

TC 2223
C62
no. 1
v. 2

SR - 1

LIBRARY
USE ONLY

uation And Development Of Water Wave Theories For Engineering Application

VOLUME II

Tabulation Of Dimensionless Stream Function Theory Variables

by
R.G. Dean

SPECIAL REPORT NO.1
NOVEMBER 1974

BOOKS ARE ACCOUNTABLE PROPERTY CHARGED
TO AN INDIVIDUAL BY NAME. PLEASE DO
NOT LEND TO OTHERS WITHOUT CLEARING
YOURSELF.



Approved for public release;
distribution unlimited

Prepared for
**U.S. ARMY, CORPS OF ENGINEERS
COASTAL ENGINEERING
RESEARCH CENTER**

Kingman Building
Fort Belvoir, Va. 22060

LIBRARY BRANCH
TECHNICAL INFORMATION CENTER
US ARMY ENGINEER WATERWAYS EXPERIMENT STATION
VICKSBURG, MISSISSIPPI

1C 223
C6s
no. 1
v. 2

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER SR-1	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) EVALUATION AND DEVELOPMENT OF WATER WAVE THEORIES FOR ENGINEERING APPLICATION VOL. I - PRESENTATION OF RESEARCH RESULTS VOL. II - TABULATION OF DIMENSIONLESS STREAM-FUNCTION THEORY VARIABLES	5. TYPE OF REPORT & PERIOD COVERED SPECIAL REPORT	
	6. PERFORMING ORG. REPORT NUMBER TECHNICAL REPORT NO. 14	
7. AUTHOR(s) R. G. DEAN	8. CONTRACT OR GRANT NUMBER(s) DACW 72-67-C-0009	
9. PERFORMING ORGANIZATION NAME AND ADDRESS COASTAL AND OCEANOGRAPHIC ENGINEERING LABORATORY COLLEGE OF ENGINEERING UNIVERSITY OF FLORIDA GAINESVILLE, FLORIDA 32611	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS VO 4200	
11. CONTROLLING OFFICE NAME AND ADDRESS DEPARTMENT OF THE ARMY COASTAL ENGINEERING RESEARCH CENTER KINGMAN BUILDING, FORT BELVOIR, VA 22060	12. REPORT DATE November 1974	
	13. NUMBER OF PAGES VOL. I - 133 VOL. II - 534	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
16. DISTRIBUTION STATEMENT (of this Report) APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Coastal Engineering Dean's Stream-Function Wave Theory Water-Wave Theories Wave Tables		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Volume I of of this report 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. Volume I describes: (1) an evaluation of the degree to which various available wave theories satisfy the nonlinear water-wave mathematical formulation and (2) a comparison of water particle velocities measured in the laboratory with those predicted by a number of available wave theories. The results indicated that Dean's Stream-Function Wave Theory provided generally better agreement with both the mathematical formulation and (Continued)		

DD FORM 1473 JAN 73

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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.

TABLE OF CONTENTS

VOLUME II

CHAPTER	Page
I INTRODUCTION TO TABLES	1
II STREAM-FUNCTION THEORY TABULATIONS IN DIMENSIONLESS FORM FOR 40 SETS OF WAVE CHARACTERISTICS	13
Case 1-A	15
1-B	28
1-C	41
1-D	54
Case 2-A	67
2-B	80
2-C	93
2-D	106
Case 3-A	119
3-B	132
3-C	145
3-C	158
Case 4-A	171
4-B	184
4-C	197
4-D	210
Case 5-A	223
5-B	236
5-C	249
5-D	262
Case 6-A	275
6-B	288
6-C	301
6-D	314
Case 7-A	327
7-B	340
7-C	353
7-D	366
Case 8-A	379
8-B	392
8-C	405
8-D	418
Case 9-A	431
9-B	444
9-C	457
9-D	470
Case 10-A	483
10-B	496
10-C	509
10-D	522

TABLE OF CONTENTS

VOLUME I

	Page
CHAPTER	
I INTRODUCTION	1
II STREAM FUNCTION WAVE THEORY	2
III EVALUATION OF VALIDITIES OF WAVE THEORIES	6
IV DESCRIPTION OF TABLES	38
V EXAMPLES ILLUSTRATING USE OF WAVE TABLES	58
VI SUMMARY	96
VII REFERENCES	97
 APPENDIX	
I NUMERICAL SOLUTION OF STEAM-FUNCTION PARAMETERS . . .	99
II DEVELOPMENT OF COMBINED SHOALING-REFRACTION COEFFICIENTS	103
III SAMPLE SET OF WAVE TABLES FOR CASE 4-D	108

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.

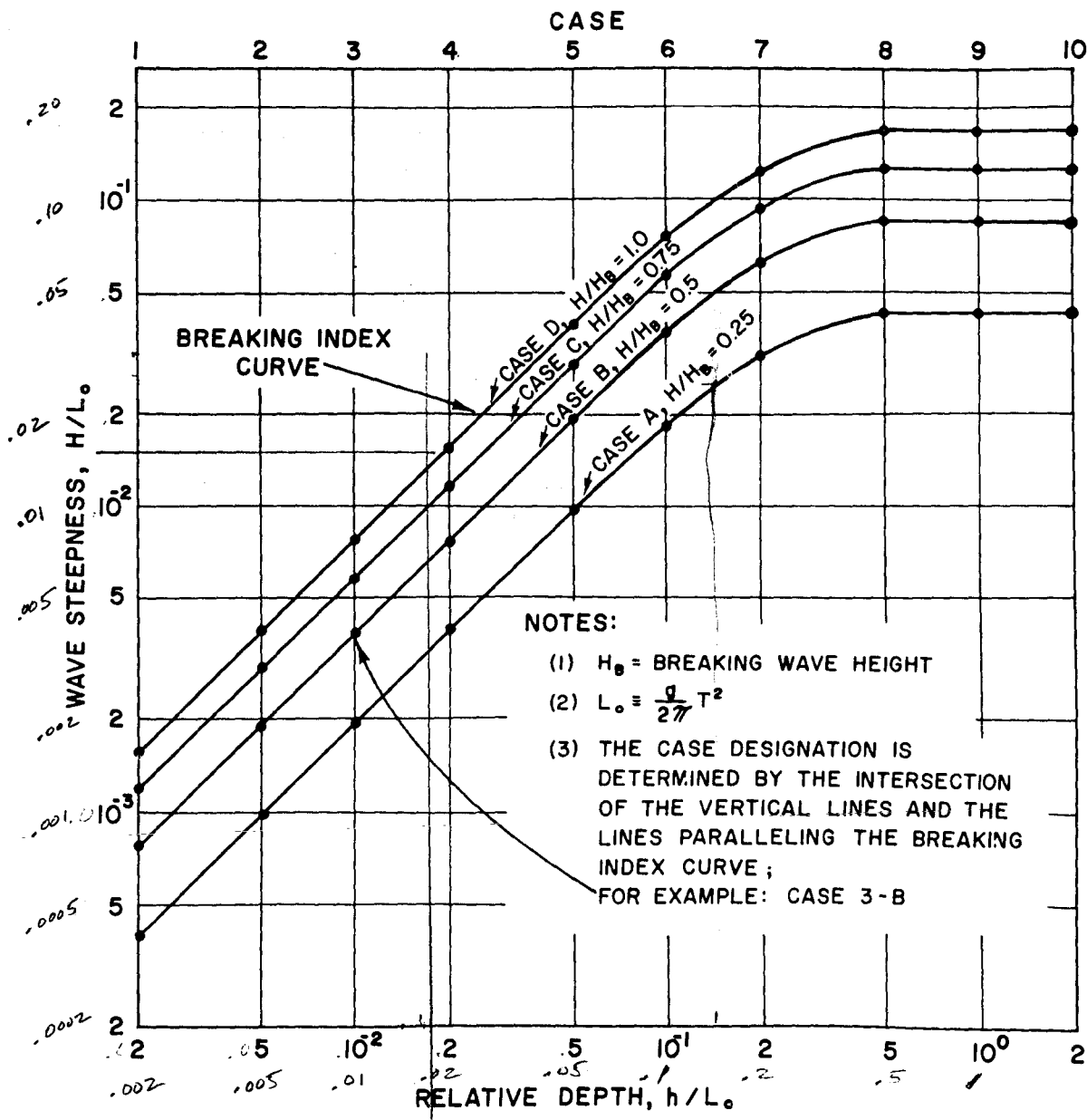


Figure 23 from Volume I showing wave steepnesses (H/L_0) and relative depths (h/L_0) of the 40 wave cases tabulated.

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	$\left(\frac{2}{C_D \rho D (H/T)^2 h} \right) F_D$	(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	$\left[\frac{4}{C_M \rho \pi D^2 (H/T^2) h} \right] F_I$	(26)	VI
Drag Moment Component up to a Level, S, $M_D(\theta, S)$	$M_D(\theta, S) = \frac{C_D \rho D}{2} \int_0^S s' u u ds'$	$\left[\frac{2}{C_D \rho D (H/T)^2 h^2} \right] M_D$	(27)	VII
Inertia Moment Component up to a Level, S, $M_I(\theta, S)$	$M_I(\theta, S) = \frac{C_M \rho \pi D^2}{4} \int_0^S s' \frac{Du}{Dt} ds'$	$\left[\frac{4}{C_M \rho \pi D^2 (H/T^2) h^2} \right] M_I$	(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, $\eta(\theta)$	$\eta(\theta) = \frac{T}{L} \psi_n - \frac{T}{L} \sum_{n=1}^{NN} X(n) \sinh \left(\frac{2\pi}{L} n(h + \eta) \right) \cos(n\theta)$	$\left(\frac{1}{H} \right) \eta(\theta)$	(30)	I - IX
Total Drag Force Component, $F_D(\theta)$	Same as Eq. (25), except upper limit is $h + \eta(\theta)$	$\left[\frac{2}{C_{D\rho D}(H/T)^2 H} \right] F_D$	(31)	V (labeled "Surface")
Total Inertia Force Component, $F_I(\theta)$	Same as Eq. (26), except upper limit is $h + \eta(\theta)$	$\left[\frac{4}{C_{M\rho\pi D^2}(H/T^2)H} \right] F_I$	(32)	VI (labeled "Surface")
Total Drag Moment Component, $M_D(\theta)$	Same as Eq. (27), except upper limit is $h + \eta(\theta)$	$\left[\frac{2}{C_{D\rho D}(H/T)^2 h^2} \right] M_D$	(33)	VII (labeled "Surface")
Total Inertia Moment Component, $M_I(\theta)$	Same as Eq. (28) except upper limit is $h + \eta(\theta)$	$\left[\frac{4}{C_{M\rho\pi D^2}(H/T^2)h^2} \right] M_I$	(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: $\bar{Q} \equiv \overline{Q(\theta)}$	$\left(\frac{1}{H} \right) \epsilon_2$	(36)	X Item 3, Linear Theory 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)	$\left(\frac{2\pi}{gT^2}\right) L$	(37)	XI Item 1
Average Potential Energy, PE	$PE = \frac{\gamma}{4\pi} \int_0^{2\pi} \eta^2(\theta) d\theta$	$\left(\frac{8}{\gamma H^2}\right) PE$	(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

9

TABLE F—Continued

Variable	Expression for Variable	Dimensionless Form	Equation No.	Presented in Table
Average Momentum Flux, in Wave Direction, F_{m_x}	$F_{m_x} = \frac{1}{2\pi} \int_0^{2\pi} \int_0^{h+\eta} (p_D + \rho u^2) ds d\theta$	$\left(\frac{8}{\gamma H^2}\right) F_{m_x}$	(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)	$\left(\frac{1}{H}\right) \sqrt{\epsilon_2^2}$ and $\left(\frac{1}{H}\right) \epsilon_2 _{\max}$	(47)	XI Items 11 & 13
Kinematic Free Surface Breaking Parameter, β_1	$\beta_1 = \frac{u}{c}, u \text{ evaluated at } \begin{cases} \theta = 0^\circ \\ S = h + \eta \end{cases}$	Expression Given is in Dimensionless Form	(48)	XI Item 14
Dynamic Free Surface Breaking Parameter β_2	$\beta_2 = -\frac{1}{g} \frac{Dw}{Dt}, \frac{Dw}{Dt} \text{ evaluated at } \begin{cases} \theta = 0^\circ \\ S = h + \eta \end{cases}$	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 $60^\circ,$ Respectively.

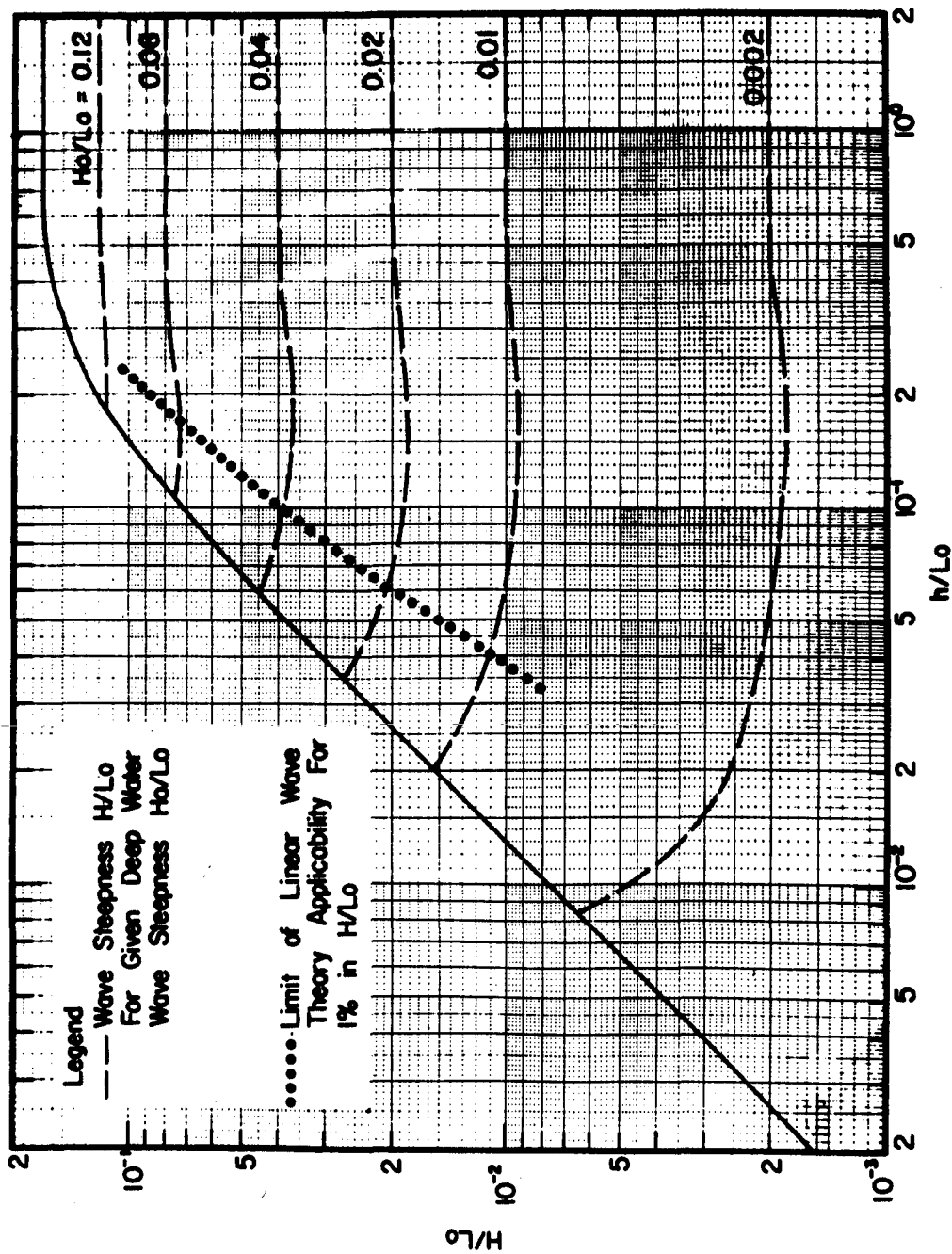


Figure 25. Combined shoaling-refraction for a deepwater wave direction, $\alpha_o = 0^\circ$.

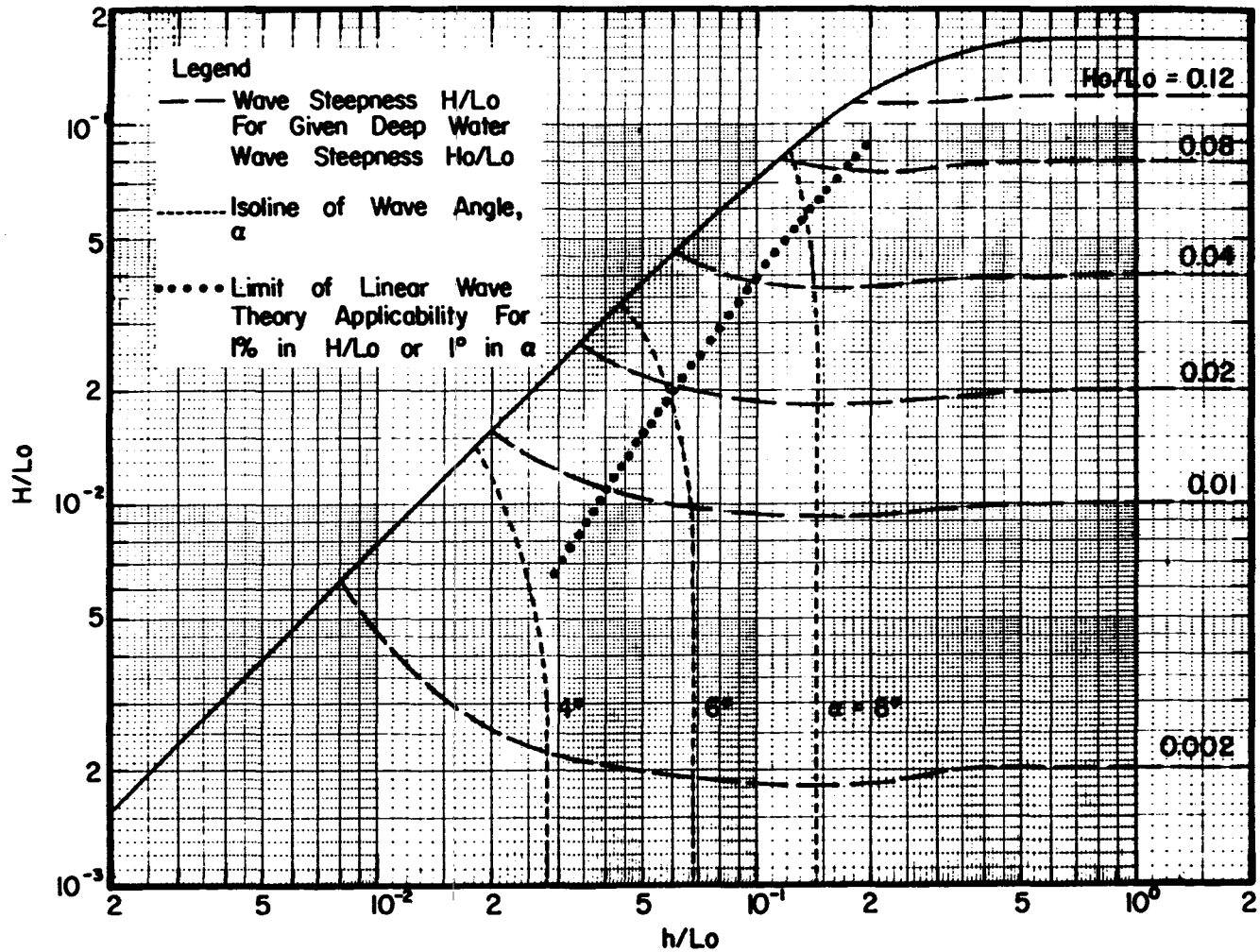


Figure 26. Combined shoaling-refraction for a deepwater wave direction, $\alpha_0 = 10^\circ$.

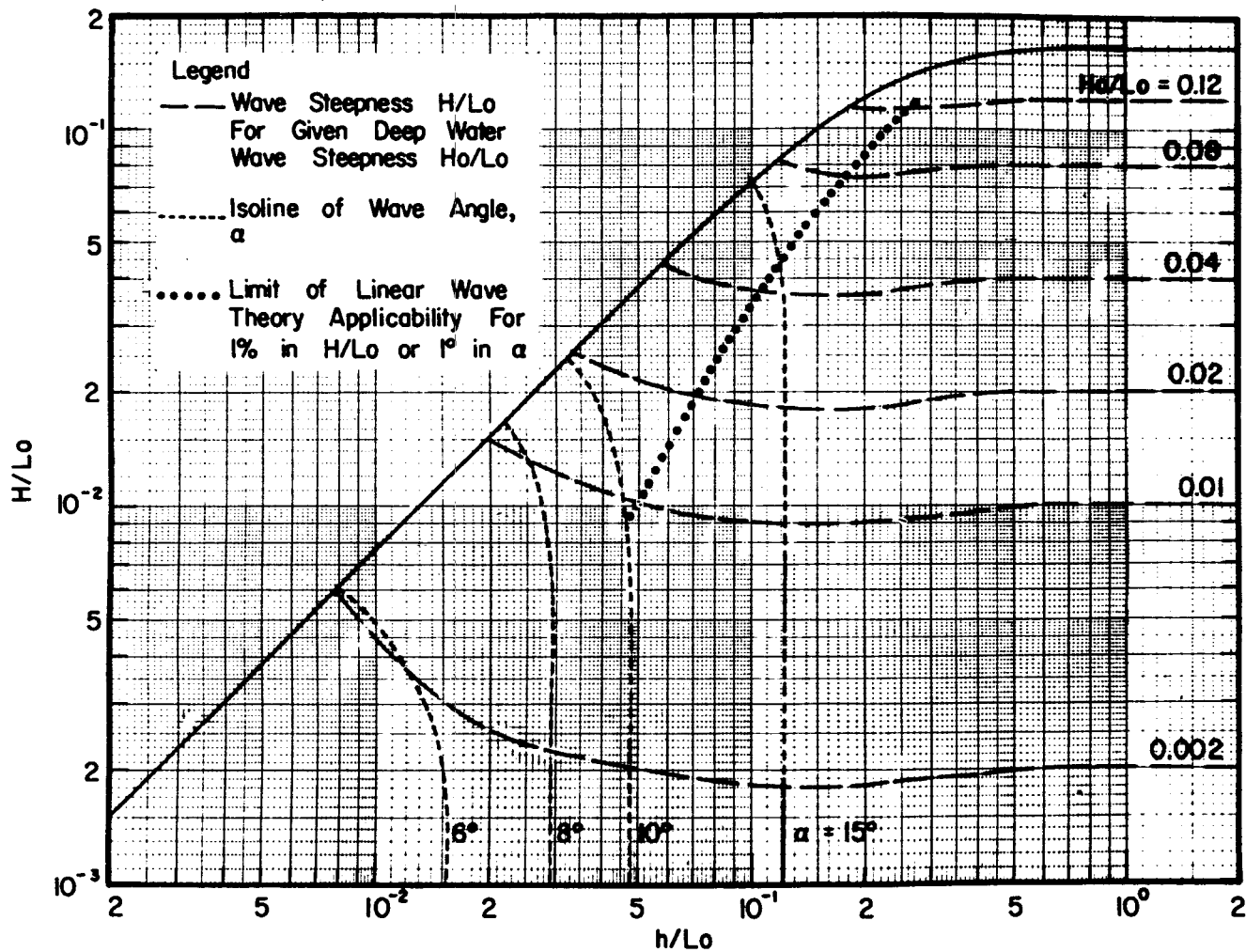


Figure 27. Combined shoaling-refraction for a deepwater wave direction, $\alpha_0 = 20^\circ$.

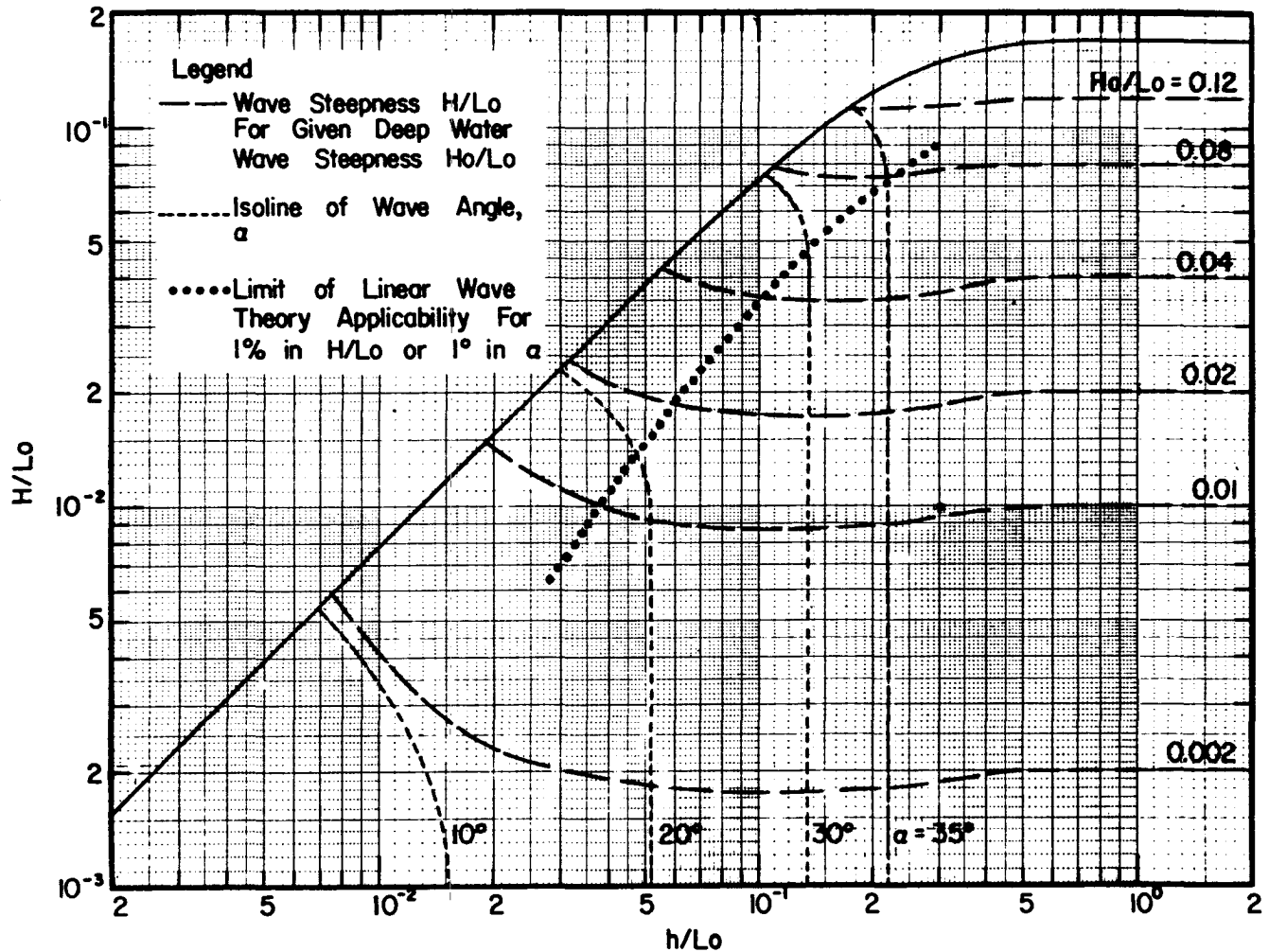


Figure 28. Combined shoaling-refraction for a deepwater wave direction, $\alpha_o = 40^\circ$.

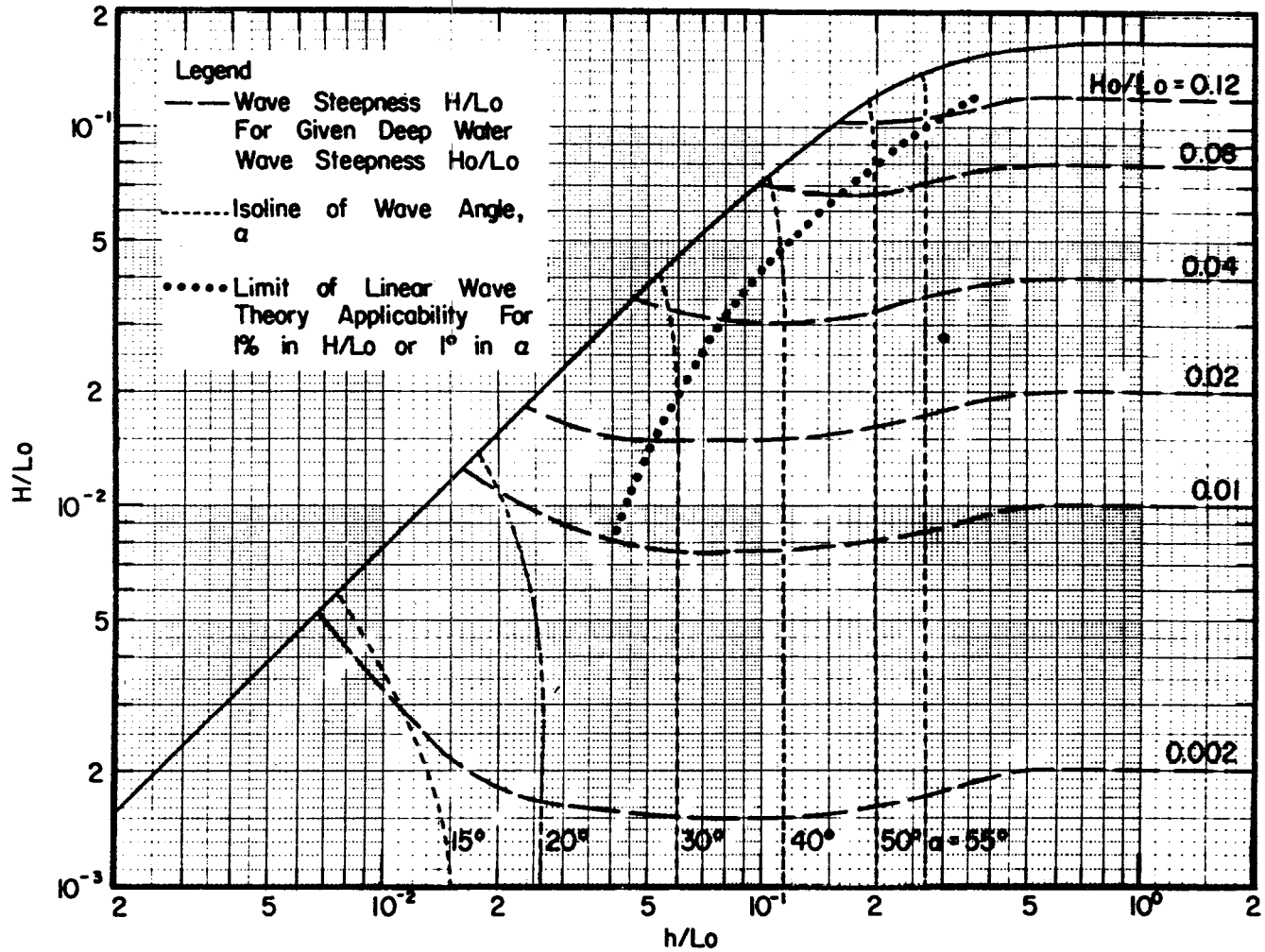


Figure 29. Combined shoaling-refraction for a deepwater wave direction, $\alpha_0 = 60^\circ$.

