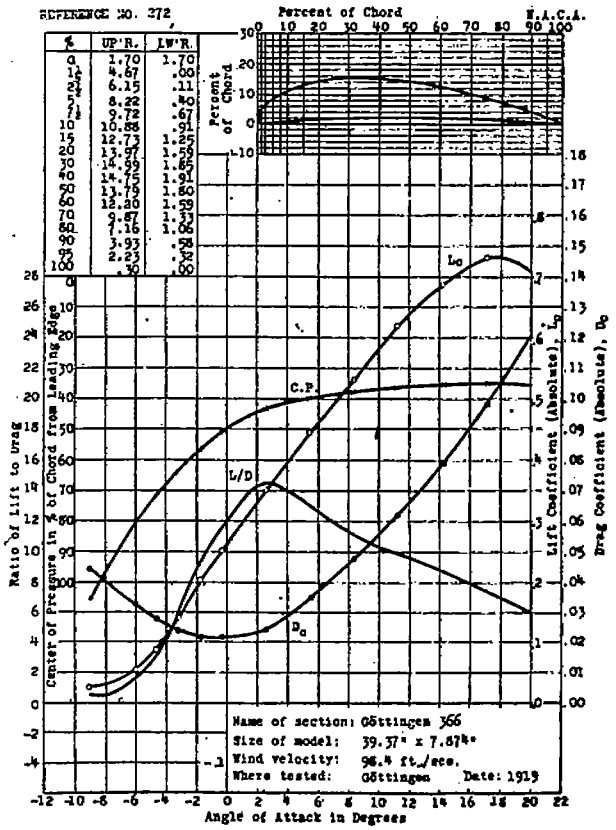
%	UP'R.	LW'R.
0	1.22	1.22
1¼	4.14	.00
2½	5.41	.11
5	7.27	.42
7½	8.65	.58
10	9.55	.85
15	11.14	1.17
20	11.94	1.49
30	12.57	1.86
40	12.20	1.91
50	11.14	1.80
60	9.55	1.59
70	7.80	1.33
80	5.57	.96
90	3.02	.55
95	1.58	.27
100	.21	.00

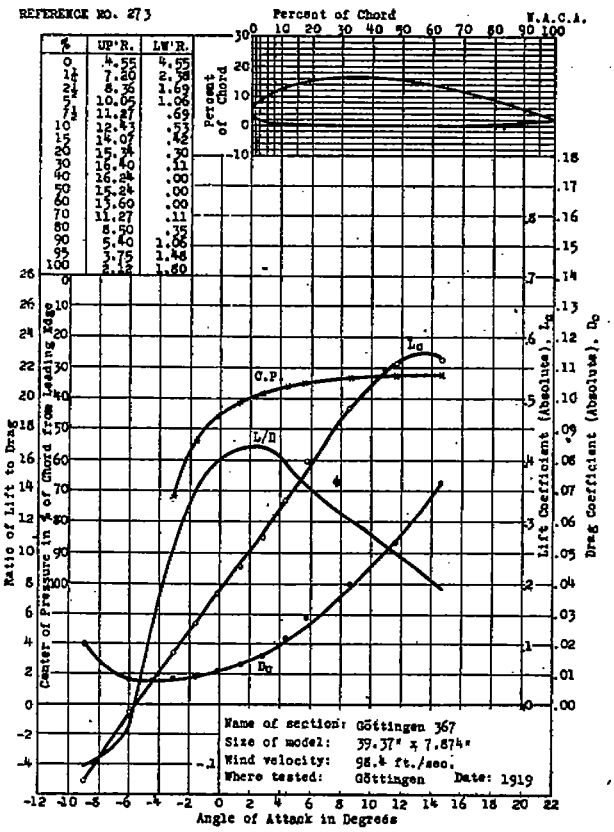
Percent of Chord 0 10 20 30 40 50 60 70 80 90 100 N.A.C.A.

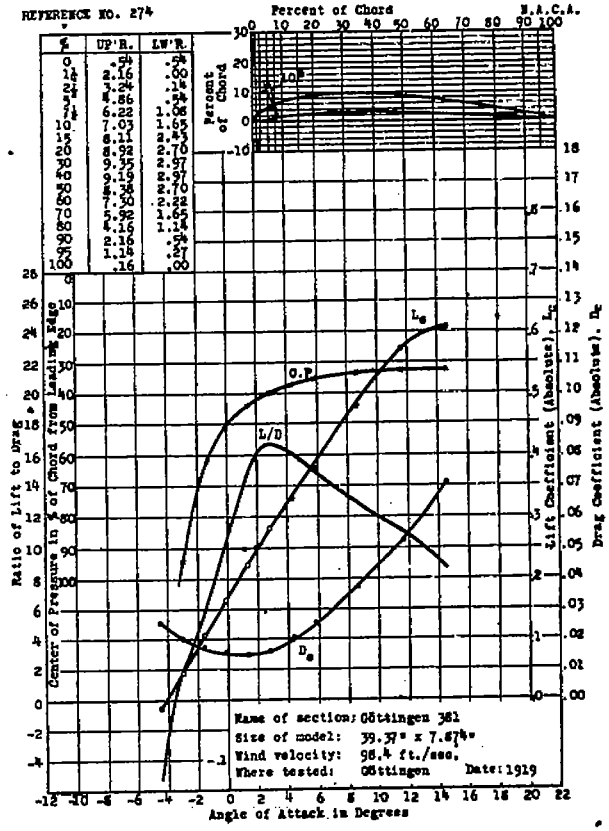
Name of section: Göttingen 364
Size of model: 39.37" x 7.87½"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919

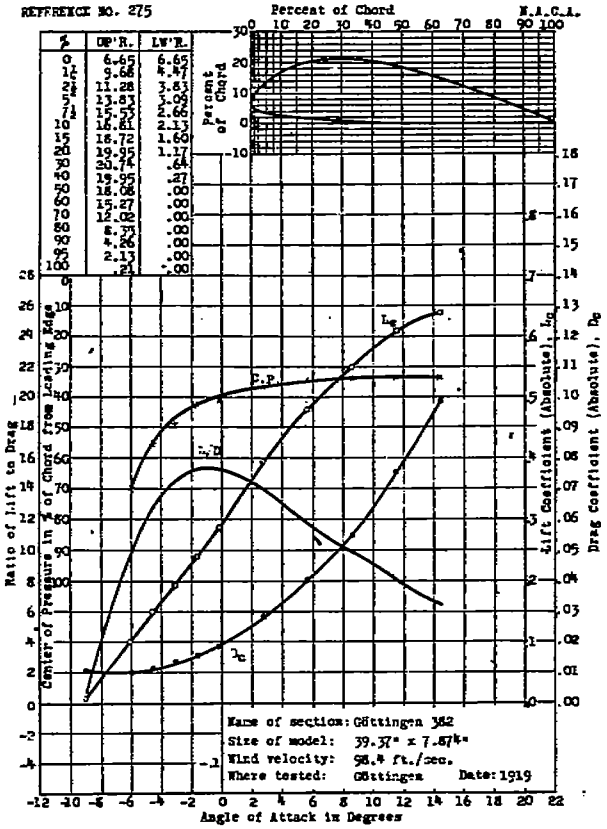
Ratio of Lift to Drag — Center of Pressure in % of Chord from Leading Edge — Lift Coefficient (Absolute), L_c — Drag Coefficient (Absolute), D_c — Angle of Attack in Degrees

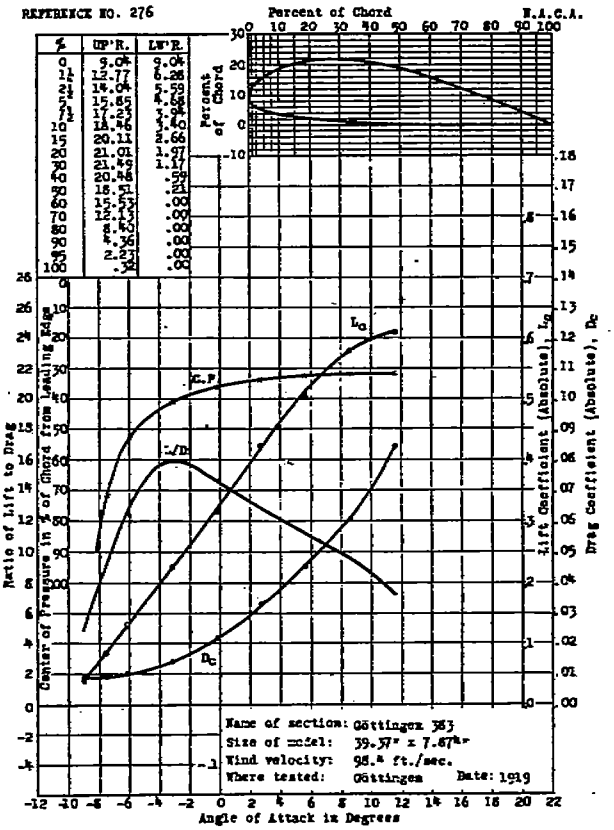

REFERENCE NO. 271
Percent of Chord
N.A.C.A.
Name of section: Göttingen 365
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D

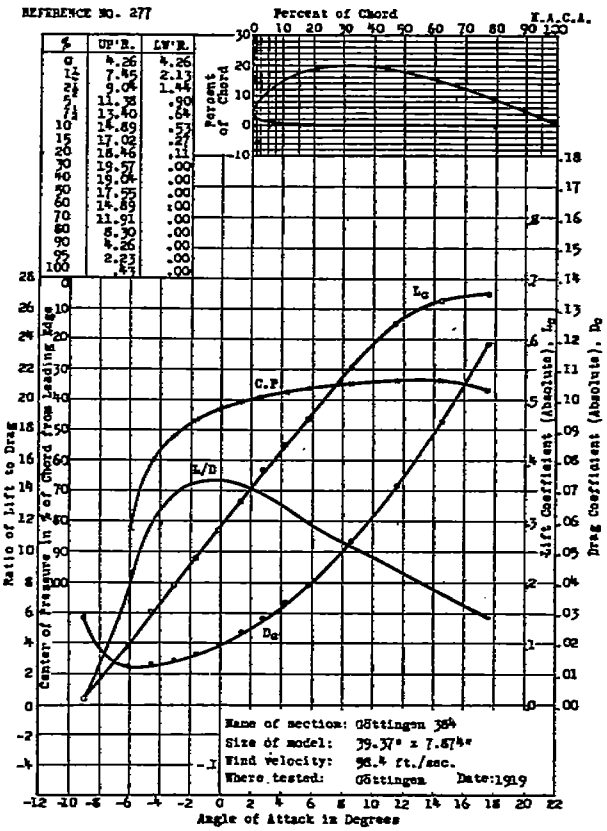

REFERENCE NO. 272
Percent of Chord
N.A.C.A.
Name of section: Göttingen 366
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D

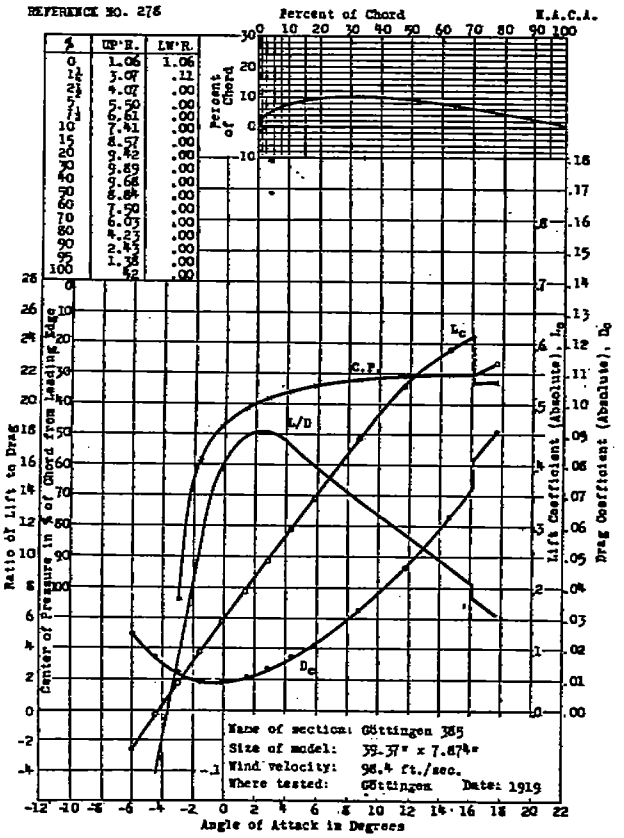

REFERENCE NO. 273
Percent of Chord
N.A.C.A.
Name of section: Göttingen 367
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D


REFERENCE NO. 274
Percent of Chord
N.A.C.A.
Name of section: Göttingen 381
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D


REFERENCE NO. 275
Percent of Chord
N.A.C.A.
Name of section: Göttingen 382
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Lc
Drag Coefficient (Absolute), Dc
C.P
L/D

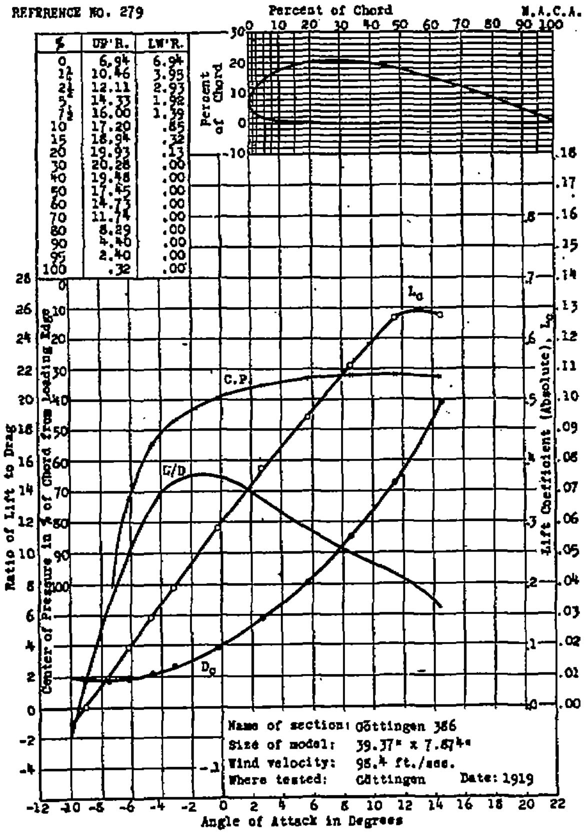

REFERENCE NO. 276
Percent of Chord
N.A.C.A.
Name of section: Göttingen 383
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Lc
Drag Coefficient (Absolute), Dc
C.P
L/D


REFERENCE NO. 277
Percent of Chord
N.A.C.A.
Name of section: Göttingen 384
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Lc
Drag Coefficient (Absolute), Dc
C.P
L/D


REFERENCE NO. 278
Percent of Chord
N.A.C.A.
Name of section: Göttingen 385
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Lc
Drag Coefficient (Absolute), Dc
C.P
L/D

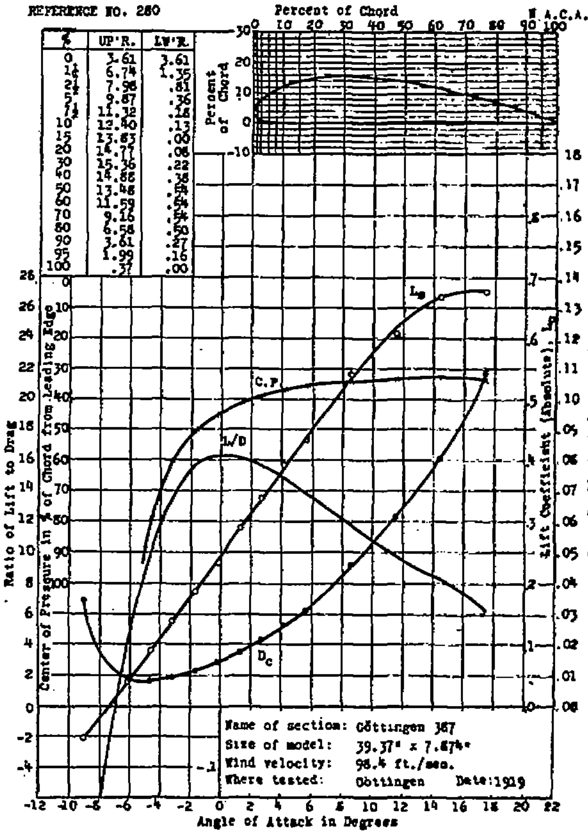
REFERENCE NO. 279

%	UP'R.	LW'R.
0	6.94	6.94
1¼	10.46	3.95
2½	12.11	2.93
5	14.33	1.98
7½	16.00	1.39
10	17.20	.65
15	18.94	.32
20	19.93	.13
30	20.28	.00
40	19.48	.00
50	17.45	.00
60	14.73	.00
70	11.74	.00
80	8.29	.00
90	4.40	.00
95	2.40	.00
100	.32	.00



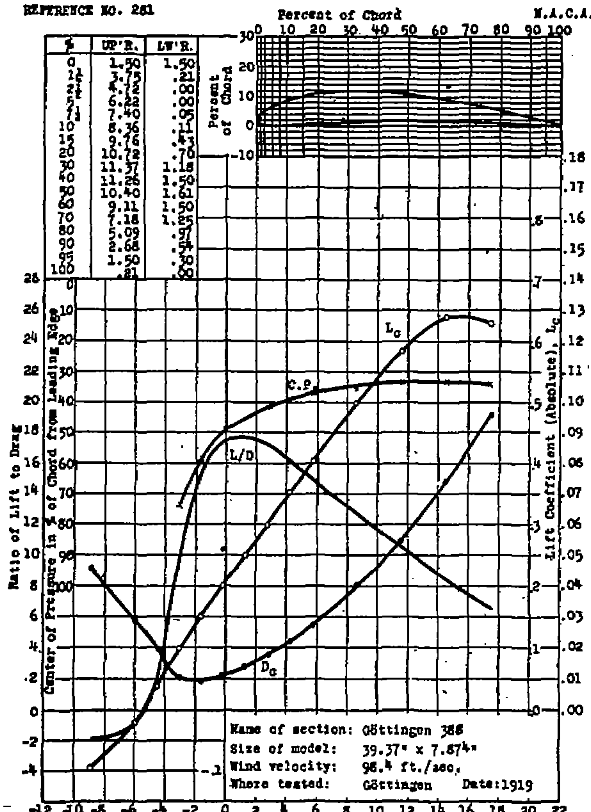
REFERENCE NO. 280

%	UP'R.	LW'R.
0	3.61	3.61
1¼	6.74	1.35
2½	7.98	.81
5	9.87	.36
7½	11.32	.18
10	12.40	.13
15	13.83	.00
20	14.77	.08
30	15.36	.22
40	14.88	.38
50	13.48	.54
60	11.59	.64
70	9.16	.64
80	6.58	.50
90	3.61	.27
95	1.99	.16
100	.37	.00



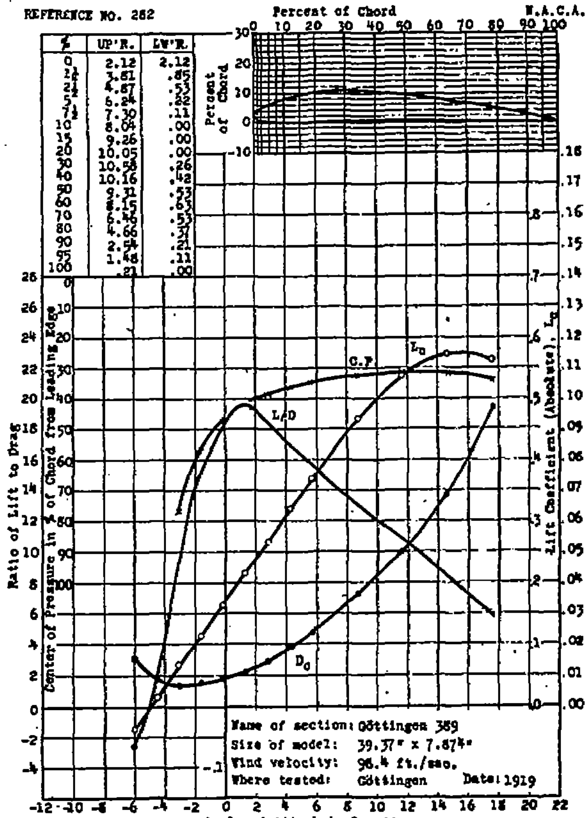
REFERENCE NO. 281

%	UP'R.	LW'R.
0	1.50	1.50
1¼	3.75	.21
2½	4.72	.00
5	6.22	.00
7½	7.40	.05
10	8.36	.11
15	9.76	.43
20	10.72	.70
30	11.37	1.18
40	11.26	1.50
50	10.40	1.61
60	9.11	1.50
70	7.18	1.25
80	5.09	.97
90	2.68	.54
95	1.50	.30
100	.21	.00



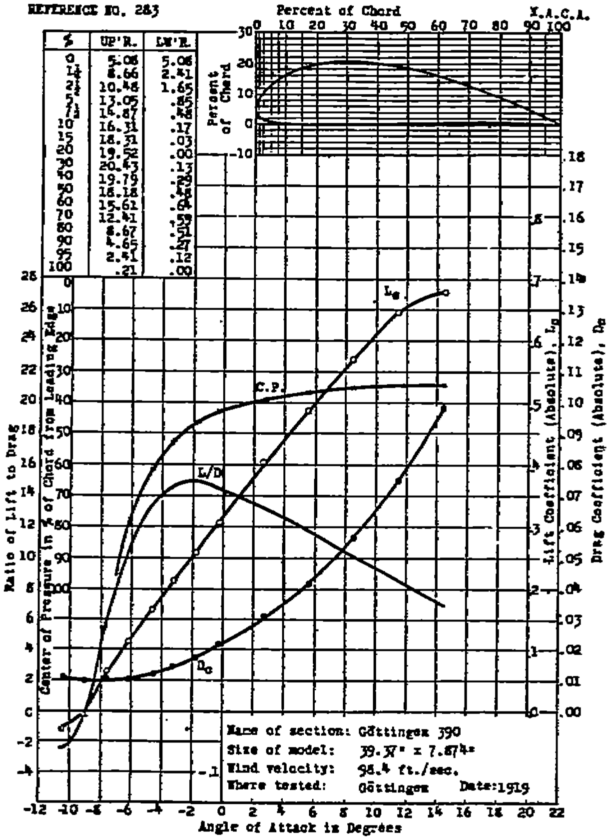
REFERENCE NO. 282

%	UP'R.	LW'R.
0	2.12	2.12
1¼	3.81	.85
2½	4.87	.53
5	6.24	.22
7½	7.30	.11
10	8.04	.00
15	9.26	.00
20	10.05	.00
30	10.58	.26
40	10.16	.42
50	9.31	.53
60	8.15	.63
70	6.46	.53
80	4.66	.37
90	2.54	.21
95	1.48	.11
100	.21	.00



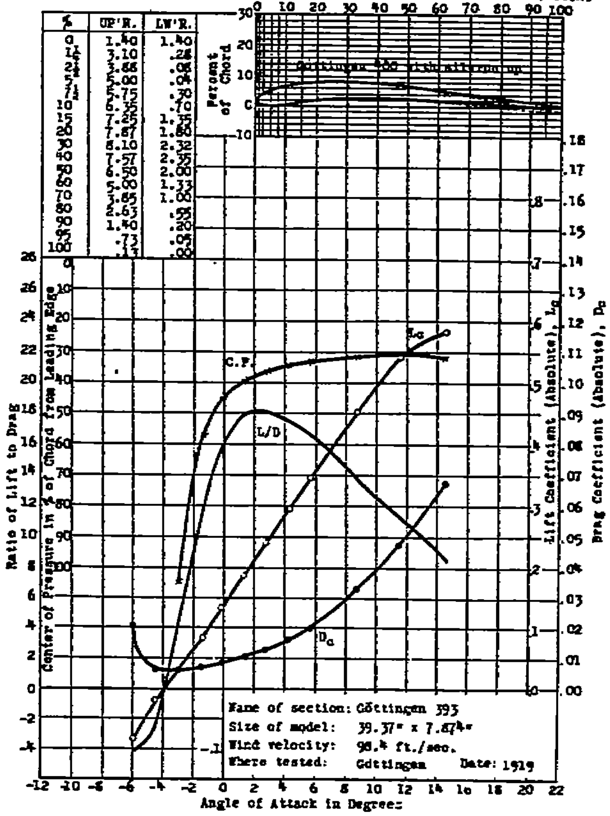
REFERENCE NO. 283 N.A.C.A.

%	UP'R.	LW'R.
0	5.08	5.08
1¼	8.66	2.41
2½	10.48	1.65
5	13.05	.85
7½	14.87	.48
10	16.31	.17
15	18.31	.03
20	19.52	.00
30	20.43	.13
40	19.79	.29
50	18.18	.48
60	15.61	.64
70	12.41	.59
80	8.67	.51
90	4.65	.27
95	2.41	.12
100	.21	.00



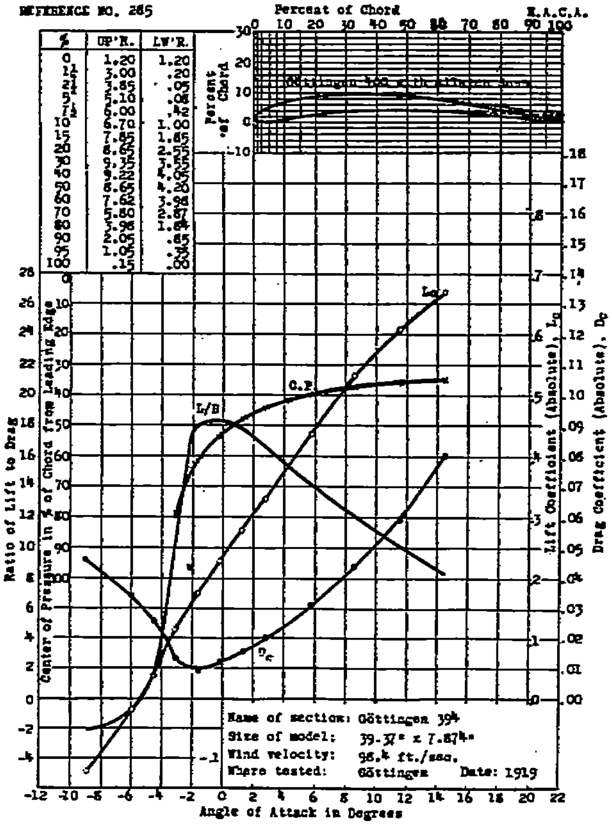
REFERENCE NO. 284 N.A.C.A.

