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NAVY DEPARTMENT
DAVID TAYLOR MODEL BASIN

HYDROMECHANICS

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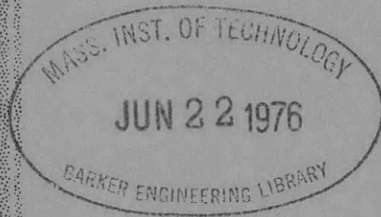
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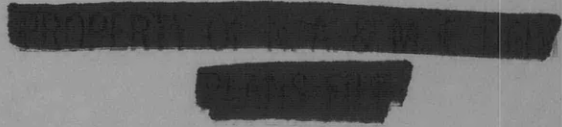
APPLIED
MATHEMATICS

COEFFICIENTS FOR INTERNATIONAL TOWING TANK
CONFERENCE 1957 MODEL-SHIP CORRELATION LINE

by

J.B. Hadler
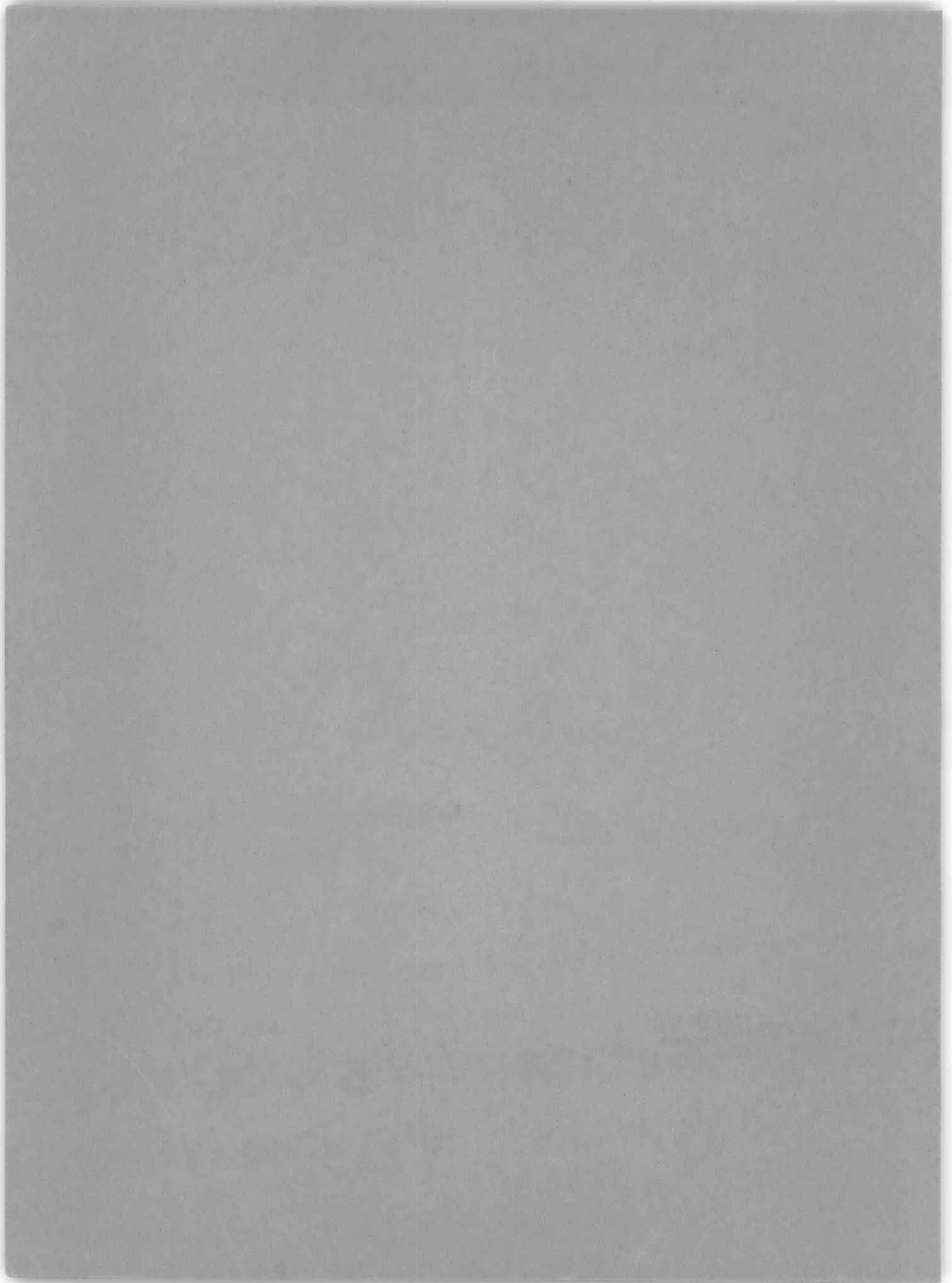
HYDROMECHANICS LABORATORY

RESEARCH AND DEVELOPMENT REPORT

April 1958   Report 1185

COEFFICIENTS FOR INTERNATIONAL TOWING TANK
CONFERENCE 1957 MODEL-SHIP CORRELATION LINE

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ABSTRACT

This report gives a table of C_f versus R values for the "I.T.T.C. 1957 Model-Ship Correlation Line" recommended by the Eighth International Towing Tank Conference. In the determination of effective horsepower of ships this report should be used in conjunction with TMB Report 576.

INTRODUCTION

In 1947 the David Taylor Model Basin published Report 576, "The Prediction of the Effective Horsepower of Ships by Methods in use at the David Taylor Model Basin."[1] The method outlined in this report was based on the William Froude law of similitude and the frictional-resistance formulation derived by Schoenherr.[2] The formulation developed by Schoenherr was subsequently renamed the A.T.T.C. 1947 Line.

In 1948 at the Fifth International Towing Tank Conference in London, England, the members agreed to accept, in the determination of the effective horsepower of ships, the William Froude law of similitude in conjunction with either the Froude coefficients of frictional resistance or the A.T.T.C. 1947 Line. At the Eighth Meeting of the I.T.T.C. in Madrid, Spain, in 1957 the Conference agreed to continue to use the William Froude law of similitude but recommended a new formulation to be used in lieu of the Froude or A.T.T.C. 1947 frictional resistance coefficients. As set forth by the Skin Friction Committee of this Conference, they recommended that the line given by the formula

$$C_f = \frac{0.075}{\left(\log_{10} R - 2\right)^2}$$

be adopted as the "I.T.T.C. 1957 Model-Ship Correlation Line."

It is the purpose of this report to serve as a supplement to Reference 1 by providing a table of C_f versus R values throughout the model-ship test range based upon the I.T.T.C. 1957 Model-Ship Correlation Line. The method of calculation to be employed with this formulation is identical to that described in Reference 1 with the substitution of the C_f values from Appendix C of this report in lieu of those from Appendix 3 in Reference 1.

In order to make this report as convenient as practicable to those performing repeated calculations of effective horsepower, Appendices 1 and 2 of Reference 1 are repeated as Appendices A and B respectively in this report.

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[1]References are listed on page 2.

ACKNOWLEDGMENTS

REFERENCES

1. M. Gertler, "The Prediction of the Effective Horsepower of Ships by Methods in Use at the David Taylor Model Basin," David Taylor Model Basin Report 576 (Dec 1947).

2. Schoenherr, Karl E., "Resistance of Flat Surfaces Moving Through a Fluid," Transactions of the Society of Naval Architects and Marine Engineers, Vol. 40 (1932).

APPENDIX A

TABLE OF DENSITY OF WATER

These values were adopted by the American Towing Tank Conference in 1942.
The fifth significant figures are doubtful.

Density of Fresh Water ρ lb $\times$ sec^2/ft^4	Temperature degree F	Density of Sea Water ρ_s lb $\times$ sec^2/ft^4	Density of Fresh Water ρ lb $\times$ sec^2/ft^4	Temperature degree F	Density of Sea Water ρ_s lb $\times$ sec^2/ft^4
1.9399	32	1.9947	1.9381	61	1.9901
1.9399	33	1.9946	1.9379	62	1.9898
1.9400	34	1.9946	1.9377	63	1.9895
1.9400	35	1.9945	1.9375	64	1.9893
1.9401	36	1.9944	1.9373	65	1.9890
1.9401	37	1.9943	1.9371	66	1.9888
1.9401	38	1.9942	1.9369	67	1.9885
1.9401	39	1.9941	1.9367	68	1.9882
1.9401	40	1.9940	1.9365	69	1.9879
1.9401	41	1.9939	1.9362	70	1.9876
1.9401	42	1.9937	1.9360	71	1.9873
1.9401	43	1.9936	1.9358	72	1.9870
1.9400	44	1.9934	1.9355	73	1.9867
1.9400	45	1.9933	1.9352	74	1.9864
1.9399	46	1.9931	1.9350	75	1.9861
1.9398	47	1.9930	1.9347	76	1.9858
1.9398	48	1.9928	1.9344	77	1.9854
1.9397	49	1.9926	1.9342	78	1.9851
1.9396	50	1.9924	1.9339	79	1.9848
1.9395	51	1.9923	1.9336	80	1.9844
1.9394	52	1.9921	1.9333	81	1.9841
1.9393	53	1.9919	1.9330	82	1.9837
1.9392	54	1.9917	1.9327	83	1.9834
1.9390	55	1.9914	1.9324	84	1.9830
1.9389	56	1.9912	1.9321	85	1.9827
1.9387	57	1.9910	1.9317	86	1.9823
1.9386	58	1.9908			
1.9384	59	1.9905			
1.9383	60	1.9903			

APPENDIX B

TABLE OF KINEMATIC VISCOSITY OF WATER

These values were adopted by the American Towing Tank Conference in 1942.
The fifth significant figures are doubtful.