**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, $LO = (G/6.28318) * T^2$

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 = .000390 DPT/LO = .002000
 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) =	-.254337=02	X(6)/(H*T*G) =	-.153772=02
X(7)/(H*T*G) =	-.927237=03	X(8)/(H*T*G) =	-.556964=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) =	-.682359=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 I-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%	
S/DEPTH=1.0	50.923	33.528								
	44.8%	17.4%								
S/DEPTH=.9	49.681	33.311	10.705	.262						
	43.5%	17.0%	-146.4%	*****						
S/DEPTH=.8	48.585	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=.7	47.626	32.920	11.438	.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=.6	46.798	32.750	11.733	.889	=4.353	=4.899	=4.925	=4.934	=4.933	
	40.2%	15.9%	-124.1%	*****	513.2%	247.8%	1.3%	=334.4%	=467.2%	
S/DEPTH=.5	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=.4	45.504	32.471	12.195	1.186	=4.312	=4.897	=4.926	=4.933	=4.932	
	38.6%	15.3%	-115.3%	*****	516.4%	247.7%	1.5%	=333.8%	=466.5%	
S/DEPTH=.3	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=.2	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=.1	44.404	32.220	12.588	1.445	=4.277	=4.895	=4.927	=4.933	=4.931	
	37.2%	14.7%	-108.3%	*****	519.4%	247.5%	1.7%	=333.3%	=465.9%	
S/DEPTH=.0	44.249	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%	*****	519.9%	247.5%	1.7%	=333.2%	=465.7%	

CASE 1=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=	.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	.000	15.209	10.052	4.012	.439	.006	.011	.010	.000
	*****	96.1%	88.3%	57.6%	*****	*****	*****	*****	*****
S/DEPTH=1.1	.000	14.927							
	*****	96.0%							
S/DEPTH=1.0	.000	13.314	9.675	4.006					
	*****	95.9%	88.9%	60.8%					
S/DEPTH=.9	.000	11.778	8.702	3.637	.405	.007	.010	.009	.000
	*****	95.8%	88.9%	61.2%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	10.309	7.729	3.258	.364	.008	.008	.007	.000
	*****	95.8%	88.9%	61.5%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	8.899	6.758	2.870	.321	.008	.006	.006	.000
	*****	95.7%	88.9%	61.8%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	7.538	5.788	2.474	.278	.008	.005	.004	.000
	*****	95.7%	88.9%	62.0%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	6.220	4.819	2.072	.233	.007	.004	.003	.000
	*****	95.6%	88.9%	62.2%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	4.935	3.853	1.664	.188	.006	.003	.003	.000
	*****	95.6%	88.9%	62.3%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	3.678	2.888	1.252	.141	.005	.002	.002	.000
	*****	95.6%	88.9%	62.5%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	2.441	1.925	.836	.094	.003	.001	.001	.000
	*****	95.5%	88.9%	62.5%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	1.217	.962	.419	.047	.002	.001	.001	.000
	*****	95.5%	88.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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	-.080	-.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	227.818	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	.713	.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%	*****	*****	*****	*****	*****

CASE 1-A

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=	.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	=717.860	=69.976	270.840	149.656	20.160	.695	=1.031	.606	1.095
	97.3%	72.6%	106.7%	111.0%	*****	*****	*****	*****	*****
S/DEPTH=1.1	=658.339	=70.433							
	97.0%	72.8%							
S/DEPTH=1.0	=585.515	=71.491	258.381	149.407					
	97.0%	75.5%	106.4%	110.1%					
S/DEPTH=.9	=516.577	=70.089	227.402	134.770	18.439	.678	-.860	.507	.909
	96.9%	77.5%	106.6%	110.1%	*****	*****	*****	*****	*****
S/DEPTH=.8	=451.049	=66.646	198.053	120.019	16.409	.641	-.687	.407	.722
	96.8%	79.0%	106.7%	110.1%	*****	*****	*****	*****	*****
S/DEPTH=.7	=388.480	=61.519	170.150	105.174	14.382	.589	-.545	.325	.570
	96.8%	80.1%	106.8%	110.1%	*****	*****	*****	*****	*****
S/DEPTH=.6	=328.443	=55.017	143.510	90.258	12.352	.524	-.427	.256	.445
	96.8%	80.9%	106.9%	110.1%	*****	*****	*****	*****	*****
S/DEPTH=.5	=270.537	=47.404	117.951	75.286	10.314	.450	-.329	.199	.342
	96.7%	81.6%	107.0%	110.1%	*****	*****	*****	*****	*****
S/DEPTH=.4	=214.377	=38.913	93.288	60.272	8.267	.369	-.247	.150	.255
	96.7%	82.0%	107.1%	110.0%	*****	*****	*****	*****	*****
S/DEPTH=.3	=159.594	=29.748	69.341	45.228	6.210	.281	-.175	.107	.181
	96.7%	*****	107.2%	110.0%	*****	*****	*****	*****	*****
S/DEPTH=.2	=105.833	=20.096	45.931	30.163	4.145	.190	-.113	.069	.116
	96.6%	*****	107.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	=52.748	=10.126	22.876	15.084	2.074	.096	-.055	.034	.057
	96.6%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=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=	.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	2574.030	1191.188	149.314	1.309	-18.412	=23.564	=23.836	=23.912	=23.902
	66.6%	30.1%	=405.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	2369.607	1172.094							
	63.7%	28.9%							
S/DEPTH=1.0	2116.694	1060.416	144.948	1.309					
	63.0%	28.4%	=376.9%	*****					
S/DEPTH=.9	1875.398	950.139	133.056	1.294	-16.765	=21.582	=21.840	=21.905	=21.894
	62.5%	28.1%	=367.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	1644.084	841.159	120.353	1.257	-14.835	=19.181	=19.416	=19.469	=19.458
	62.0%	27.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	1421.281	733.354	106.921	1.193	-12.929	=16.781	=16.991	=17.034	=17.024
	61.5%	27.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	1205.658	626.598	92.848	1.098	-11.044	=14.382	=14.565	=14.600	=14.590
	61.1%	27.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	995.999	520.751	78.222	.973	-9.177	=11.984	=12.138	=12.166	=12.158
	60.8%	27.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	791.177	415.671	63.134	.818	-7.324	=9.586	=9.711	=9.733	=9.726
	60.6%	27.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	590.141	311.208	47.675	.638	-5.483	=7.189	=7.284	=7.299	=7.294
	60.4%	27.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	391.897	207.212	31.938	.437	-3.650	=4.792	=4.856	=4.866	=4.862
	60.2%	27.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	195.492	103.528	16.015	.222	-1.824	=2.396	=2.428	=2.433	=2.431
	60.1%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1-A

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	.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	.000	815.575	575.043	238.514	26.612	.364	.692	.633	.000
	*****	96.3%	89.6%	63.4%	*****	*****	*****	*****	*****
S/DEPTH=1.1	.000	800.431							
	*****	96.2%							
S/DEPTH=1.0	.000	713.829	553.675	238.145					
	*****	96.1%	90.1%	66.2%					
S/DEPTH=.9	.000	631.373	498.223	216.259	24.567	.431	.584	.532	.000
	*****	96.1%	90.1%	66.5%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	552.551	442.710	193.760	22.067	.474	.474	.428	.000
	*****	96.0%	90.1%	66.8%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	476.881	387.193	170.718	19.490	.482	.382	.342	.000
	*****	96.0%	90.1%	67.0%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	403.911	331.710	147.203	16.844	.460	.304	.270	.000
	*****	95.9%	90.1%	67.2%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	333.212	276.283	123.283	14.135	.416	.238	.210	.000
	*****	95.9%	90.1%	67.4%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	264.377	220.922	99.028	11.373	.353	.181	.158	.000
	*****	95.8%	90.1%	67.5%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	197.012	165.625	74.504	8.569	.276	.130	.113	.000
	*****	95.8%	90.1%	67.6%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	130.740	110.383	49.780	5.731	.190	.084	.073	.000
	*****	95.8%	90.1%	67.7%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	65.190	55.181	24.924	2.871	.096	.041	.036	.000
	*****	95.8%	90.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=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=	.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	1598.651	674.935	73.097	.449	-9.177	-11.582	-11.704	-11.748	-11.745
	70.4%	32.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	1365.838	653.769							
	65.4%	30.0%							
S/DEPTH=1.0	1100.175	536.495	68.647	.448					
	64.3%	29.1%	*****	*****					
S/DEPTH=.9	870.855	431.721	57.356	.434	-7.624	-9.716	-9.825	-9.859	-9.855
	63.6%	28.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	674.161	339.078	46.565	.403	-5.984	-7.675	-7.764	-7.789	-7.785
	62.8%	28.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	506.993	258.215	36.497	.356	-4.555	-5.875	-5.946	-5.963	-5.959
	62.2%	28.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	366.784	188.815	27.354	.294	-3.329	-4.315	-4.369	-4.380	-4.378
	61.7%	27.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	251.427	130.592	19.314	.226	-2.302	-2.996	-3.034	-3.042	-3.040
	61.2%	27.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	159.221	83.300	12.528	.156	-1.468	-1.917	-1.942	-1.947	-1.945
	60.8%	27.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	88.831	46.734	7.120	.093	-.823	-1.078	-1.092	-1.095	-1.094
	60.5%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	39.251	20.732	3.188	.043	-.365	-.479	-.486	-.487	-.486
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	9.779	5.177	.801	.011	-.091	-.120	-.121	-.122	-.121
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=A

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=	.010	.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	.000	480.530	299.002	116.633	12.696	.027	.415	.386	.000
	*****	96.5%	89.1%	59.3%	*****	*****	*****	*****	*****
S/DEPTH=1.1	.000	463.742							
	*****	96.4%							
S/DEPTH=1.0	.000	372.773	277.170	116.264					
	*****	96.3%	90.1%	65.3%					
S/DEPTH=.9	.000	294.408	224.492	95.477	10.771	.090	.314	.289	.000
	*****	96.2%	90.1%	65.8%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	227.381	177.306	76.358	8.646	.127	.220	.201	.000
	*****	96.1%	90.1%	66.3%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	170.604	135.668	59.081	6.714	.133	.151	.137	.000
	*****	96.0%	90.1%	66.6%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	123.153	99.603	43.800	4.994	.119	.100	.090	.000
	*****	96.0%	90.1%	66.9%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	84.252	69.118	30.647	3.505	.095	.064	.057	.000
	*****	95.9%	90.1%	67.2%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	53.262	44.205	19.734	2.263	.067	.038	.033	.000
	*****	95.9%	90.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	29.674	24.851	11.153	1.282	.040	.020	.018	.000
	*****	95.8%	90.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	13.098	11.040	4.974	.572	.019	.009	.007	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	3.261	2.759	1.246	.144	.005	.002	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.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=	.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	1.821	1.203	.397	.017	.162	.180	.180	.181	.181
S/DEPTH=1.1	46.4%	20.0%	=132.3%	*****	500.3%	255.4%	16.0%	=325.5%	=465.4%
S/DEPTH=1.0	1.787	1.202							
S/DEPTH=.9	45.4%	19.9%							
S/DEPTH=.8	1.748	1.197	.403	.018					
S/DEPTH=.7	44.2%	19.7%	=128.3%	*****					
S/DEPTH=.6	1.712	1.193	.419	.027	.161	.180	.180	.181	.181
S/DEPTH=.5	43.1%	19.5%	=119.6%	*****	502.2%	255.3%	16.2%	=325.4%	=465.5%
S/DEPTH=.4	1.682	1.188	.432	.035	.159	.180	.181	.181	.181
S/DEPTH=.3	42.1%	19.3%	=112.5%	*****	504.6%	255.2%	16.4%	=325.0%	=465.0%
S/DEPTH=.2	1.655	1.184	.444	.042	.158	.180	.181	.181	.181
S/DEPTH=.1	41.2%	19.1%	=106.7%	*****	506.8%	255.2%	16.5%	=324.6%	=464.6%
S/DEPTH=.0	1.632	1.181	.454	.048	.158	.180	.181	.181	.181
S/DEPTH=.9	40.5%	18.9%	=102.0%	*****	508.7%	255.1%	16.7%	=324.2%	=464.2%
S/DEPTH=.8	1.613	1.177	.462	.053	.157	.179	.181	.181	.181
S/DEPTH=.7	39.8%	18.7%	=98.3%	*****	510.4%	255.1%	16.8%	=323.9%	=463.8%
S/DEPTH=.6	1.598	1.175	.469	.058	.156	.179	.181	.181	.181
S/DEPTH=.5	39.3%	18.5%	=95.3%	*****	511.7%	255.1%	16.9%	=323.7%	=463.6%
S/DEPTH=.4	1.586	1.172	.474	.061	.156	.179	.181	.181	.181
S/DEPTH=.3	38.8%	18.4%	=93.1%	*****	512.8%	255.0%	16.9%	=323.5%	=463.3%
S/DEPTH=.2	1.577	1.171	.478	.063	.155	.179	.181	.181	.181
S/DEPTH=.1	38.5%	18.3%	=91.6%	*****	513.6%	255.0%	17.0%	=323.4%	=463.2%
S/DEPTH=.0	1.572	1.170	.480	.065	.155	.179	.181	.181	.181
S/DEPTH=.9	38.3%	18.3%	=90.7%	*****	514.0%	255.0%	17.0%	=323.3%	=463.1%
S/DEPTH=.8	1.571	1.170	.481	.065	.155	.179	.181	.181	.181
S/DEPTH=.7	38.3%	18.3%	=90.4%	*****	514.2%	255.0%	17.0%	=323.2%	=463.0%

CASE 1-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	.000	.001	.001	.001	.001	=.000	=.001	=.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE 1-A

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 (=136.7%)
- (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%)

CASE 1-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	.000761	STREAM FUNCTION	.000000
(11)	DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)			
	LINEAR	.008315	STREAM FUNCTION	.000319
(12)	DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)			
	LINEAR	.001142	STREAM FUNCTION	.000000
(13)	DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)			
	LINEAR	.011790	STREAM FUNCTION	.001154
(14)	DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48)			
	LINEAR	.097858	STREAM FUNCTION	.169314
(15)	DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)			
	LINEAR	.001211	STREAM FUNCTION	.044500

CASE 1-B

19TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY. $LO = (G/6,28318) * T^{**2}$
 H = WAVE HEIGHT G = GRAVITATIONAL CONSTANT
 T = WAVE PERIOD X(N) = NTH STREAM FUNCTION COEFFICIENT
 DPT = WATER DPTH 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) =	-.771776=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	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	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%	=853.8%	*****	642.9%	323.9%	=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%	=553.8%	=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%	=553.8%	=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%	*****	655.6%	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 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=	.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	17.510							
	*****	96.6%							
S/DEPTH=1.0	.000	15.566	5.764						
	*****	96.5%	81.4%						
S/DEPTH=.9	.000	13.729	5.280	1.425	.120	-.087	.057	.053	.000
	*****	96.4%	81.7%	.9%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	11.985	4.764	1.276	.103	-.071	.046	.043	.000
	*****	96.4%	82.0%	1.7%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	10.320	4.220	1.125	.087	-.057	.037	.035	.000
	*****	96.3%	82.2%	2.4%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	8.724	3.655	.971	.073	-.045	.029	.028	.000
	*****	96.3%	82.4%	3.1%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	7.185	3.071	.814	.059	-.035	.023	.022	.000
	*****	96.2%	82.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	5.693	2.473	.654	.047	-.027	.017	.017	.000
	*****	96.2%	82.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	4.238	1.864	.493	.035	-.019	.013	.012	.000
	*****	96.1%	82.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	2.810	1.247	.329	.023	-.012	.008	.008	.000
	*****	96.1%	82.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	1.401	.625	.165	.011	-.006	.004	.004	.000
	*****	96.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=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 =	.958	.413	.049	.039	.062	.061	.061	.062	.062
	46.7%	=19.3%	=89.2%	*****	621.2%	310.5%	=41.7%	=518.6%	=710.5%
SURFACE	.000	1130.109	278.736	93.929	12.727	=13.429	8.834	8.133	.000
	*****	97.8%	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%	24.3%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	892.513	343.116	98.660	9.737	=8.224	5.378	5.016	.000
	*****	97.2%	85.7%	25.8%	*****	*****	*****	*****	*****
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%	86.6%	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%	31.3%	*****	*****	*****	*****	*****
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	106.897	7.406	=3.968	2.583	2.464	.000
	*****	96.8%	87.4%	31.8%	*****	*****	*****	*****	*****

CASE 1-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=	.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	*****	263,545	316,304	85,695	19,034	2,786	6,276	3,784	6,539
	98.2%	106.5%	105.5%	118.0%	*****	*****	*****	*****	*****
S/DEPTH=1.3	994.189								
	100.0%								
S/DEPTH=1.2	897,717								
	97.9%								
S/DEPTH=1.1	805,567	249,698							
	97.8%	106.9%							
S/DEPTH=1.0	717,653	201,851	310,076						
	97.8%	107.7%	104.7%						
S/DEPTH=.9	633,768	162,258	277,573	78,666	16,502	2,340	5,396	3,240	5,561
	97.7%	108.6%	104.8%	115.1%	*****	*****	*****	*****	*****
S/DEPTH=.8	553,620	129,525	245,354	70,317	13,622	1,852	4,403	2,629	4,473
	97.7%	109.6%	104.8%	115.0%	*****	*****	*****	*****	*****
S/DEPTH=.7	476,860	102,462	213,499	61,876	11,161	1,456	3,565	2,117	3,571
	97.7%	110.6%	104.8%	115.0%	*****	*****	*****	*****	*****
S/DEPTH=.6	403,100	80,048	182,042	53,324	9,035	1,133	2,851	1,685	2,818
	97.6%	111.7%	104.8%	114.9%	*****	*****	*****	*****	*****
S/DEPTH=.5	331,934	61,400	150,982	44,655	7,172	867	2,237	1,317	2,185
	97.6%	112.7%	104.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	262,937	45,740	120,291	35,875	5,514	646	1,702	998	1,645
	97.6%	*****	104.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	195,679	32,376	89,919	26,999	4,009	457	1,227	718	1,176
	97.6%	*****	104.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	129,727	20,681	59,800	18,044	2,614	292	795	464	757
	97.6%	*****	104.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	64,646	10,072	29,855	9,036	1,290	142	390	228	370
	97.5%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1-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 =	.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=.3	2554.316								
	100.0%								
S/DEPTH=1.2	2284.330								
	59.0%								
S/DEPTH=1.1	2035.023	607.370							
	57.6%	=37.6%							
S/DEPTH=1.0	1803.278	554.075	15.454						
	56.6%	=37.0%	*****						
S/DEPTH=.9	1586.427	500.042	14.806	=2.730	=9.530	=9.504	=9.416	=9.649	=9.559
	55.6%	=36.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	1382.162	445.444	13.925	=2.314	=8.436	=8.452	=8.381	=8.570	=8.485
	54.8%	=36.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	1188.472	390.417	12.809	=1.940	=7.355	=7.399	=7.341	=7.494	=7.416
	54.0%	=35.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	1003.585	335.072	11.464	=1.602	=6.286	=6.344	=6.298	=6.420	=6.351
	53.3%	=35.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	825.924	279.495	9.908	=1.293	=5.225	=5.288	=5.253	=5.348	=5.289
	52.8%	=35.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	654.069	223.754	8.165	=1.007	=4.172	=4.232	=4.205	=4.277	=4.229
	52.3%	=35.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	486.724	167.899	6.267	=.740	=3.125	=3.174	=3.155	=3.207	=3.170
	51.9%	=35.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	322.681	111.970	4.247	=.486	=2.081	=2.116	=2.104	=2.137	=2.113
	51.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	160.804	55.995	2.144	=.241	=1.040	=1.058	=1.052	=1.069	=1.056
	51.5%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

63

CASE 1=B

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
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	=6.636	4.339	4.060	.000
	*****	97.1%	83.9%	14.6%	*****	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000	959.406							
	*****	97.2%							
S/DEPTH=1.0	.000	853.418	357.200						
	*****	97.1%	86.2%						
S/DEPTH= .9	.000	753.031	327.619	92.124	7.821	=5.683	3.711	3.484	.000
	*****	97.1%	86.5%	28.6%	*****	*****	*****	*****	*****
S/DEPTH= .8	.000	657.566	295.886	82.531	6.706	=4.613	3.010	2.834	.000
	*****	97.0%	86.7%	29.2%	*****	*****	*****	*****	*****
S/DEPTH= .7	.000	566.380	262.361	72.758	5.690	=3.715	2.422	2.287	.000
	*****	97.0%	86.9%	29.7%	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	478.866	227.361	62.798	4.753	=2.958	1.927	1.824	.000
	*****	96.9%	87.0%	30.2%	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	394.445	191.162	52.656	3.877	=2.311	1.506	1.428	.000
	*****	96.9%	87.2%	30.7%	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	312.563	154.009	42.346	3.050	=1.752	1.141	1.085	.000
	*****	96.8%	87.3%	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	232.688	116.123	31.892	2.258	=1.259	.820	.780	.000
	*****	96.8%	87.3%	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	154.304	77.704	21.327	1.492	=.814	.530	.505	.000
	*****	96.8%	87.4%	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	76.906	38.938	10.683	.742	=.399	.260	.248	.000
	*****	96.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

34

CASE 1=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	.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	2074.248	367.450	6.394	=1.730	=5.119	=5.020	=4.960	=5.119	=5.082
	72.9%	=47.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	1820.554								
	100.0%								
S/DEPTH=1.2	1482.885								
	62.1%								
S/DEPTH=1.1	1196.023	331.296							
	60.3%	=39.1%							
S/DEPTH=1.0	952.557	275.343	6.295						
	58.8%	=38.2%	*****						
S/DEPTH=.9	746.434	224.018	5.681	=1.360	=4.329	=4.272	=4.225	=4.350	=4.314
	57.5%	=37.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	572.713	177.613	4.934	=1.006	=3.399	=3.378	=3.345	=3.433	=3.402
	56.3%	=36.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	427.365	136.346	4.098	=.725	=2.588	=2.588	=2.565	=2.625	=2.600
	55.2%	=36.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	307.122	100.374	3.226	=.505	=1.893	=1.902	=1.887	=1.927	=1.907
	54.2%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	209.354	69.808	2.372	=.335	=1.310	=1.322	=1.312	=1.338	=1.323
	53.4%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	131.977	44.726	1.589	=.206	=.836	=.846	=.840	=.856	=.846
	52.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	73.373	25.178	.926	=.113	=.469	=.476	=.473	=.481	=.476
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	32.340	11.196	.422	=.049	=.208	=.212	=.210	=.214	=.211
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	8.045	2.800	.107	=.012	=.052	=.053	=.053	=.053	=.053
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

35

CASE 1=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
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	635.995	175.555	48.139	4.665	=3.950	2.586	2.407	.000
	*****	97.2%	80.3%	=4.0%	*****	*****	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000	559.628							
	*****	97.3%							
S/DEPTH=1.0	.000	448.291	170.135						
	*****	97.2%	85.5%						
S/DEPTH=.9	.000	352.880	142.053	40.596	3.795	=3.055	1.997	1.866	.000
	*****	97.2%	86.0%	27.0%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	271.696	115.096	32.444	2.846	=2.143	1.400	1.312	.000
	*****	97.1%	86.3%	27.9%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	203.274	89.966	25.116	2.083	=1.469	.959	.902	.000
	*****	97.0%	86.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	146.361	67.227	18.644	1.474	-.976	.636	.600	.000
	*****	97.0%	86.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	99.906	47.326	13.066	.992	-.619	.404	.382	.000
	*****	96.9%	87.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	63.040	30.615	8.428	.619	-.367	.239	.227	.000
	*****	96.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	35.070	17.360	4.771	.341	-.194	.126	.120	.000
	*****	96.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	15.463	7.759	2.130	.150	-.082	.054	.051	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	3.847	1.946	.534	.037	-.020	.013	.012	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=B

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=	.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	1.871	.835	.097	.080	.127	.123	.122	.125	.125
	49.1%	=12.6%	=835.9%	*****	611.9%	343.8%	=6.4%	=519.0%	=738.3%
S/DEPTH=1.3	1.828								
	100.0%								
S/DEPTH=1.2	1.767								
	46.1%								
S/DEPTH=1.1	1.713	.846							
	44.5%	=11.1%							
S/DEPTH=1.0	1.665	.860	.100						
	42.9%	=9.1%	=798.6%						
S/DEPTH=.9	1.622	.872	.119	.076	.126	.123	.122	.125	.125
	41.4%	=7.5%	=656.6%	*****	614.4%	343.4%	=5.9%	=519.8%	=740.2%
S/DEPTH=.8	1.584	.881	.136	.071	.125	.123	.122	.125	.124
	40.1%	=6.3%	=563.2%	*****	618.0%	343.1%	=5.3%	=520.3%	=742.3%
S/DEPTH=.7	1.551	.888	.150	.067	.125	.123	.122	.125	.124
	38.9%	=5.4%	=498.3%	*****	620.9%	342.9%	=4.8%	=520.3%	=743.2%
S/DEPTH=.6	1.523	.894	.163	.063	.124	.123	.123	.124	.124
	37.8%	=4.6%	=451.7%	*****	623.3%	342.7%	=4.4%	=520.3%	=743.7%
S/DEPTH=.5	1.500	.898	.173	.060	.123	.123	.123	.124	.124
	36.9%	=4.0%	=417.7%	*****	625.2%	342.5%	=4.1%	=520.3%	=744.2%
S/DEPTH=.4	1.481	.902	.182	.058	.123	.123	.123	.124	.124
	36.1%	=3.6%	=392.9%	*****	626.7%	342.4%	=3.8%	=520.2%	=744.4%
S/DEPTH=.3	1.466	.904	.189	.056	.123	.123	.123	.124	.123
	35.5%	=3.3%	=375.3%	*****	627.9%	342.3%	=3.6%	=520.1%	=744.6%
S/DEPTH=.2	1.456	.906	.194	.054	.122	.123	.123	.124	.123
	35.0%	=3.0%	=363.5%	*****	628.7%	342.2%	=3.5%	=520.1%	=744.8%
S/DEPTH=.1	1.450	.907	.196	.053	.122	.123	.123	.124	.123
	34.8%	=2.9%	=356.7%	*****	629.1%	342.2%	=3.4%	=520.0%	=744.8%
S/DEPTH=.0	1.448	.907	.197	.053	.122	.123	.123	.124	.123
	34.7%	=2.9%	=354.4%	*****	629.3%	342.2%	=3.3%	=520.0%	=744.8%

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 CONDITON 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-B

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)
.323 (=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
 DPT = WATER DEPTH L = WAVE LENGTH
 PSI = VALUE OF STREAM FUNCTION ON THE FREE SURFACE

WAVE CHARACTERISTICS

H/LO = .001169 DPT/LO = .002000
 H/DPT = .584426
 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) =	= .843849=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 I-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%	367.9%	=81.4%	=681.4%	=926.2%
SURFACE	56.519	16.026	=.174	=2.305	=2.745	=2.457	=2.405	=2.561	=2.558
	50.1%	=73.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	54.801								
	100.0%								
S/DEPTH=1.4	51.999								
	100.0%								
S/DEPTH=1.3	49.510								
	43.1%								
S/DEPTH=1.2	47.304								
	40.5%								
S/DEPTH=1.1	45.357	16.347							
	38.0%	=69.3%							
S/DEPTH=1.0	43.644	16.756	=.170						
	35.7%	=69.0%	*****						
S/DEPTH=.9	42.147	17.095	.16A	=2.244	=2.715	=2.463	=2.416	=2.554	=2.547
	33.5%	=61.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	40.848	17.374	.474	=2.172	=2.678	=2.470	=2.429	=2.546	=2.533
	31.4%	=58.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	39.733	17.603	.746	=2.109	=2.649	=2.476	=2.439	=2.540	=2.522
	29.6%	=56.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	38.790	17.787	.983	=2.056	=2.625	=2.481	=2.448	=2.534	=2.513
	27.9%	=54.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	38.008	17.934	1.184	=2.011	=2.606	=2.484	=2.455	=2.530	=2.506
	26.5%	=53.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	37.379	18.048	1.350	=1.974	=2.591	=2.487	=2.460	=2.527	=2.501
	25.3%	=52.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	36.897	18.132	1.479	=1.946	=2.580	=2.489	=2.464	=2.524	=2.497
	24.4%	=51.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	36.556	18.191	1.571	=1.926	=2.573	=2.490	=2.467	=2.523	=2.494
	23.7%	=51.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	36.353	18.225	1.626	=1.914	=2.568	=2.491	=2.469	=2.522	=2.493
	23.3%	=50.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	36.286	18.236	1.645	=1.910	=2.567	=2.491	=2.469	=2.521	=2.492
	23.1%	=50.6%	*****	*****	*****	*****	*****	*****	*****

CASE 1=C

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=	.951	.287	.002	-.042	-.050	-.048	-.048	-.049	-.049
	47.4%	-71.8%	*****	*****	739.9%	367.9%	-81.4%	-681.4%	-926.2%
SURFACE	.000	18.170	3.021	.927	.149	-.190	.126	.115	.000
	*****	96.1%	54.6%	*****	*****	*****	*****	*****	*****
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	16.845							
	*****	96.4%							
S/DEPTH=1.0	.000	14.978	3.019						
	*****	96.4%	64.4%						
S/DEPTH=.9	.000	13.211	2.846	.844	.132	-.166	.109	.101	.000
	*****	96.3%	66.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	11.534	2.629	.740	.110	-.136	.090	.083	.000
	*****	96.2%	67.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	9.933	2.375	.640	.091	-.111	.073	.067	.000
	*****	96.2%	68.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	8.397	2.090	.544	.074	-.089	.058	.054	.000
	*****	96.1%	69.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	6.916	1.778	.450	.060	-.070	.046	.043	.000
	*****	96.1%	69.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	5.480	1.447	.358	.046	-.054	.035	.033	.000
	*****	96.0%	70.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	4.079	1.099	.268	.034	-.039	.025	.024	.000
	*****	96.0%	70.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	2.705	.739	.178	.022	-.025	.016	.015	.000
	*****	96.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	1.348	.371	.089	.011	-.012	.008	.008	.000
	*****	96.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

67

CASE 1=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=	.951	.287	.002	.042	.050	.048	.048	.049	.049
	47.4%	=71.8%	*****	*****	739.9%	367.9%	=81.4%	=681.4%	=926.2%
SURFACE	.000	1131.940	94.953	78.320	17.877	=25.352	17.017	15.317	.001
	*****	98.1%	53.5%	15.2%	*****	*****	*****	*****	*****
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	1090.026							
	*****	98.0%							
S/DEPTH=1.0	.000	1033.438	95.371						
	*****	97.9%	54.0%						
S/DEPTH=.9	.000	983.185	128.770	74.629	16.185	=22.494	15.050	13.609	.001
	*****	97.8%	66.0%	11.6%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	939.002	157.102	70.802	14.131	=19.118	12.743	11.579	.001
	*****	97.7%	72.1%	7.0%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	900.641	180.919	67.961	12.432	=16.354	10.860	9.917	.001
	*****	97.6%	75.8%	3.2%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	867.874	200.687	65.890	11.042	=14.114	9.337	8.570	.000
	*****	97.5%	78.2%	.3%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	840.500	216.794	64.415	9.924	=12.328	8.126	7.496	.000
	*****	97.4%	79.9%	=1.9%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	818.344	229.558	63.390	9.048	=10.937	7.186	6.659	.000
	*****	97.3%	81.0%	=3.5%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	801.264	239.231	62.705	8.391	=9.899	6.484	6.035	.000
	*****	97.3%	81.8%	=4.6%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	789.145	246.006	62.275	7.934	=9.180	6.000	5.603	.000
	*****	97.2%	82.3%	=5.3%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	781.906	250.018	62.039	7.665	=8.757	5.715	5.348	.000
	*****	97.2%	82.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	779.499	251.346	61.965	7.576	=8.618	5.621	5.265	.000
	*****	97.2%	82.7%	*****	*****	*****	*****	*****	*****

77

CASE 1=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=	.951	.287	.002	.042	.050	.048	.048	.049	.049	
	47.4%	=71.8%	*****	*****	739.9%	367.9%	=81.4%	=681.4%	=926.2%	
SURFACE	*****	512.314	245.785	59.806	32.085	=6.276	=11.360	7.125	12.056	
	98.4%	103.4%	106.6%	123.7%	*****	*****	*****	*****	*****	
S/DEPTH=1.5	*****									
	100.0%									
S/DEPTH=1.4	*****									
	100.0%									
S/DEPTH=1.3	=927.612									
	98.1%									
S/DEPTH=1.2	=847.356									
	98.0%									
S/DEPTH=1.1	=767.664	453.437								
	98.0%	103.3%								
S/DEPTH=1.0	=689.290	377.448	245.542							
	98.0%	103.6%	105.2%							
S/DEPTH= .9	=612.682	312.868	223.839	54.229	27.949	=5.396	=9.924	6.199	10.433	
	98.0%	103.9%	105.1%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .8	=538.062	257.766	200.958	47.317	22.883	=4.352	=8.183	5.076	8.482	
	97.9%	104.2%	105.1%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .7	=465.483	210.502	177.190	40.820	18.586	=3.484	=6.689	4.122	6.841	
	97.9%	104.5%	105.0%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .6	=394.874	169.667	152.764	34.619	14.913	=2.758	=5.397	3.307	5.451	
	97.9%	104.8%	105.0%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .5	=326.076	134.040	127.859	28.625	11.738	=2.144	=4.268	2.602	4.263	
	97.9%	105.1%	105.0%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .4	=258.862	102.549	102.614	22.773	8.954	=1.617	=3.269	1.984	3.233	
	97.8%	105.3%	105.0%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .3	=192.962	74.238	77.134	17.014	6.468	=1.158	=2.369	1.433	2.324	
	97.8%	105.5%	105.0%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .2	=128.071	48.239	51.499	11.315	4.197	=.746	=1.540	.930	1.502	
	97.8%	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH= .1	=63.863	23.748	25.771	5.650	2.064	=.366	=.759	.457	.737	
	97.8%	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 1=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/HEIGHT=	.951	.287	.002	.042	.050	.048	.048	.049	.049
	47.4%	=71.8%	*****	*****	739.9%	367.9%	=81.4%	=681.4%	=926.2%

SURFACE	2860.992	361.832	1.366	=4.071	=6.669	=5.982	=5.833	=6.234	=6.131
	64.5%	=171.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	2687.695								
	100.0%								
S/DEPTH=1.4	2402.768								
	100.0%								
S/DEPTH=1.3	2145.372								
	52.7%								
S/DEPTH=1.2	1911.227								
	50.8%								
S/DEPTH=1.1	1696.733	344.140							
	49.2%	=142.9%							
S/DEPTH=1.0	1498.846	316.721	1.366						
	47.8%	=139.7%	*****						
S/DEPTH=.9	1314.972	288.054	1.365	=3.681	=6.143	=5.548	=5.415	=5.768	=5.665
	46.5%	=137.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	1142.887	258.334	1.353	=3.194	=5.416	=4.939	=4.828	=5.117	=5.020
	45.3%	=134.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	980.665	227.735	1.315	=2.736	=4.707	=4.328	=4.235	=4.471	=4.381
	44.2%	=132.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	826.621	196.411	1.240	=2.302	=4.011	=3.713	=3.638	=3.827	=3.747
	43.3%	=131.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	679.270	164.901	1.121	=1.889	=3.327	=3.097	=3.037	=3.186	=3.117
	42.6%	=130.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	537.279	132.125	.960	=1.492	=2.652	=2.479	=2.433	=2.547	=2.490
	41.9%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	399.441	99.392	.759	=1.108	=1.984	=1.860	=1.827	=1.909	=1.866
	41.4%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	264.641	66.401	.525	=.754	=1.320	=1.241	=1.219	=1.272	=1.243
	41.1%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	131.828	33.242	.269	=.365	=.659	=.621	=.610	=.636	=.621
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=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=	.951	.287	.002	-.042	-.050	-.048	-.048	-.049	-.049
	47.4%	=71.8%	*****	*****	739.9%	367.9%	=81.4%	=681.4%	=926.2%
SURFACE	.000	1043.479	202.656	64.500	10.428	=13.308	8.811	8.076	.000
	*****	97.3%	72.5%	=27.9%	*****	*****	*****	*****	*****
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	968.507							
	*****	97.5%							
S/DEPTH=1.0	.000	862.388	202.545						
	*****	97.5%	78.4%						
S/DEPTH=.9	.000	761.609	191.294	58.741	9.226	=11.593	7.657	7.046	.000
	*****	97.4%	79.5%	=.7%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	665.549	176.960	51.478	7.713	=9.518	6.272	5.790	.000
	*****	97.4%	80.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	573.614	160.024	44.548	6.388	=7.749	5.095	4.718	.000
	*****	97.3%	80.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	485.234	140.911	37.861	5.217	=6.230	4.088	3.796	.000
	*****	97.3%	81.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	399.860	120.008	31.350	4.171	=4.911	3.217	2.995	.000
	*****	97.3%	81.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	316.960	97.664	24.963	3.224	=3.751	2.453	2.289	.000
	*****	97.3%	82.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	236.022	74.200	18.660	2.354	=2.712	1.772	1.656	.000
	*****	97.2%	82.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	156.542	49.914	12.413	1.539	=1.761	1.149	1.075	.000
	*****	97.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	78.030	25.090	6.199	.761	=.866	.565	.529	.000
	*****	97.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

47

CASE 1=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=	.951	.287	.002	.042	.050	.048	.048	.049	.049
	47.4%	=71.8%	*****	*****	739.9%	367.9%	=81.4%	=681.4%	=926.2%
SURFACE	2570.152	203.055	.405	=2.114	=3.307	=2.894	=2.811	=3.043	=3.003
	74.4%	=212.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	2305.308								
	100.0%								
S/DEPTH=1.4	1891.915								
	100.0%								
S/DEPTH=1.3	1544.219								
	57.4%								
S/DEPTH=1.2	1251.360								
	54.7%								
S/DEPTH=1.1	1004.542	183.001							
	52.7%	=151.9%							
S/DEPTH=1.0	796.633	154.223	.405						
	50.8%	=146.7%	*****						
S/DEPTH=.9	621.846	126.999	.404	=1.748	=2.814	=2.488	=2.420	=2.606	=2.567
	49.0%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	475.484	101.744	.394	=1.334	=2.196	=1.970	=1.921	=2.053	=2.018
	47.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	353.743	78.801	.366	=.990	=1.664	=1.512	=1.477	=1.568	=1.539
	45.8%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	253.552	58.447	.317	=.708	=1.212	=1.112	=1.088	=1.150	=1.127
	44.5%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	172.459	40.900	.252	=.481	=.836	=.774	=.758	=.797	=.781
	43.4%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	108.524	26.335	.180	=.302	=.532	=.496	=.486	=.510	=.499
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	60.251	14.881	.110	=.167	=.298	=.279	=.274	=.286	=.280
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	26.530	6.635	.052	=.074	=.132	=.124	=.122	=.127	=.124
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	6.596	1.662	.013	=.018	=.033	=.031	=.030	=.032	=.031
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

