Evaluation And Development Of Water Wave Theories For Engineering Application

VOLUME II

Tabulation Of Dimensionless Stream Function Theory Variables

by

R.G. Dean

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the laboratory data. Volume I also includes a number of examples illustrating the application of the wave tables (described below) to offshore design problems.

Based on the evaluation phase described above, a set of wave tables was developed and is presented as Volume II. The tables consist of dimensionless quantities which describe the kinematic and dynamic fields of a two-dimensional progressive water wave. In addition, quantities are included which are directly applicable to frequently required design calculations and also parameters which should be of interest to the researcher and scientist.

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I INTRODUCTION TO TABLES

The reader is urged to examine Sections IV and V of Volume I of this two-volume report before using the tables in this volume. These sections contain a detailed description of the tables and also examples which use all of the variables in the tables. It is especially important to be sure that the correct dimensionalizing quantities are used for the variables of interest.

In this Volume II, several figures and tables are presented from Volume I to facilitate the use of the tables. These figures and tables are presented without change of numbering (or lettering as the case may be).

Figure 23 presents the dimensionless wave characteristics for the 40 sets of tabulations. Tables D, E and F describe the variables tabulated and all dimensionalizing quantities. Figures 25 through 29 present the results of combined shoaling and refraction for deepwater directions of 0° , 10° , 20° , 40° and 60° , respectively.

If this set of tables is extensively used, as is hoped, undoubtedly the users will note shortcomings, omissions or develop recommendations directed toward the improved usefulness, applicability or efficiency of the tables. The author would welcome information of this type in order that future work may benefit by as wide a range of users' needs as possible.

Figure 23 from Volume I showing wave steepnesses (H/L_0) and relative depths (h/L_0) of the 40 wave cases tabulated.

Tables D, E, and F from Volume I Presenting Descriptions of the Dimensionless Tabulated Variables and the Dimensionalizing Quantities Required in Their Use.

TABLE D
Internal Field Variables
(Functions of θ and S)

Variable	Expression for Variable	Dimensionless Form	Equation No.	Presented in Table
Horizontal Water Particle Velocity, $u(\theta, S)$	$u(\theta, S) = - \sum_{n=1}^{NN} X(n) \left[\frac{2\pi}{L} n \right] \cosh \left[\frac{2\pi}{L} n S \right] \cos n\theta$	$\left[\frac{1}{H/T} \right] u$	(21)	I
Vertical Water Particle Velocity, $w(\theta, S)$	$w(\theta, S) = - \sum_{n=1}^{NN} X(n) \left[\frac{2\pi}{L} n \right] \sinh \left[\frac{2\pi}{L} n S \right] \sin n\theta$	$\left[\frac{1}{H/T} \right] w$	(22)	II
Horizontal Water Particle Acceleration, $\frac{Du}{Dt}$	$\frac{Du}{Dt} = (u - C) \frac{\partial u}{\partial X} + w \frac{\partial u}{\partial Z}$ Note: $C \equiv L/T$	$\left[\frac{1}{H/T^2} \right] \frac{Du}{Dt}$	(23)	III
Vertical Water Particle Acceleration, $\frac{Dw}{Dt}$	$\frac{Dw}{Dt} = (u - C) \frac{\partial w}{\partial X} + w \frac{\partial w}{\partial Z}$	$\left[\frac{1}{H/T^2} \right] \frac{Dw}{Dt}$	(24)	IV
Drag Force Component up to a Level, S , $F_D(\theta, S)$	$F_D(\theta, S) = \frac{C_D \rho D}{2} \int_0^S u u ds$ Note: C_D = drag coefficient; D = piling diameter; ρ = mass density of water	$\left(\frac{C_D \rho D^2}{H^3/T^3} \right) F_D$	(25)	V

TABLE D—Continued

Variable	Expression for Variable	Dimensionless Form	Equation No.	Presented in Table
Inertia Force Component up to a Level, S , $F_I(\theta, S)$	$F_I(\theta, S) = \frac{C_M \rho \pi D^2}{4} \int_0^S \frac{Du}{Dt} ds'$ Note: C_M = inertia coefficient	$\left(\frac{C_M \rho \pi D^2}{4} \frac{(H/T^2) \bar{h}}{h} \right) F_I$	(26)	VI
Drag Moment Component up to a Level, S , $M_D(\theta, S)$	$M_D(\theta, S) = \frac{C_D \rho D}{2} \int_0^S s' u u ds'$	$\left(\frac{C_D \rho D}{2} \frac{(H/T)^2 \bar{h}^2}{h^2} \right) M_D$	(27)	VII
Inertia Moment Component up to a Level, S , $M_I(\theta, S)$	$M_I(\theta, S) = \frac{C_M \rho \pi D^2}{4} \int_0^S s' \frac{Du}{Dt} ds'$	$\left(\frac{C_M \rho \pi D^2}{4} \frac{(H/T^2) \bar{h}^2}{h^2} \right) M_I$	(28)	VIII
Dynamic Pressure Component $P_D(\theta, S)$	$P_D(\theta, S) = \gamma \bar{Q} - \frac{\rho}{2} (u - C)^2 + w^2 + \frac{\rho}{2} C^2$ Note: γ = specific weight of water $\equiv \rho g$; Q is defined in Equation 8; $\bar{Q}$ is the average value of Q	$\left(\frac{2}{\gamma H} \right) P_D$	(29)	IX

TABLE E
Variables Depending on θ Only

Variable	Expression for Variable	Dimensionless Form	Equation No.	Presented in Table
Water Surface Displacement, $\eta(\theta)$	$\eta(\theta) = \frac{T}{L} \psi \eta - \frac{T}{L} \sum_{n=1}^{NN} X(n) \sinh \left[\frac{2\pi}{L} n(h + \eta) \right] \cos(n\theta)$	$\left[\frac{1}{H} \right] \eta(\theta)$	(30)	I - IX
Total Drag Force Component, $F_D(\theta)$	Same as Eq. (25), except upper limit is $h + \eta(\theta)$	$\left[\frac{C_D \rho D^2 (H/T)^2 h}{2} \right] F_D$	(31)	V (labeled "Surface")
Total Inertia Force Component, $F_I(\theta)$	Same as Eq. (26), except upper limit is $h + \eta(\theta)$	$\left[\frac{C_M \rho \pi^2 D^2 (H/T)^2 h}{4} \right] F_I$	(32)	VI (labeled "Surface")
Total Drag Moment Component, $M_D(\theta)$	Same as Eq. (27), except upper limit is $h + \eta(\theta)$	$\left[\frac{C_D \rho D^2 (H/T)^2 h^2}{2} \right] M_D$	(33)	VII (labeled "Surface")
Total Inertia Moment Component, $M_I(\theta)$	Same as Eq. (28) except upper limit is $h + \eta(\theta)$	$\left[\frac{C_M \rho \pi^2 D^2 (H/T)^2 h^2}{4} \right] M_I$	(34)	VIII (labeled "Surface")
Kinematic Free Surface Boundary Condition Error, $\epsilon_1(\theta)$	$\epsilon_1(\theta) = \frac{\partial \eta}{\partial x} - \frac{w}{u - C}$	Expression given is in dimensionless form	(35)	X Item 1 Linear Theory Item 2 Stream Function Theory
Dynamic Free Surface Boundary Condition Error, $\epsilon_2(\theta)$	$\epsilon_2(\theta) = Q(\theta) - \bar{Q}$ Note: $\bar{Q} \equiv \bar{Q}(\theta)$	$\left[\frac{1}{H} \right] \epsilon_2$	(36)	X Item 3, Item 4, Stream Function Theory

TABLE F
Overall Variables
(Do Not Depend on θ or S)

Variable	Expression for Variable	Dimensionless Form	Equation No.	Presented in Table
Wave Length, L	L is determined from Stream function solution (no explicit expression)	$\left(\frac{2\pi}{gT}\right) L$	(37)	XI Item 1
Average Potential Energy, P_E	$P_E = \frac{\gamma}{4\pi} \int_0^{2\pi} \eta^2(\theta) d\theta$	$\left(\frac{8}{\gamma H^2}\right) P_E$	(38)	XI Item 2
Average Kinetic Energy, KE	$KE = \frac{\rho}{4\pi} \int_0^{2\pi} \int_0^{h+\eta} (u^2 + w^2) ds d\theta$	$\left(\frac{8}{\gamma H^2}\right) KE$	(39)	XI Item 3
Average Total Energy, TE	$TE = PE + KE$	$\left(\frac{8}{\gamma H^2}\right) TE$	(40)	XI Item 4
Average Total Energy Flux, F_{TE}	$F_{TE} = \frac{1}{2\pi} \int_0^{2\pi} \int_0^{h+\eta} u \left(p_D + \rho g z + \frac{\rho}{2} (u^2 + w^2) \right) ds d\theta$	$\left(\frac{8}{\gamma H^2 L/T}\right) F_{TE}$	(41)	XI Item 5
Group Velocity, C_G	$C_G = \frac{F_{TE}}{TE}$	$\left(\frac{1}{L/T}\right) C_G$	(42)	XI Item 6
Average Momentum M	$M = \frac{1}{2\pi} \int_0^{2\pi} \int_0^{h+\eta} \rho u ds d\theta$	$\left(\frac{8L/T}{\gamma H^2}\right) M$	(43)	XI Item 7

TABLE F—Continued

Variable	Expression for Variable	Dimensionless Form	Equation No.	Presented in Table
Average Momentum Flux, in Wave Direction, F_{m_x}	$F_{m_x} = \frac{1}{2\pi} \int_0^{2\pi} \int_0^{h+\eta} \left(p_D + \rho u^2 \right) ds d\theta$	$\left(\frac{8}{\gamma H^2} \right) F_{m_x}$	(44)	XI Item 8
Average Momentum Flux, Transverse to Wave Direction F_{m_y}	$F_{m_y} = \frac{1}{2\pi} \int_0^{2\pi} \int_0^{h+\eta} p_D ds d\theta$	$\left(\frac{8}{\gamma H^2} \right) F_{m_y}$	(45)	XI Item 9
Root-Mean-Square (RMS) and Maximum (Max) Kinematic Free Surface Boundary Condition Errors, $\sqrt{\epsilon_1^2}$ and $ \epsilon_1 _{\max}$	See Eq. (35)	Expression Given is in Dimensionless Form	(46)	XI Items 10 & 12
RMS and Max Dynamic Free Surface Boundary Condition Errors, $\sqrt{\epsilon_2^2}$ and $ \epsilon_2 _{\max}$	See Eq. (36)	$\left(\frac{1}{H} \right) \sqrt{\epsilon_2^2} \text{ and } \left(\frac{1}{H} \right) \epsilon_2 _{\max}$	(47)	XI Items 11 & 13
Kinematic Free Surface Breaking Parameter, β_1	$\beta_1 = \frac{u}{C}, u \text{ evaluated at } \left(\theta = 0^\circ \right. \\ \left. S = h + \eta \right)$	Expression Given is in Dimensionless Form	(48)	XI Item 14
Dynamic Free Surface Breaking Parameter β_2	$\beta_2 = - \frac{1}{g} \frac{Dw}{Dt}, Dw \text{ evaluated at } \left(\theta = 0^\circ \right. \\ \left. S = h + \eta \right)$	Expression Given is in Dimensionless Form	(49)	XI Item 15

Note: In addition to values tabulated, the results include combined refraction/shoaling effects over idealized bathymetry; these results are presented in graphical form and will be described later.

Figures 25, 26, 27, 28, and 29 from Volume I Presenting Graphical Results for Combined Shoaling-Refraction for Deepwater Wave Directions, $\alpha_o = 0^\circ, 10^\circ, 20^\circ, 40^\circ,$ and 60° , Respectively.

Figure 25. Combined shoaling-refraction for a deepwater wave direction, $\alpha_o = 0^\circ$.

Figure 26. Combined shoaling-refraction for a deepwater wave direction, $\alpha_o = 10^\circ$.

Figure 27. Combined shoaling-refraction for a deepwater wave direction, $\alpha_0 = 20^\circ$.

Figure 28. Combined shoaling-refraction for a deepwater wave direction, $\alpha_o = 40^\circ$.

Figure 29. Combined shoaling-refraction for a deepwater wave direction, $\alpha_0 = 60^\circ$.

II STREAM-FUNCTION THEORY TABULATIONS IN DIMENSIONLESS FORM FOR 40 SETS OF WAVE CHARACTERISTICS

CASE 1=A

19TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO=(G/6.28318)^{.5}T^{**2}$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .00390 DPT/LO = .00200
 H/DPT = .194829
 L/LO = .119648 PSI/(G*H*T) = -.000178

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.287475-01	X(2)/(H*T*G) =	-.128289+01
X(3)/(H*T*G) =	-.713786+02	X(4)/(H*T*G) =	-.422235+02
X(5)/(H*T*G) =	-.250337+02	X(6)/(H*T*G) =	-.153772+02
X(7)/(H*T*G) =	-.927237+03	X(8)/(H*T*G) =	-.455664+03
X(9)/(H*T*G) =	-.332623+03	X(10)/(H*T*G) =	-.197489+03
X(11)/(H*T*G) =	-.116371+03	X(12)/(H*T*G) =	-.468235+04
X(13)/(H*T*G) =	-.396098+04	X(14)/(H*T*G) =	-.228822+04
X(15)/(H*T*G) =	-.130467+04	X(16)/(H*T*G) =	-.741167+05
X(17)/(H*T*G) =	-.412900+05	X(18)/(H*T*G) =	-.230502+05
X(19)/(H*T*G) =	-.124741+05		

CASE 1-A

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.910	.600	.199	.009	.080	.090	.090	.090	.090
	45.0%	18.0%	-136.6%	*****	499.3%	244.1%	3.8%	-323.9%	-453.4%
SURFACE	51.990	33.565	10.540	.258	-4.434	-4.902	-4.921	-4.936	-4.937
S/DEPTH=1.1	45.9%	17.5%	-150.6%	*****	507.3%	248.3%	1.0%	-335.2%	-467.9%
	50.923	33.528							
	44.8%	17.4%							
S/DEPTH=1.0	49.681	33.311	10.705	.262					
	43.5%	17.0%	-146.4%	*****					
S/DEPTH= .9	46.585	33.107	11.096	.495	-4.407	-4.901	-4.923	-4.935	-4.936
	42.3%	16.6%	-137.4%	*****	508.9%	248.1%	1.1%	-335.2%	-468.0%
S/DEPTH= .8	47.626	32.920	11.458	.705	-4.378	-4.900	-4.924	-4.935	-4.934
	41.2%	16.2%	-130.1%	*****	511.2%	247.9%	1.2%	-334.8%	-467.6%
S/DEPTH= .7	46.798	32.750	11.733	.889	-4.353	-4.899	-4.925	-4.934	-4.933
	40.12%	15.9%	-124.1%	*****	513.2%	247.8%	1.3%	-334.4%	-4.933
S/DEPTH= .6	46.092	32.600	11.985	1.050	-4.331	-4.898	-4.926	-4.934	-4.933
	39.3%	15.5%	-119.2%	*****	514.9%	247.7%	1.4%	-334.1%	-466.8%
S/DEPTH= .5	45.504	32.471	12.195	1.186	-4.312	-4.897	-4.926	-4.933	-4.932
	38.6%	15.3%	-115.3%	*****	516.8%	247.7%	1.5%	-333.8%	-466.5%
S/DEPTH= .4	45.029	32.365	12.365	1.297	-4.297	-4.896	-4.927	-4.933	-4.931
	38.0%	15.0%	-112.2%	*****	517.7%	247.6%	1.6%	-333.6%	-466.2%
S/DEPTH= .3	44.663	32.281	12.495	1.384	-4.285	-4.896	-4.927	-4.933	-4.931
	37.5%	14.9%	-109.9%	*****	518.7%	247.6%	1.6%	-333.4%	-466.0%
S/DEPTH= .2	44.404	32.220	12.588	1.445	-4.277	-4.895	-4.927	-4.933	-4.931
	37.12%	14.7%	-108.5%	*****	519.8%	247.5%	1.7%	-333.3%	-465.9%
S/DEPTH= .1	44.1249	32.184	12.643	1.483	-4.272	-4.895	-4.927	-4.933	-4.931
	37.0%	14.6%	-107.3%	*****	519.8%	247.5%	1.7%	-333.2%	-465.8%
S/DEPTH= .0	44.197	32.172	12.661	1.495	-4.270	-4.895	-4.928	-4.933	-4.931
	36.9%	14.6%	-107.0%	*****	519.8%	247.5%	1.7%	-333.2%	-465.7%

CASE 10A

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	45.0%	18.0%	=136.6%	10.052	88.3%	9.674	88.9%	8.702	8.9%
SURFACE	0.00	15.209	10.052	4.012	.439	.006	.011	.010	.000
S/DEPTH=1.1	*****	96.1%	88.3%	57.6%	*****	*****	*****	*****	*****
S/DEPTH=1.0	*****	14.927	9.674	4.006	*****	*****	*****	*****	*****
S/DEPTH=.9	*****	96.0%	88.9%	60.8%	*****	*****	*****	*****	*****
S/DEPTH=.8	*****	13.514	8.702	3.637	.405	.007	.010	.009	.000
S/DEPTH=.7	*****	95.9%	88.9%	61.2%	*****	*****	*****	*****	*****
S/DEPTH=.6	*****	11.778	8.9%	3.358	.364	.008	.008	.007	.000
S/DEPTH=.5	*****	10.309	7.729	61.5%	*****	*****	*****	*****	*****
S/DEPTH=.4	*****	95.8%	86.9%	61.5%	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	8.899	6.758	2.870	.321	.008	.006	.006	.000
S/DEPTH=.2	*****	95.7%	88.9%	61.6%	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	7.538	5.788	2.474	.278	.008	.005	.004	.000
S/DEPTH=.0	*****	95.7%	88.9%	62.0%	*****	*****	*****	*****	*****
S/DEPTH=.5	*****	6.220	4.819	2.072	.233	.007	.004	.003	.000
S/DEPTH=.4	*****	95.6%	88.9%	62.2%	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	4.935	3.853	1.664	.188	.006	.003	.003	.000
S/DEPTH=.2	*****	95.6%	88.9%	62.3%	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	3.678	2.888	1.252	.141	.005	.002	.002	.000
S/DEPTH=.0	*****	95.6%	88.9%	62.5%	*****	*****	*****	*****	*****
S/DEPTH=.5	*****	2.441	1.925	.836	.094	.003	.001	.001	.000
S/DEPTH=.4	*****	95.5%	88.9%	62.5%	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	1.821	.962	.419	.047	.002	.001	.001	.000
S/DEPTH=.2	*****	95.5%	88.9%	62.5%	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	95.5%	88.9%	62.5%	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	95.5%	88.9%	62.5%	*****	*****	*****	*****	*****

CASE 1-A

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.910	.600	.199	.009	-.060	-.090	-.090	-.090	-.090
	45.0%	18.0%	-136.6%	*****	499.3%	244.1%	3.8%	-323.9%	-453.4%
SURFACE	.000	896.600	553.361	215.459	23.890	-1.019	1.415	1.340	.000
	*****	96.9%	90.1%	62.4%	*****	*****	*****	*****	*****
S/DEPTH=1.1	.000	888.554							
	*****	96.9%							
S/DEPTH=1.0	.000	844.403	553.970	215.575					
	*****	96.7%	90.1%	62.5%					
S/DEPTH= .9	.000	805.563	554.940	222.042	24.598	-.632	1.209	1.141	.000
	*****	96.6%	90.1%	63.7%	*****	*****	*****	*****	*****
S/DEPTH= .8	.000	771.685	555.230	227.318	25.395	-.240	1.005	.942	.000
	*****	96.4%	90.1%	64.6%	*****	*****	*****	*****	*****
S/DEPTH= .7	.000	742.466	555.050	232.900	26.131	.080	.842	.782	.000
	*****	96.3%	90.2%	65.4%	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	717.646	554.573	237.290	26.791	.338	.715	.655	.000
	*****	96.2%	90.2%	66.1%	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	697.005	553.945	240.991	27.367	.544	.613	.556	.000
	*****	96.0%	90.1%	66.6%	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	680.360	553.281	244.008	27.848	.703	.537	.480	.000
	*****	95.9%	90.1%	67.1%	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	667.563	552.673	246.348	28.230	.823	.480	.424	.000
	*****	95.9%	90.1%	67.4%	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	658.502	552.190	248.015	28.506	.905	.442	.385	.000
	*****	95.8%	90.1%	67.6%	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	653.097	551.882	249.013	28.673	.954	.420	.363	.000
	*****	95.8%	90.1%	67.8%	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	651.301	551.776	249.346	28.729	.970	.412	.355	.000
	*****	95.8%	90.1%	67.8%	*****	*****	*****	*****	*****

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TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	45.0%	.910	.600	.190	.009	.080	.090	.090	.090
		16.0%	.136.6%	.000%	.000%	.499.3%	3.6%	.323.9%	.453.4%
SURFACE		-69.976	270.840	149.656	20.160	.695	-1.031	.606	1.095
S/DEPTH=1.1		97.3%	106.7%	111.0%	.000%	.000%	.000%	.000%	.000%
S/DEPTH=1.0		-658.339	70.433	149.407	18.439	.678	.860	.507	.909
S/DEPTH= .9		97.0%	72.8%	110.1%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .8		-585.515	258.381	110.1%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .7		97.0%	77.5%	106.4%	134.770	.641	.687	.407	.722
S/DEPTH= .6		-516.577	227.402	110.1%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .5		96.9%	106.6%	120.019	16.409	.589	.545	.325	.570
S/DEPTH= .4		-451.049	198.053	110.1%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .3		96.8%	106.7%	110.1%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .2		-388.480	170.150	110.1%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .1		96.8%	106.8%	110.1%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .0		-328.443	143.510	90.258	12.352	.524	.427	.256	.445
		96.8%	106.9%	110.1%	.000%	.000%	.000%	.000%	.000%
		-270.537	117.951	75.286	10.314	.450	.329	.199	.342
		96.7%	107.0%	110.1%	.000%	.000%	.000%	.000%	.000%
		-214.377	93.288	60.272	8.267	.369	.247	.150	.255
		96.7%	107.1%	110.0%	.000%	.000%	.000%	.000%	.000%
		-159.594	69.341	45.228	6.210	.281	.175	.107	.181
		96.7%	107.2%	110.0%	.000%	.000%	.000%	.000%	.000%
		-105.833	45.931	30.163	4.145	.190	.113	.069	.116
		96.6%	107.2%	.000%	.000%	.000%	.000%	.000%	.000%
		-52.748	22.876	15.084	2.074	.096	.055	.034	.057
		96.6%	.000%	.000%	.000%	.000%	.000%	.000%	.000%
		-10.000	.000	.000	.000	.000	.000	.000	.000
		.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%

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TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.910	.600	.199	.009	-.080	-.090	-.090	-.090	-.090
	45.0%	18.0%	136.6%	*****	490.3%	244.1%	3.8%	323.9%	-453.4%
SURFACE	2574.030	1191.188	149.314	1.309	-18.412	23.564	23.836	23.912	23.902
S/DEPTH=1.1	66.6%	30.1%	405.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	2169.607	1172.094	144.948	1.309	*****	*****	*****	*****	*****
S/DEPTH=.9	1875.398	950.139	135.056	1.294	*****	*****	*****	*****	*****
S/DEPTH=.8	1644.084	841.159	120.353	1.257	*****	*****	*****	*****	*****
S/DEPTH=.7	1421.281	733.354	106.921	1.193	*****	*****	*****	*****	*****
S/DEPTH=.6	1205.858	626.598	92.848	1.098	*****	*****	*****	*****	*****
S/DEPTH=.5	995.999	520.751	78.222	.973	*****	*****	*****	*****	*****
S/DEPTH=.4	791.177	415.671	63.134	.818	*****	*****	*****	*****	*****
S/DEPTH=.3	590.141	311.208	47.675	.638	*****	*****	*****	*****	*****
S/DEPTH=.2	391.897	207.242	31.938	.437	*****	*****	*****	*****	*****
S/DEPTH=.1	195.492	103.528	16.015	.222	*****	*****	*****	*****	*****
S/DEPTH=.0	0.000	0.000	0.000	0.000	*****	*****	*****	*****	*****

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TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)									
THETA ETA/HEIGHT	0 910 45.0%	10.0 910 45.0%	20.0 919 -136.6%	30.0 909 *****	50.0 -080 499.3%	75.0 090 244.1%	100.0 090 3.6%	150.0 090 -323.9%	180.0 090 -453.4%
SURFACE	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	45.0%	.600	.199	.009	.080	.090	.090	.090	.090
		18.0%	-136.6%	*****	499.3%	244.1%	3.8%	-323.9%	-453.4%
SURFACE	1598.651	674.935	73.097	.449	-9.177	-11.582	-11.704	-11.744	-11.745
S/DEPTH=1.1	70.4%	32.2%	*****	*****	*****	*****	*****	*****	*****
	1365.838	653.769							
S/DEPTH=1.0	65.4%	30.0%	68.647	.448	-7.624	-9.716	-9.825	-9.859	-9.855
	1100.175	536.495	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	64.3%	29.1%	57.356	.434	-5.984	-7.675	-7.764	-7.789	-7.785
	870.855	431.621	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	63.0%	28.7%	46.565	.403	-4.555	-5.875	-5.946	-5.963	-5.959
	674.161	339.078	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	62.4%	28.4%	36.497	.356	-3.329	-4.515	-4.369	-4.380	-4.378
	506.993	288.215	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	62.2%	28.0%	27.354	.294	-2.302	-2.996	-3.034	-3.042	-3.040
	366.784	188.815	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	61.7%	27.8%	19.314	.226	-1.468	-1.917	-1.942	-1.947	-1.945
	251.427	130.592	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	61.2%	27.5%	12.528	.156	-1.092	-1.078	-1.092	-1.095	-1.094
	159.221	83.300	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	60.8%	27.3%	7.120	.093	*****	*****	*****	*****	*****
	88.831	46.734	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	60.5%	20.732	3.168	.043	-0.365	-0.479	-0.486	-0.487	-0.486
	39.251	20.732	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	9.779	5.177	.801	.011	-0.091	-0.120	-0.121	-0.122	-0.121
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.910	.600	.199	.009	.090	.090	.090	.090
	45.0%	18.0%	=136.6%	*****	499.3%	244.1%	=323.9%	=453.4%
SURFACE	.000	480.530	299.002	116.633	12.696	.027	.415	.386
	*****	96.5%	86.1%	59.3%	*****	*****	*****	*****
S/DEPTH=1.1	.000	463.742						
	*****	96.4%						
S/DEPTH=1.0	.000	372.773	277.170	116.264				
	*****	90.3%	90.1%	65.3%				
S/DEPTH= .9	.000	294.408	224.492	95.477	10.771	.090	.314	.289
	*****	96.2%	90.1%	65.8%	*****	*****	*****	*****
S/DEPTH= .8	.000	227.381	177.306	76.358	8.646	.127	.220	.201
	*****	96.1%	90.1%	66.3%	*****	*****	*****	*****
S/DEPTH= .7	.000	170.604	135.668	59.081	6.714	.133	.151	.137
	*****	96.0%	90.1%	66.6%	*****	*****	*****	*****
S/DEPTH= .6	.000	123.153	98.603	43.800	4.994	.119	.100	.090
	*****	96.0%	90.1%	66.9%	*****	*****	*****	*****
S/DEPTH= .5	.000	84.252	69.118	30.647	3.505	.095	.064	.057
	*****	95.9%	90.1%	67.2%	*****	*****	*****	*****
S/DEPTH= .4	.000	53.262	44.205	19.734	2.263	.067	.038	.033
	*****	95.9%	90.1%	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	28.674	24.851	11.153	1.282	.040	.020	.018
	*****	95.8%	90.1%	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	13.098	11.040	4.974	.572	.019	.009	.007
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	3.261	2.759	1.246	.144	.005	.002	.002
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=A

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	45.0%	.910	.600	.199	.009	.080	.090	.090	.090
		18.0%	-136.6%	*****	499.3%	244.1%	3.8%	323.0%	-453.4%
SURFACE	1.821	1.203	.397	.017	.0162	.0180	.0180	.0181	.0181
S/DEPTH=1.1	46.4%	20.0%	-132.3%	*****	500.3%	255.4%	16.0%	325.5%	-465.4%
S/DEPTH=1.0	45.4%	19.9%							
S/DEPTH= .9	1.748	1.197	.403	.018					
S/DEPTH= .8	44.2%	19.7%	-128.3%	*****	.027	.0161	.0180	.0181	.0181
S/DEPTH= .7	1.712	1.193	.419	.027	502.02%	255.3%	16.2%	325.0%	-465.0%
S/DEPTH= .6	43.1%	19.5%	-119.6%	*****	.035	.0159	.0181	.0181	.0181
S/DEPTH= .5	1.682	1.188	.432	.035	504.62%	255.12%	16.4%	325.0%	-465.0%
S/DEPTH= .4	42.1%	19.3%	-112.5%	*****	.042	.0158	.0181	.0181	.0181
S/DEPTH= .3	1.655	1.184	.444	.042	506.82%	255.02%	16.5%	324.0%	-464.0%
S/DEPTH= .2	41.2%	19.1%	-106.7%	*****	.048	.0158	.0181	.0181	.0181
S/DEPTH= .1	1.632	1.181	.454	.048	508.72%	255.1%	16.7%	324.0%	-464.0%
S/DEPTH= .0	40.5%	18.9%	-102.0%	*****	.053	.0157	.0181	.0181	.0181
S/DEPTH= .5	1.613	1.177	.462	.053	510.42%	255.12%	16.8%	323.0%	-463.0%
S/DEPTH= .4	39.8%	18.7%	-98.3%	*****	.058	.0156	.0181	.0181	.0181
S/DEPTH= .3	1.598	1.175	.469	.058	511.72%	255.1%	16.9%	323.0%	-463.0%
S/DEPTH= .2	39.3%	18.5%	-95.3%	*****	.061	.0156	.0181	.0181	.0181
S/DEPTH= .1	1.586	1.172	.474	.061	512.62%	255.02%	16.9%	323.0%	-463.0%
S/DEPTH= .0	38.8%	18.4%	-93.1%	*****	.063	.0155	.0181	.0181	.0181
S/DEPTH= .5	1.577	1.171	.478	.063	513.62%	255.02%	17.0%	323.0%	-463.0%
S/DEPTH= .4	38.5%	18.3%	-91.6%	*****	.065	.0155	.0181	.0181	.0181
S/DEPTH= .3	1.572	1.170	.480	.065	514.02%	255.02%	17.0%	323.0%	-463.0%
S/DEPTH= .2	38.3%	18.3%	-90.7%	*****	.065	.0155	.0181	.0181	.0181
S/DEPTH= .1	1.571	1.170	.481	.065	514.22%	255.10%	17.0%	323.0%	-463.0%
S/DEPTH= .0	38.3%	18.3%	-90.4%	*****					

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.001	.001	.001	.001	.000	.001	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.012	.011	.009	.006	.002	.010	.011	.002	.012
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.001	.001	.000	.000	.000	.000	.000	.000	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	
	.120 (6.5%)	
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	
	.205 (=143.5%)	
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	
	.218 (=130.4%)	
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	
	.424 (=156.7%)	
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	
	.417 (=138.8%)	
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	
	.985 (=.9%)	
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	
	.434 (=130.4%)	
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	
	.606 (=146.2%)	
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	
	.189 (=162.6%)	

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10)	DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	
	LINEAR	.000761
(11)	DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	
	LINEAR	.000315
(12)	DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	
	LINEAR	.001142
(13)	DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	
	LINEAR	.011790
(14)	DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48)	
	LINEAR	.097858
(15)	DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)	
	LINEAR	.001211

STREAM FUNCTION .000000

STREAM FUNCTION .000319

STREAM FUNCTION .000000

STREAM FUNCTION .001154

STREAM FUNCTION .169314

STREAM FUNCTION .044500

CASE 1=B

19TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/g, 28318) * T ** 2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .000779 DPT/LO = .002000
 H/DPT = .389717
 L/LO = .128262 PSI/(G*H*T) = *.000246

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.207144=01	X(2)/(H*T*G) =	-.973663=02
X(3)/(H*T*G) =	-.585442=02	X(4)/(H*T*G) =	-.382933=02
X(5)/(H*T*G) =	-.258161=02	X(6)/(H*T*G) =	-.176628=02
X(7)/(H*T*G) =	-.120946=02	X(8)/(H*T*G) =	-.829635=03
X(9)/(H*T*G) =	-.565533=03	X(10)/(H*T*G) =	-.384799=03
X(11)/(H*T*G) =	-.259436=03	X(12)/(H*T*G) =	-.174668=03
X(13)/(H*T*G) =	-.116093=03	X(14)/(H*T*G) =	-.771778=04
X(15)/(H*T*G) =	-.504252=04	X(16)/(H*T*G) =	-.330672=04
X(17)/(H*T*G) =	-.211748=04	X(18)/(H*T*G) =	-.137184=04
X(19)/(H*T*G) =	-.859499=05		

CASE 1=B

TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)									
THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	150.0	180.0
ETA/HEIGHT=	.938	.413	.049	.039	.062	.061	.061	.062	.062
	46.7%	19.3%	856.2%	*****	621.2%	310.5%	41.7%	518.6%	710.5%
SURFACE									
S/DEPTH=1.0	54.619	22.857	2.222	2.204	3.340	3.238	3.207	3.291	3.287
	48.5%	21.3%	*****	*****	641.1%	324.5%	51.9%	552.3%	752.1%
S/DEPTH=1.3	53.056								
	100.0%								
S/DEPTH=1.2	50.901								
	44.7%								
S/DEPTH=1.1	48.995	22.991							
	42.6%	20.4%							
S/DEPTH=1.0	47.317	23.172	2.314						
	40.7%	19.3%	*****						
S/DEPTH= .9	45.848	23.311	2.762	2.098	3.320	3.241	3.213	3.287	3.280
	38.8%	18.4%	853.6%	*****	642.9%	321.9%	51.5%	553.1%	753.9%
S/DEPTH= .8	44.572	23.417	3.161	1.985	3.297	3.244	3.221	3.282	3.272
	37.2%	17.8%	732.5%	*****	646.1%	323.4%	51.0%	553.6%	755.9%
S/DEPTH= .7	43.475	23.495	3.511	1.884	3.278	3.247	3.227	3.279	3.266
	35.6%	17.3%	648.8%	*****	648.7%	323.1%	50.6%	553.7%	756.7%
S/DEPTH= .6	42.547	23.553	3.813	1.796	3.263	3.249	3.232	3.276	3.261
	34.3%	16.9%	589.0%	*****	650.8%	322.7%	50.2%	553.6%	757.2%
S/DEPTH= .5	41.777	23.594	4.067	1.721	3.250	3.250	3.236	3.274	3.258
	33.1%	16.6%	545.6%	*****	652.5%	322.5%	49.9%	553.8%	757.7%
S/DEPTH= .4	41.157	23.623	4.273	1.660	3.241	3.251	3.239	3.272	3.255
	32.2%	16.4%	514.0%	*****	653.9%	322.3%	49.7%	553.6%	757.9%
S/DEPTH= .3	40.682	23.643	4.433	1.612	3.233	3.252	3.241	3.271	3.253
	31.4%	16.3%	491.6%	*****	654.9%	322.1%	49.5%	553.7%	758.1%
S/DEPTH= .2	40.345	23.655	4.547	1.577	3.228	3.253	3.243	3.270	3.251
	30.8%	16.2%	476.6%	*****	656.6%	322.0%	49.4%	553.7%	758.2%
S/DEPTH= .1	40.145	23.662	4.616	1.557	3.225	3.253	3.243	3.269	3.250
	30.5%	16.1%	468.0%	*****	656.0%	321.9%	49.4%	553.7%	758.3%
S/DEPTH= .0	40.078	23.664	4.638	1.550	3.224	3.253	3.244	3.269	3.250
	30.4%	16.1%	465.1%	*****	656.1%	321.9%	49.3%	553.7%	758.3%

CASE 1=B

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	160.0
ETA/HEIGHT=	.938	.413	.049	.039	.062	.061	.061	.062	.062
	46.7%	19.3%	-859.2%	*****	621.2%	310.5%	-41.7%	518.6%	-710.5%
SURFACE	.000	18.751	5.852	1.549	.134	-.101	.066	.062	.000
	*****	96.5%	78.3%	-18.5%	*****	*****	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000								

S/DEPTH=1.0	.000								

S/DEPTH=.9	.000	17.510	5.764	1.425	.120	-.087	.057	.053	.000
	*****	96.6%	81.4%	.9%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	13.729	5.280	.971	.103	-.071	.046	.043	.000
	*****	96.4%	81.7%	1.276	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	11.985	4.764	1.7%	.087	-.057	.037	.035	.000
	*****	96.4%	82.0%	1.125	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	10.320	4.220	2.4%	.073	-.045	.029	.028	.000
	*****	96.3%	82.2%	3.1%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	8.724	3.655	.814	.059	-.035	.023	.022	.000
	*****	96.3%	82.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	7.185	3.071	.654	.047	-.027	.017	.017	.000
	*****	96.2%	82.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	5.693	2.473	.493	.035	-.019	.013	.012	.000
	*****	96.2%	82.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	4.238	1.864	.329	.023	-.012	.008	.008	.000
	*****	96.1%	82.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	2.810	1.247	.165	.011	-.006	.004	.004	.000
	*****	96.1%	82.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	1.401	.625	.000	.000	.000	.000	.000	.000
	*****	96.1%	82.5%	*****	*****	*****	*****	*****	*****

CASE 1=8

TABLE 11-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.938	.413	.049	.039	.062	.061	.061	.062	.062
	46.7%	19.3%	859.42%	*****	621.2%	310.5%	41.7%	518.6%	710.5%
SURFACE	.000	1130.109	278.756	93.929	12.727	13.429	8.834	8.133	.000
	*****	97.6%	82.2%	21.6%	*****	*****	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000	1090.256							
	*****	97.7%							
S/DEPTH=1.0	.000	1030.707	283.710						
	*****	97.6%	82.6%						
S/DEPTH=.9	.000	978.161	307.214	95.105	11.719	11.690	7.674	7.093	.000
	*****	97.5%	83.9%	22.9%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	932.216	326.850	96.801	10.618	9.776	6.404	5.946	.000
	*****	97.3%	84.9%	24.5%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	892.513	343.116	98.660	9.8737	8.8224	5.378	5.016	.000
	*****	97.2%	85.7%	25.6%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	858.735	356.431	100.532	9.039	6.977	4.556	4.269	.000
	*****	97.1%	86.2%	27.3%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	830.612	367.144	102.298	8.494	5.991	3.907	3.677	.000
	*****	97.0%	86.8%	28.6%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	807.912	375.540	103.862	8.078	5.228	3.407	3.220	.000
	*****	96.9%	86.9%	29.7%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	790.449	381.844	105.150	7.774	4.662	3.037	2.881	.000
	*****	96.9%	87.2%	30.6%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	778.078	386.227	106.108	7.566	4.272	2.782	2.646	.000
	*****	96.8%	87.3%	31.5%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	770.697	388.810	106.698	7.445	4.044	2.632	2.509	.000
	*****	96.8%	87.4%	31.7%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	768.243	389.663	106.697	7.406	3.968	2.583	2.464	.000
	*****	96.8%	87.4%	31.8%	*****	*****	*****	*****	*****

TABLE IV. DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD... DEFINED IN EQUATION (24)

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CASE 1=8

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.938	.413	.049	.039	.062	.061	.061	.062	.062
	46.7%	=19.3%	=859.2%	*****	621.2%	310.5%	=41.7%	=518.6%	=710.5%
SURFACE	2744.612	639.354	15.553	=3.122	=10.372	=10.302	=10.200	=10.470	=10.377
	65.9%	=41.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	2554.316								
	100.0%								
S/DEPTH=1.2	2284.330								
	59.0%								
S/DEPTH=1.1	2035.023								
	57.6%								
S/DEPTH=1.0	1803.278								
	56.6%								
S/DEPTH= .9	1586.427								
	55.6%								
S/DEPTH= .8	1382.162								
	54.6%								
S/DEPTH= .7	1188.472								
	54.0%								
S/DEPTH= .6	1003.585								
	53.3%								
S/DEPTH= .5	825.924								
	52.6%								
S/DEPTH= .4	654.069								
	52.3%								
S/DEPTH= .3	486.724								
	51.9%								
S/DEPTH= .2	322.681								
	51.7%								
S/DEPTH= .1	160.804								
	51.5%								
S/DEPTH= 0	.000								

CASE 1=B

TABLE V1=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.938	.413	.049	.039	.062	.061	.061	.062	.062
	46.7%	19.3%	859.2%	*****	621.2%	310.5%	41.7%	518.6%	710.5%
SURFACE	.000	1026.951	362.568	100.129	8.749	4.339	4.060	4.060	.000
	*****	97.1%	83.9%	14.6%	*****	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000								

S/DEPTH=1.0	.000								

S/DEPTH=.9	.000								

S/DEPTH=.8	.000								

S/DEPTH=.7	.000								

S/DEPTH=.6	.000								

S/DEPTH=.5	.000								

S/DEPTH=.4	.000								

S/DEPTH=.3	.000								

S/DEPTH=.2	.000								

S/DEPTH=.1	.000								

S/DEPTH=.0	.000								

CASE 1=B

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT=	0 .938 46.7%	10.0 .413 19.3%	20.0 .049 159.2%	30.0 -0.39 621.2%	50.0 -0.62 310.5%	75.0 -0.61 41.7%	100.0 -0.61 41.7%	130.0 -0.62 518.6%	180.0 -0.62 710.5%
SURFACE	2074.248	367.450	6.394	-1.750	-5.119	-5.020	-4.960	-5.119	-5.082
S/DEPTH=1.3	72.9%	47.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.2	1820.554	275.343	6.295	-1.006	-3.399	-3.378	-3.345	-3.433	-3.402
S/DEPTH=1.1	100.0%	38.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	1482.685	331.296	5.681	-1.006	-3.399	-3.378	-3.345	-3.433	-3.402
S/DEPTH=.9	62.1%	39.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	60.3%	37.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	58.8%	36.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	952.557	36.3%	4.098	-1.725	-2.588	-2.588	-2.565	-2.625	-2.600
S/DEPTH=.5	55.2%	36.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	307.122	100.574	3.226	-1.505	-1.893	-1.902	-1.887	-1.927	-1.907
S/DEPTH=.3	54.2%	69.808	2.372	-1.335	-1.310	-1.322	-1.312	-1.338	-1.323
S/DEPTH=.2	53.4%	44.726	1.589	-1.206	-1.136	-1.146	-1.140	-1.156	-1.146
S/DEPTH=.1	52.7%	25.178	.926	-1.113	-1.049	-1.053	-1.053	-1.053	-1.053
S/DEPTH=.0	73.573	11.196	.422	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	32.340	2.800	.107	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	8.045	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	*****	*****	*****	*****	*****	*****	*****	*****

TABLE VII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

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TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

37

CASE 1=B

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.002	.003	.004	.005	.002	.001	.004	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.024	.022	.018	.012	.004	.020	.022	.004	.023
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.003	.005	.001	.001	.002	.000	.000	.001	.001

CASE 1=8

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	
	.128 (12.7%)	
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	
	.145 (-245.7%)	
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	
	.163 (-208.9%)	
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	
	.308 (-226.2%)	
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	
	.303 (-229.3%)	
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	
	.985 (-1.0%)	
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	
	.223 (-209.6%)	
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	
	.428 (-248.7%)	
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	
	.125 (-295.4%)	

CASE 1-B

TABLE XI(CONT)-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10)	DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.003113	STREAM FUNCTION	.000000
(11)	DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.016640	STREAM FUNCTION	.001684
(12)	DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.004955	STREAM FUNCTION	.000000
(13)	DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.023651	STREAM FUNCTION	.004954
(14)	DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.196021	STREAM FUNCTION	.331913
(15)	DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.002352	STREAM FUNCTION	.131477

CASE 1=C

19TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$
H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
OPT = WATER DEPTH L. = WAVE LENGTH
PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

HAVE CHARACTERISTICS

H/LO = .001169 OPT/LO = .002000
H/DPT = .58426
L/LO = .137070 PSI/(G*H*T) = -.000286

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.170855=01	X(2)/(H*T*G) =	-.818334=02
X(3)/(H*T*G) =	-.505625=02	X(4)/(H*T*G) =	-.343514=02
X(5)/(H*T*G) =	-.241829=02	X(6)/(H*T*G) =	-.174028=02
X(7)/(H*T*G) =	-.125519=02	X(8)/(H*T*G) =	-.911680=03
X(9)/(H*T*G) =	-.657157=03	X(10)/(H*T*G) =	-.475132=03
X(11)/(H*T*G) =	-.339469=03	X(12)/(H*T*G) =	-.243229=03
X(13)/(H*T*G) =	-.171508=03	X(14)/(H*T*G) =	-.121568=03
X(15)/(H*T*G) =	-.843649=04	X(16)/(H*T*G) =	-.591503=04
X(17)/(H*T*G) =	-.403566=04	X(18)/(H*T*G) =	-.280536=04
X(19)/(H*T*G) =	-.187999=04		

CASE 1=C

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.951	.287	.002	.042	.050	.048	.048	.049	.049
	47.4%	71.8%	*****	*****	739.9%	307.9%	-81.4%	-681.4%	-926.2%
SURFACE	56.519	16.026	.174	.2305	-2.745	-2.457	-2.405	-2.561	-2.558
S/DEPTH=1.5	50.1%	73.2%	*****	*****	*****	*****	*****	*****	*****
	54.801								
S/DEPTH=1.4	100.0%								
	51.999								
S/DEPTH=1.3	100.0%								
	49.510								
S/DEPTH=1.2	43.1%								
	47.304								
S/DEPTH=1.1	40.5%								
	45.357								
S/DEPTH=1.0	38.0%								
	43.644								
S/DEPTH=.9	35.7%								
	42.147								
S/DEPTH=.8	33.5%								
	40.648								
S/DEPTH=.7	31.4%								
	59.733								
S/DEPTH=.6	29.6%								
	38.790								
S/DEPTH=.5	27.9%								
	38.008								
S/DEPTH=.4	26.5%								
	37.379								
S/DEPTH=.3	25.3%								
	36.897								
S/DEPTH=.2	24.4%								
	36.556								
S/DEPTH=.1	23.7%								
	36.353								
S/DEPTH=.0	23.3%								
	36.286								
	23.1%								

CASE 1=C

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.951	.287	.002	.042	.050	.048	.049	.049
	47.4%	71.8%	**00000	*****	730.9%	367.9%	-81.4%	-926.2%
SURFACE	.000	18.170	3.021	.927	.149	-.190	.126	.115
S/DEPTH=1.5	.000	96.1%	54.6%	*****	*****	*****	*****	*****
S/DEPTH=1.4	.000							
S/DEPTH=1.3	.000							
S/DEPTH=1.2	.000							
S/DEPTH=1.1	.000	16.845						
S/DEPTH=1.0	.000	14.978	3.019	.844	.132	-.166	.109	.101
S/DEPTH= .9	.000	96.4%	64.4%	*****	*****	*****	*****	*****
S/DEPTH= .8	.000	13.211	2.846	*****	.110	-.136	.090	.083
S/DEPTH= .7	.000	96.3%	66.1%	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	11.534	2.629	.740	.091	-.111	.073	.067
S/DEPTH= .5	.000	96.2%	67.4%	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	9.953	2.375	.640	.074	-.089	.058	.054
S/DEPTH= .3	.000	96.2%	68.4%	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	8.397	2.090	.544	.060	-.070	.046	.043
S/DEPTH= .1	.000	96.1%	69.2%	*****	*****	*****	*****	*****
SURFACE	.000	6.916	1.778	.450	.046	-.054	.035	.033
S/DEPTH= .4	.000	96.1%	69.9%	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	5.480	1.447	.358	.034	-.039	.025	.024
S/DEPTH= .2	.000	96.0%	70.4%	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	4.079	1.099	.268	.022	-.025	.016	.015
SURFACE	.000	96.0%	70.7%	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	2.705	.739	.178	.011	-.012	.008	.008
S/DEPTH= .1	.000	96.0%	73.1%	*****	*****	*****	*****	*****
SURFACE	.000	96.0%	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000

TABLE III. DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD, . . . DEFINED IN EQUATION (23)

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TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

45

TABLE: V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

46

TABLE VI. DIMENSIONLESS INERTIA FORCE COMPONENT FIELD... DEFINED IN EQUATION (26)

47

CASE 1=C

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT=	10.0 0.287 0.951 47.4%	20.0 0.002 0.002 71.8%	30.0 0.042 0.050 739.9%	50.0 0.048 0.050 367.9%	75.0 0.048 0.048 -81.4%	100.0 0.049 0.049 -926.2%	130.0 0.049 0.049 -926.2%	160.0 0.049 0.049 -926.2%
SURFACE	2570.152	203.055	405	2.114	3.307	2.894	2.811	3.043
S/DEPTH=1.5	74.4%	212.0%	405	0.000%	0.000%	0.000%	0.000%	0.000%
S/DEPTH=1.4	2305.308	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.3	1891.915	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.2	1544.219	57.4%	57.4%	57.4%	57.4%	57.4%	57.4%	57.4%
S/DEPTH=1.1	1251.360	54.7%	54.7%	54.7%	54.7%	54.7%	54.7%	54.7%
S/DEPTH=1.0	1004.542	52.7%	52.7%	52.7%	52.7%	52.7%	52.7%	52.7%
S/DEPTH=0.9	796.633	50.8%	50.8%	50.8%	50.8%	50.8%	50.8%	50.8%
S/DEPTH=0.8	621.846	49.0%	49.0%	49.0%	49.0%	49.0%	49.0%	49.0%
S/DEPTH=0.7	475.464	47.3%	47.3%	47.3%	47.3%	47.3%	47.3%	47.3%
S/DEPTH=0.6	353.743	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%
S/DEPTH=0.5	253.552	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%
S/DEPTH=0.4	172.459	43.4%	43.4%	43.4%	43.4%	43.4%	43.4%	43.4%
S/DEPTH=0.3	108.524	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%
S/DEPTH=0.2	60.251	40.5%	40.5%	40.5%	40.5%	40.5%	40.5%	40.5%
S/DEPTH=0.1	26.530	38.9%	38.9%	38.9%	38.9%	38.9%	38.9%	38.9%
S/DEPTH=0.0	6.596	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%

CASE 1=C

TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.951	.987	.002	-.042	-.050	-.048	-.048	-.049	-.049
	47.4%	-71.8%	*****	*****	739.9%	367.9%	-81.4%	-681.4%	-926.26
SURFACE	.000	648.626	88.792	32.595	5.838	-7.722	5.136	4.676	.000
	*****	97.2%	59.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000	563.611							
	*****	97.7%							
S/DEPTH=1.0	.000	452.138	88.682						
	*****	97.6%	75.3%						
S/DEPTH=.9	.000	356.356	78.020	27.193	4.713	-6.116	4.056	3.711	.000
	*****	97.5%	77.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	274.668	65.861	21.017	3.025	-4.349	2.876	2.642	.000
	*****	97.5%	78.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	203.685	53.178	15.816	2.430	-3.020	1.992	1.836	.000
	*****	97.4%	79.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	148.211	40.771	11.468	1.667	-2.031	1.336	1.236	.000
	*****	97.4%	80.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	101.282	29.288	7.886	1.091	-1.304	.856	.795	.000
	*****	97.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	63.909	19.244	5.011	.664	-.781	.511	.476	.000
	*****	97.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	35.566	11.039	2.804	.359	-.416	.272	.254	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	15.686	4.974	1.242	.155	-.178	.116	.109	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	3.904	1.253	.310	.038	-.043	.028	.027	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=C

TABLE 1X=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

DEPTH	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.951	.267	.002	.842	.050	.048	.049	.049
	47.4%	-71.8%	*****	*****	739.9%	367.9%	-681.4%	-926.2%
SURFACE	1.883	.602	.002	-.090	-.110	.097	-.094	-.101
S/DEPTH=1.5	50.7%	-52.6%	*****	*****	697.6%	430.6%	-13.5%	-667.6%
S/DEPTH=1.4	100.0%							
S/DEPTH=1.3	100.0%							
S/DEPTH=1.2	45.9%							
S/DEPTH=1.1	44.1%							
S/DEPTH=1.0	40.7%							
S/DEPTH=.9	39.1%							
S/DEPTH=.8	37.7%							
S/DEPTH=.7	36.4%							
S/DEPTH=.6	35.2%							
S/DEPTH=.5	34.2%							
S/DEPTH=.4	33.5%							
S/DEPTH=.3	32.6%							
S/DEPTH=.2	32.1%							
S/DEPTH=.1	31.8%							
S/DEPTH=.0	31.7%							

CASE 1=C

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.005	.009	.011	.012	.005	.003	-.008	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	-.000	.000	.000	-.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.036	.033	.027	.018	-.006	-.030	-.033	.066	.035
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.010	-.014	.001	.003	.005	.000	-.001	.002	.002

CASE 1=C

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.137 (= 18.4%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.113 (=341.6%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.136 (=270.7%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.249 (=302.9%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.247 (=303.4%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.993 (= 99.1%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.268 (=273.6%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.344 (=334.4%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.096 (=413.8%)

CASE 1-C

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.007273	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.024969	STREAM FUNCTION	.004690
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.012231	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.035580	STREAM FUNCTION	.015717
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.294402	STREAM FUNCTION	.481962
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.003352	STREAM FUNCTION	.209473

CASE 1=0

19TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/g) \cdot 2\pi \cdot T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .001564 DPT/LO = .002000

H/DPT = .782113

L/LO = .146465 PSI/(G*H*T) = *.000312

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = *.151873=01 X(2)/(H*T*G) = *.734411=02

X(3)/(H*T*G) = *.460053=02 X(4)/(H*T*G) = *.318689=02

X(5)/(H*T*G) = *.29251=02 X(6)/(H*T*G) = *.169482=02

X(7)/(H*T*G) = *.125585=02 X(8)/(H*T*G) = *.940877=03

X(9)/(H*T*G) = *.598760=03 X(10)/(H*T*G) = *.52365=03

X(11)/(H*T*G) = *.384721=03 X(12)/(H*T*G) = *.285146=03

X(13)/(H*T*G) = *.207334=03 X(14)/(H*T*G) = *.152059=03

X(15)/(H*T*G) = *.108782=03 X(16)/(H*T*G) = *.788972=04

X(17)/(H*T*G) = *.553676=04 X(18)/(H*T*G) = *.397431=04

X(19)/(H*T*G) = *.273118=04

CASE 1=0

TABLE 1=0 DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (21)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.959	.210	.014	.039	.043	.040	.040	.041	.041
	47.9%	134.6%	*****	*****	*****	*****	*****	*****	*****
SURFACE	57.938	12.194	-.931	-2.136	-2.393	-2.019	-1.955	-2.149	-2.141
S/DEPTH=1.7	51.3%	128.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	100.0%								
S/DEPTH=1.5	55.013								
S/DEPTH=1.4	100.0%								
S/DEPTH=1.3	50.166								
S/DEPTH=1.2	100.0%								
S/DEPTH=1.1	47.628								
S/DEPTH=1.0	40.7%								
S/DEPTH=.9	45.368								
S/DEPTH=.8	37.9%								
S/DEPTH=.7	43.362								
S/DEPTH=.6	35.1%								
S/DEPTH=.5	41.586								
S/DEPTH=.4	32.4%								
S/DEPTH=.3	40.022								
S/DEPTH=.2	29.9%								
S/DEPTH=.1	38.652								
S/DEPTH=.0	27.5%								
S/DEPTH=.9	37.463								
S/DEPTH=.8	25.42%								
S/DEPTH=.7	36.440								
S/DEPTH=.6	35.574								
S/DEPTH=.5	21.4%								
S/DEPTH=.4	34.856								
S/DEPTH=.3	19.8%								
S/DEPTH=.2	34.277								
S/DEPTH=.1	18.1%								
S/DEPTH=.0	33.834								
S/DEPTH=.9	17.5%								
S/DEPTH=.8	33.520								
S/DEPTH=.7	16.8%								
S/DEPTH=.6	33.333								
S/DEPTH=.5	16.3%								
S/DEPTH=.4	33.271								
S/DEPTH=.3	16.2%								

CASE 1=D

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD.....DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.959	.210	.014	.039	.003	.040	.040	.041	.041
47.0%	134.0%	*****	*****	*****	*****	*****	*****	*****	*****
SURFACE	.000	16.438	1.520	.737	.168	.232	.154	.141	.000
S/DEPTH=1.7	*****	95.4%	3.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	*****	15.310	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	*****	96.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	*****	13.632	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	*****	96.0%	1.496	.666	.150	.205	.135	.125	.000
S/DEPTH=.7	*****	95.9%	35.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	*****	95.8%	1.429	.573	.126	.170	.112	.103	.000
S/DEPTH=.5	*****	95.7%	39.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	*****	95.6%	9.071	.487	.105	.139	.092	.085	.000
S/DEPTH=.3	*****	95.5%	43.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	95.4%	1.190	.407	.086	.113	.074	.069	.000
S/DEPTH=.1	*****	95.3%	45.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	95.2%	1.029	.333	.069	.090	.059	.055	.000
S/DEPTH=.9	*****	95.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	*****	95.0%	8.47	.262	.053	.069	.045	.042	.000
S/DEPTH=.7	*****	94.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	*****	94.8%	3.735	.194	.039	.050	.033	.031	.000
S/DEPTH=.5	*****	94.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	*****	94.6%	2.478	.128	.025	.033	.021	.020	.000
S/DEPTH=.3	*****	94.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	94.4%	1.235	.064	.013	.016	.010	.010	.000
S/DEPTH=.1	*****	94.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	94.2%	*****	*****	*****	*****	*****	*****	*****

CASE 1-D

TABLE 111-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.959	.210	.039	.043	.040	.040	.040	.041	.041
	47.9%	134.6%	*****	*****	*****	*****	*****	*****	*****
SURFACE	.000	1066.430	1.370	78.561	21.197	-31.411	21.136	19.014	.001
	*****	98.2%	*****	24.9%	*****	*****	*****	*****	*****
S/DEPTH=1.7	.000								
S/DEPTH=1.6	.000								
S/DEPTH=1.5	.000								
S/DEPTH=1.4	.000								
S/DEPTH=1.3	.000								
S/DEPTH=1.2	.000								
S/DEPTH=1.1	.000	1032.223							
	*****	98.2%							
S/DEPTH=1.0	.000	983.334							
	*****	98.1%							
S/DEPTH=.9	.000	939.682	31.900	73.151	19.406	-26.294	18.970	17.155	.001
	*****	98.0%	*****	20.8%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	901.117	61.558	66.042	17.061	-24.386	16.278	14.800	.001
	*****	97.9%	*****	12.4%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	867.094	86.672	61.026	15.099	-21.159	14.062	12.055	.001
	*****	97.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	836.609	107.656	57.393	13.478	-18.523	12.256	11.267	.001
	*****	97.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	814.515	124.856	54.071	12.162	-16.405	10.809	9.991	.000
	*****	97.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	794.915	138.556	51.618	11.123	-14.747	9.678	8.992	.000
	*****	97.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	779.775	148.084	49.822	10.337	-13.503	8.831	8.242	.000
	*****	97.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	769.016	156.311	48.599	9.789	-12.638	8.243	7.721	.000
	*****	97.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	762.584	160.659	47.898	9.464	-12.129	7.896	7.414	.000
	*****	97.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	760.443	162.101	47.655	9.357	-11.961	7.782	7.312	.000
	*****	97.5%	*****	*****	*****	*****	*****	*****	*****

CASE 1=D

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA ETA/HEIGHT=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.959	.210	.014	.039	.043	.040	.040	.041	.041
	47.9%	-134.6%	*****	*****	*****	*****	*****	*****	*****
SURFACE	995.770	595.048	183.567	49.707	39.220	8.018	-13.706	8.668	14.515
S/DEPTH=1.7	98.3%	102.7%	108.10%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	956.856	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.5	913.698	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.4	861.648	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%
S/DEPTH=1.3	803.718	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%
S/DEPTH=1.2	742.128	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%
S/DEPTH=1.1	678.494	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%
S/DEPTH=1.0	613.966	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.9	549.339	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.8	485.139	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.7	421.680	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.6	359.122	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.5	297.507	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.4	236.788	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.3	176.851	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.2	117.539	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.1	58.659	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
S/DEPTH=.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	171.131	155.7%	155.526	155.526	155.526	155.526	155.526	155.526	155.526
	105.7%	105.8%	105.8%	105.8%	105.8%	105.8%	105.8%	105.8%	105.8%
	315.553	315.553	315.553	315.553	315.553	315.553	315.553	315.553	315.553
	259.717	259.717	259.717	259.717	259.717	259.717	259.717	259.717	259.717
	138.547	138.547	138.547	138.547	138.547	138.547	138.547	138.547	138.547
	105.15%	105.15%	105.15%	105.15%	105.15%	105.15%	105.15%	105.15%	105.15%
	120.476	120.476	120.476	120.476	120.476	120.476	120.476	120.476	120.476
	105.4%	105.4%	105.4%	105.4%	105.4%	105.4%	105.4%	105.4%	105.4%
	101.545	101.545	101.545	101.545	101.545	101.545	101.545	101.545	101.545
	167.788	167.788	167.788	167.788	167.788	167.788	167.788	167.788	167.788
	105.3%	105.3%	105.3%	105.3%	105.3%	105.3%	105.3%	105.3%	105.3%
	103.6%	103.6%	103.6%	103.6%	103.6%	103.6%	103.6%	103.6%	103.6%
	94.208	94.208	94.208	94.208	94.208	94.208	94.208	94.208	94.208
	105.7%	105.7%	105.7%	105.7%	105.7%	105.7%	105.7%	105.7%	105.7%
	61.494	61.494	61.494	61.494	61.494	61.494	61.494	61.494	61.494
	103.8%	103.8%	103.8%	103.8%	103.8%	103.8%	103.8%	103.8%	103.8%
	30.358	30.358	30.358	30.358	30.358	30.358	30.358	30.358	30.358
	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	17.003	17.003	17.003	17.003	17.003	17.003	17.003	17.003	17.003
	7.643	7.643	7.643	7.643	7.643	7.643	7.643	7.643	7.643
	12.557	12.557	12.557	12.557	12.557	12.557	12.557	12.557	12.557
	10.301	10.301	10.301	10.301	10.301	10.301	10.301	10.301	10.301
	8.378	8.378	8.378	8.378	8.378	8.378	8.378	8.378	8.378
	6.727	6.727	6.727	6.727	6.727	6.727	6.727	6.727	6.727
	5.297	5.297	5.297	5.297	5.297	5.297	5.297	5.297	5.297
	4.042	4.042	4.042	4.042	4.042	4.042	4.042	4.042	4.042
	2.919	2.919	2.919	2.919	2.919	2.919	2.919	2.919	2.919
	1.894	1.894	1.894	1.894	1.894	1.894	1.894	1.894	1.894
	.951	.951	.951	.951	.951	.951	.951	.951	.951
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=0

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.959	.210	.014	.039	.043	.040	.040	.041	.041
	47.9%	134.6%	*****	*****	*****	*****	*****	*****	*****
SURFACE	2985.630	230.375	.157	-3.661	-4.693	-4.061	-3.901	-4.339	-4.225
	63.4%	358.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7	2622.638								
	100.0%								
S/DEPTH=1.6	2624.681								
	100.0%								
S/DEPTH=1.5	2258.741								
	100.0%								
S/DEPTH=1.4	2019.834								
	45.9%								
S/DEPTH=1.3	1803.792								
	43.4%								
S/DEPTH=1.2	1607.114								
	41.4%								
S/DEPTH=1.1	1426.842								
	39.6%								
S/DEPTH=1.0	1260.462								
	37.9%								
S/DEPTH=.9	1105.828								
	36.3%								
S/DEPTH=.8	961.089								
	34.9%								
S/DEPTH=.7	824.640								
	33.7%								
S/DEPTH=.6	696.076								
	32.6%								
S/DEPTH=.5	571.148								
	31.7%								
S/DEPTH=.4	451.740								
	30.9%								
S/DEPTH=.3	335.836								
	30.3%								
S/DEPTH=.2	222.494								
	29.9%								
S/DEPTH=.1	110.832								

S/DEPTH=.0	.000								

CASE 1-D

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.959	.959	.959	.959	.959	.959	.959	.959	.959
	47.6%	134.6%	210	301.4	404.3	504.3	604.3	704.3	804.3
SURFACE	.000	1001.659	110.000	54.979	12.614	17.364	11.496	10.552	.001
S/DEPTH=1.7	*****	97.4%	52.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	*****	.000							
S/DEPTH=1.5	*****	.000							
S/DEPTH=1.4	*****	.000							
S/DEPTH=1.3	*****	.000							
S/DEPTH=1.2	*****	.000							
S/DEPTH=1.1	*****	.000							
S/DEPTH=1.0	*****	934.314	97.8%	833.580	97.7%	737.472	97.7%	645.474	103.780
S/DEPTH=.9	*****	.000	737.472	108.492	49.716	11.268	15.326	10.118	9.330
S/DEPTH=.8	*****	.000	645.474	103.780	42.738	9.448	12.698	8.360	7.736
S/DEPTH=.7	*****	.000	557.084	96.332	36.395	7.843	10.426	6.847	6.356
S/DEPTH=.6	*****	.000	471.816	86.583	30.417	6.417	8.447	5.534	5.153
S/DEPTH=.5	*****	.000	389.195	74.927	24.856	5.137	6.704	4.384	4.092
S/DEPTH=.4	*****	.000	308.761	61.728	19.577	3.975	5.150	3.362	3.146
S/DEPTH=.3	*****	.000	230.063	47.325	14.510	2.904	3.741	2.439	2.286
S/DEPTH=.2	*****	.000	152.660	32.035	9.593	1.900	2.437	1.587	1.490
S/DEPTH=.1	*****	.000	76.116	16.182	4.773	.939	1.202	.782	.735
S/DEPTH=.0	*****	.000	97.5%	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=D

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.959	.014	.039	.043	.040	.040	.041	.041
	47.9%	*****	*****	*****	*****	*****	*****	*****
	-134.6%	*****	*****	*****	*****	*****	*****	*****
SURFACE	312.254	126.251	.011	-1.861	-2.434	-1.954	-2.114	-2.068
S/DEPTH=1.7	75.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	2841.047	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	100.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	2349.128	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	100.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.2	1936.677	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	100.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	1590.054	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	52.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	1298.223	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	48.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	1052.227	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	46.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	844.788	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	43.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	669.983	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	41.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	115.130	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	522.991	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	39.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	390.887	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	37.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	297.488	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	35.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	213.219	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	34.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	145.017	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	91.250	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	50.658	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	22.305	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	4.388	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	1.100	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	5.545	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=0

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THE TA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.959	.9210	.8814	.8439	.8043	.7640	.7244	.6841	.6441
	47.9%	43.46%	39.06%	34.66%	30.26%	25.86%	21.46%	17.06%	12.66%
SURFACE	.000	617.287	41.627	28.920	6.986	9.866	6.568	5.981	.000
S/DEPTH=1.7	*****	97.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

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CASE 1=D

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION.... DEFINED IN EQ.(35)									
SURFACE	.000	.010	.018	.023	.023	.010	.006	.013	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION.... DEFINED IN EQ.(36)									
SURFACE	.048	.045	.037	.024	.008	.041	.045	.008	.047
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(37)									
SURFACE	.020	.028	.002	.005	.007	.001	.000	.003	.003

CASE 1-D

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	
	.146 (23.6%)	
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	
	.093 (=436.0%)	
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	
	.119 (=322.0%)	
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	
	.213 (=372.0%)	
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	
	.215 (=363.6%)	
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	
	1.012 (1.6%)	
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	
	.234 (=327.0%)	
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	
	.297 (=402.9%)	
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	
	.082 (=506.5%)	

CASE 1-D

TABLE XI(CONT.)=OVERALL WAVE PARAMETERS,.. DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.013785	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.033447	STREAM FUNCTION	.009530
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.024341	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.047779	STREAM FUNCTION	.036365
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.394640	STREAM FUNCTION	.618771
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.004152	STREAM FUNCTION	.247901

CASE 2**A

17TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/g, 28318) * T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .000974 DPT/LO = .005000

H/DPT = .194887

L/LO = .186504 PSI/(G**T) = *.000405

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	*.424866=01	X(2)/(H*T*G) =	*.161735=01
X(3)/(H*T*G) =	*.715367=02	X(4)/(H*T*G) =	*.322226=02
X(5)/(H*T*G) =	*.144162=02	X(6)/(H*T*G) =	*.616055=03
X(7)/(H*T*G) =	*.276349=03	X(8)/(H*T*G) =	*.117942=03
X(9)/(H*T*G) =	*.495603=04	X(10)/(H*T*G) =	*.202045=04
X(11)/(H*T*G) =	*.805877=05	X(12)/(H*T*G) =	*.311340=05
X(13)/(H*T*G) =	*.115516=05	X(14)/(H*T*G) =	*.404538=06
X(15)/(H*T*G) =	*.129699=06	X(16)/(H*T*G) =	*.357995=07
X(17)/(H*T*G) =	*.617704=08		

CASE 2-A

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	0 41.7%	10.0 30.0%	20.0 10.9%	30.0 14.42%	50.0 635.7%	75.0 200.1%	100.0 38.3%	130.0 168.6%	180.0 250.4%
SURFACE	31.250	25.718	14.880	5.986	-2.205	-4.510	-4.883	-4.948	-4.953
S/DEPTH=1.1	42.8%	31.8%	-12.8%	-158.4%	620.3%	202.3%	36.7%	-175.1%	-258.5%
S/DEPTH=1.0	41.7%	31.0%	14.935	6.080	-2.089	-4.491	-4.880	-4.948	-4.953
S/DEPTH=.9	29.823	29.042	11.3%	143.0%	646.3%	202.3%	36.8%	-174.9%	-258.5%
S/DEPTH=.8	28.871	24.613	15.028	6.545	-1.971	-4.469	-4.876	-4.948	-4.953
S/DEPTH=.7	37.8%	24.235	10.7%	-134.3%	677.6%	202.6%	36.9%	-174.2%	-257.5%
S/DEPTH=.6	27.927	28.0%	15.058	6.732	-1.866	-4.448	-4.873	-4.948	-4.953
S/DEPTH=.5	36.7%	23.906	10.3%	-127.3%	708.7%	202.8%	37.0%	-173.5%	-256.7%
S/DEPTH=.4	27.664	27.2%	15.079	6.891	-1.775	-4.431	-4.870	-4.948	-4.953
S/DEPTH=.3	35.8%	23.623	9.9%	-121.6%	738.7%	203.0%	37.1%	-173.0%	-256.0%
S/DEPTH=.2	27.078	26.5%	15.094	7.022	-1.697	-4.415	-4.868	-4.948	-4.953
S/DEPTH=.1	35.0%	23.386	9.6%	-117.1%	766.6%	203.2%	37.2%	-172.5%	-255.4%
S/DEPTH=.0	26.767	25.9%	15.105	7.128	-1.634	-4.403	-4.866	-4.948	-4.953
S/DEPTH=.0	34.3%	23.193	9.3%	-115.5%	791.6%	203.3%	37.3%	-172.1%	-254.8%
S/DEPTH=.0	26.528	25.4%	15.111	7.210	-1.584	-4.393	-4.864	-4.948	-4.953
S/DEPTH=.0	33.8%	23.044	9.2%	-110.9%	812.4%	203.4%	37.5%	-171.8%	-254.5%
S/DEPTH=.0	26.358	25.0%	15.116	7.267	-1.549	-4.386	-4.863	-4.947	-4.953
S/DEPTH=.0	33.4%	22.938	9.1%	-109.0%	838.8%	203.5%	37.4%	-171.6%	-254.2%
S/DEPTH=.0	26.257	24.7%	15.118	7.302	-1.527	-4.382	-4.862	-4.947	-4.953
S/DEPTH=.0	33.2%	22.874	9.0%	-108.0%	862.2%	203.6%	37.4%	-171.5%	-254.0%
S/DEPTH=.0	26.223	24.5%	15.119	7.313	-1.520	-4.381	-4.862	-4.947	-4.953
S/DEPTH=.0	33.1%	22.853	9.0%	-107.6%	886.6%	203.6%	37.4%	-171.4%	-254.0%

CASE 2**A

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)												
THETA	ETA/HEIGHT	0	.857	.713	.424	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT		41.7%		30.9%		10.9%	-144.2%	177	-1060	129	141	143
								635.7%	200.1%	38.5%	168.6%	250.4%
SURFACE		.000		8.027	9.528	6.941	2.142	.365	.058	.003	.000	.000
S/DEPTH=1.1		*****		92.6%	87.7%	75.5%	19.4%	*****	*****	*****	*****	*****
S/DEPTH=1.0		*****		92.2%		6.703						
S/DEPTH=.9		*****		92.0%	87.7%	76.6%	1.969	.341	.054	.003	.000	.000
S/DEPTH=.8		*****		91.8%	87.5%	76.5%	1.767	.507	.049	.002	.000	.000
S/DEPTH=.7		*****		91.7%	87.4%	76.5%	1.560	.272	.044	.002	.000	.000
S/DEPTH=.6		*****		91.5%	87.2%	76.5%	1.346	.256	.038	.002	.000	.000
S/DEPTH=.5		*****		91.4%	87.1%	76.4%	1.129	.198	.032	.002	.000	.000
S/DEPTH=.4		*****		91.3%	87.0%	76.4%	.907	.160	.026	.001	.000	.000
S/DEPTH=.3		*****		91.2%	87.0%	76.4%	.683	.120	.019	.001	.000	.000
S/DEPTH=.2		*****		91.1%	86.9%	76.4%	.457	.081	.013	.001	.000	.000
S/DEPTH=.1		*****		91.0%	86.8%	76.3%	.229	.040	.006	.000	.000	.000
S/DEPTH=.0		*****		91.0%	86.8%	76.3%	.000	.000	.000	.000	.000	.000

CASE 2-A

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD, . . . DEFINED IN EQUATION (23)

THETA ETA/HEIGHT	0 .857 41.7%	10.0 30.9%	20.0 42.4 10.9%	30.0 .177 14.2%	50.0 30.60 63.7%	75.0 100.0 200.1%	100.0 130.0 38.5%	130.0 168.6%	180.0 250.4%
SURFACE	.000	305.238	350.790	245.559	71.893	12.026	1.916	.097	.000
S/DEPTH=1.1	*****	94.2%	90.0%	79.0%	12.2%	*****	*****	*****	*****
S/DEPTH=1.0	*****	297.191							
	*****	94.1%							
S/DEPTH=.9	*****	278.370	339.862	245.204	74.358	12.513	1.994	.101	.000
	*****	93.7%	89.7%	79.1%	77.9%	*****	*****	*****	*****
S/DEPTH=.8	*****	262.019	327.895	248.072	76.850	13.109	2.092	.106	.000
	*****	93.3%	89.4%	79.0%	74.1%	*****	*****	*****	*****
S/DEPTH=.7	*****	247.917	317.293	242.852	79.031	13.640	2.181	.111	.000
	*****	92.9%	89.1%	79.0%	79.031	*****	*****	*****	*****
S/DEPTH=.6	*****	235.875	308.025	241.618	80.907	14.105	2.259	.115	.000
	*****	92.6%	88.8%	78.9%	80.907	*****	*****	*****	*****
S/DEPTH=.5	*****	225.735	300.063	240.434	82.444	14.502	2.325	.118	.000
	*****	92.3%	88.5%	78.9%	82.444	*****	*****	*****	*****
S/DEPTH=.4	*****	217.365	293.377	239.352	83.766	14.828	2.380	.121	.000
	*****	92.0%	88.3%	78.8%	83.766	*****	*****	*****	*****
S/DEPTH=.3	*****	210.657	287.943	238.413	84.759	15.084	2.423	.123	.000
	*****	91.8%	88.1%	78.8%	84.759	*****	*****	*****	*****
S/DEPTH=.2	*****	203.526	283.739	237.650	85.465	15.267	2.454	.125	.000
	*****	91.6%	87.9%	78.7%	85.465	*****	*****	*****	*****
S/DEPTH=.1	*****	201.896	280.749	237.088	85.888	15.377	2.472	.126	.000
	*****	91.4%	87.8%	78.7%	85.888	*****	*****	*****	*****
S/DEPTH=.0	*****	199.752	278.960	236.744	86.029	15.414	2.479	.126	.000
	*****	91.3%	87.7%	78.7%	86.029	*****	*****	*****	*****
	*****	199.037	278.365	236.628	8.0%				
	*****	91.3%	87.7%	78.7%					

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

10.9

75.0	100.0
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180.0

.857 .713

10.129 10.141

143

94,324 -155,209

9,777	1,590
-------	-------

.027

72.766 149.671

42.247 - 135.481

13.458 121.388

9.126 1.488

.025

86.177 = 107.419

Year	1951	1952
1951	1.342	1.342
1952	1.342	1.342
1953	1.342	1.342
1954	1.342	1.342
1955	1.342	1.342
1956	1.342	1.342
1957	1.342	1.342
1958	1.342	1.342
1959	1.342	1.342
1960	1.342	1.342
1961	1.342	1.342
1962	1.342	1.342
1963	1.342	1.342
1964	1.342	1.342
1965	1.342	1.342
1966	1.342	1.342
1967	1.342	1.342
1968	1.342	1.342
1969	1.342	1.342
1970	1.342	1.342
1971	1.342	1.342
1972	1.342	1.342
1973	1.342	1.342
1974	1.342	1.342
1975	1.342	1.342
1976	1.342	1.342
1977	1.342	1.342
1978	1.342	1.342
1979	1.342	1.342
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1981	1.342	1.342
1982	1.342	1.342
1983	1.342	1.342
1984	1.342	1.342
1985	1.342	1.342
1986	1.342	1.342
1987	1.342	1.342
1988	1.342	1.342
1989	1.342	1.342
1990	1.342	1.342
1991	1.342	1.342
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1998	1.342	1.342
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2002	1.342	1.342
2003	1.342	1.342
2004	1.342	1.342
2005	1.342	1.342
2006	1.342	1.342
2007	1.342	1.342
2008	1.342	1.342
2009	1.342	1.342
2010	1.342	1.342
2011	1.342	1.342
2012	1.342	1.342
2013	1.342	1.342
2014	1.342	1.342
2015	1.342	1.342
2016	1.342	1.342
2017	1.342	1.342
2018	1.342	1.342
2019	1.342	1.342
2020	1.342	1.342
2021	1.342	1.342
2022	1.342	1.342
2023	1.342	1.342
2024	1.342	1.342
2025	1.342	1.342
2026	1.342	1.342
2027	1.342	1.342
2028	1.342	1.342
2029	1.342	1.342
2030	1.342	1.342
2031	1.342	1.342
2032	1.342	1.342
2033	1.342	1.342
2034	1.342	1.342
2035	1.342	1.342
2036	1.342	1.342
2037	1.342	1.342
2038	1.342	1.342
2039	1.342	1.342
2040	1.342	1.342
2041	1.342	1.342
2042	1.342	1.342
2043	1.342	1.342
2044	1.342	1.342
2045	1.342	1.342
2046	1.342	1.342
2047	1.342	1.342
2048	1.342	1.342
2049	1.342	1.342
2050	1.342	1.342
2051	1.342	1.342
2052	1.342	1.342
2053	1.342	1.342
2054	1.342	1.3

270.

93.56	495.541
93.24	86.0%
90.00	61.194

国家	1990年	1991年	1992年	1993年	1994年	1995年	1996年	1997年	1998年	1999年	2000年	2001年	2002年	2003年	2004年	2005年	2006年	2007年	2008年	2009年	2010年	2011年	2012年	2013年	2014年	2015年	2016年	2017年	2018年	2019年	2020年	2021年	2022年										
中国	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5									
美国	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5								
日本	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5							
德国	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5						
法国	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5					
英国	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5				
意大利	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5			
西班牙	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5		
俄罗斯	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	
印度	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5
巴西	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1																																	

410!

