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A.M. Cunningham, Jr.
R.G. den Boer
C.S.G. Dogger

E.G.M. Geurts
A.P. Retel
R.j. Zwaan

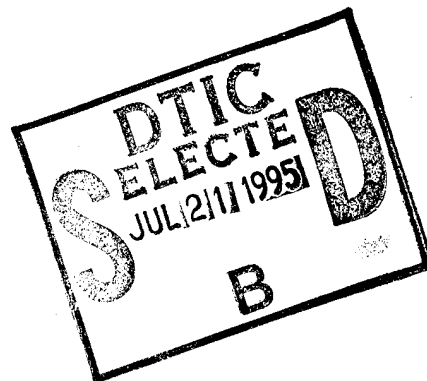
UNSTEADY TRANSONIC WIND TUNNEL TEST ON A SEMISPAN STRAKED DELTA WING MODEL OSCILLATING IN PITCH

Part 2: Selected Data Points for Harmonic Oscillation

Atlee M. Cunningham, Jr.
Lockheed Fort Worth Company
Forth Worth TX

and

Ruud G. den Boer
C. S. G. Dogger
E. G. M. Geurts
A. P. Retel
R. J. Zwaan
National Aerospace Laboratory (NLR)
Amsterdam, The Netherlands



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Wright Laboratory
Air Force Materiel Command
Wright-Patterson Air Force Base, Ohio 45433-7542

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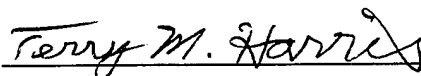
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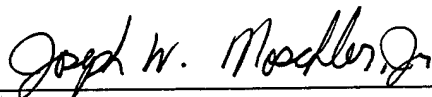
This technical report has been reviewed and is approved for publication.



LAWRENCE J. HUTTSELL
Aerospace Engineer
Aeroelasticity Section
Structural Dynamics Branch



TERRY M. HARRIS
Technical Manager
Aeroelasticity Section
Structural Dynamics Branch



JOSEPH W. MOSCHLER, MAJ, USAF
Chief, Structural Dynamics Branch
Structures Division

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13. ABSTRACT (Maximum 200 words) A wind tunnel investigation was conducted in 1992 to investigate the unsteady aerodynamic aspects of transonic high incidence flows over a simple straked wing model. This test was designed to show how low speed vortex type flows evolve into complicated shock vortex interacting flows at transonic speeds. Requirements for this test were based on a low speed test conducted in 1986 on a full span model in the NLR Low Speed Tunnel. The transonic model was a semispan version of the low speed model with some modifications. It was equipped with a three-component semispan balance to measure total wing loads, seven rows of high response pressure transducers to measure unsteady pressures and 15 vertical accelerometers to measure model motion and vibrations. The model was oscillated sinusoidally in pitch at various amplitudes and frequencies for mean model incidences varying from 4° to 48°. In addition, maneuver type transient motions of the model were tested with amplitudes of 16° and 30° total rotation at various starting angles. The test was conducted in the NLR HST in the Mach range of 0.225 to 0.90 with some preliminary vapor screen flow visualization data taken at M=0.6 and 0.9. This part of the report presents selected data points for harmonic oscillations.				
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FOREWORD

This report summarizes the results of an investigation into transonic high incidence unsteady aerodynamics. Transonic wind tunnel tests were conducted for a semispan straked delta wing model oscillating in pitch at high incidences.

This test was conducted under a cooperative program of research between the Lockheed Fort Worth Company (LFWC), Fort Worth, Texas, USA (Formerly the Fort Worth Division of General Dynamics until 28 February 1993) and the National Aerospace Laboratory (NLR), Amsterdam, The Netherlands. The test was conducted in April/May 1992. The models and corresponding support system were designed at NLR under an earlier separate program with funding from the Fort Worth Division of General Dynamics (now LFWC) and NLR. The fabrication of models, test preparation, wind tunnel test and reporting were performed at NLR under a subcontract from LFWC. This work was funded under Air Force contract F33657-84-C-0247 (CCP 4551) for the Aeronautical Systems Center, Wright-Patterson Air Force Base, Ohio. The work was administered by Mr. F. Zapata of the F-16 SPO (ASC/YPEF) and Mr. L. J. Huttshell of the Flight Dynamics Directorate of Wright Laboratory (WL/FIBG) Wright-Patterson Air Force Base, Ohio under work unit 24010292.

The program manager was Dr. A. M. Cunningham, Jr. at LFWC. The principal investigators were Dr. Cunningham at LFWC, Mr. R. G. den Boer for the wind tunnel test programs at NLR. Mr. den Boer was assisted by the following NLR specialists: C. D. G. Dogger, E. G. M. Geurts, A. P. Retel and R. J. Zwaan. The authors would like to acknowledge the following person who contributed substantially in the project:

Mr. E. W. M. Slijkerman for the design of the wind tunnel model and support; Messrs. T. Horsman and F. Hofman for the fabrication and instrumentation of the model; and Messrs. O. van Teunenbroek and A. van der Kamp for their contribution in the software development.

The test program for the straked delta wing is documented in three separate reports. This report (Part 2) contains selected test points for harmonic oscillation. Part 1 contains a description of the model, test setup, data acquisition, and data processing. Part 3 contains selected data for simulated maneuvers. Parts 1 and 3 are published as WL-TR-94-3094 and WL-TR-94-3096, respectively. An overview of this test program is also published as WL-TR-94-3017.

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SUMMARY

An unsteady transonic wind tunnel test was conducted for a highly instrumented semispan simple straked delta wing model. Harmonic pitch oscillation as well as maneuver simulation were performed.

Appendix A of this report presents the mean and first five harmonic components of the unsteady data of data points 151,358,375,593 and 605 of the test on the model oscillating harmonically in pitch in tabulated and plotted form. These data are also available on a floppy disk. The rationale for selecting these data points is discussed in Section 7 of Part 1 (WL-TR-94-3094). Table 4 in Part 1 provides a convenient cross-reference of conditions and data point numbers. For nondimensionalization, symbols and definitions the reader is referred to Part 1 (see the section starting on page ix of Part 1).

As a reference, Appendix B presents plots of normal force and moment coefficients versus incidence. In these plots, results of a large number of data points have been collected. Data of the SiS configuration WITHOUT filler plate are only presented in the Figures B.1 to B.5; all other figures contain only data of the SiS configuration WITH filler plate.

APPENDIX A Prints and Plots of the Mean and First Five Harmonic Components
of the Unsteady Data of Data Points 151, 358, 375, 593 and 605

test conditions				Simple Strake configuration			
alpha	=	22.109 deg	Q	=	6.690 kPa		
Mach	=	0.225	Ptot	=	195.256 kPa		
Re*10 ⁻⁶	=	7.982	Ttot	=	291.828 K		
dalpha	=	8.342 deg					
freq	=	5.700 Hz					
k	=	0.192					
harm	=	1					

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 1	Im 1		Zero	Re 1	Im 1
main	CN	1.09156	2.14309	0.61275	2364.58			
	Cm	0.08135	0.29350	-.04218	201.95	-.056	-.037	0.002
	Cl	-.37659	-.50772	-.26108	625.90	-.063	-.004	-.008

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	75.286	2.197	1	2.878	1.790	7.946
12	-215.6	-12.0	35.066	3.471				
13	167.4	-12.0	28.761	-178.363				
21	-138.6	-116.9	24.535	16.071	2	28.034	1.208	8.353
22	-46.6	-116.9						
23	121.4	-116.9	24.104	-167.130				
31	-74.6	-189.9	8.681	18.730	3	45.540	2.749	7.223
32	-10.6	-189.9						
33	141.4	-189.9	26.302	-168.691				
41	29.4	-304.9	3.384	-172.471	4	73.118	0.588	8.675
42	89.4	-304.9	17.520	-178.576				
43	152.4	-304.9	27.168	-178.495				
51	85.0	-374.9	15.733	-166.775	5	89.904	1.179	8.758
52	121.4	-374.9	22.863	-163.986				
53	157.4	-374.9	29.896	-164.250				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
101	2.00	-1.572	0.899	-.972
102	5.00	-1.621	1.512	-.885
103	10.00	-1.557	2.213	-1.058
104	15.00	-1.987	4.878	-1.166
105				
106	30.00	-1.117	-2.346	-1.420
107	40.00	-.878	-2.855	-1.111
108	50.00	-.775	-2.952	-.989
109	60.00	-.756	-3.090	-.913
110	70.00	-.723	-2.848	-.752
111	79.00	-.663	-2.535	-.393
112	82.50	-.615	-2.426	-.177
113	85.00	-.574	-2.331	-.009
114	90.00	-.521	-2.240	0.280
115	95.00	-.463	-2.179	0.472
151	10.00	0.619	0.889	0.180
152	20.00	0.509	1.010	0.241
153	40.00	0.336	0.883	0.292
154	60.00	0.247	0.592	0.295
155	80.00	0.164	0.158	0.267

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
201	2.00	-.913	1.992	-.914
202	5.00	-.918	2.009	-1.005
203	10.00	-.929	2.178	-1.034
204	15.00	-.894	2.310	-.948
205	18.00	-.879	1.119	-1.667
206	30.00	-.843	2.697	-.942
207	40.00	-.799	2.012	-.827
208	50.00	-.773	0.686	-.814
209	60.00	-.720	-.331	-.827
210	70.00	-.668		
211	79.00	-.596	-1.451	-.699
212	82.50	-.606	-1.636	-.696
213	85.00	-.569	-1.674	-.637
214	90.00	-.556	-1.878	-.540
215	95.00	-.532	-2.116	-.389
251	10.00	0.601	0.765	0.217
252	20.00	0.495	0.879	0.259
253	40.00	0.330	0.741	0.280
254	60.00	0.224	0.452	0.273
255	80.00	0.101	-.012	0.227

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
301	2.00	-.523	1.506	-.653
302	5.00	-.528	1.477	-.653
303	10.00	-.522	1.463	-.702
304	15.00	-.513	1.353	-.698
305	18.00	-.506	0.453	-1.029
306	30.00	-.513	0.903	-.636
307	40.00	-.528	0.339	-.536
308	50.00	-.560	-.051	-.440
309	60.00	-.537	-.248	-.390
310	70.00	-.538	-.468	-.466
311	79.00	-.554	-.692	-.594
312	90.00	-.549	-.931	-.676

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
401	2.00	-.300	0.666	-.550
402	5.00	-.308	0.628	-.552
403	10.00	-.305	0.525	-.516
404	15.00	-.315	0.469	-.522
405	18.00	-.315	0.416	-.523
406	30.00	-.324	0.128	-.491
407	40.00	-.349	-.201	-.433
408	50.00	-.378	-.586	-.326
409	60.00	-.389	-.880	-.235
410	70.00	-.399	-1.025	-.221
411	79.00	-.396	-1.078	-.248
412	90.00	-.405	-1.155	-.280

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PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
501	6.62	-.440	-1.518	-.267
502	20.43	-.574	-2.557	-.119
503	34.05	-.835	-4.215	0.156
504	47.67	-1.298	-5.928	0.427
505	54.49	-1.541	-6.029	0.374
506	61.29	-1.686	-5.240	0.138
507	68.10	-1.645	-4.189	-.141
508	74.91	-1.419	-3.535	-.326
509	81.72	-1.124	-3.077	-.290
510	88.53	-1.123	-2.990	-.316

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
601	38.90	-1.568	-3.997	-.031
602	42.93	-1.771	-4.141	-.364
603	46.93	-1.731	-4.658	-.575
604	50.99	-1.556	-5.500	-.593
605	59.03	-1.258	-5.123	-.664
606	67.07	-1.233	-6.098	-.728
607	71.11	-1.404	-6.762	-.944
608	75.56	-1.965	-4.665	-1.308
609	80.00	-2.647	4.103	-1.041
610	84.44	-1.874	3.100	-.957
102	89.45	-1.621	1.512	-.885

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
701	22.71	-.036	0.673	-.516
702	28.21	-.312	0.592	-.066
703	33.72	-.778	-.192	0.370
704	39.26	-.891	-2.468	0.079
705	44.69	-.870	-3.140	-.631
109	50.03	-.756	-3.090	-.913
706	55.28	-.700	-2.560	-.945
707	60.46	-.752	-.957	-.960
208	65.56	-.773	0.686	-.814
708	70.59	-.689	0.802	-.668
709	75.54	-.613	0.672	-.627
307	80.42	-.528	0.339	-.536
710	85.22	-.443	0.305	-.517
711	90.19	-.374	0.340	-.513
405	94.60	-.315	0.416	-.523

SECTION COEFFICIENTS				
section	comp.	Zero	Re 1	Im 1
1	CN_u	0.976	1.357	0.770
	CN_l	0.319	0.627	0.261
	CN_t	1.295	1.984	1.031
	Cm_u	-.120	-.803	-.061
	Cm_l	-.026	-.065	-.072
2	Cm_t	-.146	-.868	-.133
	CN_u	0.733	-.426	0.854
	CN_l	0.295	0.482	0.250
	CN_t	1.029	0.056	1.104
	Cm_u	-.140	-.342	-.152
3	Cm_l	-.017	-.024	-.062
	Cm_t	-.157	-.366	-.214
	CN_u	0.507	-.118	0.604
4	CN_l	-.118	-.199	-.136
	CN_t	0.341	0.412	0.370
5	Cm_u	-.087	-.290	-.060
	CN_u	0.992	3.683	0.051
	Cl_u	-.553	-1.968	-.040
6	CN_u	1.531	3.071	0.489
	Cl_u	-.745	-1.060	-.355
7	CN_u	0.464	0.271	0.512
	Cl_u	-.266	-.140	-.282

test conditions				Simple Strake configuration			
alpha	=	22.109 deg	Q	=	6.690 kPa		
Mach	=	0.225	Ptot	=	195.256 kPa		
Re*10 ⁻⁶	=	7.982	Ttot	=	291.828 K		
dalpha	=	8.342 deg					
freq	=	5.700 Hz					
k	=	0.192					
harm	=	2					

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 2	Im 2		Zero	Re 2	Im 2
main	CN	1.09156	-.51877	-.13902	*****			
	Cm	0.08135	-.00052	-.00582	769.37	-.056	0.001	0.001
	Cl	-.37659	0.19050	0.05409	*****	-.063	0.005	0.001

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	3.224	-136.668				
12	-215.6	-12.0	3.505	-147.962	1	2.878	0.297	0.072
13	167.4	-12.0	1.397	40.046				
21	-138.6	-116.9	0.447	-125.017	2	28.034	0.047	0.035
22	-46.6	-116.9						
23	121.4	-116.9	0.486	115.696				
31	-74.6	-189.9	0.292	-143.511	3	45.540	0.050	0.044
32	-10.6	-189.9						
33	141.4	-189.9	0.703	107.313				
41	29.4	-304.9	0.339	88.281	4	73.118	0.048	0.008
42	89.4	-304.9	0.275	80.138				
43	152.4	-304.9	0.431	84.757				
51	85.0	-374.9	0.366	98.551	5	89.904	0.172	0.074
52	121.4	-374.9	0.189	142.441				
53	157.4	-374.9	0.248	-160.389				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
101	2.00	-1.572	1.204	0.148
102	5.00	-1.621	1.484	0.474
103	10.00	-1.557	1.130	0.068
104	15.00	-1.987	1.105	-.267
105				
106	30.00	-1.117	2.337	2.246
107	40.00	-.878	1.891	1.462
108	50.00	-.775	1.610	0.950
109	60.00	-.756	1.550	0.853
110	70.00	-.723	1.724	1.214
111	79.00	-.663	1.805	1.427
112	82.50	-.615	1.747	1.388
113	85.00	-.574	1.619	1.267
114	90.00	-.521	1.338	0.915
115	95.00	-.463	0.973	0.461
151	10.00	0.619	-.076	-.089
152	20.00	0.509	-.079	-.062
153	40.00	0.336	-.072	-.034
154	60.00	0.247	-.065	-.025
155	80.00	0.164	-.044	-.032

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
201	2.00	-.913	0.344	0.130
202	5.00	-.918	0.411	0.131
203	10.00	-.929	0.577	0.233
204	15.00	-.894	0.453	0.112
205	18.00	-.879	0.172	-.153
206	30.00	-.843	0.189	-.193
207	40.00	-.799	0.176	-.350
208	50.00	-.773	0.160	-.515
209	60.00	-.720	0.299	-.341
210	70.00	-.668		
211	79.00	-.596	0.609	0.190
212	82.50	-.606	0.717	0.274
213	85.00	-.569	0.743	0.326
214	90.00	-.556	0.858	0.437
215	95.00	-.532	1.008	0.550
251	10.00	0.601	-.080	-.091
252	20.00	0.495	-.082	-.067
253	40.00	0.330	-.062	-.031
254	60.00	0.224	-.028	-.002
255	80.00	0.101	0.071	0.058

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
301	2.00	-.523	0.199	-.100
302	5.00	-.528	0.164	-.119
303	10.00	-.522	0.132	-.149
304	15.00	-.513	0.093	-.182
305	18.00	-.506	-.072	-.094
306	30.00	-.513	-.166	-.400
307	40.00	-.528	-.508	-.589
308	50.00	-.560	-.704	-.674
309	60.00	-.537	-.650	-.610
310	70.00	-.538	-.459	-.549
311	79.00	-.554	-.245	-.464
312	90.00	-.549	0.020	-.294

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
401	2.00	-.300	0.043	-.316
402	5.00	-.308	0.003	-.331
403	10.00	-.305	-.060	-.337
404	15.00	-.315	-.095	-.360
405	18.00	-.315	-.122	-.376
406	30.00	-.324	-.265	-.451
407	40.00	-.349	-.415	-.513
408	50.00	-.378	-.571	-.544
409	60.00	-.389	-.627	-.449
410	70.00	-.399	-.551	-.362
411	79.00	-.396	-.436	-.311
412	90.00	-.405	-.340	-.236

Unsteady Transonic Delta Program

DPN = 151

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
501	6.62	-.440	0.139	0.012
502	20.43	-.574	0.108	-.108
503	34.05	-.835	0.155	-.144
504	47.67	-1.298	0.478	0.013
505	54.49	-1.541	0.615	0.104
506	61.29	-1.686	0.539	0.091
507	68.10	-1.645	0.323	0.000
508	74.91	-1.419	0.238	-.016
509	81.72	-1.124	0.330	0.038
510	88.53	-1.123	0.283	0.026

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
601	38.90	-1.568	0.706	0.146
602	42.93	-1.771	0.784	0.217
603	46.93	-1.731	0.906	0.339
604	50.99	-1.556	1.081	0.380
605	59.03	-1.258	0.605	-.163
606	67.07	-1.233	0.952	0.078
607	71.11	-1.404	1.730	1.006
608	75.56	-1.965	3.126	2.817
609	80.00	-2.647	2.191	0.829
610	84.44	-1.874	1.282	-.472
102	89.45	-1.621	1.484	0.474

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
701	22.71	-.036	-.267	-.448
702	28.21	-.312	-.058	-.350
703	33.72	-.778	1.294	1.098
704	39.26	-.891	2.418	2.245
705	44.69	-.870	2.029	1.505
109	50.03	-.756	1.550	0.853
706	55.28	-.700	1.311	0.688
707	60.46	-.752	0.827	0.193
208	65.56	-.773	0.160	-.515
708	70.59	-.689	-.419	-.761
709	75.54	-.613	-.558	-.693
307	80.42	-.528	-.508	-.589
710	85.22	-.443	-.330	-.474
711	90.19	-.374	-.220	-.398
405	94.60	-.315	-.122	-.376

SECTION COEFFICIENTS				
section	comp.	Zero	Re 2	Im 2
1	CN_u	0.976	-1.595	-.982
	CN_l	0.319	-.064	-.044
	CN_t	1.295	-1.659	-1.026
	Cm_u	-.120	0.391	0.289
	Cm_l	-.026	0.012	0.006
2	Cm_t	-.146	0.403	0.295
	CN_u	0.733	-.422	0.038
	CN_l	0.295	-.021	-.013
	CN_t	1.029	-.443	0.025
	Cm_u	-.140	0.156	0.025
3	Cm_l	-.017	-.012	-.013
	Cm_t	-.157	0.144	0.012
	CN_u	0.507	0.251	0.405
4	Cm_u	-.118	-.084	-.125
	CN_u	0.341	0.354	0.386
5	Cm_u	-.087	-.126	-.085
	CN_u	0.992	-.285	0.013
6	Cm_l	-.553	0.164	0.004
	CN_u	1.531	-1.092	-.341
7	Cm_l	-.745	0.658	0.223
	CN_u	0.464	-.335	-.025
	Cm_l	-.266	0.138	-.023

test conditions		Simple Strake configuration	
alpha	= 22.109 deg	Q	= 6.690 kPa
Mach	= 0.225	Ptot	= 195.256 kPa
Re*10 ⁻⁶	= 7.982	Ttot	= 291.828 K
dalpha	= 8.342 deg		
freq	= 5.700 Hz		
k	= 0.192		
harm	= 3		

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 3	Im 3		Zero	Re 3	Im 3
main	CN	1.09156	-.03052	0.02867	945.44			
	Cm	0.08135	-.00290	-.02506	365.75	-.056	0.000	0.002
	Cl	-.37659	0.00361	-.02478	584.27	-.063	0.000	-.001

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	2.109	-94.531	1	2.878	0.031	0.025
12	-215.6	-12.0	1.296	-117.082				
13	167.4	-12.0	0.917	77.704				
21	-138.6	-116.9	0.501	-92.601	2	28.034	0.013	0.023
22	-46.6	-116.9						
23	121.4	-116.9	0.714	93.022				
31	-74.6	-189.9	0.233	-78.844	3	45.540	0.012	0.024
32	-10.6	-189.9						
33	141.4	-189.9	0.833	100.266				
41	29.4	-304.9	0.205	160.524	4	73.118	0.012	0.020
42	89.4	-304.9	0.471	82.926				
43	152.4	-304.9	0.539	92.783				
51	85.0	-374.9	0.418	86.025	5	89.904	0.035	0.044
52	121.4	-374.9	0.668	88.596				
53	157.4	-374.9	1.060	92.720				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
101	2.00	-1.572	0.036	0.499
102	5.00	-1.621	0.109	0.207
103	10.00	-1.557	-0.093	0.293
104	15.00	-1.987	-0.210	-0.148
105				
106	30.00	-1.117	0.041	0.347
107	40.00	-0.878	-0.215	0.449
108	50.00	-0.775	-0.185	0.436
109	60.00	-0.756	-0.161	0.430
110	70.00	-0.723	-0.182	0.466
111	79.00	-0.663	0.082	0.138
112	82.50	-0.615	0.276	-0.134
113	85.00	-0.574	0.406	-0.328
114	90.00	-0.521	0.618	-0.661
115	95.00	-0.463	0.615	-0.855
151	10.00	0.619	-0.006	0.000
152	20.00	0.509	-0.002	-0.009
153	40.00	0.336	0.001	-0.015
154	60.00	0.247	0.001	-0.027
155	80.00	0.164	0.011	-0.075

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
201	2.00	-0.913	-0.095	-0.186
202	5.00	-0.918	-0.123	-0.165
203	10.00	-0.929	-0.136	-0.202
204	15.00	-0.894	-0.097	-0.269
205	18.00	-0.879	-0.118	-0.021
206	30.00	-0.843	-0.160	-0.511
207	40.00	-0.799	-0.115	-0.956
208	50.00	-0.773	-0.035	-0.941
209	60.00	-0.720	-0.075	-0.483
210	70.00	-0.668		
211	79.00	-0.596	0.000	0.059
212	82.50	-0.606	0.042	0.081
213	85.00	-0.569	0.065	0.062
214	90.00	-0.556	0.140	0.002
215	95.00	-0.532	0.207	-0.065
251	10.00	0.601	0.001	0.001
252	20.00	0.495	0.004	-0.005
253	40.00	0.330	0.004	-0.013
254	60.00	0.224	0.006	-0.024
255	80.00	0.101	0.025	-0.054

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
301	2.00	-0.523	0.009	-0.111
302	5.00	-0.528	0.019	-0.143
303	10.00	-0.522	0.040	-0.174
304	15.00	-0.513	0.036	-0.203
305	18.00	-0.506	-0.072	-0.054
306	30.00	-0.513	0.034	-0.386
307	40.00	-0.528	0.004	-0.519
308	50.00	-0.560	-0.043	-0.385
309	60.00	-0.537	-0.035	-0.116
310	70.00	-0.538	-0.018	0.077
311	79.00	-0.554	-0.089	0.174
312	90.00	-0.549	-0.141	0.243

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
401	2.00	-0.300	0.228	-0.198
402	5.00	-0.308	0.226	-0.225
403	10.00	-0.305	0.210	-0.251
404	15.00	-0.315	0.224	-0.279
405	18.00	-0.315	0.227	-0.294
406	30.00	-0.324	0.193	-0.318
407	40.00	-0.349	0.125	-0.281
408	50.00	-0.378	0.012	-0.192
409	60.00	-0.389	-0.064	0.003
410	70.00	-0.399	-0.053	0.169
411	79.00	-0.396	-0.013	0.251
412	90.00	-0.405	-0.015	0.307

PRESSURES section 5
b = 82.70 mm
x = -269.60 mm

nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
501	6.62	-.440	-.009	-.033
502	20.43	-.574	0.002	0.032
503	34.05	-.835	0.015	0.131
504	47.67	-1.298	0.029	0.200
505	54.49	-1.541	0.036	0.172
506	61.29	-1.686	0.052	0.156
507	68.10	-1.645	0.080	0.212
508	74.91	-1.419	0.101	0.266
509	81.72	-1.124	0.036	0.132
510	88.53	-1.123	0.019	0.065

PRESSURES section 6
b = 233.73 mm
x = -60.62 mm

nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
601	38.90	-1.568	0.032	0.086
602	42.93	-1.771	0.069	0.179
603	46.93	-1.731	0.084	0.229
604	50.99	-1.556	0.013	0.250
605	59.03	-1.258	-.071	0.517
606	67.07	-1.233	-.281	0.659
607	71.11	-1.404	-.417	0.717
608	75.56	-1.965	0.005	0.240
609	80.00	-2.647	0.645	0.098
610	84.44	-1.874	-.051	0.998
102	89.45	-1.621	0.109	0.207

PRESSURES section 7
b = 417.90 mm
x = 100.71 mm

nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
701	22.71	-.036	0.130	-.289
702	28.21	-.312	0.278	-.306
703	33.72	-.778	0.513	-.475
704	39.26	-.891	0.131	0.357
705	44.69	-.870	-.215	0.875
109	50.03	-.756	-.161	0.430
706	55.28	-.700	-.038	-.176
707	60.46	-.752	0.082	-.627
208	65.56	-.773	-.035	-.941
708	70.59	-.689	-.084	-.851
709	75.54	-.613	-.045	-.653
307	80.42	-.528	0.004	-.519
710	85.22	-.443	0.081	-.379
711	90.19	-.374	0.195	-.311
405	94.60	-.315	0.227	-.294

SECTION COEFFICIENTS

section	comp.	Zero	Re 3	Im 3
1	CN_u	0.976	-.017	-.140
	CN_l	0.319	0.002	-.032
	CN_t	1.295	-.015	-.172
	Cm_u	-.120	0.050	-.025
	Cm_l	-.026	-.002	0.016
2	Cm_t	-.146	0.048	-.009
	CN_u	0.733	0.045	0.345
	CN_l	0.295	0.010	-.024
	CN_t	1.029	0.055	0.321
	Cm_u	-.140	0.014	-.059
3	Cm_l	-.017	-.005	0.012
	Cm_t	-.157	0.009	-.047
	CN_u	0.507	0.037	0.113
	Cm_u	-.118	-.023	0.019
	CN_u	0.341	-.073	0.055
4	Cm_u	-.087	-.011	0.051
	CN_u	0.992	-.028	-.112
5	Cl_u	-.553	0.019	0.069
	CN_u	1.531	-.020	-.268
6	Cl_u	-.745	0.013	0.172
	CN_u	0.464	-.089	0.271
	Cl_u	-.266	0.036	-.163

test conditions				Simple Strake configuration			
alpha	=	22.109 deg	Q	=	6.690 kPa		
Mach	=	0.225	Ptot	=	195.256 kPa		
Re*10^-6	=	7.982	Ttot	=	291.828 K		
dalpha	=	8.342 deg					
freq	=	5.700 Hz					
k	=	0.192					
harm	=	4					

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 4	Im 4		Zero	Re 4	Im 4
main	CN	1.09156	-.06407	0.03904	6885.83			
	Cm	0.08135	0.00515	-.00362	370.80	-.056	0.000	0.000
	Cl	-.37659	0.02299	-.01616	2665.55	-.063	0.001	0.000

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s^2]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	0.585	-12.457				
12	-215.6	-12.0	0.379	-5.627	1	2.878	0.004	0.005
13	167.4	-12.0	0.481	157.183				
21	-138.6	-116.9	0.282	-30.727				
22	-46.6	-116.9			2	28.034	0.003	0.007
23	121.4	-116.9	0.366	140.103				
31	-74.6	-189.9	0.071	44.611				
32	-10.6	-189.9			3	45.540	0.006	0.005
33	141.4	-189.9	0.335	143.290				
41	29.4	-304.9	0.174	-122.030				
42	89.4	-304.9	0.257	135.162	4	73.118	0.007	0.008
43	152.4	-304.9	0.295	143.568				
51	85.0	-374.9	0.126	111.927				
52	121.4	-374.9	0.290	148.646	5	89.904	0.018	0.015
53	157.4	-374.9	0.488	146.496				

PRESSURES section 1
c = 300.65 mm
y = -209.06 mm

nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
101	2.00	-1.572	-.096	-.227
102	5.00	-1.621	0.084	-.341
103	10.00	-1.557	0.054	-.249
104	15.00	-1.987	0.047	-.624
105				
106	30.00	-1.117	0.381	-.233
107	40.00	-.878	0.547	-.180
108	50.00	-.775	0.627	-.244
109	60.00	-.756	0.545	-.315
110	70.00	-.723	0.604	-.339
111	79.00	-.663	0.988	-.354
112	82.50	-.615	1.020	-.361
113	85.00	-.574	0.933	-.357
114	90.00	-.521	0.569	-.338
115	95.00	-.463	0.014	-.243
151	10.00	0.619	-.003	0.002
152	20.00	0.509	-.009	0.005
153	40.00	0.336	-.016	0.006
154	60.00	0.247	-.027	0.009
155	80.00	0.164	-.062	0.018

PRESSURES section 2
c = 246.21 mm
y = -273.97 mm

nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
201	2.00	-.913	0.092	-.114
202	5.00	-.918	0.071	-.106
203	10.00	-.929	0.125	-.171
204	15.00	-.894	0.067	-.070
205	18.00	-.879	0.001	-.024
206	30.00	-.843	-.016	0.108
207	40.00	-.799	0.074	-.045
208	50.00	-.773	0.021	-.141
209	60.00	-.720	-.211	-.130
210	70.00	-.668		
211	79.00	-.596	0.054	-.189
212	82.50	-.606	0.165	-.248
213	85.00	-.569	0.229	-.278
214	90.00	-.556	0.350	-.344
215	95.00	-.532	0.430	-.404
251	10.00	0.601	-.008	0.007
252	20.00	0.495	-.013	0.004
253	40.00	0.330	-.017	0.000
254	60.00	0.224	-.019	-.004
255	80.00	0.101	-.006	-.026

PRESSURES section 3
c = 194.13 mm
y = -336.06 mm

nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
301	2.00	-.523	-.002	0.196
302	5.00	-.528	-.005	0.196
303	10.00	-.522	0.004	0.200
304	15.00	-.513	-.003	0.171
305	18.00	-.506	0.044	0.017
306	30.00	-.513	-.008	0.052
307	40.00	-.528	-.054	0.004
308	50.00	-.560	-.249	0.140
309	60.00	-.537	-.326	0.315
310	70.00	-.538	-.285	0.348
311	79.00	-.554	-.193	0.250
312	90.00	-.549	-.040	0.100

PRESSURES section 4
c = 144.42 mm
y = -395.32 mm

nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
401	2.00	-.300	0.069	-.072
402	5.00	-.308	0.062	-.082
403	10.00	-.305	0.049	-.088
404	15.00	-.315	0.050	-.093
405	18.00	-.315	0.041	-.097
406	30.00	-.324	-.049	-.111
407	40.00	-.349	-.149	-.100
408	50.00	-.378	-.263	-.073
409	60.00	-.389	-.321	0.031
410	70.00	-.399	-.282	0.113
411	79.00	-.396	-.201	0.093
412	90.00	-.405	-.120	0.048

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
501	6.62	-.440	0.015	-.001
502	20.43	-.574	0.012	-.021
503	34.05	-.835	0.031	-.040
504	47.67	-1.298	0.030	-.031
505	54.49	-1.541	0.001	0.011
506	61.29	-1.686	-.032	0.053
507	68.10	-1.645	-.037	0.049
508	74.91	-1.419	-.005	0.009
509	81.72	-1.124	0.000	-.016
510	86.53	-1.123	-.009	0.007

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
601	38.90	-1.568	-.017	0.054
602	42.93	-1.771	-.001	-.005
603	46.93	-1.731	0.007	-.060
604	50.99	-1.556	0.029	-.063
605	59.03	-1.258	-.004	-.087
606	67.07	-1.233	0.051	-.074
607	71.11	-1.404	0.210	-.054
608	75.56	-1.965	0.111	-.044
609	80.00	-2.647	-.626	-.602
610	84.44	-1.874	0.137	-.465
102	89.45	-1.621	0.084	-.341

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
701	22.71	-.036	0.115	-.030
702	28.21	-.312	0.028	0.127
703	33.72	-.778	-.085	0.321
704	39.26	-.891	0.624	-.037
705	44.69	-.870	0.589	-.187
109	50.03	-.756	0.545	-.315
706	55.28	-.700	0.438	-.380
707	60.46	-.752	0.168	-.381
708	65.56	-.773	0.021	-.141
709	70.59	-.689	-.086	0.179
708	75.54	-.613	-.055	0.110
307	80.42	-.528	-.054	0.004
710	85.22	-.443	-.032	0.000
711	90.19	-.374	0.009	-.033
405	94.60	-.315	0.041	-.097

SECTION COEFFICIENTS				
section	comp.	Zero	Re 4	Im 4
1	CN_u	0.976	-.441	0.313
	CN_l	0.319	-.029	0.010
	CN_t	1.295	-.470	0.323
	Cm_u	-.120	0.161	-.074
	Cm_l	-.026	0.014	-.004
2	Cm_t	-.146	0.175	-.078
	CN_u	0.733	-.062	0.133
	CN_l	0.295	-.012	-.007
	CN_t	1.029	-.074	0.127
	Cm_u	-.140	0.033	-.061
3	Cm_l	-.017	0.003	0.005
	Cm_t	-.157	0.036	-.056
	CN_u	0.507	0.113	-.158
	CN_l	-.118	0.046	0.048
	CN_t	0.341	-.132	0.020
4	Cm_u	-.087	-.058	0.015
	CN_u	0.992	-.005	0.005
	Cl_u	-.553	-.001	0.000
	CN_u	1.531	-.006	0.093
	Cl_u	-.745	0.008	-.091
7	CN_u	0.464	-.146	0.053
	Cl_u	-.266	0.058	-.032

test conditions		Simple Strake configuration	
alpha	= 22.109 deg	Q	= 6.690 kPa
Mach	= .225	Ptot	= 195.256 kPa
Re*10^-6	= 7.982	Ttot	= 291.828 K
dalpha	= 8.342 deg		
freq	= 5.700 Hz		
k	= .192		
harm	= 5		

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 5	Im 5		Zero	Re 5	Im 5
main	CN	1.09156	0.02322	-.00886	1111.01			
	Cm	0.08135	-.00367	-.00113	110.07	-.056	0.000	0.000
	Cl	-.37659	-.01128	0.00566	583.13	-.063	0.000	0.000

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s^2]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	0.924	92.656	1	2.878	0.006	0.004
12	-215.6	-12.0	0.778	63.782				
13	167.4	-12.0	0.645	-122.223				
21	-138.6	-116.9	0.311	67.978	2	28.034	0.000	0.004
22	-46.6	-116.9						
23	121.4	-116.9	0.275	-106.055				
31	-74.6	-189.9	0.107	55.643	3	45.540	0.002	0.004
32	-10.6	-189.9						
33	141.4	-189.9	0.347	-104.762				
41	29.4	-304.9	0.169	-80.975	4	73.118	0.004	0.004
42	89.4	-304.9	0.314	-119.600				
43	152.4	-304.9	0.398	-114.170				
51	85.0	-374.9	0.327	-110.443	5	89.904	0.016	0.005
52	121.4	-374.9	0.316	-96.919				
53	157.4	-374.9	0.303	-71.002				

Unsteady Transonic Delta Program

DPN = 151

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
101	2.00	-1.572	0.095	0.175
102	5.00	-1.621	-0.048	0.120
103	10.00	-1.557	-0.005	0.113
104	15.00	-1.987	0.193	0.177
105				
106	30.00	-1.117	0.260	0.078
107	40.00	-.878	0.159	0.089
108	50.00	-.775	0.094	0.076
109	60.00	-.756	0.028	0.006
110	70.00	-.723	0.070	0.091
111	79.00	-.663	-.058	-.015
112	82.50	-.615	-.207	-.230
113	85.00	-.574	-.313	-.390
114	90.00	-.521	-.517	-.655
115	95.00	-.463	-.644	-.658
151	10.00	0.619	-.003	-.005
152	20.00	0.509	-.002	-.005
153	40.00	0.336	-.003	-.006
154	60.00	0.247	-.009	-.009
155	80.00	0.164	-.028	-.021

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
201	2.00	-.913	-.133	0.047
202	5.00	-.918	-.104	0.053
203	10.00	-.929	-.126	0.093
204	15.00	-.894	-.196	0.090
205	18.00	-.879	0.001	0.065
206	30.00	-.843	-.196	0.090
207	40.00	-.799	-.362	0.115
208	50.00	-.773	-.398	0.014
209	60.00	-.720	-.372	-.019
210	70.00	-.668		
211	79.00	-.596	-.046	0.165
212	82.50	-.606	-.044	0.142
213	85.00	-.569	-.063	0.094
214	90.00	-.556	-.156	-.013
215	95.00	-.532	-.259	-.140
251	10.00	0.601	-.001	-.005
252	20.00	0.495	0.000	-.007
253	40.00	0.330	-.005	-.008
254	60.00	0.224	-.016	-.013
255	80.00	0.101	-.051	-.035

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
301	2.00	-.523	-.014	0.080
302	5.00	-.528	0.009	0.071
303	10.00	-.522	0.041	0.068
304	15.00	-.513	0.069	0.062
305	18.00	-.506	0.018	-.015
306	30.00	-.513	0.090	-.021
307	40.00	-.528	0.051	-.094
308	50.00	-.560	-.090	-.096
309	60.00	-.537	-.034	-.019
310	70.00	-.538	0.105	0.023
311	79.00	-.554	0.189	0.070
312	90.00	-.549	0.179	0.086

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
401	2.00	-.300	0.088	-.110
402	5.00	-.308	0.086	-.116
403	10.00	-.305	0.072	-.124
404	15.00	-.315	0.070	-.138
405	18.00	-.315	0.064	-.151
406	30.00	-.324	0.031	-.159
407	40.00	-.349	0.014	-.136
408	50.00	-.378	0.008	-.076
409	60.00	-.389	0.005	0.057
410	70.00	-.399	0.083	0.149
411	79.00	-.396	0.143	0.129
412	90.00	-.405	0.168	0.111

PRESSURES section 5
b = 82.70 mm
x = -269.60 mm

nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
501	6.62	-.440	-.029	0.003
502	20.43	-.574	-.033	0.004
503	34.05	-.835	-.024	0.009
504	47.67	-1.298	-.010	0.013
505	54.49	-1.541	0.007	0.013
506	61.29	-1.686	0.036	0.009
507	68.10	-1.645	0.066	0.004
508	74.91	-1.419	0.090	0.002
509	81.72	-1.124	0.042	0.006
510	88.53	-1.123	0.005	0.009

PRESSURES section 6
b = 233.73 mm
x = -60.62 mm

nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
601	38.90	-1.568	-.060	-.013
602	42.93	-1.771	-.066	-.011
603	46.93	-1.731	-.069	-.006
604	50.99	-1.556	-.079	-.019
605	59.03	-1.258	-.030	0.034
606	67.07	-1.233	-.109	0.036
607	71.11	-1.404	-.198	0.030
608	75.56	-1.965	-.129	0.026
609	80.00	-2.647	0.580	0.549
610	84.44	-1.874	0.092	0.205
102	89.45	-1.621	-.048	0.120

PRESSURES section 7
b = 417.90 mm
x = 100.71 mm

nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
701	22.71	-.036	0.139	0.064
702	28.21	-.312	0.172	0.087
703	33.72	-.778	0.086	-.017
704	39.26	-.891	-.200	-.081
705	44.69	-.870	0.142	0.132
109	50.03	-.756	0.028	0.006
706	55.28	-.700	-.054	-.055
707	60.46	-.752	-.188	-.011
208	65.56	-.773	-.398	0.014
708	70.59	-.689	-.194	-.025
709	75.54	-.613	0.036	-.089
307	80.42	-.528	0.051	-.094
710	85.22	-.443	0.084	-.073
711	90.19	-.374	0.098	-.115
405	94.60	-.315	0.064	-.151

SECTION COEFFICIENTS

section	comp.	Zero	Re 5	Im 5
1	CN_u	0.976	0.008	0.035
	CN_l	0.319	-.012	-.011
	CN_t	1.295	-.003	0.024
	Cm_u	-.120	-.056	-.067
2	Cm_l	-.026	0.006	0.004
	Cm_t	-.146	-.050	-.062
	CN_u	0.733	0.210	-.052
	CN_l	0.295	-.020	-.017
3	CN_t	1.029	0.191	-.069
	Cm_u	-.140	-.057	0.005
	Cm_l	-.017	0.011	0.007
	Cm_t	-.157	-.046	0.013
4	CN_u	0.507	-.065	-.010
	Cm_u	-.118	0.031	0.007
5	CN_u	0.341	-.072	0.020
	Cm_u	-.087	0.027	0.026
6	CN_u	0.992	-.004	-.007
	Cl_u	-.553	0.010	0.004
7	CN_u	1.531	0.034	-.050
	Cl_u	-.745	-.008	0.045
7	CN_u	0.464	-.023	0.010
	Cl_u	-.266	-.003	-.024

test conditions				Simple Strake configuration			
alpha	=	10.031 deg	Q	=	17.267 kPa		
Mach	=	0.601	Ptqt	=	87.220 kPa		
Re*10 ⁻⁶	=	8.024	Ttot	=	300.608 K		
dalpha	=	4.167 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	1					

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 1	Im 1		Zero	Re 1	Im 1
main	CN	0.56090	3.05619	0.20800	8386.65			
	Cm	0.02249	0.18782	-.01030	330.62	-.049	-.031	0.001
	Cl	-.22050	-1.03618	-.09754	2944.68	-.105	-.030	-.004

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	39.541	1.436	1	2.878	0.100	4.129
12	-215.6	-12.0	20.007	1.583				
13	167.4	-12.0	15.211	-178.370				
21	-138.6	-116.9	12.074	15.552	2	28.034	0.040	3.877
22	-46.6	-116.9						
23	121.4	-116.9	10.489	-164.672				
31	-74.6	-189.9	3.708	13.106	3	45.540	0.177	2.324
32	-10.6	-189.9						
33	141.4	-189.9	7.532	-170.191				
41	29.4	-304.9	1.513	-177.722	4	73.118	0.658	3.977
42	89.4	-304.9	7.343	-174.598				
43	152.4	-304.9	12.448	-178.089				
51	85.0	-374.9	8.560	-164.652	5	89.904	0.375	4.530
52	121.4	-374.9	12.107	-162.969				
53	157.4	-374.9	15.893	-162.982				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
101	2.00	-1.319	-2.035	-.312
102	5.00	-1.226	-4.247	-.300
103	10.00	-1.189	-6.699	-.249
104	15.00	-1.179	-8.611	-.245
105				
106	30.00	-.511	-4.355	-.074
107	40.00	-.404	-2.552	-.050
108	50.00	-.351	-1.865	-.092
109	60.00	-.284	-1.139	-.112
110	70.00	-.221	-.925	-.092
111	79.00	-.157	-.925	-.057
112	82.50	-.119	-.881	-.049
113	85.00	-.092	-.850	-.041
114	90.00	-.048	-.794	-.024
115	95.00	-.006	-.713	-.003
151	10.00	0.363	1.795	0.100
152	20.00	0.243	1.542	0.121
153	40.00	0.114	1.133	0.137
154	60.00	0.092	0.689	0.134
155	80.00	0.118	0.206	0.115