%	UP'R.	LW'R.
0	1.40	1.40
1¼	3.10	.28
2½	3.88	.08
5	5.00	.04
7½	5.75	.30
10	6.35	.70
15	7.25	1.35
20	7.87	1.80
30	8.10	2.32
40	7.57	2.35
50	6.50	2.00
60	5.00	1.33
70	3.85	1.00
80	2.63	.55
90	1.40	.20
95	.73	.05
100	.13	.00



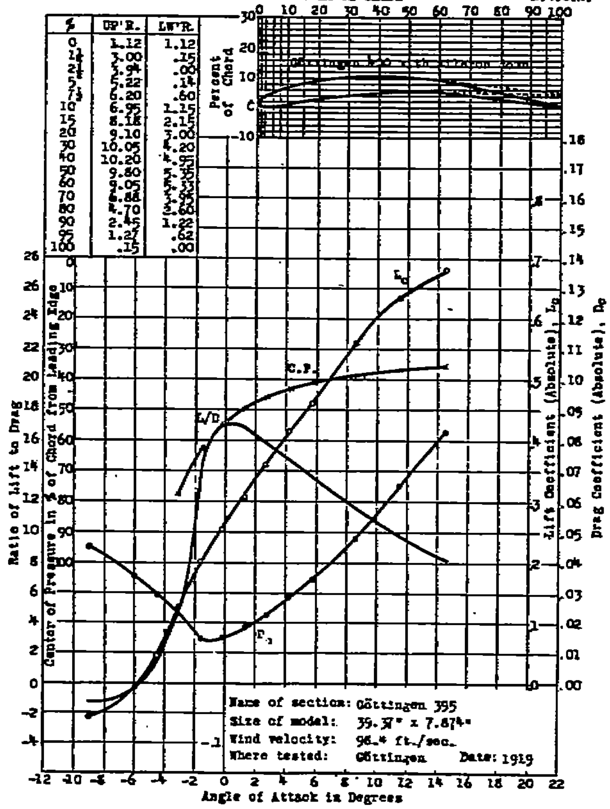
REFERENCE NO. 285 N.A.C.A.

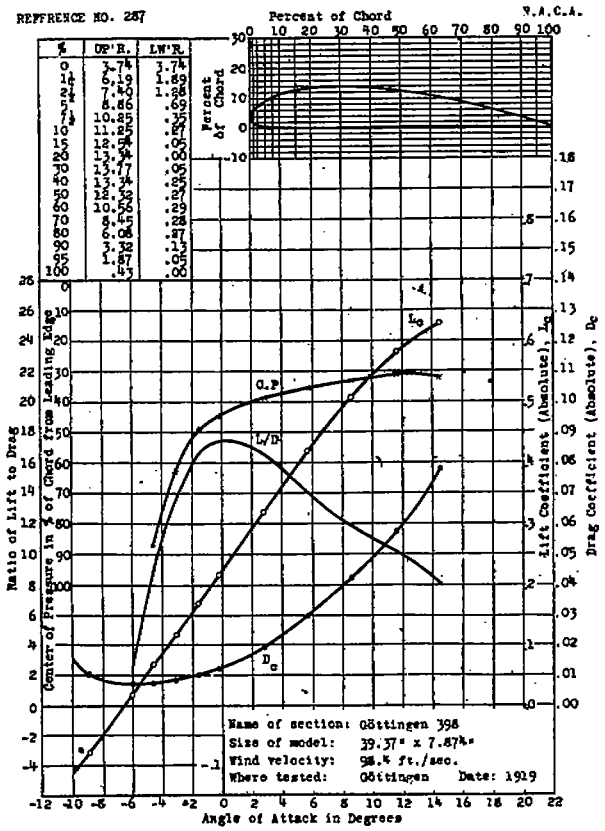
%	UP'R.	LW'R.
0	1.20	1.20
1¼	3.00	.20
2½	3.85	.05
5	5.10	.08
7½	6.00	.42
10	6.70	1.00
15	7.85	1.85
20	8.65	2.55
30	9.35	3.55
40	9.22	4.05
50	8.65	4.20
60	7.62	3.98
70	5.80	2.87
80	3.98	1.84
90	2.05	.85
95	1.05	.35
100	.15	.00

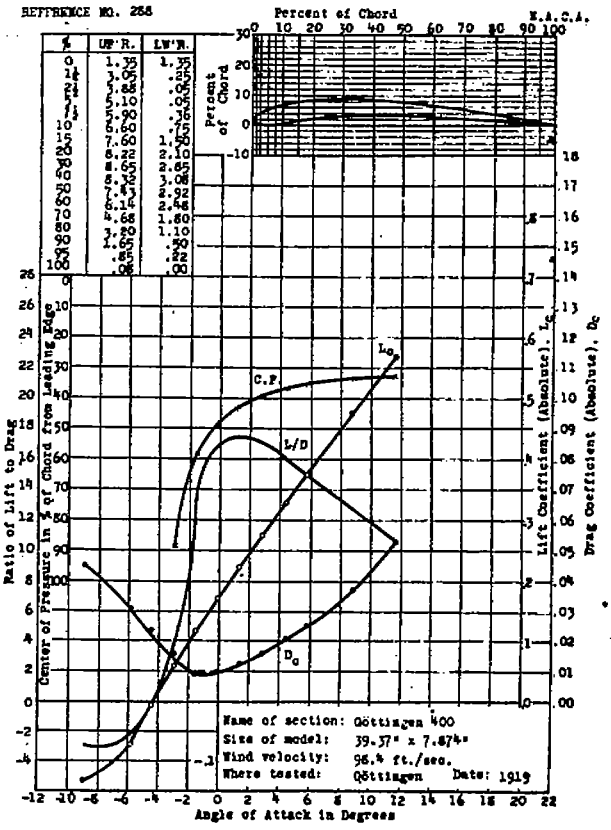


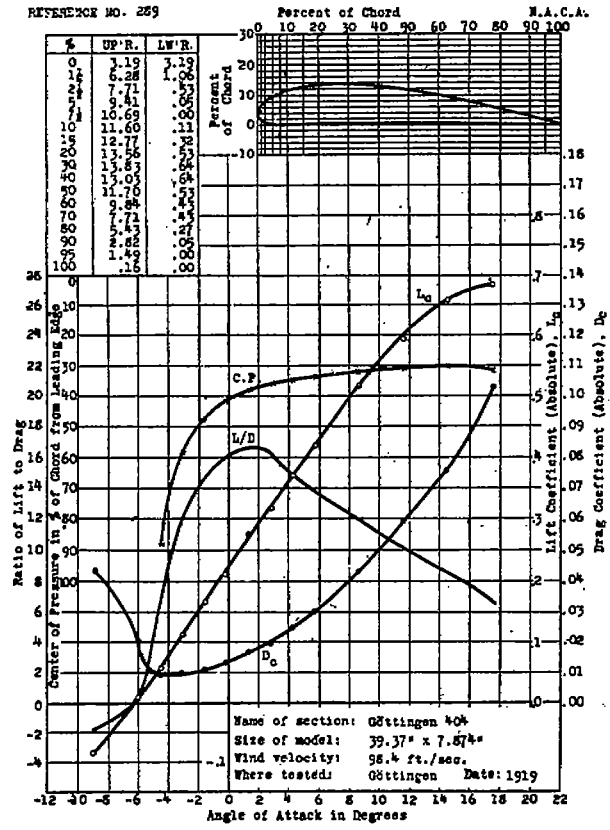
REFERENCE NO. 286 N.A.C.A.

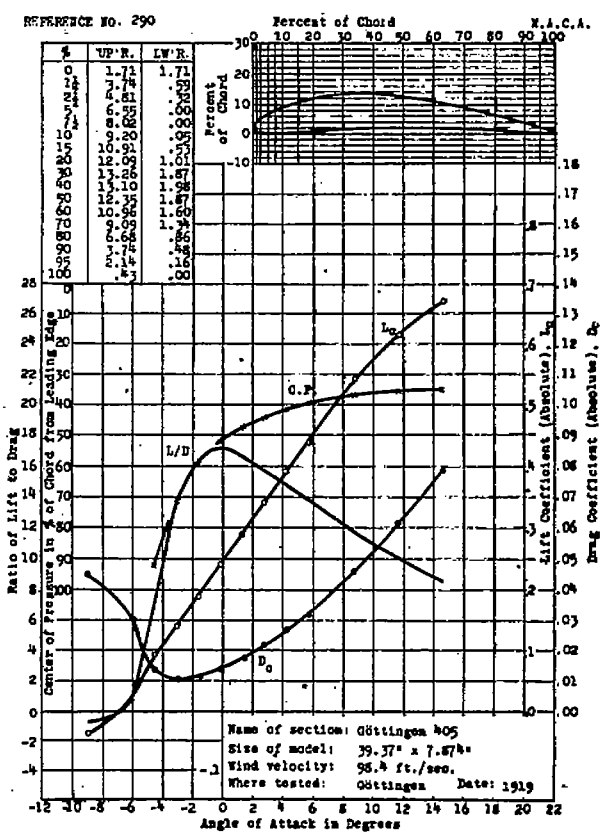
%	UP'R.	LW'R.
0	1.12	1.12
1¼	3.00	.15
2½	3.94	.00
5	5.22	.14
7½	6.20	.60
10	6.95	1.15
15	8.18	2.15
20	9.10	3.00
30	10.05	4.20
40	10.20	4.95
50	9.80	5.35
60	9.05	5.33
70	6.88	3.95
80	4.70	3.60
90	2.45	1.22
95	1.27	.62
100	.15	.00

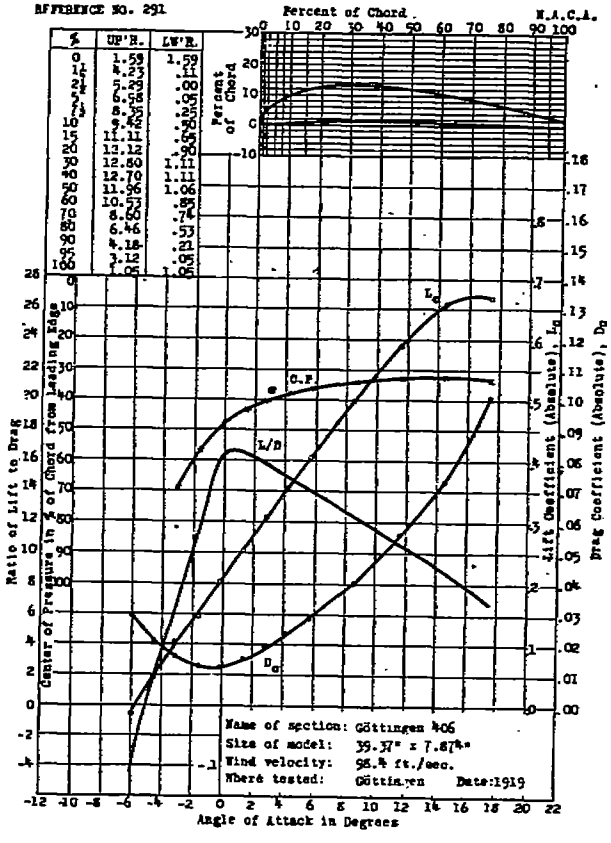


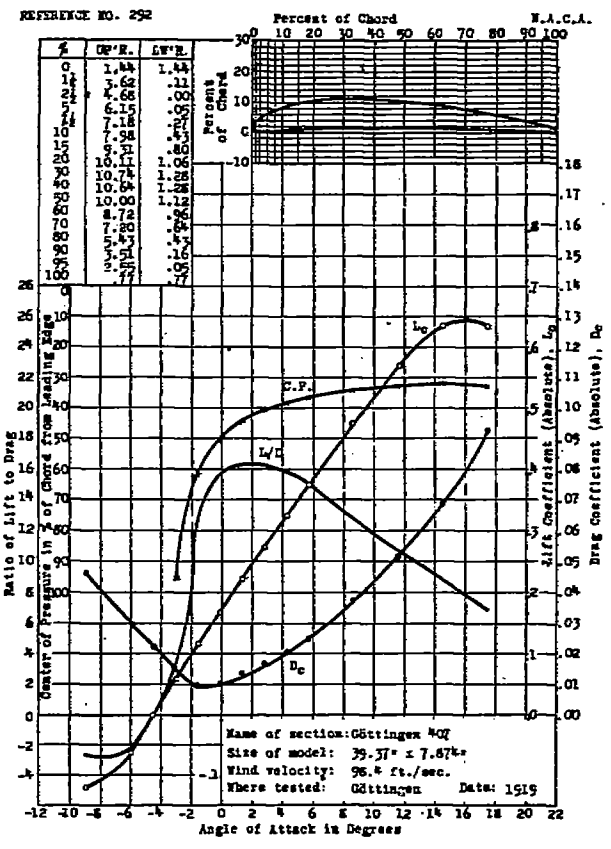

REFFRENCE NO. 287
Percent of Chord
N.A.C.A.
Name of section: Göttingen 398
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D

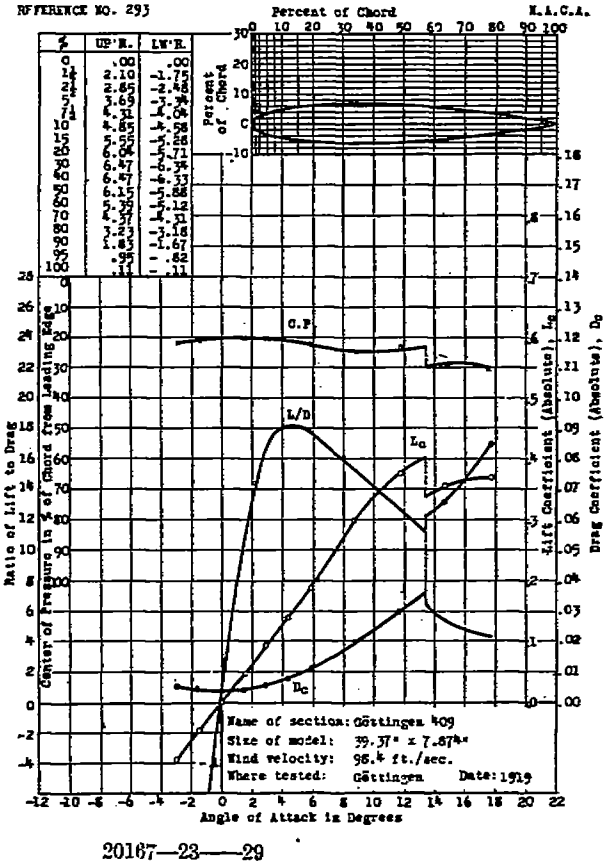

REFFRENCE NO. 288
Percent of Chord
N.A.C.A.
Name of section: Göttingen 400
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D

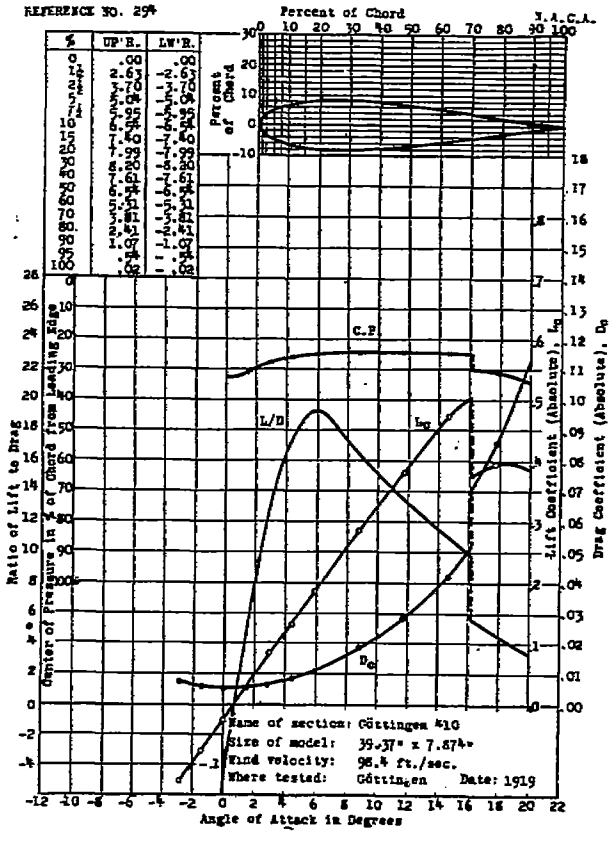

REFERENCE NO. 289
Percent of Chord
N.A.C.A.
Name of section: Göttingen 404
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D

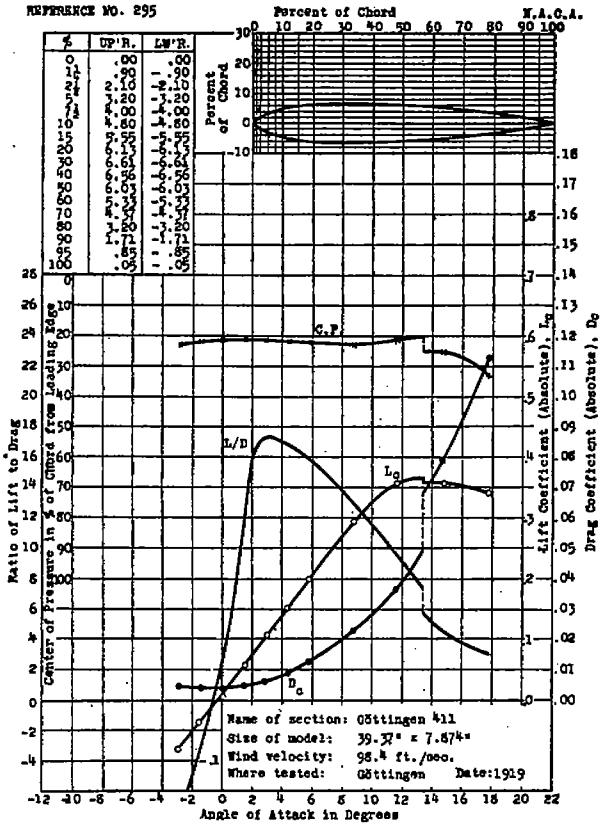

REFFRENCE NO. 290
Percent of Chord
N.A.C.A.
Name of section: Göttingen 405
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D

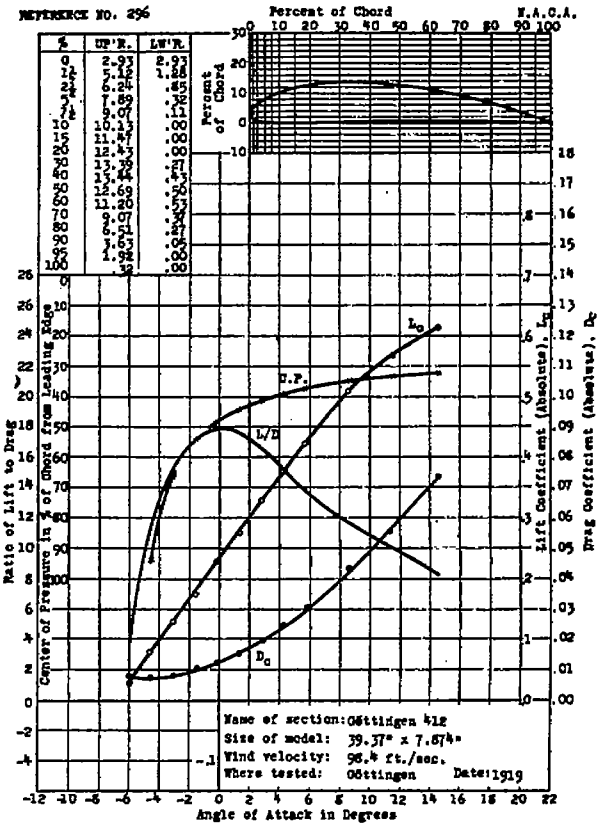

REFERENCE NO. 291
Percent of Chord
N.A.C.A.
Name of section: Göttingen 406
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

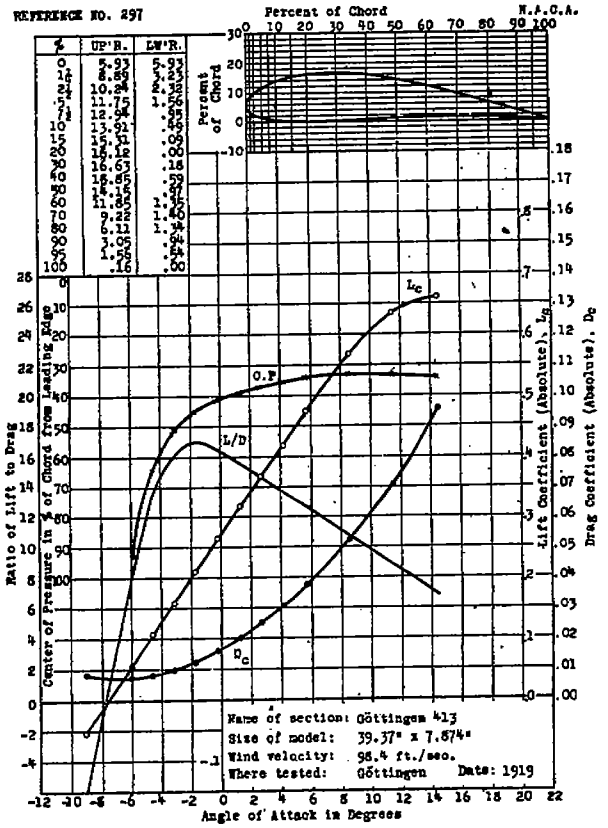

REFERENCE NO. 292
Percent of Chord
N.A.C.A.
Name of section: Göttingen 407
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

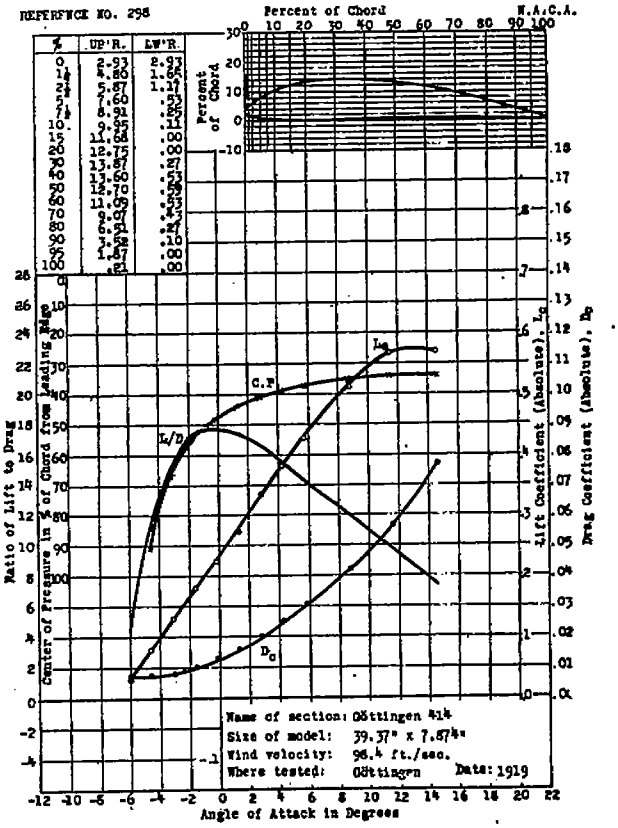

REFERENCE NO. 293
Percent of Chord
N.A.C.A.
Name of section: Göttingen 409
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

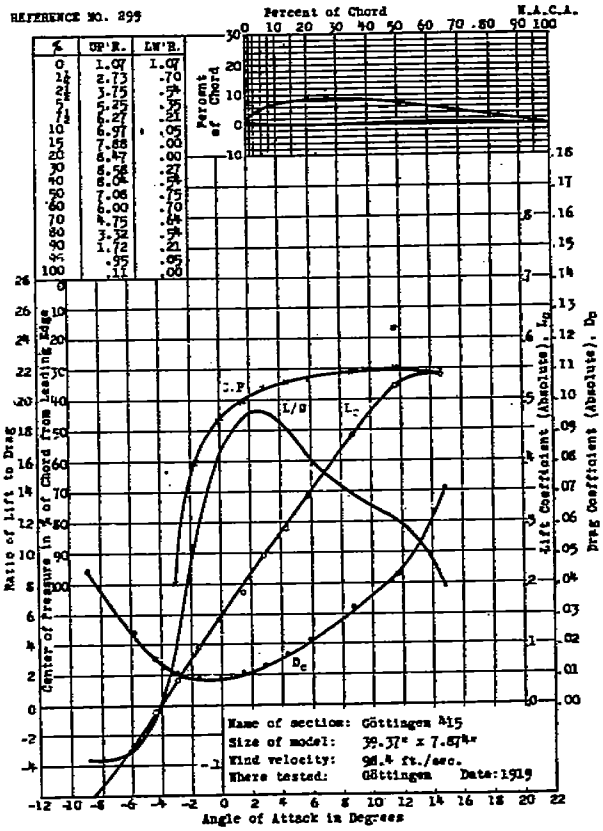

REFERENCE NO. 294
Percent of Chord
N.A.C.A.
Name of section: Göttingen 410
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

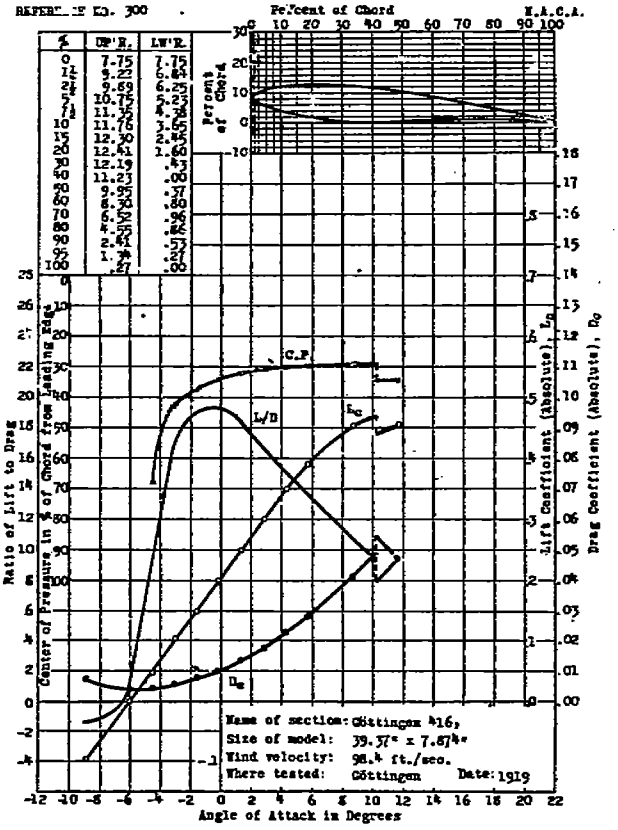

REFERENCE NO. 295
Percent of Chord
N.A.C.A.
Name of section: Göttingen 411
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
C.P.
L/D
Angle of Attack in Degrees