Kinematic Viscosity of Fresh Water $\nu \times 10^5$ ft^2/sec	Temperature degree F	Kinematic Viscosity of Sea Water $\nu_s \times 10^5$ ft^2/sec	Kinematic Viscosity of Fresh Water $\nu \times 10^5$ ft^2/sec	Temperature degree F	Kinematic Viscosity of Sea Water $\nu_s \times 10^5$ ft^2/sec
1.9291	32		1.1937	61	1.2470
1.8922	33		1.1769	62	1.2303
1.8565	34		1.1605	63	1.2139
1.8219	35		1.1444	64	1.1979
1.7883	36		1.1287	65	1.1822
1.7558	37		1.1133	66	1.1669
1.7242	38		1.0983	67	1.1519
1.6935	39		1.0836	68	1.1372
1.6638	40		1.0692	69	1.1229
1.6349	41	1.6846	1.0552	70	1.1088
1.6068	42	1.6568	1.0414	71	1.0951
1.5795	43	1.6298	1.0279	72	1.0816
1.5530	44	1.6035	1.0147	73	1.0684
1.5272	45	1.5780	1.0018	74	1.0554
1.5021	46	1.5531	0.98918	75	1.0427
1.4776	47	1.5289	0.97680	76	1.0303
1.4538	48	1.5053	0.96466	77	1.0181
1.4306	49	1.4823	0.95276	78	1.0062
1.4080	50	1.4599	0.94111	79	0.99447
1.3860	51	1.4381	0.92969	80	0.98299
1.3646	52	1.4168	0.91850	81	0.97172
1.3437	53	1.3961	0.90752	82	0.96067
1.3233	54	1.3758	0.89676	83	0.94982
1.3034	55	1.3561	0.88621	84	0.93917
1.2840	56	1.3368	0.87586	85	0.92873
1.2651	57	1.3180	0.86570	86	0.91847
1.2466	58	1.2996			
1.2285	59	1.2817			
1.2109	60	1.2641			

APPENDIX C

TABLES OF COEFFICIENTS FOR I. T. T. C. 1957 MODEL-SHIP
CORRELATION LINE VERSUS REYNOLDS NUMBERS

Coefficients for I.T.T.C. 1957 Model-Ship Correlation Line Versus Reynolds Numbers from 1.00 to 9.99 × 10^5

The values for the coefficients must be multiplied by 10^{-3}.

Reynolds Number $10^5 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
1.0	8.333	8.309	8.286	8.262	8.240	8.217	8.194	8.172	8.151	8.129	8.108
1.1	8.108	8.087	8.066	8.046	8.026	8.006	7.986	7.967	7.948	7.929	7.910
1.2	7.910	7.892	7.874	7.855	7.838	7.820	7.803	7.785	7.768	7.751	7.735
1.3	7.735	7.718	7.702	7.686	7.670	7.654	7.638	7.623	7.607	7.592	7.577
1.4	7.577	7.562	7.548	7.533	7.519	7.504	7.490	7.476	7.462	7.449	7.435
1.5	7.435	7.421	7.408	7.395	7.382	7.369	7.356	7.343	7.330	7.318	7.305
1.6	7.305	7.293	7.281	7.269	7.257	7.245	7.233	7.221	7.210	7.198	7.187
1.7	7.187	7.175	7.164	7.153	7.142	7.131	7.120	7.109	7.099	7.088	7.078
1.8	7.078	7.067	7.057	7.046	7.036	7.026	7.016	7.006	6.996	6.986	6.977
1.9	6.977	6.967	6.957	6.948	6.938	6.929	6.919	6.910	6.901	6.892	6.883
2.0	6.883	6.874	6.865	6.856	6.847	6.838	6.830	6.821	6.812	6.804	6.795
2.1	6.795	6.787	6.778	6.770	6.762	6.754	6.745	6.737	6.729	6.721	6.713
2.2	6.713	6.705	6.698	6.690	6.682	6.674	6.667	6.659	6.651	6.644	6.636
2.3	6.636	6.629	6.622	6.614	6.607	6.600	6.593	6.585	6.578	6.571	6.564
2.4	6.564	6.557	6.550	6.543	6.536	6.529	6.523	6.516	6.509	6.502	6.496
2.5	6.496	6.489	6.483	6.476	6.469	6.463	6.457	6.450	6.444	6.437	6.431
2.6	6.431	6.425	6.419	6.412	6.406	6.400	6.394	6.388	6.382	6.376	6.370
2.7	6.370	6.364	6.358	6.352	6.346	6.340	6.335	6.329	6.323	6.317	6.312
2.8	6.312	6.306	6.300	6.295	6.289	6.284	6.278	6.273	6.267	6.262	6.256
2.9	6.256	6.251	6.245	6.240	6.235	6.229	6.224	6.219	6.214	6.208	6.203
3.0	6.203	6.198	6.193	6.188	6.183	6.178	6.173	6.168	6.163	6.158	6.153
3.1	6.153	6.148	6.143	6.138	6.133	6.128	6.124	6.119	6.114	6.109	6.104
3.2	6.104	6.100	6.095	6.090	6.086	6.081	6.076	6.072	6.067	6.063	6.058
3.3	6.058	6.054	6.049	6.045	6.040	6.036	6.031	6.027	6.023	6.018	6.014
3.4	6.014	6.009	6.005	6.001	5.997	5.992	5.988	5.984	5.980	5.975	5.971
3.5	5.971	5.967	5.963	5.959	5.955	5.950	5.946	5.942	5.938	5.934	5.930
3.6	5.930	5.926	5.922	5.918	5.914	5.910	5.906	5.902	5.898	5.894	5.891
3.7	5.891	5.887	5.883	5.879	5.875	5.871	5.868	5.864	5.860	5.856	5.853
3.8	5.853	5.849	5.845	5.841	5.838	5.834	5.830	5.827	5.823	5.819	5.816
3.9	5.816	5.812	5.809	5.805	5.802	5.798	5.794	5.791	5.787	5.784	5.780
4.0	5.780	5.777	5.773	5.770	5.767	5.763	5.760	5.756	5.753	5.750	5.746
4.1	5.746	5.743	5.739	5.736	5.733	5.729	5.726	5.723	5.720	5.716	5.713
4.2	5.713	5.710	5.707	5.703	5.700	5.697	5.694	5.690	5.687	5.684	5.681
4.3	5.681	5.678	5.675	5.671	5.668	5.665	5.662	5.659	5.656	5.653	5.650
4.4	5.650	5.647	5.644	5.641	5.638	5.635	5.632	5.629	5.626	5.623	5.620
4.5	5.620	5.617	5.614	5.611	5.608	5.605	5.602	5.599	5.596	5.593	5.590
4.6	5.590	5.588	5.585	5.582	5.579	5.576	5.573	5.570	5.568	5.565	5.562
4.7	5.562	5.559	5.556	5.554	5.551	5.548	5.545	5.543	5.540	5.537	5.534
4.8	5.534	5.532	5.529	5.526	5.524	5.521	5.518	5.516	5.513	5.510	5.508
4.9	5.508	5.505	5.502	5.500	5.497	5.494	5.492	5.489	5.487	5.484	5.482