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
201	2.00	-1.019	2.406	-.515
202	5.00	-.962	1.152	-.516
203	10.00	-.887	-.835	-.504
204	15.00	-.831	-2.090	-.360
205	18.00	-.823	-.325	0.646
206	30.00	-.747	-3.625	-.469
207	40.00	-.653	-3.855	-.346
208	50.00	-.557	-4.196	-.161
209	60.00	-.439	-3.631	0.019
210	70.00	-.361		
211	79.00	-.278	-3.047	0.096
212	82.50	-.258	-3.195	0.123
213	85.00	-.229	-3.055	0.109
214	90.00	-.190	-3.027	0.126
215	95.00	-.131	-2.824	0.141
251	10.00	0.362	1.668	0.120
252	20.00	0.248	1.461	0.130
253	40.00	0.135	0.952	0.133
254	60.00	0.105	0.508	0.130
255	80.00	0.094	-.078	0.116

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
301	2.00	-.783	3.432	-.510
302	5.00	-.755	2.702	-.521
303	10.00	-.700	1.364	-.531
304	15.00	-.650	0.214	-.485
305	18.00	-.618	-.258	-.462
306	30.00	-.554	-1.283	-.401
307	40.00	-.504	-1.685	-.373
308	50.00	-.472	-2.054	-.357
309	60.00	-.414	-2.227	-.311
310	70.00	-.372	-2.404	-.257
311	79.00	-.331	-2.601	-.220
312	90.00	-.273	-3.038	-.128

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
401	2.00	-.634	3.367	-.318
402	5.00	-.608	2.572	-.326
403	10.00	-.544	1.312	-.309
404	15.00	-.514	0.390	-.306
405	18.00	-.494	-.031	-.299
406	30.00	-.449	-.998	-.271
407	40.00	-.413	-1.308	-.253
408	50.00	-.376	-1.376	-.250
409	60.00	-.346	-1.341	-.257
410	70.00	-.316	-1.388	-.271
411	79.00	-.288	-1.445	-.244
412	90.00	-.260	-1.812	-.212

PRESSURES section 5				
		b = 82.70 mm x = -269.60 mm		
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
501	6.62	-.136	-1.187	-.056
502	20.43	-.134	-1.213	-.059
503	34.05	-.148	-1.544	-.042
504	47.67	-.215	-3.026	0.074
505	54.49	-.304	-4.609	0.196
506	61.29	-.443	-6.082	0.309
507	68.10	-.574	-5.482	0.232
508	74.91	-.580	-2.432	-.141
509	81.72	-.449	-2.070	-.132
510	88.53	-.443	-2.730	-.046

PRESSURES section 6				
		b = 233.73 mm x = -60.62 mm		
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
601	38.90	-.674	-5.291	0.210
602	42.93	-.772	-3.838	-.180
603	46.93	-.580	-2.881	-.400
604	50.99	-.505	-2.407	-.147
605	59.03	-.419	-1.709	-.208
606	67.07	-.382	-1.201	-.132
607	71.11	-.464	-3.702	-.164
608	75.56	-1.280	-15.463	-.310
609	80.00	-1.369	-11.865	-.167
610	84.44	-1.269	-8.247	-.172
102	89.45	-1.226	-4.247	-.300

PRESSURES section 7				
		b = 417.90 mm x = 100.71 mm		
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
701	22.71	-.221	-.595	-.071
702	28.21	-.401	-2.434	0.154
703	33.72	-.271	-1.528	-.040
704	39.26	-.258	-1.246	0.008
705	44.69	-.279	-1.219	-.089
109	50.03	-.284	-1.139	-.112
706	55.28	-.317	-2.141	-.036
707	60.46	-.421	-3.682	0.187
208	65.56	-.557	-4.196	-.161
708	70.59	-.532	-2.961	-.304
709	75.54	-.525	-2.202	-.395
307	80.42	-.504	-1.685	-.373
710	85.22	-.501	-1.192	-.363
711	90.19	-.494	-.740	-.346
405	94.60	-.494	-.031	-.299

SECTION COEFFICIENTS				
section	comp.	Zero	Re 1	Im 1
1	CN_u	0.481	2.834	0.111
	CN_l	0.155	0.927	0.122
	CN_t	0.636	3.761	0.233
	Cm_u	-.008	-.142	-.007
	Cm_l	-.012	-.059	-.031
2	CN_u	-.020	-.201	-.038
	CN_l	0.545	2.666	0.094
	CN_t	0.158	0.738	0.125
	Cm_u	0.703	3.404	0.219
	Cm_l	-.058	-.941	0.021
3	CN_u	-.011	0.007	-.030
	CN_l	-.069	-.934	-.009
	CN_t	0.462	1.411	0.334
	Cm_u	-.066	-.786	-.047
	Cm_l	0.380	0.770	0.263
4	CN_u	-.059	-.495	-.057
	CN_l	0.279	2.660	-.011
	CN_t	-.170	-1.557	0.010
	Cm_u	0.710	5.106	0.046
	Cm_l	-.375	-2.668	-.078
7	CN_u	0.353	1.510	0.132
	CN_l	-.202	-.822	-.098

test conditions				Simple Strake configuration			
alpha	=	10.031 deg	Q	=	17.267 kPa		
Mach	=	0.601	Ptot	=	87.220 kPa		
Re*10 ⁻⁶	=	8.024	Ttot	=	300.608 K		
dalpha	=	4.167 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	2					

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 2	Im 2		Zero	Re 2	Im 2
main	CN	0.56090	-.03536	-.05546	*****			
	Cm	0.02249	-.00129	-.00012	273.49	-.049	0.000	0.000
	Cl	-.22050	0.03330	0.06695	*****	-.105	0.002	0.003

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	0.353	-160.915	1	2.878	0.008	0.009
12	-215.6	-12.0	0.206	-151.976				
13	167.4	-12.0	0.118	16.915				
21	-138.6	-116.9	0.274	-132.925	2	28.034	0.025	0.012
22	-46.6	-116.9						
23	121.4	-116.9	0.055	-40.210				
31	-74.6	-189.9	1.073	-109.743	3	45.540	0.169	0.034
32	-10.6	-189.9						
33	141.4	-189.9	0.532	-81.113				
41	29.4	-304.9	0.169	139.140	4	73.118	0.090	0.055
42	89.4	-304.9	0.811	13.336				
43	152.4	-304.9	0.426	-48.292				
51	85.0	-374.9	0.385	6.730	5	89.904	0.117	0.074
52	121.4	-374.9	0.117	42.225				
53	157.4	-374.9	0.743	40.562				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
101	2.00	-1.319	-.230	-.365
102	5.00	-1.226	0.862	1.589
103	10.00	-1.189	1.738	2.993
104	15.00	-1.179	2.258	3.791
105				
106	30.00	-.511	-1.450	-2.485
107	40.00	-.404	-1.510	-2.384
108	50.00	-.351	-.706	-1.150
109	60.00	-.284	-.262	-.468
110	70.00	-.221	-.123	-.252
111	79.00	-.157	-.111	-.226
112	82.50	-.119	-.138	-.259
113	85.00	-.092	-.143	-.264
114	90.00	-.048	-.150	-.266
115	95.00	-.006	-.163	-.276
151	10.00	0.363	-.066	-.112
152	20.00	0.243	-.042	-.067
153	40.00	0.114	-.023	-.033
154	60.00	0.092	-.020	-.028
155	80.00	0.118	-.039	-.058

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
201	2.00	-1.019	-.318	-.404
202	5.00	-.962	0.117	0.442
203	10.00	-.887	0.855	1.711
204	15.00	-.831	1.408	2.005
205	18.00	-.823	0.348	-.124
206	30.00	-.747	1.502	2.352
207	40.00	-.653	1.017	1.511
208	50.00	-.557	0.366	0.412
209	60.00	-.439	0.011	-.105
210	70.00	-.361		
211	79.00	-.278	-.208	-.469
212	82.50	-.258	-.189	-.452
213	85.00	-.229	-.174	-.439
214	90.00	-.190	-.171	-.437
215	95.00	-.131	-.191	-.448
251	10.00	0.362	-.074	-.129
252	20.00	0.248	-.047	-.080
253	40.00	0.135	-.025	-.052
254	60.00	0.105	-.009	-.020
255	80.00	0.094	-.014	-.039

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
301	2.00	-.783	-1.053	-1.547
302	5.00	-.755	-.843	-1.074
303	10.00	-.700	-.385	-.191
304	15.00	-.650	-.027	0.405
305	18.00	-.618	0.109	0.608
306	30.00	-.554	0.309	0.789
307	40.00	-.504	0.342	0.718
308	50.00	-.472	0.411	0.729
309	60.00	-.414	0.444	0.682
310	70.00	-.372	0.451	0.621
311	79.00	-.331	0.467	0.586
312	90.00	-.273	0.555	0.618

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
401	2.00	-.634	-1.136	-1.873
402	5.00	-.608	-.862	-1.293
403	10.00	-.544	-.429	-.469
404	15.00	-.514	-.153	0.064
405	18.00	-.494	-.052	0.256
406	30.00	-.449	0.055	0.446
407	40.00	-.413	0.065	0.390
408	50.00	-.376	0.105	0.342
409	60.00	-.346	0.130	0.297
410	70.00	-.316	0.166	0.283
411	79.00	-.288	0.185	0.290
412	90.00	-.260	0.325	0.480

PRESSURES section 5 b = 82.70 mm
x = -269.60 mm

nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
501	6.62	-.136	-.031	-.056
502	20.43	-.134	-.048	-.082
503	34.05	-.148	-.144	-.215
504	47.67	-.215	-.399	-.564
505	54.49	-.304	-.435	-.628
506	61.29	-.443	-.059	-.163
507	68.10	-.574	0.608	0.691
508	74.91	-.580	0.508	0.643
509	81.72	-.449	-.184	-.181
510	88.53	-.443	0.004	0.016

PRESSURES section 6 b = 233.73 mm
x = -60.62 mm

nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
601	38.90	-.674	0.179	0.094
602	42.93	-.772	0.288	0.275
603	46.93	-.580	-.035	-.003
604	50.99	-.505	0.082	0.061
605	59.03	-.419	-.044	-.103
606	67.07	-.382	-.415	-.683
607	71.11	-.464	-1.567	-2.971
608	75.56	-1.280	-.796	-1.678
609	80.00	-1.369	1.857	3.311
610	84.44	-1.269	1.771	3.055
102	89.45	-1.226	0.862	1.589

PRESSURES section 7 b = 417.90 mm
x = 100.71 mm

nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
701	22.71	-.221	-.119	-.126
702	28.21	-.401	-.285	-.424
703	33.72	-.271	-.322	-.524
704	39.26	-.258	-.236	-.353
705	44.69	-.279	-.150	-.300
109	50.03	-.284	-.262	-.468
706	55.28	-.317	-.771	-1.250
707	60.46	-.421	-.697	-1.123
208	65.56	-.557	0.366	0.412
708	70.59	-.532	0.773	1.147
709	75.54	-.525	0.683	1.107
307	80.42	-.504	0.342	0.718
710	85.22	-.501	0.104	0.494
711	90.19	-.494	0.040	0.490
405	94.60	-.494	-.052	0.256

SECTION COEFFICIENTS

section	comp.	Zero	Re 2	Im 2
1	CN_u	0.481	0.138	0.221
	CN_l	0.155	-.036	-.057
	CN_t	0.636	0.102	0.164
	Cm_u	-.008	-.121	-.207
	Cm_l	-.012	0.007	0.010
2	Cm_t	-.020	-.114	-.197
	CN_u	0.545	-.365	-.457
	CN_l	0.158	-.029	-.058
	CN_t	0.703	-.394	-.515
	Cm_u	-.058	-.014	-.063
3	Cm_l	-.011	0.001	0.006
	Cm_t	-.069	-.012	-.057
	CN_u	0.462	-.246	-.468
	Cm_u	-.066	0.154	0.199
	CN_u	0.380	-.015	-.163
4	Cm_u	-.059	0.080	0.134
	CN_u	0.279	0.041	0.079
5	Cl_u	-.170	-.002	-.013
	CN_u	0.710	-.237	-.302
6	Cl_u	-.375	0.171	0.270
	CN_u	0.353	0.065	0.034
	Cl_u	-.202	0.006	0.065

test conditions				Simple Strake configuration			
alpha	=	10.031 deg	Q	=	17.267 kPa		
Mach	=	0.601	Ptot	=	87.220 kPa		
Re*10 ⁻⁶	=	8.024	Ttot	=	300.608 K		
dalpha	=	4.167 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	3					

BALANCE LOADS		aerodynamic coefficients			aero	angular deflections [deg]		
position	comp.	Zero	Re 3	Im 3	inertia [%]	Zero	Re 3	Im 3
main	CN	0.56090	0.00506	0.06681	5556.22			
	Cm	0.02249	-0.00026	-0.00438	233.71	-0.049	0.000	0.000
	Cl	-0.22050	0.00167	-0.04107	3521.94	-0.105	0.000	-0.002

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	1.059	-46.982	1	2.878	0.001	0.012
12	-215.6	-12.0	0.546	-47.599				
13	167.4	-12.0	0.400	133.650				
21	-138.6	-116.9	0.384	-47.902	2	28.034	0.003	0.013
22	-46.6	-116.9						
23	121.4	-116.9	0.311	142.625				
31	-74.6	-189.9	0.132	122.581	3	45.540	0.029	0.013
32	-10.6	-189.9						
33	141.4	-189.9	0.704	121.393				
41	29.4	-304.9	0.786	81.488	4	73.118	0.022	0.037
42	89.4	-304.9	0.745	83.673				
43	152.4	-304.9	1.717	85.779				
51	85.0	-374.9	0.493	100.300	5	89.904	0.029	0.028
52	121.4	-374.9	0.563	121.695				
53	157.4	-374.9	0.826	121.791				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
101	2.00	-1.319	-.386	0.586
102	5.00	-1.226	0.449	-.720
103	10.00	-1.189	0.394	-.757
104	15.00	-1.179	-.870	1.177
105				
106	30.00	-.511	0.331	-.536
107	40.00	-.404	0.676	-1.184
108	50.00	-.351	0.218	-.324
109	60.00	-.284	0.037	-.020
110	70.00	-.221	-.005	0.041
111	79.00	-.157	0.000	0.035
112	82.50	-.119	0.005	0.023
113	85.00	-.092	0.009	0.014
114	90.00	-.048	0.021	-.010
115	95.00	-.006	0.033	-.036
151	10.00	0.363	0.004	0.004
152	20.00	0.243	0.004	0.007
153	40.00	0.114	0.003	0.011
154	60.00	0.092	-.001	0.020
155	80.00	0.118	-.002	0.024

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
201	2.00	-1.019	-.362	0.362
202	5.00	-.962	0.122	-.362
203	10.00	-.887	0.716	-1.350
204	15.00	-.831	0.465	-1.545
205	18.00	-.823	-.119	-.077
206	30.00	-.747	-.180	-.181
207	40.00	-.653	-.496	0.447
208	50.00	-.557	-.498	0.711
209	60.00	-.439	-.388	0.760
210	70.00	-.361		
211	79.00	-.278	-.219	0.659
212	82.50	-.258	-.207	0.684
213	85.00	-.229	-.193	0.645
214	90.00	-.190	-.172	0.625
215	95.00	-.131	-.139	0.551
251	10.00	0.362	0.009	0.005
252	20.00	0.248	0.004	0.013
253	40.00	0.135	-.001	0.027
254	60.00	0.105	-.006	0.035
255	80.00	0.094	-.018	0.069

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
301	2.00	-.783	-.331	0.351
302	5.00	-.755	-.047	-.014
303	10.00	-.700	0.440	-.759
304	15.00	-.650	0.662	-1.162
305	18.00	-.618	0.681	-1.259
306	30.00	-.554	0.454	-1.084
307	40.00	-.504	0.222	-.766
308	50.00	-.472	0.054	-.510
309	60.00	-.414	-.067	-.247
310	70.00	-.372	-.160	-.030
311	79.00	-.331	-.211	0.115
312	90.00	-.273	-.242	0.230

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
401	2.00	-.634	-.553	0.651
402	5.00	-.608	-.233	0.253
403	10.00	-.544	0.161	-.297
404	15.00	-.514	0.373	-.611
405	18.00	-.494	0.417	-.685
406	30.00	-.449	0.295	-.520
407	40.00	-.413	0.151	-.292
408	50.00	-.376	0.066	-.134
409	60.00	-.346	0.012	-.029
410	70.00	-.316	-.026	0.030
411	79.00	-.288	-.055	0.071
412	90.00	-.260	-.047	0.009

PRESSURES section 5				
		b = 82.70 mm x = -269.60 mm		
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
501	6.62	-.136	0.003	-.020
502	20.43	-.134	0.002	-.021
503	34.05	-.148	0.012	-.041
504	47.67	-.215	-.002	0.004
505	54.49	-.304	-.063	0.165
506	61.29	-.443	-.130	0.312
507	68.10	-.574	-.071	0.082
508	74.91	-.580	0.073	-.318
509	81.72	-.449	-.030	0.115
510	88.53	-.443	-.009	-.007

PRESSURES section 6				
		b = 233.73 mm x = -60.62 mm		
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
601	38.90	-.674	-.052	0.090
602	42.93	-.772	-.029	-.070
603	46.93	-.580	-.010	-.009
604	50.99	-.505	-.009	-.016
605	59.03	-.419	-.031	0.007
606	67.07	-.382	0.157	-.272
607	71.11	-.464	0.568	-.769
608	75.56	-1.280	-.751	0.838
609	80.00	-1.369	-1.189	1.586
610	84.44	-1.269	0.315	-.620
102	89.45	-1.226	0.449	-.720

PRESSURES section 7				
		b = 417.90 mm x = 100.71 mm		
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
701	22.71	-.221	0.023	-.061
702	28.21	-.401	0.044	-.035
703	33.72	-.271	0.100	-.140
704	39.26	-.258	-.005	0.081
705	44.69	-.279	-.011	0.084
109	50.03	-.284	0.037	-.020
706	55.28	-.317	0.110	-.119
707	60.46	-.421	-.167	0.699
208	65.56	-.557	-.498	0.711
708	70.59	-.532	-.290	0.093
709	75.54	-.525	0.030	-.571
307	80.42	-.504	0.222	-.766
710	85.22	-.501	0.340	-.771
711	90.19	-.494	0.458	-.812
405	94.60	-.494	0.417	-.685

SECTION COEFFICIENTS				
section	comp.	Zero	Re 3	Im 3
1	CN_u	0.481	-.075	0.144
	CN_l	0.155	0.001	0.015
	CN_t	0.636	-.074	0.159
2	Cm_u	-.008	0.025	-.031
	Cm_l	-.012	0.000	-.006
	Cm_t	-.020	0.025	-.037
	CN_u	0.545	0.195	-.261
	CN_l	0.158	-.005	0.036
	CN_t	0.703	0.190	-.225
3	Cm_u	-.058	-.080	0.195
	Cm_l	-.011	0.004	-.016
	Cm_t	-.069	-.076	0.180
4	CN_u	0.462	-.083	0.394
	CN_l	-.066	-.045	0.005
5	CN_u	0.380	-.066	0.149
	Cm_u	-.059	-.001	-.005
6	CN_u	0.279	0.014	-.013
	Cl_u	-.170	-.010	0.010
7	CN_u	0.710	0.005	0.031
	Cl_u	-.375	0.017	-.056
	CN_u	0.353	-.055	0.140
	Cl_u	-.202	0.049	-.124

test conditions		Simple Strake configuration	
alpha	= 10.031 deg	Q	= 17.267 kPa
Mach	= 0.601	Ptot	= 87.220 kPa
Re*10^-6	= 8.024	Ttot	= 300.608 K
dalpha	= 4.167 deg		
freq	= 5.700 Hz		
k	= 0.073		
harm	= 4		

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 4	Im 4		Zero	Re 4	Im 4
main	CN	0.56090	0.00225	-.00531	*****			
	Cm	0.02249	-.00160	0.00065	6563.78	-.049	0.000	0.000
	Cl	-.22050	-.00200	0.00498	*****	-.105	0.000	0.000

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s^2]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	0.140	158.308	1	2.878	0.001	0.001
12	-215.6	-12.0	0.091	171.214				
13	167.4	-12.0	0.047	4.091				
21	-138.6	-116.9	0.038	-124.861	2	28.034	0.001	0.001
22	-46.6	-116.9						
23	121.4	-116.9	0.042	-28.023				
31	-74.6	-189.9	0.109	-44.621	3	45.540	0.006	0.001
32	-10.6	-189.9						
33	141.4	-189.9	0.159	-44.882				
41	29.4	-304.9	0.695	-46.110	4	73.118	0.023	0.009
42	89.4	-304.9	0.184	17.826				
43	152.4	-304.9	0.734	-77.567				
51	85.0	-374.9	0.243	0.613	5	89.904	0.004	0.004
52	121.4	-374.9	0.132	-25.674				
53	157.4	-374.9	0.336	-11.359				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
101	2.00	-1.319	0.288	0.007
102	5.00	-1.226	-.627	-.064
103	10.00	-1.189	-.025	0.044
104	15.00	-1.179	0.192	0.051
105				
106	30.00	-.511	-.304	-.005
107	40.00	-.404	-.178	0.040
108	50.00	-.351	-.365	0.042
109	60.00	-.284	-.182	0.001
110	70.00	-.221	-.048	-.019
111	79.00	-.157	-.005	-.017
112	82.50	-.119	-.008	-.014
113	85.00	-.092	-.004	-.012
114	90.00	-.048	0.008	-.010
115	95.00	-.006	0.012	-.009
151	10.00	0.363	-.007	0.001
152	20.00	0.243	-.008	0.001
153	40.00	0.114	-.006	0.000
154	60.00	0.092	-.003	-.001
155	80.00	0.118	-.001	-.002

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
201	2.00	-1.019	0.930	0.009
202	5.00	-.962	0.306	-.056
203	10.00	-.887	-.341	-.073
204	15.00	-.831	-.137	0.038
205	18.00	-.823	0.004	-.006
206	30.00	-.747	0.908	0.065
207	40.00	-.653	0.976	0.023
208	50.00	-.557	0.480	-.017
209	60.00	-.439	0.102	-.043
210	70.00	-.361		
211	79.00	-.278	-.224	-.020
212	82.50	-.258	-.220	-.011
213	85.00	-.229	-.216	-.009
214	90.00	-.190	-.214	-.004
215	95.00	-.131	-.206	-.001
251	10.00	0.362	-.015	0.003
252	20.00	0.248	-.015	0.000
253	40.00	0.135	-.014	-.002
254	60.00	0.105	-.001	-.002
255	80.00	0.094	0.001	-.005

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
301	2.00	-.783	0.352	0.060
302	5.00	-.755	-.024	-.002
303	10.00	-.700	-.696	-.055
304	15.00	-.650	-.977	-.035
305	18.00	-.618	-.971	0.002
306	30.00	-.554	-.433	0.111
307	40.00	-.504	-.082	0.120
308	50.00	-.472	0.129	0.091
309	60.00	-.414	0.264	0.058
310	70.00	-.372	0.333	0.021
311	79.00	-.331	0.360	-.005
312	90.00	-.273	0.381	-.043

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
401	2.00	-.634	0.518	0.090
402	5.00	-.608	0.162	0.009
403	10.00	-.544	-.296	-.053
404	15.00	-.514	-.508	-.051
405	18.00	-.494	-.530	-.032
406	30.00	-.449	-.329	0.083
407	40.00	-.413	-.196	0.113
408	50.00	-.376	-.105	0.094
409	60.00	-.346	-.029	0.067
410	70.00	-.316	0.016	0.034
411	79.00	-.288	0.045	0.020
412	90.00	-.260	0.063	0.021

Unsteady Transonic Delta Program

DPN = 358

PRESSURES section 5 b = 82.70 mm
x = -269.60 mm

nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
501	6.62	-.136	0.001	0.001
502	20.43	-.134	0.000	0.001
503	34.05	-.148	-.006	0.002
504	47.67	-.215	-.042	0.008
505	54.49	-.304	-.040	0.004
506	61.29	-.443	0.047	-.017
507	68.10	-.574	0.116	-.021
508	74.91	-.580	-.021	0.019
509	81.72	-.449	0.025	-.014
510	88.53	-.443	0.005	0.001

PRESSURES section 6 b = 233.73 mm
x = -60.62 mm

nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
601	38.90	-.674	0.053	-.016
602	42.93	-.772	0.022	0.005
603	46.93	-.580	-.007	-.006
604	50.99	-.505	0.024	-.002
605	59.03	-.419	0.035	0.012
606	67.07	-.382	-.007	0.007
607	71.11	-.464	-.275	-.016
608	75.56	-1.280	0.265	-.008
609	80.00	-1.369	0.189	0.037
610	84.44	-1.269	0.476	0.092
102	89.45	-1.226	-.627	-.064

PRESSURES section 7 b = 417.90 mm
x = 100.71 mm

nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
701	22.71	-.221	-.005	-.003
702	28.21	-.401	-.060	0.009
703	33.72	-.271	-.023	0.016
704	39.26	-.258	-.133	0.018
705	44.69	-.279	-.148	0.006
109	50.03	-.284	-.182	0.001
706	55.28	-.317	-.545	0.023
707	60.46	-.421	-.720	0.047
208	65.56	-.557	0.480	-.017
708	70.59	-.532	0.806	0.006
709	75.54	-.525	0.468	0.048
307	80.42	-.504	-.082	0.120
710	85.22	-.501	-.422	0.114
711	90.19	-.494	-.579	0.030
405	94.60	-.494	-.530	-.032

SECTION COEFFICIENTS

section	comp.	Zero	Re 4	Im 4
1	CN_u	0.481	0.112	-.008
	CN_l	0.155	-.004	0.000
	CN_t	0.636	0.107	-.008
	Cm_u	-.008	-.020	-.001
	Cm_l	-.012	0.000	0.000
2	Cm_t	-.020	-.019	-.001
	CN_u	0.545	-.217	0.006
	CN_l	0.158	-.007	-.002
	CN_t	0.703	-.224	0.004
	Cm_u	-.058	-.009	-.003
3	Cm_l	-.011	0.000	0.001
	Cm_t	-.069	-.009	-.002
	CN_u	0.462	0.025	-.032
	CN_u	-.066	0.094	0.003
	CN_u	0.380	0.104	-.041
4	Cm_u	-.059	0.003	0.012
	CN_u	0.279	-.005	0.001
	Cl_u	-.170	0.005	-.001
	CN_u	0.710	0.025	0.009
	Cl_u	-.375	-.044	-.004
7	CN_u	0.353	0.101	-.018
	Cl_u	-.202	-.073	0.013

test conditions				Simple Strake configuration			
alpha	=	10.031 deg	Q	=	17.267 kPa		
Mach	=	0.601	Ptot	=	87.220 kPa		
Re*10 ⁻⁶	=	8.024	Ttot	=	300.608 K		
dalpha	=	4.167 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	5					

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 5	Im 5		Zero	Re 5	Im 5
main	CN	0.56090	0.04546	0.02569	6602.97			
	Cm	0.02249	-.00235	-.00105	209.09	-.049	0.000	0.000
	Cl	-.22050	-.02493	-.01372	3718.29	-.105	-.001	-.001

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	1.300	60.521	1	2.878	0.001	0.005
12	-215.6	-12.0	0.622	61.673				
13	167.4	-12.0	0.495	-122.859				
21	-138.6	-116.9	0.414	55.687	2	28.034	0.002	0.005
22	-46.6	-116.9						
23	121.4	-116.9	0.348	-100.594				
31	-74.6	-189.9	0.233	11.694	3	45.540	0.007	0.001
32	-10.6	-189.9						
33	141.4	-189.9	0.201	-28.380				
41	29.4	-304.9	0.452	5.736	4	73.118	0.015	0.006
42	89.4	-304.9	0.261	9.532				
43	152.4	-304.9	0.502	-48.636				
51	85.0	-374.9	0.449	17.545	5	89.904	0.022	0.007
52	121.4	-374.9	0.347	5.420				
53	157.4	-374.9	0.339	-21.789				

PRESSURES section 1				
		c = 300.65 mm y = -209.06 mm		
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
101	2.00	-1.319	-.041	0.040
102	5.00	-1.226	0.165	0.524
103	10.00	-1.189	-.062	-.038
104	15.00	-1.179	-.103	-.070
105				
106	30.00	-.511	-.096	-.116
107	40.00	-.404	-.264	-.422
108	50.00	-.351	-.184	-.305
109	60.00	-.284	-.010	-.062
110	70.00	-.221	0.065	0.038
111	79.00	-.157	0.076	0.055
112	82.50	-.119	0.072	0.049
113	85.00	-.092	0.069	0.047
114	90.00	-.048	0.068	0.045
115	95.00	-.006	0.062	0.039
151	10.00	0.363	0.008	0.007
152	20.00	0.243	0.007	0.002
153	40.00	0.114	0.009	0.003
154	60.00	0.092	0.012	0.007
155	80.00	0.118	0.019	0.011

PRESSURES section 2				
		c = 246.21 mm y = -273.97 mm		
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
201	2.00	-1.019	-.053	0.062
202	5.00	-.962	0.069	0.412
203	10.00	-.887	0.131	0.527
204	15.00	-.831	-.094	0.019
205	18.00	-.823	-.019	0.012
206	30.00	-.747	-.433	-.465
207	40.00	-.653	-.330	-.156
208	50.00	-.557	-.116	0.091
209	60.00	-.439	0.105	0.249
210	70.00	-.361		
211	79.00	-.278	0.223	0.215
212	82.50	-.258	0.242	0.215
213	85.00	-.229	0.235	0.202
214	90.00	-.190	0.237	0.183
215	95.00	-.131	0.224	0.149
251	10.00	0.362	0.007	0.000
252	20.00	0.248	0.009	0.003
253	40.00	0.135	0.012	0.003
254	60.00	0.105	0.017	0.010
255	80.00	0.094	0.030	0.019

PRESSURES section 3				
		c = 194.13 mm y = -336.06 mm		
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
301	2.00	-.783	-.167	-.274
302	5.00	-.755	-.083	-.020
303	10.00	-.700	0.072	0.358
304	15.00	-.650	0.100	0.342
305	18.00	-.618	0.052	0.204
306	30.00	-.554	-.245	-.363
307	40.00	-.504	-.353	-.490
308	50.00	-.472	-.357	-.439
309	60.00	-.414	-.293	-.298
310	70.00	-.372	-.218	-.162
311	79.00	-.331	-.155	-.070
312	90.00	-.273	-.101	0.001

PRESSURES section 4				
		c = 144.42 mm y = -395.32 mm		
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
401	2.00	-.634	-.165	-.280
402	5.00	-.608	-.114	-.048
403	10.00	-.544	-.033	0.204
404	15.00	-.514	-.009	0.240
405	18.00	-.494	-.018	0.185
406	30.00	-.449	-.089	-.098
407	40.00	-.413	-.086	-.149
408	50.00	-.376	-.049	-.126
409	60.00	-.346	-.019	-.094
410	70.00	-.316	-.005	-.069
411	79.00	-.288	-.001	-.041
412	90.00	-.260	-.018	-.043

PRESSURES section 5				
		b = 82.70 mm x = -269.60 mm		
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
501	6.62	-.136	-.006	-.001
502	20.43	-.134	-.006	-.001
503	34.05	-.148	-.008	-.004
504	47.67	-.215	-.006	-.004
505	54.49	-.304	0.002	0.007
506	61.29	-.443	-.004	0.008
507	68.10	-.574	-.031	-.018
508	74.91	-.580	-.033	-.019
509	81.72	-.449	-.001	0.009
510	88.53	-.443	-.012	-.002

PRESSURES section 6				
		b = 233.73 mm x = -60.62 mm		
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
601	38.90	-.674	-.028	-.007
602	42.93	-.772	-.025	0.005
603	46.93	-.580	0.000	0.035
604	50.99	-.505	-.018	0.011
605	59.03	-.419	-.019	0.012
606	67.07	-.382	-.033	-.037
607	71.11	-.464	-.060	-.148
608	75.56	-1.280	-.221	-.258
609	80.00	-1.369	-.059	0.028
610	84.44	-1.269	-.051	-.008
102	89.45	-1.226	0.165	0.524

PRESSURES section 7				
		b = 417.90 mm x = 100.71 mm		
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
701	22.71	-.221	-.006	-.024
702	28.21	-.401	0.006	-.017
703	33.72	-.271	0.001	-.008
704	39.26	-.258	-.005	-.035
705	44.69	-.279	-.005	-.038
109	50.03	-.284	-.010	-.062
706	55.28	-.317	-.084	-.200
707	60.46	-.421	0.202	0.098
208	65.56	-.557	-.116	0.091
708	70.59	-.532	-.322	-.226
709	75.54	-.525	-.443	-.517
307	80.42	-.504	-.353	-.490
710	85.22	-.501	-.138	-.226
711	90.19	-.494	-.032	0.039
405	94.60	-.494	-.018	0.185

SECTION COEFFICIENTS				
section	comp.	Zero	Re 5	Im 5
1	CN_u	0.481	0.042	0.064
	CN_l	0.155	0.012	0.007
	CN_t	0.636	0.055	0.071
	Cm_u	-.008	0.005	-.011
	Cm_l	-.012	-.004	-.002
2	Cm_t	-.020	0.000	-.014
	CN_u	0.545	0.005	-.084
	CN_l	0.158	0.017	0.009
	CN_t	0.703	0.022	-.075
	Cm_u	-.058	0.037	0.038
3	Cm_l	-.011	-.007	-.004
	Cm_t	-.069	0.030	0.033
	CN_u	0.462	0.177	0.148
	Cm_u	-.066	-.053	-.044
	CN_u	0.380	0.042	0.043
4	Cm_u	-.059	-.003	-.020
	CN_u	0.279	0.010	0.003
5	Cl_u	-.170	-.006	-.001
	CN_u	0.710	0.013	-.050
6	Cl_u	-.375	0.001	0.051
	CN_u	0.353	0.067	0.071
	Cl_u	-.202	-.051	-.045

test conditions				Simple Strake configuration			
alpha	=	22.050 deg	Q	=	17.344 kPa		
Mach	=	0.600	Ptot	=	87.810 kPa		
Re*10 ⁻⁶	=	8.061	Ttot	=	300.862 K		
dalpha	=	8.298 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	1					

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 1	Im 1		Zero	Re 1	Im 1
main	CN	1.09614	1.74730	0.58990	5071.63			
	Cm	0.06577	0.20619	-.01744	365.33	-.124	-.059	0.001
	Cl	-.37743	-.39155	-.23482	1297.56	-.163	-.011	-.017

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	74.222	3.190	1	2.878	1.932	8.058
12	-215.6	-12.0	36.997	4.391				
13	167.4	-12.0	33.087	-179.215				
21	-138.6	-116.9	22.774	16.119	2	28.034	2.992	8.536
22	-46.6	-116.9						
23	121.4	-116.9	26.942	-168.090				
31	-74.6	-189.9	5.756	24.992	3	45.540	3.553	5.963
32	-10.6	-189.9						
33	141.4	-189.9	23.271	-171.665				
41	29.4	-304.9	0.788	-17.774	4	73.118	4.813	7.186
42	89.4	-304.9	7.899	-180.000				
43	152.4	-304.9	19.057	176.775				
51	85.0	-374.9	12.719	-163.897	5	89.904	0.735	7.684
52	121.4	-374.9	23.224	-162.816				
53	157.4	-374.9	25.204	-163.705				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
101	2.00	-1.449	0.717	-.913
102	5.00	-1.425	0.589	-.894
103	10.00	-1.442	1.289	-.867
104	15.00	-1.382	0.979	-.653
105				
106	30.00	-1.271	0.220	-1.084
107	40.00	-1.039	-.153	-.867
108	50.00	-.821	-.850	-.689
109	60.00	-.698	-1.289	-.667
110	70.00	-.615	-1.405	-.625
111	79.00	-.567	-1.489	-.604
112	82.50	-.548	-1.570	-.587
113	85.00	-.531	-1.599	-.578
114	90.00	-.517	-1.675	-.569
115	95.00	-.521	-1.718	-.525
151	10.00	0.630	0.926	0.107
152	20.00	0.513	1.068	0.140
153	40.00	0.343	0.999	0.162
154	60.00	0.251	0.735	0.161
155	80.00	0.170	0.326	0.130

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
201	2.00	-.935	0.736	-.923
202	5.00	-.924	0.707	-.858
203	10.00	-.916	0.730	-.786
204	15.00	-.882	0.726	-.784
205	18.00	-.887	-.124	-.305
206	30.00	-.848	0.448	-.639
207	40.00	-.816	0.332	-.563
208	50.00	-.770	0.296	-.526
209	60.00	-.698	0.099	-.485
210	70.00	-.654		
211	79.00	-.581	-.458	-.444
212	82.50	-.587	-.563	-.466
213	85.00	-.557	-.634	-.456
214	90.00	-.539	-.805	-.478
215	95.00	-.516	-1.040	-.512
251	10.00	0.611	0.850	0.122
252	20.00	0.504	0.988	0.147
253	40.00	0.345	0.897	0.152
254	60.00	0.237	0.647	0.140
255	80.00	0.119	0.269	0.083

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
301	2.00	-.613	0.661	-.632
302	5.00	-.628	0.615	-.647
303	10.00	-.635	0.635	-.662
304	15.00	-.637	0.592	-.605
305	18.00	-.631	0.572	-.588
306	30.00	-.628	0.409	-.566
307	40.00	-.615	0.243	-.568
308	50.00	-.571	0.080	-.549
309	60.00	-.571	-.067	-.463
310	70.00	-.548	-.224	-.412
311	79.00	-.535	-.379	-.407
312	90.00	-.512	-.559	-.440

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
401	2.00	-.475	0.689	-.420
402	5.00	-.482	0.686	-.417
403	10.00	-.469	0.654	-.395
404	15.00	-.468	0.653	-.380
405	18.00	-.467	0.653	-.374
406	30.00	-.469	0.587	-.337
407	40.00	-.457	0.416	-.303
408	50.00	-.442	0.181	-.282
409	60.00	-.428	-.047	-.274
410	70.00	-.412	-.227	-.266
411	79.00	-.397	-.361	-.243
412	90.00	-.396	-.516	-.260

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DPN = 375

PRESSURES section 5				
		b = 82.70 mm x = -269.60 mm		
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
501	6.62	-.448	-1.480	-.177
502	20.43	-.564	-2.311	-.131
503	34.05	-.804	-3.572	-.057
504	47.67	-1.179	-4.530	0.030
505	54.49	-1.336	-4.207	-.006
506	61.29	-1.338	-2.949	-.093
507	68.10	-1.212	-2.106	-.170
508	74.91	-1.028	-2.129	-.198
509	81.72	-.927	-2.054	-.196
510	88.53	-.956	-2.000	-.210

PRESSURES section 6				
		b = 233.73 mm x = -60.62 mm		
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
601	38.90	-1.431	-1.497	-.898
602	42.93	-1.436	-1.834	-1.289
603	46.93	-1.265	-2.262	-1.004
604	50.99	-1.141	-2.444	-.723
605	59.03	-1.048	-2.845	-.720
606	67.07	-1.236	-3.724	-.813
607	71.11	-1.616	-2.226	-.967
608	75.56	-2.256	3.113	-.805
609	80.00	-1.791	1.548	-.820
610	84.44	-1.635	1.582	-.968
102	89.45	-1.425	0.589	-.894

PRESSURES section 7				
		b = 417.90 mm x = 100.71 mm		
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
701	22.71	-.346	-.657	-.126
702	28.21	-.739	-.015	-.591
703	33.72	-.888	-.724	-1.022
704	39.26	-.720	-1.273	-.769
705	44.69	-.707	-1.467	-.704
109	50.03	-.698	-1.289	-.667
706	55.28	-.729	-.502	-.629
707	60.46	-.770	0.144	-.555
208	65.56	-.770	0.296	-.526
708	70.59	-.697	0.155	-.570
709	75.54	-.659	0.169	-.609
307	80.42	-.615	0.243	-.568
710	85.22	-.579	0.381	-.514
711	90.19	-.528	0.526	-.439
405	94.60	-.467	0.653	-.374

SECTION COEFFICIENTS				
section	comp.	Zero	Re 1	Im 1
1	CN_u	0.915	0.537	0.738
	CN_l	0.324	0.744	0.141
	CN_t	1.239	1.281	0.879
	Cm_u	-.123	-.416	-.149
	Cm_l	-.027	-.108	-.036
2	Cm_t	-.149	-.524	-.185
	CN_u	0.729	-.026	0.553
	CN_l	0.307	0.665	0.124
	CN_t	1.036	0.639	0.677
	Cm_u	-.136	-.131	-.113
3	Cm_l	-.020	-.091	-.025
	Cm_t	-.157	-.222	-.138
	CN_u	0.560	-.071	0.518
4	Cm_u	-.116	-.104	-.107
	Cm_l	0.418	-.141	0.307
5	Cm_u	-.087	-.094	-.062
	CN_u	0.853	2.679	0.123
6	Cl_u	-.459	-1.337	-.068
	CN_u	1.359	1.115	0.886
7	Cl_u	-.658	-.333	-.439
	CN_u	0.582	0.308	0.484
	Cl_u	-.302	-.025	-.268

test conditions				Simple Strake configuration			
alpha	=	22.050 deg	Q	=	17.344 kPa		
Mach	=	0.600	Ptot	=	87.810 kPa		
Re*10 ⁻⁶	=	8.061	Ttot	=	300.862 K		
dalpha	=	8.298 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	2					

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 2	Im 2		Zero	Re 2	Im 2
main	CN	1.09614	-0.75553	-0.47267	*****	-0.124	0.005	0.005
	Cm	0.06577	-0.00748	-0.01266	5377.40	-0.163	0.020	0.012
	Cl	-0.37743	0.28860	0.17838	*****			

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a. [mm]	pitch [deg]
11	-425.6	-12.0	4.888	-144.159	1	2.878	0.091	0.163
12	-215.6	-12.0	3.397	-150.675				
13	167.4	-12.0	4.548	34.434				
21	-138.6	-116.9	1.531	-118.942	2	28.034	0.238	0.045
22	-46.6	-116.9						
23	121.4	-116.9	1.126	-162.554				
31	-74.6	-189.9	1.072	-154.278	3	45.540	0.315	0.084
32	-10.6	-189.9						
33	141.4	-189.9	2.662	-164.316				
41	29.4	-304.9	2.148	-156.840	4	73.118	0.044	0.325
42	89.4	-304.9	2.096	149.598				
43	152.4	-304.9	5.431	177.430				
51	85.0	-374.9	1.028	129.427	5	89.904	0.094	0.006
52	121.4	-374.9	0.279	-152.559				
53	157.4	-374.9	0.983	128.979				

PRESSURES section 1				
		c = 300.65 mm y = -209.06 mm		
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
101	2.00	-1.449	1.377	0.275
102	5.00	-1.425	1.402	0.335
103	10.00	-1.442	1.624	0.514
104	15.00	-1.382	1.425	0.365
105				
106	30.00	-1.271	1.681	1.631
107	40.00	-1.039	1.315	1.018
108	50.00	-.821	1.123	0.804
109	60.00	-.698	1.007	0.820
110	70.00	-.615	0.923	0.767
111	79.00	-.567	0.918	0.718
112	82.50	-.548	0.950	0.747
113	85.00	-.531	0.974	0.773
114	90.00	-.517	1.068	0.867
115	95.00	-.521	1.216	1.028
151	10.00	0.630	-.073	-.100
152	20.00	0.513	-.081	-.080
153	40.00	0.343	-.077	-.055
154	60.00	0.251	-.062	-.034
155	80.00	0.170	-.012	0.008