07

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	.287	.002	.042	.050	.048	.048	.049	.049
	47.4%	=71.8%	*****	*****	739.9%	367.9%	=81.4%	=681.4%	=926.2%
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	3.425	=4.349	2.876	2.642	.000
	*****	97.5%	78.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	205.685	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%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	101.232	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	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

67

CASE 1=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=	.951	.287	.002	.042	.050	.048	.048	.049	.049
	47.4%	=71.8%	*****	*****	739.9%	367.9%	=81.4%	=681.4%	=926.2%
SURFACE	1.883	.602	.002	.090	.110	.097	.094	.101	.101
	50.7%	=52.6%	*****	*****	697.6%	430.6%	=13.5%	=667.6%	=957.5%
S/DEPTH=1.5	1.844								
	100.0%								
S/DEPTH=1.4	1.777								
	100.0%								
S/DEPTH=1.3	1.716								
	45.9%								
S/DEPTH=1.2	1.659								
	44.1%								
S/DEPTH=1.1	1.608	.622							
	42.4%	=47.2%							
S/DEPTH=1.0	1.562	.649	.003						
	40.7%	=41.0%	*****						
S/DEPTH=.9	1.520	.671	.017	.087	.108	.097	.095	.101	.101
	39.1%	=36.3%	*****	*****	703.8%	429.7%	=12.6%	100.0%	100.0%
S/DEPTH=.8	1.483	.689	.031	.084	.107	.097	.095	.101	.100
	37.7%	=32.6%	*****	*****	712.6%	428.7%	=11.4%	=672.6%	=969.3%
S/DEPTH=.7	1.452	.704	.043	.081	.105	.098	.096	.100	.100
	36.4%	=29.7%	*****	*****	719.9%	427.9%	=10.4%	=674.1%	=974.4%
S/DEPTH=.6	1.424	.716	.054	.079	.104	.098	.096	.100	.099
	35.2%	=27.5%	*****	*****	726.0%	427.3%	=9.6%	=675.1%	=977.5%
S/DEPTH=.5	1.401	.725	.062	.077	.103	.098	.097	.100	.099
	34.2%	=25.7%	*****	*****	730.9%	426.8%	=8.9%	=675.8%	=980.0%
S/DEPTH=.4	1.383	.733	.070	.075	.103	.098	.097	.100	.099
	33.3%	=24.4%	*****	*****	734.7%	426.4%	=8.4%	=676.3%	=981.9%
S/DEPTH=.3	1.368	.738	.076	.074	.102	.098	.097	.100	.098
	32.6%	=23.4%	*****	*****	737.6%	426.1%	=8.0%	=676.7%	=983.2%
S/DEPTH=.2	1.358	.742	.080	.073	.102	.098	.097	.100	.098
	32.1%	=22.7%	*****	*****	739.6%	425.9%	=7.7%	=676.9%	=984.2%
S/DEPTH=.1	1.352	.745	.082	.073	.102	.098	.097	.100	.098
	31.8%	=22.3%	*****	*****	740.8%	425.8%	=7.5%	=677.1%	=984.7%
S/DEPTH=.0	1.350	.745	.083	.072	.102	.098	.097	.100	.098
	31.7%	=22.2%	*****	*****	741.2%	425.8%	=7.4%	=677.1%	=984.9%

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	.006	.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 (=.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, $LO = (G/6.28318) * T^{**2}$

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 = .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) =	+.229251=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) =	+.698760=03	X(10)/(H*T*G) =	+.522365=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=D

TABLE I=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	
	51.3%	=128.0%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.7	56.202									
	100.0%									
S/DEPTH=.6	53.013									
	100.0%									
S/DEPTH=.5	50.166									
	100.0%									
S/DEPTH=.4	47.620									
	40.7%									
S/DEPTH=.3	45.368									
	37.9%									
S/DEPTH=.2	43.362									
	35.1%									
S/DEPTH=.1	41.586	12.543								
	32.4%	=120.7%								
S/DEPTH=.0	40.022	13.018								
	29.9%	=112.3%								
S/DEPTH=.9	38.652	13.419	=.718	=2.093	=2.360	=2.026	=1.967	=2.142	=2.129	
	27.5%	=105.8%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.8	37.463	13.755	=.498	=2.038	=2.318	=2.034	=1.982	=2.133	=2.114	
	25.2%	=100.5%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.7	36.440	14.035	=.299	=1.992	=2.284	=2.041	=1.994	=2.125	=2.101	
	23.2%	=96.3%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.6	35.574	14.264	=.124	=1.953	=2.256	=2.047	=2.004	=2.119	=2.091	
	21.4%	=93.0%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.5	34.856	14.450	.025	=1.921	=2.233	=2.051	=2.012	=2.114	=2.083	
	19.8%	=90.4%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.4	34.277	14.595	.149	=1.895	=2.216	=2.055	=2.019	=2.110	=2.077	
	18.5%	=88.4%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.3	33.834	14.705	.246	=1.875	=2.203	=2.057	=2.024	=2.107	=2.072	
	17.5%	=86.9%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.2	33.520	14.781	.315	=1.861	=2.194	=2.059	=2.027	=2.105	=2.069	
	16.8%	=85.9%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.1	33.333	14.827	.357	=1.853	=2.188	=2.060	=2.029	=2.104	=2.067	
	16.3%	=85.3%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	33.271	14.841	.371	=1.850	=2.186	=2.060	=2.030	=2.104	=2.067	
	16.2%	=85.1%	*****	*****	*****	*****	*****	*****	*****	

55

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	.043	.040	.040	.041	.041
	47.9%	-134.6%	*****	*****	*****	*****	*****	*****	*****

SURFACE	.000	16.438	1.520	.737	.168	.232	.154	.141	.000
S/DEPTH=1.7	***** .000	95.4%	3.3%	*****	*****	*****	*****	*****	*****
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	15.310							
S/DEPTH=1.0	***** .000	96.1%							
S/DEPTH=.9	***** .000	13.632							
S/DEPTH=.8	***** .000	96.0%							
S/DEPTH=.7	***** .000	12.040	1.496	.666	.150	.205	.135	.125	.000
S/DEPTH=.6	***** .000	95.9%	35.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	***** .000	10.523	1.429	.573	.126	.170	.112	.103	.000
S/DEPTH=.4	***** .000	95.9%	39.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	***** .000	9.071	1.325	.487	.105	.139	.092	.085	.000
S/DEPTH=.2	***** .000	95.8%	43.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	***** .000	7.675	1.190	.407	.086	.113	.074	.069	.000
S/DEPTH=.0	***** .000	95.7%	45.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	***** .000	6.326	1.029	.333	.069	.090	.059	.055	.000
S/DEPTH=.8	***** .000	95.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	***** .000	5.016	.847	.262	.053	.069	.045	.042	.000
S/DEPTH=.6	***** .000	95.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	***** .000	3.735	.649	.194	.039	.050	.033	.031	.000
S/DEPTH=.4	***** .000	95.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	***** .000	2.478	.439	.128	.025	.033	.021	.020	.000
S/DEPTH=.2	***** .000	95.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	***** .000	1.235	.222	.064	.013	.016	.010	.010	.000
S/DEPTH=.0	***** .000	95.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	***** .000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	***** *****	*****	*****	*****	*****	*****	*****	*****	*****

56

CASE 1=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=	.959	.210	.014	.039	.043	.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	=28.294	18.970	17.155	.001
	*****	98.0%	*****	20.0%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	901.117	61.558	66.642	17.061	=24.386	16.278	14.800	.001
	*****	97.9%	*****	12.4%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	867.494	86.672	61.426	15.099	=21.159	14.062	12.855	.001
	*****	97.8%	56.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	838.669	107.656	57.293	13.478	=18.523	12.256	11.267	.001
	*****	97.8%	64.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	814.515	124.856	54.071	12.162	=16.405	10.809	9.991	.000
	*****	97.7%	69.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	794.915	138.556	51.618	11.123	=14.747	9.678	8.992	.000
	*****	97.6%	72.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	779.775	148.984	49.822	10.337	=13.503	8.831	8.242	.000
	*****	97.6%	74.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	769.016	156.311	48.599	9.789	=12.638	8.243	7.721	.000
	*****	97.6%	75.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	762.584	160.659	47.888	9.464	=12.129	7.896	7.414	.000
	*****	97.5%	76.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	760.443	162.101	47.655	9.357	=11.961	7.782	7.312	.000
	*****	97.5%	76.6%	*****	*****	*****	*****	*****	*****

CASE 1=D

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=	.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	14.315
	98.3%	102.7%	108.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7	=987.100								
	100.0%								
S/DEPTH=1.6	=956.858								
	100.0%								
S/DEPTH=1.5	=913.698								
	100.0%								
S/DEPTH=1.4	=861.648								
	98.1%								
S/DEPTH=1.3	=803.718								
	98.1%								
S/DEPTH=1.2	=742.128								
	98.1%								
S/DEPTH=1.1	=678.494	533.625							
	98.1%	102.4%							
S/DEPTH=1.0	=613.966	449.197							
	98.0%	102.6%							
S/DEPTH= .9	=549.339	376.491	171.131	44.630	34.627	=7.003	=12.124	7.643	12.557
	98.0%	102.8%	105.7%	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	=485.139	313.553	155.526	38.047	28.555	=5.717	=10.085	6.314	10.301
	98.0%	103.0%	105.6%	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	=421.680	258.717	138.547	32.148	23.345	=4.629	=8.310	5.170	8.378
	98.0%	103.2%	105.5%	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	=359.122	210.546	120.476	26.775	18.840	=3.702	=6.754	4.179	6.727
	98.0%	103.3%	105.4%	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	=297.507	167.788	101.545	21.803	14.904	=2.905	=5.376	3.310	5.297
	98.0%	103.5%	105.3%	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	=236.788	129.339	81.953	17.131	11.417	=2.209	=4.140	2.538	4.042
	98.0%	103.6%	105.3%	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	=176.851	94.208	61.867	12.676	8.275	=1.592	=3.013	1.841	2.919
	98.0%	103.7%	105.2%	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	=117.539	61.494	41.430	8.372	5.382	=1.031	=1.965	1.198	1.894
	98.0%	103.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	=58.659	30.358	20.770	4.163	2.651	=.507	=.970	.590	.931
	98.0%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

58

CASE 1=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=	.959	.210	.014	.039	.043	.040	.040	.041	.041
	47.9%	=134.6%	*****	*****	*****	*****	*****	*****	*****
SURFACE	2985.630	230.375	=.157	=3.661	=4.893	=4.061	=3.901	=4.339	=4.225
	63.4%	=358.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7	2822.638								
	100.0%								
S/DEPTH=1.6	2524.681								
	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	220.549							
	39.6%	=279.0%							
S/DEPTH=1.0	1260.462	204.195							
	37.9%	=271.8%							
S/DEPTH= .9	1105.828	186.704	=.096	=3.351	=4.518	=3.781	=3.637	=4.028	=3.915
	36.3%	=265.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	961.089	168.228	=.059	=2.924	=3.971	=3.369	=3.247	=3.571	=3.465
	34.9%	=260.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	824.640	148.907	=.043	=2.518	=3.442	=2.954	=2.852	=3.118	=3.021
	33.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	695.076	128.875	=.038	=2.130	=2.927	=2.536	=2.452	=2.667	=2.582
	32.6%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	571.148	108.252	=.038	=1.755	=2.424	=2.116	=2.048	=2.220	=2.146
	31.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	451.740	87.152	=.037	=1.391	=1.929	=1.695	=1.642	=1.774	=1.714
	30.9%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	335.836	65.680	=.033	=1.036	=1.441	=1.272	=1.233	=1.329	=1.283
	30.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	222.494	43.936	=.025	=.687	=.958	=.849	=.823	=.885	=.855
	29.9%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	110.832	22.012	=.013	=.343	=.478	=.424	=.412	=.443	=.427
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=D

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
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	.000	1001.659	110.000	54.979	12.614	=17.364	11.496	10.552	.001
	*****	97.4%	52.5%	*****	*****	*****	*****	*****	*****
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	934.314							
	*****	97.8%							
S/DEPTH=1.0	.000	833.580							
	*****	97.7%							
S/DEPTH= .9	.000	737.472	108.492	49.716	11.268	=15.326	10.118	9.330	.000
	*****	97.7%	68.4%	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	.000	645.474	103.780	42.738	9.448	=12.698	8.360	7.736	.000
	*****	97.7%	70.6%	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	.000	557.084	96.332	36.345	7.843	=10.426	6.847	6.356	.000
	*****	97.6%	72.3%	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	471.816	86.583	30.417	6.417	=8.447	5.534	5.153	.000
	*****	97.6%	73.6%	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	389.195	74.927	24.856	5.137	=6.704	4.384	4.092	.000
	*****	97.6%	74.6%	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	308.761	61.728	19.577	3.975	=5.150	3.362	3.146	.000
	*****	97.6%	75.4%	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	230.063	47.325	14.510	2.904	=3.741	2.439	2.286	.000
	*****	97.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	152.660	32.035	9.593	1.900	=2.437	1.587	1.490	.000
	*****	97.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	76.116	16.162	4.773	.939	=1.202	.782	.735	.000
	*****	97.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

69

CASE 1=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=	.959	.210	.014	.039	.043	.040	.040	.041	.041
	47.9%	=134.6%	*****	*****	*****	*****	*****	*****	*****
SURFACE	3122.254	126.251	.111	-1.861	-2.434	-1.954	-1.867	-2.114	-2.068
	75.5%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7	2841.047								
	100.0%								
S/DEPTH=1.6	2349.128								
	100.0%								
S/DEPTH=1.5	1936.677								
	100.0%								
S/DEPTH=1.4	1590.054								
	52.0%								
S/DEPTH=1.3	1298.223								
	48.7%								
S/DEPTH=1.2	1052.227								
	46.2%								
S/DEPTH=1.1	844.788	115.130							
	43.7%	*****							
S/DEPTH=1.0	669.983	97.968							
	41.5%	*****							
S/DEPTH=.9	522.991	81.361	.053	-1.570	-2.084	-1.692	-1.620	-1.823	-1.779
	39.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	399.887	65.664	.022	-1.208	-1.619	-1.342	-1.289	-1.435	-1.396
	37.4%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	297.488	51.180	.009	-.903	-1.222	-1.031	-.992	-1.095	-1.063
	35.6%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	213.219	38.164	.006	-.651	-.887	-.759	-.733	-.802	-.778
	34.0%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	145.017	26.826	.006	-.444	-.610	-.528	-.511	-.556	-.538
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	91.250	17.334	.006	-.280	-.388	-.339	-.328	-.355	-.343
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	50.658	9.822	.004	-.156	-.217	-.191	-.185	-.199	-.193
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	22.305	4.388	.002	-.069	-.096	-.085	-.082	-.089	-.085
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	5.545	1.100	.001	-.017	-.024	-.021	-.021	-.022	-.021
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1=D

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	.959	.210	.014	.039	.043	.040	.040	.041	.041
	47.9%	=134.6%	*****	*****	*****	*****	*****	*****	*****
SURFACE	.000	617.287	41.627	28.920	6.986	=9.866	6.568	5.981	.000
	*****	97.1%	*****	*****	*****	*****	*****	*****	*****
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	541.034							
	*****	97.9%							
S/DEPTH=1.0	.000	435.223							
	*****	97.8%							
S/DEPTH=.9	.000	343.884	40.223	23.999	5.730	=7.960	5.280	4.839	.000
	*****	97.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	265.653	36.242	18.062	4.181	=5.723	3.784	3.482	.000
	*****	97.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	199.333	30.677	13.263	2.975	=4.017	2.647	2.446	.000
	*****	97.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	143.884	24.358	9.406	2.047	=2.728	1.792	1.663	.000
	*****	97.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	98.423	17.961	6.345	1.342	=1.768	1.158	1.078	.000
	*****	97.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	62.211	12.033	3.968	.818	=1.067	.697	.651	.000
	*****	97.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	34.654	7.001	2.193	.443	=.573	.374	.350	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	15.295	3.184	.962	.191	=.246	.160	.150	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	3.808	.807	.239	.047	=.060	.039	.037	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 1-D

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
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	1.878	.477	.032	.088	.101	.083	.080	.089	.088
	51.8%	=87.7%	*****	*****	754.9%	*****	*****	*****	*****
S/DEPTH=1.7	1.846								
	100.0%								
S/DEPTH=1.6	1.784								
	100.0%								
S/DEPTH=1.5	1.725								
	100.0%								
S/DEPTH=1.4	1.668								
	45.8%								
S/DEPTH=1.3	1.615								
	44.1%								
S/DEPTH=1.2	1.566								
	42.4%								
S/DEPTH=1.1	1.521	.500							
	40.7%	=78.6%							
S/DEPTH=1.0	1.480	.531							
	39.1%	=67.9%							
S/DEPTH= .9	1.443	.557	.022	.086	.099	.083	.080	.089	.088
	37.6%	=59.9%	*****	*****	764.0%	*****	*****	*****	*****
S/DEPTH= .8	1.410	.579	.011	.084	.097	.083	.081	.088	.087
	36.2%	=53.7%	*****	*****	777.5%	*****	*****	*****	*****
S/DEPTH= .7	1.381	.597	.002	.081	.095	.084	.081	.088	.087
	34.9%	=48.9%	*****	*****	788.9%	*****	*****	*****	*****
S/DEPTH= .6	1.356	.612	.006	.080	.094	.084	.082	.087	.086
	33.7%	=45.2%	*****	*****	798.5%	*****	*****	*****	*****
S/DEPTH= .5	1.335	.624	.013	.078	.093	.084	.082	.087	.086
	32.7%	=42.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	1.318	.634	.019	.077	.092	.084	.083	.087	.085
	31.9%	=40.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	1.305	.641	.024	.076	.091	.084	.083	.087	.085
	31.2%	=38.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	1.295	.646	.027	.075	.091	.085	.083	.087	.085
	30.7%	=37.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	1.290	.649	.029	.075	.091	.085	.083	.087	.085
	30.5%	=36.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	1.288	.650	.030	.075	.091	.085	.083	.087	.085
	30.4%	=36.7%	*****	*****	*****	*****	*****	*****	*****

CASE 1=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	.010	.018	.023	.023	.010	.006	.013	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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	(1.8%)
(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	.038365
(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, $LO = (G/6.28318) * T^2$
 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 = .000974 DPT/LO = .005000
 H/DPT = .194887
 L/LO = .186504 PSI/(G*H*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) =	= .636055=03
X(7)/(H*T*G) =	= .276349=03	X(8)/(H*T*G) =	= .117942=03
X(9)/(H*T*G) =	= .493603=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) =	= .404338=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 I=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 =	.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	31.250	25.718	14.880	5.986	=2.205	=4.510	=4.883	=4.948	=4.953
S/DEPTH=1.1	42.8%	31.6%	=12.8%	=158.4%	620.3%	202.3%	36.7%	=175.1%	=258.5%
	30.642	25.518							
S/DEPTH=1.0	41.7%	31.0%							
	29.823	25.040	14.935	6.080					
S/DEPTH=.9	40.3%	30.0%	=12.1%	=153.7%					
	29.101	24.613	14.988	6.329	=2.089	=4.491	=4.880	=4.948	=4.953
S/DEPTH=.8	39.0%	29.0%	=11.3%	=143.0%	646.3%	202.3%	36.8%	=174.9%	=258.5%
	28.471	24.235	15.028	6.545	=1.971	=4.469	=4.876	=4.948	=4.953
S/DEPTH=.7	37.8%	28.0%	=10.7%	=134.3%	677.6%	202.6%	36.9%	=174.2%	=257.5%
	27.927	23.906	15.058	6.732	=1.866	=4.448	=4.873	=4.948	=4.953
S/DEPTH=.6	36.7%	27.2%	=10.3%	=127.3%	708.7%	202.8%	37.0%	=173.5%	=256.7%
	27.464	23.623	15.079	6.891	=1.775	=4.431	=4.870	=4.948	=4.953
S/DEPTH=.5	35.8%	26.5%	=9.9%	=121.6%	738.7%	203.0%	37.1%	=173.0%	=256.0%
	27.078	23.386	15.094	7.022	=1.697	=4.415	=4.868	=4.948	=4.953
S/DEPTH=.4	35.0%	25.9%	=9.6%	=117.1%	766.6%	203.2%	37.2%	=172.5%	=255.4%
	26.767	23.193	15.105	7.128	=1.634	=4.403	=4.866	=4.948	=4.953
S/DEPTH=.3	34.3%	25.4%	=9.3%	=113.5%	791.6%	203.3%	37.3%	=172.1%	=254.8%
	26.528	23.044	15.111	7.210	=1.584	=4.393	=4.864	=4.948	=4.953
S/DEPTH=.2	33.8%	25.0%	=9.2%	=110.9%	812.4%	203.4%	37.3%	=171.8%	=254.5%
	26.358	22.938	15.116	7.267	=1.549	=4.386	=4.863	=4.947	=4.953
S/DEPTH=.1	33.4%	24.7%	=9.1%	=109.0%	*****	203.5%	37.4%	=171.6%	=254.2%
	26.257	22.874	15.118	7.302	=1.527	=4.382	=4.862	=4.947	=4.953
S/DEPTH=.0	33.2%	24.5%	=9.0%	=108.0%	*****	203.6%	37.4%	=171.5%	=254.0%
	26.223	22.853	15.119	7.313	=1.520	=4.381	=4.862	=4.947	=4.953
	33.1%	24.5%	=9.0%	=107.6%	*****	203.6%	37.4%	=171.4%	=254.0%

CASE 2=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=	.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	.000	8.027	9.528	6.941	2.142	.365	.058	.003	.000
	*****	92.6%	87.7%	75.5%	-19.4%	*****	*****	*****	*****
S/DEPTH=1.1	.000	7.674							
	*****	92.2%							
S/DEPTH=1.0	.000	6.807	8.696	6.703					
	*****	92.0%	87.7%	76.6%					
S/DEPTH=.9	.000	5.991	7.723	6.016	1.969	.341	.054	.003	.000
	*****	91.8%	87.5%	76.5%	-9.8%	*****	*****	*****	*****
S/DEPTH=.8	.000	5.221	6.783	5.334	1.767	.307	.049	.002	.000
	*****	91.7%	87.4%	76.5%	-8.6%	*****	*****	*****	*****
S/DEPTH=.7	.000	4.489	5.873	4.656	1.560	.272	.044	.002	.000
	*****	91.5%	87.2%	76.5%	-7.6%	*****	*****	*****	*****
S/DEPTH=.6	.000	3.790	4.988	3.983	1.346	.236	.038	.002	.000
	*****	91.4%	87.1%	76.4%	-6.8%	*****	*****	*****	*****
S/DEPTH=.5	.000	3.119	4.124	3.313	1.129	.198	.032	.002	.000
	*****	91.3%	87.0%	76.4%	-6.1%	*****	*****	*****	*****
S/DEPTH=.4	.000	2.469	3.278	2.646	.907	.160	.026	.001	.000
	*****	91.2%	87.0%	76.4%	-5.5%	*****	*****	*****	*****
S/DEPTH=.3	.000	1.837	2.446	1.982	.683	.120	.019	.001	.000
	*****	91.1%	86.9%	76.4%	-5.1%	*****	*****	*****	*****
S/DEPTH=.2	.000	1.218	1.625	1.320	.457	.081	.013	.001	.000
	*****	91.1%	86.9%	76.3%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.607	.811	.660	.229	.040	.006	.000	.000
	*****	91.1%	86.8%	76.3%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=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	.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	.000	305.238	350.790	245.559	71.893	12.026	1.916	.097	.000
	*****	94.2%	90.0%	79.0%	-12.2%	*****	*****	*****	*****
S/DEPTH=1.1	.000	297.191							
	*****	94.1%							
S/DEPTH=1.0	.000	278.370	339.862	245.204					
	*****	93.7%	89.7%	79.1%					
S/DEPTH=.9	.000	262.019	327.895	244.072	74.358	12.513	1.994	.101	.000
	*****	93.3%	89.4%	79.0%	-7.9%	*****	*****	*****	*****
S/DEPTH=.8	.000	247.917	317.293	242.852	76.850	13.109	2.092	.106	.000
	*****	92.9%	89.1%	79.0%	-4.1%	*****	*****	*****	*****
S/DEPTH=.7	.000	235.875	308.025	241.618	79.031	13.640	2.181	.111	.000
	*****	92.6%	88.8%	78.9%	-1.0%	*****	*****	*****	*****
S/DEPTH=.6	.000	225.735	300.063	240.434	80.907	14.105	2.259	.115	.000
	*****	92.3%	88.5%	78.9%	1.6%	*****	*****	*****	*****
S/DEPTH=.5	.000	217.365	293.377	239.352	82.484	14.502	2.325	.118	.000
	*****	92.0%	88.3%	78.8%	3.7%	*****	*****	*****	*****
S/DEPTH=.4	.000	210.657	287.943	238.413	83.766	14.828	2.380	.121	.000
	*****	91.8%	88.1%	78.8%	5.3%	*****	*****	*****	*****
S/DEPTH=.3	.000	205.526	283.739	237.650	84.759	15.084	2.423	.123	.000
	*****	91.6%	87.9%	78.7%	6.5%	*****	*****	*****	*****
S/DEPTH=.2	.000	201.906	280.749	237.088	85.465	15.267	2.454	.125	.000
	*****	91.4%	87.8%	78.7%	7.4%	*****	*****	*****	*****
S/DEPTH=.1	.000	199.752	278.960	236.744	85.888	15.377	2.472	.126	.000
	*****	91.3%	87.7%	78.7%	7.9%	*****	*****	*****	*****
S/DEPTH=.0	.000	199.037	278.365	236.628	86.029	15.414	2.479	.126	.000
	*****	91.3%	87.7%	78.7%	8.0%	*****	*****	*****	*****

CASE 2=A

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=	.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	294.324	155.209	44.915	109.475	52.427	9.777	1.590	.070	.027
	93.4%	87.6%	140.3%	115.0%	121.8%	*****	*****	*****	*****
S/DEPTH=1.1	272.766	149.671							
	92.8%	87.2%							
S/DEPTH=1.0	242.247	135.481	37.642	104.785					
	92.7%	87.1%	144.1%	114.4%					
S/DEPTH=.9	213.458	121.388	30.183	91.803	47.959	9.126	1.488	.065	.025
	92.5%	87.0%	149.4%	114.8%	120.1%	*****	*****	*****	*****
S/DEPTH=.8	186.177	107.419	23.994	79.623	42.817	8.219	1.342	.059	.022
	92.4%	87.0%	155.3%	115.2%	120.0%	*****	*****	*****	*****
S/DEPTH=.7	160.199	93.591	18.874	68.149	37.604	7.275	1.189	.053	.019
	92.2%	86.9%	161.4%	115.5%	120.0%	*****	*****	*****	*****
S/DEPTH=.6	135.333	79.904	14.646	57.289	32.331	6.297	1.030	.046	.016
	92.1%	86.9%	*****	115.8%	119.9%	*****	*****	*****	*****
S/DEPTH=.5	111.399	66.353	11.151	46.952	27.010	5.292	.866	.039	.013
	92.0%	86.9%	*****	116.1%	119.8%	*****	*****	*****	*****
S/DEPTH=.4	88.226	52.924	8.244	37.047	21.651	4.262	.698	.031	.011
	92.0%	86.8%	*****	116.3%	119.8%	*****	*****	*****	*****
S/DEPTH=.3	65.653	39.598	5.795	27.486	16.262	3.213	.527	.024	.008
	91.9%	86.8%	*****	116.5%	119.8%	*****	*****	*****	*****
S/DEPTH=.2	43.525	26.353	3.681	18.182	10.853	2.150	.353	.016	.005
	91.9%	86.8%	*****	116.6%	*****	*****	*****	*****	*****
S/DEPTH=.1	21.689	13.162	1.786	9.048	5.430	1.077	.177	.008	.003
	91.8%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2-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 =	.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
	62.3%	48.7%	=22.4%	=415.3%	*****	*****	*****	*****	*****
S/DEPTH= 1.1	842.737	619.947							
	59.4%	46.5%							
S/DEPTH= 1.0	751.383	556.066	227.196	47.941					
	58.6%	45.7%	=20.9%	=386.8%					
S/DEPTH= .9	664.626	494.451	204.806	44.088	=2.660	=17.567	=21.330	=22.032	=22.079
	57.9%	45.2%	=20.5%	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	581.803	434.816	182.278	39.941	=2.248	=15.561	=18.950	=19.583	=19.626
	57.4%	44.7%	=20.1%	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	502.323	376.895	159.646	35.530	=1.880	=13.573	=16.573	=17.135	=17.172
	56.9%	44.3%	=19.8%	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	425.656	320.437	136.939	30.888	=1.549	=11.602	=14.200	=14.687	=14.719
	56.4%	43.9%	=19.6%	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	351.318	265.208	114.177	26.045	=1.249	=9.646	=11.829	=12.239	=12.266
	56.1%	43.6%	=19.4%	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	278.868	210.985	91.377	21.036	=.972	=7.702	=9.461	=9.791	=9.813
	55.8%	43.3%	=19.2%	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	207.891	157.554	68.551	15.894	=.713	=5.768	=7.094	=7.343	=7.359
	55.5%	43.1%	=19.1%	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	138.000	104.713	45.709	10.652	=.468	=3.841	=4.729	=4.895	=4.906
	55.4%	42.9%	=19.0%	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	68.823	52.260	22.857	5.343	=.232	=1.919	=2.364	=2.448	=2.453
	55.3%	42.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2-A

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 =	.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	.000	264.878	327.105	248.385	80.416	13.911	2.225	.113	.000
S/DEPTH=1.1	*****	92.8%	88.5%	77.8%	-5.3%	*****	*****	*****	*****
S/DEPTH=1.0	.000	253.156	298.610	239.905					
S/DEPTH=.9	*****	92.5%	88.5%	78.8%					
S/DEPTH=.8	.000	224.399	265.234	215.440	73.956	12.993	2.083	.106	.000
S/DEPTH=.7	*****	92.2%	88.3%	78.8%	3.2%	*****	*****	*****	*****
S/DEPTH=.6	.000	197.399	232.986	191.094	66.393	11.711	1.879	.096	.000
S/DEPTH=.5	*****	92.1%	88.2%	78.8%	4.2%	*****	*****	*****	*****
S/DEPTH=.4	.000	171.921	201.731	166.870	58.597	10.373	1.665	.085	.000
S/DEPTH=.3	*****	91.9%	88.1%	78.8%	5.1%	*****	*****	*****	*****
S/DEPTH=.2	.000	147.747	171.337	142.768	50.597	8.985	1.443	.074	.000
S/DEPTH=.1	*****	91.8%	88.0%	78.7%	5.9%	*****	*****	*****	*****
S/DEPTH=.0	.000	124.682	141.676	118.780	42.425	7.554	1.214	.062	.000
S/DEPTH=1.1	*****	91.6%	87.9%	78.7%	6.5%	*****	*****	*****	*****
S/DEPTH=1.0	.000	102.541	112.620	94.893	34.110	6.087	.978	.050	.000
S/DEPTH=.9	*****	91.5%	87.8%	78.7%	7.0%	*****	*****	*****	*****
S/DEPTH=.8	.000	81.154	84.046	71.092	25.682	4.591	.738	.038	.000
S/DEPTH=.7	*****	91.5%	87.8%	78.7%	7.4%	*****	*****	*****	*****
S/DEPTH=.6	.000	60.358	55.832	47.356	17.168	3.073	.494	.025	.000
S/DEPTH=.5	*****	91.4%	87.7%	78.7%	7.7%	*****	*****	*****	*****
S/DEPTH=.4	.000	39.998	27.856	23.667	8.598	1.540	.248	.013	.000
S/DEPTH=.3	*****	91.3%	87.7%	78.7%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	19.928	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	*****	91.3%	87.7%	78.7%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2-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=	.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	560.828	382.307	132.298	23.869	1.716	9.392	11.230	11.570	11.594
	66.3%	52.2%	24.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.1	488.014	353.713							
	61.3%	48.3%							
S/DEPTH=1.0	392.052	286.618	113.198	22.589					
	60.1%	47.1%	22.0%	*****					
S/DEPTH=.9	309.597	228.066	91.929	18.931	1.331	7.972	9.610	9.915	9.936
	59.2%	46.3%	21.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	239.167	177.361	72.781	15.408	.981	6.266	7.587	7.834	7.850
	58.4%	45.6%	20.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	179.531	133.907	55.808	12.102	.705	4.775	5.805	5.997	6.010
	57.7%	44.9%	20.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	129.676	97.198	41.048	9.086	.490	3.494	4.262	4.406	4.416
	57.0%	44.4%	19.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	88.773	66.813	28.530	6.424	.324	2.418	2.958	3.060	3.066
	56.5%	43.9%	19.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	56.156	42.405	18.270	4.172	.199	1.543	1.893	1.958	1.962
	56.0%	43.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	31.304	23.699	10.281	2.373	.108	.866	1.064	1.101	1.104
	55.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	13.824	10.484	4.571	1.063	.047	.384	.473	.490	.491
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	3.443	2.614	1.143	.267	.012	.096	.118	.122	.123
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2-A