Reynolds Number $10^5 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
5.0	5.482	5.479	5.476	5.474	5.471	5.469	5.466	5.464	5.461	5.459	5.456
5.1	5.456	5.454	5.451	5.449	5.446	5.444	5.441	5.439	5.436	5.434	5.431
5.2	5.431	5.429	5.426	5.424	5.422	5.419	5.417	5.414	5.412	5.410	5.407
5.3	5.407	5.405	5.403	5.400	5.398	5.395	5.393	5.391	5.388	5.386	5.384
5.4	5.384	5.381	5.379	5.377	5.375	5.372	5.370	5.368	5.365	5.363	5.361
5.5	5.361	5.359	5.356	5.354	5.352	5.350	5.347	5.345	5.343	5.341	5.338
5.6	5.338	5.336	5.334	5.332	5.330	5.328	5.325	5.323	5.321	5.319	5.317
5.7	5.317	5.314	5.312	5.310	5.308	5.306	5.304	5.302	5.300	5.297	5.295
5.8	5.295	5.293	5.291	5.289	5.287	5.285	5.283	5.281	5.279	5.277	5.275
5.9	5.275	5.272	5.270	5.268	5.266	5.264	5.262	5.260	5.258	5.256	5.254
6.0	5.254	5.252	5.250	5.248	5.246	5.244	5.242	5.240	5.238	5.236	5.234
6.1	5.234	5.232	5.230	5.228	5.226	5.224	5.223	5.221	5.219	5.217	5.215
6.2	5.215	5.213	5.211	5.209	5.207	5.205	5.203	5.201	5.199	5.198	5.196
6.3	5.196	5.194	5.192	5.190	5.188	5.186	5.184	5.183	5.181	5.179	5.177
6.4	5.177	5.175	5.173	5.172	5.170	5.168	5.166	5.164	5.162	5.161	5.159
6.5	5.159	5.157	5.155	5.153	5.152	5.150	5.148	5.146	5.144	5.143	5.141
6.6	5.141	5.139	5.137	5.136	5.134	5.132	5.130	5.129	5.127	5.125	5.123
6.7	5.123	5.122	5.120	5.118	5.116	5.115	5.113	5.111	5.110	5.108	5.106
6.8	5.106	5.104	5.103	5.101	5.099	5.098	5.096	5.094	5.093	5.091	5.089
6.9	5.089	5.088	5.086	5.084	5.083	5.081	5.079	5.078	5.076	5.074	5.073
7.0	5.073	5.071	5.070	5.068	5.066	5.065	5.063	5.061	5.060	5.058	5.057
7.1	5.057	5.055	5.053	5.052	5.050	5.049	5.047	5.045	5.044	5.042	5.041
7.2	5.041	5.039	5.038	5.036	5.034	5.033	5.031	5.030	5.028	5.027	5.025
7.3	5.025	5.023	5.022	5.020	5.019	5.017	5.016	5.014	5.013	5.011	5.010
7.4	5.010	5.008	5.007	5.005	5.004	5.002	5.001	4.999	4.998	4.996	4.995
7.5	4.995	4.993	4.992	4.990	4.989	4.987	4.986	4.984	4.983	4.981	4.980
7.6	4.980	4.978	4.977	4.975	4.974	4.973	4.971	4.970	4.968	4.967	4.965
7.7	4.965	4.964	4.962	4.961	4.960	4.958	4.957	4.955	4.954	4.952	4.951
7.8	4.951	4.950	4.948	4.947	4.945	4.944	4.943	4.941	4.940	4.938	4.937
7.9	4.937	4.936	4.934	4.933	4.931	4.930	4.929	4.927	4.926	4.925	4.923
8.0	4.923	4.922	4.920	4.919	4.918	4.916	4.915	4.914	4.912	4.911	4.910
8.1	4.910	4.908	4.907	4.906	4.904	4.903	4.902	4.900	4.899	4.898	4.896
8.2	4.896	4.895	4.894	4.892	4.891	4.890	4.888	4.887	4.886	4.884	4.883
8.3	4.883	4.882	4.880	4.879	4.878	4.877	4.875	4.874	4.873	4.871	4.870
8.4	4.870	4.869	4.868	4.866	4.865	4.864	4.862	4.861	4.860	4.859	4.857
8.5	4.857	4.856	4.855	4.854	4.852	4.851	4.850	4.849	4.847	4.846	4.845
8.6	4.845	4.844	4.842	4.841	4.840	4.839	4.837	4.836	4.835	4.834	4.833
8.7	4.833	4.831	4.830	4.829	4.828	4.826	4.825	4.824	4.823	4.822	4.820
8.8	4.820	4.819	4.818	4.817	4.816	4.814	4.813	4.812	4.811	4.810	4.808
8.9	4.808	4.807	4.806	4.805	4.804	4.802	4.801	4.800	4.799	4.798	4.797
9.0	4.797	4.795	4.794	4.793	4.792	4.791	4.790	4.788	4.787	4.786	4.785
9.1	4.785	4.784	4.783	4.782	4.780	4.779	4.778	4.777	4.776	4.775	4.774
9.2	4.774	4.772	4.771	4.770	4.769	4.768	4.767	4.766	4.764	4.763	4.762
9.3	4.762	4.761	4.760	4.759	4.758	4.757	4.756	4.754	4.753	4.752	4.751
9.4	4.751	4.750	4.749	4.748	4.747	4.746	4.745	4.743	4.742	4.741	4.740
9.5	4.740	4.739	4.738	4.737	4.736	4.735	4.734	4.733	4.731	4.730	4.729
9.6	4.729	4.728	4.727	4.726	4.725	4.724	4.723	4.722	4.721	4.720	4.719
9.7	4.719	4.718	4.717	4.715	4.714	4.713	4.712	4.711	4.710	4.709	4.708
9.8	4.708	4.707	4.706	4.705	4.704	4.703	4.702	4.701	4.700	4.699	4.698
9.9	4.698	4.697	4.696	4.695	4.694	4.693	4.692	4.691	4.690	4.689	4.688

Coefficients for I.T.T.C. 1957 Model-Ship Correlation Line Versus Reynolds
Numbers from 1.00 to 9.99 × 10^6

The values for the coefficients must be multiplied by 10^{-3}.

Reynolds Number $10^6 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
1.0	4.688	4.677	4.667	4.658	4.648	4.638	4.629	4.619	4.610	4.601	4.592
1.1	4.592	4.583	4.574	4.566	4.557	4.548	4.540	4.532	4.523	4.515	4.507
1.2	4.507	4.499	4.491	4.484	4.476	4.468	4.461	4.453	4.446	4.439	4.431
1.3	4.431	4.424	4.417	4.410	4.403	4.396	4.390	4.383	4.376	4.369	4.363
1.4	4.363	4.356	4.350	4.344	4.337	4.331	4.325	4.319	4.313	4.307	4.301
1.5	4.301	4.295	4.289	4.283	4.277	4.271	4.266	4.260	4.254	4.249	4.243
1.6	4.243	4.238	4.232	4.227	4.222	4.217	4.211	4.206	4.201	4.196	4.191
1.7	4.191	4.186	4.181	4.176	4.171	4.166	4.161	4.156	4.151	4.147	4.142
1.8	4.142	4.137	4.133	4.128	4.123	4.119	4.114	4.110	4.105	4.101	4.097
1.9	4.097	4.092	4.088	4.084	4.079	4.075	4.071	4.067	4.063	4.058	4.054
2.0	4.054	4.050	4.046	4.042	4.038	4.034	4.030	4.026	4.022	4.019	4.015
2.1	4.015	4.011	4.007	4.003	3.999	3.996	3.992	3.988	3.985	3.981	3.977
2.2	3.977	3.974	3.970	3.967	3.963	3.960	3.957	3.953	3.949	3.946	3.942
2.3	3.942	3.939	3.935	3.932	3.929	3.925	3.922	3.919	3.916	3.912	3.910
2.4	3.910	3.906	3.903	3.899	3.896	3.893	3.890	3.887	3.884	3.881	3.878
2.5	3.878	3.875	3.872	3.868	3.865	3.862	3.859	3.857	3.854	3.851	3.848
2.6	3.848	3.845	3.842	3.839	3.836	3.833	3.831	3.828	3.825	3.822	3.819
2.7	3.819	3.817	3.814	3.811	3.808	3.806	3.803	3.800	3.798	3.795	3.792
2.8	3.792	3.790	3.787	3.784	3.782	3.779	3.778	3.774	3.771	3.769	3.766
2.9	3.766	3.764	3.761	3.759	3.756	3.754	3.751	3.749	3.746	3.744	3.742
3.0	3.742	3.739	3.737	3.734	3.732	3.730	3.727	3.725	3.723	3.720	3.718
3.1	3.718	3.716	3.713	3.711	3.709	3.706	3.704	3.702	3.700	3.697	3.695
3.2	3.695	3.693	3.691	3.689	3.686	3.684	3.682	3.680	3.678	3.676	3.673
3.3	3.673	3.671	3.669	3.667	3.665	3.663	3.661	3.659	3.657	3.654	3.652
3.4	3.652	3.650	3.648	3.646	3.644	3.642	3.640	3.638	3.636	3.634	3.632
3.5	3.632	3.630	3.628	3.626	3.624	3.622	3.620	3.619	3.617	3.615	3.613
3.6	3.613	3.611	3.609	3.607	3.605	3.603	3.601	3.600	3.598	3.596	3.594
3.7	3.594	3.592	3.590	3.588	3.587	3.585	3.583	3.581	3.579	3.578	3.576
3.8	3.576	3.574	3.572	3.570	3.569	3.567	3.565	3.563	3.562	3.560	3.558
3.9	3.558	3.557	3.555	3.553	3.551	3.550	3.548	3.546	3.545	3.543	3.541
4.0	3.541	3.540	3.538	3.536	3.535	3.533	3.531	3.530	3.528	3.526	3.525
4.1	3.525	3.523	3.522	3.520	3.518	3.517	3.515	3.514	3.512	3.510	3.509
4.2	3.509	3.507	3.506	3.504	3.503	3.501	3.500	3.498	3.496	3.495	3.493
4.3	3.493	3.492	3.490	3.489	3.487	3.486	3.484	3.483	3.481	3.480	3.478
4.4	3.478	3.477	3.475	3.474	3.473	3.471	3.470	3.468	3.467	3.465	3.464
4.5	3.464	3.462	3.461	3.460	3.458	3.457	3.455	3.454	3.452	3.451	3.450
4.6	3.450	3.448	3.447	3.445	3.444	3.443	3.441	3.440	3.439	3.437	3.436
4.7	3.436	3.435	3.433	3.432	3.430	3.429	3.428	3.426	3.425	3.424	3.422
4.8	3.422	3.421	3.420	3.419	3.417	3.416	3.415	3.413	3.412	3.411	3.409
4.9	3.409	3.408	3.407	3.406	3.404	3.403	3.402	3.400	3.399	3.398	3.397

