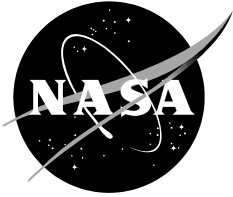


NASA/TM-20240001510



Mars Helicopter Ingenuity Rotor Geometry

*Witold J. F. Koning, Michelle Dominguez
Ames Research Center, Moffett Field, California*

February 2024

NASA STI Program Report Series

The NASA STI Program collects, organizes, provides for archiving, and disseminates NASA's STI. The NASA STI program provides access to the NTRS Registered and its public interface, the NASA Technical Reports Server, thus providing one of the largest collections of aeronautical and space science STI in the world. Results are published in both non-NASA channels and by NASA in the NASA STI Report Series, which includes the following report types:

- **TECHNICAL PUBLICATION.** Reports of completed research or a major significant phase of research that present the results of NASA Programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed to be of continuing reference value. NASA counterpart of peer-reviewed formal professional papers but has less stringent limitations on manuscript length and extent of graphic presentations.
- **TECHNICAL MEMORANDUM.** Scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.
- **CONTRACTOR REPORT.** Scientific and technical findings by NASA-sponsored contractors and grantees.
- **CONFERENCE PUBLICATION.** Collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or co-sponsored by NASA.
- **SPECIAL PUBLICATION.** Scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest.
- **TECHNICAL TRANSLATION.** English-language translations of foreign scientific and technical material pertinent to NASA's mission.

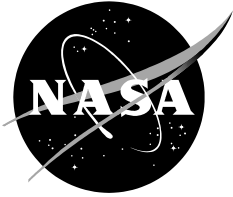
Specialized services also include organizing and publishing research results, distributing specialized research announcements and feeds, providing information desk and personal search support, and enabling data exchange services.

For more information about the NASA STI program, see the following:

- Access the NASA STI program home page at <http://www.sti.nasa.gov>
- Help desk contact information:

<https://www.sti.nasa.gov/sti-contact-form/> and select the "General" help request type.

NASA/TM-20240001510



Mars Helicopter Ingenuity Rotor Geometry

*Witold J. F. Koning, Michelle Dominguez
Ames Research Center, Moffett Field, California*

National Aeronautics and
Space Administration

*Ames Research Center
Moffett Field, California 94035-1000*

February 2024

ACKNOWLEDGMENTS

Enter acknowledgments here, if applicable.

Available from:

NASA STI Support Services
Mail Stop 148
NASA Langley Research Center
Hampton, VA 23681-2199
757-864-9658

National Technical Information Service
5301 Shawnee Road
Alexandria, VA 22312
webmail@ntis.gov
703-605-6000

This report is also available in electronic form at

<http://ntrs.nasa.gov>

NOMENCLATURE

A	=	rotor disk area, m ²
c	=	chord, m
M	=	blade section Mach number
r	=	rotor radial coordinate, m
R	=	rotor radius, m
Re	=	chord-based Reynolds number, $\rho Vc/\mu$
V	=	section resultant velocity, m/s
ϕ	=	blade twist, deg
ρ	=	atmospheric density, kg/m ³
μ	=	dynamic viscosity, Ns/m ²

Subscripts

tip	=	tip-based
-----	---	-----------

Abbreviations

CFD	Computational Fluid Dynamics
JPL	NASA Jet Propulsion Laboratory
MH	Mars Helicopter
OML	Outer Mold Line
UAV	Unmanned Aerial Vehicle
VTOL	Vertical Take-Off and Landing

ABSTRACT

The NASA Mars Helicopter Ingenuity performed its maiden flight on April 19, 2021, and opened new possibilities for planetary exploration. Ingenuity has ended its mission after experiencing an anomaly during its 72nd flight on January 18, 2024.

Due to the low density and low temperature of the surface atmosphere on Mars, significant challenges must be overcome to achieve aerodynamic performance. The low density of the Martian atmosphere and the relatively small-scale rotor result in flows with very low Reynolds number, reducing the lifting force and lifting efficiency, respectively. Until recently, compressible flow at Reynolds numbers around $Re = 10,000$ was of moderate practical interest but with the success of Ingenuity, the aerodynamic regime is attracting considerable attention. The purpose of this report is to document the geometry (planform, twist, and airfoils) of the Mars Helicopter rotor, for use in future research on rotor performance in the Mars atmosphere.

INTRODUCTION

The NASA Jet Propulsion Laboratory (JPL) designed the Mars Helicopter (MH) *Ingenuity* in collaboration with AeroVironment Inc., NASA Ames Research Center, and NASA Langley Research Center to explore the possibility of a vertical take-off and landing (VTOL) unmanned aerial vehicle (UAV) for flight on Mars. Ingenuity is part of the NASA Mars 2020 rover mission, launched at the end of July 2020. The Mars Perseverance rover successfully landed on February 18, 2021 and deployed Ingenuity after initial checks were completed to perform its maiden flight on April 19, 2021, see Figure 1. Ingenuity successfully completed its 30-day technology demonstration and entered its operations demo phase afterwards.



Figure 1 Ingenuity's maiden flight, April 19, 2021. NASA/JPL-Caltech.

The design of Ingenuity, shown in Figure 2, features a co-axial rotor with a mass of roughly 1.8 kg and a 1.21 m rotor diameter. The helicopter relies on solar cells and a battery system for power, allowing up to 90 s flight endurance that is conducted fully autonomously due to the communication delay between Earth and Mars.

The rotor design features two counterrotating, hingeless, two-bladed rotors. The rotors are spaced apart at approximately 8–9% of the rotor diameter and are designed to operate at speeds up to 2800 RPM. The tip speed and tip Mach number during hover in the Mars atmosphere are roughly $V_{\text{tip}} = 177$ m/s and $M_{\text{tip}} = 0.76$, respectively. Flights are limited to favorable weather with low wind and gust speeds. The maximum airspeed is constrained to 10 m/s horizontally and 3 m/s vertically.



Figure 2 NASA's Ingenuity Mars Helicopter. NASA/JPL-Caltech.

Flight in the Mars atmosphere presents various difficulties because of the thin atmosphere (approximately 1% of the density of that of Earth) and the low temperature (reducing the speed of sound, increasing Mach number). The low density of the Martian atmosphere and the relatively small-scale rotor result in flows with very low Reynolds number, reducing the lifting force and lifting efficiency, respectively.

The purpose of this report is to document the geometry (planform, twist, and airfoils) of the Mars Helicopter rotor, for use in future research on rotor performance in the Martian atmosphere.

BACKGROUND

The Mars Helicopter design and fabrication was performed by AeroVironment, Inc. and more details on the development on the rotor, airframe, and airfoils can be found in work by Pipenberg et al. [1,2], with early development discussed by Balaram and Tokumaru [3], and a general overview is provided in Balaram et al. [4].

NASA has performed multiple analyses on the rotor system to predict Ingenuity's performance and dynamics in the Mars atmosphere. Published work includes comprehensive analyses on rotor performance by Koning, Johnson, and Allan [5], and Koning, Johnson, and Grip [6] and full three-dimensional Computational Fluid Dynamics (CFD) by Koning et al. [7]. Grip et al. [8,9] discuss Ingenuity's flight dynamics and Grip et al. [10,11] discuss the guidance and control for the helicopter.

ROTOR GEOMETRY

Initial rotor design was performed using a minimum induced loss design routine in XROTOR [12], modified for structural and fabrication considerations as well as off-design aerodynamic improvements. AeroVironment Inc.'s PROP code was utilized for rotor performance predictions of the final Mars Helicopter rotor. More detailed analysis was performed using CAMRADII [13], improving the blade twist distribution [1]. The minimum thickness for the rotor was set to 5% because of the high first frequency flapping requirements.

Table 1 provides key rotor parameters and Table 2 includes the basic rotor geometry information from which the rotor twist, planform, and airfoil locations can be obtained. No sweep is applied at any radial station. Table 2 also contains the blade twist and chord distributions as extracted from the original outer mold line (OML) Computer Aided Design (CAD) model of Ingenuity's rotor blades, at selected radial stations. Figure 3 shows the chord, thickness, and twist distributions versus radius.

Table 1 Key rotor parameters

Parameter	Value
Rotor radius, R	0.605 m
Disk area, A	1.150 m ²
Blade area	0.170 m ²
Solidity (thrust-weighted), σ	0.14782
Design RPM	2,600
Rotor-rotor spacing	0.099 m
Quarter chord ($r > 0.2R$) location, aft of pitch axis	0.0075 m

Table 2 Ingenuity design rotor twist, planform, and airfoil locations

r/R	c/R	ϕ (deg)	ϕ_{OML} (deg)	r (m)	c (m)	c _{OML} (m)	t (m)	t/c	airfoil
0.0908	0.0506	16.316	-	0.055	0.031	0.026	0.02895	0.973	Station 1
0.1158	0.0631	16.716		0.070	0.038		0.02620	0.707	-
0.1551	0.0967	17.316		0.094	0.059		0.02222	0.391	-
0.2000	0.1407	17.616	17.620	0.121	0.085	0.085	0.01817	0.220	Station 2
0.2472	0.1758	17.216		0.150	0.106		0.01448	0.140	-
0.2950	0.1968	15.916	15.920	0.178	0.119	0.119	0.01136	0.098	Station 3
0.3429	0.2021	14.142		0.207	0.122		0.00883	0.074	-
0.3903	0.1968	12.067	12.069	0.236	0.119	0.119	0.00693	0.060	Station 4
0.4369	0.1863	10.703		0.264	0.113		0.00564	0.052	-
0.4826	0.1743	9.495		0.292	0.105		0.00512	0.050	-
0.5271	0.1627	8.433	8.434	0.319	0.098	0.098	0.00478	0.050	clf5605
0.5704	0.1530	7.486		0.345	0.093		0.00449	0.050	-
0.6121	0.1446	6.632		0.370	0.087		0.00425	0.050	-
0.6523	0.1375	5.858	5.864	0.395	0.083	0.083	0.00404	0.050	clf5605

0.6908	0.1314	5.156		0.418	0.080		0.00386	0.050	-
0.7274	0.1259	4.512		0.440	0.076		0.00370	0.050	-
0.7621	0.1209	3.926	3.914	0.461	0.073	0.073	0.00355	0.050	-
0.7947	0.1160	3.388		0.481	0.070		0.00341	0.050	-
0.8252	0.1111	2.901	2.901	0.499	0.067	0.067	0.00326	0.050	clf5605
0.8535	0.1058	2.461		0.516	0.064		0.00311	0.050	-
0.8794	0.1001	2.061		0.532	0.061		0.00294	0.050	-
0.9030	0.0935	1.706		0.546	0.057		0.00275	0.050	-
0.9241	0.0860	1.390	1.390	0.559	0.052	0.052	0.00253	0.050	clf5605
0.9427	0.0775	1.117		0.570	0.047		0.00228	0.050	-
0.9588	0.0679	0.881		0.580	0.041		0.00200	0.050	-
0.9722	0.0573	0.543	0.544	0.588	0.035	0.035	0.00168	0.050	clf5605
0.9830	0.0460	0.179		0.595	0.028		0.00135	0.050	-
0.9912	0.0341	0.057	0.057	0.600	0.021	0.021	0.00100	0.050	clf5605
0.9966	0.0223	0.019		0.603	0.013		0.00066	0.050	-
1.0000	0.0123	0.000		0.605	0.007		0.00036	0.050	clf5605

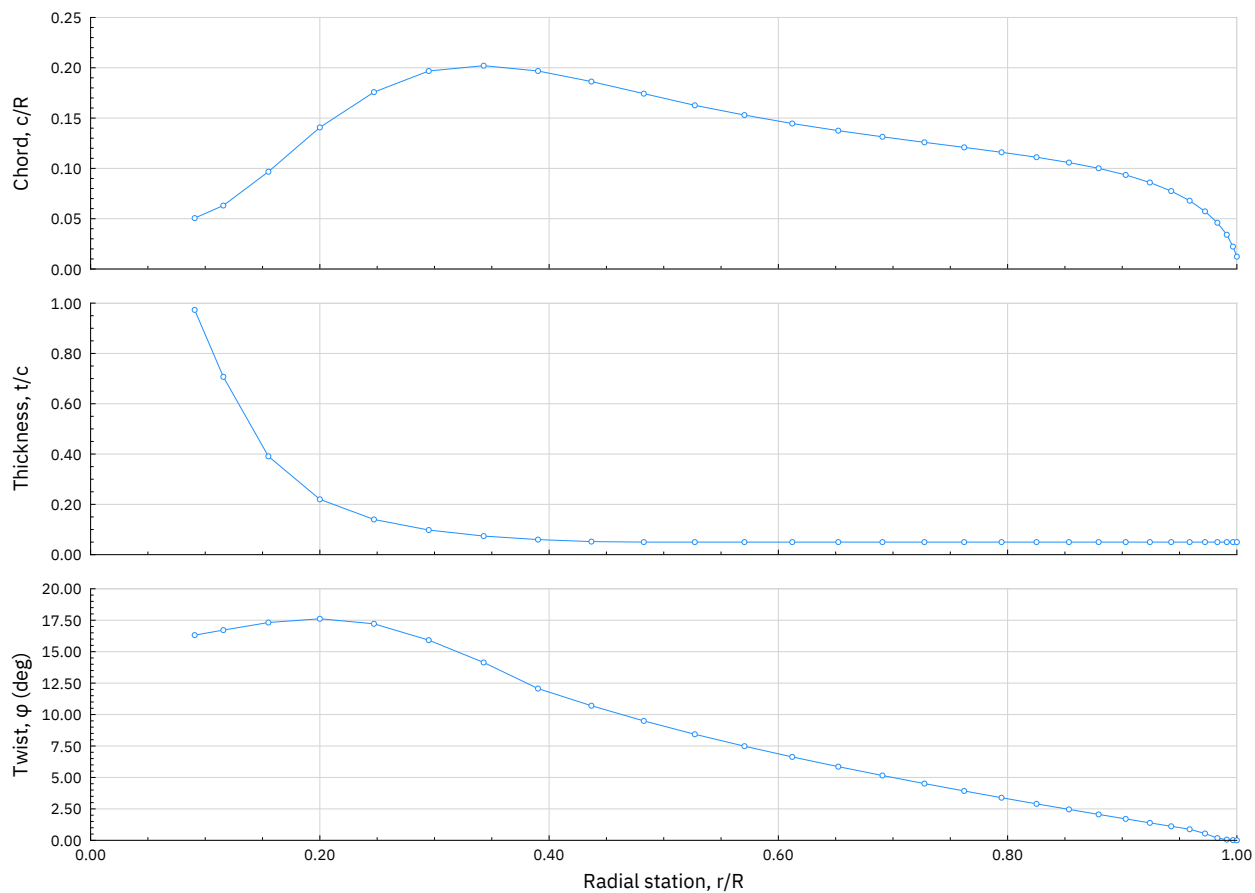


Figure 3 Design rotor chord, thickness, and twist distributions (from Table 2).

AIRFOIL GEOMETRY

The outboard rotor airfoils are thin laminar flow airfoils developed for the low Reynolds number experienced by the rotor in the Mars atmosphere. The primary outboard clf5605 airfoil was based on previous work by AeroVironment, Inc. with an adjusted camber line for increased lift coefficients, and a (minimum) thickness of 5% driven by the flap frequency requirements [1]. The five airfoils used on the rotor (see Table 2) are shown in Figure 4. The original normalized airfoil coordinates for each airfoil are presented in Appendix A and are used for the performance predictions in Refs. [5,6].

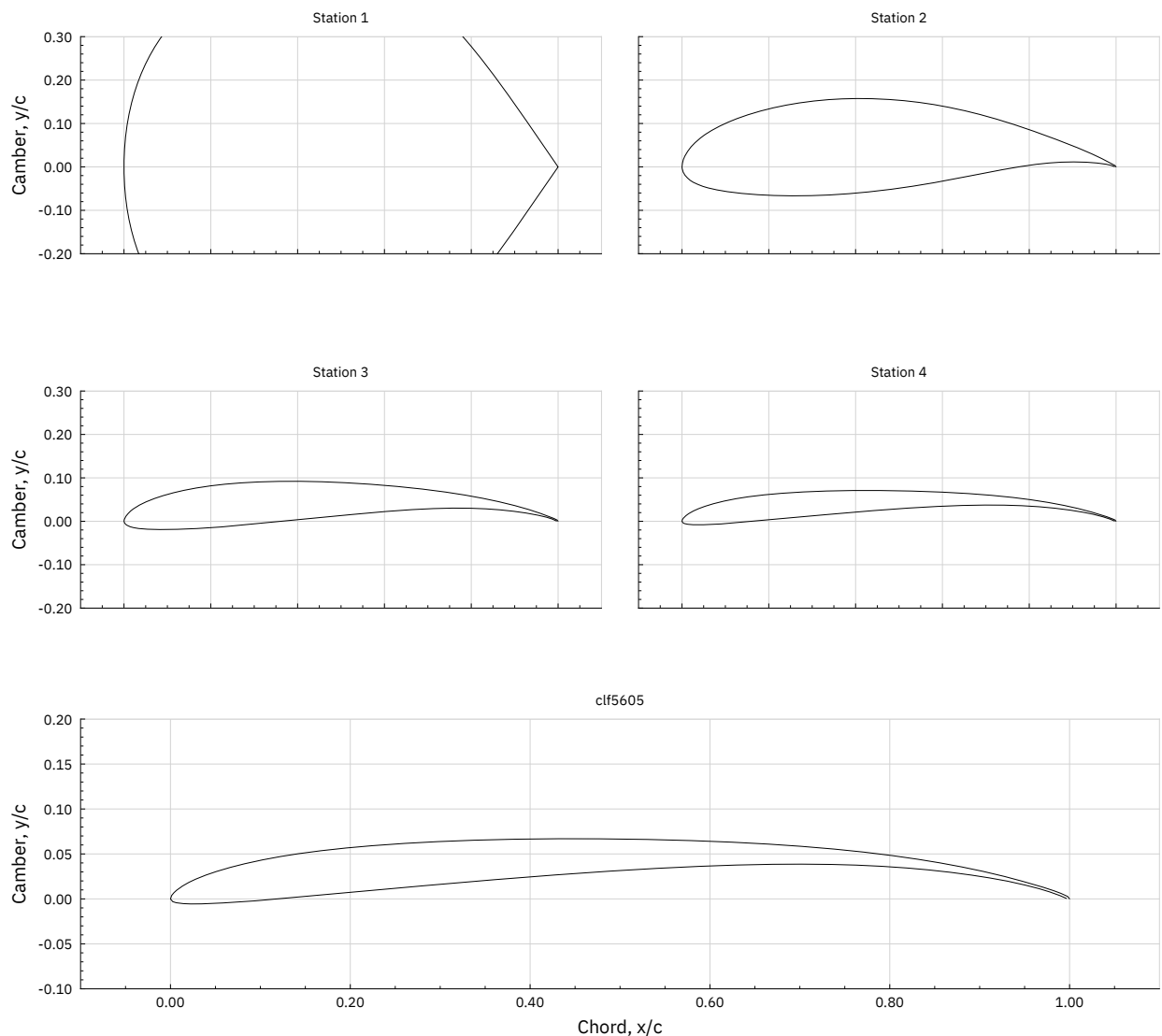


Figure 4 Normalized design airfoil profiles for Stations 1 through 4 and the clf5605 profile.

The thickness of the airfoils was altered near the trailing edge to comply with manufacturability limits and structural constraints. To create a finite trailing edge, the airfoil thicknesses were adjusted by increasing the profile thickness linearly as function of chord, resulting in a trailing edge thickness of around 0.5 mm across the blade span.

The original OML CAD model of Ingenuity’s rotor blades was utilized to extract the ‘as-built’ airfoil geometries for representative radial stations (as shown in Table 2 and Figure 5). Each airfoil profile consists of around 1,000 coordinates, split in to an upper and lower surface with a shared coordinate on the leading edge point. The trailing edges are left open (where applicable) and are intended to be closed using a straight line. The airfoils are unpitched and normalized by chord to facilitate further analyses but should primarily be used at their nominal chord lengths, due to the constant absolute trailing edge spacing across the span. The normalized airfoil coordinates for each airfoil are presented in Appendix B and are used for the performance predictions in Ref. [7].

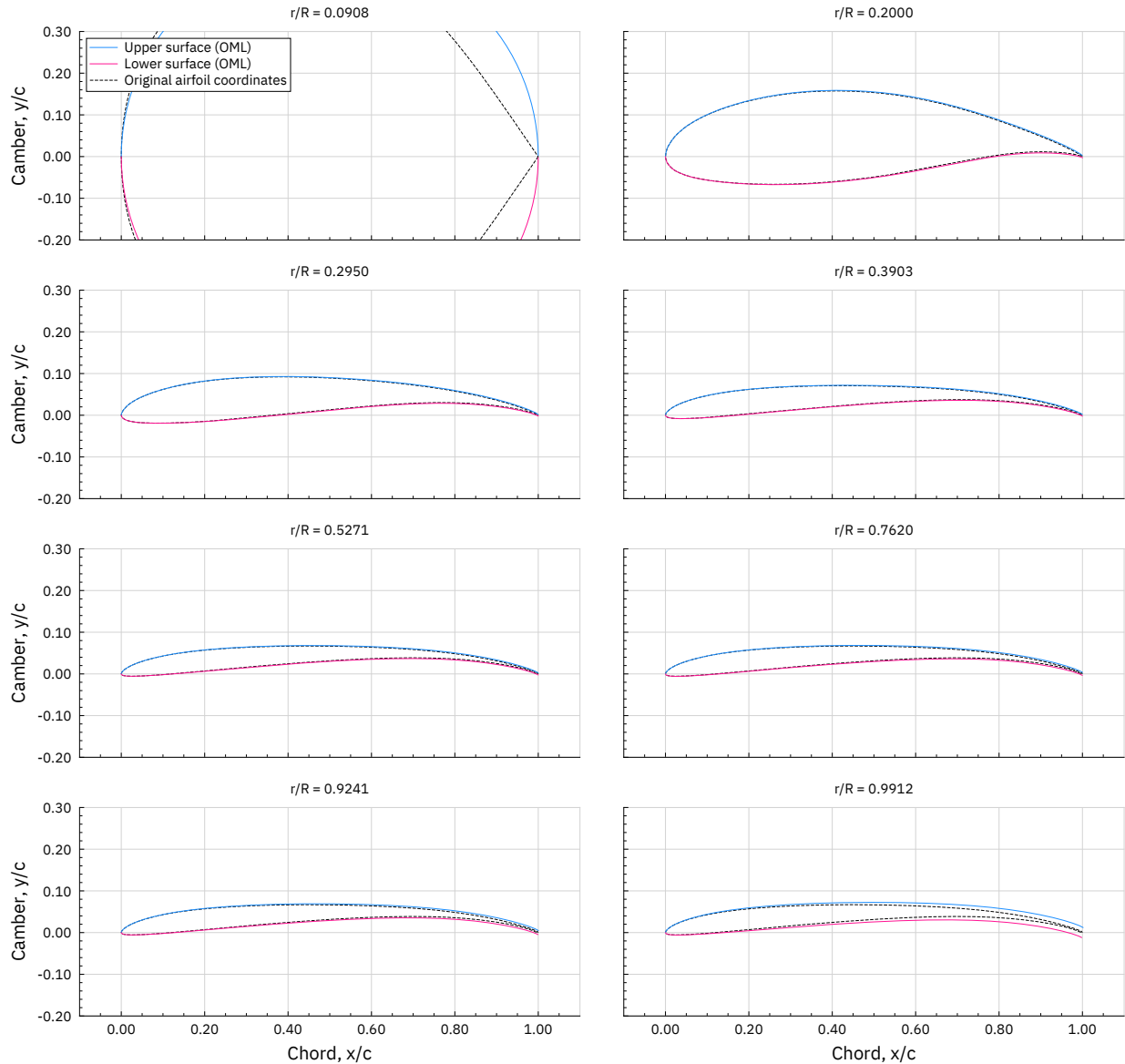


Figure 5 Normalized OML airfoil profiles for 8 representative radial stations.

REFERENCES

- [1] Pipenberg, B. T., Keennon, M., Tyler, J., Hibbs, B., Langberg, S., Balamam, J., Grip, H. F., and Pempejian, J. "Design and Fabrication of the Mars Helicopter Rotor, Airframe, and Landing Gear Systems." AIAA Science and Technology Forum and Exposition (AIAA SciTech), AIAA Paper 2019-0620, January 2019. <https://doi.org/https://doi.org/10.2514/6.2019-0620>
- [2] Pipenberg, B. T., Keennon, M. T., Langberg, S. A., and Tyler, J. D. "Development of the Mars Helicopter Rotor System." Vertical Flight Society 75th Annual Forum, Philadelphia, PA, May 2019.
- [3] Balamam, J., and Tokumaru, P. T. "Rotorcrafts for Mars Exploration." 11th International Planetary Probe Workshop, Pasadena, CA, 2014.
- [4] Balamam, J. (Bob), Canham, T., Duncan, C., Golombek, M., Grip, H. F., Johnson, W., Maki, J., Quon, A., Stern, R., and Zhu, D., "Mars Helicopter Technology Demonstrator," AIAA Science and Technology Forum and Exposition (AIAA SciTech), AIAA Paper 2018-0023, January 2018. <https://doi.org/10.2514/6.2018-0023>
- [5] Koning, W. J. F., Johnson, W., and Allan, B. G. "Generation of Mars Helicopter Rotor Model for Comprehensive Analyses" American Helicopter Society Technical Conference on Aeromechanics Designs for Transformative Vertical Flight, San Francisco, CA, January 2018.
- [6] Koning, W. J. F., Johnson, W., and Grip, H. F. "Improved Mars Helicopter Aerodynamic Rotor Model for Comprehensive Analyses." *AIAA Journal*, Vol. 57, No. 9, September 2019. <https://doi.org/10.2514/1.J058045>
- [7] Koning, W., Allan, B., Romander, E., Johnson, W., "Comparing 3D and 2D CFD for Mars Helicopter Ingenuity Rotor Performance Prediction," 49th European Rotorcraft Forum, Bückeburg, Germany, September 2023.
- [8] Grip, H. F., Johnson, W., Malpica, C., Scharf, D. P., Mandić, M., Young, L., Allan, B., Mettler, B., and Martin, M. S. "Flight Dynamics of a Mars Helicopter." 43rd European Rotorcraft Forum, 2017, September 2017.
- [9] Grip, H. F., Johnson, W., Malpica, C., Scharf, D. P., Mandić, M., Young, L., Allan, B., Mettler, B., Martin, M. S., and Lam, J. "Modeling and Identification of Hover Flight Dynamics for NASA's Mars Helicopter." *Journal of Guidance, Control, and Dynamics*, Vol. 43, No. 2, February 2020. <https://doi.org/10.2514/1.G004228>
- [10] Grip, H. F., Scharf, D. P., Malpica, C., Johnson, W., Mandic, M., Singh, G., and Young, L. A. "Guidance and Control for a Mars Helicopter." AIAA Guidance, Navigation, and Control Conference, AIAA Paper No. 2018-1849, January 2018.
- [11] Grip, H. F., Lam, J., Bayard, D. S., Conway, D. T., Singh, G., Brockers, R., Delaune, J. H., Matthies, L. H., Malpica, C., and Brown, T. L. "Flight Control System for NASA's Mars Helicopter." AIAA Science and Technology Forum and Exposition (AIAA SciTech), AIAA Paper 2019-1289, January 2019. <https://doi.org/https://doi.org/10.2514/6.2019-1289>
- [12] Drela, M., and Youngren, H. XROTOR: An Interactive Program for the Design and Analysis of Ducted and Free-Tip Propellers and Windmills.
- [13] Johnson, W. "CAMRAD II." Vol. VI, version 5.0.

APPENDIX A

The design normalized airfoil coordinates for Stations 1 through 4 are presented in Table 3 through Table 6, respectively. The clf5605 airfoil coordinates are presented in Table 7. Note that these profiles have an infinitely sharp trailing edge; Appendix B presents the normalized OML profiles.

Table 3 Design station 1 airfoil coordinates

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
1.00000	0.00000	0.33293	0.46588	0.08550	0.29850	0.01315	0.12879
0.97909	0.03048	0.32403	0.46344	0.08036	0.29101	0.01222	0.12437
0.95060	0.07195	0.31534	0.46090	0.07530	0.28328	0.01131	0.11990
0.92360	0.11099	0.30684	0.45823	0.07032	0.27530	0.01044	0.11539
0.89727	0.14856	0.29852	0.45546	0.06542	0.26704	0.00959	0.11081
0.87128	0.18484	0.29037	0.45257	0.06062	0.25848	0.00878	0.10619
0.84549	0.21971	0.28238	0.44959	0.05590	0.24963	0.00799	0.10153
0.81990	0.25284	0.27454	0.44649	0.05129	0.24047	0.00724	0.09682
0.79454	0.28394	0.26685	0.44329	0.04978	0.23734	0.00652	0.09206
0.76949	0.31265	0.25928	0.43999	0.04828	0.23418	0.00584	0.08724
0.74485	0.33877	0.25185	0.43660	0.04679	0.23098	0.00519	0.08237
0.72072	0.36217	0.24454	0.43310	0.04532	0.22774	0.00457	0.07744
0.69720	0.38286	0.23734	0.42948	0.04386	0.22446	0.00399	0.07248
0.67438	0.40090	0.23026	0.42578	0.04241	0.22115	0.00344	0.06746
0.65232	0.41644	0.22328	0.42196	0.04098	0.21780	0.00293	0.06238
0.63108	0.42969	0.21640	0.41804	0.03957	0.21440	0.00246	0.05726
0.61069	0.44088	0.20963	0.41401	0.03816	0.21096	0.00203	0.05208
0.59116	0.45021	0.20294	0.40988	0.03678	0.20749	0.00164	0.04689
0.57248	0.45791	0.19635	0.40563	0.03541	0.20397	0.00129	0.04157
0.55463	0.46419	0.18984	0.40128	0.03406	0.20041	0.00097	0.03633
0.53759	0.46923	0.18342	0.39679	0.03272	0.19682	0.00070	0.03087
0.52132	0.47318	0.17708	0.39220	0.03140	0.19317	0.00048	0.02523
0.50578	0.47620	0.17082	0.38748	0.03010	0.18949	0.00029	0.02063
0.49093	0.47841	0.16464	0.38264	0.02882	0.18576	0.00015	0.01270
0.47671	0.47993	0.15854	0.37767	0.02756	0.18198	0.00005	0.01049
0.46309	0.48083	0.15251	0.37255	0.02631	0.17816	0.00001	0.00244
0.45002	0.48119	0.14655	0.36730	0.02509	0.17431	0.00001	-0.00244
0.43746	0.48110	0.14066	0.36192	0.02389	0.17039	0.00005	-0.01049
0.42538	0.48064	0.13484	0.35637	0.02271	0.16645	0.00015	-0.01270
0.41374	0.47983	0.12909	0.35067	0.02155	0.16245	0.00029	-0.02062
0.40250	0.47877	0.12341	0.34480	0.02042	0.15841	0.00048	-0.02522
0.39164	0.47746	0.11779	0.33877	0.01930	0.15431	0.00070	-0.03086
0.38113	0.47594	0.11224	0.33255	0.01821	0.15018	0.00097	-0.03632
0.37093	0.47425	0.10676	0.32615	0.01715	0.14600	0.00129	-0.04156
0.36104	0.47237	0.10134	0.31956	0.01611	0.14177	0.00164	-0.04688
0.35142	0.47035	0.09599	0.31275	0.01510	0.13749	0.00203	-0.05207
0.34206	0.46817	0.09071	0.30574	0.01411	0.13316	0.00246	-0.05724