PRESSURES section 2				
		c = 246.21 mm y = -273.97 mm		
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
201	2.00	-.935	1.407	0.701
202	5.00	-.924	1.326	0.624
203	10.00	-.916	1.257	0.564
204	15.00	-.882	1.184	0.362
205	18.00	-.887	0.107	-.154
206	30.00	-.848	0.867	0.320
207	40.00	-.816	0.723	0.286
208	50.00	-.770	0.629	0.208
209	60.00	-.698	0.572	0.166
210	70.00	-.654		
211	79.00	-.581	0.432	0.077
212	82.50	-.587	0.467	0.074
213	85.00	-.557	0.461	0.086
214	90.00	-.539	0.509	0.136
215	95.00	-.516	0.628	0.263
251	10.00	0.611	-.097	-.113
252	20.00	0.504	-.102	-.093
253	40.00	0.345	-.077	-.059
254	60.00	0.237	-.044	-.023
255	80.00	0.119	0.042	0.043

PRESSURES section 3				
		c = 194.13 mm y = -336.06 mm		
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
301	2.00	-.613	0.646	0.353
302	5.00	-.628	0.647	0.353
303	10.00	-.635	0.637	0.402
304	15.00	-.637	0.558	0.382
305	18.00	-.631	0.540	0.374
306	30.00	-.628	0.448	0.283
307	40.00	-.615	0.418	0.196
308	50.00	-.617	0.395	0.142
309	60.00	-.571	0.324	0.055
310	70.00	-.548	0.251	-.034
311	79.00	-.535	0.243	-.080
312	90.00	-.512	0.288	-.079

PRESSURES section 4				
		c = 144.42 mm y = -395.32 mm		
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
401	2.00	-.475	0.197	0.351
402	5.00	-.482	0.183	0.325
403	10.00	-.469	0.165	0.269
404	15.00	-.468	0.144	0.233
405	18.00	-.467	0.133	0.213
406	30.00	-.469	0.076	0.118
407	40.00	-.457	0.028	0.014
408	50.00	-.442	-.011	-.085
409	60.00	-.428	-.036	-.177
410	70.00	-.412	-.068	-.251
411	79.00	-.397	-.085	-.299
412	90.00	-.396	-.056	-.353

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
501	6.62	-.448	0.203	0.073
502	20.43	-.564	0.240	0.084
503	34.05	-.804	0.355	0.222
504	47.67	-1.179	0.550	0.478
505	54.49	-1.336	0.571	0.491
506	61.29	-1.338	0.444	0.356
507	68.10	-1.212	0.302	0.179
508	74.91	-1.028	0.329	0.200
509	81.72	-.927	0.353	0.224
510	88.53	-.956	0.340	0.202

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
601	38.90	-1.431	1.922	1.235
602	42.93	-1.436	2.112	0.799
603	46.93	-1.265	1.775	0.795
604	50.99	-1.141	1.297	0.813
605	59.03	-1.048	1.100	0.638
606	67.07	-1.236	1.529	1.174
607	71.11	-1.616	1.644	1.986
608	75.56	-2.256	1.204	1.452
609	80.00	-1.791	1.238	0.370
610	84.44	-1.635	1.557	0.584
102	89.45	-1.425	1.402	0.335

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
701	22.71	-.346	-.186	-.184
702	28.21	-.739	0.873	0.559
703	33.72	-.888	2.203	1.747
704	39.26	-.720	1.498	1.193
705	44.69	-.707	1.153	0.905
109	50.03	-.698	1.007	0.820
706	55.28	-.729	0.845	0.576
707	60.46	-.770	0.744	0.339
208	65.56	-.770	0.629	0.208
708	70.59	-.697	0.527	0.181
709	75.54	-.659	0.509	0.192
307	80.42	-.615	0.418	0.196
710	85.22	-.579	0.299	0.251
711	90.19	-.528	0.198	0.264
405	94.60	-.467	0.133	0.213

SECTION COEFFICIENTS				
section	comp.	Zero	Re 2	Im 2
1	CN_u	0.915	-1.237	-.843
	CN_l	0.324	-.055	-.042
	CN_t	1.239	-1.292	-.885
2	Cm_u	-.123	0.253	0.230
	Cm_l	-.027	0.006	-.001
	Cm_t	-.149	0.259	0.230
3	CN_u	0.729	-.687	-.230
	CN_l	0.307	-.041	-.034
	CN_t	1.036	-.728	-.264
4	Cm_u	-.136	0.119	0.031
	Cm_l	-.020	-.006	-.008
	Cm_t	-.157	0.113	0.022
5	CN_u	0.560	-.399	-.137
	CN_l	-.116	0.064	-.016
	CN_t	0.418	-.021	0.056
6	Cm_u	-.087	-.020	-.081
	Cm_l	0.853	-.352	-.229
	Cm_t	-.459	0.189	0.128
7	CN_u	1.359	-1.637	-.978
	CN_l	-.658	0.752	0.421
	CN_t	0.582	-.540	-.365
102	Cm_u	-.302	0.288	0.197
	Cm_l			
	Cm_t			

test conditions				Simple Strake configuration			
alpha	=	22.050 deg	Q	=	17.344 kPa		
Mach	=	0.600	Ptot	=	87.810 kPa		
Re*10^-6	=	8.061	Ttot	=	300.862 K		
dalpha	=	8.298 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	3					

BALANCE LOADS		aerodynamic coefficients			aero	angular deflections [deg]		
position	comp.	Zero	Re 3	Im 3	inertia [%]	Zero	Re 3	Im 3
main	CN	1.09614	0.01355	-.07823	4049.73			
	Cm	0.06577	-.00011	-.02563	839.22	-.124	-.001	0.005
	C1	-.37743	-.00486	0.00585	400.87	-.163	0.000	-.001

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s^2]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	3.763	-104.102	1	2.878	0.054	0.044
12	-215.6	-12.0	2.218	-109.575				
13	167.4	-12.0	1.769	107.849				
21	-138.6	-116.9	1.340	-88.266	2	28.034	0.008	0.047
22	-46.6	-116.9						
23	121.4	-116.9	1.151	100.270				
31	-74.6	-189.9	0.734	-70.442	3	45.540	0.008	0.045
32	-10.6	-189.9						
33	141.4	-189.9	1.237	99.486				
41	29.4	-304.9	0.622	12.639	4	73.118	0.056	0.047
42	89.4	-304.9	0.644	-98.562				
43	152.4	-304.9	0.676	-113.601				
51	85.0	-374.9	0.424	108.692	5	89.904	0.114	0.048
52	121.4	-374.9	0.846	83.975				
53	157.4	-374.9	0.656	30.954				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
101	2.00	-1.449	-.164	0.397
102	5.00	-1.425	-.278	0.543
103	10.00	-1.442	-.103	0.212
104	15.00	-1.382	-.229	0.577
105				
106	30.00	-1.271	0.050	-.071
107	40.00	-1.039	-.026	0.004
108	50.00	-.821	-.122	0.083
109	60.00	-.698	-.072	0.089
110	70.00	-.615	-.022	0.078
111	79.00	-.567	-.004	0.071
112	82.50	-.548	0.015	0.030
113	85.00	-.531	0.018	0.001
114	90.00	-.517	0.043	-.095
115	95.00	-.521	0.143	-.281
151	10.00	0.630	-.006	0.002
152	20.00	0.513	0.001	-.013
153	40.00	0.343	0.008	-.020
154	60.00	0.251	0.015	-.020
155	80.00	0.170	0.034	-.028

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
201	2.00	-.935	0.061	0.323
202	5.00	-.924	0.033	0.328
203	10.00	-.916	-.001	0.325
204	15.00	-.882	0.018	0.267
205	18.00	-.887	0.021	0.007
206	30.00	-.848	-.009	0.030
207	40.00	-.816	0.058	-.027
208	50.00	-.770	0.104	-.089
209	60.00	-.698	0.073	-.124
210	70.00	-.654		
211	79.00	-.581	0.047	-.041
212	82.50	-.587	0.028	0.005
213	85.00	-.557	0.014	0.032
214	90.00	-.539	-.012	0.076
215	95.00	-.516	-.031	0.085
251	10.00	0.611	-.006	-.013
252	20.00	0.504	0.001	-.025
253	40.00	0.345	0.010	-.027
254	60.00	0.237	0.019	-.028
255	80.00	0.119	0.032	-.033

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
301	2.00	-.613	-.079	0.009
302	5.00	-.628	-.083	-.010
303	10.00	-.635	-.080	-.084
304	15.00	-.637	-.076	-.167
305	18.00	-.631	-.074	-.204
306	30.00	-.628	-.043	-.276
307	40.00	-.615	-.002	-.246
308	50.00	-.617	0.029	-.229
309	60.00	-.571	0.068	-.198
310	70.00	-.548	0.098	-.134
311	79.00	-.535	0.099	-.060
312	90.00	-.512	0.055	0.049

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
401	2.00	-.475	-.059	-.628
402	5.00	-.482	-.053	-.647
403	10.00	-.469	-.041	-.627
404	15.00	-.468	-.036	-.644
405	18.00	-.467	-.036	-.655
406	30.00	-.469	-.030	-.698
407	40.00	-.457	0.005	-.661
408	50.00	-.442	0.056	-.552
409	60.00	-.428	0.101	-.410
410	70.00	-.412	0.128	-.280
411	79.00	-.397	0.144	-.154
412	90.00	-.396	0.133	-.006

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
501	6.62	-.448	0.026	0.043
502	20.43	-.564	-.005	0.133
503	34.05	-.804	-.030	0.208
504	47.67	-1.179	-.010	0.213
505	54.49	-1.336	0.014	0.204
506	61.29	-1.338	0.009	0.198
507	68.10	-1.212	-.020	0.252
508	74.91	-1.028	-.022	0.255
509	81.72	-.927	0.007	0.161
510	88.53	-.956	0.017	0.133

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
601	38.90	-1.431	0.021	0.932
602	42.93	-1.436	0.123	1.000
603	46.93	-1.265	0.219	0.632
604	50.99	-1.141	-.007	0.314
605	59.03	-1.048	-.163	0.276
606	67.07	-1.236	-.243	0.292
607	71.11	-1.616	-.148	-.173
608	75.56	-2.256	-.035	-.562
609	80.00	-1.791	-.041	-.179
610	84.44	-1.635	-.008	-.027
102	89.45	-1.425	-.278	0.543

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
701	22.71	-.346	-.081	-.019
702	28.21	-.739	-.002	-.083
703	33.72	-.888	0.147	-.308
704	39.26	-.720	-.103	0.136
705	44.69	-.707	-.113	0.194
109	50.03	-.698	-.072	0.089
706	55.28	-.729	-.009	-.034
707	60.46	-.770	0.036	-.093
208	65.56	-.770	0.104	-.089
708	70.59	-.697	0.042	-.087
709	75.54	-.659	0.002	-.128
307	80.42	-.615	-.002	-.246
710	85.22	-.579	-.024	-.428
711	90.19	-.528	-.042	-.594
405	94.60	-.467	-.036	-.655

SECTION COEFFICIENTS				
section	comp.	Zero	Re 3	Im 3
1	CN_u	0.915	0.049	-.100
	CN_l	0.324	0.014	-.018
	CN_t	1.239	0.063	-.118
	Cm_u	-.123	0.009	-.021
	Cm_l	-.027	-.008	0.007
2	Cm_t	-.149	0.001	-.014
	CN_u	0.729	-.035	-.033
	CN_l	0.307	0.015	-.027
	CN_t	1.036	-.021	-.059
	Cm_u	-.136	0.008	-.013
3	Cm_l	-.020	-.008	0.008
	Cm_t	-.157	0.000	-.004
	CN_u	0.560	-.014	0.135
4	CN_u	-.116	0.021	-.019
	CN_l	0.418	-.050	0.436
5	CN_u	-.087	0.034	-.042
	CN_l	0.853	0.001	-.167
6	Cl_u	-.459	0.000	0.092
	CN_u	1.359	0.052	-.535
7	Cl_u	-.658	-.051	0.176
	CN_u	0.582	0.025	0.136
	Cl_u	-.302	-.006	-.113

test conditions				Simple Strake configuration			
alpha	=	22.050 deg	Q	=	17.344 kPa		
Mach	=	0.600	Ptot	=	87.810 kPa		
Re*10 ⁻⁶	=	8.061	Ttot	=	300.862 K		
dalpha	=	8.298 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	4					

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 4	Im 4		Zero	Re 4	Im 4
main	CN	1.09614	-.02885	0.17815	*****			
	Cm	0.06577	0.00683	-.00587	1281.30	-.124	-.001	0.000
	Cl	-.37743	0.02522	-.07916	*****	-.163	0.002	-.006

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	1.558	-27.376	1	2.878	0.059	0.008
12	-215.6	-12.0	0.853	-20.121				
13	167.4	-12.0	2.508	-82.233				
21	-138.6	-116.9	0.568	-7.553	2	28.034	0.006	0.010
22	-46.6	-116.9						
23	121.4	-116.9	0.433	143.791				
31	-74.6	-189.9	0.677	85.780	3	45.540	0.048	0.018
32	-10.6	-189.9						
33	141.4	-189.9	1.788	130.385				
41	29.4	-304.9	1.358	86.058	4	73.118	0.069	0.040
42	89.4	-304.9	1.732	100.106				
43	152.4	-304.9	2.554	127.386				
51	85.0	-374.9	1.460	128.978	5	89.904	0.024	0.029
52	121.4	-374.9	1.690	134.332				
53	157.4	-374.9	2.213	128.299				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
101	2.00	-1.449	-.145	-.575
102	5.00	-1.425	-.064	-.542
103	10.00	-1.442	-.108	-.600
104	15.00	-1.382	0.050	-.414
105				
106	30.00	-1.271	0.136	-.387
107	40.00	-1.039	0.078	-.419
108	50.00	-.821	0.079	-.286
109	60.00	-.698	0.126	-.190
110	70.00	-.615	0.128	-.177
111	79.00	-.567	0.138	-.204
112	82.50	-.548	0.165	-.209
113	85.00	-.531	0.189	-.217
114	90.00	-.517	0.256	-.236
115	95.00	-.521	0.282	-.237
151	10.00	0.630	-.001	0.007
152	20.00	0.513	-.001	0.014
153	40.00	0.343	-.004	0.021
154	60.00	0.251	-.013	0.027
155	80.00	0.170	-.034	0.029

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
201	2.00	-.935	-.153	-.336
202	5.00	-.924	-.154	-.346
203	10.00	-.916	-.099	-.385
204	15.00	-.882	-.100	-.350
205	18.00	-.887	-.031	-.006
206	30.00	-.848	0.022	-.311
207	40.00	-.816	0.007	-.206
208	50.00	-.770	0.013	-.154
209	60.00	-.698	0.042	-.154
210	70.00	-.654		
211	79.00	-.581	-.022	-.126
212	82.50	-.587	-.020	-.147
213	85.00	-.557	-.005	-.144
214	90.00	-.539	0.036	-.157
215	95.00	-.516	0.128	-.181
251	10.00	0.611	0.002	0.009
252	20.00	0.504	0.002	0.017
253	40.00	0.345	-.006	0.022
254	60.00	0.237	-.013	0.023
255	80.00	0.119	-.014	0.011

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
301	2.00	-.613	0.129	-.376
302	5.00	-.628	0.146	-.385
303	10.00	-.635	0.205	-.382
304	15.00	-.637	0.242	-.365
305	18.00	-.631	0.263	-.365
306	30.00	-.628	0.288	-.291
307	40.00	-.615	0.214	-.214
308	50.00	-.617	0.145	-.154
309	60.00	-.571	0.044	-.084
310	70.00	-.548	-.061	-.035
311	79.00	-.535	-.126	-.027
312	90.00	-.512	-.128	-.063

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
401	2.00	-.475	0.462	-.289
402	5.00	-.482	0.458	-.284
403	10.00	-.469	0.422	-.264
404	15.00	-.468	0.418	-.259
405	18.00	-.467	0.416	-.258
406	30.00	-.469	0.386	-.235
407	40.00	-.457	0.289	-.172
408	50.00	-.442	0.158	-.081
409	60.00	-.428	0.010	0.000
410	70.00	-.412	-.098	0.056
411	79.00	-.397	-.177	0.083
412	90.00	-.396	-.242	0.067

PRESSURES section 5				
		b = 82.70 mm x = -269.60 mm		
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
501	6.62	-.448	-.045	-.012
502	20.43	-.564	-.044	-.019
503	34.05	-.804	-.015	-.026
504	47.67	-1.179	-.029	-.020
505	54.49	-1.336	-.074	-.007
506	61.29	-1.338	-.069	-.009
507	68.10	-1.212	-.006	-.025
508	74.91	-1.028	0.038	-.038
509	81.72	-.927	-.041	-.017
510	88.53	-.956	-.098	-.003

PRESSURES section 6				
		b = 233.73 mm x = -60.62 mm		
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
601	38.90	-1.431	-.112	-.047
602	42.93	-1.436	-.397	-.272
603	46.93	-1.265	-.268	-.253
604	50.99	-1.141	0.063	-.317
605	59.03	-1.048	0.067	-.410
606	67.07	-1.236	0.079	-.378
607	71.11	-1.616	0.057	-.426
608	75.56	-2.256	0.404	-.542
609	80.00	-1.791	0.031	-.653
610	84.44	-1.635	-.127	-.661
102	89.45	-1.425	-.064	-.542

PRESSURES section 7				
		b = 417.90 mm x = 100.71 mm		
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
701	22.71	-.346	-.088	0.057
702	28.21	-.739	-.027	-.246
703	33.72	-.888	0.084	-.644
704	39.26	-.720	0.290	-.392
705	44.69	-.707	0.142	-.254
109	50.03	-.698	0.126	-.190
706	55.28	-.729	0.090	-.198
707	60.46	-.770	0.087	-.199
208	65.56	-.770	0.013	-.154
708	70.59	-.697	0.047	-.153
709	75.54	-.659	0.142	-.204
307	80.42	-.615	0.214	-.214
710	85.22	-.579	0.324	-.237
711	90.19	-.528	0.414	-.261
405	94.60	-.467	0.416	-.258

SECTION COEFFICIENTS				
section	comp.	Zero	Re 4	Im 4
1	CN_u	0.915	-.104	0.325
	CN_l	0.324	-.014	0.022
	CN_t	1.239	-.118	0.346
2	Cm_u	-.123	0.051	-.048
	Cm_l	-.027	0.007	-.008
	Cm_t	-.149	0.058	-.056
3	CN_u	0.729	0.004	0.197
	CN_l	0.307	-.007	0.016
	CN_t	1.036	-.003	0.213
4	Cm_u	-.136	0.013	-.035
	Cm_l	-.020	0.004	-.004
	Cm_t	-.157	0.017	-.039
5	CN_u	0.560	-.084	0.183
	CN_l	-.116	-.019	-.009
	CN_t	0.418	-.127	0.091
6	Cm_u	-.087	-.043	0.017
	Cm_l	0.853	0.042	0.017
	Cm_t	-.459	-.023	-.008
7	CN_u	1.359	0.051	0.288
	CN_l	-.658	-.010	-.205
	CN_t	0.582	-.107	0.180
	Cl_u	-.302	0.094	-.112

test conditions				Simple Strake configuration			
alpha	=	22.050 deg	Q	=	17.344 kPa		
Mach	=	0.600	Ptot	=	87.810 kPa		
Re*10 ⁻⁶	=	8.061	Ttot	=	300.862 K		
dalpha	=	8.298 deg					
freq	=	5.700 Hz					
k	=	0.073					
harm	=	5					

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 5	Im 5		Zero	Re 5	Im 5
main	CN	1.09614	-.04621	0.07858	8118.78			
	Cm	0.06577	-.00713	0.00251	432.34	-.124	0.001	-.001
	Cl	-.37743	0.01242	-.03073	3050.37	-.163	0.001	-.002

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	2.288	101.046	1	2.878	0.008	0.010
12	-215.6	-12.0	1.463	102.881				
13	167.4	-12.0	1.140	-52.289				
21	-138.6	-116.9	0.901	114.152	2	28.034	0.005	0.009
22	-46.6	-116.9						
23	121.4	-116.9	0.480	-62.376				
31	-74.6	-189.9	0.781	134.019	3	45.540	0.013	0.009
32	-10.6	-189.9						
33	141.4	-189.9	0.416	-.592				
41	29.4	-304.9	0.811	66.926	4	73.118	0.031	0.016
42	89.4	-304.9	0.221	73.841				
43	152.4	-304.9	0.600	-31.988				
51	85.0	-374.9	0.266	86.038	5	89.904	0.040	0.019
52	121.4	-374.9	0.274	2.830				
53	157.4	-374.9	0.515	-89.581				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
101	2.00	-1.449	0.208	-.110
102	5.00	-1.425	0.197	-.044
103	10.00	-1.442	0.101	-.065
104	15.00	-1.382	0.142	0.043
105				
106	30.00	-1.271	0.173	-.049
107	40.00	-1.039	0.067	-.003
108	50.00	-.821	0.032	0.008
109	60.00	-.698	0.055	-.051
110	70.00	-.615	0.087	-.072
111	79.00	-.567	0.103	-.043
112	82.50	-.548	0.085	-.051
113	85.00	-.531	0.064	-.060
114	90.00	-.517	-.007	-.121
115	95.00	-.521	-.121	-.252
151	10.00	0.630	0.000	0.004
152	20.00	0.513	-.005	0.008
153	40.00	0.343	-.009	0.011
154	60.00	0.251	-.011	0.009
155	80.00	0.170	-.010	0.004

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
201	2.00	-.935	0.128	-.299
202	5.00	-.924	0.125	-.259
203	10.00	-.916	0.148	-.223
204	15.00	-.882	0.086	-.223
205	18.00	-.887	-.011	-.012
206	30.00	-.848	0.049	-.150
207	40.00	-.816	-.043	-.152
208	50.00	-.770	-.085	-.154
209	60.00	-.698	-.097	-.133
210	70.00	-.654		
211	79.00	-.581	-.064	-.074
212	82.50	-.587	-.042	-.073
213	85.00	-.557	-.036	-.069
214	90.00	-.539	-.034	-.068
215	95.00	-.516	-.057	-.093
251	10.00	0.611	-.002	0.010
252	20.00	0.504	-.008	0.012
253	40.00	0.345	-.015	0.010
254	60.00	0.237	-.018	0.004
255	80.00	0.119	-.023	-.012

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
301	2.00	-.613	0.311	0.015
302	5.00	-.628	0.305	0.021
303	10.00	-.635	0.278	0.019
304	15.00	-.637	0.229	0.026
305	18.00	-.631	0.200	0.031
306	30.00	-.628	0.061	0.026
307	40.00	-.615	-.030	-.023
308	50.00	-.617	-.092	-.059
309	60.00	-.571	-.132	-.098
310	70.00	-.548	-.115	-.128
311	79.00	-.535	-.080	-.133
312	90.00	-.512	-.025	-.107

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
401	2.00	-.475	-.058	0.084
402	5.00	-.482	-.083	0.082
403	10.00	-.469	-.112	0.072
404	15.00	-.468	-.141	0.074
405	18.00	-.467	-.158	0.076
406	30.00	-.469	-.242	0.080
407	40.00	-.457	-.299	0.054
408	50.00	-.442	-.314	0.009
409	60.00	-.428	-.287	-.042
410	70.00	-.412	-.230	-.076
411	79.00	-.397	-.147	-.088
412	90.00	-.396	-.051	-.076

PRESSURES section 5				
		b = 82.70 mm x = -269.60 mm		
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
501	6.62	-.448	-.004	-.045
502	20.43	-.564	0.003	-.039
503	34.05	-.804	0.004	-.043
504	47.67	-1.179	0.004	-.044
505	54.49	-1.336	0.023	-.029
506	61.29	-1.338	0.055	0.004
507	68.10	-1.212	0.070	0.017
508	74.91	-1.028	0.051	-.003
509	81.72	-.927	0.026	-.022
510	88.53	-.956	0.007	-.038

PRESSURES section 6				
		b = 233.73 mm x = -60.62 mm		
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
601	38.90	-1.431	0.277	-.020
602	42.93	-1.436	0.306	-.371
603	46.93	-1.265	0.277	-.561
604	50.99	-1.141	0.252	-.327
605	59.03	-1.048	0.276	-.193
606	67.07	-1.236	0.130	-.204
607	71.11	-1.616	0.162	0.053
608	75.56	-2.256	0.133	0.178
609	80.00	-1.791	0.061	-.131
610	84.44	-1.635	0.141	-.078
102	89.45	-1.425	0.197	-.044

PRESSURES section 7				
		b = 417.90 mm x = 100.71 mm		
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
701	22.71	-.346	-.096	0.143
702	28.21	-.739	0.134	0.031
703	33.72	-.888	0.248	-.209
704	39.26	-.720	0.123	-.144
705	44.69	-.707	0.093	-.044
109	50.03	-.698	0.055	-.051
706	55.28	-.729	0.006	-.055
707	60.46	-.770	-.077	-.115
208	65.56	-.770	-.085	-.154
708	70.59	-.697	-.037	-.089
709	75.54	-.659	-.009	-.052
307	80.42	-.615	-.030	-.023
710	85.22	-.579	-.046	0.029
711	90.19	-.528	-.102	0.071
405	94.60	-.467	-.158	0.076

SECTION COEFFICIENTS				
section	comp.	Zero	Re 5	Im 5
1	CN_u	0.915	-.082	0.054
	CN_l	0.324	-.008	0.007
	CN_t	1.239	-.089	0.061
2	Cm_u	-.123	0.003	-.025
	Cm_l	-.027	0.003	-.002
	Cm_t	-.149	0.005	-.026
	CN_u	0.729	0.018	0.132
	CN_l	0.307	-.015	0.003
	CN_t	1.036	0.003	0.134
3	Cm_u	-.136	-.021	-.021
	Cm_l	-.020	0.006	0.002
	Cm_t	-.157	-.015	-.019
4	CN_u	0.560	-.020	0.051
	CN_l	-.116	-.028	-.030
5	CN_u	0.418	0.189	-.002
	CN_l	-.087	-.043	-.019
6	CN_u	0.853	-.017	0.030
	Cl_u	-.459	0.012	-.012
7	CN_u	1.359	-.230	0.098
	CN_l	-.658	0.101	-.052
	Cl_u	0.582	0.019	0.001
	Cl_l	-.302	-.016	-.011

test conditions			Simple Strake configuration		
alpha	=	10.368 deg	Q	=	24.218 kPa
Mach	=	0.901	Ptot	=	72.140 kPa
Re*10^-6	=	8.089	Ttot	=	307.409 K
dalpha	=	4.169 deg			
freq	=	7.600 Hz			
k	=	0.067			
harm	=	1			

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 1	Im 1		Zero	Re 1	Im 1
main	CN	0.61701	2.66946	0.41525	5835.52			
	Cm	0.00947	0.11016	-.03759	161.41	-.046	-.033	0.004
	Cl	-.24576	-.79701	-.23785	1856.67	-.165	-.028	-.014

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s^2]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	60.358	1.298	1	2.878	0.997	3.604
12	-215.6	-12.0	35.114	1.244				
13	167.4	-12.0	27.145	-179.115				
21	-138.6	-116.9	21.493	10.908	2	28.034	0.229	3.982
22	-46.6	-116.9						
23	121.4	-116.9	19.709	-170.360				
31	-74.6	-189.9	7.223	19.645	3	45.540	1.042	2.903
32	-10.6	-189.9						
33	141.4	-189.9	18.032	-179.908				
41	29.4	-304.9	1.475	112.733	4	73.118	1.171	2.737
42	89.4	-304.9	11.335	174.010				
43	152.4	-304.9	13.641	-174.969				
51	85.0	-374.9	14.836	-167.753	5	89.904	1.033	4.934
52	121.4	-374.9	21.898	-166.783				
53	157.4	-374.9	29.040	-169.273				

PRESSURES section 1				
		c = 300.65 mm y = -209.06 mm		
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
101	2.00	-1.176	-1.148	-.157
102	5.00	-1.159	-1.202	-.270
103	10.00	-.926	-4.485	-.154
104	15.00	-.820	-5.172	-.134
105				
106	30.00	-.726	-4.171	-.328
107	40.00	-.672	-2.541	-.552
108	50.00	-.601	-.705	-.209
109	60.00	-.594	0.338	-.397
110	70.00	-.433	-1.668	-.750
111	79.00	-.244	-3.597	0.725
112	82.50	-.220	-3.694	0.754
113	85.00	-.197	-3.856	0.720
114	90.00	-.157	-3.987	0.794
115	95.00	-.124	-3.925	0.820
151	10.00	0.359	1.854	0.104
152	20.00	0.230	1.696	0.143
153	40.00	0.076	1.547	0.200
154	60.00	0.056	0.897	0.251
155	80.00	0.115	0.091	0.273

PRESSURES section 2				
		c = 246.21 mm y = -273.97 mm		
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
201	2.00	-1.109	2.627	-1.116
202	5.00	-1.024	2.179	-1.156
203	10.00	-.966	1.712	-.961
204	15.00	-.835	-.035	-.742
205	18.00	-.783	-.952	-.039
206	30.00	-.651	-1.669	-.739
207	40.00	-.652	-1.000	-.968
208	50.00	-.649	-.475	-1.170
209	60.00	-.611	0.305	-.867
210	70.00	-.404		
211	79.00	-.299	-4.283	0.285
212	82.50	-.282	-4.520	0.411
213	85.00	-.260	-4.493	0.416
214	90.00	-.232	-4.695	0.499
215	95.00	-.199	-4.858	0.584
251	10.00	0.342	1.913	0.130
252	20.00	0.224	1.770	0.159
253	40.00	0.106	1.344	0.198
254	60.00	0.081	0.744	0.251
255	80.00	0.102	-.105	0.287

PRESSURES section 3				
		c = 194.13 mm y = -336.06 mm		
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
301	2.00	-.985	4.524	-1.730
302	5.00	-.953	3.913	-1.590
303	10.00	-.910	3.273	-1.527
304	15.00	-.865	3.236	-1.752
305	18.00	-.831	3.062	-1.753
306	30.00	-.712	0.649	-1.589
307	40.00	-.664	0.484	-1.501
308	50.00	-.646	0.586	-.941
309	60.00	-.532	-.511	-.642
310	70.00	-.366	-3.663	0.438
311	79.00	-.313	-3.983	0.740
312	90.00	-.261	-4.491	0.976

PRESSURES section 4				
		c = 144.42 mm y = -395.32 mm		
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
401	2.00	-.906	5.446	-2.864
402	5.00	-.878	4.970	-2.707
403	10.00	-.820	4.359	-2.550
404	15.00	-.813	4.316	-2.466
405	18.00	-.798	4.141	-2.474
406	30.00	-.766	3.469	-2.259
407	40.00	-.645	1.018	-1.797
408	50.00	-.525	-.883	-1.639
409	60.00	-.445	-2.182	-.813
410	70.00	-.413	-2.367	-.618
411	79.00	-.398	-2.388	-.421
412	90.00	-.360	-3.182	-.086

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
501	6.62	-.064	-.678	-.006
502	20.43	-.060	-.714	-.008
503	34.05	-.076	-1.039	0.013
504	47.67	-.136	-2.410	0.134
505	54.49	-.219	-3.767	0.259
506	61.29	-.334	-4.821	0.372
507	68.10	-.420	-3.499	0.240
508	74.91	-.396	-.838	-.090
509	81.72	-.310	-1.339	-.015
510	88.53	-.318	-1.805	0.045

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
601	38.90	-.650	-3.385	0.167
602	42.93	-.574	-1.933	-.104
603	46.93	-.508	-2.560	0.046
604	50.99	-.511	-2.417	0.020
605	59.03	-.487	-2.208	0.073
606	67.07	-.640	-4.530	0.079
607	71.11	-.860	-7.045	0.197
608	75.56	-.868	-6.606	0.169
609	80.00	-.872	-6.086	0.115
610	84.44	-.903	-5.470	0.032
102	89.45	-1.159	-1.202	-.270

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
701	22.71	-.653	0.231	0.019
702	28.21	-.629	0.270	-.377
703	33.72	-.611	-.166	-.225
704	39.26	-.552	0.179	-.324
705	44.69	-.583	0.527	-.521
109	50.03	-.594	0.338	-.397
706	55.28	-.626	-.299	-.835
707	60.46	-.632	-.375	-1.058
208	65.56	-.649	-.475	-1.170
708	70.59	-.616	-.066	-.895
709	75.54	-.630	0.068	-.917
307	80.42	-.664	0.484	-1.501
710	85.22	-.728	1.442	-1.841
711	90.19	-.797	3.376	-2.219
405	94.60	-.798	4.141	-2.474

SECTION COEFFICIENTS				
section	comp.	Zero	Re 1	Im 1
1	CN_u	0.578	2.774	0.069
	CN_l	0.138	1.048	0.209
	CN_t	0.715	3.823	0.279
	CM_u	-.061	-.651	0.068
	CM_l	-.008	-.062	-.070
2	CM_t	-.069	-.713	-.002
	CN_u	0.580	1.480	0.458
	CN_l	0.143	0.938	0.219
	CN_t	0.723	2.418	0.677
	CM_u	-.072	-.900	0.013
3	CM_l	-.010	-.007	-.072
	CM_t	-.081	-.907	-.059
	CN_u	0.571	0.477	0.618
4	CM_u	-.069	-.961	0.139
	CN_u	0.563	-.311	1.408
5	CM_u	-.079	-.787	-.080
	CN_u	0.184	1.817	-.072
6	Cl_u	-.118	-1.060	0.044
	CN_u	0.665	3.442	-.065
7	Cl_u	-.343	-1.743	0.004
	CN_u	0.632	-.629	0.797
	Cl_u	-.315	0.524	-.611

test conditions				Simple Strake configuration			
alpha	=	10.368 deg	Q	=	24.218 kPa		
Mach	=	0.901	Ptot	=	72.140 kPa		
Re*10^-6	=	8.089	Ttot	=	307.409 K		
dalpha	=	4.169 deg					
freq	=	7.600 Hz					
k	=	0.067					
harm	=	2					

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 2	Im 2		Zero	Re 2	Im 2
main	CN	0.61701	-.39376	-.34069	*****			
	Cm	0.00947	0.00901	0.01509	1323.35	-.046	0.000	-.001
	Cl	-.24576	0.22970	0.20963	*****	-.165	0.014	0.012

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s^2]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	5.310	-146.017	1	2.878	0.120	0.075
12	-215.6	-12.0	0.819	-177.690				
13	167.4	-12.0	0.686	33.099				
21	-138.6	-116.9	0.634	-154.708	2	28.034	0.046	0.011
22	-46.6	-116.9						
23	121.4	-116.9	0.272	-113.436				
31	-74.6	-189.9	3.118	-136.342	3	45.540	0.355	0.032
32	-10.6	-189.9						
33	141.4	-189.9	3.577	-119.139				
41	29.4	-304.9	3.465	-173.475	4	73.118	0.459	0.123
42	89.4	-304.9	3.317	-144.257				
43	152.4	-304.9	2.060	-130.980				
51	85.0	-374.9	1.077	-111.029	5	89.904	0.138	0.049
52	121.4	-374.9	0.886	-105.889				
53	157.4	-374.9	1.202	-82.882				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
101	2.00	-1.176	1.022	0.927
102	5.00	-1.159	1.087	0.824
103	10.00	-.926	1.625	1.413
104	15.00	-.820	1.167	0.817
105				
106	30.00	-.726	1.279	0.852
107	40.00	-.672	1.024	0.523
108	50.00	-.601	0.045	0.209
109	60.00	-.594	-.088	0.100
110	70.00	-.433	-.119	0.431
111	79.00	-.244	-.826	-.558
112	82.50	-.220	-.905	-.642
113	85.00	-.197	-.852	-.710
114	90.00	-.157	-.975	-.782
115	95.00	-.124	-1.092	-.828
151	10.00	0.359	-.078	-.074
152	20.00	0.230	-.060	-.046
153	40.00	0.076	-.060	-.045
154	60.00	0.056	-.043	-.004
155	80.00	0.115	-.066	0.002

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
201	2.00	-1.109	1.917	1.446
202	5.00	-1.024	2.247	1.785
203	10.00	-.966	1.863	1.579
204	15.00	-.835	2.909	0.957
205	18.00	-.783	2.838	0.138
206	30.00	-.651	1.536	1.166
207	40.00	-.652	1.133	0.704
208	50.00	-.649	0.702	0.302
209	60.00	-.611	0.136	-.043
210	70.00	-.404		
211	79.00	-.299	0.335	-.017
212	82.50	-.282	0.288	-.089
213	85.00	-.260	0.240	-.130
214	90.00	-.232	0.135	-.231
215	95.00	-.199	-.003	-.318
251	10.00	0.342	-.092	-.085
252	20.00	0.224	-.077	-.066
253	40.00	0.106	-.050	-.054
254	60.00	0.081	-.033	0.008
255	80.00	0.102	-.025	0.040

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
301	2.00	-.985	1.734	1.837
302	5.00	-.953	1.763	1.844
303	10.00	-.910	1.755	1.851
304	15.00	-.865	1.534	1.417
305	18.00	-.831	1.438	1.359
306	30.00	-.712	2.006	2.306
307	40.00	-.664	1.231	1.672
308	50.00	-.646	0.390	0.658
309	60.00	-.532	-.079	0.721
310	70.00	-.366	0.759	0.570
311	79.00	-.313	0.511	0.099
312	90.00	-.261	0.371	-.129

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
401	2.00	-.906	0.882	1.019
402	5.00	-.878	0.956	1.117
403	10.00	-.820	0.904	1.066
404	15.00	-.813	0.741	0.953
405	18.00	-.798	0.773	0.991
406	30.00	-.766	0.619	0.948
407	40.00	-.645	1.405	1.815
408	50.00	-.525	1.273	2.176
409	60.00	-.445	1.223	1.325
410	70.00	-.413	0.952	0.861
411	79.00	-.398	0.659	0.507
412	90.00	-.360	0.764	0.554

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
501	6.62	-.064	-.025	-.037
502	20.43	-.060	-.046	-.063
503	34.05	-.076	-.146	-.176
504	47.67	-.136	-.383	-.436
505	54.49	-.219	-.360	-.416
506	61.29	-.334	0.101	0.059
507	68.10	-.420	0.795	0.771
508	74.91	-.396	0.334	0.352
509	81.72	-.310	-.092	-.074
510	88.53	-.318	0.038	0.042

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
601	38.90	-.650	0.499	0.405
602	42.93	-.574	0.091	0.120
603	46.93	-.508	0.231	0.193
604	50.99	-.511	0.227	0.210
605	59.03	-.487	0.042	-.033
606	67.07	-.640	-.358	-.682
607	71.11	-.860	0.273	0.245
608	75.56	-.868	0.466	0.476
609	80.00	-.902	0.666	0.677
610	84.44	-.873	1.101	1.123
102	89.45	-1.159	1.087	0.824

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
701	22.71	-.653	0.023	0.952
702	28.21	-.629	-.394	0.415
703	33.72	-.611	-.363	0.246
704	39.26	-.552	0.124	0.345
705	44.69	-.583	0.260	0.273
109	50.03	-.594	-.088	0.100
706	55.28	-.626	0.475	0.294
707	60.46	-.632	0.659	0.350
208	65.56	-.649	0.702	0.302
708	70.59	-.616	0.432	0.356
709	75.54	-.630	0.585	0.696
307	80.42	-.664	1.231	1.672
710	85.22	-.728	1.679	1.999
711	90.19	-.797	0.909	1.083
405	94.60	-.798	0.773	0.991

SECTION COEFFICIENTS				
section	comp.	Zero	Re 2	Im 2
1	CN_u	0.578	-.283	-.266
	CN_l	0.138	-.061	-.027
	CN_t	0.715	-.344	-.294
	Cm_u	-.061	-.178	-.109
	Cm_l	-.008	0.014	-.001
2	Cm_t	-.069	-.164	-.110
	CN_u	0.580	-1.013	-.427
	CN_l	0.143	-.050	-.020
	CN_t	0.723	-1.063	-.447
	Cm_u	-.072	0.010	-.051
3	Cm_l	-.010	0.005	-.009
	Cm_t	-.081	0.015	-.060
	CN_u	0.571	-.944	-.992
	Cm_u	-.069	0.080	0.039
	CN_u	0.563	-.935	-1.100
4	Cm_u	-.079	0.227	0.222
	CN_u	0.184	0.010	0.029
	Cl_u	-.118	0.018	0.011
	CN_u	0.665	-.469	-.369
	Cl_u	-.343	0.267	0.210
7	CN_u	0.632	-.368	-.723
	Cl_u	-.315	0.302	0.393

test conditions				Simple Strake configuration			
alpha	=	10.368 deg	Q	=	24.218 kPa		
Mach	=	0.901	Ptot	=	72.140 kPa		
Re*10 ⁻⁶	=	8.089	Ttot	=	307.409 K		
dalpha	=	4.169 deg					
freq	=	7.600 Hz					
k	=	0.067					
harm	=	3					

BALANCE LOADS		aerodynamic coefficients			aero ----- inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 3	Im 3		Zero	Re 3	Im 3
main	CN	0.61701	0.16218	0.09132	*****			
	Cm	0.00947	-0.01478	-0.01251	806.18	-0.046	0.001	0.001
	Cl	-0.24576	-0.08972	-0.07254	7732.74	-0.165	-0.005	-0.005

ACCELERATIONS			vibration mode					
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	2.615	-86.115	1	2.878	0.005	0.016
12	-215.6	-12.0	1.121	-76.993				
13	167.4	-12.0	0.880	132.434				
21	-138.6	-116.9	0.628	-68.402	2	28.034	0.011	0.016
22	-46.6	-116.9						
23	121.4	-116.9	0.866	88.990				
31	-74.6	-189.9	0.676	65.753	3	45.540	0.058	0.019
32	-10.6	-189.9						
33	141.4	-189.9	2.179	67.227				
41	29.4	-304.9	1.824	-34.685	4	73.118	0.088	0.025
42	89.4	-304.9	2.784	-4.477				
43	152.4	-304.9	2.893	-31.881				
51	85.0	-374.9	3.191	62.730	5	89.904	0.119	0.012
52	121.4	-374.9	2.593	57.155				
53	157.4	-374.9	3.420	58.831				

PRESSURES section 1				
		c = 300.65 mm y = -209.06 mm		
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
101	2.00	-1.176	0.348	-.330
102	5.00	-1.159	0.348	-.041
103	10.00	-.926	0.301	-.127
104	15.00	-.820	-.082	1.068
105				
106	30.00	-.726	-.399	1.508
107	40.00	-.672	-.411	0.806
108	50.00	-.601	-.224	-.436
109	60.00	-.594	-.214	-.772
110	70.00	-.433	-.430	-.497
111	79.00	-.244	0.485	0.156
112	82.50	-.220	0.449	0.135
113	85.00	-.197	0.439	0.268
114	90.00	-.157	0.427	0.244
115	95.00	-.124	0.378	0.162
151	10.00	0.359	0.011	0.006
152	20.00	0.230	0.018	0.003
153	40.00	0.076	0.021	0.009
154	60.00	0.056	0.036	0.022
155	80.00	0.115	0.053	0.064

PRESSURES section 2				
		c = 246.21 mm y = -273.97 mm		
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
201	2.00	-1.109	-.123	-.867
202	5.00	-1.024	-.189	-.650
203	10.00	-.966	-.154	-.461
204	15.00	-.835	-.712	-.988
205	18.00	-.783	-.635	-.523
206	30.00	-.651	-.585	0.616
207	40.00	-.652	-.689	0.409
208	50.00	-.649	-.688	0.183
209	60.00	-.611	-.373	-.130
210	70.00	-.404		
211	79.00	-.299	0.086	1.006
212	82.50	-.282	0.134	1.079
213	85.00	-.260	0.126	1.074
214	90.00	-.232	0.174	1.110
215	95.00	-.199	0.223	1.110
251	10.00	0.342	0.009	0.007
252	20.00	0.224	0.015	0.004
253	40.00	0.106	0.024	0.021
254	60.00	0.081	0.038	0.028
255	80.00	0.102	0.061	0.092