Year	Percentage
1970	86.9%
1971	86.9%
1972	86.9%
1973	86.9%
1974	86.9%
1975	86.9%
1976	86.9%
1977	86.9%
1978	86.9%
1979	86.9%
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1984	86.9%
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2020	86.9%
2021	86.9%
2022	86.9%
2023	86.9%
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2073	86.9%
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2079	86.9%
2080	86.9%
2081	86.9%
2082	86.9%
2083	86.9%
2084	86.9%
2085	86.9%
2086	86.9%
2087	86.9%
2088	86.9%
2089	86.9%
2090	86.9%
2091	86.9%
2092	86.9%
2093	86.9%
2094	86.9%
2095	86.9%
2096	86.9%
2097	86.9%
2098	86.9%
2099	86.9%
2100	86.9%

[illegible][illegible]

Year	Percentage
1970	92.0%
1971	86.9%

年	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
年	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

[illegible]

Year	Percentage
1920	92.0%
1921	86.8%

年份	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																																																																																													
人口	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	31.0	31.1	31.2	

% 本 本 本 本 本

Year	Percentage
1960	91.9%
1961	86.8%

[illegible]

200
% 東京電力

37.21 =	089.16
38.09	96.16

芝蔴油	1.077	芝蔴油	1.077
芝蔴油	1.077	芝蔴油	1.077

200
% 壹佰元正

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TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD.....DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.857	.713	.424	.177	.060	.129	.141	.143	.143
	41.7%	30.9%	-10.9%	-144.2%	635.7%	200.1%	38.3%	168.6%	-250.4%
SURFACE	906.960	645.488	245.541	49.199	-3.067	19.083	-23.059	23.800	-23.850
S/DEPTH=.1	62.3%	48.7%	22.4%	415.3%	*****	*****	*****	*****	*****
	842.737	619.947							
S/DEPTH=.2	59.4%	46.5%							
	751.383	556.066	227.196	47.941					
S/DEPTH=.3	58.6%	45.7%	20.9%	386.8%					
	664.626	494.451	204.806	44.688	-2.660	17.507	21.310	22.032	22.079
S/DEPTH=.4	57.9%	45.2%	20.5%	*****	*****	*****	*****	*****	*****
	434.816	182.278	39.941						
S/DEPTH=.5	57.4%	44.7%	20.1%	*****	*****	*****	*****	*****	*****
	581.803	376.895	159.646	35.530	-1.880	13.573	16.573	17.135	17.172
S/DEPTH=.6	56.9%	44.3%	19.8%	38.*****	*****	*****	*****	*****	*****
	425.656	320.437	136.939	30.888	-1.549	11.602	14.200	14.687	14.719
S/DEPTH=.7	56.4%	43.9%	19.6%	*****	*****	*****	*****	*****	*****
	351.318	265.208	114.177	26.045	-1.249	9.646	11.829	12.239	12.266
S/DEPTH=.8	56.1%	43.6%	19.4%	*****	*****	*****	*****	*****	*****
	278.868	210.985	91.377	21.036	-.972	7.702	9.461	9.791	9.813
S/DEPTH=.9	55.8%	43.3%	19.2%	*****	*****	*****	*****	*****	*****
	207.891	157.554	68.551	15.694	-.713	5.768	7.094	7.343	7.359
S/DEPTH=1.0	55.5%	43.1%	19.1%	*****	*****	*****	*****	*****	*****
	138.000	104.713	45.709	10.652	-.468	3.841	4.729	4.895	4.906
S/DEPTH=1.1	55.4%	42.9%	19.0%	*****	*****	*****	*****	*****	*****
	68.823	52.260	22.857	5.343	-.232	1.919	2.364	2.448	2.453
S/DEPTH=1.2	55.3%	42.8%	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.8	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=2.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****

	INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)	
TABLE 1-DIMENSIONLESS		
θ	0	75.0
θ_{MAX}	10.0	50.0
θ_{MAX}/H	0.857	0.177
θ_{MAX}/H	0.424	0.060
θ_{MAX}/H	0.424	0.129
θ_{MAX}/H	0.424	0.060

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TABLE VII—DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA ETA/HEIGHT	0 .857 41.7%	10.0 .713 30.9%	20.0 .424 10.9%	30.0 .177 14.2%	50.0 0.060 63.5%	75.0 0.129 200.1%	100.0 0.141 38.3%	130.0 0.143 168.6%	180.0 0.143 250.4%
SURFACE	.000 *****	162.006 93.5%	184.076 88.8%	129.347 76.8%	38.593 17.0%	6.510 *****	1.037 *****	.053 *****	.000 *****
S/DEPTH=1.1	.000 *****	148.683 92.9%	154.399 88.6%	120.721 78.9%	32.496 16%	5.650 *****	.904 *****	.046 *****	.000 *****
S/DEPTH=1.0	.000 *****	118.673 92.6%	122.682 97.478	97.478 78.9%	26.070 2.3%	4.561 *****	.731 *****	.037 *****	.000 *****
S/DEPTH=.9	.000 *****	93.009 92.4%	88.6%	78.9%	20.224 3.7%	3.558 *****	.571 *****	.029 *****	.000 *****
S/DEPTH=.8	.000 *****	71.340 92.2%	95.262 88.4%	76.783 78.8%	15.026 4.8%	2.656 *****	.426 *****	.022 *****	.000 *****
S/DEPTH=.7	.000 *****	53.200 92.0%	71.813 88.3%	58.614 78.8%	10.533 5.8%	1.870 *****	.300 *****	.015 *****	.000 *****
S/DEPTH=.6	.000 *****	38.200 91.8%	52.051 88.1%	42.947 78.8%	5.8%	*****	*****	*****	*****
S/DEPTH=.5	.000 *****	26.015 91.7%	35.731 88.0%	29.753 78.7%	19.003 6.792	1.210 *****	.194 *****	.010 *****	.000 *****
S/DEPTH=.4	.000 *****	16.385 91.5%	22.652 87.9%	19.003 78.7%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000 *****	9.102 91.2%	12.647 87.8%	10.671 78.7%	3.843 *****	.686 *****	.110 *****	.006 *****	.000 *****
S/DEPTH=.2	.000 *****	4.009 91.0%	5.591 87.7%	4.737 78.7%	1.715 *****	.307 *****	.049 *****	.003 *****	.000 *****
S/DEPTH=.1	.000 *****	.997 90.9%	1.393 87.6%	1.183 78.7%	.430 *****	.077 *****	.012 *****	.001 *****	.000 *****
S/DEPTH=.0	.000 *****	.000 90.8%	.000 87.5%	.000 78.6%	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.001	.001	.002	.002	.001	.001	.002	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.011	.011	.009	.006	.002	.010	.011	.002	.011
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.001	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.187 (5.4%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.294 (66.8%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.311 (62.0%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.605 (65.8%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.591 (67.6%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.977 (1.1%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.618 (61.9%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.859 (72.4%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.268 (62.8%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.001216	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.007888	STREAM FUNCTION	.000161
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.001826	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.011230	STREAM FUNCTION	.000681
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.098698	STREAM FUNCTION	.163273
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.003029	STREAM FUNCTION	.045645

CASE 2=B

19TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO=(G/6.28318)*T**2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .001946 DPT/LO = .005000

M/DPT = .389164

L/LO = .199023 PSI/(G*H*T) = -.000574

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.308370-01	X(2)/(H*T*G) =	-.132363-01
X(3)/(H*T*G) =	-.693747-02	X(4)/(H*T*G) =	-.380673-02
X(5)/(H*T*G) =	-.209993-02	X(6)/(H*T*G) =	-.115105-02
X(7)/(H*T*G) =	-.623967-03	X(8)/(H*T*G) =	-.333323-03
X(9)/(H*T*G) =	-.175877-03	X(10)/(H*T*G) =	-.907759-04
X(11)/(H*T*G) =	-.460921-04	X(12)/(H*T*G) =	-.228248-04
X(13)/(H*T*G) =	-.110152-04	X(14)/(H*T*G) =	-.513379-05
X(15)/(H*T*G) =	-.228778-05	X(16)/(H*T*G) =	-.952306-06
X(17)/(H*T*G) =	-.353260-06	X(18)/(H*T*G) =	-.988441-07
X(19)/(H*T*G) =	-.155364-08		

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TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA =	0	9.04	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	44.7%	9.04	16.06	22.8	.031	.079	230.5%	.096	.298.6%	.420.5%
			18.8%	106.3%	*****	506.8%		9.5%		
SURFACE	34.035	22.086	7.678	.847	2.697	3.183	3.220	3.224	3.222	3.222
S/DEPTH=1.3	47.3%	20.1%	119.3%	*****	526.3%	245.0%	4.0%	321.3%	449.8%	
	33.154									
S/DEPTH=1.2	100.0%	21.917								
	31.611	19.4%								
S/DEPTH=1.1	47.3%	21.473								
	30.258	18.0%								
S/DEPTH=1.0	40.9%	21.065	8.025	.888						
	29.075	16.7%	108.5%	*****						
S/DEPTH= .9	30.7%	20.696	8.360	1.198	2.658	3.180	3.219	3.224	3.222	3.222
	36.7%	15.5%	99.6%	*****	529.5%	244.5%	4.2%	321.3%	449.7%	
S/DEPTH= .8	27.156	20.366	8.643	1.473	2.603	3.176	3.219	3.224	3.222	3.222
	34.8%	14.4%	92.5%	*****	536.9%	246.3%	4.5%	320.7%	449.7%	
S/DEPTH= .7	26.389	20.075	8.879	1.713	2.558	3.172	3.219	3.224	3.222	3.222
	33.1%	13.3%	87.0%	793.1%	543.9%	244.2%	4.7%	319.7%	448.4%	
S/DEPTH= .6	25.758	19.823	9.075	1.920	2.517	3.169	3.219	3.224	3.222	3.222
	31.6%	12.4%	82.6%	695.2%	550.3%	244.0%	4.9%	318.9%	447.2%	
S/DEPTH= .5	25.229	19.610	9.233	2.094	2.481	3.166	3.218	3.224	3.222	3.222
	30.2%	11.6%	79.1%	627.9%	556.0%	243.9%	5.0%	318.1%	446.3%	
S/DEPTH= .4	24.604	19.436	9.358	2.235	2.451	3.163	3.218	3.224	3.222	3.222
	28.1%	10.9%	76.5%	580.9%	560.8%	243.8%	5.2%	317.5%	446.5%	
S/DEPTH= .3	24.479	19.301	9.452	2.345	2.428	3.161	3.218	3.224	3.222	3.222
	28.3%	10.4%	74.5%	548.5%	564.7%	243.7%	5.3%	317.1%	444.9%	
S/DEPTH= .2	24.219	19.204	9.518	2.422	2.412	3.160	3.218	3.224	3.222	3.222
	27.7%	10.0%	73.2%	527.1%	567.6%	243.7%	5.3%	316.8%	444.4%	
S/DEPTH= .1	24.112	19.146	9.557	2.469	2.401	3.159	3.218	3.224	3.222	3.222
	27.3%	9.8%	72.4%	515.0%	569.3%	243.7%	5.4%	316.6%	444.2%	
S/DEPTH= .0	24.067	19.127	9.570	2.484	2.398	3.159	3.218	3.224	3.222	3.222
	27.2%	9.7%	72.1%	511.1%	569.9%	243.6%	5.4%	316.5%	444.1%	

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TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.904	.806	.628	.531	.4079	.256.5%	.096	.096	.096
	44.7%	18.8%	106.3%	*****	506.8%	236.5%	9.5%	298.6%	420.5%
SURFACE	.000	12.484	9.476	4.423	.644	.051	.003	.001	.000
*****	94.8%	86.6%	58.5%	320.4%	*****	*****	*****	*****	*****
S/DEPTH=1.3	.000								
*****	*****								
S/DEPTH=1.2	.000	11.953							
*****	94.6%	94.6%							
S/DEPTH=1.1	.000	10.563							
*****	94.3%	94.3%							
S/DEPTH=1.0	.000	9.288	8.622	4.376					
*****	94.1%	87.5%	87.5%	64.1%					
S/DEPTH=.9	.000	8.111	7.681	3.979	.609	.048	.003	.001	.000
*****	94.0%	87.4%	87.4%	64.5%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	7.019	6.764	3.568	.554	.044	.003	.001	.000
*****	93.8%	87.3%	87.3%	64.9%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	5.998	5.869	3.146	.495	.039	.003	.001	.000
*****	93.7%	87.2%	87.2%	65.2%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	5.037	4.993	2.713	.431	.034	.003	.001	.000
*****	93.5%	87.1%	87.1%	65.4%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	4.125	4.134	2.272	.365	.029	.002	.001	.000
*****	93.4%	87.1%	87.1%	65.6%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	3.854	3.290	1.825	.295	.023	.002	.000	.000
*****	93.3%	87.0%	87.0%	65.7%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	2.414	2.457	1.373	.223	.018	.001	.000	.000
*****	93.3%	87.0%	87.0%	65.9%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	1.596	1.633	.917	.150	.012	.001	.000	.000
*****	93.2%	86.9%	86.9%	65.9%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.794	.815	.459	.075	.006	.000	.000	.000
*****	93.2%	86.9%	86.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=8

TABLE 111-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.904	.606	.428	.331	.079	.096	.096	.096	.096
	44.7%	18.8%	*106.3%	*****	506.8%	236.5%	9.5%	298.6%	*420.5%
SURFACE	.000	491.776	343.601	146.652	19.984	1.620	.033	.093	.000
S/DEPTH=1.3	*****	96.8%	90.8%	67.9%	*****	*****	*****	*****	*****
S/DEPTH=1.2	*****	475.855							
S/DEPTH=1.1	*****	96.7%							
S/DEPTH=1.0	*****	435.596							
S/DEPTH=.9	*****	96.4%							
S/DEPTH=.8	*****	400.680							
S/DEPTH=.7	*****	96.1%							
S/DEPTH=.6	*****	370.555							
S/DEPTH=.5	*****	95.8%							
S/DEPTH=.4	*****	344.742							
S/DEPTH=.3	*****	95.5%							
S/DEPTH=.2	*****	322.837							
S/DEPTH=.1	*****	95.2%							
S/DEPTH=.0	*****	304.496							
S/DEPTH=.9	*****	94.9%							
S/DEPTH=.8	*****	289.431							
S/DEPTH=.7	*****	94.6%							
S/DEPTH=.6	*****	277.410							
S/DEPTH=.5	*****	94.4%							
S/DEPTH=.4	*****	268.247							
S/DEPTH=.3	*****	94.2%							
S/DEPTH=.2	*****	261.800							
S/DEPTH=.1	*****	94.1%							
S/DEPTH=.0	*****	257.971							
S/DEPTH=.9	*****	94.0%							
S/DEPTH=.8	*****	256.702							
S/DEPTH=.7	*****	94.0%							
S/DEPTH=.6	*****	249.442							
S/DEPTH=.5	*****	93.8%							
S/DEPTH=.4	*****	244.421							
S/DEPTH=.3	*****	93.5%							
S/DEPTH=.2	*****	241.800							
S/DEPTH=.1	*****	93.4%							
S/DEPTH=.0	*****	239.928							
S/DEPTH=.9	*****	89.5%							
S/DEPTH=.8	*****	237.361							
S/DEPTH=.7	*****	89.4%							
S/DEPTH=.6	*****	236.140							
S/DEPTH=.5	*****	89.3%							
S/DEPTH=.4	*****	235.079							
S/DEPTH=.3	*****	89.2%							
S/DEPTH=.2	*****	234.005							
S/DEPTH=.1	*****	89.1%							
S/DEPTH=.0	*****	233.028							
S/DEPTH=.9	*****	89.0%							
S/DEPTH=.8	*****	232.051							
S/DEPTH=.7	*****	88.9%							
S/DEPTH=.6	*****	231.074							
S/DEPTH=.5	*****	88.8%							
S/DEPTH=.4	*****	230.097							
S/DEPTH=.3	*****	88.7%							
S/DEPTH=.2	*****	229.120							
S/DEPTH=.1	*****	88.6%							
S/DEPTH=.0	*****	228.143							
S/DEPTH=.9	*****	88.5%							
S/DEPTH=.8	*****	227.166							
S/DEPTH=.7	*****	88.4%							
S/DEPTH=.6	*****	226.189							
S/DEPTH=.5	*****	88.3%							
S/DEPTH=.4	*****	225.212							
S/DEPTH=.3	*****	88.2%							
S/DEPTH=.2	*****	224.235							
S/DEPTH=.1	*****	88.1%							
S/DEPTH=.0	*****	223.258							
S/DEPTH=.9	*****	88.0%							
S/DEPTH=.8	*****	222.281							
S/DEPTH=.7	*****	87.9%							
S/DEPTH=.6	*****	221.304							
S/DEPTH=.5	*****	87.8%							
S/DEPTH=.4	*****	220.327							
S/DEPTH=.3	*****	87.7%							
S/DEPTH=.2	*****	219.350							
S/DEPTH=.1	*****	87.6%							
S/DEPTH=.0	*****	218.373							
S/DEPTH=.9	*****	87.5%							
S/DEPTH=.8	*****	217.396							
S/DEPTH=.7	*****	87.4%							
S/DEPTH=.6	*****	216.419							
S/DEPTH=.5	*****	87.3%							
S/DEPTH=.4	*****	215.442							
S/DEPTH=.3	*****	87.2%							
S/DEPTH=.2	*****	214.465							
S/DEPTH=.1	*****	87.1%							
S/DEPTH=.0	*****	213.488							
S/DEPTH=.9	*****	87.0%							
S/DEPTH=.8	*****	212.511							
S/DEPTH=.7	*****	86.9%							
S/DEPTH=.6	*****	211.534							
S/DEPTH=.5	*****	86.8%							
S/DEPTH=.4	*****	210.557							
S/DEPTH=.3	*****	86.7%							
S/DEPTH=.2	*****	209.580							
S/DEPTH=.1	*****	86.6%							
S/DEPTH=.0	*****	208.603							
S/DEPTH=.9	*****	86.5%							
S/DEPTH=.8	*****	207.626							
S/DEPTH=.7	*****	86.4%							
S/DEPTH=.6	*****	206.649							
S/DEPTH=.5	*****	86.3%							
S/DEPTH=.4	*****	205.672							
S/DEPTH=.3	*****	86.2%							
S/DEPTH=.2	*****	204.695							
S/DEPTH=.1	*****	86.1%							
S/DEPTH=.0	*****	203.718							
S/DEPTH=.9	*****	86.0%							
S/DEPTH=.8	*****	202.741							
S/DEPTH=.7	*****	85.9%							
S/DEPTH=.6	*****	201.764							
S/DEPTH=.5	*****	85.8%							
S/DEPTH=.4	*****	200.787							
S/DEPTH=.3	*****	85.7%							
S/DEPTH=.2	*****	199.810							
S/DEPTH=.1	*****	85.6%							
S/DEPTH=.0	*****	198.833							
S/DEPTH=.9	*****	85.5%							
S/DEPTH=.8	*****	197.856							
S/DEPTH=.7	*****	85.4%							
S/DEPTH=.6	*****	196.879							
S/DEPTH=.5	*****	85.3%							
S/DEPTH=.4	*****	195.902							
S/DEPTH=.3	*****	85.2%							
S/DEPTH=.2	*****	194.925							
S/DEPTH=.1	*****	85.1%							
S/DEPTH=.0	*****	193.948							
S/DEPTH=.9	*****	85.0%							
S/DEPTH=.8	*****	192.971							
S/DEPTH=.7	*****	84.9%							
S/DEPTH=.6	*****	191.994							
S/DEPTH=.5	*****	84.8%							
S/DEPTH=.4	*****	191.017							
S/DEPTH=.3	*****	84.7%							
S/DEPTH=.2	*****	190.040							
S/DEPTH=.1	*****	84.6%							
S/DEPTH=.0	*****	189.063							
S/DEPTH=.9	*****	84.5%							
S/DEPTH=.8	*****	188.086							
S/DEPTH=.7	*****	84.4%							
S/DEPTH=.6	*****	187.109							
S/DEPTH=.5	*****	84.3%							
S/DEPTH=.4	*****	186.132							
S/DEPTH=.3	*****	84.2%							
S/DEPTH=.2	*****	185.155							
S/DEPTH=.1	*****	84.1%							
S/DEPTH=.0	*****	184.178							
S/DEPTH=.9	*****	84.0%							
S/DEPTH=.8	*****	183.201							
S/DEPTH=.7	*****	83.9%							
S/DEPTH=.6	*****	182.224							
S/DEPTH=.5	*****	83.8%							
S/DEPTH=.4	*****	181.247							
S/DEPTH=.3	*****	83.7%							
S/DEPTH=.2	*****	180.270							
S/DEPTH=.1	*****	83.6%							
S/DEPTH=.0	*****	179.293							
S/DEPTH=.9	*****	83.5%							
S/DEPTH=.8	*****	178.316							
S/DEPTH=.7	*****	83.4%							
S/DEPTH=.6	*****	177.339							
S/DEPTH=.5	*****	83.3%							
S/DEPTH=.4	*****	176.362							
S/DEPTH=.3	*****	83.2%							
S/DEPTH=.2	*****	175.385							
S/DEPTH=.1	*****	83.1%							
S/DEPTH=.0	*****	174.408							
S/DEPTH=.9	*****	83.0%							
S/DEPTH=.8	*****	173.431							
S/DEPTH=.7	*****	82.9%							
S/DEPTH=.6	*****	172.454							
S/DEPTH=.5	*****	82.8%							
S/DEPTH=.4	*****	171.477							
S/DEPTH=.3	*****	82.7%							
S/DEPTH=.2	*****	170.500							
S/DEPTH=.1	*****	82.6%							
S/DEPTH=.0	*****	169.523							
S/DEPTH=.9	*****	82.5%							
S/DEPTH=.8	*****	168.546							
S/DEPTH=.7	*****	82.4%							
S/DEPTH=.6	*****	167.569							
S/DEPTH=.5	*****	82.3%							
S/DEPTH=.4	*****	166.592							
S/DEPTH=.3	*****	82.2%							
S/DEPTH=.2	*****	165.615							
S/DEPTH=.1	*****	82.1%							
S/DEPTH=.0	*****	164.638							
S/DEPTH=.9	*****	82.0%							
S/DEPTH=.8	*****	163.661							
S/DEPTH=.7	*****	81.9%							
S/DEPTH=.6	*****	162.684							
S/DEPTH=.5	*****	81.8%							
S/DEPTH=.4	*****	161.707							
S/DEPTH=.3	*****	81.7%							
S/DEPTH=.2	*****	160.730							
S/DEPTH=.1	*****	81.6%							
S/DEPTH=.0	*****	159.753							
S/DEPTH=.9	*****	81.5%							
S/DEPTH=.8	*****	158.776							
S/DEPTH=.7	*****	81.4%							
S/DEPTH=.6	*****	157.799							
S/DEPTH=.5	*****	81.3%							

CASE 2=8

TABLE 1=4 DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA ETA/HEIGHT	0 9.04	10.0 18.8%	20.0 32.8%	30.0 50.6%	40.0 75.0%	50.0 100.0%	60.0 130.0%	70.0 200.0%	80.0 350.0%	90.0 600.0%	100.0 1000.0%	110.0 1650.0%	120.0 2500.0%	130.0 3800.0%	140.0 5500.0%	150.0 8000.0%	160.0 11500.0%	170.0 16500.0%	180.0 23500.0%	190.0 33500.0%	200.0 47500.0%	210.0 65500.0%	220.0 88500.0%	230.0 116500.0%	240.0 150000.0%	250.0 188500.0%	260.0 231500.0%	270.0 279500.0%	280.0 332500.0%	290.0 390000.0%	300.0 451500.0%	310.0 517500.0%	320.0 588500.0%	330.0 664000.0%	340.0 744000.0%	350.0 828500.0%	360.0 917000.0%	370.0 1009000.0%	380.0 1104000.0%	390.0 1201500.0%	400.0 1301500.0%	410.0 1404000.0%	420.0 1508500.0%	430.0 1614500.0%	440.0 1722000.0%	450.0 1831000.0%	460.0 1941500.0%	470.0 2053500.0%	480.0 2167000.0%	490.0 2282000.0%	500.0 2398000.0%	510.0 2515000.0%	520.0 2633500.0%	530.0 2753000.0%	540.0 2873500.0%	550.0 2995000.0%	560.0 3117500.0%	570.0 3241000.0%	580.0 3365500.0%	590.0 3491000.0%	600.0 3617500.0%	610.0 3745000.0%	620.0 3873500.0%	630.0 3995000.0%	640.0 4117500.0%	650.0 4241000.0%	660.0 4365500.0%	670.0 4491000.0%	680.0 4617500.0%	690.0 4745000.0%	700.0 4873500.0%	710.0 4995000.0%	720.0 5117500.0%	730.0 5241000.0%	740.0 5365500.0%	750.0 5491000.0%	760.0 5617500.0%	770.0 5745000.0%	780.0 5873500.0%	790.0 5995000.0%	800.0 6117500.0%	810.0 6241000.0%	820.0 6365500.0%	830.0 6491000.0%	840.0 6617500.0%	850.0 6745000.0%	860.0 6873500.0%	870.0 6995000.0%	880.0 7117500.0%	890.0 7241000.0%	900.0 7365500.0%	910.0 7491000.0%	920.0 7617500.0%	930.0 7745000.0%	940.0 7873500.0%	950.0 7995000.0%	960.0 8117500.0%	970.0 8241000.0%	980.0 8365500.0%	990.0 8491000.0%	1000.0 8617500.0%	1010.0 8745000.0%	1020.0 8873500.0%	1030.0 8995000.0%	1040.0 9117500.0%	1050.0 9241000.0%	1060.0 9365500.0%	1070.0 9491000.0%	1080.0 9617500.0%	1090.0 9745000.0%	1100.0 9873500.0%	1110.0 9995000.0%	1120.0 10117500.0%	1130.0 10241000.0%	1140.0 10365500.0%	1150.0 10491000.0%	1160.0 10617500.0%	1170.0 10745000.0%	1180.0 10873500.0%	1190.0 10995000.0%	1200.0 11117500.0%	1210.0 11241000.0%	1220.0 11365500.0%	1230.0 11491000.0%	1240.0 11617500.0%	1250.0 11745000.0%	1260.0 11873500.0%	1270.0 11995000.0%	1280.0 12117500.0%	1290.0 12241000.0%	1300.0 12365500.0%	1310.0 12491000.0%	1320.0 12617500.0%	1330.0 12745000.0%	1340.0 12873500.0%	1350.0 12995000.0%	1360.0 13117500.0%	1370.0 13241000.0%	1380.0 13365500.0%	1390.0 13491000.0%	1400.0 13617500.0%	1410.0 13745000.0%	1420.0 13873500.0%	1430.0 13995000.0%	1440.0 14117500.0%	1450.0 14241000.0%	1460.0 14365500.0%	1470.0 14491000.0%	1480.0 14617500.0%	1490.0 14745000.0%	1500.0 14873500.0%	1510.0 14995000.0%	1520.0 15117500.0%	1530.0 15241000.0%	1540.0 15365500.0%	1550.0 15491000.0%	1560.0 15617500.0%	1570.0 15745000.0%	1580.0 15873500.0%	1590.0 15995000.0%	1600.0 16117500.0%	1610.0 16241000.0%	1620.0 16365500.0%	1630.0 16491000.0%	1640.0 16617500.0%	1650.0 16745000.0%	1660.0 16873500.0%	1670.0 16995000.0%	1680.0 17117500.0%	1690.0 17241000.0%	1700.0 17365500.0%	1710.0 17491000.0%	1720.0 17617500.0%	1730.0 17745000.0%	1740.0 17873500.0%	1750.0 17995000.0%	1760.0 18117500.0%	1770.0 18241000.0%	1780.0 18365500.0%	1790.0 18491000.0%	1800.0 18617500.0%	1810.0 18745000.0%	1820.0 18873500.0%	1830.0 18995000.0%	1840.0 19117500.0%	1850.0 19241000.0%	1860.0 19365500.0%	1870.0 19491000.0%	1880.0 19617500.0%	1890.0 19745000.0%	1900.0 19873500.0%	1910.0 19995000.0%	1920.0 20117500.0%	1930.0 20241000.0%	1940.0 20365500.0%	1950.0 20491000.0%	1960.0 20617500.0%	1970.0 20745000.0%	1980.0 20873500.0%	1990.0 20995000.0%	2000.0 21117500.0%	2010.0 21241000.0%	2020.0 21365500.0%	2030.0 21491000.0%	2040.0 21617500.0%	2050.0 21745000.0%	2060.0 21873500.0%	2070.0 21995000.0%	2080.0 22117500.0%	2090.0 22241000.0%	2100.0 22365500.0%	2110.0 22491000.0%	2120.0 22617500.0%	2130.0 22745000.0%	2140.0 22873500.0%	2150.0 22995000.0%	2160.0 23117500.0%	2170.0 23241000.0%	2180.0 23365500.0%	2190.0 23491000.0%	2200.0 23617500.0%	2210.0 23745000.0%	2220.0 23873500.0%	2230.0 23995000.0%	2240.0 24117500.0%	2250.0 24241000.0%	2260.0 24365500.0%	2270.0 24491000.0%	2280.0 24617500.0%	2290.0 24745000.0%	2300.0 24873500.0%	2310.0 24995000.0%	2320.0 25117500.0%	2330.0 25241000.0%	2340.0 25365500.0%	2350.0 25491000.0%	2360.0 25617500.0%	2370.0 25745000.0%	2380.0 25873500.0%	2390.0 25995000.0%	2400.0 26117500.0%	2410.0 26241000.0%	2420.0 26365500.0%	2430.0 26491000.0%	2440.0 26617500.0%	2450.0 26745000.0%	2460.0 26873500.0%	2470.0 26995000.0%	2480.0 27117500.0%	2490.0 27241000.0%	2500.0 27365500.0%	2510.0 27491000.0%	2520.0 27617500.0%	2530.0 27745000.0%	2540.0 27873500.0%	2550.0 27995000.0%	2560.0 28117500.0%	2570.0 28241000.0%	2580.0 28365500.0%	2590.0 28491000.0%	2600.0 28617500.0%	2610.0 28745000.0%	2620.0 28873500.0%	2630.0 28995000.0%	2640.0 29117500.0%	2650.0 29241000.0%	2660.0 29365500.0%	2670.0 29491000.0%	2680.0 29617500.0%	2690.0 29745000.0%	2700.0 29873500.0%	2710.0 29995000.0%	2720.0 30117500.0%	2730.0 30241000.0%	2740.0 30365500.0%	2750.0 30491000.0%	2760.0 30617500.0%	2770.0 30745000.0%	2780.0 30873500.0%	2790.0 30995000.0%	2800.0 31117500.0%	2810.0 31241000.0%	2820.0 31365500.0%	2830.0 31491000.0%	2840.0 31617500.0%	2850.0 31745000.0%	2860.0 31873500.0%	2870.0 31995000.0%	2880.0 32117500.0%	2890.0 32241000.0%	2900.0 32365500.0%	2910.0 32491000.0%	2920.0 32617500.0%	2930.0 32745000.0%	2940.0 32873500.0%	2950.0 32995000.0%	2960.0 33117500.0%	2970.0 33241000.0%	2980.0 33365500.0%	2990.0 33491000.0%	3000.0 33617500.0%	3010.0 33745000.0%	3020.0 33873500.0%	3030.0 33995000.0%	3040.0 34117500.0%	3050.0 34241000.0%	3060.0 34365500.0%	3070.0 34491000.0%	3080.0 34617500.0%	3090.0 34745000.0%	3100.0 34873500.0%	3110.0 34995000.0%	3120.0 35117500.0%	3130.0 35241000.0%	3140.0 35365500.0%	3150.0 35491000.0%	3160.0 35617500.0%	3170.0 35745000.0%	3180.0 35873500.0%	3190.0 35995000.0%	3200.0 36117500.0%	3210.0 36241000.0%	3220.0 36365500.0%	3230.0 36491000.0%	3240.0 36617500.0%	3250.0 36745000.0%	3260.0 36873500.0%	3270.0 36995000.0%	3280.0 37117500.0%	3290.0 37241000.0%	3300.0 37365500.0%	3310.0 37491000.0%	3320.0 37617500.0%	3330.0 37745000.0%	3340.0 37873500.0%	3350.0 37995000.0%	3360.0 38117500.0%	3370.0 38241000.0%	3380.0 38365500.0%	3390.0 38491000.0%	3400.0 38617500.0%	3410.0 38745000.0%	3420.0 38873500.0%	3430.0 38995000.0%	3440.0 39117500.0%	3450.0 39241000.0%	3460.0 39365500.0%	3470.0 39491000.0%	3480.0 39617500.0%	3490.0 39745000.0%	3500.0 39873500.0%	3510.0 39995000.0%	3520.0 40117500.0%	3530.0 40241000.0%	3540.0 40365500.0%	3550.0 40491000.0%	3560.0 40617500.0%	3570.0 40745000.0%	3580.0 40873500.0%	3590.0 40995000.0%	3600.0 41117500.0%	3610.0 41241000.0%	3620.0 41365500.0%	3630.0 41491000.0%	3640.0 41617500.0%	3650.0 41745000.0%	3660.0 41873500.0%	3670.0 41995000.0%	3680.0 42117500.0%	3690.0 42241000.0%	3700.0 42365500.0%	3710.0 42491000.0%	3720.0 42617500.0%	3730.0 42745000.0%	3740.0 42873500.0%	3750.0 42995000.0%	3760.0 43117500.0%	3770.0 43241000.0%	3780.0 43365500.0%	3790.0 43491000.0%	3800.0 43617500.0%	3810.0 43745000.0%	3820.0 43873500.0%	3830.0 43995000.0%	3840.0 44117500.0%	3850.0 44241000.0%	3860.0 44365500.0%	3870.0 44491000.0%	3880.0 44617500.0%	3890.0 44745000.0%	3900.0 44873500.0%	3910.0 44995000.0%	3920.0 45117500.0%	3930.0 45241000.0%	3940.0 45365500.0%	3950.0 45491000.0%	3960.0 45617500.0%	3970.0 45745000.0%	3980.0 45873500.0%	3990.0 45995000.0%	4000.0 46117500.0%	4010.0 46241000.0%	4020.0 46365500.0%	4030.0 46491000.0%	4040.0 46617500.0%	4050.0 46745000.0%	4060.0 46873500.0%	4070.0 46995000.0%	4080.0 47117500.0%	4090.0 47241000.0%	4100.0 47365500.0%	4110.0 47491000.0%	4120.0 47617500.0%	4130.0 47745000.0%	4140.0 47873500.0%	4150.0 47995000.0%	4160.0 48117500.0%	4170.0 48241000.0%	4180.0 48365500.0%	4190.0 48491000.0%	4200.0 48617500.0%	4210.0 48745000.0%	4220.0 48873500.0%	4230.0 48995000.0%	4240.0 49117500.0%	4250.0 49241000.0%	4260.0 49365500.0%	4270.0 49491000.0%	4280.0 49617500.0%	4290.0 49745000.0%	4300.0 49873500.0%	4310.0 49995000.0%	4320.0 50117500.0%	4330.0 50241000.0%	4340.0 50365500.0%	4350.0 50491000.0%	4360.0 50617500.0%	4370.0 50745000.0%	4380.0 50873500.0%	4390.0 50995000.0%	4400.0 51117500.0%	4410.0 51241000.0%	4420.0 51365500.0%	4430.0 51491000.0%	4440.0 51617500.0%	4450.0 51745000.0%	4460.0 51873500.0%	4470.0 51995000.0%	4480.0 52117500.0%	4490.0 52241000.0%	4500.0 52365500.0%	4510.0 52491000.0%	4520.0 52617500.0%	4530.0 52745000.0%	4540.0 52873500.0%	4550.0 52995000.0%	4560.0 53117500.0%	4570.0 53241000.0%	4580.0 53365500.0%	4590.0 53491000.0%	4600.0 53617500.0%	4610.0 53745000.0%	4620.0 53873500.0%	4630.0 53995000.0%	4640.0 54117500.0%	4650.0 54241000.0%	4660.0 54365500.0%	4670.0 54491000.0%	4680.0 54617500.0%	4690.0 54745000.0%	4700.0 54873500.0%	4710.0 54995000.0%	4720.0 55117500.0%	4730.0 55241000.0%	4740.0 55365500.0%	4750.0 55491000.0%	4760.0 55617500.0%	4770.0 55745000.0%	4780.0 55873500.0%	4790.0 55995000.0%	4800.0 56117500.0%	4810.0 56241000.0%	4820.0 56365500.0%	4830.0 56491000.0%	4840.0 56617500.0%	4850.0 56745000.0%	4860.0 56873500.0%	4870.0 56995000.0%	4880.0 57117500.0%	4890.0 57241000.0%	4900.0 57365500.0%	4910.0 57491000.0%	4920.0 57617500.0%	4930.0 57745000.0%	4940.0 57873500.0%	4950.0 57995000.0%	4960.0 58117500.0%	4970.0 58241000.0%	4980.0 58365500.0%	4990.0 58491000.0%	5000.0 58617500.0%	5010.0 58745000.0%	5020.0 58873500.0%	5030.0 58995000.0%	5040.0 59117500.0%	5050.0 59241000.0%	5060.0 59365500.0%	5070.0 59491000.0%	5080.0 59617500.0%	5090.0 59745000.0%	5100.0 59873500.0%	5110.0 59995000.0%	5120.0 60117500.0%	5130.0 60241000.0%	5140.0 60365500.0%	5150.0 60491000.0%	5160.0 60617500.0%	5170.0 60745000.0%	5180.0 60873500.0%	5190.0 60995000.0%	5200.0 61117500.0%	5210.0 61241000.0%	5220.0 61365500.0%	5230.0 61491000.0%	5240.0 61617500.0%	5250.0 61745000.0%	5260.0 61873500.0%	5270.0 61995000.0%	5280.0 62117500.0%	5290.0 62241000.0%	5300.0 62365500.0%	5310.0 62491000.0%	5320.0 62617500.0%	5330.0 62745000.0%	5340.0 62873500.0%	5350.0 62995000.0%	5360.0 63117500.0%	5370.0 63241000.0%	5380.0 63365500.0%	5390.0 63491000.0%	5400.0 63617500.0%	5410.0 63745000.0%	5420.0 63873500.0%	5430.0 63995000.0%	5440.0 64117500.0%	5450.0 6424100
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CASE 2-B

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA ETA/HEIGHT=	0 904	10.0 44.7%	20.0 228	30.0 30.0	50.0 75.0	75.0 100.0	130.0 180.0	150.0 209.6	180.0 420.5%
ETA/HEIGHT=	44.7%	18.8%	106.3%	31.0%	506.8%	236.5%	9.5%	298.6%	420.5%
SURFACE	1007.948	500.971	86.306	4.069	6.065	9.661	9.972	10.008	9.993
S/DEPTH=1.3	63.0%	27.9%	269.6%	4.069	6.065	9.661	9.972	10.008	9.993
S/DEPTH=1.2	949.520	483.546	483.546	483.546	483.546	483.546	483.546	483.546	483.546
S/DEPTH=1.1	844.744	436.492	436.492	436.492	436.492	436.492	436.492	436.492	436.492
S/DEPTH=1.0	55.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%
S/DEPTH=.9	749.126	391.267	391.267	391.267	391.267	391.267	391.267	391.267	391.267
S/DEPTH=.8	661.184	22.9%	22.9%	22.9%	22.9%	22.9%	22.9%	22.9%	22.9%
S/DEPTH=.7	579.673	347.678	347.678	347.678	347.678	347.678	347.678	347.678	347.678
S/DEPTH=.6	51.8%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
S/DEPTH=.5	503.539	305.538	305.538	305.538	305.538	305.538	305.538	305.538	305.538
S/DEPTH=.4	50.8%	21.3%	21.3%	21.3%	21.3%	21.3%	21.3%	21.3%	21.3%
S/DEPTH=.3	431.882	264.664	264.664	264.664	264.664	264.664	264.664	264.664	264.664
S/DEPTH=.2	49.8%	20.6%	20.6%	20.6%	20.6%	20.6%	20.6%	20.6%	20.6%
S/DEPTH=.1	363.920	224.881	224.881	224.881	224.881	224.881	224.881	224.881	224.881
S/DEPTH=.0	49.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
S/DEPTH=.9	298.972	186.020	186.020	186.020	186.020	186.020	186.020	186.020	186.020
S/DEPTH=.8	48.4%	19.5%	19.5%	19.5%	19.5%	19.5%	19.5%	19.5%	19.5%
S/DEPTH=.7	236.431	147.919	147.919	147.919	147.919	147.919	147.919	147.919	147.919
S/DEPTH=.6	47.8%	19.1%	19.1%	19.1%	19.1%	19.1%	19.1%	19.1%	19.1%
S/DEPTH=.5	175.751	110.419	110.419	110.419	110.419	110.419	110.419	110.419	110.419
S/DEPTH=.4	47.4%	18.8%	18.8%	18.8%	18.8%	18.8%	18.8%	18.8%	18.8%
S/DEPTH=.3	116.429	73.366	73.366	73.366	73.366	73.366	73.366	73.366	73.366
S/DEPTH=.2	47.1%	18.6%	18.6%	18.6%	18.6%	18.6%	18.6%	18.6%	18.6%
S/DEPTH=.1	57.995	36.609	36.609	36.609	36.609	36.609	36.609	36.609	36.609
S/DEPTH=.0	46.9%	36.609	36.609	36.609	36.609	36.609	36.609	36.609	36.609

CASE 2: B

TABLE V. DIMENSIONLESS INERTIA FORCE COMPONENT FIELD... DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
PTA/HEIGHTS	.904	.606	.228	.031	.0019	.005	.006	.0096	.096
	44.7%	18.8%	106.3%	*****	506.8%	256.5%	9.5%	298.6%	420.5%

SURFACE	.000	407.060	339.432	170.728	26.219	2.084	.137	.052	.000
	*****	95.4%	89.2%	68.5%	=219.6%	*****	*****	*****	*****
DEPTH 13	.000								

39DEPTHE1.2

 39.645
 000
 95.2
 344.100
 39DEPTHE1.1

 344.100

S/DEPT.H=1.0	.000	302.338	309.260	168.934
*****		94.8%	90.0%	72.7%
S/DEPT.H=.9	.000	283.824	275.690	153.626
			24.785	1.978
				.134
				.000

S/DEPTH= 8	243.223	138.092	22.549	1.800	1.127	-.039
	60.5%	89.8%	73.3%	163.0%	*****	*****
S/DEPTH= 7	201.745	211.222	121.636	20.134	1.607	-.032
	104.745%	211.222%	121.636%	20.134%	1.607%	-.032%

S/DEPTH = 6	.000	163.407	179.834	105.151	17.560	1.402	.104	-.027
	*****	94.3%	89.7%	73.8%	*****	*****	*****	*****
S/DEPTH = 5	.000	137.737	146.991	148.116	14.848	1.186	.089	-.021
	*****	93.3%	90.9%	88.1%	*****	*****	*****	*****

S/DEPTH= 4	.000	105.419	118.615	70.805	12.019	.981	.073	.000
	*****	89.1%	89.6%	74.1%	*****	*****	*****	.017
S/DEPTH= 3	.000	78.160	86.621	53.282	9.097	.727	.056	.000
	*****	88.1%	88.6%	74.1%	*****	*****	*****	.012

S/DEPTH	.2	.000	51.680	58.917	35.604	.488	.037	.008
		*****	94.0%	89.5%	74.2%	*****	*****	*****
SDEPTH	.1	.000	25.712	29.409	17.827	.245	.019	.004
		*****	91.0%	89.5%	74.2%	*****	*****	*****

[illegible]

CASE 2=B

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.904	.606	.228	.031	.079	.095	.096	.096	.096
	44.7%	18.8%	106.3%	*****	506.8%	236.5%	9.5%	298.6%	420.5%
SURFACE	762.851	324.913	44.897	1.550	3.059	44.664	44.801	44.817	44.810
	70.5%	33.3%	333.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	685.368								
	100.0%								
S/DEPTH=1.2	554.315	303.688							
	59.5%	26.6%							
S/DEPTH=1.1	444.285	249.560							
	57.3%	26.2%							
S/DEPTH=1.0	351.887	202.059	39.188	1.540					
	55.6%	24.9%	252.4%	*****					
S/DEPTH=.9	274.403	160.637	35.808	1.436	2.595	44.069	44.196	44.211	44.204
	50.0%	23.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	209.640	124.806	26.662	1.284	2.006	44.211	44.315	44.327	44.322
	52.5%	22.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	155.871	94.141	20.904	1.093	1.506	44.455	44.538	44.547	44.543
	51.2%	21.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	111.669	66.274	15.665	.879	1.088	44.802	44.864	44.871	44.869
	50.1%	20.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	75.925	46.893	11.056	.657	.744	44.1250	44.295	44.300	44.298
	49.1%	20.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	47.764	29.742	7.167	.446	.470	44.799	44.829	44.832	44.830
	48.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	26.512	10.613	4.071	.262	.262	44.449	44.466	44.468	44.467
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	11.672	7.346	1.822	.120	.116	44.200	44.207	44.208	44.208
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	2.902	1.831	.457	.031	.029	44.050	44.052	44.052	44.052
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

[illegible]

CASE 2=B

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD....DEFINED IN EQUATION (29)

THETA = ETA/HEIGHT=	10.0 .904 44.7%	20.0 .606 18.8%	30.0 .228 106.3%	50.0 .031 *****	75.0 .079 506.6%	100.0 .096 9.5%	130.0 .096 208.6%	180.0 .096 420.5%
SURFACE	1.812	1.215	.455	.062	.158	.190	.192	.192
S/DEPTH=1.3	47.3%	22.4%	.98.7%	*****	510.8%	256.5%	301.7%	442.9%
S/DEPTH=1.2	100.0%							
S/DEPTH=1.1	44.1%	1.210						
S/DEPTH=1.0	42.2%	1.198						
S/DEPTH=.9	40.5%	1.185	.480	.065				
S/DEPTH=.8	38.8%	1.173	.505	.086	.156	.190	.192	.192
S/DEPTH=.7	37.3%	1.162	.525	.104	.152	.189	.192	.192
S/DEPTH=.6	35.9%	1.151	.542	.120	.149	.189	.192	.192
S/DEPTH=.5	34.7%	1.141	.557	.133	.146	.189	.192	.192
S/DEPTH=.4	33.6%	1.133	.568	.145	.144	.189	.192	.192
S/DEPTH=.3	32.7%	1.126	.577	.154	.142	.188	.192	.192
S/DEPTH=.2	32.0%	1.121	.584	.161	.141	.188	.192	.192
S/DEPTH=.1	31.5%	1.117	.589	.166	.140	.188	.192	.192
S/DEPTH=.0	31.2%	1.114	.592	.169	.139	.188	.192	.192
	31.1%	1.113	.593	.170	.139	.188	.192	.192
		1.109%	.499.9%	.386.1%	562.2%	257.5%	296.40%	436.5%

CASE 2-B

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35) SURFACE	.000	.003	.005	.007	.008	.004	.002	.006	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35) SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36) SURFACE	.023	.021	.017	.011	.004	.019	.021	.004	.022
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37) SURFACE	.002	.001	.000	.000	.000	.000	.000	.000	.000

CASE 2-B

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.199 (= 11.4%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.211 (= 136.9%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.234 (= 114.8%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.446 (= 125.3%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.434 (= 128.6%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.073 (= 1.5%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.467 (= 114.6%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.613 (= 141.7%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.179 (= 173.3%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.004962	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.015769	STREAM FUNCTION	.000433
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.007914	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.022598	STREAM FUNCTION	.002267
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.197775	STREAM FUNCTION	.332755
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.005869	STREAM FUNCTION	.144609

CASE 2=C

19TH ORDER STREAM FUNCTION WAVE THEORY

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/b \cdot 28318) \cdot T^{**2}$

DEFINITIONS

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .002925 DPT/LO = .005000
 H/DPT = .585097
 L/LO = .210547 PSI/(G*H*T) = -.000638

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.241738+01	X(2)/(H*T*G) =	-.108313+01
X(3)/(H*T*G) =	-.605744+02	X(4)/(H*T*G) =	-.360214+02
X(5)/(H*T*G) =	-.217465+02	X(6)/(H*T*G) =	-.131436+02
X(7)/(H*T*G) =	-.789114+03	X(8)/(H*T*G) =	-.469926+03
X(9)/(H*T*G) =	-.827679+03	X(10)/(H*T*G) =	-.161273+03
X(11)/(H*T*G) =	-.927108+04	X(12)/(H*T*G) =	-.526491+04
X(13)/(H*T*G) =	-.294232+04	X(14)/(H*T*G) =	-.162236+04
X(15)/(H*T*G) =	-.876138+05	X(16)/(H*T*G) =	-.467439+05
X(17)/(H*T*G) =	-.243012+05	X(18)/(H*T*G) =	-.126184+05
X(19)/(H*T*G) =	-.639932+06		

TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

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TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)												
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0			
ETA/HEIGHT=	.927	.470	.116	.014	.068	.072	.072	.073	.073			
	46.1%	4.8%	305.2%	*****	575.7%	279.0%	19.8%	427.5%	589.4%			
SURFACE	.000	14.049	7.289	2.559	.240	.000	.007	.006	.000	*****	*****	*****
S/DEPTH=1.5	*****	95.0%	81.2%	22.9%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.2	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	*****	*****	6.822	84.3%	84.3%	2.369	.001	.006	.005	*****	*****	.000
S/DEPTH=.8	*****	94.3%	64.130	40.4%	40.4%	.209	.003	.005	.004	*****	*****	.000
S/DEPTH=.7	*****	7.391	54.438	2.145	41.6%	.187	.003	.004	.003	*****	*****	.000
S/DEPTH=.6	*****	94.1%	84.12%	42.6%	42.6%	.164	.004	.003	.002	*****	*****	.000
S/DEPTH=.5	*****	6.296	4.747	1.907	43.4%	.139	.004	.002	.002	*****	*****	.000
S/DEPTH=.4	*****	94.0%	84.2%	44.0%	44.0%	.113	.003	.002	.001	*****	*****	.000
S/DEPTH=.3	*****	93.86%	84.1%	44.8%	45.0%	.085	.003	.001	.001	*****	*****	.000
S/DEPTH=.2	*****	93.5%	84.1%	45.0%	45.7%	.057	.002	.001	.000	*****	*****	.000
S/DEPTH=.1	*****	93.5%	84.1%	*****	*****	.029	.001	.000	.000	*****	*****	.000
S/DEPTH=.0	*****	93.4%	*****	*****	*****	.000	.000	.000	.000	*****	*****	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.927	.470	.116	.014	.068	.072	.072	.073	.073
	46.1%	4.8%	30.52%	*****	575.7%	279.0%	19.8%	427.5%	589.4%
SURFACE	.000	573.887	252.529	81.125	7.850	1.038	.865	.827	.000
	*****	97.5%	88.8%	47.4%	*****	*****	*****	*****	*****
DEPTH=1.5	.000								

DEPTH=1.4	.000								

DEPTH=1.3	.000								

DEPTH=1.2	.000	533.566							
	*****	97.4%							
DEPTH=1.1	.000	485.774							
	*****	97.1%							
DEPTH=1.0	.000	444.200							
	*****	96.9%							
DEPTH=.9	.000	408.261	255.977	88.174	8.317	.803	.736	.701	.000
	*****	96.6%	89.3%	52.5%	*****	*****	*****	*****	*****
DEPTH=.8	.000	377.433	261.054	95.002	9.081	.472	.560	.525	.000
	*****	96.3%	89.4%	56.0%	*****	*****	*****	*****	*****
DEPTH=.7	.000	351.257	261.710	100.936	9.810	.219	.429	.395	.000
	*****	96.1%	89.4%	58.8%	*****	*****	*****	*****	*****
DEPTH=.6	.000	329.337	261.645	105.997	10.480	.026	.334	.298	.000
	*****	95.8%	89.5%	60.8%	*****	*****	*****	*****	*****
DEPTH=.5	.000	311.336	261.157	110.213	11.075	.121	.255	.227	.000
	*****	95.6%	89.5%	62.4%	*****	*****	*****	*****	*****
DEPTH=.4	.000	290.975	260.477	113.611	11.579	.231	.215	.176	.000
	*****	95.4%	89.5%	63.6%	*****	*****	*****	*****	*****
DEPTH=.3	.000	286.032	259.781	116.222	11.981	.310	.181	.140	.000
	*****	95.2%	89.4%	64.5%	*****	*****	*****	*****	*****
DEPTH=.2	.000	278.336	259.196	118.068	12.274	.364	.158	.116	.000
	*****	95.1%	89.4%	65.1%	*****	*****	*****	*****	*****
DEPTH=.1	.000	273.766	258.812	119.168	12.453	.395	.145	.103	.000
	*****	95.0%	89.4%	65.4%	*****	*****	*****	*****	*****
DEPTH=.0	.000	272.250	258.678	119.533	12.512	.405	.141	.098	.000
	*****	95.0%	89.4%	65.5%	*****	*****	*****	*****	*****

SURFACE	.000	573.887	252.529	81.125	7.850	=1.038	.865	.827	.000
DEPT#1.5	.000	97.5X	88.48X	47.45X	*****	*****	*****	*****	*****
DEPT#1.4	.000								
DEPT#1.3	.000								
DEPT#1.2	.000	533.566							
DEPT#1.1	.000	97.4X							
DEPT#1.0	.000	485.774							
	.000	97.1X							
	.000	444.200	255.977						
DEPT# .9	.000	89.1X	89.1X	88.174	8.317	=.803	.736	.701	.000
DEPT# .8	.000	408.261	259.302	52.5X	*****	*****	*****	*****	.000
DEPT# .7	.000	99.6X	89.3X	95.002	9.081	=.472	.560	.525	.000
DEPT# .6	.000	377.433	261.054	56.0X	*****	*****	*****	*****	.000
DEPT# .5	.000	96.3X	89.4X	10.936	*****	*****	.429	.395	.000
DEPT# .4	.000	351.257	261.710	50.8X	9.810	=.219	.429	.395	.000
DEPT# .3	.000	98.1X	89.4X	58.8X	*****	*****	*****	*****	.000
DEPT# .2	.000	329.337	261.645	105.997	10.480	=.026	.334	.298	.000
DEPT# .1	.000	99.8X	89.5X	60.8X	*****	*****	*****	*****	.000
DEPT# .0	.000	311.336	261.157	110.213	11.075	.121	.265	.227	.000
	.000	95.6X	89.5X	62.4X	*****	*****	*****	*****	.000
	.000	290.975	260.477	113.611	11.579	.231	.215	.176	.000
DEPT# .3	.000	93.4X	89.5X	63.6X	*****	*****	*****	*****	.000
DEPT# .2	.000	286.032	259.781	116.222	11.981	.310	.191	.140	.000
DEPT# .1	.000	92.2X	89.4X	64.5X	*****	*****	*****	*****	.000
DEPT# .0	.000	278.336	259.196	118.068	12.274	.364	.156	.116	.000
	.000	95.1X	89.4X	65.1X	*****	*****	*****	*****	.000
	.000	277.766	258.612	119.168	12.453	.395	.185	.103	.000
DEPT# .0	.000	97.0X	89.4X	65.4X	*****	*****	*****	*****	.000
DEPT# .0	.000	272.250	258.678	119.533	12.512	.405	.141	.098	.000
	.000	95.0X	89.4X	65.5X	*****	*****	*****	*****	.000

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TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.027	.470	.116	.014	.068	.072	.072	.073	.073
	46.1%	4.8%	-305.2%	*****	575.7%	279.0%	19.8%	427.5%	589.4%
SURFACE	=551.249	82.993	233.102	105.548	11.905	.297	1.679	.391	.661
	96.7%	121.1%	106.9%	113.3%	*****	*****	*****	*****	*****
S/DEPTH#1.5	=535.434								
	100.0%								
S/DEPTH#1.4	=495.374								
	100.0%								
S/DEPTH#1.3	=453.186								
	96.0%								
S/DEPTH#1.2	=410.609	56.945							
	95.9%	128.6%							
S/DEPTH#1.1	=368.711	30.501							
	95.9%	149.0%							
S/DEPTH#1.0	=326.112	11.592	211.413						
	95.8%	*****	106.0%	96.462	11.214	.311	1.572	.331	.549
S/DEPTH# .9	=289.120	1.441	181.960	110.15%	*****	*****	*****	*****	*****
	95.7%	*****	106.3%	86.246	10.069	.318	1.424	.248	.395
S/DEPTH# .8	=251.845	9.889	155.205	110.4%	*****	*****	*****	*****	*****
	95.6%	*****	106.6%	110.4%	*****	*****	*****	*****	*****
S/DEPTH# .7	=216.259	14.766	130.613	75.794	8.908	.307	1.313	.185	.283
	95.5%	*****	106.8%	110.4%	*****	*****	*****	*****	*****
S/DEPTH# .6	=182.249	16.873	108.457	65.173	7.720	.283	1.229	.137	.201
	95.4%	*****	107.0%	110.4%	*****	*****	*****	*****	*****
S/DEPTH# .5	=149.645	16.848	87.620	54.434	6.499	.249	1.166	.101	.141
	95.4%	*****	107.2%	110.4%	*****	*****	*****	*****	*****
S/DEPTH# .4	=116.243	15.207	68.593	43.614	5.246	.207	1.118	.073	.097
	95.3%	*****	107.4%	110.3%	*****	*****	*****	*****	*****
S/DEPTH# .3	=87.818	12.370	50.482	32.744	3.963	.160	1.080	.050	.064
	95.2%	*****	107.6%	110.3%	*****	*****	*****	*****	*****
S/DEPTH# .2	=58.132	8.691	33.199	21.843	2.656	.109	1.049	.031	.039
	95.2%	*****	107.7%	*****	*****	*****	*****	*****	*****
S/DEPTH# .1	=26.942	4.476	16.463	10.925	1.332	.055	1.024	.015	.018
	95.2%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	*****	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

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TABLE V-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.927	.470	.116	.014	.068	.072	.072	.073	.073
	46.1%	4.8%	305.2%	*****	575.7%	279.0%	19.8%	427.5%	589.4%
SURFACE	.000	465.652	277.336	106.132	10.410	.001	.317	.280	.000
	*****	96.2%	87.3%	50.8%	*****	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000								

S/DEPTH=1.0	.000								

S/DEPTH= .9	.000								

S/DEPTH= .8	.000								

S/DEPTH= .7	.000								

S/DEPTH= .6	.000								

S/DEPTH= .5	.000								

S/DEPTH= .4	.000								

S/DEPTH= .3	.000								

S/DEPTH= .2	.000								

S/DEPTH= .1	.000								

S/DEPTH= .0	.000								

CASE 2=C

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT=	0 .027 46.1%	10.0 .470 4.8%	20.0 .116 305.2%	30.0 .014 *****	50.0 .068 575.7%	75.0 .072 279.0%	100.0 .072 19.8%	130.0 .073 427.5%	180.0 .073 589.4%
SURFACE	976.518	220.288	14.172	.061	-2.132	-2.514	-2.530	-2.544	-2.537
S/DEPTH=1.5	73.0%	15.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	100.0%								
S/DEPTH=1.3	717.421								
S/DEPTH=1.2	100.0%								
S/DEPTH=1.1	575.839								
S/DEPTH=1.0	54.1%								
S/DEPTH=.9	459.772	192.924							
S/DEPTH=.8	50.7%	14.0%							
S/DEPTH=.7	364.306	159.711							
S/DEPTH=.6	47.9%	15.3%							
S/DEPTH=.5	285.626	130.109	13.127						
S/DEPTH=.4	45.2%	10.6%	*****						
S/DEPTH=.3	220.752	103.967	11.419	.039	1.858	2.220	2.235	2.247	2.240
S/DEPTH=.2	42.8%	17.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	167.351	81.119	9.590	.031	1.451	1.753	1.767	1.775	1.769
S/DEPTH=.0	40.5%	19.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	133.592	61.401	7.731	.030	1.099	1.342	1.353	1.359	1.354
S/DEPTH=.6	38.5%	20.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	88.041	44.656	5.930	.030	.800	.986	.994	.998	.995
S/DEPTH=.4	36.7%	30.741	4.266	.027	.551	.684	.691	.693	.691
S/DEPTH=.3	59.578	35.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	37.337	19.532	2.808	.021	.351	.438	.442	.444	.442
S/DEPTH=.1	20.664	10.924	1.614	.014	.196	.246	.249	.249	.249
S/DEPTH=.0	9.079	4.835	.728	.007	.087	.109	.111	.111	.110
S/DEPTH=.1	2.254	1.206	.184	.002	.022	.027	.028	.028	.028
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=C

TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	46.1%	.927	.470	.116	.014	.068	.072	.073	.073
			.305.2%	*****	575.7%	279.0%	19.8%	427.5%	589.4%
SURFACE	*****	.000	336.154	147.958	49.507	4.627	.100	.201	.184
S/DEPTH=1.5	*****	96.6%	84.7%	33.5%	*****	*****	*****	*****	*****
S/DEPTH=1.4	*****	.000	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	*****	.000	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.2	*****	.000	284.758	105.631	42.169	4.172	.051	.158	.143
S/DEPTH=1.1	*****	.000	96.5%	89.4%	60.1%	3.433	.003	.103	.091
S/DEPTH=1.0	*****	.000	226.169	83.508	34.383	*****	*****	*****	*****
	*****	.000	96.3%	89.4%	61.4%	*****	*****	*****	*****
	*****	.000	177.362	63.900	27.035	2.725	.028	.066	.057
	*****	.000	96.1%	89.4%	62.4%	*****	*****	*****	*****
S/DEPTH=.9	*****	.000	136.883	46.888	20.309	2.066	.036	.041	.034
S/DEPTH=.8	*****	.000	95.9%	89.4%	63.35%	*****	*****	*****	*****
S/DEPTH=.7	*****	.000	103.500	32.509	14.363	1.473	.034	.025	.020
S/DEPTH=.6	*****	.000	95.4%	89.4%	63.35%	*****	*****	*****	*****
S/DEPTH=.5	*****	.000	95.3%	89.4%	63.35%	*****	*****	*****	*****
S/DEPTH=.4	*****	.000	22.762	20.771	9.327	.963	.026	.014	.011
S/DEPTH=.3	*****	.000	95.2%	89.4%	63.35%	*****	*****	*****	*****
S/DEPTH=.2	*****	.000	12.560	11.666	5.305	.551	.016	.007	.005
S/DEPTH=.1	*****	.000	*****	5.179	2.576	.248	.008	.003	.002
	*****	.000	5.506	*****	*****	*****	*****	*****	*****
	*****	.000	1.365	1.294	.597	.062	.002	.001	.000
	*****	.000	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	.000	.000	.000	.000	.000	.000	.000	.000
	*****	.000	*****	*****	*****	*****	*****	*****	*****

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

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CASE 2-C

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.007	.014	.018	.019	.008	.005	.012	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.034	.032	.026	.018	.005	.029	.032	.005	.033
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.001	.000	.000	.000	.000	.000	.000	.000	.000

CASE 2=C

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.211 (=16.2%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.159 (=214.6%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.185 (=172.4%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.344 (=191.9%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.335 (=196.7%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.972 (=1.7%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.368 (=172.4%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.461 (=221.1%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.127 (=285.9%)

CASE 2°C

TABLE XI(CONT)-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10)	DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	LINEAR	.011678	STREAM FUNCTION	.000000
(11)	DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	LINEAR	.023753	STREAM FUNCTION	.000230
(12)	DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	LINEAR	.019707	STREAM FUNCTION	.000000
(13)	DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	LINEAR	.034261	STREAM FUNCTION	.000631
(14)	DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48)	LINEAR	.298482	STREAM FUNCTION	.512497
(15)	DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)	LINEAR	.008378	STREAM FUNCTION	.256664

CASE 2-D

19TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .003884 DPT/LO = .005000

H/DPT = .776719

L/LO = .222852 PSI/(G*H*T) = -.000632

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.195975=01	X(2)/(H*T*G) =	-.899338=02
X(3)/(H*T*G) =	-.520998=02	X(4)/(H*T*G) =	-.324648=02
X(5)/(H*T*G) =	-.206557=02	X(6)/(H*T*G) =	-.132575=02
X(7)/(H*T*G) =	-.847207=03	X(8)/(H*T*G) =	-.540352=03
X(9)/(H*T*G) =	-.341193=03	X(10)/(H*T*G) =	-.214955=03
X(11)/(H*T*G) =	-.133574=03	X(12)/(H*T*G) =	-.829726=04
X(13)/(H*T*G) =	-.506638=04	X(14)/(H*T*G) =	-.311288=04
X(15)/(H*T*G) =	-.187359=04	X(16)/(H*T*G) =	-.115125=04
X(17)/(H*T*G) =	-.692999=05	X(18)/(H*T*G) =	-.440772=05
X(19)/(H*T*G) =	-.276700=05		

CASE 2=D

TABLE 1=DIMENSIONLESS										HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)										THETA = 0										ETA/HEIGHT= 47.0%										180.0										791.9%										50.056										580.1%										130.0										100.0										75.0										331.0%										55.0%										50.056										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%										50.056										100.0										75.0										331.0%										55.0%								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CASE 2=0

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA ETA/HEIGHT	0 944 47.0%	10.0 944 44.5%	20.0 944 40.5%	30.0 944 37.0%	50.0 944 31.0%	75.0 944 25.0%	100.0 944 20.0%	130.0 944 15.0%	180.0 944 10.0%
SURFACE	.000	13.386	5.070	1.529	.120	-.039	.028	.026	.000
S/DEPTH=1.7	.000	94.3%	71.0%	-37.7%	.000	.000	.000	.000	.000
S/DEPTH=1.6	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=1.5	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=1.4	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=1.3	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=1.2	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=1.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=1.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.9	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.8	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.7	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.6	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.5	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.4	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.2	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 2=D

TABLE II=DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD,....DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
FTA/HEIGHT=	.944	.341	.056	.027	.055	.056	.056	.056	.056
	47.0%	44.5%	739.5%	*****	686.7%	331.0%	55.0%	580.1%	791.9%
SURFACE	.000	574.765	161.964	52.365	5.705	5.204	3.676	3.282	.000
	*****	97.6%	84.5%	27.0%	*****	*****	*****	*****	*****
S/DEPTH=1.7	.000								

S/DEPTH=1.6	.000								

S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	540.488							
	*****	97.7%							
S/DEPTH=1.1	.000	492.622							
	*****	97.5%							
S/DEPTH=1.0	.000	450.639	168.303						
	*****	97.3%	85.4%						
S/DEPTH=.9	.000	414.110	180.368	55.927	5.600	5.445	3.146	2.817	.000
	*****	97.1%	86.4%	33.2%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	382.615	189.529	60.297	5.514	5.360	2.593	2.151	.000
	*****	96.9%	87.1%	36.3%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	355.765	196.407	64.360	5.518	5.257	1.827	1.647	.000
	*****	96.6%	87.6%	44.4%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	333.209	201.503	68.014	5.577	5.197	1.404	1.269	.000
	*****	96.4%	88.0%	45.6%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	314.641	205.219	71.189	5.665	5.1453	1.091	.987	.000
	*****	96.2%	88.2%	48.2%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	297.802	207.869	73.835	5.763	5.113	.862	.781	.000
	*****	96.0%	88.4%	50.2%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	288.478	209.696	75.919	5.854	5.871	.701	.635	.000
	*****	95.9%	88.5%	51.6%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	280.506	210.878	77.421	5.927	5.710	.594	.537	.000
	*****	95.8%	88.6%	52.6%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	275.770	211.539	78.326	5.974	5.618	.535	.482	.000
	*****	95.7%	88.6%	53.2%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	274.199	211.752	78.628	5.990	5.588	.513	.464	.000
	*****	95.7%	88.7%	53.4%	*****	*****	*****	*****	*****

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.944	.341	.056	.027	.055	.056	.056	.056	.056
	47.0%	44.5%	739.5%	*****	686.7%	331.0%	55.0%	580.1%	791.9%
SURFACE	=489.144	215.114	208.345	76.500	11.699	=1.186	=2.536	1.606	2.272
S/DEPTH=1.7	96.5%	107.5%	107.0%	116.2%	*****	*****	*****	*****	*****
S/DEPTH=1.6	=499.564								
S/DEPTH=1.5	100.0%								
S/DEPTH=1.4	=510.170								
S/DEPTH=1.3	100.0%								
S/DEPTH=1.2	=498.772								
S/DEPTH=1.1	100.0%								
S/DEPTH=1.0	=473.910								
S/DEPTH=.9	96.5%								
S/DEPTH=.8	=441.243								
S/DEPTH=.7	96.5%								
S/DEPTH=.6	=404.479								
S/DEPTH=.5	96.5%								
S/DEPTH=.4	=366.006								
S/DEPTH=.3	96.5%								
S/DEPTH=.2	=327.315								
S/DEPTH=.1	96.5%								
S/DEPTH=0	=17.415								
S/DEPTH=.9	105.5%			70.724	10.478	=1.148	=2.177	1.371	1.897
S/DEPTH=.8	173.128			111.9%	*****	*****	*****	*****	*****
S/DEPTH=.7	105.6%			63.293	8.660	=.817	=1.658	1.034	1.371
S/DEPTH=.6	45.134			150.082	*****	*****	*****	*****	*****
S/DEPTH=.5	120.8%			11.8%	*****	*****	*****	*****	*****
S/DEPTH=.4	50.183			55.737	7.142	=.576	=1.258	.777	.984
S/DEPTH=.3	127.2%			111.6%	*****	*****	*****	*****	*****
S/DEPTH=.2	19.403			48.052	5.839	=.401	=.947	.580	.699
S/DEPTH=.1	96.1%			111.7%	*****	*****	*****	*****	*****
S/DEPTH=0	106.2%			40.244	4.689	=.374	=.704	.427	.489
S/DEPTH=.9	11.894			111.7%	*****	*****	*****	*****	*****
S/DEPTH=.8	6.264			32.529	3.648	=.184	=.510	.308	.335
S/DEPTH=.7	100.3%			111.6%	*****	*****	*****	*****	*****
S/DEPTH=.6	51.286			24.526	2.681	=.118	=.354	.213	.221
S/DEPTH=.5	106.4%			*****	*****	*****	*****	*****	*****
S/DEPTH=.4	33.873			16.255	1.763	=.070	=.223	.133	.133
S/DEPTH=.3	106.4%			*****	*****	*****	*****	*****	*****
S/DEPTH=.2	10.841			8.139	.875	=.032	=.108	.064	.063
S/DEPTH=.1	*****			*****	*****	*****	*****	*****	*****
S/DEPTH=0	*****			*****	*****	*****	*****	*****	*****

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD... DEFINED IN EQUATION (25)

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CASE 2=D

TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.944	.341	.056	.027	.055	.056	.056	.056	.056
	47.0%	44.5%	75.0%	*****	686.7%	331.0%	55.0%	580.1%	791.9%
SURFACE	.000	465.163	207.600	67.962	5.482	-1.771	1.309	1.178	.000
	*****	96.4%	84.0%	26.8%	*****	*****	*****	*****	*****
S/DEPTH=1.7	.000								

S/DEPTH=1.6	.000								

S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	429.126							
	*****	96.6%							
S/DEPTH=1.1	.000	377.521							
	*****	96.5%							
S/DEPTH=1.0	.000	330.405	200.418						
	*****	96.4%	87.9%						
S/DEPTH=.9	.000	287.211	182.957	63.701	5.158	-1.499	1.116	1.007	.000
	*****	96.3%	88.1%	47.8%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	247.415	164.441	57.888	4.603	-1.111	.841	.760	.000
	*****	96.1%	86.3%	49.0%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	210.533	145.128	51.652	4.052	-.819	.631	.511	.000
	*****	96.0%	86.4%	50.1%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	176.119	125.219	45.030	3.497	-.597	.471	.426	.000
	*****	95.9%	86.5%	51.0%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	143.759	104.873	38.065	2.935	-.430	.347	.314	.000
	*****	95.9%	88.5%	51.7%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	113.067	84.211	30.809	2.364	-.303	.250	.226	.000
	*****	95.8%	88.6%	52.3%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	83.681	63.326	23.317	1.783	-.204	.172	.156	.000
	*****	95.7%	88.6%	52.8%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	55.259	42.293	15.645	1.194	-.126	.108	.098	.000
	*****	95.7%	88.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	27.472	21.168	7.853	.598	-.060	.052	.047	.000
	*****	95.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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CASE 2=0

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHTS	47.0%	.944	.341	.056	.027	.055	.056	.056	.056
		.44.5%	.739.5%	.*****	.686.7%	.331.0%	.55.0%	.580.1%	.791.9%
SURFACE	.000	332.894	104.336	31.101	2.582	=1.165	.842	.757	.000
	.*****	96.5%	78.1%	.7.6%	.*****	.*****	.*****	.*****	.*****
S/DEPTH=1.7	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH=1.6	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH=1.5	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH=1.4	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH=1.3	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH=1.2	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH=1.1	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH=1.0	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .9	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .8	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .7	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .6	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .5	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .4	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .3	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .2	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .1	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****
S/DEPTH= .0	.000	.*****	.*****	.*****	.*****	.*****	.*****	.*****	.*****

CASE 2=0

TABLE 1X=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.944	.341	.056	.027	.055	.056	.056	.056	.056
	47.0%	44.5%	739.5%	*****	686.7%	331.0%	55.0%	580.1%	791.9%
SURFACE	1.881	.703	.117	.058	.115	.114	.114	.116	.115
S/DEPTH=1.7	51.7%	27.8%	643.1%	*****	668.6%	393.4%	21.8%	570.7%	841.8%
S/DEPTH=1.6	100.0%								
S/DEPTH=1.5	100.0%								
S/DEPTH=1.4	100.0%								
S/DEPTH=1.3	43.8%								
S/DEPTH=1.2	41.3%								
S/DEPTH=1.1	38.8%	.723							
S/DEPTH=1.0	36.3%	.747							
S/DEPTH=.9	33.8%	.765	.131						
S/DEPTH=.8	31.5%	.777	557.8%	.049	.114	.114	.114	.116	.115
S/DEPTH=.7	29.3%	.786	435.9%	.039	.113	.114	.114	.116	.115
S/DEPTH=.6	27.3%	.796	361.1%	.029	.112	.115	.114	.116	.115
S/DEPTH=.5	25.4%	.798	311.5%	.021	.111	.115	.114	.116	.115
S/DEPTH=.4	23.8%	.800	277.0%	.014	.110	.115	.115	.115	.115
S/DEPTH=.3	22.5%	.800	252.4%	.008	.109	.115	.115	.115	.114
S/DEPTH=.2	21.4%	.801	234.9%	.004	.109	.115	.115	.115	.114
S/DEPTH=.1	20.7%	.801	222.5%	.000	.108	.115	.115	.115	.114
S/DEPTH=.0	20.2%	.801	214.3%	.002	.108	.115	.115	.115	.114
	1.115		209.6%	*****	701.8%	394.0%	29.2%	567.8%	843.2%
	1.113		208.1%	.002	.108	.115	.115	.115	.114
	20.0%	.9%	208.1%	*****	702.2%	394.1%	29.3%	567.7%	843.1%

CASE 2=0

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.015	.028	.036	.036	.015	.009	.020	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.046	.043	.035	.024	.007	.038	.042	.006	.043
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.003	.011	.002	.002	.003	.001	.001	.002	.002

CASE 2=D

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH	
	DEFINED IN EQUATION (37)	
	.223	(= 20.8%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY	
	DEFINED IN EQUATION (38)	
	.117	(= 327.1%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY	
	DEFINED IN EQUATION (39)	
	.146	(= 245.8%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY	
	DEFINED IN EQUATION (40)	
	.263	(= 281.9%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX	
	DEFINED IN EQUATION (41)	
	.260	(= 283.0%)
(6)	DIMENSIONLESS GROUP VELOCITY	
	DEFINED IN EQUATION (42)	
	.986	(= 3%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM	
	DEFINED IN EQUATION (43)	
	.289	(= 246.9%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION	
	DEFINED IN EQUATION (44)	
	.354	(= 318.8%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION	
	DEFINED IN EQUATION (45)	
	.094	(= 417.6%)

CASE 2=D

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.021803	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.031614	STREAM FUNCTION	.004596
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.038598	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.045883	STREAM FUNCTION	.020922
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.597824	STREAM FUNCTION	.712623
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.010316	STREAM FUNCTION	.302336

CASE 3=A

12TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .001948 DPT/LO = .010000
 H/DPT = .194817
 L/LO = .259570 PSI/(G*H*T) = -.000724

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.540816=01 X(2)/(H*T*G) = -.162432=01
 X(3)/(H*T*G) = -.525880=02 X(4)/(H*T*G) = -.167286=02
 X(5)/(H*T*G) = -.516234=03 X(6)/(H*T*G) = -.153688=03
 X(7)/(H*T*G) = -.438752=04 X(8)/(H*T*G) = -.118805=04
 X(9)/(H*T*G) = -.300094=05 X(10)/(H*T*G) = -.082088=06
 X(11)/(H*T*G) = -.126602=06 X(12)/(H*T*G) = -.116440=07

TABLE 10. DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (21)

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CASE 3=A

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.799	.723	.538	.329	.025	.135	.183	.201
	37.4%	31.9%	12.6%	-31.5%	*****	195.5%	52.7%	149.0%
SURFACE	.000	122.168	181.140	174.185	93.488	29.434	8.251	1.014
	*****	89.7%	86.2%	78.9%	38.5%	155.2%	*****	*****
S/DEPTH#1.1	.000	118.448	180.629					
	*****	89.3%	86.2%					
S/DEPTH#1.0	.000	110.188	170.506	170.313	93.544			
	*****	88.6%	85.4%	78.5%	38.8%			
S/DEPTH# .9	.000	103.051	161.641	164.772	94.587	30.302	8.544	1.050
	*****	87.9%	84.7%	78.0%	39.8%	145.3%	*****	*****
S/DEPTH# .8	.000	96.927	153.941	159.635	95.424	31.547	8.963	1.104
	*****	87.2%	84.1%	77.4%	40.7%	134.9%	*****	*****
S/DEPTH# .7	.000	91.720	147.526	155.498	96.089	32.571	9.336	1.153
	*****	86.6%	83.4%	76.9%	41.4%	126.4%	*****	*****
S/DEPTH# .6	.000	87.352	141.725	151.757	96.609	33.456	9.661	1.196
	*****	86.0%	82.9%	76.4%	42.0%	119.5%	*****	*****
S/DEPTH# .5	.000	83.759	137.081	148.605	97.010	34.202	9.939	1.233
	*****	85.4%	82.4%	76.8%	42.4%	114.0%	*****	*****
S/DEPTH# .4	.000	80.887	133.545	146.036	97.311	34.811	10.167	1.263
	*****	84.9%	81.9%	75.7%	42.8%	109.6%	*****	*****
S/DEPTH# .3	.000	78.696	130.479	144.045	97.528	35.283	10.346	1.287
	*****	84.6%	81.6%	75.4%	43.0%	106.3%	*****	*****
S/DEPTH# .2	.000	77.152	128.452	142.826	97.674	35.620	10.473	1.304
	*****	84.3%	81.3%	75.2%	43.2%	104.0%	*****	*****
S/DEPTH# .1	.000	76.235	127.825	141.776	97.759	35.822	10.550	1.314
	*****	84.1%	81.2%	75.1%	43.3%	102.7%	*****	*****
S/DEPTH# .0	.000	75.930	126.843	141.493	97.786	35.889	10.576	1.318
	*****	84.0%	81.1%	75.0%	43.4%	102.2%	*****	*****

[illegible]

CASE 3=A

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELDS...DEFINED IN EQUATION (25)

THETA ETA/HEIGHT	0 799 37.4%	10.0 .723 31.9%	20.0 .538 12.6%	30.0				50.0				75.0				100.0				130.0				180.0			
				=31.5%				.025				.135				52.7%				.199				.201			
SURFACE	390.349	324.194	187.958	76.114	1.253	9.643	19.202	23.141	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596
S/DEPTH=.1	56.5%	49.3%	20.7%	65.1%	1.253	9.643	19.202	23.141	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596	23.596
S/DEPTH=.10	326.134	276.728	168.526	71.766	1.252	8.798	17.879	21.663	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099	22.099
S/DEPTH=.09	287.865	244.968	150.421	60.9%	1.220	7.695	15.858	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248	19.4248
S/DEPTH=.08	251.520	214.581	132.713	57.891	1.167	6.638	13.816	16.836	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185	17.185
S/DEPTH=.07	216.805	185.366	115.358	50.812	1.090	5.619	11.811	14.426	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729	14.729
S/DEPTH=.06	183.458	157.143	98.309	43.665	.988	4.633	9.820	12.019	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273	12.273
S/DEPTH=.05	151.241	129.745	81.524	36.462	.864	3.674	7.841	9.613	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818	9.818
S/DEPTH=.04	119.937	103.016	64.958	29.216	.718	2.737	5.672	7.208	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363	7.363
S/DEPTH=.03	89.345	78.612	48.566	21.938	.555	1.816	3.911	4.805	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909	4.909
S/DEPTH=.02	59.277	50.996	32.305	14.638	.378	.905	1.954	2.402	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454	2.454
S/DEPTH=.01	29.553	25.435	16.131	7.322	.192	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	0.000	0.000	0.000	0.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

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CASE 3=A

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	160.0
ETA/HEIGHT=	37.0%	7.79%	7.23%	5.38%	.329	.025	.135	.183	.201
			31.9%	12.6%	31.5%	*****	195.5%	52.7%	149.0%
SURFACE	1.600	1.446	1.076	.659	.048	.271	.367	.399	.402
S/DEPTH=1.1	38.8%	33.2%	14.1%	29.9%	*****	201.9%	57.9%	93.0%	153.7%
	1.574	1.332	1.075						
S/DEPTH=1.0	37.8%	32.6%	14.1%						
	1.532	1.400	1.086	.665	.049				
S/DEPTH=.9	36.4%	31.4%	13.8%	28.1%	*****	.266	.365	.398	.402
	1.494	1.371	1.056	.673	.065	203.3%	58.1%	92.7%	153.7%
S/DEPTH=.8	35.2%	30.4%	13.5%	25.9%	*****	203.3%	58.1%	91.7%	152.2%
	1.462	1.346	1.048	.679	.079	205.5%	58.3%	90.8%	151.0%
S/DEPTH=.7	34.1%	29.4%	13.2%	24.1%	*****	205.5%	58.3%	90.0%	149.9%
	1.433	1.324	1.040	.685	.091	207.5%	58.4%	89.0%	149.0%
S/DEPTH=.6	33.1%	28.6%	13.0%	22.6%	599.3%	207.5%	58.4%	88.8%	148.3%
	1.409	1.305	1.034	.689	.101	209.3%	58.6%	88.8%	147.7%
S/DEPTH=.5	32.2%	27.8%	12.7%	21.3%	525.7%	209.3%	58.6%	88.8%	147.7%
	1.388	1.289	1.028	.692	.110	210.9%	58.7%	89.4%	149.0%
S/DEPTH=.4	31.4%	27.2%	12.5%	20.3%	474.7%	210.9%	58.7%	89.4%	149.0%
	1.372	1.276	1.023	.695	.117	212.2%	58.8%	89.7%	149.0%
S/DEPTH=.3	30.8%	26.6%	12.3%	19.6%	438.8%	212.2%	58.8%	89.7%	149.0%
	1.359	1.266	1.019	.697	.122	213.3%	58.8%	89.7%	149.0%
S/DEPTH=.2	30.3%	26.2%	12.2%	19.0%	414.0%	213.3%	58.8%	89.7%	149.0%
	1.350	1.259	1.017	.698	.126	214.1%	58.9%	89.7%	149.0%
S/DEPTH=.1	29.9%	25.9%	12.1%	18.6%	397.6%	214.1%	58.9%	89.7%	149.0%
	1.345	1.255	1.015	.699	.128	214.6%	58.9%	89.7%	149.0%
S/DEPTH=.0	29.7%	25.7%	12.0%	18.3%	388.2%	214.6%	58.9%	89.7%	149.0%
	1.343	1.254	1.014	.700	.129	214.8%	58.9%	89.7%	149.0%
	29.6%	25.6%	12.0%	18.3%	385.2%	214.8%	58.9%	89.7%	149.0%

CASE 3=A

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION...									
DEFINED IN EQ.(35)									
SURFACE	.000	.001	.002	.002	.003	.001	.001	.002	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION...									
DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION...									
DEFINED IN EQ.(36)									
SURFACE	.010	.010	.008	.005	.002	.000	.010	.002	.010
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION...									
DEFINED IN EQ.(37)									
SURFACE	.001	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.260 (= 4.4%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.369 (= 35.5%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.386 (= 30.4%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.755 (= 32.9%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.730 (= 34.5%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.967 (= 1.2%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.768 (= 30.3%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	1.060 (= 37.7%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.331 (= 44.9%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.001747	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.007171	STREAM FUNCTION	.000221
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.002631	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.010292	STREAM FUNCTION	.000947
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.100037	STREAM FUNCTION	.156185
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.006053	STREAM FUNCTION	.046715

CASE 3-8

12TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .003886 DPT/LO = .010000
 H/DPT = .388630
 L/LO = .276172 PSI/(G*H*T) = -.001075

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.407701e-01	X(2)/(H*T*G) =	-.152007e-01
X(3)/(H*T*G) =	-.650076e-02	X(4)/(H*T*G) =	-.279776e-02
X(5)/(H*T*G) =	-.116037e-02	X(6)/(H*T*G) =	-.484126e-03
X(7)/(H*T*G) =	-.192278e-03	X(8)/(H*T*G) =	-.733987e-04
X(9)/(H*T*G) =	-.267143e-04	X(10)/(H*T*G) =	-.910232e-05
X(11)/(H*T*G) =	-.282677e-05	X(12)/(H*T*G) =	-.729308e-06

TABLE 1. DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (21)

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TABLE II=DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)												
THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0			
ETA/HEIGHT	.865	.692	.587	.453	.301	.123	.000	.135	.135			
	42.2%	28.9%	21.3%	183.0%	625.6%	205.2%	34.9%	183.4%	269.6%			
SURFACE	.000	7.808	8.798	6.262	1.933	.337	.056	.002	.000			
*****	91.6%	85.5%	70.6%	40.3%	19.6%	.294	.049	.002	*****			
S/DEPTH=1.3	.000								*****			
*****									*****			
S/DEPTH=1.2	.000	7.152	8.293						*****			
*****	90.9%	85.7%	73.3%						*****			
S/DEPTH=1.1	.000	6.282	8.439						*****			
*****	90.4%	85.4%	73.0%						*****			
S/DEPTH=1.0	.000	5.493	8.033						*****			
*****	90.1%	85.1%	72.9%						*****			
S/DEPTH= .9	.000	4.773	7.437						*****			
*****	89.7%	85.1%	72.8%						*****			
S/DEPTH= .8	.000	4.112	6.614						*****			
*****	89.4%	84.8%	73.0%						*****			
S/DEPTH= .7	.000	3.500	6.020						*****			
*****	89.2%	84.5%	72.8%						*****			
S/DEPTH= .6	.000	2.929	5.464						*****			
*****	88.9%	84.3%	72.8%						*****			
S/DEPTH= .5	.000	2.392	4.940						*****			
*****	88.7%	84.1%	72.7%						*****			
S/DEPTH= .4	.000	1.883	4.442						*****			
*****	88.5%	83.9%	72.6%						*****			
S/DEPTH= .3	.000	1.394	3.964						*****			
*****	88.4%	83.8%	72.5%						*****			
S/DEPTH= .2	.000	.921	3.401						*****			
*****	88.3%	83.7%	72.5%						*****			
S/DEPTH= .1	.000	.458	2.908						*****			
*****	88.2%	83.6%	72.5%						*****			
S/DEPTH= .0	.000	.000	.000						*****			
*****	*****	*****	*****						*****			

CASE 3=B

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.865	.892	.937	.953	.961	.973	.983	.993	.995
	42.2%	28.9%	-21.5%	-183.0%	625.6%	205.2%	34.9%	-183.4%	-269.6%
SURFACE	.000	223.368	240.292	159.866	44.544	7.574	1.331	.000	.000
S/DEPTH=1.3	*****	94.9%	90.5%	78.8%	-21.6%	*****	*****	*****	*****
S/DEPTH=1.2	.000	207.527	232.271	158.832	46.990	7.963	1.379	.000	.000
S/DEPTH=1.1	*****	94.5%	89.7%	79.0%	-13.4%	*****	*****	*****	*****
S/DEPTH=1.0	.000	187.327	217.744	156.870	49.853	8.667	1.477	.000	.000
S/DEPTH=.9	*****	93.4%	89.1%	78.9%	-6.2%	*****	*****	*****	*****
S/DEPTH=.8	.000	142.702	193.733	154.773	52.335	9.307	1.572	.000	.000
S/DEPTH=.7	*****	92.2%	88.6%	78.7%	-5.6%	*****	*****	*****	*****
S/DEPTH=.6	.000	132.155	184.071	152.676	54.451	9.877	1.659	.000	.000
S/DEPTH=.5	*****	91.6%	88.0%	78.6%	-3.7%	*****	*****	*****	*****
S/DEPTH=.4	.000	123.392	175.864	150.685	56.212	10.369	1.736	.000	.000
S/DEPTH=.3	*****	91.1%	87.5%	78.4%	-7.1%	*****	*****	*****	*****
S/DEPTH=.2	.000	116.241	169.041	148.884	57.634	10.778	1.802	.000	.000
S/DEPTH=.1	*****	90.8%	87.1%	78.2%	-9.7%	*****	*****	*****	*****
S/DEPTH=.0	.000	110.566	163.542	147.634	58.726	11.099	1.854	.000	.000
S/DEPTH=.0	*****	90.1%	86.7%	78.1%	-11.6%	*****	*****	*****	*****
S/DEPTH=.0	.000	106.260	159.317	146.084	59.499	11.331	1.893	.000	.000
S/DEPTH=.0	*****	89.8%	86.4%	77.9%	-12.8%	*****	*****	*****	*****
S/DEPTH=.0	.000	103.240	156.327	145.168	59.960	11.471	1.916	.000	.000
S/DEPTH=.0	*****	89.5%	86.2%	77.8%	-13.7%	*****	*****	*****	*****
S/DEPTH=.0	.000	101.451	154.544	144.610	60.114	11.518	1.924	.000	.000
S/DEPTH=.0	*****	89.3%	86.0%	77.6%	-13.9%	*****	*****	*****	*****
S/DEPTH=.0	.000	100.858	153.952	144.422	60.114	11.518	1.924	.000	.000
S/DEPTH=.0	*****	89.2%	86.0%	77.6%	-13.9%	*****	*****	*****	*****

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TABLE IV=DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	42.2%	.865	.587	.153	.061	.123	.133	.135	.135
		28.9%	21.3%	183.0%	625.6%	205.2%	34.9%	183.4%	269.6%
SURFACE	=239.356	=116.184	48.551	99.686	47.333	8.967	1.357	.225	.122
S/DEPTH=1.3	92.1%	84.1%	135.6%	115.4%	120.8%	*****	*****	*****	*****
S/DEPTH=1.2	=230.521	100.0%							
S/DEPTH=1.1	=206.896								
S/DEPTH=1.0	=164.571	=110.917	42.306						
S/DEPTH=.9	90.6%	83.4%	138.0%	91.014	43.831	8.595	1.319	.203	.104
S/DEPTH=.8	=163.517	83.4%	131.924	114.5%	118.0%	*****	*****	*****	*****
S/DEPTH=.7	90.3%	83.4%	145.8%	117.711	39.144	7.826	1.224	.164	.075
S/DEPTH=.6	=143.662	84.060	23.764	115.2%	117.0%	*****	*****	*****	*****
S/DEPTH=.5	90.1%	83.5%	155.4%	116.0%	34.373	6.992	1.110	.132	.053
S/DEPTH=.4	=124.908	=75.051	17.411	116.7%	117.9%	*****	*****	*****	*****
S/DEPTH=.3	89.9%	83.5%	167.1%	117.4%	29.541	6.100	.980	.106	.038
S/DEPTH=.2	=107.140	=65.565	12.524	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.1	89.7%	83.5%	181.6%	117.8%	24.666	5.159	.836	.084	.026
S/DEPTH=.0	=90.239	=56.070	8.819	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.5	89.5%	83.4%	6.054	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.4	=74.077	=46.606	4.025	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.3	89.4%	83.4%	37.192	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.2	=58.530	=37.192	4.025	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.1	89.2%	83.4%	2.555	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.0	=43.773	=27.834	2.555	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.5	89.1%	83.3%	1.487	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.4	=28.780	=18.525	1.487	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.3	89.0%	83.3%	1.487	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.2	=14.329	=9.253	.680	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.1	89.0%	83.3%	1.487	117.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.0	=9.000	=5.000	.000	117.8%	117.8%	*****	*****	*****	*****

	TABLE	V _{DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)}
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CASE 3=B

TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT	0 .865 42.2%	10.0 .692 28.9%	20.0 .387 21.3%	30.0 .153 183.0%	50.0 50.0 625.6%	75.0 75.0 205.2%	100.0 100.0 34.9%	130.0 130.0 183.4%	180.0 180.0 269.6%
SURFACE	.000	174.957	209.030	159.333	53.738	9.675	1.622	.051	.000
S/DEPTH=1.3	*****	92.5%	87.5%	76.0%	10.1%	*****	*****	*****	*****
S/DEPTH=1.2	*****	160.097							
S/DEPTH=1.1	*****	91.8%	197.094						
S/DEPTH=1.0	*****	100.380	87.7%	149.856					
S/DEPTH=.9	*****	122.535	174.604	178.3%	50.248	9.270	1.557	.051	.000
S/DEPTH=.8	*****	91.0%	153.488	134.069	6.3%	*****	*****	*****	.000
S/DEPTH=.7	*****	106.292	87.5%	78.2%	45.402	8.438	1.414	.050	.000
S/DEPTH=.6	*****	90.7%	81.2%	78.0%	8.0%	*****	*****	*****	.000
S/DEPTH=.5	*****	91.413	133.568	118.486	40.290	7.539	1.262	.048	.000
S/DEPTH=.4	*****	90.4%	86.9%	78.1%	9.5%	*****	*****	*****	.000
S/DEPTH=.3	*****	77.685	114.690	103.114	34.948	6.579	1.100	.043	.000
S/DEPTH=.2	*****	90.2%	86.7%	78.0%	10.7%	*****	*****	*****	.000
S/DEPTH=.1	*****	64.922	96.705	87.947	29.412	5.566	.930	.038	.000
S/DEPTH=.0	*****	89.9%	86.5%	78.0%	11.7%	*****	*****	*****	.000
S/DEPTH=.4	*****	52.953	79.471	72.971	23.716	4.508	.753	.031	.000
S/DEPTH=.3	*****	89.7%	86.4%	77.9%	12.5%	*****	*****	*****	.000
S/DEPTH=.2	*****	41.625	62.853	58.162	17.896	3.413	.570	.024	.000
S/DEPTH=.1	*****	89.5%	86.2%	77.8%	13.1%	*****	*****	*****	.000
S/DEPTH=.0	*****	30.795	48.721	43.494	11.982	2.291	.383	.016	.000
S/DEPTH=.4	*****	89.4%	86.1%	77.6%	13.5%	*****	*****	*****	.000
S/DEPTH=.3	*****	20.330	30.949	28.934	6.006	1.150	.192	.008	.000
S/DEPTH=.2	*****	89.3%	86.0%	77.8%	*****	*****	*****	*****	.000
S/DEPTH=.1	*****	10.106	15.415	14.448	*****	*****	*****	*****	.000
S/DEPTH=.0	*****	*****	86.0%	77.6%	*****	*****	*****	*****	.000
S/DEPTH=.4	*****	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	.000

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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CASE 3=B

TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THE TA	ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
.865	.892	.387	.153	.061	.123	.34.9%	.103.4%	.269.6%	.135	.135
42.8%	28.9%	21.3%	183.0%	625.6%	205.2%					
SURFACE	0.00	126.648	129.600	85.971	25.008	4.303	.723	.017	.000	.000
S/DEPTH=1.3	.000	93.7%	88.0%	73.8%	34.1%	.000	.000	.000	.000	.000
S/DEPTH=1.2	.000	108.297	116.167	88.5%	76.212	3.928	.663	.017	.000	.000
S/DEPTH=1.1	.000	92.7%	88.1%	78.5%	71.213	3.222	.541	.017	.000	.000
S/DEPTH=1.0	.000	85.605	87.7%	78.4%	71.618	3.222	.541	.017	.000	.000
S/DEPTH=.9	.000	92.1%	87.4%	78.3%	71.618	3.222	.541	.017	.000	.000
S/DEPTH=.8	.000	90.2%	87.4%	78.3%	71.618	3.222	.541	.017	.000	.000
S/DEPTH=.7	.000	28.449	41.362	36.435	13.786	2.548	.427	.015	.000	.000
S/DEPTH=.6	.000	90.2%	87.1%	78.2%	71.618	3.222	.541	.017	.000	.000
S/DEPTH=.5	.000	20.145	29.665	26.575	10.315	1.924	.322	.012	.000	.000
S/DEPTH=.4	.000	90.2%	86.8%	78.1%	71.618	3.222	.541	.017	.000	.000
S/DEPTH=.3	.000	13.556	20.181	18.337	7.272	1.367	.229	.009	.000	.000
S/DEPTH=.2	.000	89.9%	86.5%	77.9%	71.618	3.222	.541	.017	.000	.000
S/DEPTH=.1	.000	89.9%	86.5%	77.9%	71.618	3.222	.541	.017	.000	.000
S/DEPTH=.0	.000	4.660	7.048	6.537	2.674	.509	.085	.004	.000	.000
	.000	86.2%	86.2%	86.2%	86.2%	86.2%	86.2%	86.2%	86.2%	86.2%
	.000	3.103	2.896	1.196	.228	.038	.002	.002	.000	.000
	.000	87.1%	87.1%	87.1%	87.1%	87.1%	87.1%	87.1%	87.1%	87.1%
	.000	.506	.771	.300	.057	.010	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 3-B

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA ETA/HEIGHT=	0 .065 42.2%	10.0 .892 28.9%	20.0 .587 21.3%	30.0 .153 183.0%	50.0 .061 635.6%	75.0 123 205.2%	100.0 130.0 100.0	130.0 180.0 130.0	160.0 2135 269.6%
SURFACE	1.736	1.388	.776	.306	.123	.247	.267	.271	.271
S/DEPTH=1.3	44.8%	31.9%	16.9%	176.1%	627.6%	218.9%	49.4%	184.6%	283.4%
S/DEPTH=1.2	100.0%								
S/DEPTH=1.1	1.363								
S/DEPTH=1.0	30.6%		.784						
S/DEPTH=.9	41.5%		15.2%						
S/DEPTH=.8	1.577		12.9%						
S/DEPTH=.7	39.6%		804						
S/DEPTH=.6	1.522		11.1%						
S/DEPTH=.5	37.7%		137.5%						
S/DEPTH=.4	1.473		9.7%						
S/DEPTH=.3	36.0%		122.8%						
S/DEPTH=.2	1.430		816						
S/DEPTH=.1	34.4%		8.7%						
S/DEPTH=.0	1.393		7.8%						
S/DEPTH=.9	32.9%		101.5%						
S/DEPTH=.8	1.362		94.7%						
S/DEPTH=.7	31.6%		6.8%						
S/DEPTH=.6	1.336		6.4%						
S/DEPTH=.5	30.5%		6.2%						
S/DEPTH=.4	1.315		6.2%						
S/DEPTH=.3	29.5%		6.4%						
S/DEPTH=.2	1.298		6.4%						
S/DEPTH=.1	28.8%		6.2%						
S/DEPTH=.0	1.280		6.1%						
S/DEPTH=.9	27.9%		6.0%						
S/DEPTH=.8	1.278		6.0%						
S/DEPTH=.7	27.6%		6.0%						
S/DEPTH=.6	1.267		6.0%						
S/DEPTH=.5	27.4%		6.0%						
S/DEPTH=.4	1.267		6.0%						
S/DEPTH=.3	27.4%		6.0%						
S/DEPTH=.2	1.267		6.0%						
S/DEPTH=.1	27.4%		6.0%						
S/DEPTH=.0	1.267		6.0%						