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.00293	-0.06236	0.03406	-0.20036	0.15854	-0.37755	0.41374	-0.47968
0.00344	-0.06744	0.03541	-0.20391	0.16464	-0.38253	0.42538	-0.48047
0.00399	-0.07245	0.03678	-0.20743	0.17082	-0.38737	0.43746	-0.48094
0.00457	-0.07742	0.03816	-0.21090	0.17708	-0.39208	0.45002	-0.48103
0.00519	-0.08234	0.03957	-0.21434	0.18342	-0.39668	0.46309	-0.48066
0.00584	-0.08722	0.04098	-0.21773	0.18984	-0.40115	0.47671	-0.47976
0.00652	-0.09202	0.04241	-0.22109	0.19635	-0.40551	0.49093	-0.47824
0.00724	-0.09679	0.04386	-0.22440	0.20294	-0.40975	0.50578	-0.47603
0.00799	-0.10150	0.04532	-0.22768	0.20963	-0.41389	0.52132	-0.47301
0.00878	-0.10617	0.04679	-0.23091	0.21640	-0.41791	0.53759	-0.46906
0.00959	-0.11078	0.04828	-0.23411	0.22328	-0.42183	0.55463	-0.46402
0.01044	-0.11535	0.04978	-0.23727	0.23026	-0.42564	0.57248	-0.45775
0.01131	-0.11987	0.05129	-0.24040	0.23734	-0.42935	0.59116	-0.45004
0.01222	-0.12434	0.05590	-0.24956	0.24454	-0.43296	0.61069	-0.44071
0.01315	-0.12876	0.06062	-0.25841	0.25185	-0.43646	0.63108	-0.42953
0.01411	-0.13313	0.06542	-0.26696	0.25928	-0.43985	0.65232	-0.41628
0.01510	-0.13746	0.07032	-0.27522	0.26685	-0.44315	0.67438	-0.40074
0.01611	-0.14173	0.07530	-0.28321	0.27454	-0.44635	0.69720	-0.38270
0.01715	-0.14595	0.08036	-0.29093	0.28238	-0.44944	0.72072	-0.36203
0.01821	-0.15014	0.08550	-0.29841	0.29037	-0.45243	0.74485	-0.33864
0.01930	-0.15427	0.09071	-0.30565	0.29852	-0.45531	0.76949	-0.31252
0.02042	-0.15836	0.09599	-0.31267	0.30684	-0.45808	0.79454	-0.28381
0.02155	-0.16240	0.10134	-0.31947	0.31534	-0.46074	0.81990	-0.25274
0.02271	-0.16640	0.10676	-0.32606	0.32403	-0.46329	0.84549	-0.21961
0.02389	-0.17035	0.11224	-0.33246	0.33293	-0.46572	0.87128	-0.18475
0.02509	-0.17425	0.11779	-0.33867	0.34206	-0.46803	0.89727	-0.14848
0.02631	-0.17811	0.12341	-0.34470	0.35142	-0.47019	0.92360	-0.11094
0.02756	-0.18193	0.12909	-0.35056	0.36104	-0.47221	0.95060	-0.07192
0.02882	-0.18570	0.13484	-0.35626	0.37093	-0.47409	0.97909	-0.03046
0.03010	-0.18944	0.14066	-0.36181	0.38113	-0.47579	<u>1.00000</u>	<u>0.00000</u>
0.03140	-0.19311	0.14655	-0.36720	0.39164	-0.47730		
0.03272	-0.19676	0.15251	-0.37245	0.40250	-0.47860		

Table 4 Design station 2 airfoil coordinates

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
1.00000	0.00000	0.20615	0.13509	0.00011	-0.00087	0.31591	-0.06565
0.99901	0.00081	0.18133	0.12879	0.00044	-0.00358	0.34546	-0.06435
0.99606	0.00303	0.15777	0.12189	0.00099	-0.00594	0.37563	-0.06238
0.99114	0.00618	0.13555	0.11447	0.00170	-0.00883	0.40628	-0.05987
0.98429	0.01018	0.11477	0.10651	0.00279	-0.01191	0.43730	-0.05680
0.97553	0.01489	0.09552	0.09808	0.00410	-0.01477	0.46857	-0.05321
0.96489	0.02026	0.08357	0.09225	0.00560	-0.01712	0.49998	-0.04915
0.95241	0.02624	0.07787	0.08927	0.00699	-0.01917	0.53137	-0.04453
0.93815	0.03267	0.07235	0.08624	0.00885	-0.02124	0.56265	-0.03951
0.92216	0.03958	0.06702	0.08318	0.01092	-0.02353	0.59367	-0.03406
0.90451	0.04685	0.06188	0.08009	0.01320	-0.02593	0.62433	-0.02829
0.88527	0.05442	0.05693	0.07694	0.01570	-0.02831	0.65449	-0.02251
0.86449	0.06239	0.05217	0.07376	0.01840	-0.03054	0.68405	-0.01672
0.84228	0.07068	0.04761	0.07048	0.02132	-0.03261	0.71288	-0.01114
0.81872	0.07921	0.04325	0.06711	0.02445	-0.03453	0.74087	-0.00588
0.79390	0.08793	0.03909	0.06368	0.02779	-0.03630	0.76790	-0.00115
0.76792	0.09664	0.03513	0.06027	0.03134	-0.03799	0.79388	0.00292
0.74089	0.10520	0.03138	0.05691	0.03509	-0.03965	0.81870	0.00626
0.71290	0.11346	0.02783	0.05359	0.03905	-0.04135	0.84226	0.00875
0.68408	0.12136	0.02449	0.05019	0.04321	-0.04302	0.86447	0.01042
0.65453	0.12868	0.02136	0.04669	0.04757	-0.04461	0.88525	0.01130
0.62437	0.13530	0.01843	0.04307	0.05212	-0.04609	0.90451	0.01148
0.59371	0.14126	0.01573	0.03940	0.05688	-0.04747	0.92216	0.01116
0.56269	0.14633	0.01313	0.03570	0.06182	-0.04878	0.93815	0.01043
0.53141	0.15044	0.01090	0.03212	0.06696	-0.05004	0.95241	0.00929
0.50003	0.15362	0.00887	0.02890	0.07781	-0.05239	0.96489	0.00796
0.46863	0.15580	0.00706	0.02570	0.09546	-0.05562	0.97553	0.00641
0.43736	0.15711	0.00560	0.02260	0.11471	-0.05841	0.98429	0.00482
0.40634	0.15751	0.00420	0.01954	0.13549	-0.06080	0.99114	0.00320
0.37569	0.15693	0.00280	0.01565	0.15770	-0.06282	0.99606	0.00173
0.34552	0.15550	0.00170	0.01159	0.18126	-0.06444	0.99901	0.00058
0.31597	0.15306	0.00099	0.00783	0.20607	-0.06563	<u>1.00000</u>	<u>0.00000</u>
0.28714	0.14974	0.00044	0.00482	0.23206	-0.06636		
0.25916	0.14562	0.00011	0.00168	0.25909	-0.06663		
<u>0.23213</u>	<u>0.14072</u>	<u>0.00000</u>	<u>0.00031</u>	<u>0.28708</u>	<u>-0.06638</u>		

Table 5 Design station 3 airfoil coordinates

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
1.00000	0.00000	0.60278	0.08255	0.17389	0.07789	0.00204	0.00747
0.99597	0.00264	0.59071	0.08353	0.16256	0.07598	0.00177	0.00689
0.98904	0.00619	0.57864	0.08446	0.15130	0.07392	0.00152	0.00633
0.98103	0.00979	0.56658	0.08535	0.14015	0.07169	0.00128	0.00577
0.97207	0.01344	0.55452	0.08617	0.12911	0.06930	0.00107	0.00522
0.96232	0.01709	0.54245	0.08695	0.11819	0.06673	0.00087	0.00469
0.95209	0.02070	0.53036	0.08768	0.10739	0.06395	0.00070	0.00417
0.94155	0.02418	0.51826	0.08836	0.09672	0.06099	0.00054	0.00365
0.93076	0.02753	0.50618	0.08899	0.08627	0.05785	0.00040	0.00316
0.91974	0.03078	0.49410	0.08958	0.07613	0.05453	0.00027	0.00265
0.90861	0.03390	0.48205	0.09010	0.06632	0.05102	0.00017	0.00217
0.89742	0.03689	0.47000	0.09058	0.05693	0.04732	0.00010	0.00169
0.88613	0.03975	0.45797	0.09098	0.04811	0.04351	0.00004	0.00123
0.87474	0.04251	0.44593	0.09133	0.04008	0.03967	0.00001	0.00077
0.86328	0.04515	0.43389	0.09162	0.03523	0.03709	0.00000	0.00032
0.85177	0.04769	0.42186	0.09185	0.03295	0.03580	0.00002	-0.00013
0.84022	0.05013	0.40983	0.09201	0.03077	0.03450	0.00007	-0.00059
0.82861	0.05248	0.39783	0.09211	0.02671	0.03195	0.00014	-0.00104
0.81694	0.05473	0.38585	0.09214	0.02137	0.02840	0.00026	-0.00151
0.80523	0.05690	0.37388	0.09209	0.01836	0.02622	0.00040	-0.00197
0.79352	0.05899	0.36189	0.09197	0.01701	0.02517	0.00058	-0.00244
0.78178	0.06098	0.34988	0.09178	0.01577	0.02412	0.00078	-0.00290
0.77001	0.06290	0.33787	0.09152	0.01461	0.02309	0.00102	-0.00335
0.75820	0.06474	0.32593	0.09120	0.01353	0.02205	0.00128	-0.00381
0.74639	0.06649	0.31405	0.09079	0.01253	0.02105	0.00156	-0.00427
0.73456	0.06816	0.30219	0.09028	0.01070	0.01910	0.00187	-0.00473
0.72267	0.06976	0.29031	0.08969	0.00832	0.01643	0.00221	-0.00517
0.71072	0.07131	0.27843	0.08901	0.00633	0.01407	0.00258	-0.00562
0.69876	0.07281	0.26660	0.08824	0.00519	0.01261	0.00297	-0.00607
0.68683	0.07423	0.25484	0.08737	0.00469	0.01192	0.00339	-0.00650
0.67489	0.07558	0.24314	0.08639	0.00421	0.01124	0.00385	-0.00694
0.66292	0.07688	0.23148	0.08529	0.00378	0.01058	0.00433	-0.00736
0.65091	0.07812	0.21986	0.08408	0.00337	0.00993	0.00485	-0.00777
0.63888	0.07931	0.20828	0.08274	0.00300	0.00930	0.00540	-0.00817
0.62686	0.08044	0.19676	0.08126	0.00266	0.00868	0.00599	-0.00858
0.61483	0.08153	0.18529	0.07965	0.00234	0.00807	0.00660	-0.00897

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.00726	-0.00936	0.13731	-0.01806	0.44049	0.00709	0.74316	0.03010
0.00794	-0.00974	0.14925	-0.01760	0.45275	0.00832	0.75500	0.03029
0.00867	-0.01013	0.16119	-0.01706	0.46501	0.00956	0.76678	0.03036
0.00943	-0.01053	0.17314	-0.01644	0.47725	0.01079	0.77856	0.03032
0.01023	-0.01091	0.18512	-0.01575	0.48949	0.01204	0.79036	0.03018
0.01107	-0.01130	0.19714	-0.01498	0.50171	0.01327	0.80214	0.02992
0.01196	-0.01168	0.20920	-0.01417	0.51390	0.01449	0.81387	0.02956
0.01290	-0.01206	0.22129	-0.01329	0.52606	0.01568	0.82555	0.02907
0.01389	-0.01244	0.23339	-0.01238	0.53821	0.01684	0.83721	0.02845
0.01494	-0.01281	0.24547	-0.01142	0.55037	0.01797	0.84884	0.02771
0.01605	-0.01316	0.25753	-0.01042	0.56255	0.01907	0.86042	0.02683
0.01723	-0.01351	0.26963	-0.00937	0.57473	0.02015	0.87196	0.02581
0.01849	-0.01384	0.28180	-0.00828	0.58689	0.02121	0.88351	0.02463
0.02126	-0.01449	0.29401	-0.00718	0.59902	0.02222	0.89503	0.02333
0.02614	-0.01545	0.30618	-0.00609	0.61112	0.02320	0.90646	0.02189
0.03205	-0.01642	0.31830	-0.00496	0.62319	0.02413	0.91778	0.02031
0.03913	-0.01726	0.33042	-0.00381	0.63525	0.02501	0.92897	0.01856
0.04755	-0.01791	0.34260	-0.00263	0.64732	0.02583	0.93999	0.01665
0.05721	-0.01842	0.35481	-0.00144	0.65938	0.02659	0.95084	0.01456
0.06771	-0.01878	0.36702	-0.00027	0.67141	0.02732	0.96127	0.01234
0.07877	-0.01898	0.37920	0.00093	0.68339	0.02797	0.97117	0.00996
0.09019	-0.01903	0.39141	0.00215	0.69535	0.02853	0.98039	0.00748
0.10178	-0.01895	0.40365	0.00337	0.70732	0.02904	0.98857	0.00493
0.11353	-0.01874	0.41593	0.00461	0.71931	0.02947	0.99575	0.00221
0.12539	-0.01844	0.42822	0.00585	0.73127	0.02984	1.00000	0.00000

Table 6 Design station 4 airfoil coordinates

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
1.00000	0.00006	0.62245	0.06601	0.21683	0.06341	0.00368	0.00769
0.99630	0.00228	0.61119	0.06657	0.20575	0.06245	0.00315	0.00704
0.98943	0.00554	0.59992	0.06710	0.19471	0.06139	0.00267	0.00643
0.98106	0.00898	0.58863	0.06758	0.18370	0.06024	0.00224	0.00585
0.97174	0.01238	0.57733	0.06804	0.17271	0.05899	0.00185	0.00528
0.96185	0.01570	0.56602	0.06846	0.16177	0.05763	0.00150	0.00475
0.95171	0.01886	0.55472	0.06885	0.15088	0.05617	0.00119	0.00423
0.94142	0.02186	0.54342	0.06921	0.14009	0.05458	0.00093	0.00373
0.93100	0.02471	0.53213	0.06953	0.12937	0.05284	0.00071	0.00324
0.92044	0.02742	0.52084	0.06982	0.11873	0.05095	0.00052	0.00277
0.90980	0.03002	0.50954	0.07007	0.10815	0.04889	0.00037	0.00231
0.89912	0.03248	0.49824	0.07029	0.09764	0.04665	0.00024	0.00186
0.88839	0.03483	0.48693	0.07048	0.08722	0.04424	0.00014	0.00143
0.87760	0.03707	0.47560	0.07063	0.07697	0.04164	0.00007	0.00101
0.86677	0.03920	0.46426	0.07076	0.06690	0.03884	0.00003	0.00060
0.85591	0.04122	0.45293	0.07087	0.05703	0.03581	0.00002	0.00019
0.84501	0.04315	0.44162	0.07095	0.04744	0.03254	0.00005	-0.00021
0.83407	0.04498	0.43033	0.07099	0.03829	0.02905	0.00014	-0.00062
0.82311	0.04672	0.41905	0.07099	0.03253	0.02661	0.00028	-0.00104
0.81212	0.04837	0.40778	0.07096	0.02978	0.02537	0.00046	-0.00145
0.80109	0.04994	0.39650	0.07088	0.02713	0.02410	0.00069	-0.00185
0.79003	0.05144	0.38521	0.07076	0.02460	0.02283	0.00097	-0.00225
0.77897	0.05286	0.37391	0.07060	0.02219	0.02156	0.00129	-0.00263
0.76791	0.05420	0.36262	0.07041	0.01994	0.02030	0.00165	-0.00300
0.75684	0.05546	0.35135	0.07018	0.01783	0.01906	0.00205	-0.00336
0.74574	0.05665	0.34009	0.06990	0.01589	0.01784	0.00250	-0.00371
0.73460	0.05777	0.32884	0.06958	0.01412	0.01666	0.00300	-0.00404
0.72343	0.05883	0.31760	0.06921	0.01250	0.01552	0.00354	-0.00435
0.71223	0.05983	0.30635	0.06879	0.01104	0.01442	0.00414	-0.00465
0.70103	0.06079	0.29511	0.06832	0.00973	0.01339	0.00479	-0.00493
0.68984	0.06169	0.28387	0.06779	0.00855	0.01242	0.00550	-0.00519
0.67866	0.06253	0.27267	0.06722	0.00749	0.01150	0.00628	-0.00544
0.66745	0.06331	0.26149	0.06659	0.00655	0.01064	0.00714	-0.00567
0.65621	0.06405	0.25032	0.06589	0.00571	0.00984	0.00808	-0.00591
0.64495	0.06475	0.23914	0.06513	0.00496	0.00908	0.00912	-0.00614
0.63370	0.06540	0.22797	0.06430	0.00429	0.00836	0.01027	-0.00637

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.01155	-0.00660	0.22371	0.00519	0.49545	0.02865	0.76534	0.03657
0.01299	-0.00684	0.23501	0.00628	0.50676	0.02942	0.77646	0.03616
0.01459	-0.00706	0.24632	0.00735	0.51807	0.03018	0.78756	0.03566
0.01638	-0.00728	0.25764	0.00842	0.52937	0.03090	0.79864	0.03508
0.01838	-0.00748	0.26895	0.00950	0.54066	0.03160	0.80971	0.03440
0.02060	-0.00766	0.28024	0.01057	0.55195	0.03226	0.82077	0.03362
0.02569	-0.00794	0.29153	0.01163	0.56324	0.03290	0.83181	0.03275
0.03470	-0.00815	0.30284	0.01267	0.57453	0.03350	0.84281	0.03177
0.04480	-0.00807	0.31418	0.01370	0.58583	0.03406	0.85378	0.03069
0.05555	-0.00780	0.32554	0.01473	0.59712	0.03459	0.86472	0.02949
0.06648	-0.00739	0.33689	0.01576	0.60839	0.03509	0.87566	0.02817
0.07755	-0.00685	0.34823	0.01677	0.61965	0.03555	0.88660	0.02674
0.08869	-0.00624	0.35955	0.01777	0.63090	0.03595	0.89749	0.02520
0.09981	-0.00555	0.37088	0.01876	0.64216	0.03632	0.90829	0.02354
0.11096	-0.00478	0.38222	0.01974	0.65343	0.03663	0.91905	0.02174
0.12217	-0.00395	0.39356	0.02070	0.66468	0.03690	0.92974	0.01980
0.13341	-0.00306	0.40489	0.02165	0.67589	0.03712	0.94034	0.01771
0.14464	-0.00214	0.41622	0.02259	0.68709	0.03727	0.95085	0.01545
0.15589	-0.00117	0.42755	0.02351	0.69830	0.03736	0.96112	0.01305
0.16716	-0.00016	0.43888	0.02442	0.70953	0.03740	0.97113	0.01044
0.17844	0.00087	0.45020	0.02531	0.72076	0.03737	0.98067	0.00769
0.18974	0.00193	0.46152	0.02617	0.73195	0.03729	0.98913	0.00487
0.20106	0.00301	0.47283	0.02702	0.74309	0.03713	0.99617	0.00206
0.21239	0.00410	0.48414	0.02785	0.75422	0.03689	1.00000	0.00006

Table 7 Design clf5605 airfoil coordinates

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
1.00000	0.00005	0.70692	0.05805	0.39158	0.06652	0.08111	0.03875
0.99708	0.00181	0.69821	0.05872	0.38281	0.06638	0.07298	0.03674
0.99165	0.00448	0.68950	0.05935	0.37404	0.06621	0.06493	0.03460
0.98486	0.00730	0.68080	0.05995	0.36527	0.06602	0.05698	0.03231
0.97750	0.01009	0.67209	0.06051	0.35651	0.06581	0.04915	0.02986
0.96981	0.01275	0.66336	0.06104	0.34775	0.06557	0.04150	0.02726
0.96186	0.01533	0.65462	0.06154	0.33900	0.06531	0.03412	0.02449
0.95383	0.01779	0.64587	0.06202	0.33025	0.06503	0.02708	0.02154
0.94571	0.02014	0.63713	0.06248	0.32151	0.06471	0.02058	0.01843
0.93754	0.02238	0.62838	0.06290	0.31276	0.06437	0.01484	0.01524
0.92931	0.02453	0.61964	0.06330	0.30402	0.06400	0.01017	0.01216
0.92100	0.02659	0.61089	0.06368	0.29528	0.06361	0.00672	0.00954
0.91265	0.02858	0.60213	0.06402	0.28655	0.06318	0.00436	0.00742
0.90429	0.03049	0.59337	0.06435	0.27782	0.06273	0.00274	0.00569
0.89590	0.03232	0.58460	0.06466	0.26910	0.06224	0.00162	0.00425
0.88747	0.03408	0.57583	0.06495	0.26039	0.06172	0.00083	0.00302
0.87902	0.03577	0.56706	0.06521	0.25169	0.06116	0.00030	0.00193
0.87055	0.03740	0.55829	0.06546	0.24298	0.06057	0.00002	0.00093
0.86206	0.03896	0.54951	0.06569	0.23428	0.05993	0.00004	-0.00001
0.85356	0.04045	0.54074	0.06590	0.22558	0.05927	0.00036	-0.00096
0.84503	0.04189	0.53197	0.06609	0.21690	0.05857	0.00098	-0.00189
0.83648	0.04327	0.52320	0.06626	0.20824	0.05782	0.00196	-0.00272
0.82792	0.04459	0.51443	0.06640	0.19961	0.05703	0.00332	-0.00339
0.81935	0.04586	0.50566	0.06653	0.19098	0.05618	0.00513	-0.00398
0.81077	0.04707	0.49688	0.06664	0.18236	0.05528	0.00761	-0.00449
0.80216	0.04824	0.48810	0.06672	0.17376	0.05432	0.01121	-0.00497
0.79355	0.04935	0.47932	0.06679	0.16517	0.05330	0.01644	-0.00539
0.78492	0.05043	0.47053	0.06685	0.15661	0.05223	0.02310	-0.00561
0.77629	0.05145	0.46174	0.06689	0.14808	0.05108	0.03085	-0.00559
0.76766	0.05243	0.45295	0.06692	0.13959	0.04986	0.03907	-0.00539
0.75903	0.05335	0.44417	0.06693	0.13113	0.04856	0.04753	-0.00504
0.75038	0.05423	0.43540	0.06692	0.12271	0.04718	0.05616	-0.00462
0.74171	0.05507	0.42664	0.06688	0.11432	0.04569	0.06480	-0.00413
0.73303	0.05587	0.41787	0.06683	0.10595	0.04411	0.07348	-0.00359
0.72434	0.05663	0.40911	0.06675	0.09762	0.04243	0.08221	-0.00301
0.71564	0.05736	0.40034	0.06665	0.08933	0.04064	0.09092	-0.00240

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.09962	-0.00176	0.33640	0.01938	0.57333	0.03555	0.80869	0.03514
0.10834	-0.00108	0.34518	0.02011	0.58209	0.03593	0.81732	0.03451
0.11708	-0.00038	0.35396	0.02084	0.59086	0.03630	0.82594	0.03382
0.12583	0.00035	0.36274	0.02156	0.59962	0.03664	0.83455	0.03307
0.13458	0.00109	0.37152	0.02228	0.60838	0.03696	0.84315	0.03225
0.14333	0.00185	0.38030	0.02298	0.61713	0.03726	0.85173	0.03138
0.15209	0.00262	0.38908	0.02368	0.62588	0.03754	0.86030	0.03043
0.16085	0.00341	0.39787	0.02437	0.63463	0.03778	0.86885	0.02941
0.16961	0.00422	0.40665	0.02505	0.64338	0.03799	0.87740	0.02832
0.17838	0.00503	0.41542	0.02571	0.65213	0.03818	0.88595	0.02716
0.18716	0.00585	0.42420	0.02637	0.66087	0.03834	0.89447	0.02594
0.19594	0.00668	0.43298	0.02702	0.66961	0.03848	0.90296	0.02465
0.20473	0.00751	0.44176	0.02766	0.67834	0.03858	0.91141	0.02327
0.21351	0.00834	0.45054	0.02829	0.68706	0.03864	0.91984	0.02181
0.22230	0.00917	0.45932	0.02890	0.69578	0.03866	0.92824	0.02026
0.23106	0.00999	0.46809	0.02951	0.70451	0.03864	0.93659	0.01862
0.23983	0.01081	0.47686	0.03009	0.71324	0.03860	0.94490	0.01688
0.24861	0.01161	0.48564	0.03067	0.72197	0.03852	0.95315	0.01503
0.25740	0.01241	0.49441	0.03123	0.73068	0.03840	0.96127	0.01308
0.26619	0.01322	0.50319	0.03178	0.73938	0.03824	0.96933	0.01098
0.27497	0.01402	0.51196	0.03231	0.74806	0.03803	0.97715	0.00878
0.28373	0.01482	0.52073	0.03282	0.75673	0.03778	0.98462	0.00643
0.29249	0.01560	0.52950	0.03332	0.76541	0.03747	0.99150	0.00401
0.30126	0.01636	0.53827	0.03381	0.77408	0.03711	0.99701	0.00166
0.31004	0.01712	0.54703	0.03427	0.78274	0.03670	<u>1.00000</u>	<u>0.00005</u>
0.31883	0.01788	0.55580	0.03471	0.79140	0.03623		
0.32762	0.01863	0.56456	0.03514	0.80004	0.03571		

APPENDIX B

The OML ('as-built') normalized airfoil coordinates for various radial stations are plotted in Table 8 through Table 23. Both upper and lower surface coordinates are presented separately, with a coincident point at the leading edge. Around 1,000 coordinates are distributed along the profile for each airfoil to facilitate subsequent interpolation of the curves. The trailing edge is left open and should be closed using a straight line.

Table 8 OML Station 1 upper surface airfoil coordinates, $r/R = 0.0908$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.99999	0.00244	0.98601	0.11751	0.94590	0.22626	0.88183	0.32286
0.99997	0.00558	0.98526	0.12056	0.94447	0.22906	0.87979	0.32525
0.99992	0.00872	0.98449	0.12361	0.94302	0.23185	0.87774	0.32763
0.99986	0.01186	0.98371	0.12665	0.94156	0.23462	0.87568	0.33000
0.99978	0.01500	0.98290	0.12968	0.94008	0.23739	0.87360	0.33235
0.99967	0.01814	0.98208	0.13271	0.93858	0.24015	0.87151	0.33469
0.99955	0.02128	0.98124	0.13573	0.93706	0.24290	0.86940	0.33701
0.99941	0.02441	0.98038	0.13875	0.93553	0.24564	0.86727	0.33933
0.99924	0.02755	0.97949	0.14177	0.93398	0.24837	0.86514	0.34163
0.99906	0.03068	0.97860	0.14478	0.93241	0.25109	0.86298	0.34391
0.99886	0.03382	0.97768	0.14778	0.93082	0.25380	0.86082	0.34619
0.99864	0.03695	0.97674	0.15078	0.92922	0.25650	0.85864	0.34844
0.99839	0.04008	0.97578	0.15377	0.92760	0.25919	0.85644	0.35069
0.99813	0.04321	0.97481	0.15675	0.92597	0.26187	0.85423	0.35292
0.99785	0.04634	0.97382	0.15973	0.92432	0.26454	0.85201	0.35514
0.99755	0.04946	0.97280	0.16270	0.92265	0.26720	0.84977	0.35734
0.99723	0.05259	0.97177	0.16567	0.92096	0.26985	0.84752	0.35953
0.99689	0.05571	0.97072	0.16863	0.91926	0.27249	0.84526	0.36171
0.99653	0.05883	0.96966	0.17158	0.91754	0.27512	0.84298	0.36387
0.99615	0.06194	0.96857	0.17453	0.91580	0.27773	0.84069	0.36601
0.99576	0.06506	0.96746	0.17746	0.91405	0.28034	0.83838	0.36815
0.99534	0.06817	0.96634	0.18040	0.91228	0.28293	0.83607	0.37026
0.99490	0.07128	0.96520	0.18332	0.91050	0.28552	0.83373	0.37237
0.99444	0.07438	0.96404	0.18624	0.90870	0.28809	0.83139	0.37446
0.99397	0.07749	0.96286	0.18915	0.90688	0.29065	0.82903	0.37653
0.99347	0.08059	0.96166	0.19205	0.90505	0.29320	0.82666	0.37859
0.99296	0.08369	0.96045	0.19495	0.90320	0.29574	0.82428	0.38063
0.99242	0.08678	0.95922	0.19784	0.90133	0.29826	0.82188	0.38266
0.99187	0.08987	0.95797	0.20072	0.89945	0.30078	0.81947	0.38467
0.99129	0.09296	0.95670	0.20359	0.89756	0.30328	0.81705	0.38667
0.99070	0.09604	0.95541	0.20645	0.89564	0.30577	0.81462	0.38866
0.99009	0.09912	0.95410	0.20931	0.89372	0.30825	0.81217	0.39062
0.98945	0.10220	0.95278	0.21215	0.89177	0.31071	0.80971	0.39258
0.98880	0.10527	0.95144	0.21499	0.88982	0.31317	0.80724	0.39451
0.98813	0.10833	0.95008	0.21782	0.88784	0.31561	0.80476	0.39644
0.98744	0.11140	0.94871	0.22065	0.88585	0.31804	0.80226	0.39834
0.98673	0.11446	0.94731	0.22346	0.88385	0.32046	0.79976	0.40023

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.79724	0.40211	0.69088	0.46218	0.57313	0.49467	0.45102	0.49764
0.79471	0.40396	0.68797	0.46337	0.57003	0.49512	0.44790	0.49733
0.79216	0.40581	0.68506	0.46454	0.56692	0.49555	0.44478	0.49699
0.78961	0.40763	0.68214	0.46569	0.56380	0.49596	0.44166	0.49663
0.78704	0.40944	0.67921	0.46683	0.56069	0.49635	0.43854	0.49626
0.78447	0.41124	0.67628	0.46794	0.55757	0.49672	0.43542	0.49586
0.78188	0.41302	0.67334	0.46904	0.55445	0.49707	0.43231	0.49545
0.77928	0.41478	0.67039	0.47012	0.55133	0.49741	0.42920	0.49501
0.77667	0.41652	0.66743	0.47118	0.54820	0.49772	0.42610	0.49456
0.77405	0.41825	0.66447	0.47222	0.54508	0.49801	0.42299	0.49408
0.77142	0.41997	0.66150	0.47325	0.54195	0.49829	0.41989	0.49359
0.76878	0.42166	0.65853	0.47425	0.53882	0.49854	0.41679	0.49308
0.76612	0.42334	0.65555	0.47524	0.53569	0.49877	0.41370	0.49254
0.76346	0.42501	0.65256	0.47620	0.53256	0.49899	0.41061	0.49199
0.76079	0.42665	0.64957	0.47715	0.52942	0.49918	0.40752	0.49142
0.75810	0.42828	0.64657	0.47808	0.52629	0.49936	0.40444	0.49083
0.75541	0.42989	0.64356	0.47899	0.52315	0.49951	0.40136	0.49022
0.75270	0.43149	0.64055	0.47989	0.52001	0.49965	0.39828	0.48959
0.74999	0.43307	0.63754	0.48076	0.51688	0.49976	0.39521	0.48894
0.74727	0.43463	0.63452	0.48161	0.51374	0.49986	0.39214	0.48828
0.74453	0.43617	0.63149	0.48245	0.51060	0.49994	0.38908	0.48759
0.74179	0.43770	0.62846	0.48327	0.50746	0.49999	0.38602	0.48688
0.73904	0.43921	0.62542	0.48406	0.50432	0.50003	0.38296	0.48616
0.73627	0.44070	0.62238	0.48484	0.50118	0.50005	0.37991	0.48541
0.73350	0.44218	0.61933	0.48560	0.49804	0.50004	0.37687	0.48465
0.73072	0.44363	0.61628	0.48634	0.49490	0.50002	0.37383	0.48387
0.72793	0.44507	0.61322	0.48706	0.49176	0.49998	0.37079	0.48306
0.72513	0.44650	0.61016	0.48776	0.48862	0.49992	0.36776	0.48224
0.72232	0.44790	0.60710	0.48844	0.48548	0.49984	0.36473	0.48140
0.71951	0.44929	0.60403	0.48911	0.48235	0.49974	0.36171	0.48054
0.71668	0.45066	0.60096	0.48975	0.47921	0.49962	0.35870	0.47967
0.71385	0.45201	0.59788	0.49037	0.47607	0.49948	0.35569	0.47877
0.71100	0.45334	0.59480	0.49098	0.47294	0.49931	0.35269	0.47785
0.70815	0.45466	0.59171	0.49156	0.46980	0.49914	0.34969	0.47692
0.70529	0.45596	0.58863	0.49213	0.46667	0.49894	0.34670	0.47597
0.70243	0.45724	0.58553	0.49268	0.46353	0.49872	0.34371	0.47499
0.69955	0.45850	0.58244	0.49321	0.46040	0.49848	0.34073	0.47400
0.69667	0.45974	0.57934	0.49371	0.45727	0.49822	0.33776	0.47299
0.69378	0.46097	0.57624	0.49420	0.45415	0.49794	0.33479	0.47197