Reynolds Number $10^6 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
5.0	3.397	3.395	3.394	3.393	3.392	3.390	3.390	3.388	3.387	3.386	3.384
5.1	3.384	3.383	3.382	3.381	3.379	3.378	3.377	3.376	3.375	3.373	3.372
5.2	3.372	3.371	3.370	3.369	3.367	3.366	3.365	3.364	3.363	3.362	3.360
5.3	3.360	3.359	3.358	3.357	3.356	3.355	3.353	3.352	3.351	3.350	3.349
5.4	3.349	3.348	3.347	3.345	3.344	3.343	3.342	3.341	3.340	3.339	3.338
5.5	3.338	3.337	3.335	3.334	3.333	3.332	3.331	3.330	3.329	3.328	3.327
5.6	3.327	3.326	3.324	3.323	3.322	3.321	3.320	3.319	3.318	3.317	3.316
5.7	3.316	3.315	3.314	3.313	3.312	3.311	3.310	3.309	3.307	3.306	3.305
5.8	3.305	3.304	3.303	3.302	3.301	3.300	3.299	3.298	3.297	3.296	3.295
5.9	3.295	3.294	3.293	3.292	3.291	3.290	3.289	3.288	3.287	3.286	3.285
6.0	3.285	3.284	3.283	3.282	3.281	3.280	3.279	3.278	3.277	3.276	3.275
6.1	3.275	3.274	3.273	3.272	3.271	3.270	3.269	3.268	3.267	3.267	3.266
6.2	3.266	3.265	3.264	3.263	3.262	3.261	3.260	3.259	3.258	3.257	3.256
6.3	3.256	3.255	3.254	3.253	3.252	3.251	3.251	3.250	3.249	3.248	3.247
6.4	3.247	3.246	3.245	3.244	3.243	3.242	3.241	3.240	3.240	3.239	3.238
6.5	3.238	3.237	3.236	3.235	3.234	3.233	3.232	3.232	3.231	3.230	3.229
6.6	3.229	3.228	3.227	3.226	3.225	3.224	3.223	3.223	3.222	3.221	3.220
6.7	3.220	3.219	3.218	3.218	3.217	3.216	3.215	3.214	3.213	3.212	3.212
6.8	3.212	3.211	3.210	3.209	3.208	3.207	3.206	3.206	3.205	3.204	3.203
6.9	3.203	3.202	3.201	3.201	3.200	3.199	3.198	3.197	3.197	3.196	3.195
7.0	3.195	3.194	3.193	3.192	3.192	3.191	3.190	3.189	3.188	3.188	3.187
7.1	3.187	3.186	3.185	3.184	3.184	3.183	3.182	3.181	3.180	3.180	3.179
7.2	3.179	3.178	3.177	3.176	3.176	3.175	3.174	3.173	3.173	3.172	3.171
7.3	3.171	3.170	3.169	3.169	3.168	3.167	3.166	3.166	3.165	3.164	3.163
7.4	3.163	3.163	3.162	3.161	3.160	3.160	3.159	3.158	3.157	3.156	3.156
7.5	3.156	3.155	3.154	3.153	3.153	3.152	3.151	3.151	3.150	3.149	3.148
7.6	3.148	3.148	3.147	3.146	3.145	3.145	3.144	3.143	3.142	3.142	3.141
7.7	3.141	3.140	3.140	3.139	3.138	3.137	3.137	3.136	3.135	3.135	3.134
7.8	3.134	3.133	3.132	3.132	3.131	3.130	3.130	3.129	3.128	3.127	3.127
7.9	3.127	3.126	3.125	3.125	3.124	3.123	3.123	3.122	3.121	3.120	3.120
8.0	3.120	3.119	3.118	3.118	3.117	3.116	3.116	3.115	3.114	3.114	3.113
8.1	3.113	3.112	3.112	3.111	3.110	3.110	3.109	3.108	3.108	3.107	3.106
8.2	3.106	3.105	3.104	3.104	3.103	3.103	3.102	3.101	3.101	3.100	3.100
8.3	3.100	3.099	3.098	3.098	3.097	3.096	3.096	3.095	3.094	3.094	3.093
8.4	3.093	3.092	3.092	3.091	3.090	3.090	3.089	3.088	3.088	3.087	3.087
8.5	3.087	3.086	3.085	3.085	3.084	3.083	3.083	3.082	3.081	3.081	3.080
8.6	3.080	3.080	3.079	3.078	3.078	3.077	3.076	3.076	3.075	3.075	3.074
8.7	3.074	3.073	3.073	3.072	3.071	3.071	3.070	3.070	3.069	3.068	3.068
8.8	3.068	3.067	3.067	3.066	3.065	3.065	3.064	3.063	3.063	3.062	3.062
8.9	3.062	3.061	3.060	3.060	3.059	3.059	3.058	3.057	3.057	3.056	3.056
9.0	3.056	3.055	3.054	3.054	3.053	3.053	3.052	3.052	3.051	3.050	3.050
9.1	3.050	3.049	3.049	3.048	3.047	3.047	3.046	3.046	3.045	3.045	3.044
9.2	3.044	3.043	3.043	3.042	3.042	3.041	3.040	3.040	3.039	3.039	3.038
9.3	3.038	3.038	3.037	3.037	3.036	3.035	3.035	3.034	3.034	3.033	3.033
9.4	3.033	3.032	3.031	3.031	3.030	3.030	3.029	3.029	3.028	3.027	3.027
9.5	3.027	3.026	3.026	3.025	3.025	3.024	3.024	3.023	3.022	3.022	3.021
9.6	3.021	3.021	3.020	3.020	3.019	3.019	3.018	3.018	3.017	3.016	3.016
9.7	3.016	3.015	3.015	3.014	3.014	3.013	3.013	3.012	3.012	3.011	3.011
9.8	3.011	3.010	3.009	3.009	3.008	3.008	3.007	3.007	3.006	3.006	3.005
9.9	3.005	3.005	3.004	3.004	3.003	3.003	3.002	3.002	3.001	3.001	3.000

Coefficients for I.T.T.C. 1957 Model-Ship Correlation Line Versus Reynolds
Numbers from 1.00 to 9.99 $\times 10^7$

The values for the coefficients must be multiplied by 10^{-3}.

Reynolds Number $10^7 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
1.0	3.000	2.995	2.990	2.985	2.980	2.975	2.970	2.965	2.960	2.956	2.951
1.1	2.951	2.946	2.942	2.937	2.933	2.928	2.924	2.920	2.916	2.911	2.907
1.2	2.907	2.903	2.899	2.895	2.891	2.887	2.883	2.879	2.875	2.872	2.868
1.3	2.868	2.864	2.860	2.857	2.853	2.850	2.846	2.842	2.839	2.835	2.832
1.4	2.832	2.829	2.825	2.822	2.819	2.815	2.812	2.809	2.806	2.802	2.799
1.5	2.799	2.796	2.793	2.790	2.787	2.784	2.781	2.778	2.775	2.772	2.769
1.6	2.769	2.766	2.764	2.761	2.758	2.755	2.752	2.750	2.747	2.744	2.741
1.7	2.741	2.739	2.736	2.734	2.731	2.728	2.726	2.723	2.721	2.718	2.716
1.8	2.716	2.713	2.711	2.708	2.706	2.703	2.701	2.699	2.696	2.694	2.692
1.9	2.692	2.689	2.687	2.685	2.682	2.680	2.678	2.676	2.673	2.671	2.669
2.0	2.669	2.667	2.665	2.662	2.660	2.658	2.656	2.654	2.652	2.650	2.648
2.1	2.648	2.646	2.644	2.642	2.640	2.638	2.636	2.634	2.632	2.630	2.628
2.2	2.628	2.626	2.624	2.622	2.620	2.618	2.616	2.614	2.613	2.611	2.609
2.3	2.609	2.607	2.605	2.603	2.602	2.600	2.598	2.596	2.594	2.593	2.591
2.4	2.591	2.590	2.588	2.586	2.584	2.582	2.581	2.579	2.577	2.576	2.574
2.5	2.574	2.572	2.571	2.569	2.567	2.566	2.564	2.563	2.561	2.560	2.558
2.6	2.558	2.556	2.555	2.553	2.552	2.550	2.548	2.547	2.545	2.544	2.542
2.7	2.542	2.541	2.539	2.538	2.536	2.535	2.533	2.532	2.531	2.529	2.528
2.8	2.528	2.526	2.525	2.523	2.522	2.521	2.519	2.518	2.516	2.515	2.514
2.9	2.514	2.512	2.511	2.509	2.508	2.507	2.505	2.504	2.503	2.501	2.500
3.0	2.500	2.498	2.497	2.496	2.495	2.494	2.492	2.491	2.490	2.488	2.487
3.1	2.487	2.486	2.485	2.483	2.482	2.481	2.480	2.478	2.477	2.476	2.475
3.2	2.475	2.473	2.472	2.471	2.470	2.469	2.467	2.466	2.465	2.464	2.463
3.3	2.463	2.462	2.460	2.459	2.458	2.457	2.456	2.455	2.453	2.452	2.451
3.4	2.451	2.450	2.449	2.448	2.447	2.446	2.444	2.443	2.442	2.441	2.440
3.5	2.440	2.439	2.438	2.437	2.436	2.435	2.434	2.433	2.431	2.430	2.429
3.6	2.429	2.428	2.427	2.426	2.425	2.424	2.423	2.422	2.421	2.420	2.419
3.7	2.419	2.418	2.417	2.416	2.415	2.414	2.413	2.412	2.411	2.410	2.409
3.8	2.409	2.408	2.407	2.406	2.405	2.404	2.403	2.402	2.401	2.400	2.399
3.9	2.399	2.398	2.397	2.396	2.395	2.394	2.394	2.393	2.392	2.391	2.390
4.0	2.390	2.389	2.388	2.387	2.386	2.385	2.384	2.383	2.383	2.382	2.381
4.1	2.381	2.380	2.379	2.378	2.377	2.376	2.375	2.374	2.374	2.373	2.372
4.2	2.372	2.371	2.370	2.369	2.368	2.368	2.367	2.366	2.365	2.364	2.363
4.3	2.363	2.362	2.362	2.361	2.360	2.359	2.358	2.357	2.357	2.356	2.355
4.4	2.355	2.354	2.353	2.352	2.352	2.351	2.350	2.349	2.348	2.348	2.347
4.5	2.347	2.346	2.345	2.344	2.344	2.343	2.342	2.341	2.340	2.340	2.339
4.6	2.339	2.338	2.337	2.337	2.336	2.335	2.334	2.333	2.333	2.332	2.331
4.7	2.331	2.330	2.330	2.329	2.328	2.327	2.327	2.326	2.325	2.324	2.323
4.8	2.324	2.323	2.322	2.321	2.321	2.320	2.319	2.319	2.318	2.317	2.316
4.9	2.316	2.316	2.315	2.314	2.313	2.313	2.312	2.311	2.311	2.310	2.309