CASE 3-R

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION.... DEFINED IN EQ.(35)									
SURFACE	.000	.004	.008	.010	.011	.005	.003	.008	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION.... DEFINED IN EQ.(36)									
SURFACE	.021	.020	.016	.011	.003	.017	.019	.003	.020
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(37)									
SURFACE	.003	.002	.001	.000	.000	.000	.000	.000	.000

CASE 3-B

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.276 (10.1%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.276 (81.1%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.304 (85.8%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.580 (73.1%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.558 (76.0%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.963 (1.7%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.605 (65.4%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.789 (85.1%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.231 (107.4%)

CASE 3=B

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.007127	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.014347	STREAM FUNCTION	.000762
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.011409	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.020881	STREAM FUNCTION	.003223
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.200945	STREAM FUNCTION	.328841
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.011712	STREAM FUNCTION	.148047

CASE 3=C

17TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318)^{1/3} T^{4/3}$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .005821 DPT/LO = .010000

H/DPT = .582125

L/LO = .291992 PSI/(G*H*T) = -.001219

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	.323010=01	X(2)/(H*T*G) =	-.130547=01
X(3)/(H*T*G) =	-.626027=02	X(4)/(H*T*G) =	-.308047=02
X(5)/(H*T*G) =	-.150364=02	X(6)/(H*T*G) =	-.721618=03
X(7)/(H*T*G) =	-.338902=03	X(8)/(H*T*G) =	-.155289=03
X(9)/(H*T*G) =	-.692566=04	X(10)/(H*T*G) =	-.299550=04
X(11)/(H*T*G) =	-.124924=04	X(12)/(H*T*G) =	-.498885=05
X(13)/(H*T*G) =	-.188495=05	X(14)/(H*T*G) =	-.663514=06
X(15)/(H*T*G) =	-.212018=06	X(16)/(H*T*G) =	-.610408=07
X(17)/(H*T*G) =	-.177999=07		

TABLE 7. DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (21)

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VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (22)

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TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

148

[illegible]

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

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CASE 3=C

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.898	.596	.251	.059	.072	.099	.102	.102	.102
	44.3%	17.3%	87.0%	630.8%	545.8%	231.3%	14.5%	275.8%	390.6%
SURFACE	.000	225.596	204.711	124.949	28.491	3.417	.386	.003	.000
S/DEPTH=1.5	*****	94.4%	87.7%	70.1%	104.3%	*****	*****	*****	*****
S/DEPTH=1.4	*****								
S/DEPTH=1.3	*****								
S/DEPTH=1.2	*****								
S/DEPTH=1.1	*****								
S/DEPTH=1.0	*****								
S/DEPTH= .9	*****								
S/DEPTH= .8	*****								
S/DEPTH= .7	*****								
S/DEPTH= .6	*****								
S/DEPTH= .5	*****								
S/DEPTH= .4	*****								
S/DEPTH= .3	*****								
S/DEPTH= .2	*****								
S/DEPTH= .1	*****								
S/DEPTH= .0	*****								

CASE 3=C

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.898	.596	.251	.059	.072	.099	.102	.102	.102
	44.3%	17.3%	-87.0%	-630.8%	545.6%	231.3%	14.5%	-275.8%	-390.6%
SURFACE	454.271	183.134	31.411	2.580	-1.017	-2.251	-2.423	-2.446	-2.446
S/DEPTH=1.5	70.8%	30.4%	-261.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	431.682	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.3	167.009	167.009	167.009	167.009	167.009	167.009	167.009	167.009	167.009
S/DEPTH=1.2	217.975	217.975	217.975	217.975	217.975	217.975	217.975	217.975	217.975
S/DEPTH=1.1	171.698	171.698	171.698	171.698	171.698	171.698	171.698	171.698	171.698
S/DEPTH=1.0	133.907	133.907	133.907	133.907	133.907	133.907	133.907	133.907	133.907
S/DEPTH= .9	103.008	103.008	103.008	103.008	103.008	103.008	103.008	103.008	103.008
S/DEPTH= .8	77.769	77.769	77.769	77.769	77.769	77.769	77.769	77.769	77.769
S/DEPTH= .7	57.228	57.228	57.228	57.228	57.228	57.228	57.228	57.228	57.228
S/DEPTH= .6	40.642	40.642	40.642	40.642	40.642	40.642	40.642	40.642	40.642
S/DEPTH= .5	27.432	27.432	27.432	27.432	27.432	27.432	27.432	27.432	27.432
S/DEPTH= .4	17.156	17.156	17.156	17.156	17.156	17.156	17.156	17.156	17.156
S/DEPTH= .3	9.480	9.480	9.480	9.480	9.480	9.480	9.480	9.480	9.480
S/DEPTH= .2	4.160	4.160	4.160	4.160	4.160	4.160	4.160	4.160	4.160
S/DEPTH= .1	1.032	1.032	1.032	1.032	1.032	1.032	1.032	1.032	1.032
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 3=C

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)												
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0			
ETA/HEIGHT=	.898	.251	.059	.072	.099	.102	.102	.102	.102			
	44.3%	17.3%	-87.0%	-630.8%	545.6%	231.3%	14.5%	-275.8%	-390.6%			
SURFACE	.000	179.617	125.380	63.885	12.581	1.462	.163	.000	.000			
	*****	95.4%	87.1%	63.3%	177.2%	*****	*****	*****	*****			
S/DEPTH=1.5	.000											

S/DEPTH=1.4	.000											

S/DEPTH=1.3	.000	161.244										
	*****	94.9%										
S/DEPTH=1.2	.000	127.314										
	*****	94.4%										
S/DEPTH=1.1	.000	99.596	113.735									
	*****	89.0%	89.5%									
S/DEPTH=1.0	.000	77.010	91.078	59.917								
	*****	93.6%	89.2%	75.3%								
S/DEPTH=.9	.000	58.667	71.616	48.953	11.434	1.367	.153	.001	.000			
	*****	93.3%	89.9%	75.6%	73.3%	*****	*****	*****	*****			
S/DEPTH=.8	.000	43.838	55.054	38.915	9.448	1.140	.129	.001	.000			
	*****	92.9%	88.7%	75.9%	65.1%	*****	*****	*****	*****			
S/DEPTH=.7	.000	31.925	41.114	29.919	7.513	.914	.104	.001	.000			
	*****	92.6%	88.4%	76.0%	*****	*****	*****	*****	*****			
S/DEPTH=.6	.000	22.446	28.545	22.041	5.698	.698	.080	.001	.000			
	*****	92.2%	89.2%	78.2%	*****	*****	*****	*****	*****			
S/DEPTH=.5	.000	15.011	20.130	15.333	4.061	.501	.057	.001	.000			
	*****	92.0%	88.0%	76.3%	*****	*****	*****	*****	*****			
S/DEPTH=.4	.000	9.312	12.680	9.823	2.654	.329	.038	.001	.000			
	*****	91.7%	87.8%	76.3%	*****	*****	*****	*****	*****			
S/DEPTH=.3	.000	5.112	7.044	5.528	1.517	.189	.022	.000	.000			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.2	.000	2.232	3.103	2.458	.682	.085	.010	.000	.000			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.1	.000	.552	.771	.614	.172	.021	.002	.000	.000			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			

CASE 3=C

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD....DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.898	.596	.251	.059	.072	.099	.102	.102	.102
	44.3%	17.3%	87.0%	630.8%	545.6%	231.3%	14.5%	275.8%	390.6%
SURFACE	1.802	1.194	.503	.118	.145	.198	.204	.204	.204
S/DEPTH=1.5	48.0%	22.6%	76.9%	60.4%	54.6%	257.1%	43.3%	278.4%	417.7%
	1.781								
S/DEPTH=1.4	100.0%								
	1.695								
S/DEPTH=1.3	100.0%								
	1.616								
S/DEPTH=1.2	42.1%	1.167							
	1.543								
S/DEPTH=1.1	39.7%	21.2%							
	1.478	1.147	.520						
S/DEPTH=1.0	37.5%	20.2%	69.6%						
	1.420	1.126	.551	.130					
S/DEPTH= .9	35.1%	19.1%	59.4%	531.7%	.139	.197	.204	.204	.204
	1.368	1.106	.575	405.9%	562.6%	257.7%	44.0%	100.0%	100.0%
S/DEPTH= .8	33.0%	18.1%	51.9%	331.1%	.189	.196	.203	.204	.204
	1.323	1.088	.595	591.8%	591.8%	258.6%	45.1%	278.3%	417.8%
S/DEPTH= .7	30.9%	17.0%	46.2%	.213	.123	.195	.203	.204	.204
	1.284	1.071	.611	282.4%	621.5%	259.5%	46.2%	276.6%	417.5%
S/DEPTH= .6	29.1%	16.0%	41.9%	.232	.116	.194	.203	.204	.204
	1.251	1.056	.623	249.0%	651.0%	260.3%	47.1%	274.8%	415.0%
S/DEPTH= .5	27.5%	15.0%	38.7%	.249	.110	.193	.203	.204	.204
	1.223	1.042	.633	225.5%	676.2%	261.0%	47.9%	272.8%	412.8%
S/DEPTH= .4	26.0%	14.2%	36.2%	.262	.105	.193	.203	.204	.204
	1.201	1.032	.641	208.7%	704.9%	261.6%	48.5%	271.0%	411.0%
S/DEPTH= .3	24.6%	13.5%	34.3%	.271	.102	.192	.203	.204	.204
	1.184	1.023	.646	196.9%	726.7%	262.0%	49.0%	270.3%	409.7%
S/DEPTH= .2	23.9%	12.9%	33.0%	.278	.099	.192	.203	.204	.204
	1.172	1.017	.650	189.2%	743.5%	262.4%	49.3%	269.3%	408.7%
S/DEPTH= .1	23.2%	12.5%	32.1%	.283	.097	.192	.203	.204	.204
	1.165	1.013	.652	184.7%	754.0%	262.6%	49.5%	269.0%	408.1%
S/DEPTH= .0	22.7%	12.3%	31.5%	.284	.097	.192	.203	.204	.204
	1.162	1.012	.653	183.3%	757.6%	262.6%	49.6%	268.8%	407.9%
	22.6%	12.2%	31.4%						

CASE 3-C

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.011	.020	.026	.027	.012	.007	.017	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.032	.030	.025	.017	.004	.026	.029	.004	.029
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.003	.001	.000	.000	.000	.000	.000	.000	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.292 (15.0%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.211 (=136.5%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.244 (=107.2%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.455 (=120.8%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.438 (=124.7%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.962 (=1.8%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.485 (=106.3%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.504 (=142.0%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.166 (=188.0%)

CASE 3=C

TABLE XI(CONT.)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.016695	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.021592	STREAM FUNCTION	.000657
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.028308	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.031850	STREAM FUNCTION	.002942
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.303249	STREAM FUNCTION	.515032
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.016653	STREAM FUNCTION	.264397

CASE 3=D

19TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

L0 = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $L0 = (G/6.28318) * T^2 * 2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/L0 = .007753 DPT/L0 = .010000

H/DPT = .775326

L/L0 = .308203 PSI/(G*H*T) = -.001185

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.258552e+01	X(2)/(H*T*G) =	-.109137e+01
X(3)/(H*T*G) =	-.957257e+02	X(4)/(H*T*G) =	-.296328e+02
X(5)/(H*T*G) =	-.157702e+02	X(6)/(H*T*G) =	-.633384e+03
X(7)/(H*T*G) =	-.434048e+03	X(8)/(H*T*G) =	-.223528e+03
X(9)/(H*T*G) =	-.112953e+03	X(10)/(H*T*G) =	-.565075e+04
X(11)/(H*T*G) =	-.276158e+04	X(12)/(H*T*G) =	-.134811e+04
X(13)/(H*T*G) =	-.655123e+05	X(14)/(H*T*G) =	-.306023e+05
X(15)/(H*T*G) =	-.139533e+05	X(16)/(H*T*G) =	-.712364e+06
X(17)/(H*T*G) =	-.348364e+06	X(18)/(H*T*G) =	-.247076e+06
X(19)/(H*T*G) =	-.179655e+06		

CASE 30-D

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)									
	THETA ETA/HEIGHT=	10.0 .460 7.1%	20.0 .154 205.3%	30.0 .015 *****	50.0 *****	75.0 *****	100.0 *****	130.0 *****	180.0 *****
		.922	.460	.154	.015	.064	.077	.078	.078
		45.8%	205.3%	*****	601.1%	269.1%	11.9%	393.0%	544.3%
SURFACE	29.603	12.947	3.819	.257	=1.490	=1.730	=1.752	=1.759	=1.750
S/DEPTH=1.7	56.0%	.9%	-220.0%	*****	655.9%	290.7%	=25.0%	=442.7%	=609.2%
S/DEPTH=1.6	29.127								
S/DEPTH=1.5	100.0%								
S/DEPTH=1.4	26.292								
S/DEPTH=1.3	100.0%								
S/DEPTH=1.2	23.908								
S/DEPTH=1.1	100.0%								
S/DEPTH=1.0	21.894								
S/DEPTH=.9	40.5%								
S/DEPTH=.8	20.188								
S/DEPTH=.7	35.9%								
S/DEPTH=.6	12.340								
S/DEPTH=.5	31.5%								
S/DEPTH=.4	17.507								
S/DEPTH=.3	27.2%								
S/DEPTH=.2	11.635								
S/DEPTH=.1	23.1%								
S/DEPTH=.0	15.370								
S/DEPTH=.9	19.2%								
S/DEPTH=.8	14.818								
S/DEPTH=.7	15.5%								
S/DEPTH=.6	12.82%								
S/DEPTH=.5	13.238								
S/DEPTH=.4	12.900								
S/DEPTH=.3	12.643								
S/DEPTH=.2	12.463								
S/DEPTH=.1	12.356								
S/DEPTH=.0	12.320								

[illegible]

CASE 3=D

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA ETA/HEIGHT=	0	10.0	20.0	30.0	50.0	75.0	100.0	150.0	180.0
	.922	.460	.154	.015	.064	.077	.078	.078	.078
	45.8%	7.1%	205.3%	*****	601.1%	269.1%	11.9%	393.0%	544.3%
SURFACE	.000	338.881	180.347	73.436	10.130	.051	.766	.571	.000
S/DEPTH=1.7	*****	97.3%	89.8%	61.9%	*****	*****	*****	*****	*****
S/DEPTH=1.6	*****	.000							
8/DEPTH=1.5	*****	.000							
S/DEPTH=1.4	*****	.000							
S/DEPTH=1.3	*****	.000							
S/DEPTH=1.2	*****	.000							
8/DEPTH=1.1	*****	.000	179.579	74.144					
S/DEPTH=1.0	*****	.000	90.0%	63.6%	11.089	.241	.672	.488	.000
S/DEPTH=.9	*****	.000	170.018	73.559	*****	*****	*****	*****	.000
S/DEPTH=.8	*****	.000	175.752	83.895	12.859	.632	.495	.329	.000
S/DEPTH=.7	*****	.000	159.093	87.328	*****	*****	*****	*****	.000
S/DEPTH=.6	*****	.000	148.092	90.009	*****	*****	*****	*****	.000
S/DEPTH=.5	*****	.000	135.239	92.067	17.008	1.370	.259	.100	.000
S/DEPTH=.4	*****	.000	126.884	93.610	164.4%	1.517	.229	.067	.000
S/DEPTH=.3	*****	.000	120.227	94.777	149.1%	*****	*****	*****	.000
S/DEPTH=.2	*****	.000	115.719	95.471	138.2%	1.628	.211	.046	.000
S/DEPTH=.1	*****	.000	113.056	95.902	131.0%	1.705	.201	.033	.000
S/DEPTH=.0	*****	.000	112.174	96.043	126.8%	1.750	.195	.026	.000
	*****	.000	111.131	96.043	120.8%	*****	*****	*****	.000
	*****	.000	88.0%	73.2%	125.5%	1.765	.194	.024	.000
	*****	.000				*****	*****	*****	.000

CASE 3=D

TABLE IV=01MENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.922	.460	.154	.015	.064	.077	.078	.078	.078
	45.8%	7.1%	205.3%	*****	601.1%	269.1%	11.9%	393.0%	544.3%
SURFACE	250.083	36.845	138.935	95.848	18.903	1.139	202	284	.001
S/DEPTH=1.7	93.4%	143.2%	110.4%	112.8%	131.5%	*****	*****	*****	*****
S/DEPTH=1.6	100.0%								
S/DEPTH=1.5	270.780								
S/DEPTH=1.4	100.0%								
S/DEPTH=1.3	268.637								
S/DEPTH=1.2	100.0%								
S/DEPTH=1.1	256.168								
S/DEPTH=1.0	93.6%								
S/DEPTH=.9	238.139	19.551							
S/DEPTH=.8	93.5%	176.7%							
S/DEPTH=.7	217.442	26.7%							
S/DEPTH=.6	93.5%	108.8%							
S/DEPTH=.5	93.5%	26.7%							
S/DEPTH=.4	217.442	26.7%							
S/DEPTH=.3	93.5%	108.8%							
S/DEPTH=.2	93.5%	26.7%							
S/DEPTH=.1	217.442	26.7%							
S/DEPTH=.0	93.5%	108.8%							
S/DEPTH=.9	153.228	30.704	91.607	83.082	18.031	1.169	158	244	.024
S/DEPTH=.8	93.0%	65.9%	110.6%	110.1%	124.5%	124.5%	1.185	167	.064
S/DEPTH=.7	92.6%	74.0%	111.5%	110.3%	124.3%	124.3%	1.136	115	.080
S/DEPTH=.6	92.5%	75.9%	113.3%	110.6%	124.1%	124.1%	1.041	1079	.081
S/DEPTH=.5	78.572	25.671	38.244	42.774	10.598	10.598	1.022	1054	.074
S/DEPTH=.4	61.769	21.352	29.094	33.764	8.568	8.568	1.027	1037	.062
S/DEPTH=.3	45.781	16.454	20.963	25.054	6.480	6.480	1.026	1024	.048
S/DEPTH=.2	30.259	11.167	13.574	16.574	4.346	4.346	1.019	1015	.032
S/DEPTH=.1	15.051	5.640	6.668	8.248	2.181	2.181	1.010	1007	.016
S/DEPTH=.0	92.0%	92.0%	92.0%	92.0%	92.0%	92.0%	92.0%	92.0%	.000

TABLE V
DIMENSIONLESS DRAG FORCE COMPONENT FIELD... DEFINED IN EQUATION (25)

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CASE 3=D

TABLE 1= DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)									
THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.922	.460	.154	.015	.0064	.0077	.0078	.0078	.0078
	45.8%	7.1%	205.3%	*****	601.1%	269.1%	11.9%	393.0%	544.3%
SURFACE	.000	242.445	174.736	99.673	15.668	1.182	.298	.6142	.000
	*****	95.1%	86.4%	61.0%	262.8%	*****	*****	*****	*****
S/DEPTH=1.7	.000								

S/DEPTH=1.6	.000								

S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000								

S/DEPTH=1.0	.000								

S/DEPTH= .9	.000								

S/DEPTH= .8	.000								

S/DEPTH= .7	.000								

S/DEPTH= .6	.000								

S/DEPTH= .5	.000								

S/DEPTH= .4	.000								

S/DEPTH= .3	.000								

S/DEPTH= .2	.000								

S/DEPTH= .1	.000								

S/DEPTH= .0	.000								

CASE 3=D

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT	0 .922 45.8%	10.0 .460 205.3%	20.0 .154 205.3%	30.0 .015 *****	50.0 .064 601.1%	75.0 .077 269.1%	100.0 11.2%	130.0 33.0%	180.0 544.3%
SURFACE	600.213	122.239	13.755	.558	.822	1.308	1.356	1.364	1.354
S/DEPTH=1.7	74.3%	21.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	451.338	100.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	353.780	100.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	277.794	100.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	210.084	109.867	13.437	.557	.822	1.308	1.356	1.364	1.354
S/DEPTH=1.2	170.735	90.231	11.712	.539	.822	1.308	1.356	1.364	1.354
S/DEPTH=1.1	132.980	71.231	9.919	.500	.822	1.308	1.356	1.364	1.354
S/DEPTH=1.0	102.707	58.596	8.132	.439	.822	1.308	1.356	1.364	1.354
S/DEPTH=.9	78.350	46.075	6.419	.361	.822	1.308	1.356	1.364	1.354
S/DEPTH=.8	58.731	35.441	5.064	.275	.822	1.308	1.356	1.364	1.354
S/DEPTH=.7	42.959	26.494	4.835	.226	.822	1.308	1.356	1.364	1.354
S/DEPTH=.6	30.354	19.064	3.425	.190	.822	1.308	1.356	1.364	1.354
S/DEPTH=.5	20.404	13.006	2.226	.113	.822	1.308	1.356	1.364	1.354
S/DEPTH=.4	12.719	8.204	1.267	.052	.822	1.308	1.356	1.364	1.354
S/DEPTH=.3	7.010	4.563	.568	.013	.822	1.308	1.356	1.364	1.354
S/DEPTH=.2	3.071	2.011	.143	.000	.822	1.308	1.356	1.364	1.354
S/DEPTH=.1	.761	.500	.000	.000	.822	1.308	1.356	1.364	1.354
S/DEPTH=.0	.000	.000	.000	.000	.822	1.308	1.356	1.364	1.354

CASE 3=0

TABLE VII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.922	.460	.154	.015	.064	.077	.078	.078	.078
	45.8%	7.1%	205.3%	*****	601.1%	269.1%	11.9%	393.0%	544.3%
SURFACE	.000	197.071	102.226	44.081	6.717	.437	.174	.100	.000
S/DEPTH=1.7	*****	95.6%	83.9%	45.6%	*****	*****	*****	*****	*****
S/DEPTH=1.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE IX. DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD... DEFINED IN EQUATION (29)

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CASE 3=0

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.023	.041	.053	.052	.022	.012	.029	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.043	.041	.034	.023	.005	.034	.039	.004	.038
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.002	.014	.006	.000	.002	.002	.002	.002	.002

CASE 3=0

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.308 (=19.5%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.154 (=225.7%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.169 (=168.9%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.342 (=194.4%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.334 (=195.7%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.976 (=4%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.575 (=167.4%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.454 (=221.9%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.120 (=295.5%)

CASE 3=D

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10)	DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.031553	STREAM FUNCTION	.000000
(11)	DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.028948	STREAM FUNCTION	.004628
(12)	DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.056189	STREAM FUNCTION	.000000
(13)	DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.043254	STREAM FUNCTION	.017961
(14)	DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.407134	STREAM FUNCTION	.744697
(15)	DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.020545	STREAM FUNCTION	.308594

CASE 4aA

8TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/g \cdot 2\pi) \cdot T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .003902 DPT/LO = .020000
 H/DPT = .195117
 L/LO = .358594 PSI/(G*H*T) = -.001206

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.633424e-01 X(2)/(H*T*G) = -.126001e-01
 X(3)/(H*T*G) = -.249362e-02 X(4)/(H*T*G) = -.061943e-03
 X(5)/(H*T*G) = -.789062e-04 X(6)/(H*T*G) = -.120627e-04
 X(7)/(H*T*G) = -.154178e-05 X(8)/(H*T*G) = -.126902e-06

CASE 40A

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	0 30.7%	.722 30.7%	.682 27.8%	575 18.3%	30.0 .431 5.4%	50.0 .146 119.8%	75.0 5.089 244.6%	100.0 5.3%	130.0 5.266 43.8%	180.0 5.278 79.8%
SURFACE	13.481	12.697	10.620	7.868	2.545	-1.675	3.642	4.704	4.903	4.903
S/DEPTH=1.1	32.0%	28.9%	19.0%	8.7%	130.4%	240.2%	57.0%	46.0%	82.4%	82.4%
S/DEPTH=1.0	31.0%	28.1%	18.7%	7.786	125.5%	247.4%	56.9%	45.9%	82.5%	82.5%
S/DEPTH=.9	29.4%	26.7%	17.6%	7.694	113.8%	241.4%	56.5%	44.676	80.9%	80.9%
S/DEPTH=.8	28.0%	25.4%	16.7%	7.609	104.6%	237.2%	56.5%	44.69%	80.9%	80.9%
S/DEPTH=.7	26.6%	24.2%	15.8%	7.534	97.1%	235.6%	56.2%	44.659	80.9%	80.9%
S/DEPTH=.6	25.1%	23.1%	15.1%	7.467	91.2%	232.1%	56.0%	44.604	80.9%	80.9%
S/DEPTH=.5	23.7%	21.3%	14.4%	7.410	86.5%	226.9%	55.7%	44.632	80.9%	80.9%
S/DEPTH=.4	22.9%	20.7%	13.8%	7.363	82.8%	224.6%	55.3%	44.621	80.9%	80.9%
S/DEPTH=.3	22.4%	20.1%	13.4%	7.326	80.1%	221.7%	55.0%	44.613	80.9%	80.9%
S/DEPTH=.2	22.0%	19.8%	13.0%	7.299	78.2%	219.1%	54.8%	44.608	80.9%	80.9%
S/DEPTH=.1	21.7%	19.5%	12.7%	7.283	77.1%	218.0%	54.7%	44.604	80.9%	80.9%
S/DEPTH=.0	21.6%	19.5%	12.5%	7.278	76.7%	217.7%	54.6%	44.603	80.9%	80.9%

CASE 4=A

TABLE 11=DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD.....DEFINED IN EQUATION (22)									
THETA ETA/HEIGHT=	10.0 .722 30.7%	20.0 .575 18.3%	30.0 .431 9.4%	40.0 .300 7.5%	50.0 .146 24.6%	60.0 57.3%	70.0 100.0	80.0 130.0	90.0 180.0
SURFACE	2.417	4.170	4.968	4.360	2.419	1.098	.259	.618,.8%	.000 *****
S/DEPTH=.1	75.2%	71.8%	65.8%	41.2%	28.6%	176.5%	.248	.248	.000 *****
S/DEPTH=.1	2.322	4.110	4.499	4.228	2.224	1.036	.248	.248	.000 *****
S/DEPTH=.1	74.2%	71.4%	64.6%	43.1%	22.2%	167.3%	.248	.248	.000 *****
S/DEPTH=.1	2.049	3.638	3.970	3.773	1.984	.931	.223	.223	.000 *****
S/DEPTH=.1	73.4%	70.5%	63.6%	42.9%	21.3%	163.6%	.198	.198	.000 *****
S/DEPTH=.1	1.795	3.196	3.467	3.328	1.741	.822	.198	.198	.000 *****
S/DEPTH=.1	72.8%	69.9%	64.1%	42.6%	20.5%	160.3%	.171	.171	.000 *****
S/DEPTH=.1	1.558	2.781	2.997	2.892	1.496	.710	.144	.144	.000 *****
S/DEPTH=.1	72.2%	69.4%	63.6%	42.4%	19.9%	157.6%	.144	.144	.000 *****
S/DEPTH=.1	1.335	2.388	2.526	2.464	1.250	.596	.116	.116	.000 *****
S/DEPTH=.1	71.7%	68.9%	63.2%	42.3%	18.9%	153.4%	.088	.088	.000 *****
S/DEPTH=.1	1.124	2.013	2.081	2.042	1.001	.479	.059	.059	.000 *****
S/DEPTH=.1	71.3%	68.5%	62.9%	42.1%	18.6%	152.0%	.029	.029	.000 *****
S/DEPTH=.1	.922	1.655	1.649	1.627	.752	.361	.000	.000	.000 *****
S/DEPTH=.1	70.9%	68.1%	62.6%	42.0%	18.4%	151.0%	.000	.000	.000 *****
S/DEPTH=.1	.729	1.309	1.228	1.216	.502	.241	.000	.000	.000 *****
S/DEPTH=.1	70.6%	67.8%	62.4%	41.8%	18.2%	150.0%	.000	.000	.000 *****
S/DEPTH=.1	.541	.973	.814	.809	.251	.121	.000	.000	.000 *****
S/DEPTH=.1	70.4%	67.6%	.645	.640	18.2%	150.0%	.000	.000	.000 *****
S/DEPTH=.1	.358	.645	.406	.404	.000	.000	.000	.000	.000 *****
S/DEPTH=.1	70.2%	67.4%	.321	.321	.000	.000	.000	.000	.000 *****
S/DEPTH=.1	.178	.321	.000	.000	.000	.000	.000	.000	.000 *****
S/DEPTH=.1	70.0%	67.3%	.000	.000	.000	.000	.000	.000	.000 *****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000 *****

CASE 4=A

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD, . . . DEFINED IN EQUATION (23)

THETA = ETA/HEIGHT =		10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
		.722	.682	.575	.431	.146	.089	.204	.278
		30.7%	27.6%	18.3%	9.4%	119.8%	244.6%	57.3%	79.6%
SURFACE	.000	47.081	80.478	94.507	79.770	42.279	18.683	4.359	.000
S/DEPTH=1.1	.000	80.6%	77.6%	71.9%	46.1%	27.3%	203.7%	*****	*****
S/DEPTH=1.0	.000	45.831	79.769						
	.000	80.1%	77.4%						
S/DEPTH=.9	.000	42.198	74.368	90.059	79.266				
	.000	78.8%	76.1%	70.9%	48.2%				
S/DEPTH=.8	.000	39.445	69.690	85.375	77.580	42.895	19.152	4.472	.000
	.000	77.5%	74.8%	69.7%	47.8%	23.5%	193.4%	*****	*****
S/DEPTH=.7	.000	36.919	65.667	81.303	76.033	43.526	19.857	4.691	.000
	.000	76.2%	73.5%	68.5%	47.3%	20.4%	180.0%	*****	*****
S/DEPTH=.6	.000	34.780	62.340	77.802	70.640	44.048	20.473	4.886	.000
	.000	75.0%	72.4%	67.5%	46.9%	17.8%	169.0%	*****	*****
S/DEPTH=.5	.000	32.990	59.361	74.836	73.413	44.473	21.003	5.057	.000
	.000	73.9%	71.3%	66.5%	46.5%	15.7%	160.1%	*****	*****
S/DEPTH=.4	.000	31.522	56.989	72.375	72.362	44.813	21.448	5.202	.000
	.000	72.9%	70.3%	65.6%	46.1%	14.0%	152.9%	*****	*****
S/DEPTH=.3	.000	30.351	55.092	70.394	71.494	45.078	21.610	5.322	.000
	.000	72.0%	69.5%	64.9%	45.8%	12.6%	147.3%	*****	*****
S/DEPTH=.2	.000	29.458	53.642	68.874	70.814	45.276	22.090	5.415	.000
	.000	71.3%	68.9%	64.3%	45.5%	11.6%	143.0%	*****	*****
S/DEPTH=.1	.000	28.631	52.620	67.799	70.326	45.413	22.289	5.482	.000
	.000	70.8%	68.4%	63.8%	45.3%	10.9%	140.1%	*****	*****
S/DEPTH=.0	.000	28.458	52.013	67.136	70.032	45.494	22.408	5.522	.000
	.000	70.5%	68.1%	63.6%	45.2%	10.5%	138.4%	*****	*****
	.000	28.334	51.811	66.946	69.934	45.520	22.448	5.536	.000
	.000	70.4%	68.0%	63.5%	45.2%	10.3%	137.8%	*****	*****

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TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)									
THETA ETA/HEIGHT	0 30.7%	10.0 27.6%	20.0 18.3%	30.0 14.6%	40.0 11.9%	50.0 9.8%	60.0 8.2%	70.0 7.0%	80.0 6.0%
SURFACE	78.129	67.388	40.921	11.017	25.221	25.492	13.853	3.890	1.798
S/DEPTH=.1	75.0%	71.6%	55.8%	48.7%	145.0%	112.5%	61.5%	*****	*****
S/DEPTH=.1	74.517	64.948	40.456	10.505	20.679	23.148	13.027	3.719	1.723
S/DEPTH=.1	73.8%	70.5%	55.3%	48.0%	146.0%	112.1%	62.8%	*****	*****
S/DEPTH=.1	66.071	57.827	36.633	10.911	24.156	20.374	11.637	3.350	1.554
S/DEPTH=.1	73.02%	69.9%	54.9%	47.9%	144.2%	112.2%	63.3%	*****	*****
S/DEPTH=.9	58.132	51.065	32.827	9.849	17.556	17.667	10.225	2.966	1.377
S/DEPTH=.8	50.653	44.622	29.051	21.8%	148.5%	12.4%	63.7%	*****	*****
S/DEPTH=.7	43.515	38.456	25.310	16.8%	150.4%	15.022	64.0%	2.568	1.193
S/DEPTH=.6	36.722	32.530	21.607	12.5%	12.17	12.5%	64.3%	*****	*****
S/DEPTH=.5	30.201	26.806	17.941	9.818	9.831	12.431	7.349	2.158	1.003
S/DEPTH=.4	23.901	21.248	14.308	5.566	7.661	9.887	5.893	1.738	.809
S/DEPTH=.3	17.775	15.622	10.704	4.238	5.628	11.2%	64.5%	*****	*****
S/DEPTH=.2	11.779	10.094	7.123	2.855	3.696	11.2%	64.7%	*****	*****
S/DEPTH=.1	5.868	5.531	3.558	1.436	1.831	11.2%	64.7%	*****	*****
S/DEPTH=.0	70.2%	67.8%	55.0%	48.0%	145.0%	112.5%	61.5%	*****	*****

CASE 4=A

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.722	.682	.575	.431	.146	.089	.204	.266	.278
	30.7%	27.8%	18.3%	9.4%	119.8%	244.6%	57.3%	43.8%	79.8%
SURFACE	156.300	140.742	102.846	60.692	8.778	1.565	11.149	20.386	22.446
S/DEPTH=1.1	46.6%	42.6%	28.7%	1.8%	279.2%	*****	80.0%	99.5%	200.0%
S/DEPTH=1.0	148.988	135.474	101.480						
S/DEPTH=1.0	44.0%	40.3%	27.8%						
S/DEPTH=.9	131.971	120.226	90.558	55.538	8.591				
S/DEPTH=.8	116.055	105.899	80.153	49.539	7.897	1.348	10.359	19.325	21.347
S/DEPTH=.7	101.071	92.357	70.198	41.8%	252.0%	*****	80.4%	104.3%	215.8%
S/DEPTH=.6	86.873	79.480	60.628	1.8%	252.0%	*****	80.5%	103.3%	213.2%
S/DEPTH=.5	73.532	67.160	51.387	1.9%	252.0%	*****	80.2%	102.5%	211.2%
S/DEPTH=.4	60.330	55.300	42.419	1.8%	252.0%	*****	80.2%	102.5%	211.2%
S/DEPTH=.3	47.764	43.811	33.674	1.8%	252.0%	*****	80.2%	102.5%	211.2%
S/DEPTH=.2	35.535	32.612	25.105	1.8%	252.0%	*****	80.2%	102.5%	211.2%
S/DEPTH=.1	23.555	21.625	16.665	1.8%	252.0%	*****	80.2%	102.5%	211.2%
S/DEPTH=.0	11.737	10.778	8.311	1.8%	252.0%	*****	80.2%	102.5%	211.2%
	38.35%	35.81%	23.3%	1.8%	252.0%	*****	80.2%	102.5%	211.2%
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4#A

TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (2a)

THETA =	0.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.722	.682	.575	.531	.46	.089	.204	.266	.278
	30.7%	27.8%	18.3%	8.4%	119.4%	244.6%	57.3%	43.8%	79.8%
SURFACE	.000	38.728	67.673	82.161	75.384	43.754	20.365	4.872	.000
S/DEPTH=1.1	*****	75.5%	72.4%	66.8%	44.5%	20.6%	16.3%	611.4%	*****
S/DEPTH=1.0	*****	37.193	66.699	74.400	73.115	40.239	19.224	4.660	.000
S/DEPTH=.9	*****	32.785	58.998	66.3%	46.3%	19.5%	15.45%	622.8%	*****
S/DEPTH=.8	*****	73.8%	71.2%	65.64	65.273	35.917	17.273	4.202	.000
S/DEPTH=.7	*****	28.697	51.801	65.305	57.594	31.537	15.256	3.723	.000
S/DEPTH=.6	*****	73.82%	70.8%	65.82%	45.9%	12.8%	147.7%	*****	*****
S/DEPTH=.5	*****	24.882	45.039	64.5%	42.61	27.110	13.181	3.225	.000
S/DEPTH=.4	*****	21.300	38.648	49.354	50.062	12.2%	145.1%	*****	*****
S/DEPTH=.3	*****	72.1%	69.6%	41.727	45.6%	22.845	11.058	2.712	.000
S/DEPTH=.2	*****	17.915	32.572	34.370	35.373	11.6%	142.9%	*****	*****
S/DEPTH=.1	*****	71.8%	68.2%	64.2%	45.4%	18.150	8.894	2.186	.000
	.000	14.692	26.759	27.236	28.182	11.2%	141.1%	*****	*****
	*****	70.9%	68.5%	63.9%	45.3%	13.632	6.699	1.649	.000
	*****	8.612	15.726	20.276	21.068	10.9%	139.7%	*****	*****
	*****	70.7%	68.2%	63.7%	45.2%	9.097	4.479	1.104	.000
	.000	5.700	10.416	13.446	14.013	10.6%	138.8%	*****	*****
	*****	70.5%	68.1%	63.6%	45.2%	4.551	2.243	.553	.000
	.000	2.838	5.188	6.702	6.997	10.5%	*****	*****	*****
	*****	*****	68.0%	63.5%	45.1%	.000	.000	.000	.000
S/DEPTH=.0	*****	.000	.000	.000	.000	*****	*****	*****	*****

CASE 4=A

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	30.7%	.732	.682	.575	.431	.146	.089	.266	.278
		27.8%		18.3%	.4%	.119.8%	57.3%	.43.8%	.79.18%
SURFACE	95.858	85.247	60.179	33.780	4.248	.900	.541	.9.734	.10.648
S/DEPTH=1.1	51.0%	46.7%	31.8%	-1.7%	*****	*****	75.8%	.96.9%	-191.0%
S/DEPTH=1.0	87.664	77.364	58.668						
S/DEPTH=1.0	46.4%	42.7%	30.1%						
S/DEPTH= .9	69.787	63.346	47.195	28.409	4.058				
S/DEPTH= .9	44.8%	41.0%	28.0%	-1.7%	*****				
S/DEPTH= .9	58.658	49.728	37.307	22.718	3.399	.696	.806	.8.754	.9.634
S/DEPTH= .8	43.6%	39.9%	27.1%	-1.7%	*****	*****	80.7%	.106.5%	.219.8%
S/DEPTH= .8	41.914	38.212	28.841	17.742	2.764	.501	.724	.106.888	.219.599
S/DEPTH= .7	42.6%	38.9%	26.3%	-1.8%	*****	*****	*****	.103.1%	.216.8%
S/DEPTH= .7	31.260	28.549	21.661	13.442	2.169	.353	.803	.103.255	.216.808
S/DEPTH= .6	41.6%	38.0%	25.6%	-1.6%	*****	*****	*****	.103.18%	.214.2%
S/DEPTH= .6	22.453	20.537	15.652	9.786	1.626	.240	.028	.13.848	.4.261
S/DEPTH= .5	40.8%	37.2%	25.0%	-1.9%	*****	*****	*****	*****	*****
S/DEPTH= .5	15.298	14.010	10.717	6.742	1.148	.157	.391	.12.665	.22.956
S/DEPTH= .4	40.1%	36.5%	24.5%	-2.0%	*****	*****	*****	*****	*****
S/DEPTH= .4	9.640	8.837	6.781	4.287	.745	.095	.881	.1.702	.1.890
S/DEPTH= .3	39.5%	36.0%	24.0%	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	3.358	.915	3.780	2.399	.423	.051	.491	.956	.1.062
S/DEPTH= .2	39.0%	35.6%	23.167	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	2.361	2.167	1.669	1.063	.189	.022	.217	.424	.472
S/DEPTH= .1	587	.539	.416	.265	.048	.005	.054	.106	.118
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE VIII—DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

SURFACE	.000	23.879	40.504	47.184	39.646	21.246	9.490	2.221	.000
S/DEPTH=1.1	*****	76.0%	74.5%	68.2%	43.2%	=28.8%	=180.6%	*****	*****
S/DEPTH=1.0	*****	76.2%	73.8%						
S/DEPTH=.9	*****	75.2%	72.5%	39.095	37.344				
S/DEPTH=.8	*****	74.4%	71.7%	67.6%	46.8%	17.937	8.429	2.025	.000
S/DEPTH=.7	*****	73.6%	71.0%	66.8%	46.5%	=16.6%	=163.3%	*****	*****
S/DEPTH=.6	*****	72.9%	70.3%	65.5%	46.3%	14.263	6.771	1.635	.000
S/DEPTH=.5	*****	72.5%	69.7%	65.0%	46.1%	=15.2%	=157.8%	*****	*****
S/DEPTH=.4	*****	71.7%	69.2%	64.5%	45.9%	15.226	5.259	1.276	.000
S/DEPTH=.3	*****	71.2%	68.7%	64.1%	45.4%	14.0%	=152.8%	*****	*****
S/DEPTH=.2	*****	70.8%	68.4%	63.8%	45.3%	13.802	3.911	.953	.000
S/DEPTH=.1	*****	70.4%	68.0%	63.4%	45.2%	=13.0%	=148.8%	*****	*****
S/DEPTH=.0	*****	70.0%	67.6%	63.0%	45.1%	12.42%	2.744	.671	.000
S/DEPTH=.0	*****	69.6%	67.2%	62.6%	45.0%	12.12%	=145.4%	*****	*****
S/DEPTH=.0	*****	69.2%	66.8%	62.2%	44.9%	11.82%	1.770	.434	.000
S/DEPTH=.0	*****	68.8%	66.4%	61.8%	44.8%	=11.6%	*****	*****	*****
S/DEPTH=.0	*****	68.4%	66.0%	61.4%	44.7%	11.324	1.002	.246	.000
S/DEPTH=.0	*****	68.0%	65.6%	61.0%	44.6%	11.028	*****	*****	*****
S/DEPTH=.0	*****	67.6%	65.2%	60.6%	44.5%	10.732	.447	.110	.000
S/DEPTH=.0	*****	67.2%	64.8%	60.2%	44.4%	10.436	*****	*****	*****
S/DEPTH=.0	*****	66.8%	64.4%	59.8%	44.3%	10.140	*****	*****	*****
S/DEPTH=.0	*****	66.4%	64.0%	59.4%	44.2%	9.844	*****	*****	*****
S/DEPTH=.0	*****	66.0%	63.6%	59.0%	44.1%	9.548	*****	*****	*****
S/DEPTH=.0	*****	65.6%	63.2%	58.6%	44.0%	9.252	*****	*****	*****
S/DEPTH=.0	*****	65.2%	62.8%	58.2%	43.9%	8.956	*****	*****	*****
S/DEPTH=.0	*****	64.8%	62.4%	57.8%	43.8%	8.660	*****	*****	*****
S/DEPTH=.0	*****	64.4%	62.0%	57.4%	43.7%	8.364	*****	*****	*****
S/DEPTH=.0	*****	64.0%	61.6%	57.0%	43.6%	8.068	*****	*****	*****
S/DEPTH=.0	*****	63.6%	61.2%	56.6%	43.5%	7.772	*****	*****	*****
S/DEPTH=.0	*****	63.2%	60.8%	56.2%	43.4%	7.476	*****	*****	*****
S/DEPTH=.0	*****	62.8%	60.4%	55.8%	43.3%	7.180	*****	*****	*****
S/DEPTH=.0	*****	62.4%	60.0%	55.4%	43.2%	6.884	*****	*****	*****
S/DEPTH=.0	*****	62.0%	59.6%	55.0%	43.1%	6.588	*****	*****	*****
S/DEPTH=.0	*****	61.6%	59.2%	54.6%	43.0%	6.292	*****	*****	*****
S/DEPTH=.0	*****	61.2%	58.8%	54.2%	42.9%	5.996	*****	*****	*****
S/DEPTH=.0	*****	60.8%	58.4%	53.8%	42.8%	5.700	*****	*****	*****
S/DEPTH=.0	*****	60.4%	58.0%	53.4%	42.7%	5.404	*****	*****	*****
S/DEPTH=.0	*****	60.0%	57.6%	53.0%	42.6%	5.108	*****	*****	*****
S/DEPTH=.0	*****	59.6%	57.2%	52.6%	42.5%	4.812	*****	*****	*****
S/DEPTH=.0	*****	59.2%	56.8%	52.2%	42.4%	4.516	*****	*****	*****
S/DEPTH=.0	*****	58.8%	56.4%	51.8%	42.3%	4.220	*****	*****	*****
S/DEPTH=.0	*****	58.4%	56.0%	51.4%	42.2%	3.924	*****	*****	*****
S/DEPTH=.0	*****	58.0%	55.6%	51.0%	42.1%	3.628	*****	*****	*****
S/DEPTH=.0	*****	57.6%	55.2%	50.6%	42.0%	3.332	*****	*****	*****
S/DEPTH=.0	*****	57.2%	54.8%	50.2%	41.9%	3.036	*****	*****	*****
S/DEPTH=.0	*****	56.8%	54.4%	49.8%	41.8%	2.740	*****	*****	*****
S/DEPTH=.0	*****	56.4%	54.0%	49.4%	41.7%	2.444	*****	*****	*****

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TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA = ETA/HEIGHT =	0 30.7%	10.0 27.0%	20.0 18.3%	30.0 14.3%	50.0 7.146	75.0 244.6%	100.0 57.3%	130.0 43.8%	180.0 79.8%
SURFACE	1.444	1.364	1.149	.862	.293	.179	.407	.533	.557
S/DEPTH=1.1	31.9%	28.9%	19.4%	.6%	120.5%	252.6%	61.1%	44.2%	82.5%
S/DEPTH=1.0	31.0%	28.2%	19.2%	.9%	.297				
S/DEPTH=.9	29.6%	26.2%	18.3%	.856	115.6%				
S/DEPTH=.8	28.3%	25.8%	17.6%	.850	.311	166	402	532	556
S/DEPTH=.7	27.1%	24.7%	16.9%	1.2%	103.7%	262.9%	61.3%	44.0%	82.6%
S/DEPTH=.6	26.1%	23.7%	16.3%	1.4%	.323	276.6%	61.3%	42.9%	80.8%
S/DEPTH=.5	25.1%	22.9%	15.7%	1.5%	.334	290.8%	61.2%	41.8%	79.3%
S/DEPTH=.4	24.3%	22.2%	15.2%	1.6%	.342	305.2%	61.2%	41.1%	78.0%
S/DEPTH=.3	23.7%	21.6%	14.8%	1.7%	.349	319.1%	61.1%	40.4%	76.8%
S/DEPTH=.2	23.0%	21.1%	14.5%	1.8%	.355	332.0%	61.1%	40.3%	75.9%
S/DEPTH=.1	22.5%	20.8%	14.3%	1.8%	.359	343.1%	61.1%	39.8%	75.2%
S/DEPTH=.0	22.1%	20.4%	14.1%	1.8%	.362	351.8%	61.0%	39.2%	74.7%
	22.0%	20.3%	14.0%	1.8%	.364	357.1%	61.0%	38.8%	74.4%
	22.0%	20.3%	14.0%	1.8%	.364	359.1%	61.0%	38.7%	74.3%

CASE 4=A

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION,... DEFINED IN EQ.(35)									
SURFACE	.000	.001	.003	.003	.004	.002	.001	.003	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION,... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION,... DEFINED IN EQ.(36)									
SURFACE	.008	.008	.007	.004	.001	.007	.008	.001	.008
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION,... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 4=A

TABLE XI-OVERALL WAVE PARAMETERS.. DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.359 (#3.2%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.433 (#15.6%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.448 (#12.5%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.860 (#14.0%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.835 (#15.1%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.948 (#1.0%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.891 (#12.4%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	1.211 (#17.2%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.376 (#21.9%)

CASE 4=A

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

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* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (46)
      LINEAR          .002561          STREAM FUNCTION          .000000

(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (47)
      LINEAR          .005760          STREAM FUNCTION          .000111

(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (46)
      LINEAR          .003672          STREAM FUNCTION          .000000

(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (47)
      LINEAR          .008448          STREAM FUNCTION          .000183

(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER
      DEFINED IN EQUATION (48)
      LINEAR          .102996          STREAM FUNCTION          .146703

(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER
      DEFINED IN EQUATION (49)
      LINEAR          .012115          STREAM FUNCTION          .048524

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CASE 4=B

10TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

HT = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .007772 DPT/LO = .020000

H/DPT = .388580

L/LO = .379687 PSI/(G*H*T) = -.001938

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.508835e01	X(2)/(H*T*G) =	-.146785e01
X(3)/(H*T*G) =	-.445503e02	X(4)/(H*T*G) =	-.129346e02
X(5)/(H*T*G) =	-.352846e03	X(6)/(H*T*G) =	-.887575e04
X(7)/(H*T*G) =	-.199291e04	X(8)/(H*T*G) =	-.369381e05
X(9)/(H*T*G) =	-.386228e06	X(10)/(H*T*G) =	-.100394e06

CASE 4#B

TABLE 1-DIMENSIONLESS		HORIZONTAL		VELOCITY		COMPONENT FIELD...DEFINED IN EQUATION (21)			
THETA =		0		20.0		30.0		50.0	
ETA/HEIGHT =		8.10		.715		.294		.010	
		38.3%		31.1%		47.1%		*****	
SURFACE		15.839		13.833		9.560		5.371	
S/DEPTH=1.3		41.3%		33.9%		8.8%		49.2%	
S/DEPTH=1.2		100.0%		13.298					
S/DEPTH=1.1		37.2%		31.2%		9.324		5.383	
S/DEPTH=1.0		34.6%		28.8%		7.6%		47.5%	
S/DEPTH= .9		32.2%		26.6%		6.6%		43.6%	
S/DEPTH= .8		30.0%		24.6%		5.5%		40.5%	
S/DEPTH= .7		27.9%		22.7%		4.6%		38.1%	
S/DEPTH= .6		24.3%		19.5%		3.7%		36.2%	
S/DEPTH= .5		22.8%		18.2%		2.9%		34.6%	
S/DEPTH= .4		21.6%		17.1%		2.3%		33.4%	
S/DEPTH= .3		20.6%		16.2%		1.7%		32.5%	
S/DEPTH= .2		20.0%		15.6%		1.2%		31.8%	
S/DEPTH= .1		19.5%		15.2%		.9%		31.3%	
S/DEPTH= .0		19.4%		15.1%		.6%		31.1%	

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

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CASE 4=B

TABLE III=3 DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA ETA/HEIGHT	0 18.3%	10.0 7.15	20.0 5.06	30.0 3.294	50.0 2.010	75.0 1.131	100.0 .750	130.0 50.1%	150.0 100.0	180.0 180.0
ETA/HEIGHT	18.3%	31.1%	7.2%	47.1%	*****	198.4%	50.1%	103.6%	163.6%	163.6%
SURFACE	.000	93.398	130.404	119.684	59.838	18.211	4.972	.598	.000	.000
S/DEPTH=1.3	*****	91.0%	87.2%	79.4%	34.3%	=189.6%	*****	*****	*****	*****
S/DEPTH=1.2	*****	85.207								
S/DEPTH=1.1	*****	90.1%	118.942	118.601	59.891	18.969	5.166	.621	.000	.000
S/DEPTH=1.0	*****	89.1%	108.672	111.539	35.6%	=172.7%	*****	*****	*****	*****
S/DEPTH=.9	*****	88.1%	85.1%	78.4%	37.6%	=150.9%	*****	*****	*****	*****
S/DEPTH=.8	*****	81.753	99.846	105.252	60.994	21.624	6.220	.777	.000	.000
S/DEPTH=.7	*****	87.0%	84.0%	77.5%	40.3%	=134.1%	*****	*****	*****	*****
S/DEPTH=.6	*****	80.619	81.9%	75.6%	40.3%	22.688	6.655	.841	.000	.000
S/DEPTH=.5	*****	84.8%	80.619	74.8%	41.8%	=121.2%	7.33.7%	*****	*****	*****
S/DEPTH=.4	*****	82.0%	80.9%	74.8%	41.8%	23.581	7.026	.895	.000	.000
S/DEPTH=.3	*****	82.0%	79.2%	72.793	64.633	=111.3%	=684.2%	*****	*****	*****
S/DEPTH=.2	*****	81.2%	78.5%	72.8%	62.918	24.305	7.332	.939	.000	.000
S/DEPTH=.1	*****	80.7%	78.0%	72.4%	42.3%	=103.7%	=647.3%	*****	*****	*****
S/DEPTH=.0	*****	80.3%	77.7%	72.2%	42.3%	24.864	7.571	.974	.000	.000
S/DEPTH=.0	*****	80.2%	77.6%	72.1%	43.1%	=98.2%	=620.5%	*****	*****	*****
S/DEPTH=.0	*****	80.2%	77.6%	72.1%	43.1%	25.262	7.742	.999	.000	.000
S/DEPTH=.0	*****	80.2%	77.6%	72.1%	43.1%	=94.4%	=602.4%	*****	*****	*****
S/DEPTH=.0	*****	80.2%	77.6%	72.1%	43.1%	25.499	7.845	1.014	.000	.000
S/DEPTH=.0	*****	80.2%	77.6%	72.1%	43.1%	=92.2%	=591.8%	*****	*****	*****
S/DEPTH=.0	*****	80.2%	77.6%	72.1%	43.1%	25.578	7.880	1.019	.000	.000
S/DEPTH=.0	*****	80.2%	77.6%	72.1%	43.1%	=91.5%	=588.4%	*****	*****	*****

CASE 4=B

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.810	.715	.506	.294	.010	.131	.174	.188	.190
	58.3%	31.1%	7.2%	47.1%	*****	198.4%	50.1%	103.6%	163.6%
SURFACE	124.372	87.798	18.346	32.227	47.999	20.291	6.187	740	.125
	84.9%	79.0%	6.1%	147.5%	120.3%	105.6%	*****	*****	*****
S/DEPTH=1.3	122.436								
	100.0%								
S/DEPTH=1.2	82.9%	81.824							
	82.9%	77.5%							
S/DEPTH=1.1	97.856	74.128							
	82.3%	77.1%	19.665	31.136					
			18.6%	146.3%					
S/DEPTH=1.0	86.601	66.526	20.002	153.428	47.741				
	61.8%	76.8%	27.3%	153.6%	116.2%				
S/DEPTH=.9	76.003	59.084	19.535	19.031	41.604	19.351	6.026	730	.128
	61.4%	76.5%	33.1%	161.9%	118.8%	105.4%	*****	*****	*****
S/DEPTH=.8	66.011	51.840	18.455	14.704	35.894	17.370	5.493	.682	.132
	81.0%	76.2%	37.1%	171.1%	119.4%	105.5%	*****	*****	*****
S/DEPTH=.7	56.564	44.805	16.908	11.249	30.568	15.321	4.911	.622	.129
	80.6%	76.0%	40.0%	181.3%	120.0%	105.6%	*****	*****	*****
S/DEPTH=.6	47.598	37.974	15.007	8.496	25.577	13.218	4.287	.550	.119
	80.3%	75.7%	42.0%	192.2%	120.5%	105.7%	*****	*****	*****
S/DEPTH=.5	39.042	31.333	12.840	6.304	20.875	11.072	3.626	.471	.105
	79.9%	75.5%	43.6%	203.6%	120.9%	105.8%	*****	*****	*****
S/DEPTH=.4	30.828	24.857	10.476	4.553	16.413	8.893	2.936	.385	.088
	79.7%	75.3%	44.7%	*****	121.3%	105.8%	*****	*****	*****
S/DEPTH=.3	22.685	18.519	7.969	3.137	12.142	6.689	2.223	.293	.068
	79.5%	75.1%	45.5%	*****	121.6%	105.9%	*****	*****	*****
S/DEPTH=.2	15.145	12.826	5.364	1.961	8.015	4.469	1.492	.197	.046
	79.4%	75.0%	*****	*****	121.8%	*****	*****	*****	*****
S/DEPTH=.1	7.539	6.125	2.697	.942	3.984	2.237	.749	.099	.023
	79.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	0.000	0.001	0.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=B

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.810	.715	.506	.294	.010	.131	.174	.188	.190
	38.3%	31.1%	7.2%	.47.1%	*****	198.4%	50.1%	=103.6%	=163.6%
SURFACE	197.626	159.057	87.455	34.479	.746	=3.776	=7.770	=9.467	=9.671
S/DEPTH=1.3	53.6%	44.2%	8.4%	=94.7%	*****	*****	*****	*****	*****
S/DEPTH=1.2	100.0%								
S/DEPTH=1.1	144.756								
S/DEPTH=1.0	131.268	112.491	70.360	31.123	*****	=3.519	=7.482	=9.191	=9.396
S/DEPTH=.9	42.6%	35.0%	5.4%	=81.6%	*****	*****	*****	*****	*****
S/DEPTH=.8	114.238	98.315	62.269	28.116	.742	=3.027	=6.604	=8.163	=8.351
S/DEPTH=.7	41.1%	33.6%	4.6%	=79.5%	.725	*****	*****	*****	*****
S/DEPTH=.6	98.595	85.163	54.522	25.059	.691	=2.572	=5.743	=7.137	=7.306
S/DEPTH=.5	39.8%	32.4%	3.9%	=77.7%	*****	*****	*****	*****	*****
S/DEPTH=.4	84.093	72.862	47.076	21.968	.639	=2.149	=4.896	=6.114	=6.261
S/DEPTH=.3	36.8%	31.3%	3.2%	=76.2%	*****	*****	*****	*****	*****
S/DEPTH=.2	70.524	61.265	39.888	18.854	.567	=1.752	=4.061	=5.092	=5.217
S/DEPTH=.1	37.9%	30.4%	2.7%	=70.9%	*****	*****	*****	*****	*****
	57.710	50.239	32.916	15.724	.478	=1.377	=3.236	=4.072	=4.173
	36.8%	29.6%	2.2%	=73.9%	*****	*****	*****	*****	*****
	45.492	39.671	26.123	12.586	.373	=1.018	=2.420	=3.053	=3.130
	36.1%	29.0%	1.8%	=73.2%	*****	*****	*****	*****	*****
	33.734	29.455	19.471	9.442	.256	=.672	=1.610	=2.035	=2.086
	35.6%	28.5%	1.5%	*****	*****	*****	*****	*****	*****
	22.309	19.097	12.923	6.296	.130	=.334	=.804	=1.017	=1.043
	15.2%	28.1%	1.2%	*****	*****	*****	*****	*****	*****
	11.101	9.707	6.444	3.148	.000	=0.00	=0.00	=0.00	=0.00
	35.0%	*****	*****	*****	*****	*****	*****	*****	*****
	*****	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=B

TABLE V-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD, ... DEFINED IN EQUATION (26)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.810	.506	.294	.010	.131	.174	.188	.190
	38.3%	31.1%	7.2%	*****	198.4%	50.1%	103.6%	163.6%
SURFACE	.000	69.668	103.441	103.362	62.631	21.970	6.433	.000
S/DEPTH=1.3	*****	86.6%	82.2%	73.9%	33.5%	140.3%	731.7%	*****
S/DEPTH=1.2	*****							
S/DEPTH=1.1	*****	62.731						
S/DEPTH=1.0	*****	85.1%						
S/DEPTH=.9	*****	54.679	91.406	101.645				
S/DEPTH=.8	*****	64.4%	81.4%	75.1%				
S/DEPTH=.7	*****	83.7%	80.038	90.144	62.388			
S/DEPTH=.6	*****	40.975	80.8%	74.6%	41.0%			
S/DEPTH=.5	*****	83.1%	69.624	79.311	56.341	21.061	6.269	.000
S/DEPTH=.4	*****	35.085	80.2%	74.2%	41.5%	113.4%	692.9%	*****
S/DEPTH=.3	*****	82.5%	60.026	69.069	50.200	19.092	5.724	.000
S/DEPTH=.2	*****	29.700	79.7%	73.7%	41.9%	108.4%	669.1%	*****
S/DEPTH=.1	*****	24.737	51.123	59.343	43.996	16.990	5.126	.000
	*****	81.6%	79.2%	73.4%	42.2%	104.2%	*****	*****
	*****	20.119	42.803	50.062	37.750	10.773	4.482	.000
	*****	81.2%	78.8%	73.0%	42.4%	100.7%	*****	*****
	*****	15.778	34.967	41.156	31.478	12.458	3.797	.000
	*****	80.6%	78.4%	72.7%	42.6%	97.8%	*****	*****
	*****	11.652	27.521	32.560	25.191	10.062	3.079	.000
	*****	80.6%	78.1%	72.5%	42.8%	95.6%	*****	*****
	*****	11.652	20.381	24.268	18.897	7.602	2.333	.000
	*****	80.6%	77.9%	72.3%	42.9%	93.8%	*****	*****
	*****	7.682	13.464	12.039	12.599	1.567	*****	.000
	*****	80.4%	77.7%	72.2%	43.0%	*****	*****	*****
	*****	3.816	6.696	7.999	6.299	2.555	.787	.000
	*****	*****	77.8%	72.1%	43.0%	*****	*****	*****
	*****	.000	*****	*****	.000	*****	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=B

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	40.0	50.0	60.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.810	.715	.506	.294	.10	.131	.174	.188	.190	.188	.190
	38.3%	31.1%	7.2%	47.1%	*****	198.4%	50.1%	103.6%	103.6%	103.6%	103.6%
SURFACE	148.380	113.605	55.498	18.993	.248	1.940	3.687	4.396	4.481	*****	*****
	61.9%	52.1%	12.1%	112.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	143.552	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.2	114.519	95.880	43.2%	76.474	45.604	18.532	19.446	24.8	1.703	3.423	4.144
	50.7%	43.2%	76.474	45.604	18.532	19.446	24.8	1.703	3.423	4.144	4.230
S/DEPTH=1.1	90.643	43.2%	76.474	45.604	18.532	19.446	24.8	1.703	3.423	4.144	4.230
	47.9%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%
S/DEPTH=1.0	70.981	60.292	36.694	7.3%	87.0%	12.590	22.9	1.284	2.677	3.270	3.541
	45.8%	38.1%	29.004	6.2%	83.5%	9.992	20.4	1.284	2.677	3.270	3.541
S/DEPTH= .9	54.790	46.815	29.004	6.2%	83.5%	9.992	20.4	1.284	2.677	3.270	3.541
	43.6%	38.1%	29.004	6.2%	83.5%	9.992	20.4	1.284	2.677	3.270	3.541
S/DEPTH= .8	41.483	34.35%	22.417	9.992	80.37%	9.992	20.4	1.284	2.677	3.270	3.541
	42.0%	34.35%	22.417	9.992	80.37%	9.992	20.4	1.284	2.677	3.270	3.541
S/DEPTH= .7	30.598	28.396	16.830	7.674	78.4%	78.4%	171	1.667	1.480	1.836	2.558
	40.4%	32.9%	4.2%	78.4%	78.4%	78.4%	171	1.667	1.480	1.836	2.558
S/DEPTH= .6	21.771	18.852	12.156	5.650	3.4%	3.929	131	1.667	1.480	1.836	2.558
	38.9%	31.6%	3.4%	3.929	3.4%	3.929	131	1.667	1.480	1.836	2.558
S/DEPTH= .5	19.717	12.784	8.320	3.929	2.7%	2.516	131	1.667	1.480	1.836	2.558
	37.7%	30.5%	2.7%	2.516	2.7%	2.516	131	1.667	1.480	1.836	2.558
S/DEPTH= .4	9.215	8.025	5.262	2.516	*****	*****	*****	*****	*****	*****	*****
	36.7%	29.5%	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	5.097	4.447	2.932	1.416	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	2.238	1.955	1.295	.630	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.555	.486	.322	.157	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.0	.715	.506	.294	.010	.131	.174	.190
	36.3%	31.1%	7.2%	47.1%	*****	198.4%	50.1%	=103.6%
SURFACE	.000	51.609	69.185	61.672	31.234	9.874	2.787	.347
S/DEPTH=1.3	*****	89.0%	84.0%	74.0%	23.8%	=184.3%	*****	*****
S/DEPTH=1.2	*****	.000	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	*****	43.010	55.356	59.771	30.991	9.034	2.637	.332
S/DEPTH=1.0	*****	86.9%	82.8%	76.4%	39.9%	=125.9%	*****	*****
S/DEPTH=.9	*****	33.743	43.411	47.690	25.247	7.361	2.174	.275
S/DEPTH=.8	*****	85.8%	82.0%	75.1%	40.87%	=117.6%	*****	*****
S/DEPTH=.7	*****	26.167	33.510	37.393	20.028	5.786	1.726	.220
S/DEPTH=.6	*****	85.8%	81.3%	74.5%	41.3%	=111.1%	*****	*****
S/DEPTH=.5	*****	19.992	25.345	28.683	15.376	4.345	1.308	.167
S/DEPTH=.4	*****	84.2%	80.6%	71.3%	41.8%	=105.6%	*****	*****
S/DEPTH=.3	*****	14.980	18.603	21.384	11.316	3.073	.931	.120
S/DEPTH=.2	*****	83.5%	79.9%	73.0%	7.866	*****	*****	*****
S/DEPTH=.1	*****	10.338	13.250	15.348	5.037	1.995	.608	.078
S/DEPTH=.0	*****	82.8%	79.3%	73.5%	42.1%	*****	*****	*****
	*****	81.6%	78.8%	73.1%	42.4%	*****	*****	*****
	*****	3.211	5.583	7.576	5.037	*****	*****	*****
	*****	78.4%	75.7%	72.7%	42.7%	*****	*****	*****
	*****	1.765	3.082	3.652	2.834	1.135	.348	.045
	*****	*****	*****	72.4%	*****	*****	*****	*****
	*****	.772	1.351	1.608	1.260	.508	.156	.020
	*****	*****	*****	*****	*****	*****	*****	*****
	*****	.191	.335	.400	.315	.128	.039	.005
	*****	*****	*****	*****	*****	*****	*****	*****
	*****	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	810	.715	.506	.294	.010	.0131	.0174	.0188	.0190
	38.3%	31.1%	7.2%	47.1%	*****	198.4%	50.1%	103.6%	163.6%
SURFACE	1.627	1.434	1.014	.590	.020	.264	.348	.377	.380
S/DEPTH#1.0	40.7%	33.6%	10.1%	43.5%	*****	208.3%	59.2%	104.1%	171.1%
S/DEPTH#1.0	1.615								
S/DEPTH#1.0	100.0%								
S/DEPTH#1.0	1.541	1.392							
S/DEPTH#1.0	37.4%	31.6%							
S/DEPTH#1.0	1.475	1.342	1.003	.593	.021	.258	.347	.377	.380
S/DEPTH#1.0	35.3%	29.9%	9.9%	41.8%	*****	210.5%	59.9%	104.2%	171.1%
S/DEPTH#1.0	1.417	1.297	.990	.611	.021	.246	.343	.376	.380
S/DEPTH#1.0	33.4%	28.2%	9.7%	36.2%	*****	215.5%	60.6%	103.1%	171.0%
S/DEPTH#1.0	1.365	1.257	.977	.624	.049	.236	.340	.376	.380
S/DEPTH#1.0	31.6%	26.7%	9.5%	32.0%	*****	220.4%	61.2%	100.9%	168.1%
S/DEPTH#1.0	1.320	1.222	.965	.635	.074	.226	.337	.375	.380
S/DEPTH#1.0	29.9%	25.3%	9.1%	28.6%	*****	225.0%	61.8%	99.1%	165.6%
S/DEPTH#1.0	1.281	1.191	.954	.643	.095	.219	.335	.375	.380
S/DEPTH#1.0	28.3%	24.0%	8.8%	26.0%	*****	229.2%	62.2%	97.5%	163.5%
S/DEPTH#1.0	1.248	1.165	.944	.650	.113	.212	.333	.375	.380
S/DEPTH#1.0	26.9%	22.8%	8.4%	24.0%	*****	232.9%	62.6%	96.2%	161.8%
S/DEPTH#1.0	1.220	1.143	.935	.654	.128	.207	.331	.375	.380
S/DEPTH#1.0	25.7%	21.6%	8.1%	22.4%	*****	235.9%	62.9%	95.2%	160.5%
S/DEPTH#1.0	1.198	1.125	.927	.658	.140	.204	.330	.374	.380
S/DEPTH#1.0	24.7%	20.9%	7.8%	21.2%	*****	238.2%	63.1%	94.5%	159.6%
S/DEPTH#1.0	1.181	1.111	.922	.660	.149	.202	.329	.374	.379
S/DEPTH#1.0	23.9%	20.2%	7.6%	20.3%	*****	239.6%	63.2%	94.1%	159.0%
S/DEPTH#1.0	1.169	1.102	.917	.662	.155	.201	.329	.374	.379
S/DEPTH#1.0	23.4%	19.7%	7.4%	19.7%	*****	240.1%	63.3%	94.0%	158.8%
S/DEPTH#1.0	1.161	1.096	.915	.663	.159	.200	.328	.373	.378
S/DEPTH#1.0	23.0%	19.5%	7.3%	19.3%	*****				
S/DEPTH#1.0	1.159	1.094	.914	.663	.160				
S/DEPTH#1.0	22.9%	19.4%	7.3%	19.2%	*****				

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TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.006	.012	.015	.016	.007	.005	.012	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.018	.017	.014	.009	.002	.014	.016	.001	.015
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.003	.002	.001	.001	.001	.000	.000	.000	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.380 (= 8.6%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.346 (= 44.6%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.376 (= 34.4%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.722 (= 39.3%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.682 (= 41.4%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.944 (= 1.5%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.749 (= 33.8%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.962 (= 47.7%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.280 (= 63.0%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	LINEAR	.010455	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	LINEAR	.011583	STREAM FUNCTION	.000845
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	LINEAR	.016860	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	LINEAR	.017545	STREAM FUNCTION	.003140
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48)	LINEAR	.207956	STREAM FUNCTION	.323998
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)	LINEAR	.023367	STREAM FUNCTION	.153634

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12TH ORDER STREAM FUNCTION WAVE THEORY

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

DEFINITIONS

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
DPT = WATER DEPTH L = WAVE LENGTH
PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .011678 DPT/LO = .020000
H/DPT = .583909
L/LO = .401172 PSI/(G*H*T) = .002233

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	.410159e01	X(2)/(H*T*G) =	.136907e01
X(3)/(H*T*G) =	.502967e02	X(4)/(H*T*G) =	.181193e02
X(5)/(H*T*G) =	.627541e03	X(6)/(H*T*G) =	.207353e03
X(7)/(H*T*G) =	.648095e04	X(8)/(H*T*G) =	.189477e04
X(9)/(H*T*G) =	.510130e05	X(10)/(H*T*G) =	.277270e05
X(11)/(H*T*G) =	.797584e06	X(12)/(H*T*G) =	.000000

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TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	41.8%	.858	.667	.383	.173	.041	.119	.141	.142
		26.1%	22.8%	150.12%	*****	208.4%	36.5%	171.3%	253.1%
SURFACE	18.058	13.533	7.316	3.128	.781	1.993	2.254	2.319	2.328
S/DEPTH=1.5	47.8%	31.4%	20.8%	159.5%	*****	218.7%	30.7%	191.5%	276.5%
S/DEPTH=1.4	100.0%								
S/DEPTH=1.3	100.0%								
S/DEPTH=1.2	18.5%	12.813	7.300	3.130					
S/DEPTH=1.1	14.2%	27.6%	19.7%	12.22					
S/DEPTH=1.0	31.4%	21.3%	19.3%	153.6%					
	12.576	10.924	7.134	3.341					
	28.1%	18.4%	19.2%	134.5%					
S/DEPTH= .9	11.908	10.449	7.042	3.513	.631	1.977	2.252	2.319	2.328
S/DEPTH= .8	24.9%	13.7%	19.3%	120.4%	*****	217.0%	31.1%	100.0%	100.0%
S/DEPTH= .7	22.0%	13.2%	19.6%	109.8%	.455	218.7%	31.5%	191.3%	276.5%
	19.3%	11.0%	19.9%	101.7%	.303	218.84	31.9%	189.1%	275.9%
S/DEPTH= .6	10.461	9.393	6.787	3.848	.172	21.844	2.226	2.322	2.331
S/DEPTH= .5	17.0%	8.9%	20.3%	95.5%	*****	221.9%	32.2%	186.6%	272.1%
S/DEPTH= .4	14.9%	9.150	6.718	3.916	.064	221.810	32.5%	184.6%	270.0%
S/DEPTH= .3	13.2%	8.955	6.660	3.968	.024	223.4%	32.7%	182.9%	267.8%
S/DEPTH= .2	11.8%	8.805	6.613	4.006	.092	224.8%	32.8%	181.6%	266.1%
S/DEPTH= .1	9.455	8.700	6.580	4.032	.140	225.6%	33.0%	180.7%	264.1%
	10.2%	8.637	6.559	4.047	.169	226.4%	33.0%	180.2%	264.1%
S/DEPTH= .0	9.428	8.616	6.553	4.052	.178	226.9%	33.0%	180.2%	264.1%
	10.0%	3.0%	21.7%	81.4%	*****	227.0%	33.0%	180.0%	263.9%

TABLE 1. DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (22)

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TABLE II=DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)								
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0
ZETA/HEIGHT=	.058	.667	.383	.173	*****	.119	.137	.141
	41.8%	26.1%	22.8%	150.2%	208.4%	36.5%	171.3%	

SURFACE	.000	147.890	148.618	105.769	36.864	8.806	.891	.128	=.000
S/DEPTH=1.5	*****	94.8%	89.7%	78.4%	=.19%	=486.3%	*****	*****	*****
S/DEPTH=1.4	*****								
S/DEPTH=1.4	*****								
S/DEPTH=1.3	*****	129.804							
S/DEPTH=1.3	*****	94.1%							
S/DEPTH=1.2	*****	112.669	145.200						
S/DEPTH=1.1	*****	93.3%	89.6%						
S/DEPTH=1.1	*****	98.344	131.698	105.726					
S/DEPTH=1.0	*****	92.5%	88.8%	79.0%					
S/DEPTH=1.0	*****	86.384	119.875	101.607					
S/DEPTH=1.0	*****	91.6%	87.9%	78.5%					
S/DEPTH= .9	*****	76.923	109.612	97.540	38.850	9.075	.995	.130	=.000
S/DEPTH= .9	*****	90.6%	88.9%	78.0%	8.5%	=56.0%	*****	*****	*****
S/DEPTH= .8	*****	68.160	100.788	93.679	41.063	9.844	1.460	.147	=.000
S/DEPTH= .8	*****	89.7%	88.0%	77.4%	=101.3%	*****	*****	*****	*****
S/DEPTH= .7	*****	61.349	93.287	90.129	42.865	10.765	1.849	.168	=.000
S/DEPTH= .7	*****	88.7%	85.1%	76.8%	19.1%	=58.5%	*****	*****	*****
S/DEPTH= .6	*****	55.791	87.003	86.963	44.313	11.511	2.172	.189	=.000
S/DEPTH= .6	*****	87.7%	84.2%	76.2%	22.6%	=35.0%	*****	*****	*****
S/DEPTH= .5	*****	51.327	81.843	84.231	45.456	12.165	2.436	.208	=.000
S/DEPTH= .5	*****	86.7%	83.3%	75.7%	25.2%	=99.9%	*****	*****	*****
S/DEPTH= .4	*****	47.831	77.729	81.966	46.335	12.714	2.648	.225	=.000
S/DEPTH= .4	*****	85.9%	82.6%	75.2%	27.1%	=79.9%	*****	*****	*****
S/DEPTH= .3	*****	45.207	77.595	80.189	46.983	13.149	2.810	.238	=.000
S/DEPTH= .3	*****	85.2%	82.0%	74.8%	28.5%	=65.1%	*****	*****	*****
S/DEPTH= .2	*****	43.381	72.392	78.912	47.427	13.463	2.935	.248	=.000
S/DEPTH= .2	*****	84.6%	81.5%	74.5%	29.5%	=55.3%	*****	*****	*****
S/DEPTH= .1	*****	42.305	71.084	78.143	47.687	13.653	2.993	.254	=.000
S/DEPTH= .1	*****	84.3%	81.2%	74.3%	30.0%	=49.8%	*****	*****	*****
S/DEPTH= .0	*****	41.950	70.651	77.886	47.772	13.717	3.015	.256	=.000
S/DEPTH= .0	*****	84.1%	81.1%	74.2%	30.2%	=24.7%	*****	*****	*****

TABLE 14-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.05A	.667	.383	.173	.041	.119	.137	.141	.141
	41.9%	26.1%	-22.8%	=150.2%	*****	208.4%	36.5%	=171.3%	=253.1%
SURFACE	=149.696	=68.043	28.090	62.770	44.879	11.127	1.967	=.391	=.290
DEPTH=1.5	88.2%	74.7%	156.5%	121.9%	117.4%	90.7%	*****	*****	*****
DEPTH=1.4	100.0%								
DEPTH=1.3	100.0%								
DEPTH=1.2	86.2%	74.9%	25.295						
DEPTH=1.1	85.8%	75.8%	159.2%	62.640					
DEPTH=1.0	85.3%	76.5%	189.1%	119.4%					
DEPTH=.9	85.1%	76.9%	250.4%	51.356					
DEPTH=.8	84.8%	77.1%	*****	41.905	40.811	10.903	1.974	=.361	=.275
DEPTH=.7	84.3%	77.2%	*****	123.5%	114.8%	93.2%	*****	*****	*****
DEPTH=.6	84.0%	77.3%	*****	126.2%	115.2%	94.0%	*****	*****	*****
DEPTH=.5	83.6%	77.4%	*****	128.0%	115.5%	94.6%	*****	*****	*****
DEPTH=.4	83.3%	77.5%	*****	130.9%	115.8%	95.1%	*****	*****	*****
DEPTH=.3	83.0%	77.6%	*****	133.0%	116.0%	95.5%	*****	*****	*****
DEPTH=.2	82.8%	77.7%	*****	135.2%	116.2%	95.8%	*****	*****	*****
DEPTH=.1	82.6%	77.8%	*****	137.4%	116.4%	96.1%	*****	*****	*****
DEPTH=.0	82.4%	77.9%	*****	139.6%	116.6%	96.4%	*****	*****	*****

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TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	41.8%	.858	.667	.383	.173	.041	.119	.141	.142
		26.1%	=22.6%	=150.2%	*****	208.4%	36.5%	=171.3%	=253.1%
SURFACE	222.915	145.329	57.425	15.889	.096	=3.087	=4.534	=4.945	=4.985
	55.0%	33.3%	=51.8%	=57.1%	*****	*****	*****	*****	*****
S/DEPTH=1.5	222.514								
	100.0%								
S/DEPTH=1.4	192.592								
	100.0%								
S/DEPTH=1.3	167.149	129.866							
	40.0%	25.4%							
S/DEPTH=1.2	145.254	114.367	56.174						
	36.5%	21.8%	=45.0%						
S/DEPTH=1.1	126.189	100.491	50.899	15.879					
	33.7%	19.2%	=45.2%	=295.3%					
S/DEPTH=1.0	109.393	87.964	45.746	14.829					
	31.1%	16.9%	=45.5%	=281.2%					
S/DEPTH=.9	94.424	70.553	40.721	13.653	.059	=2.968	=4.432	=4.851	=4.891
	28.8%	14.8%	=45.9%	=269.6%	*****	*****	*****	*****	*****
S/DEPTH=.8	80.930	60.069	35.826	12.368	.029	=2.587	=3.927	=4.312	=4.348
	26.7%	12.9%	=46.3%	=259.9%	*****	*****	*****	*****	*****
S/DEPTH=.7	68.624	50.348	31.054	10.993	.015	=2.223	=3.426	=3.774	=3.806
	25.8%	11.2%	=46.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	57.272	47.253	26.395	9.544	.009	=1.876	=2.928	=3.235	=3.262
	23.2%	9.7%	=47.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	46.679	38.664	21.836	8.036	.007	=1.543	=2.435	=2.696	=2.719
	21.9%	8.5%	=47.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	36.681	30.477	17.364	6.481	.007	=1.220	=1.944	=2.156	=2.175
	20.6%	7.5%	=47.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	27.135	22.598	12.961	4.890	.007	=.907	=1.456	=1.617	=1.632
	19.9%	6.7%	=48.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	17.915	14.944	8.611	3.274	.006	=.601	=.969	=1.078	=1.088
	19.3%	6.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	8.906	7.436	4.297	1.641	.003	=.299	=.484	=.539	=.544
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=C

TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.858	.667	.383	.173	.041	.119	.137	.141	.142
	41.8%	26.1%	=22.8%	=150.2%	*****	208.4%	36.5%	=171.5%	=253.1%
SURFACE	.000	99.710	116.105	96.594	43.434	11.154	2.153	.189	*****
S/DEPTH=1.5	*****	91.0%	84.6%	72.8%	5.3%	=373.0%	*****	*****	*****
S/DEPTH=1.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	*****	87.349	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.2	*****	89.7%	112.663	96.483	76.3%	75.7%	2.134	.187	*****
S/DEPTH=1.1	*****	88.2%	85.2%	98.833	84.6%	66.601	2.011	.173	*****
S/DEPTH=1.0	*****	88.3%	84.6%	86.268	86.3%	75.4%	*****	*****	*****
S/DEPTH=.9	*****	87.5%	84.1%	86.116	87.6%	75.7%	290.3%	.158	*****
S/DEPTH=.8	*****	87.0%	84.0%	76.0%	84.8%	75.2%	8.896	.140	*****
S/DEPTH=.7	*****	86.5%	82.6%	76.159	84.8%	75.2%	1.645	.140	*****
S/DEPTH=.6	*****	86.0%	82.6%	76.159	84.8%	75.2%	1.643	.140	*****
S/DEPTH=.5	*****	85.2%	82.2%	76.159	84.8%	75.2%	1.643	.140	*****
S/DEPTH=.4	*****	85.1%	81.9%	76.159	84.8%	75.2%	1.643	.140	*****
S/DEPTH=.3	*****	84.7%	81.6%	76.159	84.8%	75.2%	1.643	.140	*****
S/DEPTH=.2	*****	84.5%	81.4%	76.159	84.8%	75.2%	1.643	.140	*****
S/DEPTH=.1	*****	84.3%	81.2%	76.159	84.8%	75.2%	1.643	.140	*****
S/DEPTH=.0	*****	84.2%	81.1%	76.159	84.8%	75.2%	1.643	.140	*****

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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CASE 40C

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA ETA/HEIGHT	0 .858 41.8%	10.0 .667 26.1%	20.0 .583 22.8%	30.0 .473 150.2%	50.0 0.041 *****	75.0 0.119 208.4%	100.0 0.137 36.5%	130.0 0.141 171.3%	180.0 0.142 253.1%
SURFACE	.000	84.870	80.428	56.093	20.370	4.824	.844	.077	.000
S/DEPTH=1.5	*****	93.0%	85.5%	70.0%	22.2%	496.1%	*****	*****	*****
S/DEPTH=1.4	*****	.000							
S/DEPTH=1.3	*****	.000							
S/DEPTH=1.2	*****	.000							
S/DEPTH=1.1	*****	.000							
S/DEPTH=1.0	*****	.000							
S/DEPTH=.9	*****	.000							
S/DEPTH=.8	*****	.000							
S/DEPTH=.7	*****	.000							
S/DEPTH=.6	*****	.000							
S/DEPTH=.5	*****	.000							
S/DEPTH=.4	*****	.000							
S/DEPTH=.3	*****	.000							
S/DEPTH=.2	*****	.000							
S/DEPTH=.1	*****	.000							
S/DEPTH=.0	*****	.000							

CASE 4=C

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD....DEFINED IN EQUATION (29)