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.33183	0.47092	0.22268	0.41609	0.13008	0.33644	0.05955	0.23671
0.32888	0.46985	0.22007	0.41434	0.12797	0.33411	0.05808	0.23394
0.32593	0.46877	0.21748	0.41258	0.12588	0.33177	0.05662	0.23116
0.32299	0.46767	0.21489	0.41080	0.12381	0.32941	0.05517	0.22837
0.32006	0.46655	0.21232	0.40900	0.12175	0.32704	0.05375	0.22557
0.31713	0.46541	0.20976	0.40718	0.11970	0.32466	0.05234	0.22276
0.31421	0.46425	0.20721	0.40535	0.11767	0.32226	0.05095	0.21995
0.31130	0.46307	0.20467	0.40351	0.11565	0.31986	0.04958	0.21712
0.30840	0.46188	0.20214	0.40164	0.11365	0.31744	0.04823	0.21429
0.30550	0.46067	0.19962	0.39976	0.11167	0.31500	0.04689	0.21145
0.30261	0.45944	0.19712	0.39787	0.10970	0.31256	0.04557	0.20860
0.29973	0.45819	0.19463	0.39596	0.10774	0.31010	0.04427	0.20574
0.29686	0.45692	0.19215	0.39403	0.10580	0.30763	0.04299	0.20288
0.29400	0.45564	0.18968	0.39209	0.10388	0.30515	0.04172	0.20000
0.29114	0.45434	0.18722	0.39014	0.10197	0.30266	0.04048	0.19712
0.28829	0.45301	0.18478	0.38817	0.10008	0.30015	0.03925	0.19423
0.28545	0.45168	0.18235	0.38618	0.09820	0.29764	0.03804	0.19133
0.28262	0.45032	0.17993	0.38418	0.09634	0.29511	0.03684	0.18843
0.27979	0.44895	0.17752	0.38216	0.09450	0.29257	0.03567	0.18552
0.27698	0.44755	0.17513	0.38013	0.09267	0.29001	0.03452	0.18260
0.27417	0.44615	0.17275	0.37808	0.09085	0.28745	0.03338	0.17967
0.27138	0.44472	0.17038	0.37602	0.08906	0.28488	0.03226	0.17674
0.26859	0.44327	0.16803	0.37394	0.08728	0.28229	0.03116	0.17380
0.26581	0.44181	0.16569	0.37185	0.08551	0.27969	0.03008	0.17085
0.26304	0.44033	0.16336	0.36974	0.08377	0.27708	0.02901	0.16789
0.26028	0.43884	0.16104	0.36762	0.08203	0.27446	0.02797	0.16493
0.25753	0.43732	0.15874	0.36548	0.08032	0.27183	0.02694	0.16197
0.25479	0.43579	0.15645	0.36333	0.07862	0.26919	0.02594	0.15899
0.25206	0.43424	0.15418	0.36117	0.07694	0.26654	0.02495	0.15601
0.24934	0.43268	0.15192	0.35899	0.07527	0.26388	0.02398	0.15302
0.24662	0.43109	0.14967	0.35680	0.07362	0.26121	0.02303	0.15003
0.24392	0.42949	0.14744	0.35459	0.07199	0.25852	0.02209	0.14703
0.24123	0.42788	0.14522	0.35237	0.07038	0.25583	0.02118	0.14403
0.23855	0.42624	0.14301	0.35013	0.06878	0.25313	0.02028	0.14102
0.23588	0.42459	0.14082	0.34788	0.06720	0.25042	0.01941	0.13801
0.23322	0.42293	0.13864	0.34562	0.06564	0.24769	0.01855	0.13499
0.23057	0.42124	0.13648	0.34335	0.06409	0.24496	0.01771	0.13196
0.22793	0.41954	0.13433	0.34106	0.06256	0.24222	0.01690	0.12893
0.22530	0.41783	0.13220	0.33875	0.06105	0.23947	0.01610	0.12589

<u>x/c</u>	<u>y/c</u>
0.01531	0.12285
0.01455	0.11980
0.01381	0.11675
0.01309	0.11370
0.01238	0.11064
0.01170	0.10757
0.01103	0.10451
0.01039	0.10143
0.00976	0.09836
0.00915	0.09528
0.00856	0.09219

<u>x/c</u>	<u>y/c</u>
0.00799	0.08910
0.00745	0.08601
0.00692	0.08292
0.00640	0.07982
0.00591	0.07672
0.00544	0.07361
0.00499	0.07051
0.00456	0.06740
0.00414	0.06428
0.00375	0.06117
0.00338	0.05805

<u>x/c</u>	<u>y/c</u>
0.00302	0.05493
0.00269	0.05181
0.00237	0.04869
0.00208	0.04556
0.00180	0.04243
0.00154	0.03930
0.00131	0.03617
0.00109	0.03304
0.00089	0.02991
0.00071	0.02677
0.00056	0.02364

<u>x/c</u>	<u>y/c</u>
0.00042	0.02050
0.00030	0.01736
0.00020	0.01422
0.00012	0.01108
0.00006	0.00795
0.00002	0.00481
0.00000	0.00167
0.00000	0.00000

Table 9 OML Station 1 lower surface airfoil coordinates, $r/R = 0.0908$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.00000	0.00000	0.01307	-0.11351	0.05230	-0.22258	0.11559	-0.31969
0.00000	-0.00147	0.01379	-0.11656	0.05371	-0.22539	0.11761	-0.32209
0.00002	-0.00461	0.01453	-0.11962	0.05513	-0.22819	0.11964	-0.32449
0.00006	-0.00775	0.01529	-0.12266	0.05657	-0.23097	0.12168	-0.32687
0.00012	-0.01089	0.01607	-0.12570	0.05803	-0.23375	0.12374	-0.32924
0.00020	-0.01403	0.01687	-0.12874	0.05951	-0.23653	0.12582	-0.33160
0.00030	-0.01717	0.01769	-0.13177	0.06100	-0.23929	0.12791	-0.33394
0.00041	-0.02031	0.01853	-0.13480	0.06251	-0.24204	0.13001	-0.33627
0.00055	-0.02344	0.01938	-0.13782	0.06404	-0.24478	0.13213	-0.33859
0.00071	-0.02658	0.02026	-0.14083	0.06559	-0.24751	0.13427	-0.34089
0.00089	-0.02971	0.02115	-0.14384	0.06715	-0.25024	0.13642	-0.34318
0.00108	-0.03285	0.02206	-0.14685	0.06873	-0.25295	0.13858	-0.34546
0.00130	-0.03598	0.02300	-0.14985	0.07033	-0.25565	0.14075	-0.34772
0.00154	-0.03911	0.02395	-0.15284	0.07194	-0.25835	0.14295	-0.34997
0.00179	-0.04224	0.02492	-0.15582	0.07357	-0.26103	0.14515	-0.35220
0.00207	-0.04537	0.02591	-0.15880	0.07522	-0.26370	0.14737	-0.35443
0.00236	-0.04850	0.02691	-0.16178	0.07689	-0.26636	0.14960	-0.35663
0.00268	-0.05162	0.02794	-0.16475	0.07857	-0.26902	0.15185	-0.35883
0.00301	-0.05474	0.02898	-0.16771	0.08027	-0.27166	0.15411	-0.36101
0.00336	-0.05786	0.03004	-0.17066	0.08198	-0.27429	0.15638	-0.36317
0.00374	-0.06098	0.03113	-0.17361	0.08371	-0.27691	0.15867	-0.36532
0.00413	-0.06409	0.03223	-0.17655	0.08546	-0.27952	0.16097	-0.36746
0.00454	-0.06721	0.03334	-0.17948	0.08722	-0.28211	0.16329	-0.36958
0.00498	-0.07032	0.03448	-0.18241	0.08900	-0.28470	0.16561	-0.37169
0.00543	-0.07342	0.03564	-0.18533	0.09080	-0.28728	0.16796	-0.37378
0.00590	-0.07653	0.03681	-0.18824	0.09261	-0.28984	0.17031	-0.37586
0.00639	-0.07963	0.03800	-0.19115	0.09444	-0.29239	0.17268	-0.37792
0.00690	-0.08273	0.03921	-0.19405	0.09628	-0.29493	0.17506	-0.37997
0.00743	-0.08582	0.04044	-0.19694	0.09815	-0.29746	0.17745	-0.38200
0.00798	-0.08891	0.04168	-0.19982	0.10002	-0.29998	0.17985	-0.38402
0.00855	-0.09200	0.04295	-0.20269	0.10191	-0.30249	0.18227	-0.38602
0.00913	-0.09509	0.04423	-0.20556	0.10382	-0.30498	0.18470	-0.38801
0.00974	-0.09817	0.04553	-0.20842	0.10574	-0.30746	0.18715	-0.38998
0.01037	-0.10124	0.04685	-0.21127	0.10768	-0.30993	0.18960	-0.39194
0.01101	-0.10432	0.04818	-0.21411	0.10964	-0.31239	0.19207	-0.39388
0.01168	-0.10738	0.04954	-0.21694	0.11161	-0.31483	0.19455	-0.39581
0.01236	-0.11045	0.05091	-0.21976	0.11359	-0.31727	0.19704	-0.39772

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.19955	-0.39961	0.30541	-0.46053	0.42290	-0.49397	0.54498	-0.49792
0.20206	-0.40149	0.30831	-0.46175	0.42600	-0.49445	0.54811	-0.49763
0.20459	-0.40335	0.31121	-0.46294	0.42911	-0.49490	0.55123	-0.49732
0.20713	-0.40520	0.31413	-0.46412	0.43222	-0.49534	0.55435	-0.49699
0.20968	-0.40703	0.31704	-0.46528	0.43533	-0.49575	0.55747	-0.49664
0.21224	-0.40885	0.31997	-0.46642	0.43844	-0.49615	0.56059	-0.49627
0.21481	-0.41064	0.32290	-0.46754	0.44156	-0.49653	0.56371	-0.49588
0.21740	-0.41243	0.32584	-0.46864	0.44468	-0.49688	0.56682	-0.49547
0.21999	-0.41419	0.32879	-0.46973	0.44780	-0.49722	0.56993	-0.49504
0.22260	-0.41594	0.33174	-0.47079	0.45093	-0.49754	0.57304	-0.49459
0.22522	-0.41768	0.33470	-0.47184	0.45405	-0.49784	0.57614	-0.49412
0.22785	-0.41940	0.33767	-0.47287	0.45718	-0.49812	0.57925	-0.49363
0.23049	-0.42110	0.34064	-0.47388	0.46031	-0.49837	0.58234	-0.49312
0.23314	-0.42278	0.34362	-0.47487	0.46344	-0.49861	0.58544	-0.49260
0.23580	-0.42445	0.34661	-0.47584	0.46657	-0.49883	0.58853	-0.49205
0.23847	-0.42610	0.34960	-0.47680	0.46970	-0.49903	0.59162	-0.49149
0.24115	-0.42773	0.35260	-0.47773	0.47284	-0.49921	0.59470	-0.49090
0.24384	-0.42935	0.35560	-0.47865	0.47598	-0.49937	0.59779	-0.49030
0.24654	-0.43095	0.35861	-0.47954	0.47911	-0.49952	0.60086	-0.48967
0.24925	-0.43253	0.36162	-0.48042	0.48225	-0.49964	0.60394	-0.48903
0.25197	-0.43410	0.36464	-0.48128	0.48539	-0.49974	0.60701	-0.48837
0.25471	-0.43565	0.36767	-0.48212	0.48853	-0.49982	0.61007	-0.48769
0.25745	-0.43718	0.37070	-0.48294	0.49167	-0.49988	0.61313	-0.48699
0.26020	-0.43869	0.37373	-0.48375	0.49480	-0.49993	0.61619	-0.48627
0.26296	-0.44019	0.37677	-0.48453	0.49794	-0.49995	0.61924	-0.48553
0.26573	-0.44167	0.37982	-0.48529	0.50108	-0.49995	0.62229	-0.48477
0.26850	-0.44313	0.38287	-0.48604	0.50422	-0.49993	0.62533	-0.48399
0.27129	-0.44458	0.38592	-0.48676	0.50736	-0.49990	0.62836	-0.48319
0.27409	-0.44601	0.38898	-0.48747	0.51050	-0.49984	0.63140	-0.48238
0.27689	-0.44742	0.39205	-0.48816	0.51364	-0.49977	0.63442	-0.48154
0.27971	-0.44881	0.39511	-0.48883	0.51678	-0.49967	0.63744	-0.48069
0.28253	-0.45018	0.39819	-0.48948	0.51992	-0.49956	0.64046	-0.47982
0.28536	-0.45154	0.40126	-0.49011	0.52306	-0.49942	0.64347	-0.47893
0.28820	-0.45288	0.40434	-0.49072	0.52619	-0.49927	0.64648	-0.47802
0.29105	-0.45420	0.40743	-0.49131	0.52933	-0.49909	0.64948	-0.47709
0.29391	-0.45550	0.41051	-0.49188	0.53246	-0.49890	0.65247	-0.47614
0.29677	-0.45679	0.41360	-0.49243	0.53559	-0.49868	0.65546	-0.47517
0.29965	-0.45805	0.41670	-0.49296	0.53872	-0.49845	0.65844	-0.47419
0.30253	-0.45930	0.41980	-0.49348	0.54185	-0.49820	0.66141	-0.47318

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.66438	-0.47216	0.77397	-0.41821	0.86721	-0.33930	0.93853	-0.24014
0.66734	-0.47112	0.77659	-0.41648	0.86933	-0.33699	0.94003	-0.23738
0.67030	-0.47006	0.77920	-0.41474	0.87144	-0.33466	0.94151	-0.23461
0.67325	-0.46898	0.78180	-0.41298	0.87354	-0.33232	0.94298	-0.23184
0.67619	-0.46788	0.78439	-0.41120	0.87562	-0.32997	0.94443	-0.22905
0.67912	-0.46677	0.78697	-0.40940	0.87768	-0.32761	0.94586	-0.22625
0.68205	-0.46563	0.78953	-0.40759	0.87973	-0.32523	0.94727	-0.22345
0.68497	-0.46448	0.79209	-0.40577	0.88177	-0.32284	0.94866	-0.22064
0.68789	-0.46331	0.79463	-0.40393	0.88379	-0.32043	0.95004	-0.21781
0.69079	-0.46212	0.79716	-0.40207	0.88579	-0.31802	0.95140	-0.21498
0.69369	-0.46091	0.79968	-0.40019	0.88778	-0.31559	0.95274	-0.21215
0.69658	-0.45969	0.80219	-0.39830	0.88976	-0.31315	0.95406	-0.20930
0.69946	-0.45844	0.80468	-0.39640	0.89171	-0.31069	0.95537	-0.20644
0.70234	-0.45718	0.80716	-0.39448	0.89366	-0.30823	0.95666	-0.20358
0.70521	-0.45590	0.80964	-0.39254	0.89559	-0.30575	0.95793	-0.20071
0.70807	-0.45460	0.81210	-0.39059	0.89750	-0.30326	0.95918	-0.19783
0.71092	-0.45329	0.81454	-0.38862	0.89940	-0.30076	0.96041	-0.19494
0.71376	-0.45196	0.81698	-0.38664	0.90128	-0.29824	0.96163	-0.19205
0.71659	-0.45060	0.81940	-0.38464	0.90314	-0.29572	0.96283	-0.18914
0.71942	-0.44923	0.82181	-0.38263	0.90499	-0.29318	0.96400	-0.18623
0.72224	-0.44785	0.82420	-0.38060	0.90682	-0.29063	0.96516	-0.18331
0.72504	-0.44644	0.82659	-0.37855	0.90864	-0.28807	0.96631	-0.18039
0.72784	-0.44502	0.82896	-0.37650	0.91044	-0.28550	0.96743	-0.17746
0.73063	-0.44358	0.83132	-0.37442	0.91223	-0.28291	0.96854	-0.17452
0.73342	-0.44213	0.83366	-0.37233	0.91400	-0.28032	0.96962	-0.17157
0.73619	-0.44065	0.83599	-0.37023	0.91575	-0.27772	0.97069	-0.16862
0.73895	-0.43916	0.83831	-0.36812	0.91749	-0.27510	0.97174	-0.16566
0.74170	-0.43765	0.84062	-0.36598	0.91921	-0.27247	0.97277	-0.16270
0.74445	-0.43612	0.84291	-0.36384	0.92091	-0.26983	0.97379	-0.15972
0.74718	-0.43458	0.84519	-0.36168	0.92259	-0.26719	0.97478	-0.15675
0.74991	-0.43302	0.84745	-0.35950	0.92426	-0.26453	0.97575	-0.15376
0.75262	-0.43144	0.84970	-0.35731	0.92592	-0.26186	0.97671	-0.15077
0.75533	-0.42985	0.85194	-0.35511	0.92755	-0.25918	0.97765	-0.14777
0.75802	-0.42823	0.85417	-0.35289	0.92917	-0.25649	0.97857	-0.14477
0.76070	-0.42661	0.85637	-0.35066	0.93078	-0.25379	0.97947	-0.14176
0.76338	-0.42496	0.85857	-0.34842	0.93236	-0.25108	0.98035	-0.13875
0.76604	-0.42330	0.86075	-0.34616	0.93393	-0.24836	0.98121	-0.13573
0.76870	-0.42162	0.86292	-0.34389	0.93548	-0.24563	0.98205	-0.13271
0.77134	-0.41992	0.86507	-0.34160	0.93702	-0.24289	0.98288	-0.12968

<u>x/c</u>	<u>y/c</u>
0.98368	-0.12664
0.98447	-0.12360
0.98524	-0.12056
0.98598	-0.11751
0.98671	-0.11445
0.98742	-0.11140
0.98811	-0.10833
0.98878	-0.10526
0.98944	-0.10219
0.99007	-0.09912
0.99068	-0.09604

<u>x/c</u>	<u>y/c</u>
0.99127	-0.09296
0.99185	-0.08987
0.99240	-0.08678
0.99294	-0.08368
0.99346	-0.08059
0.99395	-0.07749
0.99443	-0.07438
0.99489	-0.07128
0.99532	-0.06817
0.99574	-0.06506
0.99614	-0.06194

<u>x/c</u>	<u>y/c</u>
0.99652	-0.05883
0.99688	-0.05571
0.99722	-0.05258
0.99754	-0.04946
0.99784	-0.04634
0.99813	-0.04321
0.99839	-0.04008
0.99863	-0.03695
0.99885	-0.03382
0.99905	-0.03068
0.99924	-0.02755

<u>x/c</u>	<u>y/c</u>
0.99940	-0.02441
0.99955	-0.02128
0.99967	-0.01814
0.99977	-0.01500
0.99986	-0.01186
0.99992	-0.00872
0.99997	-0.00558
0.99999	-0.00244

Table 10 OML Station 2 upper surface airfoil coordinates, $r/R = 0.2000$

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.99950	0.00290	0.93010	0.03869	0.85733	0.06745	0.78358	0.09362
0.99785	0.00422	0.92816	0.03953	0.85535	0.06819	0.78158	0.09429
0.99616	0.00549	0.92621	0.04036	0.85336	0.06892	0.77957	0.09496
0.99442	0.00669	0.92426	0.04118	0.85138	0.06966	0.77756	0.09563
0.99264	0.00783	0.92232	0.04201	0.84940	0.07039	0.77556	0.09629
0.99084	0.00894	0.92037	0.04282	0.84741	0.07112	0.77355	0.09695
0.98902	0.01002	0.91841	0.04364	0.84543	0.07185	0.77154	0.09761
0.98720	0.01109	0.91646	0.04445	0.84344	0.07258	0.76953	0.09827
0.98536	0.01215	0.91451	0.04526	0.84145	0.07330	0.76751	0.09892
0.98352	0.01319	0.91255	0.04606	0.83947	0.07403	0.76550	0.09957
0.98167	0.01421	0.91059	0.04686	0.83748	0.07475	0.76349	0.10022
0.97981	0.01522	0.90863	0.04766	0.83549	0.07547	0.76147	0.10087
0.97794	0.01621	0.90667	0.04845	0.83350	0.07618	0.75946	0.10151
0.97607	0.01719	0.90471	0.04924	0.83151	0.07690	0.75744	0.10215
0.97419	0.01816	0.90274	0.05002	0.82952	0.07762	0.75543	0.10279
0.97230	0.01912	0.90078	0.05080	0.82753	0.07833	0.75341	0.10342
0.97042	0.02008	0.89881	0.05158	0.82554	0.07904	0.75139	0.10405
0.96853	0.02103	0.89684	0.05235	0.82355	0.07975	0.74937	0.10468
0.96663	0.02197	0.89487	0.05312	0.82155	0.08047	0.74735	0.10530
0.96474	0.02291	0.89290	0.05389	0.81956	0.08117	0.74533	0.10593
0.96284	0.02383	0.89093	0.05466	0.81757	0.08188	0.74331	0.10655
0.96093	0.02476	0.88896	0.05542	0.81557	0.08259	0.74128	0.10716
0.95903	0.02567	0.88699	0.05618	0.81358	0.08329	0.73926	0.10778
0.95712	0.02658	0.88501	0.05694	0.81158	0.08399	0.73724	0.10839
0.95521	0.02749	0.88304	0.05770	0.80959	0.08469	0.73521	0.10899
0.95329	0.02838	0.88106	0.05846	0.80759	0.08539	0.73318	0.10960
0.95137	0.02927	0.87909	0.05922	0.80560	0.08609	0.73116	0.11020
0.94945	0.03015	0.87711	0.05997	0.80360	0.08678	0.72913	0.11080
0.94752	0.03102	0.87514	0.06073	0.80160	0.08748	0.72710	0.11140
0.94559	0.03189	0.87316	0.06148	0.79960	0.08817	0.72507	0.11199
0.94366	0.03276	0.87118	0.06223	0.79760	0.08886	0.72304	0.11258
0.94173	0.03362	0.86921	0.06298	0.79560	0.08954	0.72101	0.11317
0.93980	0.03447	0.86723	0.06373	0.79360	0.09023	0.71897	0.11375
0.93786	0.03532	0.86525	0.06447	0.79160	0.09091	0.71694	0.11434
0.93592	0.03617	0.86327	0.06522	0.78960	0.09159	0.71491	0.11492
0.93398	0.03702	0.86129	0.06596	0.78759	0.09227	0.71287	0.11549
0.93204	0.03786	0.85931	0.06671	0.78559	0.09295	0.71084	0.11607

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.70880	0.11664	0.62869	0.13622	0.54740	0.15008	0.46526	0.15740
0.70676	0.11721	0.62662	0.13665	0.54530	0.15035	0.46315	0.15750
0.70472	0.11777	0.62455	0.13708	0.54320	0.15062	0.46104	0.15760
0.70268	0.11833	0.62247	0.13750	0.54110	0.15088	0.45892	0.15770
0.70065	0.11889	0.62040	0.13792	0.53900	0.15114	0.45681	0.15779
0.69860	0.11945	0.61833	0.13834	0.53690	0.15139	0.45470	0.15787
0.69656	0.12000	0.61625	0.13875	0.53480	0.15164	0.45258	0.15796
0.69452	0.12055	0.61418	0.13916	0.53270	0.15188	0.45047	0.15804
0.69248	0.12110	0.61210	0.13956	0.53060	0.15212	0.44836	0.15812
0.69043	0.12164	0.61003	0.13997	0.52850	0.15236	0.44624	0.15819
0.68839	0.12218	0.60795	0.14037	0.52640	0.15259	0.44413	0.15826
0.68634	0.12272	0.60587	0.14076	0.52430	0.15282	0.44202	0.15832
0.68430	0.12325	0.60379	0.14115	0.52219	0.15304	0.43990	0.15839
0.68225	0.12378	0.60171	0.14154	0.52009	0.15326	0.43779	0.15844
0.68020	0.12431	0.59963	0.14193	0.51798	0.15347	0.43567	0.15850
0.67815	0.12483	0.59755	0.14231	0.51588	0.15368	0.43356	0.15855
0.67610	0.12535	0.59547	0.14268	0.51377	0.15389	0.43144	0.15859
0.67405	0.12586	0.59339	0.14305	0.51167	0.15409	0.42933	0.15863
0.67200	0.12637	0.59131	0.14342	0.50956	0.15428	0.42721	0.15867
0.66994	0.12688	0.58922	0.14378	0.50746	0.15447	0.42510	0.15870
0.66789	0.12738	0.58714	0.14414	0.50535	0.15466	0.42298	0.15873
0.66583	0.12788	0.58505	0.14449	0.50324	0.15485	0.42087	0.15875
0.66378	0.12838	0.58297	0.14484	0.50114	0.15502	0.41875	0.15876
0.66172	0.12887	0.58088	0.14519	0.49903	0.15520	0.41664	0.15878
0.65966	0.12936	0.57879	0.14553	0.49692	0.15537	0.41452	0.15878
0.65760	0.12984	0.57671	0.14586	0.49481	0.15554	0.41241	0.15879
0.65554	0.13032	0.57462	0.14619	0.49270	0.15570	0.41029	0.15878
0.65348	0.13080	0.57253	0.14652	0.49059	0.15585	0.40818	0.15878
0.65142	0.13127	0.57044	0.14684	0.48848	0.15601	0.40606	0.15876
0.64936	0.13174	0.56834	0.14715	0.48637	0.15615	0.40395	0.15875
0.64730	0.13221	0.56625	0.14747	0.48426	0.15630	0.40184	0.15873
0.64523	0.13267	0.56416	0.14777	0.48215	0.15644	0.39972	0.15870
0.64317	0.13312	0.56207	0.14808	0.48004	0.15657	0.39761	0.15867
0.64110	0.13358	0.55997	0.14838	0.47793	0.15670	0.39549	0.15864
0.63903	0.13403	0.55788	0.14867	0.47582	0.15683	0.39338	0.15860
0.63697	0.13447	0.55578	0.14896	0.47371	0.15695	0.39126	0.15855
0.63490	0.13492	0.55369	0.14925	0.47160	0.15707	0.38915	0.15851
0.63283	0.13536	0.55159	0.14953	0.46949	0.15718	0.38703	0.15846
0.63076	0.13579	0.54950	0.14981	0.46737	0.15729	0.38492	0.15840

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.38280	0.15834	0.30056	0.15237	0.21924	0.13878	0.13988	0.11649
0.38069	0.15828	0.29846	0.15212	0.21717	0.13833	0.13788	0.11579
0.37858	0.15821	0.29637	0.15186	0.21511	0.13787	0.13589	0.11508
0.37646	0.15814	0.29427	0.15160	0.21305	0.13740	0.13390	0.11436
0.37435	0.15807	0.29217	0.15133	0.21099	0.13692	0.13191	0.11363
0.37224	0.15799	0.29007	0.15106	0.20893	0.13645	0.12993	0.11290
0.37012	0.15791	0.28797	0.15079	0.20687	0.13596	0.12795	0.11215
0.36801	0.15782	0.28588	0.15050	0.20481	0.13547	0.12598	0.11140
0.36590	0.15773	0.28378	0.15022	0.20275	0.13497	0.12400	0.11064
0.36378	0.15763	0.28169	0.14993	0.20070	0.13447	0.12203	0.10987
0.36167	0.15753	0.27959	0.14963	0.19865	0.13396	0.12007	0.10909
0.35956	0.15742	0.27750	0.14933	0.19660	0.13345	0.11810	0.10830
0.35745	0.15731	0.27541	0.14902	0.19455	0.13293	0.11614	0.10750
0.35533	0.15720	0.27332	0.14871	0.19250	0.13240	0.11419	0.10670
0.35322	0.15708	0.27122	0.14839	0.19045	0.13187	0.11224	0.10588
0.35111	0.15695	0.26913	0.14807	0.18840	0.13133	0.11029	0.10506
0.34900	0.15682	0.26704	0.14775	0.18636	0.13079	0.10835	0.10422
0.34689	0.15668	0.26496	0.14741	0.18432	0.13024	0.10641	0.10338
0.34478	0.15654	0.26287	0.14708	0.18228	0.12968	0.10447	0.10253
0.34267	0.15639	0.26078	0.14674	0.18024	0.12912	0.10254	0.10167
0.34056	0.15624	0.25869	0.14639	0.17820	0.12855	0.10061	0.10080
0.33845	0.15608	0.25661	0.14604	0.17617	0.12797	0.09868	0.09992
0.33634	0.15592	0.25452	0.14568	0.17414	0.12739	0.09677	0.09903
0.33423	0.15575	0.25244	0.14532	0.17210	0.12680	0.09485	0.09814
0.33213	0.15558	0.25036	0.14495	0.17007	0.12621	0.09294	0.09723
0.33002	0.15540	0.24828	0.14458	0.16805	0.12560	0.09104	0.09631
0.32791	0.15521	0.24620	0.14420	0.16602	0.12500	0.08914	0.09538
0.32581	0.15502	0.24412	0.14381	0.16400	0.12438	0.08724	0.09444
0.32370	0.15483	0.24204	0.14343	0.16197	0.12376	0.08535	0.09349
0.32159	0.15463	0.23996	0.14303	0.15995	0.12313	0.08347	0.09253
0.31949	0.15443	0.23788	0.14263	0.15794	0.12250	0.08159	0.09155
0.31738	0.15422	0.23581	0.14223	0.15592	0.12186	0.07972	0.09057
0.31528	0.15401	0.23373	0.14181	0.15391	0.12121	0.07786	0.08957
0.31318	0.15379	0.23166	0.14140	0.15190	0.12056	0.07600	0.08856
0.31107	0.15356	0.22959	0.14098	0.14989	0.11990	0.07414	0.08754
0.30897	0.15334	0.22751	0.14055	0.14788	0.11923	0.07230	0.08651
0.30687	0.15310	0.22544	0.14012	0.14587	0.11856	0.07046	0.08546
0.30477	0.15286	0.22337	0.13968	0.14387	0.11788	0.06863	0.08440
0.30267	0.15262	0.22131	0.13923	0.14187	0.11719	0.06680	0.08333

<u>x/c</u>	<u>y/c</u>
0.06499	0.08225
0.06318	0.08115
0.06138	0.08003
0.05959	0.07891
0.05781	0.07777
0.05604	0.07661
0.05428	0.07544
0.05254	0.07424
0.05080	0.07303
0.04909	0.07180
0.04739	0.07054
0.04571	0.06925
0.04404	0.06795
0.04239	0.06662

<u>x/c</u>	<u>y/c</u>
0.04076	0.06528
0.03914	0.06392
0.03754	0.06254
0.03594	0.06115
0.03435	0.05976
0.03278	0.05835
0.03121	0.05692
0.02966	0.05549
0.02813	0.05403
0.02662	0.05254
0.02514	0.05103
0.02370	0.04948
0.02229	0.04791
0.02092	0.04630

<u>x/c</u>	<u>y/c</u>
0.01958	0.04466
0.01827	0.04300
0.01701	0.04131
0.01577	0.03959
0.01457	0.03784
0.01340	0.03608
0.01225	0.03431
0.01112	0.03252
0.01000	0.03073
0.00888	0.02893
0.00776	0.02714
0.00667	0.02533
0.00565	0.02348
0.00473	0.02157

<u>x/c</u>	<u>y/c</u>
0.00394	0.01961
0.00327	0.01761
0.00268	0.01557
0.00216	0.01352
0.00170	0.01146
0.00127	0.00939
0.00085	0.00732
0.00048	0.00523
0.00021	0.00314
0.00003	0.00103
0.00003	0.00000

Table 11 OML Station 2 lower surface airfoil coordinates, $r/R = 0.2000$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.00003	0.00000	0.05498	-0.04707	0.13194	-0.06078	0.20998	-0.06634
0.00010	-0.00108	0.05702	-0.04765	0.13404	-0.06101	0.21209	-0.06642
0.00034	-0.00318	0.05906	-0.04821	0.13614	-0.06123	0.21420	-0.06649
0.00078	-0.00525	0.06110	-0.04875	0.13825	-0.06145	0.21632	-0.06657
0.00131	-0.00730	0.06315	-0.04927	0.14035	-0.06166	0.21843	-0.06663
0.00187	-0.00934	0.06520	-0.04978	0.14246	-0.06187	0.22055	-0.06670
0.00251	-0.01135	0.06726	-0.05028	0.14456	-0.06207	0.22266	-0.06676
0.00324	-0.01334	0.06932	-0.05076	0.14667	-0.06227	0.22477	-0.06682
0.00415	-0.01525	0.07138	-0.05122	0.14877	-0.06247	0.22689	-0.06688
0.00527	-0.01704	0.07345	-0.05167	0.15088	-0.06266	0.22900	-0.06693
0.00656	-0.01871	0.07552	-0.05212	0.15299	-0.06284	0.23112	-0.06698
0.00795	-0.02030	0.07759	-0.05255	0.15509	-0.06302	0.23323	-0.06702
0.00938	-0.02187	0.07966	-0.05297	0.15720	-0.06320	0.23535	-0.06707
0.01080	-0.02344	0.08173	-0.05338	0.15931	-0.06337	0.23746	-0.06711
0.01223	-0.02499	0.08381	-0.05378	0.16142	-0.06354	0.23958	-0.06715
0.01371	-0.02650	0.08589	-0.05417	0.16352	-0.06371	0.24169	-0.06718
0.01525	-0.02795	0.08797	-0.05456	0.16563	-0.06387	0.24381	-0.06721
0.01684	-0.02934	0.09005	-0.05493	0.16774	-0.06403	0.24592	-0.06724
0.01849	-0.03067	0.09213	-0.05530	0.16985	-0.06418	0.24803	-0.06727
0.02020	-0.03192	0.09422	-0.05566	0.17196	-0.06433	0.25015	-0.06729
0.02196	-0.03309	0.09630	-0.05600	0.17407	-0.06447	0.25226	-0.06731
0.02376	-0.03419	0.09839	-0.05634	0.17618	-0.06461	0.25438	-0.06732
0.02560	-0.03523	0.10048	-0.05667	0.17829	-0.06475	0.25649	-0.06734
0.02748	-0.03621	0.10257	-0.05700	0.18040	-0.06488	0.25861	-0.06735
0.02937	-0.03715	0.10466	-0.05731	0.18251	-0.06501	0.26072	-0.06735
0.03129	-0.03804	0.10676	-0.05762	0.18463	-0.06513	0.26284	-0.06736
0.03322	-0.03891	0.10885	-0.05792	0.18674	-0.06526	0.26495	-0.06736
0.03515	-0.03977	0.11094	-0.05821	0.18885	-0.06537	0.26707	-0.06735
0.03709	-0.04061	0.11304	-0.05849	0.19096	-0.06549	0.26918	-0.06735
0.03904	-0.04144	0.11514	-0.05877	0.19307	-0.06559	0.27130	-0.06734
0.04099	-0.04225	0.11723	-0.05904	0.19519	-0.06570	0.27341	-0.06733
0.04296	-0.04303	0.11933	-0.05931	0.19730	-0.06580	0.27553	-0.06731
0.04493	-0.04378	0.12143	-0.05957	0.19941	-0.06590	0.27764	-0.06729
0.04692	-0.04450	0.12353	-0.05982	0.20152	-0.06600	0.27976	-0.06727
0.04892	-0.04519	0.12563	-0.06007	0.20364	-0.06609	0.28187	-0.06725
0.05093	-0.04585	0.12773	-0.06031	0.20575	-0.06618	0.28399	-0.06722
0.05295	-0.04647	0.12983	-0.06055	0.20786	-0.06626	0.28610	-0.06720