Reynolds Number $10^7 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
5.0	2.309	2.309	2.308	2.307	2.306	2.306	2.305	2.304	2.304	2.303	2.302
5.1	2.302	2.302	2.301	2.300	2.300	2.299	2.298	2.298	2.297	2.296	2.295
5.2	2.295	2.295	2.294	2.293	2.293	2.292	2.291	2.291	2.290	2.290	2.289
5.3	2.289	2.288	2.288	2.287	2.286	2.286	2.285	2.284	2.284	2.283	2.282
5.4	2.282	2.282	2.281	2.280	2.280	2.279	2.279	2.278	2.277	2.277	2.276
5.5	2.276	2.275	2.275	2.274	2.274	2.273	2.272	2.272	2.271	2.270	2.270
5.6	2.270	2.269	2.269	2.268	2.267	2.267	2.266	2.266	2.265	2.264	2.264
5.7	2.264	2.263	2.263	2.262	2.261	2.261	2.260	2.260	2.259	2.258	2.258
5.8	2.258	2.257	2.257	2.256	2.256	2.255	2.254	2.254	2.253	2.253	2.252
5.9	2.252	2.251	2.251	2.250	2.250	2.249	2.249	2.248	2.248	2.247	2.246
6.0	2.246	2.246	2.245	2.245	2.244	2.244	2.243	2.242	2.242	2.241	2.241
6.1	2.241	2.240	2.240	2.239	2.239	2.238	2.238	2.237	2.236	2.236	2.235
6.2	2.235	2.235	2.234	2.234	2.233	2.233	2.232	2.232	2.231	2.231	2.230
6.3	2.230	2.229	2.229	2.228	2.228	2.227	2.227	2.226	2.226	2.225	2.225
6.4	2.225	2.224	2.224	2.223	2.223	2.222	2.222	2.221	2.221	2.220	2.220
6.5	2.220	2.219	2.219	2.218	2.218	2.217	2.217	2.216	2.216	2.215	2.215
6.6	2.215	2.214	2.214	2.213	2.213	2.212	2.212	2.211	2.211	2.210	2.210
6.7	2.210	2.209	2.209	2.208	2.208	2.207	2.207	2.206	2.206	2.205	2.205
6.8	2.205	2.204	2.204	2.203	2.203	2.202	2.202	2.201	2.201	2.200	2.200
6.9	2.200	2.199	2.199	2.198	2.198	2.198	2.197	2.197	2.196	2.196	2.195
7.0	2.195	2.195	2.194	2.194	2.193	2.193	2.192	2.192	2.192	2.191	2.191
7.1	2.191	2.190	2.190	2.189	2.189	2.188	2.188	2.187	2.187	2.187	2.186
7.2	2.186	2.186	2.185	2.185	2.184	2.184	2.183	2.183	2.182	2.182	2.182
7.3	2.182	2.181	2.181	2.180	2.180	2.179	2.179	2.179	2.178	2.178	2.177
7.4	2.177	2.177	2.176	2.176	2.175	2.175	2.175	2.174	2.174	2.173	2.173
7.5	2.173	2.172	2.172	2.172	2.171	2.171	2.170	2.170	2.169	2.169	2.169
7.6	2.169	2.168	2.168	2.167	2.167	2.167	2.166	2.166	2.165	2.165	2.164
7.7	2.164	2.164	2.164	2.163	2.163	2.162	2.162	2.162	2.161	2.161	2.160
7.8	2.160	2.160	2.160	2.159	2.159	2.158	2.158	2.157	2.157	2.157	2.156
7.9	2.156	2.156	2.155	2.155	2.155	2.154	2.154	2.153	2.153	2.153	2.152
8.0	2.152	2.152	2.152	2.151	2.151	2.150	2.150	2.150	2.149	2.149	2.148
8.1	2.148	2.148	2.148	2.147	2.147	2.146	2.146	2.146	2.145	2.145	2.144
8.2	2.144	2.144	2.144	2.143	2.143	2.143	2.142	2.142	2.141	2.141	2.141
8.3	2.141	2.140	2.140	2.140	2.139	2.139	2.138	2.138	2.138	2.137	2.137
8.4	2.137	2.137	2.136	2.136	2.135	2.135	2.135	2.134	2.134	2.134	2.133
8.5	2.133	2.133	2.132	2.132	2.132	2.131	2.131	2.131	2.130	2.130	2.130
8.6	2.130	2.129	2.129	2.128	2.128	2.128	2.127	2.127	2.127	2.126	2.126
8.7	2.126	2.126	2.125	2.125	2.125	2.124	2.124	2.123	2.123	2.123	2.122
8.8	2.122	2.122	2.122	2.121	2.121	2.121	2.120	2.120	2.120	2.119	2.119
8.9	2.119	2.119	2.118	2.118	2.118	2.117	2.117	2.117	2.116	2.116	2.115
9.0	2.115	2.115	2.115	2.114	2.114	2.114	2.113	2.113	2.113	2.112	2.112
9.1	2.112	2.112	2.111	2.111	2.111	2.110	2.110	2.110	2.109	2.109	2.109
9.2	2.109	2.108	2.108	2.108	2.107	2.107	2.107	2.106	2.106	2.106	2.105
9.3	2.105	2.105	2.105	2.104	2.104	2.104	2.103	2.103	2.103	2.102	2.102
9.4	2.102	2.102	2.101	2.101	2.101	2.100	2.100	2.100	2.100	2.099	2.099
9.5	2.099	2.099	2.098	2.098	2.098	2.097	2.097	2.097	2.096	2.096	2.096
9.6	2.096	2.095	2.095	2.095	2.094	2.094	2.094	2.093	2.093	2.093	2.093
9.7	2.093	2.092	2.092	2.092	2.091	2.091	2.091	2.090	2.090	2.090	2.089
9.8	2.089	2.089	2.089	2.089	2.088	2.088	2.088	2.087	2.087	2.087	2.086
9.9	2.086	2.086	2.086	2.085	2.085	2.085	2.085	2.084	2.084	2.284	2.083

Coefficients for I.T.T.C. 1957 Model-Ship Correlation Line Versus Reynolds Numbers from 1.00 to 9.99 $\times 10^8$

The values for the coefficients must be multiplied by 10^{-3}.

Reynolds Number $10^8 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	9.07	0.08	0.09	0.10
1.0	2.083	2.080	2.077	2.074	2.072	2.069	2.066	2.063	2.060	2.058	2.055
1.1	2.055	2.052	2.050	2.047	2.044	2.042	2.039	2.037	2.034	2.032	2.029
1.2	2.029	2.027	2.025	2.022	2.020	2.018	2.015	2.013	2.011	2.009	2.006
1.3	2.006	2.004	2.002	2.000	1.998	1.996	1.994	1.992	1.989	1.987	1.985
1.4	1.985	1.983	1.981	1.980	1.978	1.976	1.974	1.972	1.970	1.968	1.966
1.5	1.966	1.964	1.963	1.961	1.959	1.957	1.955	1.954	1.952	1.950	1.949
1.6	1.949	1.947	1.945	1.943	1.942	1.940	1.938	1.937	1.935	1.934	1.932
1.7	1.932	1.930	1.929	1.927	1.926	1.924	1.923	1.921	1.920	1.918	1.917
1.8	1.917	1.915	1.914	1.912	1.911	1.909	1.908	1.907	1.905	1.904	1.902
1.9	1.902	1.901	1.900	1.898	1.897	1.896	1.894	1.893	1.892	1.890	1.889
2.0	1.889	1.888	1.886	1.885	1.884	1.883	1.881	1.880	1.879	1.878	1.876
2.1	1.876	1.875	1.874	1.873	1.872	1.870	1.869	1.868	1.867	1.866	1.864
2.2	1.864	1.863	1.862	1.861	1.860	1.859	1.858	1.856	1.855	1.854	1.853
2.3	1.853	1.852	1.851	1.850	1.849	1.848	1.847	1.846	1.845	1.843	1.842
2.4	1.842	1.841	1.840	1.839	1.838	1.837	1.836	1.835	1.834	1.833	1.832
2.5	1.832	1.831	1.830	1.829	1.828	1.827	1.826	1.825	1.824	1.823	1.823
2.6	1.823	1.822	1.821	1.820	1.819	1.818	1.817	1.816	1.815	1.814	1.813
2.7	1.813	1.812	1.811	1.811	1.810	1.809	1.808	1.807	1.806	1.805	1.804
2.8	1.804	1.803	1.803	1.802	1.801	1.800	1.799	1.798	1.798	1.797	1.796
2.9	1.796	1.795	1.794	1.793	1.793	1.792	1.791	1.790	1.789	1.789	1.788
3.0	1.788	1.787	1.786	1.785	1.784	1.783	1.782	1.782	1.781	1.781	1.780
3.1	1.780	1.779	1.778	1.778	1.777	1.776	1.775	1.775	1.774	1.773	1.772
3.2	1.772	1.772	1.771	1.770	1.769	1.769	1.768	1.767	1.767	1.766	1.765
3.3	1.765	1.764	1.764	1.763	1.762	1.762	1.761	1.760	1.759	1.759	1.758
3.4	1.758	1.757	1.757	1.756	1.755	1.755	1.754	1.753	1.753	1.752	1.751
3.5	1.751	1.751	1.750	1.749	1.749	1.748	1.747	1.747	1.746	1.745	1.745
3.6	1.745	1.744	1.744	1.743	1.742	1.742	1.741	1.740	1.740	1.739	1.738
3.7	1.738	1.738	1.737	1.737	1.736	1.735	1.735	1.734	1.734	1.733	1.732
3.8	1.732	1.732	1.731	1.731	1.730	1.729	1.729	1.728	1.728	1.727	1.726
3.9	1.726	1.726	1.725	1.725	1.724	1.724	1.723	1.722	1.722	1.721	1.721
4.0	1.721	1.720	1.720	1.719	1.718	1.718	1.717	1.717	1.716	1.716	1.715
4.1	1.715	1.715	1.714	1.713	1.713	1.712	1.712	1.711	1.711	1.710	1.710
4.2	1.710	1.709	1.709	1.708	1.708	1.707	1.707	1.706	1.705	1.705	1.704
4.3	1.704	1.704	1.703	1.703	1.702	1.702	1.701	1.701	1.700	1.700	1.699
4.4	1.699	1.699	1.698	1.698	1.697	1.697	1.696	1.696	1.695	1.695	1.694
4.5	1.694	1.694	1.693	1.693	1.692	1.692	1.691	1.691	1.690	1.690	1.689
4.6	1.689	1.689	1.689	1.688	1.688	1.687	1.687	1.686	1.686	1.685	1.685
4.7	1.685	1.684	1.684	1.683	1.683	1.682	1.682	1.682	1.681	1.681	1.680
4.8	1.680	1.680	1.679	1.679	1.678	1.678	1.677	1.677	1.677	1.676	1.676
4.9	1.676	1.675	1.675	1.674	1.674	1.673	1.673	1.673	1.672	1.672	1.671