PRESSURES section 3				
		c = 194.13 mm y = -336.06 mm		
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
301	2.00	-.985	-.807	-1.463
302	5.00	-.953	-.775	-1.246
303	10.00	-.910	-.779	-1.188
304	15.00	-.865	-.815	-1.383
305	18.00	-.831	-.811	-1.358
306	30.00	-.712	-.613	-2.236
307	40.00	-.664	-.754	-1.176
308	50.00	-.646	-.435	-.358
309	60.00	-.532	0.438	-.160
310	70.00	-.366	0.196	0.605
311	79.00	-.313	0.343	0.893
312	90.00	-.261	0.490	1.051

PRESSURES section 4				
		c = 144.42 mm y = -395.32 mm		
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
401	2.00	-.906	-1.345	-1.938
402	5.00	-.878	-1.294	-1.898
403	10.00	-.820	-1.261	-1.656
404	15.00	-.813	-1.205	-1.590
405	18.00	-.798	-1.234	-1.586
406	30.00	-.766	-1.054	-1.522
407	40.00	-.645	-.631	-2.286
408	50.00	-.525	-.292	-1.681
409	60.00	-.445	-.366	-.375
410	70.00	-.413	-.401	0.098
411	79.00	-.398	-.305	0.323
412	90.00	-.360	-.177	0.368

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
501	6.62	-.064	0.005	-.021
502	20.43	-.060	0.006	-.024
503	34.05	-.076	0.009	-.036
504	47.67	-.136	0.001	0.039
505	54.49	-.219	-.025	0.201
506	61.29	-.334	-.048	0.286
507	68.10	-.420	-.027	0.011
508	74.91	-.396	0.029	-.370
509	81.72	-.310	-.004	0.088
510	88.53	-.318	0.000	0.001

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
601	38.90	-.650	0.054	-.326
602	42.93	-.574	-.008	-.045
603	46.93	-.508	-.012	0.071
604	50.99	-.511	-.024	0.055
605	59.03	-.487	0.020	-.013
606	67.07	-.640	0.066	-.456
607	71.11	-.860	-.310	0.847
608	75.56	-.868	-.230	0.672
609	80.00	-.872	-.155	0.540
610	84.44	-.903	0.029	0.158
102	89.45	-1.159	0.348	-.041

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
701	22.71	-.653	-.678	-.713
702	28.21	-.629	-.728	-.976
703	33.72	-.611	-.474	-.697
704	39.26	-.552	-.306	-.411
705	44.69	-.583	-.268	-.450
109	50.03	-.594	-.214	-.772
706	55.28	-.626	-.531	-.058
707	60.46	-.632	-.633	0.125
208	65.56	-.649	-.688	0.183
708	70.59	-.616	-.563	0.021
709	75.54	-.630	-.571	-.142
307	80.42	-.664	-.754	-1.176
710	85.22	-.728	-.753	-2.195
711	90.19	-.797	-1.087	-1.420
405	94.60	-.798	-1.234	-1.586

SECTION COEFFICIENTS				
section	comp.	Zero	Re 3	Im 3
1	CN_u	0.578	0.033	-.237
	CN_l	0.138	0.032	0.027
	CN_t	0.715	0.064	-.210
	CM_u	-.061	0.022	-.015
	CM_l	-.008	-.013	-.014
2	CM_t	-.069	0.009	-.028
	CN_u	0.580	0.308	-.275
	CN_l	0.143	0.035	0.039
	CN_t	0.723	0.342	-.236
	CM_u	-.072	-.014	0.225
3	CM_l	-.010	-.014	-.019
	CM_t	-.081	-.028	0.205
	CN_u	0.571	0.205	0.423
	CM_u	-.069	0.095	0.184
	CN_u	0.563	0.644	0.912
4	CM_u	-.079	-.046	0.021
	CN_u	0.184	0.002	-.008
5	Cl_u	-.118	-.002	0.005
	CN_u	0.665	-.042	0.066
6	Cl_u	-.343	0.028	0.025
	CN_u	0.632	0.651	0.706
7	Cl_u	-.315	-.357	-.401

test conditions				Simple Strake configuration			
alpha	=	10.368 deg	Q	=	24.218 kPa		
Mach	=	0.901	Ptot	=	72.140 kPa		
Re*10^-6	=	8.089	Ttot	=	307.409 K		
dalpha	=	4.169 deg					
freq	=	7.600 Hz					
k	=	0.067					
harm	=	4					

BALANCE LOADS		aerodynamic coefficients			aero	angular deflections [deg]		
position	comp.	Zero	Re 4	Im 4	inertia [%]	Zero	Re 4	Im 4
main	CN	0.61701	-.04314	0.10158	*****			
	Cm	0.00947	0.00649	-.00991	844.84	-.046	-.001	0.001
	Cl	-.24576	0.02598	-.05591	7077.15	-.165	0.002	-.003

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s^2]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	2.389	-82.023	1	2.878	0.004	0.008
12	-215.6	-12.0	0.941	-67.016				
13	167.4	-12.0	0.353	122.100				
21	-138.6	-116.9	0.508	-63.185	2	28.034	0.002	0.006
22	-46.6	-116.9						
23	121.4	-116.9	0.563	106.020				
31	-74.6	-189.9	0.403	7.018	3	45.540	0.014	0.014
32	-10.6	-189.9						
33	141.4	-189.9	1.710	124.487				
41	29.4	-304.9	1.971	58.402	4	73.118	0.058	0.019
42	89.4	-304.9	3.145	99.268				
43	152.4	-304.9	2.715	88.700				
51	85.0	-374.9	1.945	117.238	5	89.904	0.067	0.006
52	121.4	-374.9	2.128	124.596				
53	157.4	-374.9	1.681	119.318				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
101	2.00	-1.176	-.183	0.170
102	5.00	-1.159	-.295	0.270
103	10.00	-.926	-.571	0.424
104	15.00	-.820	0.153	0.120
105				
106	30.00	-.726	-.211	-.185
107	40.00	-.672	-.036	-.541
108	50.00	-.601	0.177	-.201
109	60.00	-.594	0.168	-.063
110	70.00	-.433	0.448	0.059
111	79.00	-.244	-.222	0.529
112	82.50	-.220	-.172	0.490
113	85.00	-.197	-.249	0.469
114	90.00	-.157	-.207	0.496
115	95.00	-.124	-.174	0.494
151	10.00	0.359	0.001	-.002
152	20.00	0.230	0.003	-.001
153	40.00	0.076	0.007	0.002
154	60.00	0.056	0.006	0.010
155	80.00	0.115	0.002	0.024

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
201	2.00	-1.109	-.084	-.616
202	5.00	-1.024	0.081	-.668
203	10.00	-.966	0.009	-.549
204	15.00	-.835	-.523	0.433
205	18.00	-.783	-.329	0.157
206	30.00	-.651	0.408	-.755
207	40.00	-.652	0.256	-.692
208	50.00	-.649	0.045	-.437
209	60.00	-.611	-.214	-.054
210	70.00	-.404		
211	79.00	-.299	0.096	-.356
212	82.50	-.282	0.070	-.332
213	85.00	-.260	0.053	-.292
214	90.00	-.232	-.001	-.201
215	95.00	-.199	-.056	-.068
251	10.00	0.342	0.008	-.005
252	20.00	0.224	0.007	-.002
253	40.00	0.106	0.000	-.004
254	60.00	0.081	0.006	0.009
255	80.00	0.102	0.011	0.010

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
301	2.00	-.985	0.411	-.671
302	5.00	-.953	0.407	-.694
303	10.00	-.910	0.291	-.603
304	15.00	-.865	0.201	-.543
305	18.00	-.831	0.159	-.435
306	30.00	-.712	-.167	0.078
307	40.00	-.664	0.718	-.030
308	50.00	-.646	0.427	0.016
309	60.00	-.532	-.176	-.163
310	70.00	-.366	0.466	-.576
311	79.00	-.313	0.219	-.570
312	90.00	-.261	0.011	-.483

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
401	2.00	-.906	0.157	-.070
402	5.00	-.878	0.289	-.109
403	10.00	-.820	0.314	-.094
404	15.00	-.813	0.248	0.028
405	18.00	-.798	0.247	0.042
406	30.00	-.766	0.135	0.214
407	40.00	-.645	-.595	0.510
408	50.00	-.525	0.170	0.198
409	60.00	-.445	0.653	-.495
410	70.00	-.413	0.721	-.581
411	79.00	-.398	0.543	-.495
412	90.00	-.360	0.447	-.482

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
501	6.62	-.064	-.003	0.003
502	20.43	-.060	-.003	0.003
503	34.05	-.076	-.010	0.008
504	47.67	-.136	-.041	0.025
505	54.49	-.219	-.023	0.014
506	61.29	-.334	0.056	-.029
507	68.10	-.420	0.093	-.048
508	74.91	-.396	-.058	0.046
509	81.72	-.310	0.031	-.022
510	88.53	-.318	-.003	0.004

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
601	38.90	-.650	0.312	-.146
602	42.93	-.574	0.022	0.000
603	46.93	-.508	0.014	-.014
604	50.99	-.511	0.025	-.014
605	59.03	-.487	-.031	0.009
606	67.07	-.640	-.003	-.059
607	71.11	-.860	0.151	-.035
608	75.56	-.868	0.279	-.049
609	80.00	-.872	0.308	-.037
610	84.44	-.903	-.061	0.144
102	89.45	-1.159	-.295	0.270

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
701	22.71	-.653	0.560	-.727
702	28.21	-.629	0.258	-.305
703	33.72	-.611	0.209	-.094
704	39.26	-.552	0.170	-.186
705	44.69	-.583	0.117	-.214
109	50.03	-.594	0.168	-.063
706	55.28	-.626	0.047	-.301
707	60.46	-.632	0.092	-.339
208	65.56	-.649	0.045	-.437
708	70.59	-.616	0.119	-.265
709	75.54	-.630	0.408	-.222
307	80.42	-.664	0.718	-.030
710	85.22	-.728	-.231	0.249
711	90.19	-.797	0.209	-.029
405	94.60	-.798	0.247	0.042

SECTION COEFFICIENTS				
section	comp.	Zero	Re 4	Im 4
1	CN_u	0.578	0.036	-.079
	CN_l	0.138	0.004	0.009
	CN_t	0.715	0.040	-.070
	Cm_u	-.061	0.003	0.058
	Cm_l	-.008	-.001	-.005
2	Cm_t	-.069	0.002	0.053
	CN_u	0.580	-.010	0.326
	CN_l	0.143	0.007	0.003
	CN_t	0.723	-.003	0.330
	Cm_u	-.072	0.004	-.059
3	Cm_l	-.010	-.002	-.002
	Cm_t	-.081	0.002	-.061
	CN_u	0.571	-.211	0.332
	Cm_u	-.069	0.037	-.092
	CN_u	0.563	-.291	0.142
4	Cm_u	-.079	0.118	-.104
	CN_u	0.184	0.000	-.002
5	Cl_u	-.118	0.002	0.001
	CN_u	0.665	-.119	0.027
6	Cl_u	-.343	0.012	0.020
	CN_u	0.632	-.280	0.299
	Cl_u	-.315	0.107	-.081

test conditions				Simple Strake configuration			
alpha	=	10.368 deg	Q	=	24.218 kPa		
Mach	=	0.901	Ptot	=	72.140 kPa		
Re*10 ⁻⁶	=	8.089	Ttot	=	307.409 K		
dalpha	=	4.169 deg					
freq	=	7.600 Hz					
k	=	0.067					
harm	=	5					

BALANCE LOADS		aerodynamic coefficients			aero	angular deflections [deg]		
position	comp.	Zero	Re 5	Im 5	inertia [%]	Zero	Re 5	Im 5
main	CN	0.61701	0.01156	-.04855	2326.70			
	Cm	0.00947	-.00190	0.00885	270.99	-.046	0.000	-.001
	Cl	-.24576	-.01162	0.03079	1585.64	-.165	-.001	0.002

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	4.694	27.874	1	2.878	0.004	0.011
12	-215.6	-12.0	2.359	36.402				
13	167.4	-12.0	1.619	-146.820				
21	-138.6	-116.9	1.412	39.703	2	28.034	0.001	0.010
22	-46.6	-116.9						
23	121.4	-116.9	1.260	-133.801				
31	-74.6	-189.9	0.797	28.502	3	45.540	0.007	0.011
32	-10.6	-189.9						
33	141.4	-189.9	1.600	-110.877				
41	29.4	-304.9	1.056	-132.425	4	73.118	0.014	0.018
42	89.4	-304.9	2.289	-111.552				
43	152.4	-304.9	3.084	-109.027				
51	85.0	-374.9	2.743	-74.986	5	89.904	0.064	0.016
52	121.4	-374.9	3.037	-76.258				
53	157.4	-374.9	2.747	-98.435				

PRESSURES section 1				
		c = 300.65 mm y = -209.06 mm		
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
101	2.00	-1.176	-.202	-.192
102	5.00	-1.159	-.220	-.162
103	10.00	-.926	-.176	-.067
104	15.00	-.820	-.125	-.057
105				
106	30.00	-.726	0.385	-.083
107	40.00	-.672	0.555	-.012
108	50.00	-.601	-.240	0.088
109	60.00	-.594	-.416	0.159
110	70.00	-.433	-.498	0.364
111	79.00	-.244	-.239	-.339
112	82.50	-.220	-.232	-.247
113	85.00	-.197	-.172	-.267
114	90.00	-.157	-.199	-.187
115	95.00	-.124	-.209	-.102
151	10.00	0.359	0.003	0.000
152	20.00	0.230	0.003	0.001
153	40.00	0.076	0.001	-.001
154	60.00	0.056	0.001	-.005
155	80.00	0.115	0.006	-.015

PRESSURES section 2				
		c = 246.21 mm y = -273.97 mm		
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
201	2.00	-1.109	-.215	-.394
202	5.00	-1.024	-.068	-.185
203	10.00	-.966	-.025	-.218
204	15.00	-.835	0.304	-.220
205	18.00	-.783	-.015	-.021
206	30.00	-.651	0.427	0.178
207	40.00	-.652	0.409	0.339
208	50.00	-.649	0.339	0.328
209	60.00	-.611	0.199	0.114
210	70.00	-.404		
211	79.00	-.299	0.336	-.114
212	82.50	-.282	0.345	-.129
213	85.00	-.260	0.347	-.117
214	90.00	-.232	0.354	-.124
215	95.00	-.199	0.338	-.134
251	10.00	0.342	0.004	0.004
252	20.00	0.224	0.003	0.003
253	40.00	0.106	0.010	-.005
254	60.00	0.081	0.003	-.005
255	80.00	0.102	0.015	-.019

PRESSURES section 3				
		c = 194.13 mm y = -336.06 mm		
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
301	2.00	-.985	-.305	0.429
302	5.00	-.953	-.160	0.417
303	10.00	-.910	-.051	0.436
304	15.00	-.865	-.274	0.416
305	18.00	-.831	-.240	0.428
306	30.00	-.712	-.412	0.335
307	40.00	-.664	-.850	-.028
308	50.00	-.646	-.202	-.018
309	60.00	-.532	0.115	-.099
310	70.00	-.366	-.109	-.268
311	79.00	-.313	0.120	-.259
312	90.00	-.261	0.294	-.264

PRESSURES section 4				
		c = 144.42 mm y = -395.32 mm		
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
401	2.00	-.906	-.494	0.914
402	5.00	-.878	-.584	0.890
403	10.00	-.820	-.468	0.869
404	15.00	-.813	-.403	0.804
405	18.00	-.798	-.359	0.838
406	30.00	-.766	-.313	0.689
407	40.00	-.645	0.129	0.723
408	50.00	-.525	-.681	-.211
409	60.00	-.445	-.662	-.009
410	70.00	-.413	-.500	0.120
411	79.00	-.398	-.206	0.186
412	90.00	-.360	-.158	0.188

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
501	6.62	-.064	-.001	-.003
502	20.43	-.060	-.001	-.003
503	34.05	-.076	-.004	-.005
504	47.67	-.136	-.002	-.003
505	54.49	-.219	0.008	0.002
506	61.29	-.334	-.009	0.000
507	68.10	-.420	-.025	-.008
508	74.91	-.396	-.025	-.009
509	81.72	-.310	-.015	-.006
510	88.53	-.318	-.003	-.004

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
601	38.90	-.650	-.147	-.051
602	42.93	-.574	0.064	0.033
603	46.93	-.508	0.015	0.007
604	50.99	-.511	0.007	0.011
605	59.03	-.487	0.000	0.011
606	67.07	-.640	-.274	-.139
607	71.11	-.860	0.093	0.116
608	75.56	-.868	-.043	0.006
609	80.00	-.872	-.123	-.073
610	84.44	-.903	-.143	-.056
102	89.45	-1.159	-.220	-.162

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
701	22.71	-.653	0.495	0.528
702	28.21	-.629	-.133	0.551
703	33.72	-.611	-.207	0.433
704	39.26	-.552	-.087	0.300
705	44.69	-.583	-.092	0.215
109	50.03	-.594	-.416	0.159
706	55.28	-.626	0.089	0.291
707	60.46	-.632	0.244	0.370
208	65.56	-.649	0.339	0.328
708	70.59	-.616	0.212	0.240
709	75.54	-.630	-.030	0.168
307	80.42	-.664	-.850	-.028
710	85.22	-.728	-.213	0.539
711	90.19	-.797	-.276	0.731
405	94.60	-.798	-.359	0.838

SECTION COEFFICIENTS				
section	comp.	Zero	Re 5	Im 5
1	CN_u	0.578	0.100	0.030
	CN_l	0.138	0.003	-.005
	CN_t	0.715	0.104	0.025
2	Cm_u	-.061	-.060	-.007
	Cm_l	-.008	-.001	0.003
	Cm_t	-.069	-.061	-.003
	CN_u	0.580	-.254	-.023
	CN_l	0.143	0.008	-.007
	CN_t	0.723	-.246	-.030
3	Cm_u	-.072	0.092	0.005
	Cm_l	-.010	-.003	0.004
	Cm_t	-.081	0.089	0.010
4	CN_u	0.571	0.140	-.032
	Cm_u	-.069	0.023	-.070
5	CN_u	0.563	0.356	-.391
	Cm_u	-.079	-.073	0.015
6	CN_u	0.184	0.006	0.004
	Cl_u	-.118	-.004	-.002
7	CN_u	0.665	0.112	0.048
	Cl_u	-.343	-.057	-.029
7	CN_u	0.632	-.027	-.419
	Cl_u	-.315	-.057	0.209

test conditions				Simple Strake configuration			
alpha	=	22.459 deg	Q	=	24.255 kPa		
Mach	=	0.900	Ptot	=	72.335 kPa		
Re*10 ⁻⁶	=	8.080	Ttot	=	308.220 K		
dalpha	=	8.272 deg					
freq	=	7.600 Hz					
k	=	0.067					
harm	=	1					

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 1	Im 1		Zero	Re 1	Im 1
main	CN	1.05469	1.69158	0.37099	3746.46			
	Cm	0.03674	0.13315	-0.03980	193.01	-.115	-.066	0.009
	Cl	-.36892	-.46789	-.15778	1103.92	-.226	-.027	-.016

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	122.232	2.986	1	2.878	1.585	7.237
12	-215.6	-12.0	61.817	4.082				
13	167.4	-12.0	48.858	175.730				
21	-138.6	-116.9	40.115	10.969	2	28.034	0.743	7.520
22	-46.6	-116.9						
23	121.4	-116.9	37.724	-171.936				
31	-74.6	-189.9	18.145	11.651	3	45.540	0.658	6.316
32	-10.6	-189.9						
33	141.4	-189.9	36.228	-174.749				
41	29.4	-304.9	2.573	-129.807	4	73.118	2.088	4.401
42	89.4	-304.9	15.932	-161.811				
43	152.4	-304.9	23.085	-177.825				
51	85.0	-374.9	21.031	-167.759	5	89.904	5.880	4.657
52	121.4	-374.9	39.818	-167.393				
53	157.4	-374.9	34.522	-166.339				

Unsteady Transonic Delta Program

DPN = 605

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
101	2.00	-1.102	0.097	-.017
102	5.00	-1.088	-.036	-.022
103	10.00	-1.048	-.216	-.019
104	15.00	-1.002	-.287	-.060
105				
106	30.00	-.910	-.305	-.270
107	40.00	-.844	-.137	-.410
108	50.00	-.742	-.183	-.439
109	60.00	-.699	-.223	-.417
110	70.00	-.649	-.176	-.404
111	79.00	-.605	-.130	-.360
112	82.50	-.597	-.151	-.333
113	85.00	-.575	-.158	-.314
114	90.00	-.548	-.214	-.265
115	95.00	-.533	-.340	-.208
151	10.00	0.662	1.146	0.093
152	20.00	0.542	1.308	0.116
153	40.00	0.381	1.356	0.143
154	60.00	0.286	1.173	0.160
155	80.00	0.237	0.839	0.161

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 1	ImCp 1
201	2.00	-.836	0.045	-.464
202	5.00	-.796	-.100	-.457
203	10.00	-.778	-.058	-.460
204	15.00	-.737	-.171	-.422
205	18.00	-.762	-.260	-.367
206	30.00	-.738	-.280	-.433
207	40.00	-.735	-.277	-.438
208	50.00	-.709	-.251	-.471
209	60.00	-.659	-.186	-.432
210	70.00	-.655		
211	79.00	-.607	-.099	-.406
212	82.50	-.609	-.106	-.394
213	85.00	-.588	-.092	-.369
214	90.00	-.577	-.078	-.349
215	95.00	-.558	-.059	-.328
251	10.00	0.638	1.094	0.105
252	20.00	0.531	1.259	0.122
253	40.00	0.388	1.259	0.136
254	60.00	0.290	1.089	0.155
255	80.00	0.207	0.788	0.150

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
301	2.00	-.654	-.108	-.706
302	5.00	-.674	-.178	-.757
303	10.00	-.663	-.077	-.592
304	15.00	-.642	-.141	-.468
305	18.00	-.623	-.147	-.442
306	30.00	-.629	-.157	-.408
307	40.00	-.615	-.154	-.409
308	50.00	-.631	-.148	-.428
309	60.00	-.606	-.119	-.419
310	70.00	-.609	-.085	-.415
311	79.00	-.593	-.063	-.408
312	90.00	-.579	-.052	-.382

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 1	ImCp 1
401	2.00	-.545	0.084	-.373
402	5.00	-.547	0.080	-.366
403	10.00	-.530	0.070	-.353
404	15.00	-.523	0.078	-.345
405	18.00	-.518	0.083	-.345
406	30.00	-.530	0.112	-.361
407	40.00	-.541	0.123	-.377
408	50.00	-.539	0.140	-.392
409	60.00	-.542	0.140	-.399
410	70.00	-.532	0.153	-.400
411	79.00	-.526	0.155	-.385
412	90.00	-.526	0.137	-.373

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
501	6.62	-.305	-1.353	0.027
502	20.43	-.384	-1.811	0.070
503	34.05	-.561	-2.500	0.146
504	47.67	-.809	-2.734	0.212
505	54.49	-.932	-2.538	0.232
506	61.29	-.866	-1.428	0.109
507	68.10	-.746	-1.246	0.050
508	74.91	-.661	-1.603	0.081
509	81.72	-.625	-1.532	0.077
510	88.53	-.637	-1.371	0.054

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
601	38.90	-1.065	-.127	-.342
602	42.93	-.999	-1.012	-.222
603	46.93	-.919	-1.073	-.183
604	50.99	-.900	-1.103	-.190
605	59.03	-.889	-1.237	-.138
606	67.07	-1.127	0.334	-.006
607	71.11	-1.241	0.710	0.267
608	75.56	-1.201	0.241	0.350
609	80.00	-1.154	0.129	0.238
610	84.44	-1.098	-.018	0.122
102	89.45	-1.088	-.036	-.022

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 1	ImCp 1
701	22.71	-.637	1.414	-.337
702	28.21	-.696	0.488	-.318
703	33.72	-.705	0.173	-.223
704	39.26	-.617	-.269	-.255
705	44.69	-.670	-.420	-.373
109	50.03	-.699	-.223	-.417
706	55.28	-.699	-.130	-.449
707	60.46	-.692	-.187	-.444
208	65.56	-.709	-.251	-.471
708	70.59	-.665	-.205	-.425
709	75.54	-.643	-.182	-.422
307	80.42	-.615	-.154	-.409
710	85.22	-.600	-.108	-.394
711	90.19	-.575	-.032	-.374
405	94.60	-.518	0.083	-.345

SECTION COEFFICIENTS				
section	comp.	Zero	Re 1	Im 1
1	CN_u	0.770	0.202	0.280
	CN_l	0.361	1.126	0.140
	CN_t	1.132	1.327	0.421
	Cm_u	-.134	-.056	-.094
	Cm_l	-.037	-.237	-.042
2	Cm_t	-.171	-.292	-.136
	CN_u	0.675	0.168	0.416
	CN_l	0.352	1.059	0.137
	CN_t	1.028	1.227	0.554
	Cm_u	-.141	-.034	-.097
3	Cm_l	-.035	-.220	-.039
	Cm_t	-.175	-.255	-.136
	CN_u	0.588	0.113	0.447
	CN_l	-.127	-.019	-.093
	CN_t	0.506	-.123	0.376
4	Cm_u	-.114	0.038	-.097
	CN_u	0.572	1.824	-.100
	Cl_u	-.305	-.877	0.051
	CN_u	1.001	0.241	0.139
	Cl_u	-.479	-.099	-.018
7	CN_u	0.631	-.291	0.367
	Cl_u	-.302	-.003	-.192

test conditions				Simple Strake configuration			
alpha	=	22.459 deg	Q	=	24.255 kPa		
Mach	=	0.900	Ptot	=	72.335 kPa		
Re*10 ⁻⁶	=	8.080	Ttot	=	308.220 K		
dalpha	=	8.272 deg					
freq	=	7.600 Hz					
k	=	0.067					
harm	=	2					

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 2	Im 2		Zero	Re 2	Im 2
main	CN	1.05469	-.42244	-.25033	*****			
	Cm	0.03674	0.01045	-.00396	1399.47	-.115	0.000	0.003
	Cl	-.36892	0.16732	0.08876	*****	-.226	0.016	0.008

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	12.114	-145.798	1	2.878	0.177	0.209
12	-215.6	-12.0	6.001	-152.525				
13	167.4	-12.0	7.985	33.708				
21	-138.6	-116.9	2.580	-107.085	2	28.034	0.038	0.128
22	-46.6	-116.9						
23	121.4	-116.9	2.732	83.505				
31	-74.6	-189.9	1.207	-115.326	3	45.540	0.127	0.070
32	-10.6	-189.9						
33	141.4	-189.9	2.216	161.230				
41	29.4	-304.9	1.937	65.615	4	73.118	0.200	0.265
42	89.4	-304.9	1.472	140.436				
43	152.4	-304.9	6.163	118.983				
51	85.0	-374.9	2.434	96.225	5	89.904	0.029	0.095
52	121.4	-374.9	1.268	139.549				
53	157.4	-374.9	3.412	105.745				

Unsteady Transonic Delta Program

DPN = 605

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
101	2.00	-1.102	-0.004	-0.073
102	5.00	-1.088	0.061	0.009
103	10.00	-1.048	0.117	0.102
104	15.00	-1.002	0.174	0.164
105				
106	30.00	-0.910	0.464	0.314
107	40.00	-0.844	0.640	0.271
108	50.00	-0.742	0.621	0.234
109	60.00	-0.699	0.594	0.246
110	70.00	-0.649	0.527	0.220
111	79.00	-0.605	0.382	0.179
112	82.50	-0.597	0.303	0.148
113	85.00	-0.575	0.253	0.127
114	90.00	-0.548	0.149	0.057
115	95.00	-0.533	0.078	-0.005
151	10.00	0.662	-0.034	-0.077
152	20.00	0.542	-0.022	-0.057
153	40.00	0.381	-0.006	-0.039
154	60.00	0.286	0.012	-0.015
155	80.00	0.237	0.029	0.015

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 2	ImCp 2
201	2.00	-0.836	0.716	0.289
202	5.00	-0.796	0.713	0.249
203	10.00	-0.778	0.702	0.262
204	15.00	-0.737	0.692	0.000
205	18.00	-0.762	0.579	-0.146
206	30.00	-0.738	0.675	0.244
207	40.00	-0.735	0.664	0.207
208	50.00	-0.709	0.679	0.180
209	60.00	-0.659	0.601	0.169
210	70.00	-0.655		
211	79.00	-0.607	0.469	0.173
212	82.50	-0.609	0.447	0.164
213	85.00	-0.588	0.407	0.166
214	90.00	-0.577	0.350	0.154
215	95.00	-0.558	0.281	0.135
251	10.00	0.638	-0.035	-0.086
252	20.00	0.531	-0.026	-0.068
253	40.00	0.388	-0.001	-0.041
254	60.00	0.290	0.009	-0.015
255	80.00	0.207	0.029	0.014

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
301	2.00	-0.654	0.859	0.087
302	5.00	-0.674	0.920	0.066
303	10.00	-0.663	0.756	0.132
304	15.00	-0.642	0.649	0.179
305	18.00	-0.623	0.623	0.172
306	30.00	-0.629	0.552	0.142
307	40.00	-0.615	0.537	0.126
308	50.00	-0.631	0.541	0.117
309	60.00	-0.606	0.517	0.125
310	70.00	-0.609	0.489	0.136
311	79.00	-0.593	0.467	0.148
312	90.00	-0.579	0.412	0.151

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 2	ImCp 2
401	2.00	-0.545	0.524	0.236
402	5.00	-0.547	0.516	0.245
403	10.00	-0.530	0.487	0.235
404	15.00	-0.523	0.471	0.232
405	18.00	-0.518	0.468	0.229
406	30.00	-0.530	0.475	0.225
407	40.00	-0.541	0.478	0.217
408	50.00	-0.539	0.470	0.210
409	60.00	-0.542	0.447	0.195
410	70.00	-0.532	0.407	0.179
411	79.00	-0.526	0.348	0.147
412	90.00	-0.526	0.278	0.106

Unsteady Transonic Delta Program

DPN = 605

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
501	6.62	-.305	-.039	-.051
502	20.43	-.384	0.094	0.084
503	34.05	-.561	0.263	0.282
504	47.67	-.809	0.421	0.459
505	54.49	-.932	0.315	0.359
506	61.29	-.866	0.029	0.066
507	68.10	-.746	-.068	-.051
508	74.91	-.661	0.001	0.025
509	81.72	-.625	-.027	-.001
510	88.53	-.637	-.036	-.012

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
601	38.90	-1.065	1.023	0.563
602	42.93	-.999	1.100	0.772
603	46.93	-.919	0.864	0.585
604	50.99	-.900	0.836	0.502
605	59.03	-.889	0.642	0.390
606	67.07	-1.127	0.147	0.344
607	71.11	-1.241	-.162	0.013
608	75.56	-1.201	-.386	-.055
609	80.00	-1.154	-.198	-.020
610	84.44	-1.098	-.021	0.009
102	89.45	-1.088	0.061	0.009

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 2	ImCp 2
701	22.71	-.637	-.137	0.351
702	28.21	-.696	0.059	0.400
703	33.72	-.705	0.192	0.262
704	39.26	-.617	0.280	0.168
705	44.69	-.670	0.523	0.246
109	50.03	-.699	0.594	0.246
706	55.28	-.699	0.620	0.194
707	60.46	-.692	0.643	0.190
208	65.56	-.709	0.679	0.180
708	70.59	-.665	0.578	0.136
709	75.54	-.643	0.553	0.117
307	80.42	-.615	0.537	0.126
710	85.22	-.600	0.525	0.158
711	90.19	-.575	0.505	0.198
405	94.60	-.518	0.468	0.229

SECTION COEFFICIENTS				
section	comp.	Zero	Re 2	Im 2
1	CN_u	0.770	-.375	-.178
	CN_l	0.361	0.001	-.027
	CN_t	1.132	-.373	-.204
	Cm_u	-.134	0.101	0.041
	Cm_l	-.037	-.007	-.003
2	Cm_t	-.171	0.094	0.038
	CN_u	0.675	-.576	-.161
	CN_l	0.352	0.001	-.030
	CN_t	1.028	-.574	-.191
	Cm_u	-.141	0.111	0.041
3	Cm_l	-.035	-.007	-.003
	Cm_t	-.175	0.104	0.038
	CN_u	0.588	-.554	-.136
	CN_l	-.127	0.106	0.036
	CN_t	0.506	-.426	-.191
4	Cm_u	-.114	0.086	0.036
	CN_u	0.572	-.098	-.115
5	CN_l	-.305	0.038	0.051
	CN_u	1.001	-.583	-.366
6	CN_l	-.479	0.165	0.119
	CN_u	0.631	-.321	-.243
7	CN_l	-.302	0.234	0.102
	CN_u			

test conditions				Simple Strake configuration			
alpha	=	22.459 deg	Q	=	24.255 kPa		
Mach	=	0.900	Ptot	=	72.335 kPa		
Re*10 ⁻⁶	=	8.080	Ttot	=	308.220 K		
dalpha	=	8.272 deg					
freq	=	7.600 Hz					
k	=	0.067					
harm	=	3					

BALANCE LOADS		aerodynamic coefficients			aero	angular deflections [deg]		
position	comp.	Zero	Re 3	Im 3	inertia [%]	Zero	Re 3	Im 3
main	CN	1.05469	-.06585	-.06785	3233.63			
	Cm	0.03674	-.00499	-.01212	287.74	-.115	0.001	0.004
	Cl	-.36892	0.02737	0.02870	1401.68	-.226	0.003	0.003

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	7.404	-120.501	1	2.878	0.031	0.043
12	-215.6	-12.0	3.655	-126.180				
13	167.4	-12.0	1.990	13.850				
21	-138.6	-116.9	2.053	-95.724	2	28.034	0.011	0.040
22	-46.6	-116.9						
23	121.4	-116.9	1.673	97.007				
31	-74.6	-189.9	1.560	-99.039	3	45.540	0.040	0.029
32	-10.6	-189.9						
33	141.4	-189.9	0.866	124.337				
41	29.4	-304.9	1.583	138.482	4	73.118	0.105	0.101
42	89.4	-304.9	2.880	-178.237				
43	152.4	-304.9	4.778	-153.408				
51	85.0	-374.9	1.208	-153.272	5	89.904	0.144	0.084
52	121.4	-374.9	0.900	159.631				
53	157.4	-374.9	3.253	-132.429				

Unsteady Transonic Delta Program

DPN = 605

PRESSURES section 1				
		c = 300.65 mm y = -209.06 mm		
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
101	2.00	-1.102	-.028	0.066
102	5.00	-1.088	-.012	0.050
103	10.00	-1.048	0.006	0.077
104	15.00	-1.002	0.037	0.147
105				
106	30.00	-.910	0.088	0.261
107	40.00	-.844	0.189	0.274
108	50.00	-.742	0.177	0.275
109	60.00	-.699	0.139	0.183
110	70.00	-.649	0.088	0.036
111	79.00	-.605	0.050	-.109
112	82.50	-.597	0.031	-.146
113	85.00	-.575	0.029	-.170
114	90.00	-.548	0.046	-.193
115	95.00	-.533	0.064	-.152
151	10.00	0.662	-.003	0.001
152	20.00	0.542	-.004	-.004
153	40.00	0.381	-.008	-.011
154	60.00	0.286	-.008	-.020
155	80.00	0.237	-.004	-.026

PRESSURES section 2				
		c = 246.21 mm y = -273.97 mm		
nr. up low	x/c [%]	Cp 0	ReCp 3	ImCp 3
201	2.00	-.836	0.379	0.417
202	5.00	-.796	0.301	0.422
203	10.00	-.778	0.280	0.375
204	15.00	-.737	0.337	0.131
205	18.00	-.762	0.285	0.029
206	30.00	-.738	0.223	0.363
207	40.00	-.735	0.213	0.304
208	50.00	-.709	0.182	0.269
209	60.00	-.659	0.145	0.171
210	70.00	-.655		
211	79.00	-.607	0.047	-.018
212	82.50	-.609	0.043	-.059
213	85.00	-.588	0.037	-.088
214	90.00	-.577	0.023	-.151
215	95.00	-.558	0.016	-.208
251	10.00	0.638	-.006	0.000
252	20.00	0.531	-.008	-.007
253	40.00	0.388	-.013	-.011
254	60.00	0.290	-.010	-.023
255	80.00	0.207	-.007	-.029

PRESSURES section 3				
		c = 194.13 mm y = -336.06 mm		
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
301	2.00	-.654	0.249	0.519
302	5.00	-.674	0.278	0.583
303	10.00	-.663	0.217	0.413
304	15.00	-.642	0.156	0.256
305	18.00	-.623	0.151	0.235
306	30.00	-.629	0.128	0.190
307	40.00	-.615	0.116	0.168
308	50.00	-.631	0.108	0.152
309	60.00	-.606	0.084	0.117
310	70.00	-.609	0.056	0.068
311	79.00	-.593	0.030	0.020
312	90.00	-.579	0.005	-.054

PRESSURES section 4				
		c = 144.42 mm y = -395.32 mm		
nr. up	x/c [%]	Cp 0	ReCp 3	ImCp 3
401	2.00	-.545	0.025	0.055
402	5.00	-.547	0.016	0.044
403	10.00	-.530	0.006	0.033
404	15.00	-.523	-.001	0.021
405	18.00	-.518	-.004	0.017
406	30.00	-.530	-.014	0.010
407	40.00	-.541	-.023	-.012
408	50.00	-.539	-.035	-.056
409	60.00	-.542	-.044	-.104
410	70.00	-.532	-.058	-.160
411	79.00	-.526	-.070	-.201
412	90.00	-.526	-.091	-.232

PRESSURES section 5				
		b = 82.70 mm x = -269.60 mm		
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
501	6.62	-.305	0.025	-.070
502	20.43	-.384	0.005	0.071
503	34.05	-.561	0.004	0.090
504	47.67	-.809	0.023	0.021
505	54.49	-.932	0.034	0.082
506	61.29	-.866	0.015	0.104
507	68.10	-.746	-.003	0.159
508	74.91	-.661	0.008	0.062
509	81.72	-.625	0.012	-.007
510	88.53	-.637	0.015	-.039

PRESSURES section 6				
		b = 233.73 mm x = -60.62 mm		
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
601	38.90	-1.065	0.352	0.018
602	42.93	-.999	0.256	0.161
603	46.93	-.919	0.215	0.257
604	50.99	-.900	0.225	0.297
605	59.03	-.889	0.141	0.282
606	67.07	-1.127	0.173	-.436
607	71.11	-1.241	0.036	-.414
608	75.56	-1.201	-.125	-.244
609	80.00	-1.154	-.080	-.089
610	84.44	-1.098	-.041	0.027
102	89.45	-1.088	-.012	0.050

PRESSURES section 7				
		b = 417.90 mm x = 100.71 mm		
nr. up	y/b [%]	Cp 0	ReCp 3	ImCp 3
701	22.71	-.637	-.278	-.825
702	28.21	-.696	-.020	-.429
703	33.72	-.705	0.006	-.157
704	39.26	-.617	0.029	0.142
705	44.69	-.670	0.074	0.202
706	50.03	-.699	0.139	0.183
707	55.28	-.699	0.171	0.191
708	60.46	-.692	0.184	0.224
208	65.56	-.709	0.182	0.269
708	70.59	-.665	0.172	0.220
709	75.54	-.643	0.151	0.203
307	80.42	-.615	0.116	0.168
710	85.22	-.600	0.073	0.126
711	90.19	-.575	0.031	0.071
405	94.60	-.518	-.004	0.017

SECTION COEFFICIENTS				
section	comp.	Zero	Re 3	Im 3
1	CN_u	0.770	-.085	-.093
	CN_l	0.361	-.006	-.015
	CN_t	1.132	-.090	-.108
	Cm_u	-.134	0.024	-.007
	Cm_l	-.037	0.001	0.007
2	Cm_t	-.171	0.026	-.001
	CN_u	0.675	-.169	-.149
	CN_l	0.352	-.009	-.016
	CN_t	1.028	-.178	-.166
	Cm_u	-.141	0.012	-.008
3	Cm_l	-.035	0.002	0.007
	Cm_t	-.175	0.015	0.000
	CN_u	0.588	-.102	-.155
	CN_l	-.127	0.005	-.005
	CN_t	0.506	0.037	0.080
4	Cm_u	-.114	-.019	-.049
	Cm_l	0.572	-.014	-.036
5	CN_u	-.305	0.007	0.019
	CN_l	1.001	-.187	-.014
6	CN_t	-.479	0.050	-.003
	CN_u	0.631	0.005	0.139
	Cl_u	-.302	0.034	0.029

test conditions				Simple Strake configuration	
alpha	=	22.459 deg	Q	=	24.255 kPa
Mach	=	0.900	Ptot	=	72.335 kPa
Re*10 ⁻⁶	=	8.080	Ttot	=	308.220 K
dalpha	=	8.272 deg			
freq	=	7.600 Hz			
k	=	0.067			
harm	=	4			

BALANCE LOADS		aerodynamic coefficients			aero inertia [%]	angular deflections [deg]		
position	comp.	Zero	Re 4	Im 4		Zero	Re 4	Im 4
main	CN	1.05469	-0.01766	0.07405	8887.86			
	Cm	0.03674	0.00233	-0.01090	835.79	-0.115	-0.001	0.003
	Cl	-0.36892	0.01035	-0.03959	4936.96	-0.226	0.001	-0.004

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a. [mm]	pitch [deg]
11	-425.6	-12.0	3.242	-79.491	1	2.878	0.040	0.007
12	-215.6	-12.0	1.941	-93.905				
13	167.4	-12.0	1.495	-116.243				
21	-138.6	-116.9	0.896	-45.947	2	28.034	0.011	0.006
22	-46.6	-116.9						
23	121.4	-116.9	0.251	-159.205				
31	-74.6	-189.9	0.036	-147.871	3	45.540	0.016	0.013
32	-10.6	-189.9						
33	141.4	-189.9	1.741	110.769				
41	29.4	-304.9	1.651	123.225	4	73.118	0.096	0.030
42	89.4	-304.9	2.477	112.313				
43	152.4	-304.9	0.907	-99.362				
51	85.0	-374.9	1.103	55.075	5	89.904	0.080	0.026
52	121.4	-374.9	2.710	111.890				
53	157.4	-374.9	0.674	135.777				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
101	2.00	-1.102	-.043	-.024
102	5.00	-1.088	0.005	-.057
103	10.00	-1.048	0.086	-.142
104	15.00	-1.002	0.139	-.206
105				
106	30.00	-.910	0.123	-.061
107	40.00	-.844	0.002	-.050
108	50.00	-.742	-.010	-.052
109	60.00	-.699	0.012	-.069
110	70.00	-.649	0.002	-.120
111	79.00	-.605	-.002	-.102
112	82.50	-.597	-.009	-.069
113	85.00	-.575	-.019	-.047
114	90.00	-.548	-.053	0.027
115	95.00	-.533	-.085	0.092
151	10.00	0.662	0.004	-.005
152	20.00	0.542	0.004	-.006
153	40.00	0.381	0.005	-.006
154	60.00	0.286	0.004	-.007
155	80.00	0.237	0.002	-.005

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 4	ImCp 4
201	2.00	-.836	0.193	-.155
202	5.00	-.796	0.153	-.074
203	10.00	-.778	0.134	-.053
204	15.00	-.737	0.062	-.086
205	18.00	-.762	0.027	-.064
206	30.00	-.738	0.049	-.053
207	40.00	-.735	0.031	-.048
208	50.00	-.709	0.012	-.093
209	60.00	-.659	0.014	-.132
210	70.00	-.655		
211	79.00	-.607	0.044	-.207
212	82.50	-.609	0.040	-.204
213	85.00	-.588	0.050	-.191
214	90.00	-.577	0.049	-.170
215	95.00	-.558	0.030	-.127
251	10.00	0.638	0.002	-.004
252	20.00	0.531	0.003	-.006
253	40.00	0.388	0.003	-.011
254	60.00	0.290	0.004	-.009
255	80.00	0.207	0.003	-.010