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.28822	-0.06716	0.37062	-0.06380	0.45277	-0.05638	0.53454	-0.04561
0.29033	-0.06713	0.37273	-0.06366	0.45487	-0.05615	0.53663	-0.04529
0.29245	-0.06709	0.37484	-0.06351	0.45697	-0.05591	0.53872	-0.04497
0.29456	-0.06706	0.37695	-0.06336	0.45907	-0.05567	0.54081	-0.04465
0.29668	-0.06702	0.37906	-0.06321	0.46117	-0.05543	0.54290	-0.04432
0.29879	-0.06697	0.38117	-0.06305	0.46328	-0.05519	0.54499	-0.04400
0.30091	-0.06693	0.38328	-0.06289	0.46538	-0.05494	0.54708	-0.04367
0.30302	-0.06688	0.38539	-0.06273	0.46748	-0.05470	0.54917	-0.04334
0.30514	-0.06683	0.38750	-0.06257	0.46958	-0.05445	0.55126	-0.04301
0.30725	-0.06678	0.38961	-0.06241	0.47168	-0.05420	0.55335	-0.04267
0.30936	-0.06672	0.39172	-0.06224	0.47378	-0.05395	0.55544	-0.04234
0.31148	-0.06667	0.39382	-0.06207	0.47588	-0.05369	0.55752	-0.04200
0.31359	-0.06661	0.39593	-0.06190	0.47798	-0.05344	0.55961	-0.04166
0.31571	-0.06654	0.39804	-0.06173	0.48008	-0.05318	0.56170	-0.04132
0.31782	-0.06648	0.40015	-0.06155	0.48217	-0.05292	0.56379	-0.04098
0.31993	-0.06641	0.40226	-0.06137	0.48427	-0.05265	0.56587	-0.04063
0.32205	-0.06634	0.40436	-0.06119	0.48637	-0.05239	0.56796	-0.04028
0.32416	-0.06626	0.40647	-0.06101	0.48847	-0.05212	0.57004	-0.03993
0.32628	-0.06618	0.40858	-0.06083	0.49057	-0.05185	0.57213	-0.03958
0.32839	-0.06610	0.41068	-0.06064	0.49266	-0.05157	0.57422	-0.03923
0.33050	-0.06602	0.41279	-0.06045	0.49476	-0.05130	0.57630	-0.03887
0.33261	-0.06593	0.41490	-0.06026	0.49686	-0.05102	0.57838	-0.03851
0.33473	-0.06584	0.41700	-0.06007	0.49895	-0.05074	0.58047	-0.03815
0.33684	-0.06574	0.41911	-0.05987	0.50105	-0.05045	0.58255	-0.03779
0.33895	-0.06564	0.42121	-0.05967	0.50314	-0.05017	0.58464	-0.03742
0.34107	-0.06554	0.42332	-0.05947	0.50524	-0.04988	0.58672	-0.03706
0.34318	-0.06544	0.42542	-0.05926	0.50733	-0.04958	0.58880	-0.03669
0.34529	-0.06533	0.42753	-0.05906	0.50943	-0.04929	0.59088	-0.03631
0.34740	-0.06522	0.42963	-0.05885	0.51152	-0.04899	0.59296	-0.03594
0.34951	-0.06510	0.43174	-0.05863	0.51362	-0.04870	0.59505	-0.03556
0.35163	-0.06499	0.43384	-0.05842	0.51571	-0.04840	0.59713	-0.03518
0.35374	-0.06487	0.43595	-0.05820	0.51780	-0.04809	0.59921	-0.03480
0.35585	-0.06474	0.43805	-0.05798	0.51990	-0.04779	0.60129	-0.03442
0.35796	-0.06462	0.44015	-0.05776	0.52199	-0.04748	0.60337	-0.03404
0.36007	-0.06449	0.44226	-0.05753	0.52408	-0.04717	0.60545	-0.03366
0.36218	-0.06436	0.44436	-0.05731	0.52617	-0.04687	0.60753	-0.03327
0.36429	-0.06422	0.44646	-0.05708	0.52827	-0.04655	0.60961	-0.03288
0.36640	-0.06409	0.44856	-0.05685	0.53036	-0.04624	0.61169	-0.03250
0.36851	-0.06395	0.45067	-0.05662	0.53245	-0.04592	0.61376	-0.03211

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.61584	-0.03172	0.69687	-0.01630	0.77807	-0.00181	0.85999	0.00762
0.61792	-0.03134	0.69895	-0.01590	0.78016	-0.00148	0.86210	0.00775
0.62000	-0.03095	0.70103	-0.01551	0.78225	-0.00116	0.86421	0.00787
0.62208	-0.03056	0.70311	-0.01511	0.78434	-0.00084	0.86632	0.00799
0.62416	-0.03017	0.70518	-0.01472	0.78643	-0.00053	0.86843	0.00810
0.62624	-0.02978	0.70726	-0.01432	0.78853	-0.00022	0.87054	0.00820
0.62832	-0.02939	0.70934	-0.01393	0.79062	0.00009	0.87266	0.00830
0.63040	-0.02901	0.71142	-0.01354	0.79271	0.00040	0.87477	0.00839
0.63248	-0.02862	0.71350	-0.01314	0.79480	0.00070	0.87688	0.00847
0.63455	-0.02823	0.71558	-0.01275	0.79690	0.00100	0.87900	0.00854
0.63663	-0.02784	0.71765	-0.01236	0.79899	0.00129	0.88111	0.00861
0.63871	-0.02744	0.71973	-0.01197	0.80109	0.00158	0.88323	0.00867
0.64079	-0.02705	0.72181	-0.01159	0.80318	0.00187	0.88534	0.00872
0.64287	-0.02666	0.72389	-0.01120	0.80528	0.00215	0.88745	0.00876
0.64495	-0.02627	0.72597	-0.01081	0.80738	0.00243	0.88957	0.00880
0.64702	-0.02587	0.72805	-0.01043	0.80947	0.00270	0.89168	0.00883
0.64910	-0.02548	0.73013	-0.01004	0.81157	0.00297	0.89380	0.00885
0.65118	-0.02508	0.73221	-0.00966	0.81367	0.00323	0.89591	0.00886
0.65326	-0.02469	0.73429	-0.00928	0.81577	0.00349	0.89803	0.00887
0.65534	-0.02429	0.73637	-0.00890	0.81787	0.00374	0.90014	0.00887
0.65741	-0.02389	0.73845	-0.00853	0.81997	0.00399	0.90226	0.00887
0.65949	-0.02349	0.74053	-0.00815	0.82207	0.00423	0.90437	0.00885
0.66157	-0.02309	0.74262	-0.00778	0.82417	0.00447	0.90649	0.00883
0.66364	-0.02269	0.74470	-0.00741	0.82627	0.00470	0.90860	0.00881
0.66572	-0.02229	0.74678	-0.00704	0.82838	0.00493	0.91072	0.00878
0.66780	-0.02189	0.74886	-0.00667	0.83048	0.00515	0.91283	0.00874
0.66987	-0.02149	0.75095	-0.00630	0.83259	0.00536	0.91495	0.00870
0.67195	-0.02109	0.75303	-0.00594	0.83469	0.00557	0.91706	0.00865
0.67403	-0.02069	0.75512	-0.00558	0.83680	0.00577	0.91918	0.00859
0.67610	-0.02029	0.75720	-0.00522	0.83890	0.00597	0.92129	0.00853
0.67818	-0.01989	0.75928	-0.00487	0.84101	0.00616	0.92340	0.00846
0.68026	-0.01949	0.76137	-0.00452	0.84311	0.00635	0.92552	0.00838
0.68233	-0.01909	0.76346	-0.00417	0.84522	0.00653	0.92763	0.00829
0.68441	-0.01869	0.76554	-0.00382	0.84733	0.00670	0.92974	0.00820
0.68649	-0.01829	0.76763	-0.00348	0.84944	0.00687	0.93186	0.00810
0.68856	-0.01789	0.76972	-0.00314	0.85155	0.00703	0.93397	0.00799
0.69064	-0.01749	0.77180	-0.00280	0.85366	0.00719	0.93608	0.00787
0.69272	-0.01709	0.77389	-0.00247	0.85577	0.00734	0.93819	0.00773
0.69480	-0.01670	0.77598	-0.00213	0.85788	0.00748	0.94030	0.00759

<u>x/c</u>	<u>y/c</u>
0.94241	0.00743
0.94452	0.00726
0.94663	0.00709
0.94873	0.00690
0.95084	0.00671
0.95295	0.00651
0.95505	0.00631
0.95715	0.00610

<u>x/c</u>	<u>y/c</u>
0.95926	0.00588
0.96136	0.00564
0.96346	0.00539
0.96556	0.00513
0.96766	0.00485
0.96975	0.00455
0.97184	0.00424
0.97393	0.00391

<u>x/c</u>	<u>y/c</u>
0.97602	0.00357
0.97810	0.00322
0.98019	0.00285
0.98226	0.00246
0.98434	0.00205
0.98641	0.00161
0.98847	0.00114
0.99052	0.00062

<u>x/c</u>	<u>y/c</u>
0.99256	0.00006
0.99459	-0.00054
0.99660	-0.00118
0.99859	-0.00190
1.00046	-0.00289

Table 12 OML Station 3 upper surface airfoil coordinates, $r/R = 0.2950$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.99966	0.00208	0.92932	0.02981	0.85587	0.04853	0.78138	0.06265
0.99796	0.00323	0.92736	0.03040	0.85386	0.04896	0.77935	0.06298
0.99624	0.00434	0.92539	0.03098	0.85186	0.04939	0.77733	0.06331
0.99448	0.00538	0.92343	0.03155	0.84986	0.04982	0.77531	0.06363
0.99267	0.00634	0.92146	0.03212	0.84785	0.05025	0.77329	0.06396
0.99083	0.00725	0.91949	0.03269	0.84585	0.05067	0.77126	0.06428
0.98898	0.00812	0.91752	0.03325	0.84384	0.05109	0.76924	0.06460
0.98712	0.00898	0.91554	0.03380	0.84183	0.05150	0.76721	0.06491
0.98525	0.00983	0.91357	0.03435	0.83983	0.05191	0.76519	0.06523
0.98338	0.01067	0.91160	0.03490	0.83782	0.05232	0.76316	0.06554
0.98150	0.01149	0.90962	0.03544	0.83581	0.05273	0.76114	0.06585
0.97962	0.01229	0.90764	0.03598	0.83380	0.05313	0.75911	0.06616
0.97773	0.01308	0.90566	0.03651	0.83179	0.05353	0.75708	0.06646
0.97583	0.01385	0.90368	0.03704	0.82978	0.05393	0.75506	0.06676
0.97392	0.01461	0.90170	0.03757	0.82777	0.05432	0.75303	0.06706
0.97201	0.01536	0.89972	0.03809	0.82576	0.05471	0.75100	0.06736
0.97010	0.01609	0.89774	0.03860	0.82374	0.05510	0.74897	0.06765
0.96818	0.01682	0.89575	0.03912	0.82173	0.05549	0.74695	0.06794
0.96626	0.01753	0.89377	0.03962	0.81972	0.05587	0.74492	0.06823
0.96434	0.01824	0.89178	0.04013	0.81770	0.05625	0.74289	0.06852
0.96242	0.01894	0.88979	0.04063	0.81569	0.05663	0.74086	0.06880
0.96049	0.01964	0.88781	0.04112	0.81368	0.05700	0.73883	0.06908
0.95856	0.02033	0.88582	0.04161	0.81166	0.05737	0.73680	0.06936
0.95663	0.02101	0.88382	0.04210	0.80964	0.05774	0.73477	0.06964
0.95469	0.02168	0.88183	0.04258	0.80763	0.05811	0.73274	0.06992
0.95275	0.02235	0.87984	0.04306	0.80561	0.05847	0.73071	0.07019
0.95081	0.02301	0.87785	0.04353	0.80359	0.05883	0.72867	0.07046
0.94887	0.02366	0.87585	0.04400	0.80158	0.05919	0.72664	0.07073
0.94692	0.02430	0.87386	0.04447	0.79956	0.05955	0.72461	0.07100
0.94498	0.02494	0.87186	0.04494	0.79754	0.05990	0.72258	0.07126
0.94303	0.02557	0.86986	0.04540	0.79552	0.06025	0.72055	0.07153
0.94107	0.02619	0.86787	0.04585	0.79350	0.06060	0.71851	0.07179
0.93912	0.02681	0.86587	0.04631	0.79148	0.06095	0.71648	0.07205
0.93716	0.02742	0.86387	0.04676	0.78946	0.06129	0.71445	0.07231
0.93521	0.02803	0.86187	0.04720	0.78744	0.06164	0.71242	0.07257
0.93325	0.02863	0.85987	0.04765	0.78542	0.06197	0.71038	0.07282
0.93129	0.02922	0.85787	0.04809	0.78340	0.06231	0.70835	0.07308

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.70632	0.07333	0.62684	0.08175	0.54715	0.08780	0.46733	0.09166
0.70428	0.07358	0.62480	0.08193	0.54511	0.08792	0.46528	0.09172
0.70225	0.07383	0.62276	0.08211	0.54306	0.08805	0.46323	0.09179
0.70021	0.07407	0.62072	0.08229	0.54102	0.08817	0.46118	0.09185
0.69818	0.07432	0.61868	0.08247	0.53897	0.08829	0.45914	0.09192
0.69614	0.07456	0.61664	0.08265	0.53693	0.08841	0.45709	0.09198
0.69411	0.07480	0.61459	0.08282	0.53488	0.08853	0.45504	0.09204
0.69207	0.07504	0.61255	0.08300	0.53283	0.08865	0.45299	0.09209
0.69004	0.07528	0.61051	0.08317	0.53079	0.08877	0.45094	0.09215
0.68800	0.07551	0.60847	0.08334	0.52874	0.08888	0.44889	0.09220
0.68597	0.07575	0.60643	0.08351	0.52670	0.08899	0.44684	0.09225
0.68393	0.07598	0.60438	0.08368	0.52465	0.08911	0.44480	0.09230
0.68189	0.07621	0.60234	0.08384	0.52260	0.08922	0.44275	0.09235
0.67986	0.07644	0.60030	0.08401	0.52056	0.08933	0.44070	0.09240
0.67782	0.07666	0.59826	0.08417	0.51851	0.08943	0.43865	0.09244
0.67578	0.07688	0.59621	0.08433	0.51646	0.08954	0.43660	0.09249
0.67375	0.07711	0.59417	0.08449	0.51442	0.08965	0.43455	0.09253
0.67171	0.07733	0.59213	0.08465	0.51237	0.08975	0.43250	0.09257
0.66967	0.07754	0.59008	0.08481	0.51032	0.08985	0.43045	0.09261
0.66763	0.07776	0.58804	0.08497	0.50828	0.08996	0.42840	0.09264
0.66560	0.07797	0.58600	0.08512	0.50623	0.09006	0.42636	0.09268
0.66356	0.07819	0.58395	0.08528	0.50418	0.09015	0.42431	0.09271
0.66152	0.07840	0.58191	0.08543	0.50214	0.09025	0.42226	0.09274
0.65948	0.07861	0.57987	0.08558	0.50009	0.09035	0.42021	0.09277
0.65744	0.07882	0.57782	0.08573	0.49804	0.09044	0.41816	0.09279
0.65540	0.07902	0.57578	0.08588	0.49600	0.09053	0.41611	0.09282
0.65336	0.07923	0.57373	0.08602	0.49395	0.09062	0.41406	0.09284
0.65132	0.07943	0.57169	0.08617	0.49190	0.09071	0.41201	0.09286
0.64929	0.07963	0.56965	0.08631	0.48985	0.09080	0.40996	0.09288
0.64725	0.07983	0.56760	0.08646	0.48781	0.09089	0.40791	0.09290
0.64521	0.08003	0.56556	0.08660	0.48576	0.09097	0.40586	0.09291
0.64317	0.08023	0.56351	0.08674	0.48371	0.09106	0.40382	0.09293
0.64113	0.08042	0.56147	0.08688	0.48166	0.09114	0.40177	0.09294
0.63909	0.08062	0.55942	0.08701	0.47962	0.09122	0.39972	0.09295
0.63705	0.08081	0.55738	0.08715	0.47757	0.09129	0.39767	0.09296
0.63501	0.08100	0.55533	0.08728	0.47552	0.09137	0.39562	0.09296
0.63297	0.08119	0.55329	0.08741	0.47347	0.09144	0.39357	0.09296
0.63093	0.08138	0.55124	0.08754	0.47142	0.09152	0.39152	0.09297
0.62888	0.08157	0.54920	0.08767	0.46938	0.09159	0.38947	0.09296

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.38742	0.09296	0.30753	0.09118	0.22782	0.08543	0.14878	0.07377
0.38537	0.09296	0.30548	0.09109	0.22579	0.08521	0.14677	0.07337
0.38332	0.09295	0.30343	0.09099	0.22375	0.08499	0.14477	0.07296
0.38127	0.09294	0.30138	0.09090	0.22171	0.08477	0.14276	0.07255
0.37922	0.09293	0.29934	0.09079	0.21967	0.08454	0.14075	0.07214
0.37718	0.09292	0.29729	0.09069	0.21764	0.08431	0.13875	0.07171
0.37513	0.09290	0.29524	0.09059	0.21560	0.08408	0.13674	0.07129
0.37308	0.09288	0.29320	0.09048	0.21357	0.08384	0.13474	0.07085
0.37103	0.09286	0.29115	0.09037	0.21153	0.08359	0.13274	0.07041
0.36898	0.09284	0.28911	0.09025	0.20950	0.08335	0.13074	0.06996
0.36693	0.09281	0.28706	0.09014	0.20746	0.08310	0.12874	0.06951
0.36488	0.09279	0.28501	0.09002	0.20543	0.08284	0.12674	0.06905
0.36283	0.09276	0.28297	0.08990	0.20340	0.08258	0.12475	0.06858
0.36078	0.09273	0.28092	0.08977	0.20137	0.08231	0.12275	0.06811
0.35873	0.09269	0.27888	0.08964	0.19933	0.08204	0.12076	0.06763
0.35668	0.09266	0.27683	0.08951	0.19730	0.08177	0.11877	0.06714
0.35464	0.09262	0.27479	0.08938	0.19527	0.08149	0.11678	0.06665
0.35259	0.09258	0.27274	0.08925	0.19324	0.08121	0.11480	0.06614
0.35054	0.09254	0.27070	0.08911	0.19122	0.08092	0.11281	0.06563
0.34849	0.09250	0.26865	0.08896	0.18919	0.08063	0.11083	0.06512
0.34644	0.09245	0.26661	0.08882	0.18716	0.08033	0.10885	0.06459
0.34439	0.09240	0.26457	0.08867	0.18513	0.08003	0.10687	0.06406
0.34234	0.09236	0.26252	0.08852	0.18311	0.07973	0.10489	0.06352
0.34029	0.09231	0.26048	0.08837	0.18108	0.07942	0.10292	0.06298
0.33825	0.09226	0.25844	0.08821	0.17906	0.07910	0.10094	0.06242
0.33620	0.09220	0.25639	0.08805	0.17703	0.07878	0.09897	0.06186
0.33415	0.09215	0.25435	0.08788	0.17501	0.07846	0.09700	0.06130
0.33210	0.09209	0.25231	0.08771	0.17299	0.07813	0.09503	0.06072
0.33005	0.09203	0.25027	0.08754	0.17096	0.07779	0.09307	0.06014
0.32800	0.09197	0.24822	0.08737	0.16894	0.07745	0.09111	0.05955
0.32596	0.09190	0.24618	0.08719	0.16692	0.07711	0.08915	0.05895
0.32391	0.09183	0.24414	0.08701	0.16490	0.07676	0.08719	0.05834
0.32186	0.09176	0.24210	0.08683	0.16288	0.07640	0.08524	0.05773
0.31981	0.09168	0.24006	0.08664	0.16087	0.07604	0.08328	0.05710
0.31776	0.09161	0.23802	0.08644	0.15885	0.07568	0.08134	0.05646
0.31572	0.09153	0.23598	0.08625	0.15684	0.07531	0.07939	0.05582
0.31367	0.09144	0.23394	0.08605	0.15482	0.07493	0.07745	0.05516
0.31162	0.09136	0.23190	0.08585	0.15281	0.07455	0.07551	0.05450
0.30957	0.09127	0.22986	0.08564	0.15080	0.07416	0.07358	0.05382

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.07165	0.05314	0.04884	0.04396	0.02720	0.03233	0.00845	0.01660
0.06972	0.05244	0.04697	0.04311	0.02548	0.03122	0.00712	0.01504
0.06780	0.05173	0.04512	0.04224	0.02377	0.03009	0.00583	0.01345
0.06588	0.05101	0.04327	0.04136	0.02207	0.02894	0.00460	0.01181
0.06396	0.05028	0.04143	0.04045	0.02039	0.02777	0.00347	0.01010
0.06206	0.04953	0.03960	0.03952	0.01874	0.02656	0.00246	0.00832
0.06015	0.04877	0.03779	0.03857	0.01712	0.02530	0.00158	0.00647
0.05825	0.04800	0.03599	0.03760	0.01555	0.02398	0.00083	0.00456
0.05636	0.04722	0.03420	0.03660	0.01404	0.02259	0.00026	0.00260
0.05447	0.04642	0.03242	0.03557	0.01259	0.02115	0.00001	0.00057
0.05259	0.04561	0.03067	0.03451	0.01118	0.01966	<u>0.00002</u>	<u>0.00000</u>
<u>0.05071</u>	<u>0.04479</u>	<u>0.02893</u>	<u>0.03343</u>	<u>0.00981</u>	<u>0.01814</u>		

Table 13 OML Station 3 lower surface airfoil coordinates, $r/R = 0.2950$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.00002	0.00000	0.06893	-0.01895	0.14474	-0.01808	0.22044	-0.01382
0.00024	-0.00146	0.07098	-0.01900	0.14679	-0.01800	0.22248	-0.01367
0.00102	-0.00335	0.07303	-0.01904	0.14883	-0.01792	0.22452	-0.01352
0.00213	-0.00507	0.07508	-0.01908	0.15088	-0.01784	0.22657	-0.01337
0.00349	-0.00660	0.07713	-0.01912	0.15293	-0.01775	0.22861	-0.01322
0.00505	-0.00793	0.07918	-0.01914	0.15498	-0.01767	0.23066	-0.01307
0.00675	-0.00907	0.08123	-0.01917	0.15702	-0.01758	0.23270	-0.01292
0.00853	-0.01008	0.08327	-0.01918	0.15907	-0.01749	0.23474	-0.01277
0.01037	-0.01099	0.08532	-0.01920	0.16112	-0.01739	0.23679	-0.01261
0.01224	-0.01182	0.08737	-0.01921	0.16316	-0.01730	0.23883	-0.01245
0.01415	-0.01256	0.08942	-0.01921	0.16521	-0.01720	0.24087	-0.01230
0.01610	-0.01320	0.09147	-0.01921	0.16726	-0.01710	0.24292	-0.01214
0.01807	-0.01377	0.09352	-0.01921	0.16930	-0.01700	0.24496	-0.01198
0.02006	-0.01426	0.09557	-0.01920	0.17135	-0.01689	0.24700	-0.01182
0.02206	-0.01470	0.09762	-0.01919	0.17340	-0.01679	0.24904	-0.01165
0.02407	-0.01511	0.09967	-0.01918	0.17544	-0.01668	0.25109	-0.01149
0.02608	-0.01549	0.10172	-0.01916	0.17749	-0.01657	0.25313	-0.01132
0.02810	-0.01585	0.10377	-0.01913	0.17954	-0.01645	0.25517	-0.01116
0.03012	-0.01618	0.10582	-0.01910	0.18158	-0.01634	0.25721	-0.01099
0.03214	-0.01649	0.10786	-0.01907	0.18363	-0.01622	0.25926	-0.01082
0.03417	-0.01677	0.10991	-0.01904	0.18567	-0.01610	0.26130	-0.01065
0.03621	-0.01702	0.11196	-0.01900	0.18772	-0.01598	0.26334	-0.01048
0.03825	-0.01724	0.11401	-0.01896	0.18977	-0.01585	0.26538	-0.01030
0.04029	-0.01744	0.11606	-0.01892	0.19181	-0.01573	0.26742	-0.01013
0.04233	-0.01762	0.11811	-0.01888	0.19386	-0.01560	0.26947	-0.00995
0.04437	-0.01778	0.12016	-0.01883	0.19590	-0.01547	0.27151	-0.00977
0.04641	-0.01792	0.12221	-0.01878	0.19795	-0.01534	0.27355	-0.00959
0.04846	-0.01806	0.12426	-0.01873	0.19999	-0.01521	0.27559	-0.00941
0.05051	-0.01818	0.12630	-0.01867	0.20204	-0.01508	0.27763	-0.00923
0.05255	-0.01830	0.12835	-0.01862	0.20408	-0.01494	0.27967	-0.00906
0.05460	-0.01841	0.13040	-0.01856	0.20613	-0.01481	0.28171	-0.00888
0.05664	-0.01851	0.13245	-0.01850	0.20817	-0.01467	0.28376	-0.00870
0.05869	-0.01860	0.13450	-0.01843	0.21022	-0.01453	0.28580	-0.00852
0.06074	-0.01869	0.13655	-0.01837	0.21226	-0.01439	0.28784	-0.00834
0.06279	-0.01876	0.13859	-0.01830	0.21430	-0.01425	0.28988	-0.00816
0.06483	-0.01883	0.14064	-0.01823	0.21635	-0.01411	0.29192	-0.00798
0.06688	-0.01890	0.14269	-0.01815	0.21839	-0.01396	0.29396	-0.00780

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.29600	-0.00762	0.37558	-0.00022	0.45512	0.00760	0.53466	0.01537
0.29805	-0.00745	0.37762	-0.00003	0.45716	0.00780	0.53670	0.01556
0.30009	-0.00727	0.37966	0.00017	0.45920	0.00800	0.53874	0.01575
0.30213	-0.00709	0.38170	0.00037	0.46124	0.00820	0.54078	0.01594
0.30417	-0.00691	0.38374	0.00057	0.46328	0.00840	0.54283	0.01612
0.30621	-0.00673	0.38578	0.00077	0.46532	0.00860	0.54487	0.01631
0.30825	-0.00655	0.38782	0.00097	0.46736	0.00881	0.54691	0.01649
0.31029	-0.00636	0.38986	0.00117	0.46940	0.00901	0.54895	0.01668
0.31234	-0.00618	0.39190	0.00137	0.47143	0.00921	0.55099	0.01686
0.31438	-0.00599	0.39394	0.00157	0.47347	0.00941	0.55303	0.01704
0.31642	-0.00581	0.39598	0.00177	0.47551	0.00962	0.55507	0.01722
0.31846	-0.00562	0.39802	0.00197	0.47755	0.00982	0.55711	0.01740
0.32050	-0.00543	0.40006	0.00217	0.47959	0.01002	0.55915	0.01759
0.32254	-0.00524	0.40210	0.00237	0.48163	0.01022	0.56120	0.01776
0.32458	-0.00505	0.40414	0.00257	0.48367	0.01043	0.56324	0.01794
0.32662	-0.00486	0.40618	0.00277	0.48571	0.01063	0.56528	0.01812
0.32866	-0.00467	0.40821	0.00297	0.48775	0.01083	0.56732	0.01830
0.33070	-0.00448	0.41025	0.00318	0.48979	0.01103	0.56936	0.01848
0.33274	-0.00429	0.41229	0.00338	0.49183	0.01124	0.57140	0.01865
0.33478	-0.00409	0.41433	0.00358	0.49387	0.01144	0.57344	0.01883
0.33682	-0.00390	0.41637	0.00378	0.49591	0.01164	0.57549	0.01900
0.33886	-0.00371	0.41841	0.00398	0.49795	0.01184	0.57753	0.01918
0.34090	-0.00351	0.42045	0.00418	0.49998	0.01204	0.57957	0.01935
0.34294	-0.00332	0.42249	0.00438	0.50202	0.01224	0.58161	0.01952
0.34498	-0.00313	0.42453	0.00458	0.50406	0.01244	0.58365	0.01969
0.34702	-0.00293	0.42657	0.00479	0.50610	0.01264	0.58570	0.01986
0.34906	-0.00274	0.42861	0.00499	0.50814	0.01284	0.58774	0.02003
0.35110	-0.00255	0.43065	0.00519	0.51018	0.01304	0.58978	0.02020
0.35314	-0.00235	0.43269	0.00539	0.51222	0.01324	0.59182	0.02037
0.35518	-0.00216	0.43473	0.00559	0.51426	0.01344	0.59387	0.02054
0.35722	-0.00197	0.43677	0.00579	0.51630	0.01363	0.59591	0.02070
0.35926	-0.00177	0.43881	0.00599	0.51834	0.01383	0.59795	0.02087
0.36130	-0.00158	0.44084	0.00619	0.52038	0.01403	0.59999	0.02103
0.36334	-0.00139	0.44288	0.00639	0.52242	0.01422	0.60204	0.02120
0.36538	-0.00119	0.44492	0.00659	0.52446	0.01441	0.60408	0.02136
0.36742	-0.00100	0.44696	0.00679	0.52650	0.01461	0.60612	0.02152
0.36946	-0.00081	0.44900	0.00699	0.52854	0.01480	0.60817	0.02168
0.37150	-0.00061	0.45104	0.00720	0.53058	0.01499	0.61021	0.02184
0.37354	-0.00042	0.45308	0.00740	0.53262	0.01518	0.61225	0.02200

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.61429	0.02215	0.69406	0.02702	0.77396	0.02873	0.85380	0.02558
0.61634	0.02231	0.69611	0.02711	0.77601	0.02871	0.85585	0.02542
0.61838	0.02246	0.69816	0.02719	0.77806	0.02870	0.85789	0.02526
0.62043	0.02261	0.70021	0.02728	0.78011	0.02868	0.85993	0.02509
0.62247	0.02276	0.70225	0.02736	0.78216	0.02865	0.86197	0.02492
0.62451	0.02291	0.70430	0.02744	0.78421	0.02863	0.86401	0.02474
0.62656	0.02306	0.70635	0.02752	0.78625	0.02860	0.86606	0.02456
0.62860	0.02320	0.70840	0.02759	0.78830	0.02856	0.86810	0.02437
0.63065	0.02335	0.71045	0.02767	0.79035	0.02853	0.87014	0.02418
0.63269	0.02349	0.71249	0.02774	0.79240	0.02849	0.87218	0.02398
0.63473	0.02363	0.71454	0.02781	0.79445	0.02844	0.87422	0.02378
0.63678	0.02377	0.71659	0.02787	0.79650	0.02840	0.87625	0.02358
0.63882	0.02391	0.71864	0.02794	0.79855	0.02835	0.87829	0.02337
0.64087	0.02404	0.72069	0.02800	0.80060	0.02829	0.88033	0.02316
0.64291	0.02418	0.72274	0.02806	0.80264	0.02823	0.88237	0.02294
0.64496	0.02431	0.72478	0.02812	0.80469	0.02817	0.88441	0.02272
0.64700	0.02444	0.72683	0.02818	0.80674	0.02811	0.88644	0.02249
0.64905	0.02457	0.72888	0.02824	0.80879	0.02804	0.88848	0.02226
0.65109	0.02470	0.73093	0.02829	0.81084	0.02797	0.89051	0.02202
0.65314	0.02483	0.73298	0.02834	0.81289	0.02790	0.89255	0.02178
0.65518	0.02495	0.73503	0.02839	0.81493	0.02782	0.89458	0.02154
0.65723	0.02508	0.73708	0.02843	0.81698	0.02773	0.89662	0.02129
0.65927	0.02520	0.73912	0.02847	0.81903	0.02765	0.89865	0.02104
0.66132	0.02532	0.74117	0.02851	0.82108	0.02756	0.90069	0.02078
0.66337	0.02544	0.74322	0.02855	0.82312	0.02747	0.90272	0.02052
0.66541	0.02556	0.74527	0.02859	0.82517	0.02737	0.90475	0.02025
0.66746	0.02568	0.74732	0.02862	0.82722	0.02727	0.90678	0.01998
0.66950	0.02579	0.74937	0.02864	0.82926	0.02716	0.90881	0.01971
0.67155	0.02591	0.75142	0.02867	0.83131	0.02705	0.91084	0.01943
0.67360	0.02602	0.75347	0.02869	0.83336	0.02694	0.91287	0.01914
0.67564	0.02613	0.75552	0.02871	0.83540	0.02682	0.91490	0.01885
0.67769	0.02624	0.75757	0.02872	0.83745	0.02670	0.91693	0.01855
0.67974	0.02634	0.75961	0.02874	0.83949	0.02657	0.91895	0.01825
0.68178	0.02644	0.76166	0.02874	0.84154	0.02645	0.92098	0.01794
0.68383	0.02655	0.76371	0.02875	0.84358	0.02631	0.92300	0.01762
0.68588	0.02665	0.76576	0.02875	0.84563	0.02617	0.92503	0.01730
0.68792	0.02674	0.76781	0.02875	0.84767	0.02603	0.92705	0.01697
0.68997	0.02684	0.76986	0.02875	0.84972	0.02589	0.92907	0.01664
0.69202	0.02693	0.77191	0.02874	0.85176	0.02574	0.93109	0.01630