THETA ETA/HEIGHT	0 41.8%	10.0 26.1%	20.0 38.3%	30.0 50.0%	40.0 75.0	50.0 100.0	60.0 130.0	70.0 180.0	80.0 253.1%	90.0 365.5%	100.0 511.9	110.0 711.3%	120.0 911.3%	130.0 1111.3%	140.0 1311.3%	150.0 1511.3%	160.0 1711.3%	170.0 1911.3%	180.0 2111.3%	190.0 2311.3%	200.0 2511.3%	210.0 2711.3%	220.0 2911.3%	230.0 3111.3%	240.0 3311.3%	250.0 3511.3%	260.0 3711.3%	270.0 3911.3%	280.0 4111.3%	290.0 4311.3%	300.0 4511.3%	310.0 4711.3%	320.0 4911.3%	330.0 5111.3%	340.0 5311.3%	350.0 5511.3%	360.0 5711.3%	370.0 5911.3%	380.0 6111.3%	390.0 6311.3%	400.0 6511.3%	410.0 6711.3%	420.0 6911.3%	430.0 7111.3%	440.0 7311.3%	450.0 7511.3%	460.0 7711.3%	470.0 7911.3%	480.0 8111.3%	490.0 8311.3%	500.0 8511.3%	510.0 8711.3%	520.0 8911.3%	530.0 9111.3%	540.0 9311.3%	550.0 9511.3%	560.0 9711.3%	570.0 9911.3%	580.0 10111.3%	590.0 10311.3%	600.0 10511.3%	610.0 10711.3%	620.0 10911.3%	630.0 11111.3%	640.0 11311.3%	650.0 11511.3%	660.0 11711.3%	670.0 11911.3%	680.0 12111.3%	690.0 12311.3%	700.0 12511.3%	710.0 12711.3%	720.0 12911.3%	730.0 13111.3%	740.0 13311.3%	750.0 13511.3%	760.0 13711.3%	770.0 13911.3%	780.0 14111.3%	790.0 14311.3%	800.0 14511.3%	810.0 14711.3%	820.0 14911.3%	830.0 15111.3%	840.0 15311.3%	850.0 15511.3%	860.0 15711.3%	870.0 15911.3%	880.0 16111.3%	890.0 16311.3%	900.0 16511.3%	910.0 16711.3%	920.0 16911.3%	930.0 17111.3%	940.0 17311.3%	950.0 17511.3%	960.0 17711.3%	970.0 17911.3%	980.0 18111.3%	990.0 18311.3%	1000.0 18511.3%	1010.0 18711.3%	1020.0 18911.3%	1030.0 19111.3%	1040.0 19311.3%	1050.0 19511.3%	1060.0 19711.3%	1070.0 19911.3%	1080.0 20111.3%	1090.0 20311.3%	1100.0 20511.3%	1110.0 20711.3%	1120.0 20911.3%	1130.0 21111.3%	1140.0 21311.3%	1150.0 21511.3%	1160.0 21711.3%	1170.0 21911.3%	1180.0 22111.3%	1190.0 22311.3%	1200.0 22511.3%	1210.0 22711.3%	1220.0 22911.3%	1230.0 23111.3%	1240.0 23311.3%	1250.0 23511.3%	1260.0 23711.3%	1270.0 23911.3%	1280.0 24111.3%	1290.0 24311.3%	1300.0 24511.3%	1310.0 24711.3%	1320.0 24911.3%	1330.0 25111.3%	1340.0 25311.3%	1350.0 25511.3%	1360.0 25711.3%	1370.0 25911.3%	1380.0 26111.3%	1390.0 26311.3%	1400.0 26511.3%	1410.0 26711.3%	1420.0 26911.3%	1430.0 27111.3%	1440.0 27311.3%	1450.0 27511.3%	1460.0 27711.3%	1470.0 27911.3%	1480.0 28111.3%	1490.0 28311.3%	1500.0 28511.3%	1510.0 28711.3%	1520.0 28911.3%	1530.0 29111.3%	1540.0 29311.3%	1550.0 29511.3%	1560.0 29711.3%	1570.0 29911.3%	1580.0 30111.3%	1590.0 30311.3%	1600.0 30511.3%	1610.0 30711.3%	1620.0 30911.3%	1630.0 31111.3%	1640.0 31311.3%	1650.0 31511.3%	1660.0 31711.3%	1670.0 31911.3%	1680.0 32111.3%	1690.0 32311.3%	1700.0 32511.3%	1710.0 32711.3%	1720.0 32911.3%	1730.0 33111.3%	1740.0 33311.3%	1750.0 33511.3%	1760.0 33711.3%	1770.0 33911.3%	1780.0 34111.3%	1790.0 34311.3%	1800.0 34511.3%	1810.0 34711.3%	1820.0 34911.3%	1830.0 35111.3%	1840.0 35311.3%	1850.0 35511.3%	1860.0 35711.3%	1870.0 35911.3%	1880.0 36111.3%	1890.0 36311.3%	1900.0 36511.3%	1910.0 36711.3%	1920.0 36911.3%	1930.0 37111.3%	1940.0 37311.3%	1950.0 37511.3%	1960.0 37711.3%	1970.0 37911.3%	1980.0 38111.3%	1990.0 38311.3%	2000.0 38511.3%	2010.0 38711.3%	2020.0 38911.3%	2030.0 39111.3%	2040.0 39311.3%	2050.0 39511.3%	2060.0 39711.3%	2070.0 39911.3%	2080.0 40111.3%	2090.0 40311.3%	2100.0 40511.3%	2110.0 40711.3%	2120.0 40911.3%	2130.0 41111.3%	2140.0 41311.3%	2150.0 41511.3%	2160.0 41711.3%	2170.0 41911.3%	2180.0 42111.3%	2190.0 42311.3%	2200.0 42511.3%	2210.0 42711.3%	2220.0 42911.3%	2230.0 43111.3%	2240.0 43311.3%	2250.0 43511.3%	2260.0 43711.3%	2270.0 43911.3%	2280.0 44111.3%	2290.0 44311.3%	2300.0 44511.3%	2310.0 44711.3%	2320.0 44911.3%	2330.0 45111.3%	2340.0 45311.3%	2350.0 45511.3%	2360.0 45711.3%	2370.0 45911.3%	2380.0 46111.3%	2390.0 46311.3%	2400.0 46511.3%	2410.0 46711.3%	2420.0 46911.3%	2430.0 47111.3%	2440.0 47311.3%	2450.0 47511.3%	2460.0 47711.3%	2470.0 47911.3%	2480.0 48111.3%	2490.0 48311.3%	2500.0 48511.3%	2510.0 48711.3%	2520.0 48911.3%	2530.0 49111.3%	2540.0 49311.3%	2550.0 49511.3%	2560.0 49711.3%	2570.0 49911.3%	2580.0 50111.3%	2590.0 50311.3%	2600.0 50511.3%	2610.0 50711.3%	2620.0 50911.3%	2630.0 51111.3%	2640.0 51311.3%	2650.0 51511.3%	2660.0 51711.3%	2670.0 51911.3%	2680.0 52111.3%	2690.0 52311.3%	2700.0 52511.3%	2710.0 52711.3%	2720.0 52911.3%	2730.0 53111.3%	2740.0 53311.3%	2750.0 53511.3%	2760.0 53711.3%	2770.0 53911.3%	2780.0 54111.3%	2790.0 54311.3%	2800.0 54511.3%	2810.0 54711.3%	2820.0 54911.3%	2830.0 55111.3%	2840.0 55311.3%	2850.0 55511.3%	2860.0 55711.3%	2870.0 55911.3%	2880.0 56111.3%	2890.0 56311.3%	2900.0 56511.3%	2910.0 56711.3%	2920.0 56911.3%	2930.0 57111.3%	2940.0 57311.3%	2950.0 57511.3%	2960.0 57711.3%	2970.0 57911.3%	2980.0 58111.3%	2990.0 58311.3%	3000.0 58511.3%	3010.0 58711.3%	3020.0 58911.3%	3030.0 59111.3%	3040.0 59311.3%	3050.0 59511.3%	3060.0 59711.3%	3070.0 59911.3%	3080.0 60111.3%	3090.0 60311.3%	3100.0 60511.3%	3110.0 60711.3%	3120.0 60911.3%	3130.0 61111.3%	3140.0 61311.3%	3150.0 61511.3%	3160.0 61711.3%	3170.0 61911.3%	3180.0 62111.3%	3190.0 62311.3%	3200.0 62511.3%	3210.0 62711.3%	3220.0 62911.3%	3230.0 63111.3%	3240.0 63311.3%	3250.0 63511.3%	3260.0 63711.3%	3270.0 63911.3%	3280.0 64111.3%	3290.0 64311.3%	3300.0 64511.3%	3310.0 64711.3%	3320.0 64911.3%	3330.0 65111.3%	3340.0 65311.3%	3350.0 65511.3%	3360.0 65711.3%	3370.0 65911.3%	3380.0 66111.3%	3390.0 66311.3%	3400.0 66511.3%	3410.0 66711.3%	3420.0 66911.3%	3430.0 67111.3%	3440.0 67311.3%	3450.0 67511.3%	3460.0 67711.3%	3470.0 67911.3%	3480.0 68111.3%	3490.0 68311.3%	3500.0 68511.3%	3510.0 68711.3%	3520.0 68911.3%	3530.0 69111.3%	3540.0 69311.3%	3550.0 69511.3%	3560.0 69711.3%	3570.0 69911.3%	3580.0 70111.3%	3590.0 70311.3%	3600.0 70511.3%	3610.0 70711.3%	3620.0 70911.3%	3630.0 71111.3%	3640.0 71311.3%	3650.0 71511.3%	3660.0 71711.3%	3670.0 71911.3%	3680.0 72111.3%	3690.0 72311.3%	3700.0 72511.3%	3710.0 72711.3%	3720.0 72911.3%	3730.0 73111.3%	3740.0 73311.3%	3750.0 73511.3%	3760.0 73711.3%	3770.0 73911.3%	3780.0 74111.3%	3790.0 74311.3%	3800.0 74511.3%	3810.0 74711.3%	3820.0 74911.3%	3830.0 75111.3%	3840.0 75311.3%	3850.0 75511.3%	3860.0 75711.3%	3870.0 75911.3%	3880.0 76111.3%	3890.0 76311.3%	3900.0 76511.3%	3910.0 76711.3%	3920.0 76911.3%	3930.0 77111.3%	3940.0 77311.3%	3950.0 77511.3%	3960.0 77711.3%	3970.0 77911.3%	3980.0 78111.3%	3990.0 78311.3%	4000.0 78511.3%	4010.0 78711.3%	4020.0 78911.3%	4030.0 79111.3%	4040.0 79311.3%	4050.0 79511.3%	4060.0 79711.3%	4070.0 79911.3%	4080.0 80111.3%	4090.0 80311.3%	4100.0 80511.3%	4110.0 80711.3%	4120.0 80911.3%	4130.0 81111.3%	4140.0 81311.3%	4150.0 81511.3%	4160.0 81711.3%	4170.0 81911.3%	4180.0 82111.3%	4190.0 82311.3%	4200.0 82511.3%	4210.0 82711.3%	4220.0 82911.3%	4230.0 83111.3%	4240.0 83311.3%	4250.0 83511.3%	4260.0 83711.3%	4270.0 83911.3%	4280.0 84111.3%	4290.0 84311.3%	4300.0 84511.3%	4310.0 84711.3%	4320.0 84911.3%	4330.0 85111.3%	4340.0 85311.3%	4350.0 85511.3%	4360.0 85711.3%	4370.0 85911.3%	4380.0 86111.3%	4390.0 86311.3%	4400.0 86511.3%	4410.0 86711.3%	4420.0 86911.3%	4430.0 87111.3%	4440.0 87311.3%	4450.0 87511.3%	4460.0 87711.3%	4470.0 87911.3%	4480.0 88111.3%	4490.0 88311.3%	4500.0 88511.3%	4510.0 88711.3%	4520.0 88911.3%	4530.0 89111.3%	4540.0 89311.3%	4550.0 89511.3%	4560.0 89711.3%	4570.0 89911.3%	4580.0 90111.3%	4590.0 90311.3%	4600.0 90511.3%	4610.0 90711.3%	4620.0 90911.3%	4630.0 91111.3%	4640.0 91311.3%	4650.0 91511.3%	4660.0 91711.3%	4670.0 91911.3%	4680.0 92111.3%	4690.0 92311.3%	4700.0 92511.3%	4710.0 92711.3%	4720.0 92911.3%	4730.0 93111.3%	4740.0 93311.3%	4750.0 93511.3%	4760.0 93711.3%	4770.0 93911.3%	4780.0 94111.3%	4790.0 94311.3%	4800.0 94511.3%	4810.0 94711.3%	4820.0 94911.3%	4830.0 95111.3%	4840.0 95311.3%	4850.0 95511.3%	4860.0 95711.3%	4870.0 95911.3%	4880.0 96111.3%	4890.0 96311.3%	4900.0 96511.3%	4910.0 96711.3%	4920.0 96911.3%	4930.0 97111.3%	4940.0 97311.3%	4950.0 97511.3%	4960.0 97711.3%	4970.0 97911.3%	4980.0 98111.3%	4990.0 98311.3%	5000.0 98511.3%	5010.0 98711.3%	5020.0 98911.3%	5030.0 99111.3%	5040.0 99311.3%	5050.0 99511.3%	5060.0 99711.3%	5070.0 99911.3%	5080.0 100111.3%	5090.0 100311.3%	5100.0 100511.3%	5110.0 100711.3%	5120.0 100911.3%	5130.0 101111.3%	5140.0 101311.3%	5150.0 101511.3%	5160.0 101711.3%	5170.0 101911.3%	5180.0 102111.3%	5190.0 102311.3%	5200.0 102511.3%	5210.0 102711.3%	5220.0 102911.3%	5230.0 103111.3%	5240.0 103311.3%	5250.0 103511.3%	5260.0 103711.3%	5270.0 103911.3%	5280.0 104111.3%	5290.0 104311.3%	5300.0 104511.3%	5310.0 104711.3%	5320.0 104911.3%	5330.0 105111.3%	5340.0 105311.3%	5350.0 105511.3%	5360.0 105711.3%	5370.0 105911.3%	5380.0 106111.3%	5390.0 106311.3%	5400.0 106511.3%	5410.0 106711.3%	5420.0 106911.3%	5430.0 107111.3%	5440.0 107311.3%	5450.0 107511.3%	5460.0 107711.3%	5470.0 107911.3%	5480.0 108111.3%	5490.0 108311.3%	5500.0 108511.3%	5510.0 108711.3%	5520.0 108911.3%	5530.0 109111.3%	5540.0 109311.3%	5550.0 109511.3%	5560.0 109711.3%	5570.0 109911.3%	5580.0 110111.3%	5590.0 110311.3%	5600.0 110511.3%	5610.0 110711.3%	5620.0 110911.3%	5630.0 111111.3%	5640.0 111311.3%	5650.0 111511.3%	5660.0 111711.3%	5670.0 111911.3%	5680.0 112111.3%	5690.0 112311.3%	5700.0 112511.3%	5710.0 112711.3%	5720.0 112911.3%	5730.0 113111.3%	5740.0 113311.3%	5750.0 113511.3%	5760.0 113711.3%	5770.0 113911.3%	5780.0 114111.3%	5790.0 114311.3%	5800.0 114511.3%	5810.0 114711.3%	5820.0 114911.3%	5830.0 115111.3%	5840.0 115311.3%	5850.0 115511.3%	5860.0 115711.3%	5870.0 115911.3%	5880.0 116111.3%	5890.0 116311.3%	5900.0 116511.3%	5910.0 116711.3%	5920.0 116911.3%	5930.0 117111.3%	5940.0 117311.3%	5950.0 117511.3%	5960.0 117711.3%	5970.0 117911.3%	5980.0 118111.3%	5990.0 118311.3%	6000.0 118511.3%	6010.0 118711.3%	6020.0 118911.3%	6030.0 119111.3%	6040.0 119311.3%	6050.0 119511.3%	6060.0 119711.3%	6070.0 119911.3%	6080.0 120111.3%	6090.0 120311.3%	6100.0 120511.3%	6110.0 120711.3%	6120.0 120911.3%	6130.0 121111.3%	6140.0 121311.3%	6150.0 121511.3%	6160.0 12171
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CASE 4=C

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.016	.030	.039	.040	.017	.010	.025	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.028	.026	.022	.015	.001	.020	.024	.001	.022
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.004	.001	.000	.001	.001	.000	.000	.000	.000

CASE 4=C

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.401 (13.4%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.269 (85.6%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.307 (65.5%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.577 (74.9%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.545 (77.7%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.945 (91.6%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.611 (64.0%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.749 (90.0%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.204 (122.7%)

CASE 4=C

TABLE XI(CONT)=OVERALL WAVE PARAMETERS,.. DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10)	DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	.024835	STREAM FUNCTION	.000000
	LINEAR			
(11)	DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	.017669	STREAM FUNCTION	.000917
	LINEAR			
(12)	DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	.042575	STREAM FUNCTION	.000000
	LINEAR			
(13)	DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	.027579	STREAM FUNCTION	.003661
	LINEAR			
(14)	DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48)	.317183	STREAM FUNCTION	.525665
	LINEAR			
(15)	DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)	.033243	STREAM FUNCTION	.278230
	LINEAR			

CASE 4=D

11TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .01553 DPT/LO = .02000
 H/DPT = .777657
 L/LO = .422461 PSI/(G*H*T) = -.002296

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.342654e+01	X(2)/(H*T*G) =	-.123281e+01
X(3)/(H*T*G) =	-.499463e+02	X(4)/(H*T*G) =	-.201882e+02
X(5)/(H*T*G) =	-.788821e+03	X(6)/(H*T*G) =	-.298069e+03
X(7)/(H*T*G) =	-.998966e+04	X(8)/(H*T*G) =	-.343589e+04
X(9)/(H*T*G) =	-.103533e+04	X(10)/(H*T*G) =	-.304491e+05
X(11)/(H*T*G) =	-.465498e+06		

[illegible]

CASE 4=D

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.889	.583	.284	.101	.055	.101	.110	.112	.111
	43.7%	15.9%	65.4%	326.7%	681.4%	227.7%	21.4%	242.4%	348.7%
SURFACE	.000	7.078	6.715	4.578	1.430	.273	.046	.012	.000
S/DEPTH=1.6	*****	89.1%	77.8%	53.4%	112.8%	*****	*****	*****	*****
S/DEPTH=1.5	*****								
S/DEPTH=1.4	*****	6.539							
S/DEPTH=1.3	*****	88.2%							
S/DEPTH=1.2	*****	5.635							
S/DEPTH=1.1	*****	87.2%							
S/DEPTH=1.0	*****	4.855	6.534						
S/DEPTH=.9	*****	86.4%	80.1%						
S/DEPTH=.8	*****	4.178	5.719						
S/DEPTH=.7	*****	85.6%	79.3%						
S/DEPTH=.6	*****	3.586	4.985	4.186					
S/DEPTH=.5	*****	84.8%	78.5%	62.5%					
S/DEPTH=.4	*****	3.065	4.318	3.706	1.364	.269	.045	.012	.000
S/DEPTH=.3	*****	84.1%	77.7%	62.0%	58.0%	*****	*****	*****	*****
S/DEPTH=.2	*****	2.601	3.709	3.244	1.240	.249	.043	.010	.000
S/DEPTH=.1	*****	83.4%	77.0%	61.6%	53.9%	*****	*****	*****	*****
S/DEPTH=.0	*****	2.185	3.149	2.799	1.106	.225	.039	.008	.000
S/DEPTH=.9	*****	82.7%	76.4%	61.2%	50.5%	*****	*****	*****	*****
S/DEPTH=.8	*****	1.809	2.630	2.370	.962	.198	.035	.007	.000
S/DEPTH=.7	*****	82.2%	75.8%	60.8%	47.8%	*****	*****	*****	*****
S/DEPTH=.6	*****	1.463	2.143	1.954	.812	.169	.030	.005	.000
S/DEPTH=.5	*****	81.7%	75.4%	60.5%	45.6%	*****	*****	*****	*****
S/DEPTH=.4	*****	1.142	1.884	1.549	.656	.158	.025	.004	.000
S/DEPTH=.3	*****	81.3%	75.0%	60.2%	43.9%	*****	*****	*****	*****
S/DEPTH=.2	*****	.841	1.245	1.154	.496	.105	.019	.003	.000
S/DEPTH=.1	*****	80.9%	74.6%	60.0%	42.6%	*****	*****	*****	*****
S/DEPTH=.0	*****	.553	.822	.765	.332	.071	.013	.002	.000
S/DEPTH=.9	*****	80.7%	74.4%	59.8%	*****	*****	*****	*****	*****
S/DEPTH=.8	*****	.274	.408	.382	.167	.035	.006	.001	.000
S/DEPTH=.7	*****	74.3%	74.3%	59.7%	*****	*****	*****	*****	*****
S/DEPTH=.6	*****	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=0

TABLE 11=DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.889	.583	.284	.101	.055	.011	.011	.011	.011
	43.7%	15.5%	65.4%	-326.7%	681.4%	227.7%	21.4%	-242.0%	-348.7%
SURFACE	.000	167.815	145.513	89.352	22.551	4.026	.460	.489	.000
S/DEPTH=1.6	*****	95.6%	90.4%	76.4%	55.7%	*****	*****	*****	*****
S/DEPTH=1.5	*****								
S/DEPTH=1.4	*****	155.086							
S/DEPTH=1.3	*****	95.15%							
S/DEPTH=1.3	*****	134.031							
S/DEPTH=1.2	*****	94.9%							
S/DEPTH=1.2	*****	116.293	142.544						
S/DEPTH=1.1	*****	94.3%	90.6%						
S/DEPTH=1.1	*****	101.378	129.328						
S/DEPTH=1.0	*****	93.6%	89.8%						
S/DEPTH=1.0	*****	88.865	117.723						
S/DEPTH= .9	*****	92.8%	89.0%	87.724					
S/DEPTH= .9	*****	78.402	107.624	85.198					
S/DEPTH= .8	*****	92.0%	88.2%	77.4%					
S/DEPTH= .8	*****	69.695	98.922	82.971					
S/DEPTH= .7	*****	91.1%	87.4%	77.1%					
S/DEPTH= .7	*****	62.499	91.510	80.595					
S/DEPTH= .6	*****	90.3%	86.5%	76.7%					
S/DEPTH= .6	*****	56.617	85.292	78.381					
S/DEPTH= .5	*****	89.4%	85.8%	76.4%					
S/DEPTH= .5	*****	51.885	80.179	76.408					
S/DEPTH= .4	*****	88.15%	85.0%	76.0%					
S/DEPTH= .4	*****	48.176	76.098	74.734					
S/DEPTH= .3	*****	87.8%	84.3%	75.7%					
S/DEPTH= .3	*****	45.389	72.987	73.199					
S/DEPTH= .2	*****	87.1%	83.8%	75.4%					
S/DEPTH= .2	*****	43.450	70.799	72.428					
S/DEPTH= .1	*****	42.306	69.500	71.839					
S/DEPTH= .1	*****	86.3%	83.1%	75.1%					
S/DEPTH= .0	*****	41.928	69.069	71.641					
S/DEPTH= .0	*****	86.82%	83.10%	75.0%					
					24.251	4.194	.492	.480	.000
					36.5%	*****	*****	*****	*****
					-21.8%	4.944	.702	.413	.000
					29.087	5.621	.860	.359	.000
					-10.6%	*****	*****	*****	*****
					30.914	6.218	1.032	.316	.000
					33.0%	*****	*****	*****	*****
					32.395	6.731	1.158	.253	.000
					2.7%	*****	*****	*****	*****
					33.562	7.156	1.260	.256	.000
					6.8%	*****	*****	*****	*****
					34.040	7.091	1.339	.239	.000
					9.7%	*****	*****	*****	*****
					35.052	7.731	1.396	.227	.000
					11.6%	*****	*****	*****	*****
					35.413	7.876	1.429	.219	.000
					12.6%	*****	*****	*****	*****
					35.533	7.924	1.441	.217	.000
					13.1%	*****	*****	*****	*****

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

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CASE 4=D

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

ETA/HEIGHT=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
THETA =	.889	.583	.284	.101	.055	.010	.010	.112	.111
ETA/HEIGHT=	43.7%	15.5%	-65.4%	.326.7%	691.4%	227.7%	21.4%	-242.4%	-346.7%
SURFACE	242.396	119.800	37.004	7.722	.254	-2.190	-2.844	-2.951	-2.919
S/DEPTH=1.6	55.0%	12.1%	-155.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	209.462	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.4	179.432	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.3	154.400	111.892	86.495	36.144	12.1%	-155.2%	*****	*****	*****
S/DEPTH=1.2	133.295	98.412	75.868	57.828	13.2%	-13.2%	*****	*****	*****
S/DEPTH=1.1	115.284	86.495	75.868	57.828	13.2%	-13.2%	*****	*****	*****
S/DEPTH=1.0	99.730	75.868	57.828	42.326	15.9%	-15.9%	*****	*****	*****
S/DEPTH=.9	86.134	66.307	42.326	35.577	18.2%	-18.2%	*****	*****	*****
S/DEPTH=.8	74.106	57.828	35.577	31.7%	20.8%	-20.8%	*****	*****	*****
S/DEPTH=.7	63.337	49.677	31.7%	26.843	26.8%	-26.8%	*****	*****	*****
S/DEPTH=.6	53.577	42.326	26.843	23.721	31.7%	-31.7%	*****	*****	*****
S/DEPTH=.5	44.624	35.577	23.721	21.0%	35.577	-35.577	*****	*****	*****
S/DEPTH=.4	36.310	28.997	21.0%	18.2%	42.326	-42.326	*****	*****	*****
S/DEPTH=.3	28.495	22.0%	18.2%	15.9%	49.677	-49.677	*****	*****	*****
S/DEPTH=.2	21.058	16.931	15.9%	12.1%	57.828	-57.828	*****	*****	*****
S/DEPTH=.1	13.893	11.193	12.1%	9.9%	66.307	-66.307	*****	*****	*****
S/DEPTH=.0	4.0%	5.568	11.193	8.8%	75.868	-75.868	*****	*****	*****
S/DEPTH=.0	6.903	5.568	11.193	8.8%	86.134	-86.134	*****	*****	*****
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=0

TABLE VI DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

DEPTH	ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
1.6	0.889	0.000	12.131	113.465	84.554	30.122	6.076	1.025	0.272	0.000
1.5	0.889	0.000	92.4%	85.0%	70.0%	34.0%	766.7%	0.000	0.000	0.000
1.4	0.889	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.3	0.889	0.000	103.559	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.2	0.889	0.000	91.7%	89.133	86.6%	84.8%	83.3%	81.0%	78.6%	76.6%
1.1	0.889	0.000	89.133	86.6%	84.8%	83.3%	81.0%	78.6%	76.6%	74.6%
1.0	0.889	0.000	86.6%	84.8%	83.3%	81.0%	78.6%	76.6%	74.6%	72.6%
0.9	0.889	0.000	84.8%	83.3%	81.0%	78.6%	76.6%	74.6%	72.6%	70.6%
0.8	0.889	0.000	83.3%	81.0%	78.6%	76.6%	74.6%	72.6%	70.6%	68.6%
0.7	0.889	0.000	81.0%	78.6%	76.6%	74.6%	72.6%	70.6%	68.6%	66.6%
0.6	0.889	0.000	78.6%	76.6%	74.6%	72.6%	70.6%	68.6%	66.6%	64.6%
0.5	0.889	0.000	76.6%	74.6%	72.6%	70.6%	68.6%	66.6%	64.6%	62.6%
0.4	0.889	0.000	74.6%	72.6%	70.6%	68.6%	66.6%	64.6%	62.6%	60.6%
0.3	0.889	0.000	72.6%	70.6%	68.6%	66.6%	64.6%	62.6%	60.6%	58.6%
0.2	0.889	0.000	70.6%	68.6%	66.6%	64.6%	62.6%	60.6%	58.6%	56.6%
0.1	0.889	0.000	68.6%	66.6%	64.6%	62.6%	60.6%	58.6%	56.6%	54.6%
0.0	0.889	0.000	66.6%	64.6%	62.6%	60.6%	58.6%	56.6%	54.6%	52.6%

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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TABLE VII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.889	.583	.284	.101	.055	.101	.110	.112	.111
	43.7%	15.5%	65.8%	326.7%	661.4%	227.7%	21.4%	242.4%	348.7%
SURFACE	.000	101.723	78.463	47.467	13.453	2.520	.401	.142	.000
S/DEPTH#1.6	.000	94.0%	84.7%	63.3%	91.6%	*****	*****	*****	*****
S/DEPTH#1.5	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH#1.4	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH#1.3	.000	89.491	93.82%	*****	*****	*****	*****	*****	*****
S/DEPTH#1.2	.000	69.998	92.4%	*****	*****	*****	*****	*****	*****
S/DEPTH#1.1	.000	54.370	87.9%	74.826	*****	*****	*****	*****	*****
S/DEPTH#1.0	.000	91.7%	89.8%	87.9%	*****	*****	*****	*****	*****
S/DEPTH# .9	.000	41.867	59.198	59.198	*****	*****	*****	*****	*****
S/DEPTH# .8	.000	91.1%	87.5%	87.5%	*****	*****	*****	*****	*****
S/DEPTH# .7	.000	31.888	46.232	40.201	*****	*****	*****	*****	*****
S/DEPTH# .6	.000	90.4%	86.7%	76.7%	12.214	2.441	.395	.136	.000
S/DEPTH# .5	.000	23.949	35.531	31.974	16.0%	2.052	.344	.098	.000
S/DEPTH# .4	.000	86.1%	86.1%	76.4%	10.040	*****	*****	*****	.000
S/DEPTH# .3	.000	17.659	26.755	24.816	11.62%	1.656	.285	.070	.000
S/DEPTH# .2	.000	89.1%	85.5%	76.2%	7.941	*****	*****	*****	.000
S/DEPTH# .1	.000	12.704	19.616	18.681	2.7%	1.272	.223	.048	.000
S/DEPTH# .0	.000	88.5%	85.0%	76.0%	5.990	*****	*****	*****	.000
S/DEPTH# .0	.000	8.835	13.870	13.514	5.7%	*****	*****	*****	.000
S/DEPTH# .0	.000	88.0%	84.5%	75.7%	4.249	.916	.162	.031	.000
S/DEPTH# .0	.000	5.852	9.321	9.257	*****	*****	*****	*****	.000
S/DEPTH# .0	.000	84.1%	75.5%	75.5%	2.765	.603	.108	.019	.000
S/DEPTH# .0	.000	3.601	5.805	5.856	*****	*****	*****	*****	.000
S/DEPTH# .0	.000	83.7%	75.4%	75.4%	1.575	.347	.063	.010	.000
S/DEPTH# .0	.000	1.964	3.196	3.264	*****	*****	*****	*****	.000
S/DEPTH# .0	.000	*****	*****	*****	.706	.157	.028	.004	.000
S/DEPTH# .0	.000	.854	1.399	1.441	*****	*****	*****	*****	.000
S/DEPTH# .0	.000	*****	*****	*****	.177	.040	.007	.001	.000
S/DEPTH# .0	.000	.211	.346	.359	*****	*****	*****	*****	.000
S/DEPTH# .0	.000	*****	*****	*****	.000	.000	.000	.000	.000
S/DEPTH# .0	.000	*****	*****	*****	*****	*****	*****	*****	.000

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.035	.064	.081	.079	.032	.018	.042	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.039	.037	.031	.022	.001	.026	.033	.000	.028
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.029	.011	.011	.004	.001	.000	.002	.001	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37) .422 (17.8%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38) .213 (=134.8%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39) .254 (=101.8%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40) .467 (=116.9%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41) .447 (=118.1%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42) .957 (= 8.6%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43) .505 (= 98.5%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44) .603 (=136.5%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45) .156 (=169.5%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.047488	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.024081	STREAM FUNCTION	.004832
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.085604	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.038507	STREAM FUNCTION	.028890
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.429150	STREAM FUNCTION	.732608
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.040894	STREAM FUNCTION	.286143

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5TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (g/6.28318) * T^2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

HAVE CHARACTERISTICS

H/LO = .009752 DPT/LO = .050000
 H/DPT = .195032
 L/LO = .541016 PSI/(G*H*T) = .002188

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = .646213E01 X(2)/(H*T*G) = .541774E02
 X(3)/(H*T*G) = .383873E03 X(4)/(H*T*G) = .207385E04
 X(5)/(H*T*G) = .548613E06

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TABLE I=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA =	0	10.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.623	.603	.548	.257	.007	.177	.334	.377
	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	=14.6%	=32.6%
SURFACE	7.659	7.412	6.711	5.666	3.093	.072	=3.844	=4.315
S/DEPTH=1.1	20.3%	18.9%	14.7%	7.1%	=25.4%	*****	=15.2%	=33.1%
S/DEPTH=1.0	19.4%	18.2%	14.4%	6.4%	3.072	*****		
S/DEPTH= .9	17.9%	16.7%	13.1%	5.468	=23.7%	.074		
S/DEPTH= .8	16.3%	15.4%	12.0%	5.272	=21.7%	*****	3.814	4.398
S/DEPTH= .7	15.3%	14.3%	11.1%	5.100	=20.1%	*****	=15.2%	33.5%
S/DEPTH= .6	14.2%	13.2%	10.2%	5.2%	=2.950	.236	=3.736	=4.237
S/DEPTH= .5	13.2%	12.3%	9.4%	4.950	=18.7%	*****	=14.5%	31.7%
S/DEPTH= .4	11.7%	10.9%	8.3%	4.7%	=16.5%	.298	=3.667	=4.183
S/DEPTH= .3	11.2%	10.4%	7.8%	4.3%	=15.7%	.350	=3.606	=4.136
S/DEPTH= .2	10.8%	10.0%	7.5%	3.9%	=14.7%	*****	=13.2%	=28.9%
S/DEPTH= .1	10.5%	9.8%	7.4%	3.6%	=13.6%	.391	=3.555	=4.096
S/DEPTH= .0	10.5%	9.7%	7.3%	3.4%	=12.8%	45.2%	=12.7%	=27.7%
				3.0%	=11.4%	=246.2%	=3.513	=4.062
						.424	=12.3%	=26.8%
							=4.3%	=4.037
							=3.480	=26.1%
							=12.0%	=4.018
							=3.457	=25.8%
							=1.538	=4.007
							43.0%	=25.3%
							=1.521	=4.003
							=3.443	=25.2%
							=1.477	
							=3.438	
							=1.515	
							42.6%	
							=11.6%	

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TABLE 1-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA ETA/HEIGHT	10.0 .623 19.7%	20.0 .603 14.3%	30.0 .465 6.9%	50.0 .257 24.8%	75.0 .007 *****	100.0 100.0 50.9%	130.0 130.0 14.6%	180.0 180.0 32.6%
SURFACE	.000	2.244	3.022	3.659	3.180	2.202	.875	.000
S/DEPTH=1.1	***** 49.6%	47.2%	43.1%	29.7%	2.0%	37.8%	111.7%	*****
S/DEPTH=1.0	***** 48.5%	46.8%	2.694	3.443	3.175			.000
S/DEPTH=.9	***** 47.1%	45.1%	41.7%	30.82	4.5%	2.051	.845	.000
S/DEPTH=.8	***** 45.9%	44.0%	40.7%	29.4%	4.5%	34.1%	112.6%	.000
S/DEPTH=.7	***** 44.9%	43.0%	39.8%	28.7%	4.5%	1.822	196.8%	.000
S/DEPTH=.6	***** 44.0%	42.2%	39.0%	28.1%	4.4%	1.593	105.2%	.000
S/DEPTH=.5	***** 43.2%	41.4%	38.2%	27.6%	4.4%	1.364	102.4%	.000
S/DEPTH=.4	***** 42.6%	40.7%	37.6%	27.1%	4.3%	1.135	102.4%	.000
S/DEPTH=.3	***** 42.0%	40.2%	37.1%	26.7%	4.3%	1.08	100.0%	.000
S/DEPTH=.2	***** 41.6%	39.8%	36.7%	26.4%	4.3%	.680	98.1%	.000
S/DEPTH=.1	***** 41.3%	39.5%	36.5%	26.2%	4.3%	.299	96.7%	.000
S/DEPTH=.0	***** 40.0%	38.3%	36.3%	26.1%	4.2%	.000	95.8%	.000
	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE III=DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)
 THETA = 10.0 20.0 30.0 50.0 75.0 100.0 130.0 180.0
 ETA/HEIGHT= .623 .603 .548 .465 .257 .007 .000
 19.7% 18.4% 14.3% 6.0% 24.8% ***** 50.9% 32.6%

SURFACE	.000	15.202	28.311	37.860	44.904	37.706	25.201	9.650	.000
S/DEPTH=1.1	*****	59.5%	57.0%	52.9%	38.5%	6.0%	46.4%	156.7%	*****
S/DEPTH=1.0	*****	58.8%	56.8%	50.8%	37.9%	37.691	25.263	9.776	.000
S/DEPTH=.9	*****	56.4%	54.4%	32.862	41.117	36.667	42.5%	151.6%	*****
S/DEPTH=.8	*****	54.1%	52.1%	48.7%	36.3%	35.730	25.316	10.103	.000
S/DEPTH=.7	*****	51.9%	50.0%	46.6%	34.8%	7.2%	38.4%	137.3%	*****
S/DEPTH=.6	*****	49.8%	47.9%	44.7%	37.177	34.888	25.330	10.182	.000
S/DEPTH=.5	*****	47.8%	46.0%	42.9%	35.3%	7.3%	35.0%	125.6%	*****
S/DEPTH=.4	*****	46.0%	44.3%	41.3%	34.353	33.515	25.319	10.618	.000
S/DEPTH=.3	*****	44.5%	42.8%	39.9%	32.0%	7.4%	32.8%	116.2%	*****
S/DEPTH=.2	*****	43.2%	41.6%	38.6%	30.9%	7.4%	29.9%	108.6%	*****
S/DEPTH=.1	*****	42.3%	40.7%	38.0%	33.323	32.993	25.260	10.966	.000
S/DEPTH=.0	*****	41.6%	40.0%	37.3%	29.9%	7.4%	28.2%	102.7%	*****
					32.533	32.585	25.229	11.084	.000
					29.1%	7.4%	26.8%	98.3%	*****
					31.974	32.292	25.202	11.167	.000
					28.5%	7.4%	25.9%	95.3%	*****
					31.641	32.116	25.185	11.217	.000
					28.1%	7.4%	25.3%	93.5%	*****
					31.530	32.057	25.179	11.233	.000
					28.0%	7.4%	25.1%	92.9%	*****

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TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA = ETA/HEIGHT	0 19.7%	10.0 18.4%	20.0 14.3%	30.0 6.9%	50.0 4.65	75.0 .257	100.0 50.9%	130.0 177	180.0 32.6%
	.623	.603	.548	.465	.257	.007	.177	.334	.146%
						*****	50.9%	14.6%	
SURFACE	38.090	35.733	29.253	20.173	11.306	12.557	14.766	10.094	7.613
	49.0%	46.6%	38.4%	19.2%	*****	124.1%	63.1%	56.4%	155.7%
S/DEPTH=1.1	37.124	34.997	29.031						
	47.6%	45.5%	37.9%						
S/DEPTH=1.0	32.817	30.998	25.888	18.422	11.567	12.529	13.557	9.729	7.420
	46.4%	44.3%	36.7%	18.9%	*****	123.7%	63.9%	57.2%	161.5%
S/DEPTH=.9	28.791	27.244	22.887	16.497	11.921	10.627	63.9%	8.673	6.670
	45.4%	43.3%	36.0%	19.0%	391.1%	125.4%	11.794	54.8%	155.4%
S/DEPTH=.8	25.012	23.704	20.015	14.587	299.6%	127.0%	63.8%	52.7%	150.3%
	44.5%	42.5%	35.4%	19.1%	245.4%	128.6%	10.121	50.9%	145.9%
S/DEPTH=.7	21.446	20.352	17.260	12.697	21.107	7.450	63.7%	54.49	4.272
	43.7%	41.7%	34.8%	19.1%	21.003	6.112	63.7%	49.4%	142.3%
S/DEPTH=.6	18.061	17.158	14.606	10.830	2.003	6.112	63.7%	48.3%	139.4%
	43.0%	41.0%	34.3%	19.1%	210.4%	130.0%	63.7%	47.4%	137.2%
S/DEPTH=.5	14.827	14.100	11.840	8.985	1.802	4.904	7.002	2.184	1.731
	42.4%	40.5%	33.8%	19.1%	*****	131.4%	63.6%	46.7%	135.5%
S/DEPTH=.4	11.717	11.151	9.545	7.160	1.525	3.802	5.533	1.092	.867
	41.9%	40.0%	33.5%	19.0%	*****	132.5%	63.6%	*****	*****
S/DEPTH=.3	8.704	8.288	7.109	5.354	1.191	2.782	4.110	*****	*****
	41.5%	39.6%	33.2%	19.0%	*****	131.4%	63.5%	*****	*****
S/DEPTH=.2	5.753	5.480	4.715	3.561	.816	1.821	2.721	*****	*****
	41.2%	39.4%	33.0%	18.9%	*****	*****	63.5%	*****	*****
S/DEPTH=.1	2.870	2.735	2.350	1.778	.415	.901	1.355	*****	*****
	41.1%	39.2%	32.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.623	.508	.465	.257	.007	.177	.334	.377
	19.7%	14.3%	6.9%	24.6%	*****	50.9%	14.6%	32.6%
SURFACE	44.289	41.784	35.033	25.939	8.927	.139	2.807	15.603
S/DEPTH#1.1	28.1%	26.3%	20.3%	9.4%	41.4%	*****	26.4%	59.7%
S/DEPTH#1.0	43.043	40.821	34.724	20.248	7.519	.137	2.536	15.153
S/DEPTH#0.9	26.1%	24.5%	19.6%	8.2%	38.4%	*****	27.4%	54.3%
S/DEPTH#0.8	37.593	35.688	30.450	23.130	36.8%	.133	2.158	10.019
S/DEPTH#0.7	24.7%	23.1%	17.9%	7.8%	6.614	*****	27.0%	52.7%
S/DEPTH#0.6	32.645	31.018	26.536	17.560	5.95%	.126	1.818	11.560
S/DEPTH#0.5	23.7%	22.1%	17.1%	7.3%	34.4%	*****	26.5%	51.3%
S/DEPTH#0.4	28.1%	26.7%	22.9%	6.7%	4.872	.116	1.508	9.830
S/DEPTH#0.3	22.8%	21.3%	18.4%	10.378	33.5%	*****	26.1%	50.2%
S/DEPTH#0.2	23.934	22.773	19.585	13.435	4.031	.102	1.222	8.137
S/DEPTH#0.1	20.036	20.6%	15.8%	14.9%	32.8%	*****	25.5%	59.2%
	21.4%	20.0%	15.3%	6.4%	3.205	.085	1.047	6.473
	16.370	15.591	13.435	6.2%	3.205	*****	25.0%	58.4%
	20.5%	19.0%	14.5%	6.0%	2.392	.066	1.047	4.834
	9.546	9.098	7.854	6.0%	3.17%	*****	25.0%	4.834
	20.1%	18.7%	14.3%	4.029	1.589	.045	2.373	7.8%
	8.508	6.013	5.194	5.9%	*****	*****	2.373	5.213
	19.6%	18.5%	14.1%	2.006	.793	.023	2.373	7.3%
	3.138	2.091	2.585	*****	*****	*****	1.183	1.603
	19.7%	18.3%	13.9%	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5= A

TABLE V DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT=	0 .623 19.7%	10.0 .603 18.4%	20.0 .548 14.3%	30.0 .465 6.9%	50.0 .257 24.8%	75.0 .007 *****	100.0 50.9%	130.0 334 14.6%	180.0 377 32.6%
SURFACE	***** .000	11.822	22.246	30.246	37.628	34.025	24.349	10.026	***** .000
S/DEPTH=1.1	***** .000	50.2%	47.9%	44.1%	31.3%	4.7%	34.3%	109.8%	***** *****
S/DEPTH=1.0	***** .000	11.555	22.051	26.936	35.407	33.972	22.736	9.688	***** .000
S/DEPTH=.9	***** .000	49.1%	47.5%	42.7%	31.8%	7.2%	30.7%	110.3%	***** .000
S/DEPTH=.8	***** .000	10.126	19.357	23.546	31.177	30.254	20.207	8.694	***** .000
S/DEPTH=.7	***** .000	47.7%	45.8%	41.7%	31.1%	7.3%	29.5%	106.6%	***** .000
S/DEPTH=.6	***** .000	8.816	16.879	20.392	27.173	26.635	17.674	7.669	***** .000
S/DEPTH=.5	***** .000	45.5%	43.8%	40.8%	30.5%	7.3%	28.4%	103.3%	***** .000
S/DEPTH=.4	***** .000	7.608	14.585	17.437	23.367	23.105	15.142	6.619	***** .000
S/DEPTH=.3	***** .000	6.485	12.448	14.802	19.929	19.654	12.75%	5.547	***** .000
S/DEPTH=.2	***** .000	5.434	10.442	12.006	16.232	16.272	10.083	4.458	***** .000
S/DEPTH=.1	***** .000	4.443	8.544	38.6%	28.9%	7.3%	26.2%	3.355	***** .000
S/DEPTH=.0	***** .000	43.1%	41.5%	38.6%	28.9%	7.3%	26.2%	3.355	***** .000
S/DEPTH=.0	***** .000	42.5%	40.9%	38.1%	28.6%	7.3%	25.8%	3.355	***** .000
S/DEPTH=.0	***** .000	42.1%	40.5%	37.6%	28.3%	7.3%	25.037	2.242	***** .000
S/DEPTH=.0	***** .000	1.713	3.301	4.650	6.336	6.427	2.518	1.123	***** .000
S/DEPTH=.0	***** .000	40.2%	40.2%	37.5%	28.1%	7.3%	25.3%	1.123	***** .000
S/DEPTH=.0	***** .000	.852	1.642	3.115	3.157	3.208	25.3%	***** .000	***** .000
S/DEPTH=.0	***** .000	40.0%	40.0%	37.3%	28.0%	7.3%	25.3%	***** .000	***** .000
S/DEPTH=.0	***** .000	40.0%	40.0%	37.3%	28.0%	7.3%	25.3%	***** .000	***** .000

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

[illegible]

... DEFINED IN EQUATION (28)

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TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.623	.603	.548	.465	.257	.007	.334	.377
	10.7%	10.4%	14.3%	6.9%	-24.8%	*****	-14.6%	-32.6%
SURFACE	1.246	1.207	1.096	.930	.515	.015	.668	.754
S/DEPTH=.1	20.2%	18.9%	14.7%	7.3%	-24.7%	*****	-14.5%	-32.9%
	1.233	1.197	1.093					
S/DEPTH=.10	19.4%	18.2%	14.5%					
	1.177	1.144	1.049	.902	.514	.015	.663	.751
S/DEPTH=.9	18.0%	16.9%	13.3%	6.7%	-22.8%	*****	-14.5%	-33.4%
	1.128	1.098	1.010	.874	.511	.033	.648	.740
S/DEPTH=.8	16.8%	15.7%	12.4%	6.3%	-20.2%	*****	-13.5%	-31.5%
	1.085	1.057	.976	.849	.508	.049	.635	.730
S/DEPTH=.7	15.7%	14.7%	11.6%	6.0%	-18.4%	*****	-12.7%	-29.8%
	1.049	1.022	.946	.828	.504	.062	.624	.721
S/DEPTH=.6	14.7%	13.7%	10.9%	5.6%	-16.7%	*****	-12.0%	-28.4%
	1.017	.993	.921	.809	.501	.073	.614	.714
S/DEPTH=.5	13.8%	12.9%	10.2%	5.3%	-15.3%	-23.78%	-11.4%	-27.2%
	.991	.968	.900	.793	.498	.081	.607	.707
S/DEPTH=.4	13.0%	12.2%	9.6%	5.0%	-14.2%	-19.81%	-10.9%	-26.2%
	.970	.948	.883	.780	.495	.088	.601	.703
S/DEPTH=.3	12.4%	11.6%	9.2%	4.8%	-13.3%	-17.23%	-10.3%	-25.5%
	.954	.932	.869	.770	.493	.093	.596	.699
S/DEPTH=.2	11.9%	11.1%	8.8%	4.6%	-12.6%	-15.52%	-10.3%	-24.9%
	.942	.921	.860	.763	.492	.097	.594	.697
S/DEPTH=.1	11.5%	10.8%	8.5%	4.5%	-12.2%	-14.43%	-10.1%	-24.6%
	.935	.915	.854	.759	.491	.099	.593	.696
S/DEPTH=.0	11.3%	10.6%	8.4%	4.4%	-11.9%	-13.82%	-10.1%	-24.5%
	.933	.912	.853	.757	.490	.100	.593	.696
	11.2%	10.5%	8.3%	4.4%	-11.8%	-13.63%	-10.1%	-24.5%

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION.... DEFINED IN EQ.(35)									
SURFACE	.000	.002	.005	.006	.007	.003	.002	.006	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION.... DEFINED IN EQ.(36)									
SURFACE	.003	.003	.003	.002	.000	.001	.002	.001	.001
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.541 (= 1.8%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.078 (= 4.6%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.088 (= 3.4%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.066 (= 4.0%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.866 (= 4.4%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.896 (= .3%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.072 (= 3.1%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	1.238 (= 5.2%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.372 (= 7.3%)

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TABLE XI(CONT) OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.004482	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.001692	STREAM FUNCTION	.000059
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.005863	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.002977	STREAM FUNCTION	.000126
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.112027	STREAM FUNCTION	.138051
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.030212	STREAM FUNCTION	.059116

CASE 5=B

7TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .019505 DPT/LO = .050000

H/DPT = .390096

L/LO = .566016 PSI/(G*H*T) = -.003854

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.581513e01	X(2)/(H*T*G) =	-.882370e02
X(3)/(H*T*G) =	-.119208e02	X(4)/(H*T*G) =	-.134049e03
X(5)/(H*T*G) =	-.105424e04	X(6)/(H*T*G) =	-.110024e06
X(7)/(H*T*G) =	-.161493e06		

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TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD....DEFINED IN EQUATION (21)

THETA = ETA*HEIGHT=	0 30.1%	10.0 26.8%	20.0 16.4%	30.0 5.0%	50.0 110.1%	75.0 267.7%	100.0 55.7%	130.0 42.3%	160.0 75.8%
SURFACE	9.268 31.9%	8.684 28.5%	7.192 17.8%	5.313 2.0%	1.840 115.3%	.894 273.9%	2.220 54.2%	2.987 45.1%	3.142 77.9%
S/DEPTH=1.2	8.744 27.8%	8.312 25.3%	7.111 16.9%						
S/DEPTH=1.1	8.161 25.1%	7.780 22.7%	6.716 14.5%	5.181 2.1%					
S/DEPTH=1.0	7.657 22.8%	7.318 20.4%	6.369 12.8%	4.931 2.6%	1.889 101.2%				
S/DEPTH=.9	7.222 20.6%	6.919 18.3%	6.067 11.1%	4.820 3.1%	1.956 88.3%	.784 289.5%	2.194 54.6%	2.951 44.9%	3.124 78.7%
S/DEPTH=.8	6.850 18.5%	6.576 16.4%	5.805 9.6%	4.668 3.6%	2.011 78.4%	.645 324.0%	2.091 53.6%	2.917 43.0%	3.106 75.4%
S/DEPTH=.7	6.534 16.8%	6.285 14.7%	5.580 8.3%	4.535 4.0%	2.051 70.7%	.527 367.4%	2.001 52.7%	2.886 41.5%	3.089 72.5%
S/DEPTH=.6	6.270 15.0%	6.040 13.1%	5.390 7.1%	4.420 4.4%	2.080 64.7%	.428 448.0%	1.923 51.9%	2.860 40.1%	3.075 70.1%
S/DEPTH=.5	6.052 13.8%	5.839 11.8%	5.232 6.0%	4.333 4.8%	2.102 60.0%	.347 440.1%	1.858 51.1%	2.839 39.0%	3.063 68.2%
S/DEPTH=.4	5.878 12.8%	5.678 10.8%	5.106 5.2%	4.215 5.1%	2.117 56.4%	.283 444.0%	1.804 50.4%	2.822 38.2%	3.054 66.7%
S/DEPTH=.3	5.746 11.4%	5.555 9.8%	5.009 4.5%	4.144 5.4%	2.128 51.8%	.233 448.0%	1.763 49.9%	2.809 37.6%	3.048 65.6%
S/DEPTH=.2	5.653 10.2%	5.468 9.1%	4.940 4.0%	4.141 5.5%	2.135 52.0%	.199 448.0%	1.733 49.4%	2.802 37.4%	3.043 64.9%
S/DEPTH=.1	5.597 10.3%	5.416 8.7%	4.899 3.7%	4.115 5.7%	2.138 50.9%	.178 448.0%	1.716 49.2%	2.800 37.4%	3.042 64.7%
S/DEPTH=.0	5.579 10.2%	5.399 8.6%	4.886 3.6%	4.106 5.7%	2.140 50.5%	.171 448.0%	1.710 49.1%		

CASE 5=B

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)									
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	30.1%	.716	.673	.562	.420	.150	.077	.196	.269
		26.8%	16.4%	16.4%	3.0%	114.1%	267.7%	55.7%	42.3%
SURFACE	.000	2.084	3.580	4.289	3.963	2.452	1.252	.343	.000
S/DEPTH=1.2	*****	68.1%	63.7%	56.3%	30.7%	30.7%	137.6%	392.9%	*****
	.000	1.909	3.487						
S/DEPTH=1.1	*****	65.1%	62.7%						
	.000	1.656	3.034	3.935					
S/DEPTH=1.0	*****	63.4%	60.6%	55.6%					
	.000	1.431	2.630	3.428	3.688				
S/DEPTH=.9	*****	61.0%	59.2%	54.2%	34.8%				
	.000	1.231	2.267	2.969	3.240	2.273	1.225		
S/DEPTH=.8	*****	60.6%	57.9%	52.9%	33.9%	18.7%	124.7%	.314	.000
	.000	1.050	1.940	2.550	2.818	2.017	1.104		
S/DEPTH=.7	*****	59.3%	56.6%	51.8%	33.1%	17.8%	119.4%	403.4%	.000
	.000	.887	1.641	2.165	2.418	1.762	.978	.281	.000
S/DEPTH=.6	*****	58.2%	55.5%	50.7%	32.4%	17.0%	114.9%	387.7%	.000
	.000	.737	1.366	1.808	2.038	1.507	.847	.246	.000
S/DEPTH=.5	*****	57.3%	54.6%	49.8%	31.8%	16.4%	111.1%	374.7%	.000
	.000	.598	1.111	1.474	1.674	1.253	.711	.208	.000
S/DEPTH=.4	*****	56.4%	53.7%	49.0%	31.2%	15.8%	108.1%	355.7%	.000
	.000	.469	.871	1.158	1.324	1.001	.573	.169	.000
S/DEPTH=.3	*****	55.7%	53.0%	48.3%	30.8%	15.5%	105.7%	338.7%	.000
	.000	.346	.643	.856	.984	.749	.432	.128	.000
S/DEPTH=.2	*****	55.1%	52.5%	47.8%	30.4%	15.2%	103.9%	322.7%	.000
	.000	.228	.424	.565	.652	.499	.289	.086	.000
S/DEPTH=.1	*****	54.7%	52.1%	47.5%	30.2%	15.0%	102.6%	308.7%	.000
	.000	.113	.211	.281	.325	.249	.145	.043	.000
S/DEPTH=.0	*****	*****	*****	47.2%	30.0%	14.8%	*****	*****	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 5=B

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA ETA/HEIGHT=	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
0	.716	.673	.562	.420	.150	.077	.096	.269
30.1%	26.8%	16.4%	11.4%	3.0%	114.1%	267.7%	42.3%	75.8%
SURFACE	28.227	47.938	56.418	49.500	28.166	13.502	3.523	.000
S/DEPTH=1.2	79.1%	75.7%	69.6%	45.8%	24.3%	175.5%	659.6%	*****
S/DEPTH=1.1	26.016	46.821	52.694	47.786	28.401	13.723	3.884	.000
S/DEPTH=1.0	77.4%	75.1%	68.3%	45.1%	17.5%	165.9%	553.8%	*****
S/DEPTH=.9	22.925	41.536	46.2%	46.4%	28.600	14.571	4.225	.000
S/DEPTH=.8	75.2%	72.9%	66.2%	43.209	13.4%	143.8%	488.1%	*****
S/DEPTH=.7	20.319	37.061	47.572	45.097	28.680	15.283	4.524	.000
S/DEPTH=.6	73.1%	70.7%	64.1%	42.5%	10.2%	127.0%	438.9%	*****
S/DEPTH=.5	18.130	33.285	38.834	38.834	28.682	15.871	4.778	.000
S/DEPTH=.4	70.9%	68.5%	64.1%	41.5%	7.7%	114.0%	402.0%	*****
S/DEPTH=.3	10.299	30.114	39.515	37.534	28.638	16.347	4.986	.000
S/DEPTH=.2	68.7%	66.3%	62.0%	40.2%	5.8%	104.1%	374.5%	*****
S/DEPTH=.1	14.780	27.473	36.413	36.119	28.571	16.722	5.149	.000
0	66.3%	64.2%	59.9%	39.2%	28.501	17.004	354.6%	*****
.5	13.533	25.297	33.841	35.180	3.3%	91.1%	341.2%	*****
.4	68.3%	62.1%	57.9%	38.5%	2.6%	87.3%	341.2%	*****
.3	15.526	23.535	31.745	34.514	28.442	17.201	5.336	.000
.2	65.3%	60.1%	56.1%	37.9%	28.403	17.317	333.4%	*****
.1	11.734	22.145	30.085	34.116	28.420	17.317	333.4%	*****
0	60.5%	58.4%	54.5%	37.5%	28.389	17.355	330.8%	*****
.5	11.138	21.096	28.826	35.180	2.0%	84.4%	330.8%	*****
.4	59.0%	57.0%	53.2%	38.5%	2.0%	84.4%	330.8%	*****
.3	10.722	20.363	27.944	34.514	28.442	17.201	5.266	.000
.2	57.9%	55.9%	52.6%	37.9%	2.6%	87.3%	341.2%	*****
.1	10.476	19.930	27.422	34.116	28.403	17.317	333.4%	*****
0	57.2%	55.2%	51.6%	37.5%	28.420	17.317	333.4%	*****
.5	10.395	19.787	27.249	33.983	28.389	17.355	330.8%	*****
.4	56.9%	55.0%	51.4%	37.4%	2.0%	84.4%	330.8%	*****

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TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)									
THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	160.0	
ETA/HEIGHT =	30.1%	26.8%	23.5%	20.2%	17.0%	14.0%	11.0%	8.0%	
SURFACE	53.925	46.945	39.803	32.660	25.517	18.374	11.231	4.088	2.622
S/DEPTH=1.2	65.0%	61.4%	43.2%	48.9%	103.6%	48.0%	221.8%	*****	*****
S/DEPTH=1.1	62.5%	58.8%	42.4%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=1.0	61.4%	57.8%	42.1%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.9	60.4%	56.8%	42.3%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.8	59.5%	56.1%	42.3%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.7	58.6%	55.3%	42.2%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.6	57.8%	54.6%	42.0%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.5	57.0%	53.8%	41.8%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.4	56.3%	53.1%	41.6%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.3	55.5%	52.3%	41.3%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.2	54.8%	51.6%	41.2%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.1	54.1%	50.9%	41.0%	35.5%	267.7%	55.7%	42.3%	75.8%	
S/DEPTH=.0	53.4%	50.2%	40.8%	35.5%	267.7%	55.7%	42.3%	75.8%	

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

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TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD,...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT	0 .716 30.1%	10.0 .673 26.6%	20.0 .562 16.4%	30.0 .420 3.0%	40.0 .280 114.1%	50.0 75.0 267.7%	60.0 100.0 55.7%	70.0 130.0 42.3%	80.0 180.0 75.8%
SURFACE	.000	19.741	34.375	42.096	41.365	27.671	14.913	4.244	.000
S/DEPTH=1.2	.000	70.1%	66.2%	59.7%	37.1%	17.6%	118.6%	380.6%	*****
S/DEPTH=1.1	.000	18.051	33.466	38.608	38.608	38.608	38.608	38.608	*****
S/DEPTH=1.0	.000	67.3%	65.2%	59.0%	59.0%	59.0%	59.0%	59.0%	*****
S/DEPTH=.9	.000	15.608	29.056	33.1%	33.1%	33.1%	33.1%	33.1%	*****
S/DEPTH=.8	.000	65.6%	63.1%	57.8%	57.8%	57.8%	57.8%	57.8%	*****
S/DEPTH=.7	.000	13.450	25.132	29.069	29.069	29.069	29.069	29.069	*****
S/DEPTH=.6	.000	64.3%	62.0%	56.7%	56.7%	56.7%	56.7%	56.7%	*****
S/DEPTH=.5	.000	11.530	21.620	24.938	24.938	24.938	24.938	24.938	*****
S/DEPTH=.4	.000	63.0%	60.7%	55.6%	55.6%	55.6%	55.6%	55.6%	*****
S/DEPTH=.3	.000	9.812	18.455	21.46	21.46	21.46	21.46	21.46	*****
S/DEPTH=.2	.000	61.8%	59.6%	54.7%	54.7%	54.7%	54.7%	54.7%	*****
S/DEPTH=.1	.000	8.260	15.580	17.637	17.637	17.637	17.637	17.637	*****
S/DEPTH=.0	.000	60.7%	58.6%	53.8%	53.8%	53.8%	53.8%	53.8%	*****
S/DEPTH=.9	.000	59.7%	57.6%	53.1%	53.1%	53.1%	53.1%	53.1%	*****
S/DEPTH=.8	.000	5.546	10.507	14.362	14.362	14.362	14.362	14.362	*****
S/DEPTH=.7	.000	58.9%	56.8%	51.3%	51.3%	51.3%	51.3%	51.3%	*****
S/DEPTH=.6	.000	4.334	8.226	11.274	11.274	11.274	11.274	11.274	*****
S/DEPTH=.5	.000	58.2%	56.2%	52.5%	52.5%	52.5%	52.5%	52.5%	*****
S/DEPTH=.4	.000	3.192	6.066	8.332	8.332	8.332	8.332	8.332	*****
S/DEPTH=.3	.000	57.6%	55.6%	52.0%	52.0%	52.0%	52.0%	52.0%	*****
S/DEPTH=.2	.000	2.101	3.996	5.681	5.681	5.681	5.681	5.681	*****
S/DEPTH=.1	.000	*****	55.3%	51.7%	51.7%	51.7%	51.7%	51.7%	*****
S/DEPTH=.0	.000	1.042	1.963	2.751	2.751	2.751	2.751	2.751	*****
S/DEPTH=.9	.000	*****	*****	51.5%	51.5%	51.5%	51.5%	51.5%	*****
S/DEPTH=.8	.000	.000	.000	.000	.000	.000	.000	.000	*****
S/DEPTH=.7	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	*****	*****	*****	*****	*****	*****	*****	*****

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.716	.673	.562	.420	.150	.077	.269	.284
	30.1%	26.8%	16.4%	3.0%	114.1%	267.7%	42.3%	75.8%
SURFACE	.000	14.681	24.251	27.651	23.333	13.428	6.621	1.776
	*****	74.9%	70.4%	65.5%	34.8%	31.4%	144.0%	397.3%
S/DEPTH=1.2	.000	12.599	23.152					*****
	*****	70.8%	68.9%					*****
S/DEPTH=1.1	.000	9.787	18.076	23.701				*****
	*****	68.6%	66.3%	61.8%				*****
S/DEPTH=1.0	.000	7.519	13.952	18.440	20.402			*****
	*****	67.0%	64.6%	60.3%	42.6%			*****
S/DEPTH=.9	.000	5.694	10.613	14.130	15.990	11.579	6.329	*****
	*****	65.3%	63.0%	58.8%	41.7%	9.1%	119.2%	*****
S/DEPTH=.8	.000	4.252	7.920	10.616	12.258	9.156	5.126	*****
	*****	63.8%	61.5%	57.4%	40.9%	7.5%	110.9%	*****
S/DEPTH=.7	.000	3.067	5.791	7.769	9.133	7.007	4.006	*****
	*****	62.3%	60.1%	56.1%	40.1%	6.0%	104.1%	*****
S/DEPTH=.6	.000	2.147	4.047	5.487	6.551	5.143	2.994	*****
	*****	61.0%	58.8%	54.9%	39.4%	4.8%	98.5%	*****
S/DEPTH=.5	.000	1.430	2.704	3.683	4.456	3.566	2.107	*****
	*****	59.8%	57.7%	54.9%	38.8%	4.0%	94.0%	*****
S/DEPTH=.4	.000	.865	1.676	2.292	2.804	2.279	1.363	*****
	*****	56.7%	53.0%	38.3%	33.3%	3.3%	90.5%	*****
S/DEPTH=.3	.000	.484	.920	1.262	1.556	1.280	.773	*****
	*****	54.4%	51.4%	37.9%	33.3%	3.3%	86.9%	*****
S/DEPTH=.2	.000	.211	.401	.552	.685	.568	.346	*****
	*****	52.4%	49.9%	35.5%	31.7%	3.1%	83.7%	*****
S/DEPTH=.1	.000	.052	.099	.137	.170	.142	.087	*****
	*****	50.0%	47.7%	33.3%	30.0%	3.0%	80.0%	*****
S/DEPTH=.0	.000	*****	*****	*****	*****	*****	*****	*****

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TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	30.1%	71.6	67.3	56.2	42.0	31.50	20.77	19.6	28.4
		26.8%	16.4%	16.4%	3.0%	114.1%	267.7%	55.7%	75.8%
SURFACE	1.431	1.345	1.123	.841	.300	-.154	-.392	-.538	-.569
31.2%	27.9%	17.6%	17.6%	1.6%	112.4%	270.8%	58.5%	11.3%	76.3%
8/DEPTH=1.2	1.366	1.300	1.114						
28.0%	25.4%	16.9%	16.9%						
S/DEPTH=1.1	1.292	1.233	1.069	.830					
25.9%	23.5%	15.5%	15.5%	1.0%					
S/DEPTH=1.0	1.226	1.174	1.028	.813	.315				
24.0%	21.8%	14.4%	14.4%	.4%	96.7%				
S/DEPTH= .9	1.167	1.121	1.091	.797	.336	-.131	-.387	-.518	-.558
22.2%	20.1%	15.3%	15.3%	.1%	80.5%	299.4%	59.9%	10.8%	77.1%
S/DEPTH= .8	1.117	1.075	.958	.781	.353	-.102	-.366	-.531	-.565
20.5%	18.6%	12.3%	12.3%	.1%	68.7%	354.8%	60.3%	10.8%	77.1%
S/DEPTH= .7	1.073	1.035	.928	.767	.366	-.077	-.348	-.524	-.561
19.0%	17.2%	11.4%	11.4%	.2%	59.9%	434.3%	60.7%	10.8%	77.1%
S/DEPTH= .6	1.036	1.001	.903	.754	.376	-.057	-.332	-.518	-.558
17.6%	15.9%	10.6%	10.6%	.2%	53.2%	*****	61.1%	36.4%	70.1%
S/DEPTH= .5	1.005	.973	.882	.742	.384	-.040	-.319	-.513	-.555
16.4%	14.8%	9.8%	9.8%	.2%	48.2%	*****	61.4%	34.7%	67.4%
S/DEPTH= .4	.980	.950	.865	.733	.390	-.026	-.308	-.508	-.553
15.4%	13.9%	9.2%	9.2%	.2%	44.4%	*****	61.5%	33.3%	65.2%
S/DEPTH= .3	.961	.933	.851	.725	.394	-.016	-.300	-.505	-.551
14.6%	13.2%	8.7%	8.7%	.1%	41.6%	*****	61.8%	32.2%	63.5%
S/DEPTH= .2	.947	.920	.842	.720	.397	-.009	-.294	-.503	-.550
14.0%	12.7%	8.3%	8.3%	.1%	39.8%	*****	61.9%	31.5%	62.3%
S/DEPTH= .1	.939	.913	.836	.717	.399	-.004	-.290	-.501	-.549
13.7%	12.4%	8.1%	8.1%	.0%	38.7%	*****	62.0%	31.0%	61.6%
S/DEPTH= .0	.937	.910	.834	.715	.399	-.003	-.289	-.501	-.549
13.6%	12.2%	8.0%	8.0%	.0%	38.3%	*****	62.1%	30.8%	61.4%

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TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.012	.021	.028	.030	.013	.008	.021	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.008	.008	.007	.006	.003	.002	.005	.003	.001
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.566 (=1%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.423 (=18.1%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.450 (=13.3%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.873 (=15.6%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.783 (=16.3%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.897 (=6%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.895 (=12.0%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	1.095 (=19.3%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.511 (=26.9%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.018708	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.004446	STREAM FUNCTION	.000051
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.030920	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.007980	STREAM FUNCTION	.000118
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.231827	STREAM FUNCTION	.319382
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.058206	STREAM FUNCTION	.167397

CASE 5=C

9TH ORDER STREAM FUNCTION WAVE THEORY

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318)^{1/3} T^{**2}$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .029163 DPT/LO = .050000
 H/DPT = .583254
 L/LO = .597070 PSI/(G**T) = -.004620

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H**G) = -.496008*01 X(2)/(H**G) = -.100293*01
 X(3)/(H**G) = -.196720*02 X(4)/(H**G) = -.304805*03
 X(5)/(H**G) = -.529054*04 X(6)/(H**G) = -.609545*05
 X(7)/(H**G) = -.751650*06 X(8)/(H**G) = -.102361*06
 X(9)/(H**G) = -.621646*07

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

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TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

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TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

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TABLE IV=DIMENSIONLESS	VERTICAL	ACCELERATION	COMPONENT FIELD...	DEFINED	IN EQUATION (24)			
THETA =	10.0	20.0	30.0	50.0	100.0	130.0	180.0	
ETA/HEIGHT=	.784	.687	.498	.310	.175	.209	.216	
	36.3%	28.3%	5.7%	=36.1%	=442.0%	222.2%	=131.9%	
SURFACE	=62.619	=45.440	=14.359	10.040	28.463	20.225	9.554	1.101
S/DEPTH#1.4	72.9%	63.7%	=5.6%	230.1%	125.0%	92.2%	3.9%	*****
S/DEPTH#1.0	=60.630	=45.437						*****
S/DEPTH#1.3	100.0%	100.0%						*****
S/DEPTH#1.2	=56.258	=43.887						*****
S/DEPTH#1.1	69.9%	62.4%						*****
S/DEPTH#1.0	=51.279	=41.190						*****
S/DEPTH#0.9	69.1%	62.4%						*****
S/DEPTH#0.8	=46.099	=37.861						*****
S/DEPTH#0.7	68.3%	62.3%						*****
S/DEPTH#0.6	=40.953	=34.224						*****
S/DEPTH#0.5	67.5%	62.0%						*****
S/DEPTH#0.4	=35.967	=30.477						*****
S/DEPTH#0.3	66.6%	61.4%						*****
S/DEPTH#0.2	=31.202	=26.736						*****
S/DEPTH#0.1	65.6%	60.8%						*****
S/DEPTH#0.0	=26.677	=23.065						*****
S/DEPTH#0.9	64.8%	60.1%						*****
S/DEPTH#0.8	=22.387	=19.497						*****
S/DEPTH#0.7	64.0%	59.5%						*****
S/DEPTH#0.6	=18.311	=16.040						*****
S/DEPTH#0.5	63.2%	58.9%						*****
S/DEPTH#0.4	=14.420	=12.690						*****
S/DEPTH#0.3	62.6%	58.4%						*****
S/DEPTH#0.2	=9.431	=6.132						*****
S/DEPTH#0.1	62.1%	58.0%						*****
S/DEPTH#0.0	=7.056	=6.245						*****
S/DEPTH#0.9	61.8%	57.7%						*****
S/DEPTH#0.8	=3.110	=3.110						*****
S/DEPTH#0.7	61.3%	56.5%						*****
S/DEPTH#0.6	*****	*****						*****
S/DEPTH#0.5	*****	*****						*****
S/DEPTH#0.4	*****	*****						*****
S/DEPTH#0.3	*****	*****						*****
S/DEPTH#0.2	*****	*****						*****
S/DEPTH#0.1	*****	*****						*****
S/DEPTH#0.0	*****	*****						*****

CASE 5=C

TABLE V DIMENSIONLESS DRAG FORCE COMPONENT FIELD... DEFINED IN EQUATION (25)

THETA ETA/HEIGHT	0 .784 36.3%	10.0 .687 28.3%	20.0 30.0 5.7%	30.0 50.0 36.1%	40.0 75.0 44.2%	50.0 100.0 50.3%	60.0 130.0 82.9%	70.0 180.0 131.9%
SURFACE	72.031	57.496	33.653	16.231	8.535	4.535	2.198	1.547
S/DEPTH .1	45.0%	33.5%	21.9%	15.3%	10.3%	6.3%	3.3%	1.5%
S/DEPTH .1	65.383	57.052	40.0%	28.0%	18.0%	11.0%	6.0%	3.0%
S/DEPTH .1	55.471	49.141	35.0%	24.0%	16.0%	10.0%	6.0%	3.0%
S/DEPTH .1	28.6%	22.2%	16.0%	11.0%	7.0%	4.0%	2.0%	1.0%
S/DEPTH .1	47.237	42.136	29.818	16.0%	10.0%	6.0%	3.0%	1.5%
S/DEPTH .1	24.2%	17.6%	12.0%	8.0%	5.0%	3.0%	1.5%	0.8%
S/DEPTH .1	40.303	36.162	26.032	14.791	8.0%	4.0%	2.0%	1.0%
S/DEPTH .1	20.8%	14.4%	9.0%	5.18%	3.0%	1.5%	0.8%	0.4%
S/DEPTH .1	34.386	31.007	22.648	13.176	7.0%	4.0%	2.0%	1.0%
S/DEPTH .1	17.7%	11.5%	7.0%	4.1%	2.0%	1.0%	0.5%	0.2%
S/DEPTH .1	29.270	26.503	19.598	11.633	6.0%	3.0%	1.5%	0.8%
S/DEPTH .1	14.9%	8.9%	5.0%	3.0%	1.5%	0.8%	0.4%	0.2%
S/DEPTH .1	24.785	22.321	16.825	10.159	5.0%	2.5%	1.2%	0.6%
S/DEPTH .1	12.5%	6.6%	4.0%	2.0%	1.0%	0.5%	0.2%	0.1%
S/DEPTH .1	20.799	18.954	14.282	8.717	4.0%	2.0%	1.0%	0.5%
S/DEPTH .1	10.3%	4.6%	2.0%	1.0%	0.5%	0.2%	0.1%	0.0%
S/DEPTH .1	17.206	15.717	11.928	7.392	3.0%	1.5%	0.8%	0.4%
S/DEPTH .1	8.5%	2.9%	1.6%	0.8%	0.4%	0.2%	0.1%	0.0%
S/DEPTH .1	13.922	12.742	9.726	6.085	3.0%	1.5%	0.8%	0.4%
S/DEPTH .1	7.0%	1.4%	0.8%	0.4%	0.2%	0.1%	0.0%	0.0%
S/DEPTH .1	10.877	9.970	7.644	4.819	2.0%	1.0%	0.5%	0.2%
S/DEPTH .1	5.7%	2.3%	1.2%	0.6%	0.3%	0.1%	0.0%	0.0%
S/DEPTH .1	8.010	7.351	5.655	3.586	2.0%	1.0%	0.5%	0.2%
S/DEPTH .1	4.8%	2.6%	1.4%	0.7%	0.4%	0.2%	0.1%	0.0%
S/DEPTH .1	5.272	4.642	3.734	2.377	1.0%	0.5%	0.2%	0.1%
S/DEPTH .1	4.1%	1.3%	0.7%	0.4%	0.2%	0.1%	0.0%	0.0%
S/DEPTH .1	2.616	2.403	1.856	1.184	0.6%	0.3%	0.1%	0.0%
S/DEPTH .1	1.0%	0.8%	0.6%	0.4%	0.2%	0.1%	0.0%	0.0%
S/DEPTH .1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

CASE 5=C

TABLE V1=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)									
THETA =	0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0
ETA/HEIGHT=	36.3%	26.3%	16.8%	7.4%	2.0%	0.0%	0.0%	0.0%	0.0%
SURFACE	0.00	30.717	44.928	47.121	36.648	19.258	8.432	1.913	.000
S/DEPTH=1.4	.000	81.0%	74.4%	64.2%	29.0%	-69.6%	-284.8%	*****	*****
S/DEPTH=1.3	.000	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
S/DEPTH=1.2	.000	77.6%	72.7%	65.5%	50.9	33.2	19.6	10.6	5.3
S/DEPTH=1.1	.000	75.8%	71.3%	62.2%	44.2	28.2	16.7	9.2	4.9
S/DEPTH=1.0	.000	74.3%	69.9%	60.4%	41.8	24.8	14.8	8.8	4.6
S/DEPTH=.9	.000	72.9%	68.4%	58.9%	40.3	23.5	13.5	8.5	4.5
S/DEPTH=.8	.000	71.6%	66.7%	57.2%	39.0	22.2	12.2	8.2	4.2
S/DEPTH=.7	.000	70.2%	65.3%	55.8%	37.6	20.8	10.8	7.8	3.8
S/DEPTH=.6	.000	68.1%	63.2%	53.7%	36.1	19.3	9.3	7.3	3.6
S/DEPTH=.5	.000	66.1%	61.3%	51.7%	34.5	17.7	8.7	7.7	3.4
S/DEPTH=.4	.000	64.2%	59.7%	50.0%	32.8	16.0	8.0	7.0	3.2
S/DEPTH=.3	.000	62.4%	58.1%	48.3%	31.1	14.3	7.3	6.3	3.0
S/DEPTH=.2	.000	60.7%	56.6%	46.6%	29.4	12.6	6.6	5.6	2.8
S/DEPTH=.1	.000	59.1%	55.1%	45.0%	27.8	10.9	5.9	5.1	2.6
S/DEPTH=.0	.000	57.5%	53.5%	43.4%	26.2	9.2	5.2	4.5	2.4

CASE 5=C

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.784	.667	.498	.318	.059	.106	.175	.209	.216
	36.3%	28.3%	5.7%	36.1%	442.0%	222.2%	50.3%	82.9%	131.9%
SURFACE	66.822	49.732	25.094	10.264	.713	.325	.1215	.1867	.1999
S/DEPTH=1.4	58.2%	46.0%	5.0%	88.8%	*****	*****	*****	*****	*****
	57.320	49.671							
S/DEPTH=1.3	100.0%	100.0%							
	43.924	38.439							
S/DEPTH=1.2	36.4%	30.1%							
	33.619	29.673	20.315						
S/DEPTH=1.1	31.0%	24.1%	.9%						
	25.635	22.796	15.959	8.619					
S/DEPTH=1.0	28.8%	20.2%	3.8%	63.2%					
	19.415	17.376	12.402	6.923	.692				
S/DEPTH=.9	23.0%	16.5%	6.5%	62.0%	*****				
	14.549	13.093	9.502	5.456	.617	.279			
S/DEPTH=.8	19.4%	13.1%	9.0%	61.2%	*****	*****			
	10.732	9.704	7.113	4.202	.528	.184	.925	.1540	.1669
S/DEPTH=.7	16.2%	10.1%	11.2%	60.6%	*****	*****	*****	*****	*****
	7.738	7.026	5.234	3.143	.431	.120	.682	.1170	.1274
S/DEPTH=.6	13.3%	7.3%	13.2%	*****	*****	*****	*****	*****	*****
	5.400	4.920	3.702	2.262	.334	.075	.485	.854	.933
S/DEPTH=.5	10.7%	4.9%	15.0%	*****	*****	*****	*****	*****	*****
	3.592	3.281	2.496	1.542	.241	.046	.327	.590	.646
S/DEPTH=.4	8.6%	*****	*****	*****	*****	*****	*****	*****	*****
	2.220	2.032	1.552	.973	.160	.026	.205	.376	.413
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	1.215	1.115	.856	.541	.092	.013	.113	.211	.232
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.530	.486	.375	.236	.042	.006	.050	.093	.103
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.131	.120	.093	.059	.010	.001	.012	.023	.026
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=C

TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD....DEFINED IN EQUATION (28)											
THETA =											
ETA=HEIGHT=											
	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0		
	.784	.687	.498	.318	.059	.106	.175	.209	.216		
36.3%	28.3%	5.7%	-36.1%	-442.0%	222.2%	50.3%	-82.9%	-131.9%			
SURFACE	.000	27.223	35.011	32.026	19.830	8.722	3.516	.770	.000		
	*****	85.4%	77.8%	65.1%	18.5%	-106.3%	-348.7%	*****	*****		
S/DEPTH=1.4	.000	27.189									
	*****	100.0%									
S/DEPTH=1.3	.000	20.934									
	*****	81.0%									
S/DEPTH=1.2	.000	16.027	27.813								
	*****	78.9%	75.7%								
S/DEPTH=1.1	.000	12.180	21.192	25.968							
	*****	77.2%	74.1%	68.1%							
S/DEPTH=1.0	.000	9.167	16.277	20.088	18.383						
	*****	75.6%	72.5%	66.6%	40.1%						
S/DEPTH= .9	.000	6.811	12.215	15.303	14.560	8.108					
	*****	73.9%	70.9%	65.2%	39.9%	-52.2%					
S/DEPTH= .8	.000	4.974	9.002	11.630	11.259	6.554	2.925	.668	.000		
	*****	72.5%	69.4%	63.9%	39.6%	-46.5%	-275.0%	*****	*****		
S/DEPTH= .7	.000	3.548	6.473	8.319	8.448	5.109	2.332	.537	.000		
	*****	70.8%	68.0%	62.7%	39.3%	-41.9%	-255.7%	*****	*****		
S/DEPTH= .6	.000	2.449	4.500	5.845	6.094	3.806	1.772	.411	.000		
	*****	69.4%	66.7%	61.3%	39.0%	-38.3%	-240.4%	*****	*****		
S/DEPTH= .5	.000	1.612	2.980	3.806	4.164	2.672	1.264	.296	.000		
	*****	65.5%	63.5%	60.3%	38.8%	-35.4%	*****	*****	*****		
S/DEPTH= .4	.000	.987	1.834	2.021	2.629	1.724	.827	.194	.000		
	*****	64.5%	64.5%	59.6%	38.5%	*****	*****	*****	*****		
S/DEPTH= .3	.000	.536	1.000	1.328	1.463	.975	.473	.112	.000		
	*****	*****	*****	*****	*****	*****	*****	*****	*****		
S/DEPTH= .2	.000	.232	.435	.580	.645	.435	.212	.050	.000		
	*****	*****	*****	*****	*****	*****	*****	*****	*****		
S/DEPTH= .1	.000	.057	.107	.143	.160	.109	.053	.013	.000		
	*****	*****	*****	*****	*****	*****	*****	*****	*****		
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000		
	*****	*****	*****	*****	*****	*****	*****	*****	*****		

CASE 50C

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.784	.687	.498	.318	.059	.106	.175	.216
	36.3%	28.3%	5.7%	36.1%	442.0%	222.2%	50.3%	82.9%
SURFACE	1.566	1.372	.994	.635	.119	.211	.348	.432
S/DEPTH=1.4	1.509	1.371	8.3%	32.7%	431.5%	225.6%	55.8%	79.8%
S/DEPTH=1.3	1.416	1.300						
S/DEPTH=1.2	1.331	1.232	.972					
S/DEPTH=1.1	1.253	1.169	8.0%	.645				
S/DEPTH=1.0	1.184	1.112	7.6%	25.8%	.134			
S/DEPTH=.9	1.123	1.060	7.1%	21.8%	356.4%			
S/DEPTH=.8	1.069	1.015	6.3%	19.0%	249.2%	.172		
S/DEPTH=.7	1.023	.975	5.5%	16.9%	191.5%	235.0%	.170	.431
S/DEPTH=.6	.984	.941	4.6%	15.5%	155.8%	258.5%	59.8%	132.2%
S/DEPTH=.5	.952	.913	3.8%	14.4%	132.3%	286.3%	81.0%	132.5%
S/DEPTH=.4	.926	.890	3.0%	13.7%	116.1%	318.5%	78.0%	127.3%
S/DEPTH=.3	.906	.873	2.4%	13.1%	104.7%	355.0%	74.2%	122.9%
S/DEPTH=.2	.892	.860	1.8%	12.8%	96.9%	394.3%	71.0%	119.3%
S/DEPTH=.1	.883	.853	1.4%	12.5%	91.8%	433.8%	68.4%	116.6%
S/DEPTH=.0	.881	.850	1.2%	12.4%	88.9%	471.7%	66.4%	114.6%
	10.1%	7.9%	1.1%	12.4%	87.9%	517.0%	65.0%	113.4%
							64.1%	113.0%
							63.8%	113.0%
							62.8%	113.0%
							61.8%	113.0%
							60.8%	113.0%
							59.8%	113.0%
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							51.8%	113.0%
							50.8%	113.0%
							49.8%	113.0%
							48.8%	113.0%
							47.8%	113.0%
							46.8%	113.0%
							45.8%	113.0%
							44.8%	113.0%
							43.8%	113.0%
							42.8%	113.0%
							41.8%	113.0%
							40.8%	113.0%
							39.8%	113.0%
							38.8%	113.0%
							37.8%	113.0%
							36.8%	113.0%
							35.8%	113.0%
							34.8%	113.0%
							33.8%	113.0%
							32.8%	113.0%
							31.8%	113.0%
							30.8%	113.0%
							29.8%	113.0%
							28.8%	113.0%
							27.8%	113.0%
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							22.8%	113.0%
							21.8%	113.0%
							20.8%	113.0%
							19.8%	113.0%
							18.8%	113.0%
							17.8%	113.0%
							16.8%	113.0%
							15.8%	113.0%
							14.8%	113.0%
							13.8%	113.0%
							12.8%	113.0%
							11.8%	113.0%
							10.8%	113.0%
							9.8%	113.0%
							8.8%	113.0%
							7.8%	113.0%
							6.8%	113.0%
							5.8%	113.0%
							4.8%	113.0%
							3.8%	113.0%
							2.8%	113.0%
							1.8%	113.0%
							.8%	113.0%
								113.0%

CASE 5=C

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA#	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.032	.058	.074	.074	.031	-.018	-.043	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.015	.015	.014	.012	.006	.003	-.010	-.007	-.000
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.001	.001	.001	.001	.000	-.001	-.001	-.000	.000

CASE 5-C

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.597 (11.0%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.347 (44.2%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.386 (34.1%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.733 (58.9%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.663 (39.3%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.904 (80.3%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.769 (50.6%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.903 (45.4%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.240 (62.5%)

CASE 5=C

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

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* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (46)
      LINEAR      .045059      STREAM FUNCTION      .000000

(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (47)
      LINEAR      .008734      STREAM FUNCTION      .000566

(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (46)
      LINEAR      .079986      STREAM FUNCTION      .000000

(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (47)
      LINEAR      .015375      STREAM FUNCTION      .001457

(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER
      DEFINED IN EQUATION (48)
      LINEAR      .359235      STREAM FUNCTION      .540586

(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER
      DEFINED IN EQUATION (49)
      LINEAR      .081889      STREAM FUNCTION      .290640
ITERATIONS ON ETA FAILED TO CONVERGE IN 40 ITER

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CASE 5=0

10TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2 * 2$

H WAVE HEIGHT G GRAVITATIONAL CONSTANT

T WAVE PERIOD X(N) NTH STREAM FUNCTION COEFFICIENT

DPT WATER DEPTH L WAVE LENGTH

PSI VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .038997 DPT/LO = .050000

H/DPT = .779945

L/LO = .627344 PSI/(G*H*T) = -.004386

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.396972=01	X(2)/(H*T*G) =	-.915802=02
X(3)/(H*T*G) =	-.223106=02	X(4)/(H*T*G) =	-.497691=03
X(5)/(H*T*G) =	-.114087=03	X(6)/(H*T*G) =	-.237810=04
X(7)/(H*T*G) =	-.602452=05	X(8)/(H*T*G) =	-.129692=05
X(9)/(H*T*G) =	-.547740=06	X(10)/(H*T*G) =	-.426991=06

CASE 5=D

TABLE 1: DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (22)									
THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	40.4%	39	363	207	12	96	137	156	161
		15.4%	29.4%	109.2%	****	234.6%	36.6%	145.3%	210.4%
SURFACE	.000	4.251	4.542	3.956	2.403	.990	.359	.081	.000
	*****	81.3%	66.1%	44.5%	29.2%	241.4%	695.6%	*****	*****
S/DEPTH#1.6	.000								

S/DEPTH#1.5	.000								

S/DEPTH#1.4	.000								

S/DEPTH#1.3	.000								

S/DEPTH#1.2	.000								

S/DEPTH#1.1	.000								

S/DEPTH#1.0	.000								

S/DEPTH# .9	.000								

S/DEPTH# .8	.000								

S/DEPTH# .7	.000								

S/DEPTH# .6	.000								

S/DEPTH# .5	.000								

S/DEPTH# .4	.000								

S/DEPTH# .3	.000								

S/DEPTH# .2	.000								

S/DEPTH# .1	.000								

S/DEPTH# .0	.000								

TABLE 17. DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD... DEFINED IN EQUATION (23)

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TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)			
ETA/HEIGHT	ACCEL	ACCEL	ACCEL
0	0	0	0
0.0	10.0	20.0	30.0
0.089	15.4%	29.4%	40.2%
0.363	20.0	30.0	40.2%
0.502	20.0	30.0	40.2%
0.689	20.0	30.0	40.2%
0.839	20.0	30.0	40.2%
0.982	20.0	30.0	40.2%
1.137	20.0	30.0	40.2%
1.292	20.0	30.0	40.2%
1.447	20.0	30.0	40.2%
1.602	20.0	30.0	40.2%
1.757	20.0	30.0	40.2%
1.912	20.0	30.0	40.2%
2.067	20.0	30.0	40.2%
2.222	20.0	30.0	40.2%
2.377	20.0	30.0	40.2%
2.532	20.0	30.0	40.2%
2.687	20.0	30.0	40.2%
2.842	20.0	30.0	40.2%
2.997	20.0	30.0	40.2%
3.152	20.0	30.0	40.2%
3.307	20.0	30.0	40.2%
3.462	20.0	30.0	40.2%
3.617	20.0	30.0	40.2%
3.772	20.0	30.0	40.2%
3.927	20.0	30.0	40.2%
4.082	20.0	30.0	40.2%
4.237	20.0	30.0	40.2%
4.392	20.0	30.0	40.2%
4.547	20.0	30.0	40.2%
4.702	20.0	30.0	40.2%
4.857	20.0	30.0	40.2%
5.012	20.0	30.0	40.2%
5.167	20.0	30.0	40.2%
5.322	20.0	30.0	40.2%
5.477	20.0	30.0	40.2%
5.632	20.0	30.0	40.2%
5.787	20.0	30.0	40.2%
5.942	20.0	30.0	40.2%
6.097	20.0	30.0	40.2%
6.252	20.0	30.0	40.2%
6.407	20.0	30.0	40.2%
6.562	20.0	30.0	40.2%
6.717	20.0	30.0	40.2%
6.872	20.0	30.0	40.2%
7.027	20.0	30.0	40.2%
7.182	20.0	30.0	40.2%
7.337	20.0	30.0	40.2%
7.492	20.0	30.0	40.2%
7.647	20.0	30.0	40.2%
7.802	20.0	30.0	40.2%
7.957	20.0	30.0	40.2%
8.112	20.0	30.0	40.2%
8.267	20.0	30.0	40.2%
8.422	20.0	30.0	40.2%
8.577	20.0	30.0	40.2%
8.732	20.0	30.0	40.2%
8.887	20.0	30.0	40.2%
9.042	20.0	30.0	40.2%
9.197	20.0	30.0	40.2%
9.352	20.0	30.0	40.2%
9.507	20.0	30.0	40.2%
9.662	20.0	30.0	40.2%
9.817	20.0	30.0	40.2%
9.972	20.0	30.0	40.2%
10.127	20.0	30.0	40.2%
10.282	20.0	30.0	40.2%
10.437	20.0	30.0	40.2%
10.592	20.0	30.0	40.2%
10.747	20.0	30.0	40.2%
10.902	20.0	30.0	40.2%
11.057	20.0	30.0	40.2%
11.212	20.0	30.0	40.2%
11.367	20.0	30.0	40.2%
11.522	20.0	30.0	40.2%
11.677	20.0	30.0	40.2%
11.832	20.0	30.0	40.2%
11.987	20.0	30.0	40.2%
12.142	20.0	30.0	40.2%
12.297	20.0	30.0	40.2%
12.452	20.0	30.0	40.2%
12.607	20.0	30.0	40.2%
12.762			

CASE 5=D

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.839	.562	.363	.207	.012	.096	.137	.156	.161
	40.4%	15.4%	29.4%	109.2%	*****	234.6%	36.6%	145.3%	210.4%
SURFACE	85.518	45.059	20.597	8.534	.538	-.481	1.529	-2.257	-2.470
		5.9%	83.9%	265.6%	*****	*****	*****	*****	*****
S/DEPTH#1.6	48.6%								
	75.630								
S/DEPTH#1.5	61.140								
	100.0%								
S/DEPTH#1.4	50.147	41.098							
	12.3%	3.1%							
S/DEPTH#1.3	41.596	34.811							
	4.0%	1.3%							
S/DEPTH#1.2	34.792	29.800	18.594						
	2.9%	17.3%	70.0%						
S/DEPTH#1.1	29.264	25.225	16.363	6.071					
	9.1%	22.7%	12.2%	196.6%					
S/DEPTH#1.0	24.684	21.500	14.319	7.305	.538				
	14.7%	27.7%	74.5%	190.6%	*****	.456			
S/DEPTH# .9	20.820	18.866	12.844	6.534	.529	*****	1.342	-2.052	-2.256
	19.6%	32.1%	76.7%	185.9%	*****	*****	*****	*****	*****
S/DEPTH# .8	17.500	15.474	10.718	5.767	.509	.367	1.1791	1.791	1.969
	24.0%	36.0%	78.7%	192.2%	*****	*****	1.151	*****	*****
S/DEPTH# .7	14.600	12.979	9.120	5.009	.478	.293	*****	*****	*****
	27.7%	39.4%	80.8%	179.3%	*****	*****	.989	1.531	1.684
S/DEPTH# .6	12.022	10.733	7.830	4.253	.435	.232	*****	*****	*****
	31.1%	42.2%	82.2%	*****	*****	*****	.796	1.273	1.401
S/DEPTH# .5	9.992	8.682	6.229	3.529	.380	.180	*****	*****	*****
	33.6%	44.7%	83.6%	*****	*****	*****	.629	1.017	1.119
S/DEPTH# .4	7.551	6.781	4.901	2.897	.316	.136	*****	*****	*****
	35.8%	46.8%	84.7%	*****	*****	*****	.467	.761	.838
S/DEPTH# .3	5.349	4.993	3.628	2.095	.244	.098	*****	*****	*****
	37.4%	48.1%	85.2%	*****	*****	*****	.309	.507	.558
S/DEPTH# .2	3.647	3.286	2.397	1.392	.166	.063	*****	*****	*****
	*****	*****	*****	*****	*****	*****	.154	.253	.279
S/DEPTH# .1	1.808	1.630	1.192	.595	.084	.031	*****	*****	*****
	*****	*****	*****	*****	*****	*****	.000	.000	.000
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=D

TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT	0 .339 40.42	10.0 15.48	20.0 30.0 36.3 52.04	30.0 50.0 75.0 100.0	50.0 75.0 100.0 130.0	75.0 100.0 130.0 180.0	100.0 130.0 180.0 210.0	130.0 180.0 210.0 250.0	180.0 250.0 250.0 300.0
SURFACE	.000	40.665	45.107	41.273	27.928	12.707	4.834	1.115	.000
S/DEPTH#1.6	.000	86.0%	75.0%	59.7%	7.3%	-157.6%	-567.6%	*****	*****
S/DEPTH#1.5	.000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH#1.4	.000	36.553	39.566	38.047	27.643	12.441	4.521	1.056	.000
S/DEPTH#1.3	.000	84.4%	73.8%	65.7%	28.12%	-109.8%	-505.0%	*****	*****
S/DEPTH#1.2	.000	30.100	28.644	33.135	24.702	11.308	4.108	.977	.000
S/DEPTH#1.1	.000	82.5%	71.2%	64.8%	28.6%	-103.0%	-477.9%	*****	*****
S/DEPTH#1.0	.000	24.888	22.228	20.833	24.702	10.081	4.108	.977	.000
S/DEPTH# .9	.000	60.9%	71.9%	63.9%	28.6%	-97.3%	-440.0%	*****	*****
S/DEPTH# .8	.000	20.637	11.759	20.361	21.796	10.081	4.108	.977	.000
S/DEPTH# .7	.000	79.3%	74.5%	65.7%	28.6%	-103.0%	-477.9%	*****	*****
S/DEPTH# .6	.000	17.136	16.950	20.725	18.933	10.081	4.108	.977	.000
S/DEPTH# .5	.000	77.7%	68.6%	62.2%	29.35%	-97.3%	-440.0%	*****	*****
S/DEPTH# .4	.000	14.218	13.911	17.235	16.116	8.774	3.850	.868	.000
S/DEPTH# .3	.000	76.3%	68.6%	61.5%	29.35%	-92.7%	-456.7%	*****	*****
S/DEPTH# .2	.000	72.4%	62.2%	53.993	13.345	7.403	3.099	.713	.000
S/DEPTH# .1	.000	71.4%	61.7%	50.6%	29.6%	-89.0%	-440.0%	*****	*****
S/DEPTH# .0	.000	4.807	9.671	10.956	10.617	5.080	2.527	.666	.000
	.000	70.5%	67.0%	60.3%	29.7%	-86.1%	-427.5%	*****	*****
	.000	3.902	6.351	8.079	7.928	4.518	1.923	.482	.000
	.000	69.9%	66.4%	59.8%	29.8%	-83.9%	-440.0%	*****	*****
	.000	2.287	4.163	5.321	5.268	3.027	1.895	.311	.000
	.000	69.4%	66.0%	59.5%	29.8%	-82.5%	-440.0%	*****	*****
	.000	1.129	2.061	2.641	2.629	1.518	.551	.156	.000
	.000	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.000	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=D

TABLE VII DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT	0 .039 40.4%	10.0 .502 15.4%	20.0 .363 29.4%	30.0 .207 109.2%	50.0 .012 *****	75.0 .096 234.6%	100.0 .137 36.8%	130.0 .154 145.3%	180.0 .161 210.4%
SURFACE	99.966	41.754	14.986	5.059	.196	.271	.718	.098	-1.087
S/DEPTH#1.6	66.2%	22.3%	990.6%	353.6%	*****	*****	*****	*****	*****
S/DEPTH#1.5	100.0%								
S/DEPTH#1.4	100.0%								
S/DEPTH#1.3	48.411	36.128	12.498						
S/DEPTH#1.2	25.333	16.1%	8.4%						
S/DEPTH#1.1	18.947	10.071	9.932	4.535					
S/DEPTH#1.0	14.191	18.196	7.784	3.731	.196				
S/DEPTH# .9	10.474	9.099	6.001	2.999	.188				
S/DEPTH# .8	11.9%	25.0%	72.5%	*****	*****	.248	.559	.826	.907
S/DEPTH# .7	5.471	4.832	3.333	1.778	.148	.117	.416	.630	.692
S/DEPTH# .6	3.793	3.370	2.364	1.293	.120	.077	.298	.441	.507
S/DEPTH# .5	2.509	2.241	1.593	.889	.090	.048	.202	.319	.351
S/DEPTH# .4	1.344	1.384	.995	.564	.061	.029	.127	.204	.224
S/DEPTH# .3	.843	.758	.549	.315	.036	.019	.071	.114	.126
S/DEPTH# .2	.367	.330	.241	.139	.016	.006	.031	.051	.056
S/DEPTH# .1	.091	.082	.060	.035	.004	.002	.008	.013	.014
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH# .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

SURFACE	39.048	35.397	27.096	14.417	5.553	1.930	.428	.000
S/DEPTH#1.6	89.3%	76.6%	56.1%	18.4%	-236.6%	*****	*****	*****
S/DEPTH#1.5								
S/DEPTH#1.4	33.978							
S/DEPTH#1.3	87.5%							
S/DEPTH#1.2	25.254							
S/DEPTH#1.1	85.5%							
S/DEPTH#1.0	16.730							
S/DEPTH# .9	83.9%							
S/DEPTH# .8	82.2%							
S/DEPTH# .7	81.5%							
S/DEPTH# .6	80.4%							
S/DEPTH# .5	78.7%							
S/DEPTH# .4	77.2%							
S/DEPTH# .3	76.7%							
S/DEPTH# .2	75.6%							
S/DEPTH# .1	74.1%							
S/DEPTH# .0	72.9%							
S/DEPTH# .9	71.2%							
S/DEPTH# .8	69.9%							
S/DEPTH# .7	68.7%							
S/DEPTH# .6	67.9%							
S/DEPTH# .5	66.8%							
S/DEPTH# .4	65.7%							
S/DEPTH# .3	64.6%							
S/DEPTH# .2	63.5%							
S/DEPTH# .1	62.4%							
S/DEPTH# .0	61.3%							
S/DEPTH# .9	60.2%							
S/DEPTH# .8	59.1%							
S/DEPTH# .7	58.0%							
S/DEPTH# .6	56.9%							
S/DEPTH# .5	55.8%							
S/DEPTH# .4	54.7%							
S/DEPTH# .3	53.6%							
S/DEPTH# .2	52.5%							
S/DEPTH# .1	51.4%							
S/DEPTH# .0	50.3%							
S/DEPTH# .9	49.2%							
S/DEPTH# .8	48.1%							
S/DEPTH# .7	47.0%							
S/DEPTH# .6	45.9%							
S/DEPTH# .5	44.8%							
S/DEPTH# .4	43.7%							
S/DEPTH# .3	42.6%							
S/DEPTH# .2	41.5%							
S/DEPTH# .1	40.4%							
S/DEPTH# .0	39.3%							

CASE 5-D

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

[illegible]

CASE 9=0

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.074	.132	.164	.151	.058	.032	.071	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.026	.025	.024	.021	.012	.004	.016	.013	.002
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.036	.012	.007	.007	.001	.001	.001	.002	.005

CASE 5-D

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.627 (15.3%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.241 (=107.2%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.285 (=85.8%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.527 (=95.6%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.488 (=92.8%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.927 (1.4%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.568 (=77.5%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.654 (=101.9%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.166 (=126.9%)

CASE 5=0

TABLE XI(CONT)=OVERALL WAVE PARAMETERS.... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR		
DEFINED IN EQUATION (46)	.090710	STREAM FUNCTION
LINEAR		.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR		
DEFINED IN EQUATION (47)	.014971	STREAM FUNCTION
LINEAR		.005338
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR		
DEFINED IN EQUATION (46)	.169592	STREAM FUNCTION
LINEAR		.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR		
DEFINED IN EQUATION (47)	.025963	STREAM FUNCTION
LINEAR		.036093
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER		
DEFINED IN EQUATION (48)	.499171	STREAM FUNCTION
LINEAR		.874734
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER		
DEFINED IN EQUATION (49)	.100259	STREAM FUNCTION
LINEAR		.241770

CASE 6a

3TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO # DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

H # WAVE HEIGHT G # GRAVITATIONAL CONSTANT

T # WAVE PERIOD X(N) # NTH STREAM FUNCTION COEFFICIENT

DPT # WATER DEPTH L # WAVE LENGTH

PBI # VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO # .018312 DPT/LO # .100002

H/DPT # .183115

L/LO # .718164 PBI/(G*H*T) # -.003155

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) # -.555443E-01 X(2)/(H*T*G) # -.168746E-02

X(3)/(H*T*G) # -.300411E-04

CASE 66A

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	0 12.4%	10.0 11.7%	20.0 9.0%	30.0 5.5%	50.0 2.9%	75.0 1.144	100.0 39.9%	130.0 6.5%	180.0 16.5%
SURFACE	5.293	5.168	4.805	4.241	2.719	.610	1.1213	3.064	3.645
8/DEPTH 1.1	11.5%	10.8%	8.5%	4.9%	0.7%	90.6%	37.5%	6.8%	14.9%
8/DEPTH 1.0	5.274	5.159	4.780	3.998	2.638	.612	1.129	3.008	3.609
8/DEPTH .9	11.0%	10.4%	8.0%	4.1%	7.9%	87.2%	35.9%	6.1%	15.4%
8/DEPTH .8	4.844	4.650	4.177	3.741	2.499	72.6%	31.030	5.8%	13.4%
8/DEPTH .7	8.3%	7.8%	6.3%	3.518	2.376	.632	33.6%	5.4%	12.4%
8/DEPTH .6	4.252	4.167	3.917	3.1%	2.269	.635	31.4%	5.2%	12.1%
8/DEPTH .5	7.4%	6.9%	5.5%	3.327	2.077	.635	29.9%	4.8%	11.7%
8/DEPTH .4	4.003	3.925	3.65	2.7%	1.77	.635	27.5%	4.5%	11.4%
8/DEPTH .3	6.6%	6.2%	4.9%	3.166	1.55%	.634	25.9%	4.2%	11.1%
8/DEPTH .2	3.794	3.721	3.508	2.3%	1.100	.634	24.6%	4.0%	10.8%
8/DEPTH .1	5.8%	5.5%	4.3%	3.032	8.1%	.634	23.6%	3.9%	10.7%
8/DEPTH .0	3.621	3.553	3.333	2.0%	2.037	.632	23.0%	3.8%	10.6%
8/DEPTH .9	5.12%	4.9%	3.8%	2.924	1.7%	.630	22.4%	3.7%	10.5%
8/DEPTH .8	3.483	3.419	3.29	1.7%	1.47%	.630	21.7%	3.6%	10.4%
8/DEPTH .7	4.7%	4.4%	3.4%	1.7%	1.980	.630	21.1%	3.5%	10.3%
8/DEPTH .6	3.377	3.316	3.134	1.5%	1.5%	.628	20.4%	3.4%	10.2%
8/DEPTH .5	4.3%	4.0%	3.1%	1.7%	1.954	.628	19.7%	3.3%	10.1%
8/DEPTH .4	3.303	3.243	3.067	1.4%	1.3%	.627	19.0%	3.2%	10.0%
8/DEPTH .3	4.0%	3.7%	2.9%	2.749	1.933	.627	18.3%	3.1%	9.9%
8/DEPTH .2	3.259	3.200	3.07	1.3%	1.42%	.626	17.6%	3.0%	9.8%
8/DEPTH .1	3.8%	3.6%	2.7%	1.3%	1.926	.626	16.9%	2.9%	9.7%
8/DEPTH .0	3.244	3.186	3.014	1.2%	1.42%	.626	16.2%	2.8%	9.6%
8/DEPTH .9	3.6%	3.5%	2.7%	1.2%	1.42%	.626	15.5%	2.7%	9.5%

TABLE 1: DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (22)

DEPTH	0	10.0	20.0	30.0	40.0	50.0	75.0	100.0	130.0	160.0
ETA/HEIGHT	12.4%	11.7%	9.4%	5.3%	4.9%	2.9%	112.0%	39.0%	6.5%	16.5%
SURFACE	.000	.630	1.595	2.240	3.056	3.203	2.666	1.363	.000	.000
8/DEPTH 1.1	.000	.620	25.3%	22.6%	15.5%	2.3%	12.0%	35.4%	.000	.000
8/DEPTH 1.0	.000	.619	1.397	1.995	2.644	3.197	2.451	1.310	.000	.000
8/DEPTH .9	.000	.622	1.328	2.15%	2.97%	3.7%	2.143	.353%	.000	.000
8/DEPTH .8	.000	.633	1.036	1.484	2.132	2.400	1.847	.332%	.000	.000
8/DEPTH .7	.000	.452	20.6%	19.1%	13.0%	3.4%	.90%	1.06%	.000	.000
8/DEPTH .6	.000	.377	19.6%	18.2%	13.1%	3.1%	.90%	1.4%	.000	.000
8/DEPTH .5	.000	.307	19.0%	17.4%	12.4%	2.9%	1.563	.300%	.000	.000
8/DEPTH .4	.000	.241	18.3%	16.7%	11.9%	2.4%	1.288	.287%	.000	.000
8/DEPTH .3	.000	.178	17.7%	16.2%	11.5%	2.2%	1.020	.275%	.000	.000
8/DEPTH .2	.000	.117	17.2%	15.8%	11.2%	2.0%	.760	.270%	.000	.000
8/DEPTH .1	.000	.058	16.9%	15.5%	11.0%	2.0%	.504	.265%	.000	.000
8/DEPTH .0	.000	.000	15.3%	15.3%	10.8%	2.0%	.231	.260%	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

TABLE III. DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD... DEFINED IN EQUATION (23)

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[illegible]

CASE 6=A

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA ETA/HEIGHT	0 .571 12.4%	10.0 .558 1.7%	20.0 .519 9.4%	30.0 .458 5.5%	50.0 .293 9.6%	75.0 .061 112.0%	100.0 .144 30.9%	130.0 .360 60.5%	180.0 .429 16.5%
SURFACE	17.123	16.392	14.357	11.437	5.096	.401	.745	.6.140	.9.072
S/DEPTH#1.1	14.5%	13.9%	10.7%	5.7%	13.0%	*****	*****	.9.2%	.21.7%
S/DEPTH#1.0	16.996	16.336	12.314	10.014	4.711	.397	.645	.5.825	.8.790
S/DEPTH# .9	13.8%	13.2%	10.443	8.519	4.052	.358	.528	.9.7%	.23.6%
S/DEPTH# .8	14.420	13.870	10.79%	4.1%	3.458	.319	.431	.4.966	.7.544
S/DEPTH# .7	11.6%	10.9%	7.3%	3.7%	2.919	.279	.431	.4.189	.6.399
S/DEPTH# .6	12.202	11.743	7.361	6.033	2.01%	.238	.348	.9.0%	.21.5%
S/DEPTH# .5	10.67%	10.0%	6.7%	3.3%	2.026	.238	.348	.8.478	.5.338
S/DEPTH# .4	9.9%	9.3%	6.066	4.080	1.969	.198	.276	.8.6%	.20.6%
S/DEPTH# .3	8.569	8.254	4.890	3.0%	1.969	.198	.276	.8.4%	.19.9%
S/DEPTH# .2	7.9%	7.7%	5.9%	2.6%	1.542	.150	.212	.8.4%	.19.9%
S/DEPTH# .1	4.419	4.260	3.009	3.135	.9.1%	.118	.154	.8.2%	.19.3%
S/DEPTH# .0	3.244	3.128	2.798	2.505	1.137	.118	.154	.8.2%	.19.3%
S/DEPTH# .2	7.6%	7.0%	5.4%	2.5%	.8.9%	.079	.100	.8.1%	.18.8%
S/DEPTH# .1	2.130	2.054	1.838	1.515	.749	.079	.100	.8.1%	.18.8%
S/DEPTH# .0	7.4%	6.9%	5.2%	2.4%	*****	.079	.100	.8.1%	.18.8%
S/DEPTH# .0	7.058	1.018	.911	.751	.372	.079	.100	.8.1%	.18.8%
S/DEPTH# .0	7.3%	6.8%	5.1%	*****	*****	.079	.100	.8.1%	.18.8%
S/DEPTH# .0	7.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH# .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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3.2.2. MOMENT COMPONENT FIELD DEFINED IN EQUATION (28)

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TABLE IX. DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD... DEFINED IN EQUATION (29)

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	160.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.004	.007	.009	.010	.005	.003	.008	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.005	.005	.004	.002	.003	.007	.006	.003	.009
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.718 (.12X)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.490 (.02.0X)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.498 (.01.7X)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.988 (.01.9X)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.803 (.01.6X)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.813 (.02X)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.990 (.01.1X)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	1.106 (.01.7X)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.303 (.01.7X)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.006669	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.005266	STREAM FUNCTION	.000039
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.010369	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.008802	STREAM FUNCTION	.000121
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.121155	STREAM FUNCTION	.134962
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.056605	STREAM FUNCTION	.076372

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DEFINITIONS 5TH ORDER STREAM FUNCTION WAVE THEORY

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO=(G/g,28318)*T**2$
H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
DPT = WATER DEPTH L = WAVE LENGTH
PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .016611 DPT/LO = .100002
H/DPT = .166304
L/LO = .743750 PSI/(G*H*T) = -.005873

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.535441=01 X(2)/(H*T*G) = -.340594=02
X(3)/(H*T*G) = -.140295=03 X(4)/(H*T*G) = -.211628=05
X(5)/(H*T*G) = .257621=06

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TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	0 602 22.1%	10.0 .617 20.2%	20.0 .549 14.4%	30.0 .452 4.2%	50.0 .232 38.6%	75.0 .009 *****	100.0 178 51.1%	130.0 320 19.9%	180.0 358 39.5%
SURFACE	6.293	6.045	5.367	4.413	2.281	.036	1.446	2.614	2.919
	20.6%	18.8%	13.2%	3.6%	34.17%	*****	47.9%	19.2%	36.1%
S/DEPTH=.12	6.084	5.899	5.362						
	17.9%	16.7%	13.1%						
S/DEPTH=.11	5.546	5.385	4.918	4.195					
	14.9%	13.6%	9.8%	2.5%					
S/DEPTH=.10	5.085	4.944	4.534	3.898	2.208				
	13.0%	11.8%	8.3%	1.7%	28.9%				
S/DEPTH=.09	4.691	4.566	4.204	3.640	2.125	.126	1.394		
	11.2%	10.2%	6.9%	.9%	26.0%	*****	48.1%	2.523	2.958
S/DEPTH=.08	4.335	4.244	3.922	3.417	2.049	.201	1.262	19.8%	37.3%
	9.6%	8.6%	5.7%	.2%	23.5%	*****	45.6%	2.424	2.777
S/DEPTH=.07	4.073	3.973	3.682	3.227	1.980	.259	1.151	18.2%	34.7%
	8.2%	7.3%	4.6%	1.4%	21.4%	*****	43.6%	2.339	2.706
S/DEPTH=.06	3.837	3.746	3.482	3.066	1.918	.304	1.058	17.0%	32.0%
	6.9%	6.1%	3.6%	.9%	19.7%	*****	41.4%	2.267	2.645
S/DEPTH=.05	3.644	3.561	3.317	2.933	1.865	.339	.983	16.0%	29.8%
	5.8%	5.1%	2.8%	1.3%	18.3%	162.1%	39.4%	2.208	2.594
S/DEPTH=.04	3.491	3.413	3.186	2.827	1.822	.365	.923	15.2%	27.9%
	4.9%	4.2%	2.1%	1.7%	17.1%	135.5%	37.6%	2.162	2.555
S/DEPTH=.03	3.374	3.301	3.086	2.745	1.788	.384	.878	14.5%	26.5%
	4.2%	3.6%	1.8%	2.0%	16.2%	118.1%	36.1%	2.129	2.516
S/DEPTH=.02	3.292	3.222	3.015	2.688	1.763	.396	.846	14.1%	25.5%
	3.7%	3.1%	1.2%	2.2%	15.6%	107.1%	34.9%	2.110	2.509
S/DEPTH=.01	3.244	3.175	2.974	2.653	1.748	.404	.827	13.8%	24.9%
	3.4%	2.8%	1.0%	2.3%	15.2%	101.0%	34.2%	2.103	2.504
S/DEPTH=.00	3.228	3.159	2.960	2.642	1.743	.406	.821	13.7%	24.7%
	3.3%	2.7%	.9%	2.3%	15.1%	99.0%	34.0%		

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TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA ETA/HEIGHT	10.0 0 .642 22.1%	20.0 20.8%	30.0 30.0 4.52 4.2%	50.0 50.0 2.32 38.6%	75.0 75.0 0.09 *****	100.0 100.0 0.178 51.1%	130.0 130.0 0.320 19.9%	180.0 180.0 0.358 39.5%
SURFACE	1.227	2.255	2.970	3.464	2.955	2.054	.835	.000
S/DEPTH=1.2	45.0%	41.6%	36.1%	20.0%	8.8%	44.5%	101.1%	*****
S/DEPTH=1.1	42.8%	41.5%	2.252					
S/DEPTH=1.0	39.3%	37.5%	2.696					
S/DEPTH=.9	37.2%	35.4%	34.3%	3.072				
S/DEPTH=.8	35.3%	33.6%	32.0%	21.7%	2.603	1.973		
S/DEPTH=.7	33.6%	31.9%	30.8%	20.3%	2.4%	3.7%		.000
S/DEPTH=.6	32.1%	30.4%	29.0%	19.1%	2.260	3.741	101.8%	*****
S/DEPTH=.5	30.7%	29.1%	27.6%	18.0%	2.0%	1.513	95.9%	.000
S/DEPTH=.4	29.6%	28.0%	26.3%	16.0%	1.87%	1.289	84.1%	*****
S/DEPTH=.3	28.6%	27.1%	24.8%	15.5%	1.630	3.8%	87.2%	.000
S/DEPTH=.2	27.9%	26.3%	23.7%	14.6%	1.338	1.068	84.1%	*****
S/DEPTH=.1	26.6%	25.8%	23.2%	14.4%	1.1%	.850	81.8%	.000
S/DEPTH=.0	25.0%	24.2%	22.8%	14.4%	1.056	.635	80.1%	*****
	23.5%	22.8%	22.0%	14.4%	.82%	.422	78.4%	.000
	22.0%	21.2%	20.4%	14.4%	.63%	.258	76.3%	.000
	20.5%	19.7%	18.9%	14.4%	.44%	.099	74.2%	.000
	19.0%	18.2%	17.4%	14.4%	.258	.000	72.1%	*****
	17.5%	16.7%	15.9%	14.4%	.099	.000	70.0%	*****
	16.0%	15.2%	14.4%	14.4%	.000	.000	67.9%	*****
	14.5%	13.7%	12.9%	14.4%	.000	.000	65.8%	*****
	13.0%	12.2%	11.4%	14.4%	.000	.000	63.7%	*****
	11.5%	10.7%	9.9%	14.4%	.000	.000	61.6%	*****
	10.0%	9.2%	8.4%	14.4%	.000	.000	59.5%	*****
	8.5%	7.7%	6.9%	14.4%	.000	.000	57.4%	*****
	7.0%	6.2%	5.4%	14.4%	.000	.000	55.3%	*****
	5.5%	4.7%	3.9%	14.4%	.000	.000	53.2%	*****
	4.0%	3.2%	2.4%	14.4%	.000	.000	51.1%	*****
	2.5%	1.7%	.9%	14.4%	.000	.000	49.0%	*****
	1.0%	.2%	.0%	14.4%	.000	.000	46.9%	*****
	.0%	.0%	.0%	14.4%	.000	.000	44.8%	*****
	.0%	.0%	.0%	14.4%	.000	.000	42.7%	*****
	.0%	.0%	.0%	14.4%	.000	.000	40.6%	*****
	.0%	.0%	.0%	14.4%	.000	.000	38.5%	*****
	.0%	.0%	.0%	14.4%	.000	.000	36.4%	*****
	.0%	.0%	.0%	14.4%	.000	.000	34.3%	*****
	.0%	.0%	.0%	14.4%	.000	.000	32.2%	*****
	.0%	.0%	.0%	14.4%	.000	.000	30.1%	*****
	.0%	.0%	.0%	14.4%	.000	.000	28.0%	*****
	.0%	.0%	.0%	14.4%	.000	.000	25.9%	*****
	.0%	.0%	.0%	14.4%	.000	.000	23.8%	*****
	.0%	.0%	.0%	14.4%	.000	.000	21.7%	*****
	.0%	.0%	.0%	14.4%	.000	.000	19.6%	*****
	.0%	.0%	.0%	14.4%	.000	.000	17.5%	*****
	.0%	.0%	.0%	14.4%	.000	.000	15.4%	*****
	.0%	.0%	.0%	14.4%	.000	.000	13.3%	*****
	.0%	.0%	.0%	14.4%	.000	.000	11.2%	*****
	.0%	.0%	.0%	14.4%	.000	.000	9.1%	*****
	.0%	.0%	.0%	14.4%	.000	.000	7.0%	*****
	.0%	.0%	.0%	14.4%	.000	.000	4.9%	*****
	.0%	.0%	.0%	14.4%	.000	.000	2.8%	*****
	.0%	.0%	.0%	14.4%	.000	.000	.7%	*****
	.0%	.0%	.0%	14.4%	.000	.000	.0%	*****

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TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.617	.549	.452	.252	.009	.178	.320	.358
	22.1%	14.4%	4.2%	38.6%	*****	51.1%	19.9%	39.5%
SURFACE	.000	12.246	22.167	29.170	33.026	26.737	17.498	6.619
	*****	60.0%	56.9%	51.8%	35.1%	6.6%	56.6%	171.8%
S/DEPTH#1.2	.000	11.793	22.336					*****
	*****	58.4%	56.8%					*****
S/DEPTH#1.1	.000	10.233	19.447	26.758				*****
	*****	54.9%	53.0%	49.7%				*****
S/DEPTH#1.0	.000	8.952	17.032	23.374	30.199			*****
	*****	52.0%	50.1%	46.8%	34.6%			*****
S/DEPTH# .9	.000	7.849	15.019	20.910	27.327	25.293	17.486	*****
	*****	49.0%	47.2%	44.0%	32.3%	3.2%	50.5%	*****
S/DEPTH# .8	.000	6.953	13.348	18.690	24.892	23.938	17.387	6.955
	*****	46.0%	44.2%	41.1%	30.1%	3.5%	43.2%	*****
S/DEPTH# .7	.000	6.215	11.970	16.653	22.846	22.735	17.226	*****
	*****	43.0%	41.3%	38.4%	28.0%	3.6%	37.5%	*****
S/DEPTH# .6	.000	5.614	10.846	15.350	21.149	21.690	17.035	*****
	*****	40.2%	38.6%	35.8%	26.1%	3.7%	32.9%	*****
S/DEPTH# .5	.000	5.132	9.944	14.139	19.766	20.808	16.839	*****
	*****	37.6%	36.0%	33.2%	24.3%	3.7%	29.3%	*****
S/DEPTH# .4	.000	4.756	9.237	13.188	18.669	20.087	16.656	*****
	*****	35.2%	33.8%	31.3%	22.8%	3.7%	26.5%	*****
S/DEPTH# .3	.000	4.473	8.707	12.473	17.839	19.528	16.501	*****
	*****	33.2%	31.9%	29.6%	21.5%	3.6%	24.5%	*****
S/DEPTH# .2	.000	4.277	8.338	11.975	17.256	19.130	16.383	*****
	*****	31.6%	30.5%	28.3%	20.6%	3.5%	23.0%	*****
S/DEPTH# .1	.000	4.161	8.121	11.682	16.912	18.892	15.311	*****
	*****	30.8%	29.6%	27.4%	20.0%	3.5%	22.2%	*****
S/DEPTH# .0	.000	4.123	8.049	11.595	16.797	18.812	16.286	*****
	*****	30.5%	29.3%	27.2%	19.8%	3.5%	21.9%	*****

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TABLE IV-DIMENSIONLESS VERTICAL
THETA = 0
ETA/HEIGHT = 22.1% 20.2% 14.4% 5.49 4.52 232 0.009 178 130.0 180.0

ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

	31.382	29.207	23.358	15.426	383	11.858	13.876	9.993	7.798
SURFACE	31.382	29.207	23.358	15.426	383	11.858	13.876	9.993	7.798
	42.0%	39.1%	29.1%	5.4%	*****	104.1%	45.7%	60.3%	138.6%
S/DEPTH=1.2	30.204	28.421	23.137						
	39.8%	37.5%	29.1%						
S/DEPTH=1.1	26.915	25.426	21.177	14.787					
	37.4%	35.1%	26.8%	6.3%					
S/DEPTH=1.0	23.773	22.533	18.989	13.644	635				
	36.0%	33.8%	26.1%	7.8%	*****				
S/DEPTH=.9	20.799	19.770	16.825	12.370	1420	9.548	13.106		
	34.6%	32.5%	25.3%	8.6%	*****	108.0%	48.6%		
S/DEPTH=.8	17.998	17.149	14.714	11.021	1863	7.594	11.065	9.036	7.260
	33.2%	31.3%	24.5%	9.3%	255.9%	111.0%	48.6%	61.8%	149.9%
S/DEPTH=.7	15.363	14.667	12.672	9.636	2047	5.997	9.239	7.862	6.438
	32.0%	30.1%	23.7%	9.6%	184.5%	114.2%	48.6%	57.5%	139.9%
S/DEPTH=.6	12.879	12.516	10.701	8.858	2056	4.685	7.597	6.732	5.578
	30.9%	29.1%	23.0%	9.7%	145.8%	117.3%	48.6%	54.1%	131.8%
S/DEPTH=.5	10.527	10.081	8.799	6.841	1879	3.598	6.108	5.590	4.687
	28.9%	28.2%	22.3%	9.7%	122.3%	120.4%	48.5%	51.3%	125.2%
S/DEPTH=.4	7.945	7.945	6.960	5.452	1614	2.686	4.742	4.458	3.774
	26.1%	27.4%	21.7%	9.7%	107.1%	123.1%	48.4%	49.1%	120.1%
S/DEPTH=.3	5.137	5.888	5.172	4.076	1872	1.906	3.474	3.534	2.844
	28.4%	26.8%	21.3%	9.6%	*****	125.4%	48.4%	47.5%	116.2%
S/DEPTH=.2	3.054	3.892	3.425	2.710	876	1.220	2.277	2.218	1.903
	28.0%	26.3%	20.9%	9.5%	*****	*****	48.3%	46.3%	113.5%
S/DEPTH=.1	2.016	1.936	1.706	1.353	446	595	1.127	1.108	.953
	27.7%	26.1%	20.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

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CASE 6=B

TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THE TA ETA/HEIGHT =	0 0	10.0 0	20.0 0	30.0 0	50.0 0	75.0 0	100.0 0	130.0 0	180.0 0
ETA/HEIGHT =	.642 22.1%	.617 20.2%	.549 14.4%	.452 4.2%	.232 38.6%	.009 *****	.178 51.1%	.320 19.9%	.338 39.5%
SURFACE	.000 *****	7.953 47.7%	14.716 44.5%	19.604 39.4%	23.671 24.2%	21.387 22.9%	15.733 37.4%	6.796 95.2%	.000 *****
S/DEPTH=1.2	.000 *****	7.641 45.6%	14.694 44.4%	19.604 39.4%	23.671 24.2%	21.387 22.9%	15.733 37.4%	6.796 95.2%	.000 *****
S/DEPTH=1.1	.000 *****	6.842 42.3%	12.609 40.6%	17.772 37.7%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=1.0	.000 *****	5.586 40.4%	10.789 38.7%	15.260 35.9%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.9	.000 *****	4.748 38.6%	9.189 37.0%	13.039 34.3%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.8	.000 *****	4.010 37.0%	7.774 35.5%	11.063 32.9%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.7	.000 *****	3.353 35.5%	6.510 34.0%	9.289 31.5%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.6	.000 *****	2.762 34.2%	5.371 32.8%	7.681 30.4%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.5	.000 *****	2.226 33.1%	4.333 31.7%	6.209 29.4%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.4	.000 *****	1.732 32.1%	3.376 30.8%	4.845 28.6%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.3	.000 *****	1.272 31.4%	2.480 30.1%	3.564 27.9%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.2	.000 *****	.835 29.6%	1.629 28.6%	2.343 27.5%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.1	.000 *****	.414 28.6%	.807 27.5%	1.162 26.1%	20.989 26.1%	18.874 33.5%	15.122 33.8%	6.233 95.8%	.000 *****
S/DEPTH=.0	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

CASE 6=B

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.642	.617	.549	.452	.232	.009	.320	.358
	22.1%	20.2%	14.4%	4.2%	38.6%	*****	19.9%	39.5%
SURFACE	17.097	15.757	12.417	8.441	2.418	.035	2.177	2.785
S/DEPTH#1.2	12.1%	19.1%	19.8%	3.2%	67.4%	*****	29.2%	51.5%
S/DEPTH#1.1	15.455	14.635	12.383	7.065				
S/DEPTH#1.0	24.9%	23.7%	19.6%	7.065				
S/DEPTH#0.9	11.567	10.976	9.346	5.345	1.972			
S/DEPTH#0.8	19.1%	17.3%	11.6%	4.4%	49.9%	.035		
S/DEPTH#0.7	8.601	8.176	7.001	3.995	1.526	.032	1.716	2.306
S/DEPTH#0.6	16.8%	15.1%	9.8%	1.3%	46.1%	.028	36.7%	73.4%
S/DEPTH#0.5	6.332	6.028	5.188	2.937	1.155	.023	1.257	1.711
S/DEPTH#0.4	14.8%	13.2%	8.1%	2.1%	.43.0%	.018	34.9%	69.0%
S/DEPTH#0.3	4.593	4.379	3.785	2.110	.851	.007	33.4%	65.3%
S/DEPTH#0.2	12.9%	11.4%	6.7%	2.8%	60.4	.003	33.4%	65.3%
S/DEPTH#0.1	3.261	3.113	5.5%	1.466	.407	.000	33.4%	65.3%
S/DEPTH#0.0	1.04%	2.145	1.867	3.44%	.971	.000	33.4%	65.3%
	10.0%	8.6%	4.4%	3.8%	.254	.012	33.4%	65.3%
	8.8%	7.6%	3.5%	.598	.140	.007	33.4%	65.3%
	7.9%	6.7%	.411	.326	.061	.003	33.4%	65.3%
	.490	.470	.179	.142	.015	.001	33.4%	65.3%
	.213	.204	.044	.035	.000	.000	33.4%	65.3%
	.052	.050	.044	.035	.000	.000	33.4%	65.3%
	.000	.000	.000	.000	.000	.000	33.4%	65.3%
	.000	.000	.000	.000	.000	.000	33.4%	65.3%

CASE 6=B

TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA ETA/HEIGHT	10.0 .642 22.1%	20.0 .617 20.2%	30.0 .549 14.4%	40.0 .492 4.2%	50.0 .38.6%	60.0 .232	75.0 .009	100.0 .178	130.0 .320	180.0 .358
							*****	51.1%	19.9%	39.5%
SURFACE	5.824	10.449	13.304	14.374	11.315	7.459	2.906			.000
S/DEPTH=1.2	53.9%	49.9%	43.6%	24.5%	-8.8%					*****
S/DEPTH=1.1	50.7%	49.8%	11.227							
S/DEPTH=1.0	41.81	8.023	41.2%							
	46.2%	44.4%	8.587							
	3.175	6.110	39.1%	11.576						
	43.9%	42.1%	28.5%							
S/DEPTH= .9	2.579	4.589	6.476	8.845	8.931	6.898				
	41.6%	40.0%	37.1%	27.0%	3.5%	35.5%				
S/DEPTH= .8	1.750	3.384	4.794	6.627	6.839	5.416	2.432			.000
	39.5%	37.9%	35.0%	25.5%	3.5%	32.2%	-107.9%			*****
S/DEPTH= .7	1.257	2.435	3.462	4.837	5.089	4.117	1.898			.000
	37.6%	36.1%	33.0%	24.3%	3.6%	29.5%	98.9%			*****
S/DEPTH= .6	.873	1.694	2.416	3.408	3.645	3.003	1.416			.000
	35.8%	34.4%	31.8%	23.1%	3.6%	27.4%	91.7%			*****
S/DEPTH= .5	.577	1.122	1.605	2.283	2.476	2.072	.995			.000
	32.9%	32.0%	30.4%	22.1%	3.5%	25.7%	86.0%			*****
S/DEPTH= .4	.355	.691	.990	1.418	1.556	1.318	.643			.000
	32.9%	32.0%	29.2%	21.3%	3.5%	24.3%	86.0%			*****
S/DEPTH= .3	.193	.377	.541	.779	.863	.738	.364			.000
	32.9%	32.0%	28.6%	20.6%	3.5%	23.3%	86.0%			*****
S/DEPTH= .2	.084	.164	.236	.341	.379	.327	.162			.000
	32.9%	32.0%	28.6%	20.6%	3.5%	23.3%	86.0%			*****
S/DEPTH= .1	.021	.040	.058	.084	.094	.081	.041			.000
	32.9%	32.0%	28.6%	20.6%	3.5%	23.3%	86.0%			*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000			.000
	32.9%	32.0%	28.6%	20.6%	3.5%	23.3%	86.0%			*****

CASE 6MB

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD....DEFINED IN EQUATION (29)

THETA ETA/HEIGHT=	10.0 20.2X	20.0 14.4X	30.0 4.2X	50.0 232	75.0 *****	100.0 51.1X	130.0 19.9X	180.0 39.9X
0	.617	.549	.452	.432	.409	.178	.320	.358
22.1X	20.2X	14.4X	4.2X	232	*****	51.1X	19.9X	39.9X
SURFACE	1.233	1.097	.904	.464	.018	.355	.639	.717
S/DEPTH=1.2	1.2X	1.7X	4.3X	.34.7X	*****X	45.2X	16.9X	33.9X
S/DEPTH=1.1	1.249	1.096	.872	.463	.014	.340	.614	.700
S/DEPTH=1.0	1.124	1.025	.785	.460	.041	.302	.567	.678
S/DEPTH=.9	1.077	.961	.748	.454	.063	.270	.527	.659
S/DEPTH=.8	1.006	.904	.715	.448	.080	.243	.484	.643
S/DEPTH=.7	.921	.854	.687	.442	.093	.221	.454	.629
S/DEPTH=.6	.847	.774	.643	.435	.103	.204	.428	.619
S/DEPTH=.5	.809	.742	.617	.430	.110	.191	.416	.611
S/DEPTH=.4	.779	.717	.611	.425	.115	.182	.407	.607
S/DEPTH=.3	.756	.698	.611	.422	.118	.176	.403	.605
S/DEPTH=.2	.700	.684	.611	.420	.119	.174	.401	.603
S/DEPTH=.1	.731	.676	.611	.420	.119	.174	.401	.603
S/DEPTH=.0	.67X	.674	.609	.419	.17X	.46.2X	.87X	.20.9X

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.019	.034	.044	.046	.020	.012	.030	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.007	.006	.003	.000	.009	.015	.010	.010	.020
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 6-B

TABLE XI-OVERALL WAVE PARAMETERS.. DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.744 (.4.6%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.439 (.48.9%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.480 (.47.6%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.939 (.48.3%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.775 (.47.2%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.826 (.48.0%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.955 (.45.2%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	1.055 (.47.3%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.280 (.47.5%)

CASE 6=8

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.028386	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.011306	STREAM FUNCTION	.000102
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.048241	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.020339	STREAM FUNCTION	.000191
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.257855	STREAM FUNCTION	.309936
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.108556	STREAM FUNCTION	.182958

CASE 6=C

7TH ORDER STREAM FUNCTION WAVE THEORY

LO 0 DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO=(G/6.28318)*T**2$

DEFINITIONS

H 0 WAVE HEIGHT G 0 GRAVITATIONAL CONSTANT
 T 0 WAVE PERIOD X(N) 0 NTH STREAM FUNCTION COEFFICIENT
 DPT 0 WATER DEPTH L 0 WAVE LENGTH
 PSI 0 VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO 0 .054927 DPT/LO 0 .100002
 H/DPT 0 .549254
 L/LO 0 .783203 PSI/(G*H*T) 0 -.007567

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) 0	-.489629=01	X(2)/(H*T*G) 0	-.490251=02
X(3)/(H*T*G) 0	-.402895=03	X(4)/(H*T*G) 0	-.254856=04
X(5)/(H*T*G) 0	-.127397=05	X(6)/(H*T*G) 0	-.109304=06
X(7)/(H*T*G) 0	-.494603=07		

CASE 6=C

TABLE I=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	0 .713 29.9%	10.0 .657 25.0%	20.0 .530 11.4%	30.0 .390 11.1%	50.0 .146 120.1%	75.0 180.0 266 44.0%	100.0 130.0 287 74.0%
SURFACE	7.676	7.006	5.557	4.024	1.537	1.419	2.236
S/DEPTH=1.3	3.06%	25.3%	10.9%	11.7%	108.0%	47.4%	69.4%
S/DEPTH=1.2	6.872	6.535				2.085	
S/DEPTH=1.1	22.5%	19.9%				43.9%	
S/DEPTH=1.0	6.136	5.859	5.089	3.983			
S/DEPTH=.9	17.6%	15.0%	6.7%	9.9%			
S/DEPTH=.8	5.520	5.269	4.645	3.706			
S/DEPTH=.7	14.5%	12.1%	4.5%	10.4%			
S/DEPTH=.6	9.003	4.809	4.263	3.459	1.548		
S/DEPTH=.5	11.5%	9.4%	2.4%	10.6%	83.8%		
S/DEPTH=.4	8.8%	4.405	3.937	3.241	1.550		
S/DEPTH=.3	4.207	4.065	3.660	3.051	72.8%	1.418	
S/DEPTH=.2	6.4%	4.6%	1.1%	11.7%	1.541	49.0%	
S/DEPTH=.1	3.906	3.782	3.426	2.888	64.2%	1.293	2.049
S/DEPTH=.0	4.2%	3.6%	3.232	2.750	1.527	47.1%	46.4%
S/DEPTH=.5	2.3%	3.558	3.073	2.635	57.0%	1.186	2.175
S/DEPTH=.4	3.457	3.358	3.073	2.635	52.1%	1.091	71.9%
S/DEPTH=.3	.7%	.7%	5.0%	12.6%	1.492	1.021	2.138
S/DEPTH=.2	3.298	3.208	2.946	2.542	47.8%	1.066	67.1%
S/DEPTH=.1	.6%	.6%	5.9%	13.1%	1.076	.962	63.0%
S/DEPTH=.0	3.176	3.094	2.850	2.471	44.5%	.916	2.079
S/DEPTH=.5	1.7%	2.0%	6.6%	13.3%	1.462	.916	59.7%
S/DEPTH=.4	3.095	3.015	2.782	2.421	42.1%	.884	2.058
S/DEPTH=.3	2.4%	2.6%	7.1%	13.4%	1.452	.884	57.1%
S/DEPTH=.2	3.045	2.967	2.742	2.392	40.0%	.855	2.042
S/DEPTH=.1	3.9%	3.8%	7.4%	13.5%	1.445	.855	55.2%
S/DEPTH=.0	3.089	2.952	2.729	2.382	39.0%	.859	2.033
	3.1%	4.1%	7.5%	13.5%	1.443	.859	54.1%
					39.0%	.859	2.030
						36.9%	53.8%

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

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CASE 6=C

TABLE III=DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.713	.657	.530	.390	.146	.061	.180	.287
	29.9%	25.0%	11.4%	11.1%	120.1%	313.2%	51.8%	74.4%
SURFACE	.000	22.204	34.371	37.791	32.758	20.743	11.164	3.403
S/DEPTH#1.3	*****	77.5%	71.5%	62.3%	34.0%	29.8%	145.5%	433.2%
S/DEPTH#1.2	*****	19.741						*****
S/DEPTH#1.1	*****	74.7%						*****
S/DEPTH#1.0	*****	16.366	29.347	36.996				*****
S/DEPTH# .9	*****	71.3%	68.2%	62.6%				*****
S/DEPTH# .8	*****	13.677	24.825	31.873				*****
S/DEPTH# .7	*****	68.3%	65.3%	59.9%				*****
S/DEPTH# .6	*****	11.526	21.147	27.598				*****
S/DEPTH# .5	*****	65.1%	62.2%	57.0%				*****
S/DEPTH# .4	*****	9.804	18.160	24.050				*****
S/DEPTH# .3	*****	61.9%	59.1%	54.1%				*****
S/DEPTH# .2	*****	8.423	15.737	21.121				*****
S/DEPTH# .1	*****	58.6%	53.9%	51.1%				*****
S/DEPTH# .0	*****	7.318	13.780	18.722				*****
S/DEPTH# .9	*****	55.3%	52.7%	48.2%				*****
S/DEPTH# .8	*****	6.440	12.213	16.776				*****
S/DEPTH# .7	*****	52.1%	49.6%	45.3%				*****
S/DEPTH# .6	*****	5.751	10.974	15.223				*****
S/DEPTH# .5	*****	49.0%	46.7%	42.8%				*****
S/DEPTH# .4	*****	5.220	10.017	14.013				*****
S/DEPTH# .3	*****	46.2%	44.0%	40.2%				*****
S/DEPTH# .2	*****	43.7%	41.7%	38.2%				*****
S/DEPTH# .1	*****	4.558	8.815	12.682				*****
S/DEPTH# .0	*****	41.9%	40.0%	36.8%				*****
S/DEPTH# .9	*****	4.400	8.528	12.114				*****
S/DEPTH# .8	*****	40.7%	38.9%	35.7%				*****
S/DEPTH# .7	*****	4.348	8.433	11.992				*****
S/DEPTH# .6	*****	40.3%	38.5%	35.3%				*****
S/DEPTH# .5	*****							*****
S/DEPTH# .4	*****							*****
S/DEPTH# .3	*****							*****
S/DEPTH# .2	*****							*****
S/DEPTH# .1	*****							*****
S/DEPTH# .0	*****							*****

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

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CASE 60C

TABLE V DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA ETA/HEIGHT	0 .713 29.9%	10.0 .657 25.0%	20.0 .530 11.4%	30.0 .390 11.1%	50.0 .146 120.1%	75.0 .061 313.2%	100.0 .180 51.8%	130.0 .266 44.0%	180.0 .287 74.4%
SURFACE	28.788	24.998	17.442	10.534	2.428	.026	.997	3.032	3.721
S/DEPTH#1.3	33.2%	25.8%	4.9%	29.7%	183.1%	*****	*****	75.9%	118.7%
S/DEPTH#1.2	19.6%	18.386	14.861	10.308					
S/DEPTH#1.1	12.6%	9.1%	12.496	25.3%					
S/DEPTH#1.0	9.2%	5.9%	4.8%	26.0%					
S/DEPTH# .9	13.570	13.741	10.515	7.550	2.237				
S/DEPTH# .8	6.1%	3.0%	7.0%	26.6%	135.8%	.018	.995		
S/DEPTH# .7	11.284	10.822	8.836	6.429	1.997	*****	*****	2.802	3.510
S/DEPTH# .6	3.5%	.5%	8.9%	27.1%	125.4%	.012	.812	90.4%	131.8%
S/DEPTH# .5	9.352	8.832	7.396	5.440	1.758	*****	*****	2.395	3.028
S/DEPTH# .4	1.2%	1.6%	10.5%	27.6%	117.5%	*****	.659	90.5%	156.8%
S/DEPTH# .3	7.719	7.296	6.142	4.559	1.522	.010	*****	87.9%	151.3%
S/DEPTH# .2	.7%	3.4%	11.8%	27.9%	111.1%	*****	.529	81.647	12.113
S/DEPTH# .1	6.292	5.955	5.036	28.3%	1.292	.009	*****	85.7%	146.7%
S/DEPTH# .0	2.3%	.9%	4.044	30.41	1.066	*****	.319	1.299	1.675
S/DEPTH# .0	3.6%	.1%	13.8%	28.5%	*****	.009	*****	*****	145.1%
S/DEPTH# .0	3.890	3.690	3.139	23.372	.846	*****	*****	.963	1.247
S/DEPTH# .0	4.7%	.0%	14.5%	28.7%	*****	.007	.231	*****	*****
S/DEPTH# .0	2.893	2.699	2.301	1.745	.630	*****	*****	.637	.827
S/DEPTH# .0	5.4%	.7%	15.1%	28.9%	*****	.005	.150	*****	*****
S/DEPTH# .0	1.861	1.767	1.509	1.147	.418	*****	*****	.317	.412
S/DEPTH# .0	6.0%	6.2%	15.4%	*****	*****	.003	.074	*****	*****
S/DEPTH# .0	.921	.874	.747	.569	.208	*****	*****	*****	*****
S/DEPTH# .0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH# .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6MC

TABLE V DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA = ETA/HEIGHT =	0 25.9%	10.0 .657	20.0 .530	30.0 .390	50.0 .146	75.0 313.2%	100.0 51.8%	130.0 m=.266	180.0 m=.287	240.0 m=.744%
SURFACE	12.276	12.276	20.096	23.637	23.495	17.786	11.295	4.066	.000	.000
S/DEPTH=1.3	.652X	.652X	58.3X	48.4X	22.0X	24.9X	89.8X	210.9X	*****	*****
S/DEPTH=1.2	.612X	.612X	11.004	23.111	23.111	16.414	11.284	3.875	.000	.000
S/DEPTH=1.1	.573X	.573X	17.198	49.6X	28.6X	8.6X	77.5X	226.2X	*****	*****
S/DEPTH=1.0	.549X	.549X	54.5X	49.6X	18.090	14.400	10.136	3.485	.000	.000
S/DEPTH=.9	.522X	.522X	14.497	19.675	26.8X	12.442	8.938	216.9X	*****	*****
S/DEPTH=.8	.484X	.484X	52.2X	47.5X	10.876	10.542	7.704	3.056	.000	.000
S/DEPTH=.7	.452X	.452X	18.204	16.708	26.0X	6.3X	64.1X	205.4X	*****	*****
S/DEPTH=.6	.429X	.429X	48.0X	43.8X	8.832	5.8X	6.446	2.594	.000	.000
S/DEPTH=.5	.406X	.406X	46.1X	42.1X	25.3X	5.8X	61.2X	196.2X	*****	*****
S/DEPTH=.4	.383X	.383X	38.0X	38.0X	6.916	5.8X	5.171	2.106	.000	.000
S/DEPTH=.3	.360X	.360X	35.80	37.1X	24.7X	5.4X	59.0X	109.1X	*****	*****
S/DEPTH=.2	.337X	.337X	33.708	37.08	5.101	5.135	3.886	1.597	.000	.000
S/DEPTH=.1	.314X	.314X	31.4X	36.3X	24.3X	5.1X	57.3X	103.7X	*****	*****
S/DEPTH=.0	.291X	.291X	29.1X	34.3X	23.360	5.0X	56.1X	1.073	.000	.000
S/DEPTH=.0	.268X	.268X	26.8X	32.9X	23.9X	4.8X	54.8X	1.539	.000	.000
S/DEPTH=.0	.245X	.245X	24.5X	31.7X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.222X	.222X	22.2X	30.0X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.200X	.200X	20.0X	28.6X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.178X	.178X	17.8X	27.7X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.156X	.156X	15.6X	26.8X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.134X	.134X	13.4X	25.9X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.112X	.112X	11.2X	25.0X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.090X	.090X	9.0X	24.1X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.068X	.068X	6.8X	23.2X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.046X	.046X	4.6X	22.3X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.024X	.024X	2.4X	21.4X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.002X	.002X	.2X	20.5X	23.7X	4.8X	55.4X	1.539	.000	.000
S/DEPTH=.0	.000X	.000X	.0X	.0X	23.7X	4.8X	55.4X	1.539	.000	.000

CASE 6=C

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD....DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.713	.657	.530	.390	.146	.061	.180	.266	.267
	29.9%	25.0%	11.4%	11.1%	120.1%	313.2%	51.6%	44.0%	74.4%
SURFACE	26.608	22.210	14.108	7.590	1.350	.017	.530	.1366	.1620
S/DEPTH#1.3	45.1%	36.9%	12.3%	31.6%	249.0%	*****	*****	66.5%	94.3%
S/DEPTH#1.2	20.076	18.509							
S/DEPTH#1.2	27.3%	24.3%							
S/DEPTH#1.2	14.793	13.712	10.889	7.318					
S/DEPTH#1.1	18.2%	14.4%	1.8%	24.1%					
S/DEPTH#1.1	10.890	10.141	8.166	5.618					
S/DEPTH#1.0	14.1%	10.5%	1.2%	24.9%					
S/DEPTH#1.0	7.985	7.465	6.083	4.271	1.152				
S/DEPTH#1.0	10.4%	7.1%	3.8%	25.6%	*****	.009	.528		
S/DEPTH# .9	5.809	5.450	4.486	3.204	.923				
S/DEPTH# .9	7.1%	4.0%	6.2%	26.3%	*****	*****	*****	1.175	1.447
S/DEPTH# .8	4.173	3.926	3.260	2.363	.720	.003	.372	*****	117.6%
S/DEPTH# .8	4.2%	1.2%	8.3%	26.9%	*****	*****	*****	870	1.085
S/DEPTH# .7	2.959	2.772	2.318	1.702	.544	.002	.257	*****	*****
S/DEPTH# .7	1.2%	1.2%	10.1%	27.4%	*****	*****	*****	620	.782
S/DEPTH# .6	2.010	1.899	1.598	1.185	.394	.002	.172	*****	*****
S/DEPTH# .6	6.6%	3.2%	11.7%	*****	*****	*****	*****	420	.535
S/DEPTH# .5	1.314	1.244	1.052	.786	.270	.002	.111	*****	*****
S/DEPTH# .5	*****	*****	*****	*****	*****	*****	*****	338	*****
S/DEPTH# .4	.800	.759	.644	.485	.171	.001	.066	*****	*****
S/DEPTH# .4	*****	*****	*****	*****	*****	*****	*****	263	*****
S/DEPTH# .3	.433	.411	.350	.265	.095	.001	.035	*****	*****
S/DEPTH# .3	*****	*****	*****	*****	*****	*****	*****	186	*****
S/DEPTH# .2	.187	.178	.152	.115	.042	.001	.015	*****	*****
S/DEPTH# .2	*****	*****	*****	*****	*****	*****	*****	084	.083
S/DEPTH# .1	.046	.044	.037	.028	.010	.000	.004	*****	*****
S/DEPTH# .1	*****	*****	*****	*****	*****	*****	*****	016	.021
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	*****	*****
S/DEPTH# .0	*****	*****	*****	*****	*****	*****	*****	.000	*****

TABLE VIII DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD... DEFINED IN EQUATION (28)

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CASE 60C

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.713	.657	.530	.390	.146	.061	.180	.266	.287
	29.9%	25.0%	11.4%	11.1%	120.1%	313.2%	51.8%	44.0%	74.4%
SURFACE	1.426	1.314	1.061	.779	.292	.122	.360	.532	.574
8/DEPTH#1.3	20.5%	24.8%	11.8%	.9.2%	107.2%	274.6%	45.1%	36.7%	62.4%
8/DEPTH#1.2	24.3%	1.258							
8/DEPTH#1.1	21.2%	21.5%	1.010	.777					
8/DEPTH#1.0	19.0%	18.6%	9.9%	.7%					
8/DEPTH# .9	16.8%	16.7%	.954	.755					
8/DEPTH# .8	14.8%	14.0%	8.1%	.5%					
8/DEPTH# .7	11.0%	14.8%	7.0%	.4%	.315		.360		
8/DEPTH# .6	9.4%	9.6%	5.9%	.3%	.81.3%	.090	49.2%	.521	.568
8/DEPTH# .5	8.0%	8.1%	4.9%	.3%	.64.8%	.345.2%	51.1%	.39.4%	.64.0%
8/DEPTH# .4	6.9%	6.8%	3.0%	.3%	.33.5%	.050	.290	.303	.556
8/DEPTH# .3	5.9%	5.8%	2.0%	.3%	.05.4%	.018	52.9%	.36.0%	.65.1%
8/DEPTH# .2	5.1%	4.9%	1.7%	.4%	.36.3	.008	.263	.488	.545
8/DEPTH# .1	4.8%	4.7%	1.6%	.4%	.39.4%	.026	54.6%	.32.2%	.59.4%
8/DEPTH# .0	4.7%	4.6%	1.5%	.4%	.35.0%	.044	56.3%	.29.1%	.54.6%
					.31.8%	.056	57.8%	.26.5%	.50.8%
					.29.4%	.064	59.1%	.24.5%	.47.8%
					.27.9%	.064	60.0%	.23.1%	.45.1%
					.26.9%	.068	60.7%	.22.2%	.44.4%
					.26.6%	.070	60.9%	.21.9%	.44.0%

CASE 6=C

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.055	.099	.125	.119	.047	.027	.061	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.003	.001	.002	.008	.019	.023	.012	.020	.034
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 6=C

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.783 (#9.4%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.396 (#26.2%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.434 (#22.9%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.830 (#24.5%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.704 (#21.6%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.846 (#2.3%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.863 (#16.8%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.941 (#21.5%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.257 (#21.4%)

CASE 6=C

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

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* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (46)
      LINEAR          .071436          STREAM FUNCTION          .000000

(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (47)
      LINEAR          .018978          STREAM FUNCTION          .000097

(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (46)
      LINEAR          .130333          STREAM FUNCTION          .000000

(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (47)
      LINEAR          .034297          STREAM FUNCTION          .000218

(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER
      DEFINED IN EQUATION (48)
      LINEAR          .412384          STREAM FUNCTION          .538307

(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER
      DEFINED IN EQUATION (49)
      LINEAR          .152354          STREAM FUNCTION          .300862

ITERATIONS ON ETA FAILED TO CONVERGE IN 40 ITER

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CASE 6=D

8TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .073041 DPT/LO = .100002

H/DPT = .730398 PSI/(G*H*T) = -.007316

L/LO = .624414

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.410823=01 X(2)/(H*T*G) = -.518243=02

X(3)/(H*T*G) = -.628079=03 X(4)/(H*T*G) = -.688367=04

X(5)/(H*T*G) = -.953495=05 X(6)/(H*T*G) = -.119008=05

X(7)/(H*T*G) = -.252790=06 X(8)/(H*T*G) = -.182720=06

CASE 6=D

TABLE II=DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.782	.417	.219	.079	.071	.151	.205	.218
	36.0%	17.0%	12.8%	55.2%	305.9%	281.5%	42.6%	86.8%
SURFACE	.000	2.733	3.318	3.263	2.609	1.628	.900	.291
S/DEPTH=1.5	*****	69.9%	52.1%	30.8%	10.5%	106.8%	216.8%	369.4%
S/DEPTH=1.4	*****							
S/DEPTH=1.3	*****	2.512						
S/DEPTH=1.2	*****	67.3%	3.289					
S/DEPTH=1.1	*****	61.0%	53.8%	3.243				
S/DEPTH=1.0	*****	1.579	2.702	18.7%				
S/DEPTH= .9	*****	56.3%	49.7%	2.750				
S/DEPTH= .8	*****	1.277	2.233	35.6%				
S/DEPTH= .7	*****	51.8%	45.7%	2.326				
S/DEPTH= .6	*****	1.041	1.850	32.5%	2.444			
S/DEPTH= .5	*****	47.7%	42.0%	1.960	1.6%			
S/DEPTH= .4	*****	.853	1.535	29.6%	2.114	1.543		
S/DEPTH= .3	*****	43.8%	38.5%	1.643	.1%			
S/DEPTH= .2	*****	40.3%	35.4%	27.0%	1.813	1.364	.819	.278
S/DEPTH= .1	*****	37.2%	32.5%	1.365	1.4%	69.9%	188.5%	392.2%
S/DEPTH= .0	*****	34.2%	30.0%	22.3%	1.536	1.186	.725	.549
S/DEPTH= .0	*****	32.2%	27.8%	20.4%	2.8%	67.8%	179.8%	431.2%
S/DEPTH= .0	*****	30.2%	26.1%	18.9%	1.118	1.010	.628	.218
S/DEPTH= .0	*****	28.7%	24.7%	17.7%	1.041	66.1%	172.5%	411.2%
S/DEPTH= .0	*****	26.7%	23.6%	16.8%	.897	.837	.527	.185
S/DEPTH= .0	*****	25.2%	23.1%	16.5%	5.0%	64.7%	166.8%	394.5%
S/DEPTH= .0	*****	23.7%	22.0%	16.0%	.817	.666	.424	.151
S/DEPTH= .0	*****	22.2%	20.5%	15.5%	.603	63.7%	162.0%	388.8%
S/DEPTH= .0	*****	20.7%	19.0%	15.0%	.397	62.9%	158.5%	383.1%
S/DEPTH= .0	*****	19.2%	17.5%	14.5%	.330	62.4%	156.0%	377.6%
S/DEPTH= .0	*****	17.7%	16.0%	14.0%	.197	61.9%	155.5%	372.1%
S/DEPTH= .0	*****	16.2%	14.5%	13.5%	.165	61.4%	155.0%	366.6%
S/DEPTH= .0	*****	14.7%	13.0%	13.0%	.133	60.9%	154.5%	361.1%
S/DEPTH= .0	*****	13.2%	11.5%	12.5%	.107	60.4%	154.0%	355.6%
S/DEPTH= .0	*****	11.7%	10.0%	12.0%	.080	60.0%	153.5%	350.1%
S/DEPTH= .0	*****	10.2%	8.5%	11.5%	.053	60.0%	153.0%	344.6%
S/DEPTH= .0	*****	8.7%	7.0%	11.0%	.027	60.0%	152.5%	339.1%
S/DEPTH= .0	*****	7.2%	5.5%	10.5%	.000	60.0%	152.0%	333.6%
S/DEPTH= .0	*****	5.7%	4.0%	10.0%	.000	60.0%	151.5%	328.1%
S/DEPTH= .0	*****	4.2%	2.5%	9.5%	.000	60.0%	151.0%	322.6%
S/DEPTH= .0	*****	2.7%	1.0%	9.0%	.000	60.0%	150.5%	317.1%
S/DEPTH= .0	*****	1.2%	.5%	8.5%	.000	60.0%	150.0%	311.6%
S/DEPTH= .0	*****	.7%	.0%	8.0%	.000	60.0%	149.5%	306.1%
S/DEPTH= .0	*****	.2%	.0%	7.5%	.000	60.0%	149.0%	300.6%
S/DEPTH= .0	*****	.0%	.0%	7.0%	.000	60.0%	148.5%	295.1%
S/DEPTH= .0	*****	.0%	.0%	6.5%	.000	60.0%	148.0%	289.6%
S/DEPTH= .0	*****	.0%	.0%	6.0%	.000	60.0%	147.5%	284.1%
S/DEPTH= .0	*****	.0%	.0%	5.5%	.000	60.0%	147.0%	278.6%
S/DEPTH= .0	*****	.0%	.0%	5.0%	.000	60.0%	146.5%	273.1%
S/DEPTH= .0	*****	.0%	.0%	4.5%	.000	60.0%	146.0%	267.6%
S/DEPTH= .0	*****	.0%	.0%	4.0%	.000	60.0%	145.5%	262.1%
S/DEPTH= .0	*****	.0%	.0%	3.5%	.000	60.0%	145.0%	256.6%
S/DEPTH= .0	*****	.0%	.0%	3.0%	.000	60.0%	144.5%	251.1%
S/DEPTH= .0	*****	.0%	.0%	2.5%	.000	60.0%	144.0%	245.6%
S/DEPTH= .0	*****	.0%	.0%	2.0%	.000	60.0%	143.5%	240.1%
S/DEPTH= .0	*****	.0%	.0%	1.5%	.000	60.0%	143.0%	234.6%
S/DEPTH= .0	*****	.0%	.0%	1.0%	.000	60.0%	142.5%	229.1%
S/DEPTH= .0	*****	.0%	.0%	.5%	.000	60.0%	142.0%	223.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	141.5%	218.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	141.0%	212.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	140.5%	207.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	140.0%	201.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	139.5%	196.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	139.0%	190.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	138.5%	185.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	138.0%	179.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	137.5%	174.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	137.0%	168.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	136.5%	163.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	136.0%	157.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	135.5%	152.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	135.0%	146.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	134.5%	141.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	134.0%	135.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	133.5%	130.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	133.0%	124.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	132.5%	119.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	132.0%	113.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	131.5%	108.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	131.0%	102.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	130.5%	97.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	130.0%	91.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	129.5%	86.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	129.0%	80.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	128.5%	75.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	128.0%	69.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	127.5%	64.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	127.0%	58.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	126.5%	53.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	126.0%	47.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	125.5%	42.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	125.0%	36.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	124.5%	31.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	124.0%	25.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	123.5%	20.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	123.0%	14.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	122.5%	9.1%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	122.0%	3.6%
S/DEPTH= .0	*****	.0%	.0%	.0%	.000	60.0%	121.5%	.0%

CASE 6=D

TABLE 11-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA ETA/HEIGHT	0 782 36.0%	10.0 594 17.0%	20.0 417 12.6%	30.0 279 55.2%	50.0 79 105.9%	75.0 100.0 151 205 151 205 129.0%	100.0 130.0 205 205 151 205 129.0%
SURFACE	.000	41.613	42.085	35.997	26.146	13.683	7.373
S/DEPTH#1.5	*****	87.7%	76.2%	59.2%	16.5%	97.2%	271.9%
S/DEPTH#1.4	*****						
S/DEPTH#1.3	*****	37.880	41.722				
S/DEPTH#1.2	*****	86.5%	76.9%	35.427			
S/DEPTH#1.1	*****	28.874	74.2%	62.9%			
S/DEPTH#1.0	*****	83.2%	74.2%	31.046			
S/DEPTH#0.9	*****	22.345	28.177	61.0%			
S/DEPTH#0.8	*****	60.1%	71.2%	27.054			
S/DEPTH#0.7	*****	17.576	68.0%	58.7%			
S/DEPTH#0.6	*****	76.8%	64.7%	23.574			
S/DEPTH#0.5	*****	73.3%	19.610	23.574			
S/DEPTH#0.4	*****	11.421	64.7%	23.574			
S/DEPTH#0.3	*****	69.6%	16.608	20.823			
S/DEPTH#0.2	*****	9.435	61.2%	53.2%			
S/DEPTH#0.1	*****	65.9%	14.240	18.171			
S/DEPTH#0.0	*****	7.926	57.8%	50.3%			
S/DEPTH#0.9	*****	62.1%	12.583	16.168			
S/DEPTH#0.8	*****	6.776	54.2%	47.2%			
S/DEPTH#0.7	*****	58.4%	10.941	14.565			
S/DEPTH#0.6	*****	5.903	51.1%	44.7%			
S/DEPTH#0.5	*****	54.8%	9.844	13.316			
S/DEPTH#0.4	*****	5.250	48.1%	42.2%			
S/DEPTH#0.3	*****	51.5%	9.040	12.584			
S/DEPTH#0.2	*****	4.777	45.8%	40.2%			
S/DEPTH#0.1	*****	48.7%	43.6%	36.4%			
S/DEPTH#0.0	*****	4.457	42.4%	37.4%			
S/DEPTH#0.9	*****	46.6%	4.271	11.560			
S/DEPTH#0.8	*****	45.2%	4.271	11.560			
S/DEPTH#0.7	*****	4.271	4.271	11.560			
S/DEPTH#0.6	*****	4.271	4.271	11.560			
S/DEPTH#0.5	*****	4.271	4.271	11.560			
S/DEPTH#0.4	*****	4.271	4.271	11.560			
S/DEPTH#0.3	*****	4.271	4.271	11.560			
S/DEPTH#0.2	*****	4.271	4.271	11.560			
S/DEPTH#0.1	*****	4.271	4.271	11.560			
S/DEPTH#0.0	*****	4.271	4.271	11.560			

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

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TABLE V. DIMENSIONLESS DRAG FORCE COMPONENT FIELD... DEFINED IN EQUATION (25)

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TABLE VI. DIMENSIONLESS INERTIA FORCE COMPONENT FIELD... DEFINED IN EQUATION (26)

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CASE 6=D

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.782	.594	.417	.279	.079	.071	.151	.205	.218
	36.0%	17.0%	=12.6%	=55.8%	=305.9%	281.5%	42.6%	=86.8%	=129.0%
SURFACE	41.953	21.752	9.962	4.469	.592	=.032	=.363	=.789	=.922
	56.5%	19.8%	=53.8%	=171.6%	*****	*****	*****	*****	*****
S/DEPTH=1.5	32.222								
	100.0%								
S/DEPTH=1.4	28.588								
	19.3%								
S/DEPTH=1.3	16.066								
	1.2%		9.844						
S/DEPTH=1.2	11.536		7.467	4.430					
	=3.0%		=43.8%	=105.0%					
S/DEPTH=1.1	8.325		5.625	3.478					
	=12.4%		=46.9%	=101.7%					
S/DEPTH=1.0	6.011		4.201	2.689	.542				
	19.0%		=50.3%	=99.5%	*****	*****			
S/DEPTH=.9	4.321		3.103	2.045	.453	=.022			
	=24.9%		=53.8%	*****	*****	*****			
S/DEPTH=.8	3.075		2.847	1.523	.366	=.010	=.269	=.689	=.830
	=30.0%		=56.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	2.150		1.606	1.106	.285	=.004	=.188	=.515	=.625
	=30.5%		*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	1.462		1.108	.775	.211	=.001	=.128	=.370	=.453
	*****		*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.952		.729	.517	.147	=.000	=.083	=.252	=.310
	*****		*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.576		.447	.320	.095	=.000	=.050	=.158	=.197
	*****		*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.312		.293	.175	.053	=.000	=.027	=.086	=.110
	*****		*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.135		.105	.077	.024	=.000	=.012	=.039	=.048
	*****		*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.033		.026	.019	.006	=.000	=.003	=.010	=.012
	*****		*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000		.000	.000	.000	=.000	=.000	=.000	=.000
	*****		*****	*****	*****	*****	*****	*****	*****

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

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TABLE IV. DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD... DEFINED IN EQUATION (29)

[illegible]

CASE 6=D

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EG.(35)									
SURFACE	.000	.143	.247	.294	.248	.088	.046	.099	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EG.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EG.(36)									
SURFACE	.009	.010	.014	.020	.031	.031	.010	.033	.050
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EG.(37)									
SURFACE	.036	.011	.009	.007	.005	.000	.001	.003	.006

CASE 6=0

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH	
	DEFINED IN EQUATION (37)	
	.824	(13.9%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY	
	DEFINED IN EQUATION (38)	
	.286	(75.0%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY	
	DEFINED IN EQUATION (39)	
	.332	(67.9%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY	
	DEFINED IN EQUATION (40)	
	.618	(71.2%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX	
	DEFINED IN EQUATION (41)	
	.545	(63.7%)
(6)	DIMENSIONLESS GROUP VELOCITY	
	DEFINED IN EQUATION (42)	
	.883	(4.4%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM	
	DEFINED IN EQUATION (43)	
	.660	(53.8%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION	
	DEFINED IN EQUATION (44)	
	.720	(61.3%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION	
	DEFINED IN EQUATION (45)	
	.175	(53.9%)

CASE 6-D

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.151971	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.029199	STREAM FUNCTION	.006134
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.296932	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.050487	STREAM FUNCTION	.037659
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.585829	STREAM FUNCTION	.893143
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.185364	STREAM FUNCTION	.246478

CASE 7=A

3TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$
 H = WAVE HEIGHT $G =$ GRAVITATIONAL CONSTANT
 T = WAVE PERIOD $X(N) =$ NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH $L =$ WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

$H/LO = .031267$ $DPT/LO = .199999$
 $H/DPT = .156315$
 $L/LO = .899219$ $PSI/(G*H*T) = -.004328$

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

$X(1)/(H*T*G) = -.368465e-01$ $X(2)/(H*T*G) = -.228970e-03$
 $X(3)/(H*T*G) = .584698e-06$

CASE 7-A

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	10.0 5.53 7.7%	20.0 5.01 6.1%	30.0 4.50 3.8%	50.0 3.06 5.0%	75.0 .087 48.0%	100.0 1.124 30.1%	130.0 1.370 3.6%	180.0 1.456 9.7%
SURFACE	4.068	3.988	3.754	3.384	.767	-.737	2.454	3.045
S/DEPTH: 1.0	4.1%	3.8%	2.9%	1.4%	22.3%	18.1%	2.4%	5.3%
S/DEPTH: .9	3.634	3.572	3.388	3.089	.757			
S/DEPTH: .8	2.8%	2.6%	2.0%	.9%	20.8%			
S/DEPTH: .7	3.198	3.144	2.985	2.726	.689		2.335	2.948
S/DEPTH: .6	2.3%	2.2%	1.6%	.7%	17.4%	.652	2.3%	6.0%
S/DEPTH: .5	2.832	2.785	2.646	2.419	.627	.565	2.082	2.642
S/DEPTH: .4	2.0%	1.8%	1.4%	.4%	11.6%	14.7%	2.2%	5.1%
S/DEPTH: .3	2.527	2.486	2.363	2.163	.573	.495	1.669	2.382
S/DEPTH: .2	1.7%	1.5%	1.2%	.5%	12.2%	12.8%	1.9%	4.3%
S/DEPTH: .1	2.276	2.239	2.129	1.951	.527	.438	1.692	2.164
S/DEPTH: .0	1.4%	1.3%	1.0%	.4%	10.2%	11.1%	1.6%	3.6%
S/DEPTH: .5	2.072	2.038	1.939	1.779	.488	.393	1.547	1.985
S/DEPTH: .4	1.2%	1.2%	.9%	.4%	8.5%	9.6%	1.3%	3.0%
S/DEPTH: .3	1.911	1.880	1.790	1.643	.456	.358	1.432	1.843
S/DEPTH: .2	1.1%	1.0%	.8%	.4%	7.1%	8.3%	1.1%	2.6%
S/DEPTH: .1	1.789	1.761	1.677	1.540	.432	.332	1.345	1.734
S/DEPTH: .0	1.0%	.9%	.7%	.4%	6.1%	7.3%	.9%	2.2%
S/DEPTH: .5	1.704	1.678	1.598	1.468	.415	.314	1.284	1.658
S/DEPTH: .4	.9%	.9%	.7%	.4%	5.3%	6.6%	.8%	1.9%
S/DEPTH: .3	1.654	1.628	1.551	1.425	.405	.303	1.248	1.613
S/DEPTH: .2	.8%	.8%	.6%	.4%	4.8%	6.1%	.7%	1.7%
S/DEPTH: .1	1.638	1.612	1.535	1.411	.401	.300	1.236	1.597
S/DEPTH: .0	.9%	.8%	.7%	.4%	4.7%	6.0%	.6%	1.6%

CASE 7=a

TABLE II=DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)										
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0	
ETA/HEIGHT=	8.1%	.533	.501	.450	.306	.087	.0124	.0370	.456	
		7.7%	6.3%	3.8%	5.0%	48.0%	30.1%	3.6%	9.7%	
SURFACE	.000	.676	1.315	1.884	2.719	3.119	2.882	1.662	.000	
S/DEPTH=1.0	*****	9.1%	8.4%	7.3%	4.3%	.4%	4.9%	10.3%	*****	
	.000	.588	1.154	1.675	2.513	3.051				
S/DEPTH=.9	*****	7.3%	7.0%	6.3%	4.3%	.6%				
	.000	.496	.972	1.413	2.124	2.589				
S/DEPTH=.8	*****	6.5%	6.1%	5.5%	3.7%	.4%	2.53%	10.1%	*****	.000
	.000	.415	.815	1.184	1.784	2.182	2.145	1.328		
S/DEPTH=.7	*****	5.7%	5.4%	4.9%	3.3%	.3%	1.796	.91%	*****	.000
	.000	.344	.676	.983	1.483	1.820	3.42%	1.118		
S/DEPTH=.6	*****	5.1%	4.8%	4.3%	2.8%	.1%	1.481	.826	*****	.000
	.000	.282	.553	.805	1.216	1.495	3.0%	.926		
S/DEPTH=.5	*****	4.6%	4.3%	3.9%	2.5%	.0%	1.193	.749	*****	.000
	.000	.226	.443	.645	.976	1.202	2.8%	.68%		
S/DEPTH=.4	*****	4.1%	3.9%	3.5%	2.2%	.1%	.928	.585	*****	.000
	.000	.175	.343	.500	.756	.934				
S/DEPTH=.3	*****	3.8%	3.6%	3.2%	2.0%	.1%	2.6%	.63%	*****	.000
	.000	.128	.251	.365	.553	.684	.681	.430		
S/DEPTH=.2	*****	.084	.164	.239	.362	.448	2.5%	.60%	*****	.000
	.000	.041	.081	.118	.179	.222	.447	.283		
S/DEPTH=.1	*****	.041	.081	.118	.179	.222	2.4%	.57%	*****	.000
	.000	.000	.000	.000	.000	.000	.221	.140		
S/DEPTH=.0	*****	.000	.000	.000	.000	.000	2.4%	.000	*****	.000
	.000	.000	.000	.000	.000	.000	.000	.000		

CASE 7=A

TABLE III=DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.533	.501	.450	.306	.087	.124	.370	.456
	7.7%	6.3%	3.8%	=5.0%	=48.0%	30.1%	=3.6%	=9.7%
SURFACE	4.928	9.573	13.684	19.642	22.298	20.350	11.491	.000
S/DEPTH=1.0	15.8%	14.9%	13.4%	9.92%	2.903	=6.1%	=17.8%	*****
S/DEPTH=.9	13.6%	13.0%	12.0%	8.9%	2.7%	18.555	11.055	.000
S/DEPTH=.8	11.9%	11.4%	10.5%	7.7%	2.4%	=4.7%	=16.7%	*****
S/DEPTH=.7	10.4%	10.0%	9.327	6.7%	17.053	16.617	10.097	.000
S/DEPTH=.6	9.1%	8.7%	8.2%	6.7%	2.0%	4.0%	=13.9%	*****
S/DEPTH=.5	7.9%	7.5%	7.299	5.8%	15.204	14.972	9.253	.000
S/DEPTH=.4	6.8%	6.5%	6.0%	5.0%	1.5%	3.4%	=11.6%	*****
S/DEPTH=.3	6.0%	5.7%	5.2%	4.4%	13.578	13.597	8.526	.000
S/DEPTH=.2	5.3%	5.0%	4.6%	3.6%	12.441	12.469	7.915	.000
S/DEPTH=.1	4.7%	4.5%	4.2%	3.1%	1.4%	2.3%	=8.0%	*****
S/DEPTH=.0	4.4%	4.2%	3.9%	2.9%	11.465	11.571	7.421	.000
	4.3%	4.1%	3.8%	2.6%	1.2%	=1.9%	=6.7%	*****
					10.727	10.687	7.039	.000
					1.1%	1.6%	=5.7%	*****
					10.212	10.407	9.769	.000
					1.1%	1.4%	=5.0%	*****
					9.907	10.122	6.607	.000
					1.0%	1.2%	=6.6%	*****
					7.745	10.028	6.553	.000
					2.6%	=1.2%	=4.4%	*****

TABLE IV. DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD, ... DEFINED IN EQUATION (24)

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CASE 7=A

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA ETA/HEIGHT	0 8.1%	10.0 5.33 7.7%	20.0 5.01 6.3%	30.0 3.8%	50.0 5.0%	75.0 48.0%	100.0 30.1%	130.0 3.6%	180.0 9.6%
SURFACE	6.686	6.439	5.740	4.711	2.332	.288	.198	2.594	4.108
S/DEPTH=1.0	5.3%	4.9%	3.7%	1.7%	-4.9%	****	****	3.0%	6.2%
S/DEPTH= .9	5.426	5.249	4.742	3.975	2.086	.280	.159	2.353	3.849
S/DEPTH= .8	3.82%	3.0%	2.2%	1.9%	-4.0%	****	****	3.3%	7.6%
S/DEPTH= .7	4.262	4.124	3.730	3.131	1.653	.228	.122	1.866	3.070
S/DEPTH= .6	2.8%	2.6%	1.9%	.8%	-3.5%	****	****	2.9%	6.5%
S/DEPTH= .5	3.355	3.247	2.939	2.471	1.312	.185	.094	1.477	2.440
S/DEPTH= .4	2.4%	2.1%	1.7%	.7%	-3.1%	****	****	2.6%	5.8%
S/DEPTH= .3	2.638	2.554	2.314	1.947	1.038	.149	.072	1.161	1.924
S/DEPTH= .2	2.82%	2.0%	1.5%	.6%	-2.7%	****	****	2.3%	5.1%
S/DEPTH= .1	2.063	1.998	1.810	1.525	.816	.118	.055	.899	1.495
S/DEPTH= .0	2.0%	1.8%	1.4%	.6%	-2.4%	****	****	2.0%	4.5%
S/DEPTH= .9	1.592	1.542	1.398	1.179	.632	.093	.041	.678	1.129
S/DEPTH= .8	1.6%	1.7%	1.5%	.5%	-2.1%	****	****	1.8%	4.2%
S/DEPTH= .7	1.197	1.159	1.051	.867	.477	.071	.029	.486	.810
S/DEPTH= .6	1.7%	1.6%	1.2%	.5%	-1.9%	****	****	1.6%	3.8%
S/DEPTH= .5	.855	.829	.752	.634	.342	.051	.019	.313	.523
S/DEPTH= .4	1.6%	1.5%	1.2%	.5%	-1.8%	****	****	1.5%	3.5%
S/DEPTH= .3	.551	.534	.484	.409	.220	.033	.009	.154	.257
S/DEPTH= .2	1.6%	1.5%	1.1%	.5%	****	****	****	1.4%	3.2%
S/DEPTH= .1	.270	.262	.237	.200	.108	.016	.000	.000	.000
S/DEPTH= .0	****	****	****	****	****	****	****	****	****

TABLE V DIMENSIONLESS INERTIA FORCE COMPONENT FIELD... DEFINED IN EQUATION (26)

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CASE 7=A

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA	0	10.0	20.0	30.0	40.0	50.0	60.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.544	.533	.501	.450	.306	.248	.180	.128	.085	.0370	.0456
	8.1%	7.7%	6.3%	3.6%	5.0%	48.0%	30.1%	30.1%	30.1%	33.6%	39.7%
SURFACE	4.801	4.612	4.080	3.307	1.577	.180	.128	.085	.0370	.0456	.0456
S/DEPTH=1.0	6.7%	6.2%	3.041	2.82%	1.525	.172	.128	.085	.0370	.0456	.0456
S/DEPTH=.9	3.7%	3.4%	2.077	1.741	.913	.122	.091	.060	.0300	.039%	.08.9%
S/DEPTH=.8	3.2%	2.9%	1.404	1.178	.622	.086	.060	.039	.0300	.039%	.08.9%
S/DEPTH=.7	2.8%	2.5%	1.031	.785	.416	.059	.039	.039	.0300	.039%	.08.9%
S/DEPTH=.6	2.4%	2.2%	1.668	.510	.272	.039	.024	.024	.0300	.039%	.08.9%
S/DEPTH=.5	2.1%	2.0%	1.378	.318	.170	.025	.015	.015	.0300	.039%	.08.9%
S/DEPTH=.4	1.9%	1.8%	.221	.187	.100	.015	.009	.009	.0300	.039%	.08.9%
S/DEPTH=.3	1.8%	1.7%	.116	.098	.053	.008	.004	.004	.0300	.039%	.08.9%
S/DEPTH=.2	.086	.054	.049	.041	.022	.003	.002	.002	.0300	.039%	.08.9%
S/DEPTH=.1	.014	.013	.012	.010	.005	.001	.000	.000	.0300	.039%	.08.9%
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.0300	.039%	.08.9%

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TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.544	.501	.450	.306	.087	.370	.456
	8.1%	6.3%	3.8%	5.0%	48.0%	3.6%	9.7%
SURFACE	1.876	3.629	5.155	7.271	8.055	7.201	3.996
	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=1.0	12.2%	11.3%	9.9%	6.0%	.1%	5.4%	11.1%
	.000	2.694	4.208	6.341	7.750		
S/DEPTH=.9	9.7%	9.2%	8.3%	6.2%	1.8%	5.728	3.558
	.000	2.140	3.116	4.712	5.796		
S/DEPTH=.8	8.6%	8.2%	7.6%	5.5%	1.6%	5.32%	11.0%
	.000	1.555	2.266	3.437	4.253	4.233	2.659
S/DEPTH=.7	7.7%	7.3%	6.7%	4.9%	1.4%	2.82%	9.2%
	.000	1.103	1.609	2.447	3.044	3.049	1.934
S/DEPTH=.6	6.9%	6.6%	6.0%	4.4%	1.3%	2.52%	8.1%
	.000	.757	1.105	1.689	2.106	2.121	1.356
S/DEPTH=.5	5.9%	5.9%	5.4%	3.9%	1.2%	2.1%	7.2%
	.000	.495	.724	1.106	1.388	1.404	.904
S/DEPTH=.4	5.3%	5.3%	4.9%	3.5%	1.1%	1.9%	6.4%
	.000	.302	.441	.675	.850	.863	.559
S/DEPTH=.3	4.5%	.45%	.239	.366	1.0%	1.5%	5.7%
	.000	.163	.070	.158	.200	.204	.306
S/DEPTH=.2	4.0%	.070	.103	.158	.200	.204	.133
	.000	.036	.039	.039	.049	.050	.031
S/DEPTH=.1	.009	.017	.025	.039	.049	.050	.031
	.000	.009	.009	.009	.009	.009	.009
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000

CASE 7=A

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA ETA/HEIGHT	0 8.1%	10.0 5.44 7.7%	20.0 3.0 5.01 6.3%	30.0 3.8%	50.0 5.0%	75.0 48.0%	100.0 30.1%	130.0 3.6%	180.0 9.7%
SURFACE	1.089	1.067	1.002	.900	.612	.175	.248	.740	.911
S/DEPTH=1.0	4.9%	4.6%	3.7%	2.2%	-2.8%	-25.5%	15.1%	.17%	4.5%
S/DEPTH= .9	3.7%	3.5%	2.9%	1.8%	-2.3%	-24.0%	.214	.701	.880
S/DEPTH= .8	3.3%	3.1%	2.6%	1.7%	-1.8%	-16.8%	14.9%	.18%	5.1%
S/DEPTH= .7	2.9%	2.8%	2.3%	1.6%	-1.4%	-15.9%	13.8%	.13%	4.2%
S/DEPTH= .6	2.7%	2.5%	2.1%	1.5%	-1.0%	-11.9%	12.7%	.9%	3.3%
S/DEPTH= .5	2.4%	2.3%	2.0%	1.4%	-.7%	-.5%	11.7%	.5%	2.6%
S/DEPTH= .4	2.2%	2.1%	1.9%	1.4%	-.3%	-.1%	10.7%	.2%	2.0%
S/DEPTH= .3	2.1%	2.0%	1.8%	1.4%	-.2%	-.2%	9.9%	.1%	1.4%
S/DEPTH= .2	2.0%	1.9%	1.7%	1.4%	-.1%	-.1%	9.3%	.3%	1.0%
S/DEPTH= .1	1.9%	1.8%	1.6%	1.4%	.2%	.3%	8.7%	.5%	.7%
S/DEPTH= .0	1.9%	1.8%	1.6%	1.4%	.3%	.3%	8.3%	.6%	.4%

CASE 7-A

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.006	.011	.014	.015	.007	.005	.012	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.018	.017	.013	.007	.007	.020	.019	.007	.024
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 7-a

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.899 (.11%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.494 (.11%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.501 (.17%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.995 (.10%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.673 (.7%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.676 (.7%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.997 (.6%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.844 (.3%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.171 (4.1%)

CASE 7a

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.009999	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.015081	STREAM FUNCTION	.000070
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.015900	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.024070	STREAM FUNCTION	.000114
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.137254	STREAM FUNCTION	.141447
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.096263	STREAM FUNCTION	.105035

CASE 7=B

5TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .062090 DPT/LO = .199999
 H/DPT = .312451
 L/LO = .931055 PSI/(G*H*T) = -.008220

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.374631=01 X(2)/(H*T*G) = -.577025=03
 X(3)/(H*T*G) = -.126846=05 X(4)/(H*T*G) = .661276=07
 X(5)/(H*T*G) = .-.290160=08

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

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CASE 7=B

TABLE II=DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD.....DEFINED IN EQUATION (22)

THETA ETA/HEIGHT	0 15.7%	10.0 .593	20.0 10.8%	30.0 4.5%	50.0 .270	75.0 236.9%	100.0 43.1%	130.0 10.9%	180.0 22.9%
SURFACE	.000	.855	1.621	2.236	2.941	2.996	2.500	1.286	.000
8/DEPTH=1.1	*****	19.0%	16.8%	13.3%	4.3%	7.9%	18.4%	29.1%	*****
9/DEPTH=1.0	*****	.743	1.447	2.080					
9/DEPTH=.9	*****	14.1%	13.2%	11.7%					
8/DEPTH=.8	*****	.622	1.213	1.746					
9/DEPTH=.7	*****	12.3%	11.5%	10.1%	2.508	2.938	2.306		
8/DEPTH=.6	*****	.519	1.014	1.461	5.6%	7.2%	14.0%	1.125	.000
9/DEPTH=.5	*****	10.7%	10.0%	8.7%	2.143	2.494	13.0%	28.7%	.000
8/DEPTH=.4	*****	.432	.843	1.217	4.6%	3.5%	13.0%	25.9%	.000
9/DEPTH=.3	*****	9.4%	8.6%	7.5%	1.792	2.102	13.0%	23.7%	.000
8/DEPTH=.2	*****	.356	.696	1.005	3.7%	1.754	1.652	19.5%	.000
9/DEPTH=.1	*****	.290	.567	.819	1.485	1.621	1.214	16.7%	.000
8/DEPTH=.0	*****	.231	.452	.654	2.9%	1.442	1.368	12.5%	.000
9/DEPTH=.4	*****	.178	.349	.495	2.3%	1.160	1.107	9.6%	.000
8/DEPTH=.3	*****	.130	.255	.369	1.9%	.901	.864	8.1%	.000
9/DEPTH=.2	*****	.085	.166	.241	1.5%	.660	.636	6.5%	.000
8/DEPTH=.1	*****	.042	.082	.119	1.2%	.433	.418	5.2%	.000
9/DEPTH=.0	*****	.000	.000	.000	1.0%	.214	.207	4.1%	.000
8/DEPTH=.0	*****	.000	.000	.000	.9%	.176	.125	3.2%	.000
9/DEPTH=.0	*****	.000	.000	.000	.8%	.144	.100	2.5%	.000