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	.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	.000	162.006	184.076	129.347	38.593	6.510	1.037	.053	.000
	*****	93.5%	88.8%	76.8%	17.0%	*****	*****	*****	*****
S/DEPTH=1.1	.000	148.883							
	*****	92.9%							
S/DEPTH=1.0	.000	118.673	154.399	120.721					
	*****	92.6%	88.8%	78.9%					
S/DEPTH=.9	.000	93.009	122.682	97.478	32.496	5.650	.904	.046	.000
	*****	92.4%	88.6%	78.9%	.6%	*****	*****	*****	*****
S/DEPTH=.8	.000	71.340	95.262	76.783	26.070	4.561	.731	.037	.000
	*****	92.2%	88.4%	78.8%	2.3%	*****	*****	*****	*****
S/DEPTH=.7	.000	53.200	71.813	58.614	20.224	3.558	.571	.029	.000
	*****	92.0%	88.3%	78.8%	3.7%	*****	*****	*****	*****
S/DEPTH=.6	.000	38.200	52.051	42.947	15.026	2.656	.426	.022	.000
	*****	91.8%	88.1%	78.8%	4.8%	*****	*****	*****	*****
S/DEPTH=.5	.000	26.015	35.731	29.753	10.533	1.870	.300	.015	.000
	*****	91.7%	88.0%	78.7%	5.8%	*****	*****	*****	*****
S/DEPTH=.4	.000	16.385	22.652	19.003	6.792	1.210	.194	.010	.000
	*****	91.5%	87.9%	78.7%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	9.102	12.647	10.671	3.843	.686	.110	.006	.000
	*****	*****	87.8%	78.7%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	4.009	5.591	4.737	1.715	.307	.049	.003	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.997	1.393	1.183	.430	.077	.012	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=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=	.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	1.716	1.426	.847	.355	-.120	-.259	-.281	-.285	-.286
	43.0%	32.4%	-8.9%	-141.0%	638.3%	207.5%	45.7%	-169.8%	-257.9%
S/DEPTH=1.1	1.686	1.417							
	42.0%	32.0%							
S/DEPTH=1.0	1.645	1.394	.853	.361					
	40.7%	31.1%	-7.9%	-136.5%					
S/DEPTH=.9	1.609	1.374	.858	.376	.113	.258	.281	.285	.286
	39.6%	30.3%	-6.9%	-126.1%	669.5%	207.7%	45.9%	-169.6%	-257.9%
S/DEPTH=.8	1.577	1.356	.862	.390	.106	.256	.281	.285	.286
	38.5%	29.5%	-6.1%	-117.6%	707.0%	208.2%	46.2%	-168.8%	-256.9%
S/DEPTH=.7	1.549	1.340	.866	.402	.099	.255	.281	.285	.286
	37.6%	28.8%	-5.5%	-110.8%	744.8%	208.5%	46.4%	-168.1%	-256.0%
S/DEPTH=.6	1.526	1.326	.868	.411	.094	.254	.281	.285	.286
	36.7%	28.2%	-5.0%	-105.3%	781.9%	208.9%	46.5%	-167.5%	-255.2%
S/DEPTH=.5	1.506	1.314	.870	.420	.089	.253	.280	.285	.286
	36.0%	27.7%	-4.6%	-100.9%	816.9%	209.2%	46.7%	-167.0%	-254.5%
S/DEPTH=.4	1.490	1.305	.872	.426	.085	.252	.280	.285	.286
	35.4%	27.2%	-4.2%	-97.5%	*****	209.4%	46.8%	-166.6%	-254.0%
S/DEPTH=.3	1.478	1.297	.873	.432	.082	.252	.280	.285	.286
	34.9%	26.9%	-4.0%	-95.0%	*****	209.6%	46.9%	-166.2%	-253.6%
S/DEPTH=.2	1.469	1.292	.874	.435	.080	.251	.280	.285	.286
	34.6%	26.7%	-3.8%	-93.2%	*****	209.7%	46.9%	-166.0%	-253.3%
S/DEPTH=.1	1.464	1.289	.874	.437	.079	.251	.280	.285	.286
	34.4%	26.5%	-3.7%	-92.2%	*****	209.8%	47.0%	-165.9%	-253.1%
S/DEPTH=.0	1.462	1.288	.874	.438	.078	.251	.280	.285	.286
	34.3%	26.5%	-3.7%	-91.9%	*****	209.8%	47.0%	-165.8%	-253.0%

CASE 2-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	.001	.002	.002	.001	.001	.002	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE 20A

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	(=69.8%)
(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	(=82.8%)

CASE 2-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	.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=8

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
 H/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) =	= .175477=03	X(10)/(H*T*G) =	= .907759=04
X(11)/(H*T*G) =	= .460421=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) =	= .155384=08		

CASE 2=8

TABLE I=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=	.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	34.039	22.086	7.678	.847	=2.697	=3.183	=3.220	=3.224	=3.222
	47.3%	20.1%	=119.3%	*****	526.3%	245.0%	4.0%	=321.3%	=449.8%
S/DEPTH=1.3	33.154								
	100.0%								
S/DEPTH=1.2	31.611	21.917							
	43.3%	19.4%							
S/DEPTH=1.1	30.258	21.473							
	40.9%	18.0%							
S/DEPTH=1.0	29.075	21.065	8.025	.888					
	38.7%	16.7%	=108.5%	*****					
S/DEPTH=.9	28.047	20.696	8.360	1.198	=2.658	=3.180	=3.219	=3.224	=3.222
	36.7%	15.5%	=99.6%	*****	529.5%	244.5%	4.2%	=321.3%	=449.7%
S/DEPTH=.8	27.158	20.366	8.643	1.473	=2.605	=3.176	=3.219	=3.224	=3.222
	34.8%	14.4%	=92.5%	*****	536.9%	244.3%	4.5%	=320.7%	=449.7%
S/DEPTH=.7	26.399	20.075	8.879	1.713	=2.558	=3.172	=3.219	=3.224	=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
	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
	30.2%	11.6%	=79.1%	=627.9%	556.0%	243.9%	5.0%	=318.1%	=446.3%
S/DEPTH=.4	24.804	19.436	9.358	2.235	=2.451	=3.163	=3.218	=3.224	=3.222
	29.1%	10.9%	=76.5%	=580.9%	560.8%	243.8%	5.2%	=317.5%	=445.5%
S/DEPTH=.3	24.479	19.301	9.452	2.345	=2.428	=3.161	=3.218	=3.224	=3.222
	28.3%	10.4%	=74.5%	=548.5%	564.7%	243.7%	5.3%	=317.1%	=444.9%
S/DEPTH=.2	24.249	19.204	9.518	2.422	=2.412	=3.160	=3.218	=3.224	=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
	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
	27.2%	9.7%	=72.1%	=511.1%	569.9%	243.6%	5.4%	=316.5%	=444.1%

CASE 2-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	.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	.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%								
S/DEPTH=1.1	.000	10.563								
	*****	94.3%								
S/DEPTH=1.0	.000	9.288	8.622	4.376						
	*****	94.1%	87.5%	64.1%						
S/DEPTH=.9	.000	8.111	7.681	3.979	.609	.048	.003	-.001	.000	
	*****	94.0%	87.4%	64.5%	*****	*****	*****	*****	*****	
S/DEPTH=.8	.000	7.019	6.764	3.568	.554	.044	.003	-.001	.000	
	*****	93.8%	87.3%	64.9%	*****	*****	*****	*****	*****	
S/DEPTH=.7	.000	5.998	5.869	3.146	.495	.039	.003	-.001	.000	
	*****	93.7%	87.2%	65.2%	*****	*****	*****	*****	*****	
S/DEPTH=.6	.000	5.037	4.993	2.713	.431	.034	.003	-.001	.000	
	*****	93.5%	87.1%	65.4%	*****	*****	*****	*****	*****	
S/DEPTH=.5	.000	4.125	4.134	2.272	.365	.029	.002	-.001	.000	
	*****	93.4%	87.1%	65.6%	*****	*****	*****	*****	*****	
S/DEPTH=.4	.000	3.254	3.290	1.825	.295	.023	.002	-.000	.000	
	*****	93.3%	87.0%	65.7%	*****	*****	*****	*****	*****	
S/DEPTH=.3	.000	2.414	2.457	1.373	.223	.018	.001	-.000	.000	
	*****	93.3%	87.0%	65.9%	*****	*****	*****	*****	*****	
S/DEPTH=.2	.000	1.596	1.633	.917	.150	.012	.001	-.000	.000	
	*****	93.2%	86.9%	65.9%	*****	*****	*****	*****	*****	
S/DEPTH=.1	.000	.794	.815	.459	.075	.006	.000	-.000	.000	
	*****	93.2%	86.9%	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 2-8

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 =	.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	.000	491.776	343.601	146.652	19.984	1.620	.033	=.093	.000
	*****	96.8%	90.8%	67.9%	*****	*****	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	475.855							
	*****	96.7%							
S/DEPTH=1.1	.000	435.596							
	*****	96.4%							
S/DEPTH=1.0	.000	400.680	337.273	147.567					
	*****	96.1%	90.7%	68.3%					
S/DEPTH=.9	.000	370.555	330.140	154.395	21.399	1.715	.058	=.083	.000
	*****	95.8%	90.5%	69.8%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	344.742	323.262	160.113	23.287	1.858	.090	=.071	.000
	*****	95.5%	90.3%	71.0%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	322.837	316.842	164.853	24.980	1.990	.117	=.062	.000
	*****	95.2%	90.2%	71.9%	=198.4%	*****	*****	*****	*****
S/DEPTH=.6	.000	304.496	311.035	168.729	26.468	2.108	.138	=.055	.000
	*****	94.9%	90.0%	72.6%	=181.0%	*****	*****	*****	*****
S/DEPTH=.5	.000	289.431	305.960	171.841	27.741	2.211	.154	=.050	.000
	*****	94.6%	89.9%	73.2%	=167.6%	*****	*****	*****	*****
S/DEPTH=.4	.000	277.410	301.704	174.274	28.791	2.297	.167	=.046	.000
	*****	94.4%	89.8%	73.6%	=157.4%	*****	*****	*****	*****
S/DEPTH=.3	.000	268.247	298.334	176.097	29.614	2.365	.177	=.043	.000
	*****	94.2%	89.6%	73.9%	=149.9%	*****	*****	*****	*****
S/DEPTH=.2	.000	261.800	295.896	177.361	30.205	2.415	.184	=.041	.000
	*****	94.1%	89.6%	74.1%	=144.8%	*****	*****	*****	*****
S/DEPTH=.1	.000	257.971	294.421	178.104	30.561	2.445	.188	=.040	.000
	*****	94.0%	89.5%	74.3%	=141.8%	*****	*****	*****	*****
S/DEPTH=.0	.000	256.702	293.928	178.349	30.679	2.455	.189	=.039	.000
	*****	94.0%	89.5%	74.3%	=140.8%	*****	*****	*****	*****

83

CASE 2=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	.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	=466.954	=75.324	190.490	137.644	23.793	2.014	.133	=.013	=.039
	95.9%	75.4%	109.1%	111.2%	141.6%	*****	*****	*****	*****
S/DEPTH=1.3	=442.540								
	100.0%								
S/DEPTH=1.2	=397.308	=77.051							
	95.2%	75.9%							
S/DEPTH=1.1	=354.596	=79.305							
	95.1%	78.4%							
S/DEPTH=1.0	=314.314	=78.488	165.401	135.851					
	95.0%	80.2%	108.9%	109.7%					
S/DEPTH=.9	=276.305	=75.295	140.292	121.254	22.482	1.901	.127	=.008	=.032
	94.8%	81.4%	109.4%	109.8%	*****	*****	*****	*****	*****
S/DEPTH=.8	=240.372	=70.266	118.099	106.887	20.435	1.716	.116	=.002	=.023
	94.7%	82.3%	109.9%	109.9%	*****	*****	*****	*****	*****
S/DEPTH=.7	=206.293	=63.824	98.379	92.778	18.226	1.524	.104	.001	=.017
	94.6%	83.0%	110.4%	110.0%	*****	*****	*****	*****	*****
S/DEPTH=.6	=173.838	=56.302	80.733	78.932	15.877	1.324	.091	.003	=.012
	94.5%	83.4%	110.9%	110.0%	*****	*****	*****	*****	*****
S/DEPTH=.5	=142.769	=47.961	64.798	65.338	13.410	1.117	.077	.004	=.009
	94.5%	83.8%	111.3%	110.1%	*****	*****	*****	*****	*****
S/DEPTH=.4	=112.848	=39.009	50.245	51.973	10.844	.902	.063	.004	=.006
	94.4%	84.1%	111.7%	110.2%	*****	*****	*****	*****	*****
S/DEPTH=.3	=83.842	=29.610	36.767	38.801	8.201	.682	.047	.004	=.004
	94.3%	84.3%	111.9%	110.2%	*****	*****	*****	*****	*****
S/DEPTH=.2	=55.517	=19.902	24.080	25.780	5.500	.457	.032	.003	=.002
	94.3%	*****	112.2%	110.2%	*****	*****	*****	*****	*****
S/DEPTH=.1	=27.646	=9.998	11.912	12.864	2.759	.229	.016	.001	=.001
	94.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=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 =	.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	1007.948	500.971	88.306	4.069	=6.065	=9.661	=9.972	=10.008	=9.993	
	63.0%	27.9%	=269.6%	*****	*****	*****	*****	*****	*****	
S/DEPTH=1.3	949.520									
	100.0%									
S/DEPTH=1.2	844.744	483.546								
	55.8%	25.3%								
S/DEPTH=1.1	749.126	436.492								
	54.2%	23.8%								
S/DEPTH=1.0	661.184	391.267	82.836	4.060						
	52.9%	22.9%	=231.7%	*****						
S/DEPTH= .9	579.673	347.678	76.115	3.949	=5.569	=9.022	=9.323	=9.357	=9.343	
	51.8%	22.0%	=224.2%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .8	503.539	305.538	68.880	3.770	=4.877	=8.012	=8.287	=8.318	=8.305	
	50.8%	21.3%	=217.9%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .7	431.882	264.664	61.197	3.515	=4.211	=7.004	=7.250	=7.278	=7.267	
	49.8%	20.6%	=212.6%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .6	363.920	224.881	53.133	3.183	=3.567	=5.999	=6.214	=6.238	=6.229	
	49.0%	20.0%	=208.2%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .5	298.972	186.020	44.748	2.779	=2.943	=4.996	=5.178	=5.198	=5.191	
	48.4%	19.5%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH= .4	236.431	147.919	36.103	2.309	=2.335	=3.995	=4.142	=4.159	=4.153	
	47.8%	19.1%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH= .3	175.751	110.419	27.253	1.784	=1.740	=2.995	=3.107	=3.119	=3.114	
	47.4%	18.8%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH= .2	116.429	73.366	18.251	1.214	=1.154	=1.996	=2.071	=2.079	=2.076	
	47.1%	18.6%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH= .1	57.995	36.609	9.150	.615	=.576	=.998	=1.036	=1.040	=1.038	
	46.9%	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 2-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=	.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	.000	407.060	339.432	170.728	26.219	2.084	.137	.052	.000
	*****	95.4%	89.2%	68.3%	=219.8%	*****	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	389.645							
	*****	95.2%							
S/DEPTH=1.1	.000	344.120							
	*****	95.0%							
S/DEPTH=1.0	.000	302.348	309.260	168.934					
	*****	94.8%	90.0%	72.7%					
S/DEPTH=.9	.000	263.824	275.890	153.826	24.785	1.978	.134	.047	.000
	*****	94.7%	89.9%	73.0%	=169.8%	*****	*****	*****	*****
S/DEPTH=.8	.000	228.093	243.223	138.092	22.549	1.800	.127	.039	.000
	*****	94.5%	89.8%	73.3%	=163.4%	*****	*****	*****	*****
S/DEPTH=.7	.000	194.745	211.222	121.836	20.134	1.607	.116	.032	.000
	*****	94.4%	89.7%	73.6%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	163.407	179.834	105.151	17.560	1.402	.104	.027	.000
	*****	94.3%	89.7%	73.8%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	133.737	148.991	88.116	14.848	1.186	.089	.021	.000
	*****	94.2%	89.6%	73.9%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	105.419	118.615	70.805	12.019	.961	.073	.017	.000
	*****	94.1%	89.6%	74.1%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	78.160	88.621	53.282	9.097	.727	.056	.012	.000
	*****	94.0%	89.6%	74.2%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	51.680	58.917	35.604	6.104	.488	.037	.008	.000
	*****	94.0%	89.5%	74.2%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	25.712	29.409	17.827	3.064	.245	.019	.004	.000
	*****	94.0%	89.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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	=4.664	=4.801	=4.817	=4.810
	70.5%	33.3%	=333.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	685.368								
	100.0%								
S/DEPTH=1.2	554.315	303.688							
	59.5%	28.6%							
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	32.808	1.436	=2.595	=4.069	=4.196	=4.211	=4.204
	54.0%	23.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	209.649	124.806	26.662	1.284	=2.006	=3.211	=3.315	=3.327	=3.322
	52.5%	22.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	155.871	94.141	20.904	1.093	=1.506	=2.455	=2.538	=2.547	=2.543
	51.2%	21.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	111.669	68.274	15.665	.879	=1.088	=1.802	=1.864	=1.871	=1.869
	50.1%	20.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	75.925	46.893	11.056	.657	=.744	=1.250	=1.295	=1.300	=1.298
	49.1%	20.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	47.764	29.742	7.167	.446	=.470	=.799	=.829	=.832	=.830
	48.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	26.512	16.613	4.071	.262	=.262	=.449	=.466	=.468	=.467
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	11.672	7.346	1.822	.120	=.116	=.200	=.207	=.208	=.208
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	2.902	1.831	.457	.031	=.029	=.050	=.052	=.052	=.052
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=8

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=	.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	.000	280.362	189.874	83.813	11.861	.937	.055	-.029	.000
	*****	96.0%	88.5%	62.1%	*****	*****	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	259.150							
	*****	95.7%							
S/DEPTH=1.1	.000	206.762							
	*****	95.4%							
S/DEPTH=1.0	.000	162.873	158.360	82.008					
	*****	95.2%	90.2%	71.8%					
S/DEPTH=.9	.000	126.250	126.654	67.661	10.522	.839	.052	-.024	.000
	*****	95.0%	90.1%	72.3%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	95.857	98.881	54.292	8.623	.688	.046	-.017	.000
	*****	94.8%	90.0%	72.8%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	70.828	74.875	42.104	6.813	.543	.038	-.012	.000
	*****	94.6%	89.9%	73.2%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	50.443	54.468	31.261	5.141	.410	.030	-.008	.000
	*****	94.5%	89.8%	73.5%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	34.112	37.500	21.895	3.651	.291	.022	-.006	.000
	*****	94.3%	89.7%	73.7%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	21.359	23.827	14.107	2.379	.190	.014	-.003	.000
	*****	94.2%	89.6%	73.9%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	11.810	13.326	7.975	1.357	.108	.008	-.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	5.185	5.898	3.557	.609	.049	.004	-.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	1.287	1.471	.091	.153	.012	.001	-.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

88

CASE 2-B

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	.904	.606	.228	.031	.079	.095	.096	.096	.096
	44.7%	18.8%	=106.3%	*****X	506.8%	236.5%	9.5%	=298.6%	=420.5%
SURFACE	1.812	1.215	.455	.062	.158	.190	.192	.192	.192
S/DEPTH=1.3	47.3%	22.4%	=98.7%	*****X	510.8%	256.5%	31.6%	=301.7%	=442.9%
S/DEPTH=1.2	1.775	1.210							
S/DEPTH=1.1	1.708	1.198							
S/DEPTH=1.0	1.648	1.185	.480	.065					
S/DEPTH=.9	1.548	1.173	.505	.086	.156	.190	.192	.192	.192
S/DEPTH=.8	1.507	1.162	.525	.104	.152	.189	.192	.192	.192
S/DEPTH=.7	1.472	1.151	.542	.120	.149	.189	.192	.192	.192
S/DEPTH=.6	1.441	1.141	.557	.133	.146	.189	.192	.192	.192
S/DEPTH=.5	1.416	1.133	.568	.145	.144	.189	.192	.192	.192
S/DEPTH=.4	1.396	1.126	.577	.154	.142	.188	.192	.192	.192
S/DEPTH=.3	1.380	1.121	.584	.161	.141	.188	.192	.192	.192
S/DEPTH=.2	1.369	1.117	.589	.166	.140	.188	.192	.192	.192
S/DEPTH=.1	1.362	1.114	.592	.169	.139	.188	.192	.192	.192
S/DEPTH=.0	1.360	1.113	.593	.170	.139	.188	.192	.192	.192
	31.1%	16.9%	=49.9%	=386.1%	562.2%	257.3%	34.3%	=296.0%	=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 CONDITON 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)	
	.973	(=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%)

CASE 2-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	.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

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 = .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) =	-.276796=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		

CASE 2=C

TABLE I=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	.927	.470	.116	.014	.068	.072	.072	.073	.073	
	46.1X	=4.8X	=305.2X	*****	575.7X	279.0X	=19.8X	=427.5X	=589.4X	
SURFACE	36.884	17.239	3.693	.607	=2.217	=2.344	=2.346	=2.357	=2.355	
	51.2X	=2.8X	=357.6X	*****	619.8X	297.2X	=31.6X	=475.1X	=650.4X	
S/DEPTH=1.5	35.773									
	100.0X									
S/DEPTH=1.4	33.415									
	100.0X									
S/DEPTH=1.3	31.366									
	42.6X									
S/DEPTH=1.2	29.587	17.094								
	39.4X	=3.3X								
S/DEPTH=1.1	28.044	16.891								
	36.3X	=4.2X								
S/DEPTH=1.0	26.710	16.687	4.023							
	33.3X	=5.1X	=316.0X							
S/DEPTH=.9	25.559	16.488	4.452	.395	=2.201	=2.343	=2.347	=2.357	=2.354	
	30.5X	=6.1X	=274.8X	*****	618.7X	296.1X	=31.4X	100.0X	100.0X	
S/DEPTH=.8	24.574	16.300	4.820	.186	=2.176	=2.342	=2.348	=2.356	=2.353	
	27.9X	=7.0X	=245.2X	*****	623.1X	295.7X	=31.0X	=475.4X	=651.0X	
S/DEPTH=.7	23.738	16.127	5.132	.000	=2.154	=2.342	=2.349	=2.356	=2.352	
	25.6X	=7.9X	=223.5X	*****	627.2X	295.3X	=30.6X	=474.5X	=651.1X	
S/DEPTH=.6	23.038	15.973	5.393	.161	=2.135	=2.341	=2.350	=2.355	=2.352	
	23.5X	=8.7X	=207.2X	*****	630.8X	294.9X	=30.3X	=473.4X	=649.8X	
S/DEPTH=.5	22.462	15.838	5.607	.298	=2.119	=2.340	=2.350	=2.355	=2.351	
	21.6X	=9.4X	=195.0X	*****	634.0X	294.6X	=30.0X	=472.5X	=648.6X	
S/DEPTH=.4	22.002	15.726	5.777	.411	=2.105	=2.340	=2.350	=2.355	=2.351	
	20.1X	=10.1X	=185.9X	*****	636.6X	294.4X	=29.8X	=471.7X	=647.6X	
S/DEPTH=.3	21.651	15.638	5.906	.498	=2.095	=2.340	=2.351	=2.355	=2.351	
	18.9X	=10.6X	=179.3X	*****	638.7X	294.2X	=29.7X	=471.1X	=646.8X	
S/DEPTH=.2	21.404	15.574	5.997	.560	=2.087	=2.339	=2.351	=2.355	=2.351	
	18.0X	=10.9X	=174.9X	*****	640.3X	294.1X	=29.6X	=470.7X	=646.3X	
S/DEPTH=.1	21.257	15.536	6.051	.598	=2.082	=2.339	=2.351	=2.355	=2.351	
	17.5X	=11.1X	=172.3X	*****	641.2X	294.0X	=29.5X	=470.5X	=646.0X	
S/DEPTH=.0	21.208	15.523	6.069	.610	=2.081	=2.339	=2.351	=2.355	=2.350	
	17.3X	=11.2X	=171.4X	*****	641.5X	294.0X	=29.5X	=470.4X	=645.8X	

CASE 2=C

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	.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	
	*****	95.0%	81.2%	22.9%	*****	*****	*****	*****	*****	
S/DEPTH=1.5	.000									

S/DEPTH=1.4	.000									

S/DEPTH=1.3	.000									

S/DEPTH=1.2	.000	12.790								
	*****	94.9%								
S/DEPTH=1.1	.000	11.251								
	*****	94.7%								
S/DEPTH=1.0	.000	9.851	6.822							
	*****	94.5%	84.3%							
S/DEPTH= .9	.000	8.570	6.130	2.369	.229	.001	.006	.005	.000	
	*****	94.3%	84.3%	40.4%	*****	*****	*****	*****	*****	
S/DEPTH= .8	.000	7.391	5.438	2.145	.209	.003	.005	.004	.000	
	*****	94.1%	84.2%	41.6%	*****	*****	*****	*****	*****	
S/DEPTH= .7	.000	6.296	4.747	1.907	.187	.003	.004	.003	.000	
	*****	94.0%	84.2%	42.6%	*****	*****	*****	*****	*****	
S/DEPTH= .6	.000	5.273	4.059	1.657	.164	.004	.003	.002	.000	
	*****	93.8%	84.2%	43.4%	*****	*****	*****	*****	*****	
S/DEPTH= .5	.000	4.309	3.375	1.397	.139	.004	.002	.002	.000	
	*****	93.7%	84.2%	44.0%	*****	*****	*****	*****	*****	
S/DEPTH= .4	.000	3.392	2.694	1.127	.113	.003	.002	.001	.000	
	*****	93.6%	84.1%	44.6%	*****	*****	*****	*****	*****	
S/DEPTH= .3	.000	2.513	2.017	.851	.085	.003	.001	.001	.000	
	*****	93.5%	84.1%	45.0%	*****	*****	*****	*****	*****	
S/DEPTH= .2	.000	1.660	1.343	.570	.057	.002	.001	.000	.000	
	*****	93.5%	84.1%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .1	.000	.826	.671	.286	.029	.001	.000	.000	.000	
	*****	93.4%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 2=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	.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	573.887	252.529	81.125	7.850	1.038	.865	.827	.000
	*****	97.5%	88.8%	47.5%	*****	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	533.566							
	*****	97.4%							
S/DEPTH=1.1	.000	485.774							
	*****	97.1%							
S/DEPTH=1.0	.000	444.200	255.977						
	*****	96.9%	89.1%						
S/DEPTH=.9	.000	408.261	259.302	88.174	8.317	.803	.736	.701	.000
	*****	96.6%	89.3%	52.5%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	377.433	261.054	95.002	9.081	.472	.560	.525	.000
	*****	96.3%	89.4%	56.0%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	351.257	261.710	100.936	9.810	.219	.429	.395	.000
	*****	96.1%	89.4%	58.8%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	329.337	261.645	105.997	10.480	.026	.334	.298	.000
	*****	95.8%	89.5%	60.8%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	311.336	261.157	110.213	11.075	.121	.265	.227	.000
	*****	95.6%	89.5%	62.4%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	296.975	260.477	113.611	11.579	.231	.215	.176	.000
	*****	95.4%	89.5%	63.6%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	286.032	259.781	116.222	11.981	.310	.181	.140	.000
	*****	95.2%	89.4%	64.5%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	278.336	259.196	118.068	12.274	.364	.158	.116	.000
	*****	95.1%	89.4%	65.1%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	273.766	258.812	119.168	12.453	.395	.145	.103	.000
	*****	95.0%	89.4%	65.4%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	272.250	258.678	119.533	12.512	.405	.141	.098	.000
	*****	95.0%	89.4%	65.5%	*****	*****	*****	*****	*****

CASE 2=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	.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	.551,249	82,993	233,102	105,548	11,905	.297	-.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	.328,112	11,592	211,413						
	95.8%	*****	106.0%						
S/DEPTH=.9	.289,120	-1,441	181,960	96,462	11,214	.311	-.572	.331	.549
	95.7%	*****	106.3%	110.5%	*****	*****	*****	*****	*****
S/DEPTH=.8	.251,845	-9,889	155,205	86,246	10,069	.318	-.424	.248	.395
	95.6%	*****	106.6%	110.4%	*****	*****	*****	*****	*****
S/DEPTH=.7	.216,259	-14,766	130,813	75,794	8,908	.307	-.313	.185	.283
	95.5%	*****	106.8%	110.4%	*****	*****	*****	*****	*****
S/DEPTH=.6	.182,249	-16,873	108,457	65,173	7,720	.283	-.229	.137	.201
	95.4%	*****	107.0%	110.4%	*****	*****	*****	*****	*****
S/DEPTH=.5	.149,645	-16,848	87,820	54,434	6,499	.249	-.166	.101	.141
	95.4%	*****	107.2%	110.4%	*****	*****	*****	*****	*****
S/DEPTH=.4	.118,243	-15,207	68,593	43,614	5,246	.207	-.118	.073	.097
	95.3%	*****	107.4%	110.3%	*****	*****	*****	*****	*****
S/DEPTH=.3	.087,818	-12,370	50,482	32,744	3,963	.160	-.080	.050	.064
	95.2%	*****	107.6%	110.3%	*****	*****	*****	*****	*****
S/DEPTH=.2	.058,132	-8,691	33,199	21,843	2,656	.109	-.049	.031	.039
	95.2%	*****	107.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.028,942	-4,476	16,463	10,925	1,332	.055	-.024	.015	.018
	95.2%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=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/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	1060.696 61.8%	333.030 17.5%	30.769 *****	.172 *****	-4.346 *****	5.247 *****	5.287 *****	5.312 *****	5.295 *****
S/DEPTH=1.5	1004.406 100.0%								
S/DEPTH=1.4	884.879 100.0%								
S/DEPTH=1.3	780.086 48.1%								
S/DEPTH=1.2	687.304 45.4%	310.920 17.0%							
S/DEPTH=1.1	604.355 43.2%	282.044 18.0%							
S/DEPTH=1.0	529.479 41.2%	253.858 18.9%	29.757 *****						
S/DEPTH=.9	461.244 39.4%	226.345 19.8%	27.956 *****	.149 *****	4.051 *****	4.930 *****	4.970 *****	4.992 *****	4.976 *****
S/DEPTH=.8	398.467 37.8%	199.471 20.6%	25.800 *****	.140 *****	-3.573 *****	4.381 *****	4.419 *****	4.437 *****	4.422 *****
S/DEPTH=.7	340.166 36.3%	173.187 21.3%	23.319 *****	.139 *****	3.104 *****	3.833 *****	3.867 *****	3.882 *****	3.869 *****
S/DEPTH=.6	285.514 35.1%	147.432 22.0%	20.545 *****	.138 *****	2.644 *****	3.285 *****	3.315 *****	3.327 *****	3.316 *****
S/DEPTH=.5	233.802 34.0%	122.139 22.6%	17.516 *****	.133 *****	2.192 *****	2.737 *****	2.763 *****	2.772 *****	2.763 *****
S/DEPTH=.4	184.417 33.1%	97.237 23.0%	14.272 *****	.120 *****	1.746 *****	2.189 *****	2.210 *****	2.218 *****	2.210 *****
S/DEPTH=.3	136.817 32.4%	72.649 23.4%	10.856 *****	.099 *****	1.305 *****	1.641 *****	1.658 *****	1.663 *****	1.658 *****
S/DEPTH=.2	90.510 31.9%	48.300 *****	7.309 *****	.071 *****	.868 *****	1.094 *****	1.105 *****	1.109 *****	1.105 *****
S/DEPTH=.1	45.047 *****	24.110 *****	3.676 *****	.037 *****	.433 *****	.547 *****	.553 *****	.554 *****	.552 *****
S/DEPTH=.0	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

86

CASE 2=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=	.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	424.136							
	*****	96.1%							
S/DEPTH=1.1	.000	373.223							
	*****	95.9%							
S/DEPTH=1.0	.000	326.774	260.082						
	*****	95.8%	89.4%						
S/DEPTH=.9	.000	284.195	234.303	98.368	9.921	.054	.271	.236	.000
	*****	95.6%	89.4%	62.1%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	244.951	208.274	89.201	9.051	.117	.207	.176	.000
	*****	95.5%	89.4%	62.9%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	208.554	182.128	79.397	8.106	.151	.157	.130	.000
	*****	95.4%	89.4%	63.5%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	174.558	155.956	69.043	7.091	.163	.120	.095	.000
	*****	95.3%	89.4%	64.1%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	142.556	129.813	58.226	6.013	.157	.090	.069	.000
	*****	95.2%	89.4%	64.5%	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	112.170	103.731	47.028	4.879	.140	.066	.049	.000
	*****	95.1%	89.4%	64.9%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	83.047	77.718	35.530	3.700	.112	.046	.034	.000
	*****	95.1%	89.4%	65.2%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	54.855	51.771	23.809	2.487	.078	.029	.021	.000
	*****	95.0%	89.4%	65.4%	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	27.276	25.872	11.941	1.249	.040	.014	.010	.000
	*****	95.0%	89.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=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=	.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	976.518	220.288	14.172	.061	-2.132	2.514	-2.530	2.544	-2.537
	73.0%	15.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	890.872								
	100.0%								
S/DEPTH=1.4	717.421								
	100.0%								
S/DEPTH=1.3	575.839								
	54.1%								
S/DEPTH=1.2	459.772	192.924							
	50.7%	14.0%							
S/DEPTH=1.1	364.306	159.711							
	47.9%	15.3%							
S/DEPTH=1.0	285.626	130.109	13.127						
	45.2%	16.6%	*****						
S/DEPTH=.9	220.752	103.967	11.419	.039	1.858	2.220	2.235	2.247	2.240
	42.8%	17.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	167.351	81.119	9.590	.031	1.451	1.753	1.767	1.775	1.769
	40.5%	19.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	123.592	61.401	7.731	.030	1.099	1.342	1.353	1.359	1.354
	38.5%	20.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	88.041	44.656	5.930	.030	.800	.986	.994	.998	.995
	36.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	59.578	30.741	4.266	.027	.551	.684	.691	.693	.691
	35.1%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	37.337	19.532	2.808	.021	.351	.438	.442	.444	.442
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	20.664	10.924	1.614	.014	.196	.246	.249	.249	.249
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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 =	.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	336,154	147,958	49,507	4.627	.100	.201	.184	.000
	*****	96.6%	84.7%	33.5%	*****	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	284,758							
	*****	96.5%							
S/DEPTH=1.1	.000	226,169							
	*****	96.3%							
S/DEPTH=1.0	.000	177,362	130,119						
	*****	96.1%	89.4%						
S/DEPTH=.9	.000	136,883	105,631	42,169	4.172	.051	.158	.143	.000
	*****	95.9%	89.4%	60.1%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	103,500	83,508	34,383	3.433	.003	.103	.091	.000
	*****	95.7%	89.4%	61.4%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	76,180	63,900	27,035	2.725	.028	.066	.057	.000
	*****	95.6%	89.4%	62.4%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	54,064	46,888	20,309	2.066	.036	.041	.034	.000
	*****	95.4%	89.4%	63.3%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	36,448	32,509	14,363	1.473	.034	.025	.020	.000
	*****	95.3%	89.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	22,762	20,771	9,327	.963	.026	.014	.011	.000
	*****	95.2%	89.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	12,960	11,666	5,305	.551	.016	.007	.005	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	5,506	5,179	2,376	.248	.008	.003	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	1,365	1,294	.597	.062	.002	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