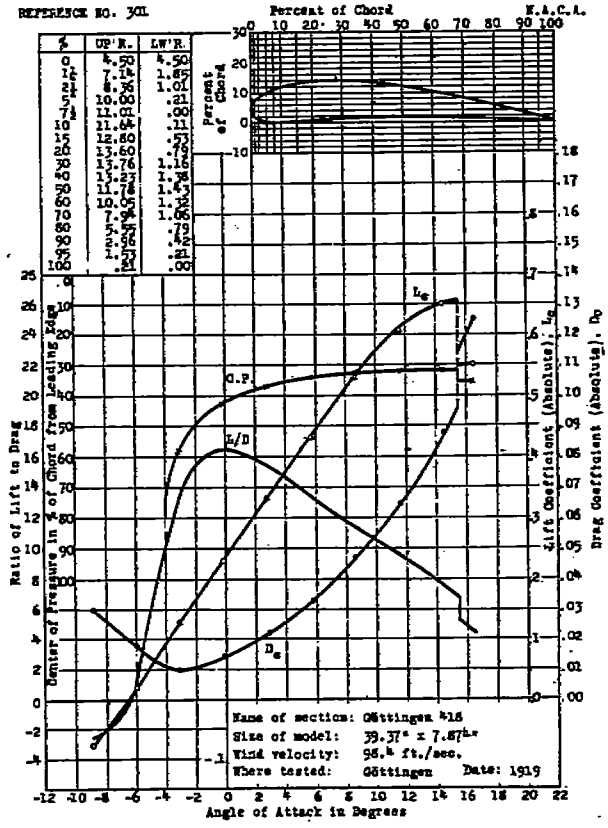

REFERENCE NO. 296
Percent of Chord
N.A.C.A.
Name of section: Göttingen 412
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
C.P.
L/D
Angle of Attack in Degrees

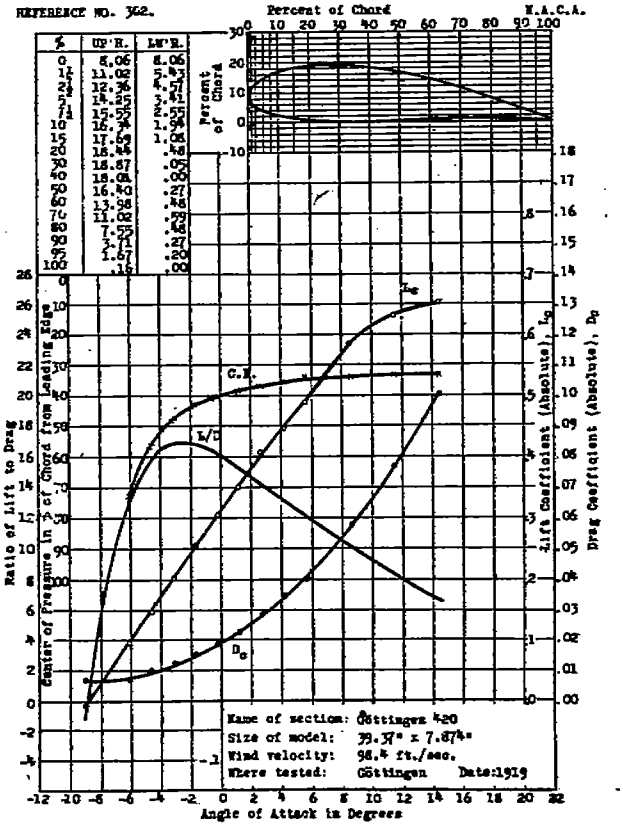

REFERENCE NO. 297
Percent of Chord
N.A.C.A.
Name of section: Göttingen 413
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
C.P.
L/D
Angle of Attack in Degrees

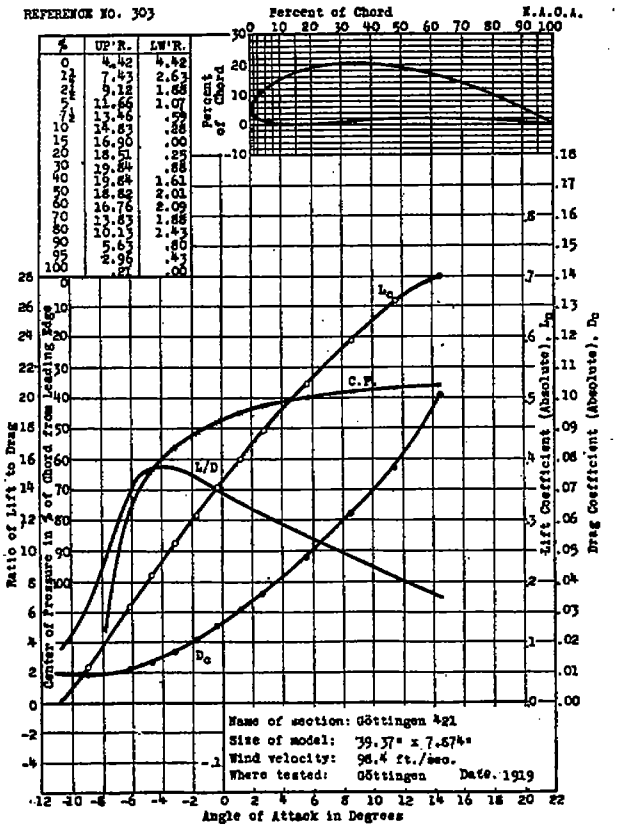

REFERENCE NO. 298
Percent of Chord
N.A.C.A.
Name of section: Göttingen 414
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
C.P.
L/D
Angle of Attack in Degrees

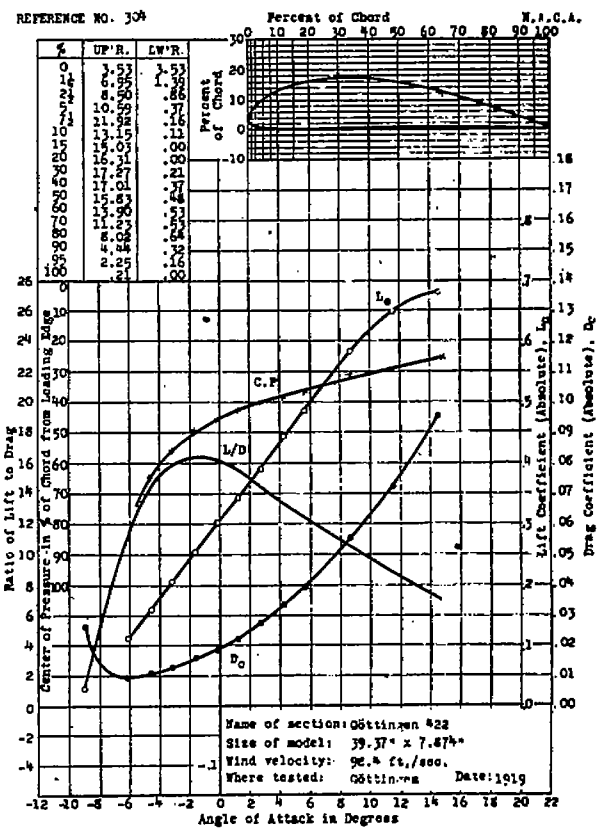

REFERENCE NO. 299
Percent of Chord
N.A.C.A.
Name of section: Göttingen 415
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P
L/D

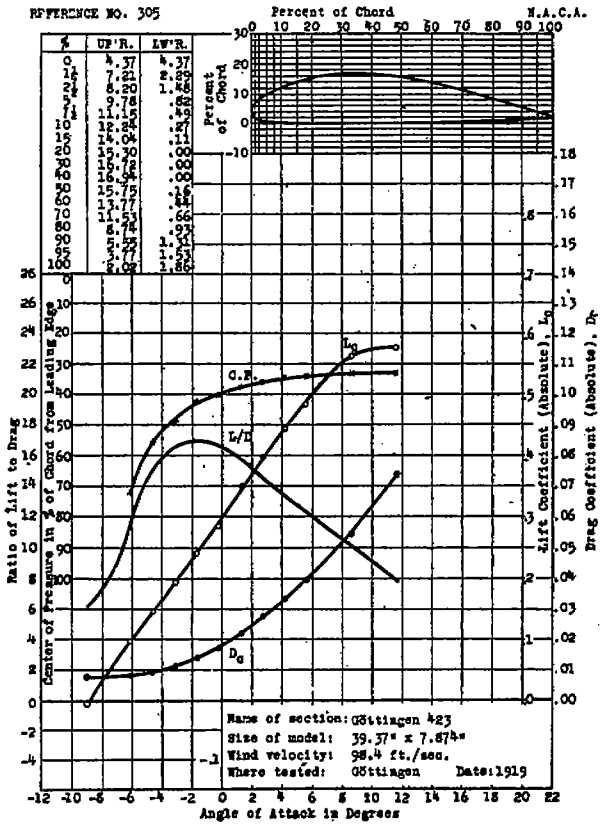

REFERENCE NO. 300
Percent of Chord
N.A.C.A.
Name of section: Göttingen 416
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P
L/D

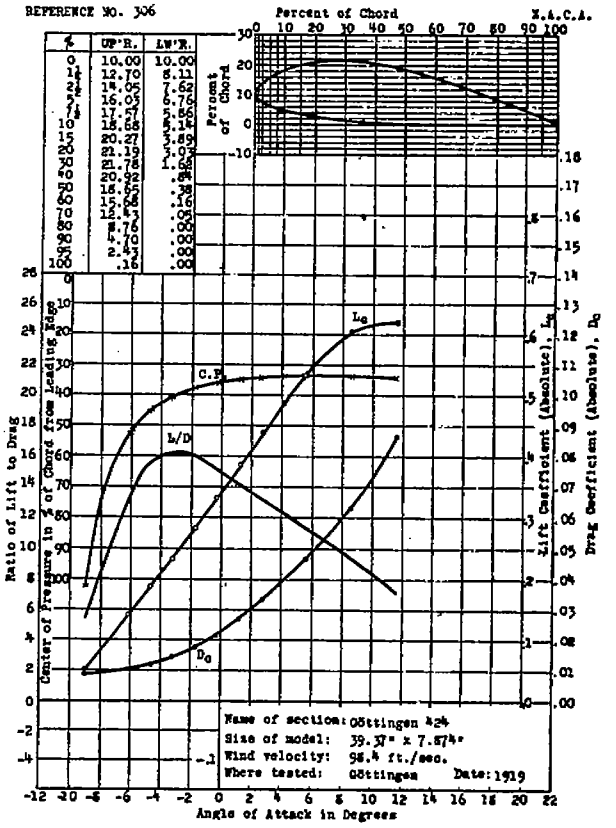

REFERENCE NO. 301
Percent of Chord
N.A.C.A.
Name of section: Göttingen 415
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P
L/D

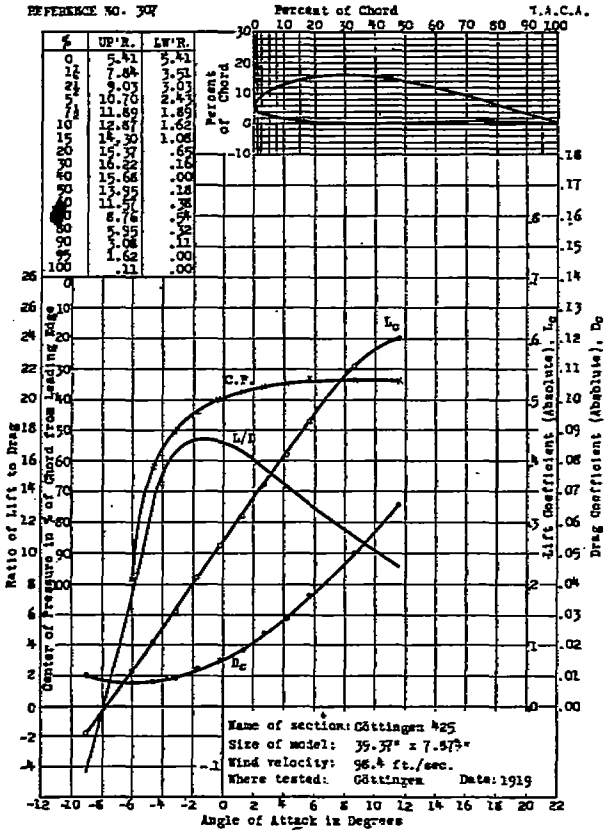

REFERENCE NO. 302
Percent of Chord
N.A.C.A.
Name of section: Göttingen 420
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P
L/D

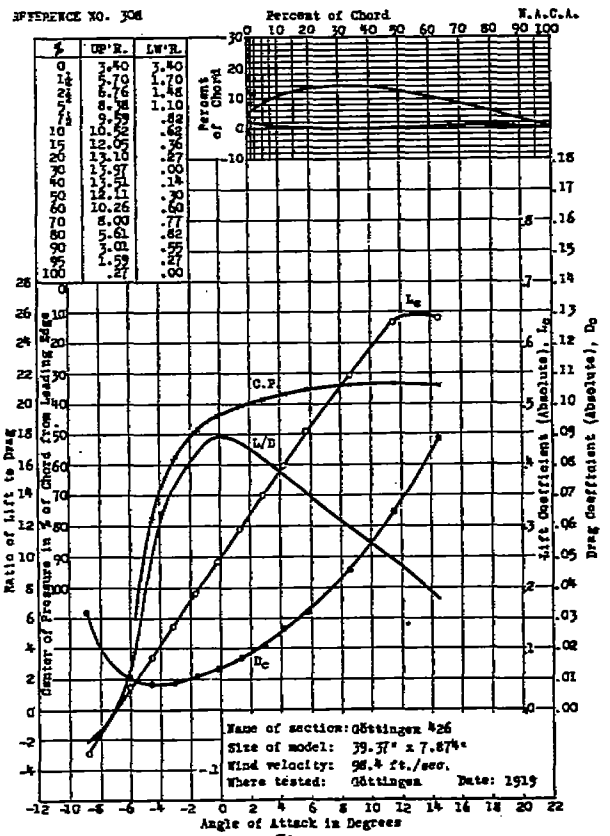

REFERENCE NO. 303
Percent of Chord
N.A.C.A.
Name of section: Göttingen 421
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

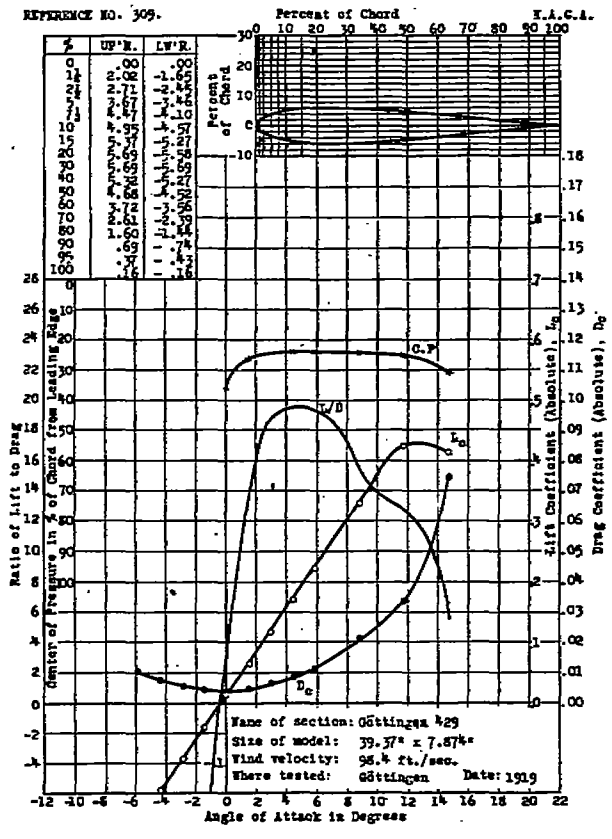

REFERENCE NO. 304
Percent of Chord
N.A.C.A.
Name of section: Göttingen 422
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

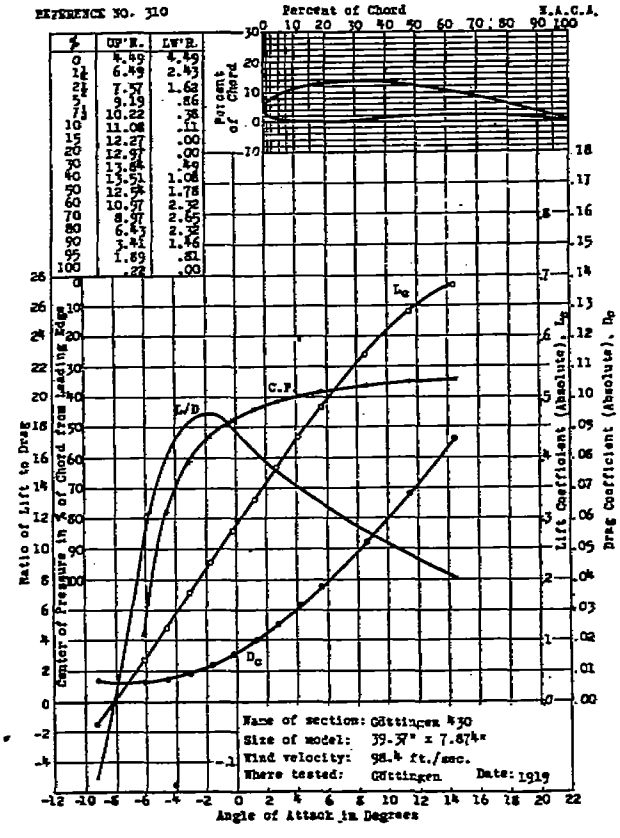

REFERENCE NO. 305
Percent of Chord
N.A.C.A.
Name of section: Göttingen 423
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

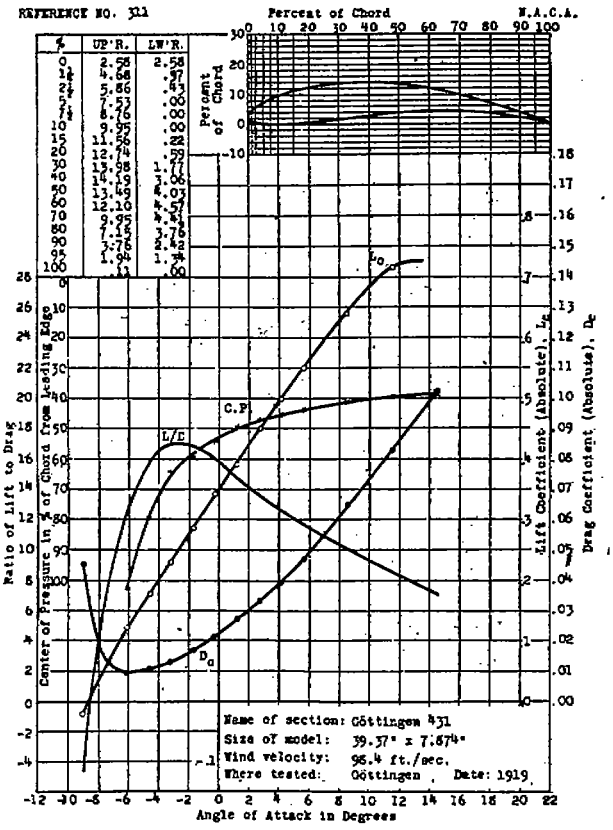

REFERENCE NO. 306
Percent of Chord
N.A.C.A.
Name of section: Göttingen 424
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

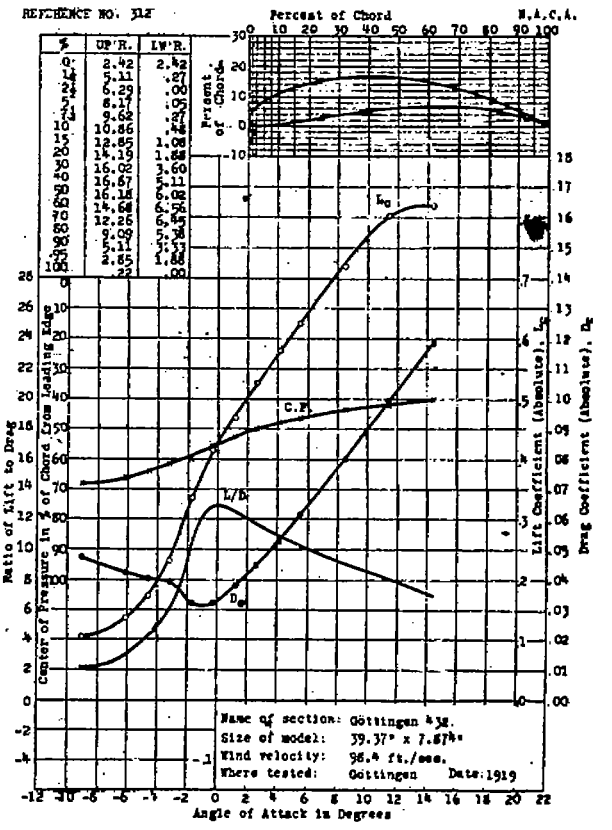

REFERENCE NO. 307
Percent of Chord
N.A.C.A.
Name of section: Göttingen 425
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D
L_a
D_a

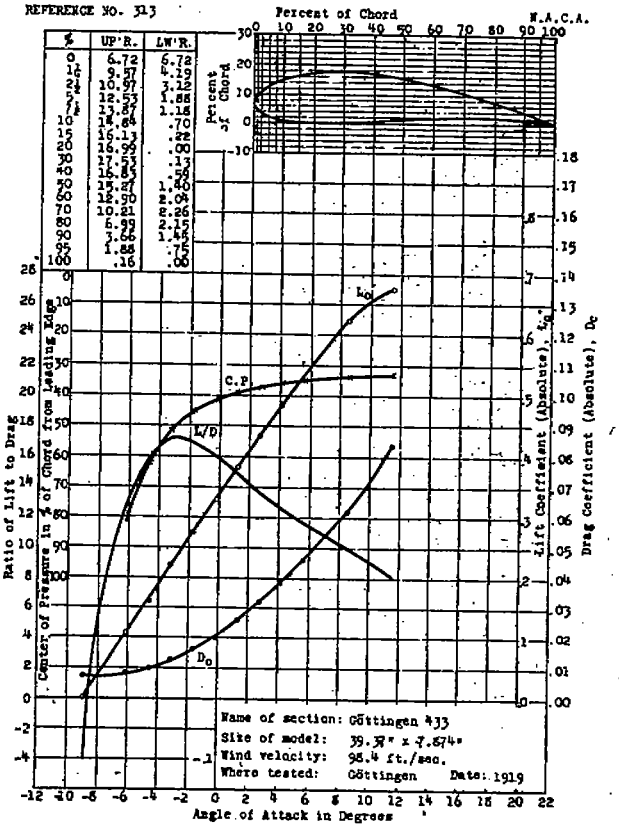

REFERENCE NO. 308
Percent of Chord
N.A.C.A.
Name of section: Göttingen 426
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D
L_a
D_a

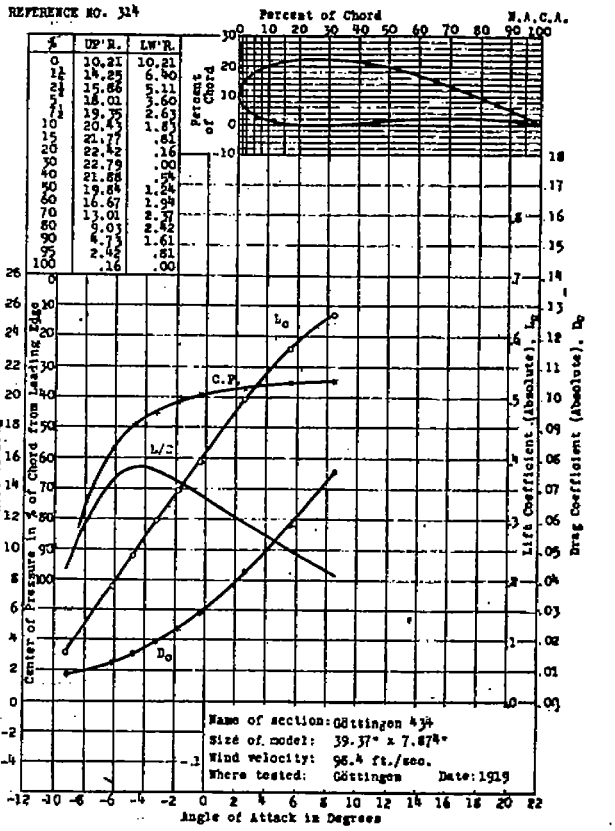

REFERENCE NO. 309.
Percent of Chord
N.A.C.A.
Name of section: Göttingen 429
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D
L_a
D_a

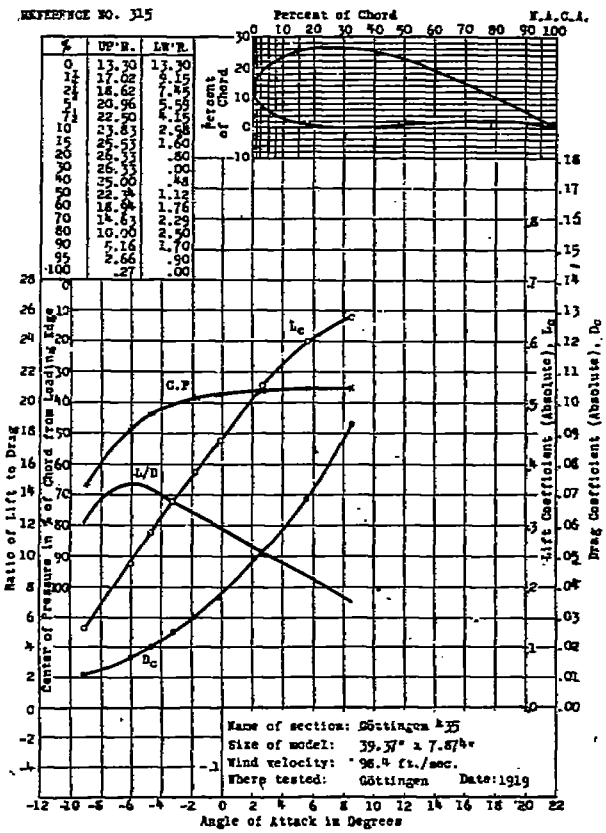

REFERENCE NO. 310
Percent of Chord
N.A.C.A.
Name of section: Göttingen 430
Size of model: 39.37" x 7.87"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D
L_a
D_a