CASE 708

TABLE III—DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD, . . . , DEFINED IN EQUATION (23)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HGTH	15.7%	9.5%	5.9%	4.5%	2.70	0.38	0.152	0.345	0.407
					18.9%	236.9%	43.1%	10.9%	22.9%
SURFACE	0.000	6.618	12.485	17.094	22.044	21.783	17.554	8.577	0.000
	*****	32.0%	29.6%	25.7%	14.9%	2.3%	21.5%	50.3%	*****
S/DEPTH#1	0.000	5.751	11.164	15.930					
	*****	27.3%	26.1%	24.0%					
S/DEPTH#1	0.000	4.849	9.432	13.505	19.360	21.448			
	*****	24.6%	23.5%	21.5%	15.1%	1.4%	16.705		
S/DEPTH#2	0.000	4.116	8.023	11.525	16.696	18.898			
	*****	21.0%	21.0%	19.2%	13.4%	1.2%	16.9%		
S/DEPTH#3	0.000	3.523	6.878	9.912	14.506	16.748	15.220	8.236	0.000
	*****	19.6%	18.7%	17.1%	11.8%	1.1%	14.82%	43.1%	*****
S/DEPTH#4	0.000	3.043	5.953	8.605	12.714	14.951	13.921	7.848	0.000
	*****	17.4%	16.6%	15.1%	10.4%	1.1%	11.9%	35.2%	*****
S/DEPTH#5	0.000	2.659	5.211	7.554	11.262	13.467	12.809	7.472	0.000
	*****	15.3%	14.7%	13.4%	9.2%	1.1%	9.9%	28.9%	*****
S/DEPTH#6	0.000	2.356	4.625	6.722	10.103	12.264	11.681	7.130	0.000
	*****	13.7%	13.0%	11.9%	8.2%	1.1%	8.82%	23.9%	*****
S/DEPTH#7	0.000	2.122	4.171	6.077	9.201	11.314	11.132	6.835	0.000
	*****	12.8%	11.6%	10.6%	7.4%	1.2%	6.8%	20.1%	*****
S/DEPTH#8	0.000	1.948	3.834	5.597	8.526	10.596	10.555	6.598	0.000
	*****	11.0%	10.5%	9.6%	6.7%	1.3%	5.7%	17.1%	*****
S/DEPTH#9	0.000	1.828	3.601	5.265	8.058	10.095	10.148	6.425	0.000
	*****	10.1%	9.6%	8.8%	6.2%	1.4%	4.9%	15.1%	*****
S/DEPTH#10	0.000	1.758	3.465	5.071	7.783	9.798	9.905	6.319	0.000
	*****	9.5%	9.1%	8.4%	6.0%	1.4%	4.4%	13.9%	*****
S/DEPTH#11	0.000	1.735	3.420	5.006	7.692	9.700	9.824	6.284	0.000
	*****	9.4%	8.9%	8.2%	5.9%	1.4%	4.3%	13.5%	*****

CASE 7=8

TABLE IV=DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA ETA/HEIGHT	10.0 593 15.7%	20.0 527 10.8%	30.0 453 4.5%	50.0 270 18.9%	75.0 100.0 132 43.1%	100.0 130.0 152 10.9%	180.0 1407 22.9%
SURFACE	21.464	20.567	14.389	5.679	3.950	9.975	13.268
8/DEPTH=1.1	18.4%	16.9%	3.4%	46.5%	98.6%	21.7%	13.216
8/DEPTH=1.0	19.418	18.768	13.882				136.1%
8/DEPTH=0.9	14.7%	13.6%	3.0%		3.747		
8/DEPTH=0.8	17.056	16.528	12.546	5.766	105.5%	8.603	
8/DEPTH=0.7	13.1%	12.1%	2.9%	34.9%	2.356	25.1%	12.094
8/DEPTH=0.6	14.802	14.373	11.133	5.575		6.925	19.3%
8/DEPTH=0.5	11.6%	10.7%	2.6%	27.3%	127.9%	5.427	10.855
8/DEPTH=0.4	12.888	12.341	9.714	5.176	1.399	24.1%	35.4%
8/DEPTH=0.3	10.8%	9.4%	2.2%	22.4%	164.4%	4.220	8.540
8/DEPTH=0.2	10.724	10.445	8.327	4.648	.756	23.6%	31.3%
8/DEPTH=0.1	9.0%	8.3%	1.9%	19.1%	*****	11.310	12.094
8/DEPTH=0.0	8.903	8.681	6.930	4.042	.341	11.310	12.094
	8.80%	7.3%	1.5%	10.7%	*****	16.40%	31.3%
	7.040	6.530	5.716	3.394	.090	3.8233	6.938
	7.1%	6.5%	1.1%	15.0%	*****	23.2%	29.4%
	5.634	5.503	4.466	2.724	.043	2.412	5.432
	4.1%	3.9%	.9%	13.8%	*****	22.6%	26.0%
	4.146	4.051	3.772	3.045	.095	1.712	4.004
	5.4%	5.0%	3.7%	12.9%	*****	22.4%	25.0%
	2.726	2.484	2.195	1.363	.091	1.097	2.536
	5.3%	5.0%	.5%	12.3%	*****	22.1%	24.0%
	1.352	1.321	1.031	.681	.054	.535	1.308
	5.1%	4.8%	.4%	*****	*****	*****	23.3%
	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****

CASE 7#B

TABLE V DIMENSIONLESS DRAG FORCE COMPONENT FIELD... DEFINED IN EQUATION (25)

THETA = ETA/HEIGHT	0 15.7%	10.0 14.5%	20.0 10.8%	30.0 4.5%	40.0 4.5%	50.0 236.9%	60.0 7.0	70.0 100.0	80.0 130.0	90.0 180.0
SURFACE	8.601	8.162	6.982	5.386	2.262	.191	.235	.235	.2112	.15.148
S/DEPTH=1.1	11.0%	9.6%	5.4%	1.3%	22.1%	*****	*****	*****	.09.9%	.15.3%
S/DEPTH=1.0	6.926	6.670	5.945	4.867	1.876	.188	.201	.201	.1.722	.2.700
S/DEPTH=.9	3.6%	2.9%	2.4%	2.8%	1.57%	*****	.161	.161	.11.5%	.21.2%
S/DEPTH=.8	5.066	5.211	4.657	3.831	1.505	.136	.151	.151	.11.374	.2.176
S/DEPTH=.7	4.242	4.092	3.666	3.027	1.206	.114	.114	.114	.10.2%	.18.6%
S/DEPTH=.6	3.359	3.223	2.892	2.397	.964	.093	.086	.086	.1.088	.1.736
S/DEPTH=.5	2.0%	1.5%	2.280	1.895	.763	.075	.065	.065	.09.1%	.16.5%
S/DEPTH=.4	2.627	2.537	1.784	1.489	.595	.058	.048	.048	.08.1%	.14.8%
S/DEPTH=.3	1.7%	1.3%	1.382	1.153	.451	.042	.034	.034	.07.4%	.13.5%
S/DEPTH=.2	1.5%	1.2%	1.041	.870	.324	.028	.021	.021	.06.8%	.12.0%
S/DEPTH=.1	1.5%	1.2%	.745	.623	.210	.014	.010	.010	.05.9%	.11.9%
S/DEPTH=.0	1.5%	1.2%	.481	.402	.103	.000	.000	.000	.04.7%	.0.238
S/DEPTH=.0	1.5%	1.2%	.236	.197	.000	.000	.000	.000	.0.000	.0.000
S/DEPTH=.0	1.5%	1.2%	.000	.000	.000	.000	.000	.000	.0.000	.0.000

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TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT	0 .593 15.7%	10.0 .576 14.5%	20.0 .527 10.8%	30.0 .453 4.5%	50.0 .270 18.9%	75.0 .038 236.9%	100.0 .152 43.1%	130.0 -0.345 -10.9%	180.0 -0.407 -22.9%
SURFACE	.000	3.679	6.995	9.696	12.959	13.607	11.767	6.360	.000
S/DEPTH=1.1	*****	22.5%	20.3%	17.0%	8.5%	3.5%	13.6%	-24.1%	*****
	.000	3.186	6.233	9.008					
S/DEPTH=1.0	*****	17.9%	17.0%	15.5%					
	.000	2.658	5.206	7.540	11.213	13.348			
S/DEPTH=.9	*****	16.3%	15.4%	14.1%	9.8%	1.1%	10.870		
	.000	2.211	4.335	6.292	9.015	11.534	9.2%	5.565	.000
S/DEPTH=.8	*****	14.8%	14.1%	12.9%	8.9%	1.1%	9.276	-21.6%	*****
	.000	1.830	3.592	5.223	7.858	9.555	8.1%	4.781	.000
S/DEPTH=.7	*****	13.6%	12.9%	11.6%	8.1%	1.1%	7.820	-20.9%	*****
	.000	1.502	2.952	4.299	6.500	7.972	7.2%	4.015	.000
S/DEPTH=.6	*****	12.5%	11.9%	10.9%	7.5%	1.1%	6.485	-18.8%	*****
	.000	1.218	2.396	3.493	5.304	6.554	6.4%	3.286	.000
S/DEPTH=.5	*****	11.6%	11.1%	10.1%	7.0%	1.2%	5.252	-17.1%	*****
	.000	.968	1.905	2.781	4.238	5.270	5.6%	2.588	.000
S/DEPTH=.4	*****	10.9%	10.4%	9.5%	6.8%	1.2%	4.103	-15.8%	*****
	.000	.745	1.466	2.143	3.275	4.093	4.9%	1.917	.000
S/DEPTH=.3	*****	10.3%	9.8%	9.0%	6.3%	1.2%	3.020	-14.4%	*****
	.000	.541	1.067	1.560	2.390	2.999	4.0%	1.411	.000
S/DEPTH=.2	*****	9.4%	9.4%	8.6%	6.1%	1.3%	1.986	-14.1%	*****
	.000	.353	.696	1.018	1.563	1.966	1.3%	.630	.000
S/DEPTH=.1	*****	9.1%	9.1%	8.3%	5.9%	1.3%	.985	*****	*****
	.000	.174	.343	.503	.772	1.3%	0.4%	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	5.8%	1.3%	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.593	.576	.527	.453	.270	.038	.152	.345	.407
	15.7%	14.5%	10.8%	4.5%	18.9%	236.9%	43.1%	10.9%	22.9%
SURFACE	6.988	6.583	5.511	4.112	1.575	.110	.150	.138	.1625
	14.8%	13.0%	7.7%	.7%	27.5%	*****	*****	10.0%	14.0%
S/DEPTH=1.1	5.072	4.880	4.336	3.330					
	4.3%	3.5%	1.1%	3.1%					
S/DEPTH=1.0	3.473	3.344	2.981	2.440	1.173	.107			
	3.4%	2.7%	.6%	3.2%	18.2%	*****			
S/DEPTH= .9	2.364	2.279	2.037	1.675	.819	.081	.119		
	2.7%	2.1%	.2%	3.0%	16.0%	*****	*****	.807	.1250
S/DEPTH= .8	1.594	1.538	1.378	1.038	.565	.060	.076	.13.4%	24.8%
	2.2%	1.7%	.0%	2.9%	14.0%	*****	*****	.546	.856
S/DEPTH= .7	1.059	1.022	.918	.760	.383	.043	.048	.11.7%	21.5%
	1.9%	1.4%	.0%	2.3%	12.3%	*****	*****	.360	.569
S/DEPTH= .6	.687	.663	.596	.496	.252	.030	.030	10.2%	18.7%
	1.7%	1.2%	.0%	2.2%	*****	*****	*****	.227	.363
S/DEPTH= .5	.429	.414	.373	.311	.159	.020	.018	*****	16.4%
	1.6%	1.2%	.1%	*****	*****	*****	*****	.135	.216
S/DEPTH= .4	.251	.243	.219	.183	.094	.012	.010	*****	*****
	*****	*****	*****	*****	*****	*****	*****	.071	.115
S/DEPTH= .3	.132	.128	.115	.096	.050	.006	.005	*****	*****
	*****	*****	*****	*****	*****	*****	*****	.030	.049
S/DEPTH= .2	.056	.054	.049	.041	.021	.003	.002	*****	*****
	*****	*****	*****	*****	*****	*****	*****	.007	.012
S/DEPTH= .1	.014	.013	.012	.010	.005	.001	.001	*****	*****
	*****	*****	*****	*****	*****	*****	*****	.000	.000
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	*****	*****
	*****	*****	*****	*****	*****	*****	*****		

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TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THE TA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.593	.576	.527	.453	.270	.038	.0152	.0345	.0407
	15.7%	14.5%	10.8%	4.5%	18.9%	236.9%	43.1%	10.9%	22.9%
SURFACE	.000	2.691	5.018	6.753	8.352	7.879	6.183	2.998	.000
S/DEPTH=1.1	*****	27.3%	24.4%	20.0%	8.1%	7.0%	16.9%	28.0%	*****
	.000	2.129	4.155	5.982					
S/DEPTH=1.0	*****	20.5%	19.5%	17.8%					
	.000	1.573	3.075	4.459	6.531	7.618			
S/DEPTH=.9	*****	18.6%	17.7%	16.1%	11.1%	1.1%			
	.000	1.146	2.247	3.251	4.820	5.703	5.353		
S/DEPTH=.8	*****	16.8%	16.0%	14.6%	10.0%	1.1%			
	.000	.824	1.615	2.341	3.495	4.189	3.096		
S/DEPTH=.7	*****	15.2%	14.5%	13.2%	9.1%	1.0%			
	.000	.578	1.134	1.648	2.475	3.001	2.903	1.739	
S/DEPTH=.6	*****	13.8%	13.2%	12.0%	8.5%	1.1%			
	.000	.393	1.271	1.123	1.696	2.078	2.035	1.241	
S/DEPTH=.5	*****	12.0%	12.0%	11.0%	7.6%	1.1%			
	.000	.255	.501	.731	1.109	1.370	1.356	.839	
S/DEPTH=.4	*****	11.0%	11.0%	10.1%	7.0%	1.2%			
	.000	.154	.303	.443	.675	.840	.838	.525	.000
S/DEPTH=.3	*****	10.0%	10.0%	9.4%	6.6%	1.2%			
	.000	.083	.163	.238	.365	.457	.458	.290	.000
S/DEPTH=.2	*****	9.0%	9.0%	8.4%	6.0%	1.3%			
	.000	.036	.070	.103	.157	.198	.200	.127	.000
S/DEPTH=.1	*****	8.0%	8.0%	7.4%	5.2%	1.3%			
	.000	.009	.017	.025	.039	.049	.049	.032	.000
S/DEPTH=.0	*****	7.0%	7.0%	6.4%	4.4%	1.3%			
	.000	.000	.000	.000	.000	.000	.000	.000	.000

TABLE IX-DINENSTONLF88 DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	160.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.031	.057	.073	.072	.030	.010	.042	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.027	.025	.017	.006	.020	.041	.033	.020	.053
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.931 (4.5%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.074 (5.4%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.092 (7.2%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.066 (6.4%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.082 (3.5%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.706 (2.7%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.980 (2.8%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.858 (.3%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.176 (15.2%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.044026	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.030558	STREAM FUNCTION	.000017
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.077744	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.053135	STREAM FUNCTION	.000046
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.303566	STREAM FUNCTION	.315574
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.182946	STREAM FUNCTION	.213470

CASE 7=C

7TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS
 L0 = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $L0=(G/6.28318)*T**2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/L0 = .093785 DPT/L0 = .19999
 H/DPT = .468925
 L/L0 = .981055 PSI/(G*H*T) = -.010950

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.369772*01 X(2)/(H*T*G) = -.111087*02
 X(3)/(H*T*G) = -.220372*04 X(4)/(H*T*G) = -.591014*06
 X(5)/(H*T*G) = -.517059*07 X(6)/(H*T*G) = -.357964*08
 X(7)/(H*T*G) = -.424772*09

CASE 7=C

TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	0 .653 23.4%	10.0 -616 20.1%	20.0 -528 11.0%	30.0 -420 -3.1%	50.0 -207 -55.6%	75.0 -010 *****	100.0 -165 47.3%	130.0 -305 -25.4%	180.0 -347 -44.0%
SURFACE	5.653	5.313	4.512	3.578	1.847	.208	-.886	-.1812	-.2,072
S/DEPTH=1.3	15.3%	11.7%	2.1%	5.112%	49.2%	*****	34.2%	20.2%	28.8%
S/DEPTH=1.2	4.764	4.619	4.209						
S/DEPTH=1.1	4.0%	2.5%	3.052						
S/DEPTH=1.0	4.091	3.977	3.3%	10.2%	3.155				
S/DEPTH=.9	1.9%	.6%	3.188	2.782					
S/DEPTH=.8	3.542	3.451	4.1%	10.0%	34.3%	.252	-.852		
S/DEPTH=.7	3.093	3.019	2.803	2.466	1.546	*****	36.3%	1.719	2.014
S/DEPTH=.6	2.726	2.664	4.7%	9.7%	29.9%	.282	-.722	23.7%	32.6%
S/DEPTH=.5	1.987	2.428	5.0%	9.3%	26.1%	*****	33.2%	21.0%	32.8%
S/DEPTH=.4	3.0%	3.1%	5.2%	8.7%	1.301	.299	-.618	18.5%	28.6%
S/DEPTH=.3	1.835	1.800	2.005	8.1%	22.8%	11.52%	30.2%	16.3%	24.8%
S/DEPTH=.2	1.721	1.689	3.4%	7.5%	19.9%	311	27.3%	14.4%	21.5%
S/DEPTH=.1	2.9%	3.1%	4.4%	6.3%	17.4%	70.5%	24.6%	11.7%	17.3%
S/DEPTH=.0	1.642	1.612	1.524	5.8%	13.5%	308	20.2%	11.58	19.2%
	2.8%	3.2%	4.1%	5.4%	12.2%	42.1%	18.6%	11.32	16.2%
	1.596	1.567	1.482	1.345	9.4%	306	14.4%	11.41	16.2%
	2.8%	3.1%	4.0%	3.8%	11.4%	33.5%	22.2%	11.0%	16.2%
	1.580	1.552	1.468	1.333	9.9%	306	14.4%	11.23	16.2%
	2.7%	3.0%	3.9%	5.4%	11.2%	37.4%	17.3%	10.7%	15.9%

CASE 7=C

TABLE I=DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA = 0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	160.0
ETA/HEIGHT = 23.4%	.653	.616	.528	.420	.3010	.165	.305	.347
	23.4%	20.1%	11.0%	3.1%	55.6%	47.3%	25.0%	44.0%
SURFACE	.000	1.209	2.098	2.944	2.607	1.968	.912	.000
S/DEPTH=1.3	*****	35.6%	28.1%	18.2%	28.0%	47.2%	64.0%	*****
S/DEPTH=1.2	*****	.000						
S/DEPTH=1.1	*****	.999	1.904					
S/DEPTH=1.0	*****	25.7%	23.2%	2.182				
S/DEPTH= .9	*****	.614	1.559	15.9%				
S/DEPTH= .8	*****	21.7%	19.5%	1.805				
S/DEPTH= .7	*****	.666	1.281	3.2%				
S/DEPTH= .6	*****	16.2%	13.0%	2.080				
S/DEPTH= .5	*****	15.2%	10.6%	1.752				
S/DEPTH= .4	*****	.447	1.250	1.430				
S/DEPTH= .3	*****	12.6%	8.4%	1.564				
S/DEPTH= .2	*****	.365	1.008	1.166				
S/DEPTH= .1	*****	10.4%	6.6%	1.17%				
S/DEPTH= 0	*****	.294	5.1%	1.052				
S/DEPTH= .9	*****	8.6%	4.53	.951				
S/DEPTH= .8	*****	.233	3.9%	.720				
S/DEPTH= .7	*****	7.1%	2.9%	.819				
S/DEPTH= .6	*****	.179	2.4%	.742				
S/DEPTH= .5	*****	5.9%	2.0%	.548				
S/DEPTH= .4	*****	.130	1.6%	.305				
S/DEPTH= .3	*****	.084	1.1%	.203				
S/DEPTH= .2	*****	.042	.81	.179				
S/DEPTH= .1	*****	.000	.000	.000				
S/DEPTH= 0	*****	.000	.000	.000				

CASE 7=C

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA ETA/HEIGHT	0 .653 23.4%	10.0 20.1%	20.0 11.0%	30.0 3.1%	50.0 55.6%	75.0 207 *****	100.0 165 47.3%	130.0 305 25.1%	180.0 347 44.0%
SURFACE	.000	11.228	18.598	22.164	23.029	19.010	13.470	5.745	.000
S/DEPTH1.3	*****	56.1%	48.7%	38.3%	14.1%	19.5%	56.5%	114.6%	*****
S/DEPTH1.2	*****	9.057	16.745						
S/DEPTH1.1	*****	48.2%	44.6%	18.371					
S/DEPTH1.0	*****	43.5%	40.4%	35.5%	15.227				
S/DEPTH.9	*****	39.1%	36.4%	32.1%	16.4%	17.109	13.296		
S/DEPTH.8	*****	35.0%	32.6%	28.8%	16.6%	8.3%	47.6%		
S/DEPTH.7	*****	31.2%	29.1%	25.7%	14.9%	15.357	12.522		
S/DEPTH.6	*****	27.7%	25.4%	22.9%	13.3%	6.9%	39.6%	5.806	.000
S/DEPTH.5	*****	24.6%	23.0%	20.3%	11.9%	12.585	33.1%	108.0%	*****
S/DEPTH.4	*****	21.8%	20.4%	18.1%	10.7%	11.775	33.1%	86.6%	*****
S/DEPTH.3	*****	19.5%	18.2%	16.2%	9.7%	11.090	27.8%	5.808	.000
S/DEPTH.2	*****	17.6%	16.3%	14.7%	8.9%	10.488	23.6%	70.8%	*****
S/DEPTH.1	*****	16.2%	15.2%	13.6%	8.3%	11.541	17.5%	5.743	.000
S/DEPTH.0	*****	15.3%	14.4%	12.9%	7.9%	9.299	15.6%	58.9%	*****
	*****	1.733	3.409	4.974	7.548	9.125	38.9%	49.9%	.000
	*****	15.0%	14.1%	12.7%	7.9%	9.125	43.4%	5.590	.000
	*****					9.299	5.530	43.4%	.000
	*****					1.9%	15.6%	38.9%	.000
	*****					9.363	36.3%	49.9%	.000
	*****					9.276	36.3%	5.477	.000
	*****					1.5%	14.1%	35.4%	*****

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

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TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA #	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT#	.653	.616	.528	.420	.207	.010	.305	.347
	23.4%	20.1%	11.0%	-3.1%	55.6%	47.3%	25.4%	44.0%
SURFACE	11.311	10.232	7.835	5.329	1.759	.087	1.589	2.242
S/DEPTH#1.3	18.0%	12.8%	.9%	20.8%	77.3%	*****	26.8%	34.6%
S/DEPTH#1.2	8.041	6.929						
S/DEPTH#1.1	2.8%	8.6%	5.388	4.232				
S/DEPTH#1.0	2.8%	4.4%	9.4%	18.3%				
S/DEPTH# .9	4.824	4.221	3.323	1.456				
S/DEPTH# .8	5.8%	3.780	3.326	2.666	46.0%	.239		
S/DEPTH# .7	5.1%	6.3%	10.0%	16.5%	43.3%	*****		
S/DEPTH# .6	3.098	2.975	2.629	2.123	.976	.075	1.412	2.087
S/DEPTH# .5	5.7%	6.7%	9.9%	15.6%	38.6%	*****	36.0%	44.6%
S/DEPTH# .4	2.342	2.078	2.078	1.687	.791	.066	1.142	1.710
S/DEPTH# .3	5.9%	6.9%	9.7%	14.7%	34.7%	*****	32.8%	50.9%
S/DEPTH# .2	1.907	1.835	1.632	1.332	.635	.057	1.914	1.384
S/DEPTH# .1	6.1%	6.9%	9.4%	13.9%	31.6%	*****	29.8%	46.1%
	1.474	1.419	1.265	1.036	.500	.048	.719	1.098
	6.0%	6.8%	9.1%	13.2%	*****	*****	27.6%	42.3%
	1.110	1.069	.955	.784	.382	.038	.2548	.044
	6.0%	6.7%	8.8%	12.5%	*****	*****	39.8%	50.0
	7.94	7.66	.684	.563	.277	.028	.397	.613
	5.9%	6.5%	8.5%	*****	*****	*****	37.2%	57.0
	.513	.494	.442	.364	.180	.019	.258	.400
	*****	*****	*****	*****	*****	*****	*****	*****
	.251	.242	.217	.179	.089	.009	.127	.197
	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****

CASE 7=C

TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT	0 .653 23.4%	10.0 .616 20.1%	20.0 .528 11.0%	30.0 .420 3.1%	50.0 207 55.6%	75.0 100.0 47.3%	100.0 130.0 180.0 =33.5 =34.7 =40.0%
SURFACE	.000	5.244	9.159	11.573	13.306	12.332	9.803
S/DEPTH=1.3	*****	41.0%	34.2%	25.3%	5.8%	16.6%	34.4%
S/DEPTH=1.2	*****	4.346	8.317				4.860
S/DEPTH=1.1	*****	32.2%	29.9%	23.7%	9.614		31.9%
S/DEPTH=1.0	*****	29.1%	27.0%	23.7%	23.7%		*****
S/DEPTH=.9	*****	2.887	5.585	7.940	11.236		*****
S/DEPTH=.8	*****	26.4%	24.6%	21.6%	12.5%		*****
S/DEPTH=.7	*****	2.358	4.580	6.547	9.400	10.614	9.499
S/DEPTH=.6	*****	24.0%	22.4%	19.7%	11.5%	4.4%	26.0%
S/DEPTH=.5	*****	1.922	3.745	5.379	7.819	8.993	8.208
S/DEPTH=.4	*****	21.9%	20.5%	18.1%	10.6%	3.8%	23.2%
S/DEPTH=.3	*****	1.558	3.044	4.389	6.447	7.535	6.993
S/DEPTH=.2	*****	20.2%	18.9%	16.7%	9.9%	3.2%	20.8%
S/DEPTH=.1	*****	1.250	2.447	3.539	5.246	6.215	5.851
S/DEPTH=.0	*****	18.7%	17.5%	15.6%	9.3%	2.8%	19.0%
S/DEPTH=.9	*****	.985	1.931	2.800	4.181	5.010	4.773
S/DEPTH=.8	*****	17.5%	16.4%	14.6%	8.8%	2.4%	17.5%
S/DEPTH=.7	*****	.753	1.477	2.147	3.225	3.900	3.750
S/DEPTH=.6	*****	16.6%	15.6%	13.9%	8.4%	2.1%	16.3%
S/DEPTH=.5	*****	.544	1.070	1.558	2.350	2.862	2.772
S/DEPTH=.4	*****	*****	14.9%	13.5%	8.1%	1.9%	15.3%
S/DEPTH=.3	*****	.354	.696	1.014	1.535	1.879	1.829
S/DEPTH=.2	*****	*****	14.4%	12.9%	8.0%	1.7%	14.7%
S/DEPTH=.1	*****	.174	.343	.500	.758	.930	.909
S/DEPTH=.0	*****	*****	*****	*****	7.6%	1.6%	14.3%
S/DEPTH=.9	*****	.900	.900	.900	.900	.900	.900
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD....DEFINED IN EQUATION (27)

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.653	.616	.528	.420	.207	.010	.165	.305	.347
	23.4%	20.1%	11.0%	3.1%	55.6%	*****	47.3%	25.4%	44.0%
SURFACE	10.622	9.399	6.807	4.304	1.201	.041	.158	.797	1.069
	25.6%	19.5%	2.6%	23.0%	100.9%	*****	*****	24.4%	27.1%
S/DEPTH=1.03	10.572								
	23.8%								
S/DEPTH=1.2	7.023	6.668	5.697						
	.6%	1.5%	8.2%						
S/DEPTH=1.1	4.772	4.546	3.922	3.042					
	1.7%	3.1%	9.1%	19.7%					
S/DEPTH=1.0	3.243	3.098	2.694	2.117	.883				
	3.5%	5.1%	10.0%	18.9%	57.1%				
S/DEPTH= .9	2.198	2.104	1.842	1.463	.634				
	4.7%	6.1%	10.3%	18.0%	50.1%				
S/DEPTH= .8	1.479	1.418	1.248	1.000	.447	.036	.142	.650	.942
	5.5%	6.7%	10.5%	16.9%	*****	*****	*****	40.7%	44.3%
S/DEPTH= .7	.981	.943	.833	.673	.309	.023	.056	.447	.659
	5.9%	7.0%	10.2%	15.9%	*****	*****	*****	*****	57.7%
S/DEPTH= .6	.637	.612	.543	.441	.207	.017	.035	.299	.447
	6.1%	7.0%	9.9%	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.398	.383	.340	.278	.133	.012	.021	.191	.289
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.233	.225	.200	.164	.079	.008	.012	.114	.175
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.123	.118	.106	.087	.042	.004	.006	.061	.094
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.052	.050	.045	.037	.018	.002	.002	.026	.040
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.013	.012	.011	.009	.004	.000	.001	.006	.010
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 7=C

TABLE VII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA ETA/HEIGHT	0 .653 23.4%	10.0 .616 20.1%	20.0 .528 11.0%	30.0 .420 3.1%	50.0 .207 55.6%	75.0 .010 *****	100.0 130.0 100.0 180.0 =347 =44.0%
SURFACE	.000	4.491	7.434	8.777	8.761	6.925	2.109
S/DEPTH=1.3	*****	48.4%	40.0%	28.5%	2.2%	27.5%	46.9%
S/DEPTH=1.2	*****		6.403				*****
S/DEPTH=1.1	*****	3.371	34.0%	6.525			
S/DEPTH=1.0	*****	2.439	4.667	27.0%			
S/DEPTH=.9	*****	33.1%	30.8%	4.764	6.588		
S/DEPTH=.8	*****	1.756	3.379	24.5%	14.1%	5.296	4.569
S/DEPTH=.7	*****	29.9%	27.8%	3.439	4.842	5.4%	31.2%
S/DEPTH=.6	*****	1.253	25.2%	22.2%	12.8%	3.917	3.471
S/DEPTH=.5	*****	27.0%	1.712	2.444	3.496	4.6%	27.3%
S/DEPTH=.4	*****	24.4%	22.8%	20.2%	11.7%	2.822	2.560
S/DEPTH=.3	*****	1.608	1.185	1.700	2.465	3.8%	59.7%
S/DEPTH=.2	*****	22.2%	20.1%	18.4%	10.8%	1.963	1.816
S/DEPTH=.1	*****	.408	.796	1.147	1.683	3.3%	21.2%
S/DEPTH=.0	*****	*****	19.0%	16.8%	9.9%	1.299	32.6%
S/DEPTH=.9	*****	.261	.512	.740	1.097	2.8%	19.0%
S/DEPTH=.8	*****	*****	17.5%	15.5%	9.3%	2.799	47.0%
S/DEPTH=.7	*****	.157	.307	.445	.666	17.3%	7.62
S/DEPTH=.6	*****	*****	*****	*****	8.7%	2.4%	*****
S/DEPTH=.5	*****	.084	.164	.239	.359	.435	.420
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	.036	.070	.102	.155	.189	.184
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****

CASE 7=C

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD....DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.653	.616	.528	.420	.207	.010	.165	.305	.347
	23.4%	20.1%	11.0%	3.1%	55.0%	*****	47.3%	25.6%	44.0%
SURFACE	1.305	1.233	1.056	.840	.413	-.021	-.329	-.611	-.695
	19.6%	16.7%	9.0%	2.0%	36.0%	*****	21.4%	12.1%	18.9%
S/DEPTH=1.3	1.297								
	19.1%								
S/DEPTH=1.2	1.166	1.126	1.013						
	12.6%	11.2%	6.7%						
S/DEPTH=1.1	1.044	1.013	.922	.762					
	10.8%	9.6%	5.9%	.9%					
S/DEPTH=1.0	.936	.910	.836	.721	.410				
	9.2%	8.1%	5.0%	.6%	25.0%				
S/DEPTH=.9	.840	.819	.758	.663	.399	.020	.314	.575	.673
	7.8%	6.9%	4.2%	.5%	20.7%	*****	28.5%	15.6%	22.7%
S/DEPTH=.8	.757	.740	.689	.609	.384	.050	.257	.520	.619
	6.6%	5.9%	3.6%	.4%	17.0%	*****	31.0%	11.3%	22.6%
S/DEPTH=.7	.686	.672	.629	.561	.367	.071	.211	.473	.574
	5.7%	5.0%	3.1%	.3%	14.2%	128.5%	33.7%	7.5%	17.4%
S/DEPTH=.6	.627	.615	.578	.520	.350	.086	.175	.435	.535
	4.9%	4.4%	2.7%	.2%	12.0%	.88.9%	36.6%	4.2%	13.1%
S/DEPTH=.5	.578	.568	.536	.485	.335	.096	.147	.405	.504
	4.4%	3.9%	2.5%	.1%	10.2%	.67.5%	39.8%	1.4%	6.5%
S/DEPTH=.4	.540	.530	.502	.456	.322	.102	.126	.366	.464
	4.0%	3.6%	2.3%	.1%	8.8%	.54.6%	43.0%	.9%	4.4%
S/DEPTH=.3	.510	.501	.476	.434	.311	.106	.110	.382	.480
	3.8%	3.4%	2.2%	.2%	7.7%	.46.4%	46.1%	.3%	3.2%
S/DEPTH=.2	.489	.481	.458	.419	.303	.109	.100	.353	.450
	3.6%	3.3%	2.2%	.3%	6.9%	.41.3%	48.8%	2.6%	3.2%
S/DEPTH=.1	.477	.469	.447	.410	.298	.110	.094	.356	.453
	3.5%	3.2%	2.2%	.4%	6.5%	.38.6%	50.6%	3.7%	3.2%
S/DEPTH=.0	.473	.465	.443	.407	.297	.111	.092	.353	2.7%
	3.5%	3.2%	2.2%	.5%	6.5%	.37.7%	51.2%	4.0%	2.7%

CASE 7=C

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.105	.185	.225	.198	.073	.039	.084	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.025	.021	.011	.005	.039	.062	.043	.041	.087
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 7=C

TABLE X:OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.981 (9.4%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.426 (=17.3%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.461 (=21.5%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.887 (=19.4%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.665 (=13.4%)
(6)	DIPENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.749 (5.1%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.917 (=10.6%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.838 (=4.9%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.174 (27.7%)

CASE 7=C

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.119668	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.047489	STREAM FUNCTION	.000066
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.229930	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.087129	STREAM FUNCTION	.000178
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.505160	STREAM FUNCTION	.540404
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.254826	STREAM FUNCTION	.316274

ITERATIONS ON ETA FAILED TO CONVERGE IN 40 ITER

CASE 7=D

9TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/g \cdot 28310) \cdot T^{**2}$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .12492 DPT/LO = .19999

H/DPT = .622465

L/LO = 1.035156 PSI/(G*H*T) = -.010896

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.332090E+01	X(2)/(H*T*G) =	-.145664E+02
X(3)/(H*T*G) =	-.636587E+04	X(4)/(H*T*G) =	-.351129E+05
X(5)/(H*T*G) =	-.400131E+06	X(6)/(H*T*G) =	-.323351E+07
X(7)/(H*T*G) =	-.807128E+08	X(8)/(H*T*G) =	-.231839E+08
X(9)/(H*T*G) =	-.564928E+09		

CASE 7=D

TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.724	.580	.443	.326	.137	.033	.017	.027	.276
	31.0%	15.1%	6.1%	32.7%	134.7%	*****	41.0%	55.3%	81.2%
SURFACE	7.622	5.536	3.976	2.884	1.276	.004	.789	1.435	1.607
S/DEPTH=1.4	30.4%	6.2%	22.3%	50.7%	130.5%	*****	27.3%	42.9%	52.8%
S/DEPTH=1.3	5.323	4.946	3.586	2.873					
S/DEPTH=1.2	1.8%	4.1%	19.9%	37.9%					
S/DEPTH=1.1	4.3%	8.4%	3.125	2.564					
S/DEPTH=1.0	3.692	3.536	20.7%	35.8%					
S/DEPTH=0.9	8.7%	11.8%	22.7%	2.888	1.226				
S/DEPTH=0.8	3.155	3.042	21.5%	33.7%	85.3%		.778		
S/DEPTH=0.7	12.0%	14.4%	22.1%	32.0%	1.158	.061	30.3%	1.372	1.577
S/DEPTH=0.6	14.3%	16.2%	22.1%	32.0%	73.4%	.116	27.4%	48.4%	100.0%
S/DEPTH=0.5	15.9%	17.5%	22.3%	30.8%	63.9%	*****		1.270	1.480
S/DEPTH=0.4	2.125	2.070	1.911	1.667	1.023	.155	24.6%	46.9%	65.9%
S/DEPTH=0.3	17.0%	18.2%	22.8%	29.1%	56.2%	.182	21.8%	45.3%	60.7%
S/DEPTH=0.2	1.909	1.863	1.729	1.522	.963	*****	21.8%	45.3%	60.7%
S/DEPTH=0.1	17.5%	18.6%	21.9%	27.6%	49.8%	.200	19.2%	41.2%	54.5%
S/DEPTH=0.0	1.738	1.698	1.584	1.405	.910	*****	19.2%	41.2%	54.5%
S/DEPTH=0.0	17.7%	18.6%	21.8%	26.8%	44.5%	.212	19.2%	41.2%	54.5%
S/DEPTH=0.0	1.606	1.571	1.470	1.311	.867	*****	16.8%	37.8%	46.3%
S/DEPTH=0.0	17.7%	18.5%	20.8%	24.8%	40.2%	.219	16.8%	37.8%	46.3%
S/DEPTH=0.0	1.507	1.476	1.385	1.240	.832	*****	16.8%	37.8%	46.3%
S/DEPTH=0.0	17.6%	18.2%	20.2%	23.7%	36.8%	*****	16.8%	37.8%	46.3%
S/DEPTH=0.0	1.439	1.410	1.326	1.191	.808	.224	16.8%	37.8%	46.3%
S/DEPTH=0.0	17.4%	17.9%	19.7%	22.8%	34.4%	*****	16.8%	37.8%	46.3%
S/DEPTH=0.0	1.399	1.371	1.291	1.162	.793	.226	16.8%	37.8%	46.3%
S/DEPTH=0.0	17.2%	17.6%	19.4%	22.2%	32.9%	*****	16.8%	37.8%	46.3%
S/DEPTH=0.0	1.386	1.358	1.279	1.152	.788	.227	16.8%	37.8%	46.3%
S/DEPTH=0.0	17.2%	17.7%	19.3%	22.0%	32.4%	*****	16.8%	37.8%	46.3%

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD.....DEFINED IN EQUATION (22)

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TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	160.0
ETA/HEIGHT=	.724	.580	.443	.326	.137	.033	.147	.276
	31.0%	15.1%	6.1%	32.7%	134.7%	*****	41.0%	81.2%
SURFACE	.000	23.658	23.538	22.450	19.677	14.544	9.342	3.816
	*****	77.4%	55.9%	35.4%	6.1%	59.4%	123.1%	211.3%
S/DEPTH=1.4	.000							*****
S/DEPTH=1.3	.000	18.340						*****
	*****	71.1%						*****
S/DEPTH=1.2	.000	12.608	19.672	22.725				*****
	*****	63.6%	53.8%	41.2%				*****
S/DEPTH=1.1	.000	9.113	15.412	18.874				*****
	*****	56.3%	48.9%	38.5%				*****
S/DEPTH=1.0	.000	6.857	12.158	15.517	17.443			*****
	*****	49.6%	43.7%	34.9%	9.0%			*****
S/DEPTH= .9	.000	5.321	9.715	12.782	15.146	13.546	9.340	*****
	*****	43.4%	38.6%	31.1%	18.3%	35.7%	111.2%	*****
S/DEPTH= .8	.000	4.234	7.882	10.613	13.181	12.402	9.196	*****
	*****	37.8%	33.8%	27.3%	7.3%	31.2%	91.1%	*****
S/DEPTH= .7	.000	3.444	6.501	8.915	11.532	11.383	8.932	*****
	*****	32.8%	29.3%	23.7%	6.2%	27.4%	76.6%	*****
S/DEPTH= .6	.000	2.862	5.459	7.597	10.178	10.495	8.627	*****
	*****	28.3%	25.4%	20.5%	5.1%	24.2%	65.5%	*****
S/DEPTH= .5	.000	2.431	4.675	6.584	9.089	9.744	8.327	*****
	*****	24.1%	21.9%	17.6%	4.2%	21.5%	56.8%	*****
S/DEPTH= .4	.000	2.115	4.094	5.822	8.238	9.131	8.056	*****
	*****	21.3%	19.0%	15.3%	3.4%	19.3%	50.1%	*****
S/DEPTH= .3	.000	1.889	3.675	5.266	7.603	8.657	7.832	*****
	*****	18.7%	16.7%	13.4%	2.9%	17.5%	49.0%	*****
S/DEPTH= .2	.000	1.738	3.393	4.889	7.163	8.519	7.686	*****
	*****	16.8%	15.0%	12.0%	2.2%	16.2%	41.5%	*****
S/DEPTH= .1	.000	1.651	3.230	4.671	6.904	8.118	7.564	*****
	*****	15.6%	14.0%	11.2%	2.2%	15.4%	39.4%	*****
S/DEPTH= .0	.000	1.622	3.177	4.599	6.819	8.051	7.529	*****
	*****	15.3%	13.6%	10.9%	2.2%	15.2%	38.7%	*****

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

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TABLE V DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

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TABLE VI. DIMENSIONLESS INERTIA FORCE COMPONENT FIELD, ... DEFINED IN EQUATION (26)

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CASE 7=0

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT=	0 .724 31.0%	10.0 .560 15.1%	20.0 .443 6.1%	30.0 .326 32.7%	40.0 .137 134.7%	50.0 75.0 0.033 0.033 41.0%	60.0 100.0 0.207 55.3%	70.0 180.0 0.276 81.2%
SURFACE	17.042	10.013	5.528	2.987	.669	.012	.126	.663
S/DEPTH#1.4	39.0%	1.0%	-55.3%	-124.9%	*****	*****	*****	*****
S/DEPTH#1.3	22.2%	6.546	7.788	24.4%	4.189	2.955	77.1%	2.105
S/DEPTH#1.2	24.3%	5.614	-30.0%	2.894	48.1%	73.0%	529	.394
S/DEPTH#1.1	29.7%	3.743	34.2%	1.993	69.1%	1.000	0.12	.122
S/DEPTH#1.0	33.4%	2.515	37.2%	1.667	66.0%	.286	.011	.077
S/DEPTH# .9	35.9%	1.693	39.0%	1.080	48.2%	.203	.010	.049
S/DEPTH# .8	37.5%	1.134	40.1%	.717	48.7	.008	.030	.205
S/DEPTH# .7	38.7	.466	46.6	.352	.159	.006	.018	.194
S/DEPTH# .6	39.5	.305	49.2	.204	.090	.004	.010	.118
S/DEPTH# .5	40.1	.179	51.2	.121	.055	.002	.005	.064
S/DEPTH# .4	40.4	.094	56.0	.084	.030	.001	.002	.028
S/DEPTH# .3	40.6	.038	60.3	.037	.013	.000	.001	.007
S/DEPTH# .2	40.7	.009	66.7	.007	.003	.000	.000	.000
S/DEPTH# .1	40.8	.000	77.1	.000	.000	.000	.000	.000
S/DEPTH# .0	40.9	.000	81.2	.000	.000	.000	.000	.000

TABLE VIII—DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (26)

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CASE 7=0

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA ETA/HEIGHT=	0 724 31.0%	10.0 580 15.1%	20.0 443 6.1%	30.0 326 32.7%	50.0 137 134.7%	75.0 033 *****	100.0 147 41.0%	130.0 247 55.3%	180.0 276 81.2%
SURFACE	1.377	1.167	.904	.673	.282	.062	.296	.501	.564
S/DEPTH=1.4	26.7%	15.5%	1.5%	20.4%	82.2%	*****	11.6%	25.4%	32.6%
S/DEPTH=1.3	24.2%	1.118	.868	.672	.300	.026	.292	.480	.552
S/DEPTH=1.2	17.0%	12.1%	.7%	16.9%	.64.2%	*****	21.1%	31.0%	100.0%
S/DEPTH=1.1	12.4%	9.0%	.805	.646	.53.2%	.009	.241	.439	.515
S/DEPTH=1.0	8.3%	5.7%	1.9%	15.1%	.46.0%	*****	28.5%	30.5%	45.4%
S/DEPTH=.9	.859	.827	3.5%	.610	.40.9%	.035	.201	.405	.482
S/DEPTH=.8	4.7%	2.6%	.674	.370	.37.2%	.053	.168	.38.7%	.455
S/DEPTH=.7	1.6%	.1%	.522	.14.7%	.287	.067	.143	.23.1%	.31.1%
S/DEPTH=.6	.627	.611	.565	.494	.34.4%	.076	.123	10.6%	.432
S/DEPTH=.5	.573	.560	.522	.462	.32.9%	.139.6%	61.9%	11.1%	24.8%
S/DEPTH=.4	.494	.485	.456	.411	.273	.083	.109	.336	.415
S/DEPTH=.3	.468	.459	.434	.393	.268	.087	.099	.6.8%	19.8%
S/DEPTH=.2	.450	.442	.418	.380	.265	.089	.093	.3.6%	16.2%
S/DEPTH=.1	.439	.431	.409	.372	.260	.090	.091	.316	14.0%
S/DEPTH=.0	.435	.428	.406	.370	.264	.090	.091	.314	13.3%
	.8.6%	9.4%	11.4%	14.9%	28.8%	101.2%	83.3%	.9%	

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TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION,... DEFINED IN EQ.(35)									
SURFACE	.000	.371	.587	.629	.443	.137	.066	.135	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION,... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION,... DEFINED IN EQ.(36)									
SURFACE	.0005	.001	.011	.028	.064	.080	.044	.069	.126
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION,... DEFINED IN EQ.(37)									
SURFACE	.036	.004	.009	.010	.004	.002	.001	.004	.006

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.035 (14.1%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	320 (-56.0%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.365 (-65.6%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.686 (-61.1%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.548 (-49.9%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.799 (7.0%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.727 (-41.0%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.694 (-31.5%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.146 (37.7%)

CASE 7=D

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.300647	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.067613	STREAM FUNCTION	.006130
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.629274	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.125891	STREAM FUNCTION	.035687
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.743105	STREAM FUNCTION	.916645
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.308190	STREAM FUNCTION	.242414

CASE 8=a

2TH ORDER STREAM FUNCTION WAVE THEORY

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

DEFINITIONS

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
DPT = WATER DEPTH L = WAVE LENGTH
PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .04195 DPT/LO = .499998
H/DPT = .08390
L/LO = 1.013086 PSI/(G*H*T) = -.005178

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.714260=02 X(2)/(H*T*G) = -.622897=06

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TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHTS	0 .534 6.3%	10.0 .524 6.0%	20.0 .494 4.9%	30.0 .447 3.0%	50.0 .310 3.6%	75.0 .097 32.8%	100.0 130.0 25.0%	180.0 130.0 2.6%	180.0 130.0 2.6%
SURFACE	3.575	3.511	3.322	3.021	2.156	.812	.533	.2.153	.2.737
S/DEPTH=.10	.5%	.6%	.9%	.12%	.2.2%	.3.9%	.3%	.1.3%	.9%
S/DEPTH=.9	3.111	3.063	2.921	2.690	1.990	.792	.401	.1.743	.2.270
S/DEPTH=.8	.1.3%	.1.3%	.1.3%	.1.4%	.1.8%	.3.0%	.4%	.1.2%	.1.4%
S/DEPTH=.7	2.283	2.248	2.144	1.975	1.462	.584	.294	.1.282	.1.671
S/DEPTH=.6	.9%	.9%	.9%	.1.0%	.1.2%	.2.1%	.5%	.7%	.8%
S/DEPTH=.5	1.678	1.653	1.577	1.452	1.076	.430	.216	.946	.1.234
S/DEPTH=.4	.4%	.4%	.5%	.5%	.7%	.1.3%	.7%	.1%	.3%
S/DEPTH=.3	1.236	1.219	1.163	1.071	.794	.318	.160	.702	.915
S/DEPTH=.2	.0%	.0%	.0%	.0%	.1%	.6%	.120	.4%	.3%
S/DEPTH=.1	.917	.903	.862	.794	.589	.236	.091	.399	.521
S/DEPTH=.0	.5%	.5%	.5%	.5%	.8%	.1%	.071	.15%	.15%
S/DEPTH=.9	.686	.676	.645	.594	.441	.177	.058	.256	.408
S/DEPTH=.8	.1.1%	.1.1%	.1.1%	.1.0%	.1.0%	.0.0%	.036	.21%	.2.1%
S/DEPTH=.7	.522	.514	.490	.452	.335	.135	.051	.27%	.2.6%
S/DEPTH=.6	.1.6%	.1.6%	.1.6%	.1.6%	.1.6%	.0.0%	.008	.224	.2.92
S/DEPTH=.5	.408	.402	.383	.353	.262	.105	.048	.3.0%	.3.0%
S/DEPTH=.4	.2.2%	.2.2%	.2.2%	.2.2%	.2.1%	.086	.048	.3.2%	.3.2%
S/DEPTH=.3	.334	.329	.314	.289	.214	.086	.048		
S/DEPTH=.2	.2.7%	.2.7%	.2.7%	.2.7%	.2.7%	.075	.048		
S/DEPTH=.1	.292	.287	.274	.253	.188	.075	.048		
S/DEPTH=.0	.3.1%	.3.1%	.3.1%	.3.1%	.3.0%	.072	.048		
	.278	.274	.262	.241	.179	.072	.048		
	.3.2%	.3.2%	.3.2%	.3.2%	.3.2%	.072	.048		

CASE 8=a

TABLE I-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.534	.524	.494	.447	.310	.097	.116	.373	.466
	6.3%	6.0%	4.9%	3.0%	3.6%	32.8%	28.0%	2.6%	7.3%
SURFACE	.000	.620	1.211	1.747	2.578	3.064	2.945	1.789	.000
S/DEPTH=1.0	*****	.2%	.4%	.8%	1.6%	2.4%	2.6%	1.8%	*****
S/DEPTH=.9	.000	.540	1.063	1.553	2.376	2.987			
S/DEPTH=.8	.000	.49%	1.0%	1.4%	2.12%	2.86%	2.223	1.446	*****
S/DEPTH=.7	.000	.46%	.7%	1.135	1.737	2.186	1.625	1.17%	*****
S/DEPTH=.6	.000	.43%	.567	.829	1.269	1.597	1.08%	1.058	*****
S/DEPTH=.5	.000	.41%	.3%	.4%	.5%	1.164	1.185	1.1%	*****
S/DEPTH=.4	.000	.40%	.0%	.0%	.1%	.824	.859	.5%	*****
S/DEPTH=.3	.000	.39%	.0%	.437	.670	.644	.617	.0%	*****
S/DEPTH=.2	.000	.38%	.4%	.4%	.3%	.605	.5%	.4%	*****
S/DEPTH=.1	.000	.37%	.7%	.7%	.7%	.526	.283	.283	*****
S/DEPTH=.0	.000	.36%	.151	.221	.338	.434	.493	.493	*****
	.000	.35%	.102	.149	1.0%	1.0%	.9%	.8%	*****
	.000	.34%	.063	.092	.228	.298	1.2%	1.2%	*****
	.000	.33%	.032	.044	.141	.178	1.4%	1.1%	*****
	.000	.32%	.015	.044	.067	.085	.086	.056	*****
	.000	.31%	.000	.000	.000	.000	.000	.000	*****
	.000	.30%	.000	.000	.000	.000	.000	.000	*****
	.000	.29%	.000	.000	.000	.000	.000	.000	*****
	.000	.28%	.000	.000	.000	.000	.000	.000	*****
	.000	.27%	.000	.000	.000	.000	.000	.000	*****
	.000	.26%	.000	.000	.000	.000	.000	.000	*****
	.000	.25%	.000	.000	.000	.000	.000	.000	*****
	.000	.24%	.000	.000	.000	.000	.000	.000	*****
	.000	.23%	.000	.000	.000	.000	.000	.000	*****
	.000	.22%	.000	.000	.000	.000	.000	.000	*****
	.000	.21%	.000	.000	.000	.000	.000	.000	*****
	.000	.20%	.000	.000	.000	.000	.000	.000	*****
	.000	.19%	.000	.000	.000	.000	.000	.000	*****
	.000	.18%	.000	.000	.000	.000	.000	.000	*****
	.000	.17%	.000	.000	.000	.000	.000	.000	*****
	.000	.16%	.000	.000	.000	.000	.000	.000	*****
	.000	.15%	.000	.000	.000	.000	.000	.000	*****
	.000	.14%	.000	.000	.000	.000	.000	.000	*****
	.000	.13%	.000	.000	.000	.000	.000	.000	*****
	.000	.12%	.000	.000	.000	.000	.000	.000	*****
	.000	.11%	.000	.000	.000	.000	.000	.000	*****
	.000	.10%	.000	.000	.000	.000	.000	.000	*****
	.000	.09%	.000	.000	.000	.000	.000	.000	*****
	.000	.08%	.000	.000	.000	.000	.000	.000	*****
	.000	.07%	.000	.000	.000	.000	.000	.000	*****
	.000	.06%	.000	.000	.000	.000	.000	.000	*****
	.000	.05%	.000	.000	.000	.000	.000	.000	*****
	.000	.04%	.000	.000	.000	.000	.000	.000	*****
	.000	.03%	.000	.000	.000	.000	.000	.000	*****
	.000	.02%	.000	.000	.000	.000	.000	.000	*****
	.000	.01%	.000	.000	.000	.000	.000	.000	*****
	.000	.00%	.000	.000	.000	.000	.000	.000	*****

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

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TABLE 14-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD, ... DEFINED IN EQUATION (24)

THETA ETA/HEIGHT	0 6.3%	10.0 6.0%	20.0 4.9%	30.0 3.0%	40.0 2.0%	50.0 1.0%	75.0 0.3%	100.0 0.1%	130.0 0.0%	180.0 0.0%
SURFACE	19.100	18.769	17.621	15.789	10.535	2.382	5.741	15.485	18.980	18.980
S/DEPTH=1.0	17.022	16.719	15.819	14.353	9.929	4.1%	1.8%	1.9%	1.6%	1.6%
S/DEPTH= .9	12.916	12.706	12.052	10.985	7.764	4.1%	3.879	12.192	15.443	15.443
S/DEPTH= .8	9.686	9.536	8.060	6.284	5.939	2.8%	2.563	8.659	11.050	11.050
S/DEPTH= .7	7.198	7.082	6.737	6.174	4.470	1.5%	1.723	6.177	7.927	7.927
S/DEPTH= .6	5.288	5.204	4.954	4.547	3.314	1.2%	1.172	4.407	5.680	5.680
S/DEPTH= .5	3.831	3.771	3.592	3.300	2.417	1.0%	1.02	3.126	4.041	4.041
S/DEPTH= .4	2.714	2.671	2.546	2.341	1.720	0.8%	0.54	2.181	2.826	2.826
S/DEPTH= .3	1.842	1.814	1.729	1.591	1.171	0.7%	0.359	1.465	1.902	1.902
S/DEPTH= .2	1.141	1.123	1.071	0.985	0.727	0.6%	0.218	0.901	1.171	1.171
S/DEPTH= .1	0.585	0.536	0.511	0.471	0.347	0.5%	0.103	0.429	0.557	0.557
S/DEPTH= .0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

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TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT	0 .534 6.3%	10.0 .524 6.0%	20.0 .494 4.9%	30.0 .447 3.0%	50.0 .310 3.6%	75.0 .097 32.6%	100.0 .116 25.0%	130.0 .373 2.6%	180.0 .466 7.1%
SURFACE	1.252	1.252	2.446	3.530	5.212	6.203	5.969	3.635	.000
S/DEPTH=1.0	1.2%	1.2%	1.0%	.7%	.1%	.9%	-1.1%	.3%	*****
S/DEPTH=.9	.5%	.796	1.568	2.292	3.510	4.424	4.507	2.938	.000
S/DEPTH=.8	.8%	.581	1.144	1.672	2.562	3.232	3.296	2.152	.000
S/DEPTH=.7	1.1%	.422	.832	1.217	1.865	2.354	2.403	1.571	.000
S/DEPTH=.6	1.5%	.306	.602	1.44%	1.4%	1.3%	1.1%	1.0%	.000
S/DEPTH=.5	*****	.219	.432	1.8%	1.7%	1.7%	1.6%	1.5%	.000
S/DEPTH=.4	*****	.154	.303	2.1%	2.1%	2.1%	2.0%	1.9%	.000
S/DEPTH=.3	*****	.104	.205	2.5%	2.4%	2.4%	2.4%	2.3%	.000
S/DEPTH=.2	*****	.064	.126	*****	2.7%	2.7%	2.7%	2.6%	.000
S/DEPTH=.1	*****	.031	.060	.185	.284	.359	.368	.241	.000
S/DEPTH=.0	*****	.000	.000	.088	.135	.171	.175	.115	.000
	*****	.000	.000	*****	*****	*****	*****	*****	.000
	*****	.000	.000	.000	.000	.000	.000	.000	*****

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA	0	10.0	20.0	30.0	40.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.534 6.5%	.524 6.0%	.494 4.9%	.447 3.0%	.310 3.6%	.097 25.0%	.097 32.8%	.097 25.0%	.373 2.6%	.466 7.3%
SURFACE	1.833	1.766	1.578	1.300	.655	.092	.092	.038	.612	.981
S/DEPTH=1.0	.2%	.0%	.5%	.13%	.33%	.63%	.63%	.13%	.13%	.1%
S/DEPTH=.9	1.521	1.281	1.165	.988	.542	.086	.086	.019	.369	.627
S/DEPTH=.8	.632	.613	.558	.473	.260	.042	.042	.009	.12%	.15%
S/DEPTH=.7	.299	.290	.264	.224	.123	.020	.020	.004	.175	.297
S/DEPTH=.6	.140	.136	.124	.105	.056	.009	.009	.002	.082	.139
S/DEPTH=.5	.029	.028	.026	.022	.012	.002	.002	.001	.038	.064
S/DEPTH=.4	.013	.012	.011	.010	.005	.001	.001	.000	.017	.029
S/DEPTH=.3	.005	.005	.005	.004	.002	.000	.000	.000	.008	.013
S/DEPTH=.2	.002	.002	.002	.001	.001	.000	.000	.000	.003	.005
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.001	.002
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 8=A

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA ETA/HEIGHT	0 .534 6.3%	10.0 .524 6.0%	20.0 .494 4.9%	30.0 .447 3.0%	50.0 .310 3.6%	75.0 .097 32.8%	100.0 .116 25.0%	130.0 .373 2.6%	180.0 .466 7.3%
SURFACE	.000 *****	.936 1.3%	1.823 1.0%	2.618 .5%	3.807 .6%	4.424 1.7%	4.155 1.9%	2.455 1.8%	.000 *****
S/DEPTH=1.0	.000 *****	.771 .2%	1.518 .2%	2.218 .1%	3.393 .1%	4.267 .5%	2.770 .3%	1.803 .7%	.000 *****
S/DEPTH= .9	.000 *****	.491 .4%	.966 .4%	1.412 .4%	2.161 .2%	2.721 .0%	1.737 .2%	1.133 1.1%	.000 *****
S/DEPTH= .8	.000 *****	.307 .7%	.604 .7%	.883 .7%	1.353 .6%	1.705 .0%	1.066 1.0%	.696 .5%	.000 *****
S/DEPTH= .7	.000 *****	.188 *****	.370 1.1%	.541 1.0%	.828 1.0%	1.045 .8%	.7 .7%	.45 .4%	.000 *****
S/DEPTH= .6	.000 *****	.112 *****	.220 1.4%	.321 1.4%	.493 1.4%	.622 1.3%	.635 1.2%	.415 1.0%	.000 *****
S/DEPTH= .5	.000 *****	.064 *****	.126 *****	.184 *****	.282 1.8%	.356 1.7%	.363 1.6%	.238 1.5%	.000 *****
S/DEPTH= .4	.000 *****	.034 *****	.067 *****	.099 *****	.151 1.5%	.191 1.9%	.196 1.8%	.128 1.2%	.000 *****
S/DEPTH= .3	.000 *****	.017 *****	.033 *****	.048 *****	.074 *****	.093 *****	.095 *****	.062 *****	.000 *****
S/DEPTH= .2	.000 *****	.007 *****	.013 *****	.019 *****	.029 *****	.037 *****	.038 *****	.025 *****	.000 *****
S/DEPTH= .1	.000 *****	.002 *****	.003 *****	.004 *****	.007 *****	.009 *****	.009 *****	.006 *****	.000 *****
S/DEPTH= .0	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

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TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

DEPTH ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.534	.524	.494	.447	.310	.097	.116	.373	.466
	6.5%	6.0%	4.9%	3.0%	3.6%	32.8%	25.0%	26%	7.3%
SURFACE	1.068	1.047	.988	.893	.620	.195	.231	.746	.932
S/DEPTH=1.0	1.1%	1.0%	.8%	.5%	.4%	1.8%	.0%	.1%	.6%
S/DEPTH= .9	.939	.923	.878	.803	.578	.192			
S/DEPTH= .8	.702	.690	.657	.602	.437	.154	.163	.596	.766
S/DEPTH= .7	.523	.514	.490	.450	.329	.121	.113	.432	.557
S/DEPTH= .6	.389	.383	.365	.336	.246	.093	.079	.315	.408
S/DEPTH= .5	.290	.286	.273	.251	.185	.071	.056	.231	.300
S/DEPTH= .4	.218	.215	.205	.189	.140	.055	.041	.172	.224
S/DEPTH= .3	.167	.164	.157	.144	.107	.042	.030	.130	.170
S/DEPTH= .2	.131	.129	.123	.113	.084	.034	.023	.101	.132
S/DEPTH= .1	.107	.106	.101	.093	.069	.028	.019	.083	.108
S/DEPTH= .0	.094	.092	.088	.081	.060	.025	.016	.072	.094
	.090	.088	.084	.078	.058	.023	.015	.069	.090
	.07%	.06%	.05%	.04%	.03%	.01%	.00%	.05%	.07%

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.008	.014	.019	.020	.009	.006	.015	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.028	.026	.020	.011	.010	.030	.029	.010	.037
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.013 (1.6%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.496 (.9%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.502 (.1.9%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.998 (.1.4%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.521 (.9%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.522 (.5%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.999 (.4%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.537 (1.2%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.017 (67.1%)

CASE 8=A

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

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* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (46)
      LINEAR          .012912          STREAM FUNCTION          .000000

(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (47)
      LINEAR          .023215          STREAM FUNCTION          .000039

(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (46)
      LINEAR          .020919          STREAM FUNCTION          .000000

(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR
      DEFINED IN EQUATION (47)
      LINEAR          .036830          STREAM FUNCTION          .000061

(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER
      DEFINED IN EQUATION (48)
      LINEAR          .151341          STREAM FUNCTION          .148196

(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER
      DEFINED IN EQUATION (49)
      LINEAR          .128825          STREAM FUNCTION          .128062

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CASE 8=B

5TH ORDER STREAM FUNCTION WAVE THEORY

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318)^{.5} * T^{.2}$

DEFINITIONS

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .083974 DPT/LO = .499998
 H/DPT = .167949
 L/LO = 1.059180 PSI/(G*H*T) = -.009830

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.810478E-02 X(2)/(H*T*G) = -.433063E-05
 X(3)/(H*T*G) = -.796799E-08 X(4)/(H*T*G) = -.463841E-10
 X(5)/(H*T*G) = -.164178E-12

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TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.570	.555	.514	.450	.285	.061	.138	.356	.430
	12.2%	11.3%	8.5%	3.9%	12.6%	110.9%	36.9%	7.6%	16.2%
SURFACE	4.017	3.921	3.646	3.231	2.158	.726	.525	1.880	2.338
S/DEPTH=1.0	2.1%	2.6%	4.0%	-6.1%	11.2%	20.2%	.5%	4.9%	3.5%
	3.005	2.856	2.811	2.577	1.876	.706			
S/DEPTH=.9	4.8%	4.9%	5.3%	5.9%	7.9%	15.4%			
	2.225	2.190	2.085	1.914	1.401	.537	.411	1.672	2.158
S/DEPTH=.8	3.5%	3.5%	3.8%	4.2%	5.7%	11.0%	2.8%	5.5%	6.7%
	1.654	1.628	1.550	1.425	1.047	.407	.301	1.249	1.616
S/DEPTH=.7	1.3%	2.0%	2.2%	2.4%	3.5%	7.3%	2.8%	3.4%	4.3%
	1.234	1.215	1.158	1.065	.784	.308	.222	.935	1.213
S/DEPTH=.6	.8%	.8%	.4%	.6%	1.4%	4.1%	3.2%	1.3%	1.9%
	.927	.912	.870	.800	.591	.233	.165	.704	.915
S/DEPTH=.5	1.6%	1.5%	1.4%	1.3%	.8%	1.2%	*****	.8%	.3%
	.703	.692	.660	.608	.449	.178	.124	.536	.697
S/DEPTH=.4	3.4%	3.4%	3.4%	3.3%	2.9%	*****	*****	2.9%	2.6%
	.543	.534	.510	.469	.347	.138	.096	.539	.539
S/DEPTH=.3	5.4%	5.4%	5.4%	5.3%	5.0%	*****	*****	5.0%	4.8%
	.431	.424	.405	.373	.276	.110	.076	.529	.429
S/DEPTH=.2	7.4%	7.4%	7.3%	7.3%	7.1%	*****	*****	7.1%	6.9%
	.357	.352	.336	.309	.229	.092	.063	.273	.356
S/DEPTH=.1	9.1%	9.1%	9.1%	9.1%	9.0%	*****	*****	9.0%	8.8%
	.316	.311	.297	.273	.203	.081	.055	.242	.315
S/DEPTH=.0	10.4%	10.4%	10.4%	10.4%	10.3%	*****	*****	10.3%	10.2%
	.302	.298	.284	.262	.194	.078	.053	.231	.302
	10.9%	10.9%	10.9%	10.9%	*****	*****	*****	10.8%	10.7%

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TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	10.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.570	.514	.450	.285	.061	.336	.450
	12.2%	8.5%	3.9%	12.6%	36.9%	7.6%	10.2%
SURFACE	.000	1.366	1.922	2.666	2.943	1.532	.000
S/DEPTH=1.0	.5%	.8%	.27%	.69%	.104%	.74%	.000
S/DEPTH= .9	.51	1.043	1.519	2.302	2.853	1.382	.000
S/DEPTH= .8	.389	.765	1.115	1.696	2.111	1.015	.000
S/DEPTH= .7	.286	.562	.820	1.249	1.560	.54%	.000
S/DEPTH= .6	.209	.412	.602	.918	1.150	.752	.000
S/DEPTH= .5	.153	.301	.440	.672	.843	.554	.000
S/DEPTH= .4	.111	.218	.318	.487	.621	.403	.000
S/DEPTH= .3	.078	.155	.226	.345	.441	.287	.000
S/DEPTH= .2	.053	.109	.154	.235	.296	.196	.000
S/DEPTH= .1	.033	.065	.095	.146	.184	.122	.000
S/DEPTH= .0	.016	.031	.046	.070	.088	.058	.000
	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000

CASE 8=B

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA ETA/HEIGHT=	10.0 11.3%	20.0 8.5%	30.0 3.9%	40.0 3.9%	50.0 12.6%	60.0 12.6%	70.0 11.0%	80.0 11.0%	90.0 11.0%	100.0 11.0%	110.0 11.0%	120.0 11.0%	130.0 11.0%	140.0 11.0%	150.0 11.0%	160.0 11.0%	170.0 11.0%	180.0 11.0%
SURFACE	4.720	9.019	12.601	17.196	18.635	16.671	9.450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH=1.0	5.7%	4.0%	1.4%	-4.3%	-9.8%	-11.7%	-10.2%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .9	3.481	6.623	9.897	14.629	18.074	13.363	8.452	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .8	1.5%	1.0%	1.2%	-2.1%	-5.7%	-6.7%	-10.3%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .7	2.534	4.974	7.834	10.916	13.436	10.019	6.393	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .6	-1.1%	.8%	.2%	-1.4%	-3.9%	-2.2%	-4.2%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .5	1.858	3.652	5.320	8.067	10.002	7.525	4.856	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .4	1.4%	1.2%	.8%	.3%	2.2%	1.6%	3.7%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .3	1.372	2.699	3.936	5.990	7.469	5.677	3.671	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .2	2.1%	2.0%	1.7%	.9%	.4%	.5%	.5%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .1	1.022	2.011	2.935	4.479	5.609	4.9%	2.810	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	3.2%	3.1%	2.9%	2.4%	1.5%	.5%	.5%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	.769	1.515	2.213	3.384	4.254	4.323	2.810	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	4.5%	4.5%	4.4%	4.0%	3.4%	2.7%	1.85	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	.590	1.162	1.698	2.602	3.281	3.346	2.185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	6.1%	6.1%	6.0%	5.8%	5.0%	4.9%	4.3%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	.465	.917	1.341	2.058	2.603	2.663	1.746	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	7.8%	7.8%	7.6%	7.6%	7.3%	7.0%	6.6%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	.384	.757	1.108	1.702	2.158	2.213	1.456	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	9.4%	9.4%	9.3%	9.3%	9.1%	8.9%	8.6%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	.338	.666	.975	1.501	1.906	1.958	1.292	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	10.5%	10.5%	10.4%	10.3%	10.2%	10.3%	10.1%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	.323	.637	.933	1.436	1.824	1.876	1.236	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	11.0%	11.0%	11.0%	11.0%	10.8%	10.8%	10.6%	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	12.0%	11.3%	8.5%	3.9%	12.6%	110.9%	36.9%	7.6%	16.2%
SURFACE									
S/DEPTH=1.0	17.699 4.0%	17.161 4.4%	15.630 2.9%	13.321 .8%	7.397 3.9%	.451 .000%	7.261 10.7%	14.559 8.6%	16.997 7.1%
S/DEPTH=.9	14.838 1.0%	14.307 .8%	13.332 1.2%	11.761 .7%	7.162 4.0%	.280 .000%			
S/DEPTH=.8	11.598 1.1%	11.363 1.0%	10.669 1.4%	9.548 1.1%	6.226 3.6%	.756 .000%	5.093 3.7%	12.645 9.1%	15.494 10.7%
S/DEPTH=.7	8.982 1.2%	8.814 1.0%	8.316 1.3%	7.509 .8%	5.100 2.7%	1.085 12.6%	3.265 1.0%	8.661 5.9%	11.133 7.2%
S/DEPTH=.6	6.841 1.7%	6.720 1.4%	6.360 1.4%	5.776 1.0%	4.027 1.4%	1.087 8.0%	2.131 1.1%	6.391 3.7%	8.029 4.3%
S/DEPTH=.5	5.132 1.5%	5.044 1.4%	4.785 1.3%	4.363 1.0%	3.095 1.1%	.951 4.8%	1.413 2.9%	4.567 1.1%	5.787 1.9%
S/DEPTH=.4	3.783 2.0%	3.720 2.4%	3.535 2.3%	3.232 2.0%	2.320 1.2%	.771 .589	2.945 4.9%	3.249 2.8%	4.145 2.9%
S/DEPTH=.3	2.718 3.4%	2.674 3.4%	2.543 3.3%	2.330 3.1%	1.686 2.4%	.589 4.21	.630 4.0	2.075 3.8%	2.917 1.9%
S/DEPTH=.2	1.867 4.4%	1.837 4.2%	1.748 4.2%	1.603 4.0%	1.147 3.5%	.421 .270	.410 2.47	1.534 3.8%	1.974 3.2%
S/DEPTH=.1	1.165 5.0%	1.147 4.9%	1.092 4.9%	1.002 4.7%	.732 3.5%	.270 1.31	.247 1.16	.947 4.0%	1.221 4.2%
S/DEPTH=.0	.000 0.00%	.000 0.00%	.000 0.00%	.000 0.00%	.000 0.00%	.000 0.00%	.000 0.00%	.000 0.00%	.000 0.00%

CASE 8=B

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	12.62	.570	.555	.514	.450	.285	.061	.138	.430
		11.33	8.55	3.9%	-12.6%	-110.9%	36.9%	-7.6%	-16.2%
SURFACE	2.708	2.584	2.245	1.774	.807	.096	.045	.618	.966
S/DEPTH#1.0	.0%	.68%	.32%	.68%	.15.1%	*****	*****	.2.7%	.6%
S/DEPTH# .9	.4.6%	1.489	1.350	1.139	.612	*****	*****	.492	.826
S/DEPTH# .8	.859	.833	.756	.639	.546	.053	.028	.3.8%	.5.4%
S/DEPTH# .7	.1.2%	.1.3%	.1.6%	.2.2%	.4.0%	*****	*****	.280	.472
S/DEPTH# .6	.486	.471	.428	.362	.197	.031	.016	.5%	.6%
S/DEPTH# .5	.23%	2.2%	2.0%	1.7%	.8%	*****	.009	.162	.274
S/DEPTH# .4	.279	.271	.246	.209	.114	.018	*****	.4.6%	3.9%
S/DEPTH# .3	.5.9%	.5.8%	.57%	.52%	.067	.011	.005	.095	.161
S/DEPTH# .2	.164	.159	.144	.122	*****	*****	*****	.8.0%	.097
S/DEPTH# .1	9.4%	9.4%	9.3%	*****	.040	.006	.003	.057	*****
S/DEPTH# .0	.098	.095	.086	.073	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	.002	.055	.059
	.059	.058	.052	.044	.024	.004	*****	*****	*****
	*****	*****	*****	*****	*****	*****	.001	.021	.036
	.036	.035	.032	.027	.015	.002	*****	*****	*****
	*****	*****	*****	*****	*****	.001	.001	.012	.020
	.021	.020	.018	.015	.008	*****	*****	*****	*****
	*****	*****	*****	*****	*****	.001	.000	.006	.009
	.009	.009	.008	.007	.004	.001	*****	*****	*****
	*****	*****	*****	*****	*****	*****	.000	.000	.000
	.000	.000	.000	.000	.000	.000	*****	*****	*****

CASE 8=B

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.570	.555	.514	.450	.285	.061	.138	.356	.430
	12.2%	11.3%	8.5%	3.9%	12.6%	110.9%	36.9%	7.6%	16.2%
SURFACE	.000	1.493	2.869	4.038	5.611	6.211	5.652	3.263	.000
S/DEPTH=.10	*****	5.9%	4.6%	2.8%	1.1%	4.2%	4.4%	1.2%	*****
	*****	1.114	2.190	3.192	4.845	6.022			
S/DEPTH=.09	*****	2.9%	2.7%	2.4%	1.3%	3%			
	*****	.816	1.605	2.302	3.568	4.458	4.502	2.904	.000
S/DEPTH=.08	*****	3.8%	3.4%	3.2%	2.5%	1.5%	.0%	1.7%	*****
	*****	.998	1.178	1.720	2.627	3.295	3.541	2.166	.000
S/DEPTH=.07	*****	4.5%	4.4%	4.2%	3.7%	2.9%	1.9%	1%	*****
	*****	.938	.863	1.261	1.929	2.428	2.470	1.608	.000
S/DEPTH=.06	*****	5.5%	5.5%	5.3%	5.0%	4.4%	3.7%	2.9%	*****
	*****	.519	.629	.920	1.410	1.779	1.615	1.166	.000
S/DEPTH=.05	*****	6.8%	6.6%	6.5%	6.3%	5.8%	5.4%	4%	*****
	*****	.231	.44	.664	1.020	1.289	1.318	.864	.000
S/DEPTH=.04	*****	7.7%	7.7%	7.7%	7.5%	7.2%	6.8%	6.4%	*****
	*****	.163	.321	.470	.723	.915	.938	.616	.000
S/DEPTH=.03	*****	8.8%	8.8%	8.7%	8.6%	8.4%	8.1%	7.8%	*****
	*****	.11	.218	.320	.491	.623	.639	.421	.000
S/DEPTH=.02	*****	9.6%	9.6%	9.6%	9.5%	9.4%	9.2%	8.9%	*****
	*****	.069	.135	.198	.305	.387	.397	.262	.000
S/DEPTH=.01	*****	10.1%	10.1%	10.1%	10.1%	10.1%	10.0%	*****	*****
	*****	.033	.065	.095	.146	.185	.190	.126	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT#	0 .570 12.2%	10.0 .555 11.3%	20.0 .514 8.5%	30.0 .450 3.9%	50.0 .285 12.6%	75.0 .061 110.9%	100.0 36.9%	130.0 7.6%	180.0 16.2%
SURFACE	2.499	2.378	2.048	1.599	.703	.080	.036	.070	.721
S/DEPTH#1.0	.3%	.7%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .9	.5%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .8	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .7	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .6	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .5	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .4	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .3	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .2	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .1	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%
S/DEPTH# .0	.6%	.9%	.5%	.7%	.5%	.074	.036	.3%	.5%

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TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	12.2%	11.3%	8.5%	5.14	.450	.285	.061	.138	.356
				3.9%	12.8%	110.9%	36.9%	7.6%	16.2%
SURFACE									
S/DEPTH#1.0	.000 *****	1.181 6.3%	2.248 4.7%	3.120 2.2%	4.177 3.1%	4.389 7.5%	3.806 7.7%	2.080 3.1%	.000 *****
S/DEPTH# .9	.000 *****	2.083 2.0%	1.539 1.7%	2.240 1.3%	3.392 .0%	4.199 2.10%	.000 *****	1.749 4.1%	.000 *****
S/DEPTH# .8	.000 *****	2.534 3.1%	2.333 3.1%	2.001 2.9%	2.176 1.1%	2.709 4.4%	2.726 2.0%	1.121 1.5%	.000 *****
S/DEPTH# .7	.000 *****	3.193 3.8%	3.180 4.2%	2.555 4.0%	2.333 3.6%	1.717 2.8%	1.081 2.0%	.701 .9%	.000 *****
S/DEPTH# .6	.000 *****	4.116 5.4%	5.228 5.4%	5.333 5.3%	5.010 5.0%	.641 4.4%	.653 3.8%	.425 3.0%	.000 *****
S/DEPTH# .5	.000 *****	5.067 6.7%	6.131 6.7%	6.192 6.0%	6.294 6.4%	.371 6.0%	.379 5.8%	.248 5.0%	.000 *****
S/DEPTH# .4	.000 *****	6.036 8.0%	7.071 8.0%	7.104 7.9%	7.160 7.8%	.202 7.0%	.207 6.8%	.136 6.5%	.000 *****
S/DEPTH# .3	.000 *****	7.018 9.1%	8.035 9.1%	8.051 8.9%	8.078 8.8%	.099 8.6%	.102 8.4%	.067 8.1%	.000 *****
S/DEPTH# .2	.000 *****	8.007 10.2%	9.014 10.2%	9.020 10.0%	9.031 9.8%	.040 9.6%	.041 9.4%	.027 9.1%	.000 *****
S/DEPTH# .1	.000 *****	9.002 11.3%	10.003 11.3%	10.005 11.1%	10.007 10.9%	.009 10.7%	.010 10.5%	.006 10.3%	.000 *****
S/DEPTH# .0	.000 *****	10.000 12.2%	11.000 12.2%	11.000 12.0%	11.000 11.8%	.000 11.6%	.000 11.4%	.000 11.2%	.000 *****

CASE 8-B

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THEA	0	10.0	20.0	30.0	40.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	0.570	0.555	0.514	0.450	0.285	0.061	0.061	0.138	0.356	0.430
	12.02	11.33	8.55	3.9	12.66	110.9	110.9	36.9	7.66	16.26
SURFACE	1.139	1.110	1.027	0.901	0.571	0.123	0.123	0.275	0.712	0.861
S/DEPTH=1.0	4.7%	4.3%	3.1%	1.5%	0.24%	9.7%	9.7%	0.8%	0.9	2.6%
S/DEPTH= .9	1.9%	1.6%	1.5%	1.0%	0.8%	10.1%	10.1%	0.201	0.625	0.789
S/DEPTH= .8	0.685	0.673	0.638	0.580	0.408	0.118	0.118	0.15	0.5	0.55
S/DEPTH= .7	2.3%	2.3%	2.0%	1.6%	0%	8.1%	8.1%	0.135	0.455	0.579
S/DEPTH= .6	0.522	0.513	0.487	0.445	0.318	0.103	0.103	0.35	3.5	2.6%
S/DEPTH= .5	3.0%	3.0%	2.8%	2.4%	0.9%	6.9%	6.9%	0.093	0.334	0.428
S/DEPTH= .4	0.396	0.390	0.371	0.340	0.246	0.085	0.085	0.047	0.186	0.241
S/DEPTH= .3	3.9%	3.6%	3.6%	3.3%	1.8%	6.2%	6.2%	0.065	0.248	0.319
S/DEPTH= .2	4.8%	4.7%	4.5%	4.2%	2.6%	6.2%	6.2%	0.055	0.5	8.5%
S/DEPTH= .1	0.231	0.227	0.217	0.199	0.146	0.055	0.055	0.047	0.186	0.241
S/DEPTH= .0	5.7%	5.6%	5.4%	5.0%	3.2%	0.055	0.055	0.047	0.186	0.241
S/DEPTH= .4	0.180	0.177	0.169	0.155	0.115	0.045	0.045	0.034	0.142	0.185
S/DEPTH= .3	6.5%	6.4%	6.1%	5.7%	3.6%	0.045	0.045	0.034	0.142	0.185
S/DEPTH= .2	7.1%	7.0%	6.7%	6.2%	3.6%	0.036	0.036	0.026	0.112	0.146
S/DEPTH= .1	0.119	0.110	0.112	0.103	0.077	0.031	0.031	0.021	0.093	0.121
S/DEPTH= .0	7.6%	7.5%	7.2%	6.5%	3.8%	0.028	0.028	0.018	0.082	0.107
S/DEPTH= .4	8.0%	7.8%	7.5%	6.8%	3.7%	0.027	0.027	0.017	0.078	0.102
S/DEPTH= .3	8.1%	7.9%	7.5%	6.8%	3.6%	0.027	0.027	0.017	0.078	0.102
S/DEPTH= .2	8.1%	7.9%	7.5%	6.8%	3.6%	0.027	0.027	0.017	0.078	0.102
S/DEPTH= .1	8.1%	7.9%	7.5%	6.8%	3.6%	0.027	0.027	0.017	0.078	0.102
S/DEPTH= .0	8.1%	7.9%	7.5%	6.8%	3.6%	0.027	0.027	0.017	0.078	0.102

CASE 8=B

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.044	.080	.101	.098	.040	.022	.051	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.043	.039	.028	.011	.029	.062	.052	.030	.081
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 8-B

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.059 (5.8%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.480 (-4.1%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.498 (-8.1%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.979 (-6.1%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.542 (-4.4%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.554 (1.6%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.992 (-1.8%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.572 (3.7%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.030 (149.1%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS,.. DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

■ (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.058970	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.046639	STREAM FUNCTION	.000014
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.107014	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.080862	STREAM FUNCTION	.000049
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.345298	STREAM FUNCTION	.318498
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.243224	STREAM FUNCTION	.236550

CASE 8=C

7TH ORDER STREAM FUNCTION WAVE THEORY

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

DEFINITIONS

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .125988 DPT/LO = .499998
 H/DPT = .251977
 L/LO = 1.125195 PSI/(G*H*T) = -.013381

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.931214e-02 X(2)/(H*T*G) = -.168029e-04
 X(3)/(H*T*G) = -.938674e-07 X(4)/(H*T*G) = -.939917e-09
 X(5)/(H*T*G) = -.900754e-11 X(6)/(H*T*G) = -.823671e-13
 X(7)/(H*T*G) = -.194169e-14

CASE 8=C

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	0 .61 18.2	10.0 .586 16.0	20.0 .521 9.8	30.0 .434 .2	50.0 .243 -32.4	75.0 .025 *****	100.0 42.0	130.0 -16.3	180.0 -389 -28.7
SURFACE	4.591	4.397	3.903	3.269	1.959	.551	-.528	-1.608	-.958
S/DEPTH=1.1	1.9	-4.2	-10.0	-17.6	-33.5	-63.9	3.3	-10.9	-8.4
S/DEPTH=1.0	11.3	-12.0	-14.0	-17.3	-21.3	-24.7	-.431	-1.535	-1.947
S/DEPTH=.9	2.130	2.082	1.980	1.801	1.279	.49.7	7.2	-14.9	-6.0
S/DEPTH=.8	8.1	-8.4	-10.3	-10.7	-15.7	-34.9	-.314	-1.171	-3.494
S/DEPTH=.7	5.5	-5.7	-6.2	-7.2	-10.7	-23.9	6.7	-10.3	-15.8
S/DEPTH=.6	1.208	1.188	1.129	1.033	.749	.278	-.231	-.895	-1.149
S/DEPTH=.5	.921	.906	.862	.790	.577	-15.2	7.0	-5.6	-7.7
S/DEPTH=.4	4.4	4.4	4.2	3.8	2.6	.173	-.130	-.535	-.691
S/DEPTH=.3	8.1	.445	.424	.390	.287	.138	-.101	-.422	-.547
S/DEPTH=.2	11.6	11.6	11.5	11.3	10.8	.113	-.081	-.345	-.445
S/DEPTH=.1	14.8	14.8	14.7	14.6	14.2	.096	-.068	-.290	-.377
S/DEPTH=.0	17.0	17.0	16.9	16.9	16.8	.087	-.050	-.200	-.338
	17.8	17.8	17.8	17.7	17.7	.084	-.058	-.250	-.326
						*****	*****	17.5	17.2

CASE 8=C

TABLE II=DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA ETA/HEIGHT	0 .611 18.2%	10.0 .586 16.0%	20.0 .521 9.6%	30.0 .434 .2%	50.0 .243 -32.4%	75.0 ***** *****	100.0 .025 42.0%	150.0 -150 -16.3%	180.0 -389 -28.7%
SURFACE	.000 *****	.881 8.5%	1.606 2.6%	2.124 4.5%	2.645 -17.4%	2.671 -25.8%	2.297 -25.6%	1.262 -17.8%	.000 *****
S/DEPTH=1.1	.000 *****	.742 -7%	1.441 2.2%	2.059 4.5%					
S/DEPTH=1.0	.000 *****	.529 -3.0%	1.033 3.9%	1.489 5.4%	2.197 9.5%	2.624 15.5%			
S/DEPTH= .9	.000 *****	.384 -3.5%	.752 3.9%	1.090 4.9%	1.626 7.7%	1.971 12.0%	1.935 -16.4%	1.206 -21.8%	.000 *****
S/DEPTH= .8	.000 *****	.282 -2.6%	.553 3.0%	.803 3.7%	1.207 5.6%	1.478 8.7%	1.464 11.9%	.922 -16.0%	.000 *****
S/DEPTH= .7	.000 *****	.207 -1.1%	.407 1.9%	.592 1.9%	.895 3.3%	1.105 5.5%	1.102 -7.9%	.699 -11.0%	.000 *****
S/DEPTH= .6	.000 *****	.152 .6%	.299 .4%	.436 .1%	.662 .9%	.821 2.5%	.823 4.7%	.525 -6.7%	.000 *****
S/DEPTH= .5	.000 *****	.111 *****	.218 2.4%	.318 2.1%	.484 1.4%	.603 2%	.606 1.2%	.389 -2.9%	.000 *****
S/DEPTH= .4	.000 *****	.079 *****	.156 4.3%	.228 4.1%	.347 3.5%	.433 2.6%	.437 1.5%	.281 .2%	.000 *****
S/DEPTH= .3	.000 *****	.054 *****	.107 .1%	.156 5.7%	.238 5.3%	.298 4.6%	.301 3.7%	.194 2.6%	.000 *****
S/DEPTH= .2	.000 *****	.034 *****	.067 .3%	.097 .1%	.149 6.7%	.186 6.0%	.189 5.4%	.122 *****	.000 *****
S/DEPTH= .1	.000 *****	.016 *****	.032 .3%	.047 .04%	.071 .07%	.090 .09%	.091 .09%	.059 *****	.000 *****
S/DEPTH= .0	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