101

CASE 2=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=	.927	.470	.116	.014	.068	.072	.072	.073	.073
	46.1%	=4.8%	=305.2%	*****	975.7%	279.0%	=19.8%	=427.5%	=589.4%
SURFACE	1.854	.940	.232	.029	.136	.144	.145	.145	.145
	49.7%	2.1%	=282.9%	*****	581.2%	319.0%	23.9%	=433.8%	=633.9%
S/DEPTH=1.5	1.817								
	100.0%								
S/DEPTH=1.4	1.735								
	100.0%								
S/DEPTH=1.3	1.659								
	43.9%								
S/DEPTH=1.2	1.590	.949							
	41.6%	3.2%							
S/DEPTH=1.1	1.528	.955							
	39.4%	4.2%							
S/DEPTH=1.0	1.473	.959	.256						
	37.3%	4.7%	=244.5%						
S/DEPTH=.9	1.424	.959	.287	.014	.135	.144	.145	.145	.145
	35.3%	5.0%	=206.3%	*****	582.8%	319.1%	24.4%	100.0%	100.0%
S/DEPTH=.8	1.381	.958	.314	.001	.133	.144	.145	.145	.145
	33.4%	5.1%	=179.6%	*****	588.2%	319.3%	25.3%	=434.1%	=634.5%
S/DEPTH=.7	1.344	.956	.336	.013	.131	.144	.145	.145	.145
	31.6%	5.1%	=160.2%	*****	593.2%	319.4%	26.1%	=433.0%	=634.7%
S/DEPTH=.6	1.312	.954	.355	.025	.130	.144	.145	.145	.145
	30.1%	5.0%	=145.9%	*****	597.7%	319.5%	26.8%	=431.6%	=633.0%
S/DEPTH=.5	1.286	.951	.371	.034	.129	.144	.145	.145	.145
	28.8%	4.8%	=135.3%	*****	601.6%	319.6%	27.3%	=430.4%	=631.6%
S/DEPTH=.4	1.264	.949	.383	.042	.128	.144	.145	.145	.145
	27.6%	4.7%	=127.4%	*****	604.9%	319.7%	27.8%	=429.4%	=630.5%
S/DEPTH=.3	1.248	.946	.393	.048	.127	.144	.145	.145	.145
	26.8%	4.6%	=121.8%	*****	607.5%	319.8%	28.1%	=428.7%	=629.6%
S/DEPTH=.2	1.236	.945	.400	.052	.127	.144	.145	.145	.145
	26.1%	4.4%	=118.0%	*****	609.4%	319.8%	28.4%	=428.1%	=628.9%
S/DEPTH=.1	1.229	.944	.403	.055	.126	.144	.145	.145	.145
	25.7%	4.4%	=115.8%	*****	610.5%	319.9%	28.6%	=427.8%	=628.5%
S/DEPTH=.0	1.227	.943	.405	.056	.126	.144	.145	.145	.145
	25.6%	4.3%	=115.0%	*****	610.9%	319.9%	28.6%	=427.7%	=628.4%

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 CONDITON 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=0

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 I=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=	.944	.341	.056	.027	.055	.056	.056	.056	.056	.056
	47.0%	=44.5%	=739.5%	*****	686.7%	331.0%	=55.0%	=580.1%	=791.9%	
SURFACE	40.892	12.677	1.704	.989	=1.792	=1.776	=1.767	=1.803	=1.793	
	55.8%	=40.3%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=1.7	39.657									
	100.0%									
S/DEPTH=1.6	36.293									
	100.0%									
S/DEPTH=1.5	33.403									
	100.0%									
S/DEPTH=1.4	30.916									
	41.6%									
S/DEPTH=1.3	28.774									
	37.4%									
S/DEPTH=1.2	26.930	12.738								
	33.4%	=38.6%								
S/DEPTH=1.1	25.342	12.786								
	29.5%	=37.6%								
S/DEPTH=1.0	23.978	12.794	1.892							
	25.7%	=37.1%	*****							
S/DEPTH= .9	22.811	12.774	2.286	.864	=1.778	=1.777	=1.770	=1.801	=1.790	
	22.2%	=36.9%	=630.0%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .8	21.817	12.736	2.629	.719	=1.757	=1.779	=1.774	=1.798	=1.787	
	18.8%	=36.9%	=533.0%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .7	20.977	12.689	2.924	.590	=1.740	=1.781	=1.777	=1.796	=1.784	
	15.8%	=37.1%	=467.8%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .6	20.278	12.637	3.174	.477	=1.726	=1.782	=1.780	=1.795	=1.782	
	13.1%	=37.4%	=422.0%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .5	19.705	12.587	3.381	.381	=1.714	=1.783	=1.782	=1.794	=1.781	
	10.7%	=37.7%	=389.2%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .4	19.248	12.542	3.548	.302	=1.705	=1.783	=1.783	=1.793	=1.780	
	8.7%	=38.0%	=365.6%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .3	18.901	12.503	3.675	.241	=1.698	=1.784	=1.784	=1.792	=1.779	
	7.1%	=38.3%	=348.9%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .2	18.657	12.475	3.765	.197	=1.694	=1.784	=1.784	=1.792	=1.779	
	6.0%	=38.5%	=337.8%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .1	18.513	12.457	3.819	.170	=1.691	=1.784	=1.785	=1.792	=1.779	
	5.3%	=38.6%	=331.5%	*****	*****	*****	*****	*****	*****	
S/DEPTH= .0	18.465	12.451	3.837	.161	=1.690	=1.784	=1.785	=1.792	=1.779	
	5.1%	=38.7%	=329.4%	*****	*****	*****	*****	*****	*****	

CASE 2=0

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	.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	13.386	5.070	1.529	.120	.039	.028	.026	.000
S/DEPTH=1.7	***** .000	94.3%	71.0%	-37.7%	*****	*****	*****	*****	*****
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	12.331							
S/DEPTH=1.1	***** .000	94.7%							
S/DEPTH=1.0	***** .000	10.829							
S/DEPTH=.9	***** .000	94.5%	4.867						
S/DEPTH=.8	***** .000	9.466	78.0%	1.432	.112	.033	.024	.022	.000
S/DEPTH=.7	***** .000	94.2%	4.447	1.5%	*****	*****	*****	*****	*****
S/DEPTH=.6	***** .000	8.223	3.986	1.300	.100	.024	.018	.017	.000
S/DEPTH=.5	***** .000	94.0%	78.5%	3.6%	*****	*****	*****	*****	*****
S/DEPTH=.4	***** .000	7.082	3.511	1.159	.088	.018	.014	.012	.000
S/DEPTH=.3	***** .000	93.9%	78.7%	5.5%	*****	*****	*****	*****	*****
S/DEPTH=.2	***** .000	6.026	3.024	1.009	.076	.015	.010	.009	.000
S/DEPTH=.1	***** .000	93.7%	78.8%	7.0%	*****	*****	*****	*****	*****
S/DEPTH=.0	***** .000	93.5%	2.529	.853	.064	.009	.008	.007	.000
	***** .000	93.4%	78.9%	8.3%	*****	*****	*****	*****	*****
	***** .000	3.238	2.028	.690	.052	.007	.005	.005	.000
	***** .000	93.3%	78.9%	*****	*****	*****	*****	*****	*****
	***** .000	2.397	1.524	.522	.039	.004	.004	.003	.000
	***** .000	93.2%	79.0%	*****	*****	*****	*****	*****	*****
	***** .000	1.583	1.017	.350	.026	.003	.002	.002	.000
	***** .000	93.1%	79.0%	*****	*****	*****	*****	*****	*****
	***** .000	.787	.509	.176	.013	.001	.001	.001	.000
	***** .000	93.1%	*****	*****	*****	*****	*****	*****	*****
	***** .000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=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	.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
	*****	97.8%	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	4.445	3.146	2.817	.000
	*****	97.1%	86.4%	33.2%	*****	*****	*****	*****	*****
S/DEPTH= .8	.000	382.615	189.529	60.297	5.514	3.360	2.393	2.151	.000
	*****	96.9%	87.1%	38.3%	*****	*****	*****	*****	*****
S/DEPTH= .7	.000	355.765	196.407	64.360	5.518	2.537	1.827	1.647	.000
	*****	96.6%	87.6%	42.4%	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	333.209	201.503	68.014	5.577	1.917	1.404	1.269	.000
	*****	96.4%	88.0%	45.6%	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	314.641	205.219	71.189	5.665	1.453	1.091	.987	.000
	*****	96.2%	88.2%	48.2%	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	299.802	207.869	73.835	5.763	1.113	.862	.781	.000
	*****	96.0%	88.4%	50.2%	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	288.478	209.696	75.919	5.854	.871	.701	.635	.000
	*****	95.9%	88.5%	51.6%	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	280.506	210.878	77.421	5.927	.710	.594	.537	.000
	*****	95.8%	88.6%	52.6%	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	275.770	211.539	78.326	5.974	.618	.535	.482	.000
	*****	95.7%	88.6%	53.2%	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	274.199	211.752	78.628	5.990	.588	.513	.464	.000
	*****	95.7%	88.7%	53.4%	*****	*****	*****	*****	*****

CASE 2=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	.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	=1.386	=2.536	1.606	2.272
S/DEPTH=1.7	96.6%	107.5%	107.0%	116.2%	*****	*****	*****	*****	*****
S/DEPTH=1.6	=499.564								
	100.0%								
S/DEPTH=1.5	=510.170								
	100.0%								
S/DEPTH=1.4	=498.772								
	100.0%								
S/DEPTH=1.3	=473.910								
	96.5%								
S/DEPTH=1.2	=441.243								
	96.5%								
S/DEPTH=1.2	=404.479	176.734							
	96.5%	107.9%							
S/DEPTH=1.1	=366.006	129.086							
	96.4%	109.9%							
S/DEPTH=1.0	=327.315	92.855	197.415						
	96.3%	112.6%	105.5%						
S/DEPTH= .9	=289.299	65.522	173.128	70.724	10.478	=1.148	=2.177	1.371	1.897
	96.3%	116.1%	105.6%	111.9%	*****	*****	*****	*****	*****
S/DEPTH= .8	=252.441	45.134	150.082	63.293	8.660	=.817	=1.658	1.034	1.371
	96.2%	120.8%	105.8%	111.8%	*****	*****	*****	*****	*****
S/DEPTH= .7	=216.961	30.163	128.263	55.737	7.142	=.576	=1.258	.777	.984
	96.1%	127.2%	105.9%	111.8%	*****	*****	*****	*****	*****
S/DEPTH= .6	=182.896	19.403	107.600	48.052	5.839	=.401	=.947	.580	.699
	96.1%	*****	106.0%	111.7%	*****	*****	*****	*****	*****
S/DEPTH= .5	=150.171	11.894	87.981	40.244	4.689	=.274	=.704	.427	.489
	96.0%	*****	106.2%	111.7%	*****	*****	*****	*****	*****
S/DEPTH= .4	=118.633	6.859	69.264	32.329	3.648	=.184	=.510	.308	.335
	95.9%	*****	106.3%	111.6%	*****	*****	*****	*****	*****
S/DEPTH= .3	=88.083	3.659	51.286	24.326	2.681	=.118	=.354	.213	.221
	95.9%	*****	106.4%	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	=58.292	1.754	33.873	16.255	1.763	=.070	=.223	.133	.133
	95.9%	*****	106.4%	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	=29.017	.675	16.841	8.139	.875	=.032	=.108	.064	.063
	95.8%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=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=	.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	1128.433	201.937	10.773	=.249	=2.838	=3.037	=3.031	=3.080	=3.038
	61.3%	=108.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7	1074.626								
	100.0%								
S/DEPTH=1.6	930.647								
	100.0%								
S/DEPTH=1.5	809.395								
	100.0%								
S/DEPTH=1.4	706.122								
	38.2%								
S/DEPTH=1.3	617.170								
	34.0%								
S/DEPTH=1.2	539.696	191.493							
	30.5%	=90.0%							
S/DEPTH=1.1	471.470	175.197							
	27.2%	=89.9%							
S/DEPTH=1.0	410.728	158.832	10.632						
	24.2%	=90.0%	*****						
S/DEPTH=.9	356.058	142.484	10.193	=.182	=2.655	=2.859	=2.854	=2.897	=2.857
	21.5%	=90.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	306.320	126.211	9.586	=.119	=2.343	=2.543	=2.540	=2.574	=2.537
	19.0%	=90.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	260.583	110.049	8.812	=.076	=2.037	=2.226	=2.225	=2.251	=2.219
	16.9%	=90.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	218.075	94.013	7.880	=.048	=1.737	=1.908	=1.908	=1.928	=1.901
	15.0%	=91.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	178.148	78.107	6.803	=.030	=1.441	=1.591	=1.591	=1.606	=1.583
	13.4%	=91.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	140.250	62.322	5.600	=.018	=1.149	=1.273	=1.273	=1.285	=1.266
	12.0%	=92.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	103.898	46.642	4.294	=.011	=.859	=.955	=.955	=.963	=.950
	11.0%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	68.663	31.046	2.908	=.006	=.572	=.636	=.637	=.642	=.633
	10.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	34.153	15.508	1.467	=.003	=.286	=.318	=.319	=.321	=.316
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=0

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

	THETA = ETA/HEIGHT=	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
		.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
		.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	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%	88.3%	49.0%	*****	*****	*****	*****	*****
S/DEPTH=.7		.000	210.533	145.128	51.652	4.052	.819	.631	.571	.000
		*****	96.0%	88.4%	50.1%	*****	*****	*****	*****	*****
S/DEPTH=.6		.000	176.119	125.219	45.030	3.497	.597	.471	.426	.000
		*****	95.9%	88.5%	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
		*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=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=	.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	1251.395	129.051	4.481	.188	1.385	1.451	1.445	1.475	1.456
	75.6%	127.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7	1159.021								
	100.0%								
S/DEPTH=1.6	921.243								
	100.0%								
S/DEPTH=1.5	733.134								
	100.0%								
S/DEPTH=1.4	583.255								
	47.5%								
S/DEPTH=1.3	463.063								
	42.3%								
S/DEPTH=1.2	366.136	116.182							
	38.1%	89.3%							
S/DEPTH=1.1	287.607	97.442							
	34.0%	89.0%							
S/DEPTH=1.0	223.772	80.259	4.337						
	30.1%	89.0%	*****						
S/DEPTH= .9	171.789	64.728	3.921	.124	1.215	1.285	1.281	1.306	1.288
	26.5%	89.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .8	129.475	50.896	3.407	.071	.949	1.016	1.014	1.031	1.016
	23.1%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	95.143	38.773	2.828	.038	.720	.779	.778	.788	.777
	20.1%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	67.488	28.349	2.223	.020	.525	.572	.572	.579	.571
	17.4%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	45.510	19.599	1.632	.010	.362	.398	.398	.402	.396
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	28.441	12.495	1.091	.004	.231	.255	.255	.257	.253
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	15.707	7.006	.635	.002	.129	.143	.143	.145	.142
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	6.890	3.107	.289	.001	.057	.064	.064	.064	.063
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	1.709	.776	.073	.000	.014	.016	.016	.016	.016
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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/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	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	288.472							
	*****	97.0%							
S/DEPTH=1.1	.000	229.087							
	*****	96.8%							
S/DEPTH=1.0	.000	179.580	96.999						
	*****	96.7%	87.5%						
S/DEPTH=.9	.000	138.515	80.422	27.101	2.281	=.913	.664	.598	.000
	*****	96.5%	87.8%	44.7%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	104.663	64.691	22.164	1.809	=.582	.429	.387	.000
	*****	96.3%	88.0%	46.6%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	76.979	50.211	17.490	1.396	=.360	.271	.245	.000
	*****	96.2%	88.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	54.591	37.275	13.189	1.036	=.217	.167	.151	.000
	*****	96.1%	88.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	36.777	26.088	9.361	.727	=.125	.098	.089	.000
	*****	96.0%	88.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	22.953	16.792	6.098	.470	=.067	.055	.049	.000
	*****	95.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	12.659	9.484	3.477	.266	=.033	.027	.025	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	5.547	4.226	1.560	.119	=.013	.011	.010	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	1.375	1.058	.392	.030	=.003	.003	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 2=0

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.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%
	1.859								
S/DEPTH=1.6	100.0%								
	1.774								
S/DEPTH=1.5	100.0%								
	1.694								
S/DEPTH=1.4	100.0%								
	1.616								
S/DEPTH=1.3	43.8%								
	1.543								
S/DEPTH=1.2	41.3%								
	1.476	.723							
S/DEPTH=1.1	38.8%	=23.7%							
	1.414	.747							
S/DEPTH=1.0	36.3%	=19.4%							
	1.359	.765	.131						
S/DEPTH=.9	33.8%	=16.4%	=557.8%						
	1.310	.777	.160	.049	.114	.114	.114	.116	.115
S/DEPTH=.8	31.5%	=14.3%	=435.9%	*****	671.1%	393.9%	22.4%	100.0%	100.0%
	1.267	.786	.186	.039	.113	.114	.114	.116	.115
S/DEPTH=.7	29.3%	=12.8%	=361.1%	*****	678.2%	393.8%	23.9%	=572.6%	100.0%
	1.230	.792	.208	.029	.112	.115	.114	.116	.115
S/DEPTH=.6	27.3%	=11.8%	=311.5%	*****	684.2%	393.8%	25.2%	=573.4%	=847.0%
	1.198	.796	.227	.021	.111	.115	.114	.116	.115
S/DEPTH=.5	25.4%	=11.1%	=277.0%	*****	689.1%	393.8%	26.3%	=572.0%	=847.8%
	1.172	.798	.243	.014	.110	.115	.115	.115	.115
S/DEPTH=.4	23.8%	=10.6%	=252.4%	*****	693.2%	393.8%	27.2%	=570.7%	=846.5%
	1.150	.800	.255	.008	.109	.115	.115	.115	.114
S/DEPTH=.3	22.5%	=10.3%	=234.9%	*****	696.5%	393.9%	28.0%	=569.6%	=845.3%
	1.134	.800	.265	.004	.109	.115	.115	.115	.114
S/DEPTH=.2	21.4%	=10.1%	=222.5%	*****	699.0%	394.0%	28.6%	=568.8%	=844.4%
	1.122	.801	.271	.000	.108	.115	.115	.115	.114
S/DEPTH=.1	20.7%	=10.0%	=214.3%	*****	700.8%	394.0%	29.0%	=568.2%	=843.7%
	1.115	.801	.275	.002	.108	.115	.115	.115	.114
S/DEPTH=.0	20.2%	=9.9%	=209.6%	*****	701.8%	394.0%	29.2%	=567.8%	=843.2%
	1.113	.801	.277	.002	.108	.115	.115	.115	.114
S/DEPTH=.0	20.0%	=9.9%	=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 CONDITON 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	.397824	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) =	= .682088=06
X(11)/(H*T*G) =	= .126802=06	X(12)/(H*T*G) =	= .116440=07

CASE 3=A

TABLE I=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=	.799	.723	.538	.329	.025	.135	.183	.199	.201	
	37.4%	31.9%	12.6%	=31.5%	*****	195.5%	52.7%	=92.2%	=149.0%	
SURFACE	20.810	18.708	13.712	8.206	.457	=3.417	=4.545	=4.917	=4.958	
	38.8%	32.9%	12.7%	=34.3%	*****	196.1%	51.7%	=96.3%	=153.9%	
S/DEPTH=1.1	20.439	18.501	13.704							
	37.7%	32.2%	12.7%							
S/DEPTH=1.0	19.834	18.033	13.534	8.260	.467					
	36.2%	30.9%	12.1%	=32.7%	*****					
S/DEPTH=.9	19.302	17.618	13.379	8.331	.647	=3.358	=4.530	=4.916	=4.958	
	34.8%	29.7%	11.6%	=30.8%	*****	197.0%	51.8%	=96.1%	=153.9%	
S/DEPTH=.8	18.837	17.254	13.238	8.389	.806	=3.285	=4.507	=4.913	=4.957	
	33.5%	28.6%	11.1%	=29.2%	*****	198.6%	51.8%	=95.2%	=152.5%	
S/DEPTH=.7	18.436	16.938	13.113	8.435	.945	=3.221	=4.487	=4.910	=4.956	
	32.4%	27.6%	10.7%	=27.9%	*****	200.1%	51.8%	=94.4%	=151.4%	
S/DEPTH=.6	18.095	16.669	13.004	8.472	1.064	=3.164	=4.470	=4.908	=4.956	
	31.4%	26.7%	10.3%	=26.8%	=649.5%	201.5%	51.8%	=93.7%	=150.4%	
S/DEPTH=.5	17.812	16.443	12.911	8.501	1.164	=3.117	=4.455	=4.906	=4.955	
	30.6%	26.0%	10.0%	=26.0%	=582.9%	202.7%	51.8%	=93.1%	=149.5%	
S/DEPTH=.4	17.583	16.261	12.834	8.523	1.245	=3.077	=4.442	=4.904	=4.955	
	29.9%	25.3%	9.7%	=25.3%	=536.7%	203.7%	51.8%	=92.6%	=148.8%	
S/DEPTH=.3	17.407	16.121	12.775	8.539	1.307	=3.047	=4.433	=4.903	=4.954	
	29.3%	24.9%	9.5%	=24.8%	=504.9%	204.5%	51.8%	=92.2%	=148.3%	
S/DEPTH=.2	17.282	16.021	12.732	8.549	1.351	=3.025	=4.426	=4.902	=4.954	
	28.9%	24.5%	9.4%	=24.4%	=484.1%	205.1%	51.8%	=91.9%	=147.9%	
S/DEPTH=.1	17.208	15.961	12.706	8.556	1.378	=3.012	=4.421	=4.901	=4.954	
	28.7%	24.3%	9.3%	=24.2%	=472.3%	205.4%	51.8%	=91.8%	=147.7%	
S/DEPTH=.0	17.183	15.942	12.698	8.558	1.387	=3.007	=4.420	=4.901	=4.954	
	28.6%	24.2%	9.2%	=24.1%	=468.5%	205.6%	51.8%	=91.7%	=147.6%	

CASE 3=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=	.799	.723	.538	.329	.025	.135	.183	.199	.201	
	37.4%	31.9%	12.6%	=31.5%	*****	195.5%	52.7%	=92.2%	=149.0%	
SURFACE	.000	4.486	6.769	6.680	3.786	1.239	.352	.043	.000	
	*****	86.7%	82.7%	74.5%	32.4%	=151.0%	=762.5%	*****	*****	
S/DEPTH=1.1	.000	4.274	6.733							
	*****	86.0%	82.6%							
S/DEPTH=1.0	.000	3.780	5.989	6.224	3.769					
	*****	85.6%	82.1%	74.8%	36.2%					
S/DEPTH=.9	.000	3.319	5.285	5.532	3.400	1.156	.332	.041	.000	
	*****	85.3%	81.8%	74.5%	36.5%	=135.6%	*****	*****	*****	
S/DEPTH=.8	.000	2.886	4.616	4.863	3.028	1.039	.299	.037	.000	
	*****	84.9%	81.5%	74.3%	36.7%	=132.6%	*****	*****	*****	
S/DEPTH=.7	.000	2.477	3.977	4.213	2.654	.918	.265	.033	.000	
	*****	84.7%	81.2%	74.1%	36.9%	=130.0%	*****	*****	*****	
S/DEPTH=.6	.000	2.088	3.363	3.580	2.277	.793	.230	.028	.000	
	*****	84.4%	81.0%	73.9%	37.1%	=127.8%	*****	*****	*****	
S/DEPTH=.5	.000	1.715	2.771	2.962	1.900	.666	.193	.024	.000	
	*****	84.2%	80.8%	73.7%	37.2%	=125.9%	*****	*****	*****	
S/DEPTH=.4	.000	1.357	2.196	2.355	1.521	.536	.156	.019	.000	
	*****	84.1%	80.6%	73.6%	37.3%	=124.5%	*****	*****	*****	
S/DEPTH=.3	.000	1.008	1.636	1.758	1.141	.403	.117	.015	.000	
	*****	83.9%	80.5%	73.5%	37.4%	=123.3%	*****	*****	*****	
S/DEPTH=.2	.000	.668	1.085	1.168	.761	.270	.079	.010	.000	
	*****	83.8%	80.4%	73.4%	37.5%	*****	*****	*****	*****	
S/DEPTH=.1	.000	.333	.541	.583	.381	.135	.039	.005	.000	
	*****	*****	80.4%	73.4%	37.5%	*****	*****	*****	*****	
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 3=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	.799	.723	.538	.329	.025	-.135	-.183	-.199	-.201
	37.4%	31.9%	12.6%	-31.5%	*****	195.5%	52.7%	-92.2%	-149.0%
SURFACE	.000	122.168	181.140	174.185	93.488	29.434	8.251	1.014	.000
	*****	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	30.382	8.544	1.050	.000
	*****	87.9%	84.7%	78.0%	39.8%	-145.3%	*****	*****	*****
S/DEPTH=.8	.000	96.927	153.941	159.835	95.424	31.547	8.963	1.104	.000
	*****	87.2%	84.1%	77.4%	40.7%	-134.9%	*****	*****	*****
S/DEPTH=.7	.000	91.720	147.326	155.498	96.089	32.571	9.336	1.153	.000
	*****	86.6%	83.4%	76.9%	41.4%	-126.4%	-739.3%	*****	*****
S/DEPTH=.6	.000	87.352	141.725	151.757	96.609	33.456	9.661	1.196	.000
	*****	86.0%	82.9%	76.4%	42.0%	-119.5%	-707.8%	*****	*****
S/DEPTH=.5	.000	83.759	137.081	148.605	97.010	34.202	9.939	1.233	.000
	*****	85.4%	82.4%	76.0%	42.4%	-114.0%	-682.5%	*****	*****
S/DEPTH=.4	.000	80.887	133.345	146.036	97.311	34.811	10.167	1.263	.000
	*****	84.9%	81.9%	75.7%	42.8%	-109.6%	-662.8%	*****	*****
S/DEPTH=.3	.000	78.696	130.479	144.045	97.528	35.283	10.346	1.287	.000
	*****	84.6%	81.6%	75.4%	43.0%	-106.3%	-648.0%	*****	*****
S/DEPTH=.2	.000	77.152	128.452	142.626	97.674	35.620	10.473	1.304	.000
	*****	84.3%	81.3%	75.2%	43.2%	-104.0%	-637.7%	*****	*****
S/DEPTH=.1	.000	76.235	127.245	141.776	97.759	35.822	10.550	1.314	.000
	*****	84.1%	81.2%	75.1%	43.3%	-102.7%	-631.6%	*****	*****
S/DEPTH=.0	.000	75.930	126.843	141.493	97.786	35.889	10.576	1.318	.000
	*****	84.0%	81.1%	75.0%	43.4%	-102.2%	-629.6%	*****	*****

CASE 3=A

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=	.799	.723	.538	.329	.025	.135	.183	.199	.201	
	37.4%	31.9%	12.6%	31.5%	*****	195.5%	52.7%	92.2%	149.0%	
SURFACE	=150.663	=111.409	=31.027	31.241	52.493	22.243	6.742	.870	.218	
	87.0%	82.8%	41.6%	152.5%	121.7%	114.5%	*****	*****	*****	
S/DEPTH=1.1	=141.359	=106.710	=30.970							
	86.2%	82.0%	41.5%							
S/DEPTH=1.0	=125.457	=95.508	=29.482	27.733	52.206					
	85.8%	81.7%	43.8%	154.5%	120.5%					
S/DEPTH=.9	=110.478	=84.732	=27.535	22.919	46.317	20.677	6.351	.823	.206	
	85.5%	81.5%	45.9%	159.3%	120.8%	113.7%	*****	*****	*****	
S/DEPTH=.8	=95.303	=74.342	=25.217	18.803	40.630	18.503	5.719	.743	.185	
	85.3%	81.3%	47.6%	164.2%	121.1%	113.6%	*****	*****	*****	
S/DEPTH=.7	=82.824	=64.297	=22.602	15.276	35.128	16.283	5.061	.659	.164	
	85.0%	81.1%	48.9%	169.1%	121.3%	113.6%	*****	*****	*****	
S/DEPTH=.6	=69.938	=54.554	=19.749	12.242	29.792	14.025	4.381	.571	.142	
	84.8%	80.9%	49.9%	173.8%	121.5%	113.5%	*****	*****	*****	
S/DEPTH=.5	=57.547	=45.068	=16.710	9.614	24.601	11.734	3.681	.481	.119	
	84.7%	80.7%	50.7%	178.2%	121.7%	113.5%	*****	*****	*****	
S/DEPTH=.4	=45.563	=35.798	=13.527	7.314	19.532	9.417	2.964	.388	.096	
	84.5%	80.6%	51.3%	*****	121.9%	113.5%	*****	*****	*****	
S/DEPTH=.3	=33.897	=26.699	=10.234	5.269	14.562	7.080	2.235	.292	.073	
	84.4%	80.5%	51.7%	*****	122.0%	*****	*****	*****	*****	
S/DEPTH=.2	=22.468	=17.728	=6.864	3.411	9.666	4.728	1.495	.196	.049	
	84.3%	80.4%	*****	*****	122.1%	*****	*****	*****	*****	
S/DEPTH=.1	=11.195	=8.843	=3.444	1.675	4.820	2.367	.749	.098	.024	
	84.2%	80.4%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	=0.000	=0.000	=0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 3=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	.799	.723	.538	.329	.025	.135	.183	.199	.201
	37.4%	31.9%	12.6%	31.5%	*****	195.5%	52.7%	92.2%	149.0%
SURFACE	390.349	324.194	187.958	76.114	1.253	9.643	19.202	23.141	23.596
S/DEPTH=1.1	56.5%	49.3%	20.7%	65.1%	*****	*****	*****	260.1%	486.6%
S/DEPTH=1.0	326.134	276.728	168.526	71.766	1.252				
S/DEPTH=.9	52.8%	46.0%	19.3%	60.9%	*****	8.798	17.879	21.663	22.099
S/DEPTH=.8	287.865	244.968	150.421	64.882	1.220	7.695	15.838	19.248	19.642
S/DEPTH=.7	52.1%	45.4%	19.0%	59.5%	*****	6.638	13.816	16.836	17.185
S/DEPTH=.6	251.520	214.581	132.713	57.891	1.167	5.619	11.811	14.426	14.729
S/DEPTH=.5	51.4%	44.8%	18.7%	58.3%	*****	4.633	9.820	12.019	12.273
S/DEPTH=.4	216.805	185.366	115.358	50.812	1.090	3.674	7.841	9.613	9.818
S/DEPTH=.3	50.8%	44.2%	18.4%	57.3%	*****	2.737	5.872	7.208	7.363
S/DEPTH=.2	183.458	157.143	98.309	43.665	.988	1.816	3.911	4.805	4.909
S/DEPTH=.1	50.3%	43.8%	18.2%	56.5%	*****	.905	1.954	2.402	2.454
S/DEPTH=.0	151.241	129.745	81.524	36.462	.864	.000	.000	.000	.000
	49.9%	43.4%	18.0%	55.8%	*****				
	119.937	103.016	64.958	29.216	.718				
	49.6%	43.1%	17.8%	55.3%	*****				
	89.345	76.812	48.566	21.938	.555				
	49.3%	42.8%	17.6%	54.8%	*****				
	59.277	50.996	32.305	14.638	.378				
	49.1%	42.6%	17.6%	*****	*****				
	29.553	25.435	16.131	7.322	.192				
	49.0%	42.5%	*****	*****	*****				
	.000	.000	.000	.000	.000				
	*****	*****	*****	*****	*****				

CASE 3=A

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	.799	.723	.538	.329	.025	.135	.183	.199	.201
	37.4%	31.9%	12.6%	-31.5%	*****	195.5%	52.7%	-92.2%	-149.0%
SURFACE	.000	103.147	159.312	162.082	97.022	32.857	9.443	1.167	.000
	*****	86.9%	83.3%	76.0%	38.5%	-129.3%	-712.2%	*****	*****
S/DEPTH=1.1	.000	98.242	158.458						
	*****	86.3%	83.2%						
S/DEPTH=1.0	.000	86.820	140.912	151.037	96.575				
	*****	85.9%	82.8%	76.3%	42.0%				
S/DEPTH=.9	.000	76.167	124.315	134.288	87.167	30.655	8.903	1.104	.000
	*****	85.5%	82.5%	76.1%	42.2%	-115.2%	-687.3%	*****	*****
S/DEPTH=.8	.000	66.176	108.545	118.062	77.665	27.557	8.027	.997	.000
	*****	85.2%	82.2%	75.9%	42.5%	-112.4%	*****	*****	*****
S/DEPTH=.7	.000	56.751	93.490	102.301	68.088	24.350	7.112	.884	.000
	*****	85.0%	81.9%	75.7%	42.7%	-109.9%	*****	*****	*****
S/DEPTH=.6	.000	47.804	79.046	86.943	58.452	21.048	6.162	.766	.000
	*****	84.7%	81.7%	75.5%	42.9%	-107.9%	*****	*****	*****
S/DEPTH=.5	.000	39.255	65.113	71.930	48.770	17.664	5.181	.645	.000
	*****	84.5%	81.5%	75.4%	43.0%	-106.2%	*****	*****	*****
S/DEPTH=.4	.000	31.028	51.600	57.202	39.053	14.212	4.176	.520	.000
	*****	84.3%	81.4%	75.2%	43.1%	-104.8%	*****	*****	*****
S/DEPTH=.3	.000	23.054	38.415	42.703	29.311	10.706	3.150	.392	.000
	*****	84.2%	81.2%	75.1%	43.2%	-103.8%	*****	*****	*****
S/DEPTH=.2	.000	15.267	25.476	28.374	19.550	7.160	2.108	.263	.000
	*****	84.1%	81.2%	75.1%	43.3%	*****	*****	*****	*****
S/DEPTH=.1	.000	7.603	12.698	14.159	9.778	3.587	1.057	.132	.000
	*****	*****	81.1%	75.0%	43.3%	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=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	.799	.723	.538	.329	.025	.135	.183	.199	.201
	37.4%	31.9%	12.6%	-31.5%	*****	195.5%	52.7%	-92.2%	-149.0%
SURFACE	240.302	194.992	106.543	39.978	.471	-4.900	-9.345	-11.134	-11.339
	60.8%	53.2%	22.7%	-72.6%	*****	*****	*****	*****	*****
S/DEPTH=1.1	213.582	179.179	105.565						
	55.8%	49.1%	22.0%						
S/DEPTH=1.0	171.009	144.144	86.089	35.491	.470				
	54.5%	47.7%	20.2%	-64.4%	*****				
S/DEPTH=.9	134.636	113.960	68.887	28.952	.441	-4.109	-8.112	-9.758	-9.947
	53.5%	46.7%	19.7%	-62.2%	*****	*****	*****	*****	*****
S/DEPTH=.8	103.728	88.120	53.832	23.010	.396	-3.171	-6.377	-7.705	-7.858
	52.6%	45.8%	19.3%	-60.4%	*****	*****	*****	*****	*****
S/DEPTH=.7	77.679	66.201	40.812	17.702	.338	-2.377	-4.860	-5.896	-6.016
	51.7%	45.1%	18.9%	-58.9%	*****	*****	*****	*****	*****
S/DEPTH=.6	55.993	47.848	29.728	13.057	.272	-1.715	-3.556	-4.330	-4.419
	51.0%	44.4%	18.5%	-57.6%	*****	*****	*****	*****	*****
S/DEPTH=.5	38.266	32.773	20.495	9.096	.204	-1.172	-2.461	-3.006	-3.069
	50.4%	43.8%	18.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	24.172	20.740	13.038	5.835	.139	-0.741	-1.571	-1.923	-1.964
	49.9%	43.3%	17.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	13.460	11.565	7.300	3.288	.082	-0.412	-0.882	-1.081	-1.105
	49.5%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	5.939	5.108	3.233	1.463	.037	-0.182	-0.391	-0.481	-0.491
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	1.478	1.272	.807	.366	.010	-0.045	-0.098	-0.120	-0.123
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=A