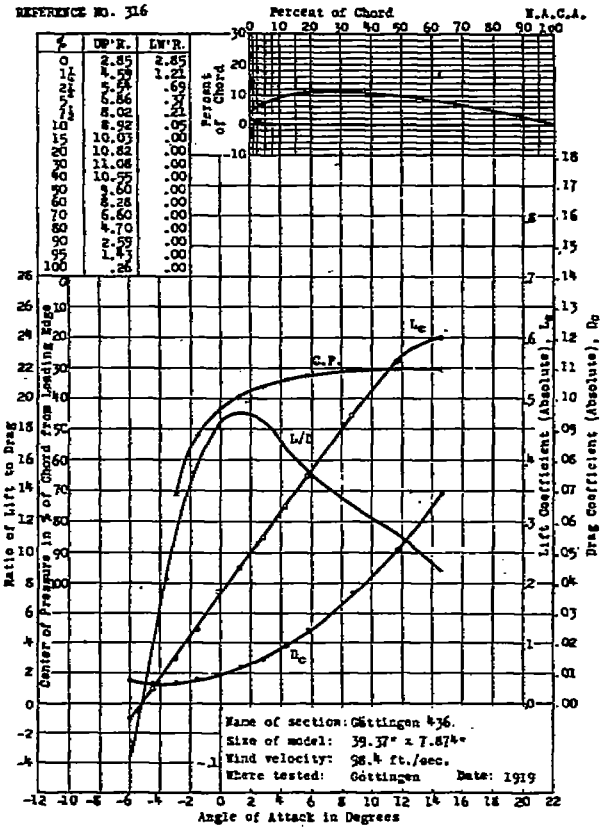

REFERENCE NO. 311
Percent of Chord
N.A.C.A.
Name of section: Göttingen 431
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

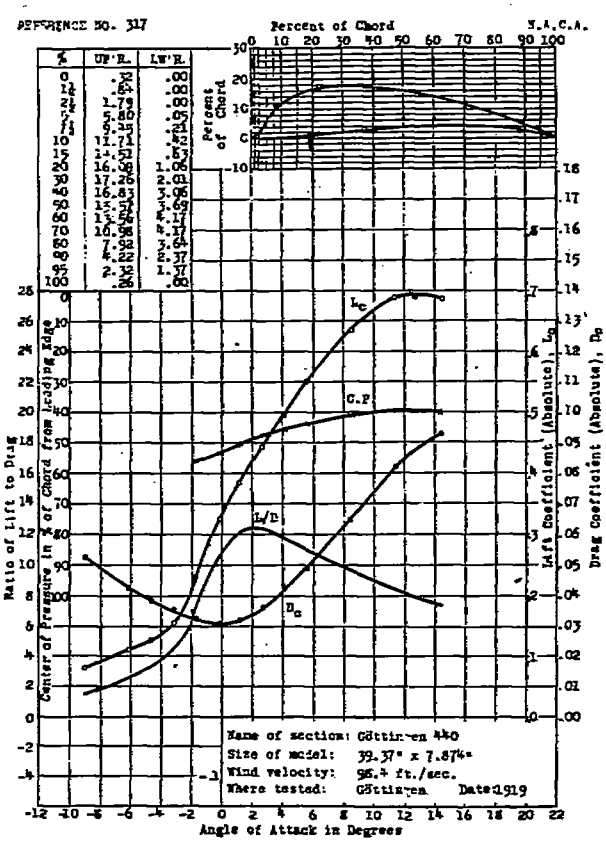

REFERENCE NO. 312
Percent of Chord
N.A.C.A.
Name of section: Göttingen 432
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

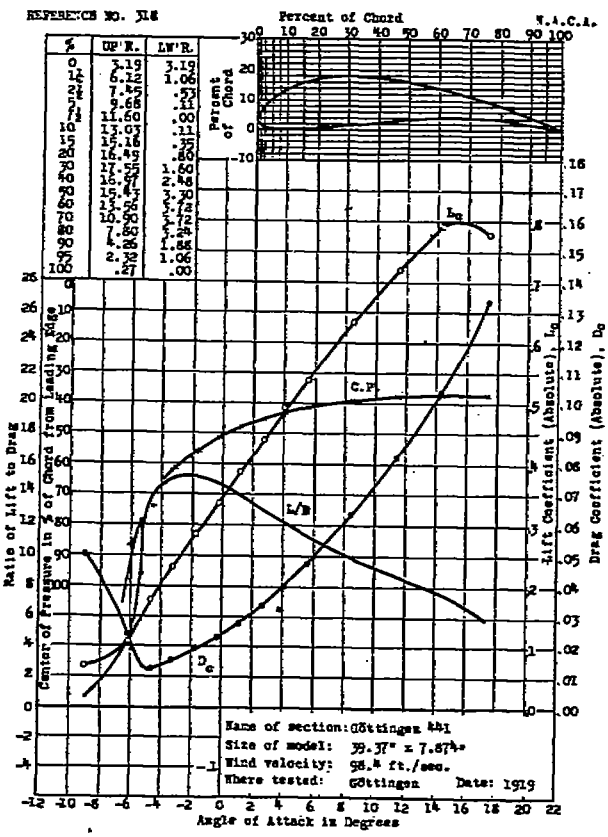

REFERENCE NO. 313
Percent of Chord
N.A.C.A.
Name of section: Göttingen 433
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a

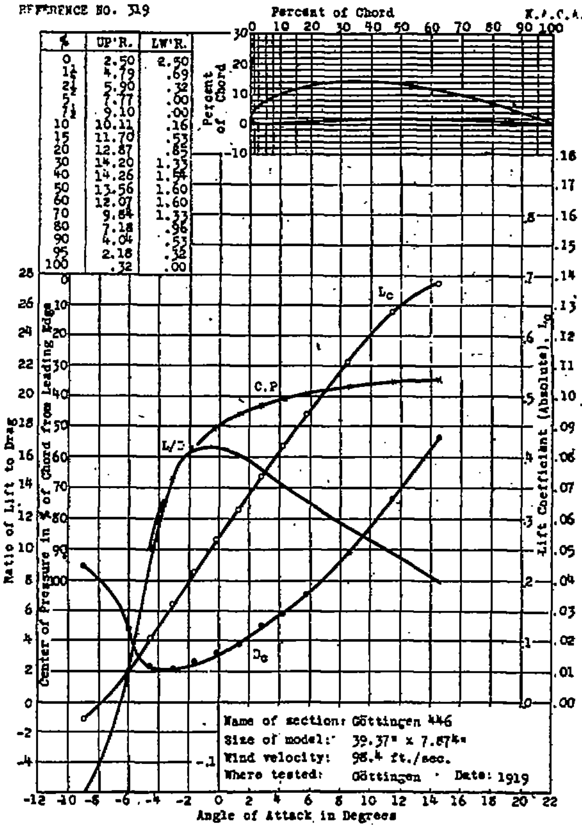

REFERENCE NO. 314
Percent of Chord
N.A.C.A.
Name of section: Göttingen 434
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_a
D_a


REFERENCE NO. 315
Percent of Chord
N.A.C.A.
Name of section: Göttingen 435
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P.
L/D

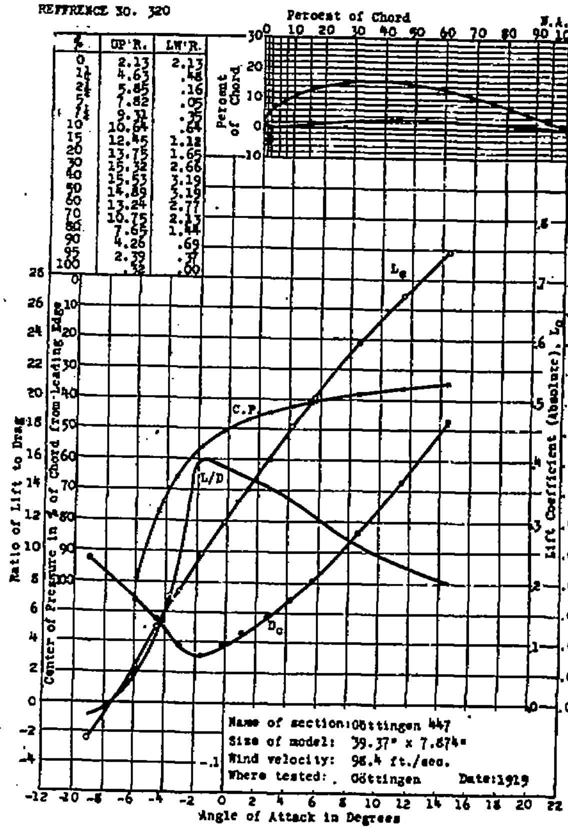

REFERENCE NO. 316
Percent of Chord
N.A.C.A.
Name of section: Göttingen 436.
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P.
L/D


REFERENCE NO. 317
Percent of Chord
N.A.C.A.
Name of section: Göttingen 440
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P.
L/D

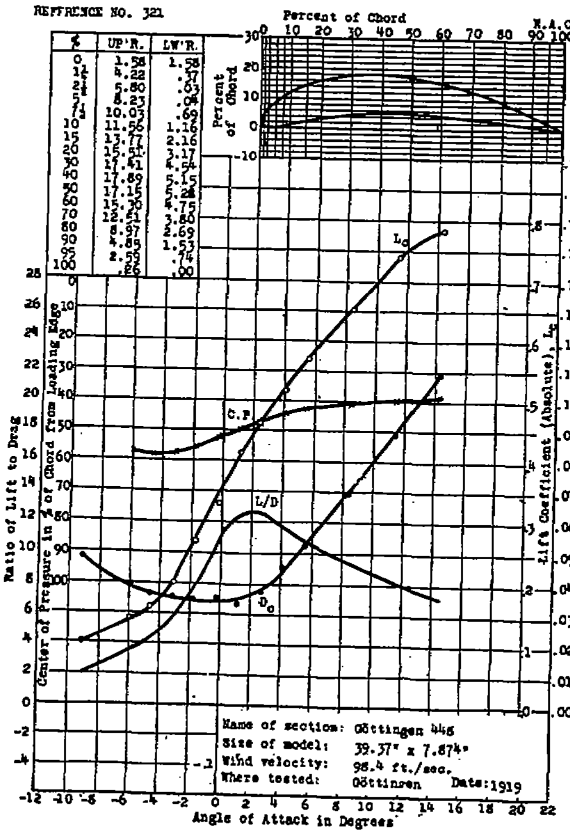

REFERENCE NO. 318
Percent of Chord
N.A.C.A.
Name of section: Göttingen 441
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)
C.P.
L/D



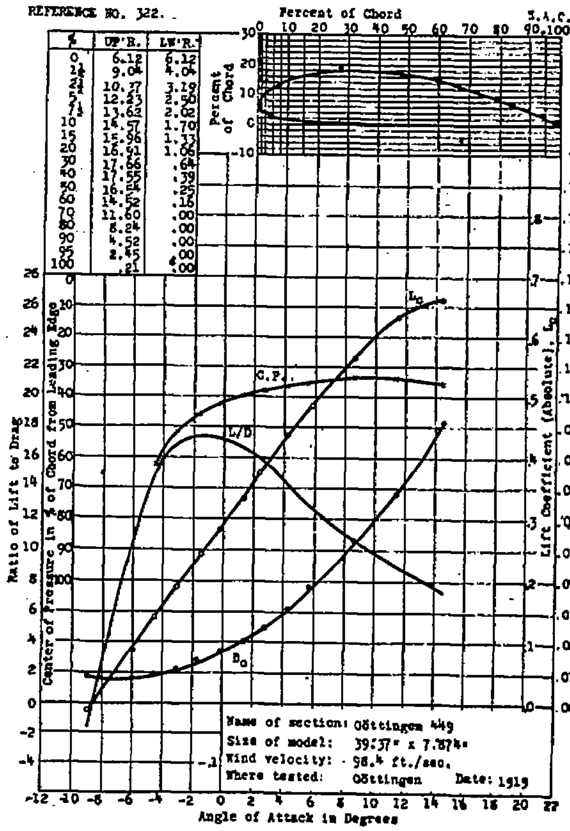
%	UP'R.	LW'R.
0	2.50	2.50
1¼	4.79	.69
2½	5.90	.32
5	7.77	.00
7½	9.10	.00
10	10.11	.16
15	11.70	.53
20	12.87	.85
30	14.20	1.35
40	14.26	1.54
50	13.56	1.60
60	12.07	1.60
70	9.84	1.33
80	7.18	.96
90	4.04	.53
95	2.18	.32
100	.32	.00



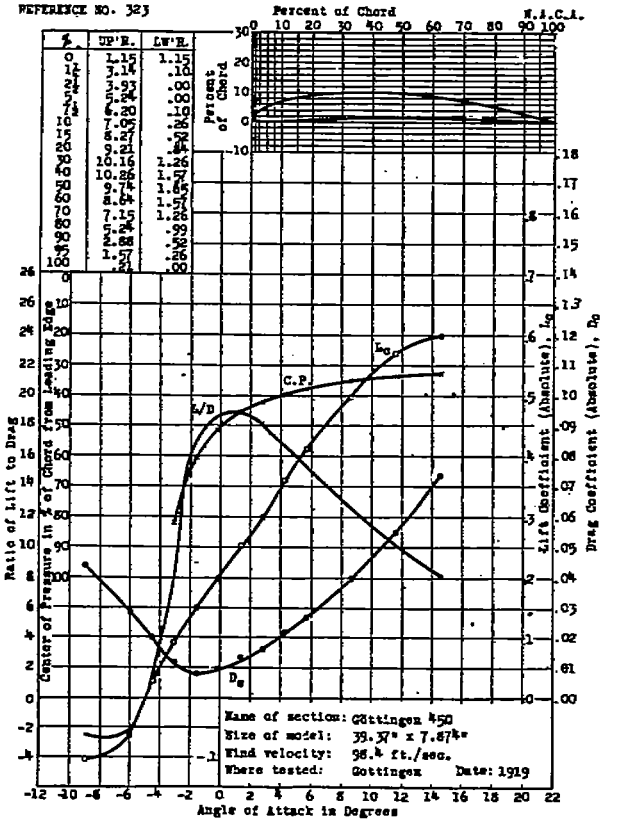
%	UP'R.	LW'R.
0	2.13	2.13
1¼	4.63	.48
2½	5.85	.16
5	7.82	.05
7½	9.31	.35
10	10.64	.64
15	12.45	1.12
20	13.75	1.65
30	15.32	2.66
40	15.53	3.19
50	14.89	3.19
60	13.24	2.77
70	10.75	2.13
80	7.65	1.44
90	4.26	.69
95	2.39	.37
100	.32	.00

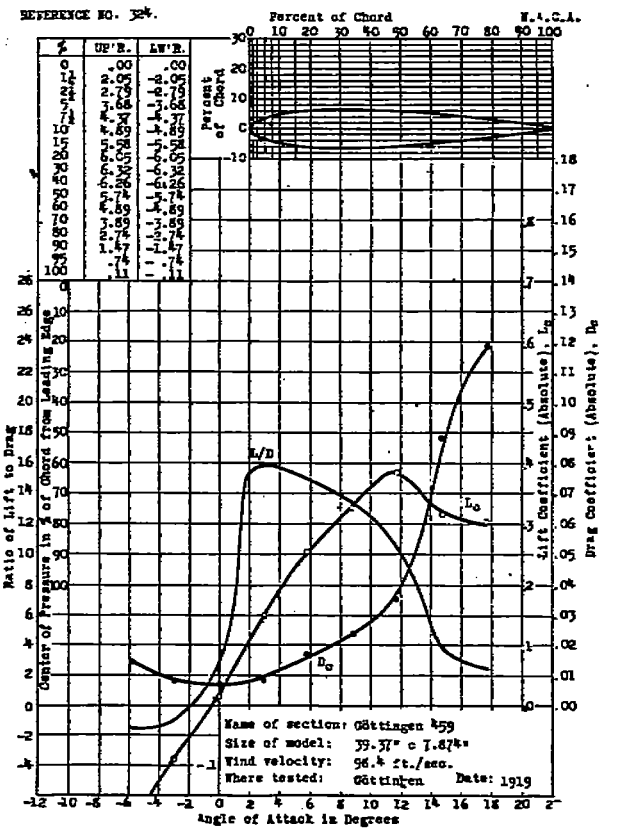


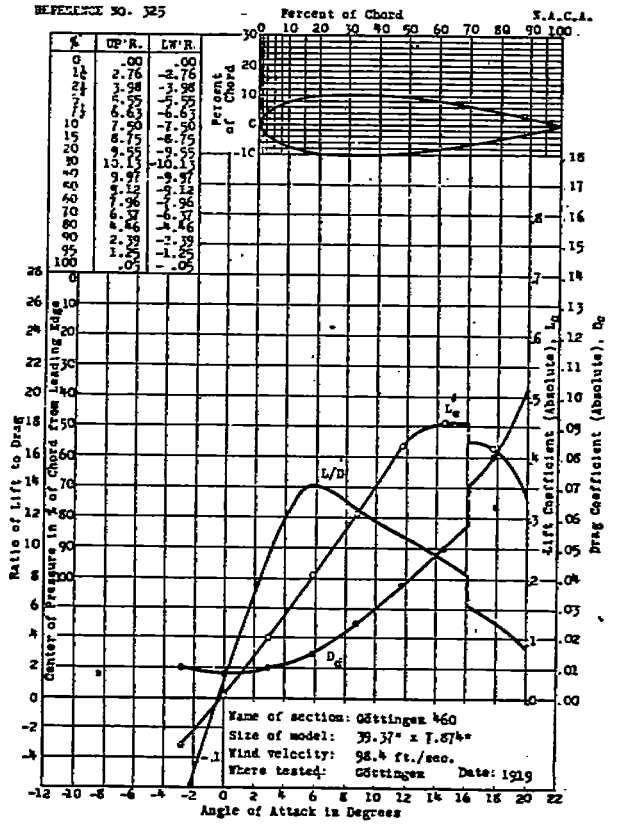
%	UP'R.	LW'R.
0	1.58	1.58
1¼	4.22	.37
2½	5.80	.03
5	8.23	.04
7½	10.03	.69
10	11.56	1.16
15	13.77	2.16
20	15.51	3.17
30	17.41	4.54
40	17.89	5.15
50	17.15	5.28
60	15.30	4.75
70	12.51	3.80
80	8.97	2.69
90	4.89	1.53
95	2.59	.74
100	.26	.00

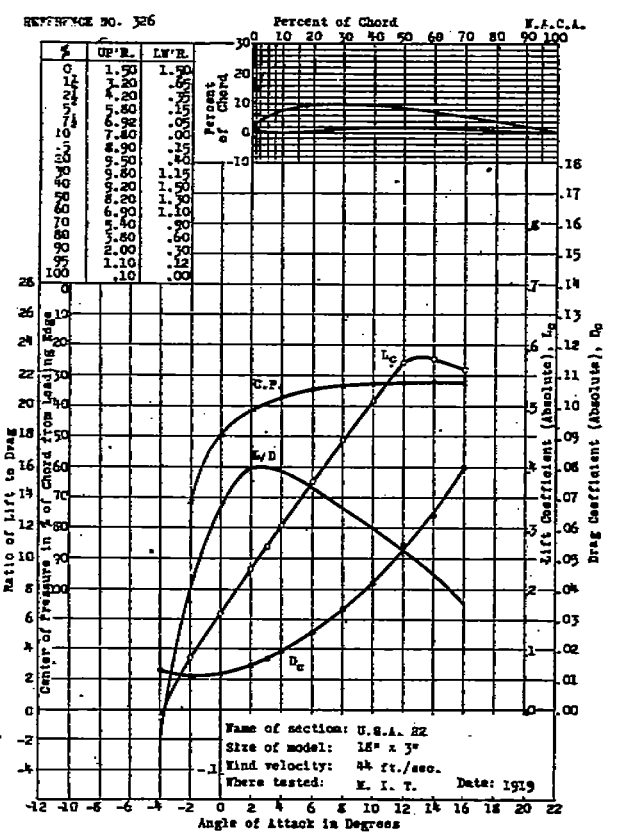


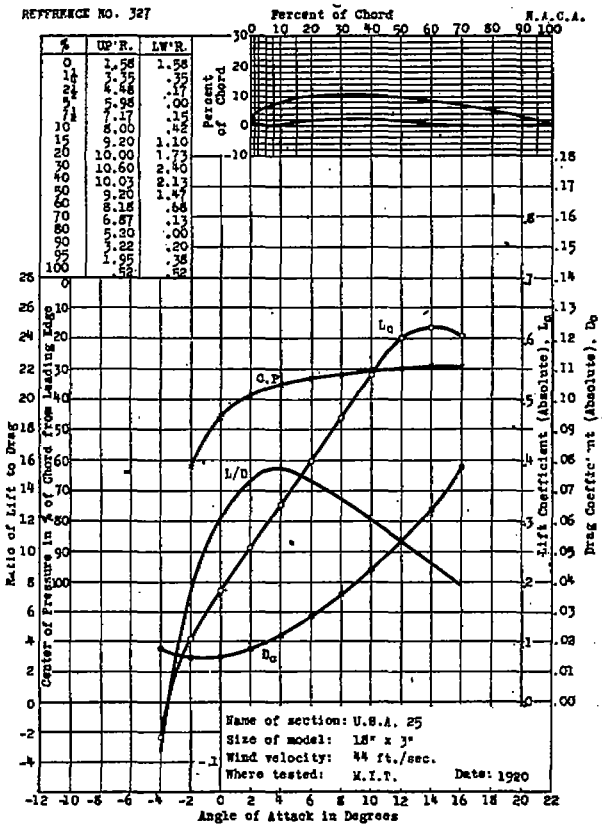
%	UP'R.	LW'R.
0	6.12	6.12
1¼	9.04	4.04
2½	10.37	3.19
5	12.23	2.50
7½	13.62	2.02
10	14.57	1.70
15	15.96	1.33
20	16.91	1.06
30	17.66	.64
40	17.55	.39
50	16.54	.25
60	14.52	.16
70	11.60	.00
80	8.24	.00
90	4.52	.00
95	2.45	.00
100	.21	.00

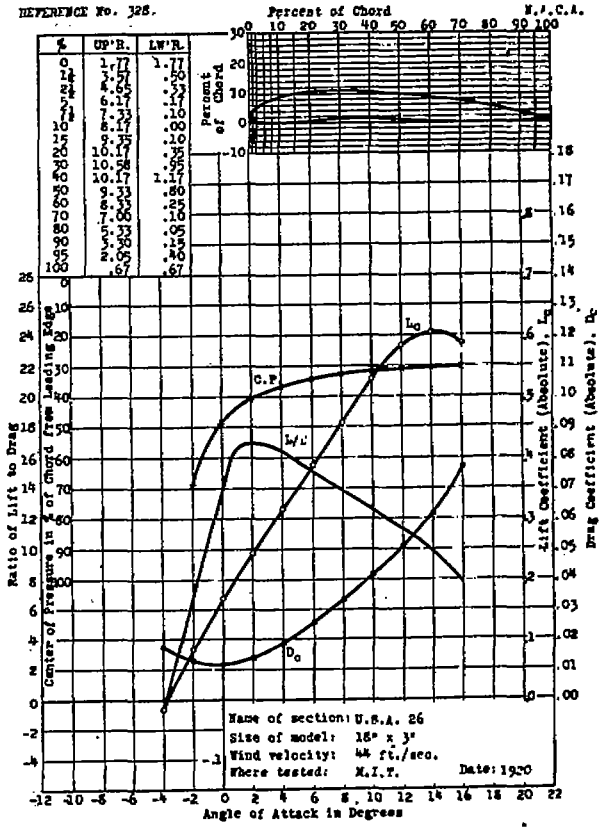

REFERENCE NO. 323
Percent of Chord
N.A.C.A.
Name of section: Göttingen 450
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_o
Drag Coefficient (Absolute), D_o
L/D
C.P.
L_o
D_o

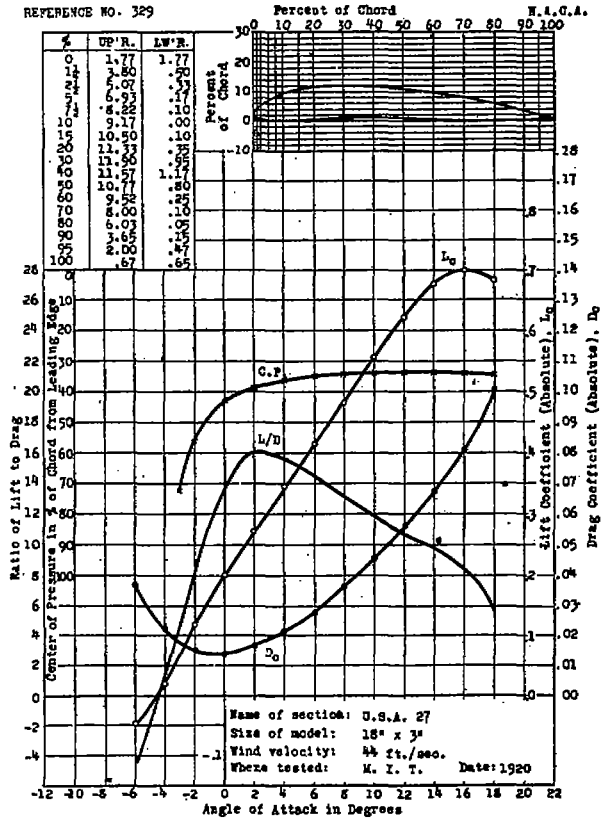

REFERENCE NO. 324.
Percent of Chord
N.A.C.A.
Name of section: Göttingen 459
Size of model: 39.37" c 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_o
Drag Coefficient (Absolute), D_o
L/D
L_o
D_o

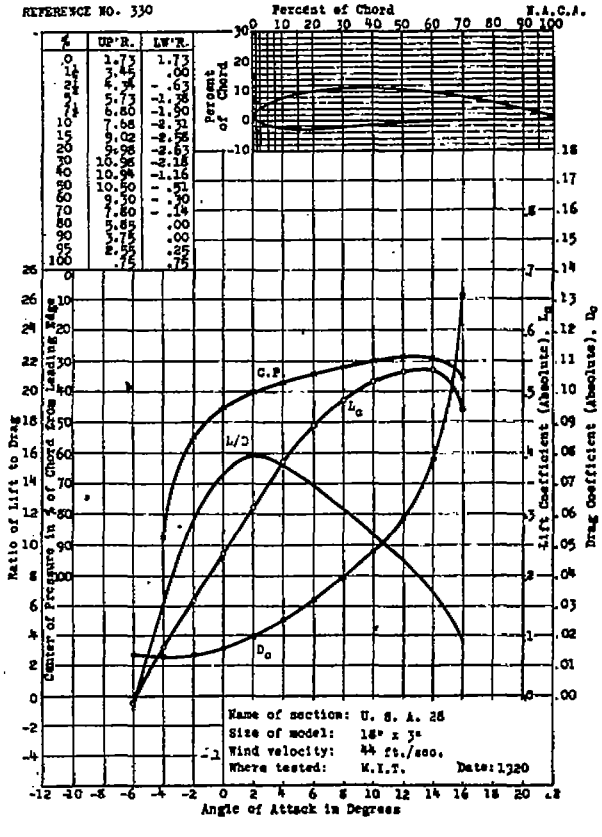

REFERENCE NO. 325
Percent of Chord
N.A.C.A.
Name of section: Göttingen 460
Size of model: 39.37" x 7.874"
Wind velocity: 98.4 ft./sec.
Where tested: Göttingen Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_o
Drag Coefficient (Absolute), D_o
L/D
L_o
D_o