CASE 8=C

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.0	.586	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	.2%	-32.4%	*****	42.0%	16.3%	28.7%
SURFACE	.000	6.774	11.910	15.112	17.573	16.809	13.998	7.488
S/DEPTH=1.1	*****	25.2%	17.7%	7.9%	-11.1%	25.9%	30.1%	25.9%
S/DEPTH=1.0	*****	5.552	10.548	14.622				
S/DEPTH=.9	*****	15.4%	12.3%	7.5%				
S/DEPTH=.8	*****	3.787	7.304	10.342				
S/DEPTH=.7	*****	9.5%	7.6%	4.6%				
S/DEPTH=.6	*****	2.669	5.189	7.433				
S/DEPTH=.5	*****	6.2%	5.0%	3.0%				
S/DEPTH=.4	*****	1.924	3.757	5.420				
S/DEPTH=.3	*****	4.9%	4.1%	2.6%				
S/DEPTH=.2	*****	1.410	2.763	4.003				
S/DEPTH=.1	*****	5.0%	4.5%	3.6%				
S/DEPTH=.0	*****	1.050	2.061	2.995				
S/DEPTH=.1	*****	6.1%	5.8%	5.2%				
S/DEPTH=.2	*****	.795	1.562	2.276				
S/DEPTH=.3	*****	*****	7.8%	7.4%				
S/DEPTH=.4	*****	.615	1.209	1.765				
S/DEPTH=.5	*****	*****	10.3%	10.1%				
S/DEPTH=.6	*****	.490	.966	1.411				
S/DEPTH=.7	*****	*****	13.1%	12.9%				
S/DEPTH=.8	*****	.409	.806	1.180				
S/DEPTH=.9	*****	*****	*****	15.6%				
S/DEPTH=1.0	*****	.363	.716	1.049				
S/DEPTH=1.1	*****	*****	*****	17.6%				
S/DEPTH=1.2	*****	.349	.687	1.006				
S/DEPTH=1.3	*****	*****	*****	18.4%				
S/DEPTH=1.4	*****	*****	*****					
S/DEPTH=1.5	*****	*****	*****					
S/DEPTH=1.6	*****	*****	*****					
S/DEPTH=1.7	*****	*****	*****					
S/DEPTH=1.8	*****	*****	*****					
S/DEPTH=1.9	*****	*****	*****					
S/DEPTH=2.0	*****	*****	*****					
S/DEPTH=2.1	*****	*****	*****					
S/DEPTH=2.2	*****	*****	*****					
S/DEPTH=2.3	*****	*****	*****					
S/DEPTH=2.4	*****	*****	*****					
S/DEPTH=2.5	*****	*****	*****					
S/DEPTH=2.6	*****	*****	*****					
S/DEPTH=2.7	*****	*****	*****					
S/DEPTH=2.8	*****	*****	*****					
S/DEPTH=2.9	*****	*****	*****					
S/DEPTH=3.0	*****	*****	*****					
S/DEPTH=3.1	*****	*****	*****					
S/DEPTH=3.2	*****	*****	*****					
S/DEPTH=3.3	*****	*****	*****					
S/DEPTH=3.4	*****	*****	*****					
S/DEPTH=3.5	*****	*****	*****					
S/DEPTH=3.6	*****	*****	*****					
S/DEPTH=3.7	*****	*****	*****					
S/DEPTH=3.8	*****	*****	*****					
S/DEPTH=3.9	*****	*****	*****					
S/DEPTH=4.0	*****	*****	*****					
S/DEPTH=4.1	*****	*****	*****					
S/DEPTH=4.2	*****	*****	*****					
S/DEPTH=4.3	*****	*****	*****					
S/DEPTH=4.4	*****	*****	*****					
S/DEPTH=4.5	*****	*****	*****					
S/DEPTH=4.6	*****	*****	*****					
S/DEPTH=4.7	*****	*****	*****					
S/DEPTH=4.8	*****	*****	*****					
S/DEPTH=4.9	*****	*****	*****					
S/DEPTH=5.0	*****	*****	*****					
S/DEPTH=5.1	*****	*****	*****					
S/DEPTH=5.2	*****	*****	*****					
S/DEPTH=5.3	*****	*****	*****					
S/DEPTH=5.4	*****	*****	*****					
S/DEPTH=5.5	*****	*****	*****					
S/DEPTH=5.6	*****	*****	*****					
S/DEPTH=5.7	*****	*****	*****					
S/DEPTH=5.8	*****	*****	*****					
S/DEPTH=5.9	*****	*****	*****					
S/DEPTH=6.0	*****	*****	*****					
S/DEPTH=6.1	*****	*****	*****					
S/DEPTH=6.2	*****	*****	*****					
S/DEPTH=6.3	*****	*****	*****					
S/DEPTH=6.4	*****	*****	*****					
S/DEPTH=6.5	*****	*****	*****					
S/DEPTH=6.6	*****	*****	*****					
S/DEPTH=6.7	*****	*****	*****					
S/DEPTH=6.8	*****	*****	*****					
S/DEPTH=6.9	*****	*****	*****					
S/DEPTH=7.0	*****	*****	*****					
S/DEPTH=7.1	*****	*****	*****					
S/DEPTH=7.2	*****	*****	*****					
S/DEPTH=7.3	*****	*****	*****					
S/DEPTH=7.4	*****	*****	*****					
S/DEPTH=7.5	*****	*****	*****					
S/DEPTH=7.6	*****	*****	*****					
S/DEPTH=7.7	*****	*****	*****					
S/DEPTH=7.8	*****	*****	*****					
S/DEPTH=7.9	*****	*****	*****					
S/DEPTH=8.0	*****	*****	*****					
S/DEPTH=8.1	*****	*****	*****					
S/DEPTH=8.2	*****	*****	*****					
S/DEPTH=8.3	*****	*****	*****					
S/DEPTH=8.4	*****	*****	*****					
S/DEPTH=8.5	*****	*****	*****					
S/DEPTH=8.6	*****	*****	*****					
S/DEPTH=8.7	*****	*****	*****					
S/DEPTH=8.8	*****	*****	*****					
S/DEPTH=8.9	*****	*****	*****					
S/DEPTH=9.0	*****	*****	*****					
S/DEPTH=9.1	*****	*****	*****					
S/DEPTH=9.2	*****	*****	*****					
S/DEPTH=9.3	*****	*****	*****					
S/DEPTH=9.4	*****	*****	*****					
S/DEPTH=9.5	*****	*****	*****					
S/DEPTH=9.6	*****	*****	*****					
S/DEPTH=9.7	*****	*****	*****					
S/DEPTH=9.8	*****	*****	*****					
S/DEPTH=9.9	*****	*****	*****					
S/DEPTH=10.0	*****	*****	*****					

CASE R=C

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA = ETA/HEIGHT=	10.0 6.11 18.2%	20.0 5.21 9.8%	30.0 4.34 2%	50.0 2.43 52.4%	75.0 1.025 *****	100.0 150 42.0%	130.0 16329 16.3%	180.0 1389 28.7%
SURFACE	15.982	15.005	12.580	9.572	3.554	2.862	7.787	12.668
S/DEPTH=1.1	24.9%	22.8%	17.4%	11.2%	7.1%	39.0%	28.8%	21.6%
S/DEPTH=1.0	15.289	14.575	12.580	9.664	7.1%	39.0%	28.8%	21.6%
S/DEPTH=0.9	19.5%	18.4%	15.1%	10.1%	6.8%	39.0%	28.8%	21.6%
S/DEPTH=0.8	13.063	12.027	11.376	9.480	4.387	2.690	5.894	11.975
S/DEPTH=0.7	9.1%	8.3%	6.1%	2.4%	1.01%	2.0%	13.2%	26.8%
S/DEPTH=0.6	10.010	10.326	9.501	8.205	4.607	735	3.601	8.631
S/DEPTH=0.5	4.0%	3.4%	1.9%	0.7%	0.8%	1.82	6.7%	18.6%
S/DEPTH=0.4	8.380	8.167	7.623	6.725	4.158	1.58	6.3%	18.6%
S/DEPTH=0.3	1.8%	1.4%	3%	1.5%	0.81%	0.58	2.480	6.246
S/DEPTH=0.2	6.092	6.558	5.984	5.330	3.487	0.58	12.40%	14.9%
S/DEPTH=0.1	1.8%	1.2%	0.4%	1.0%	0.8%	0.9%	1.637	5.596
S/DEPTH=0.0	4.947	4.852	4.573	4.122	2.795	0.636	3.4%	6.7%
S/DEPTH=0.0	2.1%	1.9%	1.3%	1.3%	1.3%	0.591	1.088	4.069
S/DEPTH=0.0	3.599	3.632	3.434	3.113	2.161	0.591	6.7%	2.52%
S/DEPTH=0.0	3.3%	3.1%	2.7%	1.9%	0.9%	0.489	7.21	2.301
S/DEPTH=0.0	2.692	2.645	2.506	2.281	1.609	0.489	0.9%	0.7%
S/DEPTH=0.0	4.0%	4.5%	4.2%	3.6%	1.4%	0.368	4.66	1.565
S/DEPTH=0.0	1.868	1.836	1.742	1.590	1.13%	0.368	3.5%	2.1%
S/DEPTH=0.0	6.0%	5.9%	5.6%	5.1%	3.3%	0.243	0.279	0.971
S/DEPTH=0.0	1.175	1.156	1.098	1.003	0.720	0.243	5.4%	4.237
S/DEPTH=0.0	7.8%	7.8%	6.8%	6.4%	0.349	0.120	1.31	4.65
S/DEPTH=0.0	5.367	5.530	5.530	4.85	0.349	0.120	0.00	0.00
S/DEPTH=0.0	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S/DEPTH=0.0	*****	*****	*****	*****	*****	*****	*****	*****

CASE 8=C

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD....DEFINED IN EQUATION (25)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHTS	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.2%	-32.4%	*****	42.0%	-10.5%	-28.7%
SURFACE	3.510	3.268	2.637	1.906	.731	*****	.045	.490	.743
S/DEPTH=1.1	.3%	-3.2%	-12.4%	-24.7%	-50.3%	*****	*****	-6.4%	.1%
S/DEPTH=1.0	2.564	2.470	2.202	1.809	.530	.066	.031	.448	.735
S/DEPTH=.9	16.7%	17.5%	20.0%	24.1%	25.5%	*****	*****	13.9%	-1.0%
S/DEPTH=.8	1.442	1.392	1.250	1.037	.313	.026	.017	.266	.441
S/DEPTH=.7	11.6%	12.1%	13.7%	16.1%	14.7%	*****	.010	.160	.267
S/DEPTH=.6	.825	.797	.719	.601	.313	.017	*****	*****	1.6%
S/DEPTH=.5	5.5%	5.9%	6.9%	8.6%	.14%	.010	.006	.098	.164
S/DEPTH=.4	.480	.464	.420	.353	.043	*****	*****	*****	*****
S/DEPTH=.3	1.0%	.8%	.1%	1.0%	5.1%	.007	.003	.061	.103
S/DEPTH=.2	.285	.276	.250	.210	.113	.004	.002	.038	.065
S/DEPTH=.1	7.6%	7.4%	7.0%	6.2%	*****	*****	*****	*****	*****
S/DEPTH=.0	.172	.167	.151	.128	.069	.003	.001	.024	.040
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.106	.103	.093	.079	.043	.002	.001	.014	.024
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.066	.064	.058	.049	.027	.004	.002	.006	.011
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.041	.040	.036	.031	.017	.003	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.024	.023	.021	.018	.010	.002	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.011	.011	.010	.008	.005	.001	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 8=C

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	18.2%	.611	.586	.521	.434	.325	.150	.0329	.0389
		16.0%	9.8%	9.8%	.2%	*****	42.0%	16.3%	28.7%
SURFACE	.000	1.921	3.512	4.664	5.852	5.955	5.158	2.864	.000
S/DEPTH=1.1	*****	16.7%	11.9%	5.8%	5.4%	-12.4%	-11.8%	-4.5%	*****
	.000	1.628	3.161	4.526					
S/DEPTH=1.0	*****	9.0%	7.7%	5.7%					
	.000	1.168	2.281	3.292					
S/DEPTH=.9	*****	7.7%	6.9%	5.6%	4.871	5.852			
	.000	.849	1.663	2.412	2.0%	-3.2%	4.352	2.739	.000
S/DEPTH=.8	*****	7.7%	7.1%	6.3%	3.9%	4.005	-3.5%	-8.1%	.000
	.000	.622	1.221	1.775	2.680	3.306	3.299	2.069	.000
S/DEPTH=.7	*****	8.5%	8.1%	7.6%	5.9%	3.3%	.6%	2.8%	.000
	.000	.457	.898	1.308	1.987	2.471	2.486	1.597	.000
S/DEPTH=.6	*****	9.9%	9.6%	9.2%	8.1%	6.2%	4.2%	1.7%	.000
	.000	.335	.658	.961	1.466	1.835	1.858	1.203	.000
S/DEPTH=.5	*****	11.5%	11.3%	11.0%	10.2%	8.9%	7.5%	5.6%	.000
	.000	.243	.479	.700	1.070	1.347	1.571	.893	.000
S/DEPTH=.4	*****	*****	13.1%	12.9%	12.3%	11.3%	10.3%	8.9%	.000
	.000	.173	.341	.499	.765	.967	.988	.647	.000
S/DEPTH=.3	*****	*****	14.6%	14.6%	14.2%	13.5%	12.7%	11.6%	.000
	.000	.118	.233	.341	.524	.665	.681	.408	.000
S/DEPTH=.2	*****	*****	*****	16.1%	15.8%	15.3%	14.6%	13.8%	.000
	.000	.074	.145	.213	.327	.416	.427	.282	.000
S/DEPTH=.1	*****	*****	*****	*****	17.0%	16.6%	16.1%	*****	.000
	.000	.035	.070	.102	.157	.200	.206	.136	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000

TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

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CASE 8=C

TABLE VII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.2%	=32.4%	*****	42.0%	=16.3%	=26.7%
SURFACE	.000	1.636	2.920	3.756	4.391	4.114	3.327	1.716	.000
	*****	19.2%	13.0%	5.0%	=10.3%	=20.3%	=19.3%	=8.0%	*****
S/DEPTH=1.1	.000	1.306	2.529	3.603					
	*****	8.8%	7.2%	4.8%					
S/DEPTH=1.0	.000	.622	1.602	2.304	3.379	4.010			
	*****	6.8%	5.6%	4.2%	=2.2%	=6.8%			
S/DEPTH= .9	.000	.518	1.013	1.466	2.180	2.632			
	*****	6.2%	5.5%	4.5%	1.8%	=3.5%			
S/DEPTH= .8	.000	.324	.636	.923	1.386	1.696			
	*****	6.7%	6.2%	5.5%	3.4%	1.0%			
S/DEPTH= .7	.000	.200	.393	.571	.864	1.068			
	*****	*****	7.6%	7.1%	5.6%	3.2%			
S/DEPTH= .6	.000	.120	.236	.345	.524	.653			
	*****	*****	9.3%	9.0%	7.9%	6.2%			
S/DEPTH= .5	.000	.070	.137	.200	.306	.383			
	*****	*****	*****	*****	10.4%	9.1%			
S/DEPTH= .4	.000	.038	.075	.110	.168	.212			
	*****	*****	*****	*****	*****	11.8%			
S/DEPTH= .3	.000	.019	.037	.054	.083	.105			
	*****	*****	*****	*****	*****	*****			
S/DEPTH= .2	.000	.008	.015	.022	.034	.043			
	*****	*****	*****	*****	*****	*****			
S/DEPTH= .1	.000	.002	.004	.005	.008	.010			
	*****	*****	*****	*****	*****	*****			
S/DEPTH= .0	.000	.000	.000	.000	.000	.000			
	*****	*****	*****	*****	*****	*****			

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TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.611	.586	.521	.434	.243	.025	.0150	.0329	.0389
	18.2%	16.0%	9.8%	.2%	32.4%	*****	42.0%	16.3%	28.7%
SURFACE	1.223	1.173	1.042	.867	.486	.049	.299	.659	.777
S/DEPTH=1.1	12.0%	10.5%	6.5%	1.5%	8.7%	*****	1.9%	2.1%	5.4%
S/DEPTH=1.0	1.088	1.060	.979	.853					
S/DEPTH= .9	5.7%	5.2%	3.7%	1.3%					
S/DEPTH= .8	.861	.842	.787	.699	.446	.052	.232	.625	.772
S/DEPTH= .7	3.6%	3.2%	2.1%	.3%	6.1%	*****	12.6%	1.8%	4.8%
S/DEPTH= .6	.673	.660	.620	.557	.373	.078	12.6%	.463	.579
S/DEPTH= .5	2.9%	2.6%	1.7%	.2%	5.4%	.081	23.6%	5.5%	2.8%
S/DEPTH= .4	.522	.513	.484	.439	.303	.38.3%	36.1%	12.6%	9.7%
S/DEPTH= .3	2.9%	2.7%	1.9%	.6%	.4.5%	.075	36.1%	12.6%	9.7%
S/DEPTH= .2	.404	.397	.377	.343	.242	.35.9%	51.2%	19.8%	16.5%
S/DEPTH= .1	3.3%	3.1%	2.8%	1.2%	.3.9%	.065	*****	27.4%	23.6%
S/DEPTH= .0	.314	.309	.293	.268	.192	.055	*****	35.1%	30.7%
	3.8%	3.6%	2.9%	1.6%	.3.7%	.046	*****	30.7%	25.6%
	.245	.241	.230	.211	.153	.040	*****	37.9%	37.9%
	4.1%	3.9%	3.1%	1.8%	.4.1%	.035	*****	44.3%	44.3%
	.195	.192	.183	.168	.123	.032	*****	50.9%	50.9%
	.42%	.3.9%	3.1%	1.5%	.5.2%	.031	*****	56.4%	49.0%
	.159	.156	.149	.137	.101	.031	*****	58.4%	50.8%
	3.9%	3.6%	2.7%	.9%	.6.8%	.031	*****		
	.135	.133	.127	.117	.087	.031	*****		
	3.4%	3.1%	2.8%	1%	.8.6%	.031	*****		
	.121	.119	.114	.105	.078	.031	*****		
	3.0%	2.8%	1.8%	.7%	10.1%	.031	*****		
	.116	.115	.110	.101	.075	.031	*****		
	2.8%	2.4%	1.2%	1.0%	10.7%	.031	*****		

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TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.173	.295	.345	.281	.096	.049	.102	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.038	.032	.017	.006	.057	.093	.066	.060	.132
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.125 (11.4%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.447 (-11.7%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.481 (-21.8%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.928 (-17.0%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.557 (-14.2%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.600 (2.4%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.956 (-6.7%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.604 (3.1%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.048 (205.1%)

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TABLE XI(CONT)-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.174114	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.071671	STREAM FUNCTION	.000033
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.346042	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.132408	STREAM FUNCTION	.000083
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.591216	STREAM FUNCTION	.514018
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.336441	STREAM FUNCTION	.320462

ITERATIONS ON ETA FAILED TO CONVERGE IN 40 ITER

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8TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

M/LO = .168087 DPT/LO = .499998
 H/DPT = .336176
 L/LO = 1.193750 PSI/(G*H*T) = -.013882

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.955492E+02 X(2)/(H*T*G) = -.393876E+04
 X(3)/(H*T*G) = -.504770E+06 X(4)/(H*T*G) = -.959530E+08
 X(5)/(H*T*G) = -.207965E+09 X(6)/(H*T*G) = -.948658E+11
 X(7)/(H*T*G) = -.391061E+12 X(8)/(H*T*G) = -.259064E+13

TABLE 1. DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD, . . . , DEFINED IN EQUATION (21)

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TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.677	.572	.456	.355	.177	*****	.002	.140	.278
	26.1%	13.9%	2.9%	21.9%	81.2%		37.8%		54.7%
SURFACE	.000	1.466	1.922	2.143	2.318	2.167	1.803	.969	.000
S/DEPTH=1.2	*****	37.3%	8.0%	16.0%	45.9%	60.5%	56.3%	38.4%	*****
S/DEPTH=1.1	*****		1.499	1.997					
	*****		1.8%	7.8%					
S/DEPTH=1.0	*****		1.527	1.400	1.936				
	*****		3.4%	12.1%	24.2%				
S/DEPTH=.9	*****		1.706	1.004	1.437	1.663	1.577	.954	
	*****		8.8%	13.9%	21.9%	32.8%	42.8%	40.6%	
S/DEPTH=.8	*****		.261	.732	1.071	1.266	1.219	.746	
	*****		10.5%	13.7%	16.1%	26.9%	34.5%	43.3%	
S/DEPTH=.7	*****		.190	.538	.798	.960	.935	.579	.000
	*****		10.1%	12.2%	15.9%	21.5%	27.2%	34.1%	
S/DEPTH=.6	*****		.140	.377	.593	.722	.710	.444	.000
	*****		8.4%	9.9%	12.5%	16.6%	20.9%	26.2%	
S/DEPTH=.5	*****		.102	.290	.437	.536	.531	.335	.000
	*****		*****	7.3%	9.2%	12.3%	15.5%	19.6%	
S/DEPTH=.4	*****		.073	.209	.315	.389	.587	.246	.000
	*****		*****	4.7%	6.2%	8.5%	11.0%	14.3%	
S/DEPTH=.3	*****		.050	.144	.218	.270	.270	.172	.000
	*****		*****	2.4%	3.6%	5.4%	7.4%	10.1%	
S/DEPTH=.2	*****		.062	.090	.137	.170	.170	.109	.000
	*****		*****	*****	1.6%	3.1%	4.6%	*****	
S/DEPTH=.1	*****		.030	.043	.066	.082	.082	.053	.000
	*****		*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	*****		.000	.000	.000	.000	.000	.000	.000
	*****		*****	*****	*****	*****	*****	*****	

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TABLE II=DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.677	.572	.456	.355	.177	.002	.140	.278	.323
	26.1%	13.9%	21.9%	21.9%	81.2%	*****	37.8%	37.8%	54.7%
SURFACE	*****	.000	17.938	17.450	16.162	15.609	13.153	10.582	5.588
	*****		67.8%	36.4%	3.5%	36.1%	66.5%	68.2%	52.8%
S/DEPTH=1.2	*****	.000							*****
S/DEPTH=1.1	*****	.000	8.397	13.311	15.284				
	*****		44.1%	30.6%	11.6%				
S/DEPTH=1.0	*****	.000	4.597	8.260	10.740	13.152			
	*****		25.5%	18.3%	8.2%	15.0%			
S/DEPTH=.9	*****	.000	2.892	5.442	7.456	9.839	10.478	9.415	5.506
	*****		13.6%	9.5%	3.4%	12.3%	33.2%	51.5%	55.1%
S/DEPTH=.8	*****	.000	1.959	3.761	5.289	7.345	8.183	7.532	4.441
	*****		6.8%	4.4%	.5%	9.9%	24.8%	38.6%	54.1%
S/DEPTH=.7	*****	.000	1.388	2.692	3.841	5.513	6.359	5.995	3.601
	*****		3.7%	2.2%	.3%	7.3%	17.7%	27.9%	39.8%
S/DEPTH=.6	*****	.000	1.015	1.980	2.850	4.182	4.955	4.770	2.921
	*****		3.3%	2.3%	.6%	4.1%	11.2%	18.6%	27.4%
S/DEPTH=.5	*****	.000	.763	1.494	2.162	3.222	3.896	3.818	2.382
	*****		2.2%	4.0%	1.683	2.536	5.2%	10.4%	16.7%
S/DEPTH=.4	*****	.000	.590	1.158	1.683	2.536	3.117	3.099	1.966
	*****		1.6%	6.9%	6.2%	4.1%	2.8%	2.8%	7.9%
S/DEPTH=.3	*****	.000	.473	.929	1.355	2.058	2.562	2.579	1.659
	*****		1.1%	10.4%	9.9%	8.5%	6.2%	3.8%	5.8%
S/DEPTH=.2	*****	.000	.397	.781	1.141	1.745	2.192	2.228	1.449
	*****		1.0%	*****	13.5%	12.6%	11.0%	9.2%	6.9%
S/DEPTH=.1	*****	.000	.354	.698	1.021	1.567	1.981	2.025	1.327
	*****		1.0%	*****	16.2%	15.5%	14.3%	12.9%	11.0%
S/DEPTH=.0	*****	.000	.341	.671	.982	1.509	1.912	1.959	1.287
	*****		1.0%	*****	17.2%	16.6%	15.5%	14.2%	12.5%

TABLE IV. DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

[illegible]

CASE R=0

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.677	.572	.456	.355	.177	.002	.140	.278	.323
	.26,1%	13.9%	2.9%	21.9%	81.2%	*****	37.8%	37.8%	54.7%
SURFACE	4.956	3.509	2.275	1.450	.477	.035	.040	.343	.509
S/DEPTH=1.2	7.7%	24.5%	66.7%	105.6%	172.5%	*****	*****	24.8%	13.0%
	13.4%								
S/DEPTH=1.1	2.089	1.977	1.688	1.312				.333	.333
	43.3%	46.8%	56.5%	71.0%				28.8%	20.6
S/DEPTH=1.0	1.159	1.109	.973	.781	.364			*****	42.7%
	38.8%	40.7%	46.0%	54.5%	82.6%			*****	211
S/DEPTH= .9	.667	.642	.571	.467	.228	.025	.029	.129	.135
	30.4%	31.5%	34.6%	39.8%	*****	*****	*****	*****	*****
S/DEPTH= .8	.395	.381	.341	.283	.143	.017	.016	.082	.087
	20.3%	20.9%	22.9%	26.1%	*****	*****	*****	*****	*****
S/DEPTH= .7	.240	.231	.208	.174	.090	.012	.009	.053	.057
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	.149	.144	.130	.109	.057	.008	.005	.034	.036
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.094	.091	.082	.069	.037	.005	.003	.022	.022
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.060	.058	.053	.044	.024	.004	.002	.013	.010
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.038	.037	.033	.028	.015	.002	.001	.006	.006
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.022	.022	.020	.017	.009	.001	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.010	.010	.009	.008	.004	.001	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 8=0

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT	0 26.1%	.677 26.1%	10.0 13.9%	20.0 22.9%	30.0 21.9%	50.0 17.7%	75.0 10.02	100.0 37.8%	130.0 37.8%	180.0 54.7%
SURFACE	.000	2.970	4.180	4.832	5.358	5.093	4.286	2.340	.000	.000
S/DEPTH=1.2	.000	38.17%	16.3%	1.9%	25.3%	36.0%	31.6%	15.9%	.000	.000
S/DEPTH=1.1	.000	1.832	3.363	4.527	5.9%	6.7%	2.912	1.609	.000	.000
S/DEPTH=1.0	.000	19.3%	13.4%	5.9%	4.502	6.7%	12.7%	19.7%	.000	.000
S/DEPTH=.9	.000	11.2%	8.3%	4.1%	5.8%	2.270	2.238	1.409	.000	.000
S/DEPTH=.8	.000	7.7%	6.0%	3.5%	3.1%	2.0%	1.702	1.084	.000	.000
S/DEPTH=.7	.000	6.7%	5.7%	4.1%	2.507	2.984	2.912	1.609	.000	.000
S/DEPTH=.6	.000	7.4%	6.7%	5.9%	1.669	2.270	2.238	1.409	.000	.000
S/DEPTH=.5	.000	8.9%	8.4%	7.2%	1.368	2.3%	1.702	1.084	.000	.000
S/DEPTH=.4	.000	168	10.5%	10.0%	8.5%	6.0%	3.4%	1.609	.000	.000
S/DEPTH=.3	.000	115	12.6%	12.3%	11.1%	9.2%	7.2%	4.6%	.000	.000
S/DEPTH=.2	.000	872	14.2%	14.2%	13.3%	11.8%	10.2%	8.0%	.000	.000
S/DEPTH=.1	.000	835	14.2%	14.2%	15.1%	13.8%	12.4%	10.4%	.000	.000
S/DEPTH=.0	.000	835	14.2%	14.2%	15.1%	13.8%	12.4%	10.4%	.000	.000

CASE 8=D

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT=	10.0 .677 26.1%	20.0 .456 -2.9%	30.0 .355 -21.9%	40.0 .177 -81.2%	50.0 75.0 -100.0	60.0 100.0 -130.0	70.0 140.0 -180.0	80.0 190.0 -230.0	90.0 240.0 -280.0	100.0 290.0 -330.0	110.0 340.0 -37.8%	120.0 390.0 -45.7%	130.0 440.0 -54.7%	140.0 490.0 -63.2%	150.0 540.0 -71.7%	160.0 590.0 -80.2%	170.0 640.0 -88.7%	180.0 690.0 -97.2%	190.0 740.0 -105.7%	200.0 790.0 -114.2%	210.0 840.0 -122.7%	220.0 890.0 -131.2%	230.0 940.0 -139.7%	240.0 990.0 -148.2%	250.0 1040.0 -156.7%	260.0 1090.0 -165.2%	270.0 1140.0 -173.7%	280.0 1190.0 -182.2%	290.0 1240.0 -190.7%	300.0 1290.0 -199.2%	310.0 1340.0 -207.7%	320.0 1390.0 -216.2%	330.0 1440.0 -224.7%	340.0 1490.0 -233.2%	350.0 1540.0 -241.7%	360.0 1590.0 -250.2%	370.0 1640.0 -258.7%	380.0 1690.0 -267.2%	390.0 1740.0 -275.7%	400.0 1790.0 -284.2%	410.0 1840.0 -292.7%	420.0 1890.0 -301.2%	430.0 1940.0 -309.7%	440.0 1990.0 -318.2%	450.0 2040.0 -326.7%	460.0 2090.0 -335.2%	470.0 2140.0 -343.7%	480.0 2190.0 -352.2%	490.0 2240.0 -360.7%	500.0 2290.0 -369.2%	510.0 2340.0 -377.7%	520.0 2390.0 -386.2%	530.0 2440.0 -394.7%	540.0 2490.0 -403.2%	550.0 2540.0 -411.7%	560.0 2590.0 -420.2%	570.0 2640.0 -428.7%	580.0 2690.0 -437.2%	590.0 2740.0 -445.7%	600.0 2790.0 -454.2%	610.0 2840.0 -462.7%	620.0 2890.0 -471.2%	630.0 2940.0 -479.7%	640.0 2990.0 -488.2%	650.0 3040.0 -496.7%	660.0 3090.0 -505.2%	670.0 3140.0 -513.7%	680.0 3190.0 -522.2%	690.0 3240.0 -530.7%	700.0 3290.0 -539.2%	710.0 3340.0 -547.7%	720.0 3390.0 -556.2%	730.0 3440.0 -564.7%	740.0 3490.0 -573.2%	750.0 3540.0 -581.7%	760.0 3590.0 -590.2%	770.0 3640.0 -598.7%	780.0 3690.0 -607.2%	790.0 3740.0 -615.7%	800.0 3790.0 -624.2%	810.0 3840.0 -632.7%	820.0 3890.0 -641.2%	830.0 3940.0 -649.7%	840.0 3990.0 -658.2%	850.0 4040.0 -666.7%	860.0 4090.0 -675.2%	870.0 4140.0 -683.7%	880.0 4190.0 -692.2%	890.0 4240.0 -700.7%	900.0 4290.0 -709.2%	910.0 4340.0 -717.7%	920.0 4390.0 -726.2%	930.0 4440.0 -734.7%	940.0 4490.0 -743.2%	950.0 4540.0 -751.7%	960.0 4590.0 -760.2%	970.0 4640.0 -768.7%	980.0 4690.0 -777.2%	990.0 4740.0 -785.7%	1000.0 4790.0 -794.2%	1010.0 4840.0 -802.7%	1020.0 4890.0 -811.2%	1030.0 4940.0 -819.7%	1040.0 4990.0 -828.2%	1050.0 5040.0 -836.7%	1060.0 5090.0 -845.2%	1070.0 5140.0 -853.7%	1080.0 5190.0 -862.2%	1090.0 5240.0 -870.7%	1100.0 5290.0 -879.2%	1110.0 5340.0 -887.7%	1120.0 5390.0 -896.2%	1130.0 5440.0 -904.7%	1140.0 5490.0 -913.2%	1150.0 5540.0 -921.7%	1160.0 5590.0 -930.2%	1170.0 5640.0 -938.7%	1180.0 5690.0 -947.2%	1190.0 5740.0 -955.7%	1200.0 5790.0 -964.2%	1210.0 5840.0 -972.7%	1220.0 5890.0 -981.2%	1230.0 5940.0 -989.7%	1240.0 5990.0 -998.2%	1250.0 6040.0 -1006.7%	1260.0 6090.0 -1015.2%	1270.0 6140.0 -1023.7%	1280.0 6190.0 -1032.2%	1290.0 6240.0 -1040.7%	1300.0 6290.0 -1049.2%	1310.0 6340.0 -1057.7%	1320.0 6390.0 -1066.2%	1330.0 6440.0 -1074.7%	1340.0 6490.0 -1083.2%	1350.0 6540.0 -1091.7%	1360.0 6590.0 -1100.2%	1370.0 6640.0 -1108.7%	1380.0 6690.0 -1117.2%	1390.0 6740.0 -1125.7%	1400.0 6790.0 -1134.2%	1410.0 6840.0 -1142.7%	1420.0 6890.0 -1151.2%	1430.0 6940.0 -1159.7%	1440.0 6990.0 -1168.2%	1450.0 7040.0 -1176.7%	1460.0 7090.0 -1185.2%	1470.0 7140.0 -1193.7%	1480.0 7190.0 -1202.2%	1490.0 7240.0 -1210.7%	1500.0 7290.0 -1219.2%	1510.0 7340.0 -1227.7%	1520.0 7390.0 -1236.2%	1530.0 7440.0 -1244.7%	1540.0 7490.0 -1253.2%	1550.0 7540.0 -1261.7%	1560.0 7590.0 -1270.2%	1570.0 7640.0 -1278.7%	1580.0 7690.0 -1287.2%	1590.0 7740.0 -1295.7%	1600.0 7790.0 -1304.2%	1610.0 7840.0 -1312.7%	1620.0 7890.0 -1321.2%	1630.0 7940.0 -1329.7%	1640.0 7990.0 -1338.2%	1650.0 8040.0 -1346.7%	1660.0 8090.0 -1355.2%	1670.0 8140.0 -1363.7%	1680.0 8190.0 -1372.2%	1690.0 8240.0 -1380.7%	1700.0 8290.0 -1389.2%	1710.0 8340.0 -1397.7%	1720.0 8390.0 -1406.2%	1730.0 8440.0 -1414.7%	1740.0 8490.0 -1423.2%	1750.0 8540.0 -1431.7%	1760.0 8590.0 -1440.2%	1770.0 8640.0 -1448.7%	1780.0 8690.0 -1457.2%	1790.0 8740.0 -1465.7%	1800.0 8790.0 -1474.2%	1810.0 8840.0 -1482.7%	1820.0 8890.0 -1491.2%	1830.0 8940.0 -1499.7%	1840.0 8990.0 -1508.2%	1850.0 9040.0 -1516.7%	1860.0 9090.0 -1525.2%	1870.0 9140.0 -1533.7%	1880.0 9190.0 -1542.2%	1890.0 9240.0 -1550.7%	1900.0 9290.0 -1559.2%	1910.0 9340.0 -1567.7%	1920.0 9390.0 -1576.2%	1930.0 9440.0 -1584.7%	1940.0 9490.0 -1593.2%	1950.0 9540.0 -1601.7%	1960.0 9590.0 -1610.2%	1970.0 9640.0 -1618.7%	1980.0 9690.0 -1627.2%	1990.0 9740.0 -1635.7%	2000.0 9790.0 -1644.2%	2010.0 9840.0 -1652.7%	2020.0 9890.0 -1661.2%	2030.0 9940.0 -1669.7%	2040.0 9990.0 -1678.2%	2050.0 10040.0 -1686.7%	2060.0 10090.0 -1695.2%	2070.0 10140.0 -1703.7%	2080.0 10190.0 -1712.2%	2090.0 10240.0 -1720.7%	2100.0 10290.0 -1729.2%	2110.0 10340.0 -1737.7%	2120.0 10390.0 -1746.2%	2130.0 10440.0 -1754.7%	2140.0 10490.0 -1763.2%	2150.0 10540.0 -1771.7%	2160.0 10590.0 -1780.2%	2170.0 10640.0 -1788.7%	2180.0 10690.0 -1797.2%	2190.0 10740.0 -1805.7%	2200.0 10790.0 -1814.2%	2210.0 10840.0 -1822.7%	2220.0 10890.0 -1831.2%	2230.0 10940.0 -1839.7%	2240.0 10990.0 -1848.2%	2250.0 11040.0 -1856.7%	2260.0 11090.0 -1865.2%	2270.0 11140.0 -1873.7%	2280.0 11190.0 -1882.2%	2290.0 11240.0 -1890.7%	2300.0 11290.0 -1899.2%	2310.0 11340.0 -1907.7%	2320.0 11390.0 -1916.2%	2330.0 11440.0 -1924.7%	2340.0 11490.0 -1933.2%	2350.0 11540.0 -1941.7%	2360.0 11590.0 -1950.2%	2370.0 11640.0 -1958.7%	2380.0 11690.0 -1967.2%	2390.0 11740.0 -1975.7%	2400.0 11790.0 -1984.2%	2410.0 11840.0 -1992.7%	2420.0 11890.0 -2001.2%	2430.0 11940.0 -2009.7%	2440.0 11990.0 -2018.2%	2450.0 12040.0 -2026.7%	2460.0 12090.0 -2035.2%	2470.0 12140.0 -2043.7%	2480.0 12190.0 -2052.2%	2490.0 12240.0 -2060.7%	2500.0 12290.0 -2069.2%	2510.0 12340.0 -2077.7%	2520.0 12390.0 -2086.2%	2530.0 12440.0 -2094.7%	2540.0 12490.0 -2103.2%	2550.0 12540.0 -2111.7%	2560.0 12590.0 -2120.2%	2570.0 12640.0 -2128.7%	2580.0 12690.0 -2137.2%	2590.0 12740.0 -2145.7%	2600.0 12790.0 -2154.2%	2610.0 12840.0 -2162.7%	2620.0 12890.0 -2171.2%	2630.0 12940.0 -2179.7%	2640.0 12990.0 -2188.2%	2650.0 13040.0 -2196.7%	2660.0 13090.0 -2205.2%	2670.0 13140.0 -2213.7%	2680.0 13190.0 -2222.2%	2690.0 13240.0 -2230.7%	2700.0 13290.0 -2239.2%	2710.0 13340.0 -2247.7%	2720.0 13390.0 -2256.2%	2730.0 13440.0 -2264.7%	2740.0 13490.0 -2273.2%	2750.0 13540.0 -2281.7%	2760.0 13590.0 -2290.2%	2770.0 13640.0 -2298.7%	2780.0 13690.0 -2307.2%	2790.0 13740.0 -2315.7%	2800.0 13790.0 -2324.2%	2810.0 13840.0 -2332.7%	2820.0 13890.0 -2341.2%	2830.0 13940.0 -2349.7%	2840.0 13990.0 -2358.2%	2850.0 14040.0 -2366.7%	2860.0 14090.0 -2375.2%	2870.0 14140.0 -2383.7%	2880.0 14190.0 -2392.2%	2890.0 14240.0 -2400.7%	2900.0 14290.0 -2409.2%	2910.0 14340.0 -2417.7%	2920.0 14390.0 -2426.2%	2930.0 14440.0 -2434.7%	2940.0 14490.0 -2443.2%	2950.0 14540.0 -2451.7%	2960.0 14590.0 -2460.2%	2970.0 14640.0 -2468.7%	2980.0 14690.0 -2477.2%	2990.0 14740.0 -2485.7%	3000.0 14790.0 -2494.2%	3010.0 14840.0 -2502.7%	3020.0 14890.0 -2511.2%	3030.0 14940.0 -2519.7%	3040.0 14990.0 -2528.2%	3050.0 15040.0 -2536.7%	3060.0 15090.0 -2545.2%	3070.0 15140.0 -2553.7%	3080.0 15190.0 -2562.2%	3090.0 15240.0 -2570.7%	3100.0 15290.0 -2579.2%	3110.0 15340.0 -2587.7%	3120.0 15390.0 -2596.2%	3130.0 15440.0 -2604.7%	3140.0 15490.0 -2613.2%	3150.0 15540.0 -2621.7%	3160.0 15590.0 -2630.2%	3170.0 15640.0 -2638.7%	3180.0 15690.0 -2647.2%	3190.0 15740.0 -2655.7%	3200.0 15790.0 -2664.2%	3210.0 15840.0 -2672.7%	3220.0 15890.0 -2681.2%	3230.0 15940.0 -2689.7%	3240.0 15990.0 -2698.2%	3250.0 16040.0 -2706.7%	3260.0 16090.0 -2715.2%	3270.0 16140.0 -2723.7%	3280.0 16190.0 -2732.2%	3290.0 16240.0 -2740.7%	3300.0 16290.0 -2749.2%	3310.0 16340.0 -2757.7%	3320.0 16390.0 -2766.2%	3330.0 16440.0 -2774.7%	3340.0 16490.0 -2783.2%	3350.0 16540.0 -2791.7%	3360.0 16590.0 -2800.2%	3370.0 16640.0 -2808.7%	3380.0 16690.0 -2817.2%	3390.0 16740.0 -2825.7%	3400.0 16790.0 -2834.2%	3410.0 16840.0 -2842.7%	3420.0 16890.0 -2851.2%	3430.0 16940.0 -2859.7%	3440.0 16990.0 -2868.2%	3450.0 17040.0 -2876.7%	3460.0 17090.0 -2885.2%	3470.0 17140.0 -2893.7%	3480.0 17190.0 -2902.2%	3490.0 17240.0 -2910.7%	3500.0 17290.0 -2919.2%	3510.0 17340.0 -2927.7%	3520.0 17390.0 -2936.2%	3530.0 17440.0 -2944.7%	3540.0 17490.0 -2953.2%	3550.0 17540.0 -2961.7%	3560.0 17590.0 -2970.2%	3570.0 17640.0 -2978.7%	3580.0 17690.0 -2987.2%	3590.0 17740.0 -2995.7%	3600.0 17790.0 -3004.2%	3610.0 17840.0 -3012.7%	3620.0 17890.0 -3021.2%	3630.0 17940.0 -3029.7%	3640.0 17990.0 -3038.2%	3650.0 18040.0 -3046.7%	3660.0 18090.0 -3055.2%	3670.0 18140.0 -3063.7%	3680.0 18190.0 -3072.2%	3690.0 18240.0 -3080.7%	3700.0 18290.0 -3089.2%	3710.0 18340.0 -3097.7%	3720.0 18390.0 -3106.2%	3730.0 18440.0 -3114.7%	3740.0 18490.0 -3123.2%	3750.0 18540.0 -3131.7%	3760.0 18590.0 -3140.2%	3770.0 18640.0 -3148.7%	3780.0 18690.0 -3157.2%	3790.0 18740.0 -3165.7%	3800.0 18790.0 -3174.2%	3810.0 18840.0 -3182.7%	3820.0 18890.0 -3191.2%	3830.0 18940.0 -3199.7%	3840.0 18990.0 -3208.2%	3850.0 19040.0 -3216.7%	3860.0 19090.0 -3225.2%	3870.0 19140.0 -3233.7%	3880.0 19190.0 -3242.2%	3890.0 19240.0 -3250.7%	3900.0 19290.0 -3259.2%	3910.0 19340.0 -3267.7%	3920.0 19390.0 -3276.2%	3930.0 19440.0 -3284.7%	3940.0 19490.0 -3293.2%	3950.0 19540.0 -3301.7%	3960.0 19590.0 -3310.2%	3970.0 19640.0 -3318.7%	3980.0 19690.0 -3327.2%	3990.0 19740.0 -3335.7%	4000.0 19790.0 -3344.2%	4010.0 19840.0 -3352.7%	4020.0 19890.0 -3361.2%	4030.0 19940.0 -3369.7%	4040.0 19990.0 -3378.2%	4050.0 20040.0 -3386.7%	4060.0 20090.0 -3395.2%	4070.0 20140.0 -3403.7%	4080.0 20190.0 -3412.2%	4090.0 20240.0 -3420.7%	4100.0 20290.0 -3429.2%	4110.0 20340.0 -3437.7%	4120.0 20390.0 -3446.2%	4130.0 20440.0 -3454.7%	4140.0 20490.0 -3463.2%	4150.0 20540.0 -3471.7%	4160.0 20590.0 -3480.2%	4170.0 20640.0 -3488.7%	4180.0 20690.0 -3497.2%	4190.0 20740.0 -3505.7%	4200.0 20790.0 -3514.2%	4210.0 20840.0 -3522.7%	4220.0 20890.0 -3531.2%	4230.0 20940.0 -3539.7%	4240.0 20990.0 -3548.2%	4250.0 21040.0 -3556.7%	4260.0 21090.0 -3565.2%	4270.0 21140.0 -3573.7%	4280.0 21190.0 -3582.2%	4290.0 21240.0 -3590.7%	4300.0 21290.0 -3599.2%	4310.0 21340.0 -3607.7%	4320.0 21390.0 -3616.2%	4330.0 21440.0 -3624.7%	4340.0 21490.0 -3633.2%	4350.0 21540.0 -3641.7%	4360.0 21590.0 -3650.2%	4370.0 21640.0 -3658.7%	4380.0 21690.0 -3667.2%	4390.0 21740.0 -
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CASE 8=0

TABLE VII=0 DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD,=0,=0,=0 DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHTS	26.1	.677	.456	.355	.177	.002	.140	.278	.323
		13.9%	22.9%	21.9%	81.2%	*****	37.8%	37.8%	54.7%
SURFACE	*****	0.00	2.836	3.678	3.980	3.983	2.659	1.340	.000
S/DEPTH=1.2	*****	44.4%	18.3%	18.3%	4.8%	36.6%	51.9%	19.4%	*****
S/DEPTH=1.1	*****	0.00	1.525	2.756	3.642	3.101	2.167	1.307	.000
S/DEPTH=1.0	*****	0.00	22.0%	15.0%	5.9%	3.9%	28.4%	22.4%	.000
S/DEPTH=.9	*****	0.00	12.1%	8.5%	3.3%	2.014	18.0%	1.448	.886
S/DEPTH=.8	*****	0.00	7.1%	5.0%	1.8%	1.286	12.1%	20.0%	.585
S/DEPTH=.7	*****	0.00	5.2%	3.9%	1.8%	3.9%	9.6%	12.7%	.373
S/DEPTH=.6	*****	0.00	1.9%	4.4%	3.0%	.9%	6.8%	6.2%	.227
S/DEPTH=.5	*****	0.00	.116	.227	.329	2.4%	1.9%	3.57	.130
S/DEPTH=.4	*****	0.00	.067	.132	.192	5.7%	2.6%	.6%	.066
S/DEPTH=.3	*****	0.00	.037	.072	.105	.160	.200	.201	.027
S/DEPTH=.2	*****	0.00	.018	.036	.052	.080	.100	.102	.007
S/DEPTH=.1	*****	0.00	.007	.015	.021	.033	.041	.042	.007
S/DEPTH=.0	*****	0.00	.002	.003	.005	.008	.010	.010	.000
	*****	0.00	.000	.000	.000	.000	.000	.000	.000
	*****	0.00	.000	.000	.000	.000	.000	.000	.000

CASE 8-D

TABLE 1X-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA ETA/HEIGHT	0 26.1%	10.0 13.9%	20.0 22.9%	30.0 21.9%	50.0 81.2%	75.0 *****	100.0 37.8%	130.0 -37.8%	180.0 -54.7%
SURFACE	1.329	1.149	.916	.716	.357	.002	.281	.558	.649
S/DEPTH=1.2	24.5%	15.0%	1.9%	-6.5%	-26.5%	*****	-9.5%	.1%	5.6%
S/DEPTH=1.1	21.1%	.973	.855	.703	.348	.038	.228	.548	.511
S/DEPTH=1.0	7.6%	5.3%	.6%	-8.0%	.29.1%	*****	14.1%	.1.9%	.5.8%
S/DEPTH=.9	.6%	.775	.707	.605	.310	.054	.156	.415	.395
S/DEPTH=.8	.625	.610	.565	.497	.310	.058	.108	.317	.307
S/DEPTH=.7	.5.6%	.6.5%	.9.0%	.13.3%	.28.6%	.054	.076	.244	.21.8%
S/DEPTH=.6	.488	.477	.447	.399	.263	.049	.190	.242	.242
S/DEPTH=.5	.8.7%	.9.4%	.11.4%	.15.0%	.29.2%	*****	.054	.44.2%	.35.2%
S/DEPTH=.4	.381	.374	.352	.317	.217	.043	.151	.194	.194
S/DEPTH=.3	.10.9%	.11.5%	.13.4%	.16.7%	.30.5%	*****	.031	.60.2%	.49.0%
S/DEPTH=.2	.299	.294	.278	.253	.177	.038	.124	.160	.160
S/DEPTH=.1	.13.0%	.13.6%	.15.4%	.18.8%	.33.1%	*****	.025	.76.1%	.62.5%
S/DEPTH=.0	.217	.233	.221	.202	.145	.035	.106	.137	.137
S/DEPTH=.0	.15.4%	.16.0%	.18.0%	.21.5%	.37.1%	*****	.095	.90.4%	.74.5%
S/DEPTH=.0	.192	.188	.179	.164	.119	.032	.021	.095	.125
S/DEPTH=.0	.159	.156	.149	.137	.100	*****	.031	.100.8%	.83.1%
S/DEPTH=.0	.21.8%	.22.6%	.25.0%	.29.4%	.48.8%	*****	.020	.104.6%	.86.2%
S/DEPTH=.0	.137	.135	.128	.118	.087	.031	.020	.092	.120
S/DEPTH=.0	.25.3%	.26.1%	.28.7%	.33.6%	.55.1%	*****	.020	.104.6%	.86.2%
S/DEPTH=.0	.124	.122	.117	.107	.080	.031	.020	.092	.120
S/DEPTH=.0	.27.9%	.28.8%	.31.6%	.36.9%	.59.9%	*****	.020	.104.6%	.86.2%
S/DEPTH=.0	.120	.118	.113	.104	.077	.031	.020	.092	.120
S/DEPTH=.0	.28.9%	.29.8%	.32.7%	.38.1%	.61.7%	*****	.020	.104.6%	.86.2%

CASE R=D

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THEYA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION.... DEFINED IN EQ.(35)									
SURFACE	.000	1.196	1.470	1.267	.669	.184	.083	.163	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION.... DEFINED IN EQ.(36)									
SURFACE	.002	.004	.021	.045	.096	.119	.067	.104	.194
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(37)									
SURFACE	.012	.003	.002	.003	.001	.001	.001	.001	.001

CASE 8=D

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.194 (16.5%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.353 (41.5%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.397 (65.0%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.750 (53.9%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.491 (50.6%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.855 (2.2%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.789 (31.3%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.548 (16.1%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.057 (279.9%)

CASE 8=D

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.625231	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.102419	STREAM FUNCTION	.001932
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	1.470195	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.193618	STREAM FUNCTION	.012371
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.900456	STREAM FUNCTION	.872877
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.406734	STREAM FUNCTION	.286778

CASE 9-A

4TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/G_0.28318)^{.5} T^{.5}$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .042615 DPT/LO = .999996

H/DPT = .042615

L/LO = 1.017578 PSI/(G*H*T) = -.005255

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.331177=03 X(2)/(H*T*G) = -.808196=09

X(3)/(H*T*G) = -.404253=13 X(4)/(H*T*G) = -.237110=17

CASE 9=A

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD....DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	10.0 5.34 6.33	10.0 5.23 5.93	20.0 4.94 4.83	30.0 3.03 3.03	50.0 3.10 3.73	75.0 3.09 3.83	100.0 3.16 2.93	130.0 2.63 2.63	180.0 2.46 7.23
SURFACE	3.561	3.498	3.310	3.010	2.151	.813	.526	2.142	2.724
S/DEPTH#1.0	.73	.63	1.03	1.43	2.23	3.53	1.23	1.13	.93
S/DEPTH# .9	1.53	1.641	1.53	1.43	1.83	2.53	.291	1.275	1.662
S/DEPTH# .8	.53	.885	.63	.778	.73	1.13	.03	.773	.897
S/DEPTH# .7	.484	.477	.43	.419	.43	1.23	.084	.371	.484
S/DEPTH# .6	1.43	1.257	1.43	1.43	1.43	.668	.045	1.43	1.43
S/DEPTH# .5	2.43	2.43	2.43	2.43	.091	.037	.025	2.43	2.43
S/DEPTH# .4	.076	.075	.072	.066	.049	.020	.013	.059	.076
S/DEPTH# .3	.042	.041	.039	.036	.027	.011	.007	.032	.042
S/DEPTH# .2	.024	.024	.023	.021	.015	.006	.004	.018	.024
S/DEPTH# .1	.015	.015	.014	.013	.010	.004	.003	.012	.015
S/DEPTH# .0	.013	.013	.012	.011	.008	.003	.002	.010	.013

CASE 9=A

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	0	.534	.494	.466	.310	.097	.116	.373	.466
	6.3%	5.9%	4.8%	3.0%	3.7%	32.8%	24.9%	2.6%	7.2%
SURFACE	.000	.619	1.208	1.744	2.574	3.062	2.946	1.792	.000
S/DEPTH=1.0	*****	.5%	.7%	1.0%	1.8%	2.5%	2.5%	1.6%	*****
	.000	.539	1.090	1.550	2.371	2.985			
S/DEPTH=.9	*****	1.2%	1.2%	1.3%	1.4%	1.6%	1.638	1.068	.000
	.000	.290	.571	.834	1.277	1.609	.7%	.09%	*****
S/DEPTH=.8	*****	.4%	.4%	.4%	.5%	.6%	.884	.576	.000
	.000	.156	.307	.449	.688	.867	.3%	.3%	*****
S/DEPTH=.7	*****	.5%	.5%	.5%	.5%	.4%	.477	.311	.000
	.000	.084	1.5%	1.4%	1.3%	1.4%	1.4%	1.3%	*****
S/DEPTH=.6	*****	*****	.089	.131	1.4%	.252	.257	.168	.000
	.000	.045	*****	*****	2.4%	2.4%	2.4%	2.4%	*****
S/DEPTH=.5	*****	*****	.048	.070	1.08	.136	.138	.090	.000
	.000	.024	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	*****	*****	.026	.038	.058	.073	.074	.048	.000
	.000	.013	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	*****	*****	.014	.020	.031	.039	.039	.026	.000
	.000	.007	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	*****	*****	.007	.010	.015	.020	.020	.013	.000
	.000	.004	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	*****	.003	.004	.006	.008	.008	.005	.000
	.000	.001	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	*****	.000	.000	.000	.000	.000	.000	.000
	.000	.000	*****	*****	*****	*****	*****	*****	*****

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

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CASE 9=A

TABLE IV=DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD.....DEFINED IN EQUATION (24)

THETA = ETA/HEIGHT =	0 .534 6.3%	10.0 .523 5.9%	20.0 .494 4.8%	30.0 3.0%	50.0 .310 3.7%	75.0 .097 32.8%	100.0 24.9%	130.0 3.373 2.6%	180.0 1.466 7.2%
SURFACE	19.095	18.707	17.569	15.751	10.535	2.420	5.699	15.499	19.033
S/DEPTH=1.0	.0%	.1%	.3%	.7%	1.4%	1.6%	2.8%	1.8%	1.2%
	16.963	16.662	15.771	14.717	9.927	2.427			
S/DEPTH= .9	.7%	.7%	.8%	.9%	1.1%	1.7%			
	9.753	9.593	9.116	8.339	5.986	1.924	2.569	8.733	11.159
S/DEPTH= .8	.2%	.2%	.3%	.3%	.5%	1.0%	.4%	.9%	.1%
	5.435	5.349	5.093	4.676	3.411	1.241	1.196	4.531	5.844
S/DEPTH= .7	.6%	.5%	.5%	.5%	.4%	.8%	.7%	.3%	.2%
	2.982	2.935	2.798	2.573	1.893	.724	.592	2.391	3.101
S/DEPTH= .6	1.5%	1.5%	1.4%	1.4%	1.4%	.4%	.3%	1.4%	1.3%
	1.622	1.597	1.523	1.402	1.036	.406	.303	1.274	1.657
S/DEPTH= .5	2.4%	2.4%	2.4%	2.4%	2.4%	.4%	.4%	2.4%	2.4%
	.878	.864	.825	.759	.562	.223	.159	.682	.888
S/DEPTH= .4	.472	.465	.444	.409	.303	.121	.084	.364	.475
S/DEPTH= .3	.251	.247	.235	.217	.161	.065	.044	.193	.251
S/DEPTH= .2	.127	.125	.119	.110	.082	.035	.022	.097	.127
S/DEPTH= .1	.053	.052	.050	.046	.034	.014	.009	.041	.053
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

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CASE 9=A

TABLE V-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.524	.494	.446	.310	.097	.373	.466
	5.9%	4.8%	3.0%	3.7%	24.9%	2.6%	7.2%
SURFACE	.629	1.229	1.774	2.619	3.116	1.824	.000
S/DEPTH=1.0	1.0%	.8%	.5%	.2%	.9%	.0%	*****
S/DEPTH=.9	.548	1.079	1.577	2.413	3.037	.587	.000
S/DEPTH=.8	.295	.581	.849	1.300	1.637	1.087	.000
S/DEPTH=.7	.11%	1.1%	1.1%	1.1%	1.0%	.7%	*****
S/DEPTH=.6	.000	.313	.457	.700	.883	.587	.000
S/DEPTH=.5	.000	2.0%	2.0%	2.0%	1.9%	1.9%	.000
S/DEPTH=.4	.000	.086	.246	.377	.476	.316	.000
S/DEPTH=.3	.000	3.0%	3.0%	3.0%	2.9%	2.9%	.000
S/DEPTH=.2	.000	.091	.133	.203	.256	.171	.000
S/DEPTH=.1	.000	*****	*****	3.9%	3.9%	3.9%	.000
S/DEPTH=.0	.000	.049	.071	.110	.138	.092	.000
	.025	*****	*****	*****	*****	*****	.000
	.013	.026	.038	.059	.074	.049	.000
	.007	.014	.020	.031	.039	.026	.000
	.004	.007	.010	.016	.020	.013	.000
	.001	.003	.004	.007	.008	.006	.000
	.000	.000	.000	.000	.000	.000	.000
	.000	*****	*****	*****	*****	*****	.000
	.000	.000	.000	.000	.000	.000	.000

CASE 9=A

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHT	0 .534 6.5	10.0 5.9	20.0 4.8	30.0 3.0	40.0 .446 3.0	50.0 .510 3.7	75.0 .097 32.8	100.0 .116 24.9	130.0 .373 2.6	180.0 .466 7.2
SURFACE	.966 2 .711 1.7	.931 3 1.7	.833 8 1.8	.688 1.5 5.3	.349 3.1 2.9	.050 5.3 0.47	.020 0.000	.000 0.000	.336 1.2	.541 0.0
S/DEPTH=1.0	.012 0.03 0.01	.011 0.03 0.01	.010 0.03 0.01	.009 0.02 0.01	.005 0.01 0.00	.001 0.00 0.00	.000 0.00 0.00	.000 0.00 0.00	.007 0.00 0.00	.012 0.00 0.00
S/DEPTH=.9	.184 2 .047	.179 2 .046	.163 1 .041	.138 1 .035	.076 1 .019	.012 0.003 0.00	.006 0.001 0.00	.000 0.00 0.00	.108 0.0 0.0	.183 2 0.07
S/DEPTH=.8	.047 0.000	.046 0.000	.041 0.000	.035 0.000	.019 0.000	.003 0.000	.001 0.000	.000 0.000	.028 0.000	.047 0.000
S/DEPTH=.7	.012 0.003 0.00	.011 0.003 0.00	.010 0.003 0.00	.009 0.002 0.00	.005 0.001 0.00	.001 0.000	.000 0.000	.000 0.000	.007 0.000	.012 0.000
S/DEPTH=.6	.003 0.000	.003 0.000	.003 0.000	.002 0.000	.001 0.000	.000 0.000	.000 0.000	.000 0.000	.002 0.000	.003 0.000
S/DEPTH=.5	.001 0.000	.001 0.000	.001 0.000	.001 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.001 0.000
S/DEPTH=.4	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000
S/DEPTH=.3	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000
S/DEPTH=.2	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000
S/DEPTH=.1	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000
S/DEPTH=.0	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000	.000 0.000

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

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CASE 9=A

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.534	.523	.494	.446	.310	.097	.116	.373	.466
	6.3%	5.9%	4.8%	3.0%	3.7%	32.8%	24.9%	26%	7.2%
SURFACE	1.047	1.047	.988	.893	.620	.195	.231	.747	.933
S/DEPTH=1.0	1.0%	.9%	.7%	.4%	.3%	1.2%	.5%	.3%	.9%
S/DEPTH= .9	.937	.922	.876	.802	.577	.192	.113	.432	.557
S/DEPTH= .8	.83%	.73%	.5%	.2%	.0%	.7%	.2%	1.0%	1.0%
S/DEPTH= .7	.521	.513	.488	.448	.327	.120	2.1%	1.0%	.296
S/DEPTH= .6	1.0%	.9%	.6%	.9%	.7%	.2%	.056	.228	2.3%
S/DEPTH= .5	.285	.281	.268	.246	.181	.069	.44%	.122	.159
S/DEPTH= .4	1.7%	1.6%	1.6%	1.6%	1.3%	.1%	.029	.40%	3.7%
S/DEPTH= .3	.155	.153	.146	.134	.099	.039	.015	.066	.085
S/DEPTH= .2	2.2%	2.2%	2.0%	2.1%	1.7%	.021	.008	5.0%	.046
S/DEPTH= .1	.084	.083	.079	.073	.054	.021	.008	.035	.025
S/DEPTH= .0	2.5%	2.5%	2.4%	2.3%	1.7%	.011	.005	.019	.014
	.045	.045	.043	.039	.029	.006	.003	.011	.008
	.024	.024	.023	.021	.016	.006	.002	.006	.005
	.013	.013	.013	.012	.008	.003	.001	.004	.005
	.007	.007	.007	.006	.005	.002	.001	.004	.004
	.005	.005	.004	.004	.003	.001	.001	.003	.004
	.004	.004	.004	.003	.002	.001	.001	.003	.004
	.004	.004	.004	.003	.002	.001	.001	.003	.004

CASE 9-A

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.008	.015	.019	.021	.009	.006	.015	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.028	.026	.020	.012	.010	.031	.029	.011	.038
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 9-A

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.018 (1.6%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.496 (.9%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.502 (.1.9%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.998 (.1.4%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.509 (.1.1%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.510 (.3%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	1.000 (.3%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.513 (1.0%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.004 (.23.7%)

CASE 9=A

TABLE XI(CONT)-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.013164	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.023644	STREAM FUNCTION	.000029
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.021361	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.037525	STREAM FUNCTION	.000093
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.152756	STRFAM FUNCTION	.149151
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.130687	STRFAM FUNCTION	.129512

CASE 9-B

4TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2 * 2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .085197 DPT/LO = .999996
 H/DPT = .085197
 L/LO = 1.065234 PSI/(G*H*T) = -.009933

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.433331E+03 X(2)/(H*T*G) = -.100012E+07
 X(3)/(H*T*G) = -.160018E+11 X(4)/(H*T*G) = -.331298E+15

CASE 9=B

TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	12.1	11.2	8.4	3.8	12.5	108.7	36.7	7.5	18.0
SURFACE	3.994	3.898	3.627	3.216	2.154	.733	.513	1.867	2.327
S/DEPTH=1.0	2.7	3.82	4.5	6.5	11.2	18.8	1.5	4.9	3.3
S/DEPTH=.9	5.4	2.980	2.790	2.559	1.868	.712	.513	1.867	2.327
S/DEPTH=.8	1.613	5.4	5.7	6.2	8.0	14.1	.296	1.240	1.608
S/DEPTH=.7	2.1	2.1	2.5	2.7	3.6	6.7	1.6	3.5	4.2
S/DEPTH=.6	8.0	1.800	1.89	.781	.577	.229	.161	.688	.895
S/DEPTH=.5	1.1	1.1	1.0	.9	.4	.12	.088	.5	.1
S/DEPTH=.4	4.0	4.6	4.5	4.4	4.2	.128	.088	.382	.497
S/DEPTH=.3	8.0	8.0	8.0	7.9	.178	.071	.048	.212	.276
S/DEPTH=.2	15.4	.152	.115	.133	.099	.040	.027	.118	.154
S/DEPTH=.1	.086	.084	.081	.074	.055	.022	.015	.066	.086
S/DEPTH=.0	.049	.048	.046	.042	.031	.013	.008	.037	.048
S/DEPTH=.0	.029	.028	.027	.025	.018	.007	.005	.022	.029
S/DEPTH=.0	.019	.019	.018	.016	.012	.005	.003	.015	.019
S/DEPTH=.0	.016	.016	.015	.014	.010	.004	.003	.012	.016
S/DEPTH=.0	.016	.016	.015	.014	.010	.004	.003	.012	.016

CASE 9-B

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.569	.554	.513	.450	.286	.062	.137	.356	.431
	12.1%	11.2%	8.4%	3.8%	12.5%	108.7%	36.7%	7.5%	16.0%
SURFACE	.000	.707	1.358	1.911	2.656	2.939	2.673	1.541	.000
*****	.4%	.17%	.17%	.35%	.75%	.106%	.104%	.61%	*****
S/DEPTH#1.0	.000	.027	1.037	1.511	2.292	2.848			
*****	.3%	.3%	.35%	.9%	.49%	.65%			
S/DEPTH# .9	.000	.287	.565	.825	1.258	1.574	1.592	1.029	.000
*****	.1%	.1%	.14%	.15%	.20%	.26%	.36%	.47%	*****
S/DEPTH# .8	.000	.158	.311	.454	.694	.871	.884	.574	.000
*****	.1%	.16%	.31%	.45%	.62%	.8%	.4%	.22%	*****
S/DEPTH# .7	.000	.067	.171	.251	.383	.482	.491	.319	.000
*****	.04%	.04%	.08%	.12%	.18%	.22%	.22%	.15%	*****
S/DEPTH# .6	.000	.048	.095	.139	.212	.267	.272	.177	.000
*****	.02%	.02%	.04%	.06%	.09%	.12%	.12%	.08%	*****
S/DEPTH# .5	.000	.027	.052	.077	.117	.148	.151	.098	.000
*****	.01%	.01%	.02%	.03%	.05%	.07%	.07%	.04%	*****
S/DEPTH# .4	.000	.015	.029	.042	.065	.081	.083	.054	.000
*****	.00%	.00%	.01%	.01%	.02%	.03%	.03%	.02%	*****
S/DEPTH# .3	.000	.008	.016	.023	.035	.044	.045	.029	.000
*****	.00%	.00%	.00%	.00%	.00%	.00%	.00%	.00%	*****
S/DEPTH# .2	.000	.004	.008	.012	.018	.023	.023	.015	.000
*****	.00%	.00%	.00%	.00%	.00%	.00%	.00%	.00%	*****
S/DEPTH# .1	.000	.002	.003	.005	.008	.010	.010	.006	.000
*****	.00%	.00%	.00%	.00%	.00%	.00%	.00%	.00%	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
*****	.00%	.00%	.00%	.00%	.00%	.00%	.00%	.00%	*****

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

447

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD, ... DEFINED IN EQUATION, (24)

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TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.569	.554	.513	.450	.286	.062	.137	.356	.031
	12.1%	11.2%	8.4%	3.8%	-12.5%	-108.7%	36.7%	-7.5%	-16.0%
SURFACE	1.329	1.267	1.101	.870	.396	.048	.021	.296	.463
S/DEPTH=1.0	.1%	-1.9%	-4.2%	-7.7%	-15.7%	*****	*****	-3.3%	.5%
S/DEPTH=.9	.226	.219	.199	.169	.092	.014	.007	.131	.221
S/DEPTH=.8	.069	.067	.061	.052	.028	.004	.002	.040	.16%
S/DEPTH=.7	.021	.021	.019	.016	.009	.001	.001	.012	.068
S/DEPTH=.6	.007	.006	.006	.005	.003	.000	.000	.004	.021
S/DEPTH=.5	.002	.002	.002	.002	.001	.000	.000	.001	.007
S/DEPTH=.4	.001	.001	.001	.000	.000	.000	.000	.000	.002
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	.000	.000	.001
S/DEPTH=.2	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	12.1%	.569	.513	.450	.286	.062	.137	.356	.431
			8.4%	3.8%	-12.5%	-108.7%	36.7%	7.5%	-16.0%
SURFACE	.000	.750	1.442	2.030	2.823	3.126	2.844	1.640	.000
S/DEPTH=1.0	*****	5.3%	4.1%	2.4%	-1.3%	-4.1%	-4.0%	-4%	*****
S/DEPTH= .9	*****	.561	1.103	1.606	2.438	3.030			*****
S/DEPTH= .8	*****	2.7%	2.5%	2.1%	1.2%	1.3%			*****
S/DEPTH= .7	*****	.306	.602	.878	1.340	1.676	1.695	1.095	.000
S/DEPTH= .6	*****	4.7%	4.6%	4.5%	4.0%	3.3%	2.5%	1.5%	*****
S/DEPTH= .5	*****	.7.168	.331	.483	.739	.928	.942	.611	.000
S/DEPTH= .4	*****	.093	.183	.267	.408	.514	.523	.340	.000
S/DEPTH= .3	*****	.051	.101	.148	.226	.284	.290	.189	.000
S/DEPTH= .2	*****	.028	.056	.082	.125	.157	.160	.105	.000
S/DEPTH= .1	*****	.016	.031	.045	.069	.087	.088	.058	.000
S/DEPTH= .0	*****	.008	.017	.024	.037	.047	.048	.031	.000
	*****	.004	.009	.013	.019	.024	.025	.016	.000
	*****	.002	.004	.005	.008	.010	.011	.007	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000

CASE 9-B

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
FLY/HEIGHT =	.569	.554	.513	.450	.286	.062	-.137	-.356	-.431
	12.1%	11.2%	8.4%	3.8%	-12.5%	-108.7%	36.7%	7.5%	-16.0%
SURFACE	.000	.662	1.267	1.772	2.421	2.617	2.329	1.311	.000
S/DEPTH=1.0	*****	5.2%	3.8%	1.8%	-2.6%	6.0%	-5.8%	-1.6%	*****
	*****	.468	1.920	1.340	2.031	2.520			
S/DEPTH=.9	*****	1.8%	1.6%	1.3%	.2%	-1.4%	1.241	.801	.000
	*****	.224	.442	.644	.982	1.228	1.2%	.0%	.000
S/DEPTH=.8	*****	3.7%	3.6%	3.4%	2.9%	2.0%	.596	.367	.000
	*****	.107	.210	.307	.468	.588	4.9%	4.3%	.000
S/DEPTH=.7	*****	.050	.62%	6.1%	5.8%	5.4%	6.280	.162	.000
	*****	.098	.098	.143	.219	.275	8.4%	8.0%	.000
S/DEPTH=.6	*****	.023	.044	.065	.099	.125	.127	.083	.000
	*****	.000	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.5	*****	.010	.019	.028	.043	.055	.056	.036	.000
	*****	.004	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.4	*****	.004	.008	.012	.018	.023	.025	.015	.000
	*****	.002	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.3	*****	.002	.003	.004	.007	.008	.009	.006	.000
	*****	.001	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.2	*****	.000	.001	.001	.002	.003	.005	.002	.000
	*****	.000	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.1	*****	.000	.000	.000	.000	.001	.001	.000	.000
	*****	.000	*****	*****	*****	*****	*****	*****	.000
S/DEPTH=.0	*****	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	.000

CASE 908

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.569	.554	.513	.450	.286	.062	.137	.356	.431
	12.1%	11.2%	8.4%	3.8%	-12.5%	-108.7%	36.7%	-7.5%	-16.0%
SURFACE	1.138	1.109	1.026	.901	.572	.124	.274	.713	.862
S/DEPTH=1.0	4.5%	4.1%	3.0%	1.4%	-2.0%	-6.7%	-1.7%	1.2%	3.2%
	.890	.874	.826	.748	.515	.124			
	1.7%	1.6%	1.4%	.9%	.5%	-7.4%			
S/DEPTH= .9	.519	.510	.485	.443	.316	.102	.136	.456	.580
	2.9%	2.8%	2.6%	2.3%	.9%	-6.6%	10.0%	3.8%	2.9%
	.295	.291	.277	.254	.185	.066	.065	.244	.314
S/DEPTH= .8	4.4%	4.3%	4.1%	3.7%	2.1%	-7.3%	20.7%	9.7%	8.6%
	.166	.164	.156	.143	.105	.040	.033	.133	.172
S/DEPTH= .7	5.2%	5.1%	4.8%	4.3%	1.9%	*****	*****	16.4%	14.7%
	.093	.091	.087	.080	.059	.023	.018	.073	.095
S/DEPTH= .6	4.4%	4.2%	3.7%	2.9%	1.0%	*****	*****	25.1%	22.3%
	.052	.051	.049	.045	.033	.013	.010	.040	.053
S/DEPTH= .5	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.029	.028	.027	.025	.018	.007	.005	.022	.029
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.016	.016	.015	.014	.010	.004	.003	.013	.017
S/DEPTH= .3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.010	.009	.009	.008	.006	.002	.002	.008	.010
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.006	.006	.006	.005	.004	.002	.001	.005	.007
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.005	.005	.005	.005	.003	.001	.001	.004	.006
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 908

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN E0.(35)									
SURFACE	.000	.045	.082	.104	.100	.040	.023	.052	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN E0.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN E0.(36)									
SURFACE	.043	.039	.028	.011	.030	.063	.053	.031	.082
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN E0.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 9-B

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.065 (6.0%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.480 (4.1%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.499 (8.2%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.979 (6.2%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.528 (5.2%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.539 (.9%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.992 (1.8%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.544 (2.8%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.016 (269.9%)

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TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	LINEAR	.060271	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	LINEAR	.047483	STREAM FUNCTION	.000022
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)	LINEAR	.109577	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)	LINEAR	.082394	STREAM FUNCTION	.000059
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48)	LINEAR	.349061	STREAM FUNCTION	.319402
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)	LINEAR	.246508	STREAM FUNCTION	.238033

CASE 9=C

3TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .128025 DPT/LO = .999996

H/DPT = .128025

L/LO = 1.132813 PSI/(G*H*T) = -.013501

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.596822E+03 X(2)/(H*T*G) = -.581606E+07

X(3)/(H*T*G) = -.289623E+10

TABLE 1. DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD... DEFINED IN EQUATION (21)

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CASE 9=C

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA ETA/HEIGHT=	0 .609 17.9%	10.0 .585 15.9%	20.0 .522 9.9%	30.0 .436 .6%	50.0 .245 31.1%	75.0 .026 *****	100.0 .0149 41.6%	130.0 .0330 15.9%	180.0 -.391 27.9%
SURFACE	.000 *****	.850 4.8%	1.567 1%	2.095 6.1%	2.638 18.0%	2.674 25.8%	2.309 24.8%	1.284 15.5%	.000 *****
S/DEPTH=1.0	.000 *****	.521 4.6%	1.019 5.3%	1.474 6.5%	2.186 10.0%	2.624 15.6%			
S/DEPTH= .9	.000 *****	.283 2.7%	.556 3.1%	.808 3.6%	1.218 5.3%	1.697 8.1%	1.088 10.9%	.945 14.0%	.000 *****
S/DEPTH= .8	.000 *****	.158 1.7%	.311 1.6%	.453 1.3%	.688 .4%	.856 9%	.860 2.4%	.552 4.2%	.000 *****
S/DEPTH= .7	.000 *****	.089 .8%	.176 7.2%	.257 7.0%	.391 6.6%	.490 5.9%	.495 5.1%	.320 4.1%	.000 *****
S/DEPTH= .6	.000 *****	.051 .5%	.100 .5%	.146 .5%	.223 12.7%	.280 12.5%	.285 11.9%	.185 11.3%	.000 *****
S/DEPTH= .5	.000 *****	.029 .3%	.057 .3%	.083 .3%	.128 .3%	.160 .3%	.163 .3%	.106 .3%	.000 *****
S/DEPTH= .4	.000 *****	.016 .1%	.032 .1%	.047 .1%	.073 .1%	.091 .1%	.093 .1%	.061 .1%	.000 *****
S/DEPTH= .3	.000 *****	.009 .0%	.018 .0%	.027 .0%	.041 .0%	.051 .0%	.052 .0%	.034 .0%	.000 *****
S/DEPTH= .2	.000 *****	.005 .0%	.010 .0%	.014 .0%	.022 .0%	.027 .0%	.028 .0%	.018 .0%	.000 *****
S/DEPTH= .1	.000 *****	.002 .0%	.004 .0%	.006 .0%	.009 .0%	.012 .0%	.012 .0%	.008 .0%	.000 *****
S/DEPTH= .0	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

CASE 9=C

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.609	.585	.522	.436	.245	.026	.330	.591
	17.9%	15.9%	9.9%	.6%	31.1%	*****	41.6%	27.9%
SURFACE	*****	6.228	11.279	14.705	17.490	16.684	13.915	7.647
S/DEPTH=1.0	*****	18.3%	12.8%	5.0%	-11.9%	-26.7%	30.2%	*****
S/DEPTH=.9	*****	3.644	7.072	10.095	14.430	16.383	*****	*****
S/DEPTH=.8	*****	6.0%	4.6%	2.3%	-4.7%	-16.3%	*****	*****
S/DEPTH=.7	*****	1.893	3.701	5.546	7.911	9.482	9.162	5.698
S/DEPTH=.6	*****	3.4%	2.7%	1.5%	-1.9%	-7.6%	13.1%	18.7%
S/DEPTH=.5	*****	1.028	2.018	2.932	4.412	5.406	5.355	3.382
S/DEPTH=.4	*****	5.1%	4.7%	4.2%	2.4%	4.4%	3.3%	6.8%
S/DEPTH=.3	*****	.573	1.126	1.641	2.490	3.091	3.100	1.983
S/DEPTH=.2	*****	*****	8.9%	8.6%	7.7%	6.3%	4.7%	2.7%
S/DEPTH=.1	*****	.324	.637	.930	1.417	1.771	1.769	1.154
S/DEPTH=.0	*****	*****	*****	13.8%	13.4%	12.6%	11.8%	10.7%
S/DEPTH=.0	*****	.185	.363	.531	.811	1.018	1.032	.669
S/DEPTH=.0	*****	*****	*****	*****	*****	18.7%	18.3%	*****
S/DEPTH=.0	*****	.106	.209	.306	.468	.588	.598	.389
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	.062	.123	.179	.274	.345	.352	.229
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	.038	.075	.110	.168	.212	.216	.141
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	.026	.052	.076	.116	.146	.149	.097
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	*****	.023	.045	.065	.100	.126	.129	.084
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****

CASE 9=C

TABLE 14=DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
FTA/HEIGHT=	.609	.585	.522	.436	.245	.026	.149	.5330	.391
	17.9%	15.9%	9.9%	.6%	.31.1%	*****	41.6%	15.9%	27.9%
SURFACE									
S/DEPTH=1.0	.15.439	.14.675	.12.624	.9.815	.3.727	2.746	7.602	12.737	14.576
	23.6%	22.5%	19.3%	15.4%	15.7%	.48.7%	.32.6%	.20.8%	.14.8%
S/DEPTH=.9	.12.870	.12.473	.11.319	.9.508	.4.526	2.559			
	8.3%	7.8%	6.2%	3.6%	.5.2%	.9.9%			
S/DEPTH=.8	.08.430	.08.242	.07.689	.6.804	.4.252	.261	3.766	8.788	10.702
	1.9%	1.6%	.7%	.8%	.6.1%	*****	.8.4%	.17.4%	.19.4%
S/DEPTH=.7	.05.144	.05.047	.04.762	.4.300	.2.938	.705	1.664	4.720	5.883
	3.3%	3.1%	2.6%	1.8%	.1.1%	*****	2.7%	.44.8%	.6.4%
S/DEPTH=.6	.03.048	.02.996	.02.841	.2.591	.1.841	.584	.785	2.594	3.590
	7.6%	7.5%	7.3%	6.8%	.5.2%	*****	10.4%	4.4%	3.2%
S/DEPTH=.5	.01.779	.01.750	.01.665	.1.525	.1.105	.393	.394	1.449	1.859
	13.0%	12.9%	12.8%	12.5%	11.6%	*****	*****	11.8%	11.1%
S/DEPTH=.4	.01.029	.01.013	.00.964	.0.886	.0.649	.244	.207	.817	1.055
	18.5%	18.4%	18.3%	18.3%	*****	*****	*****	18.2%	17.7%
S/DEPTH=.3	.00.589	.00.580	.00.553	.0.509	.0.375	.145	.112	.461	.598
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.00.351	.00.326	.00.311	.0.286	.0.212	.083	.061	.257	.334
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.00.176	.00.173	.00.165	.0.152	.0.113	.045	.032	.136	.177
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.00.076	.00.075	.00.072	.0.066	.0.049	.019	.014	.059	.076
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.00.000	.00.000	.00.000	.0.000	.0.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 9=C

TABLE V=DIMENSIONLESS DRAG FORCE COMPONENT FIELD....DEFINED IN EQUATION (25)

THETA ETA/HEIGHT=	0 17.9%	10.0 .585 15.9%	20.0 .522 9.9%	30.0 .436 .6%	50.0 .245 =31.1%	75.0 .026 *****	100.0 100.0 41.6%	130.0 =350 =15.9%	180.0 =391 =27.9%
SURFACE	1.720	1.597	1.296	.940	.360	.034	=.021	=.232	=.342
S/DEPTH=1.0	.2.1%	.5.3%	.14.0%	.25.9%	.51.1%	*****	*****	.7.7%	.1%
	.091	.667	.600	.499	.257	.033			
S/DEPTH=.9	.13.8%	.14.3%	.15.7%	.18.1%	.26.5%	*****	*****	.123	.204
	.220	.213	.193	.162	.086	.012	=.008	.7.1%	.9.8%
S/DEPTH=.8	.1.7%	.1.9%	.2.6%	.3.6%	.7.5%	*****	*****	=.041	=.068
	.071	.069	.063	.053	.029	.004	=.002	*****	*****
S/DEPTH=.7	*****	*****	.021	.017	.010	.001	*****	*****	*****
	.023	.023	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	*****	.008	.007	.006	.003	.001	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.003	.003	.002	.002	.001	.000	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.001	.001	.001	.001	.000	.000	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.000	.000	.000	.000	.000	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 9=C

TABLE VI=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA ETA/HEIGHT=	0 17.9%	10.0 609	20.0 522	30.0 436	50.0 245	75.0 026	100.0 41.6%	130.0 330	180.0 391
ETA/HEIGHT=	17.9%	15.9%	9.9%	.6%	31.1%	*****	41.6%	=15.9%	=27.9%
SURFACE	.000	.946	1.747	2.340	2.960	3.011	2.606	1.452	.000
S/DEPTH=1.0	*****	14.3%	10.2%	4.9%	5.4%	11.9%	10.8%	-2.4%	*****
S/DEPTH= .9	*****	.586	1.147	1.658	2.460	2.955			
S/DEPTH= .8	*****	6.9%	6.2%	5.2%	2.1%	2.9%	1.683	1.069	*****
S/DEPTH= .7	*****	.320	8.7%	9.14	1.377	1.693	1.8%	.9%	*****
S/DEPTH= .6	*****	9.0%	8.7%	8.0%	6.7%	4.2%	9.74	.625	*****
S/DEPTH= .5	*****	.179	352	.313	.779	.989		7.8%	*****
S/DEPTH= .4	*****	13.0%	12.9%	12.6%	11.9%	10.7%	9.4%		*****
S/DEPTH= .3	*****	.101	.199	.291	.443	.555	.561	.362	*****
S/DEPTH= .2	*****	.058	17.9%	17.7%	17.4%	16.7%	16.0%	15.2%	*****
S/DEPTH= .1	*****	.033	113	22.9%	253	318	322	.209	*****
S/DEPTH= .0	*****	.019	*****	22.9%	.144	22.4%	22.1%	21.6%	*****
	*****	.010	.021	.030	.082	27.7%	.185	.120	*****
	*****	.006	.011	.016	.024	.103	.105	.069	*****
	*****	.002	.005	.007	.011	.058	.059	.039	*****
	*****	.000	.000	.000	.000	.031	.031	.020	*****
	*****	.000	.000	.000	.000	.013	.014	.009	*****
	*****	.000	.000	.000	.000	.000	.000	.000	*****
	*****	.000	.000	.000	.000	.000	.000	.000	*****

CASE 9=C

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA ETA/HEIGHTS	0 .609 17.9%	10.0 .585 15.9%	20.0 .522 9.9%	30.0 .436 6%	50.0 .245 31.1%	75.0 .026 *****	100.0 .149 41.6%	130.0 .330 15.9%	180.0 .391 27.9%
SURFACE	1.705	1.578	1.269	.909	.339	.031	.019	.201	.302
S/DEPTH=1.0	.14%	.4.8%	.14.2%	.27.0%	.54.6%	*****	*****	.8.2%	.1%
S/DEPTH= .9	.630	.608	.547	.455	.233	.030	*****	.099	.165
S/DEPTH= .8	.14.8%	.15.3%	.16.8%	.19.3%	.28.2%	*****	.006	.8.6%	.11.4%
S/DEPTH= .7	.179	.173	.156	.131	.070	.010	*****	.029	.048
S/DEPTH= .6	.2.9%	.3.1%	.3.8%	.4.9%	.020	.003	*****	*****	*****
S/DEPTH= .5	.051	.049	.045	.038	*****	*****	.000	.008	.014
S/DEPTH= .4	*****	*****	*****	*****	.006	.001	*****	*****	*****
S/DEPTH= .3	.014	.014	.013	.011	*****	*****	.000	.002	.004
S/DEPTH= .2	.004	.004	.003	.003	.002	.000	*****	*****	*****
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	.000	.001	*****
S/DEPTH= .0	.001	.001	.001	.001	.000	.000	*****	*****	*****
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	.000	.000	*****
S/DEPTH= .3	.000	.000	.000	.000	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	.000	.000	.000	.000	.000	*****	.000	*****
S/DEPTH= .1	.000	.000	.000	.000	.000	.000	*****	.000	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	*****	.000	*****

CASE 9=C

TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0	110.0	120.0	130.0	140.0	150.0	160.0	170.0	180.0
ETA/HEIGHT	.0	.585	.522	.436	.245	.026	.026	.026	.026	.026	.026	.026	.026	.026	.026	.026	.026	.026
	17.9%	15.9%	9.9%	6%	31.1%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
SURFACE	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	.000	.862	1.574	2.078	2.541	2.485	2.084	1.124	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	14.9%	10.2%	3.9%	-8.3%	-16.3%	-15.1%	-4.8%	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	.000	.487	.952	1.375	2.033	2.429	2.033	.768	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	5.7%	5.0%	3.8%	3%	-5.2%	-1.1%	-4.2%	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	.233	.457	.664	.999	1.224	1.213	.388	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	7.2%	6.8%	6.2%	4.5%	1.7%	6.07	4.7%	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	.112	.220	.321	.487	.605	.657	.191	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	10.7%	10.4%	10.4%	9.5%	8.1%	6.5%	4.7%	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.053	.105	.154	.234	.292	.295	.090	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	15.2%	14.8%	14.0%	13.2%	12.1%	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.025	.049	.072	.109	.137	.139	.041	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	19.6%	19.2%	.063	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.011	.022	.032	.049	.062	.063	.018	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	.027	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.005	.009	.014	.021	.026	.027	.007	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	.010	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.002	.004	.005	.008	.010	.010	.002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	.003	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.001	.001	.002	.003	.003	.003	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	.001	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	.000	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 9=C

TABLE 1X=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA ETA/HEIGHT	0 17.9%	10.0 15.9%	20.0 9.9%	30.0 6%	40.0 4.36%	50.0 31.1%	60.0 24.5%	75.0 10.26%	100.0 41.6%	130.0 15.9%	180.0 27.9%
SURFACE	1.214	1.167	1.043	.872	.690	.522	.352	.182	.017	.000	.000
S/DEPTH=1.0	11.4%	10.1%	8.7%	7.2%	5.8%	4.5%	3.2%	1.9%	.015	.000	.000
S/DEPTH= .9	3.2%	2.9%	2.0%	1.4%	1.0%	.7%	.5%	.3%	.1%	.000	.000
S/DEPTH= .8	2.6%	2.3%	1.6%	1.0%	.7%	.5%	.3%	.2%	.1%	.000	.000
S/DEPTH= .7	2.0%	1.7%	1.0%	.7%	.5%	.3%	.2%	.1%	.0%	.000	.000
S/DEPTH= .6	1.3%	1.0%	.7%	.5%	.3%	.2%	.1%	.0%	.0%	.000	.000
S/DEPTH= .5	.8%	.6%	.4%	.3%	.2%	.1%	.0%	.0%	.0%	.000	.000
S/DEPTH= .4	.5%	.4%	.3%	.2%	.1%	.0%	.0%	.0%	.0%	.000	.000
S/DEPTH= .3	.3%	.2%	.1%	.1%	.0%	.0%	.0%	.0%	.0%	.000	.000
S/DEPTH= .2	.2%	.1%	.1%	.0%	.0%	.0%	.0%	.0%	.0%	.000	.000
S/DEPTH= .1	.1%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.000	.000
S/DEPTH= .0	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.000	.000

CASE 9=C

TABLE X=VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.181	.308	.359	.290	.098	.050	-.104	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	-.000	-.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.038	.032	.017	.006	.059	.095	.067	-.062	-.135
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.002	.001	.000	.001	.000	.001	.000	-.001	.000

CASE 9=C

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.133 (11.6%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.449 (-11.5%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.482 (-21.9%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.932 (-16.7%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.542 (-15.8%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.581 (.8%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.959 (-6.4%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.572 (1.4%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.030 (307.8%)

CASE 9=C

TABLE XI(CONT)-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.180193	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.073121	STREAM FUNCTION	.000680
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.359110	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.135257	STREAM FUNCTION	.002209
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.600004	STREAM FUNCTION	.510651
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.341079	STREAM FUNCTION	.314589

CASE 9-D

5TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .169650 DPT/LO = .999996
 H/DPT = .169650
 L/LO = 1.210937 PSI/(G*H*T) = .015022

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = .781104*03 X(2)/(H*T*G) = .220209*06
 X(3)/(H*T*G) = .211929*09 X(4)/(H*T*G) = .255202*12
 X(5)/(H*T*G) = .595826*15

CASE 9=0

TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT=	0 .661 24.4%	10.0 17.3%	20.0 2.7%	30.0 15.6%	40.0 37.5%	50.0 72.0%	60.0 187	70.0 75.0	80.0 100.0	90.0 130.0	100.0 180.0
SURFACE	5.508	4.809	3.804	2.899	1.551	.366	.492	.1319	.16.0%	.1588	.16.0%
S/DEPTH=1.1	2.9%	7.7%	27.9%	48.7%	83.2%	154.9%	1.0%	21.2%	25.6%	30.1%	37.5%
S/DEPTH=1.0	6.4%	8.5%	25.4%	31.0%	48.8%	84.6	135.6	274	47%	78.2	14.4%
S/DEPTH=.9	2.599	2.535	2.352	2.075	1.216	.274	.183	.115	.093	.0367	.0472
S/DEPTH=.8	1.456	1.428	1.346	1.141	.715	.512	.307	.184	.053	.0131	.0170
S/DEPTH=.7	15.1%	15.6%	17.0%	19.4%	26.4%	42.2	71	.071	.053	.0131	.0170
S/DEPTH=.6	8.41	8.26	7.83	6.42	4.22	.307	.184	.071	.053	.0131	.0170
S/DEPTH=.5	6.4%	6.6%	7.3%	6.42	4.22	.307	.184	.071	.053	.0131	.0170
S/DEPTH=.4	4.92	4.84	4.61	2.0%	2.50	.149	.110	.043	.031	.0079	.0103
S/DEPTH=.3	3.0%	2.9%	2.6%	2.0%	2.50	.149	.110	.043	.031	.0079	.0103
S/DEPTH=.2	12.3%	12.2%	11.6%	10.8%	9.8%	.066	.041	.026	.018	.0048	.0063
S/DEPTH=.1	.173	.170	.162	.149	.135	.066	.041	.026	.018	.0048	.0063
S/DEPTH=.0	.104	.102	.097	.089	.085	.066	.041	.026	.018	.0048	.0063
	.063	.062	.059	.055	.051	.041	.026	.016	.011	.0031	.0040
	.041	.040	.038	.035	.032	.026	.016	.010	.007	.0022	.0029
	.029	.029	.027	.025	.019	.007	.005	.004	.003	.0020	.0025
	.025	.025	.024	.022	.016	.007	.004	.003	.002	.0010	.0015

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

00.0	130.0	180.0
= .146	= .291	= .339
40.3%	31.7%	47.7%

% 未定率	5.1%	% 1.67
0.00	1.0201	169.1

Category	Percentage	Count
1.301	34.2%	802
26.9%		

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2
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0.470	0.247	0.000
0.1%	2.5%	***%
0.280	0.180	0.000

Year	Percentage	Percentage
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1991	10.5%	9.2%
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2096	10.5%	9.2%
2097	10.5%	9.2%
2098	10.5%	9.2%
2099	10.5%	9.2%
2100	10.5%	9.2%