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
301	2.00	-.654	-.097	-.134
302	5.00	-.674	-.145	-.156
303	10.00	-.663	-.007	-.156
304	15.00	-.642	0.030	-.132
305	18.00	-.623	0.032	-.130
306	30.00	-.629	0.023	-.131
307	40.00	-.615	0.020	-.138
308	50.00	-.631	0.009	-.151
309	60.00	-.606	0.004	-.164
310	70.00	-.609	0.009	-.179
311	79.00	-.593	0.019	-.191
312	90.00	-.579	0.035	-.189

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 4	ImCp 4
401	2.00	-.545	0.049	-.199
402	5.00	-.547	0.057	-.207
403	10.00	-.530	0.053	-.202
404	15.00	-.523	0.057	-.206
405	18.00	-.518	0.058	-.209
406	30.00	-.530	0.059	-.234
407	40.00	-.541	0.057	-.258
408	50.00	-.539	0.055	-.276
409	60.00	-.542	0.057	-.270
410	70.00	-.532	0.059	-.264
411	79.00	-.526	0.057	-.242
412	90.00	-.526	0.054	-.214

Unsteady Transonic Delta Program

DPN = 605

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
501	6.62	-.305	-.002	0.009
502	20.43	-.384	0.007	0.001
503	34.05	-.561	0.043	-.020
504	47.67	-.809	0.040	-.024
505	54.49	-.932	-.016	0.014
506	61.29	-.866	-.063	0.054
507	68.10	-.746	0.025	-.011
508	74.91	-.661	0.003	0.003
509	81.72	-.625	-.020	0.015
510	88.53	-.637	-.043	0.031

PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
601	38.90	-1.065	-.047	0.148
602	42.93	-.999	0.175	0.021
603	46.93	-.919	0.143	0.038
604	50.99	-.900	0.132	0.046
605	59.03	-.889	0.143	-.006
606	67.07	-1.127	-.173	0.186
607	71.11	-1.241	-.251	0.053
608	75.56	-1.201	-.127	-.061
609	80.00	-1.154	-.031	-.088
610	84.44	-1.098	0.006	-.109
102	89.45	-1.088	0.005	-.057

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 4	ImCp 4
701	22.71	-.637	0.206	-.154
702	28.21	-.696	0.038	-.142
703	33.72	-.705	-.027	-.175
704	39.26	-.617	-.084	-.067
705	44.69	-.670	-.039	-.059
109	50.03	-.699	0.012	-.069
706	55.28	-.699	0.012	-.097
707	60.46	-.692	0.011	-.099
208	65.56	-.709	0.012	-.093
708	70.59	-.665	0.014	-.087
709	75.54	-.643	0.016	-.102
307	80.42	-.615	0.020	-.138
710	85.22	-.600	0.028	-.182
711	90.19	-.575	0.044	-.211
405	94.60	-.518	0.058	-.209

SECTION COEFFICIENTS				
section	comp.	Zero	Re 4	Im 4
1	CN_u	0.770	-.023	0.069
	CN_l	0.361	0.003	-.006
	CN_t	1.132	-.019	0.063
	Cm_u	-.134	-.008	-.006
	Cm_l	-.037	-.001	0.001
2	Cm_t	-.171	-.008	-.005
	CN_u	0.675	-.049	0.113
	CN_l	0.352	0.003	-.009
	CN_t	1.028	-.045	0.104
	Cm_u	-.141	0.005	-.039
3	Cm_l	-.035	-.001	0.003
	Cm_t	-.175	0.004	-.037
	CN_u	0.588	-.008	0.159
	CN_l	-.127	0.008	-.046
	CN_u	0.506	-.056	0.238
4	Cm_u	-.114	0.014	-.062
	CN_u	0.572	0.001	-.006
	Cl_u	-.305	-.005	0.006
	CN_u	1.001	0.014	-.059
	Cl_u	-.479	-.007	0.007
7	CN_u	0.631	-.059	0.133
	Cl_u	-.302	0.015	-.068

test conditions				Simple Strake configuration	
alpha	=	22.459 deg	Q	=	24.255 kPa
Mach	=	0.900	Ptot	=	72.335 kPa
Re*10 ⁻⁶	=	8.080	Ttot	=	308.220 K
dalpha	=	8.272 deg			
freq	=	7.600 Hz			
k	=	0.067			
harm	=	5			

BALANCE LOADS		aerodynamic coefficients			aero	angular deflections [deg]		
position	comp.	Zero	Re 5	Im 5	inertia [%]	Zero	Re 5	Im 5
main	CN	1.05469	0.02340	0.04377	3721.21			
	Cm	0.03674	0.00165	-0.00179	117.22	-.115	-.001	0.000
	Cl	-.36892	-.00974	-.02117	1805.53	-.226	-.001	-.002

ACCELERATIONS					vibration mode			
nr	x [mm]	y [mm]	Amplitude [m/s ²]	Phase angle rel. to LVDT [deg]	section	y/b [%]	heave at p.a [mm]	pitch [deg]
11	-425.6	-12.0	3.257	13.865	1	2.878	0.013	0.009
12	-215.6	-12.0	1.212	-5.472				
13	167.4	-12.0	1.876	-163.577				
21	-138.6	-116.9	1.300	31.600	2	28.034	0.006	0.007
22	-46.6	-116.9						
23	121.4	-116.9	0.683	-113.879				
31	-74.6	-189.9	1.006	28.556	3	45.540	0.010	0.007
32	-10.6	-189.9						
33	141.4	-189.9	0.584	155.372				
41	29.4	-304.9	1.088	84.414	4	73.118	0.033	0.010
42	89.4	-304.9	1.406	100.927				
43	152.4	-304.9	0.625	174.219				
51	85.0	-374.9	1.504	49.481	5	89.904	0.052	0.028
52	121.4	-374.9	1.532	105.067				
53	157.4	-374.9	1.989	117.477				

PRESSURES section 1				
c = 300.65 mm y = -209.06 mm				
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
101	2.00	-1.102	-.122	0.197
102	5.00	-1.088	-.129	0.168
103	10.00	-1.048	-.156	0.101
104	15.00	-1.002	-.194	0.062
105				
106	30.00	-.910	-.131	-.041
107	40.00	-.844	-.087	-.072
108	50.00	-.742	-.015	-.097
109	60.00	-.699	0.025	-.082
110	70.00	-.649	0.023	-.060
111	79.00	-.605	0.014	0.009
112	82.50	-.597	0.015	0.045
113	85.00	-.575	0.005	0.057
114	90.00	-.548	0.005	0.058
115	95.00	-.533	0.043	0.051
151	10.00	0.662	0.002	-.001
152	20.00	0.542	0.003	-.001
153	40.00	0.381	0.005	0.001
154	60.00	0.286	0.005	0.003
155	80.00	0.237	0.005	0.005

PRESSURES section 2				
c = 246.21 mm y = -273.97 mm				
nr. up low	x/c [%]	Cp 0	ReCp 5	ImCp 5
201	2.00	-.836	-.172	-.202
202	5.00	-.796	-.130	-.166
203	10.00	-.778	-.132	-.157
204	15.00	-.737	-.138	-.008
205	18.00	-.762	-.090	0.011
206	30.00	-.738	-.065	-.141
207	40.00	-.735	-.052	-.145
208	50.00	-.709	-.016	-.140
209	60.00	-.659	0.008	-.120
210	70.00	-.655		
211	79.00	-.607	0.024	-.047
212	82.50	-.609	0.007	-.040
213	85.00	-.588	-.006	-.028
214	90.00	-.577	-.040	-.008
215	95.00	-.558	-.071	0.013
251	10.00	0.638	0.005	-.001
252	20.00	0.531	0.005	0.000
253	40.00	0.388	0.008	0.002
254	60.00	0.290	0.006	0.004
255	80.00	0.207	0.004	0.005

PRESSURES section 3				
c = 194.13 mm y = -336.06 mm				
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
301	2.00	-.654	0.020	-.281
302	5.00	-.674	0.038	-.301
303	10.00	-.663	-.014	-.198
304	15.00	-.642	-.015	-.123
305	18.00	-.623	-.016	-.121
306	30.00	-.629	0.004	-.121
307	40.00	-.615	0.008	-.116
308	50.00	-.631	0.013	-.115
309	60.00	-.606	0.028	-.098
310	70.00	-.609	0.041	-.071
311	79.00	-.593	0.041	-.041
312	90.00	-.579	0.015	-.008

PRESSURES section 4				
c = 144.42 mm y = -395.32 mm				
nr. up	x/c [%]	Cp 0	ReCp 5	ImCp 5
401	2.00	-.545	0.065	-.091
402	5.00	-.547	0.068	-.085
403	10.00	-.530	0.060	-.075
404	15.00	-.523	0.057	-.068
405	18.00	-.518	0.056	-.068
406	30.00	-.530	0.061	-.076
407	40.00	-.541	0.061	-.079
408	50.00	-.539	0.055	-.071
409	60.00	-.542	0.036	-.050
410	70.00	-.532	0.015	-.027
411	79.00	-.526	-.005	-.003
412	90.00	-.526	-.029	0.027

PRESSURES section 5				
b = 82.70 mm x = -269.60 mm				
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
501	6.62	-.305	-.023	-.002
502	20.43	-.384	0.003	0.009
503	34.05	-.561	-.014	-.001
504	47.67	-.809	-.011	-.001
505	54.49	-.932	0.047	0.008
506	61.29	-.866	0.051	0.025
507	68.10	-.746	0.025	0.010
508	74.91	-.661	-.002	0.005
509	81.72	-.625	-.009	0.005
510	88.53	-.637	-.006	0.005

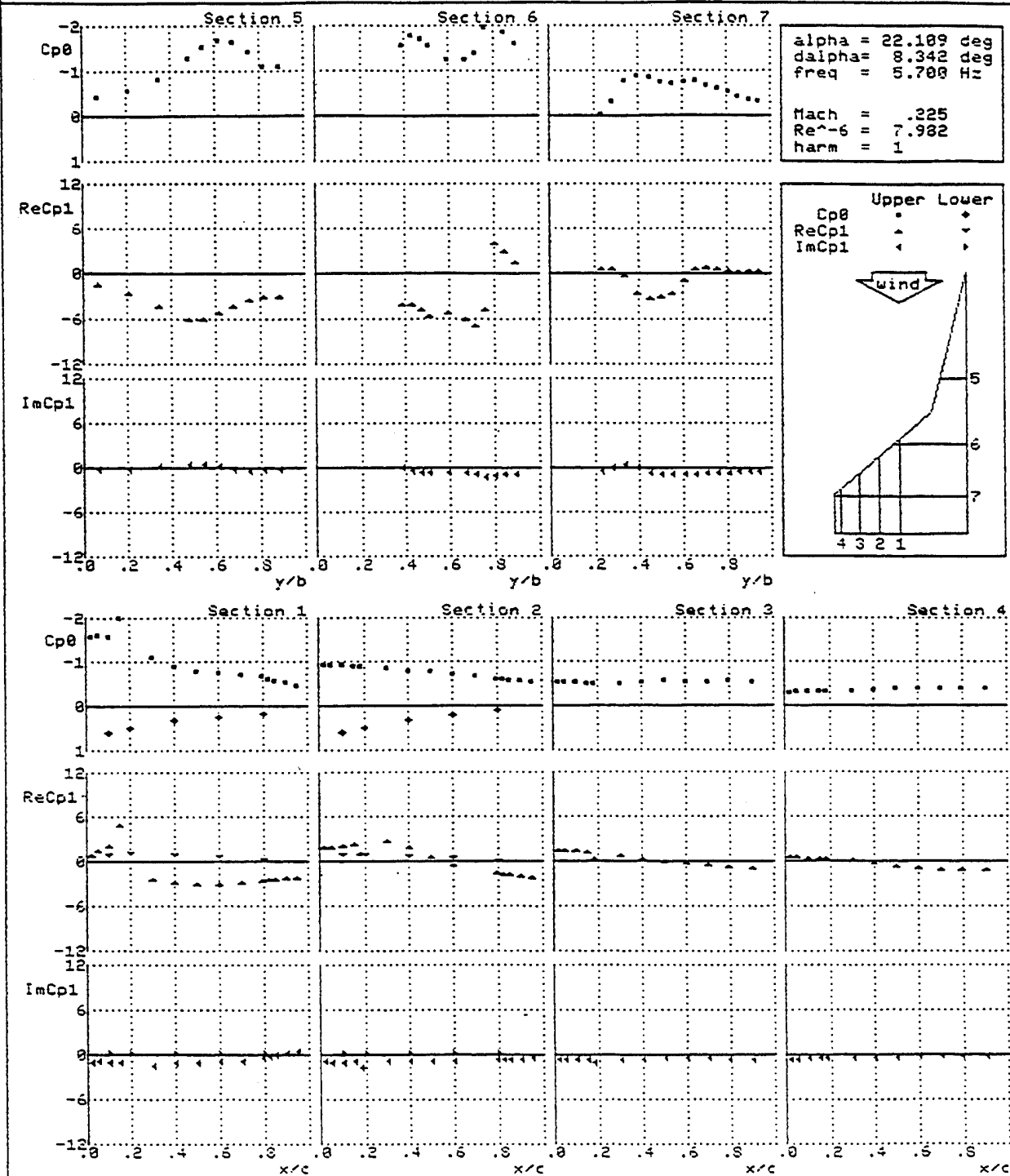
PRESSURES section 6				
b = 233.73 mm x = -60.62 mm				
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
601	38.90	-1.065	0.021	-.034
602	42.93	-.999	-.064	-.087
603	46.93	-.919	-.012	-.055
604	50.99	-.900	0.000	-.047
605	59.03	-.889	0.046	0.031
606	67.07	-1.127	0.041	0.093
607	71.11	-1.241	-.189	0.141
608	75.56	-1.201	-.157	0.196
609	80.00	-1.154	-.151	0.201
610	84.44	-1.098	-.182	0.203
102	89.45	-1.088	-.129	0.168

PRESSURES section 7				
b = 417.90 mm x = 100.71 mm				
nr. up	y/b [%]	Cp 0	ReCp 5	ImCp 5
701	22.71	-.637	0.004	0.180
702	28.21	-.696	-.079	0.160
703	33.72	-.705	-.087	0.130
704	39.26	-.617	0.044	0.037
705	44.69	-.670	0.066	-.041
109	50.03	-.699	0.025	-.082
706	55.28	-.699	0.000	-.110
707	60.46	-.692	-.011	-.134
208	65.56	-.709	-.016	-.140
708	70.59	-.665	-.023	-.125
709	75.54	-.643	-.014	-.119
307	80.42	-.615	0.008	-.116
710	85.22	-.600	0.031	-.116
711	90.19	-.575	0.048	-.102
405	94.60	-.518	0.056	-.068

SECTION COEFFICIENTS				
section	comp.	Zero	Re 5	Im 5
1	CN_u	0.770	0.054	0.000
	CN_l	0.361	0.004	0.002
	CN_t	1.132	0.058	0.002
	Cm_u	-.134	0.008	-.006
	Cm_l	-.037	-.001	-.001
2	Cm_t	-.171	0.006	-.008
	CN_u	0.675	0.047	0.089
	CN_l	0.352	0.006	0.003
	CN_t	1.028	0.053	0.092
	Cm_u	-.141	0.000	-.012
3	Cm_l	-.035	-.001	-.001
	Cm_t	-.175	-.002	-.014
	CN_u	0.588	-.015	0.104
	Cm_u	-.127	0.007	-.007
	CN_u	0.506	-.033	0.045
4	CN_u	-.114	-.001	-.001
	CN_l	0.572	-.001	-.005
	CN_t	-.305	0.002	0.003
	Cm_u	1.001	0.036	-.041
	Cm_l	-.479	-.035	0.045
7	CN_u	0.631	-.004	-.004
	Cm_u	-.302	0.006	-.031

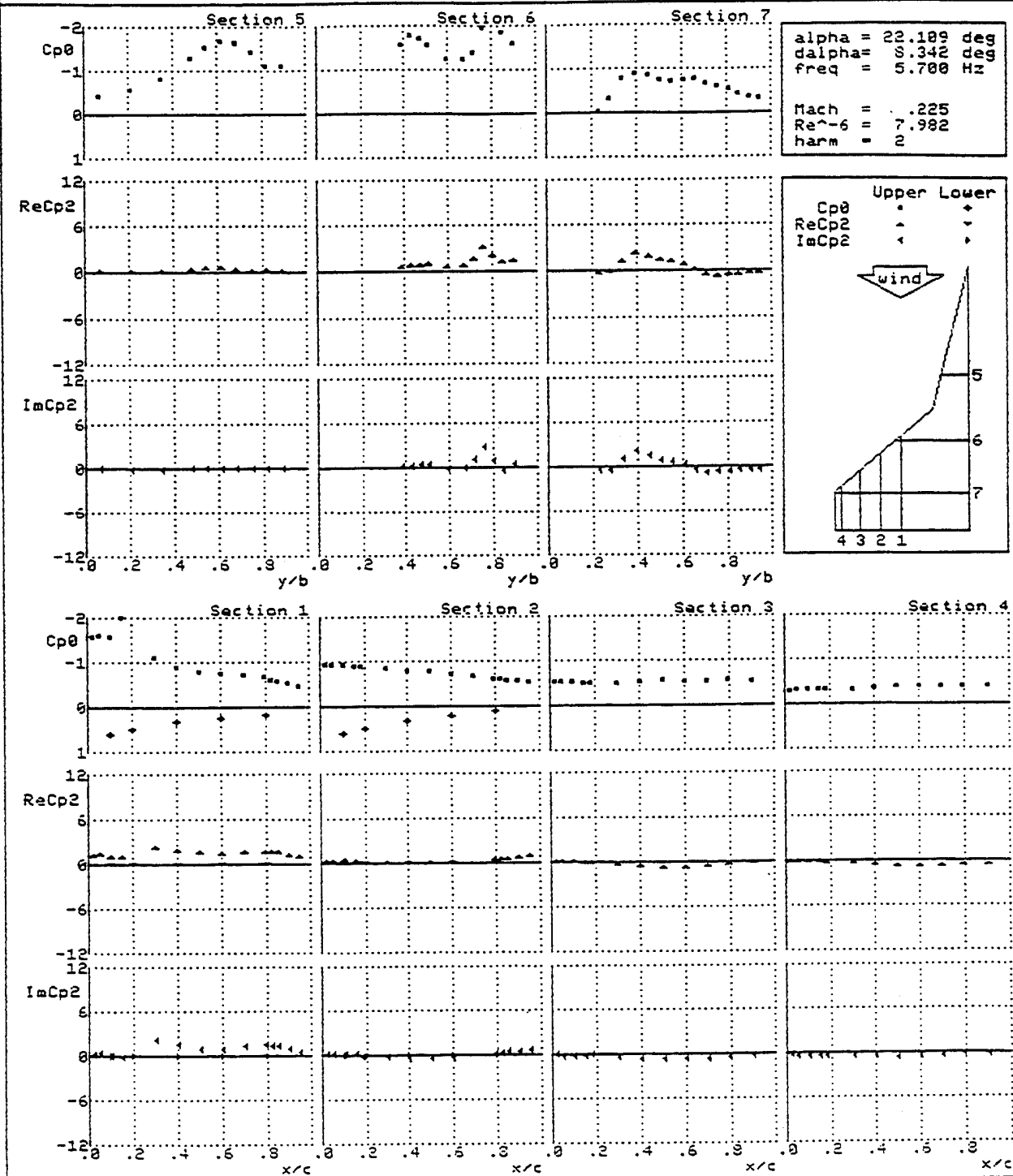
UTDP - SIMPLE STRAKE

DPN 151



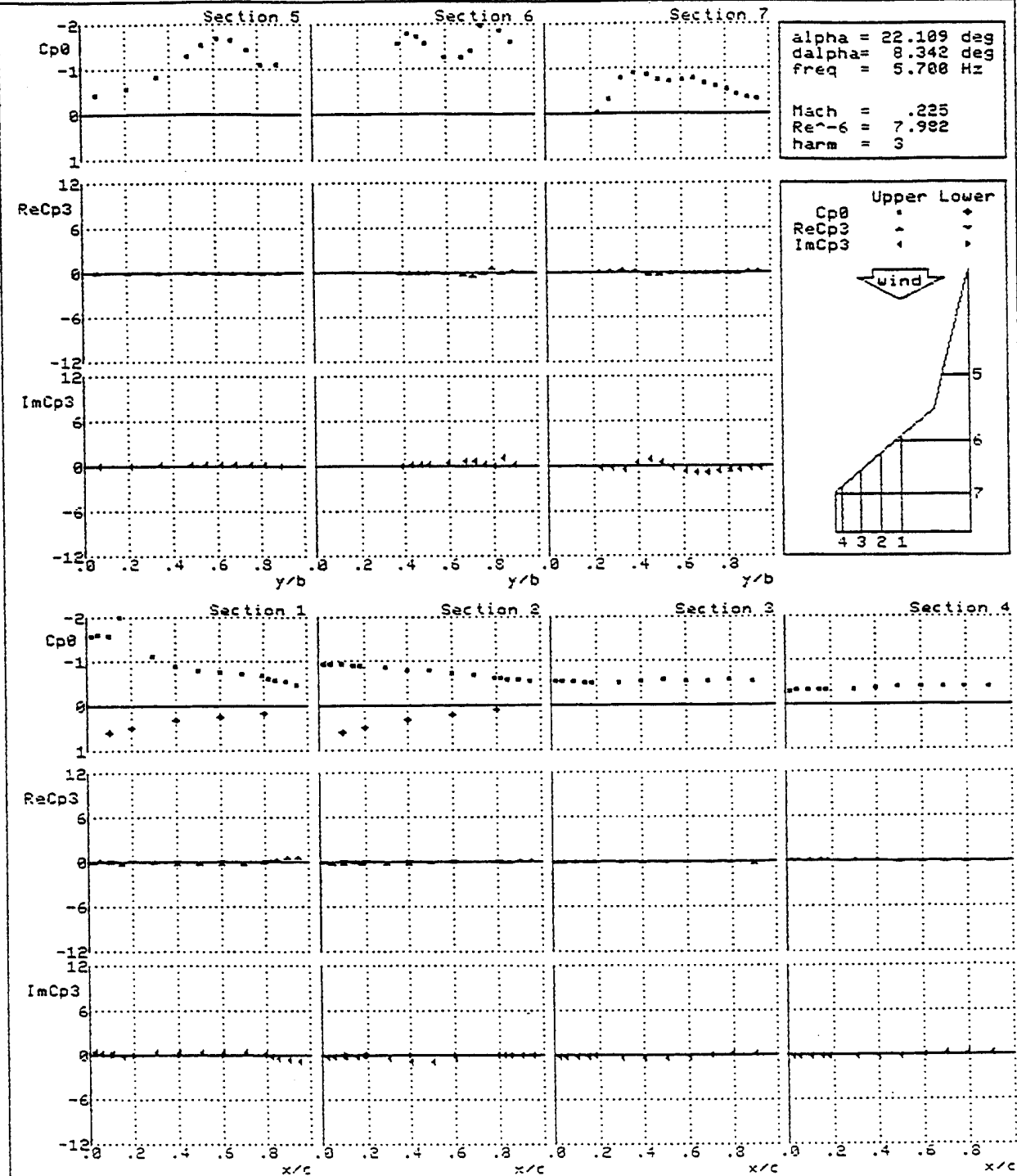
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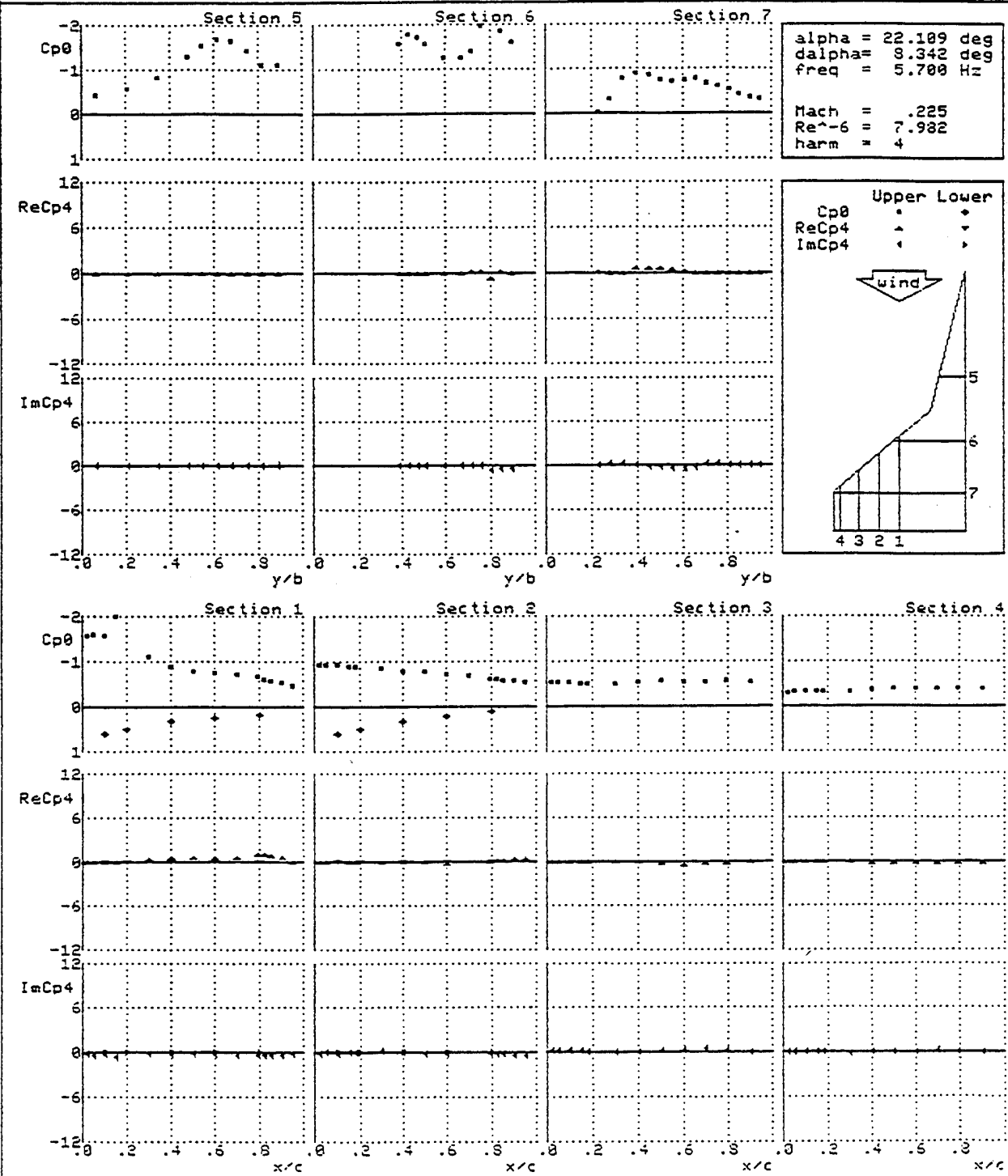
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DPN 151