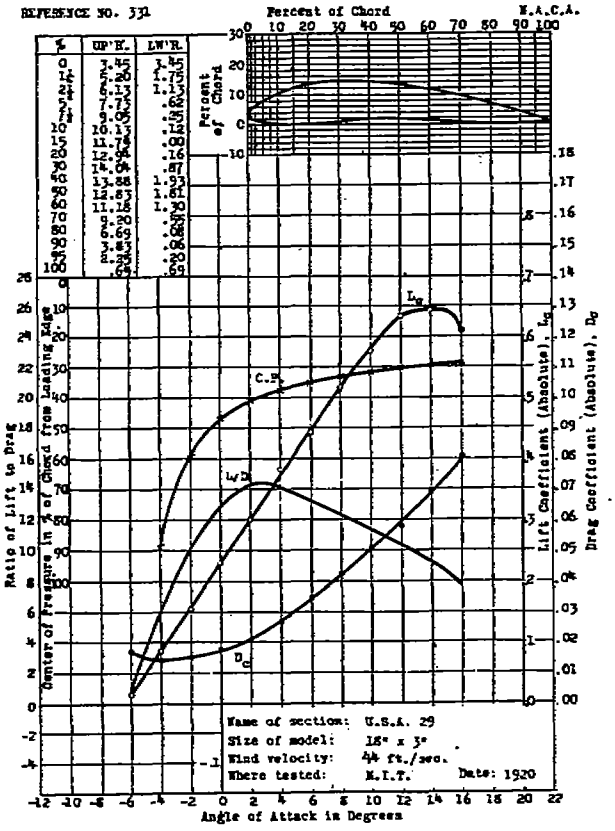

REFERENCE NO. 326
Percent of Chord
N.A.C.A.
Name of section: U.S.A. 22
Size of model: 18" x 3"
Wind velocity: 84 ft./sec.
Where tested: M. I. T. Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_o
Drag Coefficient (Absolute), D_o
L/D
C.P.
L_o
D_o

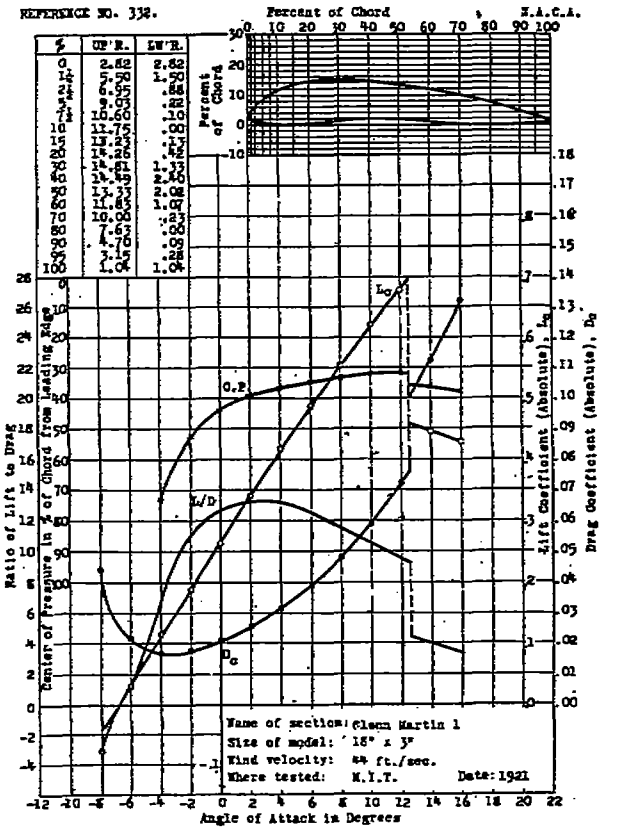

REFERENCE NO. 327
Percent of Chord
N.A.C.A.
% UP'R. LW'R.
0 1.58 1.58
1¼ 3.35 .35
2½ 4.48 .17
5 5.98 .00
7½ 7.17 .15
10 8.00 .42
15 9.20 1.10
20 10.00 1.73
30 10.60 2.40
40 10.03 2.13
50 9.20 1.47
60 8.18 .68
70 6.87 .13
80 5.20 .00
90 3.22 .20
95 1.95 .38
100 .52 .52
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D
L_a
D_a
Name of section: U.S.A. 25
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1920
Angle of Attack in Degrees

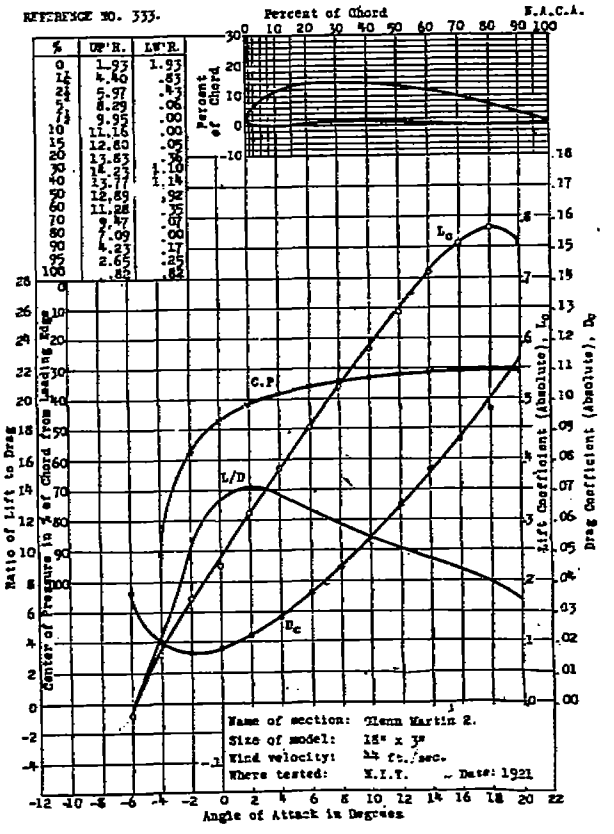

REFERENCE No. 328.
Percent of Chord
N.A.C.A.
% UP'R. LW'R.
0 1.77 1.77
1¼ 3.57 .50
2½ 4.65 .33
5 6.17 .17
7½ 7.33 .10
10 8.17 .08
15 9.35 .10
20 10.17 .35
30 10.58 .95
40 10.17 1.17
50 9.33 .80
60 8.35 .25
70 7.06 .10
80 5.33 .05
90 3.28 .15
95 2.05 .46
100 .67 .67
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D
L_a
D_a
Name of section: U.S.A. 26
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1920
Angle of Attack in Degrees

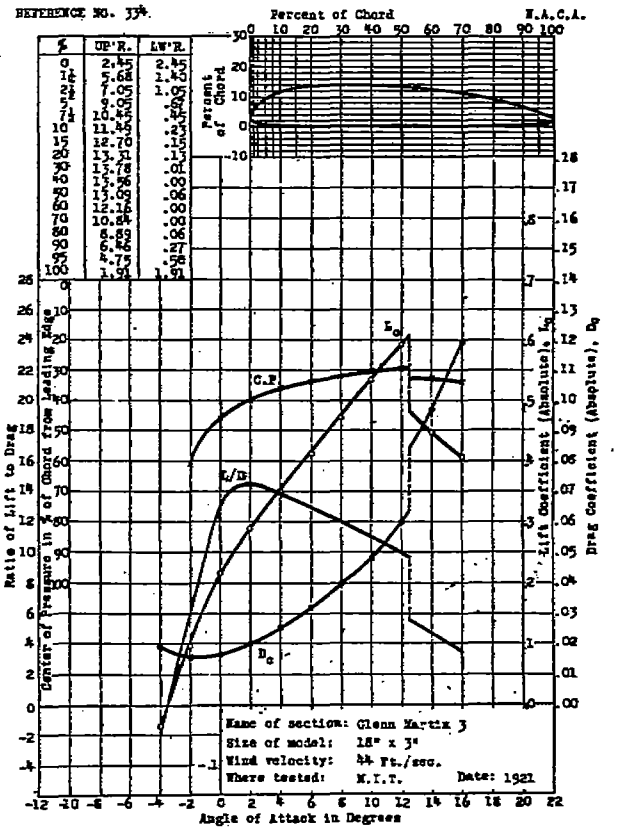

REFERENCE NO. 329
Percent of Chord
N.A.C.A.
% UP'R. LW'R.
0 1.77 1.77
1¼ 3.80 .50
2½ 5.07 .33
5 6.53 .17
7½ 8.22 .10
10 9.17 .00
15 10.50 .10
20 11.33 .35
30 11.90 .95
40 11.57 1.17
50 10.77 .80
60 9.52 .25
70 8.00 .10
80 6.02 .05
90 3.65 .25
95 2.00 .47
100 .67 .65
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D
L_a
D_a
Name of section: U.S.A. 27
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M. I. T. Date: 1920
Angle of Attack in Degrees

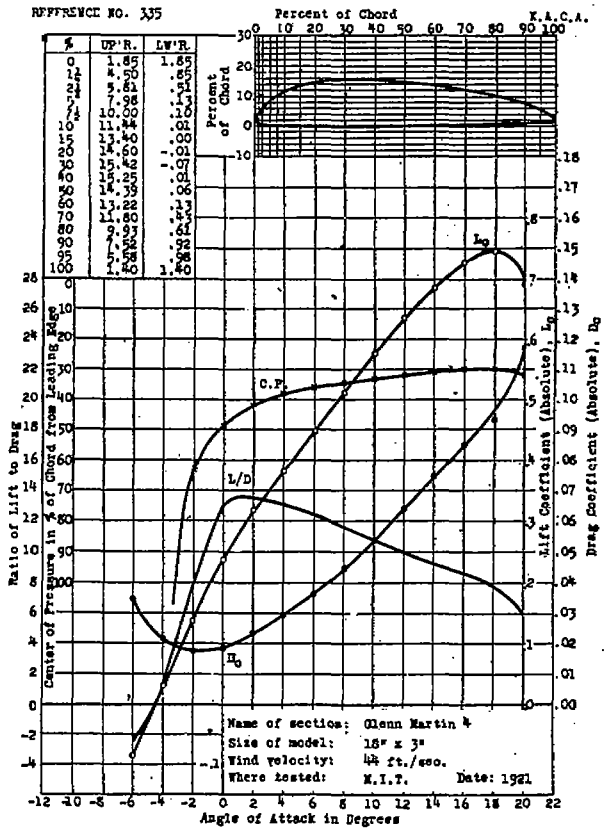

REFERENCE NO. 330
Percent of Chord
N.A.C.A.
% UP'R. LW'R.
0 1.73 1.73
1¼ 3.45 .00
2½ 4.94 -.63
5 5.73 -1.38
7½ 6.80 -1.90
10 7.65 -2.31
15 9.02 -2.58
20 9.98 -2.63
30 10.56 -2.18
40 10.54 -1.16
50 10.50 -.51
60 9.50 -.20
70 7.80 .14
80 5.45 .00
90 3.18 .00
95 2.55 .25
100 .75 .75
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D
L_a
D_a
Name of section: U. S. A. 28
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1920
Angle of Attack in Degrees

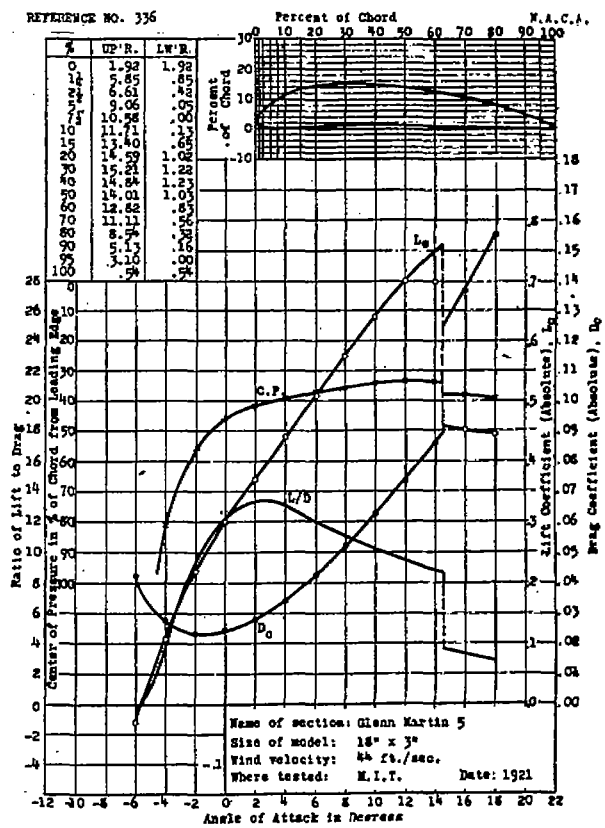

REFERENCE NO. 331.
N.A.C.A.
Percent of Chord
Name of section: U.S.A. 29
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Drag Coefficient (Absolute), Dp

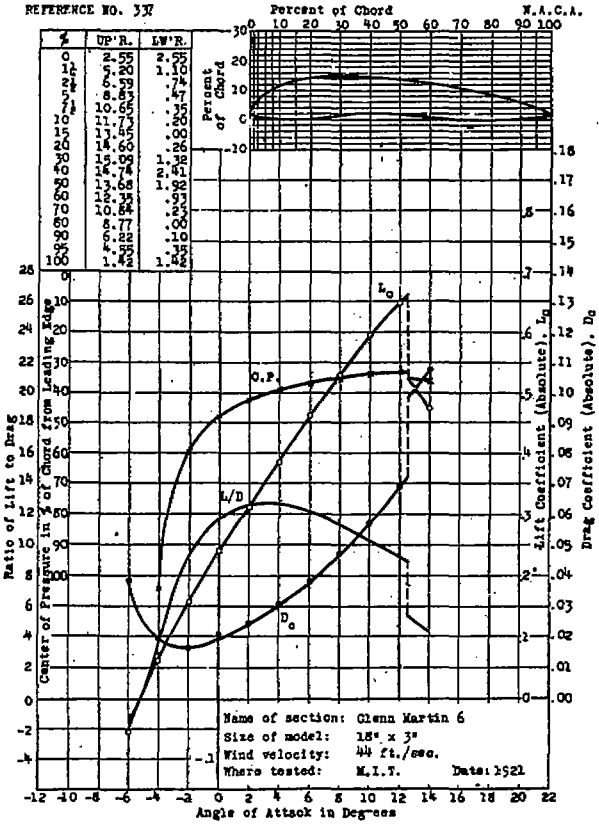

REFERENCE NO. 332.
N.A.C.A.
Percent of Chord
Name of section: Glenn Martin 1
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1921
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Drag Coefficient (Absolute), Dp

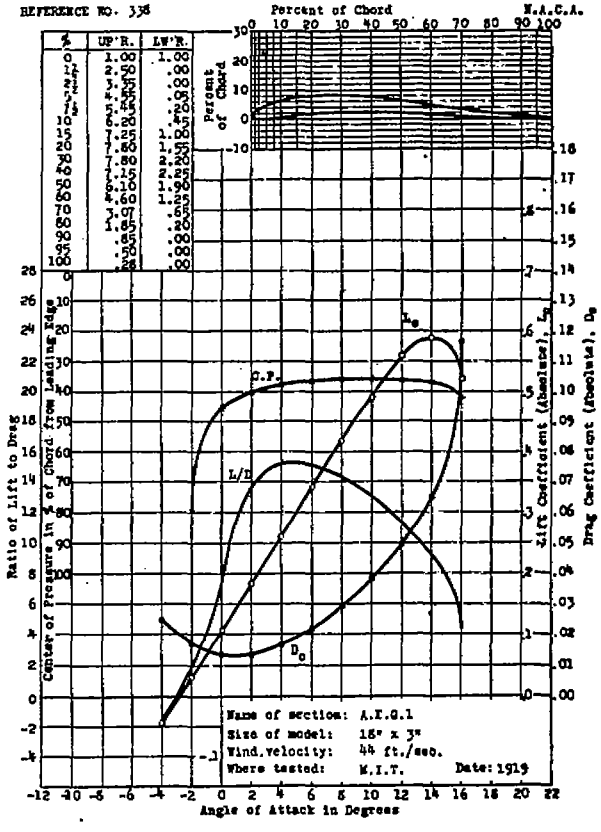

REFERENCE NO. 333.
N.A.C.A.
Percent of Chord
Name of section: Glenn Martin 2.
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1921
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Drag Coefficient (Absolute), Dp

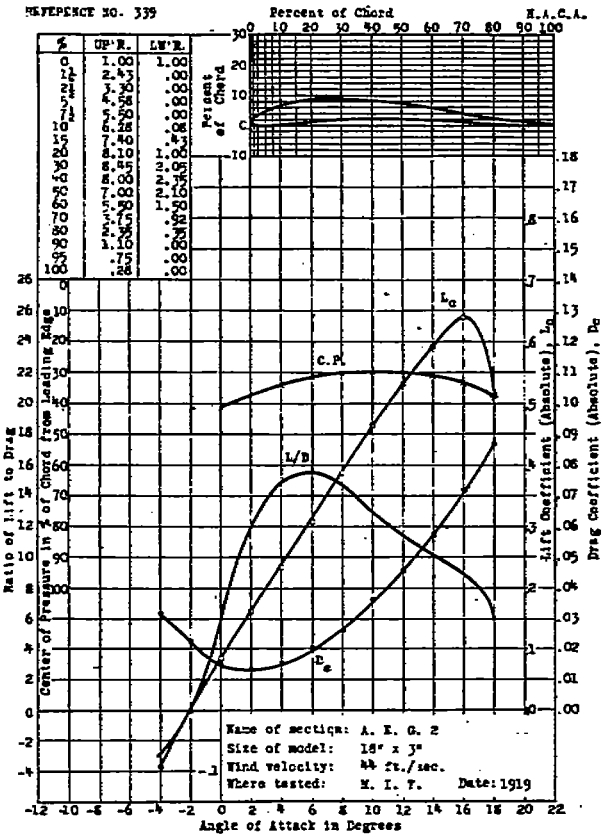

REFERENCE NO. 334.
N.A.C.A.
Percent of Chord
Name of section: Glenn Martin 3
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1921
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), Drag Coefficient (Absolute), Dp

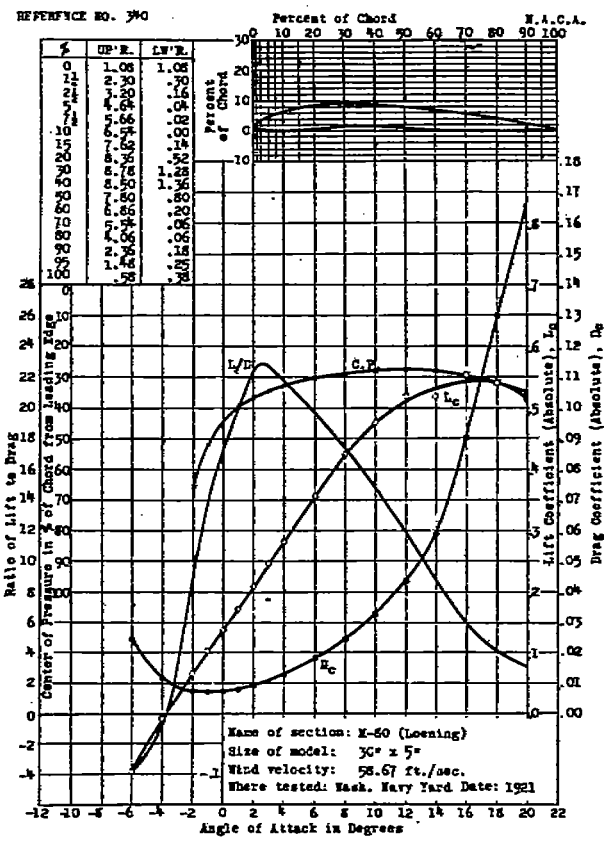

REFERENCE NO. 335
Percent of Chord
N.A.C.A.
Name of section: Glenn Martin 4
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1921
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

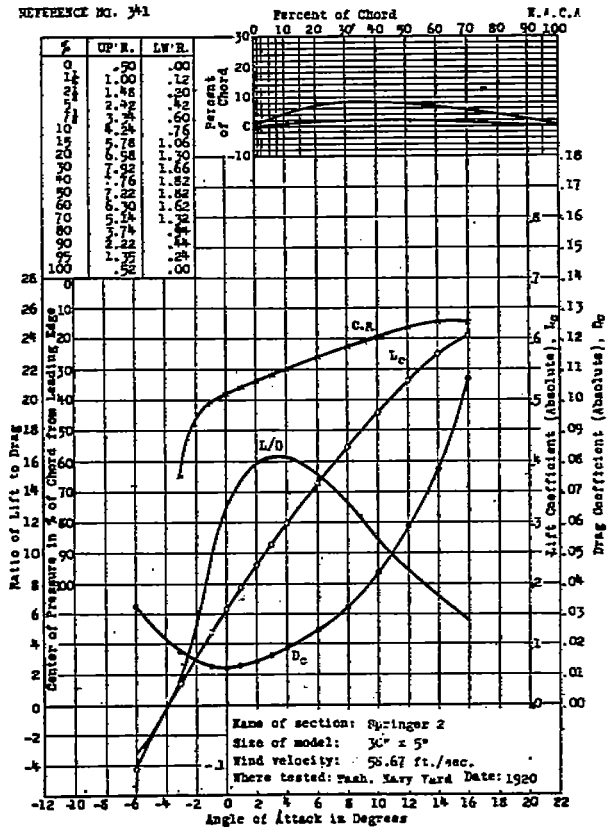

REFERENCE NO. 336
Percent of Chord
N.A.C.A.
Name of section: Glenn Martin 5
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1921
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

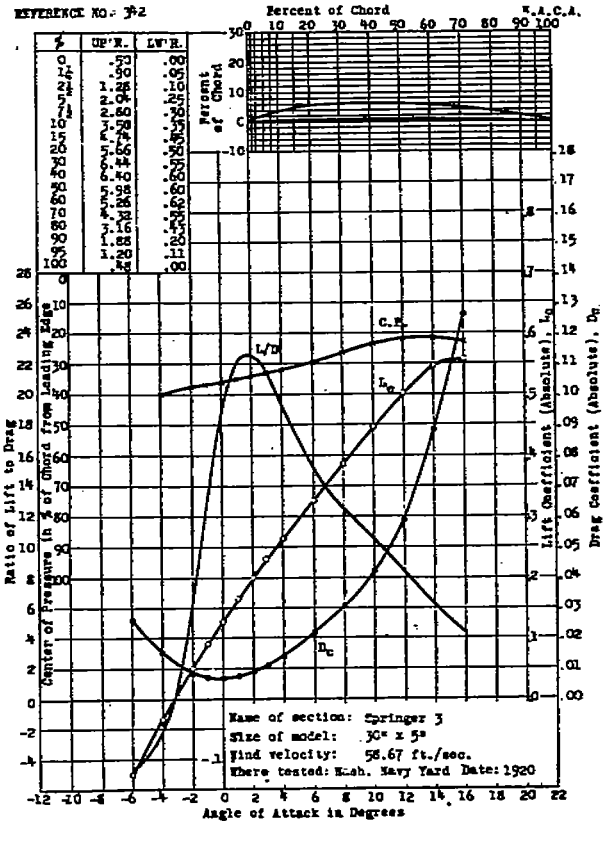

REFERENCE NO. 337
Percent of Chord
N.A.C.A.
Name of section: Glenn Martin 6
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1921
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

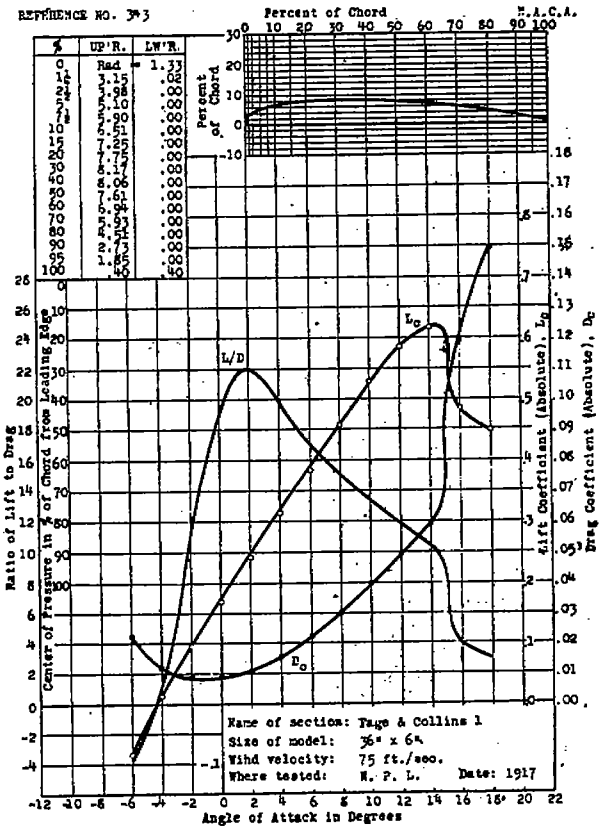

REFERENCE NO. 338
Percent of Chord
N.A.C.A.
Name of section: A.E.G.1
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M.I.T. Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D

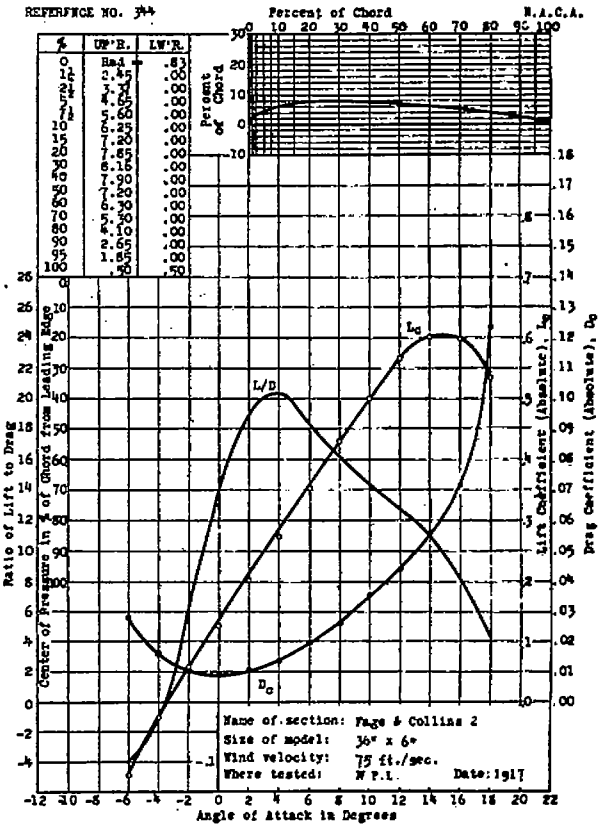

REFERENCE NO. 339
Percent of Chord
N.A.C.A.
Name of section: A. E. G. 2
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M. I. T. Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_c
D_c