Reynolds Number $10^8 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
5.0	1.671	1.671	1.670	1.670	1.670	1.669	1.669	1.668	1.668	1.667	1.667
5.1	1.667	1.667	1.666	1.666	1.665	1.665	1.664	1.664	1.664	1.663	1.663
5.2	1.663	1.662	1.662	1.662	1.661	1.661	1.660	1.660	1.660	1.659	1.659
5.3	1.659	1.658	1.658	1.658	1.657	1.657	1.656	1.656	1.656	1.655	1.655
5.4	1.655	1.654	1.654	1.654	1.653	1.653	1.652	1.652	1.652	1.651	1.651
5.5	1.651	1.650	1.650	1.650	1.649	1.649	1.648	1.648	1.648	1.647	1.647
5.6	1.647	1.647	1.646	1.646	1.645	1.645	1.645	1.644	1.644	1.644	1.643
5.7	1.643	1.643	1.642	1.642	1.642	1.641	1.641	1.641	1.640	1.640	1.640
5.8	1.640	1.639	1.639	1.638	1.638	1.638	1.637	1.637	1.637	1.636	1.636
5.9	1.636	1.636	1.635	1.635	1.635	1.634	1.634	1.633	1.633	1.633	1.632
6.0	1.632	1.632	1.632	1.631	1.631	1.631	1.630	1.630	1.630	1.629	1.629
6.1	1.629	1.629	1.628	1.628	1.628	1.627	1.627	1.627	1.626	1.626	1.626
6.2	1.626	1.625	1.625	1.625	1.624	1.624	1.624	1.623	1.623	1.623	1.622
6.3	1.622	1.622	1.622	1.621	1.621	1.621	1.620	1.620	1.620	1.619	1.619
6.4	1.619	1.619	1.618	1.618	1.618	1.617	1.617	1.617	1.616	1.616	1.616
6.5	1.616	1.616	1.615	1.615	1.615	1.614	1.614	1.614	1.613	1.613	1.613
6.6	1.613	1.612	1.612	1.612	1.611	1.611	1.611	1.611	1.610	1.610	1.610
6.7	1.610	1.609	1.609	1.609	1.608	1.608	1.608	1.607	1.607	1.607	1.607
6.8	1.607	1.606	1.606	1.606	1.605	1.605	1.605	1.604	1.604	1.604	1.604
6.9	1.604	1.603	1.603	1.603	1.602	1.602	1.602	1.602	1.601	1.601	1.601
7.0	1.601	1.600	1.600	1.600	1.600	1.599	1.599	1.599	1.598	1.598	1.598
7.1	1.598	1.598	1.597	1.597	1.597	1.596	1.596	1.596	1.596	1.595	1.595
7.2	1.595	1.595	1.594	1.594	1.594	1.594	1.593	1.593	1.593	1.592	1.592
7.3	1.592	1.592	1.592	1.591	1.591	1.591	1.591	1.590	1.590	1.590	1.589
7.4	1.589	1.589	1.589	1.589	1.588	1.588	1.588	1.588	1.587	1.587	1.587
7.5	1.587	1.586	1.586	1.586	1.586	1.585	1.585	1.585	1.585	1.584	1.584
7.6	1.584	1.584	1.584	1.583	1.583	1.583	1.583	1.582	1.582	1.582	1.581
7.7	1.581	1.581	1.581	1.581	1.580	1.580	1.580	1.580	1.579	1.579	1.579
7.8	1.579	1.579	1.578	1.578	1.578	1.578	1.577	1.577	1.577	1.577	1.576
7.9	1.576	1.576	1.576	1.576	1.575	1.575	1.575	1.575	1.574	1.574	1.574
8.0	1.574	1.574	1.573	1.573	1.573	1.573	1.572	1.572	1.572	1.572	1.571
8.1	1.571	1.571	1.571	1.571	1.570	1.570	1.570	1.570	1.569	1.569	1.569
8.2	1.569	1.569	1.569	1.568	1.568	1.568	1.568	1.567	1.567	1.567	1.567
8.3	1.567	1.566	1.566	1.566	1.566	1.565	1.565	1.565	1.565	1.565	1.564
8.4	1.564	1.564	1.564	1.564	1.563	1.563	1.563	1.563	1.562	1.562	1.562
8.5	1.562	1.562	1.561	1.561	1.561	1.561	1.561	1.560	1.560	1.560	1.560
8.6	1.560	1.559	1.559	1.559	1.559	1.559	1.558	1.558	1.558	1.558	1.557
8.7	1.557	1.557	1.557	1.557	1.557	1.556	1.556	1.556	1.556	1.555	1.555
8.8	1.555	1.555	1.555	1.555	1.554	1.554	1.554	1.554	1.553	1.553	1.553
8.9	1.553	1.553	1.553	1.552	1.552	1.552	1.552	1.551	1.551	1.551	1.551
9.0	1.551	1.551	1.550	1.550	1.550	1.550	1.550	1.549	1.549	1.549	1.549
9.1	1.549	1.548	1.548	1.548	1.548	1.548	1.547	1.547	1.547	1.547	1.547
9.2	1.547	1.546	1.546	1.546	1.546	1.546	1.545	1.545	1.545	1.545	1.544
9.3	1.544	1.544	1.544	1.544	1.544	1.543	1.543	1.543	1.543	1.543	1.542
9.4	1.542	1.542	1.542	1.542	1.542	1.541	1.541	1.541	1.541	1.541	1.540
9.5	1.540	1.540	1.540	1.540	1.540	1.539	1.539	1.539	1.539	1.539	1.538
9.6	1.538	1.538	1.538	1.538	1.538	1.537	1.537	1.537	1.537	1.537	1.536
9.7	1.536	1.536	1.536	1.536	1.536	1.535	1.535	1.535	1.535	1.535	1.534
9.8	1.534	1.534	1.534	1.534	1.534	1.533	1.533	1.533	1.533	1.533	1.533
9.9	1.533	1.532	1.532	1.532	1.532	1.532	1.531	1.531	1.531	1.531	1.531

Coefficients for I.T.T.C. 1957 Model-Ship Correlation Line Versus Reynolds
Numbers from 1.00 to 9.99 × 10^9

The values for the coefficients must be multiplied by 10^{-3}.