<u>x/c</u>	<u>y/c</u>
0.93311	0.01595
0.93513	0.01560
0.93715	0.01524
0.93917	0.01487
0.94118	0.01450
0.94320	0.01412
0.94521	0.01374
0.94722	0.01335
0.94923	0.01295

<u>x/c</u>	<u>y/c</u>
0.95124	0.01254
0.95325	0.01213
0.95525	0.01171
0.95725	0.01128
0.95926	0.01084
0.96126	0.01039
0.96325	0.00993
0.96525	0.00946
0.96724	0.00898

<u>x/c</u>	<u>y/c</u>
0.96923	0.00848
0.97121	0.00798
0.97320	0.00747
0.97518	0.00695
0.97716	0.00642
0.97913	0.00587
0.98110	0.00530
0.98307	0.00471
0.98502	0.00410

<u>x/c</u>	<u>y/c</u>
0.98697	0.00348
0.98892	0.00283
0.99086	0.00218
0.99279	0.00148
0.99469	0.00071
0.99655	-0.00014
0.99838	-0.00107
1.00018	-0.00205

Table 14 OML Station 4 upper surface airfoil coordinates, $r/R = 0.3903$

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.99985	0.00212	0.92908	0.02710	0.85556	0.04304	0.78115	0.05419
0.99812	0.00319	0.92712	0.02761	0.85356	0.04340	0.77913	0.05444
0.99637	0.00422	0.92515	0.02811	0.85155	0.04375	0.77711	0.05469
0.99457	0.00517	0.92317	0.02861	0.84955	0.04410	0.77509	0.05493
0.99274	0.00606	0.92120	0.02911	0.84755	0.04445	0.77307	0.05518
0.99089	0.00689	0.91923	0.02960	0.84554	0.04479	0.77105	0.05542
0.98902	0.00770	0.91725	0.03008	0.84354	0.04513	0.76903	0.05565
0.98715	0.00849	0.91528	0.03056	0.84153	0.04547	0.76701	0.05589
0.98527	0.00927	0.91330	0.03104	0.83952	0.04580	0.76499	0.05612
0.98338	0.01004	0.91132	0.03151	0.83752	0.04613	0.76297	0.05635
0.98149	0.01078	0.90934	0.03198	0.83551	0.04646	0.76095	0.05657
0.97959	0.01151	0.90736	0.03244	0.83350	0.04678	0.75893	0.05680
0.97769	0.01222	0.90538	0.03290	0.83149	0.04710	0.75690	0.05702
0.97578	0.01292	0.90340	0.03335	0.82948	0.04742	0.75488	0.05724
0.97386	0.01360	0.90141	0.03380	0.82747	0.04774	0.75286	0.05745
0.97194	0.01427	0.89943	0.03425	0.82547	0.04805	0.75084	0.05766
0.97002	0.01493	0.89744	0.03469	0.82345	0.04836	0.74881	0.05788
0.96809	0.01559	0.89546	0.03512	0.82144	0.04866	0.74679	0.05808
0.96616	0.01623	0.89347	0.03556	0.81943	0.04896	0.74477	0.05829
0.96423	0.01687	0.89148	0.03598	0.81742	0.04926	0.74274	0.05849
0.96230	0.01750	0.88949	0.03641	0.81541	0.04956	0.74072	0.05869
0.96036	0.01812	0.88750	0.03683	0.81340	0.04985	0.73870	0.05889
0.95842	0.01873	0.88551	0.03725	0.81138	0.05014	0.73667	0.05909
0.95648	0.01934	0.88352	0.03766	0.80937	0.05043	0.73465	0.05928
0.95453	0.01993	0.88153	0.03807	0.80736	0.05072	0.73262	0.05947
0.95259	0.02052	0.87953	0.03848	0.80534	0.05100	0.73060	0.05966
0.95064	0.02111	0.87754	0.03888	0.80333	0.05128	0.72857	0.05985
0.94869	0.02168	0.87555	0.03927	0.80131	0.05156	0.72655	0.06004
0.94674	0.02225	0.87355	0.03967	0.79930	0.05184	0.72452	0.06022
0.94478	0.02282	0.87155	0.04005	0.79728	0.05211	0.72249	0.06041
0.94283	0.02338	0.86956	0.04044	0.79527	0.05238	0.72047	0.06059
0.94087	0.02393	0.86756	0.04082	0.79325	0.05264	0.71844	0.06077
0.93891	0.02447	0.86556	0.04120	0.79123	0.05291	0.71642	0.06095
0.93695	0.02501	0.86356	0.04157	0.78922	0.05317	0.71439	0.06112
0.93498	0.02554	0.86156	0.04194	0.78720	0.05343	0.71236	0.06130
0.93302	0.02606	0.85956	0.04231	0.78518	0.05369	0.71034	0.06147
0.93105	0.02658	0.85756	0.04268	0.78316	0.05394	0.70831	0.06164

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.70628	0.06181	0.62714	0.06707	0.54788	0.07021	0.46858	0.07170
0.70426	0.06198	0.62511	0.06717	0.54585	0.07027	0.46655	0.07172
0.70223	0.06214	0.62308	0.06727	0.54382	0.07033	0.46451	0.07173
0.70020	0.06231	0.62105	0.06737	0.54179	0.07039	0.46248	0.07175
0.69818	0.06247	0.61902	0.06747	0.53975	0.07044	0.46044	0.07177
0.69615	0.06263	0.61698	0.06757	0.53772	0.07050	0.45841	0.07178
0.69412	0.06279	0.61495	0.06767	0.53569	0.07055	0.45638	0.07180
0.69209	0.06295	0.61292	0.06776	0.53365	0.07060	0.45434	0.07181
0.69007	0.06310	0.61089	0.06786	0.53162	0.07066	0.45231	0.07182
0.68804	0.06325	0.60886	0.06795	0.52959	0.07071	0.45028	0.07184
0.68601	0.06340	0.60683	0.06804	0.52755	0.07075	0.44824	0.07185
0.68398	0.06355	0.60479	0.06813	0.52552	0.07080	0.44621	0.07186
0.68195	0.06370	0.60276	0.06822	0.52349	0.07085	0.44417	0.07187
0.67992	0.06385	0.60073	0.06831	0.52145	0.07089	0.44214	0.07187
0.67789	0.06399	0.59870	0.06840	0.51942	0.07094	0.44011	0.07188
0.67587	0.06413	0.59667	0.06848	0.51739	0.07098	0.43807	0.07189
0.67384	0.06427	0.59463	0.06857	0.51535	0.07102	0.43604	0.07189
0.67181	0.06441	0.59260	0.06865	0.51332	0.07107	0.43400	0.07189
0.66978	0.06454	0.59057	0.06873	0.51129	0.07111	0.43197	0.07190
0.66775	0.06468	0.58854	0.06881	0.50925	0.07114	0.42994	0.07190
0.66572	0.06481	0.58651	0.06889	0.50722	0.07118	0.42790	0.07190
0.66369	0.06494	0.58447	0.06897	0.50519	0.07122	0.42587	0.07189
0.66166	0.06507	0.58244	0.06905	0.50315	0.07125	0.42384	0.07189
0.65963	0.06520	0.58041	0.06913	0.50112	0.07129	0.42180	0.07189
0.65760	0.06533	0.57838	0.06920	0.49909	0.07132	0.41977	0.07188
0.65557	0.06545	0.57634	0.06928	0.49705	0.07135	0.41773	0.07187
0.65354	0.06558	0.57431	0.06935	0.49502	0.07138	0.41570	0.07186
0.65151	0.06570	0.57228	0.06942	0.49298	0.07141	0.41367	0.07185
0.64948	0.06582	0.57025	0.06950	0.49095	0.07144	0.41163	0.07184
0.64745	0.06594	0.56821	0.06957	0.48892	0.07147	0.40960	0.07183
0.64542	0.06606	0.56618	0.06964	0.48688	0.07150	0.40756	0.07182
0.64339	0.06618	0.56415	0.06970	0.48485	0.07152	0.40553	0.07180
0.64136	0.06629	0.56212	0.06977	0.48282	0.07155	0.40350	0.07178
0.63933	0.06641	0.56008	0.06984	0.48078	0.07157	0.40146	0.07177
0.63730	0.06652	0.55805	0.06990	0.47875	0.07159	0.39943	0.07175
0.63527	0.06663	0.55602	0.06997	0.47671	0.07162	0.39740	0.07173
0.63323	0.06674	0.55398	0.07003	0.47468	0.07164	0.39536	0.07170
0.63120	0.06685	0.55195	0.07009	0.47265	0.07166	0.39333	0.07168
0.62917	0.06696	0.54992	0.07015	0.47061	0.07168	0.39129	0.07166

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.38926	0.07163	0.30997	0.06959	0.23078	0.06502	0.15192	0.05665
0.38723	0.07160	0.30794	0.06951	0.22876	0.06486	0.14991	0.05636
0.38519	0.07157	0.30590	0.06942	0.22673	0.06470	0.14789	0.05607
0.38316	0.07154	0.30387	0.06934	0.22470	0.06454	0.14588	0.05578
0.38113	0.07151	0.30184	0.06925	0.22267	0.06437	0.14387	0.05547
0.37909	0.07148	0.29981	0.06916	0.22065	0.06420	0.14186	0.05517
0.37706	0.07145	0.29778	0.06907	0.21862	0.06403	0.13985	0.05485
0.37503	0.07141	0.29574	0.06898	0.21659	0.06386	0.13784	0.05453
0.37299	0.07138	0.29371	0.06888	0.21457	0.06369	0.13583	0.05421
0.37096	0.07134	0.29168	0.06879	0.21254	0.06351	0.13383	0.05388
0.36892	0.07130	0.28965	0.06869	0.21052	0.06333	0.13182	0.05355
0.36689	0.07126	0.28762	0.06859	0.20849	0.06314	0.12981	0.05321
0.36486	0.07122	0.28559	0.06849	0.20647	0.06296	0.12781	0.05286
0.36282	0.07118	0.28356	0.06839	0.20444	0.06277	0.12581	0.05251
0.36079	0.07114	0.28152	0.06828	0.20242	0.06258	0.12380	0.05215
0.35876	0.07109	0.27949	0.06818	0.20039	0.06238	0.12180	0.05179
0.35672	0.07105	0.27746	0.06807	0.19837	0.06218	0.11980	0.05142
0.35469	0.07100	0.27543	0.06796	0.19634	0.06198	0.11780	0.05104
0.35266	0.07095	0.27340	0.06784	0.19432	0.06178	0.11581	0.05066
0.35062	0.07090	0.27137	0.06773	0.19230	0.06157	0.11381	0.05027
0.34859	0.07085	0.26934	0.06761	0.19027	0.06136	0.11182	0.04988
0.34656	0.07080	0.26731	0.06750	0.18825	0.06114	0.10982	0.04948
0.34452	0.07075	0.26528	0.06738	0.18623	0.06092	0.10783	0.04907
0.34249	0.07069	0.26325	0.06725	0.18421	0.06070	0.10584	0.04865
0.34046	0.07063	0.26122	0.06713	0.18219	0.06047	0.10385	0.04823
0.33843	0.07058	0.25919	0.06700	0.18017	0.06024	0.10186	0.04781
0.33639	0.07052	0.25716	0.06687	0.17814	0.06001	0.09987	0.04737
0.33436	0.07045	0.25513	0.06674	0.17612	0.05977	0.09789	0.04693
0.33233	0.07039	0.25310	0.06661	0.17410	0.05953	0.09590	0.04648
0.33029	0.07033	0.25107	0.06648	0.17209	0.05929	0.09392	0.04603
0.32826	0.07026	0.24904	0.06634	0.17007	0.05904	0.09194	0.04557
0.32623	0.07019	0.24701	0.06620	0.16805	0.05879	0.08996	0.04510
0.32420	0.07012	0.24498	0.06606	0.16603	0.05854	0.08798	0.04463
0.32216	0.07005	0.24295	0.06592	0.16401	0.05828	0.08601	0.04414
0.32013	0.06998	0.24093	0.06577	0.16200	0.05802	0.08403	0.04365
0.31810	0.06990	0.23890	0.06563	0.15998	0.05775	0.08206	0.04315
0.31607	0.06983	0.23687	0.06548	0.15796	0.05748	0.08009	0.04265
0.31403	0.06975	0.23484	0.06533	0.15595	0.05721	0.07812	0.04213
0.31200	0.06967	0.23281	0.06517	0.15393	0.05693	0.07616	0.04161

<u>x/c</u>	<u>y/c</u>
0.07420	0.04107
0.07224	0.04053
0.07028	0.03998
0.06832	0.03942
0.06637	0.03884
0.06442	0.03826
0.06248	0.03767
0.06053	0.03707
0.05860	0.03646
0.05666	0.03583
0.05473	0.03519
<u>0.05280</u>	<u>0.03454</u>

<u>x/c</u>	<u>y/c</u>
0.05088	0.03388
0.04896	0.03321
0.04705	0.03252
0.04514	0.03182
0.04323	0.03110
0.04134	0.03037
0.03945	0.02962
0.03756	0.02885
0.03568	0.02807
0.03381	0.02727
0.03195	0.02645
<u>0.03010</u>	<u>0.02560</u>

<u>x/c</u>	<u>y/c</u>
0.02826	0.02473
0.02644	0.02384
0.02462	0.02292
0.02283	0.02197
0.02104	0.02099
0.01928	0.01998
0.01753	0.01894
0.01581	0.01785
0.01412	0.01672
0.01246	0.01554
0.01084	0.01432
<u>0.00925</u>	<u>0.01305</u>

<u>x/c</u>	<u>y/c</u>
0.00770	0.01173
0.00620	0.01036
0.00477	0.00892
0.00341	0.00740
0.00217	0.00579
0.00108	0.00408
0.00031	0.00220
0.00000	0.00019
<u>0.00002</u>	<u>0.00000</u>

Table 15 OML Station 4 lower surface airfoil coordinates, $r/R = 0.3903$

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.00002	0.00000	0.07233	-0.00726	0.14740	-0.00221	0.22235	0.00459
0.00060	-0.00173	0.07436	-0.00716	0.14943	-0.00204	0.22437	0.00478
0.00192	-0.00326	0.07639	-0.00706	0.15146	-0.00187	0.22640	0.00498
0.00360	-0.00439	0.07842	-0.00696	0.15348	-0.00170	0.22842	0.00517
0.00547	-0.00519	0.08045	-0.00686	0.15551	-0.00153	0.23045	0.00536
0.00743	-0.00576	0.08248	-0.00675	0.15754	-0.00135	0.23247	0.00555
0.00941	-0.00621	0.08451	-0.00665	0.15956	-0.00118	0.23450	0.00574
0.01141	-0.00660	0.08654	-0.00654	0.16159	-0.00100	0.23652	0.00592
0.01341	-0.00692	0.08857	-0.00643	0.16362	-0.00082	0.23855	0.00611
0.01543	-0.00719	0.09061	-0.00631	0.16564	-0.00064	0.24057	0.00630
0.01745	-0.00742	0.09264	-0.00619	0.16767	-0.00046	0.24260	0.00649
0.01948	-0.00761	0.09467	-0.00607	0.16969	-0.00028	0.24462	0.00667
0.02150	-0.00776	0.09670	-0.00595	0.17172	-0.00010	0.24665	0.00686
0.02353	-0.00788	0.09873	-0.00582	0.17375	0.00008	0.24867	0.00705
0.02557	-0.00798	0.10076	-0.00569	0.17577	0.00026	0.25070	0.00723
0.02760	-0.00806	0.10279	-0.00556	0.17780	0.00044	0.25273	0.00742
0.02963	-0.00812	0.10481	-0.00543	0.17982	0.00062	0.25475	0.00761
0.03166	-0.00817	0.10684	-0.00529	0.18185	0.00081	0.25678	0.00780
0.03370	-0.00820	0.10887	-0.00515	0.18387	0.00099	0.25880	0.00799
0.03573	-0.00822	0.11090	-0.00501	0.18590	0.00118	0.26083	0.00818
0.03777	-0.00822	0.11293	-0.00487	0.18792	0.00136	0.26285	0.00836
0.03980	-0.00822	0.11496	-0.00473	0.18995	0.00155	0.26488	0.00855
0.04183	-0.00820	0.11699	-0.00458	0.19197	0.00174	0.26690	0.00874
0.04387	-0.00817	0.11902	-0.00443	0.19400	0.00193	0.26893	0.00893
0.04590	-0.00814	0.12105	-0.00428	0.19602	0.00212	0.27095	0.00912
0.04793	-0.00810	0.12307	-0.00413	0.19805	0.00231	0.27298	0.00931
0.04997	-0.00805	0.12510	-0.00398	0.20007	0.00250	0.27500	0.00950
0.05200	-0.00801	0.12713	-0.00382	0.20210	0.00269	0.27703	0.00968
0.05403	-0.00795	0.12916	-0.00367	0.20412	0.00288	0.27905	0.00987
0.05607	-0.00789	0.13119	-0.00351	0.20615	0.00307	0.28108	0.01006
0.05810	-0.00783	0.13321	-0.00335	0.20817	0.00326	0.28310	0.01024
0.06013	-0.00776	0.13524	-0.00319	0.21020	0.00345	0.28513	0.01043
0.06216	-0.00769	0.13727	-0.00303	0.21222	0.00364	0.28715	0.01061
0.06420	-0.00761	0.13930	-0.00287	0.21425	0.00383	0.28918	0.01080
0.06623	-0.00753	0.14132	-0.00271	0.21627	0.00402	0.29120	0.01098
0.06826	-0.00745	0.14335	-0.00254	0.21830	0.00421	0.29323	0.01116
0.07029	-0.00735	0.14538	-0.00238	0.22032	0.00440	0.29526	0.01134

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.29728	0.01153	0.37630	0.01843	0.45537	0.02473	0.53451	0.03008
0.29931	0.01171	0.37833	0.01860	0.45740	0.02489	0.53654	0.03020
0.30133	0.01189	0.38035	0.01877	0.45943	0.02504	0.53857	0.03032
0.30336	0.01207	0.38238	0.01894	0.46146	0.02519	0.54060	0.03044
0.30538	0.01225	0.38441	0.01911	0.46348	0.02533	0.54263	0.03056
0.30741	0.01243	0.38644	0.01928	0.46551	0.02548	0.54466	0.03068
0.30944	0.01261	0.38846	0.01944	0.46754	0.02563	0.54669	0.03079
0.31146	0.01279	0.39049	0.01961	0.46957	0.02578	0.54872	0.03091
0.31349	0.01297	0.39252	0.01978	0.47160	0.02592	0.55075	0.03102
0.31551	0.01315	0.39454	0.01994	0.47363	0.02607	0.55278	0.03113
0.31754	0.01333	0.39657	0.02011	0.47566	0.02621	0.55482	0.03125
0.31957	0.01351	0.39860	0.02028	0.47768	0.02636	0.55685	0.03136
0.32159	0.01369	0.40062	0.02044	0.47971	0.02650	0.55888	0.03147
0.32362	0.01387	0.40265	0.02061	0.48174	0.02665	0.56091	0.03157
0.32564	0.01405	0.40468	0.02077	0.48377	0.02679	0.56294	0.03168
0.32767	0.01423	0.40671	0.02094	0.48580	0.02693	0.56497	0.03179
0.32970	0.01441	0.40873	0.02110	0.48783	0.02707	0.56700	0.03189
0.33172	0.01459	0.41076	0.02126	0.48986	0.02721	0.56903	0.03200
0.33375	0.01477	0.41279	0.02143	0.49189	0.02735	0.57106	0.03210
0.33577	0.01494	0.41481	0.02159	0.49392	0.02749	0.57310	0.03220
0.33780	0.01512	0.41684	0.02175	0.49594	0.02763	0.57513	0.03230
0.33983	0.01530	0.41887	0.02191	0.49797	0.02776	0.57716	0.03240
0.34185	0.01548	0.42090	0.02208	0.50000	0.02790	0.57919	0.03250
0.34388	0.01565	0.42292	0.02224	0.50203	0.02803	0.58122	0.03260
0.34590	0.01583	0.42495	0.02240	0.50406	0.02817	0.58325	0.03269
0.34793	0.01601	0.42698	0.02256	0.50609	0.02830	0.58528	0.03279
0.34996	0.01618	0.42901	0.02272	0.50812	0.02843	0.58732	0.03288
0.35198	0.01636	0.43103	0.02288	0.51015	0.02857	0.58935	0.03297
0.35401	0.01653	0.43306	0.02303	0.51218	0.02870	0.59138	0.03307
0.35604	0.01671	0.43509	0.02319	0.51421	0.02883	0.59341	0.03316
0.35806	0.01688	0.43712	0.02335	0.51624	0.02896	0.59544	0.03325
0.36009	0.01705	0.43915	0.02351	0.51827	0.02908	0.59748	0.03334
0.36211	0.01723	0.44117	0.02366	0.52030	0.02921	0.59951	0.03342
0.36414	0.01740	0.44320	0.02382	0.52233	0.02934	0.60154	0.03351
0.36617	0.01757	0.44523	0.02397	0.52436	0.02946	0.60357	0.03359
0.36819	0.01775	0.44726	0.02413	0.52639	0.02959	0.60560	0.03368
0.37022	0.01792	0.44929	0.02428	0.52842	0.02971	0.60764	0.03376
0.37225	0.01809	0.45131	0.02443	0.53045	0.02984	0.60967	0.03384
0.37427	0.01826	0.45334	0.02458	0.53248	0.02996	0.61170	0.03392

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.61373	0.03400	0.69303	0.03585	0.77233	0.03468	0.85145	0.02913
0.61576	0.03408	0.69506	0.03587	0.77437	0.03460	0.85347	0.02892
0.61780	0.03416	0.69710	0.03588	0.77640	0.03451	0.85549	0.02870
0.61983	0.03423	0.69913	0.03588	0.77843	0.03443	0.85751	0.02848
0.62186	0.03430	0.70116	0.03589	0.78046	0.03433	0.85953	0.02826
0.62389	0.03438	0.70320	0.03589	0.78249	0.03424	0.86156	0.02803
0.62593	0.03445	0.70523	0.03589	0.78452	0.03414	0.86358	0.02780
0.62796	0.03451	0.70726	0.03589	0.78656	0.03404	0.86560	0.02756
0.62999	0.03458	0.70930	0.03589	0.78859	0.03394	0.86762	0.02732
0.63203	0.03465	0.71133	0.03589	0.79062	0.03383	0.86964	0.02708
0.63406	0.03471	0.71337	0.03588	0.79265	0.03372	0.87165	0.02683
0.63609	0.03477	0.71540	0.03587	0.79468	0.03361	0.87367	0.02658
0.63812	0.03483	0.71743	0.03586	0.79671	0.03350	0.87569	0.02632
0.64016	0.03489	0.71947	0.03585	0.79874	0.03338	0.87771	0.02606
0.64219	0.03495	0.72150	0.03583	0.80077	0.03326	0.87972	0.02580
0.64422	0.03501	0.72354	0.03582	0.80280	0.03313	0.88174	0.02553
0.64626	0.03506	0.72557	0.03580	0.80483	0.03300	0.88376	0.02526
0.64829	0.03511	0.72760	0.03578	0.80686	0.03287	0.88577	0.02499
0.65032	0.03517	0.72964	0.03576	0.80889	0.03274	0.88779	0.02471
0.65236	0.03522	0.73167	0.03573	0.81092	0.03260	0.88980	0.02443
0.65439	0.03526	0.73370	0.03571	0.81295	0.03246	0.89181	0.02414
0.65642	0.03531	0.73574	0.03568	0.81498	0.03232	0.89383	0.02385
0.65846	0.03536	0.73777	0.03564	0.81701	0.03217	0.89584	0.02356
0.66049	0.03540	0.73981	0.03561	0.81903	0.03202	0.89785	0.02326
0.66252	0.03544	0.74184	0.03557	0.82106	0.03186	0.89986	0.02295
0.66456	0.03548	0.74387	0.03553	0.82309	0.03171	0.90187	0.02265
0.66659	0.03552	0.74591	0.03549	0.82512	0.03155	0.90388	0.02233
0.66862	0.03556	0.74794	0.03545	0.82714	0.03138	0.90589	0.02202
0.67066	0.03559	0.74997	0.03540	0.82917	0.03121	0.90790	0.02169
0.67269	0.03563	0.75201	0.03535	0.83120	0.03104	0.90991	0.02137
0.67472	0.03566	0.75404	0.03530	0.83322	0.03087	0.91191	0.02103
0.67676	0.03569	0.75607	0.03524	0.83525	0.03069	0.91392	0.02070
0.67879	0.03572	0.75810	0.03518	0.83728	0.03051	0.91592	0.02035
0.68083	0.03574	0.76014	0.03512	0.83930	0.03032	0.91793	0.02001
0.68286	0.03576	0.76217	0.03505	0.84133	0.03013	0.91993	0.01965
0.68489	0.03579	0.76420	0.03498	0.84335	0.02994	0.92193	0.01930
0.68693	0.03581	0.76624	0.03491	0.84538	0.02974	0.92393	0.01893
0.68896	0.03582	0.76827	0.03484	0.84740	0.02954	0.92593	0.01856
0.69099	0.03584	0.77030	0.03476	0.84942	0.02934	0.92793	0.01819

<u>x/c</u>	<u>y/c</u>
0.92993	0.01781
0.93193	0.01743
0.93393	0.01704
0.93592	0.01664
0.93791	0.01624
0.93991	0.01583
0.94190	0.01541
0.94389	0.01499
0.94587	0.01456
<u>0.94786</u>	<u>0.01413</u>

<u>x/c</u>	<u>y/c</u>
0.94985	0.01369
0.95183	0.01324
0.95381	0.01279
0.95579	0.01232
0.95777	0.01186
0.95975	0.01138
0.96172	0.01089
0.96370	0.01039
0.96567	0.00988
<u>0.96763</u>	<u>0.00936</u>

<u>x/c</u>	<u>y/c</u>
0.96960	0.00883
0.97156	0.00830
0.97352	0.00775
0.97547	0.00720
0.97743	0.00663
0.97938	0.00605
0.98132	0.00545
0.98325	0.00482
0.98518	0.00418
<u>0.98711</u>	<u>0.00352</u>

<u>x/c</u>	<u>y/c</u>
0.98903	0.00285
0.99094	0.00217
0.99285	0.00145
0.99473	0.00067
0.99657	-0.00018
0.99837	-0.00113
<u>1.00015</u>	<u>-0.00212</u>

Table 16 OML upper surface airfoil coordinates, $r/R = 0.5271$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
1.00001	0.00254	0.92917	0.02688	0.85566	0.04223	0.78130	0.05282
0.99828	0.00360	0.92720	0.02737	0.85366	0.04257	0.77929	0.05305
0.99652	0.00461	0.92523	0.02786	0.85165	0.04291	0.77727	0.05328
0.99471	0.00554	0.92325	0.02835	0.84965	0.04324	0.77525	0.05351
0.99288	0.00640	0.92128	0.02882	0.84765	0.04357	0.77323	0.05373
0.99102	0.00723	0.91931	0.02930	0.84564	0.04390	0.77122	0.05396
0.98915	0.00802	0.91733	0.02977	0.84364	0.04423	0.76920	0.05418
0.98728	0.00880	0.91536	0.03023	0.84164	0.04455	0.76718	0.05439
0.98539	0.00955	0.91338	0.03069	0.83963	0.04486	0.76516	0.05461
0.98350	0.01029	0.91140	0.03115	0.83763	0.04518	0.76314	0.05482
0.98160	0.01101	0.90942	0.03160	0.83562	0.04549	0.76112	0.05503
0.97970	0.01173	0.90744	0.03204	0.83361	0.04580	0.75910	0.05524
0.97780	0.01242	0.90546	0.03249	0.83161	0.04610	0.75708	0.05545
0.97588	0.01310	0.90348	0.03292	0.82960	0.04641	0.75506	0.05565
0.97397	0.01377	0.90149	0.03336	0.82759	0.04671	0.75304	0.05585
0.97204	0.01442	0.89951	0.03379	0.82558	0.04700	0.75102	0.05605
0.97012	0.01507	0.89752	0.03421	0.82357	0.04730	0.74900	0.05624
0.96819	0.01570	0.89554	0.03463	0.82156	0.04759	0.74698	0.05643
0.96626	0.01633	0.89355	0.03505	0.81955	0.04787	0.74496	0.05662
0.96433	0.01695	0.89156	0.03546	0.81754	0.04816	0.74294	0.05681
0.96239	0.01756	0.88958	0.03587	0.81553	0.04844	0.74092	0.05700
0.96045	0.01817	0.88759	0.03627	0.81352	0.04872	0.73890	0.05718
0.95851	0.01876	0.88560	0.03667	0.81151	0.04900	0.73687	0.05736
0.95657	0.01935	0.88360	0.03707	0.80950	0.04927	0.73485	0.05754
0.95462	0.01993	0.88161	0.03746	0.80749	0.04954	0.73283	0.05772
0.95268	0.02051	0.87962	0.03785	0.80548	0.04981	0.73081	0.05789
0.95073	0.02108	0.87763	0.03823	0.80346	0.05007	0.72878	0.05807
0.94878	0.02164	0.87563	0.03862	0.80145	0.05034	0.72676	0.05824
0.94682	0.02219	0.87364	0.03899	0.79944	0.05060	0.72474	0.05841
0.94487	0.02273	0.87164	0.03937	0.79742	0.05085	0.72271	0.05857
0.94291	0.02327	0.86965	0.03974	0.79541	0.05111	0.72069	0.05874
0.94095	0.02381	0.86765	0.04010	0.79339	0.05136	0.71867	0.05890
0.93899	0.02433	0.86565	0.04047	0.79138	0.05161	0.71664	0.05907
0.93703	0.02486	0.86365	0.04083	0.78937	0.05186	0.71462	0.05923
0.93507	0.02537	0.86166	0.04118	0.78735	0.05210	0.71260	0.05939
0.93310	0.02588	0.85966	0.04154	0.78533	0.05234	0.71057	0.05954
0.93113	0.02638	0.85766	0.04188	0.78332	0.05258	0.70855	0.05970