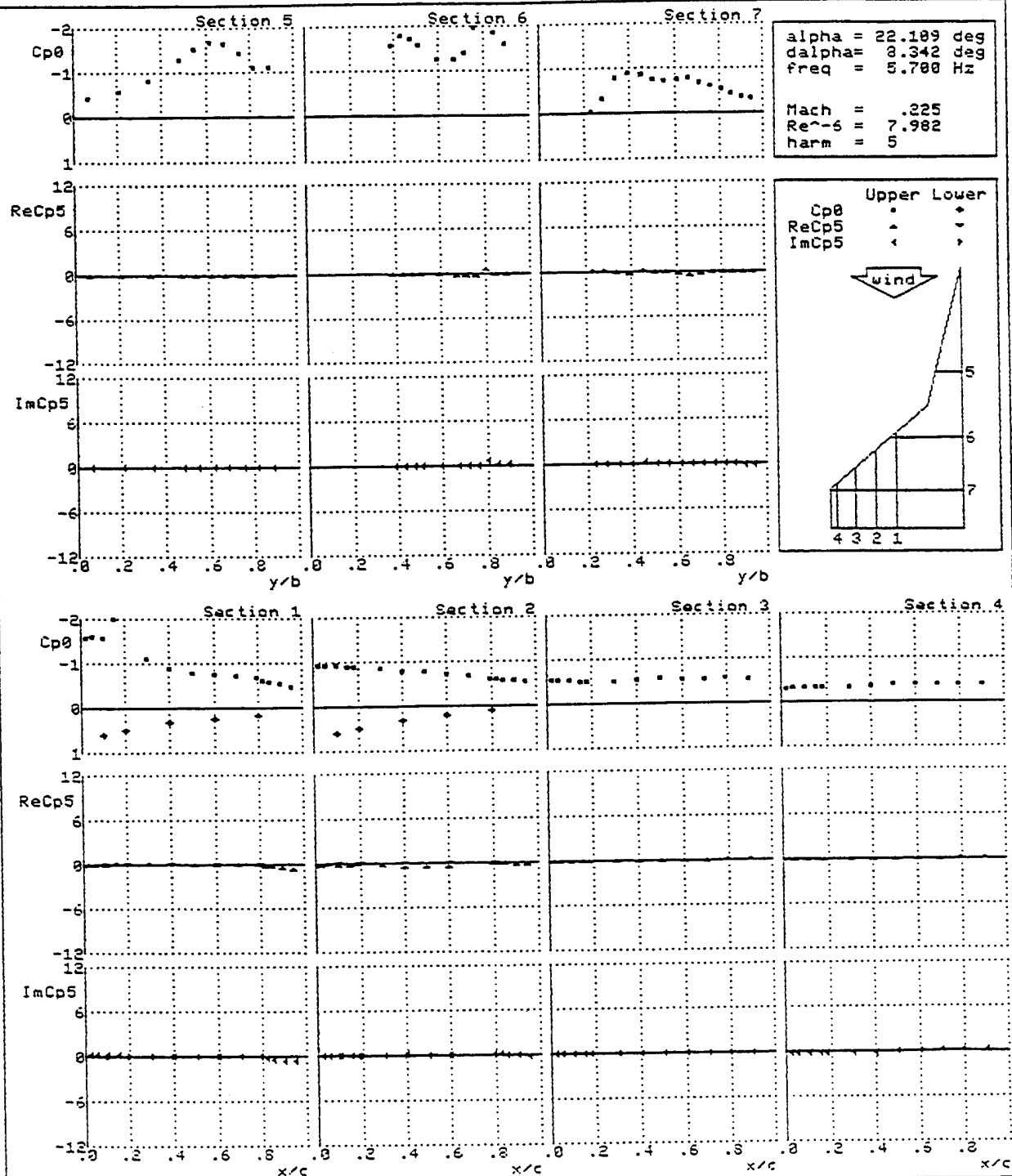
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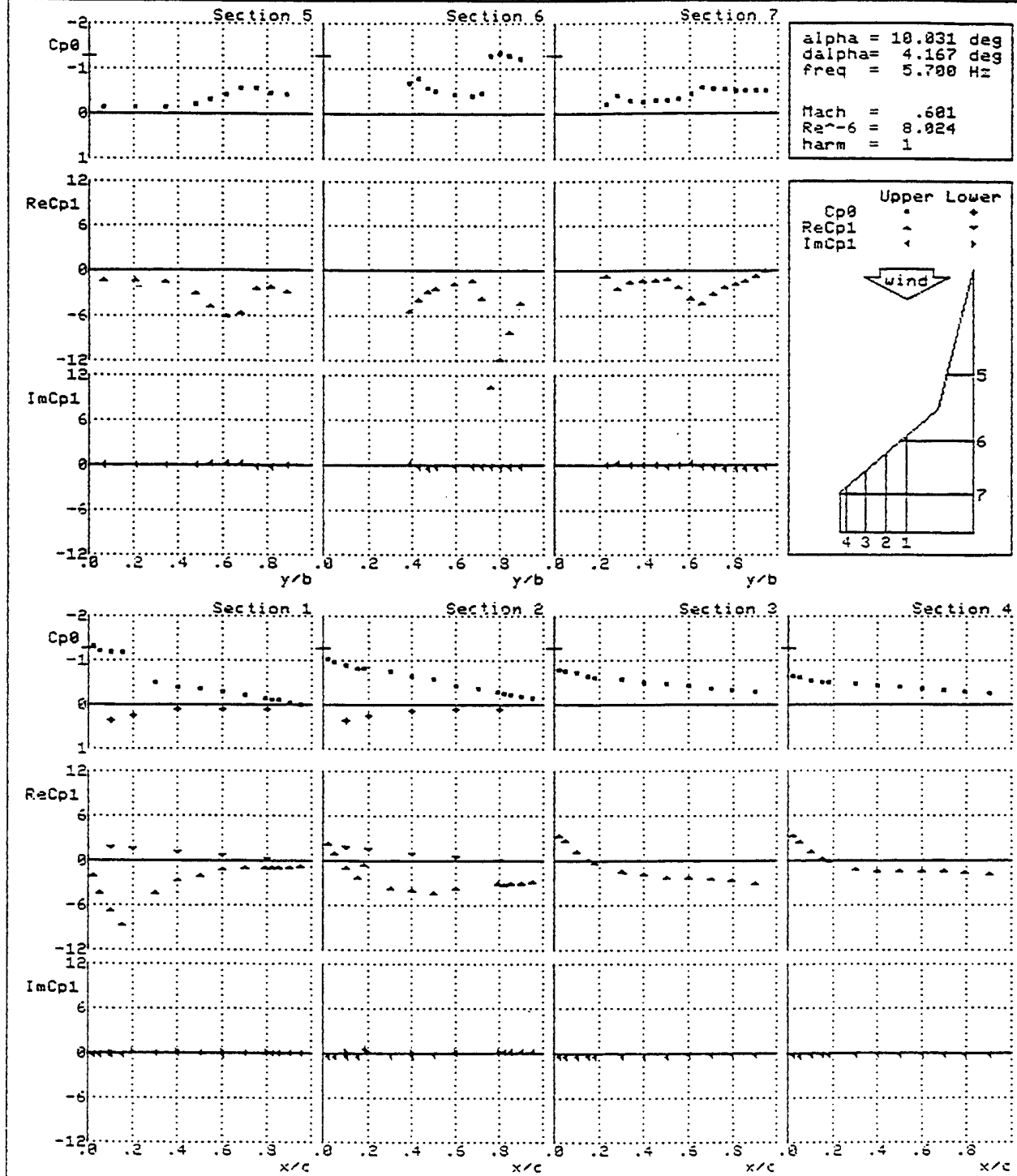
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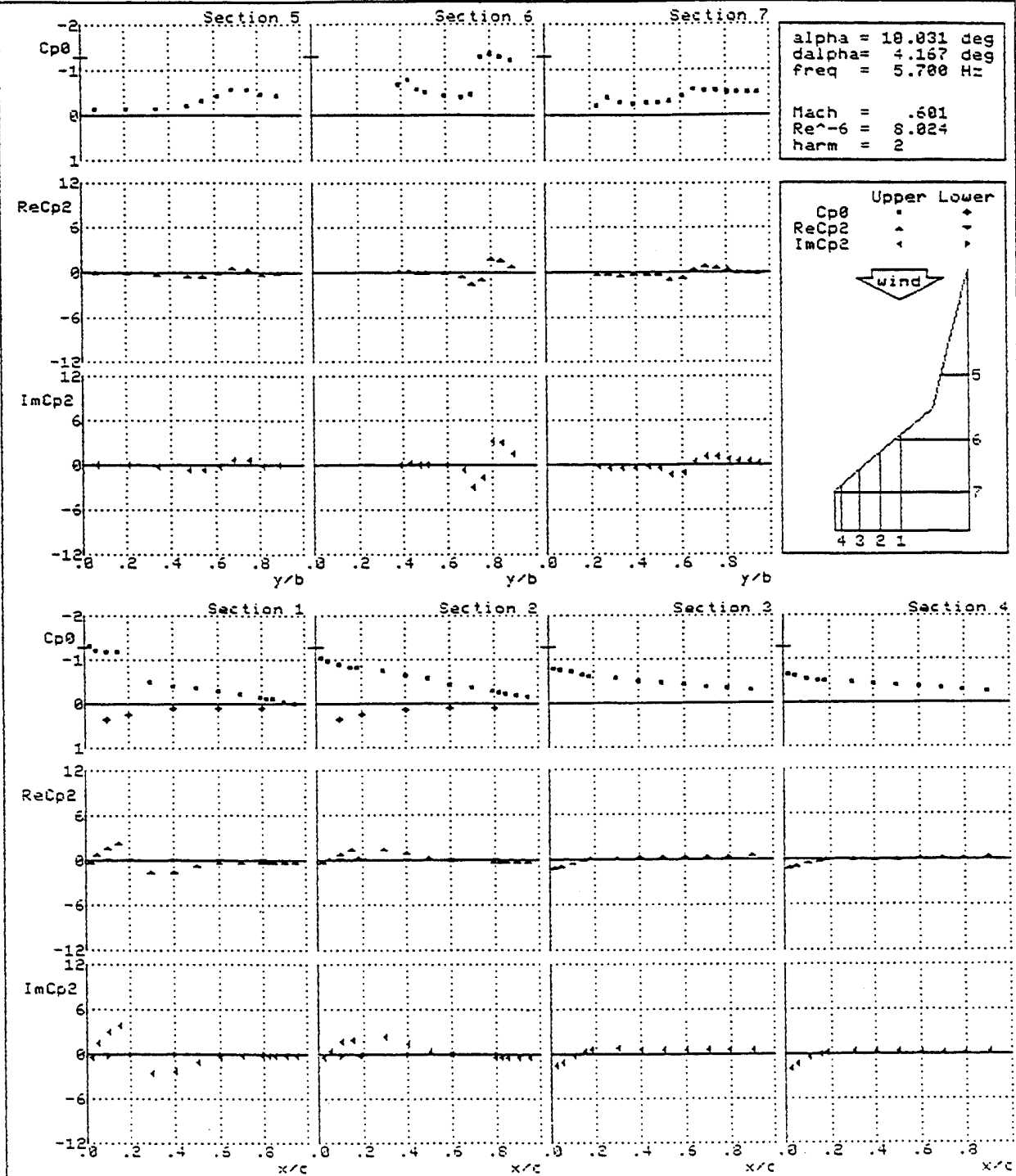
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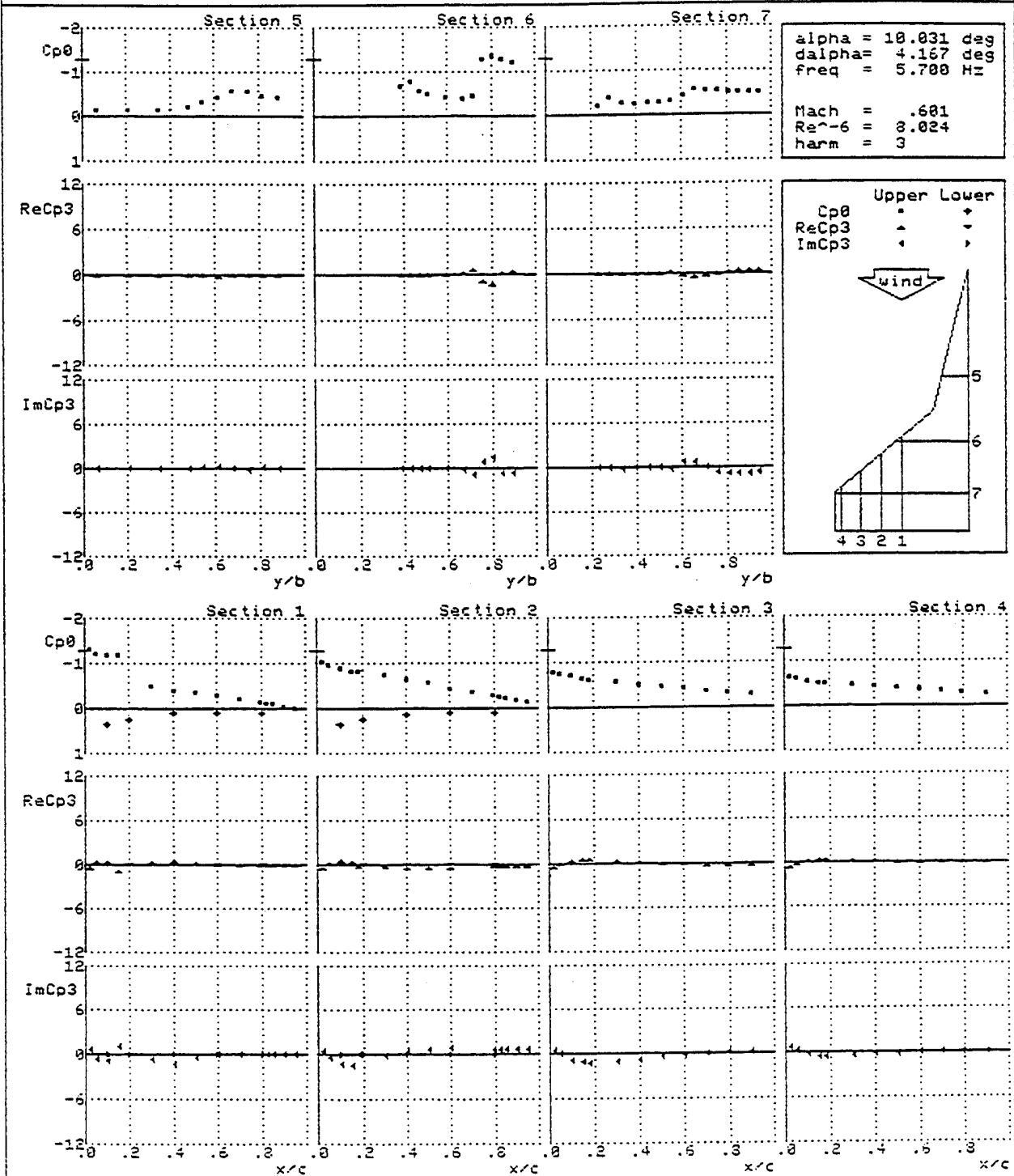
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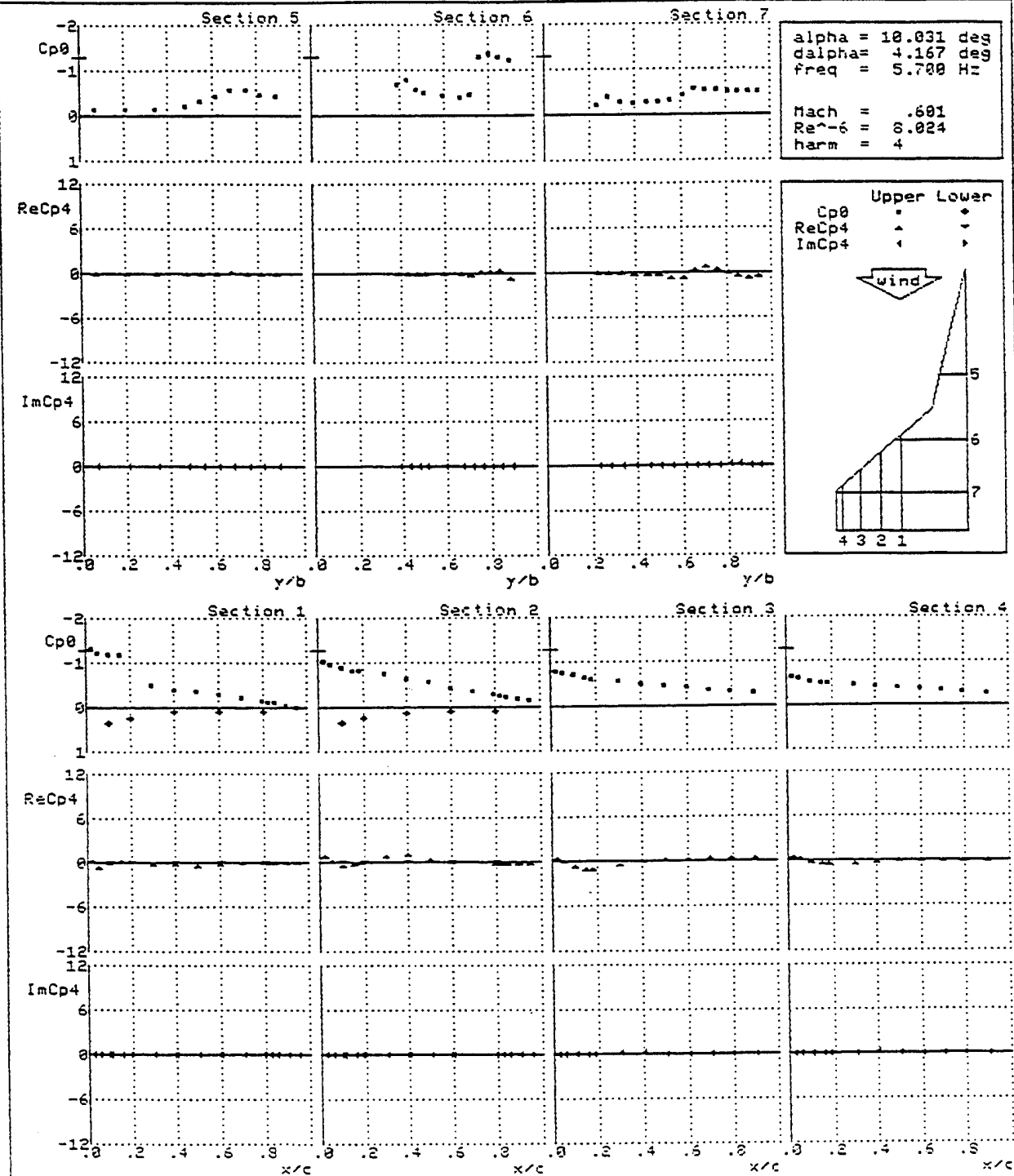
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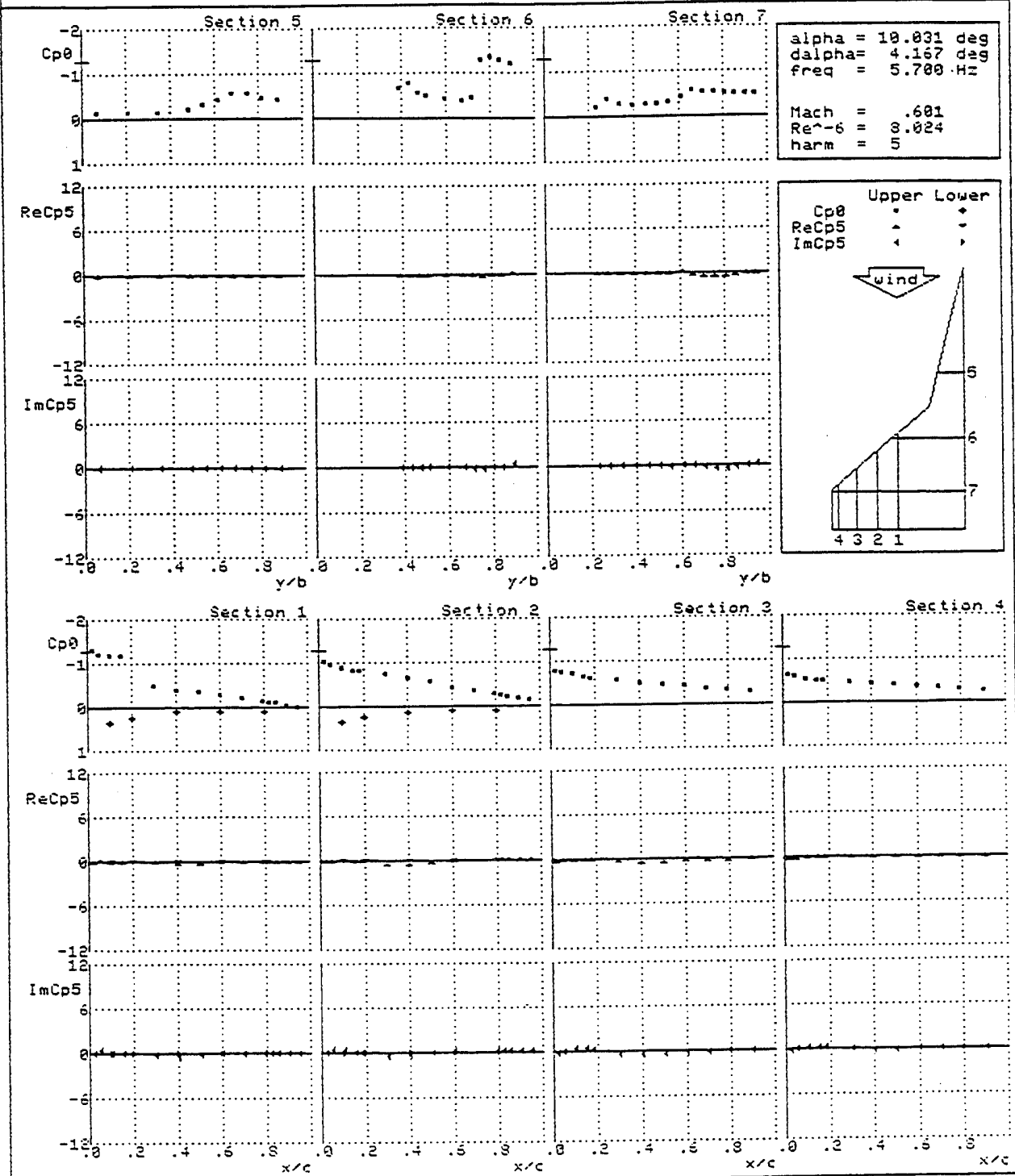
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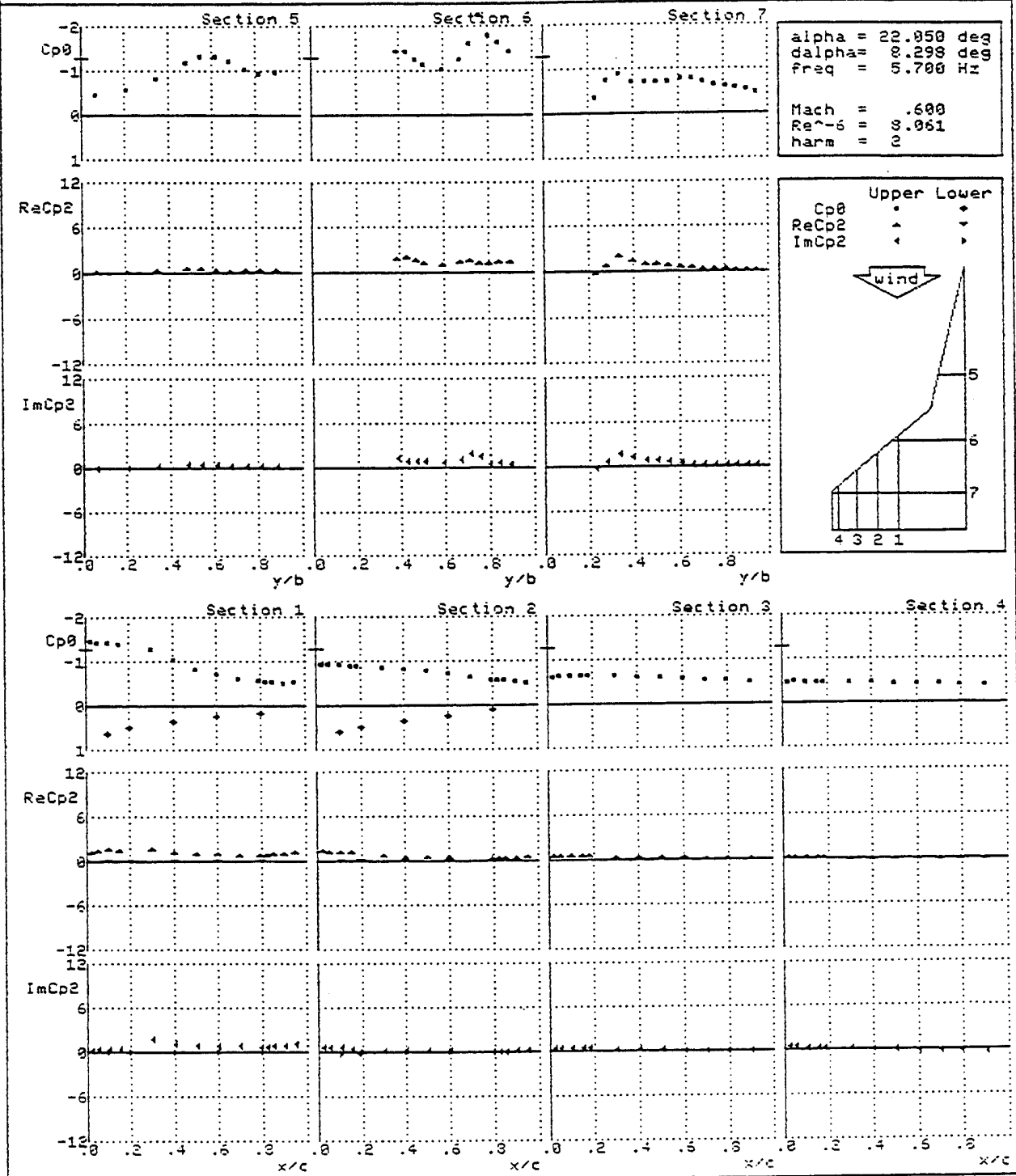
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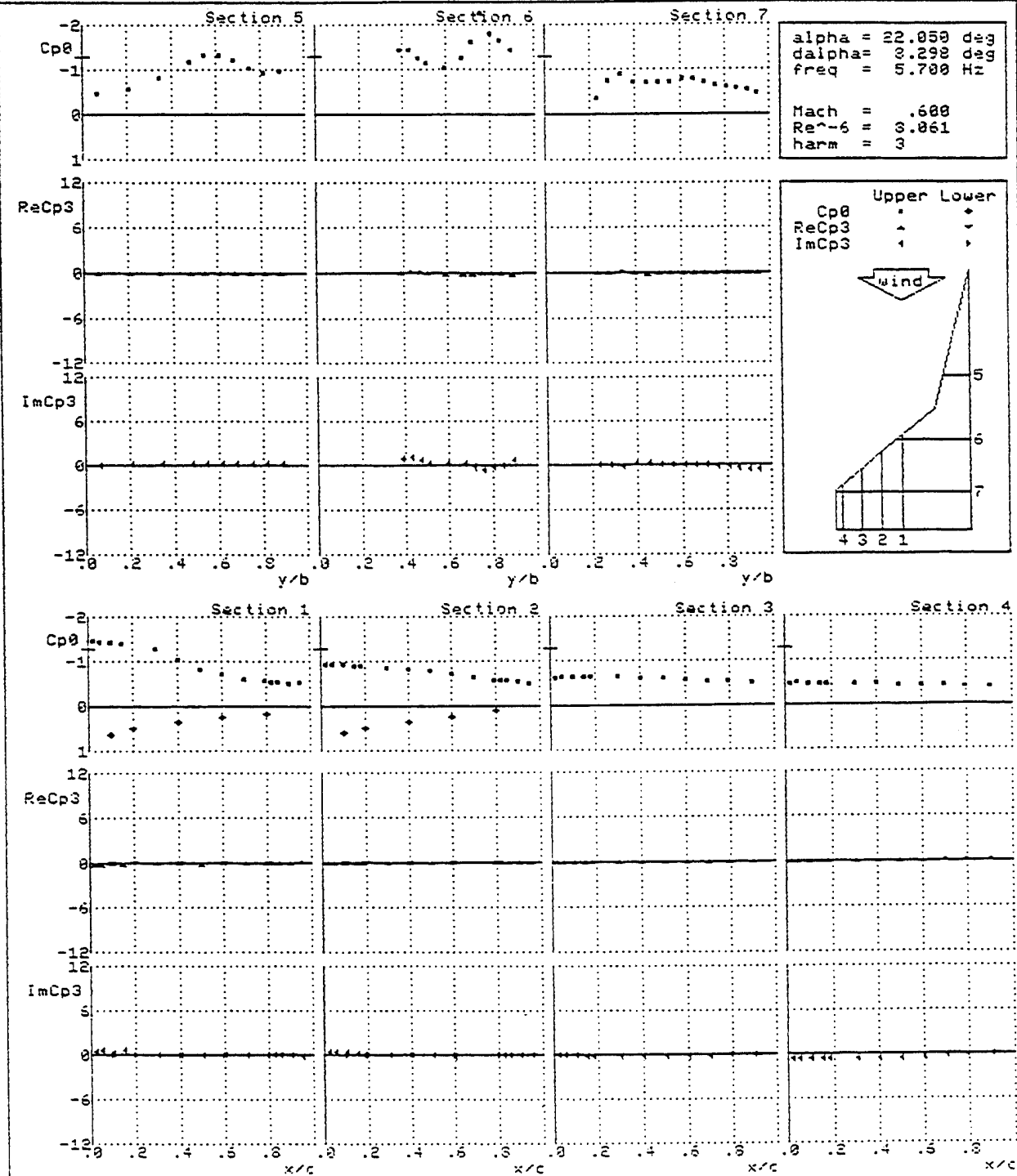
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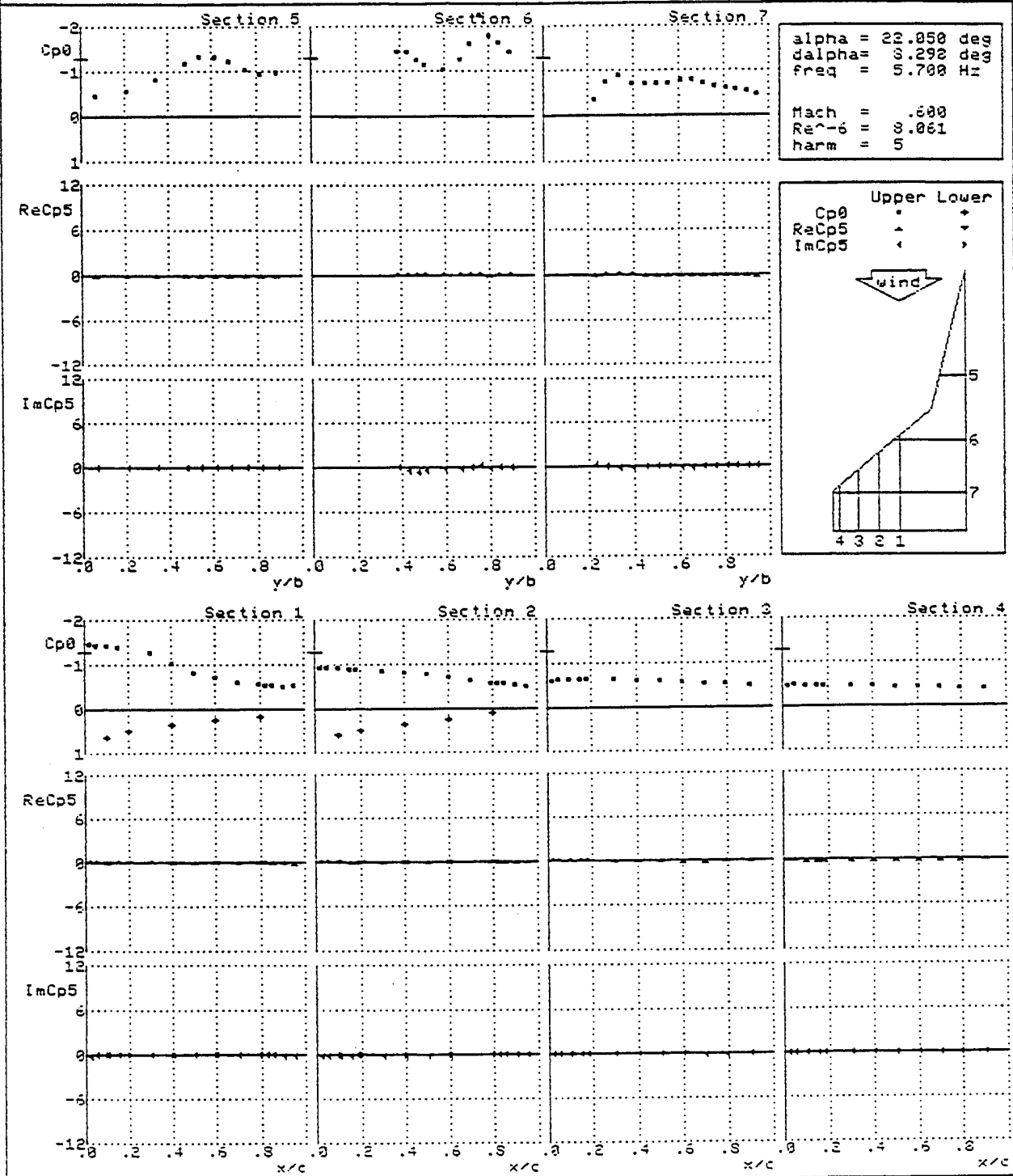
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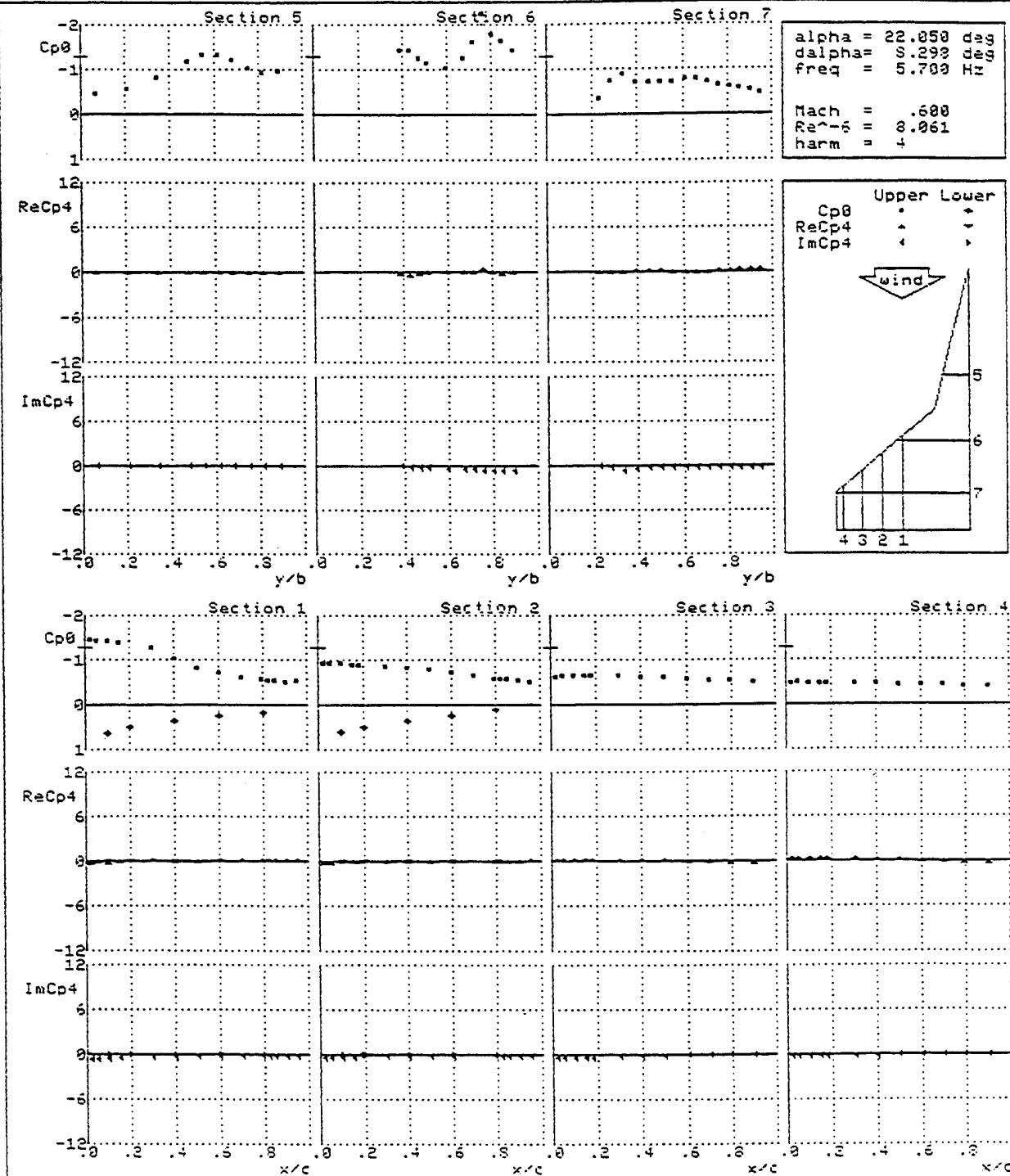
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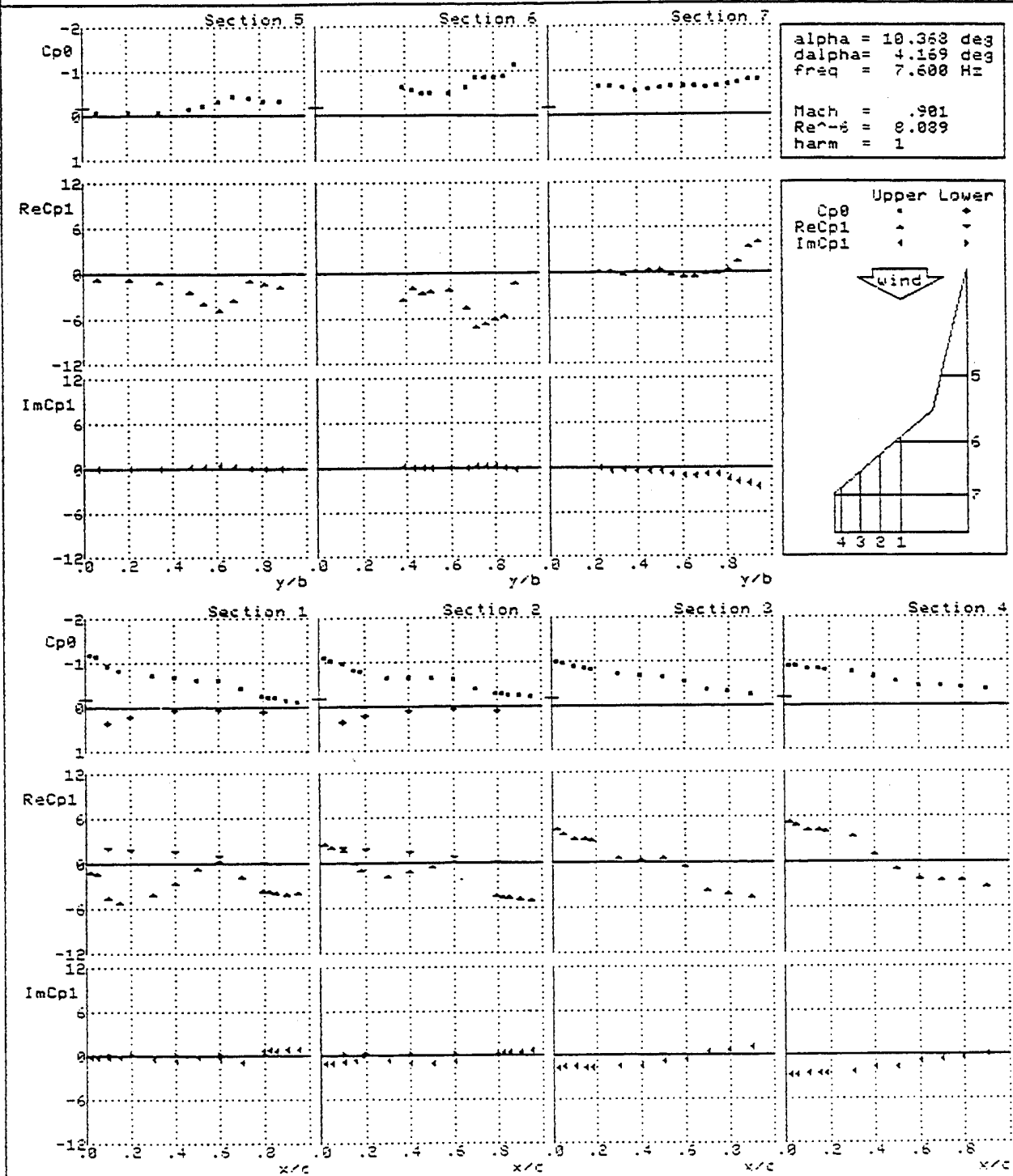
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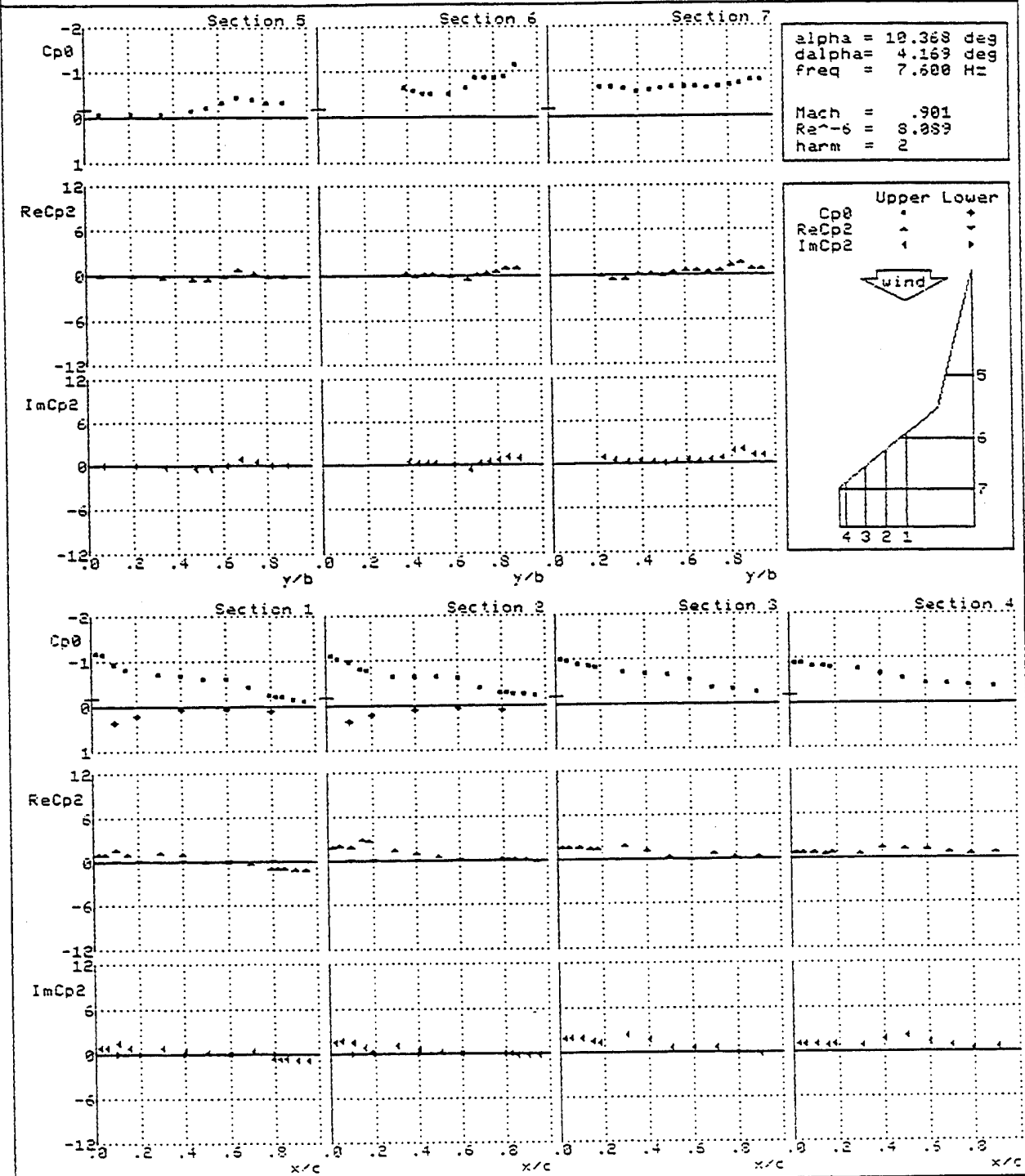
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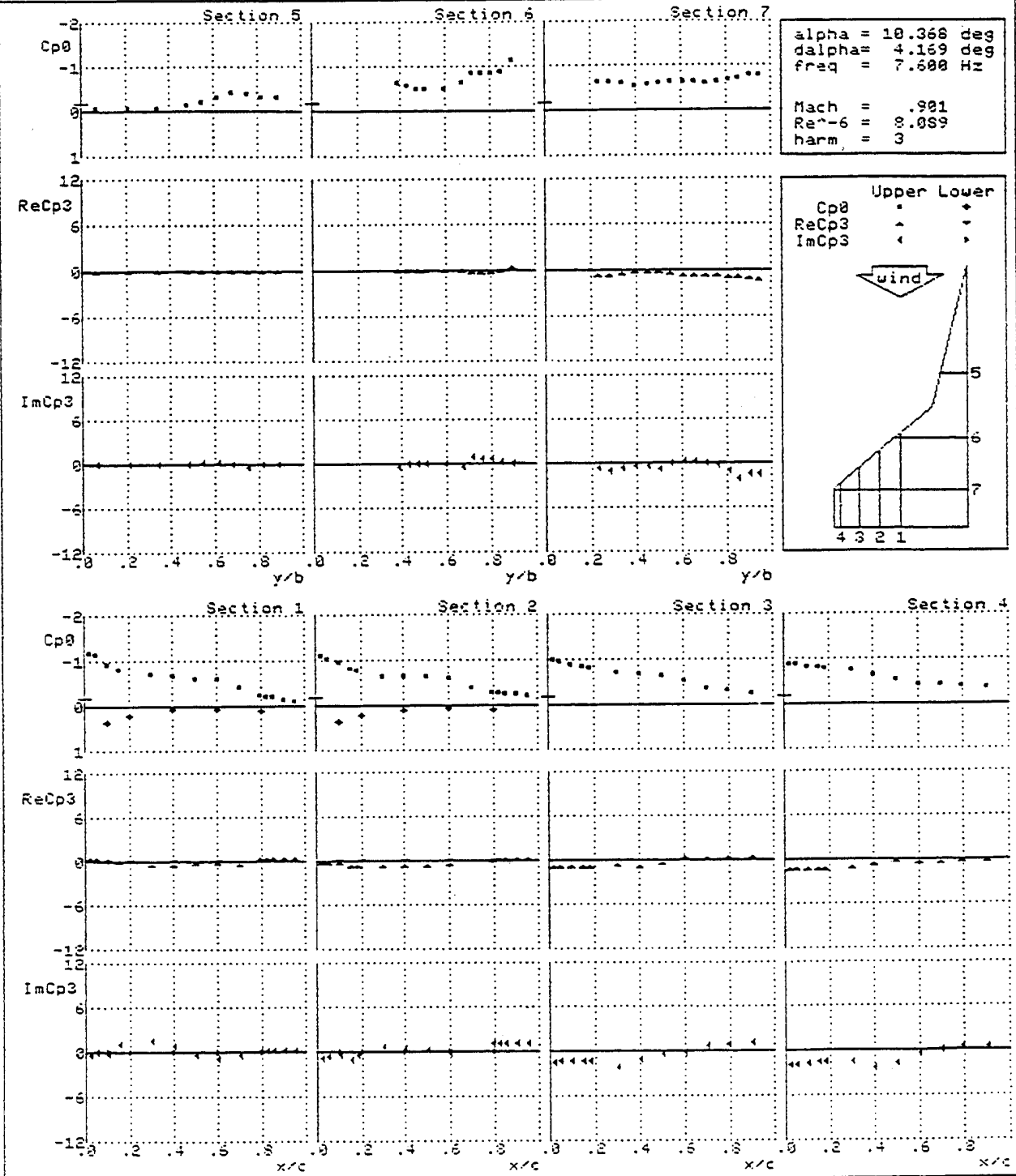
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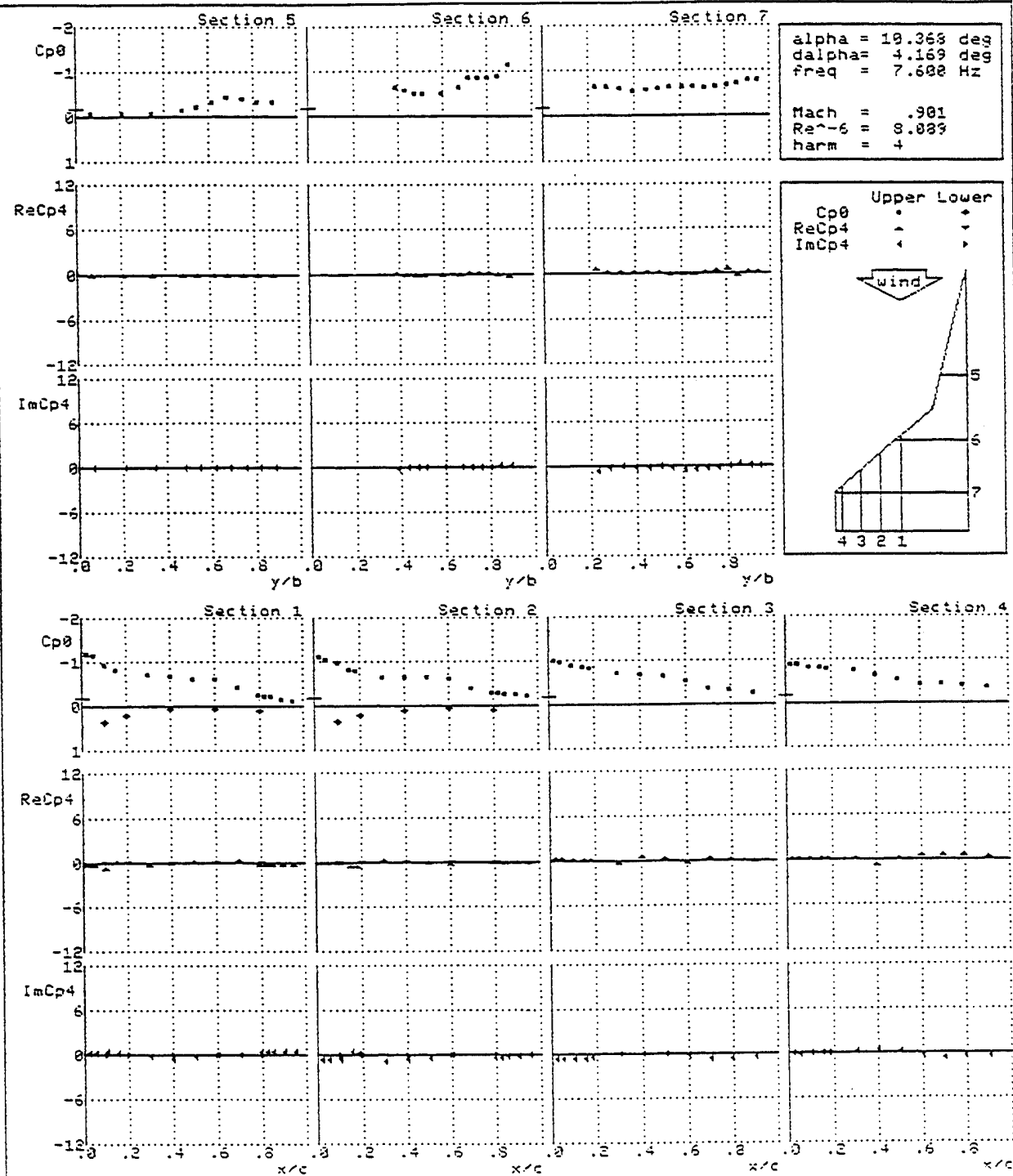
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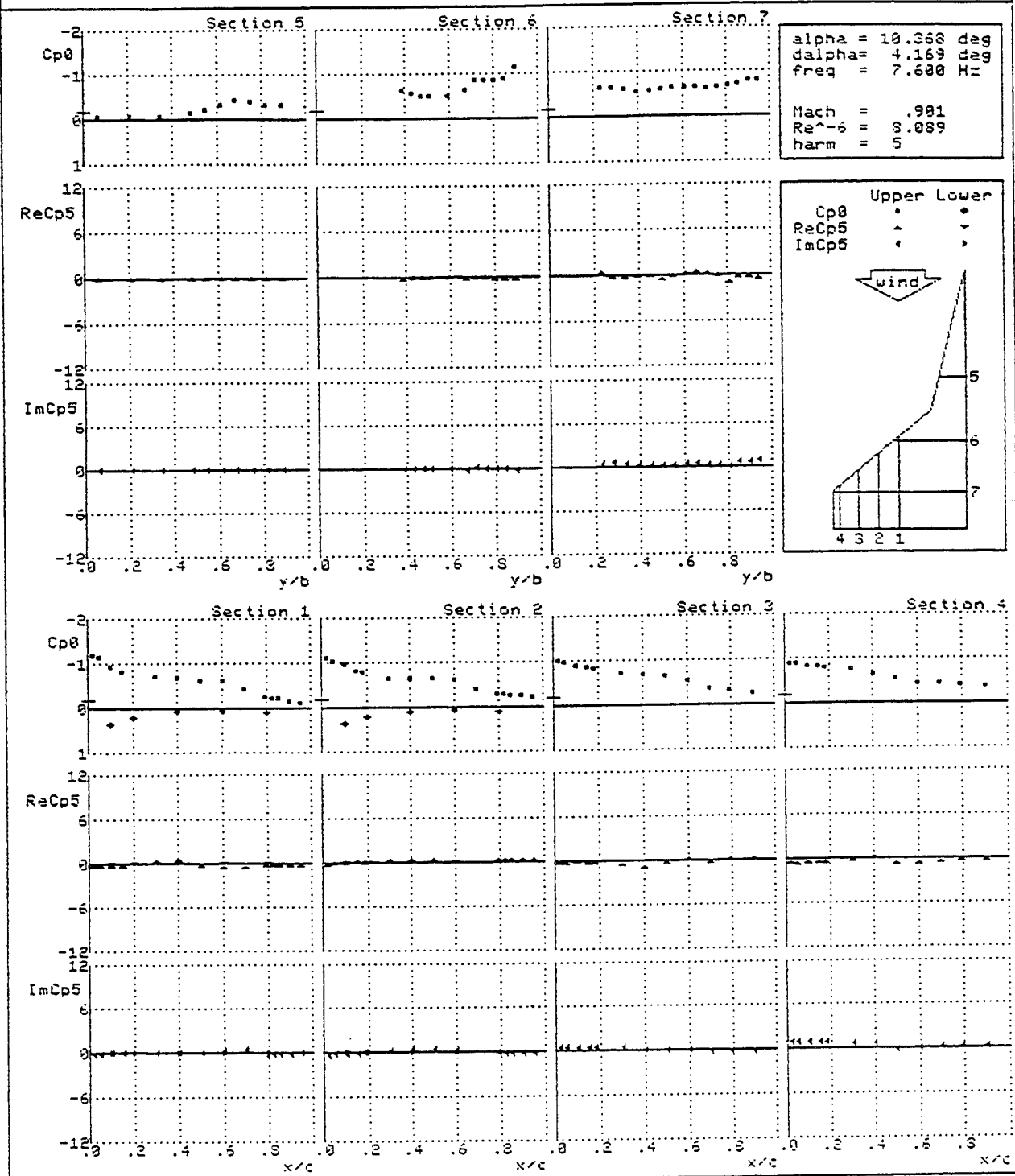
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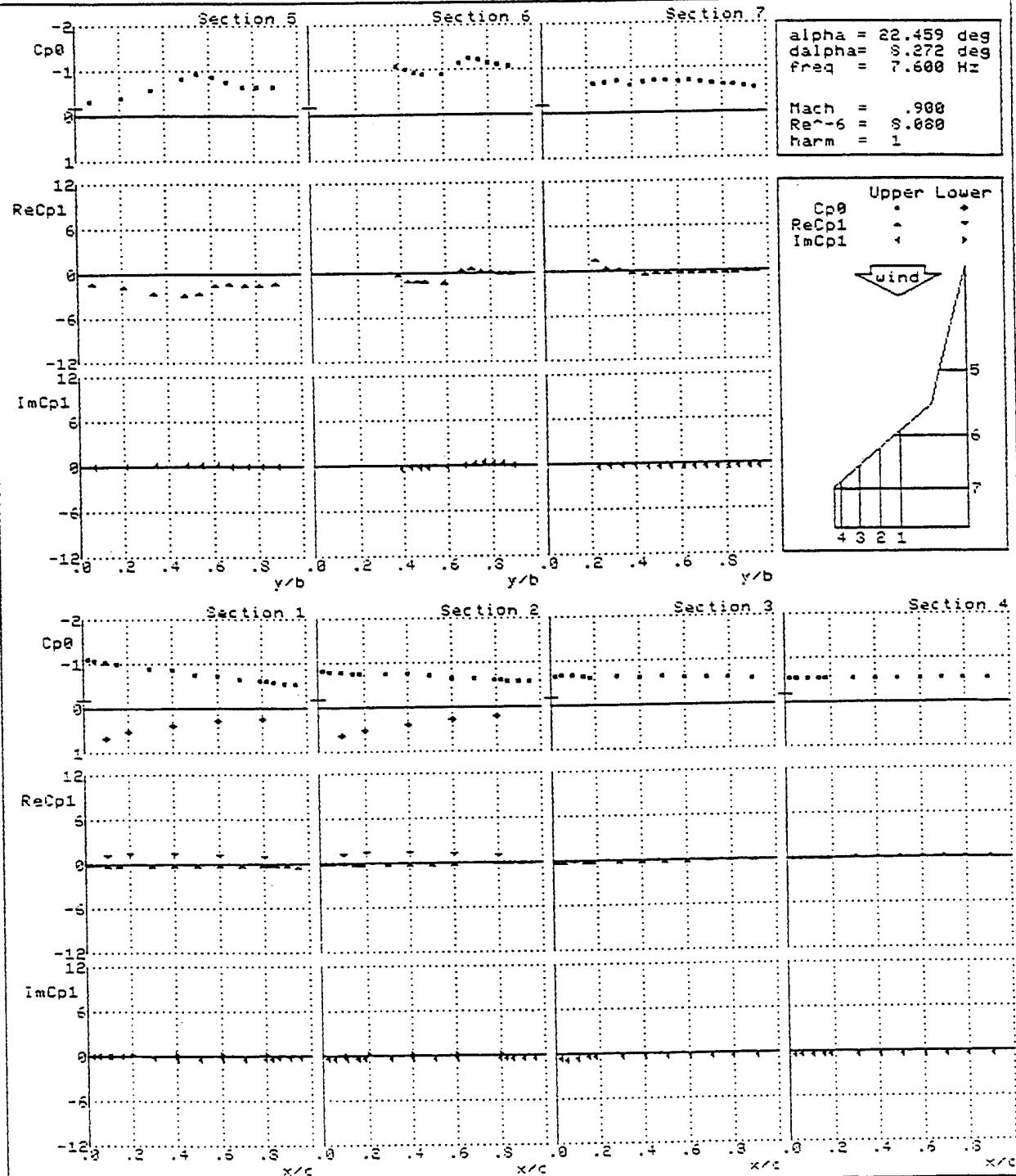
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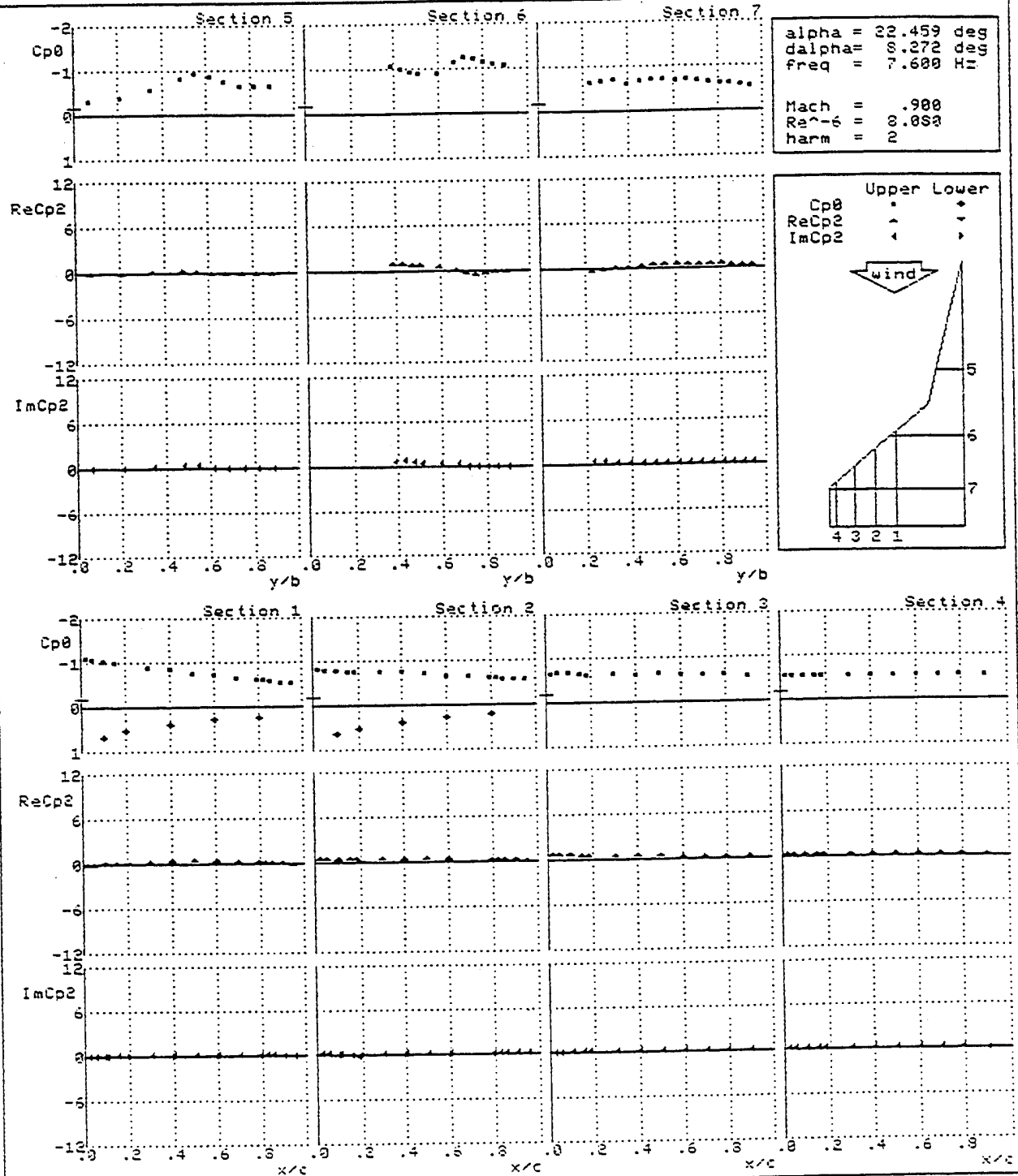
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DPN 605