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=	.799	.723	.538	.329	.025	-.135	-.183	-.199	-.201
	37.4%	31.9%	12.6%	-31.5%	*****	195.5%	52.7%	-92.2%	-149.0%
SURFACE	.000	63.693	93.407	89.313	48.408	15.486	4.372	.537	.000
	*****	88.3%	84.4%	76.3%	34.1%	-150.8%	*****	*****	*****
S/DEPTH=1.1	.000	58.197	92.465						
	*****	87.2%	84.2%						
S/DEPTH=1.0	.000	46.197	74.033	77.913	47.960				
	*****	86.6%	83.5%	76.9%	41.2%				
S/DEPTH=.9	.000	36.071	58.258	61.996	39.023	13.424	3.869	.479	.000
	*****	86.2%	83.1%	76.6%	41.7%	-122.1%	*****	*****	*****
S/DEPTH=.8	.000	27.573	44.848	48.201	30.947	10.792	3.125	.387	.000
	*****	85.8%	82.7%	76.3%	42.1%	-117.7%	*****	*****	*****
S/DEPTH=.7	.000	20.500	33.551	36.376	23.764	8.387	2.438	.303	.000
	*****	85.4%	82.3%	76.0%	42.4%	-113.9%	*****	*****	*****
S/DEPTH=.6	.000	14.681	24.158	26.390	17.501	6.241	1.821	.226	.000
	*****	85.0%	82.0%	75.7%	42.6%	-110.7%	*****	*****	*****
S/DEPTH=.5	.000	9.976	16.491	18.130	12.177	4.381	1.282	.159	.000
	*****	84.7%	81.7%	75.5%	42.9%	*****	*****	*****	*****
S/DEPTH=.4	.000	6.271	10.406	11.501	7.804	2.828	.830	.103	.000
	*****	84.5%	81.5%	75.3%	43.0%	*****	*****	*****	*****
S/DEPTH=.3	.000	3.479	5.790	6.425	4.395	1.601	.471	.059	.000
	*****	*****	81.3%	75.2%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	1.531	2.553	2.841	1.955	.715	.210	.026	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.380	.635	.708	.489	.179	.053	.007	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3aA

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	.799	.723	.538	.329	.025	.135	.183	.199	.201
	37.4X	31.9X	12.6X	=31.5X	*****	195.5X	52.7X	=92.2X	=149.0X
SURFACE	1.600	1.446	1.076	.659	.048	.271	.367	.399	.402
S/DEPTH=1.1	38.8X	33.2X	14.1X	=29.9X	*****	201.9X	57.9X	=93.0X	=153.7X
S/DEPTH=1.0	1.574	1.432	1.075						
S/DEPTH=.9	37.8X	32.6X	14.1X						
S/DEPTH=.8	1.532	1.400	1.066	.665	.049				
S/DEPTH=.7	36.4X	31.4X	13.8X	=28.1X	*****				
S/DEPTH=.6	1.494	1.371	1.056	.673	.065	.266	.365	.398	.402
S/DEPTH=.5	35.2X	30.4X	13.5X	=25.9X	*****	203.3X	58.1X	=92.7X	=153.7X
S/DEPTH=.4	1.462	1.346	1.048	.679	.079	.260	.364	.398	.402
S/DEPTH=.3	34.1X	29.4X	13.2X	=24.1X	*****	205.5X	58.3X	=91.7X	=152.2X
S/DEPTH=.2	1.433	1.324	1.040	.685	.091	.254	.362	.398	.402
S/DEPTH=.1	33.1X	28.6X	13.0X	=22.6X	=599.3X	207.5X	58.4X	=90.8X	=151.0X
S/DEPTH=.0	1.409	1.305	1.034	.689	.101	.250	.360	.398	.402
S/DEPTH=.9	32.2X	27.8X	12.7X	=21.3X	=525.7X	209.3X	58.6X	=90.0X	=149.9X
S/DEPTH=.8	1.388	1.289	1.028	.692	.110	.245	.359	.398	.402
S/DEPTH=.7	31.4X	27.2X	12.5X	=20.3X	=474.7X	210.9X	58.7X	=89.4X	=149.0X
S/DEPTH=.6	1.372	1.276	1.023	.695	.117	.242	.358	.397	.402
S/DEPTH=.5	30.8X	26.6X	12.3X	=19.6X	=438.8X	212.2X	58.8X	=88.8X	=148.3X
S/DEPTH=.4	1.359	1.266	1.019	.697	.122	.239	.357	.397	.402
S/DEPTH=.3	30.3X	26.2X	12.2X	=19.0X	=414.0X	213.3X	58.8X	=88.4X	=147.7X
S/DEPTH=.2	1.350	1.259	1.017	.698	.126	.238	.357	.397	.402
S/DEPTH=.1	29.9X	25.9X	12.1X	=18.6X	=397.6X	214.1X	58.9X	=88.1X	=147.3X
S/DEPTH=.0	1.345	1.255	1.015	.699	.128	.236	.356	.397	.402
S/DEPTH=.9	29.7X	25.7X	12.0X	=18.3X	=388.2X	214.6X	58.9X	=87.9X	=147.0X
S/DEPTH=.8	1.343	1.254	1.014	.700	.129	.236	.356	.397	.402
S/DEPTH=.7	29.6X	25.6X	12.0X	=18.3X	=385.2X	214.8X	58.9X	=87.8X	=146.9X

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 CONDITON 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	-.009	-.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

CASE 3-A

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%)

CASE 3-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	.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=B

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) =	.407701=01	X(2)/(H*T*G) =	.152007=01
X(3)/(H*T*G) =	.650076=02	X(4)/(H*T*G) =	.279776=02
X(5)/(H*T*G) =	.118037=02	X(6)/(H*T*G) =	.484126=03
X(7)/(H*T*G) =	.192278=03	X(8)/(H*T*G) =	.733987=04
X(9)/(H*T*G) =	.267143=04	X(10)/(H*T*G) =	.910232=05
X(11)/(H*T*G) =	.282677=05	X(12)/(H*T*G) =	.729308=06

CASE 3-B

TABLE I-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 =	.865	.692	.387	.153	-.061	-.123	-.133	-.135	-.135
	42.2%	28.9%	-21.3%	-183.0%	625.6%	205.2%	34.9%	-183.4%	-269.6%
SURFACE	23.368	18.376	9.838	3.626	-1.575	-2.964	-3.188	-3.232	-3.231
	45.1%	31.3%	-22.4%	-205.8%	620.9%	210.9%	31.2%	-197.5%	-287.6%
S/DEPTH=1.3	22.914								
	100.0%								
S/DEPTH=1.2	21.759	17.902							
	41.0%	29.4%							
S/DEPTH=1.1	20.749	17.279	9.864						
	38.6%	27.4%	-21.4%						
S/DEPTH=1.0	19.867	16.725	9.898	3.809					
	36.3%	25.9%	-20.2%	-187.9%					
S/DEPTH= .9	19.101	16.238	9.914	4.080	-1.455	-2.948	-3.186	-3.232	-3.231
	34.1%	23.7%	-19.3%	-167.2%	655.8%	210.5%	31.4%	-197.5%	-287.6%
S/DEPTH= .8	18.441	15.811	9.917	4.310	-1.312	-2.920	-3.182	-3.231	-3.231
	32.1%	22.0%	-18.6%	-151.5%	713.2%	211.0%	31.7%	-196.8%	-287.4%
S/DEPTH= .7	17.877	15.443	9.912	4.503	-1.185	-2.894	-3.178	-3.230	-3.231
	30.3%	20.6%	-18.1%	-139.6%	775.6%	211.4%	31.9%	-195.4%	-285.6%
S/DEPTH= .6	17.402	15.130	9.901	4.664	-1.075	-2.871	-3.174	-3.230	-3.231
	28.7%	19.2%	-17.7%	-130.4%	*****	211.8%	32.1%	-194.3%	-283.9%
S/DEPTH= .5	17.009	14.868	9.889	4.796	-.981	-2.852	-3.171	-3.230	-3.232
	27.3%	18.1%	-17.5%	-123.3%	*****	212.2%	32.3%	-193.3%	-282.6%
S/DEPTH= .4	16.695	14.658	9.875	4.900	-.905	-2.836	-3.168	-3.229	-3.232
	26.2%	17.2%	-17.3%	-117.9%	*****	212.5%	32.4%	-192.4%	-281.5%
S/DEPTH= .3	16.454	14.495	9.864	4.979	-.845	-2.823	-3.166	-3.229	-3.232
	25.2%	16.4%	-17.2%	-114.0%	*****	212.8%	32.5%	-191.8%	-280.6%
S/DEPTH= .2	16.284	14.380	9.854	5.034	-.802	-2.814	-3.165	-3.229	-3.232
	24.6%	15.9%	-17.1%	-111.3%	*****	213.0%	32.6%	-191.3%	-280.0%
S/DEPTH= .1	16.183	14.312	9.848	5.067	-.777	-2.808	-3.164	-3.229	-3.232
	24.2%	15.6%	-17.1%	-109.7%	*****	213.1%	32.7%	-191.1%	-279.6%
S/DEPTH= .0	16.150	14.289	9.846	5.077	-.768	-2.806	-3.163	-3.229	-3.232
	24.1%	15.5%	-17.1%	-109.2%	*****	213.1%	32.7%	-191.0%	-279.5%

CASE 3=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	.865	.692	.387	.153	.061	.123	.133	.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%	*****	*****	*****	*****	
S/DEPTH=1.3	.000									

S/DEPTH=1.2	.000	7.152								
	*****	90.9%								
S/DEPTH=1.1	.000	6.282	8.293							
	*****	90.4%	85.7%							
S/DEPTH=1.0	.000	5.493	7.343	5.884						
	*****	90.1%	85.4%	73.3%						
S/DEPTH=.9	.000	4.773	6.453	5.256	1.806	.323	.054	.002	.000	
	*****	89.7%	85.1%	73.2%	=19.6%	*****	*****	*****	*****	
S/DEPTH=.8	.000	4.112	5.614	4.639	1.631	.294	.049	.002	.000	
	*****	89.4%	84.8%	73.0%	=17.5%	*****	*****	*****	*****	
S/DEPTH=.7	.000	3.500	4.820	4.033	1.446	.263	.044	.002	.000	
	*****	89.2%	84.5%	72.9%	=15.8%	*****	*****	*****	*****	
S/DEPTH=.6	.000	2.929	4.064	3.437	1.254	.229	.038	.002	.000	
	*****	88.9%	84.3%	72.8%	=14.3%	*****	*****	*****	*****	
S/DEPTH=.5	.000	2.392	3.340	2.850	1.055	.194	.032	.001	.000	
	*****	88.7%	84.1%	72.7%	=13.1%	*****	*****	*****	*****	
S/DEPTH=.4	.000	1.883	2.642	2.270	.850	.157	.026	.001	.000	
	*****	88.5%	83.9%	72.6%	=12.1%	*****	*****	*****	*****	
S/DEPTH=.3	.000	1.394	1.964	1.697	.641	.119	.020	.001	.000	
	*****	88.4%	83.8%	72.5%	=11.4%	*****	*****	*****	*****	
S/DEPTH=.2	.000	.921	1.301	1.129	.429	.080	.013	.001	.000	
	*****	88.3%	83.7%	72.5%	*****	*****	*****	*****	*****	
S/DEPTH=.1	.000	.458	.648	.563	.215	.040	.007	.000	.000	
	*****	88.2%	83.6%	72.4%	*****	*****	*****	*****	*****	
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.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	.692	.387	.153	.061	.123	.133	.135	.135
	42.2%	28.9%	=21.3%	=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	=.017	.000
S/DEPTH=1.3	***** .000	94.9%	90.5%	78.8%	=21.6%	*****	*****	*****	*****
S/DEPTH=1.2	***** .000	207.527							
S/DEPTH=1.1	***** .000	94.5%	232.271						
S/DEPTH=1.0	***** .000	187.327	93.9%	90.3%					
S/DEPTH=.9	***** .000	170.015	217.744	158.832					
S/DEPTH=.8	***** .000	93.4%	89.7%	79.0%	46.990	7.963	1.379	=.004	.000
S/DEPTH=.7	***** .000	155.239	204.929	156.870	=13.4%	*****	*****	*****	*****
S/DEPTH=.6	***** .000	92.8%	89.1%	78.9%	49.853	8.667	1.477	.018	.000
S/DEPTH=.5	***** .000	142.702	193.733	154.773	=6.2%	*****	*****	*****	*****
S/DEPTH=.4	***** .000	92.2%	88.6%	78.7%	52.335	9.307	1.572	.036	.000
S/DEPTH=.3	***** .000	132.155	184.071	152.676	=.6%	*****	*****	*****	*****
S/DEPTH=.2	***** .000	91.6%	88.0%	78.6%	54.451	9.877	1.659	.050	.000
S/DEPTH=.1	***** .000	123.392	175.864	150.685	3.7%	*****	*****	*****	*****
S/DEPTH=.0	***** .000	91.1%	87.5%	78.4%	56.212	10.369	1.736	.061	.000
S/DEPTH=.0	***** .000	116.241	169.041	148.884	7.1%	*****	*****	*****	*****
S/DEPTH=.0	***** .000	90.6%	87.1%	78.2%	57.634	10.778	1.802	.069	.000
S/DEPTH=.0	***** .000	110.566	163.542	147.334	9.7%	*****	*****	*****	*****
S/DEPTH=.0	***** .000	90.1%	86.7%	78.1%	58.726	11.099	1.854	.075	.000
S/DEPTH=.0	***** .000	106.260	159.317	146.084	11.6%	*****	*****	*****	*****
S/DEPTH=.0	***** .000	89.8%	86.4%	77.9%	59.499	11.331	1.893	.080	.000
S/DEPTH=.0	***** .000	103.240	156.327	145.168	12.9%	*****	*****	*****	*****
S/DEPTH=.0	***** .000	89.5%	86.2%	77.8%	59.960	11.471	1.916	.082	.000
S/DEPTH=.0	***** .000	101.451	154.544	144.610	13.7%	*****	*****	*****	*****
S/DEPTH=.0	***** .000	89.3%	86.0%	77.8%	60.114	11.518	1.924	.083	.000
S/DEPTH=.0	***** .000	100.858	153.952	144.422	13.9%	*****	*****	*****	*****
S/DEPTH=.0	***** .000	89.2%	86.0%	77.8%					

CASE 3=8

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=	.865	.692	.387	.153	.061	.123	.133	.135	.135
	42.2%	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
	92.1%	84.1%	135.6%	115.4%	120.8%	*****	*****	*****	*****
S/DEPTH=1.3	=230.521								
	100.0%								
S/DEPTH=1.2	=206.896	=110.917							
	90.9%	83.3%							
S/DEPTH=1.1	=184.571	=102.582	42.306						
	90.6%	83.4%	138.0%						
S/DEPTH=1.0	=163.517	=93.689	31.924	91.014					
	90.3%	83.4%	145.8%	114.5%					
S/DEPTH=.9	=143.662	=84.460	23.764	77.711	43.831	8.595	1.319	.203	=.104
	90.1%	83.5%	155.4%	115.2%	118.0%	*****	*****	*****	*****
S/DEPTH=.8	=124.908	=75.051	17.411	65.821	39.144	7.826	1.224	.164	=.075
	89.9%	83.9%	167.1%	116.0%	117.9%	*****	*****	*****	*****
S/DEPTH=.7	=107.140	=65.565	12.524	55.138	34.373	6.992	1.110	.132	=.053
	89.7%	83.5%	181.6%	116.7%	117.9%	*****	*****	*****	*****
S/DEPTH=.6	=90.239	=56.070	8.819	45.474	29.541	6.100	.980	.106	=.038
	89.5%	83.4%	*****	117.4%	117.8%	*****	*****	*****	*****
S/DEPTH=.5	=74.077	=46.606	6.054	36.658	24.666	5.159	.836	.084	=.026
	89.4%	83.4%	*****	117.9%	117.8%	*****	*****	*****	*****
S/DEPTH=.4	=58.530	=37.192	4.025	28.529	19.760	4.177	.681	.064	=.018
	89.2%	83.4%	*****	118.4%	117.8%	*****	*****	*****	*****
S/DEPTH=.3	=43.473	=27.834	2.555	20.937	14.834	3.161	.518	.047	=.012
	89.1%	83.3%	*****	118.8%	117.8%	*****	*****	*****	*****
S/DEPTH=.2	=28.780	=18.525	1.487	13.741	9.896	2.121	.349	.030	=.007
	89.0%	83.3%	*****	119.1%	*****	*****	*****	*****	*****
S/DEPTH=.1	=14.329	=9.253	.680	6.806	4.949	1.065	.175	.015	=.003
	89.0%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=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=	.865	.692	.387	.153	-.061	-.123	-.133	-.135	-.135
	42.2%	28.9%	-21.3%	-183.0%	625.6%	205.2%	34.9%	-183.4%	-269.6%
SURFACE	457.311	310.437	112.381	22.861	-1.109	-7.792	-9.541	-9.884	-9.893
	59.4%	42.2%	-44.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	438.004								
	100.0%								
S/DEPTH=1.2	388.159	287.736							
	52.2%	37.6%							
S/DEPTH=1.1	343.025	256.812	107.478						
	50.4%	35.8%	-39.8%						
S/DEPTH=1.0	301.820	227.922	97.711	22.039					
	49.0%	34.5%	-39.1%	*****					
S/DEPTH=.9	263.889	200.773	87.896	20.480	-.934	-7.336	-9.051	-9.388	-9.398
	47.7%	33.3%	-38.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	228.682	175.109	78.063	18.717	-.743	-6.475	-8.038	-8.344	-8.354
	46.6%	32.3%	-38.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	195.734	150.702	68.232	16.772	-.587	-5.630	-7.027	-7.301	-7.310
	45.5%	31.4%	-37.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	164.643	127.347	58.418	14.668	-.460	-4.799	-6.018	-6.257	-6.266
	44.7%	30.6%	-37.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	135.062	104.863	48.626	12.429	-.354	-3.981	-5.012	-5.214	-5.222
	43.9%	29.9%	-37.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	106.682	83.080	38.861	10.076	-.266	-3.172	-4.007	-4.171	-4.178
	43.3%	29.4%	-37.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	79.230	61.843	29.120	7.635	-.189	-2.372	-3.004	-3.128	-3.133
	42.8%	29.0%	-37.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	52.453	41.009	19.401	5.127	-.122	-1.578	-2.002	-2.085	-2.089
	42.5%	28.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	26.118	20.439	9.696	2.974	-.059	-.788	-1.001	-1.043	-1.044
	42.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3-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	.865	.692	.387	.153	.061	.123	.133	.135	.135
	42.2%	28.9%	21.3%	183.0%	625.6%	205.2%	34.9%	183.4%	269.6%
SURFACE	.000	174.957	209.030	159.333	53.738	9.675	1.622	.051	.000
	*****	92.5%	87.5%	76.0%	=10.1%	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.2	.000	160.097							
	*****	91.8%							
S/DEPTH=1.1	.000	140.380	197.094						
	*****	91.4%	87.7%						
S/DEPTH=1.0	.000	122.535	174.608	149.856					
	*****	91.0%	87.5%	78.3%					
S/DEPTH=.9	.000	106.292	153.488	134.069	50.248	9.270	1.557	.051	.000
	*****	90.7%	87.2%	78.2%	6.3%	*****	*****	*****	*****
S/DEPTH=.8	.000	91.413	133.568	118.486	45.402	8.438	1.414	.050	.000
	*****	90.4%	86.9%	78.1%	8.0%	*****	*****	*****	*****
S/DEPTH=.7	.000	77.685	114.690	103.114	40.290	7.539	1.262	.048	.000
	*****	90.2%	86.7%	78.0%	9.5%	*****	*****	*****	*****
S/DEPTH=.6	.000	64.922	96.705	87.947	34.948	6.579	1.100	.043	.000
	*****	89.9%	86.5%	78.0%	10.7%	*****	*****	*****	*****
S/DEPTH=.5	.000	52.953	79.471	72.971	29.412	5.566	.930	.038	.000
	*****	89.7%	86.4%	77.9%	11.7%	*****	*****	*****	*****
S/DEPTH=.4	.000	41.625	62.853	58.162	23.716	4.508	.753	.031	.000
	*****	89.5%	86.2%	77.8%	12.5%	*****	*****	*****	*****
S/DEPTH=.3	.000	30.795	46.721	43.494	17.896	3.413	.570	.024	.000
	*****	89.4%	86.1%	77.8%	13.1%	*****	*****	*****	*****
S/DEPTH=.2	.000	20.330	30.949	28.934	11.982	2.291	.383	.016	.000
	*****	89.3%	86.0%	77.8%	13.5%	*****	*****	*****	*****
S/DEPTH=.1	.000	10.106	15.415	14.448	6.006	1.150	.192	.008	.000
	*****	*****	86.0%	77.8%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

138

CASE 3=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	.065	.092	.137	.153	.061	.123	.133	.135	.135
	42.2%	28.9%	=21.3%	=183.0%	625.6%	205.2%	34.9%	=183.4%	=269.6%
SURFACE	344.625	214.035	64.767	10.926	=.682	=3.779	=4.535	=4.684	=4.686
	67.4%	49.3%	=50.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.3	319.176								
	100.0%								
S/DEPTH=1.2	256.825	186.003							
	56.2%	41.7%							
S/DEPTH=1.1	204.887	150.423	59.249						
	53.7%	38.9%	=41.2%						
S/DEPTH=1.0	161.591	120.072	48.995	10.080					
	51.9%	37.2%	=40.2%	*****					
S/DEPTH=.9	125.532	94.268	39.671	8.600	=.517	=3.356	=4.083	=4.226	=4.229
	50.1%	35.6%	=39.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	95.586	72.442	31.313	7.103	=.354	=2.625	=3.221	=3.338	=3.342
	48.5%	34.1%	=38.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	70.897	54.127	23.940	5.646	=.237	=1.991	=2.463	=2.556	=2.559
	47.1%	32.8%	=38.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	50.634	38.938	17.560	4.280	=.154	=1.451	=1.807	=1.877	=1.880
	45.8%	31.7%	=38.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	34.353	26.565	12.175	3.049	=.096	=1.001	=1.254	=1.304	=1.305
	44.7%	30.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	21.574	16.758	7.780	1.992	=.056	=.637	=.802	=.834	=.835
	43.8%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	11.959	9.321	4.371	1.138	=.029	=.356	=.451	=.469	=.470
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	5.260	4.110	1.941	.511	=.012	=.158	=.200	=.209	=.209
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	1.307	1.023	.485	.129	=.003	=.039	=.050	=.052	=.052
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=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
ETA/HEIGHT	.865	.692	.387	.153	.061	.123	.133	.135	.135
	42.2%	28.9%	21.3%	183.0%	625.6%	205.2%	34.9%	183.4%	269.6%
SURFACE	.000	126.648	129.600	85.971	25.008	4.303	.723	.017	.000
S/DEPTH=1.3	*****	93.7%	88.0%	73.8%	34.1%	*****	*****	*****	*****
S/DEPTH=1.2	.000	108.297							
S/DEPTH=1.1	*****	92.7%							
S/DEPTH=1.0	.000	85.605	116.167						
S/DEPTH=.9	*****	92.1%	88.5%						
S/DEPTH=.8	.000	66.854	92.545	76.212					
S/DEPTH=.7	*****	91.7%	88.1%	78.5%					
S/DEPTH=.6	.000	51.411	72.470	61.213	21.735	3.928	.663	.017	.000
S/DEPTH=.5	*****	91.3%	87.7%	78.4%	2.1%	*****	*****	*****	*****
S/DEPTH=.4	.000	38.753	55.529	47.966	17.618	3.222	.541	.017	.000
S/DEPTH=.3	*****	90.9%	87.4%	78.3%	4.8%	*****	*****	*****	*****
S/DEPTH=.2	.000	28.449	41.362	36.435	13.786	2.548	.427	.015	.000
S/DEPTH=.1	*****	90.6%	87.1%	78.2%	7.1%	*****	*****	*****	*****
S/DEPTH=0	.000	20.145	29.665	26.575	10.315	1.924	.322	.012	.000
	*****	90.2%	86.8%	78.1%	9.0%	*****	*****	*****	*****
	.000	13.556	20.181	18.337	7.272	1.367	.229	.009	.000
	*****	89.9%	86.5%	78.0%	10.6%	*****	*****	*****	*****
	.000	8.454	12.698	11.672	4.710	.892	.149	.006	.000
	*****	89.7%	86.3%	77.9%	*****	*****	*****	*****	*****
	.000	4.660	7.048	6.537	2.674	.509	.085	.004	.000
	*****	*****	86.2%	*****	*****	*****	*****	*****	*****
	.000	2.041	3.103	2.896	1.196	.228	.038	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.506	.771	.723	.300	.057	.010	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

071

CASE 3-B

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=	.865	.692	.387	.153	.061	.123	.133	.135	.135
	42.2%	28.9%	=21.3%	=183.0%	625.6%	205.2%	34.9%	=183.4%	=269.6%
SURFACE	1.736	1.388	.776	.306	.123	.247	.267	.271	.271
	44.8%	31.9%	=16.9%	=176.1%	627.6%	218.9%	49.4%	=184.6%	=283.4%
S/DEPTH=1.3	1.709								
	100.0%								
S/DEPTH=1.2	1.639	1.363							
	41.5%	30.6%							
S/DEPTH=1.1	1.577	1.329	.784						
	39.6%	29.3%	=15.2%						
S/DEPTH=1.0	1.522	1.298	.796	.324					
	37.7%	28.0%	=12.9%	=158.4%					
S/DEPTH=.9	1.473	1.270	.804	.351	.112	.245	.267	.271	.271
	36.0%	26.7%	=11.1%	=137.5%	674.1%	219.4%	49.9%	=184.6%	=283.4%
S/DEPTH=.8	1.430	1.244	.811	.373	.099	.243	.267	.271	.271
	34.4%	25.6%	=9.7%	=122.0%	748.5%	220.6%	50.6%	=183.8%	=283.3%
S/DEPTH=.7	1.393	1.222	.816	.393	.087	.240	.266	.271	.271
	32.9%	24.5%	=8.7%	=110.4%	833.4%	221.6%	51.2%	=182.1%	=281.2%
S/DEPTH=.6	1.362	1.203	.819	.409	.077	.238	.266	.271	.271
	31.6%	23.5%	=7.8%	=101.5%	*****	222.6%	51.7%	=180.7%	=279.3%
S/DEPTH=.5	1.336	1.186	.821	.422	.068	.236	.266	.271	.271
	30.5%	22.7%	=7.2%	=94.7%	*****	223.4%	52.1%	=179.6%	=277.8%
S/DEPTH=.4	1.315	1.173	.823	.432	.061	.235	.265	.271	.271
	29.5%	22.0%	=6.8%	=89.6%	*****	224.1%	52.4%	=178.6%	=276.6%
S/DEPTH=.3	1.298	1.162	.824	.440	.056	.234	.265	.271	.271
	28.8%	21.5%	=6.4%	=85.9%	*****	224.7%	52.7%	=177.8%	=275.6%
S/DEPTH=.2	1.287	1.155	.825	.445	.052	.233	.265	.271	.271
	28.2%	21.1%	=6.2%	=83.3%	*****	225.1%	52.9%	=177.3%	=274.9%
S/DEPTH=.1	1.280	1.151	.825	.449	.049	.232	.265	.271	.271
	27.9%	20.9%	=6.1%	=81.9%	*****	225.3%	53.0%	=177.0%	=274.5%
S/DEPTH=.0	1.278	1.149	.825	.450	.048	.232	.265	.271	.271
	27.8%	20.8%	=6.0%	=81.4%	*****	225.4%	53.0%	=176.9%	=274.4%

171

CASE 3-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	.004	.008	.010	.011	.005	-.003	-.008	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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	(=65.8%)
(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 30C

17TH 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 = .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) =	-.150384=02	X(6)/(H*T*G) =	-.721618=03
X(7)/(H*T*G) =	-.338942=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		

CASE 3=C

TABLE I-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	.0	.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	25.834	16.288	6.288	1.292	=1.725	=2.281	=2.343	=2.352	=2.351
S/DEPTH=1.5	50.0%	21.9%	=92.9%	=763.5%	578.0%	244.4%	6.5%	=307.3%	=430.1%
S/DEPTH=1.4	25.382								
S/DEPTH=1.3	100.0%								
S/DEPTH=1.2	23.569								
S/DEPTH=1.1	100.0%								
S/DEPTH=1.0	22.002	15.982							
S/DEPTH=.9	41.2%	20.4%							
S/DEPTH=.8	20.648	15.376							
S/DEPTH=.7	37.8%	17.8%							
S/DEPTH=.6	19.478	14.830	6.413						
S/DEPTH=.5	34.6%	15.4%	=86.8%						
S/DEPTH=.4	18.470	14.342	6.641	1.411					
S/DEPTH=.3	31.5%	13.1%	=79.1%	=676.9%					
S/DEPTH=.2	17.603	13.908	6.822	1.725	=1.669	=2.276	=2.342	=2.352	=2.351
S/DEPTH=.1	28.5%	10.9%	=73.3%	=531.7%	584.6%	243.1%	6.7%	100.0%	100.0%
S/DEPTH=.0	16.863	13.528	6.965	1.997	=1.581	=2.264	=2.341	=2.352	=2.351
S/DEPTH=.9	25.8%	8.9%	=68.9%	=442.9%	609.1%	243.1%	7.2%	=307.3%	=430.1%
S/DEPTH=.8	16.237	13.198	7.076	2.228	=1.501	=2.254	=2.340	=2.351	=2.351
S/DEPTH=.7	23.3%	7.0%	=65.4%	=384.2%	633.6%	243.0%	7.5%	=305.9%	=429.9%
S/DEPTH=.6	15.713	12.916	7.162	2.423	=1.431	=2.245	=2.339	=2.351	=2.351
S/DEPTH=.5	21.0%	5.4%	=62.8%	=343.4%	657.5%	243.0%	7.9%	=304.2%	=427.7%
S/DEPTH=.4	15.283	12.681	7.228	2.584	=1.371	=2.237	=2.338	=2.351	=2.351
S/DEPTH=.3	19.1%	4.0%	=60.7%	=314.4%	679.9%	243.0%	8.2%	=302.8%	=425.9%
S/DEPTH=.2	14.940	12.491	7.277	2.712	=1.321	=2.231	=2.337	=2.351	=2.351
S/DEPTH=.1	17.5%	2.8%	=59.2%	=293.6%	699.9%	243.0%	8.4%	=301.7%	=424.4%
S/DEPTH=.0	14.679	12.344	7.312	2.811	=1.282	=2.226	=2.337	=2.351	=2.351
S/DEPTH=.9	16.2%	1.9%	=58.1%	=279.0%	*****	243.0%	8.6%	=300.8%	=423.2%
S/DEPTH=.8	14.495	12.240	7.336	2.880	=1.254	=2.222	=2.336	=2.351	=2.351
S/DEPTH=.7	15.3%	1.2%	=57.3%	=269.3%	*****	243.0%	8.7%	=300.1%	=422.3%
S/DEPTH=.6	14.386	12.178	7.349	2.921	=1.237	=2.220	=2.336	=2.351	=2.351
S/DEPTH=.5	14.7%	.8%	=56.9%	=263.8%	*****	243.1%	8.8%	=299.7%	=421.8%
S/DEPTH=.4	14.350	12.157	7.354	2.934	=1.231	=2.219	=2.336	=2.351	=2.351
S/DEPTH=.3	14.5%	.6%	=56.7%	=262.0%	*****	243.1%	8.8%	=299.6%	=421.7%

CASE 3=C

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=	.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	.000	10,016	8,296	4,604	.956	.112	.013	.000	.000	
	*****	92.9%	83.4%	57.1%	=199.9%	*****	*****	*****	*****	
S/DEPTH=1.5	.000									

S/DEPTH=1.4	.000									

S/DEPTH=1.3	.000	9,403								
	*****	92.5%								
S/DEPTH=1.2	.000	8,206								
	*****	92.0%								
S/DEPTH=1.1	.000	7,146	7,866							
	*****	91.6%	85.0%							
S/DEPTH=1.0	.000	6,199	6,978	4,456						
	*****	91.2%	84.6%	64.8%						
S/DEPTH=.9	.000	5,349	6,140	4,020	.914	.109	.012	.000	.000	
	*****	90.8%	84.3%	64.9%	=136.3%	*****	*****	*****	*****	
S/DEPTH=.8	.000	4,580	5,348	3,579	.835	.100	.011	.000	.000	
	*****	90.5%	84.0%	65.0%	=129.5%	*****	*****	*****	*****	
S/DEPTH=.7	.000	3,877	4,596	3,134	.748	.090	.010	.000	.000	
	*****	90.2%	83.7%	65.1%	=123.8%	*****	*****	*****	*****	
S/DEPTH=.6	.000	3,229	3,877	2,686	.654	.079	.009	.000	.000	
	*****	89.9%	83.5%	65.2%	=119.1%	*****	*****	*****	*****	
S/DEPTH=.5	.000	2,627	3,188	2,238	.554	.067	.008	.000	.000	
	*****	89.7%	83.3%	65.2%	=115.2%	*****	*****	*****	*****	
S/DEPTH=.4	.000	2,060	2,522	1,790	.449	.055	.006	.000	.000	
	*****	89.5%	83.1%	65.2%	*****	*****	*****	*****	*****	
S/DEPTH=.3	.000	1,522	1,875	1,342	.340	.042	.005	.000	.000	
	*****	89.4%	83.0%	65.3%	*****	*****	*****	*****	*****	
S/DEPTH=.2	.000	1,004	1,242	.894	.229	.028	.003	.000	.000	
	*****	89.2%	82.9%	65.3%	*****	*****	*****	*****	*****	
S/DEPTH=.1	.000	.499	.619	.447	.115	.014	.002	.000	.000	
	*****	*****	82.8%	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