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.70652	0.05985	0.62749	0.06451	0.54836	0.06709	0.46919	0.06804
0.70450	0.06001	0.62546	0.06460	0.54633	0.06714	0.46716	0.06804
0.70248	0.06016	0.62343	0.06469	0.54430	0.06718	0.46513	0.06805
0.70045	0.06031	0.62141	0.06478	0.54227	0.06723	0.46310	0.06805
0.69843	0.06045	0.61938	0.06486	0.54024	0.06727	0.46107	0.06805
0.69640	0.06060	0.61735	0.06495	0.53821	0.06731	0.45904	0.06805
0.69438	0.06074	0.61532	0.06503	0.53618	0.06735	0.45701	0.06806
0.69235	0.06088	0.61329	0.06511	0.53415	0.06739	0.45498	0.06806
0.69033	0.06102	0.61126	0.06519	0.53212	0.06742	0.45295	0.06806
0.68830	0.06116	0.60924	0.06527	0.53009	0.06746	0.45092	0.06806
0.68627	0.06129	0.60721	0.06535	0.52806	0.06749	0.44889	0.06805
0.68425	0.06143	0.60518	0.06542	0.52603	0.06753	0.44686	0.06805
0.68222	0.06156	0.60315	0.06550	0.52400	0.06756	0.44483	0.06805
0.68020	0.06169	0.60112	0.06557	0.52197	0.06759	0.44280	0.06804
0.67817	0.06182	0.59909	0.06564	0.51994	0.06762	0.44077	0.06804
0.67614	0.06194	0.59706	0.06571	0.51791	0.06765	0.43874	0.06803
0.67412	0.06207	0.59503	0.06578	0.51588	0.06768	0.43671	0.06802
0.67209	0.06219	0.59301	0.06585	0.51385	0.06770	0.43468	0.06801
0.67007	0.06231	0.59098	0.06592	0.51183	0.06773	0.43265	0.06800
0.66804	0.06243	0.58895	0.06598	0.50980	0.06775	0.43062	0.06799
0.66601	0.06255	0.58692	0.06605	0.50777	0.06778	0.42859	0.06797
0.66399	0.06266	0.58489	0.06611	0.50574	0.06780	0.42656	0.06796
0.66196	0.06278	0.58286	0.06618	0.50371	0.06782	0.42453	0.06794
0.65993	0.06289	0.58083	0.06624	0.50168	0.06784	0.42250	0.06793
0.65790	0.06300	0.57880	0.06630	0.49965	0.06786	0.42047	0.06791
0.65588	0.06311	0.57677	0.06636	0.49762	0.06788	0.41844	0.06789
0.65385	0.06322	0.57474	0.06642	0.49559	0.06790	0.41641	0.06787
0.65182	0.06333	0.57271	0.06648	0.49356	0.06791	0.41438	0.06784
0.64980	0.06344	0.57068	0.06653	0.49153	0.06793	0.41235	0.06782
0.64777	0.06354	0.56866	0.06659	0.48950	0.06794	0.41032	0.06780
0.64574	0.06365	0.56663	0.06665	0.48746	0.06795	0.40829	0.06777
0.64371	0.06375	0.56460	0.06670	0.48543	0.06797	0.40626	0.06774
0.64169	0.06385	0.56257	0.06675	0.48340	0.06798	0.40423	0.06771
0.63966	0.06395	0.56054	0.06680	0.48137	0.06799	0.40220	0.06769
0.63763	0.06405	0.55851	0.06686	0.47934	0.06800	0.40017	0.06765
0.63560	0.06414	0.55648	0.06690	0.47731	0.06801	0.39814	0.06762
0.63357	0.06424	0.55445	0.06695	0.47528	0.06802	0.39611	0.06759
0.63155	0.06433	0.55242	0.06700	0.47325	0.06802	0.39408	0.06756
0.62952	0.06442	0.55039	0.06705	0.47122	0.06803	0.39205	0.06752

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.39002	0.06748	0.31089	0.06508	0.23186	0.06034	0.15312	0.05216
0.38799	0.06745	0.30886	0.06499	0.22984	0.06018	0.15111	0.05189
0.38596	0.06741	0.30683	0.06490	0.22781	0.06002	0.14910	0.05161
0.38394	0.06737	0.30481	0.06481	0.22579	0.05986	0.14709	0.05132
0.38191	0.06732	0.30278	0.06471	0.22377	0.05970	0.14508	0.05104
0.37988	0.06728	0.30075	0.06462	0.22174	0.05953	0.14307	0.05074
0.37785	0.06724	0.29872	0.06452	0.21972	0.05936	0.14106	0.05045
0.37582	0.06719	0.29669	0.06442	0.21770	0.05919	0.13906	0.05014
0.37379	0.06715	0.29467	0.06433	0.21568	0.05902	0.13705	0.04984
0.37176	0.06710	0.29264	0.06422	0.21365	0.05884	0.13504	0.04953
0.36973	0.06705	0.29061	0.06412	0.21163	0.05866	0.13304	0.04921
0.36770	0.06700	0.28858	0.06402	0.20961	0.05848	0.13103	0.04889
0.36567	0.06695	0.28656	0.06391	0.20759	0.05830	0.12903	0.04856
0.36364	0.06690	0.28453	0.06380	0.20557	0.05811	0.12703	0.04823
0.36161	0.06685	0.28250	0.06369	0.20354	0.05792	0.12503	0.04789
0.35958	0.06679	0.28047	0.06358	0.20152	0.05773	0.12302	0.04755
0.35755	0.06674	0.27845	0.06347	0.19950	0.05753	0.12102	0.04720
0.35552	0.06668	0.27642	0.06335	0.19748	0.05733	0.11903	0.04685
0.35349	0.06662	0.27439	0.06324	0.19546	0.05713	0.11703	0.04649
0.35146	0.06656	0.27237	0.06312	0.19344	0.05692	0.11503	0.04613
0.34943	0.06650	0.27034	0.06300	0.19142	0.05672	0.11303	0.04575
0.34741	0.06644	0.26831	0.06288	0.18940	0.05651	0.11104	0.04538
0.34538	0.06638	0.26629	0.06275	0.18739	0.05629	0.10905	0.04500
0.34335	0.06631	0.26426	0.06263	0.18537	0.05608	0.10705	0.04461
0.34132	0.06625	0.26224	0.06250	0.18335	0.05586	0.10506	0.04421
0.33929	0.06618	0.26021	0.06237	0.18133	0.05563	0.10307	0.04381
0.33726	0.06611	0.25818	0.06224	0.17931	0.05541	0.10108	0.04341
0.33523	0.06604	0.25616	0.06210	0.17730	0.05518	0.09909	0.04300
0.33320	0.06597	0.25413	0.06197	0.17528	0.05495	0.09711	0.04258
0.33117	0.06589	0.25211	0.06183	0.17326	0.05471	0.09512	0.04215
0.32915	0.06582	0.25008	0.06169	0.17125	0.05447	0.09314	0.04172
0.32712	0.06574	0.24806	0.06155	0.16923	0.05423	0.09116	0.04129
0.32509	0.06566	0.24603	0.06141	0.16722	0.05398	0.08917	0.04085
0.32306	0.06559	0.24401	0.06126	0.16520	0.05373	0.08719	0.04040
0.32103	0.06550	0.24198	0.06111	0.16319	0.05348	0.08522	0.03994
0.31900	0.06542	0.23996	0.06096	0.16117	0.05322	0.08324	0.03948
0.31697	0.06534	0.23793	0.06081	0.15916	0.05296	0.08127	0.03900
0.31495	0.06525	0.23591	0.06066	0.15715	0.05270	0.07929	0.03853
0.31292	0.06517	0.23389	0.06050	0.15513	0.05243	0.07732	0.03804

<u>x/c</u>	<u>y/c</u>
0.07535	0.03755
0.07339	0.03704
0.07142	0.03653
0.06946	0.03601
0.06750	0.03549
0.06554	0.03495
0.06359	0.03440
0.06163	0.03384
0.05968	0.03328
0.05774	0.03270
0.05580	0.03211

<u>x/c</u>	<u>y/c</u>
0.05386	0.03151
0.05192	0.03090
0.04999	0.03027
0.04806	0.02964
0.04613	0.02900
0.04421	0.02834
0.04230	0.02766
0.04039	0.02698
0.03848	0.02627
0.03658	0.02556
0.03469	0.02482

<u>x/c</u>	<u>y/c</u>
0.03281	0.02407
0.03093	0.02329
0.02906	0.02250
0.02721	0.02168
0.02536	0.02084
0.02352	0.01997
0.02170	0.01907
0.01989	0.01815
0.01811	0.01719
0.01634	0.01619
0.01460	0.01514

<u>x/c</u>	<u>y/c</u>
0.01288	0.01406
0.01120	0.01293
0.00954	0.01176
0.00792	0.01054
0.00634	0.00926
0.00483	0.00790
0.00340	0.00646
0.00209	0.00491
0.00094	0.00324
0.00012	0.00139
0.00006	0.00000

Table 17 OML lower surface airfoil coordinates, $r/R = 0.5271$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.00006	0.00000	0.07184	-0.00387	0.14673	0.00178	0.22154	0.00854
0.00020	-0.00060	0.07386	-0.00374	0.14876	0.00195	0.22356	0.00872
0.00135	-0.00225	0.07589	-0.00362	0.15078	0.00212	0.22559	0.00891
0.00308	-0.00329	0.07791	-0.00349	0.15280	0.00230	0.22761	0.00909
0.00500	-0.00395	0.07994	-0.00336	0.15482	0.00248	0.22963	0.00928
0.00698	-0.00439	0.08197	-0.00323	0.15685	0.00265	0.23165	0.00946
0.00899	-0.00471	0.08399	-0.00309	0.15887	0.00283	0.23367	0.00964
0.01100	-0.00496	0.08602	-0.00296	0.16089	0.00301	0.23570	0.00983
0.01302	-0.00517	0.08804	-0.00282	0.16291	0.00319	0.23772	0.01001
0.01504	-0.00533	0.09007	-0.00268	0.16494	0.00337	0.23974	0.01019
0.01707	-0.00545	0.09209	-0.00254	0.16696	0.00355	0.24176	0.01037
0.01910	-0.00555	0.09412	-0.00240	0.16898	0.00374	0.24378	0.01055
0.02113	-0.00561	0.09614	-0.00225	0.17100	0.00392	0.24581	0.01072
0.02316	-0.00566	0.09817	-0.00211	0.17302	0.00410	0.24783	0.01090
0.02519	-0.00568	0.10019	-0.00196	0.17505	0.00428	0.24985	0.01108
0.02722	-0.00568	0.10222	-0.00181	0.17707	0.00446	0.25187	0.01126
0.02925	-0.00567	0.10424	-0.00166	0.17909	0.00464	0.25389	0.01144
0.03128	-0.00565	0.10627	-0.00151	0.18111	0.00483	0.25592	0.01163
0.03331	-0.00562	0.10829	-0.00135	0.18313	0.00501	0.25794	0.01181
0.03534	-0.00558	0.11031	-0.00120	0.18515	0.00519	0.25996	0.01199
0.03737	-0.00553	0.11234	-0.00104	0.18718	0.00538	0.26198	0.01217
0.03939	-0.00547	0.11436	-0.00088	0.18920	0.00556	0.26400	0.01235
0.04142	-0.00540	0.11639	-0.00072	0.19122	0.00575	0.26603	0.01253
0.04345	-0.00532	0.11841	-0.00056	0.19324	0.00593	0.26805	0.01271
0.04548	-0.00524	0.12043	-0.00040	0.19526	0.00612	0.27007	0.01289
0.04751	-0.00515	0.12246	-0.00024	0.19728	0.00631	0.27209	0.01307
0.04954	-0.00506	0.12448	-0.00007	0.19931	0.00649	0.27411	0.01325
0.05156	-0.00497	0.12650	0.00009	0.20133	0.00668	0.27614	0.01343
0.05359	-0.00488	0.12853	0.00026	0.20335	0.00687	0.27816	0.01360
0.05562	-0.00478	0.13055	0.00042	0.20537	0.00705	0.28018	0.01378
0.05765	-0.00467	0.13257	0.00059	0.20739	0.00724	0.28220	0.01396
0.05968	-0.00457	0.13460	0.00076	0.20941	0.00742	0.28423	0.01413
0.06170	-0.00446	0.13662	0.00093	0.21144	0.00761	0.28625	0.01431
0.06373	-0.00435	0.13864	0.00110	0.21346	0.00779	0.28827	0.01448
0.06576	-0.00423	0.14067	0.00126	0.21548	0.00798	0.29029	0.01466
0.06778	-0.00411	0.14269	0.00144	0.21750	0.00816	0.29232	0.01483
0.06981	-0.00399	0.14471	0.00161	0.21952	0.00835	0.29434	0.01500

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.29636	0.01518	0.37527	0.02162	0.45424	0.02738	0.53327	0.03216
0.29839	0.01535	0.37730	0.02177	0.45626	0.02752	0.53529	0.03226
0.30041	0.01552	0.37932	0.02193	0.45829	0.02765	0.53732	0.03237
0.30243	0.01569	0.38135	0.02209	0.46031	0.02779	0.53935	0.03247
0.30445	0.01586	0.38337	0.02224	0.46234	0.02792	0.54137	0.03258
0.30648	0.01603	0.38539	0.02240	0.46436	0.02806	0.54340	0.03268
0.30850	0.01620	0.38742	0.02255	0.46639	0.02819	0.54543	0.03278
0.31052	0.01637	0.38944	0.02271	0.46842	0.02832	0.54746	0.03288
0.31255	0.01654	0.39147	0.02286	0.47044	0.02845	0.54948	0.03298
0.31457	0.01671	0.39349	0.02302	0.47247	0.02859	0.55151	0.03308
0.31659	0.01688	0.39551	0.02317	0.47449	0.02872	0.55354	0.03317
0.31861	0.01705	0.39754	0.02332	0.47652	0.02885	0.55557	0.03327
0.32064	0.01721	0.39956	0.02347	0.47855	0.02897	0.55760	0.03337
0.32266	0.01738	0.40159	0.02363	0.48057	0.02910	0.55962	0.03346
0.32468	0.01755	0.40361	0.02378	0.48260	0.02923	0.56165	0.03355
0.32671	0.01772	0.40564	0.02393	0.48462	0.02936	0.56368	0.03364
0.32873	0.01788	0.40766	0.02408	0.48665	0.02948	0.56571	0.03374
0.33075	0.01805	0.40969	0.02423	0.48868	0.02961	0.56774	0.03383
0.33278	0.01822	0.41171	0.02438	0.49070	0.02973	0.56976	0.03391
0.33480	0.01838	0.41374	0.02452	0.49273	0.02986	0.57179	0.03400
0.33682	0.01855	0.41576	0.02467	0.49475	0.02998	0.57382	0.03409
0.33885	0.01871	0.41778	0.02482	0.49678	0.03010	0.57585	0.03417
0.34087	0.01888	0.41981	0.02497	0.49881	0.03022	0.57788	0.03426
0.34289	0.01904	0.42183	0.02511	0.50083	0.03034	0.57991	0.03434
0.34492	0.01921	0.42386	0.02526	0.50286	0.03046	0.58193	0.03442
0.34694	0.01937	0.42588	0.02540	0.50489	0.03058	0.58396	0.03450
0.34896	0.01953	0.42791	0.02555	0.50691	0.03070	0.58599	0.03458
0.35099	0.01970	0.42993	0.02569	0.50894	0.03082	0.58802	0.03466
0.35301	0.01986	0.43196	0.02583	0.51097	0.03093	0.59005	0.03474
0.35504	0.02002	0.43398	0.02598	0.51299	0.03105	0.59208	0.03482
0.35706	0.02018	0.43601	0.02612	0.51502	0.03116	0.59411	0.03489
0.35908	0.02034	0.43803	0.02626	0.51705	0.03128	0.59613	0.03497
0.36111	0.02050	0.44006	0.02640	0.51908	0.03139	0.59816	0.03504
0.36313	0.02066	0.44208	0.02654	0.52110	0.03150	0.60019	0.03511
0.36515	0.02082	0.44411	0.02669	0.52313	0.03161	0.60222	0.03519
0.36718	0.02098	0.44614	0.02683	0.52516	0.03172	0.60425	0.03526
0.36920	0.02114	0.44816	0.02696	0.52718	0.03183	0.60628	0.03533
0.37123	0.02130	0.45019	0.02710	0.52921	0.03194	0.60831	0.03539
0.37325	0.02146	0.45221	0.02724	0.53124	0.03205	0.61034	0.03546

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.61237	0.03552	0.69152	0.03687	0.77068	0.03527	0.84962	0.02941
0.61439	0.03559	0.69355	0.03687	0.77270	0.03517	0.85164	0.02919
0.61642	0.03565	0.69558	0.03686	0.77473	0.03508	0.85366	0.02897
0.61845	0.03571	0.69761	0.03686	0.77676	0.03498	0.85567	0.02874
0.62048	0.03577	0.69964	0.03685	0.77879	0.03488	0.85769	0.02851
0.62251	0.03583	0.70168	0.03684	0.78081	0.03478	0.85971	0.02828
0.62454	0.03588	0.70371	0.03683	0.78284	0.03467	0.86172	0.02804
0.62657	0.03594	0.70574	0.03681	0.78487	0.03456	0.86374	0.02780
0.62860	0.03599	0.70777	0.03680	0.78690	0.03445	0.86575	0.02755
0.63063	0.03604	0.70980	0.03679	0.78892	0.03433	0.86777	0.02730
0.63266	0.03609	0.71183	0.03677	0.79095	0.03422	0.86978	0.02705
0.63469	0.03614	0.71386	0.03675	0.79298	0.03409	0.87180	0.02679
0.63672	0.03619	0.71589	0.03673	0.79500	0.03397	0.87381	0.02653
0.63875	0.03623	0.71792	0.03671	0.79703	0.03384	0.87582	0.02626
0.64078	0.03628	0.71995	0.03668	0.79905	0.03371	0.87783	0.02599
0.64281	0.03632	0.72198	0.03666	0.80108	0.03358	0.87985	0.02572
0.64484	0.03636	0.72400	0.03663	0.80311	0.03344	0.88186	0.02545
0.64687	0.03640	0.72603	0.03660	0.80513	0.03330	0.88387	0.02517
0.64890	0.03644	0.72806	0.03656	0.80716	0.03316	0.88588	0.02489
0.65093	0.03648	0.73009	0.03653	0.80918	0.03302	0.88789	0.02460
0.65296	0.03651	0.73212	0.03649	0.81120	0.03287	0.88990	0.02431
0.65498	0.03654	0.73415	0.03645	0.81323	0.03271	0.89191	0.02401
0.65701	0.03658	0.73618	0.03640	0.81525	0.03256	0.89391	0.02371
0.65904	0.03661	0.73821	0.03636	0.81728	0.03240	0.89592	0.02341
0.66107	0.03664	0.74024	0.03631	0.81930	0.03224	0.89793	0.02310
0.66310	0.03667	0.74227	0.03626	0.82132	0.03207	0.89993	0.02279
0.66513	0.03669	0.74430	0.03621	0.82335	0.03191	0.90194	0.02248
0.66716	0.03672	0.74633	0.03615	0.82537	0.03173	0.90394	0.02216
0.66919	0.03674	0.74836	0.03609	0.82739	0.03156	0.90595	0.02183
0.67122	0.03676	0.75039	0.03603	0.82942	0.03138	0.90795	0.02150
0.67325	0.03678	0.75242	0.03597	0.83144	0.03120	0.90995	0.02117
0.67528	0.03680	0.75445	0.03590	0.83346	0.03101	0.91195	0.02083
0.67731	0.03682	0.75648	0.03583	0.83548	0.03083	0.91396	0.02048
0.67934	0.03683	0.75850	0.03576	0.83750	0.03063	0.91595	0.02013
0.68137	0.03685	0.76053	0.03568	0.83952	0.03044	0.91795	0.01978
0.68340	0.03686	0.76256	0.03561	0.84154	0.03024	0.91995	0.01942
0.68543	0.03686	0.76459	0.03553	0.84356	0.03004	0.92195	0.01905
0.68746	0.03687	0.76662	0.03544	0.84558	0.02983	0.92394	0.01868
0.68949	0.03687	0.76865	0.03536	0.84760	0.02962	0.92594	0.01830

<u>x/c</u>	<u>y/c</u>
0.92793	0.01792
0.92993	0.01754
0.93192	0.01714
0.93391	0.01675
0.93590	0.01634
0.93789	0.01593
0.93987	0.01552
0.94186	0.01510
0.94385	0.01467
<u>0.94583</u>	<u>0.01424</u>

<u>x/c</u>	<u>y/c</u>
0.94781	0.01380
0.94979	0.01335
0.95177	0.01290
0.95375	0.01243
0.95572	0.01196
0.95769	0.01149
0.95966	0.01100
0.96163	0.01050
0.96360	0.01000
<u>0.96556</u>	<u>0.00949</u>

<u>x/c</u>	<u>y/c</u>
0.96753	0.00897
0.96949	0.00844
0.97144	0.00790
0.97340	0.00735
0.97535	0.00679
0.97730	0.00622
0.97924	0.00562
0.98118	0.00502
0.98311	0.00439
<u>0.98503</u>	<u>0.00375</u>

<u>x/c</u>	<u>y/c</u>
0.98696	0.00310
0.98887	0.00243
0.99078	0.00173
0.99267	0.00100
0.99455	0.00023
0.99640	-0.00060
0.99821	-0.00153
<u>0.99999</u>	<u>-0.00251</u>

Table 18 OML upper surface airfoil coordinates, $r/R = 0.7620$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
1.00025	0.00355	0.92937	0.02779	0.85584	0.04304	0.78147	0.05354
0.99852	0.00461	0.92740	0.02828	0.85384	0.04338	0.77945	0.05377
0.99676	0.00562	0.92543	0.02877	0.85183	0.04372	0.77743	0.05400
0.99495	0.00654	0.92346	0.02925	0.84983	0.04405	0.77542	0.05423
0.99311	0.00740	0.92148	0.02972	0.84783	0.04438	0.77340	0.05445
0.99125	0.00822	0.91951	0.03020	0.84582	0.04470	0.77138	0.05467
0.98938	0.00902	0.91753	0.03066	0.84382	0.04503	0.76936	0.05489
0.98751	0.00979	0.91556	0.03112	0.84182	0.04534	0.76734	0.05510
0.98562	0.01054	0.91358	0.03158	0.83981	0.04566	0.76533	0.05532
0.98373	0.01128	0.91160	0.03203	0.83780	0.04597	0.76331	0.05553
0.98183	0.01200	0.90962	0.03248	0.83580	0.04628	0.76129	0.05573
0.97993	0.01271	0.90764	0.03293	0.83379	0.04659	0.75927	0.05594
0.97802	0.01340	0.90566	0.03337	0.83178	0.04689	0.75725	0.05614
0.97611	0.01408	0.90367	0.03380	0.82977	0.04719	0.75523	0.05634
0.97419	0.01474	0.90169	0.03423	0.82777	0.04749	0.75321	0.05654
0.97227	0.01539	0.89970	0.03466	0.82576	0.04778	0.75119	0.05674
0.97034	0.01604	0.89772	0.03508	0.82375	0.04807	0.74916	0.05693
0.96841	0.01667	0.89573	0.03550	0.82174	0.04836	0.74714	0.05712
0.96648	0.01729	0.89374	0.03591	0.81973	0.04865	0.74512	0.05731
0.96455	0.01791	0.89176	0.03632	0.81772	0.04893	0.74310	0.05749
0.96261	0.01852	0.88977	0.03673	0.81571	0.04921	0.74108	0.05768
0.96067	0.01912	0.88778	0.03713	0.81370	0.04948	0.73906	0.05786
0.95873	0.01972	0.88579	0.03753	0.81168	0.04976	0.73703	0.05803
0.95679	0.02030	0.88379	0.03792	0.80967	0.05003	0.73501	0.05821
0.95484	0.02088	0.88180	0.03831	0.80766	0.05030	0.73299	0.05839
0.95289	0.02145	0.87981	0.03870	0.80565	0.05056	0.73097	0.05856
0.95094	0.02202	0.87781	0.03908	0.80363	0.05083	0.72894	0.05873
0.94899	0.02257	0.87582	0.03946	0.80162	0.05109	0.72692	0.05890
0.94704	0.02312	0.87383	0.03983	0.79961	0.05134	0.72490	0.05906
0.94508	0.02367	0.87183	0.04020	0.79759	0.05160	0.72287	0.05923
0.94312	0.02421	0.86983	0.04057	0.79558	0.05185	0.72085	0.05939
0.94116	0.02474	0.86784	0.04094	0.79356	0.05210	0.71883	0.05956
0.93920	0.02526	0.86584	0.04130	0.79155	0.05235	0.71680	0.05972
0.93724	0.02578	0.86384	0.04165	0.78953	0.05259	0.71478	0.05987
0.93527	0.02629	0.86184	0.04201	0.78752	0.05283	0.71275	0.06003
0.93331	0.02680	0.85984	0.04235	0.78550	0.05307	0.71073	0.06019
0.93134	0.02730	0.85784	0.04270	0.78349	0.05331	0.70871	0.06034

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.70668	0.06049	0.62764	0.06505	0.54850	0.06753	0.46933	0.06836
0.70466	0.06064	0.62561	0.06514	0.54647	0.06757	0.46730	0.06837
0.70263	0.06079	0.62358	0.06523	0.54444	0.06761	0.46527	0.06837
0.70061	0.06093	0.62155	0.06531	0.54241	0.06765	0.46324	0.06837
0.69858	0.06108	0.61953	0.06539	0.54039	0.06769	0.46121	0.06837
0.69656	0.06122	0.61750	0.06547	0.53836	0.06773	0.45918	0.06837
0.69453	0.06136	0.61547	0.06555	0.53633	0.06776	0.45715	0.06837
0.69251	0.06150	0.61344	0.06563	0.53430	0.06780	0.45512	0.06837
0.69048	0.06164	0.61141	0.06571	0.53227	0.06783	0.45309	0.06836
0.68845	0.06177	0.60938	0.06578	0.53024	0.06786	0.45106	0.06836
0.68643	0.06190	0.60735	0.06586	0.52821	0.06790	0.44903	0.06836
0.68440	0.06204	0.60533	0.06593	0.52618	0.06793	0.44700	0.06835
0.68238	0.06216	0.60330	0.06600	0.52415	0.06796	0.44497	0.06834
0.68035	0.06229	0.60127	0.06607	0.52212	0.06799	0.44294	0.06834
0.67832	0.06242	0.59924	0.06614	0.52009	0.06801	0.44091	0.06833
0.67630	0.06254	0.59721	0.06621	0.51806	0.06804	0.43888	0.06832
0.67427	0.06266	0.59518	0.06628	0.51603	0.06807	0.43685	0.06831
0.67224	0.06278	0.59315	0.06634	0.51400	0.06809	0.43482	0.06829
0.67022	0.06290	0.59112	0.06641	0.51197	0.06811	0.43279	0.06828
0.66819	0.06302	0.58909	0.06647	0.50994	0.06814	0.43076	0.06827
0.66616	0.06313	0.58706	0.06653	0.50791	0.06816	0.42873	0.06825
0.66414	0.06325	0.58503	0.06660	0.50588	0.06818	0.42670	0.06823
0.66211	0.06336	0.58301	0.06666	0.50385	0.06820	0.42467	0.06822
0.66008	0.06347	0.58098	0.06672	0.50182	0.06821	0.42264	0.06820
0.65806	0.06358	0.57895	0.06678	0.49979	0.06823	0.42061	0.06818
0.65603	0.06369	0.57692	0.06683	0.49776	0.06825	0.41858	0.06815
0.65400	0.06379	0.57489	0.06689	0.49573	0.06826	0.41655	0.06813
0.65197	0.06390	0.57286	0.06695	0.49370	0.06827	0.41452	0.06811
0.64995	0.06400	0.57083	0.06700	0.49167	0.06829	0.41249	0.06808
0.64792	0.06411	0.56880	0.06705	0.48964	0.06830	0.41046	0.06805
0.64589	0.06421	0.56677	0.06711	0.48761	0.06831	0.40843	0.06802
0.64386	0.06431	0.56474	0.06716	0.48558	0.06832	0.40640	0.06799
0.64184	0.06441	0.56271	0.06721	0.48354	0.06833	0.40437	0.06796
0.63981	0.06450	0.56068	0.06726	0.48151	0.06833	0.40234	0.06793
0.63778	0.06460	0.55865	0.06731	0.47948	0.06834	0.40031	0.06790
0.63575	0.06469	0.55662	0.06735	0.47745	0.06835	0.39828	0.06786
0.63372	0.06478	0.55459	0.06740	0.47542	0.06835	0.39625	0.06783
0.63170	0.06488	0.55256	0.06744	0.47339	0.06836	0.39422	0.06779
0.62967	0.06497	0.55053	0.06749	0.47136	0.06836	0.39219	0.06775

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.39016	0.06771	0.31103	0.06522	0.23200	0.06042	0.15327	0.05218
0.38813	0.06767	0.30900	0.06513	0.22998	0.06026	0.15126	0.05190
0.38610	0.06763	0.30697	0.06504	0.22795	0.06009	0.14924	0.05162
0.38407	0.06759	0.30494	0.06494	0.22593	0.05993	0.14723	0.05133
0.38204	0.06755	0.30292	0.06485	0.22391	0.05976	0.14523	0.05105
0.38001	0.06750	0.30089	0.06475	0.22188	0.05959	0.14322	0.05075
0.37798	0.06745	0.29886	0.06465	0.21986	0.05942	0.14121	0.05045
0.37595	0.06741	0.29683	0.06455	0.21784	0.05925	0.13920	0.05015
0.37392	0.06736	0.29480	0.06445	0.21582	0.05907	0.13719	0.04984
0.37190	0.06731	0.29278	0.06435	0.21379	0.05889	0.13519	0.04953
0.36987	0.06726	0.29075	0.06424	0.21177	0.05871	0.13318	0.04921
0.36784	0.06721	0.28872	0.06414	0.20975	0.05853	0.13118	0.04889
0.36581	0.06715	0.28670	0.06403	0.20773	0.05834	0.12918	0.04856
0.36378	0.06710	0.28467	0.06392	0.20571	0.05815	0.12717	0.04823
0.36175	0.06705	0.28264	0.06381	0.20369	0.05796	0.12517	0.04789
0.35972	0.06699	0.28061	0.06369	0.20167	0.05777	0.12317	0.04755
0.35769	0.06693	0.27859	0.06358	0.19964	0.05757	0.12117	0.04720
0.35566	0.06687	0.27656	0.06346	0.19762	0.05737	0.11917	0.04684
0.35363	0.06681	0.27453	0.06334	0.19560	0.05717	0.11717	0.04648
0.35160	0.06675	0.27251	0.06322	0.19358	0.05696	0.11518	0.04612
0.34957	0.06669	0.27048	0.06310	0.19157	0.05675	0.11318	0.04574
0.34754	0.06662	0.26845	0.06298	0.18955	0.05654	0.11119	0.04537
0.34551	0.06656	0.26643	0.06285	0.18753	0.05633	0.10919	0.04498
0.34349	0.06649	0.26440	0.06272	0.18551	0.05611	0.10720	0.04459
0.34146	0.06642	0.26238	0.06259	0.18349	0.05589	0.10521	0.04420
0.33943	0.06635	0.26035	0.06246	0.18147	0.05566	0.10322	0.04380
0.33740	0.06628	0.25832	0.06232	0.17946	0.05544	0.10123	0.04339
0.33537	0.06621	0.25630	0.06219	0.17744	0.05521	0.09924	0.04298
0.33334	0.06613	0.25427	0.06205	0.17542	0.05497	0.09726	0.04256
0.33131	0.06606	0.25225	0.06191	0.17341	0.05474	0.09527	0.04213
0.32928	0.06598	0.25022	0.06177	0.17139	0.05450	0.09329	0.04170
0.32725	0.06590	0.24820	0.06163	0.16937	0.05425	0.09130	0.04126
0.32523	0.06582	0.24617	0.06148	0.16736	0.05400	0.08932	0.04082
0.32320	0.06574	0.24415	0.06134	0.16534	0.05375	0.08734	0.04037
0.32117	0.06566	0.24212	0.06119	0.16333	0.05350	0.08537	0.03991
0.31914	0.06557	0.24010	0.06104	0.16132	0.05324	0.08339	0.03944
0.31711	0.06549	0.23807	0.06088	0.15930	0.05298	0.08142	0.03897
0.31508	0.06540	0.23605	0.06073	0.15729	0.05272	0.07944	0.03849
0.31306	0.06531	0.23403	0.06057	0.15528	0.05245	0.07747	0.03800

<u>x/c</u>	<u>y/c</u>
0.07550	0.03751
0.07354	0.03700
0.07157	0.03649
0.06961	0.03597
0.06765	0.03544
0.06569	0.03490
0.06374	0.03435
0.06179	0.03380
0.05984	0.03323
0.05789	0.03265
0.05595	0.03205

<u>x/c</u>	<u>y/c</u>
0.05401	0.03145
0.05208	0.03084
0.05014	0.03022
0.04822	0.02958
0.04629	0.02893
0.04437	0.02827
0.04246	0.02760
0.04055	0.02691
0.03864	0.02621
0.03674	0.02549
0.03485	0.02476

<u>x/c</u>	<u>y/c</u>
0.03297	0.02400
0.03109	0.02323
0.02922	0.02243
0.02737	0.02161
0.02552	0.02077
0.02368	0.01990
0.02186	0.01901
0.02005	0.01808
0.01826	0.01713
0.01649	0.01613
0.01475	0.01509

<u>x/c</u>	<u>y/c</u>
0.01303	0.01401
0.01134	0.01288
0.00969	0.01171
0.00806	0.01049
0.00648	0.00922
0.00496	0.00787
0.00353	0.00644
0.00220	0.00490
0.00104	0.00323
0.00018	0.00140
0.00002	0.00000