Reynolds Number 10^9 ×	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
1.0	1.531	1.529	1.527	1.525	1.523	1.521	1.520	1.518	1.516	1.514	1.513
1.1	1.513	1.511	1.509	1.508	1.506	1.504	1.503	1.501	1.500	1.498	1.497
1.2	1.497	1.495	1.494	1.492	1.491	1.489	1.488	1.486	1.485	1.483	1.482
1.3	1.482	1.481	1.479	1.478	1.477	1.475	1.474	1.473	1.471	1.470	1.469
1.4	1.469	1.467	1.466	1.465	1.464	1.462	1.461	1.460	1.459	1.458	1.456
1.5	1.456	1.455	1.454	1.453	1.452	1.451	1.450	1.448	1.447	1.446	1.445
1.6	1.445	1.444	1.443	1.442	1.441	1.440	1.439	1.438	1.437	1.436	1.435
1.7	1.435	1.434	1.433	1.432	1.431	1.430	1.429	1.428	1.427	1.426	1.425
1.8	1.425	1.424	1.423	1.422	1.421	1.420	1.419	1.418	1.417	1.417	1.416
1.9	1.416	1.415	1.414	1.413	1.412	1.411	1.410	1.410	1.409	1.408	1.407
2.0	1.407	1.406	1.405	1.405	1.404	1.403	1.402	1.401	1.400	1.400	1.399
2.1	1.399	1.398	1.397	1.397	1.396	1.395	1.394	1.393	1.393	1.392	1.391
2.2	1.391	1.390	1.390	1.389	1.388	1.387	1.387	1.386	1.385	1.385	1.384
2.3	1.384	1.383	1.382	1.382	1.381	1.380	1.380	1.379	1.378	1.378	1.377
2.4	1.377	1.376	1.376	1.375	1.374	1.374	1.373	1.372	1.372	1.371	1.370
2.5	1.370	1.370	1.369	1.368	1.368	1.367	1.367	1.366	1.365	1.365	1.364
2.6	1.364	1.363	1.363	1.362	1.362	1.361	1.360	1.360	1.359	1.359	1.358
2.7	1.358	1.357	1.357	1.356	1.356	1.355	1.355	1.354	1.353	1.353	1.352
2.8	1.352	1.352	1.351	1.351	1.350	1.350	1.349	1.348	1.348	1.347	1.347
2.9	1.347	1.346	1.346	1.345	1.345	1.344	1.344	1.343	1.343	1.342	1.342
3.0	1.342	1.341	1.340	1.340	1.339	1.339	1.338	1.338	1.337	1.337	1.336
3.1	1.336	1.336	1.335	1.335	1.334	1.334	1.333	1.333	1.332	1.332	1.332
3.2	1.332	1.331	1.331	1.330	1.330	1.329	1.329	1.328	1.328	1.327	1.327
3.3	1.327	1.326	1.326	1.325	1.325	1.324	1.324	1.324	1.323	1.323	1.322
3.4	1.322	1.322	1.321	1.321	1.320	1.320	1.320	1.319	1.319	1.318	1.318
3.5	1.318	1.317	1.317	1.317	1.316	1.316	1.315	1.315	1.314	1.314	1.314
3.6	1.314	1.313	1.313	1.312	1.312	1.311	1.311	1.311	1.310	1.310	1.309
3.7	1.309	1.309	1.309	1.308	1.308	1.307	1.307	1.307	1.306	1.306	1.305
3.8	1.305	1.305	1.305	1.304	1.304	1.303	1.303	1.303	1.302	1.302	1.302
3.9	1.302	1.301	1.301	1.300	1.300	1.300	1.299	1.299	1.299	1.298	1.298
4.0	1.298	1.297	1.297	1.297	1.296	1.296	1.296	1.295	1.295	1.294	1.294
4.1	1.294	1.294	1.293	1.293	1.293	1.292	1.292	1.292	1.291	1.291	1.291
4.2	1.291	1.290	1.290	1.290	1.289	1.289	1.288	1.288	1.288	1.287	1.287
4.3	1.287	1.287	1.286	1.286	1.286	1.285	1.285	1.285	1.284	1.284	1.284
4.4	1.284	1.283	1.283	1.283	1.282	1.282	1.282	1.281	1.281	1.281	1.280
4.5	1.280	1.280	1.280	1.281	1.279	1.279	1.280	1.278	1.278	1.278	1.277
4.6	1.277	1.277	1.277	1.276	1.276	1.276	1.275	1.275	1.275	1.274	1.274
4.7	1.274	1.274	1.274	1.273	1.273	1.273	1.272	1.272	1.272	1.271	1.271
4.8	1.271	1.271	1.271	1.270	1.270	1.270	1.269	1.269	1.269	1.268	1.268
4.9	1.268	1.268	1.268	1.267	1.267	1.267	1.266	1.266	1.266	1.266	1.265

Reynolds Number $10^9 \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
5.0	1.265	1.265	1.265	1.264	1.264	1.264	1.264	1.263	1.263	1.263	1.262
5.1	1.262	1.262	1.262	1.262	1.261	1.261	1.261	1.261	1.260	1.260	1.260
5.2	1.260	1.259	1.259	1.259	1.259	1.258	1.258	1.258	1.258	1.257	1.257
5.3	1.257	1.257	1.256	1.256	1.256	1.256	1.255	1.255	1.255	1.255	1.254
5.4	1.254	1.254	1.254	1.254	1.253	1.253	1.253	1.253	1.252	1.252	1.252
5.5	1.252	1.252	1.251	1.251	1.251	1.251	1.250	1.250	1.250	1.250	1.249
5.6	1.249	1.249	1.249	1.249	1.248	1.248	1.248	1.248	1.247	1.247	1.247
5.7	1.247	1.247	1.246	1.246	1.246	1.246	1.245	1.245	1.245	1.245	1.244
5.8	1.244	1.244	1.244	1.244	1.243	1.243	1.243	1.243	1.242	1.242	1.242
5.9	1.242	1.242	1.242	1.241	1.241	1.241	1.241	1.240	1.240	1.240	1.240
6.0	1.240	1.239	1.239	1.239	1.239	1.239	1.238	1.238	1.238	1.238	1.237
6.1	1.237	1.237	1.237	1.237	1.236	1.236	1.236	1.236	1.236	1.235	1.235
6.2	1.235	1.235	1.235	1.234	1.234	1.234	1.234	1.234	1.233	1.233	1.233
6.3	1.233	1.233	1.233	1.232	1.232	1.232	1.232	1.231	1.231	1.231	1.231
6.4	1.231	1.231	1.230	1.230	1.230	1.230	1.230	1.229	1.229	1.229	1.229
6.5	1.229	1.228	1.228	1.228	1.228	1.228	1.227	1.227	1.227	1.227	1.227
6.6	1.227	1.226	1.226	1.226	1.226	1.226	1.225	1.225	1.225	1.225	1.224
6.7	1.225	1.224	1.224	1.224	1.224	1.224	1.223	1.223	1.223	1.223	1.223
6.8	1.223	1.222	1.222	1.222	1.222	1.222	1.221	1.221	1.221	1.221	1.221
6.9	1.221	1.220	1.220	1.220	1.220	1.???	1.219	1.219	1.219	1.219	1.219
7.0	1.219	1.218	1.218	1.218	1.218	1.218	1.217	1.217	1.217	1.217	1.217
7.1	1.217	1.217	1.216	1.216	1.216	1.216	1.216	1.215	1.215	1.215	1.215
7.2	1.215	1.215	1.214	1.214	1.214	1.214	1.214	1.214	1.213	1.213	1.213
7.3	1.213	1.213	1.213	1.212	1.212	1.212	1.212	1.212	1.212	1.211	1.211
7.4	1.211	1.211	1.211	1.211	1.210	1.210	1.210	1.210	1.210	1.210	1.209
7.5	1.209	1.209	1.209	1.209	1.209	1.208	1.208	1.208	1.208	1.208	1.208
7.6	1.208	1.207	1.207	1.207	1.207	1.207	1.207	1.206	1.206	1.206	1.206
7.7	1.206	1.206	1.206	1.205	1.205	1.205	1.205	1.205	1.204	1.204	1.204
7.8	1.204	1.204	1.204	1.204	1.203	1.203	1.203	1.203	1.203	1.203	1.202
7.9	1.202	1.202	1.202	1.202	1.202	1.202	1.201	1.201	1.201	1.201	1.201
8.0	1.201	1.201	1.200	1.200	1.200	1.200	1.200	1.200	1.199	1.199	1.199
8.1	1.199	1.199	1.199	1.199	1.199	1.198	1.198	1.198	1.198	1.198	1.198
8.2	1.198	1.197	1.197	1.197	1.197	1.197	1.197	1.196	1.196	1.196	1.196
8.3	1.196	1.196	1.196	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.194
8.4	1.194	1.194	1.194	1.194	1.194	1.194	1.193	1.193	1.193	1.193	1.193
8.5	1.193	1.193	1.193	1.192	1.192	1.192	1.192	1.192	1.192	1.191	1.191
8.6	1.191	1.191	1.191	1.191	1.191	1.191	1.190	1.190	1.190	1.190	1.190
8.7	1.190	1.190	1.189	1.189	1.189	1.189	1.189	1.189	1.189	1.188	1.188
8.8	1.188	1.188	1.188	1.188	1.188	1.188	1.187	1.187	1.187	1.187	1.187
8.9	1.187	1.187	1.187	1.186	1.186	1.186	1.186	1.186	1.186	1.186	1.185
9.0	1.185	1.185	1.185	1.185	1.185	1.185	1.185	1.184	1.184	1.184	1.184
9.1	1.184	1.184	1.184	1.184	1.183	1.183	1.183	1.183	1.183	1.183	1.183
9.2	1.183	1.182	1.182	1.182	1.182	1.182	1.182	1.182	1.181	1.181	1.181
9.3	1.181	1.181	1.181	1.181	1.181	1.180	1.180	1.180	1.180	1.180	1.180
9.4	1.180	1.180	1.180	1.179	1.179	1.179	1.179	1.179	1.179	1.179	1.178
9.5	1.178	1.178	1.178	1.178	1.178	1.178	1.178	1.177	1.177	1.177	1.177
9.6	1.177	1.177	1.177	1.177	1.177	1.176	1.176	1.176	1.176	1.176	1.176
9.7	1.176	1.176	1.175	1.175	1.175	1.175	1.175	1.175	1.175	1.175	1.174
9.8	1.174	1.174	1.174	1.174	1.174	1.174	1.174	1.174	1.173	1.173	1.173
9.9	1.173	1.173	1.173	1.173	1.173	1.173	1.172	1.172	1.172	1.172	1.172

Coefficients for I.T.T.C. 1957 Model-Ship Correlation Line Versus Reynolds Numbers from 1.00 to 9.99 × 10^{10}