147

CASE 3=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=	.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	.000	305.311	226.915	112.405	20.458	2.335	.245	=.010	.000
	*****	96.6%	90.9%	72.5%	=148.3%	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000	288.079							
	*****	96.4%							
S/DEPTH=1.2	.000	255.222							
	*****	96.0%							
S/DEPTH=1.1	.000	227.174	221.432						
	*****	95.5%	90.9%						
S/DEPTH=1.0	.000	203.304	210.088	113.765					
	*****	95.1%	90.4%	73.5%					
S/DEPTH=.9	.000	183.072	199.598	116.935	22.085	2.496	.266	=.008	.000
	*****	94.6%	90.0%	74.4%	=124.8%	*****	*****	*****	*****
S/DEPTH=.8	.000	166.021	190.090	119.161	24.660	2.852	.313	=.004	.000
	*****	94.1%	89.6%	75.1%	=100.1%	*****	*****	*****	*****
S/DEPTH=.7	.000	151.767	181.643	120.673	26.938	3.177	.354	=.000	.000
	*****	93.5%	89.2%	75.5%	=82.1%	*****	*****	*****	*****
S/DEPTH=.6	.000	139.993	174.301	121.655	28.915	3.466	.391	.003	.000
	*****	93.0%	88.8%	75.9%	=68.8%	*****	*****	*****	*****
S/DEPTH=.5	.000	130.435	168.086	122.260	30.589	3.716	.422	.005	.000
	*****	92.6%	88.4%	76.1%	=58.8%	*****	*****	*****	*****
S/DEPTH=.4	.000	122.885	163.007	122.605	31.958	3.924	.448	.007	.000
	*****	92.1%	88.1%	76.2%	=51.5%	*****	*****	*****	*****
S/DEPTH=.3	.000	117.176	159.063	122.784	33.022	4.088	.468	.008	.000
	*****	91.8%	87.9%	76.3%	=46.2%	*****	*****	*****	*****
S/DEPTH=.2	.000	113.184	156.251	122.865	33.782	4.207	.482	.009	.000
	*****	91.5%	87.7%	76.4%	=42.7%	*****	*****	*****	*****
S/DEPTH=.1	.000	110.822	154.567	122.895	34.238	4.279	.491	.009	.000
	*****	91.3%	87.6%	76.4%	=40.6%	*****	*****	*****	*****
S/DEPTH=.0	.000	110.041	154.005	122.902	34.389	4.303	.494	.010	.000
	*****	91.3%	87.5%	76.5%	=39.9%	*****	*****	*****	*****

CASE 3=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=	.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	=285.378	=52.700	118.007	111.868	29.909	3.681	.425	.044	.020
	93.7%	66.9%	113.6%	112.5%	126.9%	*****	*****	*****	*****
S/DEPTH=1.5	=281.097								
	100.0%								
S/DEPTH=1.4	=260.612								
	100.0%								
S/DEPTH=1.3	=238.572	=57.133							
	92.5%	69.5%							
S/DEPTH=1.2	=216.113	=62.870							
	92.3%	74.1%							
S/DEPTH=1.1	=193.925	=64.690	107.045						
	92.1%	76.9%	113.0%						
S/DEPTH=1.0	=172.403	=63.677	86.489	106.739					
	92.0%	78.7%	114.7%	110.5%					
S/DEPTH= .9	=151.749	=60.623	69.589	92.635	28.463	3.566	.411	.040	.017
	91.8%	79.9%	116.4%	110.9%	121.6%	*****	*****	*****	*****
S/DEPTH= .8	=132.037	=56.106	55.676	79.397	25.803	3.271	.375	.032	.011
	91.6%	80.6%	118.2%	111.3%	121.3%	*****	*****	*****	*****
S/DEPTH= .7	=113.258	=50.547	44.194	67.520	22.955	2.942	.336	.026	.007
	91.4%	81.2%	120.1%	111.7%	121.0%	*****	*****	*****	*****
S/DEPTH= .6	=95.353	=44.253	34.676	56.293	19.950	2.582	.295	.020	.005
	91.3%	81.6%	122.0%	112.0%	120.7%	*****	*****	*****	*****
S/DEPTH= .5	=78.226	=37.444	26.728	45.795	16.814	2.195	.250	.016	.003
	91.1%	81.8%	123.8%	112.3%	120.5%	*****	*****	*****	*****
S/DEPTH= .4	=61.766	=30.283	20.010	35.907	13.573	1.785	.203	.012	.002
	91.0%	82.0%	125.4%	112.6%	*****	*****	*****	*****	*****
S/DEPTH= .3	=45.846	=22.883	14.229	26.505	10.249	1.355	.155	.009	.001
	90.9%	82.2%	*****	112.8%	*****	*****	*****	*****	*****
S/DEPTH= .2	=30.336	=15.331	9.123	17.468	6.866	.912	.104	.006	.001
	90.8%	82.3%	*****	112.9%	*****	*****	*****	*****	*****
S/DEPTH= .1	=15.099	=7.686	4.454	8.674	3.443	.458	.052	.003	.000
	90.8%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=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/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	494,690	246,857	57,353	6,257	=1,896	=4,731	=5,145	=5,201	=5,200
	59.2%	21.1%	=205.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	479,745								
	100.0%								
S/DEPTH=1.4	419,920								
	100.0%								
S/DEPTH=1.3	368,067	234,674							
	45.2%	17.0%							
S/DEPTH=1.2	322,645	210,103							
	42.2%	13.9%							
S/DEPTH=1.1	282,438	187,306	55,487						
	39.8%	11.9%	=170.7%						
S/DEPTH=1.0	246,477	166,043	51,221	6,194					
	37.5%	10.1%	=165.4%	*****					
S/DEPTH=.9	213,980	146,102	46,685	5,946	=1,729	=4,510	=4,920	=4,976	=4,975
	35.5%	8.4%	=161.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	184,311	127,294	41,929	5,598	=1,465	=3,995	=4,372	=4,423	=4,422
	33.7%	6.9%	=157.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	156,947	109,447	36,997	5,149	=1,228	=3,484	=3,824	=3,870	=3,869
	32.1%	5.5%	=154.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	131,451	92,408	31,925	4,607	=1,014	=2,978	=3,277	=3,317	=3,317
	30.7%	4.4%	=152.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	107,453	76,037	26,746	3,979	=,818	=2,476	=2,730	=2,764	=2,764
	29.5%	3.4%	=150.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	84,637	60,206	21,485	3,276	=,637	=1,977	=2,183	=2,211	=2,211
	28.5%	2.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	62,723	44,795	16,163	2,512	=,468	=1,480	=1,637	=1,658	=1,658
	27.8%	1.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	41,462	29,694	10,798	1,701	=,307	=,986	=1,091	=1,106	=1,106
	27.3%	1.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	20,627	14,797	5,405	,858	=,152	=,493	=,546	=,553	=,553
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	,000	,000	,000	,000	,000	,000	,000	,000	,000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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%	545.6%	231.3%	14.5%	275.8%	390.6%
SURFACE	.000	225.596	204.711	124.949	28.491	3.417	.386	.003	.000
	*****	94.4%	87.7%	70.3%	=104.3%	*****	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000	211.716							
	*****	94.0%							
S/DEPTH=1.2	.000	184.594							
	*****	93.6%							
S/DEPTH=1.1	.000	160.511	194.344						
	*****	93.3%	88.9%						
S/DEPTH=1.0	.000	139.020	172.774	121.048					
	*****	93.0%	88.7%	75.7%					
S/DEPTH= .9	.000	119.729	152.298	109.504	27.257	3.314	.375	.004	.000
	*****	92.7%	88.5%	75.9%	=60.7%	*****	*****	*****	*****
S/DEPTH= .8	.000	102.299	132.822	97.692	24.917	3.046	.346	.004	.000
	*****	92.4%	88.3%	76.1%	=55.9%	*****	*****	*****	*****
S/DEPTH= .7	.000	86.432	114.244	85.695	22.335	2.744	.313	.005	.000
	*****	92.2%	88.1%	76.2%	=51.9%	*****	*****	*****	*****
S/DEPTH= .6	.000	71.863	96.456	73.575	19.539	2.412	.276	.004	.000
	*****	91.9%	88.0%	76.3%	=48.5%	*****	*****	*****	*****
S/DEPTH= .5	.000	58.359	79.346	61.377	16.562	2.053	.235	.004	.000
	*****	91.7%	87.8%	76.3%	=45.8%	*****	*****	*****	*****
S/DEPTH= .4	.000	45.709	62.801	49.132	13.432	1.670	.191	.003	.000
	*****	91.6%	87.7%	76.4%	=43.7%	*****	*****	*****	*****
S/DEPTH= .3	.000	33.721	46.707	36.861	10.180	1.269	.146	.003	.000
	*****	91.5%	87.6%	76.4%	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	22.217	30.951	24.578	6.837	.854	.098	.002	.000
	*****	91.4%	87.6%	76.4%	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	11.030	15.419	12.290	3.434	.429	.049	.001	.000
	*****	*****	87.5%	76.4%	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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
	70.8%	30.4%	=261.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	431.682								
	100.0%								
S/DEPTH=1.4	344.861								
	100.0%								
S/DEPTH=1.3	274.800	167.009							
	51.8%	23.6%							
S/DEPTH=1.2	217.975	136.280							
	47.9%	19.2%							
S/DEPTH=1.1	171.698	110.048	29.316						
	44.8%	16.5%	=185.4%						
S/DEPTH=1.0	133.907	87.711	24.839	2.516					
	41.9%	14.0%	=176.6%	*****					
S/DEPTH=.9	103.008	68.757	20.531	2.281	.862	=2.047	=2.216	=2.239	=2.239
	39.2%	11.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	77.769	52.761	16.490	1.986	.638	=1.609	=1.750	=1.769	=1.769
	36.7%	9.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	57.228	39.369	12.792	1.651	.459	=1.226	=1.339	=1.354	=1.354
	34.5%	7.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	40.642	28.288	9.497	1.299	.320	=.897	=.983	=.995	=.995
	32.5%	5.9%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	27.432	19.278	6.649	.954	.212	=.621	=.683	=.691	=.691
	30.8%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	17.156	12.150	4.282	.638	.130	=.396	=.437	=.442	=.442
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	9.480	6.754	2.420	.371	.071	=.222	=.246	=.249	=.249
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	4.160	2.976	1.079	.169	.031	=.099	=.109	=.111	=.111
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	1.032	.740	.270	.043	.008	=.025	=.027	=.028	=.028
	*****	*****	*****	*****	*****	*****	*****	*****	*****
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	.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	.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						
	*****	94.0%	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%	88.9%	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	29.545	22.041	5.698	.698	.080	.001	.000
	*****	92.2%	88.2%	76.2%	*****	*****	*****	*****	*****
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
	48.0%	22.6%	=76.9%	=604.4%	549.8%	257.1%	43.3%	=278.4%	=417.7%
S/DEPTH=1.5	1.781								
	100.0%								
S/DEPTH=1.4	1.695								
	100.0%								
S/DEPTH=1.3	1.616	1.186							
	42.1%	22.0%							
S/DEPTH=1.2	1.543	1.167							
	39.7%	21.2%							
S/DEPTH=1.1	1.478	1.147	.520						
	37.3%	20.2%	=69.6%						
S/DEPTH=1.0	1.420	1.126	.551	.130					
	35.1%	19.1%	=59.4%	=531.7%					
S/DEPTH=.9	1.368	1.106	.575	.162	.139	.197	.204	.204	.204
	33.0%	18.1%	=51.9%	=405.9%	562.6%	257.7%	44.0%	100.0%	100.0%
S/DEPTH=.8	1.323	1.088	.595	.189	.131	.196	.203	.204	.204
	30.9%	17.0%	=46.2%	=331.1%	591.8%	258.6%	45.1%	=278.5%	=417.8%
S/DEPTH=.7	1.284	1.071	.611	.213	.123	.195	.203	.204	.204
	29.1%	16.0%	=41.9%	=282.4%	621.5%	259.5%	46.2%	=276.6%	=417.5%
S/DEPTH=.6	1.251	1.056	.623	.232	.116	.194	.203	.204	.204
	27.5%	15.0%	=38.7%	=249.0%	651.0%	260.3%	47.1%	=274.6%	=415.0%
S/DEPTH=.5	1.223	1.042	.633	.249	.110	.193	.203	.204	.204
	26.0%	14.2%	=36.2%	=225.5%	679.2%	261.0%	47.9%	=272.8%	=412.8%
S/DEPTH=.4	1.201	1.032	.641	.262	.105	.193	.203	.204	.204
	24.8%	13.5%	=34.3%	=208.7%	704.9%	261.6%	48.5%	=271.4%	=411.0%
S/DEPTH=.3	1.184	1.023	.646	.271	.102	.192	.203	.204	.204
	23.9%	12.9%	=33.0%	=196.9%	726.7%	262.0%	49.0%	=270.2%	=409.7%
S/DEPTH=.2	1.172	1.017	.650	.278	.099	.192	.203	.204	.204
	23.2%	12.5%	=32.1%	=189.2%	743.5%	262.4%	49.3%	=269.4%	=408.7%
S/DEPTH=.1	1.165	1.013	.652	.283	.097	.192	.203	.204	.204
	22.7%	12.3%	=31.5%	=184.7%	754.0%	262.6%	49.5%	=269.0%	=408.1%
S/DEPTH=.0	1.162	1.012	.653	.284	.097	.192	.203	.204	.204
	22.6%	12.2%	=31.4%	=183.3%	757.6%	262.6%	49.6%	=268.8%	=407.9%

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 CONDITON 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

CASE 3=C

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)
.604 (=142.0%)
- (9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION
DEFINED IN EQUATION (45)
.166 (=188.0%)

CASE 30C

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=0

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 = .007753 DPT/LO = .010000
 H/DPT = .775326
 L/LO = .308203 PSI/(G*H*T) = .001185

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	= .258552=01	X(2)/(H*T*G) =	= .109137=01
X(3)/(H*T*G) =	= .557257=02	X(4)/(H*T*G) =	= .296328=02
X(5)/(H*T*G) =	= .157702=02	X(6)/(H*T*G) =	= .833384=03
X(7)/(H*T*G) =	= .434048=03	X(8)/(H*T*G) =	= .223528=03
X(9)/(H*T*G) =	= .112953=03	X(10)/(H*T*G) =	= .565075=04
X(11)/(H*T*G) =	= .276158=04	X(12)/(H*T*G) =	= .134811=04
X(13)/(H*T*G) =	= .635123=05	X(14)/(H*T*G) =	= .306023=05
X(15)/(H*T*G) =	= .139533=05	X(16)/(H*T*G) =	= .712364=06
X(17)/(H*T*G) =	= .348364=06	X(18)/(H*T*G) =	= .247076=06
X(19)/(H*T*G) =	= .179655=06		

CASE 3=D

TABLE I=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=	.922	.460	.154	.015	-.064	-.077	-.078	-.078	-.078	-.078
	45.8%	=7.1%	=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	
	56.0%	.9%	=220.0%	*****	655.9%	290.7%	=25.0%	=442.7%	=609.2%	
S/DEPTH=1.7	29.127									
	100.0%									
S/DEPTH=1.6	26.292									
	100.0%									
S/DEPTH=1.5	23.908									
	100.0%									
S/DEPTH=1.4	21.894									
	40.5%									
S/DEPTH=1.3	20.188	12.724								
	35.9%	.1%								
S/DEPTH=1.2	18.739	12.340								
	31.5%	=2.4%								
S/DEPTH=1.1	17.507	11.975	3.889							
	27.2%	=4.8%	=208.0%							
S/DEPTH=1.0	16.459	11.635	4.210	.290						
	23.1%	=7.2%	=182.6%	*****						
S/DEPTH=.9	15.570	11.325	4.474	.561	=1.461	=1.728	=1.752	=1.759	=1.750	
	19.2%	=9.4%	=164.3%	*****	*****	288.5%	=24.7%	100.0%	100.0%	
S/DEPTH=.8	14.818	11.045	4.691	.798	=1.408	=1.725	=1.752	=1.758	=1.750	
	15.5%	=11.6%	=150.8%	*****	*****	287.8%	=24.0%	=443.0%	100.0%	
S/DEPTH=.7	14.188	10.798	4.866	1.002	=1.360	=1.721	=1.752	=1.757	=1.751	
	12.2%	=13.6%	=140.6%	*****	*****	287.3%	=23.4%	=443.0%	=609.1%	
S/DEPTH=.6	13.665	10.585	5.007	1.176	=1.318	=1.718	=1.752	=1.757	=1.751	
	9.2%	=15.4%	=132.9%	*****	*****	286.9%	=22.9%	=440.9%	=608.7%	
S/DEPTH=.5	13.238	10.404	5.118	1.320	=1.282	=1.715	=1.752	=1.757	=1.751	
	6.6%	=17.0%	=127.0%	*****	*****	286.6%	=22.5%	=439.1%	=606.1%	
S/DEPTH=.4	12.900	10.257	5.203	1.437	=1.252	=1.712	=1.752	=1.757	=1.751	
	4.4%	=18.4%	=122.6%	*****	*****	286.4%	=22.2%	=437.5%	=604.0%	
S/DEPTH=.3	12.643	10.143	5.267	1.527	=1.229	=1.710	=1.752	=1.757	=1.751	
	2.7%	=19.4%	=119.5%	=597.8%	*****	286.2%	=21.9%	=436.4%	=602.3%	
S/DEPTH=.2	12.463	10.061	5.310	1.590	=1.212	=1.708	=1.752	=1.757	=1.752	
	1.5%	=20.2%	=117.3%	=568.9%	*****	286.0%	=21.7%	=435.5%	=601.1%	
S/DEPTH=.1	12.356	10.012	5.336	1.628	=1.202	=1.708	=1.752	=1.757	=1.752	
	.7%	=20.7%	=116.1%	=552.7%	*****	286.0%	=21.6%	=435.0%	=600.4%	
S/DEPTH=.0	12.320	9.996	5.344	1.640	=1.199	=1.707	=1.752	=1.757	=1.752	
	.4%	=20.8%	=115.7%	=547.5%	*****	285.9%	=21.6%	=434.9%	=600.2%	

CASE 3=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=	.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	10.402	6.658	3.112	.495	.037	.009	.004	.000
S/DEPTH=1.7	***** .000	92.7%	77.8%	32.1%	*****	*****	*****	*****	*****
S/DEPTH=1.6	***** .000								
S/DEPTH=1.5	***** .000								
S/DEPTH=1.4	***** .000								
S/DEPTH=1.3	***** .000	9.599							
S/DEPTH=1.2	***** .000	92.6%							
S/DEPTH=1.1	***** .000	8.323							
S/DEPTH=1.0	***** .000	92.1%	6.520						
S/DEPTH=.9	***** .000	7.204	81.8%	3.082					
S/DEPTH=.8	***** .000	91.7%	5.824	49.1%					
S/DEPTH=.7	***** .000	6.216	81.6%	2.809	.478	.037	.008	.004	.000
S/DEPTH=.6	***** .000	91.2%	49.8%	49.8%	*****	*****	*****	*****	*****
S/DEPTH=.5	***** .000	5.337	4.510	2.523	.440	.035	.007	.003	.000
S/DEPTH=.4	***** .000	90.8%	81.3%	50.4%	*****	*****	*****	*****	*****
S/DEPTH=.3	***** .000	4.549	3.891	2.226	.396	.033	.005	.002	.000
S/DEPTH=.2	***** .000	90.5%	80.8%	50.9%	*****	*****	*****	*****	*****
S/DEPTH=.1	***** .000	3.837	3.293	1.920	.349	.029	.004	.001	.000
S/DEPTH=.0	***** .000	90.1%	80.6%	51.3%	*****	*****	*****	*****	*****
	***** .000	3.185	2.714	1.608	.297	.025	.003	.001	.000
	***** .000	89.8%	80.4%	51.6%	*****	*****	*****	*****	*****
	***** .000	2.584	2.152	1.292	.241	.021	.003	.000	.000
	***** .000	89.5%	80.2%	51.8%	*****	*****	*****	*****	*****
	***** .000	2.022	1.602	.972	.183	.016	.002	.000	.000
	***** .000	89.3%	80.1%	52.0%	*****	*****	*****	*****	*****
	***** .000	1.491	1.063	.649	.123	.011	.001	.000	.000
	***** .000	89.1%	80.0%	52.1%	*****	*****	*****	*****	*****
	***** .000	.982	.530	.325	.062	.005	.001	.000	.000
	***** .000	89.0%	79.9%	52.2%	*****	*****	*****	*****	*****
	***** .000	.487	.000	.000	.000	.000	.000	.000	.000
	***** .000	88.9%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	***** .000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CASE 3=0

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	.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
	*****	97.3%	89.8%	61.9%	*****	*****	*****	*****	*****
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	315.147							
	*****	97.1%							
S/DEPTH=1.2	.000	277.759							
	*****	96.8%							
S/DEPTH=1.1	.000	245.711	179.579						
	*****	96.4%	90.0%						
S/DEPTH=1.0	.000	218.392	175.066	74.144					
	*****	96.0%	89.9%	63.6%					
S/DEPTH=.9	.000	195.240	170.018	79.559	11.089	.241	.672	.488	.000
	*****	95.6%	89.7%	66.4%	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	175.752	164.836	83.895	12.859	.632	.495	.329	.000
	*****	95.1%	89.4%	68.4%	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	159.493	159.814	87.328	14.440	.938	.380	.221	.000
	*****	94.6%	89.2%	69.8%	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	146.092	155.165	90.009	15.825	1.179	.306	.149	.000
	*****	94.2%	88.9%	70.9%	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	135.239	151.042	92.067	17.008	1.370	.259	.100	.000
	*****	93.8%	88.7%	71.7%	164.4%	*****	*****	*****	*****
S/DEPTH=.4	.000	126.684	147.554	93.610	17.983	1.517	.229	.067	.000
	*****	93.4%	88.5%	72.3%	149.1%	*****	*****	*****	*****
S/DEPTH=.3	.000	120.227	144.777	94.722	18.746	1.628	.211	.046	.000
	*****	93.0%	88.3%	72.7%	138.2%	*****	*****	*****	*****
S/DEPTH=.2	.000	115.719	142.761	95.471	19.294	1.705	.201	.033	.000
	*****	92.8%	88.2%	73.0%	131.0%	*****	*****	*****	*****
S/DEPTH=.1	.000	113.056	141.540	95.902	19.623	1.750	.195	.026	.000
	*****	92.6%	88.1%	73.1%	126.8%	*****	*****	*****	*****
S/DEPTH=.0	.000	112.174	141.131	96.043	19.733	1.765	.194	.024	.000
	*****	92.6%	88.0%	73.2%	125.5%	*****	*****	*****	*****

CASE 3=0

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
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
	93.4%	143.2%	110.4%	112.8%	131.5%	*****	*****	*****	*****
S/DEPTH=1.7	=254.797								
	100.0%								
S/DEPTH=1.6	=270.780								
	100.0%								
S/DEPTH=1.5	=268.637								
	100.0%								
S/DEPTH=1.4	=256.168								
	93.6%								
S/DEPTH=1.3	=238.139	19.551							
	93.5%	176.7%							
S/DEPTH=1.2	=217.442	=2.890							
	93.5%	*****							
S/DEPTH=1.1	=195.800	=17.401	134.063						
	93.3%	26.7%	108.8%						
S/DEPTH=1.0	=174.214	=26.149	111.124	94.484					
	93.2%	55.6%	109.7%	109.8%					
S/DEPTH=.9	=153.228	=30.704	91.607	83.082	18.031	1.169	=,158	.244	=,024
	93.0%	65.9%	110.6%	110.1%	124.5%	*****	*****	*****	*****
S/DEPTH=.8	=133.108	=32.207	75.001	72.254	16.271	1.185	=,076	.167	=,064
	92.8%	71.0%	111.5%	110.3%	124.3%	*****	*****	*****	*****
S/DEPTH=.7	=113.945	=31.489	60.843	61.960	14.451	1.136	=,024	.115	=,080
	92.6%	74.0%	112.4%	110.6%	124.1%	*****	*****	*****	*****
S/DEPTH=.6	=95.726	=29.160	48.715	52.152	12.561	1.041	.006	.079	=,081
	92.5%	75.9%	113.3%	110.8%	*****	*****	*****	*****	*****
S/DEPTH=.5	=78.372	=25.671	38.244	42.774	10.598	.911	.022	.054	=,074
	92.3%	77.2%	114.2%	111.0%	*****	*****	*****	*****	*****
S/DEPTH=.4	=61.769	=21.352	29.094	33.764	8.568	.756	.027	.037	=,062
	92.2%	78.0%	114.9%	111.1%	*****	*****	*****	*****	*****
S/DEPTH=.3	=45.781	=16.454	20.963	25.054	6.480	.582	.026	.024	=,048
	92.1%	78.6%	115.5%	111.3%	*****	*****	*****	*****	*****
S/DEPTH=.2	=30.259	=11.167	13.574	16.574	4.346	.395	.019	.015	=,032
	92.0%	*****	116.0%	111.4%	*****	*****	*****	*****	*****
S/DEPTH=.1	=15.051	=5.640	6.668	8.248	2.181	.199	.010	.007	=,016
	92.0%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=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	=	.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		535.366	165.093	27.110	1.607	=1.607	=2.768	=2.886	=2.902	=2.882
		59.3%	=27.4%	=596.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7		522.294								
		100.0%								
S/DEPTH=1.6		445.675								
		100.0%								
S/DEPTH=1.5		382.798								
		100.0%								
S/DEPTH=1.4		330.447								
		34.1%								
S/DEPTH=1.3		286.246	155.780							
		29.0%	=26.5%							
S/DEPTH=1.2		248.421	140.077							
		24.9%	=29.1%							
S/DEPTH=1.1		215.623	125.301	26.823						
		21.1%	=31.7%	=460.0%						
S/DEPTH=1.0		186.820	111.370	25.178	1.606					
		17.6%	=34.1%	*****	*****					
S/DEPTH=.9		161.206	98.196	23.289	1.587	=1.498	=2.647	=2.763	=2.779	=2.760
		14.4%	=36.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8		138.147	85.691	21.185	1.540	=1.292	=2.349	=2.456	=2.470	=2.453
		11.5%	=38.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7		117.138	73.768	18.899	1.458	=1.101	=2.052	=2.149	=2.161	=2.147
		9.0%	=40.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6		97.765	62.343	16.459	1.339	-.921	=1.756	=1.842	=1.852	=1.840
		6.8%	=41.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5		79.690	51.335	13.894	1.182	-.752	=1.462	=1.535	=1.543	=1.534
		4.9%	=43.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4		62.628	40.669	11.229	.991	-.592	=1.168	=1.228	=1.234	=1.227
		3.4%	=44.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3		46.334	30.271	8.487	.771	-.438	-.875	-.921	-.926	-.920
		2.2%	=45.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2		30.593	20.071	5.688	.527	-.289	-.583	-.614	-.617	-.614
		1.4%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1		15.208	10.003	2.853	.268	-.144	-.292	-.307	-.309	-.307
		*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0		.000	.000	.000	.000	.000	.000	.000	.000	.000
		*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=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	.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	242.445	174.736	90.673	15.668	1.182	.298	.142	.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	223.967							
	*****	95.0%							
S/DEPTH=1.2	.000	194.369							
	*****	94.7%							
S/DEPTH=1.1	.000	168.237	171.259						
	*****	94.4%	88.9%						
S/DEPTH=1.0	.000	145.069	153.520	89.816					
	*****	94.2%	88.8%	70.9%					
S/DEPTH= .9	.000	124.420	136.263	82.121	15.134	1.176	.269	.121	.000
	*****	93.9%	88.7%	71.4%	=167.8%	*****	*****	*****	*****
S/DEPTH= .8	.000	105.899	119.521	73.940	13.936	1.131	.211	.081	.000
	*****	93.6%	88.6%	71.8%	=157.9%	*****	*****	*****	*****
S/DEPTH= .7	.000	89.162	103.291	65.372	12.569	1.052	.168	.054	.000
	*****	93.4%	88.5%	72.2%	=149.7%	*****	*****	*****	*****
S/DEPTH= .6	.000	73.905	87.546	56.499	11.054	.946	.134	.035	.000
	*****	93.2%	88.4%	72.5%	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	59.859	72.240	47.391	9.411	.818	.106	.023	.000
	*****	93.0%	88.3%	72.7%	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	46.781	57.316	38.103	7.659	.673	.082	.015	.000
	*****	92.9%	88.2%	72.9%	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	34.452	42.706	28.683	5.821	.516	.060	.009	.000
	*****	92.7%	88.1%	73.0%	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	22.670	28.335	19.171	3.917	.349	.039	.005	.000
	*****	92.6%	88.1%	73.1%	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	11.247	14.127	9.600	1.970	.176	.019	.002	.000
	*****	*****	88.1%	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=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	.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	600.213	122.239	13.755	.558	.622	1.308	1.356	1.364	1.354
	74.3%	21.3%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.7	577.891								
	100.0%								
S/DEPTH=1.6	451.338								
	100.0%								
S/DEPTH=1.5	353.780								
	100.0%								
S/DEPTH=1.4	277.794								
	44.5%								
S/DEPTH=1.3	218.064	109.867							
	38.4%	18.6%							
S/DEPTH=1.2	170.735	90.231							
	33.5%	22.1%							
S/DEPTH=1.1	132.980	73.231	13.437						
	28.7%	25.5%	*****						
S/DEPTH=1.0	102.707	58.596	11.712	.557					
	24.3%	28.8%	*****	*****					
S/DEPTH=.9	78.350	46.075	9.919	.539	.721	1.196	1.244	1.251	1.241
	20.1%	31.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	58.731	35.441	8.132	.500	.546	.943	.983	.988	.981
	16.2%	34.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	42.959	26.494	6.419	.439	.402	.720	.752	.756	.751
	12.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	30.354	19.064	4.835	.361	.285	.528	.553	.556	.552
	9.6%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	20.404	13.006	3.425	.275	.192	.366	.384	.386	.383
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	12.719	8.204	2.226	.190	.120	.234	.246	.247	.245
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	7.010	4.563	1.267	.113	.066	.131	.138	.139	.138
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	3.071	2.011	.568	.052	.029	.058	.061	.062	.061
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.761	.500	.143	.013	.007	.015	.015	.015	.015
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3-D

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
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
	*****	95.8%	83.9%	45.6%	*****	*****	*****	*****	*****
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	172.521							
	*****	95.7%							
S/DEPTH=1.2	.000	135.492							
	*****	95.4%							
S/DEPTH=1.1	.000	105.414	98.367						
	*****	95.1%	89.3%						
S/DEPTH=1.0	.000	81.065	79.738	43.219					
	*****	94.7%	89.2%	69.5%					
S/DEPTH= .9	.000	61.429	63.340	35.913	6.223	.432	.147	.081	.000
	*****	94.4%	89.0%	70.4%	*****	*****	*****	*****	*****
S/DEPTH= .8	.000	45.670	49.104	28.963	5.206	.395	.098	.046	.000
	*****	94.1%	88.8%	71.1%	*****	*****	*****	*****	*****
S/DEPTH= .7	.000	33.103	36.928	22.540	4.182	.335	.065	.026	.000
	*****	93.8%	88.7%	71.7%	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	23.175	26.689	16.775	3.199	.267	.043	.014	.000
	*****	93.5%	88.5%	72.1%	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	15.441	18.268	11.767	2.296	.196	.028	.007	.000
	*****	93.2%	88.4%	72.5%	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	9.548	11.549	7.589	1.509	.131	.017	.004	.000
	*****	*****	88.3%	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	5.228	6.433	4.293	.866	.076	.009	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	2.279	2.839	1.915	.390	.035	.004	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.563	.707	.480	.098	.009	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=D

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=	.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	1.840	.947	.319	.030	-.132	-.156	-.159	-.159	-.158
S/DEPTH=1.7	50.3%	4.6%	-173.4%	*****	593.2%	309.2%	39.9%	-386.3%	-579.5%
S/DEPTH=1.6	100.0%	1.828	1.743	100.0%					
S/DEPTH=1.5	100.0%	1.657	100.0%						
S/DEPTH=1.4	41.9%	1.573							
S/DEPTH=1.3	39.2%	1.495							
S/DEPTH=1.2	36.4%	1.422							
S/DEPTH=1.1	33.6%	1.356							
S/DEPTH=1.0	30.9%	1.297							
S/DEPTH=.9	28.3%	1.245							
S/DEPTH=.8	25.9%	1.200							
S/DEPTH=.7	23.6%	1.160							
S/DEPTH=.6	21.6%	1.127							
S/DEPTH=.5	19.8%	1.099							
S/DEPTH=.4	18.3%	1.077							
S/DEPTH=.3	17.1%	1.060							
S/DEPTH=.2	16.2%	1.048							
S/DEPTH=.1	15.7%	1.041							
S/DEPTH=.0	15.5%	1.038							

CASE 3-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	.023	.041	.053	.052	.022	-.012	-.029	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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)
.189 (=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)
.375 (=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 (=295.3%)

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 4=A

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 = .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) =	.633424=01	X(2)/(H*T*G) =	.126001=01
X(3)/(H*T*G) =	.249362=02	X(4)/(H*T*G) =	.461943=03
X(5)/(H*T*G) =	.789062=04	X(6)/(H*T*G) =	.120627=04
X(7)/(H*T*G) =	.154178=05	X(8)/(H*T*G) =	.126902=06

CASE 4-A

TABLE I-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	.722	.682	.575	.431	.146	-.089	-.204	-.266	-.278
	30.7%	27.8%	18.3%	-.4%	-119.8%	244.6%	57.3%	-43.8%	-79.8%
SURFACE	13.481	12.697	10.620	7.868	2.545	-1.675	3.642	-4.704	-4.903
S/DEPTH=1.1	32.0%	28.9%	19.0%	-.7%	-130.4%	240.2%	57.0%	-46.0%	-82.4%
S/DEPTH=1.0	13.277	12.553	10.586						
S/DEPTH=.9	31.0%	28.1%	18.7%						
S/DEPTH=.8	12.821	12.150	10.321	7.786	2.579				
S/DEPTH=.7	29.4%	26.7%	17.6%	-.6%	-125.5%				
S/DEPTH=.6	12.419	11.795	10.084	7.694	2.687	-1.570	3.600	-4.694	-4.898
S/DEPTH=.5	28.0%	25.4%	16.7%	-.6%	-113.9%	247.4%	56.9%	-45.9%	-82.5%
S/DEPTH=.4	12.070	11.485	9.875	7.609	2.779	-1.456	3.534	-4.676	-4.890
S/DEPTH=.3	26.7%	24.2%	15.8%	-.7%	-104.6%	257.2%	56.5%	-44.9%	-80.9%
S/DEPTH=.2	11.768	11.217	9.693	7.534	2.856	-1.357	3.477	-4.659	-4.882
S/DEPTH=.1	25.6%	23.1%	15.1%	-.7%	-97.1%	267.1%	56.2%	-44.0%	-79.4%
S/DEPTH=.0	11.512	10.989	9.537	7.467	2.921	-1.271	3.426	-4.644	-4.875
S/DEPTH=.9	24.5%	22.1%	14.4%	-.8%	-91.2%	276.9%	56.0%	-43.3%	-78.2%
S/DEPTH=.8	11.299	10.798	9.406	7.410	2.974	-1.199	3.384	-4.632	-4.869
S/DEPTH=.7	23.7%	21.3%	13.8%	-.8%	-86.5%	286.2%	55.7%	-42.7%	-77.1%
S/DEPTH=.6	11.127	10.645	9.300	7.363	3.015	-1.141	3.349	-4.621	-4.864
S/DEPTH=.5	22.9%	20.7%	13.4%	-.9%	-82.8%	294.6%	55.5%	-42.1%	-76.3%
S/DEPTH=.4	10.995	10.527	9.218	7.326	3.047	-1.095	3.322	-4.613	-4.861
S/DEPTH=.3	22.4%	20.1%	13.0%	-.9%	-80.1%	301.7%	55.4%	-41.7%	-75.6%
S/DEPTH=.2	10.902	10.443	9.159	7.299	3.069	-1.063	3.302	-4.608	-4.858
S/DEPTH=.1	22.0%	19.8%	12.7%	-.9%	-78.2%	307.1%	55.3%	-41.5%	-75.1%
S/DEPTH=.0	10.846	10.393	9.124	7.283	3.082	-1.044	3.290	-4.604	-4.856
S/DEPTH=.9	21.7%	19.5%	12.5%	-1.0%	-77.1%	310.5%	55.2%	-41.3%	-74.9%
S/DEPTH=.8	10.828	10.376	9.113	7.278	3.087	-1.038	3.286	-4.603	-4.856
S/DEPTH=.7	21.6%	19.5%	12.5%	-1.0%	-76.7%	311.7%	55.2%	-41.2%	-74.8%