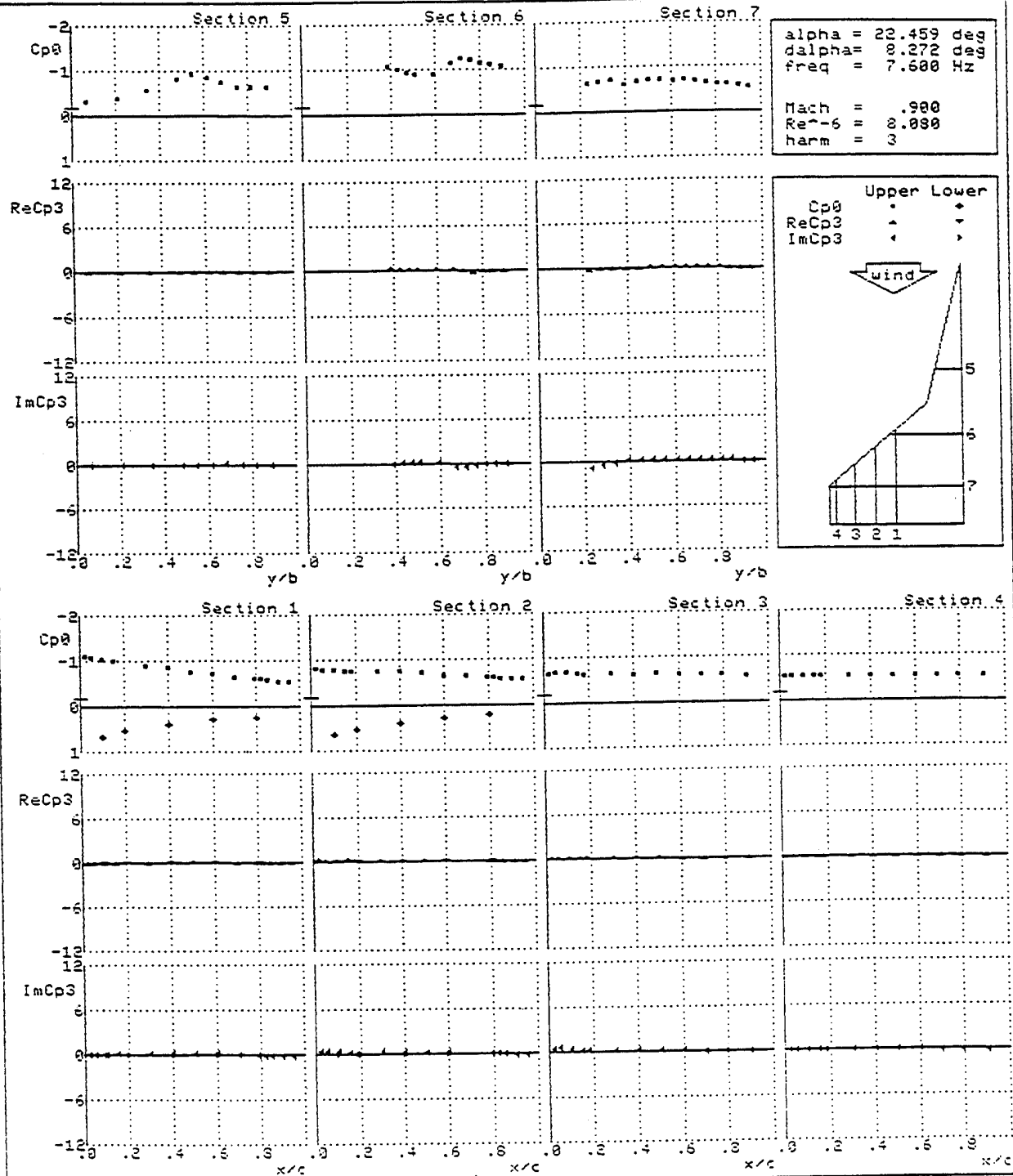
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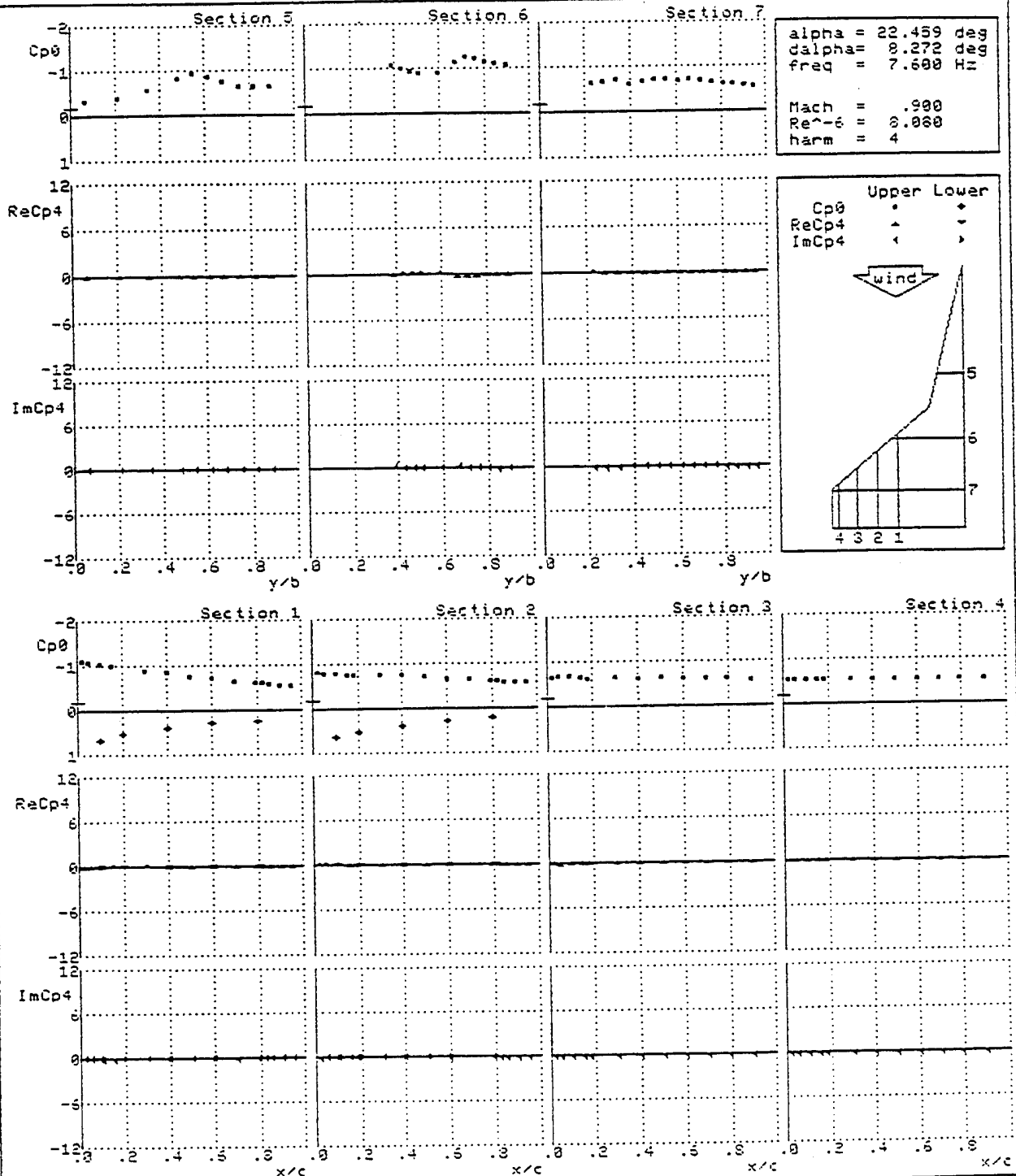
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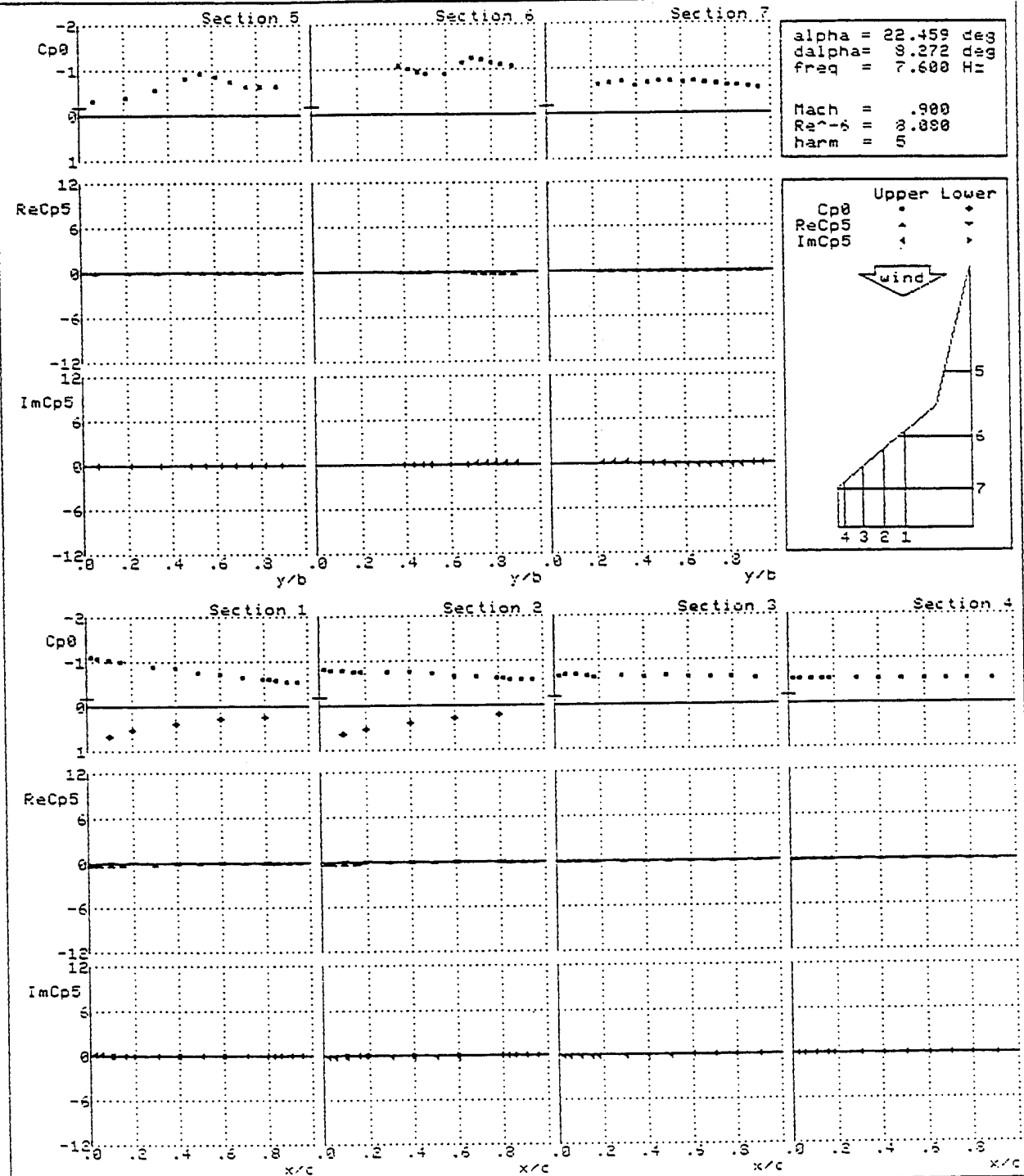
UTDP - SIMPLE STRAKE

DPN 605



UTDP - SIMPLE STRAKE

DPN 605



APPENDIX B PLOTS OF NORMAL FORCE AND MOMENT
COEFFICIENTS VERSUS INCIDENCE

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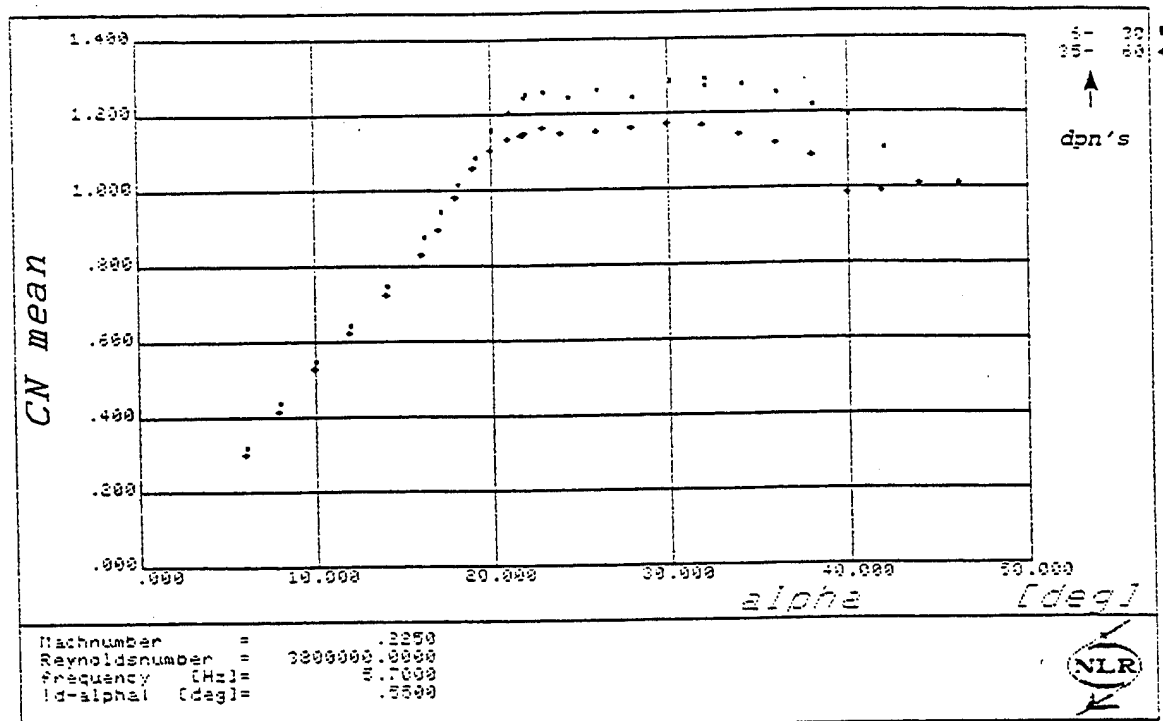


Figure B.1 CN mean versus incidence with (■) and without (◆) filler plate

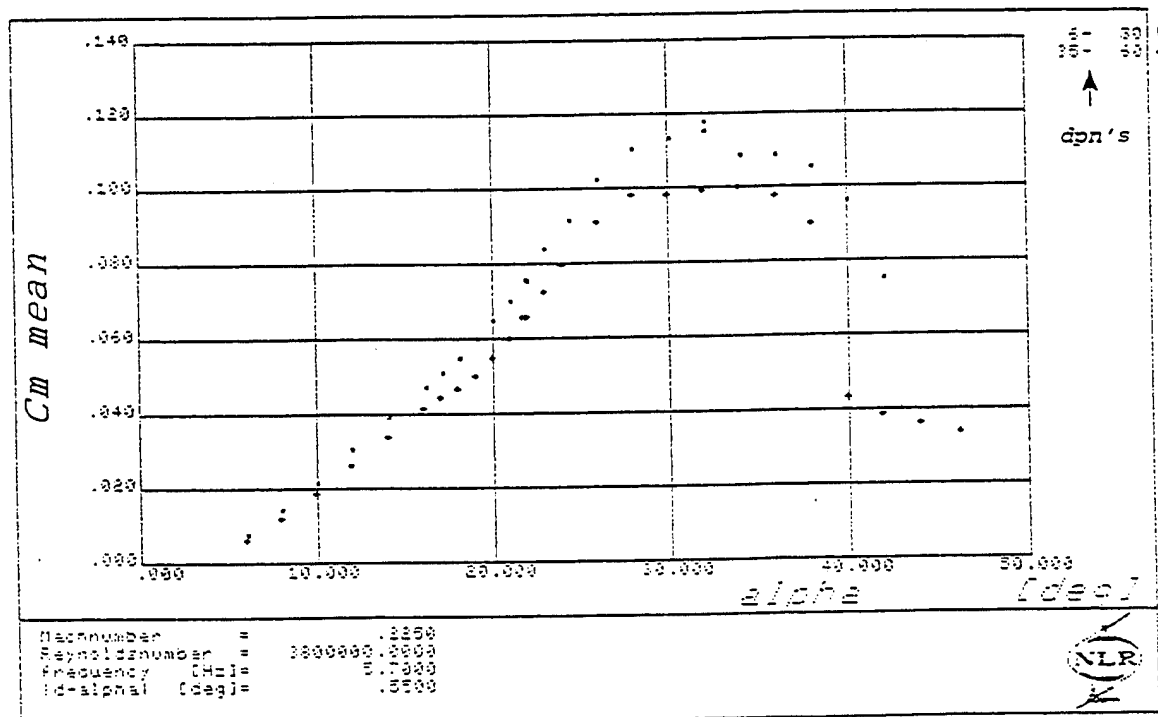


Figure B.2 Cm mean versus incidence with (■) and without (◆) filler plate

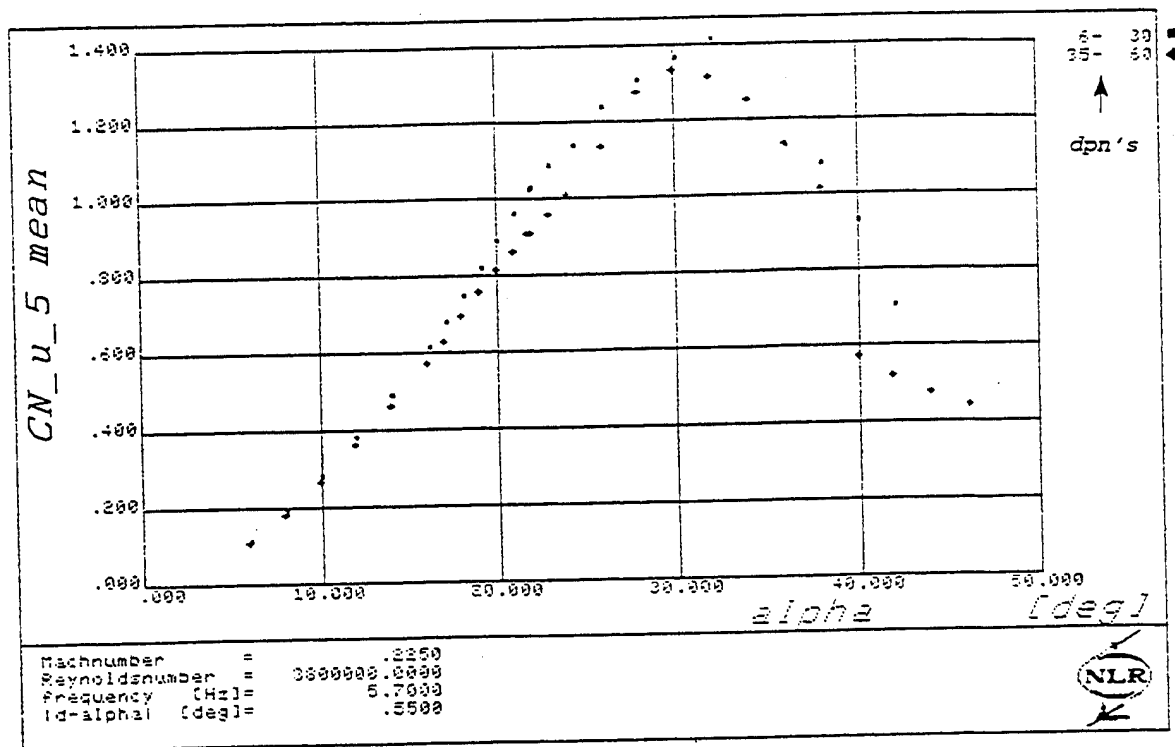


Figure B.3 CN_{u_5} mean versus incidence with (■) and without (◆) filler plate

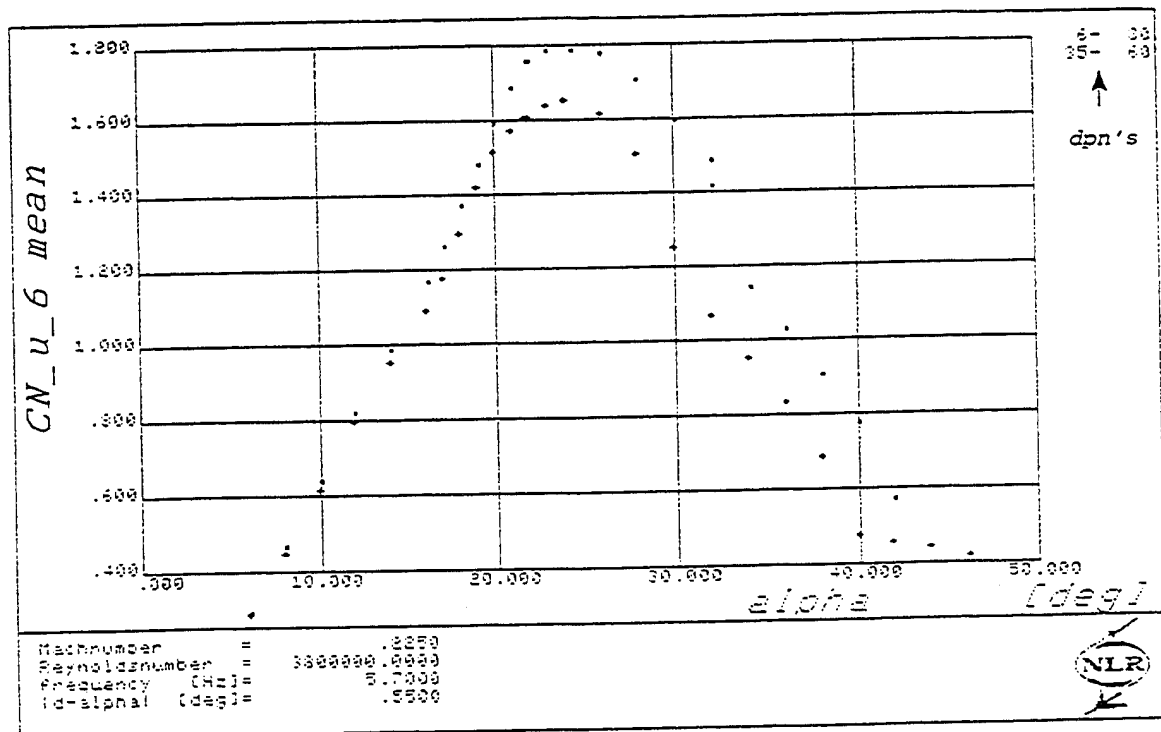


Figure B.4 CN_{u_6} mean versus incidence with (■) and without (◆) filler plate

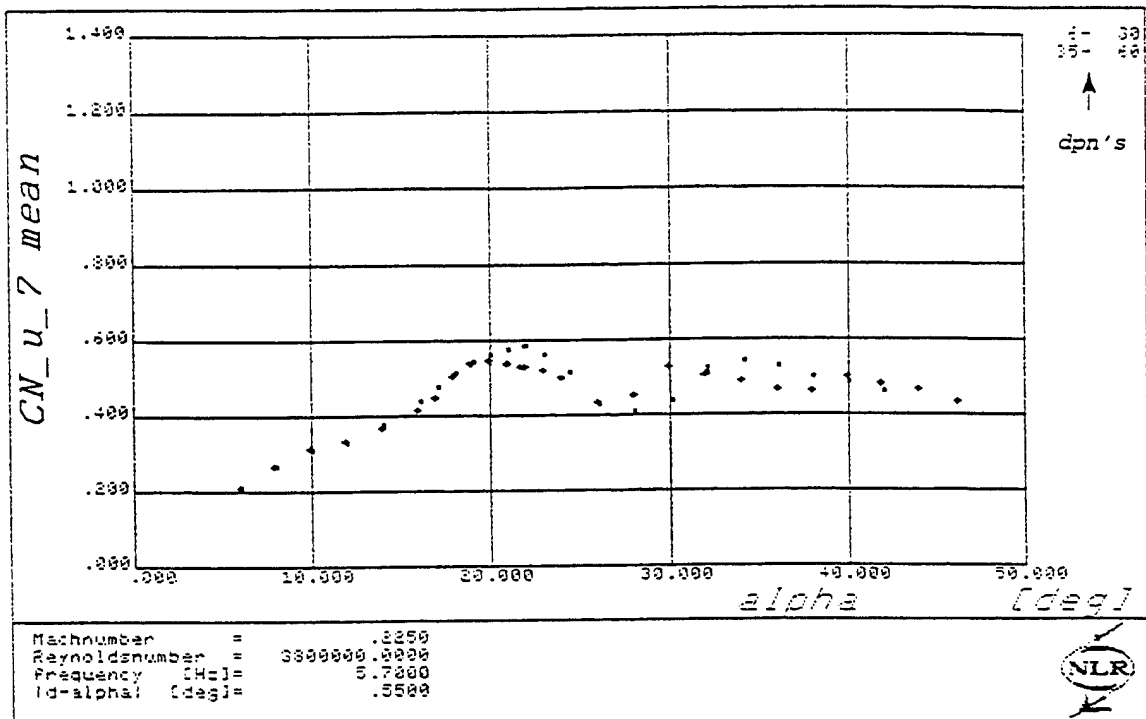


Figure B.5 CN_{u_7} mean versus incidence with (■) without (◆) filler plate

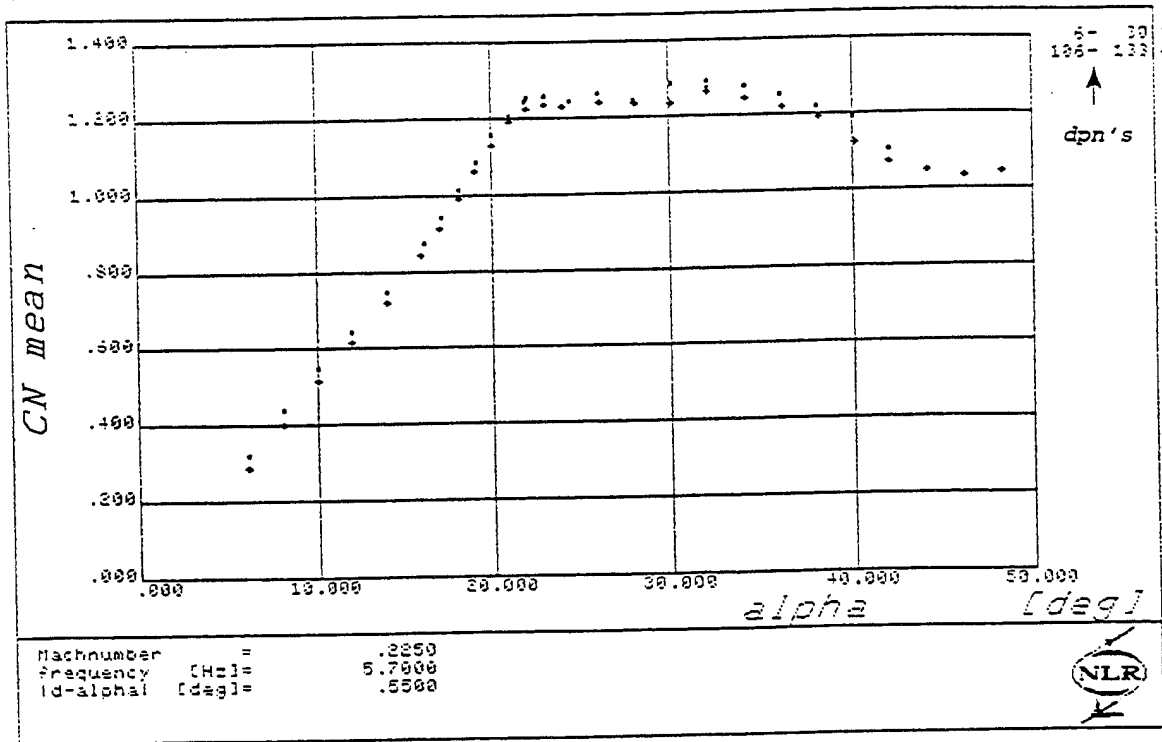


Figure B.6 CN mean versus incidence at Reynolds number of 3.8 (■) and 8.0 (♦) 10^6

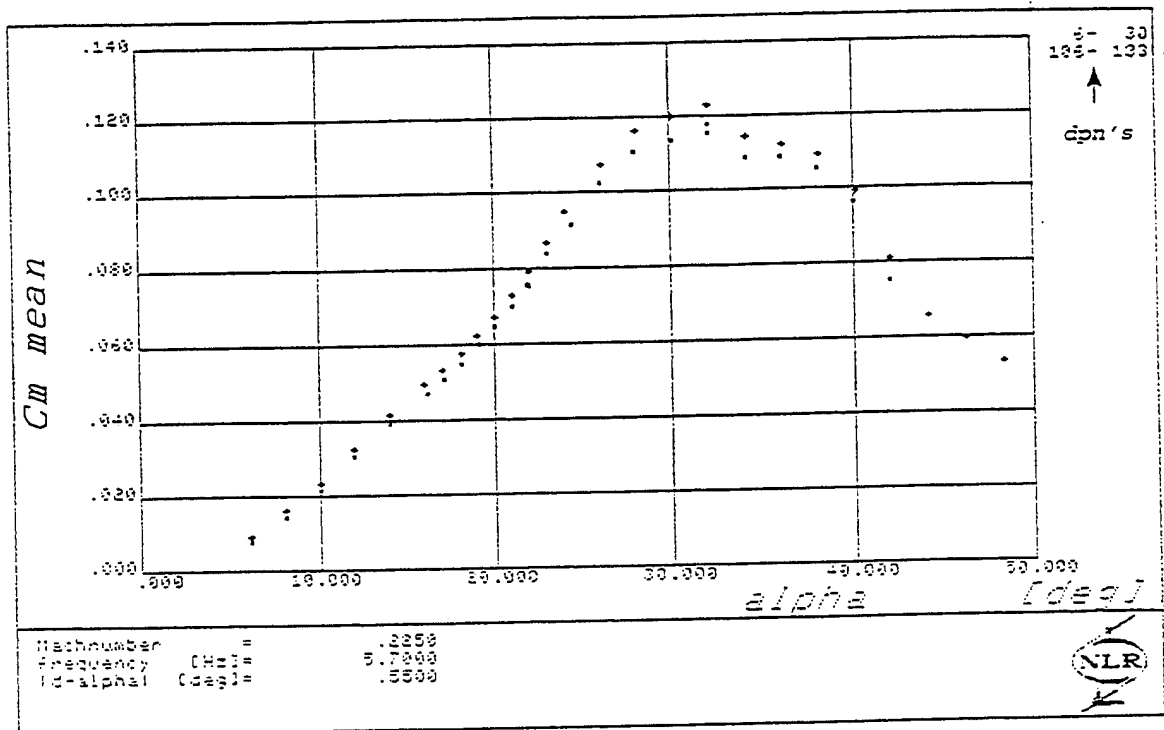


Figure B.7 Cm mean versus incidence at Reynolds number of 3.8 (■) and 8.0 (♦) 10^6

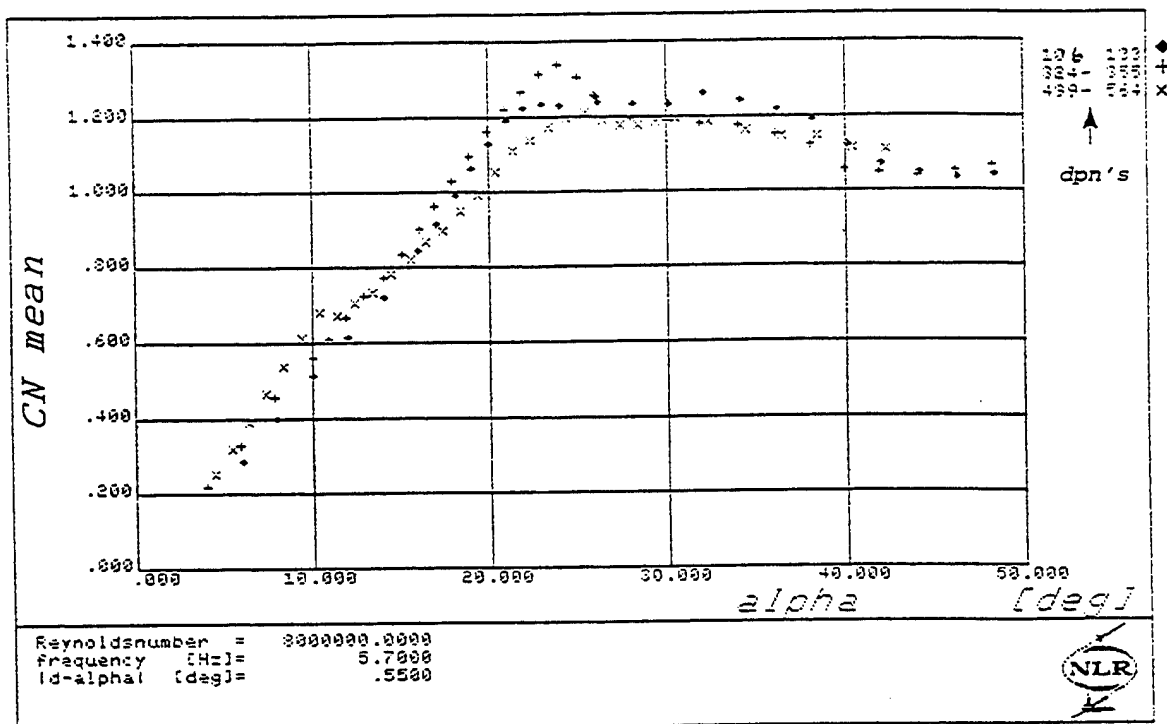


Figure B.8 CN mean versus incidence at Mach number of 0.225 (♦), 0.600 (+) and 0.900 (x)

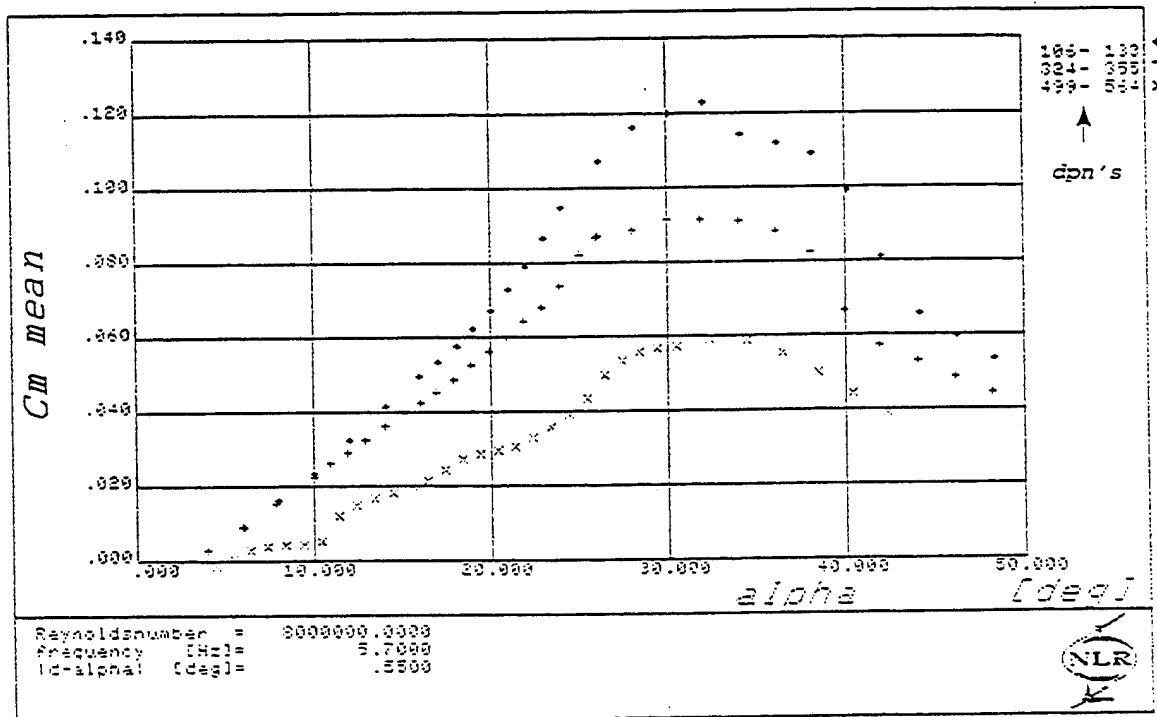


Figure B.9 Cm mean versus incidence at Mach number of 0.225 (♦), 0.600 (+) and 0.900 (x)

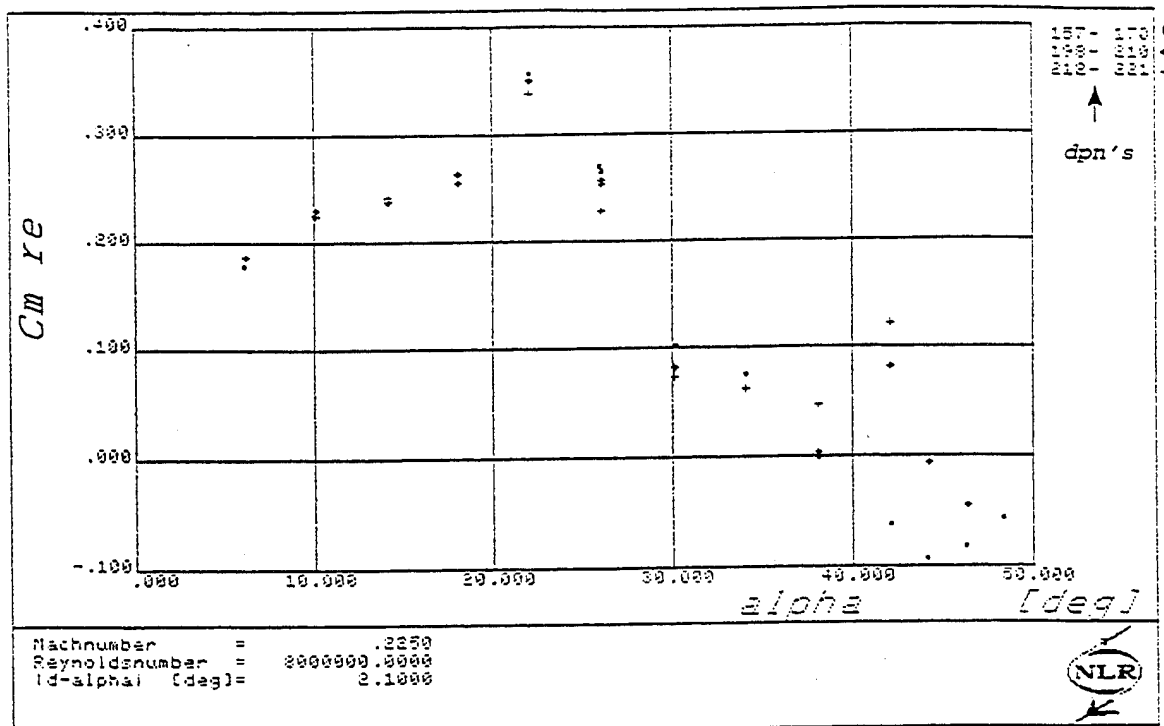


Figure B.10 C_m real versus incidence at a frequency of 7.6 (■), 11.4 (◆) and 15.2 (+) Hz

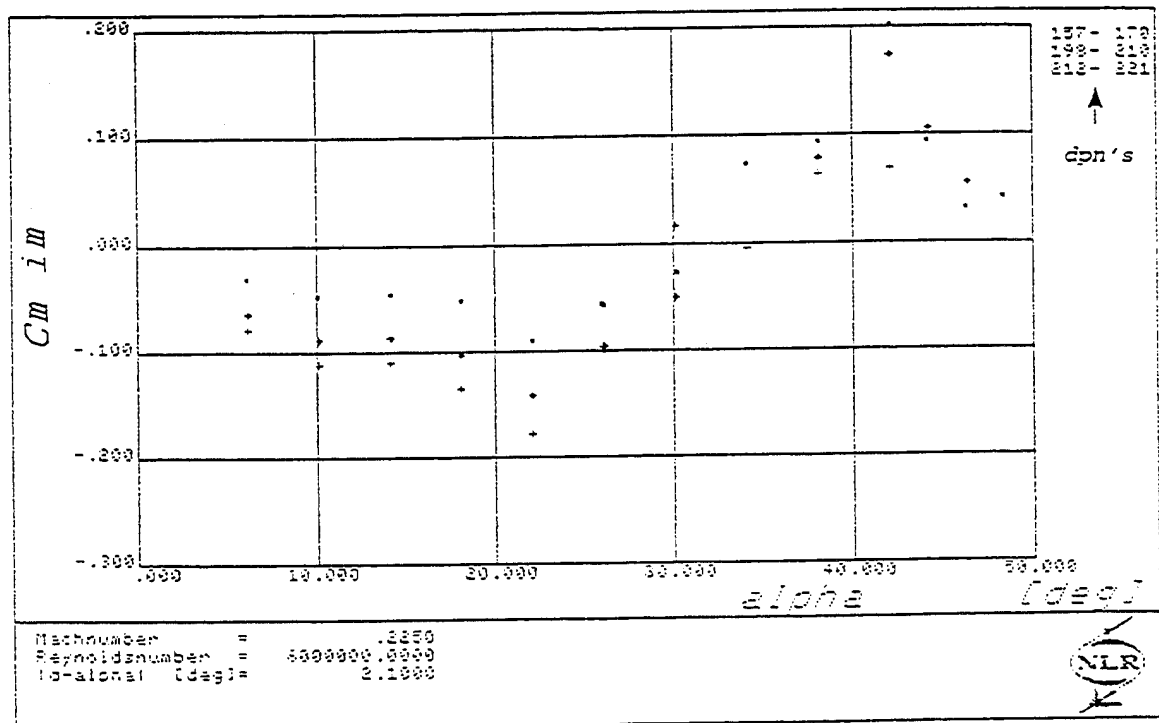


Figure B.11 C_m imaginary versus incidence at a frequency of 7.6 (■), 11.4 (◆) and 15.2 (+) Hz