Table 19 OML lower surface airfoil coordinates, $r/R = 0.7620$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.00002	0.00000	0.07161	-0.00416	0.14652	0.00144	0.22133	0.00818
0.00012	-0.00060	0.07364	-0.00404	0.14854	0.00161	0.22335	0.00837
0.00119	-0.00230	0.07566	-0.00391	0.15056	0.00179	0.22537	0.00855
0.00287	-0.00341	0.07769	-0.00378	0.15258	0.00196	0.22739	0.00873
0.00478	-0.00410	0.07972	-0.00366	0.15461	0.00214	0.22942	0.00892
0.00676	-0.00457	0.08174	-0.00353	0.15663	0.00231	0.23144	0.00910
0.00876	-0.00490	0.08377	-0.00339	0.15865	0.00249	0.23346	0.00928
0.01077	-0.00515	0.08579	-0.00326	0.16067	0.00267	0.23548	0.00946
0.01279	-0.00536	0.08782	-0.00313	0.16270	0.00285	0.23750	0.00964
0.01482	-0.00553	0.08985	-0.00299	0.16472	0.00303	0.23953	0.00982
0.01684	-0.00566	0.09187	-0.00285	0.16674	0.00321	0.24155	0.01000
0.01887	-0.00576	0.09390	-0.00271	0.16876	0.00339	0.24357	0.01018
0.02090	-0.00583	0.09592	-0.00257	0.17078	0.00358	0.24559	0.01036
0.02293	-0.00588	0.09795	-0.00242	0.17281	0.00376	0.24761	0.01054
0.02496	-0.00590	0.09997	-0.00227	0.17483	0.00394	0.24964	0.01072
0.02699	-0.00591	0.10200	-0.00213	0.17685	0.00412	0.25166	0.01090
0.02902	-0.00591	0.10402	-0.00198	0.17887	0.00430	0.25368	0.01108
0.03105	-0.00589	0.10604	-0.00182	0.18089	0.00448	0.25570	0.01126
0.03308	-0.00586	0.10807	-0.00167	0.18292	0.00467	0.25773	0.01144
0.03511	-0.00582	0.11009	-0.00152	0.18494	0.00485	0.25975	0.01162
0.03714	-0.00577	0.11212	-0.00136	0.18696	0.00503	0.26177	0.01180
0.03917	-0.00572	0.11414	-0.00120	0.18898	0.00522	0.26379	0.01198
0.04120	-0.00565	0.11617	-0.00105	0.19100	0.00540	0.26581	0.01216
0.04323	-0.00557	0.11819	-0.00089	0.19303	0.00559	0.26784	0.01234
0.04525	-0.00549	0.12021	-0.00073	0.19505	0.00577	0.26986	0.01252
0.04728	-0.00541	0.12224	-0.00056	0.19707	0.00596	0.27188	0.01270
0.04931	-0.00533	0.12426	-0.00040	0.19909	0.00614	0.27390	0.01287
0.05134	-0.00524	0.12628	-0.00024	0.20111	0.00633	0.27593	0.01305
0.05337	-0.00515	0.12831	-0.00007	0.20313	0.00651	0.27795	0.01323
0.05539	-0.00505	0.13033	0.00009	0.20515	0.00670	0.27997	0.01340
0.05742	-0.00495	0.13235	0.00026	0.20718	0.00689	0.28199	0.01358
0.05945	-0.00485	0.13438	0.00043	0.20920	0.00707	0.28402	0.01375
0.06148	-0.00474	0.13640	0.00059	0.21122	0.00726	0.28604	0.01393
0.06350	-0.00463	0.13842	0.00076	0.21324	0.00744	0.28806	0.01410
0.06553	-0.00452	0.14045	0.00093	0.21526	0.00763	0.29008	0.01427
0.06756	-0.00440	0.14247	0.00110	0.21728	0.00781	0.29211	0.01445
0.06958	-0.00428	0.14449	0.00127	0.21931	0.00800	0.29413	0.01462

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.29615	0.01479	0.37507	0.02119	0.45404	0.02690	0.53307	0.03162
0.29818	0.01496	0.37709	0.02135	0.45606	0.02704	0.53510	0.03173
0.30020	0.01513	0.37912	0.02150	0.45809	0.02717	0.53713	0.03183
0.30222	0.01530	0.38114	0.02166	0.46012	0.02731	0.53916	0.03193
0.30424	0.01547	0.38317	0.02181	0.46214	0.02744	0.54118	0.03203
0.30627	0.01564	0.38519	0.02197	0.46417	0.02757	0.54321	0.03213
0.30829	0.01581	0.38721	0.02212	0.46619	0.02771	0.54524	0.03223
0.31031	0.01598	0.38924	0.02227	0.46822	0.02784	0.54727	0.03233
0.31234	0.01615	0.39126	0.02243	0.47024	0.02797	0.54929	0.03243
0.31436	0.01631	0.39329	0.02258	0.47227	0.02810	0.55132	0.03253
0.31638	0.01648	0.39531	0.02273	0.47430	0.02823	0.55335	0.03262
0.31841	0.01665	0.39734	0.02288	0.47632	0.02836	0.55538	0.03272
0.32043	0.01682	0.39936	0.02303	0.47835	0.02848	0.55741	0.03281
0.32245	0.01698	0.40139	0.02318	0.48038	0.02861	0.55943	0.03290
0.32448	0.01715	0.40341	0.02333	0.48240	0.02874	0.56146	0.03300
0.32650	0.01732	0.40544	0.02348	0.48443	0.02886	0.56349	0.03309
0.32852	0.01748	0.40746	0.02363	0.48645	0.02898	0.56552	0.03318
0.33055	0.01765	0.40948	0.02378	0.48848	0.02911	0.56755	0.03326
0.33257	0.01781	0.41151	0.02393	0.49051	0.02923	0.56957	0.03335
0.33459	0.01798	0.41353	0.02407	0.49253	0.02935	0.57160	0.03344
0.33662	0.01814	0.41556	0.02422	0.49456	0.02947	0.57363	0.03352
0.33864	0.01831	0.41758	0.02437	0.49659	0.02959	0.57566	0.03361
0.34066	0.01847	0.41961	0.02451	0.49861	0.02971	0.57769	0.03369
0.34269	0.01863	0.42163	0.02466	0.50064	0.02983	0.57972	0.03377
0.34471	0.01879	0.42366	0.02480	0.50267	0.02995	0.58174	0.03385
0.34673	0.01896	0.42568	0.02494	0.50469	0.03007	0.58377	0.03393
0.34876	0.01912	0.42771	0.02509	0.50672	0.03018	0.58580	0.03401
0.35078	0.01928	0.42973	0.02523	0.50875	0.03030	0.58783	0.03409
0.35281	0.01944	0.43176	0.02537	0.51077	0.03041	0.58986	0.03416
0.35483	0.01960	0.43378	0.02552	0.51280	0.03053	0.59189	0.03424
0.35685	0.01976	0.43581	0.02566	0.51483	0.03064	0.59392	0.03431
0.35888	0.01992	0.43783	0.02580	0.51685	0.03075	0.59595	0.03439
0.36090	0.02008	0.43986	0.02594	0.51888	0.03087	0.59797	0.03446
0.36293	0.02024	0.44189	0.02608	0.52091	0.03098	0.60000	0.03453
0.36495	0.02040	0.44391	0.02622	0.52294	0.03109	0.60203	0.03460
0.36697	0.02056	0.44594	0.02636	0.52496	0.03119	0.60406	0.03467
0.36900	0.02072	0.44796	0.02649	0.52699	0.03130	0.60609	0.03473
0.37102	0.02088	0.44999	0.02663	0.52902	0.03141	0.60812	0.03480
0.37305	0.02103	0.45201	0.02677	0.53105	0.03152	0.61015	0.03486

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.61218	0.03493	0.69134	0.03621	0.77049	0.03454	0.84943	0.02859
0.61421	0.03499	0.69337	0.03621	0.77252	0.03444	0.85145	0.02837
0.61624	0.03505	0.69540	0.03620	0.77455	0.03434	0.85347	0.02815
0.61827	0.03511	0.69743	0.03620	0.77658	0.03424	0.85549	0.02792
0.62030	0.03517	0.69946	0.03619	0.77860	0.03414	0.85750	0.02769
0.62232	0.03522	0.70149	0.03618	0.78063	0.03404	0.85952	0.02745
0.62435	0.03528	0.70352	0.03617	0.78266	0.03393	0.86153	0.02721
0.62638	0.03533	0.70555	0.03615	0.78469	0.03382	0.86355	0.02697
0.62841	0.03538	0.70758	0.03613	0.78671	0.03370	0.86556	0.02672
0.63044	0.03543	0.70961	0.03612	0.78874	0.03358	0.86758	0.02647
0.63247	0.03548	0.71164	0.03609	0.79077	0.03346	0.86959	0.02621
0.63450	0.03553	0.71367	0.03607	0.79279	0.03334	0.87161	0.02595
0.63653	0.03557	0.71570	0.03605	0.79482	0.03321	0.87362	0.02569
0.63856	0.03562	0.71773	0.03602	0.79684	0.03309	0.87563	0.02542
0.64059	0.03566	0.71976	0.03599	0.79887	0.03295	0.87764	0.02515
0.64262	0.03570	0.72179	0.03596	0.80090	0.03282	0.87966	0.02488
0.64465	0.03574	0.72382	0.03593	0.80292	0.03268	0.88167	0.02460
0.64668	0.03578	0.72585	0.03590	0.80495	0.03254	0.88368	0.02432
0.64871	0.03581	0.72788	0.03586	0.80697	0.03239	0.88569	0.02403
0.65074	0.03585	0.72991	0.03582	0.80900	0.03225	0.88770	0.02374
0.65277	0.03588	0.73194	0.03579	0.81102	0.03210	0.88971	0.02345
0.65480	0.03592	0.73397	0.03574	0.81304	0.03194	0.89171	0.02315
0.65683	0.03595	0.73600	0.03570	0.81507	0.03179	0.89372	0.02285
0.65886	0.03598	0.73803	0.03565	0.81709	0.03162	0.89573	0.02254
0.66089	0.03600	0.74006	0.03560	0.81912	0.03146	0.89773	0.02223
0.66292	0.03603	0.74209	0.03555	0.82114	0.03129	0.89974	0.02192
0.66495	0.03605	0.74412	0.03550	0.82316	0.03112	0.90175	0.02160
0.66698	0.03608	0.74615	0.03544	0.82519	0.03095	0.90375	0.02128
0.66901	0.03610	0.74818	0.03538	0.82721	0.03077	0.90575	0.02095
0.67104	0.03612	0.75021	0.03532	0.82923	0.03059	0.90776	0.02062
0.67307	0.03613	0.75224	0.03526	0.83125	0.03041	0.90976	0.02028
0.67510	0.03615	0.75426	0.03519	0.83327	0.03022	0.91176	0.01994
0.67713	0.03616	0.75629	0.03512	0.83529	0.03003	0.91376	0.01959
0.67916	0.03618	0.75832	0.03504	0.83732	0.02984	0.91576	0.01923
0.68119	0.03619	0.76035	0.03497	0.83934	0.02964	0.91776	0.01888
0.68322	0.03620	0.76238	0.03489	0.84136	0.02944	0.91975	0.01851
0.68525	0.03620	0.76441	0.03480	0.84338	0.02923	0.92175	0.01814
0.68728	0.03621	0.76644	0.03472	0.84539	0.02902	0.92375	0.01777
0.68931	0.03621	0.76846	0.03463	0.84741	0.02881	0.92574	0.01739

<u>x/c</u>	<u>y/c</u>
0.92773	0.01701
0.92973	0.01662
0.93172	0.01623
0.93371	0.01583
0.93570	0.01542
0.93769	0.01501
0.93967	0.01459
0.94166	0.01417
0.94364	0.01374
<u>0.94562</u>	<u>0.01330</u>

<u>x/c</u>	<u>y/c</u>
0.94760	0.01285
0.94958	0.01240
0.95156	0.01195
0.95354	0.01148
0.95551	0.01101
0.95749	0.01053
0.95946	0.01004
0.96142	0.00954
0.96339	0.00903
<u>0.96535</u>	<u>0.00852</u>

<u>x/c</u>	<u>y/c</u>
0.96731	0.00800
0.96927	0.00746
0.97123	0.00692
0.97318	0.00637
0.97513	0.00580
0.97708	0.00523
0.97902	0.00463
0.98096	0.00402
0.98289	0.00339
<u>0.98481</u>	<u>0.00275</u>

<u>x/c</u>	<u>y/c</u>
0.98673	0.00209
0.98865	0.00141
0.99055	0.00071
0.99245	-0.00002
0.99432	-0.00079
0.99617	-0.00163
0.99798	-0.00256
<u>0.99975</u>	<u>-0.00355</u>

Table 20 OML upper surface airfoil coordinates, $r/R = 0.9241$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
1.00056	0.00477	0.92966	0.02894	0.85611	0.04411	0.78173	0.05453
0.99883	0.00583	0.92769	0.02943	0.85411	0.04445	0.77972	0.05475
0.99706	0.00683	0.92572	0.02991	0.85211	0.04478	0.77770	0.05498
0.99526	0.00776	0.92375	0.03039	0.85011	0.04511	0.77568	0.05520
0.99342	0.00862	0.92177	0.03087	0.84810	0.04544	0.77366	0.05543
0.99156	0.00944	0.91980	0.03134	0.84610	0.04576	0.77165	0.05564
0.98969	0.01023	0.91782	0.03180	0.84409	0.04608	0.76963	0.05586
0.98781	0.01100	0.91584	0.03226	0.84209	0.04640	0.76761	0.05607
0.98593	0.01174	0.91386	0.03271	0.84008	0.04671	0.76559	0.05628
0.98403	0.01248	0.91188	0.03317	0.83808	0.04702	0.76357	0.05649
0.98214	0.01320	0.90990	0.03361	0.83607	0.04733	0.76155	0.05670
0.98023	0.01391	0.90792	0.03405	0.83406	0.04763	0.75953	0.05690
0.97832	0.01460	0.90594	0.03449	0.83205	0.04793	0.75751	0.05710
0.97641	0.01528	0.90396	0.03492	0.83005	0.04823	0.75549	0.05730
0.97449	0.01594	0.90197	0.03535	0.82804	0.04853	0.75347	0.05749
0.97257	0.01659	0.89999	0.03578	0.82603	0.04882	0.75145	0.05769
0.97064	0.01723	0.89800	0.03620	0.82402	0.04911	0.74943	0.05788
0.96871	0.01786	0.89601	0.03661	0.82201	0.04939	0.74741	0.05807
0.96678	0.01848	0.89403	0.03702	0.82000	0.04967	0.74538	0.05825
0.96484	0.01910	0.89204	0.03743	0.81799	0.04995	0.74336	0.05843
0.96291	0.01970	0.89005	0.03784	0.81598	0.05023	0.74134	0.05862
0.96097	0.02030	0.88806	0.03823	0.81397	0.05051	0.73932	0.05879
0.95903	0.02090	0.88607	0.03863	0.81195	0.05078	0.73730	0.05897
0.95708	0.02148	0.88407	0.03902	0.80994	0.05105	0.73527	0.05915
0.95514	0.02206	0.88208	0.03941	0.80793	0.05131	0.73325	0.05932
0.95319	0.02263	0.88009	0.03979	0.80592	0.05158	0.73123	0.05949
0.95124	0.02319	0.87809	0.04017	0.80390	0.05184	0.72920	0.05966
0.94928	0.02374	0.87610	0.04055	0.80189	0.05209	0.72718	0.05982
0.94733	0.02429	0.87410	0.04092	0.79988	0.05235	0.72516	0.05999
0.94537	0.02483	0.87211	0.04129	0.79786	0.05260	0.72313	0.06015
0.94341	0.02537	0.87011	0.04166	0.79585	0.05285	0.72111	0.06031
0.94145	0.02590	0.86811	0.04202	0.79383	0.05310	0.71909	0.06047
0.93949	0.02642	0.86611	0.04238	0.79182	0.05334	0.71706	0.06063
0.93753	0.02693	0.86412	0.04273	0.78980	0.05359	0.71504	0.06079
0.93556	0.02745	0.86212	0.04308	0.78778	0.05382	0.71301	0.06094
0.93360	0.02795	0.86012	0.04343	0.78577	0.05406	0.71099	0.06109
0.93163	0.02845	0.85812	0.04377	0.78375	0.05429	0.70897	0.06124

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.70694	0.06139	0.62790	0.06587	0.54876	0.06827	0.46959	0.06904
0.70492	0.06154	0.62587	0.06596	0.54673	0.06831	0.46756	0.06904
0.70289	0.06169	0.62384	0.06604	0.54470	0.06835	0.46553	0.06904
0.70087	0.06183	0.62181	0.06612	0.54267	0.06839	0.46350	0.06904
0.69884	0.06197	0.61978	0.06620	0.54064	0.06843	0.46147	0.06904
0.69682	0.06211	0.61776	0.06628	0.53861	0.06846	0.45944	0.06904
0.69479	0.06225	0.61573	0.06636	0.53658	0.06850	0.45741	0.06903
0.69277	0.06239	0.61370	0.06644	0.53455	0.06853	0.45538	0.06903
0.69074	0.06252	0.61167	0.06651	0.53252	0.06856	0.45335	0.06903
0.68871	0.06265	0.60964	0.06659	0.53049	0.06860	0.45132	0.06902
0.68669	0.06278	0.60761	0.06666	0.52846	0.06863	0.44929	0.06902
0.68466	0.06291	0.60558	0.06673	0.52643	0.06865	0.44726	0.06901
0.68264	0.06304	0.60355	0.06680	0.52440	0.06868	0.44523	0.06900
0.68061	0.06317	0.60153	0.06687	0.52238	0.06871	0.44320	0.06899
0.67858	0.06329	0.59950	0.06694	0.52035	0.06874	0.44117	0.06898
0.67656	0.06341	0.59747	0.06701	0.51832	0.06876	0.43914	0.06897
0.67453	0.06353	0.59544	0.06707	0.51629	0.06879	0.43711	0.06896
0.67250	0.06365	0.59341	0.06714	0.51426	0.06881	0.43508	0.06894
0.67048	0.06377	0.59138	0.06720	0.51223	0.06883	0.43305	0.06893
0.66845	0.06388	0.58935	0.06726	0.51020	0.06885	0.43102	0.06891
0.66642	0.06399	0.58732	0.06732	0.50817	0.06887	0.42899	0.06889
0.66440	0.06411	0.58529	0.06738	0.50614	0.06889	0.42696	0.06887
0.66237	0.06422	0.58326	0.06744	0.50411	0.06891	0.42493	0.06885
0.66034	0.06433	0.58123	0.06750	0.50208	0.06892	0.42290	0.06883
0.65832	0.06443	0.57921	0.06755	0.50005	0.06894	0.42087	0.06881
0.65629	0.06454	0.57718	0.06761	0.49802	0.06895	0.41884	0.06878
0.65426	0.06464	0.57515	0.06766	0.49599	0.06896	0.41681	0.06876
0.65223	0.06475	0.57312	0.06772	0.49396	0.06898	0.41478	0.06873
0.65021	0.06485	0.57109	0.06777	0.49193	0.06899	0.41275	0.06870
0.64818	0.06495	0.56906	0.06782	0.48989	0.06900	0.41072	0.06868
0.64615	0.06505	0.56703	0.06787	0.48786	0.06900	0.40869	0.06864
0.64412	0.06514	0.56500	0.06792	0.48583	0.06901	0.40666	0.06861
0.64209	0.06524	0.56297	0.06797	0.48380	0.06902	0.40463	0.06858
0.64007	0.06533	0.56094	0.06801	0.48177	0.06902	0.40260	0.06855
0.63804	0.06543	0.55891	0.06806	0.47974	0.06903	0.40057	0.06851
0.63601	0.06552	0.55688	0.06810	0.47771	0.06903	0.39854	0.06847
0.63398	0.06561	0.55485	0.06815	0.47568	0.06904	0.39651	0.06844
0.63195	0.06570	0.55282	0.06819	0.47365	0.06904	0.39448	0.06840
0.62993	0.06579	0.55079	0.06823	0.47162	0.06904	0.39246	0.06836

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.39043	0.06832	0.31130	0.06575	0.23228	0.06086	0.15355	0.05252
0.38840	0.06828	0.30927	0.06565	0.23025	0.06069	0.15154	0.05224
0.38637	0.06823	0.30724	0.06556	0.22823	0.06053	0.14953	0.05196
0.38434	0.06819	0.30521	0.06546	0.22621	0.06036	0.14752	0.05167
0.38231	0.06814	0.30318	0.06536	0.22418	0.06019	0.14551	0.05138
0.38028	0.06810	0.30116	0.06527	0.22216	0.06002	0.14351	0.05109
0.37825	0.06805	0.29913	0.06516	0.22014	0.05985	0.14150	0.05079
0.37622	0.06800	0.29710	0.06506	0.21812	0.05967	0.13949	0.05048
0.37419	0.06795	0.29507	0.06496	0.21609	0.05949	0.13749	0.05017
0.37216	0.06790	0.29305	0.06485	0.21407	0.05931	0.13548	0.04986
0.37013	0.06784	0.29102	0.06475	0.21205	0.05913	0.13348	0.04954
0.36810	0.06779	0.28899	0.06464	0.21003	0.05894	0.13147	0.04921
0.36607	0.06774	0.28697	0.06453	0.20801	0.05875	0.12947	0.04888
0.36404	0.06768	0.28494	0.06442	0.20599	0.05856	0.12747	0.04855
0.36201	0.06762	0.28291	0.06430	0.20397	0.05837	0.12546	0.04821
0.35998	0.06756	0.28088	0.06419	0.20195	0.05817	0.12346	0.04786
0.35795	0.06750	0.27886	0.06407	0.19993	0.05797	0.12146	0.04751
0.35593	0.06744	0.27683	0.06395	0.19791	0.05777	0.11947	0.04716
0.35390	0.06738	0.27480	0.06383	0.19589	0.05756	0.11747	0.04679
0.35187	0.06732	0.27278	0.06371	0.19387	0.05736	0.11547	0.04643
0.34984	0.06725	0.27075	0.06358	0.19185	0.05715	0.11348	0.04605
0.34781	0.06718	0.26873	0.06346	0.18983	0.05693	0.11148	0.04568
0.34578	0.06712	0.26670	0.06333	0.18781	0.05672	0.10949	0.04529
0.34375	0.06705	0.26467	0.06320	0.18579	0.05650	0.10750	0.04490
0.34172	0.06698	0.26265	0.06307	0.18377	0.05627	0.10550	0.04450
0.33969	0.06691	0.26062	0.06293	0.18176	0.05605	0.10352	0.04410
0.33766	0.06683	0.25860	0.06280	0.17974	0.05582	0.10153	0.04369
0.33564	0.06676	0.25657	0.06266	0.17772	0.05558	0.09954	0.04328
0.33361	0.06668	0.25455	0.06252	0.17571	0.05535	0.09755	0.04286
0.33158	0.06660	0.25252	0.06238	0.17369	0.05511	0.09557	0.04243
0.32955	0.06652	0.25050	0.06223	0.17167	0.05486	0.09359	0.04200
0.32752	0.06644	0.24847	0.06209	0.16966	0.05462	0.09160	0.04156
0.32549	0.06636	0.24645	0.06194	0.16765	0.05437	0.08962	0.04111
0.32346	0.06628	0.24442	0.06179	0.16563	0.05411	0.08764	0.04066
0.32144	0.06619	0.24240	0.06164	0.16362	0.05386	0.08567	0.04020
0.31941	0.06611	0.24037	0.06149	0.16160	0.05360	0.08369	0.03974
0.31738	0.06602	0.23835	0.06133	0.15959	0.05333	0.08172	0.03926
0.31535	0.06593	0.23633	0.06118	0.15758	0.05307	0.07974	0.03878
0.31332	0.06584	0.23430	0.06102	0.15557	0.05280	0.07777	0.03830

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.07580	0.03780	0.05431	0.03175	0.03326	0.02431	0.01331	0.01435
0.07384	0.03730	0.05238	0.03114	0.03139	0.02354	0.01162	0.01323
0.07187	0.03678	0.05044	0.03051	0.02952	0.02274	0.00995	0.01207
0.06991	0.03626	0.04852	0.02988	0.02766	0.02193	0.00832	0.01086
0.06795	0.03573	0.04659	0.02923	0.02581	0.02109	0.00673	0.00960
0.06599	0.03519	0.04467	0.02857	0.02397	0.02022	0.00520	0.00827
0.06404	0.03464	0.04276	0.02790	0.02215	0.01933	0.00375	0.00685
0.06209	0.03408	0.04084	0.02721	0.02034	0.01841	0.00241	0.00533
0.06014	0.03352	0.03894	0.02651	0.01855	0.01746	0.00121	0.00369
0.05819	0.03294	0.03704	0.02580	0.01678	0.01646	0.00027	0.00189
0.05625	0.03235	0.03515	0.02506	0.01503	0.01543	0.00003	0.00000

Table 21 OML lower surface airfoil coordinates, $r/R = 0.9241$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.00003	0.00000	0.07130	-0.00406	0.14622	0.00142	0.22104	0.00802
0.00005	-0.00010	0.07333	-0.00394	0.14824	0.00159	0.22306	0.00820
0.00098	-0.00188	0.07536	-0.00381	0.15026	0.00176	0.22508	0.00838
0.00260	-0.00308	0.07738	-0.00369	0.15229	0.00193	0.22711	0.00856
0.00449	-0.00381	0.07941	-0.00357	0.15431	0.00210	0.22913	0.00873
0.00646	-0.00430	0.08144	-0.00344	0.15633	0.00227	0.23115	0.00891
0.00846	-0.00465	0.08346	-0.00331	0.15835	0.00244	0.23317	0.00909
0.01047	-0.00493	0.08549	-0.00318	0.16038	0.00262	0.23519	0.00927
0.01249	-0.00515	0.08751	-0.00305	0.16240	0.00280	0.23722	0.00945
0.01451	-0.00532	0.08954	-0.00291	0.16442	0.00297	0.23924	0.00962
0.01654	-0.00546	0.09157	-0.00278	0.16644	0.00315	0.24126	0.00980
0.01856	-0.00557	0.09359	-0.00264	0.16847	0.00333	0.24328	0.00998
0.02059	-0.00565	0.09562	-0.00250	0.17049	0.00350	0.24531	0.01015
0.02262	-0.00570	0.09764	-0.00236	0.17251	0.00368	0.24733	0.01033
0.02465	-0.00573	0.09967	-0.00222	0.17453	0.00386	0.24935	0.01051
0.02668	-0.00574	0.10169	-0.00207	0.17655	0.00404	0.25137	0.01068
0.02871	-0.00574	0.10372	-0.00193	0.17858	0.00421	0.25340	0.01086
0.03074	-0.00573	0.10574	-0.00178	0.18060	0.00439	0.25542	0.01104
0.03277	-0.00570	0.10776	-0.00163	0.18262	0.00457	0.25744	0.01121
0.03480	-0.00567	0.10979	-0.00148	0.18464	0.00475	0.25946	0.01139
0.03683	-0.00563	0.11181	-0.00132	0.18667	0.00493	0.26149	0.01157
0.03886	-0.00557	0.11384	-0.00117	0.18869	0.00511	0.26351	0.01174
0.04089	-0.00551	0.11586	-0.00102	0.19071	0.00529	0.26553	0.01192
0.04292	-0.00544	0.11789	-0.00086	0.19273	0.00547	0.26755	0.01209
0.04495	-0.00536	0.11991	-0.00070	0.19475	0.00565	0.26958	0.01227
0.04697	-0.00528	0.12193	-0.00054	0.19678	0.00583	0.27160	0.01244
0.04900	-0.00520	0.12396	-0.00039	0.19880	0.00602	0.27362	0.01262
0.05103	-0.00511	0.12598	-0.00023	0.20082	0.00620	0.27564	0.01279
0.05306	-0.00502	0.12801	-0.00006	0.20284	0.00638	0.27767	0.01296
0.05509	-0.00493	0.13003	0.00010	0.20486	0.00656	0.27969	0.01314
0.05711	-0.00483	0.13205	0.00026	0.20689	0.00675	0.28171	0.01331
0.05914	-0.00473	0.13408	0.00042	0.20891	0.00693	0.28373	0.01348
0.06117	-0.00462	0.13610	0.00059	0.21093	0.00711	0.28576	0.01365
0.06320	-0.00452	0.13812	0.00075	0.21295	0.00729	0.28778	0.01382
0.06522	-0.00441	0.14015	0.00092	0.21497	0.00748	0.28980	0.01399
0.06725	-0.00429	0.14217	0.00108	0.21699	0.00766	0.29183	0.01416
0.06928	-0.00418	0.14419	0.00125	0.21902	0.00784	0.29385	0.01433

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.29587	0.01450	0.37480	0.02077	0.45377	0.02637	0.53281	0.03098
0.29789	0.01467	0.37682	0.02093	0.45580	0.02650	0.53484	0.03108
0.29992	0.01483	0.37884	0.02108	0.45782	0.02663	0.53686	0.03118
0.30194	0.01500	0.38087	0.02123	0.45985	0.02677	0.53889	0.03128
0.30396	0.01517	0.38289	0.02138	0.46187	0.02690	0.54092	0.03138
0.30599	0.01533	0.38492	0.02154	0.46390	0.02703	0.54295	0.03148
0.30801	0.01550	0.38694	0.02169	0.46593	0.02716	0.54498	0.03158
0.31003	0.01566	0.38897	0.02184	0.46795	0.02728	0.54700	0.03167
0.31206	0.01583	0.39099	0.02199	0.46998	0.02741	0.54903	0.03177
0.31408	0.01599	0.39302	0.02214	0.47200	0.02754	0.55106	0.03186
0.31610	0.01616	0.39504	0.02228	0.47403	0.02766	0.55309	0.03195
0.31813	0.01632	0.39707	0.02243	0.47606	0.02779	0.55512	0.03205
0.32015	0.01649	0.39909	0.02258	0.47808	0.02791	0.55714	0.03214
0.32218	0.01665	0.40111	0.02273	0.48011	0.02804	0.55917	0.03223
0.32420	0.01681	0.40314	0.02287	0.48214	0.02816	0.56120	0.03232
0.32622	0.01698	0.40516	0.02302	0.48416	0.02828	0.56323	0.03240
0.32825	0.01714	0.40719	0.02317	0.48619	0.02841	0.56526	0.03249
0.33027	0.01730	0.40921	0.02331	0.48822	0.02853	0.56728	0.03257
0.33229	0.01746	0.41124	0.02346	0.49024	0.02865	0.56931	0.03266
0.33432	0.01762	0.41326	0.02360	0.49227	0.02877	0.57134	0.03274
0.33634	0.01779	0.41529	0.02374	0.49429	0.02888	0.57337	0.03282
0.33836	0.01795	0.41731	0.02389	0.49632	0.02900	0.57540	0.03291
0.34039	0.01811	0.41934	0.02403	0.49835	0.02912	0.57743	0.03299
0.34241	0.01827	0.42136	0.02417	0.50038	0.02923	0.57945	0.03306
0.34444	0.01843	0.42339	0.02431	0.50240	0.02935	0.58148	0.03314
0.34646	0.01859	0.42541	0.02445	0.50443	0.02946	0.58351	0.03322
0.34848	0.01874	0.42744	0.02459	0.50646	0.02958	0.58554	0.03330
0.35051	0.01890	0.42947	0.02473	0.50848	0.02969	0.58757	0.03337
0.35253	0.01906	0.43149	0.02487	0.51051	0.02980	0.58960	0.03344
0.35455	0.01922	0.43352	0.02501	0.51254	0.02991	0.59163	0.03352
0.35658	0.01938	0.43554	0.02515	0.51456	0.03002	0.59366	0.03359
0.35860	0.01953	0.43757	0.02529	0.51659	0.03013	0.59568	0.03366
0.36063	0.01969	0.43959	0.02542	0.51862	0.03024	0.59771	0.03373
0.36265	0.01985	0.44162	0.02556	0.52065	0.03035	0.59974	0.03379
0.36467	0.02000	0.44364	0.02570	0.52267	0.03046	0.60177	0.03386
0.36670	0.02016	0.44567	0.02583	0.52470	0.03056	0.60380	0.03393
0.36872	0.02031	0.44769	0.02597	0.52673	0.03067	0.60583	0.03399
0.37075	0.02047	0.44972	0.02610	0.52875	0.03077	0.60786	0.03405
0.37277	0.02062	0.45175	0.02624	0.53078	0.03088	0.60989	0.03412