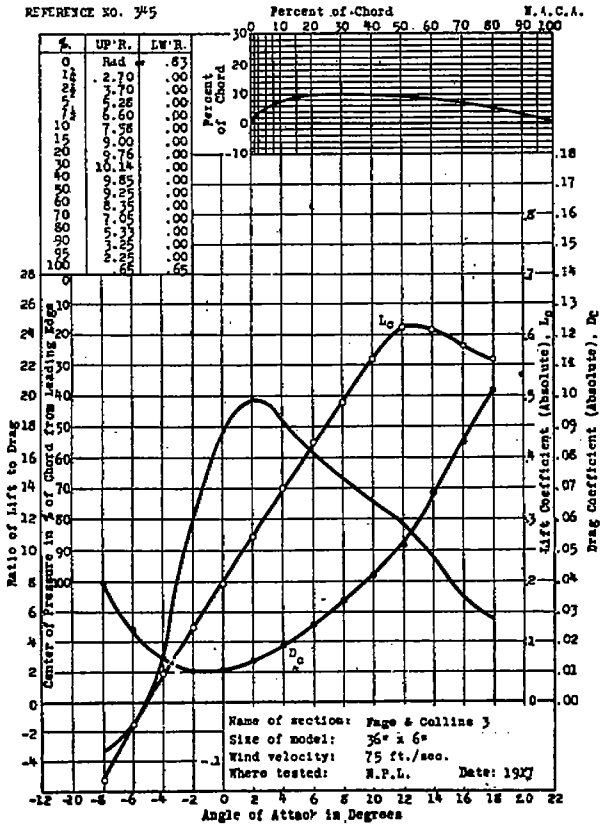

REFERENCE NO. 340
Percent of Chord
N.A.C.A.
Name of section: M-60 (Loening)
Size of model: 30" x 5"
Wind velocity: 58.67 ft./sec.
Where tested: Wash. Navy Yard Date: 1921
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_c
D_c

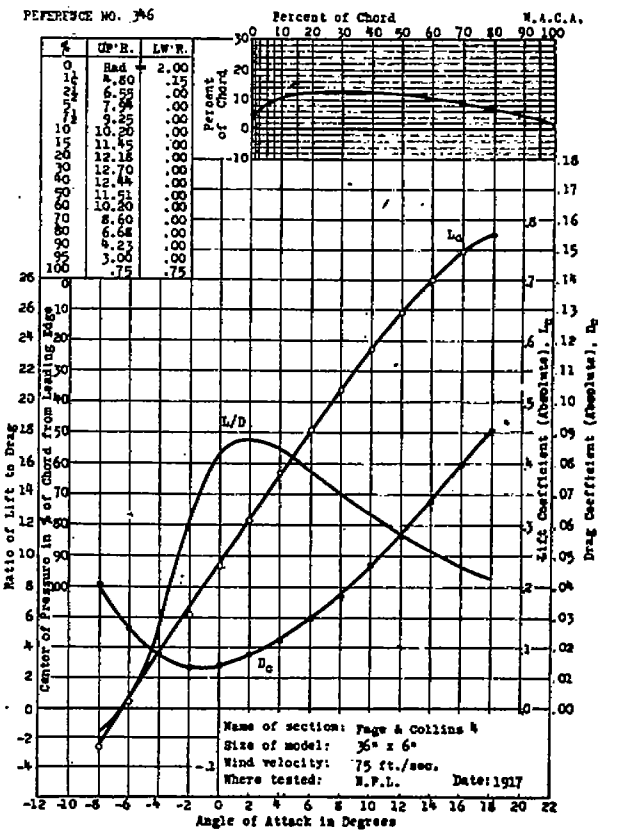

REFERENCE NO. 341
Percent of Chord
N.A.C.A.
Name of section: Springer 2
Size of model: 30" x 5"
Wind velocity: 58.67 ft./sec.
Where tested: Wash. Navy Yard Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_c
D_c

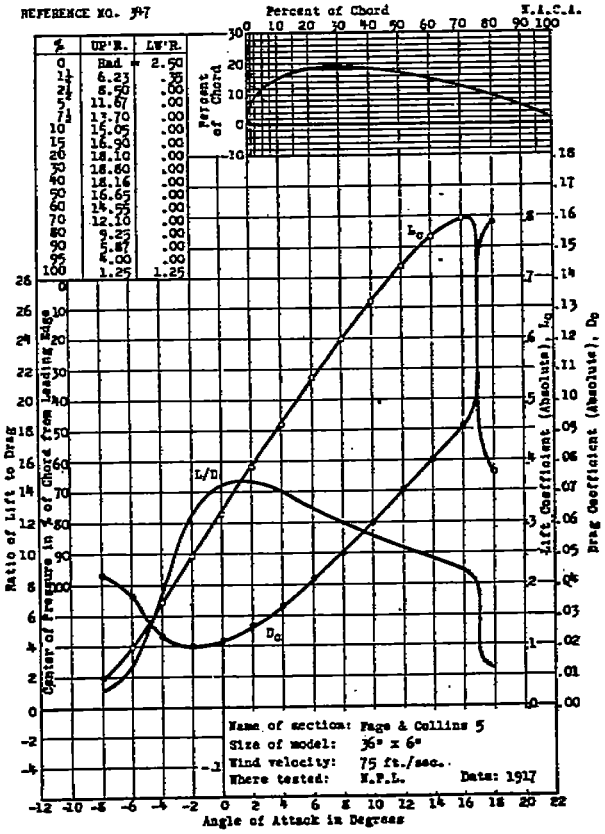

REFERENCE NO. 342
Percent of Chord
N.A.C.A.
Name of section: Springer 3
Size of model: 30" x 5"
Wind velocity: 58.67 ft./sec.
Where tested: Wash. Navy Yard Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P.
L/D
L_c
D_c

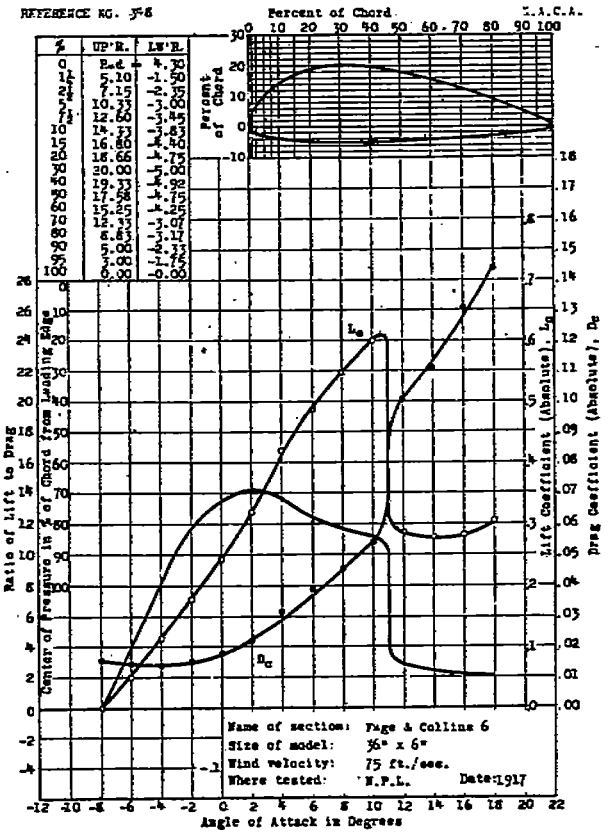

REFERENCE NO. 343
Percent of Chord
N.A.C.A.
% | UP'R. | LW'R.
0 | Rad = 1.33
1¼ | 3.15 | .08
2½ | 3.98 | .08
5 | 5.10 | .08
7½ | 5.90 | .08
10 | 6.51 | .08
15 | 7.25 | .08
20 | 7.75 | .08
30 | 8.14 | .08
40 | 8.08 | .08
50 | 7.61 | .08
60 | 6.94 | .08
70 | 5.93 | .08
80 | 4.51 | .08
90 | 2.73 | .08
95 | 1.85 | .08
100 | .40 | .40
Percent of Chord
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
L/D
L_c
D_c
Name of section: Page & Collins 1
Size of model: 36" x 6"
Wind velocity: 75 ft./sec.
Where tested: N. P. L.
Date: 1917
Angle of Attack in Degrees

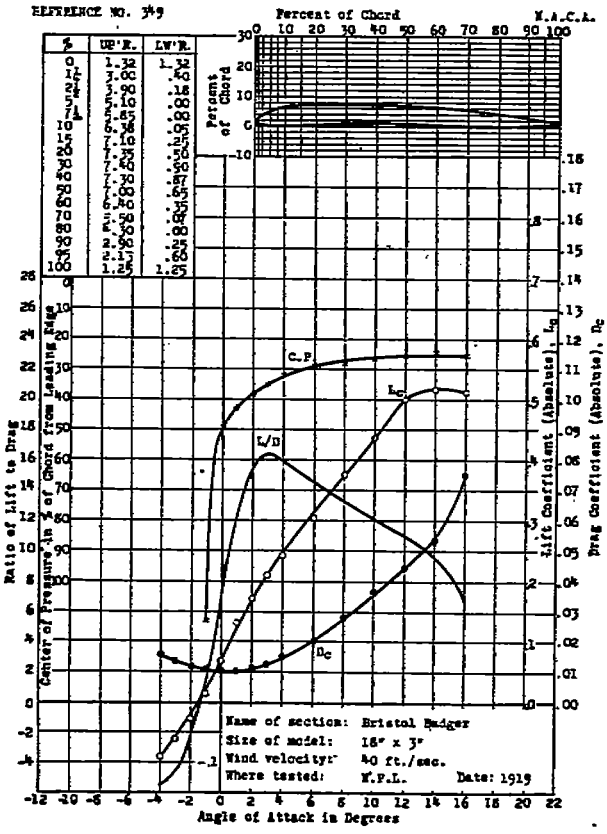

REFERENCE NO. 344
Percent of Chord
N.A.C.A.
% | UP'R. | LW'R.
0 | Rad = .83
1¼ | 2.45 | .08
2½ | 3.45 | .08
5 | 4.65 | .08
7½ | 5.60 | .08
10 | 6.25 | .08
15 | 7.20 | .08
20 | 7.65 | .08
30 | 8.15 | .08
40 | 7.90 | .08
50 | 7.20 | .08
60 | 6.30 | .08
70 | 5.30 | .08
80 | 4.10 | .08
90 | 2.65 | .08
95 | 1.85 | .08
100 | .80 | .80
Percent of Chord
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
L/D
L_c
D_c
Name of section: Page & Collins 2
Size of model: 36" x 6"
Wind velocity: 75 ft./sec.
Where tested: N.P.L.
Date: 1917
Angle of Attack in Degrees

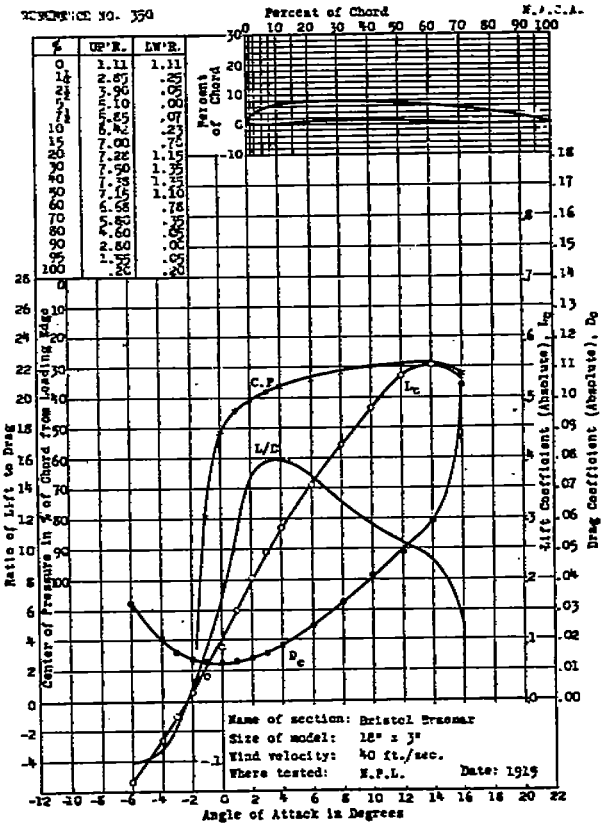

REFERENCE NO. 345
Percent of Chord
N.A.C.A.
% | UP'R. | LW'R.
0 | Rad = .83
1¼ | 2.70 | .08
2½ | 3.70 | .08
5 | 5.28 | .08
7½ | 6.60 | .08
10 | 7.58 | .08
15 | 9.00 | .08
20 | 9.76 | .08
30 | 10.14 | .08
40 | 9.85 | .08
50 | 9.25 | .08
60 | 8.35 | .08
70 | 7.05 | .08
80 | 5.33 | .08
90 | 3.25 | .08
95 | 2.25 | .08
100 | .65 | .65
Percent of Chord
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
L_c
D_c
Name of section: Page & Collins 3
Size of model: 36" x 6"
Wind velocity: 75 ft./sec.
Where tested: N.P.L.
Date: 1917
Angle of Attack in Degrees

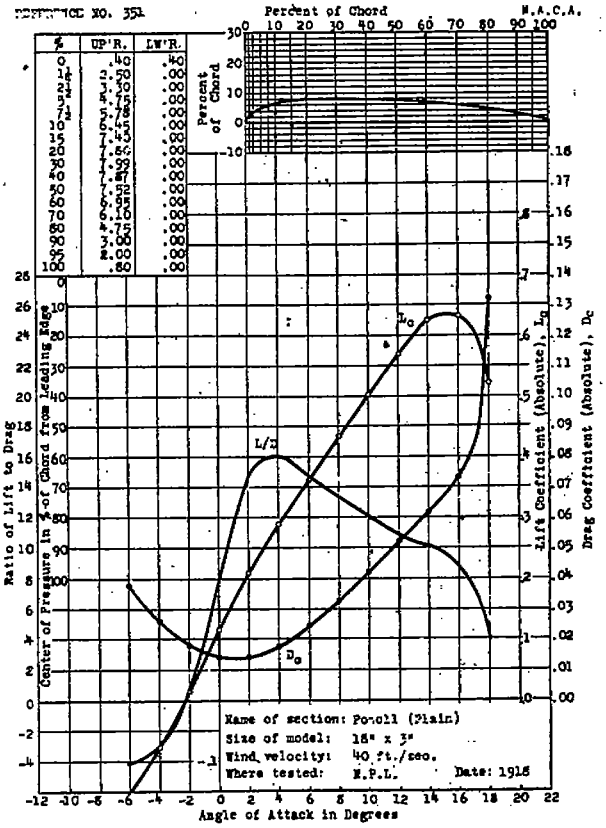

REFERENCE NO. 346
Percent of Chord
N.A.C.A.
% | UP'R. | LW'R.
0 | Rad = 2.00
1¼ | 4.60 | .15
2½ | 6.55 | .08
5 | 7.94 | .08
7½ | 9.25 | .08
10 | 10.20 | .08
15 | 11.45 | .08
20 | 12.18 | .08
30 | 12.70 | .08
40 | 12.44 | .08
50 | 11.51 | .08
60 | 10.20 | .08
70 | 8.60 | .08
80 | 6.68 | .08
90 | 4.23 | .08
95 | 3.00 | .08
100 | .75 | .75
Percent of Chord
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
L/D
L_c
D_c
Name of section: Page & Collins 4
Size of model: 36" x 6"
Wind velocity: 75 ft./sec.
Where tested: N.P.L.
Date: 1917
Angle of Attack in Degrees

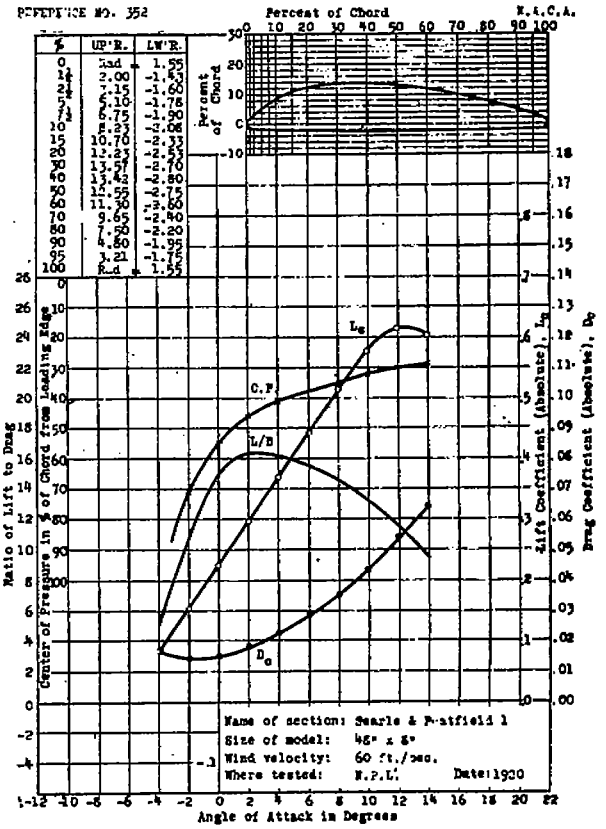

REFERENCE NO. 347
Percent of Chord
N.A.C.A.
Name of section: Page & Collins 5
Size of model: 36" x 6"
Wind velocity: 75 ft./sec.
Where tested: N.P.L. Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), D_o
Lift Coefficient (Absolute), L_o
L/D
L_o
D_o

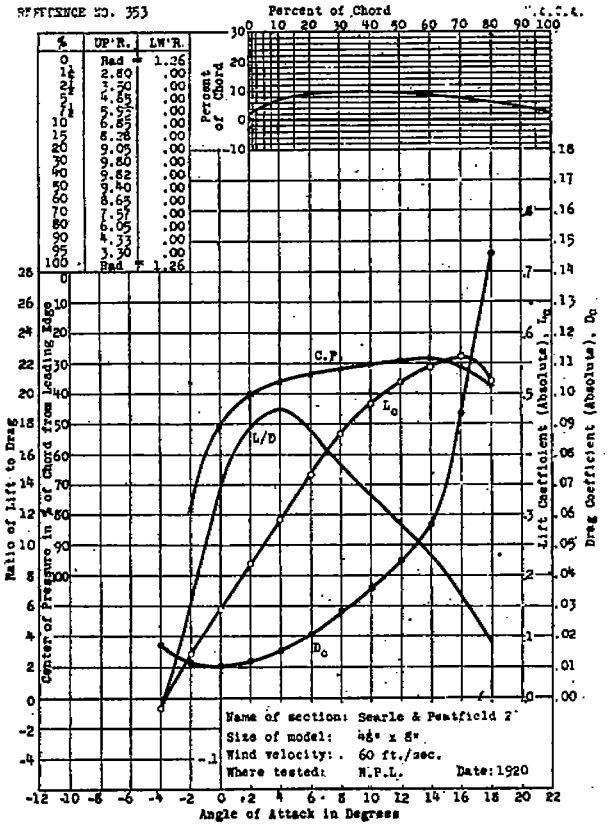

REFERENCE NO. 348
Percent of Chord
N.A.C.A.
Name of section: Page & Collins 6
Size of model: 36" x 6"
Wind velocity: 75 ft./sec.
Where tested: N.P.L. Date: 1917
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), D_o
Lift Coefficient (Absolute), L_o
L_o
D_o

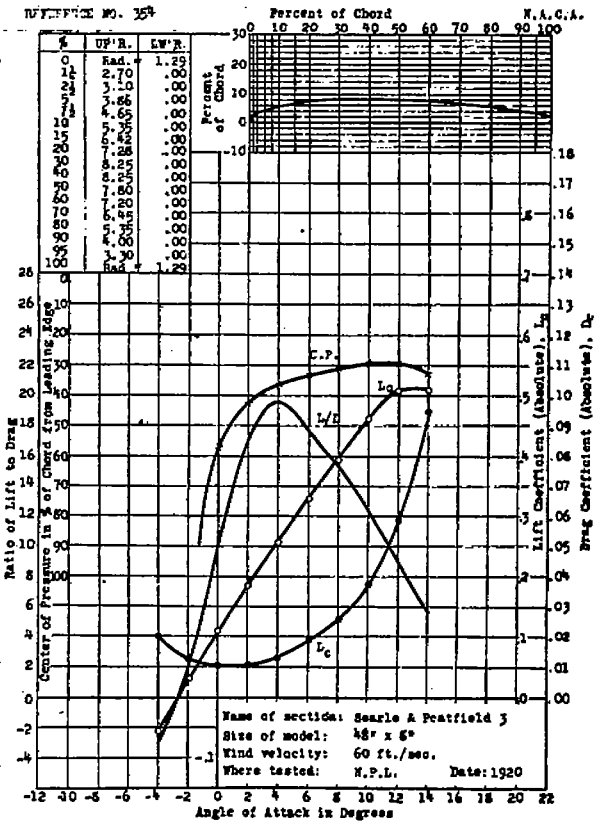

REFERENCE NO. 349
Percent of Chord
N.A.C.A.
C.P
Name of section: Bristol Badger
Size of model: 18" x 3"
Wind velocity: 40 ft./sec.
Where tested: N.P.L. Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), D_o
Lift Coefficient (Absolute), L_o
L/D
L_o
D_o

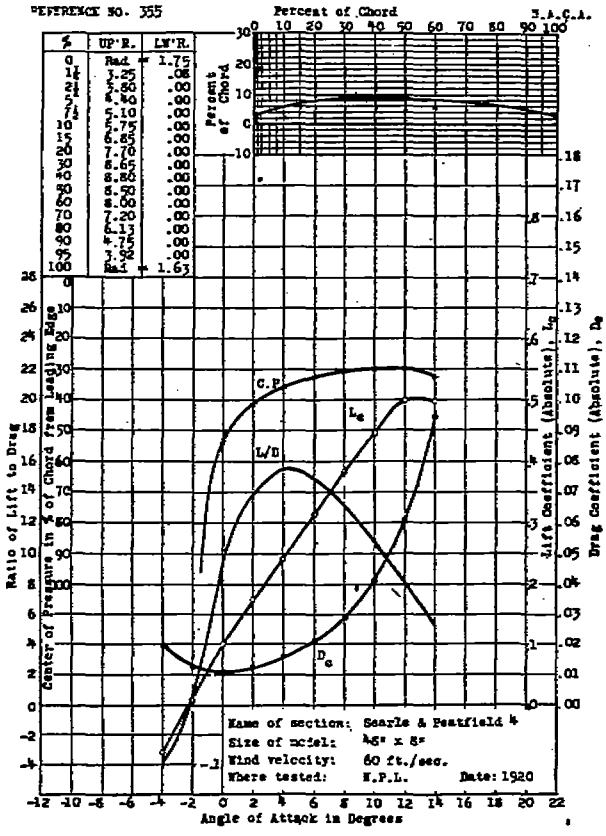

REFERENCE NO. 350
Percent of Chord
N.A.C.A.
C.P
Name of section: Bristol Braemar
Size of model: 18" x 3"
Wind velocity: 40 ft./sec.
Where tested: N.P.L. Date: 1919
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), D_o
Lift Coefficient (Absolute), L_o
L/D
L_o
D_o

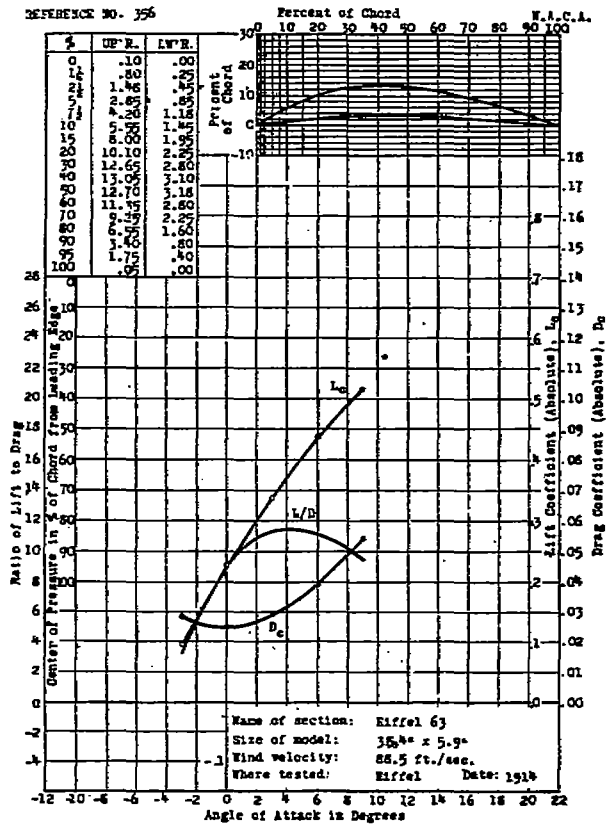

Percent of Chord
N.A.C.A.
Name of section: Pomoll (Plain)
Size of model: 18" x 3"
Wind velocity: 40 ft./sec.
Where tested: N.P.L.
Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c

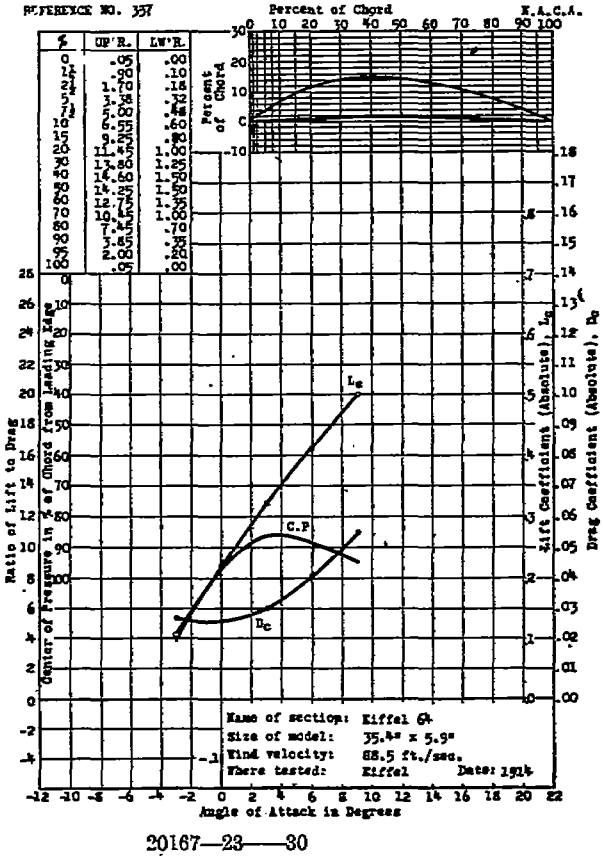

Percent of Chord
N.A.C.A.
Name of section: Searle & Pentfield 1
Size of model: 48" x 8"
Wind velocity: 60 ft./sec.
Where tested: N.P.L.
Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c