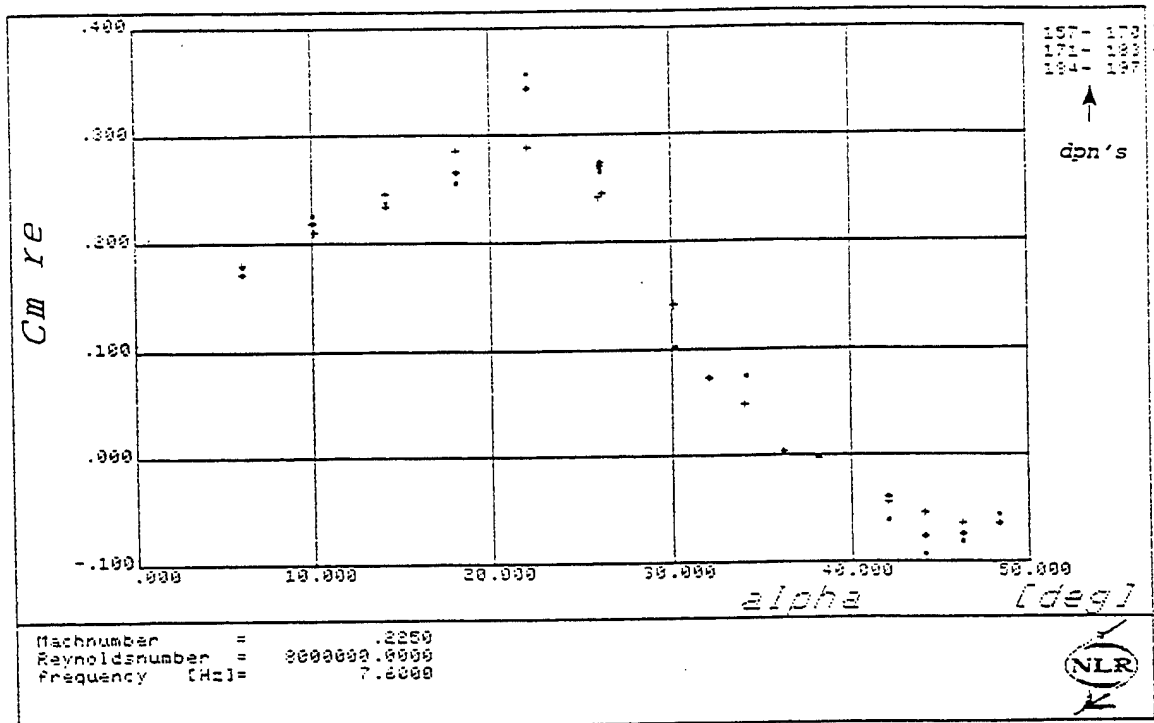


Figure B.12 C_m real versus incidence at an amplitude of 2.1 (■), 4.2 (◆) and 8.4 (+) deg

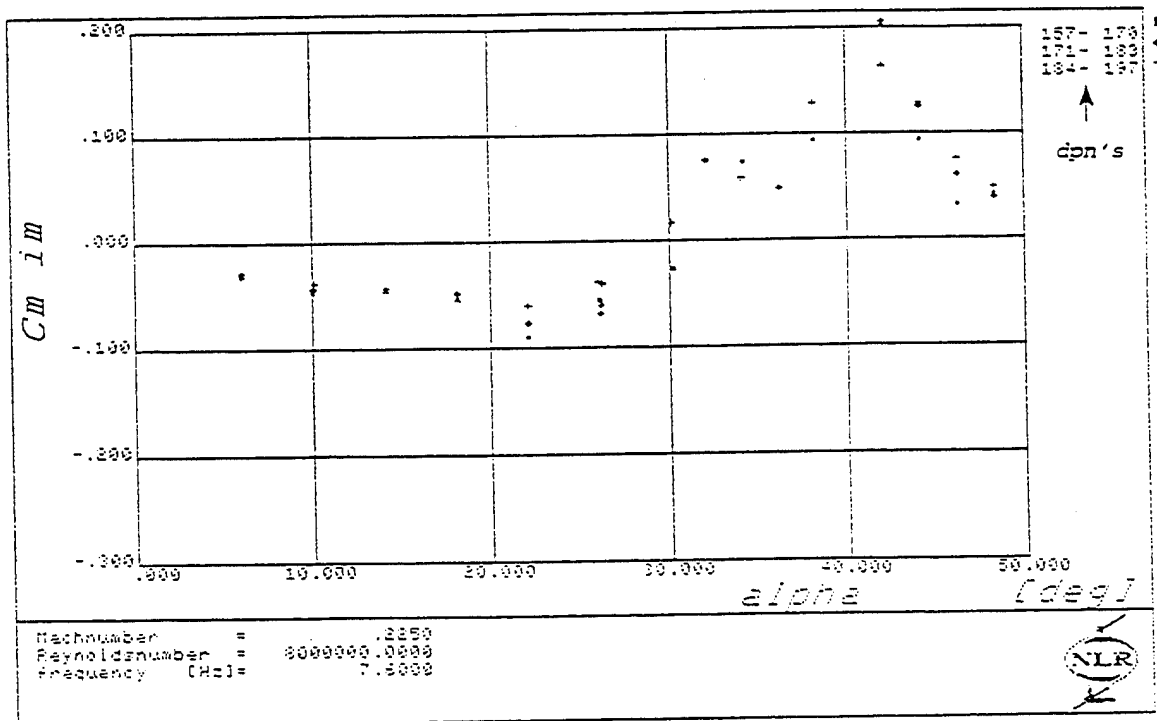


Figure B.13 C_m imaginary versus incidence at an amplitude of 2.1 (■), 4.2 (◆) and 8.4 (+) deg

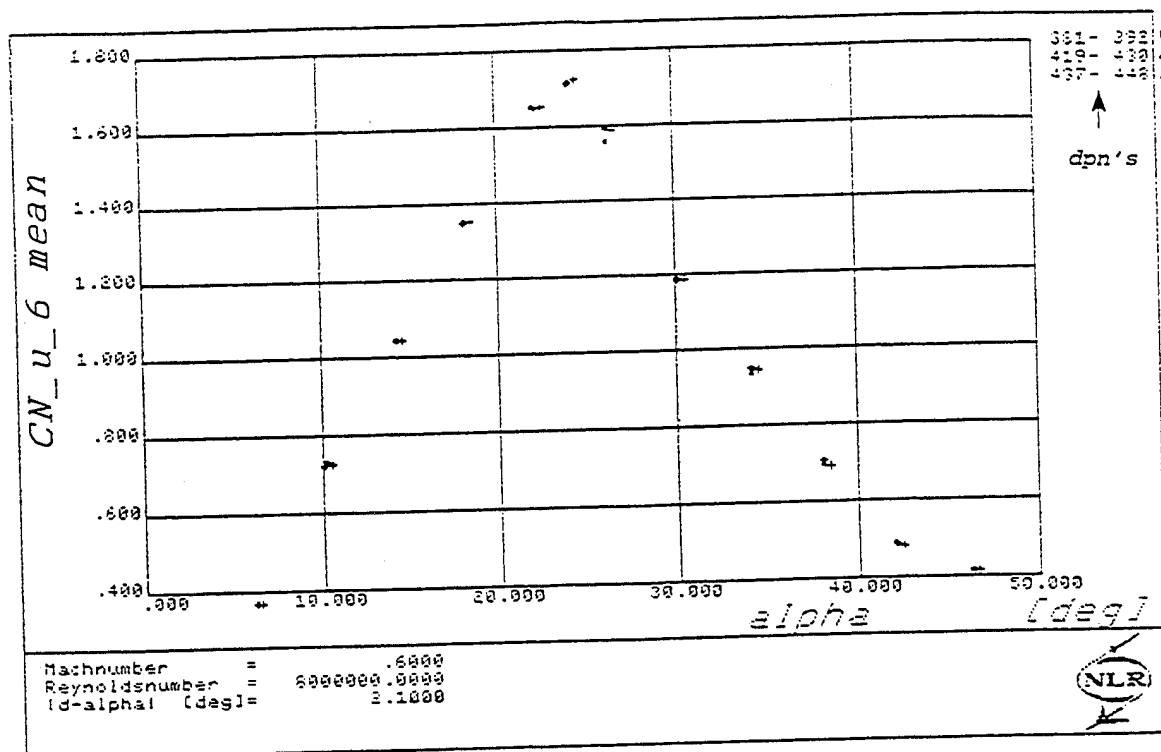


Figure B.14 CN_u_6 mean versus incidence at a frequency of 7.6 (■), 11.4 (◆) and 15.2 (+) Hz

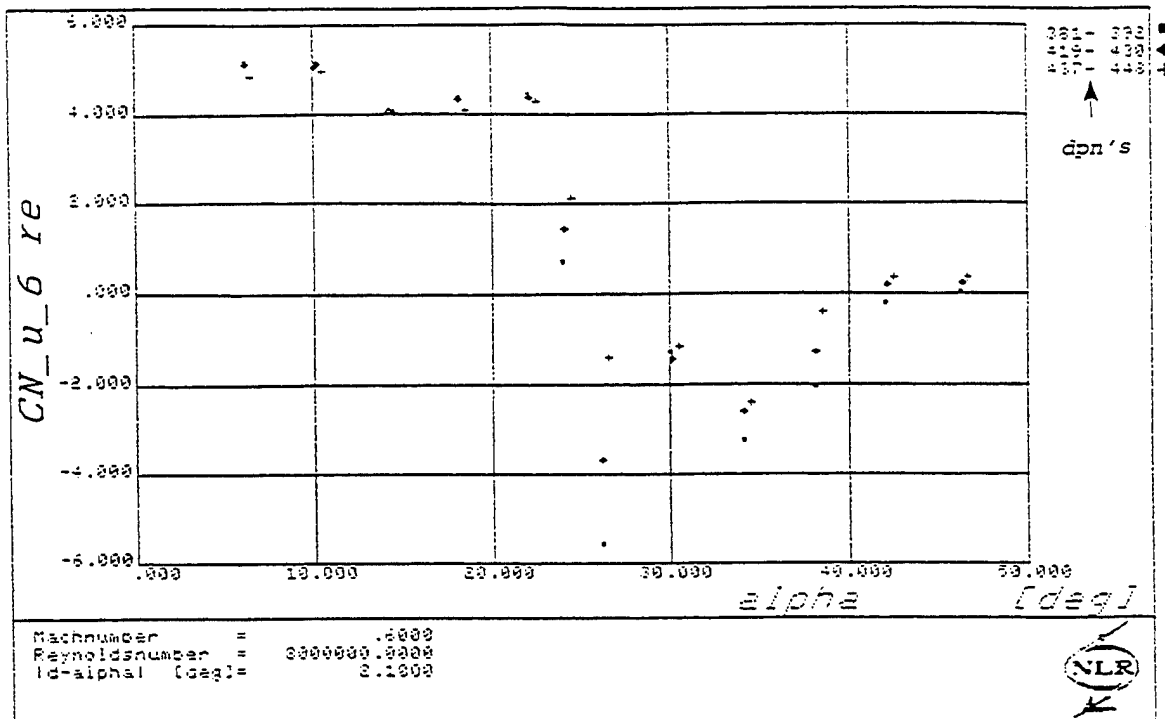


Figure B.15 CN_u_6 real versus incidence at a frequency of 7.6 (■), 11.4 (◆) and 15.2 (+) Hz

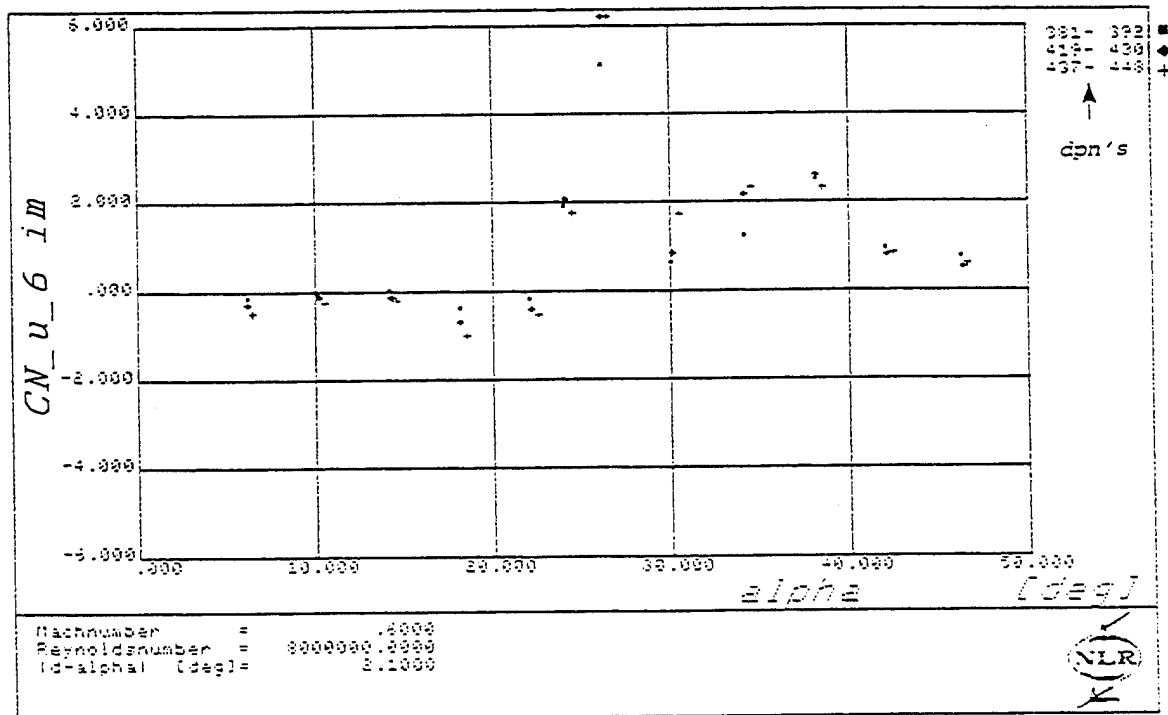


Figure B.16 CN_u_6 imaginary versus incidence at a frequency of 7.6 (■), 11.4 (◆) and 15.2 (+) Hz

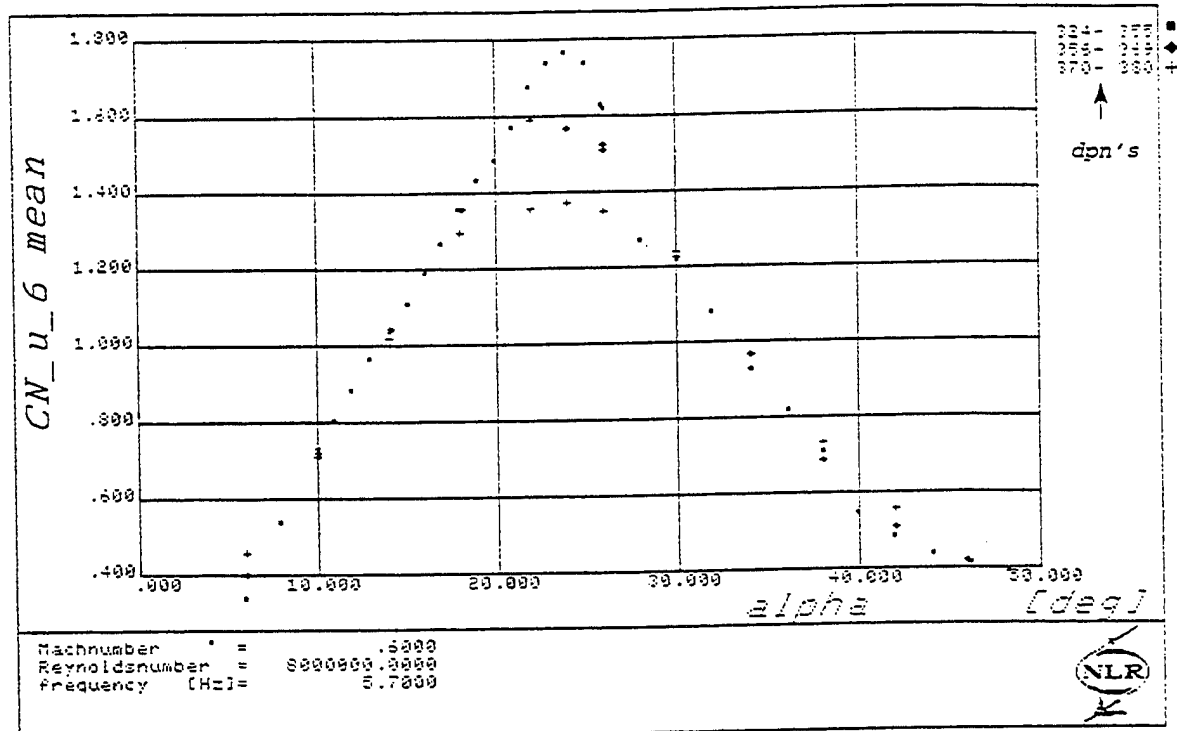


Figure B.17 CN_{u_6} mean versus incidence at an amplitude of 0.55 (■), 4.2 (◆) and 8.4 (+) deg

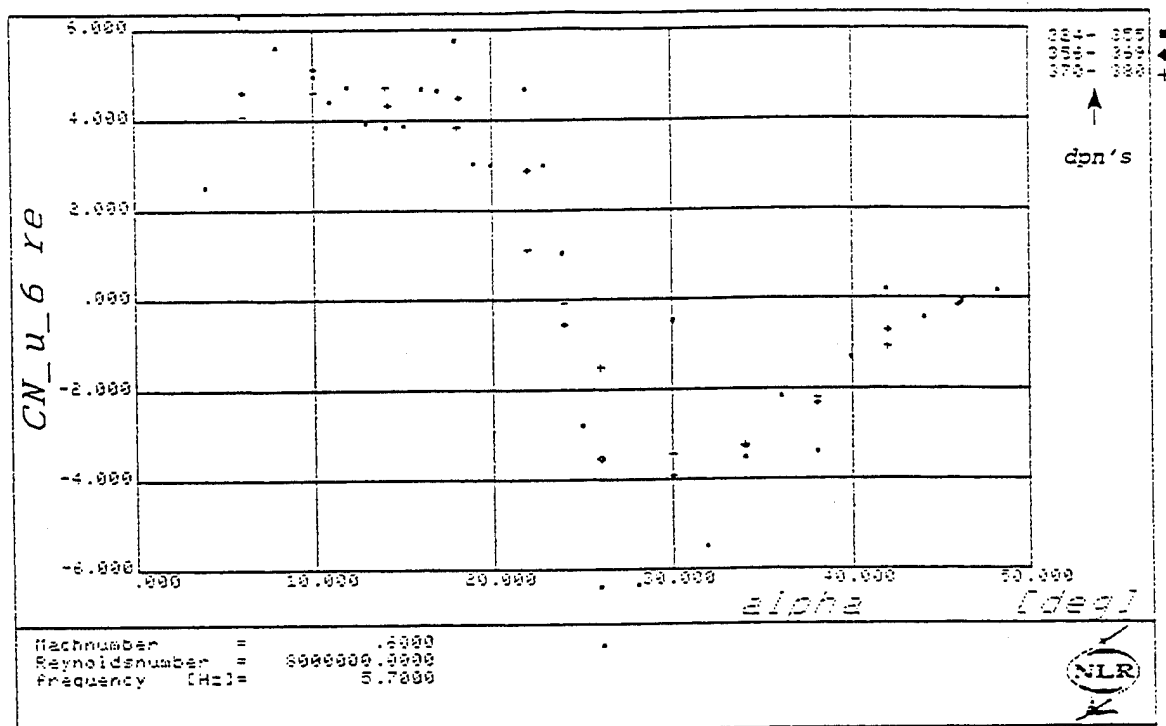


Figure B.18 CN_{u_6} real versus incidence at an amplitude of 0.55 (■), 4.2 (◆) and 8.4 (+) deg

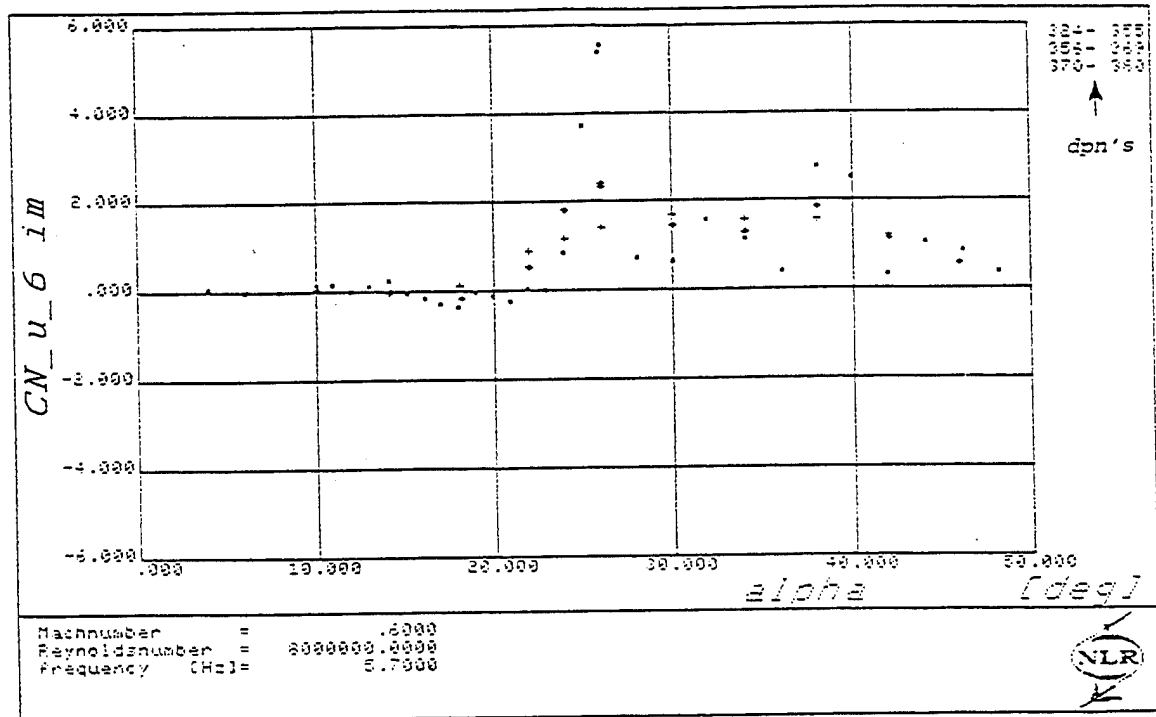


Figure B.19 CN_{u_6} imaginary versus incidence at an amplitude of 0.55 (■), 4.2 (◆) and 8.4 (+) deg

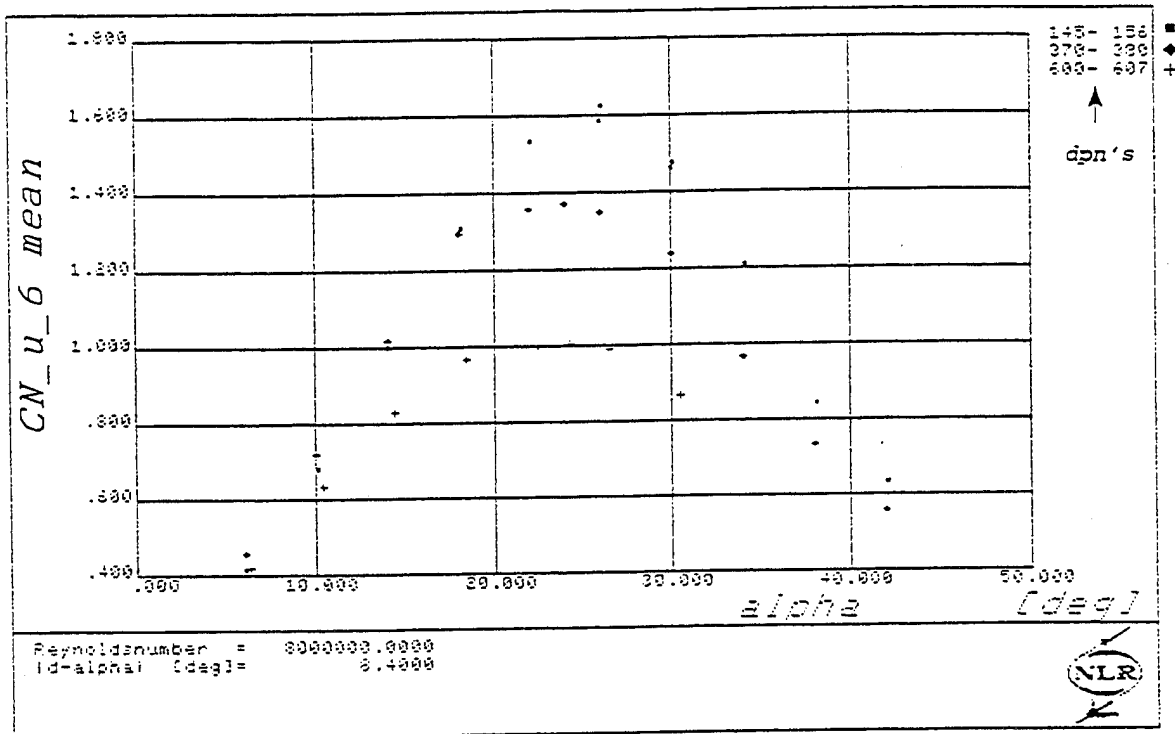


Figure B.20 CN_{u_6} mean versus incidence at a Mach number of 0.225 (■; frequency = 5.7 Hz), 0.600 (◆; frequency = 5.7 Hz) and 0.900 (+; frequency = 7.6 Hz) (this plot includes the three selected (see part I) data points 151, 375 and 605)

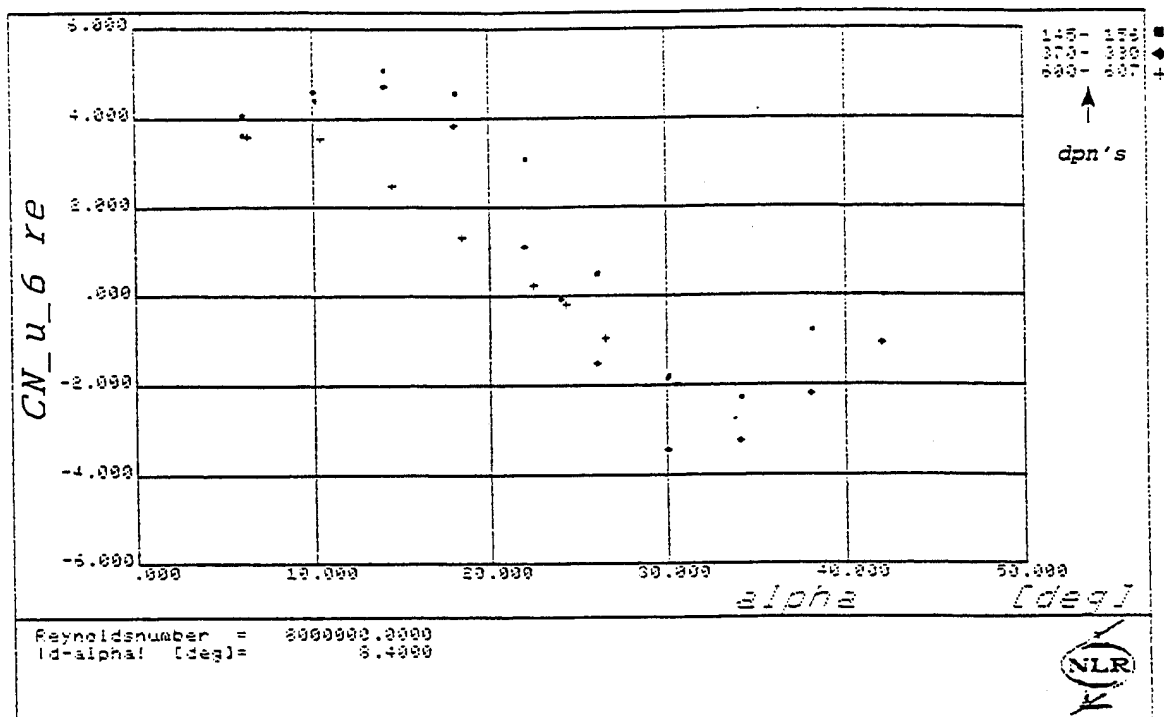


Figure B.21 CN_{u_6} real versus incidence at a Mach number of 0.225 (■; frequency = 5.7 Hz), 0.600 (◆; frequency = 5.7 Hz) and 0.900 (+; frequency = 7.6 Hz) (this plot includes the three selected (see part I) data points 151, 375 and 605)

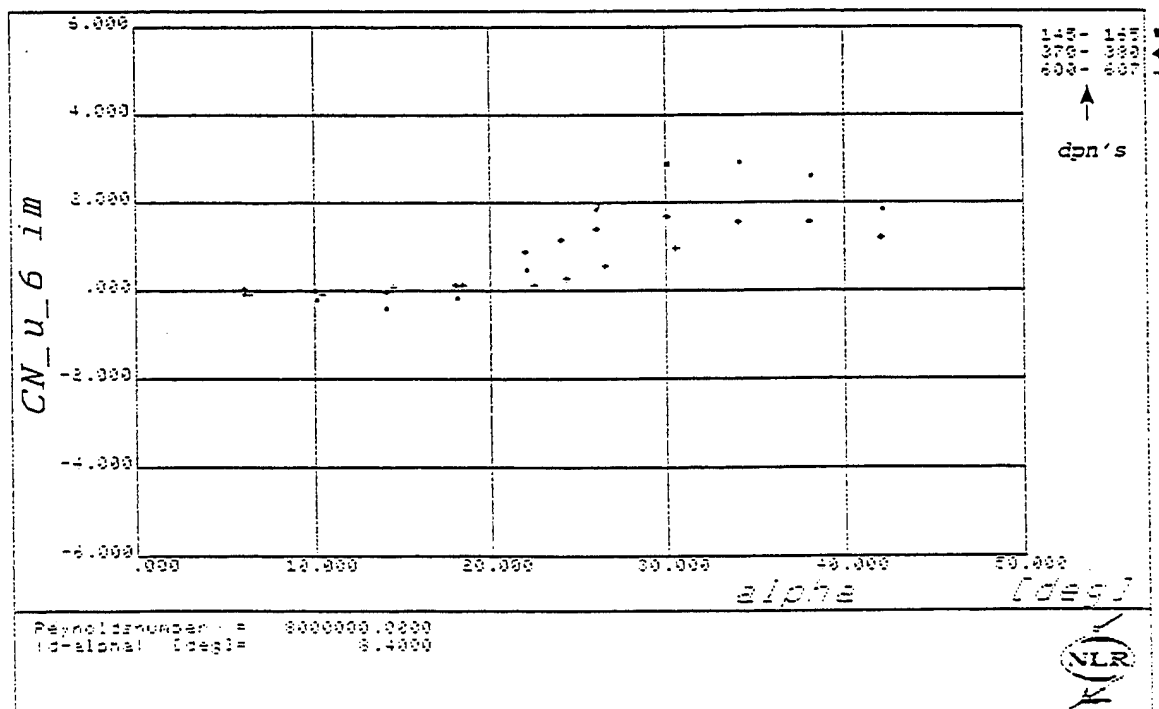


Figure B.22 CN_{u_6} imaginary versus incidence at a Mach number of 0.225 (■; frequency = 5.7 Hz), 0.600 (◆; frequency = 5.7 Hz) and 0.900 (+; frequency = 7.6 Hz) (this plot includes the three selected (see part I) data points 151, 375 and 605)

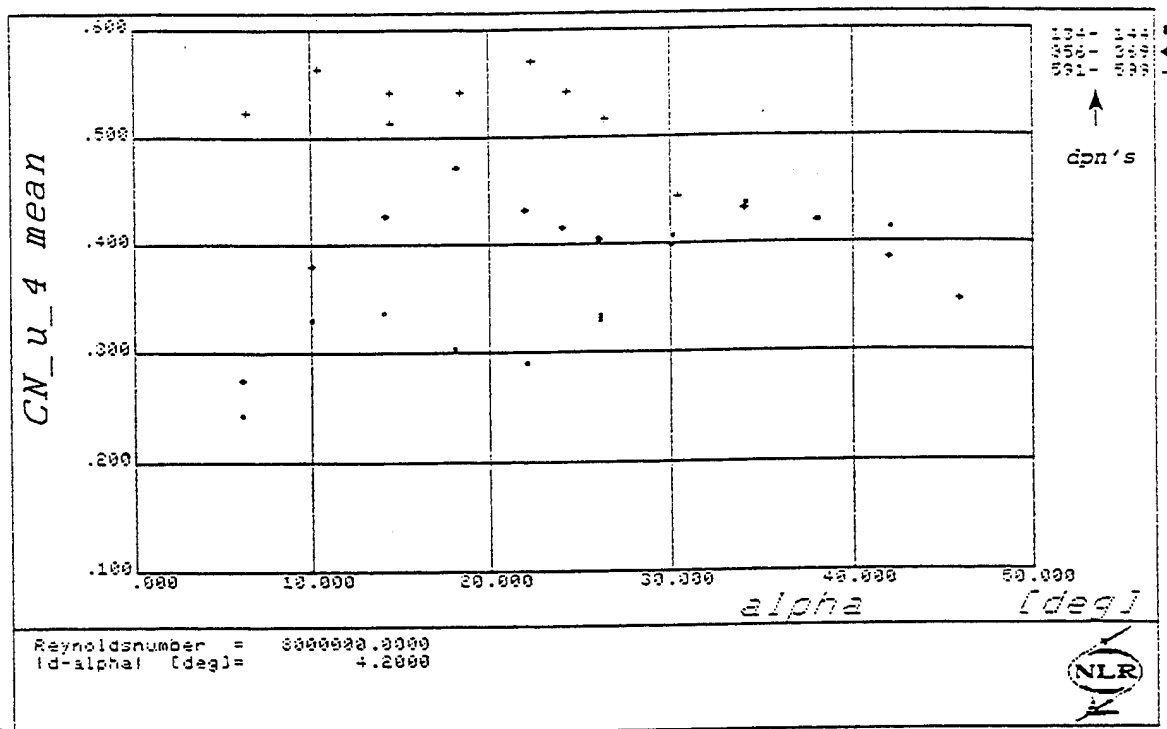


Figure B.23 CN_{u_4} mean versus incidence at a Mach number of 0.225 (■; frequency = 5.7 Hz), 0.600 (◆; frequency = 5.7 Hz) and 0.900 (+; frequency = 7.6 Hz) (this plot includes the two selected (see part I) data points 358 and 593)

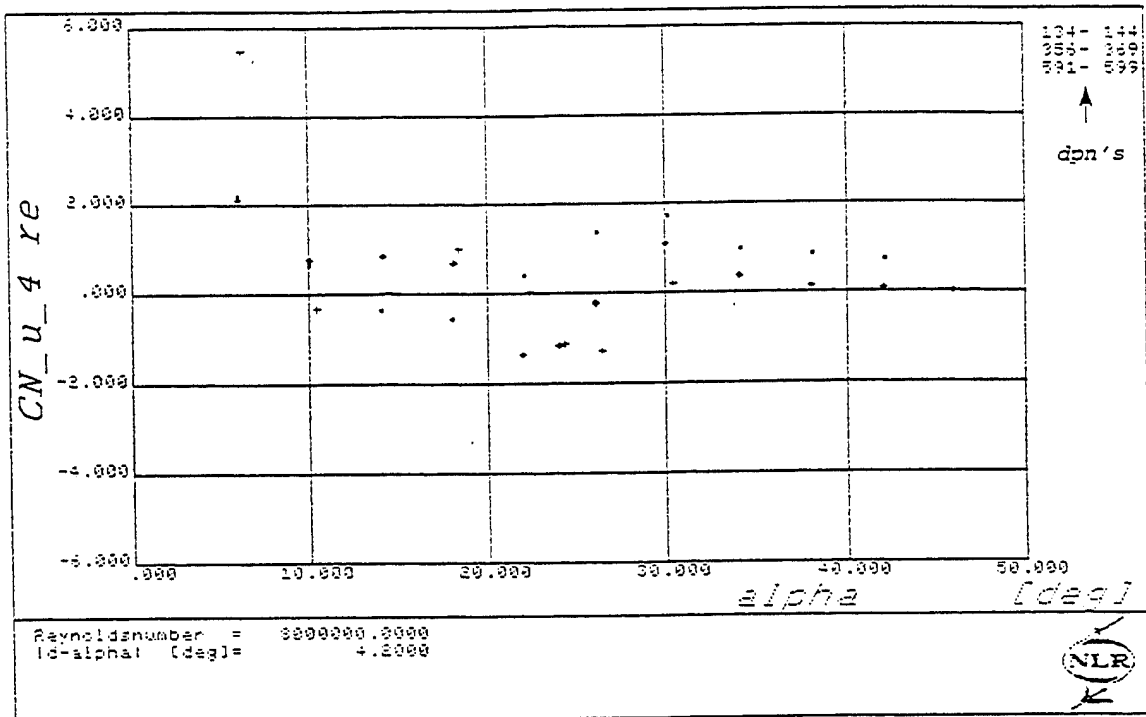


Figure B.24 CN_{u_4} real versus incidence at a Mach number of 0.225 (■; frequency = 5.7 Hz), 0.600 (◆; frequency = 5.7 Hz) and 0.900 (+; frequency = 7.6 Hz) (this plot includes the two selected (see part I) data points 358 and 593)

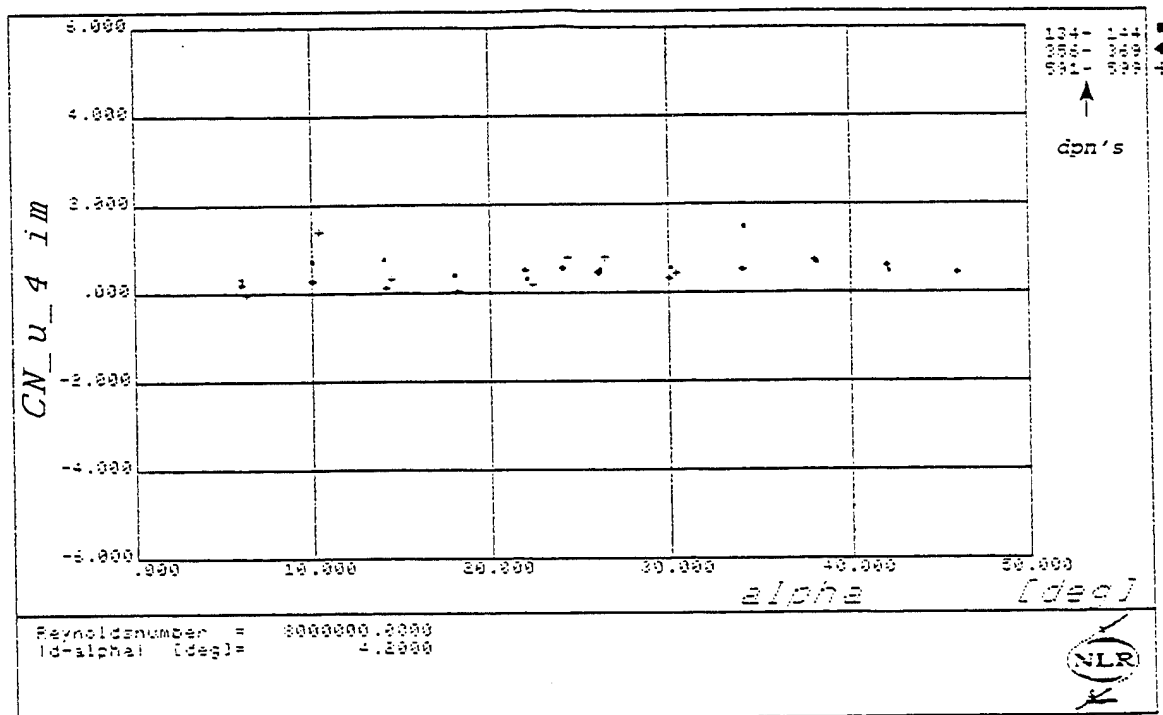


Figure B.25 CN_{u_4} imaginary versus incidence at a Mach number of 0.225 (■; frequency = 5.7 Hz), 0.600 (◆; frequency = 5.7 Hz) and 0.900 (+; frequency = 7.6 Hz) (this plot includes the two selected (see part I) data points 358 and 593)

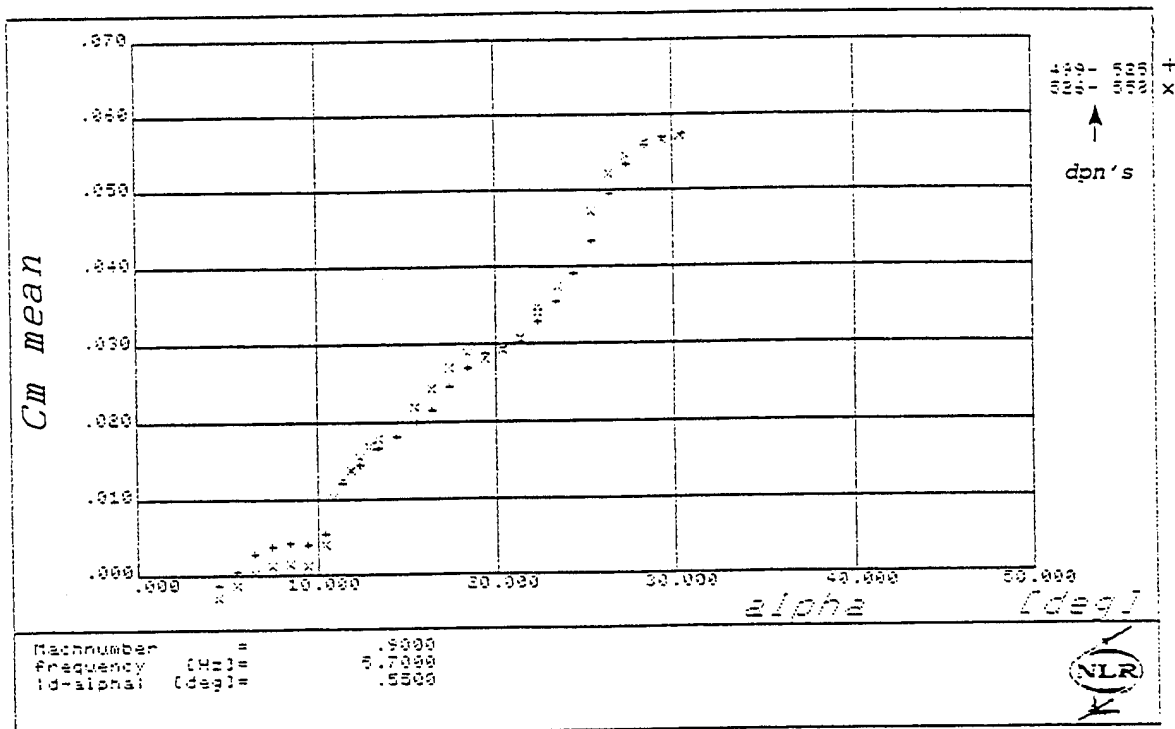


Figure B.26 C_m mean versus incidence at Reynolds number of $8.0 (+)$ and $14.0 (x) 10^6$