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.61192	0.03418	0.69108	0.03535	0.77023	0.03357	0.84916	0.02752
0.61395	0.03424	0.69311	0.03535	0.77225	0.03347	0.85117	0.02730
0.61598	0.03429	0.69514	0.03534	0.77428	0.03337	0.85319	0.02707
0.61800	0.03435	0.69717	0.03533	0.77631	0.03327	0.85521	0.02684
0.62003	0.03440	0.69920	0.03532	0.77834	0.03316	0.85722	0.02661
0.62206	0.03446	0.70123	0.03530	0.78036	0.03306	0.85924	0.02637
0.62409	0.03451	0.70326	0.03529	0.78239	0.03294	0.86126	0.02613
0.62612	0.03456	0.70529	0.03527	0.78442	0.03283	0.86327	0.02588
0.62815	0.03461	0.70732	0.03525	0.78644	0.03271	0.86529	0.02563
0.63018	0.03466	0.70935	0.03523	0.78847	0.03259	0.86730	0.02538
0.63221	0.03470	0.71138	0.03521	0.79050	0.03247	0.86931	0.02512
0.63424	0.03475	0.71341	0.03518	0.79252	0.03234	0.87133	0.02486
0.63627	0.03479	0.71544	0.03516	0.79455	0.03221	0.87334	0.02459
0.63830	0.03483	0.71747	0.03513	0.79657	0.03208	0.87535	0.02432
0.64033	0.03487	0.71950	0.03510	0.79860	0.03195	0.87736	0.02405
0.64236	0.03491	0.72153	0.03506	0.80063	0.03181	0.87937	0.02377
0.64439	0.03495	0.72356	0.03503	0.80265	0.03167	0.88138	0.02349
0.64642	0.03498	0.72559	0.03499	0.80468	0.03153	0.88339	0.02321
0.64845	0.03501	0.72762	0.03495	0.80670	0.03138	0.88540	0.02292
0.65048	0.03505	0.72965	0.03491	0.80872	0.03123	0.88741	0.02262
0.65251	0.03508	0.73168	0.03487	0.81075	0.03107	0.88942	0.02233
0.65454	0.03511	0.73371	0.03483	0.81277	0.03092	0.89143	0.02203
0.65657	0.03513	0.73574	0.03478	0.81480	0.03076	0.89344	0.02172
0.65860	0.03516	0.73777	0.03473	0.81682	0.03060	0.89544	0.02142
0.66063	0.03519	0.73980	0.03468	0.81884	0.03043	0.89745	0.02111
0.66266	0.03521	0.74182	0.03462	0.82087	0.03026	0.89945	0.02079
0.66469	0.03523	0.74385	0.03457	0.82289	0.03009	0.90146	0.02047
0.66672	0.03525	0.74588	0.03451	0.82491	0.02991	0.90346	0.02014
0.66875	0.03527	0.74791	0.03445	0.82693	0.02973	0.90547	0.01982
0.67078	0.03529	0.74994	0.03438	0.82896	0.02955	0.90747	0.01948
0.67281	0.03530	0.75197	0.03431	0.83098	0.02936	0.90947	0.01914
0.67484	0.03531	0.75400	0.03424	0.83300	0.02917	0.91147	0.01880
0.67687	0.03533	0.75603	0.03417	0.83502	0.02898	0.91347	0.01845
0.67890	0.03534	0.75806	0.03409	0.83704	0.02878	0.91547	0.01809
0.68093	0.03534	0.76008	0.03401	0.83906	0.02858	0.91747	0.01773
0.68296	0.03535	0.76211	0.03393	0.84108	0.02838	0.91946	0.01737
0.68499	0.03535	0.76414	0.03384	0.84310	0.02817	0.92146	0.01699
0.68702	0.03535	0.76617	0.03376	0.84512	0.02796	0.92345	0.01662
0.68905	0.03535	0.76820	0.03366	0.84714	0.02774	0.92545	0.01624

<u>x/c</u>	<u>y/c</u>
0.92744	0.01585
0.92943	0.01546
0.93142	0.01506
0.93341	0.01466
0.93540	0.01425
0.93739	0.01384
0.93938	0.01342
0.94136	0.01299
0.94335	0.01256
<u>0.94533</u>	<u>0.01212</u>

<u>x/c</u>	<u>y/c</u>
0.94731	0.01168
0.94929	0.01123
0.95126	0.01077
0.95324	0.01030
0.95521	0.00982
0.95719	0.00934
0.95916	0.00885
0.96112	0.00835
0.96309	0.00784
<u>0.96505</u>	<u>0.00733</u>

<u>x/c</u>	<u>y/c</u>
0.96701	0.00680
0.96897	0.00627
0.97093	0.00572
0.97288	0.00517
0.97483	0.00460
0.97678	0.00402
0.97872	0.00343
0.98065	0.00281
0.98258	0.00218
<u>0.98451</u>	<u>0.00154</u>

<u>x/c</u>	<u>y/c</u>
0.98643	0.00088
0.98834	0.00020
0.99024	-0.00050
0.99214	-0.00123
0.99401	-0.00201
0.99586	-0.00285
0.99766	-0.00378
<u>0.99944</u>	<u>-0.00477</u>

Table 22 OML upper surface airfoil coordinates, $r/R = 0.9912$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
1.00172	0.01198	0.93064	0.03564	0.85698	0.05026	0.78252	0.06012
0.99997	0.01301	0.92867	0.03612	0.85498	0.05058	0.78050	0.06033
0.99819	0.01399	0.92669	0.03659	0.85297	0.05090	0.77848	0.06054
0.99638	0.01491	0.92472	0.03705	0.85096	0.05122	0.77647	0.06075
0.99455	0.01579	0.92274	0.03751	0.84896	0.05153	0.77445	0.06096
0.99269	0.01661	0.92076	0.03796	0.84695	0.05184	0.77243	0.06116
0.99082	0.01738	0.91878	0.03841	0.84494	0.05214	0.77040	0.06136
0.98893	0.01813	0.91680	0.03886	0.84294	0.05244	0.76838	0.06156
0.98703	0.01886	0.91482	0.03930	0.84093	0.05274	0.76636	0.06175
0.98513	0.01957	0.91283	0.03973	0.83892	0.05303	0.76434	0.06194
0.98323	0.02027	0.91085	0.04016	0.83691	0.05333	0.76232	0.06213
0.98132	0.02096	0.90886	0.04059	0.83490	0.05361	0.76030	0.06232
0.97940	0.02164	0.90688	0.04101	0.83289	0.05390	0.75828	0.06250
0.97749	0.02231	0.90489	0.04143	0.83088	0.05418	0.75626	0.06269
0.97557	0.02296	0.90290	0.04184	0.82887	0.05446	0.75423	0.06287
0.97364	0.02361	0.90092	0.04225	0.82686	0.05474	0.75221	0.06305
0.97171	0.02424	0.89893	0.04265	0.82485	0.05501	0.75019	0.06322
0.96978	0.02486	0.89694	0.04306	0.82284	0.05528	0.74817	0.06340
0.96784	0.02547	0.89494	0.04345	0.82082	0.05555	0.74614	0.06357
0.96590	0.02607	0.89295	0.04385	0.81881	0.05581	0.74412	0.06374
0.96396	0.02666	0.89096	0.04423	0.81680	0.05608	0.74210	0.06390
0.96201	0.02724	0.88897	0.04462	0.81478	0.05634	0.74007	0.06407
0.96007	0.02781	0.88697	0.04500	0.81277	0.05659	0.73805	0.06423
0.95812	0.02838	0.88498	0.04538	0.81076	0.05685	0.73603	0.06439
0.95617	0.02894	0.88298	0.04575	0.80874	0.05710	0.73400	0.06455
0.95421	0.02949	0.88099	0.04612	0.80673	0.05735	0.73198	0.06471
0.95226	0.03004	0.87899	0.04649	0.80471	0.05759	0.72995	0.06486
0.95030	0.03058	0.87699	0.04685	0.80270	0.05784	0.72793	0.06502
0.94834	0.03111	0.87499	0.04721	0.80068	0.05808	0.72591	0.06517
0.94638	0.03164	0.87299	0.04756	0.79866	0.05832	0.72388	0.06532
0.94442	0.03216	0.87099	0.04791	0.79665	0.05855	0.72186	0.06546
0.94246	0.03268	0.86899	0.04826	0.79463	0.05878	0.71983	0.06561
0.94049	0.03319	0.86699	0.04860	0.79261	0.05901	0.71781	0.06575
0.93852	0.03369	0.86499	0.04894	0.79060	0.05924	0.71578	0.06589
0.93655	0.03419	0.86299	0.04927	0.78858	0.05947	0.71376	0.06603
0.93459	0.03468	0.86099	0.04961	0.78656	0.05969	0.71173	0.06617
0.93261	0.03516	0.85898	0.04994	0.78454	0.05991	0.70970	0.06630

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.70768	0.06644	0.62860	0.07033	0.54945	0.07216	0.47027	0.07237
0.70565	0.06657	0.62657	0.07040	0.54742	0.07218	0.46824	0.07236
0.70363	0.06670	0.62454	0.07047	0.54539	0.07221	0.46621	0.07234
0.70160	0.06683	0.62251	0.07053	0.54336	0.07223	0.46418	0.07233
0.69957	0.06695	0.62048	0.07060	0.54133	0.07225	0.46215	0.07231
0.69755	0.06708	0.61846	0.07067	0.53930	0.07227	0.46012	0.07229
0.69552	0.06720	0.61643	0.07073	0.53727	0.07229	0.45809	0.07227
0.69349	0.06732	0.61440	0.07079	0.53524	0.07231	0.45606	0.07226
0.69147	0.06744	0.61237	0.07085	0.53321	0.07232	0.45403	0.07223
0.68944	0.06755	0.61034	0.07091	0.53118	0.07234	0.45200	0.07221
0.68741	0.06767	0.60831	0.07097	0.52915	0.07235	0.44997	0.07219
0.68539	0.06778	0.60628	0.07103	0.52712	0.07237	0.44794	0.07217
0.68336	0.06790	0.60425	0.07108	0.52509	0.07238	0.44591	0.07214
0.68133	0.06801	0.60222	0.07114	0.52306	0.07239	0.44388	0.07212
0.67931	0.06812	0.60019	0.07119	0.52103	0.07240	0.44185	0.07209
0.67728	0.06822	0.59816	0.07124	0.51900	0.07241	0.43982	0.07206
0.67525	0.06833	0.59613	0.07130	0.51697	0.07242	0.43779	0.07203
0.67322	0.06843	0.59410	0.07135	0.51494	0.07243	0.43576	0.07200
0.67120	0.06853	0.59207	0.07139	0.51291	0.07244	0.43373	0.07197
0.66917	0.06863	0.59004	0.07144	0.51088	0.07245	0.43170	0.07194
0.66714	0.06873	0.58801	0.07149	0.50885	0.07245	0.42967	0.07191
0.66511	0.06883	0.58599	0.07153	0.50682	0.07246	0.42764	0.07187
0.66308	0.06893	0.58396	0.07158	0.50479	0.07246	0.42561	0.07184
0.66106	0.06902	0.58193	0.07162	0.50276	0.07246	0.42358	0.07180
0.65903	0.06911	0.57990	0.07166	0.50073	0.07246	0.42155	0.07176
0.65700	0.06920	0.57787	0.07170	0.49870	0.07246	0.41952	0.07172
0.65497	0.06929	0.57584	0.07174	0.49666	0.07246	0.41749	0.07168
0.65294	0.06938	0.57381	0.07178	0.49463	0.07246	0.41546	0.07164
0.65092	0.06947	0.57178	0.07182	0.49260	0.07246	0.41343	0.07160
0.64889	0.06955	0.56975	0.07186	0.49057	0.07246	0.41140	0.07156
0.64686	0.06964	0.56772	0.07189	0.48854	0.07245	0.40938	0.07152
0.64483	0.06972	0.56569	0.07192	0.48651	0.07245	0.40735	0.07147
0.64280	0.06980	0.56366	0.07196	0.48448	0.07244	0.40532	0.07142
0.64077	0.06988	0.56163	0.07199	0.48245	0.07243	0.40329	0.07138
0.63874	0.06996	0.55960	0.07202	0.48042	0.07243	0.40126	0.07133
0.63672	0.07003	0.55757	0.07205	0.47839	0.07242	0.39923	0.07128
0.63469	0.07011	0.55554	0.07208	0.47636	0.07241	0.39720	0.07123
0.63266	0.07018	0.55351	0.07211	0.47433	0.07240	0.39517	0.07118
0.63063	0.07026	0.55148	0.07213	0.47230	0.07238	0.39314	0.07112

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.39111	0.07107	0.31200	0.06794	0.23301	0.06251	0.15434	0.05367
0.38908	0.07101	0.30997	0.06783	0.23099	0.06233	0.15233	0.05337
0.38705	0.07095	0.30794	0.06772	0.22897	0.06215	0.15032	0.05308
0.38502	0.07090	0.30592	0.06761	0.22694	0.06197	0.14832	0.05278
0.38299	0.07084	0.30389	0.06750	0.22492	0.06179	0.14631	0.05247
0.38096	0.07078	0.30186	0.06739	0.22290	0.06160	0.14430	0.05217
0.37893	0.07071	0.29983	0.06727	0.22088	0.06142	0.14230	0.05185
0.37690	0.07065	0.29781	0.06716	0.21886	0.06123	0.14029	0.05154
0.37488	0.07059	0.29578	0.06704	0.21684	0.06104	0.13829	0.05121
0.37285	0.07052	0.29375	0.06692	0.21482	0.06084	0.13628	0.05089
0.37082	0.07045	0.29173	0.06680	0.21280	0.06064	0.13428	0.05056
0.36879	0.07039	0.28970	0.06668	0.21078	0.06044	0.13228	0.05022
0.36676	0.07032	0.28767	0.06655	0.20876	0.06024	0.13028	0.04988
0.36473	0.07025	0.28565	0.06643	0.20674	0.06004	0.12828	0.04953
0.36270	0.07017	0.28362	0.06630	0.20472	0.05983	0.12628	0.04918
0.36067	0.07010	0.28160	0.06617	0.20270	0.05962	0.12428	0.04883
0.35864	0.07003	0.27957	0.06604	0.20068	0.05941	0.12228	0.04846
0.35661	0.06995	0.27754	0.06591	0.19866	0.05919	0.12028	0.04810
0.35459	0.06987	0.27552	0.06577	0.19664	0.05897	0.11829	0.04772
0.35256	0.06979	0.27349	0.06563	0.19462	0.05875	0.11629	0.04735
0.35053	0.06971	0.27147	0.06550	0.19261	0.05853	0.11430	0.04696
0.34850	0.06963	0.26944	0.06535	0.19059	0.05830	0.11231	0.04657
0.34647	0.06955	0.26742	0.06521	0.18857	0.05807	0.11032	0.04618
0.34444	0.06947	0.26539	0.06507	0.18655	0.05784	0.10833	0.04577
0.34242	0.06938	0.26337	0.06492	0.18454	0.05760	0.10634	0.04537
0.34039	0.06929	0.26134	0.06477	0.18252	0.05736	0.10435	0.04495
0.33836	0.06921	0.25932	0.06462	0.18051	0.05712	0.10236	0.04453
0.33633	0.06912	0.25729	0.06447	0.17849	0.05687	0.10038	0.04411
0.33430	0.06903	0.25527	0.06432	0.17648	0.05663	0.09839	0.04368
0.33227	0.06893	0.25325	0.06416	0.17446	0.05638	0.09641	0.04324
0.33025	0.06884	0.25122	0.06401	0.17245	0.05612	0.09443	0.04280
0.32822	0.06875	0.24920	0.06385	0.17043	0.05586	0.09245	0.04235
0.32619	0.06865	0.24717	0.06369	0.16842	0.05560	0.09047	0.04189
0.32416	0.06855	0.24515	0.06352	0.16641	0.05534	0.08850	0.04143
0.32213	0.06845	0.24313	0.06336	0.16440	0.05507	0.08652	0.04096
0.32011	0.06835	0.24110	0.06319	0.16238	0.05479	0.08455	0.04049
0.31808	0.06825	0.23908	0.06302	0.16037	0.05452	0.08257	0.04000
0.31605	0.06815	0.23706	0.06285	0.15836	0.05424	0.08060	0.03951
0.31402	0.06805	0.23503	0.06268	0.15635	0.05395	0.07864	0.03902

<u>x/c</u>	<u>y/c</u>
0.07667	0.03851
0.07471	0.03800
0.07274	0.03748
0.07078	0.03695
0.06883	0.03641
0.06687	0.03586
0.06492	0.03530
0.06297	0.03474
0.06102	0.03416
0.05908	0.03357
0.05714	0.03298
<u>0.05520</u>	<u>0.03237</u>

<u>x/c</u>	<u>y/c</u>
0.05327	0.03175
0.05134	0.03113
0.04941	0.03049
0.04749	0.02983
0.04557	0.02917
0.04366	0.02849
0.04175	0.02780
0.03984	0.02709
0.03795	0.02637
0.03605	0.02564
0.03417	0.02488
<u>0.03229</u>	<u>0.02411</u>

<u>x/c</u>	<u>y/c</u>
0.03042	0.02332
0.02856	0.02250
0.02671	0.02167
0.02488	0.02080
0.02305	0.01992
0.02124	0.01900
0.01944	0.01805
0.01766	0.01707
0.01591	0.01605
0.01418	0.01499
0.01247	0.01389
<u>0.01080</u>	<u>0.01274</u>

<u>x/c</u>	<u>y/c</u>
0.00916	0.01155
0.00756	0.01030
0.00600	0.00899
0.00451	0.00762
0.00308	0.00618
0.00178	0.00462
0.00071	0.00289
0.00003	0.00099
<u>0.00004</u>	<u>0.00000</u>

Table 23 OML lower surface airfoil coordinates, $r/R = 0.9912$

x/c	y/c	x/c	y/c	x/c	y/c	x/c	y/c
0.00004	0.00000	0.07220	-0.00453	0.14715	0.00045	0.22202	0.00653
0.00035	-0.00099	0.07423	-0.00442	0.14918	0.00060	0.22404	0.00670
0.00164	-0.00253	0.07626	-0.00431	0.15120	0.00076	0.22607	0.00686
0.00342	-0.00350	0.07828	-0.00420	0.15322	0.00092	0.22809	0.00702
0.00536	-0.00410	0.08031	-0.00409	0.15525	0.00108	0.23011	0.00719
0.00734	-0.00453	0.08234	-0.00398	0.15727	0.00123	0.23214	0.00735
0.00934	-0.00486	0.08437	-0.00386	0.15930	0.00139	0.23416	0.00752
0.01136	-0.00512	0.08639	-0.00374	0.16132	0.00155	0.23618	0.00768
0.01337	-0.00534	0.08842	-0.00363	0.16334	0.00171	0.23821	0.00784
0.01540	-0.00551	0.09045	-0.00351	0.16537	0.00188	0.24023	0.00801
0.01742	-0.00565	0.09247	-0.00338	0.16739	0.00204	0.24226	0.00817
0.01945	-0.00576	0.09450	-0.00326	0.16941	0.00220	0.24428	0.00833
0.02148	-0.00584	0.09652	-0.00313	0.17144	0.00236	0.24630	0.00850
0.02351	-0.00590	0.09855	-0.00300	0.17346	0.00253	0.24833	0.00866
0.02554	-0.00593	0.10058	-0.00287	0.17548	0.00269	0.25035	0.00882
0.02757	-0.00595	0.10260	-0.00274	0.17751	0.00286	0.25237	0.00899
0.02960	-0.00596	0.10463	-0.00261	0.17953	0.00302	0.25440	0.00915
0.03163	-0.00596	0.10665	-0.00248	0.18156	0.00319	0.25642	0.00931
0.03366	-0.00594	0.10868	-0.00234	0.18358	0.00335	0.25844	0.00947
0.03569	-0.00592	0.11070	-0.00220	0.18560	0.00352	0.26047	0.00964
0.03772	-0.00588	0.11273	-0.00206	0.18763	0.00369	0.26249	0.00980
0.03975	-0.00584	0.11476	-0.00192	0.18965	0.00385	0.26452	0.00996
0.04178	-0.00578	0.11678	-0.00178	0.19167	0.00402	0.26654	0.01012
0.04381	-0.00573	0.11881	-0.00164	0.19369	0.00419	0.26856	0.01028
0.04584	-0.00566	0.12083	-0.00149	0.19572	0.00436	0.27059	0.01044
0.04786	-0.00560	0.12286	-0.00135	0.19774	0.00452	0.27261	0.01060
0.04989	-0.00553	0.12488	-0.00120	0.19976	0.00469	0.27463	0.01076
0.05192	-0.00545	0.12691	-0.00106	0.20179	0.00486	0.27666	0.01092
0.05395	-0.00537	0.12893	-0.00091	0.20381	0.00503	0.27868	0.01108
0.05598	-0.00529	0.13096	-0.00076	0.20583	0.00519	0.28071	0.01124
0.05801	-0.00521	0.13298	-0.00062	0.20786	0.00536	0.28273	0.01139
0.06004	-0.00512	0.13500	-0.00047	0.20988	0.00553	0.28475	0.01155
0.06206	-0.00503	0.13703	-0.00032	0.21190	0.00570	0.28678	0.01171
0.06409	-0.00493	0.13905	-0.00016	0.21393	0.00586	0.28880	0.01186
0.06612	-0.00484	0.14108	-0.00001	0.21595	0.00603	0.29083	0.01202
0.06815	-0.00473	0.14310	0.00014	0.21797	0.00620	0.29285	0.01217
0.07018	-0.00463	0.14513	0.00029	0.22000	0.00636	0.29488	0.01233

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.29690	0.01248	0.37587	0.01820	0.45489	0.02322	0.53396	0.02725
0.29892	0.01264	0.37789	0.01834	0.45691	0.02334	0.53599	0.02733
0.30095	0.01279	0.37992	0.01847	0.45894	0.02345	0.53801	0.02742
0.30297	0.01294	0.38195	0.01861	0.46097	0.02357	0.54004	0.02750
0.30500	0.01309	0.38397	0.01875	0.46299	0.02369	0.54207	0.02759
0.30702	0.01325	0.38600	0.01888	0.46502	0.02380	0.54410	0.02767
0.30905	0.01340	0.38802	0.01902	0.46705	0.02392	0.54613	0.02775
0.31107	0.01355	0.39005	0.01916	0.46907	0.02403	0.54816	0.02783
0.31310	0.01370	0.39207	0.01929	0.47110	0.02414	0.55019	0.02791
0.31512	0.01385	0.39410	0.01943	0.47313	0.02425	0.55221	0.02799
0.31714	0.01400	0.39612	0.01956	0.47515	0.02437	0.55424	0.02807
0.31917	0.01415	0.39815	0.01969	0.47718	0.02448	0.55627	0.02814
0.32119	0.01430	0.40018	0.01983	0.47921	0.02459	0.55830	0.02822
0.32322	0.01445	0.40220	0.01996	0.48124	0.02470	0.56033	0.02829
0.32524	0.01460	0.40423	0.02009	0.48326	0.02480	0.56236	0.02837
0.32727	0.01475	0.40625	0.02022	0.48529	0.02491	0.56439	0.02844
0.32929	0.01489	0.40828	0.02036	0.48732	0.02502	0.56642	0.02851
0.33132	0.01504	0.41031	0.02049	0.48935	0.02512	0.56844	0.02858
0.33334	0.01519	0.41233	0.02062	0.49137	0.02523	0.57047	0.02865
0.33537	0.01534	0.41436	0.02075	0.49340	0.02533	0.57250	0.02872
0.33739	0.01548	0.41638	0.02087	0.49543	0.02544	0.57453	0.02879
0.33942	0.01563	0.41841	0.02100	0.49746	0.02554	0.57656	0.02885
0.34144	0.01577	0.42044	0.02113	0.49948	0.02564	0.57859	0.02892
0.34347	0.01592	0.42246	0.02126	0.50151	0.02574	0.58062	0.02898
0.34549	0.01607	0.42449	0.02138	0.50354	0.02584	0.58265	0.02905
0.34752	0.01621	0.42651	0.02151	0.50557	0.02594	0.58468	0.02911
0.34954	0.01636	0.42854	0.02164	0.50759	0.02604	0.58671	0.02917
0.35157	0.01650	0.43057	0.02176	0.50962	0.02614	0.58874	0.02923
0.35359	0.01664	0.43259	0.02189	0.51165	0.02624	0.59077	0.02928
0.35562	0.01679	0.43462	0.02201	0.51368	0.02633	0.59279	0.02934
0.35764	0.01693	0.43665	0.02213	0.51570	0.02643	0.59482	0.02940
0.35967	0.01707	0.43867	0.02226	0.51773	0.02652	0.59685	0.02945
0.36169	0.01721	0.44070	0.02238	0.51976	0.02662	0.59888	0.02951
0.36372	0.01736	0.44273	0.02250	0.52179	0.02671	0.60091	0.02956
0.36574	0.01750	0.44475	0.02262	0.52382	0.02680	0.60294	0.02961
0.36777	0.01764	0.44678	0.02274	0.52585	0.02689	0.60497	0.02966
0.36979	0.01778	0.44881	0.02286	0.52787	0.02698	0.60700	0.02971
0.37182	0.01792	0.45083	0.02298	0.52990	0.02707	0.60903	0.02975
0.37384	0.01806	0.45286	0.02310	0.53193	0.02716	0.61106	0.02980

<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>	<u>x/c</u>	<u>y/c</u>
0.61309	0.02984	0.69226	0.03038	0.77139	0.02794	0.85027	0.02119
0.61512	0.02989	0.69429	0.03036	0.77342	0.02783	0.85228	0.02095
0.61715	0.02993	0.69632	0.03034	0.77545	0.02771	0.85430	0.02070
0.61918	0.02997	0.69835	0.03032	0.77747	0.02759	0.85631	0.02045
0.62121	0.03001	0.70038	0.03029	0.77950	0.02747	0.85833	0.02020
0.62324	0.03004	0.70241	0.03026	0.78153	0.02734	0.86034	0.01994
0.62527	0.03008	0.70444	0.03023	0.78355	0.02722	0.86235	0.01968
0.62730	0.03011	0.70647	0.03020	0.78558	0.02708	0.86437	0.01941
0.62933	0.03015	0.70850	0.03016	0.78760	0.02695	0.86638	0.01914
0.63136	0.03018	0.71053	0.03013	0.78963	0.02681	0.86839	0.01887
0.63339	0.03021	0.71256	0.03009	0.79165	0.02667	0.87040	0.01859
0.63542	0.03024	0.71459	0.03005	0.79368	0.02653	0.87241	0.01831
0.63745	0.03027	0.71662	0.03001	0.79570	0.02638	0.87442	0.01803
0.63948	0.03029	0.71865	0.02996	0.79773	0.02623	0.87643	0.01774
0.64151	0.03032	0.72068	0.02991	0.79975	0.02607	0.87844	0.01745
0.64354	0.03034	0.72271	0.02986	0.80178	0.02592	0.88045	0.01716
0.64557	0.03036	0.72474	0.02981	0.80380	0.02576	0.88246	0.01686
0.64760	0.03038	0.72677	0.02976	0.80582	0.02560	0.88447	0.01655
0.64963	0.03040	0.72880	0.02970	0.80785	0.02543	0.88647	0.01625
0.65166	0.03041	0.73083	0.02964	0.80987	0.02526	0.88848	0.01594
0.65369	0.03043	0.73286	0.02958	0.81189	0.02509	0.89048	0.01562
0.65572	0.03044	0.73488	0.02952	0.81392	0.02491	0.89249	0.01530
0.65775	0.03045	0.73691	0.02945	0.81594	0.02474	0.89449	0.01498
0.65978	0.03046	0.73894	0.02938	0.81796	0.02455	0.89650	0.01465
0.66181	0.03047	0.74097	0.02931	0.81998	0.02437	0.89850	0.01432
0.66384	0.03048	0.74300	0.02924	0.82200	0.02418	0.90050	0.01398
0.66587	0.03048	0.74503	0.02916	0.82402	0.02399	0.90250	0.01364
0.66790	0.03049	0.74706	0.02909	0.82605	0.02380	0.90450	0.01330
0.66993	0.03049	0.74909	0.02900	0.82807	0.02360	0.90650	0.01295
0.67196	0.03049	0.75111	0.02892	0.83009	0.02340	0.90850	0.01259
0.67399	0.03048	0.75314	0.02884	0.83211	0.02320	0.91050	0.01224
0.67602	0.03048	0.75517	0.02875	0.83413	0.02299	0.91250	0.01187
0.67805	0.03047	0.75720	0.02866	0.83614	0.02278	0.91449	0.01150
0.68008	0.03047	0.75923	0.02856	0.83816	0.02256	0.91649	0.01113
0.68211	0.03046	0.76126	0.02847	0.84018	0.02234	0.91848	0.01075
0.68414	0.03045	0.76328	0.02837	0.84220	0.02212	0.92048	0.01036
0.68617	0.03043	0.76531	0.02826	0.84422	0.02189	0.92247	0.00998
0.68820	0.03042	0.76734	0.02816	0.84623	0.02166	0.92446	0.00958
0.69023	0.03040	0.76937	0.02805	0.84825	0.02143	0.92645	0.00918

<u>x/c</u>	<u>y/c</u>
0.92844	0.00877
0.93043	0.00836
0.93242	0.00794
0.93440	0.00752
0.93639	0.00709
0.93837	0.00665
0.94035	0.00621
0.94233	0.00576
0.94431	0.00531
<u>0.94628</u>	<u>0.00485</u>

<u>x/c</u>	<u>y/c</u>
0.94826	0.00438
0.95023	0.00391
0.95221	0.00343
0.95418	0.00294
0.95615	0.00244
0.95811	0.00194
0.96008	0.00143
0.96204	0.00091
0.96400	0.00038
<u>0.96596</u>	<u>-0.00016</u>

<u>x/c</u>	<u>y/c</u>
0.96791	-0.00071
0.96986	-0.00127
0.97181	-0.00184
0.97375	-0.00243
0.97569	-0.00303
0.97763	-0.00364
0.97956	-0.00427
0.98149	-0.00491
0.98341	-0.00556
<u>0.98533</u>	<u>-0.00622</u>

<u>x/c</u>	<u>y/c</u>
0.98724	-0.00690
0.98914	-0.00762
0.99102	-0.00838
0.99288	-0.00919
0.99472	-0.01006
0.99652	-0.01099
<u>0.99830</u>	<u>-0.01197</u>

APPENDIX C

The description and original filenames of tabulated data presented in this report is listed in Table 24.

Table 24 Source files for data presented in this report

Description	Creation Date	Reference	Filename
Ingenuity design rotor twist, planform, and airfoil locations	March 2, 2017 (Design data) June 26, 2023 (OML data)	Table 2	'MHS010 Geometry Rev. 2.xlsx' (Design data) 'ingenuity-oml-cad-geometry.xlsx' (OML data)
Design station 1 airfoil coordinates	Aug. 31, 2015	Table 3, Figure 4	'station1.dat'
Design station 2 airfoil coordinates	Feb. 27, 2017	Table 4, Figure 4	'station2_rev_2.dat'
Design station 3 airfoil coordinates	Aug. 31, 2015	Table 5, Figure 4	'station3.dat'
Design station 4 airfoil coordinates	Feb. 23, 2017	Table 6, Figure 4	'station4_rev_1.dat'
Design clf5605 airfoil coordinates	Aug. 31, 2015	Table 7, Figure 4	'CLF5605.dat'
OML Station 1 upper surface airfoil coordinates, $r/R = 0.0908$	June 27, 2023	Table 8, Figure 5	'ingenuity-oml-rhino-rr0.0908-st1_US.csv'
OML Station 1 lower surface airfoil coordinates, $r/R = 0.0908$	June 27, 2023	Table 9, Figure 5	'ingenuity-oml-rhino-rr0.0908-st1_LS.csv'
OML Station 2 upper surface airfoil coordinates, $r/R = 0.2000$	June 27, 2023	Table 10, Figure 5	'ingenuity-oml-rhino-rr0.2000-st2_US.csv'
OML Station 2 lower surface airfoil coordinates, $r/R = 0.2000$	June 27, 2023	Table 11, Figure 5	'ingenuity-oml-rhino-rr0.2000-st2_LS.csv'
OML Station 3 upper surface airfoil coordinates, $r/R = 0.2950$	June 27, 2023	Table 12, Figure 5	'ingenuity-oml-rhino-rr0.2950-st3_US.csv'
OML Station 3 lower surface airfoil coordinates, $r/R = 0.2950$	June 27, 2023	Table 13, Figure 5	'ingenuity-oml-rhino-rr0.2950-st3_LS.csv'
OML Station 4 upper surface airfoil coordinates, $r/R = 0.3903$	June 27, 2023	Table 14, Figure 5	'ingenuity-oml-rhino-rr0.3903-st4_US.csv'
OML Station 4 lower surface airfoil coordinates, $r/R = 0.3903$	June 27, 2023	Table 15, Figure 5	'ingenuity-oml-rhino-rr0.3903-st4_LS.csv'
OML upper surface airfoil coordinates, $r/R = 0.5271$	June 27, 2023	Table 16, Figure 5	'ingenuity-oml-rhino-rr0.5271-st5_US.csv'
OML lower surface airfoil coordinates, $r/R = 0.5271$	June 27, 2023	Table 17, Figure 5	'ingenuity-oml-rhino-rr0.5271-st5_LS.csv'
OML upper surface airfoil coordinates, $r/R = 0.7620$	June 27, 2023	Table 18, Figure 5	'ingenuity-oml-rhino-rr0.7620-st6_US.csv'
OML lower surface airfoil coordinates, $r/R = 0.7620$	June 27, 2023	Table 19, Figure 5	'ingenuity-oml-rhino-rr0.7620-st6_LS.csv'

OML upper surface airfoil coordinates, $r/R = 0.9241$	June 27, 2023	Table 20, Figure 5	'ingenuity-oml-rhino-rr0.9241-st7_US.csv'
OML lower surface airfoil coordinates, $r/R = 0.9241$	June 27, 2023	Table 21, Figure 5	'ingenuity-oml-rhino-rr0.9241-st7_LS.csv'
OML upper surface airfoil coordinates, $r/R = 0.9912$	June 27, 2023	Table 22, Figure 5	'ingenuity-oml-rhino-rr0.9912-st8_US.csv'
OML lower surface airfoil coordinates, $r/R = 0.9912$	June 27, 2023	Table 23, Figure 5	'ingenuity-oml-rhino-rr0.9912-st8_LS.csv'