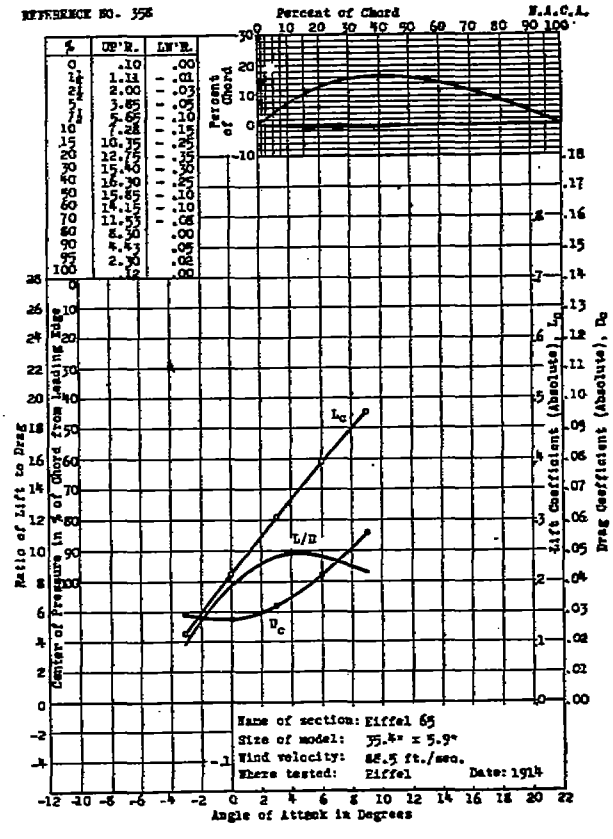

Percent of Chord
N.A.C.A.
Name of section: Searle & Pentfield 2
Size of model: 48" x 8"
Wind velocity: 60 ft./sec.
Where tested: N.P.L.
Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c

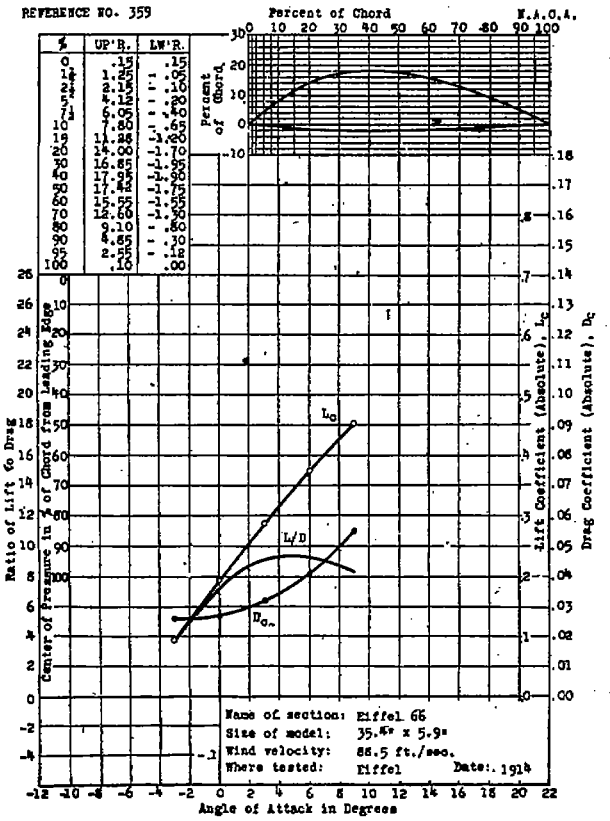

Percent of Chord
N.A.C.A.
Name of section: Searle & Pentfield 3
Size of model: 48" x 8"
Wind velocity: 60 ft./sec.
Where tested: N.P.L.
Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Center of Pressure in % of Chord from Leading Edge
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c

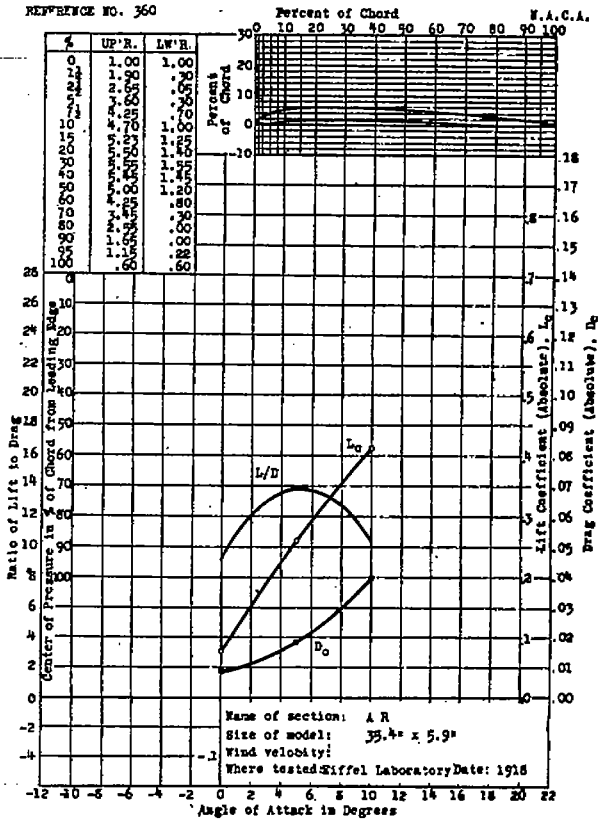

REFERENCE NO. 355
Percent of Chord
N.A.C.A.
Name of section: Searle & Pentfield 4
Size of model: 48" x 8"
Wind velocity: 60 ft./sec.
Where tested: N.P.L. Date: 1920
Angle of Attack in Degrees

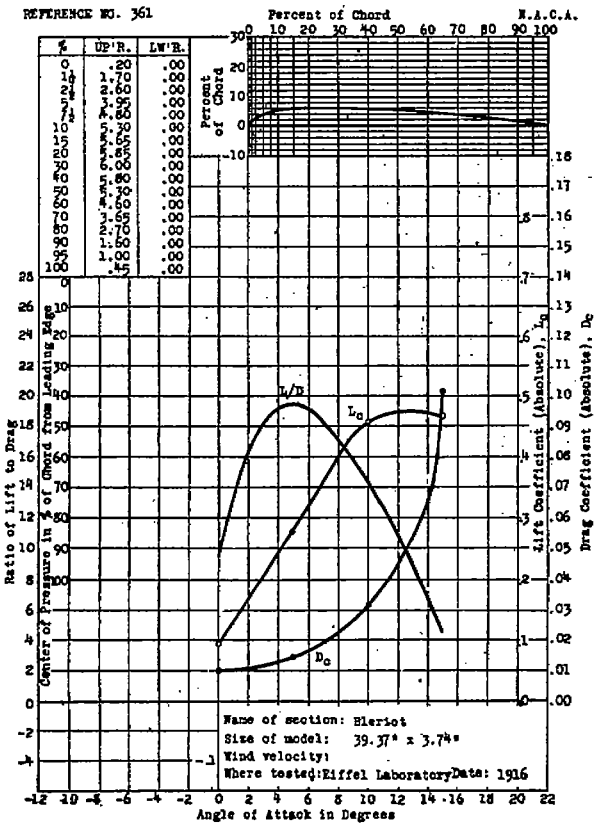

REFERENCE NO. 356
Percent of Chord
N.A.C.A.
Name of section: Eiffel 63
Size of model: 35.4" x 5.9"
Wind velocity: 88.5 ft./sec.
Where tested: Eiffel Date: 1914
Angle of Attack in Degrees

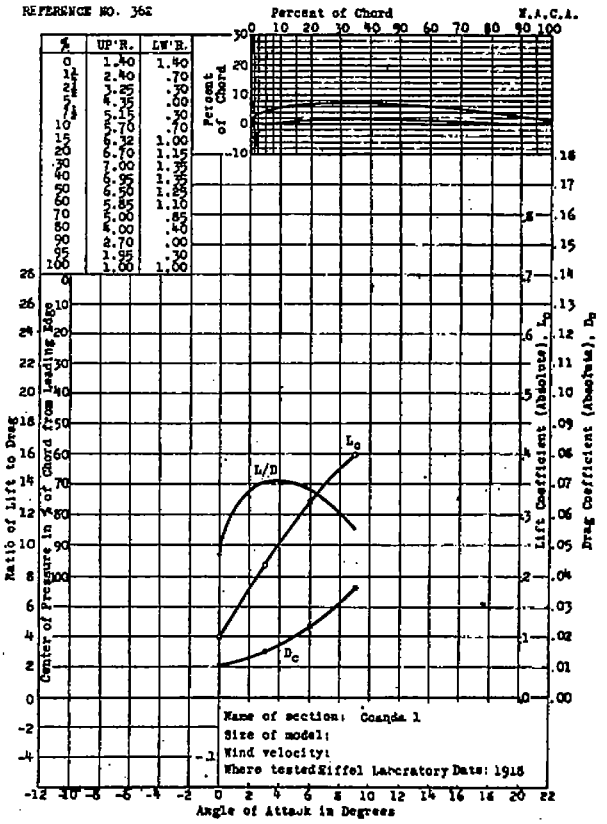

REFERENCE NO. 357
Percent of Chord
N.A.C.A.
Name of section: Eiffel 64
Size of model: 35.4" x 5.9"
Wind velocity: 88.5 ft./sec.
Where tested: Eiffel Date: 1914
Angle of Attack in Degrees

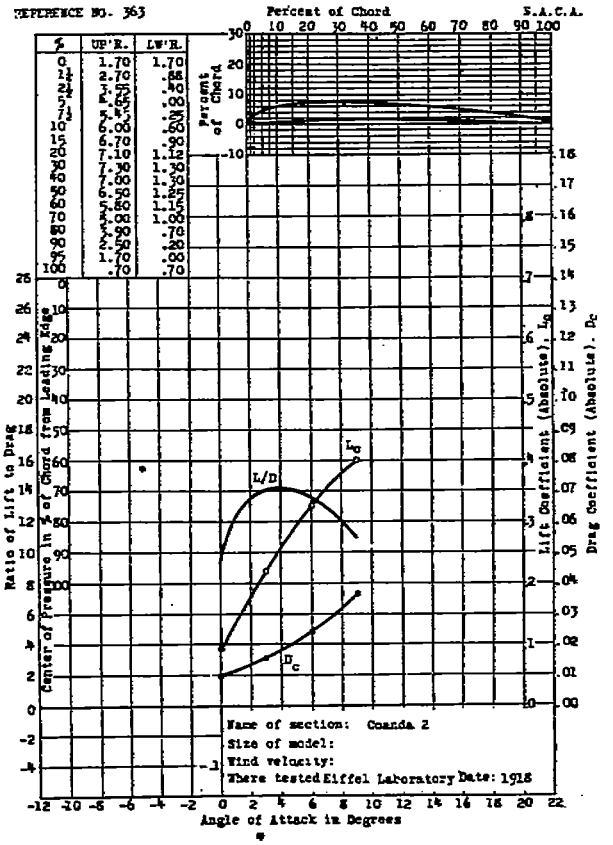

REFERENCE NO. 358
Percent of Chord
N.A.C.A.
Name of section: Eiffel 65
Size of model: 35.4" x 5.9"
Wind velocity: 88.5 ft./sec.
Where tested: Eiffel Date: 1914
Angle of Attack in Degrees

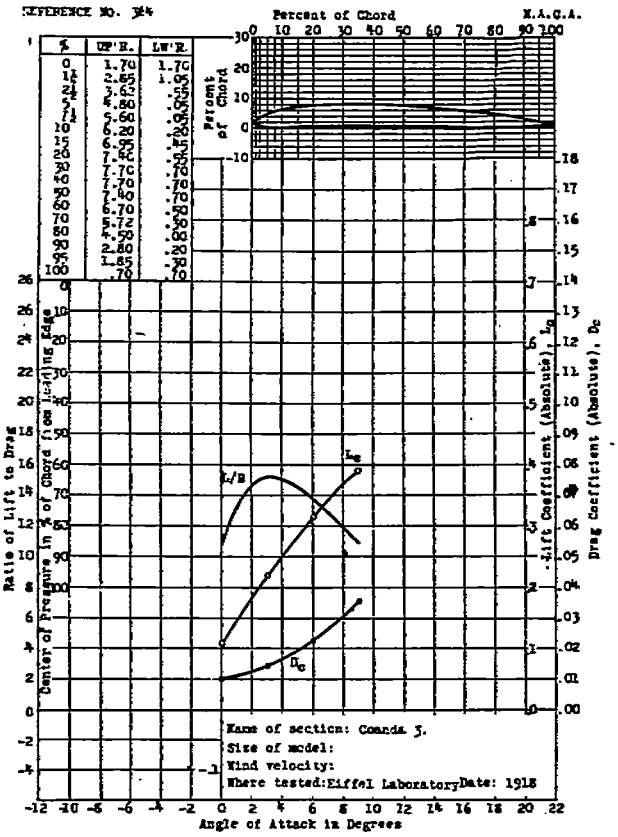

REFERENCE NO. 359
Percent of Chord
N.A.C.A.
Name of section: Eiffel 66
Size of model: 35.5" x 5.9"
Wind velocity: 88.5 ft./sec.
Where tested: Eiffel Date: 1914
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)

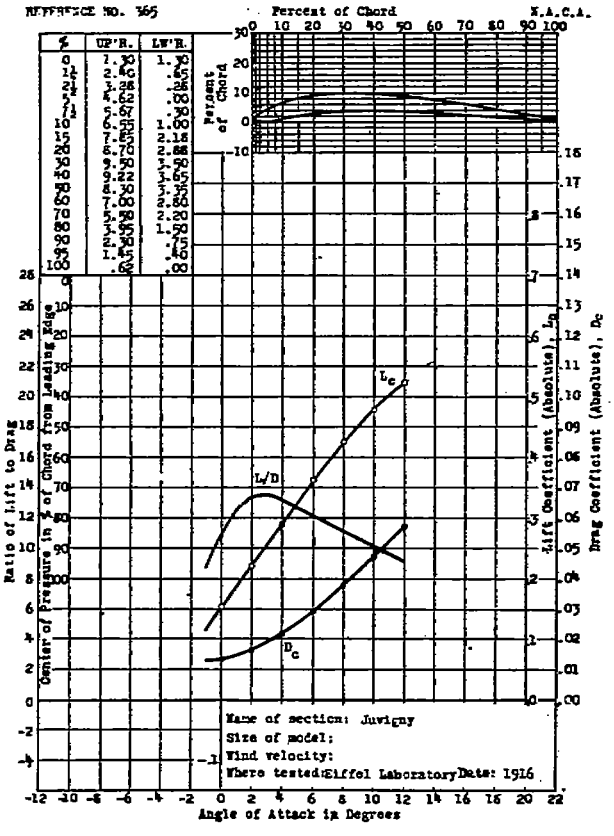

REFERENCE NO. 360
Percent of Chord
N.A.C.A.
Name of section: A R
Size of model: 35.4" x 5.9"
Wind velocity:
Where tested: Eiffel Laboratory Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)

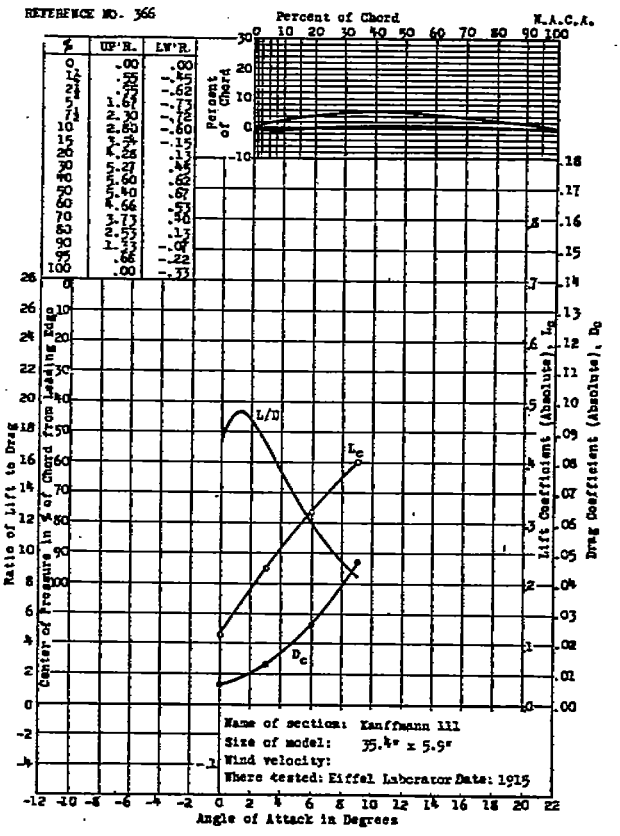

REFERENCE NO. 361
Percent of Chord
N.A.C.A.
Name of section: Blériot
Size of model: 39.37" x 3.74"
Wind velocity:
Where tested: Eiffel Laboratory Date: 1916
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)


REFERENCE NO. 362
Percent of Chord
N.A.C.A.
Name of section: Coanda 1
Size of model:
Wind velocity:
Where tested: Eiffel Laboratory Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute)
Drag Coefficient (Absolute)


REFERENCE NO. 363
Percent of Chord
N.A.C.A.
Name of section: Coanda 2
Size of model:
Wind velocity:
Where tested: Eiffel Laboratory Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), Dc
Lift Coefficient (Absolute), Lg
L/D
Lc
Dc

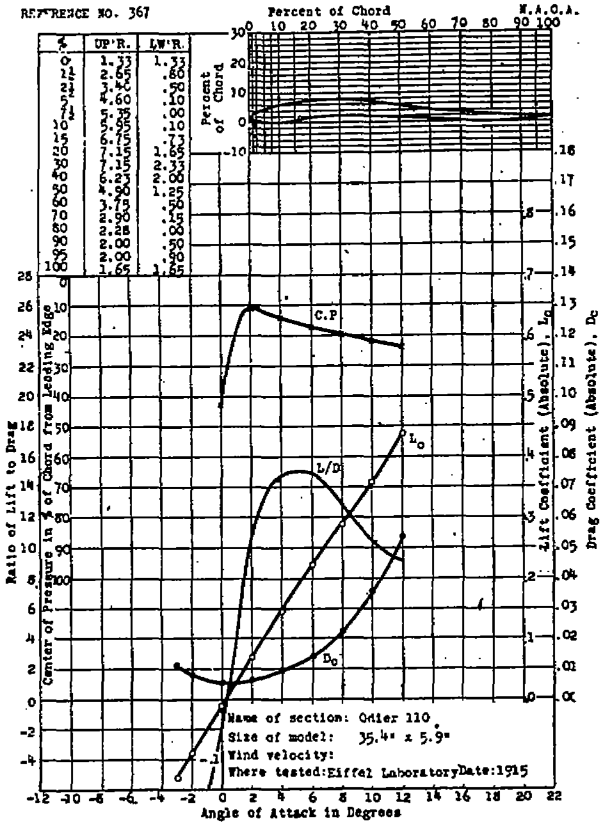

REFERENCE NO. 364
Percent of Chord
N.A.C.A.
Name of section: Coanda 3.
Size of model:
Wind velocity:
Where tested: Eiffel Laboratory Date: 1918
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), Dc
Lift Coefficient (Absolute), Lg
L/D
Lc
Dc


REFERENCE NO. 365
Percent of Chord
N.A.C.A.
Name of section: Juvigny
Size of model:
Wind velocity:
Where tested: Eiffel Laboratory Date: 1916
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), Dc
Lift Coefficient (Absolute), Lg
L/D
Lc
Dc


REFERENCE NO. 366
Percent of Chord
N.A.C.A.
Name of section: Kauffmann 111
Size of model: 35.4" x 5.9"
Wind velocity:
Where tested: Eiffel Laboratory Date: 1915
Angle of Attack in Degrees
Ratio of Lift to Drag
Drag Coefficient (Absolute), Dc
Lift Coefficient (Absolute), Lg
L/D
Lc
Dc

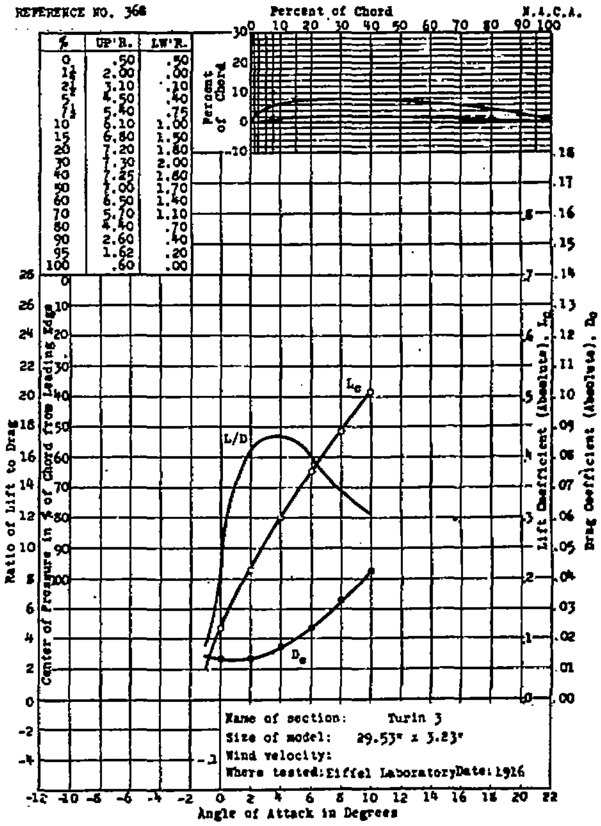
REFERENCE NO. 367

%	UP'R.	LW'R.
0	1.33	1.33
1¼	2.65	.80
2½	3.40	.50
5	4.60	.10
7½	5.35	.00
10	5.95	.10
15	6.75	.73
20	7.15	1.65
30	7.15	2.33
40	6.23	2.00
50	4.90	1.25
60	3.75	.50
70	2.90	.15
80	2.28	.00
90	2.00	.50
95	2.00	.90
100	1.65	1.65



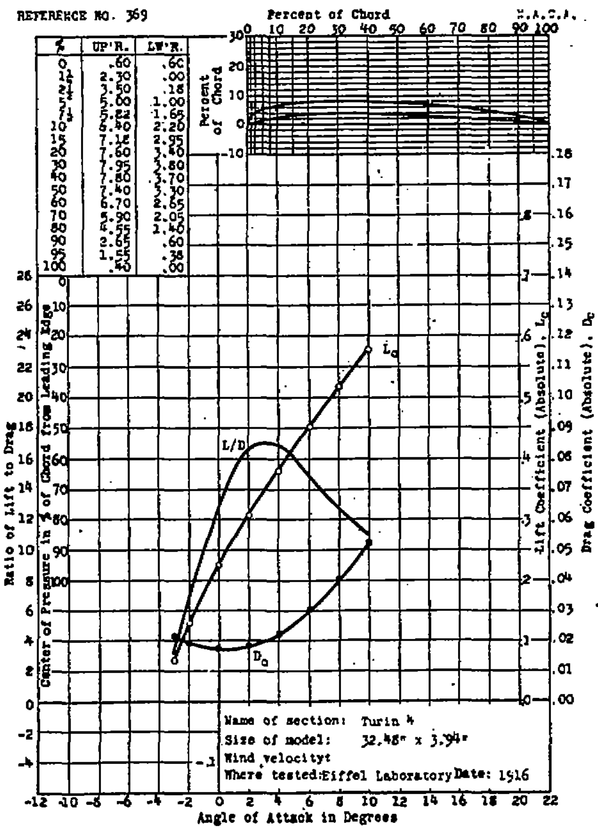
REFERENCE NO. 368

%	UP'R.	LW'R.
0	.50	.50
1¼	2.00	.00
2½	3.10	.10
5	4.50	.40
7½	5.40	.75
10	6.10	1.00
15	6.80	1.50
20	7.20	1.80
30	7.30	2.00
40	7.25	1.80
50	7.00	1.70
60	6.50	1.40
70	5.70	1.10
80	4.40	.70
90	2.60	.40
95	1.62	.20
100	.60	.00



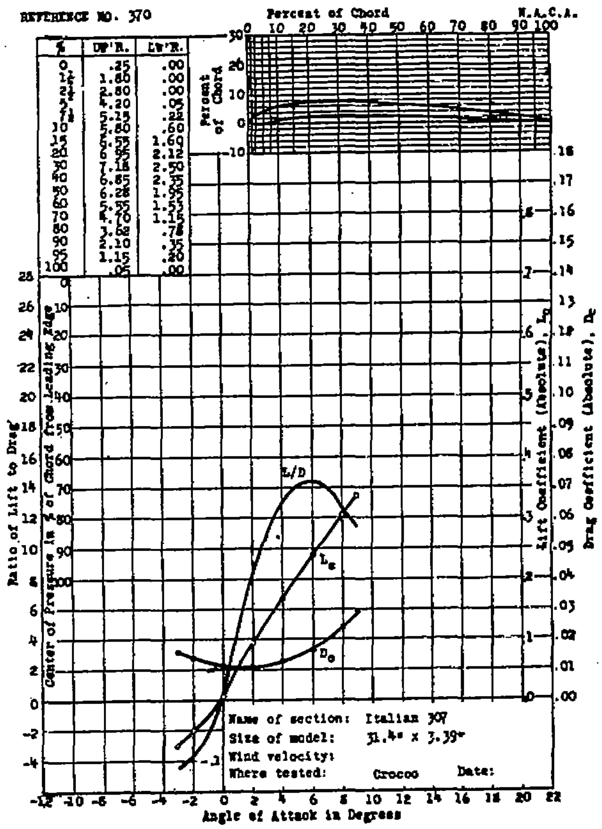
REFERENCE NO. 369

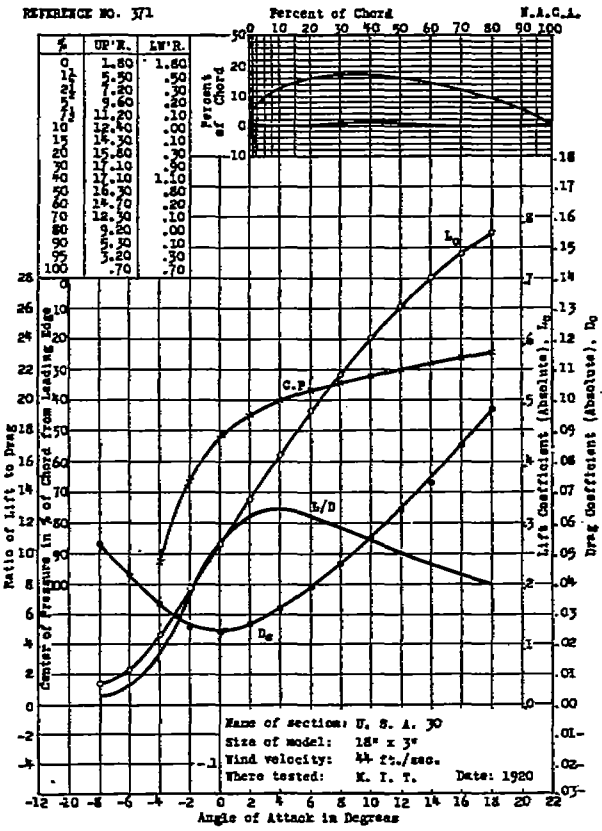
%	UP'R.	LW'R.
0	.60	.60
1¼	2.30	.00
2½	3.50	.18
5	5.00	1.00
7½	5.82	1.65
10	6.40	2.20
15	7.18	2.95
20	7.60	3.40
30	7.95	3.80
40	7.80	3.70
50	7.40	3.30
60	6.70	2.65
70	5.90	2.05
80	4.55	1.40
90	2.65	.60
95	1.55	.38
100	.43	.00