The values for the coefficients must be multiplied by 10^{-3}

Reynolds Number $10^{10} \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
1.0	1.172	1.171	1.169	1.168	1.167	1.166	1.164	1.163	1.162	1.161	1.160
1.1	1.160	1.159	1.158	1.156	1.155	1.154	1.153	1.152	1.151	1.150	1.149
1.2	1.149	1.148	1.147	1.146	1.145	1.144	1.143	1.142	1.141	1.140	1.139
1.3	1.139	1.138	1.137	1.136	1.136	1.135	1.134	1.132	1.132	1.131	1.130
1.4	1.130	1.129	1.129	1.128	1.127	1.126	1.125	1.124	1.124	1.123	1.122
1.5	1.122	1.121	1.120	1.120	1.119	1.118	1.117	1.117	1.116	1.115	1.114
1.6	1.114	1.114	1.113	1.112	1.111	1.111	1.110	1.109	1.109	1.108	1.107
1.7	1.107	1.106	1.106	1.105	1.104	1.104	1.103	1.102	1.102	1.101	1.101
1.8	1.101	1.100	1.099	1.099	1.098	1.097	1.097	1.096	1.096	1.095	1.094
1.9	1.094	1.094	1.093	1.092	1.092	1.091	1.091	1.090	1.090	1.089	1.088
2.0	1.088	1.088	1.087	1.087	1.086	1.086	1.085	1.085	1.084	1.083	1.083
2.1	1.083	1.082	1.082	1.081	1.081	1.080	1.080	1.079	1.079	1.078	1.078
2.2	1.078	1.077	1.077	1.076	1.076	1.075	1.075	1.074	1.074	1.073	1.073
2.3	1.073	1.072	1.072	1.071	1.071	1.070	1.070	1.069	1.069	1.068	1.068
2.4	1.068	1.067	1.067	1.067	1.066	1.066	1.065	1.065	1.064	1.064	1.063
2.5	1.063	1.063	1.063	1.062	1.062	1.061	1.061	1.060	1.060	1.060	1.059
2.6	1.059	1.059	1.058	1.058	1.057	1.057	1.057	1.056	1.056	1.055	1.055
2.7	1.055	1.055	1.054	1.054	1.053	1.053	1.053	1.052	1.052	1.051	1.051
2.8	1.051	1.051	1.050	1.050	1.050	1.049	1.049	1.048	1.048	1.048	1.047
2.9	1.047	1.047	1.047	1.046	1.046	1.045	1.045	1.045	1.044	1.044	1.044
3.0	1.044	1.043	1.043	1.043	1.042	1.042	1.042	1.041	1.041	1.041	1.040
3.1	1.040	1.040	1.039	1.039	1.039	1.038	1.038	1.038	1.037	1.037	1.037
3.2	1.037	1.036	1.036	1.036	1.035	1.035	1.035	1.035	1.034	1.034	1.034
3.3	1.034	1.033	1.033	1.033	1.032	1.032	1.032	1.031	1.031	1.031	1.030
3.4	1.030	1.030	1.030	1.029	1.029	1.029	1.029	1.028	1.028	1.028	1.027
3.5	1.027	1.027	1.027	1.026	1.026	1.026	1.026	1.025	1.025	1.025	1.024
3.6	1.024	1.024	1.024	1.024	1.023	1.023	1.023	1.022	1.022	1.022	1.022
3.7	1.022	1.021	1.021	1.021	1.020	1.020	1.020	1.020	1.019	1.019	1.019
3.8	1.019	1.019	1.018	1.018	1.018	1.017	1.017	1.017	1.017	1.016	1.016
3.9	1.016	1.016	1.016	1.015	1.015	1.015	1.015	1.014	1.014	1.014	1.014
4.0	1.014	1.013	1.013	1.013	1.013	1.012	1.012	1.012	1.012	1.011	1.011
4.1	1.011	1.011	1.011	1.010	1.010	1.010	1.010	1.009	1.009	1.009	1.009
4.2	1.009	1.008	1.008	1.008	1.008	1.007	1.007	1.007	1.007	1.006	1.006
4.3	1.006	1.006	1.006	1.006	1.005	1.005	1.005	1.005	1.004	1.004	1.004
4.4	1.004	1.004	1.003	1.003	1.003	1.003	1.003	1.002	1.002	1.002	1.002
4.5	1.002	1.001	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	0.999
4.6	0.999	0.999	0.989	0.999	0.999	0.998	0.998	0.998	0.998	0.997	0.996
4.7	0.997	0.997	0.997	0.997	0.996	0.996	0.996	0.996	0.996	0.995	0.995
4.8	0.995	0.995	0.995	0.995	0.994	0.994	0.994	0.994	0.994	0.993	0.993
4.9	0.993	0.993	0.993	0.993	0.993	0.992	0.992	0.992	0.992	0.991	0.991

Reynolds Number $10^{10} \times$	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
5.0	0.991	0.991	0.991	0.991	0.990	0.990	0.990	0.990	0.990	0.989	0.989
5.1	0.989	0.989	0.988	0.988	0.988	0.988	0.988	0.988	0.988	0.987	0.987
5.2	0.987	0.987	0.987	0.986	0.986	0.986	0.986	0.986	0.986	0.986	0.985
5.3	0.985	0.985	0.985	0.985	0.985	0.984	0.984	0.984	0.984	0.984	0.984
5.4	0.984	0.983	0.983	0.983	0.983	0.983	0.982	0.982	0.982	0.982	0.982
5.5	0.982	0.982	0.981	0.981	0.981	0.981	0.981	0.981	0.980	0.980	0.980
5.6	0.980	0.980	0.980	0.979	0.979	0.979	0.979	0.979	0.979	0.978	0.978
5.7	0.978	0.978	0.978	0.978	0.978	0.977	0.977	0.977	0.977	0.977	0.977
5.8	0.977	0.976	0.976	0.976	0.976	0.976	0.976	0.975	0.975	0.975	0.975
5.9	0.975	0.975	0.975	0.974	0.974	0.974	0.974	0.974	0.974	0.973	0.973
6.0	0.973	0.973	0.973	0.973	0.973	0.973	0.972	0.972	0.972	0.972	0.972
6.1	0.972	0.972	0.971	0.971	0.971	0.971	0.971	0.971	0.970	0.970	0.970
6.2	0.970	0.970	0.970	0.970	0.970	0.969	0.969	0.969	0.969	0.969	0.969
6.3	0.969	0.968	0.968	0.968	0.968	0.968	0.968	0.968	0.967	0.967	0.967
6.4	0.967	0.967	0.967	0.967	0.967	0.966	0.966	0.966	0.966	0.966	0.966
6.5	0.966	0.966	0.965	0.965	0.965	0.965	0.965	0.964	0.964	0.964	0.964
6.6	0.964	0.964	0.964	0.964	0.964	0.963	0.963	0.963	0.963	0.963	0.963
6.7	0.963	0.963	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.962	0.961
6.8	0.961	0.961	0.961	0.961	0.961	0.961	0.961	0.960	0.960	0.960	0.960
6.9	0.960	0.960	0.960	0.960	0.960	0.959	0.959	0.959	0.959	0.959	0.959
7.0	0.959	0.959	0.958	0.958	0.958	0.958	0.958	0.958	0.958	0.957	0.957
7.1	0.957	0.957	0.957	0.957	0.957	0.957	0.957	0.956	0.956	0.956	0.956
7.2	0.956	0.956	0.956	0.956	0.955	0.955	0.955	0.955	0.955	0.955	0.955
7.3	0.955	0.955	0.954	0.954	0.954	0.954	0.954	0.954	0.954	0.954	0.953
7.4	9.953	0.953	0.953	0.953	0.953	0.953	0.953	0.953	0.952	0.952	0.952
7.5	0.952	0.952	0.952	0.952	0.952	0.952	0.951	0.951	0.951	0.951	0.951
7.6	0.951	0.951	0.951	0.951	0.950	0.950	0.950	0.950	0.950	0.950	0.950
7.7	0.950	0.950	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949	0.949
7.8	0.949	0.948	0.948	0.948	0.948	0.948	0.948	0.948	0.948	0.947	0.947
7.9	0.947	0.947	0.947	0.947	0.947	0.947	0.947	0.947	0.946	0.946	0.946
8.0	0.946	0.946	0.946	0.946	0.946	0.946	0.946	0.945	0.945	0.945	0.945
8.1	0.945	0.945	0.945	0.945	0.945	0.944	0.944	0.944	0.944	0.944	0.944
8.2	0.944	0.944	0.944	0.944	0.943	0.943	0.943	0.943	0.943	0.943	0.943
8.3	0.943	0.943	0.943	0.942	0.942	0.942	0.942	0.942	0.942	0.942	0.942
8.4	0.942	0.942	0.941	0.941	0.941	0.941	0.941	0.941	0.941	0.941	0.941
8.5	0.941	0.941	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940	0.940
8.6	0.940	0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.938
8.7	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.937
8.8	0.937	0.937	0.937	0.937	0.937	0.937	0.937	0.937	0.937	0.937	0.936
8.9	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.936	0.935
9.0	0.935	0.935	0.935	0.935	0.935	0.935	0.935	0.935	0.935	0.935	0.934
9.1	0.934	0.934	0.934	0.934	0.934	0.934	0.934	0.934	0.934	0.934	0.933
9.2	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.932
9.3	0.932	0.932	0.932	0.932	0.932	0.932	0.932	0.932	0.932	0.932	0.931
9.4	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931	0.931
9.5	0.931	0.930	0.930	0.930	0.930	0.930	0.930	0.930	0.930	0.930	0.930
9.6	0.930	0.929	0.929	0.929	0.929	0.929	0.929	0.929	0.929	0.929	0.929
9.7	0.929	0.929	0.928	0.928	0.928	0.928	0.928	0.928	0.928	0.928	0.928
9.8	0.928	0.928	0.928	0.927	0.927	0.927	0.927	0.927	0.927	0.927	0.927
9.9	0.927	0.927	0.927	0.927	0.926	0.926	0.926	0.926	0.926	0.926	0.926

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2 Prof. R.B. Couch, Dir, Exptl Naval Tank, Univ of Michigan, Ann Arbor, Mich.

5 Dr. K.S.M. Davidson, Dir, ETT, SIT, Hoboken, N.J.

1 Prof. C. Ridgely Nevitt, Robinson Model Basin, Webb Inst of Naval Arch, Glen Cove, Long Island, N.Y.

1 Dr. G.P. Wislicenus, Dir, Garfield Thomas Water Tunnel, ORL, Penn State Univ, Univ Park, Pa.

2 Mr. C.H. Hancock, Dir, Hydraulic Lab, Newport News Shipbuilding and Dry Dock Co., Newport News, Va.

1 Mr. J.B. Parkinson, Chief, Hydro Div, Langley Aero Lab, Langley Field, Va.

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