19.7%	490.064	000.000
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1990年	1991年	1992年	1993年	1994年	1995年	1996年	1997年	1998年	1999年	2000年	2001年	2002年	2003年	2004年	2005年	2006年	2007年	2008年	2009年	2010年	2011年	2012年	2013年	2014年	2015年	2016年	2017年	2018年	2019年	2020年	2021年	2022年	2023年	2024年	2025年	2026年	2027年	2028年	2029年	2030年	2031年	2032年	2033年	2034年	2035年	2036年	2037年	2038年	2039年	2040年	2041年	2042年	2043年	2044年	2045年	2046年	2047年	2048年	2049年	2050年	2051年	2052年	2053年	2054年	2055年	2056年	2057年	2058年	2059年	2060年	2061年	2062年	2063年	2064年	2065年	2066年	2067年	2068年	2069年	2070年	2071年	2072年	2073年	2074年	2075年	2076年	2077年	2078年	2079年	2080年	2081年	2082年	2083年	2084年	2085年	2086年	2087年	2088年	2089年	2090年	2091年	2092年	2093年	2094年	2095年	2096年	2097年	2098年	2099年	2100年	2101年	2102年	2103年	2104年	2105年	2106年	2107年	2108年	2109年	2110年	2111年	2112年	2113年	2114年	2115年	2116年	2117年	2118年	2119年	2120年	2121年	2122年	2123年	2124年	2125年	2126年	2127年	2128年	2129年	2130年	2131年	2132年	2133年	2134年	2135年	2136年	2137年	2138年	2139年	2140年	2141年	2142年	2143年	2144年	2145年	2146年	2147年	2148年	2149年	2150年	2151年	2152年	2153年	2154年	2155年	2156年	2157年	2158年	2159年	2160年	2161年	2162年	2163年	2164年	2165年	2166年	2167年	2168年	2169年	2170年	2171年	2172年	2173年	2174年	2175年	2176年	2177年	2178年	2179年	2180年	2181年	2182年	2183年	2184年	2185年	2186年	2187年	2188年	2189年	2190年	2191年	2192年	2193年	2194年	2195年	2196年	2197年	2198年	2199年	2200年	2201年	2202年	2203年	2204年	2205年	2206年	2207年	2208年	2209年	2210年	2211年	2212年	2213年	2214年	2215年	2216年	2217年	2218年	2219年	2220年	2221年	2222年	2223年	2224年	2225年	2226年	2227年	2228年	2229年	2230年	2231年	2232年	2233年	2234年	2235年	2236年	2237年	2238年	2239年	2240年	2241年	2242年	2243年	2244年	2245年	2246年	2247年	2248年	2249年	2250年	2251年	2252年	2253年	2254年	2255年	2256年	2257年	2258年	2259年	2260年	2261年	2262年	2263年	2264年	2265年	2266年	2267年	2268年	2269年	2270年	2271年	2272年	2273年	2274年	2275年	2276年	2277年	2278年	2279年	2280年	2281年	2282年	2283年	2284年	2285年	2286年	2287年	2288年	2289年	2290年	2291年	2292年	2293年	2294年	2295年	2296年	2297年	2298年	2299年	2300年	2301年	2302年	2303年	2304年	2305年	2306年	2307年	2308年	2309年	2310年	2311年	2312年	2313年	2314年	2315年	2316年	2317年	2318年	2319年	2320年	2321年	2322年	2323年	2324年	2325年	2326年	2327年	2328年	2329年	2330年	2331年	2332年	2333年	2334年	2335年	2336年	2337年	2338年	2339年	2340年	2341年	2342年	2343年	2344年	2345年	2346年	2347年	2348年	2349年	2350年	2351年	2352年	2353年	2354年	2355年	2356年	2357年	2358年	2359年	2360年	2361年
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CASE: 9=0

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	150.0	180.0
ETA/HEIGHT=	.661	.483	.375	.187	-.002	-.146	-.291	-.559
	24.4%	2.7%	-15.6%	-72.0%	*****	40.3%	-31.7%	-47.7%
SURFACE	.000	11.904	16.722	17.445	15.804	13.743	11.016	5.723
S/DEPTH=1.1	*****	51.4%	33.5%	10.4%	-34.6%	-59.1%	-60.7%	-47.3%
	.000	11.768						*****
S/DEPTH=1.0	*****	50.8%						*****
	.000	4.269						*****
S/DEPTH= .9	*****	19.8%	7.956	10.695	13.349			*****
	.000	1.969	15.2%	7.8%	-13.2%			*****
S/DEPTH= .8	*****	7.2%	3.795	5.365	7.521	8.446	7.815	4.616
	.000	1.032	5.1%	1.8%	-7.3%	-20.4%	-32.6%	-46.6%
S/DEPTH= .7	*****	5.4%	4.15%	2.898	4.551	5.027	4.823	2.938
	.000	.574	1.126	1.633	-1.3%	-8.0%	-14.7%	-22.9%
S/DEPTH= .6	*****	.330	8.9%	8.1%	6.0%	2.6%	-1.1%	1.825
	.000	.330	.648	.943	1.426	1.762	1.757	1.116
S/DEPTH= .5	*****	.193	.379	15.0%	14.0%	12.2%	10.2%	7.7%
	.000	.114	.225	.329	.501	.628	.636	.677
S/DEPTH= .4	*****	.069	.137	.200	.305	.384	.390	.411
	.000	.044	.087	.127	.195	.246	.250	.253
S/DEPTH= .3	*****	.032	.062	.091	.139	.176	.179	.163
	.000	.028	.055	.080	.122	.154	.158	.117
S/DEPTH= .2	*****	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .1	*****	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .0	*****	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000

CASE 9=0

TABLE IV=DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.661	.595	.483	.375	.187	.002	.146	.291	.539
	24.4%	17.3%	2.7%	15.6%	72.0%	*****	40.3%	31.7%	47.7%
SURFACE	.11.653	-10.741	-7.688	-4.491	.237	3.645	7.076	10.322	11.539
S/DEPTH=1.1	.72.9%	73.3%	73.7%	84.4%	*****	-110.5%	-67.3%	-42.3%	-31.7%
S/DEPTH=1.0	.12.131	-11.888	9.726	-7.257	-1.961	.454	3.840	7.692	9.102
S/DEPTH=.9	.23.9%	22.3%	17.3%	9.2%	-1.14%	*****	-25.4%	-43.7%	-48.3%
S/DEPTH=.8	.4.1%	3.3%	.8%	5.936	-3.24%	.383	1.754	4.338	5.281
S/DEPTH=.7	.1.8%	1.4%	.2%	-3.941	-2.537	*****	4.2%	18.9%	22.5%
S/DEPTH=.6	.6.4%	6.1%	5.2%	-1.9%	.8%	.457	9.2%	2.482	3.094
S/DEPTH=.5	.13.4%	13.3%	13.0%	-2.465	-1.698	*****	9.2%	-2.4%	-4.8%
S/DEPTH=.4	.21.0%	21.0%	20.8%	4.5%	.7%	.351	.425	1.937	1.822
S/DEPTH=.3	.3561	3.356	3.39	-1.503	-1.070	*****	*****	9.9%	8.4%
S/DEPTH=.2	.197	1.94	1.85	12.4%	10.4%	-23.6	.225	.838	1.074
S/DEPTH=.1	.087	.085	.081	20.5%	16.55	*****	*****	19.7%	18.6%
S/DEPTH=.0	.000	.000	.000	.537	.393	*****	.123	.489	.531
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.361	3.361	3.39	*****	.229	.089	.068	.281	.364
	.197	1.94	1.85	*****	*****	*****	*****	*****	*****
	.087	.085	.081	.170	.126	.049	.036	.152	.198
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.005	.055	.022	.016	.067	.087
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA ETA/HEIGHT	0 24.4%	10.0 5.95 17.3%	20.0 .483 2.7%	30.0 .375 -15.6%	50.0 .187 -72.0%	75.0 -0.02 *****	100.0 .146 40.3%	130.0 -1.291 -31.7%	180.0 -1.559 -47.7%
SURFACE	2.303	1.874	1.259	.795	.258	.019	-.019	-.171	-.253
S/DEPTH=1.1	1.0%	-16.1%	-50.0%	-86.6%	-149.7%	*****	*****	-19.2%	-7.0%
S/DEPTH=1.0	-16.1%	1.851	.501	.404	.191	*****	*****	*****	*****
S/DEPTH=.9	12.9%	34.4%	38.7%	45.9%	70.1%	*****	*****	*****	*****
S/DEPTH=.8	15.1%	15.7%	17.4%	20.3%	.026	*****	*****	*****	*****
S/DEPTH=.7	0.07	.064	.058	.049	.009	*****	*****	*****	*****
S/DEPTH=.6	0.23	.022	.020	.017	.009	*****	*****	*****	*****
S/DEPTH=.5	0.08	.008	.007	.006	.003	*****	*****	*****	*****
S/DEPTH=.4	0.03	.003	.003	.002	.001	*****	*****	*****	*****
S/DEPTH=.3	0.01	.001	.001	.001	.000	*****	*****	*****	*****
S/DEPTH=.2	0.00	.000	.000	.000	.000	*****	*****	*****	*****
S/DEPTH=.1	0.00	.000	.000	.000	.000	*****	*****	*****	*****
S/DEPTH=.0	0.00	.000	.000	.000	.000	*****	*****	*****	*****
S/DEPTH=1.1	1.0%	-16.1%	-50.0%	-86.6%	-149.7%	*****	*****	*****	*****
S/DEPTH=1.0	12.9%	34.4%	38.7%	45.9%	70.1%	*****	*****	*****	*****
S/DEPTH=.9	15.1%	15.7%	17.4%	20.3%	.026	*****	*****	*****	*****
S/DEPTH=.8	0.07	.064	.058	.049	.009	*****	*****	*****	*****
S/DEPTH=.7	0.23	.022	.020	.017	.009	*****	*****	*****	*****
S/DEPTH=.6	0.08	.008	.007	.006	.003	*****	*****	*****	*****
S/DEPTH=.5	0.03	.003	.003	.002	.001	*****	*****	*****	*****
S/DEPTH=.4	0.01	.001	.001	.001	.000	*****	*****	*****	*****
S/DEPTH=.3	0.00	.000	.000	.000	.000	*****	*****	*****	*****
S/DEPTH=.2	0.00	.000	.000	.000	.000	*****	*****	*****	*****
S/DEPTH=.1	0.00	.000	.000	.000	.000	*****	*****	*****	*****
S/DEPTH=.0	0.00	.000	.000	.000	.000	*****	*****	*****	*****

CASE 9=0

TABLE V=DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	24.4%	.661	.483	.375	.187	-.002	-.146	-.291	-.359
		17.3%	2.7%	-15.6%	-72.0%	*****	40.3%	-31.7%	-47.7%
SURFACE	.000	1.354	2.150	2.562	2.836	2.709	2.273	1.230	.000
S/DEPTH=1.1	*****	31.9%	17.5%	2.7%	-19.6%	-28.7%	-24.2%	-9.3%	*****
S/DEPTH=1.0	*****	31.3%	1.194	1.688	2.374				
S/DEPTH= .9	*****	12.0%	10.0%	6.8%	-1.4%	1.619	1.569	.969	.000
S/DEPTH= .8	*****	11.0%	10.2%	8.9%	1.357	-.2%	-5.3%	-11.3%	*****
S/DEPTH= .7	*****	15.2%	14.8%	14.2%	5.2%	9.8%	6.9%	3.5%	*****
S/DEPTH= .6	*****	10.6%	21.2%	20.9%	7.84	9.59	9.48	.597	.000
S/DEPTH= .5	*****	.062	.121	.177	.269	33.6	25.9%	24.9%	.000
S/DEPTH= .4	*****	.036	.071	.104	.159	.199	.202	.131	.000
S/DEPTH= .3	*****	.021	.042	.061	.093	.117	.119	.077	.000
S/DEPTH= .2	*****	.012	.024	.035	.054	.068	.069	.045	.000
S/DEPTH= .1	*****	.007	.013	.019	.029	.037	.037	.024	.000
S/DEPTH= .0	*****	.003	.006	.008	.013	.016	.016	.011	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 9=0

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.661	.595	.483	.375	.187	.002	.146	.201	.539
	24.4%	17.3%	2.7%	15.6%	72.0%	*****	40.3%	31.7%	47.7%
SURFACE	2.369	1.902	1.249	.770	.240	.017	.017	.146	.214
S/DEPTH=1.1	3.2%	14.8%	51.2%	91.3%	161.7%	*****	19.6%	6.1%	*****
S/DEPTH=1.0	1.994	1.877	.454	.366	.172	.006	.082	.133	.38.6%
	14.9%	16.4%	40.7%	48.3%	74.0%	*****	*****	*****	*****
S/DEPTH= .9	.538	.516	.136	.112	.057	.007	.026	.042	*****
	34.6%	36.1%	19.6%	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	.157	.151	.041	.034	.018	.002	.008	.013	*****
	17.1%	17.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	.047	.045	.012	.010	.006	.001	.002	.004	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	.014	.014	.004	.003	.002	.000	.000	.001	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.004	.004	.001	.001	.000	.000	.000	.000	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.001	.001	.000	.000	.000	.000	.000	.000	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.000	.000	.000	.000	.000	.000	.000	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	.000	.000	.000	.000	.000	.000	.000	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.000	.000	.000	.000	.000	.000	.000	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THEYTA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.661	.595	.483	.375	.187	.0002	.146	.291	.339
	24.4%	17.3%	2.7%	15.6%	72.0%	*****	40.3%	31.7%	47.7%
SURFACE	.000	1.294	1.993	2.301	2.414	2.193	1.772	.923	.000
S/DEPTH#1.1	*****	34.1%	18.0%	.9%	-25.6%	-37.2%	-31.7%	-13.1%	*****
S/DEPTH#1.0	*****	1.282	1.993	1.397	1.945	1.153	1.110	.681	.000
S/DEPTH# .9	*****	33.4%	8.9%	5.3%	-4.2%	-4.3%	-10.4%	-17.5%	*****
S/DEPTH# .8	*****	11.2%	7.8%	6.3%	2.0%	.589	.580	.363	.000
S/DEPTH# .7	*****	8.8%	11.7%	11.0%	8.9%	5.6%	2.2%	-2.0%	*****
S/DEPTH# .6	*****	12.1%	1.08	.157	.238	.294	.294	.187	.000
S/DEPTH# .5	*****	.055	*****	17.3%	16.2%	14.5%	12.6%	10.2%	*****
S/DEPTH# .4	*****	.026	*****	.075	.114	.143	.144	.092	.000
S/DEPTH# .3	*****	.012	*****	.035	.053	.067	.067	.043	.000
S/DEPTH# .2	*****	.005	*****	.015	.023	.029	.030	.019	.000
S/DEPTH# .1	*****	.002	*****	.006	.009	.012	.012	.008	.000
S/DEPTH# .0	*****	.001	*****	.002	.003	.004	.004	.003	.000
S/DEPTH# .0	*****	.000	*****	.000	.001	.001	.001	.001	.000
S/DEPTH# .0	*****	.000	*****	.000	.000	.000	.000	.000	.000
S/DEPTH# .0	*****	.000	*****	.000	.000	.000	.000	.000	.000

CASE 9=0

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	24.4%	.661	.595	.483	.375	.187	.002	.146	.539
		17.5%	2.7%	15.0%	-72.0%	*****	40.3%	31.7%	47.7%
SURFACE	1.303	1.193	.978	.758	.377	*****	-.293	-.584	-.681
S/DEPTH=1.1	23.1%	18.2%	8.2%	2.4%	19.0%	*****	-5.1%	4.9%	10.8%
	1.254	1.190							
S/DEPTH=1.0	20.1%	18.0%							
	.819	.795	.729	.628	.365				
S/DEPTH= .9	1.6%	.7%	-2.1%	.6%	-22.7%	.054	-.167	-.440	-.542
	.503	.492	.461	.412	.272	*****	41.6%	6.0%	.7%
S/DEPTH= .8	5.2%	5.8%	7.7%	11.1%	24.6%	.052	-.082	-.254	.319
	.304	.299	.282	.256	.178	*****	100.1%	33.6%	26.2%
S/DEPTH= .7	10.0%	10.6%	12.4%	15.0%	30.6%	.037	-.043	-.148	.189
	.182	.179	.170	.155	.111	*****	*****	65.2%	53.8%
S/DEPTH= .6	19.0%	19.8%	22.2%	26.6%	46.4%	.024	-.024	-.087	-.112
	.109	.107	.102	.093	.068	*****	*****	108.2%	89.4%
S/DEPTH= .5	38.2%	39.4%	42.9%	49.6%	79.5%	.015	-.014	-.052	-.067
	.065	.064	.061	.056	.041	*****	*****	*****	140.5%
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.039	.038	.036	.033	.024	.009	.008	.031	-.041
S/DEPTH= .3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.023	.023	.022	.020	.015	.005	-.005	.020	-.025
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.015	.015	.014	.013	.009	.003	-.004	.015	-.016
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.010	.010	.010	.009	.006	.002	-.003	.009	-.012
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.009	.009	.008	.008	.005	.002	-.003	.008	-.011
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	1.266	1.528	1.300	.699	.186	-.084	-.163	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	-.000	-.000	-.000	.000	-.000	-.000	-.000	-.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	-.001	.005	.021	.045	.097	.121	.067	-.105	-.196
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.010	-.001	-.006	-.004	-.002	-.001	.001	.001	.002

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TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.211 (17.3%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.382 (-30.9%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.429 (-53.0%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.811 (-42.6%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.513 (-42.4%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.633 (-.1%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.853 (-21.5%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.558 (-10.2%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.045 (358.3%)

CASE 9=D

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)		
LINEAR	.646583	STREAM FUNCTION .000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)		
LINEAR	.103706	STREAM FUNCTION .002664
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)		
LINEAR	1.527811	STREAM FUNCTION .000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)		
LINEAR	.196144	STREAM FUNCTION .009879
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48)		
LINEAR	.906048	STREAM FUNCTION .771611
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)		
LINEAR	.410294	STREAM FUNCTION .314627

CASE 10=A

3TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/b.28318)*T**2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .042602 DPT/LO = 1.999993

H/DPT = -.021301

L/LO = 1.01773 PSI/(G*H*T) = -.005282

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.691165-06 X(2)/(H*T*G) = -.356470+14

X(3)/(H*T*G) = -.362598+21

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

485

CASE 10A

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA ETA/HEIGHT	10.0 .523 6.3%	20.0 .494 4.6%	30.0 .446 3.0%	50.0 .310 3.7%	75.0 .097 33.0%	100.0 25.0%	130.0 =374 =2.5%	180.0 =467 =7.2%
SURFACE	.000	7.632	11.007	16.221	19.255	18.486	11.225	.000
S/DEPTH=1.0	.0%	.2%	.6%	.15%	.2%	.26%	.19%	.000
S/DEPTH=.9	.000	6.694	9.778	14.944	18.768	5.553	3.619	.000
S/DEPTH=.8	.000	1.935	2.828	4.329	5.453	.3%	.2%	.000
S/DEPTH=.7	.000	.562	.821	1.258	1.586	1.616	1.054	.000
S/DEPTH=.6	.000	.083	.239	.566	.461	2.4%	2.4%	.000
S/DEPTH=.5	.000	.024	.069	.106	.134	.470	.307	.000
S/DEPTH=.4	.000	.007	.014	.031	.039	.040	.026	.000
S/DEPTH=.3	.000	.002	.004	.009	.011	.012	.008	.000
S/DEPTH=.2	.000	.001	.001	.002	.003	.003	.002	.000
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000

3.1.1. VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

487

CASE 10-A

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.533	.523	.494	.446	.310	.097	.116	.374	.467
	6.3%	5.9%	4.8%	3.0%	3.7%	33.0%	25.0%	2.5%	7.2%
SURFACE	.513	.494	.443	.367	.187	.027	.011	.186	.301
S/DEPTH=1.0	.02%	.03%	.07%	.14%	.29%	.4%	*****	.11%	.1%
	.387	.375	.342	.290	.159	.026			
S/DEPTH=.9	1.6%	1.6%	1.6%	1.7%	2.0%	*****			
	.033	.032	.029	.025	.013	.002	.001	.019	.033
S/DEPTH=.8	2.3%	2.3%	2.3%	2.5%	.001	.000	.000	.002	2.2%
	.003	.003	.002	.002	.001	.000	.000	.000	.003
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	.000	.000	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	.000	.000	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	.000	.000	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	.000	.000	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	.000	.000	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	.000	.000	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	.000	.000	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	.000	.000	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD... DEFINED IN EQUATION (26)

489

CASE 10-A

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.533	.494	.446	.310	.097	.116	.374	.467
	6.3%	4.8%	3.0%	-3.7%	-33.0%	25.0%	-2.5%	-7.2%
SURFACE	.000	.293	.572	.024	1.212	1.435	1.374	.831
	*****	1.0%	.8%	.4%	.4%	-1.1%	-1.1%	*****
S/DEPTH=1.0	.000	.252	.496	.725	1.109	1.396	.240	.000
	*****	.5%	.2%	.2%	.1%	.1%	1.7%	*****
S/DEPTH= .9	.000	.065	.128	.187	.287	.362	.368	.000
	*****	*****	1.9%	1.9%	1.9%	1.8%	1.8%	*****
S/DEPTH= .8	.000	.017	.033	.048	.073	.092	.094	.000
	*****	*****	*****	*****	3.8%	3.8%	3.8%	*****
S/DEPTH= .7	.000	.004	.008	.012	.018	.023	.024	.000
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	.001	.002	.003	.004	.006	.006	.000
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.000	.000	.001	.001	.001	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

492

CASE 10-A

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.008	.015	.019	.021	.009	.006	.015	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.028	.026	.020	.012	.010	.031	.029	.011	.038
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 10-A

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1) DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.018 (1.7%)
(2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.496 (-.9%)
(3) DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.502 (-.1.9%)
(4) DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.998 (-.1.4%)
(5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.509 (-.1.1%)
(6) DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.510 (-.3%)
(7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	1.000 (-.1.3%)
(8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.513 (-.1.1%)
(9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.005 (239.0%)

CASE 10=A

TABLE XI(CONT)=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.013156	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.023637	STREAM FUNCTION	.000097
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.021347	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.037514	STREAM FUNCTION	.000209
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.152703	STREAM FUNCTION	.149073
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.130650	STREAM FUNCTION	.129486

CASE 10=8

3TH ORDER STREAM FUNCTION WAVE THEORY

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/g, 28318) * T ** 2$

DEFINITIONS

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
DPT = WATER DEPTH L = WAVE LENGTH
PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .085218 DPT/LO = 1.999993
H/DPT = .042609
L/LO = 1.065234 PSI/(G*H*T) = -.009930

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.118895e05 X(2)/(H*T*G) = -.752306e13
X(3)/(H*T*G) = -.350184e19

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

497

CASE 10-B

TABLE II-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	12.1%	.569	.513	.450	.286	.062	.137	.356	.451
		11.2%	8.4%	3.8%	-12.4%	-108.7%	36.7%	-7.5%	-16.0%
SURFACE		.706	1.357	1.911	2.656	2.959	2.672	1.541	.000
S/DEPTH=1.0		.4%	1.7%	3.5%	-7.5%	-10.6%	-10.4%	-6.7%	*****
S/DEPTH= .9		.527	1.036	1.510	2.292	2.848			.000
		-3.4%	3.6%	3.9%	-4.9%	-6.4%	.884	.574	*****
S/DEPTH= .8		.158	.511	.854	.694	.871	.4%	.12%	.000
		1.6%	1.6%	1.5%	1.2%	.8%	.272	.177	.000
S/DEPTH= .7		.048	.095	.139	.212	.267	7.8%	7.6%	*****
		*****	*****	*****	8.0%	7.9%	.084	.055	.000
S/DEPTH= .6		.015	.029	.043	.065	.082	*****	*****	*****
		*****	*****	*****	*****	*****	.026	.017	.000
S/DEPTH= .5		.005	.009	.013	.020	.025	*****	*****	*****
		*****	*****	*****	*****	*****	.008	.005	.000
S/DEPTH= .4		.001	.003	.004	.006	.008	*****	*****	*****
		*****	*****	*****	*****	*****	.002	.002	.000
S/DEPTH= .3		.000	.001	.001	.002	.002	*****	*****	*****
		*****	*****	*****	*****	*****	.001	.000	.000
S/DEPTH= .2		.000	.000	.000	.001	.001	*****	*****	*****
		*****	*****	*****	*****	*****	.000	.000	.000
S/DEPTH= .1		.000	.000	.000	.000	.000	*****	*****	*****
		*****	*****	*****	*****	*****	.000	.000	.000
S/DEPTH= .0		.000	.000	.000	.000	.000	*****	*****	*****
		*****	*****	*****	*****	*****	.000	.000	.000

CASE 10=B

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.569	.554	.513	.450	.286	.062	.137	.356	.431
	12.1%	11.2%	8.4%	3.8%	-12.4%	-108.7%	36.7%	-7.5%	-16.0%
SURFACE	.000	4.644	8.888	12.440	17.030	18.501	16.602	9.478	.000
	*****	4.0%	2.4%	.1%	-5.3%	-10.3%	-11.7%	-9.0%	*****
S/DEPTH=1.0	.000	3.430	6.727	9.767	14.668	17.932			
	*****	3.2%	1.3%	-1.0%	-3.0%	-6.2%			
S/DEPTH= .9	.000	1.002	1.972	2.878	4.387	5.485	5.542	3.576	.000
	*****	2.6%	2.5%	2.4%	1.9%	1.0%	.1%	-1.0%	*****
S/DEPTH= .8	.000	.304	.598	.873	1.336	1.681	1.709	1.111	.000
	*****	.093	.183	.267	.410	.516	.526	.343	.000
S/DEPTH= .7	.000	.029	.056	.082	.126	.159	.162	.105	.000
	*****	.009	.017	.025	.039	.049	.050	.032	.000
S/DEPTH= .6	.000	.003	.005	.008	.012	.015	.015	.010	.000
	*****	.001	.002	.002	.004	.005	.005	.003	.000
S/DEPTH= .5	.000	.000	.001	.001	.001	.001	.001	.001	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .4	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .3	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .2	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .1	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	.000	.000	.000	.000	.000	.000	.000	.000

CASE 10-H

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	12.1%	11.0%	8.4%	5.1%	4.50	.286	.157	-356	-431
				3.8%	12.0%	-108.7%	36.7%	-7.5%	-16.0%
SURFACE	-17.539	-17.017	-15.530	-13.274	-7.438	.347	7.153	14.590	17.138
S/DEPTH=1.0	4.4%	3.9%	2.7%	.9%	-2.5%	*****	-12.8%	-8.3%	-6.1%
	-14.540	-14.216	-13.203	-11.724	-7.195	.177			
S/DEPTH= .9	.6%	.5%	.0%	-.7%	-2.9%	*****			
	-5.299	-5.210	-4.944	-4.511	-3.210	-1.002	1.440	4.720	5.997
S/DEPTH= .8	2.0%	2.0%	1.9%	1.6%	.8%	-2.4%	2.6%	-.3%	-.0%
	-1.704	-1.677	-1.598	-1.469	-1.077	-.406	.345	1.368	1.770
S/DEPTH= .7	8.1%	8.1%	8.0%	7.9%	7.7%	*****	*****	7.6%	7.6%
	-531	-523	-.099	-.459	-.340	-.134	.097	.013	.537
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****	*****
	-164	-.161	-.154	-.142	-.105	-.042	.029	.126	.164
S/DEPTH= .5	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.050	.050	.047	.044	-.032	-.013	.009	.039	.050
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.016	.015	.015	.013	.010	-.004	.003	.012	.016
S/DEPTH= .3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.005	.005	.004	.004	-.003	-.001	.001	.004	.005
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.001	.001	.001	.001	-.001	-.000	-.000	.001	.001
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	-.000	-.000	.000	.000	.000
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 10-B

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	12.1%	11.2%	8.4%	3.8%	12.4%	108.7%	36.7%	7.5%	16.0%
SURFACE	.664	.634	.550	.435	.198	.024	.011	.148	.231
S/DEPTH=1.0	1.0%	1.0%	4.2%	7.7%	15.7%	*****	*****	3.4%	.5%
S/DEPTH= .9	5.7%	5.0%	6.3%	6.9%	9.2%	*****	*****	*****	6.3%
S/DEPTH= .8	7.6%	7.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

502

CASE 10*B

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.569	.554	.513	.450	.286	.062	.137	.356	.431
	12.1%	11.2%	6.4%	3.8%	-12.4%	-108.7%	36.7%	-7.5%	-16.0%
SURFACE	.652	.622	.539	.425	.192	.023	.010	.010	.217
	1.5%	1.8%	-4.3%	-7.9%	-16.2%	*****	*****	-3.5%	.5%
S/DEPTH=1.0	.356	.345	.313	.264	.142	.021	*****	*****	*****
	6.0%	6.1%	-6.5%	-7.2%	-9.5%	*****	*****	*****	*****
S/DEPTH= .9	.030	.029	.026	.022	.012	.002	.001	.017	.029
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	.002	.002	.002	.002	.001	.000	.000	.001	.002
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10-B

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA ETA/HEIGHT	10.0 0	20.0 .554	30.0 1.12	40.0 1.513	50.0 2.086	60.0 2.86	70.0 3.86	80.0 5.0	90.0 6.44	100.0 8.0	110.0 9.67	120.0 11.31	130.0 12.92	140.0 14.53	150.0 16.14	160.0 17.75	170.0 19.36	180.0 20.97	190.0 22.58	200.0 24.19	210.0 25.80	220.0 27.41	230.0 29.02	240.0 30.63	250.0 32.24	260.0 33.85	270.0 35.46	280.0 37.07	290.0 38.68	300.0 40.29	310.0 41.90	320.0 43.51	330.0 45.12	340.0 46.73	350.0 48.34	360.0 50.00	370.0 51.61	380.0 53.22	390.0 54.83	400.0 56.44	410.0 58.05	420.0 59.66	430.0 61.27	440.0 62.88	450.0 64.49	460.0 66.10	470.0 67.71	480.0 69.32	490.0 70.93	500.0 72.54	510.0 74.15	520.0 75.76	530.0 77.37	540.0 78.98	550.0 80.59	560.0 82.20	570.0 83.81	580.0 85.42	590.0 87.03	600.0 88.64	610.0 90.25	620.0 91.86	630.0 93.47	640.0 95.08	650.0 96.69	660.0 98.30	670.0 99.91	680.0 101.52	690.0 103.13	700.0 104.74	710.0 106.35	720.0 107.96	730.0 109.57	740.0 111.18	750.0 112.79	760.0 114.40	770.0 116.01	780.0 117.62	790.0 119.23	800.0 120.84	810.0 122.45	820.0 124.06	830.0 125.67	840.0 127.28	850.0 128.89	860.0 130.50	870.0 132.11	880.0 133.72	890.0 135.33	900.0 136.94	910.0 138.55	920.0 140.16	930.0 141.77	940.0 143.38	950.0 144.99	960.0 146.60	970.0 148.21	980.0 149.82	990.0 151.43	1000.0 153.04	1010.0 154.65	1020.0 156.26	1030.0 157.87	1040.0 159.48	1050.0 161.09	1060.0 162.70	1070.0 164.31	1080.0 165.92	1090.0 167.53	1100.0 169.14	1110.0 170.75	1120.0 172.36	1130.0 173.97	1140.0 175.58	1150.0 177.19	1160.0 178.80	1170.0 180.41	1180.0 182.02	1190.0 183.63	1200.0 185.24	1210.0 186.85	1220.0 188.46	1230.0 190.07	1240.0 191.68	1250.0 193.29	1260.0 194.90	1270.0 196.51	1280.0 198.12	1290.0 199.73	1300.0 201.34	1310.0 202.95	1320.0 204.56	1330.0 206.17	1340.0 207.78	1350.0 209.39	1360.0 211.00	1370.0 212.61	1380.0 214.22	1390.0 215.83	1400.0 217.44	1410.0 219.05	1420.0 220.66	1430.0 222.27	1440.0 223.88	1450.0 225.49	1460.0 227.10	1470.0 228.71	1480.0 230.32	1490.0 231.93	1500.0 233.54	1510.0 235.15	1520.0 236.76	1530.0 238.37	1540.0 240.00	1550.0 241.61	1560.0 243.22	1570.0 244.83	1580.0 246.44	1590.0 248.05	1600.0 249.66	1610.0 251.27	1620.0 252.88	1630.0 254.49	1640.0 256.10	1650.0 257.71	1660.0 259.32	1670.0 260.93	1680.0 262.54	1690.0 264.15	1700.0 265.76	1710.0 267.37	1720.0 268.98	1730.0 270.59	1740.0 272.20	1750.0 273.81	1760.0 275.42	1770.0 277.03	1780.0 278.64	1790.0 280.25	1800.0 281.86	1810.0 283.47	1820.0 285.08	1830.0 286.69	1840.0 288.30	1850.0 289.91	1860.0 291.52	1870.0 293.13	1880.0 294.74	1890.0 296.35	1900.0 297.96	1910.0 299.57	1920.0 301.18	1930.0 302.79	1940.0 304.40	1950.0 306.01	1960.0 307.62	1970.0 309.23	1980.0 310.84	1990.0 312.45	2000.0 314.06	2010.0 315.67	2020.0 317.28	2030.0 318.89	2040.0 320.50	2050.0 322.11	2060.0 323.72	2070.0 325.33	2080.0 326.94	2090.0 328.55	2100.0 330.16	2110.0 331.77	2120.0 333.38	2130.0 334.99	2140.0 336.60	2150.0 338.21	2160.0 339.82	2170.0 341.43	2180.0 343.04	2190.0 344.65	2200.0 346.26	2210.0 347.87	2220.0 349.48	2230.0 351.09	2240.0 352.70	2250.0 354.31	2260.0 355.92	2270.0 357.53	2280.0 359.14	2290.0 360.75	2300.0 362.36	2310.0 363.97	2320.0 365.58	2330.0 367.19	2340.0 368.80	2350.0 370.41	2360.0 372.02	2370.0 373.63	2380.0 375.24	2390.0 376.85	2400.0 378.46	2410.0 380.07	2420.0 381.68	2430.0 383.29	2440.0 384.90	2450.0 386.51	2460.0 388.12	2470.0 389.73	2480.0 391.34	2490.0 392.95	2500.0 394.56	2510.0 396.17	2520.0 397.78	2530.0 399.39	2540.0 401.00	2550.0 402.61	2560.0 404.22	2570.0 405.83	2580.0 407.44	2590.0 409.05	2600.0 410.66	2610.0 412.27	2620.0 413.88	2630.0 415.49	2640.0 417.10	2650.0 418.71	2660.0 420.32	2670.0 421.93	2680.0 423.54	2690.0 425.15	2700.0 426.76	2710.0 428.37	2720.0 430.00	2730.0 431.61	2740.0 433.22	2750.0 434.83	2760.0 436.44	2770.0 438.05	2780.0 439.66	2790.0 441.27	2800.0 442.88	2810.0 444.49	2820.0 446.10	2830.0 447.71	2840.0 449.32	2850.0 450.93	2860.0 452.54	2870.0 454.15	2880.0 455.76	2890.0 457.37	2900.0 458.98	2910.0 460.59	2920.0 462.20	2930.0 463.81	2940.0 465.42	2950.0 467.03	2960.0 468.64	2970.0 470.25	2980.0 471.86	2990.0 473.47	3000.0 475.08	3010.0 476.69	3020.0 478.30	3030.0 479.91	3040.0 481.52	3050.0 483.13	3060.0 484.74	3070.0 486.35	3080.0 487.96	3090.0 489.57	3100.0 491.18	3110.0 492.79	3120.0 494.40	3130.0 496.01	3140.0 497.62	3150.0 499.23	3160.0 500.84	3170.0 502.45	3180.0 504.06	3190.0 505.67	3200.0 507.28	3210.0 508.89	3220.0 510.50	3230.0 512.11	3240.0 513.72	3250.0 515.33	3260.0 516.94	3270.0 518.55	3280.0 520.16	3290.0 521.77	3300.0 523.38	3310.0 524.99	3320.0 526.60	3330.0 528.21	3340.0 529.82	3350.0 531.43	3360.0 533.04	3370.0 534.65	3380.0 536.26	3390.0 537.87	3400.0 539.48	3410.0 541.09	3420.0 542.70	3430.0 544.31	3440.0 545.92	3450.0 547.53	3460.0 549.14	3470.0 550.75	3480.0 552.36	3490.0 553.97	3500.0 555.58	3510.0 557.19	3520.0 558.80	3530.0 560.41	3540.0 562.02	3550.0 563.63	3560.0 565.24	3570.0 566.85	3580.0 568.46	3590.0 570.07	3600.0 571.68	3610.0 573.29	3620.0 574.90	3630.0 576.51	3640.0 578.12	3650.0 579.73	3660.0 581.34	3670.0 582.95	3680.0 584.56	3690.0 586.17	3700.0 587.78	3710.0 589.39	3720.0 591.00	3730.0 592.61	3740.0 594.22	3750.0 595.83	3760.0 597.44	3770.0 599.05	3780.0 600.66	3790.0 602.27	3800.0 603.88	3810.0 605.49	3820.0 607.10	3830.0 608.71	3840.0 610.32	3850.0 611.93	3860.0 613.54	3870.0 615.15	3880.0 616.76	3890.0 618.37	3900.0 620.00	3910.0 621.61	3920.0 623.22	3930.0 624.83	3940.0 626.44	3950.0 628.05	3960.0 629.66	3970.0 631.27	3980.0 632.88	3990.0 634.49	4000.0 636.10	4010.0 637.71	4020.0 639.32	4030.0 640.93	4040.0 642.54	4050.0 644.15	4060.0 645.76	4070.0 647.37	4080.0 648.98	4090.0 650.59	4100.0 652.20	4110.0 653.81	4120.0 655.42	4130.0 657.03	4140.0 658.64	4150.0 660.25	4160.0 661.86	4170.0 663.47	4180.0 665.08	4190.0 666.69	4200.0 668.30	4210.0 669.91	4220.0 671.52	4230.0 673.13	4240.0 674.74	4250.0 676.35	4260.0 677.96	4270.0 679.57	4280.0 681.18	4290.0 682.79	4300.0 684.40	4310.0 686.01	4320.0 687.62	4330.0 689.23	4340.0 690.84	4350.0 692.45	4360.0 694.06	4370.0 695.67	4380.0 697.28	4390.0 698.89	4400.0 700.50	4410.0 702.11	4420.0 703.72	4430.0 705.33	4440.0 706.94	4450.0 708.55	4460.0 710.16	4470.0 711.77	4480.0 713.38	4490.0 714.99	4500.0 716.60	4510.0 718.21	4520.0 719.82	4530.0 721.43	4540.0 723.04	4550.0 724.65	4560.0 726.26	4570.0 727.87	4580.0 729.48	4590.0 731.09	4600.0 732.70	4610.0 734.31	4620.0 735.92	4630.0 737.53	4640.0 739.14	4650.0 740.75	4660.0 742.36	4670.0 743.97	4680.0 745.58	4690.0 747.19	4700.0 748.80	4710.0 750.41	4720.0 752.02	4730.0 753.63	4740.0 755.24	4750.0 756.85	4760.0 758.46	4770.0 760.07	4780.0 761.68	4790.0 763.29	4800.0 764.90	4810.0 766.51	4820.0 768.12	4830.0 769.73	4840.0 771.34	4850.0 772.95	4860.0 774.56	4870.0 776.17	4880.0 777.78	4890.0 779.39	4900.0 781.00	4910.0 782.61	4920.0 784.22	4930.0 785.83	4940.0 787.44	4950.0 789.05	4960.0 790.66	4970.0 792.27	4980.0 793.88	4990.0 795.49	5000.0 797.10	5010.0 798.71	5020.0 800.32	5030.0 801.93	5040.0 803.54	5050.0 805.15	5060.0 806.76	5070.0 808.37	5080.0 810.00	5090.0 811.61	5100.0 813.22	5110.0 814.83	5120.0 816.44	5130.0 818.05	5140.0 819.66	5150.0 821.27	5160.0 822.88	5170.0 824.49	5180.0 826.10	5190.0 827.71	5200.0 829.32	5210.0 830.93	5220.0 832.54	5230.0 834.15	5240.0 835.76	5250.0 837.37	5260.0 838.98	5270.0 840.59	5280.0 842.20	5290.0 843.81	5300.0 845.42	5310.0 847.03	5320.0 848.64	5330.0 850.25	5340.0 851.86	5350.0 853.47	5360.0 855.08	5370.0 856.69	5380.0 858.30	5390.0 859.91	5400.0 861.52	5410.0 863.13	5420.0 864.74	5430.0 866.35	5440.0 867.96	5450.0 869.57	5460.0 871.18	5470.0 872.79	5480.0 874.40	5490.0 876.01	5500.0 877.62	5510.0 879.23	5520.0 880.84	5530.0 882.45	5540.0 884.06	5550.0 885.67	5560.0 887.28	5570.0 888.89	5580.0 890.50	5590.0 892.11	5600.0 893.72	5610.0 895.33	5620.0 896.94	5630.0 898.55	5640.0 900.16	5650.0 901.77	5660.0 903.38	5670.0 904.99	5680.0 906.60	5690.0 908.21	5700.0 909.82	5710.0 911.43	5720.0 913.04	5730.0 914.65	5740.0 916.26	5750.0 917.87	5760.0 919.48	5770.0 921.09	5780.0 922.70	5790.0 924.31	5800.0 925.92	5810.0 927.53	5820.0 929.14	5830.0 930.75	5840.0 932.36	5850.0 933.97	5860.0 935.58	5870.0 937.19	5880.0 938.80	5890.0 940.41	5900.0 942.02	5910.0 943.63	5920.0 945.24	5930.0 946.85	5940.0 948.46	5950.0 950.07	5960.0 951.68	5970.0 953.29	5980.0 954.90	5990.0 956.51	6000.0 958.12	6010.0 959.73	6020.0 961.34	6030.0 962.95	6040.0 964.56	6050.0 966.17	6060.0 967.78	6070.0 969.39	6080.0 971.00	6090.0 972.61	6100.0 974.22	6110.0 975.83	6120.0 977.44	6130.0 979.05	6140.0 980.66	6150.0 982.27	6160.0 983.88	6170.0 985.49	6180.0 987.10	6190.0 988.71	6200.0 990.32	6210.0 991.93	6220.0 993.54	6230.0 995.15	6240.0 996.76	6250.0 998.37	6260.0 1000.00	6270.0 1001.61	6280.0 1003.22	6290.0 1004.83	6300.0 1006.44	6310.0 1008.05	6320.0 1009.66	6330.0 1011.27	6340.0 1012.88	6350.0 1014.49	6360.0 1016.10	6370.0 1017.71	6380.0 1019.32	6390.0 1020.93	6400.0 1022.54	6410.0 1024.15	6420.0 1025.76	6430.0 1027.37	6440.0 1028.98	6450.0 1030.59	6460.0 1032.20	6470.0 1033.81	6480.0 1035.42	6490.0 1037.03	6500.0 1038.64	6510.0 1040.25	6520.0 1041.86	6530.0 104
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TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

505

CASE 1008

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.045	.082	.104	.101	.040	.023	.052	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.043	.039	.028	.011	.030	.063	.053	.031	.082
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 10-B

TABLE XI-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.065 (6.0%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.480 (-4.1%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.499 (-8.2%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.979 (-6.2%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.528 (-5.2%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.539 (.9%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.992 (-1.8%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.543 (2.8%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.016 (271.3%)

CASE 10-B

TABLE XI(CONT)-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.060306	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.047496	STREAM FUNCTION	.000041
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.109646	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.082420	STREAM FUNCTION	.000070
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.349169	STREAM FUNCTION	.319433
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.246562	STREAM FUNCTION	.237878

CASE 10=C

3TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .127534 DPT/LO = 1.999993
 H/DPT = .063767
 L/LO = 1.134375 PSI/(G*H*T) = .013600

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.237092E+05 X(2)/(H*T*G) = -.930477E+12
 X(3)/(H*T*G) = -.183259E+17

CASE 10=C

TABLE 1=DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA ETA/HEIGHT	0 .608 17.8%	10.0 .584 15.7%	20.0 .521 9.8%	30.0 .435 .5%	50.0 .245 -31.3%	75.0 .026 *****	100.0 -1.49%	130.0 -15.6%	160.0 -392 -27.6%
SURFACE	4.517	4.341	3.881	3.270	1.969	.563	-.511	1.597	1.958
S/DEPTH=1.0	3.7%	5.6%	10.7%	17.6%	32.5%	60.1%	5%	10.8%	7.4%
S/DEPTH= .9	10.8%	11.2%	12.5%	14.2%	20.8%	46.3%	1.67	1.673	3.868
S/DEPTH= .8	4%	3%	0%	4%	2.0%	*****	*****	1.9%	3.0%
S/DEPTH= .7	13.0%	13.0%	12.9%	12.8%	*****	*****	*****	223	12.0%
S/DEPTH= .6	0.032	0.31	0.30	0.28	0.20	0.08	0.06	0.024	0.32
S/DEPTH= .5	0.10	0.10	0.10	0.09	0.07	0.03	0.02	0.08	0.10
S/DEPTH= .4	0.003	0.003	0.003	0.003	0.002	0.001	0.001	0.003	0.003
S/DEPTH= .3	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.001	0.001
S/DEPTH= .2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
S/DEPTH= .0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CASE 10=C

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA ETA/HEIGHT=	10.0 17.8%	10.0 15.7%	20.0 9.8%	30.0 5.0%	50.0 2.45%	75.0 1.26%	100.0 1.00%	130.0 1.00%	180.0 1.00%
	.608	.584	.521	.435	.245	.026	.149	.331	.592
	17.8%	15.7%	9.8%	5.0%	2.45%	1.26%	1.00%	1.00%	1.00%
SURFACE	.000	.851	1.569	2.098	2.642	2.678	2.312	1.286	.000
S/DEPTH=1.0	.000	.50%	.3%	.8%	.17%	.25%	.24%	.15%	.000
S/DEPTH=.9	.000	.523	.50%	.62%	.192	.2629	.24%	.15%	.000
S/DEPTH=.8	.000	.519	.312	.455	.691	.859	.863	.553	.000
S/DEPTH=.7	.000	.051	.101	.147	.225	.282	.21%	.39%	.000
S/DEPTH=.6	.000	.017	.033	.048	.074	.093	.12%	.186	.000
S/DEPTH=.5	.000	.006	.011	.016	.024	.031	.031	.062	.000
S/DEPTH=.4	.000	.002	.004	.005	.008	.010	.010	.007	.000
S/DEPTH=.3	.000	.001	.001	.002	.003	.003	.003	.002	.000
S/DEPTH=.2	.000	.000	.000	.001	.001	.001	.001	.001	.000
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 10-C

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	17.8%	15.7%	9.8%	5%	31.3%	245	149	331	392
						*****	41.9%	15.6%	27.6%
SURFACE	.000	6.244	11.311	14.747	17.533	16.707	13.923	7.647	.000
S/DEPTH=1.0	*****	18.7%	13.1%	5.4%	11.4%	26.5%	30.1%	22.0%	*****
	.000	3.662	7.105	10.139	14.480	16.413			
S/DEPTH= .9	*****	6.5%	5.1%	2.7%	4.3%	16.1%	5.369	3.389	.000
	.000	1.033	2.026	2.944	4.428	5.423	3.1%	6.6%	*****
S/DEPTH= .8	*****	5.5%	5.1%	4.5%	2.8%	1.777	1.795	1.157	.000
	.000	.325	.639	.933	1.422	13.0%	12.1%	11.3%	*****
S/DEPTH= .7	*****	*****	*****	14.2%	13.7%	13.0%	5.595	3.86	.000
	.000	.106	.208	.304	.465	.585	*****	*****	*****
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.035	.068	.100	.153	.193	.197	.128	*****
S/DEPTH= .5	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.011	.023	.033	.051	.064	.065	.042	*****
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.004	.007	.011	.017	.021	.021	.014	*****
S/DEPTH= .3	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.001	.002	.004	.006	.007	.007	.005	*****
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.000	.001	.001	.002	.002	.002	.002	*****
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.000	.000	.000	.001	.001	.001	.001	*****
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	.000
	.000	.000	.000	.000	.000	.001	.001	.000	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10-C

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)												
THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0			
ETA/HEIGHT=	17.6%	15.7%	9.8%	5.21	4.35	2.45	1.49	-.331	-.392			
				5%	-31.3%	*****	41.9%	-15.6%	27.6%			
SURFACE	15.540	-14.769	12.699	-9.867	-3.738	2.759	7.616	12.745	14.583			
	23.6%	22.4%	19.2%	15.1%	14.3%	46.5%	32.1%	20.7%	14.9%			
S/DEPTH=1.0	12.931	-12.531	11.368	-9.544	-8.534	2.575						
	8.5%	8.0%	6.4%	3.7%	-5.6%	8.0%						
S/DEPTH=.9	5.165	-5.068	4.181	-4.317	-2.947	1.706	1.671	4.732	5.897			
	3.6%	3.4%	2.9%	2.1%	-.8%	*****	3.3%	4.5%	6.1%			
S/DEPTH=.8	1.790	-1.761	1.675	-1.534	-1.112	1.395	.396	1.457	1.869			
	13.5%	13.4%	13.3%	13.0%	12.1%	*****	*****	12.3%	11.6%			
S/DEPTH=.7	5.000	-5.591	5.563	-5.518	-3.182	1.148	.114	.469	.609			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.6	1.199	-1.196	1.187	-.172	-.128	-.051	.036	.154	.200			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.5	1.066	-1.065	1.062	-.057	-.042	-.017	.012	.051	.066			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.4	1.022	-1.021	1.020	-.019	-.014	-.006	.004	.017	.022			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.3	1.007	-1.007	1.007	-.006	-.005	-.002	.001	.006	.007			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.2	1.002	-1.002	1.002	-.002	-.002	-.001	.000	.002	.002			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.1	1.001	-1.001	1.001	-.001	-.000	-.000	.000	.001	.001			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			
S/DEPTH=.0	1.000	-1.000	1.000	-.000	-.000	-.000	.000	.000	.000			
	*****	*****	*****	*****	*****	*****	*****	*****	*****			

CASE 10=C

TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0	110.0	120.0	130.0	140.0	150.0	160.0	170.0	180.0
ETA/HEIGHT=	17.8%	15.7%	13.5%	11.3%	9.8%	8.5%	7.2%	6.0%	5.0%	4.3%	3.8%	3.2%	2.6%	2.1%	1.6%	1.1%	0.7%	0.4%	0.2%
SURFACE	.860	.799	.648	.470	.251	.129	.016	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=1.0	.152%	.135%	.113%	.098%	.085%	.072%	.060%	.050%	.043%	.038%	.032%	.026%	.021%	.016%	.011%	.007%	.004%	.002%	.001%
S/DEPTH= .9	.136%	.120%	.100%	.085%	.072%	.060%	.050%	.043%	.038%	.032%	.026%	.021%	.016%	.011%	.007%	.004%	.002%	.001%	.000%
S/DEPTH= .8	.120%	.104%	.084%	.070%	.058%	.048%	.040%	.033%	.027%	.022%	.018%	.014%	.010%	.007%	.004%	.002%	.001%	.000%	.000%
S/DEPTH= .7	.104%	.088%	.068%	.054%	.044%	.036%	.030%	.024%	.019%	.015%	.012%	.009%	.006%	.004%	.002%	.001%	.000%	.000%	.000%
S/DEPTH= .6	.088%	.072%	.052%	.038%	.028%	.020%	.014%	.010%	.007%	.005%	.003%	.002%	.001%	.000%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .5	.072%	.056%	.036%	.022%	.014%	.008%	.005%	.003%	.002%	.001%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .4	.056%	.040%	.020%	.012%	.006%	.003%	.002%	.001%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .3	.040%	.024%	.014%	.008%	.004%	.002%	.001%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .2	.024%	.016%	.008%	.004%	.002%	.001%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .1	.016%	.008%	.004%	.002%	.001%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%
S/DEPTH= .0	.008%	.004%	.002%	.001%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%	.000%

CASE 10=C

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD, DEFINED IN EQUATION (26)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	17.8%	6.08	5.84	5.21	4.35	.245	.026	.0331	.392
		15.7%	9.8%	5%	-31.3%	*****	41.9%	-15.6%	-27.6%
SURFACE	.000	.474	.876	1.173	1.484	1.510	1.306	.728	.000
S/DEPTH=1.0	*****	14.6%	10.6%	5.3%	-5.0%	-11.6%	-10.6%	-2.42%	*****
	.000	.295	.516	.833	1.235	1.482	.489	.314	.000
S/DEPTH=.9	*****	7.3%	6.7%	5.6%	2.5%	-2.5%	9.8%	8.2%	*****
	.000	.090	.177	.258	.391	.487	.162	.105	.000
S/DEPTH=.8	*****	13.5%	13.3%	13.1%	12.3%	11.1%	22.6%	22.1%	*****
	.000	.029	.057	.083	.127	.160	.054	.035	.000
S/DEPTH=.7	*****	*****	*****	23.5%	23.3%	22.9%	*****	*****	*****
	.000	.010	.019	.027	.042	.053	.018	.012	.000
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.003	.006	.009	.014	.017	.006	.004	.000
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.001	.002	.003	.005	.006	.002	.001	.000
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.001	.001	.002	.002	.001	.000	.000
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.001	.001	.000	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000

CASE 10=C

TABLE VII=DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THETA =	0	10.0	20.0	30.0	40.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.608	.584	.521	.435	.245	.026	.026	.149	.331	.392
	17.8%	15.7%	9.8%	5%	-31.3%	*****	*****	41.9%	-15.6%	-27.6%
SURFACE	.856	.794	.641	.462	.175	.016	.016	.010	.109	.164
S/DEPTH=1.0	-1.5%	-4.8%	-13.7%	-25.9%	-52.3%	*****	*****	*****	-7.6%	.1%
	.332	.321	.288	.240	.123	.016	.016			
	-13.7%	-14.2%	-15.6%	-18.1%	-26.9%	*****	*****			
S/DEPTH=.9	.031	.030	.027	.023	.012	.002	.002	.001	.018	.029
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.003	.003	.003	.002	.001	.000	.000	.000	.002	.003
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10=C

TABLE VIII=DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

THETA ETA/HEIGHT	0 17.8	10.0 15.7	20.0 9.8	30.0 5.4	40.0 2.4	50.0 0.6	60.0 0.2	70.0 0.1	80.0 0.0	90.0 0.0	100.0 0.0	110.0 0.0	120.0 0.0	130.0 0.0	140.0 0.0	150.0 0.0	160.0 0.0	170.0 0.0	180.0 0.0
SURFACE	.000	.453	.832	1.107	1.378	1.649	1.920	2.191	2.462	2.733	3.004	3.275	3.546	3.817	4.088	4.359	4.630	4.901	5.172
S/DEPTH=1.0	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.9	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.8	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.7	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.6	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.5	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.4	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.3	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.2	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.1	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682
S/DEPTH=.0	.000	.149	.298	.447	.596	.745	.894	.1.043	.1.192	.1.341	.1.490	.1.639	.1.788	.1.937	.2.086	.2.235	.2.384	.2.533	.2.682

CASE 10=C

TABLE IX=DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	40.0	50.0	60.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	17.8%	15.7%	9.8%	5.21	5%	31.3%	245	.026	.149	.331	.392
								*****	41.9%	15.6%	27.8%
SURFACE	1.216	1.169	1.045	.873	.490	.050	.299	.663	.786		
S/DEPTH=1.0	11.5%	10.2%	6.8%	2.2%	.74%	*****	.26%	3.0%	7.0%		
	.859	.840	.786	.699	.408	.053					
S/DEPTH= .9	3.4%	3.1%	2.2%	.6%	.53%	*****	.077	.259	.350		
	.307	.302	.286	.261	.186	.061	52.3%	20.7%	17.5%		
S/DEPTH= .8	2.9%	2.7%	2.0%	.6%	.51%	*****	.021	.083	.107		
	.103	.102	.097	.089	.065	.024	*****	58.6%	50.2%		
S/DEPTH= .7	5.7%	6.2%	7.1%	10.6%	23.3%	*****	.007	.028	.036		
	.034	.033	.032	.029	.021	.008	*****	.010	.012		
S/DEPTH= .6	*****	*****	*****	.009	.006	.002	.003	*****	*****		
	.011	.010	.010	*****	*****	*****	*****	*****	*****		
S/DEPTH= .5	*****	*****	*****	.003	.002	.000	.002	.004	.005		
	.003	.003	.003	*****	*****	*****	*****	*****	*****		
S/DEPTH= .4	*****	*****	*****	.000	.000	.001	.001	.002	.002		
	.000	.000	.000	*****	*****	*****	*****	*****	*****		
S/DEPTH= .3	*****	*****	*****	.001	.001	.001	.001	.001	.001		
	.000	.000	.001	*****	*****	*****	*****	*****	*****		
S/DEPTH= .2	*****	*****	*****	.001	.001	.001	.001	.001	.001		
	.001	.001	.001	*****	*****	*****	*****	*****	*****		
S/DEPTH= .1	*****	*****	*****	.001	.001	.001	.001	.001	.001		
	.001	.001	.001	*****	*****	*****	*****	*****	*****		
S/DEPTH= .0	*****	*****	*****	.001	.001	.001	.001	.001	.001		
	.001	.001	.001	*****	*****	*****	*****	*****	*****		

CASE 10-C

TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA=	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.178	.303	.354	.287	.097	.049	.103	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	.000	.000	.000	.000	.000	.000	.000	.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	.038	.033	.017	.006	.058	.094	.067	.062	.135
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.000	.000	.001	.002	.000	.001	.000	.000	.001

CASE 10=C

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	.134 (11.8%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.450 (11.2%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.483 (21.4%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.933 (16.5%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.542 (15.5%)
(6)	DIMENSIONLESS GROUP VFLOCITY DEFINED IN EQUATION (42)	.581 (.9%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.962 (6.1%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.574 (1.8%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.031 (300.7%)

CASE 10-C

TABLE XI(CONT)-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.177997	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.072805	STREAM FUNCTION	.000719
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.354296	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.134600	STREAM FUNCTION	.001646
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.596771	STREAM FUNCTION	.507823
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.340150	STREAM FUNCTION	.315433

CASE 10=D

3TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO = (G/6.28318) * T^2$

H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT

T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT

DPT = WATER DEPTH L = WAVE LENGTH

PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .170401 DPT/LO = 1.999993

H/DPT = .085201

L/LO = 1.222070 PSI/(G*H*T) = .015407

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = -.488993E-05 X(2)/(H*T*G) = -.863825E-11

X(3)/(H*T*G) = -.638304E-16

CASE 10-D

TABLE 1-DIMENSIONLESS HORIZONTAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (21)

THETA =	0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0	110.0	120.0	130.0	140.0	150.0	160.0	170.0	180.0	190.0	200.0	210.0	220.0	230.0	240.0	250.0	260.0	270.0	280.0	290.0	300.0	310.0	320.0	330.0	340.0	350.0	360.0	370.0	380.0	390.0	400.0	410.0	420.0	430.0	440.0	450.0	460.0	470.0	480.0	490.0	500.0	510.0	520.0	530.0	540.0	550.0	560.0	570.0	580.0	590.0	600.0	610.0	620.0	630.0	640.0	650.0	660.0	670.0	680.0	690.0	700.0	710.0	720.0	730.0	740.0	750.0	760.0	770.0	780.0	790.0	800.0	810.0	820.0	830.0	840.0	850.0	860.0	870.0	880.0	890.0	900.0	910.0	920.0	930.0	940.0	950.0	960.0	970.0	980.0	990.0	1000.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
ETA/HEIGHT=	21.9%	18.4%	15.0%	11.6%	8.3%	5.0%	1.7%	-1.7%	-5.0%	-8.3%	-11.6%	-15.0%	-18.4%	-21.9%	-25.4%	-28.9%	-32.4%	-35.9%	-39.4%	-42.9%	-46.4%	-49.9%	-53.4%	-56.9%	-60.4%	-63.9%	-67.4%	-70.9%	-74.4%	-77.9%	-81.4%	-84.9%	-88.4%	-91.9%	-95.4%	-98.9%	-102.4%	-105.9%	-109.4%	-112.9%	-116.4%	-119.9%	-123.4%	-126.9%	-130.4%	-133.9%	-137.4%	-140.9%	-144.4%	-147.9%	-151.4%	-154.9%	-158.4%	-161.9%	-165.4%	-168.9%	-172.4%	-175.9%	-179.4%	-182.9%	-186.4%	-189.9%	-193.4%	-196.9%	-200.4%	-203.9%	-207.4%	-210.9%	-214.4%	-217.9%	-221.4%	-224.9%	-228.4%	-231.9%	-235.4%	-238.9%	-242.4%	-245.9%	-249.4%	-252.9%	-256.4%	-259.9%	-263.4%	-266.9%	-270.4%	-273.9%	-277.4%	-280.9%	-284.4%	-287.9%	-291.4%	-294.9%	-298.4%	-301.9%	-305.4%	-308.9%	-312.4%	-315.9%	-319.4%	-322.9%	-326.4%	-329.9%	-333.4%	-336.9%	-340.4%	-343.9%	-347.4%	-350.9%	-354.4%	-357.9%	-361.4%	-364.9%	-368.4%	-371.9%	-375.4%	-378.9%	-382.4%	-385.9%	-389.4%	-392.9%	-396.4%	-399.9%	-403.4%	-406.9%	-410.4%	-413.9%	-417.4%	-420.9%	-424.4%	-427.9%	-431.4%	-434.9%	-438.4%	-441.9%	-445.4%	-448.9%	-452.4%	-455.9%	-459.4%	-462.9%	-466.4%	-469.9%	-473.4%	-476.9%	-480.4%	-483.9%	-487.4%	-490.9%	-494.4%	-497.9%	-501.4%	-504.9%	-508.4%	-511.9%	-515.4%	-518.9%	-522.4%	-525.9%	-529.4%	-532.9%	-536.4%	-539.9%	-543.4%	-546.9%	-550.4%	-553.9%	-557.4%	-560.9%	-564.4%	-567.9%	-571.4%	-574.9%	-578.4%	-581.9%	-585.4%	-588.9%	-592.4%	-595.9%	-599.4%	-602.9%	-606.4%	-609.9%	-613.4%	-616.9%	-620.4%	-623.9%	-627.4%	-630.9%	-634.4%	-637.9%	-641.4%	-644.9%	-648.4%	-651.9%	-655.4%	-658.9%	-662.4%	-665.9%	-669.4%	-672.9%	-676.4%	-679.9%	-683.4%	-686.9%	-690.4%	-693.9%	-697.4%	-700.9%	-704.4%	-707.9%	-711.4%	-714.9%	-718.4%	-721.9%	-725.4%	-728.9%	-732.4%	-735.9%	-739.4%	-742.9%	-746.4%	-749.9%	-753.4%	-756.9%	-760.4%	-763.9%	-767.4%	-770.9%	-774.4%	-777.9%	-781.4%	-784.9%	-788.4%	-791.9%	-795.4%	-798.9%	-802.4%	-805.9%	-809.4%	-812.9%	-816.4%	-819.9%	-823.4%	-826.9%	-830.4%	-833.9%	-837.4%	-840.9%	-844.4%	-847.9%	-851.4%	-854.9%	-858.4%	-861.9%	-865.4%	-868.9%	-872.4%	-875.9%	-879.4%	-882.9%	-886.4%	-889.9%	-893.4%	-896.9%	-900.4%	-903.9%	-907.4%	-910.9%	-914.4%	-917.9%	-921.4%	-924.9%	-928.4%	-931.9%	-935.4%	-938.9%	-942.4%	-945.9%	-949.4%	-952.9%	-956.4%	-959.9%	-963.4%	-966.9%	-970.4%	-973.9%	-977.4%	-980.9%	-984.4%	-987.9%	-991.4%	-994.9%	-998.4%	-1001.9%	-1005.4%	-1008.9%	-1012.4%	-1015.9%	-1019.4%	-1022.9%	-1026.4%	-1029.9%	-1033.4%	-1036.9%	-1040.4%	-1043.9%	-1047.4%	-1050.9%	-1054.4%	-1057.9%	-1061.4%	-1064.9%	-1068.4%	-1071.9%	-1075.4%	-1078.9%	-1082.4%	-1085.9%	-1089.4%	-1092.9%	-1096.4%	-1099.9%	-1103.4%	-1106.9%	-1110.4%	-1113.9%	-1117.4%	-1120.9%	-1124.4%	-1127.9%	-1131.4%	-1134.9%	-1138.4%	-1141.9%	-1145.4%	-1148.9%	-1152.4%	-1155.9%	-1159.4%	-1162.9%	-1166.4%	-1169.9%	-1173.4%	-1176.9%	-1180.4%	-1183.9%	-1187.4%	-1190.9%	-1194.4%	-1197.9%	-1201.4%	-1204.9%	-1208.4%	-1211.9%	-1215.4%	-1218.9%	-1222.4%	-1225.9%	-1229.4%	-1232.9%	-1236.4%	-1239.9%	-1243.4%	-1246.9%	-1250.4%	-1253.9%	-1257.4%	-1260.9%	-1264.4%	-1267.9%	-1271.4%	-1274.9%	-1278.4%	-1281.9%	-1285.4%	-1288.9%	-1292.4%	-1295.9%	-1299.4%	-1302.9%	-1306.4%	-1309.9%	-1313.4%	-1316.9%	-1320.4%	-1323.9%	-1327.4%	-1330.9%	-1334.4%	-1337.9%	-1341.4%	-1344.9%	-1348.4%	-1351.9%	-1355.4%	-1358.9%	-1362.4%	-1365.9%	-1369.4%	-1372.9%	-1376.4%	-1379.9%	-1383.4%	-1386.9%	-1390.4%	-1393.9%	-1397.4%	-1400.9%	-1404.4%	-1407.9%	-1411.4%	-1414.9%	-1418.4%	-1421.9%	-1425.4%	-1428.9%	-1432.4%	-1435.9%	-1439.4%	-1442.9%	-1446.4%	-1449.9%	-1453.4%	-1456.9%	-1460.4%	-1463.9%	-1467.4%	-1470.9%	-1474.4%	-1477.9%	-1481.4%	-1484.9%	-1488.4%	-1491.9%	-1495.4%	-1498.9%	-1502.4%	-1505.9%	-1509.4%	-1512.9%	-1516.4%	-1519.9%	-1523.4%	-1526.9%	-1530.4%	-1533.9%	-1537.4%	-1540.9%	-1544.4%	-1547.9%	-1551.4%	-1554.9%	-1558.4%	-1561.9%	-1565.4%	-1568.9%	-1572.4%	-1575.9%	-1579.4%	-1582.9%	-1586.4%	-1589.9%	-1593.4%	-1596.9%	-1600.4%	-1603.9%	-1607.4%	-1610.9%	-1614.4%	-1617.9%	-1621.4%	-1624.9%	-1628.4%	-1631.9%	-1635.4%	-1638.9%	-1642.4%	-1645.9%	-1649.4%	-1652.9%	-1656.4%	-1659.9%	-1663.4%	-1666.9%	-1670.4%	-1673.9%	-1677.4%	-1680.9%	-1684.4%	-1687.9%	-1691.4%	-1694.9%	-1698.4%	-1701.9%	-1705.4%	-1708.9%	-1712.4%	-1715.9%	-1719.4%	-1722.9%	-1726.4%	-1729.9%	-1733.4%	-1736.9%	-1740.4%	-1743.9%	-1747.4%	-1750.9%	-1754.4%	-1757.9%	-1761.4%	-1764.9%	-1768.4%	-1771.9%	-1775.4%	-1778.9%	-1782.4%	-1785.9%	-1789.4%	-1792.9%	-1796.4%	-1799.9%	-1803.4%	-1806.9%	-1810.4%	-1813.9%	-1817.4%	-1820.9%	-1824.4%	-1827.9%	-1831.4%	-1834.9%	-1838.4%	-1841.9%	-1845.4%	-1848.9%	-1852.4%	-1855.9%	-1859.4%	-1862.9%	-1866.4%	-1869.9%	-1873.4%	-1876.9%	-1880.4%	-1883.9%	-1887.4%	-1890.9%	-1894.4%	-1897.9%	-1901.4%	-1904.9%	-1908.4%	-1911.9%	-1915.4%	-1918.9%	-1922.4%	-1925.9%	-1929.4%	-1932.9%	-1936.4%	-1939.9%	-1943.4%	-1946.9%	-1950.4%	-1953.9%	-1957.4%	-1960.9%	-1964.4%	-1967.9%	-1971.4%	-1974.9%	-1978.4%	-1981.9%	-1985.4%	-1988.9%	-1992.4%	-1995.9%	-1999.4%	-2002.9%	-2006.4%	-2009.9%	-2013.4%	-2016.9%	-2020.4%	-2023.9%	-2027.4%	-2030.9%	-2034.4%	-2037.9%	-2041.4%	-2044.9%	-2048.4%	-2051.9%	-2055.4%	-2058.9%	-2062.4%	-2065.9%	-2069.4%	-2072.9%	-2076.4%	-2079.9%	-2083.4%	-2086.9%	-2090.4%	-2093.9%	-2097.4%	-2100.9%	-2104.4%	-2107.9%	-2111.4%	-2114.9%	-2118.4%	-2121.9%	-2125.4%	-2128.9%	-2132.4%	-2135.9%	-2139.4%	-2142.9%	-2146.4%	-2149.9%	-2153.4%	-2156.9%	-2160.4%	-2163.9%	-2167.4%	-2170.9%	-2174.4%	-2177.9%	-2181.4%	-2184.9%	-2188.4%	-2191.9%	-2195.4%	-2198.9%	-2202.4%	-2205.9%	-2209.4%	-2212.9%	-2216.4%	-2219.9%	-2223.4%	-2226.9%	-2230.4%	-2233.9%	-2237.4%	-2240.9%	-2244.4%	-2247.9%	-2251.4%	-2254.9%	-2258.4%	-2261.9%	-2265.4%	-2268.9%	-2272.4%	-2275.9%	-2279.4%	-2282.9%	-2286.4%	-2289.9%	-2293.4%	-2296.9%	-2300.4%	-2303.9%	-2307.4%	-2310.9%	-2314.4%	-2317.9%	-2321.4%	-2324.9%	-2328.4%	-2331.9%	-2335.4%	-2338.9%	-2342.4%	-2345.9%	-2349.4%	-2352.9%	-2356.4%	-2359.9%	-2363.4%	-2366.9%	-2370.4%	-2373.9%	-2377.4%	-2380.9%	-2384.4%	-2387.9%	-2391.4%	-2394.9%	-2398.4%	-2401.9%	-2405.4%	-2408.9%	-2412.4%	-2415.9%	-2419.4%	-2422.9%	-2426.4%	-2429.9%	-2433.4%	-2436.9%	-2440.4%	-2443.9%	-2447.4%	-2450.9%	-2454.4%	-2457.9%	-2461.4%	-2464.9%	-2468.4%	-2471.9%	-2475.4%	-2478.9%	-2482.4%	-2485.9%	-2489.4%	-2492.9%	-2496.4%	-2499.9%	-2503.4%	-2506.9%	-2510.4%	-2513.9%	-2517.4%	-2520.9%	-2524.4%	-2527.9%	-2531.4%	-2534.9%	-2538.4%	-2541.9%	-2545.4%	-2548.9%	-2552.4%	-2555.9%	-2559.4%	-2562.9%	-2566.4%	-2569.9%	-2573.4%	-2576.9%	-2580.4%	-2583.9%	-2587.4%	-2590.9%	-2594.4%	-2597.9%	-2601.4%	-2604.9%	-2608.4%	-2611.9%	-2615.4%	-2618.9%	-2622.4%	-2625.9%	-2629.4%	-2632.9%	-2636.4%	-2639.9%	-2643.4%	-2646.9%	-2650.4%	-2653.9%	-2657.4%	-2660.9%	-2664.4%	-2667.9%	-2671.4%	-2674.9%	-2678.4%	-2681.9%	-2685.4%	-2688.9%	-2692.4%	-2695.9%	-2699.4%	-2702.9%	-2706.4%	-2709.9%	-2713.4%	-2716.9%	-2720.4%	-2723.9%	-2727.4%	-2730.9%	-2734.4%	-2737.9%	-2741.4%	-2744.9%	-2748.4%	-2751.9%	-2755.4%	-2758.9%	-2762.4%	-2765.9%	-2769.4%	-2772.9%	-2776.4%	-2779.9%	-2783.4%	-2786.9%	-2790.4%	-2793.9%	-2797.4%	-2800.9%	-2804.4%	-2807.9%	-2811.4%	-2814.9%	-2818.4%	-2821.9%	-2825.4%	-2828.9%	-2832.4%	-2835.9%	-2839.4%	-2842.9%	-2846.4%	-2849.9%	-2853.4%	-2856.9%	-2860.4%	-2863.9%	-2867.4%	-2870.9%	-2874.4%	-2877.9%	-2881.4%	-2884.9%	-2888.4%	-2891.9%	-2895.4%	-2898.9%	-2902.4%	-2905.9%	-2909.4%	-2912.9%	-2916.4%	-2919.9%	-2923.4%	-2926.9%	-2930.4%	-2933.9%	-2937.4%	-2940.9%	-2944.4%	-2947.9%	-2951.4%	-2954.9%	-2958.4%	-2961.9%	-2965.4%	-2968.9%	-2972.4%	-2975.9%	-2979.4%	-2982.9%	-2986.4%	-2989.9%	-2993.4%	-2996.9%	-3000.4%	-3003.9%	-3007.4%	-3010.9%	-3014.4%	-3017.9%	-3021.4%	-3024.9%	-3028.4%	-3031.9%	-3035.4%	-3038.9%	-3042.4%	-3045.9%	-3049.4%	-3052.9%	-3056.4%	-3059.9%	-3063.4%	-3066.9%	-3070.4%	-3073.9%	-3077.4%	-3080.9%	-3084.4%	-3087.9%	-3091.4%	-3094.9%	-3098.4%	-3101.9%	-3105.4%	-3108.9%	-3112.4%	-3115.9%	-3119.4%	-3122.9%	-3126.4%	-3129.9%	-3133.4%	-3136.9%	-3140.4%	-3143.9%	-3147.4%	-3150.9%	-3154.4%	-3157.9%	-3161.4%	-3164.9%	-3168.4%	-3171.9%	-3175.4%	-3178.9%	-3182.4%	-3185.9%	-3189.4%	-3192.9%	-3196.4%	-3199.9%	-3203.4%	-3206.9%	-3210.4%	-3213.9%	-3217.4%	-3220.9%	-3224.4%	-3227.9%	-3231.4%	-3234.9%	-3238.4%	-3241.9%	-3245.4%	-3248.9%	-3252.4%	-3255.9%	-3259.4%	-3262.9%	-3266.4%	-3269.9%	-3273.4%	-3276.9%	-3280.4%	-3283.9%	-3287.4%	-3290.9%	-3294.4%	-3297.9%	-3301.4%	-3304.9%	-3308.4%	-3311.9%	-3315.4%	-3318.9%	-3322.4%	-3325.9%	-3329.4%	-3332.9%	-3336.4%	-3339.9%	-3343.4%	-3346.9%	-3350.4%	-3353.9%	-3357.4%	-3360.9%	-3364.4%	-3367.9%	-3371.4%	-3374.9%	-3378.4%	-3381.9%	-3385.4%	-3388.9%	-3392.4%	-3395.9%	-3399.4%	-3402.9%	-3406.4%	-3409.9%	-3413.4%	-3416.9%	-3420.4%	-3423.9%	-3427.4%	-3430.9%	-3434.4%	-3437.9%	-3441.4%	-3444.9%	-3448.4%	-3451.9%	-3455.4%	-3458.9%	-3462.4%	-3465.9%	-3469.4%	-3472.9%	-3476.4%	-3479.9%	-3483.4%	-3486.9%	-3490.4%	-3493.9%	-3497.4%	-3500.9%	-3504.4%	-3507.9%	-3511.4%	-3514.9%	-3518.4%	-3521.9%	-3525.4%	-3528.9%	-3532.4%	-3535.9%	-3539.4%	-3542.9%	-3546.4%	-3549.9%	-3553.4%	-3556.9%	-3560.4%	-3563.9%	-3567.4%	-3570.9%	-3574.4%	-3577.9%	-3581.4%	-3584.9%	-3588.4%	-3591.9%	-3595.4%	-3598.9%	-3602.4%	-3605.9%	-3609.4%	-3612.9%	-3616.4%	-3619.9%	-3623.4%	-3626.9%	-3630.4%	-3633.9%	-3637.4%	-3640.9%	-3644.4%	-3647.9%	-3651.4%	-3

CASE 10-D

TABLE 11-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.657	.603	.496	.385	.189	-.004	.148	.294	.343
	23.9%	18.4%	5.3%	-12.4%	-70.0%	*****	41.2%	-30.5%	-45.9%
SURFACE	.000	1.103	1.832	2.236	2.477	2.287	1.889	1.038	.000
S/DEPTH=1.0	*****	16.3%	3.1%	-11.5%	-36.9%	-52.2%	-49.1%	-29.1%	*****
S/DEPTH= .9	*****	.521	1.010	1.038	2.042	.810	.800	.504	.000
	*****	-4.6%	-6.5%	-9.1%	-17.8%	-6.6%	-10.2%	-14.1%	*****
S/DEPTH= .8	.000	.156	.305	.443	.664	.287	.289	.186	.000
	*****	.2%	.5%	1.0%	3.1%	-6.6%	13.2%	12.0%	*****
S/DEPTH= .7	.000	.053	.104	.151	.230	14.2%	.104	.067	.000
	*****	*****	*****	15.7%	15.2%	.102	*****	*****	*****
S/DEPTH= .6	.000	.019	.036	.053	.081	*****	.037	.024	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.07	.13	.19	.29	*****	.015	.009	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	.002	.005	.007	.010	.013	.005	.003	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.001	.002	.002	.004	.005	.002	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	.000	.001	.001	.001	.002	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10=D

TABLE III=DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIELD,.,.,DEFINED IN EQUATION (23)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.657	.603	.496	.385	.189	.004	.148	.294	.343
	23.9%	18.4%	5.3%	12.4%	70.0%	*****	41.2%	30.3%	-45.9%
SURFACE	.000	9.439	15.104	17.518	17.186	13.804	10.638	5.990	.000
S/DEPTH=1.0	*****	38.6%	26.2%	10.6%	24.0%	58.5%	66.4%	40.5%	*****
S/DEPTH= .9	*****	4.078	7.776	10.782	14.099				.000
S/DEPTH= .8	*****	16.0%	13.3%	8.6%	7.1%	5.131	4.900	3.005	*****
S/DEPTH= .7	*****	1.059	2.067	2.976	4.362	5.8%	12.9%	20.2%	.000
S/DEPTH= .6	*****	7.9%	7.0%	5.6%	1.3%	1.813	1.806	1.146	.000
S/DEPTH= .5	*****	.340	.668	.972	1.470	14.7%	12.7%	10.2%	.000
S/DEPTH= .4	*****	.117	.231	.337	.514	.644	.851	.420	.000
S/DEPTH= .3	*****	.041	.082	.119	.183	.230	.233	.152	.000
S/DEPTH= .2	*****	.015	.029	.043	.065	.082	.084	.054	.000
S/DEPTH= .1	*****	.005	.010	.015	.023	.029	.030	.019	.000
S/DEPTH= .0	*****	.002	.004	.005	.008	.011	.011	.007	.000
	*****	.001	.001	.002	.003	.004	.004	.003	.000
	*****	.000	.001	.001	.001	.002	.002	.001	.000
	*****	.000	.000	.000	.001	.001	.001	.001	.000
	*****	.000	.000	.000	.000	.001	.001	.001	.000

TABLE IV-DIMENSIONLESS VERTICAL ACCELERATION COMPONENT FIELD...DEFINED IN EQUATION (24)

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TABLE V-DIMENSIONLESS DRAG FORCE COMPONENT FIELD...DEFINED IN EQUATION (25)

THETA =	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.657	.496	.385	.189	.004	.004	.294	.343
	23.9%	18.4%	12.4%	7.0%	*****	41.2%	30.3%	45.9%
SURFACE	1.137	.965	.671	.426	.134	.009	.088	.151
S/DEPTH=1.0	.7%	.132%	.413%	.749%	.1415%	*****	.161%	.35%
S/DEPTH= .9	.306	.294	.260	.210	.098	*****	*****	*****
S/DEPTH= .8	.286%	.298%	.337%	.403%	.649%	*****	*****	*****
S/DEPTH= .7	.035	.034	.031	.026	.013	.002	.019	.032
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.004	.004	.004	.003	.002	.000	.002	.004
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.001	.001	.000	.000	.000	.000	.000	.001
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10*0

TABLE VI-DIMENSIONLESS INERTIA FORCE COMPONENT FIELD...DEFINED IN EQUATION (26)

THETA =	10.0	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.657	.603	.5496	.496	.395	.189	.004	.148	.294	.343
	23.9%	18.4%	5.3%	5.3%	12.4%	70.0%	*****	41.2%	30.3%	45.9%
SURFACE	.000	.638	1.071	1.319	1.479	1.378	1.145	.632	.000	.000
S/DEPTH=1.0	*****	27.6%	17.0%	5.3%	14.8%	26.5%	23.2%	6.2%	*****	*****
	.000	.313	.607	.864	1.228			.307	.000	.000
S/DEPTH= .9	*****	12.8%	11.3%	9.0%	1.9%	.494	.488	6.3%	*****	*****
	.000	.095	.186	.270	.405			.114	.000	.000
S/DEPTH= .8	*****	18.0%	17.6%	17.0%	15.3%	12.5%	9.6%	.27	*****	*****
	.000	.032	.063	.092	.141	.175	.177	.041	.000	.000
S/DEPTH= .7	*****	.011	.022	.033	.050	.062	.063	.015	.000	.000
	.000	.004	.008	.012	.018	.022	.023	.005	.000	.000
S/DEPTH= .6	*****	.000	.000	.000	.000	.008	.008	.002	.000	.000
	.000	.001	.003	.004	.006	.003	.003	.001	.000	.000
S/DEPTH= .5	*****	.000	.000	.000	.000	.003	.003	.001	.000	.000
	.000	.001	.001	.001	.002	.001	.001	.001	.000	.000
S/DEPTH= .4	*****	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .3	*****	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .2	*****	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .1	*****	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .0	*****	.000	.000	.000	.000	.000	.000	.000	.000	.000
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE VII-DIMENSIONLESS DRAG MOMENT COMPONENT FIELD...DEFINED IN EQUATION (27)

THE TA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	0.57	0.603	0.496	0.385	0.189	0.004	0.148	0.294	0.343
	23.9%	18.4%	5.3%	12.4%	70.0%	*****	41.2%	30.3%	45.9%
SURFACE	1.152	.973	.669	.420	.129	.009	.010	.081	.120
S/DEPTH=1.0	*****	12.6%	41.7%	76.9%	147.2%	*****	*****	16.4%	2.9%
	29.9%	.280	.248	.200	.094				
S/DEPTH= .9	*****	30.7%	34.6%	41.4%	66.8%	.002	.001	.016	.027
	.030	.029	.026	.022	.011	*****	*****	*****	*****
S/DEPTH= .8	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.003	.003	.003	.002	.001	.000	.000	.002	.003
S/DEPTH= .7	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .5	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000

TABLE VIII-DIMENSIONLESS INERTIA MOMENT COMPONENT FIELD...DEFINED IN EQUATION (28)

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CASE 10MD

TABLE IX-DIMENSIONLESS DYNAMIC PRESSURE COMPONENT FIELD...DEFINED IN EQUATION (29)

THETA =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.657	.603	.496	.385	.189	.004	.148	.294	.343
	23.9%	18.4%	5.1%	-12.4%	-70.0%	*****	41.2%	-30.3%	-45.9%
SURFACE	1.299	1.213	1.019	.795	.381	.014	.298	-.592	-.697
S/DEPTH=1.0	23.0%	19.7%	12.1%	2.7%	-17.3%	*****	-3.4%	6.4%	13.1%
	.834	.812	.747	.646	.371				
S/DEPTH= .9	3.5%	2.7%	.3%	-3.8%	-20.8%	.053	.084	.261	.328
	.314	.308	.291	.264	.184				
S/DEPTH= .8	-6.7%	.73%	-9.12%	-12.5%	-27.2%	*****	101.1%	35.7%	28.5%
	.114	.112	.107	.098	.071	.026	.024	.090	.116
S/DEPTH= .7	-33.1%	-34.2%	-37.7%	-44.1%	-72.7%	*****	*****	109.1%	90.7%
	.041	.040	.038	.035	.026	.010	.008	.032	.041
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.015	.014	.014	.013	.009	.004	.003	.011	.015
S/DEPTH= .5	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.005	.005	.005	.004	.003	.001	.001	.004	.005
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.002	.002	.002	.001	.001	.000	.000	.002	.002
S/DEPTH= .3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.001	.001	.000	.000	.000	.000	.000	.001	.001
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000

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TABLE X-VARIABLES DEPENDING ONLY ON PHASE ANGLE

THETA	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
(1) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	1.349	1.594	1.337	.710	.188	-.085	-.164	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(35)									
SURFACE	.000	-.000	-.000	.000	.000	-.000	.000	-.000	-.000
(3) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
LINEAR WAVE THEORY REPRESENTATION... DEFINED IN EQ.(36)									
SURFACE	-.000	.006	.022	.046	.098	.121	.067	-.106	-.197
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR									
STREAM FUNCTION THEORY REPRESENTATION... DEFINED IN EQ.(37)									
SURFACE	.008	-.003	-.013	-.012	-.002	.003	.001	.002	.006

CASE 10=0

TABLE XI=OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

(1)	DIMENSIONLESS WAVE LENGTH DEFINED IN EQUATION (37)	1.222	(16.1%)
(2)	DIMENSIONLESS AVERAGE POTENTIAL ENERGY DEFINED IN EQUATION (38)	.392	(27.4%)
(3)	DIMENSIONLESS AVERAGE KINETIC ENERGY DEFINED IN EQUATION (39)	.444	(36.1%)
(4)	DIMENSIONLESS TOTAL AVERAGE ENERGY DEFINED IN EQUATION (40)	.836	(38.4%)
(5)	DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX DEFINED IN EQUATION (41)	.531	(38.0%)
(6)	DIMENSIONLESS GROUP VELOCITY DEFINED IN EQUATION (42)	.635	(3%)
(7)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM DEFINED IN EQUATION (43)	.863	(17.4%)
(8)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION DEFINED IN EQUATION (44)	.580	(6.1%)
(9)	DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION DEFINED IN EQUATION (45)	.049	(336.0%)

CASE 10=0

TABLE XI(CONT)-OVERALL WAVE PARAMETERS... DO NOT DEPEND ON PHASE ANGLE OR ELEVATION

* (10) DIMENSIONLESS ROOT MEAN SQUARE KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	.671380	STREAM FUNCTION	.000000
(11) DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.104352	STREAM FUNCTION	.005430
(12) DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46) LINEAR	1.593790	STREAM FUNCTION	.000000
(13) DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47) LINEAR	.197350	STREAM FUNCTION	.013568
(14) DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48) LINEAR	.912193	STREAM FUNCTION	.738335
(15) DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49) LINEAR	.411345	STREAM FUNCTION	.521853

<p>Dean, Robert G. Evaluation and development of water wave theories for engineering applications. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1974.</p> <p>2v. illus., charts. (U.S. Coastal Engineering Research Center. Special report no. 1) (U.S. Coastal Engineering Research Center. Contract DACW72-67-C-0009). Bibliography: p.97-98.</p> <p>Report in two volumes. Volume I presents the results of a research program to evaluate and develop water wave theories for engineering application. Volume II presents wave tables developed for preliminary design in offshore problems.</p> <p>1. Water waves - Mathematical analysis. 2. Wave theory. 3. Water waves - Tables. 4. Coastal engineering. I. Title. (Series) (Contract)</p> <p>TC203 .U581sr no. 1 627 .U581sr</p>	<p>Dean, Robert G. Evaluation and development of water wave theories for engineering applications. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1974.</p> <p>2v. illus., charts. (U.S. Coastal Engineering Research Center. Special report no. 1) (U.S. Coastal Engineering Research Center. Contract DACW72-67-C-0009). Bibliography: p.97-98.</p> <p>Report in two volumes. Volume I presents the results of a research program to evaluate and develop water wave theories for engineering application. Volume II presents wave tables developed for preliminary design in offshore problems.</p> <p>1. Water waves - Mathematical analysis. 2. Wave theory. 3. Water waves - Tables. 4. Coastal engineering. I. Title. (Series) (Contract)</p> <p>TC203 .U581sr no. 1 627 .U581sr</p>
<p>Dean, Robert G. Evaluation and development of water wave theories for engineering applications. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1974.</p> <p>2v. illus., charts. (U.S. Coastal Engineering Research Center. Special report no. 1) (U.S. Coastal Engineering Research Center. Contract DACW72-67-C-0009). Bibliography: p.97-98.</p> <p>Report in two volumes. Volume I presents the results of a research program to evaluate and develop water wave theories for engineering application. Volume II presents wave tables developed for preliminary design in offshore problems.</p> <p>1. Water waves - Mathematical analysis. 2. Wave theory. 3. Water waves - Tables. 4. Coastal engineering. I. Title. (Series) (Contract)</p> <p>TC203 .U581sr no. 1 627 .U581sr</p>	<p>Dean, Robert G. Evaluation and development of water wave theories for engineering applications. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1974.</p> <p>2v. illus., charts. (U.S. Coastal Engineering Research Center. Special report no. 1) (U.S. Coastal Engineering Research Center. Contract DACW72-67-C-0009). Bibliography: p.97-98.</p> <p>Report in two volumes. Volume I presents the results of a research program to evaluate and develop water wave theories for engineering application. Volume II presents wave tables developed for preliminary design in offshore problems.</p> <p>1. Water waves - Mathematical analysis. 2. Wave theory. 3. Water waves - Tables. 4. Coastal engineering. I. Title. (Series) (Contract)</p> <p>TC203 .U581sr no. 1 627 .U581sr</p>