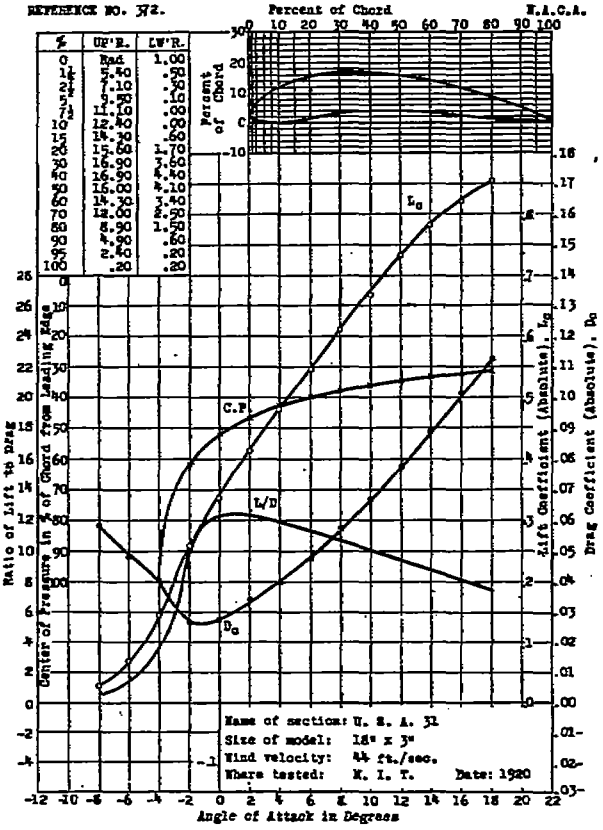


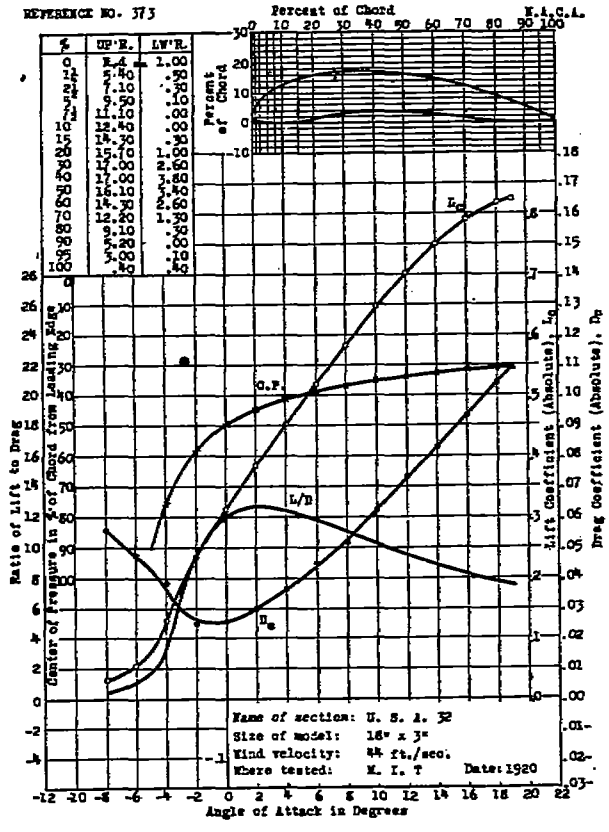
REFERENCE NO. 370

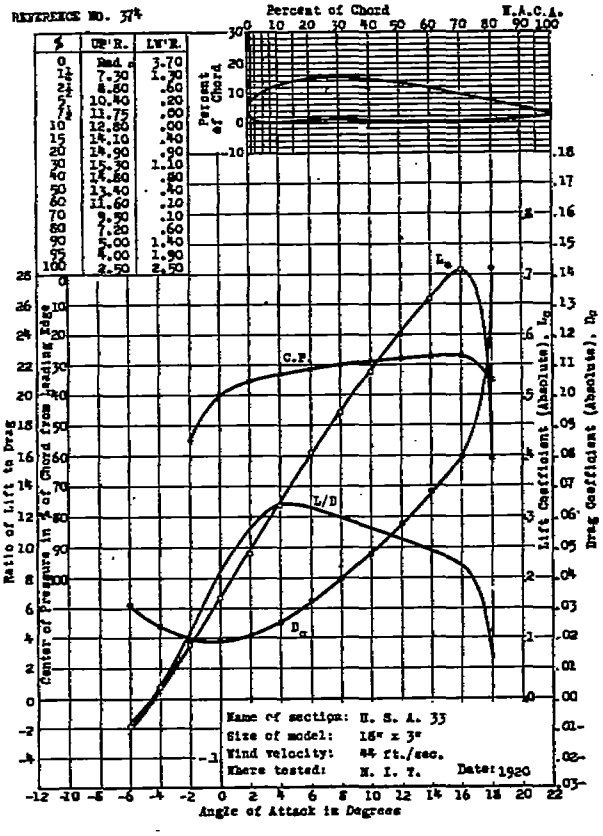
%	UP'R.	LW'R.
0	.25	.00
1¼	1.80	.00
2½	2.80	.00
5	4.20	.05
7½	5.15	.22
10	5.80	.60
15	6.55	1.60
20	6.95	2.12
30	7.18	2.50
40	6.85	2.35
50	6.28	1.95
60	5.55	1.53
70	4.70	1.15
80	3.62	.78
90	2.10	.35
95	1.15	.20
100	.05	.00

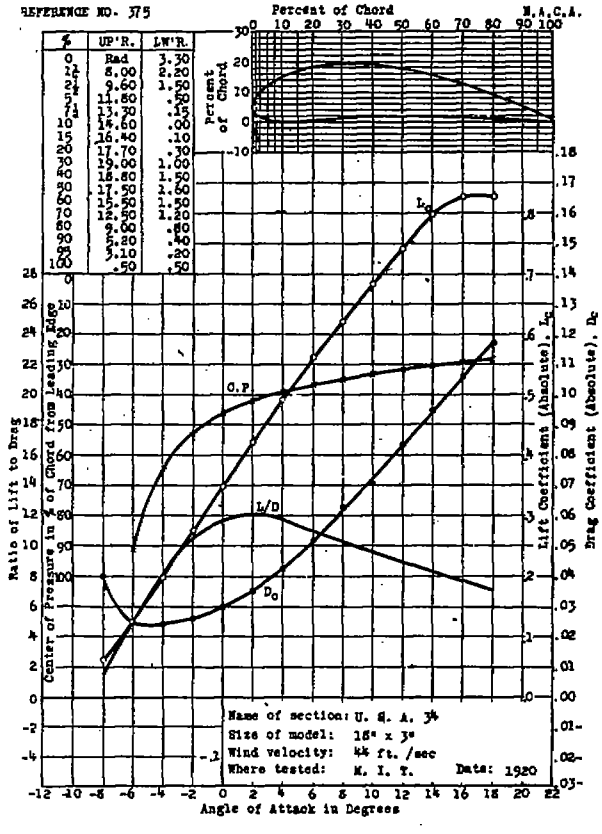



REFERENCE NO. 371
Percent of Chord
N.A.C.A.
Name of section: U. S. A. 30
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M. I. T. Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D


REFERENCE NO. 372
Percent of Chord
N.A.C.A.
Name of section: U. S. A. 31
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M. I. T. Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D


REFERENCE NO. 373
Percent of Chord
N.A.C.A.
Name of section: U. S. A. 32
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M. I. T Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D


REFERENCE NO. 374
Percent of Chord
N.A.C.A.
Name of section: U. S. A. 33
Size of model: 18" x 3"
Wind velocity: 44 ft./sec.
Where tested: M. I. T. Date: 1920
Angle of Attack in Degrees
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_a
Drag Coefficient (Absolute), D_a
C.P
L/D


REFERENCE NO. 375
N.A.C.A.
Percent of Chord
% | UP'R. | LW'R.
0 | Rad | 3.30
1¼ | 8.00 | 2.20
2½ | 9.60 | 1.80
5 | 11.80 | .90
7½ | 13.30 | .45
10 | 14.60 | .00
15 | 16.40 | .10
20 | 17.70 | .30
30 | 19.00 | 1.00
40 | 18.80 | 1.50
50 | 17.50 | 1.60
60 | 15.90 | 1.50
70 | 12.50 | 1.20
80 | 9.00 | .80
90 | 5.20 | .40
95 | 3.10 | .20
100 | .50 | .50
Percent of Chord
Center of Pressure in % of Chord from Leading Edge
Ratio of Lift to Drag
Lift Coefficient (Absolute), L_c
Drag Coefficient (Absolute), D_c
L_c
C.P.
L/D
D_c
Name of section: U. S. A. 34
Size of model: 15" x 3"
Wind velocity: 44 ft. /sec
Where tested: M. I. T. Date: 1920
Angle of Attack in Degrees

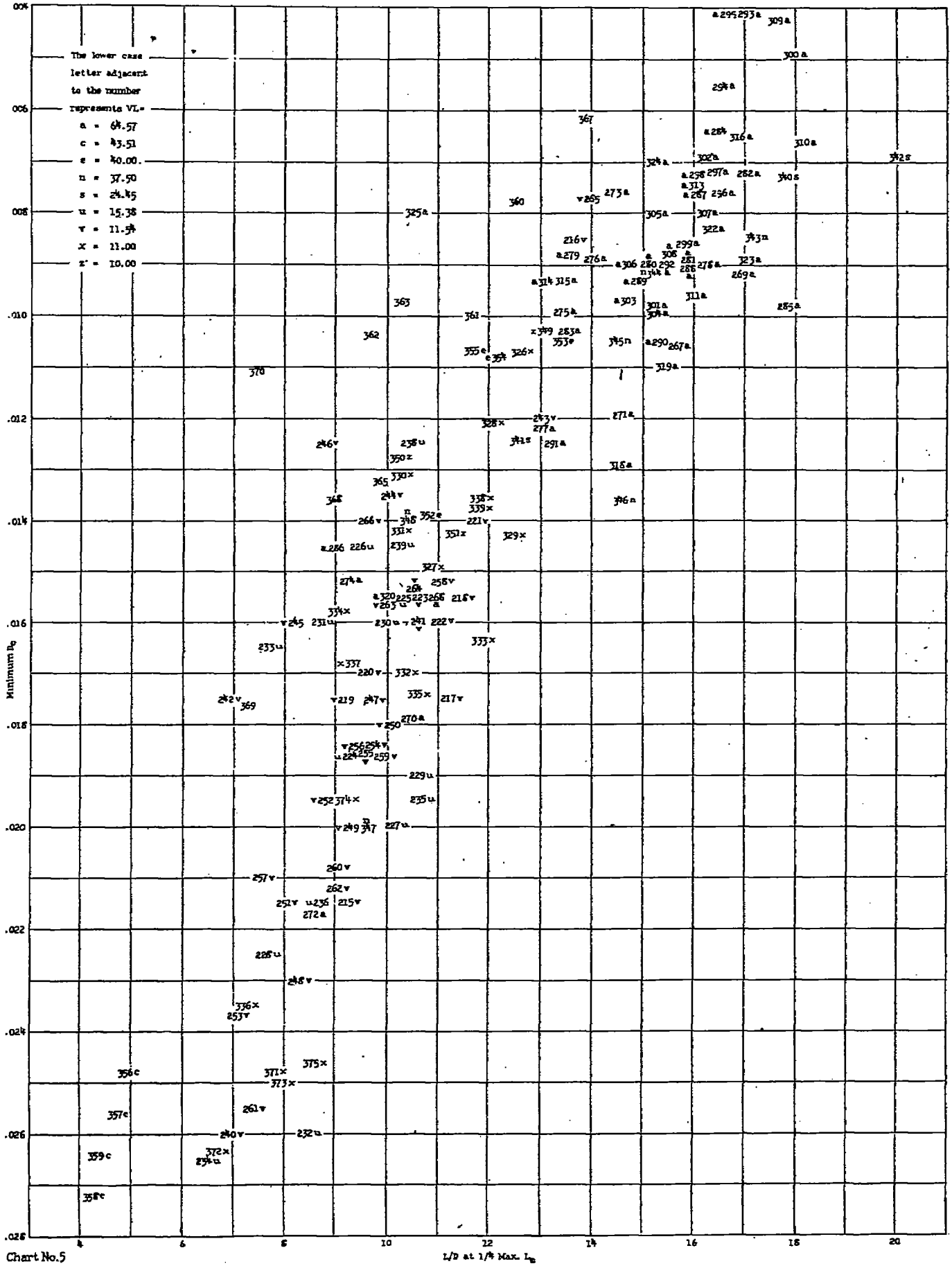

The lower case letter adjacent to the number represents VL.
a = 64.57
c = 43.51
e = 40.00
n = 37.50
s = 24.45
u = 15.38
v = 11.34
x = 11.00
z = 10.00
Minimum D_p
L/D at 1/4 Max. L_p

Chart No.5

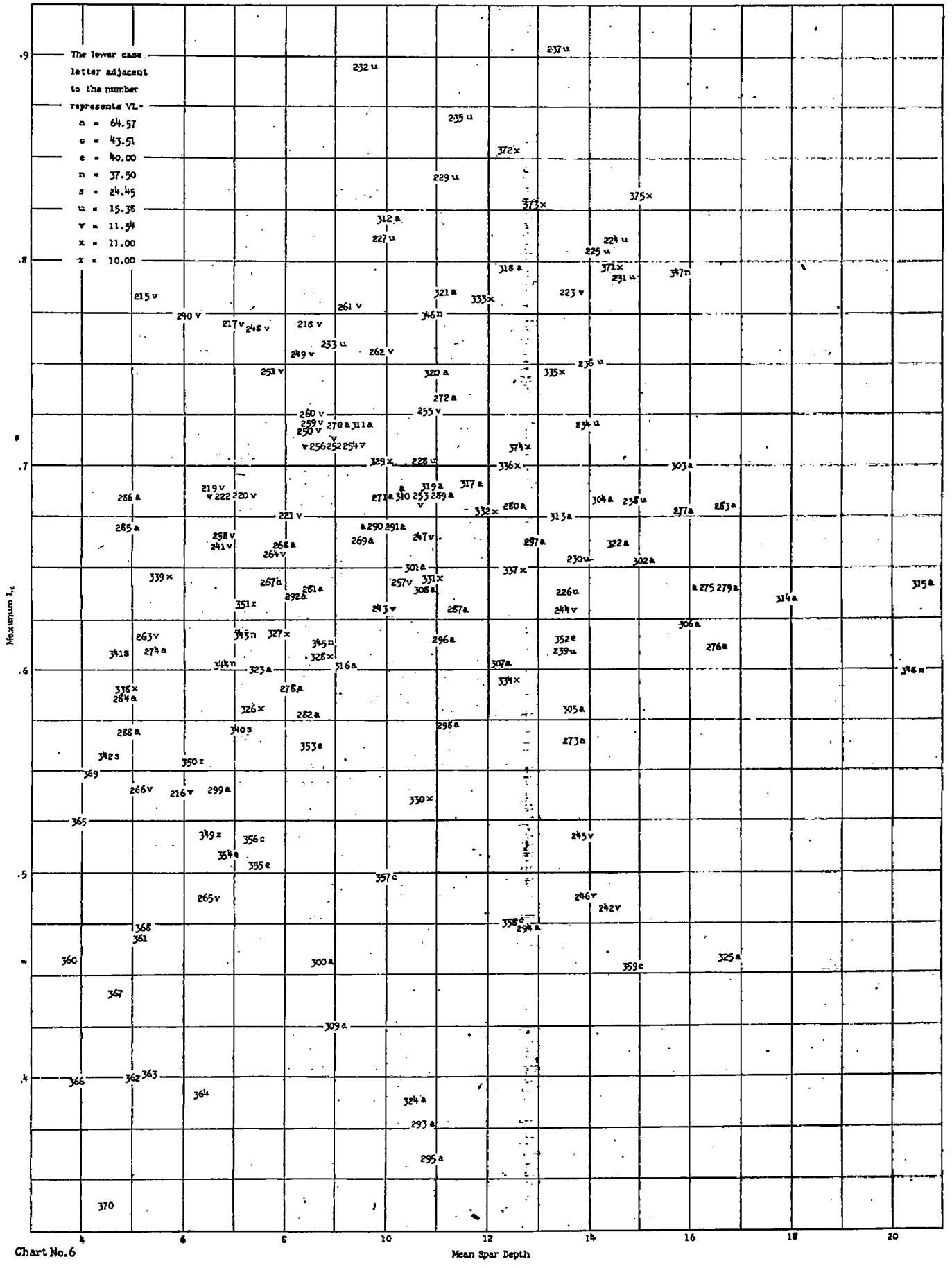

The lower case letter adjacent to the number represents VL =
a = 64.57
c = 43.51
e = 40.00
n = 37.50
s = 24.45
u = 15.38
v = 11.54
x = 11.00
z = 10.00
Maximum L_c
Mean Spar Depth
.9
.8
.7
.6
.5
.4
4
6
8
10
12
14
16
18
20

Chart No. 6

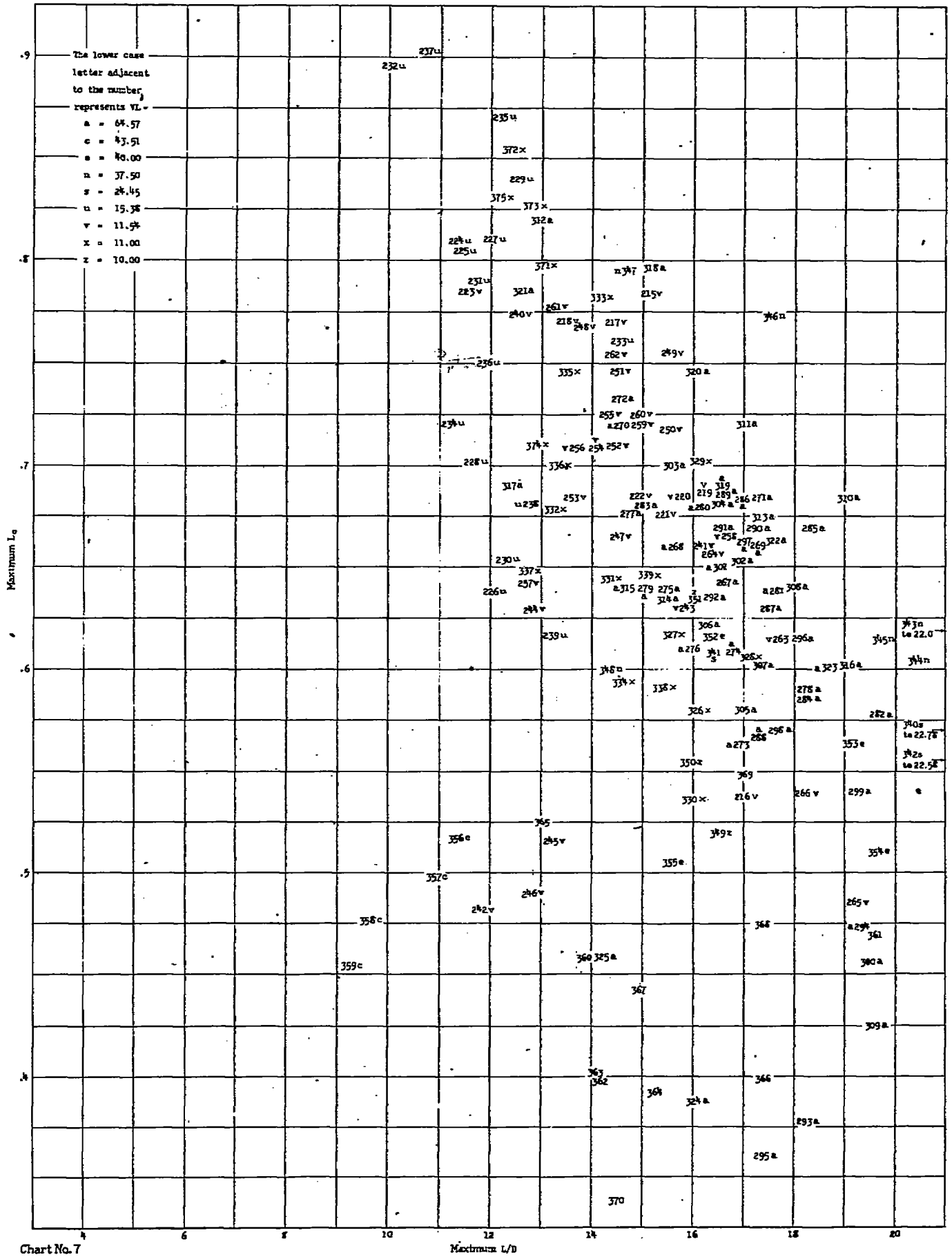

The lower case letter adjacent to the number represents VL
a = 64.57
c = 43.51
e = 40.00
n = 37.50
s = 24.45
u = 15.38
v = 11.5
x = 11.00
z = 10.00
Maximum L_a
Maximum L/D
.9
.8
.7
.6
.5
.4
4
6
8
10
12
14
16
18
20

Chart No. 7

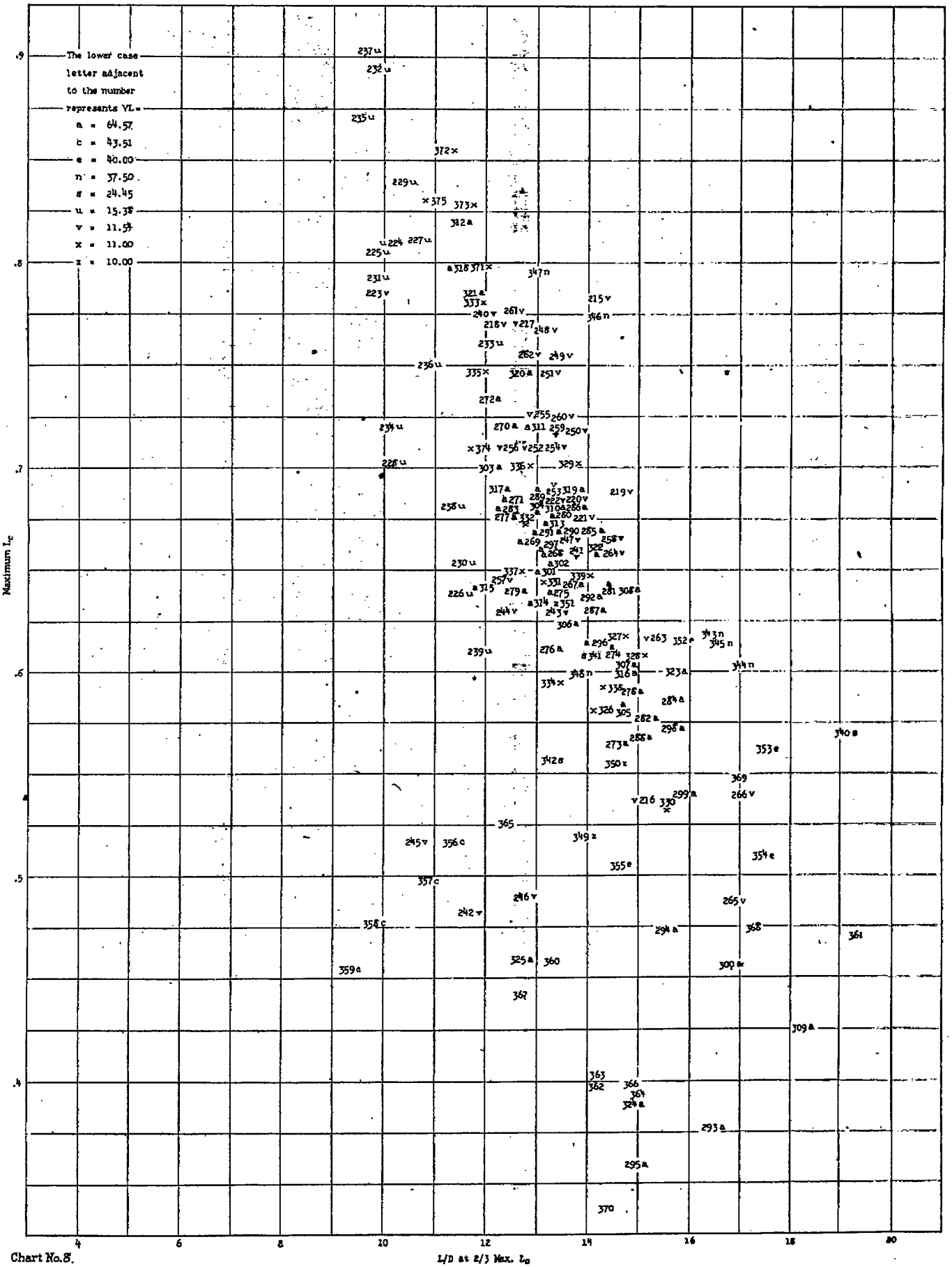

The lower case letter adjacent to the number represents VL =
a = 64.57
b = 43.51
c = 30.00
n = 37.50
s = 24.45
u = 15.38
v = 11.54
x = 11.00
z = 10.00
Maximum L_c
L/D at 2/3 Max. L_D
.9
.8
.7
.6
.5
.4
4
6
8
10
12
14
16
18
20

Chart No. 8.