CASE 4-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=	.722	.682	.575	.431	.146	.089	.204	.266	.278
	30.7%	27.8%	18.3%	.4%	=119.8%	244.6%	57.3%	=43.8%	=79.8%
SURFACE	.000	2.417	4.170	4.968	4.360	2.419	1.098	.259	.000
	*****	75.2%	71.8%	65.6%	41.2%	=28.6%	=176.5%	=618.8%	*****
S/DEPTH=1.1	.000	2.322	4.110						
	*****	74.2%	71.4%						
S/DEPTH=1.0	.000	2.049	3.638	4.499	4.228				
	*****	73.4%	70.5%	65.1%	43.1%				
S/DEPTH=.9	.000	1.795	3.196	3.970	3.773	2.224	1.036	.248	.000
	*****	72.8%	69.9%	64.6%	42.9%	=22.2%	=167.3%	=630.3%	*****
S/DEPTH=.8	.000	1.558	2.781	3.467	3.328	1.984	.931	.223	.000
	*****	72.2%	69.4%	64.1%	42.6%	=21.3%	=163.6%	*****	*****
S/DEPTH=.7	.000	1.335	2.388	2.987	2.892	1.741	.822	.198	.000
	*****	71.7%	68.9%	63.6%	42.4%	=20.5%	=160.3%	*****	*****
S/DEPTH=.6	.000	1.124	2.013	2.526	2.464	1.496	.710	.171	.000
	*****	71.3%	68.5%	63.2%	42.3%	=19.9%	=157.6%	*****	*****
S/DEPTH=.5	.000	.922	1.655	2.081	2.042	1.250	.596	.144	.000
	*****	70.9%	68.1%	62.9%	42.1%	=19.3%	=155.3%	*****	*****
S/DEPTH=.4	.000	.729	1.309	1.649	1.627	1.001	.479	.116	.000
	*****	70.6%	67.8%	62.6%	42.0%	=18.9%	=153.4%	*****	*****
S/DEPTH=.3	.000	.541	.973	1.228	1.216	.752	.361	.088	.000
	*****	70.4%	67.6%	62.4%	41.8%	=18.6%	=152.0%	*****	*****
S/DEPTH=.2	.000	.358	.645	.814	.809	.502	.241	.059	.000
	*****	70.2%	67.4%	62.3%	41.8%	=18.4%	=151.0%	*****	*****
S/DEPTH=.1	.000	.178	.321	.406	.404	.251	.121	.029	.000
	*****	*****	67.3%	62.2%	41.7%	=18.2%	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4-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=	.722	.682	.575	.431	.146	-.089	-.204	-.266	-.278
	30.7%	27.8%	18.3%	-.4%	-119.8%	244.6%	57.3%	-43.8%	-79.8%
SURFACE	.000	47.081	80.478	94.507	79.770	42.279	18.683	4.359	.000
	*****	80.6%	77.6%	71.9%	48.1%	-27.3%	-203.7%	*****	*****
S/DEPTH=1.1	.000	45.831	79.769						
	*****	80.1%	77.4%						
S/DEPTH=1.0	.000	42.398	74.368	90.059	79.266				
	*****	78.8%	76.1%	70.9%	48.2%				
S/DEPTH=.9	.000	39.445	69.690	85.375	77.580	42.895	19.152	4.472	.000
	*****	77.5%	74.8%	69.7%	47.8%	-23.5%	-193.4%	*****	*****
S/DEPTH=.8	.000	36.919	65.667	81.303	76.033	43.526	19.857	4.691	.000
	*****	76.2%	73.5%	68.5%	47.3%	-20.4%	-180.0%	-714.8%	*****
S/DEPTH=.7	.000	34.780	62.240	77.802	74.640	44.048	20.473	4.886	.000
	*****	75.0%	72.4%	67.5%	46.9%	-17.8%	-169.0%	-675.3%	*****
S/DEPTH=.6	.000	32.990	59.361	74.836	73.413	44.473	21.003	5.057	.000
	*****	73.9%	71.3%	66.5%	46.5%	-15.7%	-160.1%	-643.3%	*****
S/DEPTH=.5	.000	31.522	56.989	72.375	72.362	44.813	21.448	5.202	.000
	*****	72.9%	70.3%	65.6%	46.1%	-14.0%	-152.9%	-617.8%	*****
S/DEPTH=.4	.000	30.351	55.092	70.394	71.494	45.078	21.810	5.322	.000
	*****	72.0%	69.5%	64.9%	45.8%	-12.6%	-147.3%	-597.8%	*****
S/DEPTH=.3	.000	29.458	53.642	68.874	70.814	45.276	22.090	5.415	.000
	*****	71.3%	68.9%	64.3%	45.5%	-11.6%	-143.0%	-582.9%	*****
S/DEPTH=.2	.000	28.831	52.620	67.799	70.326	45.413	22.289	5.482	.000
	*****	70.8%	68.4%	63.8%	45.3%	-10.9%	-140.1%	-572.5%	*****
S/DEPTH=.1	.000	28.458	52.013	67.158	70.032	45.494	22.408	5.522	.000
	*****	70.5%	68.1%	63.6%	45.2%	-10.5%	-138.4%	-566.4%	*****
S/DEPTH=.0	.000	28.334	51.811	66.946	69.934	45.520	22.448	5.536	.000
	*****	70.4%	68.0%	63.5%	45.2%	-10.3%	-137.8%	-564.3%	*****

CASE 4=A

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	.722	.682	.575	.431	.146	.089	.204	.266	.278
	30.7%	27.8%	18.3%	4.4%	119.8%	244.6%	57.3%	43.8%	79.8%
SURFACE	78.129	67.388	40.921	11.017	25.221	25.492	13.853	3.890	1.798
	75.0%	71.6%	55.8%	48.7%	145.0%	112.5%	61.5%	*****	*****
S/DEPTH=1.1	74.517	64.948	40.456						
	73.8%	70.5%	55.3%						
S/DEPTH=1.0	66.071	57.827	36.633	10.911	24.156				
	73.2%	69.9%	54.9%	38.1%	144.2%				
S/DEPTH=.9	58.132	51.065	32.827	10.505	20.679	23.148	13.027	3.719	1.723
	72.6%	69.4%	54.8%	28.8%	146.4%	112.1%	62.8%	*****	*****
S/DEPTH=.8	50.633	44.622	29.051	9.849	17.556	20.374	11.637	3.350	1.554
	72.2%	68.9%	54.7%	21.8%	148.5%	112.2%	63.3%	*****	*****
S/DEPTH=.7	43.515	38.456	25.310	8.990	14.738	17.667	10.225	2.966	1.377
	71.7%	68.5%	54.6%	16.6%	150.4%	112.4%	63.7%	*****	*****
S/DEPTH=.6	36.722	32.530	21.607	7.969	12.177	15.022	8.795	2.568	1.193
	71.3%	68.2%	54.5%	12.5%	152.2%	112.5%	64.0%	*****	*****
S/DEPTH=.5	30.201	26.806	17.941	6.818	9.831	12.431	7.349	2.158	1.003
	71.0%	67.9%	54.4%	9.4%	153.9%	112.6%	64.3%	*****	*****
S/DEPTH=.4	23.901	21.248	14.308	5.566	7.661	9.887	5.893	1.738	.809
	70.7%	67.6%	54.3%	7.1%	155.2%	112.7%	64.5%	*****	*****
S/DEPTH=.3	17.775	15.822	10.704	4.238	5.628	7.381	4.427	1.311	.610
	70.5%	67.4%	54.3%	5.4%	156.4%	112.8%	64.7%	*****	*****
S/DEPTH=.2	11.779	10.494	7.123	2.855	3.696	4.904	2.955	.877	.408
	70.3%	67.3%	54.2%	*****	*****	112.9%	*****	*****	*****
S/DEPTH=.1	5.868	5.231	3.558	1.436	1.831	2.447	1.478	.440	.205
	70.2%	67.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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%	.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
	46.6%	42.6%	28.7%	=1.8%	=279.2%	*****	80.0%	=99.5%	=200.6%
S/DEPTH=1.1	148.988	135.474	101.480						
	44.0%	40.3%	27.8%						
S/DEPTH=1.0	131.971	120.226	90.558	55.538	8.591				
	42.9%	39.2%	26.5%	=1.8%	=262.5%				
S/DEPTH=.9	116.055	105.899	80.153	49.549	7.897	=1.348	=10.359	=19.325	=21.347
	42.0%	38.4%	25.9%	=1.8%	=252.0%	*****	80.4%	=104.3%	=215.2%
S/DEPTH=.8	101.071	92.357	70.198	43.696	7.149	=1.119	=9.087	=17.131	=18.952
	41.3%	37.7%	25.3%	=1.9%	*****	*****	80.3%	=103.3%	=213.2%
S/DEPTH=.7	86.873	79.480	60.628	37.964	6.355	=.921	=7.858	=14.952	=16.565
	40.6%	37.0%	24.9%	=1.9%	*****	*****	80.2%	=102.5%	=211.5%
S/DEPTH=.6	73.332	67.160	51.387	32.340	5.520	=.749	=6.667	=12.789	=14.185
	40.0%	36.3%	24.4%	=2.0%	*****	*****	*****	=101.8%	=210.0%
S/DEPTH=.5	60.330	55.300	42.419	26.808	4.651	=.597	=5.508	=10.638	=11.812
	39.6%	36.0%	24.1%	=2.0%	*****	*****	*****	=101.2%	=208.8%
S/DEPTH=.4	47.764	43.811	33.674	21.353	3.753	=.460	=4.375	=8.498	=9.443
	39.2%	35.7%	23.8%	=2.1%	*****	*****	*****	=100.7%	=207.8%
S/DEPTH=.3	35.535	32.612	25.105	15.961	2.834	=.335	=3.263	=6.366	=7.079
	38.9%	35.4%	23.6%	=2.1%	*****	*****	*****	*****	*****
S/DEPTH=.2	23.555	21.625	16.665	10.615	1.898	=.219	=2.167	=4.240	=4.717
	38.6%	35.2%	23.4%	=2.1%	*****	*****	*****	*****	*****
S/DEPTH=.1	11.737	10.778	8.311	5.300	.952	=.108	=1.081	=2.119	=2.358
	38.5%	35.1%	23.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=A

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 =	.722	.682	.575	.431	.146	-.089	-.204	-.266	-.278
	30.7%	27.8%	18.3%	-.4%	-119.8%	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
	*****	75.5%	72.4%	66.8%	44.5%	=20.6%	=163.3%	=611.4%	*****
S/DEPTH=1.1	.000	37.193	66.699						
	*****	74.5%	72.0%						
S/DEPTH=1.0	.000	32.785	58.998	74.400	73.115				
	*****	73.8%	71.2%	66.3%	46.3%				
S/DEPTH=.9	.000	28.697	51.801	65.634	65.273	40.239	19.224	4.660	.000
	*****	73.2%	70.6%	65.8%	46.1%	=14.5%	=154.5%	=622.8%	*****
S/DEPTH=.8	.000	24.882	45.039	57.305	57.594	35.917	17.273	4.202	.000
	*****	72.6%	70.0%	65.3%	45.9%	=13.6%	=150.9%	=610.1%	*****
S/DEPTH=.7	.000	21.300	38.648	49.354	50.062	31.537	15.256	3.723	.000
	*****	72.1%	69.6%	64.9%	45.7%	=12.8%	=147.7%	*****	*****
S/DEPTH=.6	.000	17.915	32.572	41.727	42.661	27.110	13.181	3.225	.000
	*****	71.6%	69.1%	64.5%	45.6%	=12.2%	=145.1%	*****	*****
S/DEPTH=.5	.000	14.692	26.759	34.370	35.373	22.645	11.058	2.712	.000
	*****	71.3%	68.8%	64.2%	45.4%	=11.6%	=142.9%	*****	*****
S/DEPTH=.4	.000	11.600	21.159	27.236	28.182	18.150	8.894	2.186	.000
	*****	70.9%	68.5%	63.9%	45.3%	=11.2%	=141.1%	*****	*****
S/DEPTH=.3	.000	8.612	15.726	20.276	21.068	13.632	6.699	1.649	.000
	*****	70.7%	68.2%	63.7%	45.2%	=10.9%	=139.7%	*****	*****
S/DEPTH=.2	.000	5.700	10.416	13.446	14.013	9.097	4.479	1.104	.000
	*****	70.5%	68.1%	63.6%	45.2%	=10.6%	=138.8%	*****	*****
S/DEPTH=.1	.000	2.838	5.188	6.702	6.997	4.551	2.243	.553	.000
	*****	*****	68.0%	63.5%	45.1%	=10.5%	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.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=	.722	.682	.575	.431	.146	.089	.204	.266	.278
	30.7%	27.8%	18.3%	4%	119.8%	244.6%	57.3%	43.8%	79.8%
SURFACE	95.858	85.247	60.179	33.780	4.248	.900	5.541	9.734	10.648
S/DEPTH=1.1	51.0%	46.7%	31.8%	1.7%	*****	*****	79.8%	96.9%	191.0%
S/DEPTH=1.0	87.664	79.364	58.668						
	46.4%	42.7%	30.1%						
S/DEPTH=.9	69.787	63.346	47.195	28.409	4.058				
	44.8%	41.0%	28.0%	1.7%	*****				
S/DEPTH=.8	54.658	49.728	37.307	22.718	3.399	.696	4.806	8.754	9.634
	43.6%	39.9%	27.1%	1.7%	*****	*****	80.7%	106.5%	219.8%
S/DEPTH=.7	41.914	38.212	28.841	17.742	2.764	.501	3.724	6.888	7.599
	42.6%	38.9%	26.3%	1.8%	*****	*****	*****	105.1%	216.8%
S/DEPTH=.6	31.260	28.549	21.661	13.442	2.169	.353	2.803	5.255	5.808
	41.6%	38.0%	25.6%	1.8%	*****	*****	*****	103.8%	214.2%
S/DEPTH=.5	22.453	20.537	15.652	9.786	1.626	.240	2.028	3.848	4.261
	40.8%	37.2%	25.0%	1.9%	*****	*****	*****	*****	*****
S/DEPTH=.4	15.298	14.010	10.717	6.742	1.148	.157	1.391	2.665	2.956
	40.1%	36.5%	24.5%	2.0%	*****	*****	*****	*****	*****
S/DEPTH=.3	9.640	8.837	6.781	4.287	.745	.095	.881	1.702	1.890
	39.5%	36.0%	24.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	5.358	4.915	3.780	2.399	.423	.051	.491	.956	1.062
	39.0%	35.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	2.361	2.167	1.669	1.063	.189	.022	.217	.424	.472
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.587	.539	.416	.265	.048	.005	.054	.106	.118
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=A

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=	.722	.682	.575	.431	.146	.089	.204	.266	.278
	30.7%	27.8%	18.3%	.4%	-119.8%	244.6%	57.3%	-43.8%	-79.8%
SURFACE	.000	23.879	40.504	47.184	39.646	21.246	9.490	2.221	.000
	*****	78.0%	74.5%	68.2%	43.2%	=28.8%	=180.6%	*****	*****
S/DEPTH=1.1	.000	22.165	39.427						
	*****	76.2%	73.8%						
S/DEPTH=1.0	.000	17.534	31.337	39.095	37.344				
	*****	75.2%	72.5%	67.6%	46.8%				
S/DEPTH=.9	.000	13.648	24.495	30.763	29.894	17.937	8.429	2.025	.000
	*****	74.4%	71.7%	66.8%	46.5%	=16.6%	=163.4%	*****	*****
S/DEPTH=.8	.000	10.403	18.744	23.680	23.365	14.263	6.771	1.635	.000
	*****	73.6%	71.0%	66.2%	46.3%	=15.2%	=157.7%	*****	*****
S/DEPTH=.7	.000	7.715	13.948	17.714	17.715	10.979	5.259	1.276	.000
	*****	72.9%	70.3%	65.5%	46.0%	=14.0%	=152.8%	*****	*****
S/DEPTH=.6	.000	5.513	9.996	12.753	12.903	8.102	3.911	.953	.000
	*****	72.2%	69.7%	65.0%	45.8%	=13.0%	=148.8%	*****	*****
S/DEPTH=.5	.000	3.739	6.797	8.705	8.894	5.647	2.744	.671	.000
	*****	71.7%	69.2%	64.5%	45.6%	=12.2%	=145.4%	*****	*****
S/DEPTH=.4	.000	2.347	4.275	5.493	5.657	3.624	1.770	.434	.000
	*****	71.2%	68.7%	64.1%	45.4%	=11.6%	*****	*****	*****
S/DEPTH=.3	.000	1.300	2.373	3.056	3.167	2.043	1.002	.246	.000
	*****	*****	68.4%	63.8%	45.3%	*****	*****	*****	*****
S/DEPTH=.2	.000	.572	1.044	1.347	1.403	.909	.447	.110	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.142	.260	.335	.350	.228	.112	.028	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4-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=	.722	.682	.575	.431	.146	-.089	-.204	-.266	-.278
	30.7%	27.8%	18.3%	-.4%	-119.8%	244.6%	57.3%	-43.8%	-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%						
S/DEPTH=.9	1.379	1.311	1.122	.856	.297				
S/DEPTH=.8	29.6%	26.9%	18.3%	.9%	-115.6%				
S/DEPTH=.7	1.340	1.276	1.099	.850	.311	-.166	-.402	-.532	-.556
S/DEPTH=.6	28.3%	25.8%	17.6%	1.2%	-103.7%	262.9%	61.3%	-44.0%	-82.6%
S/DEPTH=.5	1.305	1.245	1.080	.843	.323	-.152	-.394	-.529	-.555
S/DEPTH=.4	27.1%	24.7%	16.9%	1.4%	-94.3%	276.6%	61.3%	-42.9%	-80.8%
S/DEPTH=.3	1.275	1.219	1.062	.837	.334	-.140	-.387	-.527	-.554
S/DEPTH=.2	26.1%	23.7%	16.3%	1.5%	-86.8%	290.8%	61.2%	-41.9%	-79.3%
S/DEPTH=.1	1.250	1.196	1.048	.832	.342	-.130	-.381	-.526	-.553
S/DEPTH=.0	25.1%	22.9%	15.7%	1.6%	-80.8%	305.2%	61.2%	-41.1%	-78.0%
S/DEPTH=1.1	1.228	1.178	1.035	.827	.349	-.121	-.376	-.524	-.553
S/DEPTH=1.0	24.3%	22.2%	15.2%	1.7%	-76.1%	319.1%	61.1%	-40.4%	-76.8%
S/DEPTH=.9	1.211	1.162	1.025	.823	.355	-.114	-.371	-.523	-.552
S/DEPTH=.8	23.7%	21.6%	14.8%	1.7%	-72.5%	332.0%	61.1%	-39.8%	-75.9%
S/DEPTH=.7	1.198	1.150	1.017	.820	.359	-.108	-.368	-.522	-.552
S/DEPTH=.6	23.2%	21.1%	14.5%	1.8%	-69.8%	343.1%	61.1%	-39.3%	-75.2%
S/DEPTH=.5	1.189	1.142	1.011	.818	.362	-.104	-.366	-.521	-.551
S/DEPTH=.4	22.8%	20.8%	14.3%	1.8%	-68.0%	351.8%	61.0%	-39.0%	-74.7%
S/DEPTH=.3	1.183	1.137	1.008	.816	.364	-.102	-.364	-.521	-.551
S/DEPTH=.2	22.6%	20.6%	14.2%	1.8%	-66.9%	357.2%	61.0%	-38.8%	-74.4%
S/DEPTH=.1	1.181	1.135	1.007	.816	.364	-.101	-.364	-.521	-.551
S/DEPTH=.0	22.5%	20.5%	14.1%	1.8%	-66.5%	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 CONDITON 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)
.880 (=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

* (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	.003872	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

CASE 4=B

10TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO=(G/6.28318)*T**2$
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 = .007772 DPT/LO = .020000
H/DPT = .388980
L/LO = .379687 PSI/(G*H*T) = .001938

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.508835=01	X(2)/(H*T*G) =	-.146785=01
X(3)/(H*T*G) =	-.445503=02	X(4)/(H*T*G) =	-.129346=02
X(5)/(H*T*G) =	-.352846=03	X(6)/(H*T*G) =	-.887575=04
X(7)/(H*T*G) =	-.199291=04	X(8)/(H*T*G) =	-.369381=05
X(9)/(H*T*G) =	-.386228=06	X(10)/(H*T*G) =	-.100394=06

CASE 4-B

TABLE I-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=	.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	15,829	13,833	9,560	5,371	.086	=2.312	=2,986	=3,208	=3,234	
	41.3%	33.9%	8.8%	=49.2%	*****	201.9%	47.6%	=112.3%	=173.7%	
S/DEPTH=1.3	15,686									
	100.0%									
S/DEPTH=1.2	14,798	13,298								
	37.2%	31.2%								
S/DEPTH=1.1	14,023	12,684	9,324	5,383						
	34.6%	28.8%	7.6%	=47.5%						
S/DEPTH=1.0	13,348	12,146	9,099	5,456	.095					
	32.2%	26.6%	6.6%	=43.6%	*****					
S/DEPTH=.9	12,764	11,676	8,895	5,509	.309	=2,264	=2,977	=3,207	=3,234	
	30.0%	24.6%	5.5%	=40.5%	*****	202.2%	47.8%	=112.4%	=173.7%	
S/DEPTH=.8	12,262	11,269	8,712	5,546	.495	=2,174	=2,948	=3,204	=3,233	
	27.9%	22.7%	4.6%	=38.1%	*****	205.3%	47.9%	=111.5%	=173.6%	
S/DEPTH=.7	11,833	10,921	8,550	5,572	.654	=2,093	=2,922	=3,201	=3,232	
	26.0%	21.0%	3.7%	=36.2%	*****	208.3%	47.9%	=109.7%	=171.0%	
S/DEPTH=.6	11,473	10,626	8,410	5,588	.788	=2,023	=2,900	=3,198	=3,232	
	24.3%	19.5%	2.9%	=34.6%	*****	211.1%	48.0%	=108.1%	=168.8%	
S/DEPTH=.5	11,177	10,382	8,292	5,599	.899	=1,963	=2,880	=3,195	=3,231	
	22.8%	18.2%	2.3%	=33.4%	=516.4%	213.7%	48.0%	=106.8%	=166.9%	
S/DEPTH=.4	10,939	10,186	8,195	5,605	.989	=1,914	=2,864	=3,193	=3,231	
	21.6%	17.1%	1.7%	=32.5%	=457.6%	216.0%	48.0%	=105.7%	=165.4%	
S/DEPTH=.3	10,757	10,036	8,120	5,608	1.057	=1,875	=2,851	=3,191	=3,230	
	20.6%	16.2%	1.2%	=31.8%	=419.2%	217.8%	48.0%	=104.9%	=164.3%	
S/DEPTH=.2	10,629	9,930	8,067	5,610	1.105	=1,848	=2,842	=3,190	=3,230	
	20.0%	15.6%	.9%	=31.3%	=394.9%	219.2%	48.0%	=104.3%	=163.4%	
S/DEPTH=.1	10,553	9,866	8,035	5,611	1.134	=1,831	=2,836	=3,190	=3,230	
	19.5%	15.2%	.7%	=31.1%	=381.4%	220.0%	48.0%	=103.9%	=162.9%	
S/DEPTH=.0	10,528	9,845	8,024	5,611	1.143	=1,826	=2,835	=3,189	=3,230	
	19.4%	15.1%	.6%	=31.0%	=377.1%	220.3%	48.0%	=103.8%	=162.7%	

CASE 4-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=	.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	.000	4.499	6.469	6.169	3.405	1.120	.321	.040	.000
	*****	85.4%	80.2%	70.0%	20.1%	-185.0%	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	4.058							
	*****	83.9%							
S/DEPTH=1.1	.000	3.545	5.720	6.066					
	*****	83.0%	79.3%	71.4%					
S/DEPTH=1.0	.000	3.085	5.012	5.375	3.392				
	*****	82.3%	78.6%	70.8%	29.1%				
S/DEPTH=.9	.000	2.669	4.364	4.726	3.058	1.073	.312	.039	.000
	*****	81.7%	78.0%	70.2%	29.5%	-153.3%	*****	*****	*****
S/DEPTH=.8	.000	2.291	3.766	4.113	2.721	.972	.285	.036	.000
	*****	81.1%	77.4%	69.7%	29.8%	-147.6%	*****	*****	*****
S/DEPTH=.7	.000	1.944	3.210	3.533	2.381	.864	.255	.032	.000
	*****	80.6%	76.8%	69.2%	30.1%	-142.8%	*****	*****	*****
S/DEPTH=.6	.000	1.622	2.690	2.980	2.041	.751	.223	.028	.000
	*****	80.1%	76.4%	68.8%	30.3%	-138.8%	*****	*****	*****
S/DEPTH=.5	.000	1.322	2.199	2.450	1.701	.633	.189	.024	.000
	*****	79.7%	76.0%	68.5%	30.5%	-135.5%	*****	*****	*****
S/DEPTH=.4	.000	1.038	1.732	1.938	1.360	.511	.153	.020	.000
	*****	79.4%	75.7%	68.2%	30.6%	-132.9%	*****	*****	*****
S/DEPTH=.3	.000	.767	1.284	1.441	1.020	.386	.116	.015	.000
	*****	79.1%	75.4%	68.0%	30.7%	-130.9%	*****	*****	*****
S/DEPTH=.2	.000	.506	.848	.954	.680	.259	.078	.010	.000
	*****	78.9%	75.2%	67.8%	30.7%	*****	*****	*****	*****
S/DEPTH=.1	.000	.252	.422	.475	.340	.130	.039	.005	.000
	*****	*****	75.1%	67.7%	30.7%	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4-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=	.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	.000	93.398	130.404	119.684	59.838	18.211	4.972	.598	.000
	*****	91.0%	87.2%	79.4%	34.3%	189.6%	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	85.207							
	*****	90.1%							
S/DEPTH=1.1	.000	76.075	118.942	118.601					
	*****	89.1%	86.2%	79.4%					
S/DEPTH=1.0	.000	68.319	108.672	111.539	59.891				
	*****	88.1%	85.1%	78.4%	35.6%				
S/DEPTH= .9	.000	61.753	99.846	105.252	60.994	18.969	5.166	.621	.000
	*****	87.0%	84.0%	77.5%	37.6%	172.7%	*****	*****	*****
S/DEPTH= .8	.000	56.224	92.311	99.721	61.764	20.385	5.723	.704	.000
	*****	85.9%	82.9%	76.5%	39.2%	150.9%	*****	*****	*****
S/DEPTH= .7	.000	51.603	85.939	94.919	62.281	21.624	6.220	.777	.000
	*****	84.8%	81.9%	75.6%	40.3%	134.1%	*****	*****	*****
S/DEPTH= .6	.000	47.786	80.619	90.820	62.612	22.688	6.655	.841	.000
	*****	83.8%	80.9%	74.8%	41.2%	121.2%	733.7%	*****	*****
S/DEPTH= .5	.000	44.687	76.262	87.399	62.810	23.581	7.026	.895	.000
	*****	82.8%	80.0%	74.0%	41.8%	111.3%	684.2%	*****	*****
S/DEPTH= .4	.000	42.239	72.793	84.633	62.918	24.305	7.332	.939	.000
	*****	82.0%	79.2%	73.4%	42.3%	103.7%	647.3%	*****	*****
S/DEPTH= .3	.000	40.387	70.154	82.504	62.969	24.864	7.571	.974	.000
	*****	81.2%	78.5%	72.8%	42.7%	98.2%	620.5%	*****	*****
S/DEPTH= .2	.000	39.092	68.300	80.994	62.988	25.262	7.742	.999	.000
	*****	80.7%	78.0%	72.4%	42.9%	94.4%	602.4%	*****	*****
S/DEPTH= .1	.000	38.326	67.200	80.093	62.993	25.499	7.845	1.014	.000
	*****	80.3%	77.7%	72.2%	43.0%	92.2%	591.8%	*****	*****
S/DEPTH= .0	.000	38.072	66.835	79.793	62.994	25.578	7.880	1.019	.000
	*****	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
	38.3%	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	=109.800	=81.824							
	82.9%	77.5%							
S/DEPTH=1.1	=97.856	=74.128	=19.665	31.136					
	82.3%	77.1%	18.6%	146.3%					
S/DEPTH=1.0	=86.601	=66.526	=20.002	24.428	47.741				
	81.8%	76.8%	27.3%	153.6%	118.2%				
S/DEPTH=.9	=76.003	=59.084	=19.535	19.031	41.604	19.351	6.026	.730	.128
	81.4%	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	=22.885	=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	=12.286	=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	.000	.000	.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
	53.6%	44.2%	8.4%	=94.7%	*****	*****	*****	*****	*****
S/DEPTH=1.3	193.933								
	100.0%								
S/DEPTH=1.2	170.724	144.756							
	46.3%	38.7%							
S/DEPTH=1.1	149.979	127.893	78.842	34.063					
	44.2%	36.9%	6.3%	=84.3%					
S/DEPTH=1.0	131.268	112.491	70.360	31.123	.746				
	42.6%	35.0%	5.4%	=81.6%	*****				
S/DEPTH=.9	114.238	98.315	62.269	28.116	.742	=3.519	=7.482	=9.191	=9.396
	41.1%	33.6%	4.6%	=79.5%	*****	*****	*****	*****	*****
S/DEPTH=.8	98.595	85.163	54.522	25.059	.725	=3.027	=6.604	=8.163	=8.351
	39.8%	32.4%	3.9%	=77.7%	*****	*****	*****	*****	*****
S/DEPTH=.7	84.093	72.862	47.076	21.968	.691	=2.572	=5.743	=7.137	=7.306
	38.6%	31.3%	3.2%	=76.2%	*****	*****	*****	*****	*****
S/DEPTH=.6	70.524	61.265	39.888	18.854	.639	=2.149	=4.896	=6.114	=6.261
	37.6%	30.4%	2.7%	=74.9%	*****	*****	*****	*****	*****
S/DEPTH=.5	57.710	50.239	32.916	15.724	.567	=1.752	=4.061	=5.092	=5.217
	36.8%	29.6%	2.2%	=73.9%	*****	*****	*****	*****	*****
S/DEPTH=.4	45.492	39.671	26.123	12.586	.478	=1.377	=3.236	=4.072	=4.173
	36.1%	29.0%	1.8%	=73.2%	*****	*****	*****	*****	*****
S/DEPTH=.3	33.734	29.455	19.471	9.442	.373	=1.018	=2.420	=3.053	=3.130
	35.6%	28.5%	1.5%	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	22.309	19.497	12.923	6.296	.256	=.672	=1.610	=2.035	=2.086
	35.2%	28.1%	1.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	11.101	9.707	6.444	3.148	.130	=.334	=.804	=1.017	=1.043
	35.0%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4-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	.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	.000	69.668	103.441	103.362	62.631	21.970	6.433	.813	.000
	*****	86.6%	82.2%	73.9%	33.5%	=140.3%	=731.7%	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	62.731							
	*****	85.1%							
S/DEPTH=1.1	.000	54.679	91.406	101.645					
	*****	84.4%	81.4%	75.1%					
S/DEPTH=1.0	.000	47.470	80.038	90.144	62.388				
	*****	83.7%	80.8%	74.6%	41.0%				
S/DEPTH=.9	.000	40.975	69.624	79.311	56.341	21.061	6.269	.797	.000
	*****	83.1%	80.2%	74.2%	41.5%	=113.4%	=692.9%	*****	*****
S/DEPTH=.8	.000	35.085	60.026	69.069	50.200	19.092	5.724	.731	.000
	*****	82.5%	79.7%	73.7%	41.9%	=108.4%	=669.1%	*****	*****
S/DEPTH=.7	.000	29.700	51.123	59.343	43.996	16.990	5.126	.657	.000
	*****	82.0%	79.2%	73.4%	42.2%	=104.2%	*****	*****	*****
S/DEPTH=.6	.000	24.737	42.803	50.062	37.750	14.773	4.482	.576	.000
	*****	81.6%	78.8%	73.0%	42.4%	=100.7%	*****	*****	*****
S/DEPTH=.5	.000	20.119	34.967	41.156	31.478	12.458	3.797	.489	.000
	*****	81.2%	78.4%	72.7%	42.6%	=97.9%	*****	*****	*****
S/DEPTH=.4	.000	15.778	27.521	32.560	25.191	10.062	3.079	.397	.000
	*****	80.8%	78.1%	72.5%	42.8%	=95.6%	*****	*****	*****
S/DEPTH=.3	.000	11.652	20.381	24.208	18.897	7.602	2.333	.301	.000
	*****	80.6%	77.9%	72.3%	42.9%	=93.8%	*****	*****	*****
S/DEPTH=.2	.000	7.682	13.464	16.039	12.599	5.095	1.567	.203	.000
	*****	80.4%	77.7%	72.2%	43.0%	*****	*****	*****	*****
S/DEPTH=.1	.000	3.816	6.696	7.989	6.299	2.555	.787	.102	.000
	*****	*****	77.6%	72.1%	43.0%	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.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	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	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%								
S/DEPTH=1.2	114.519	95.880							
	50.7%	43.2%							
S/DEPTH=1.1	90.643	76.474	45.604	18.532					
	47.9%	40.1%	8.5%	=91.1%					
S/DEPTH=1.0	70.981	60.292	36.694	15.446	.248				
	45.8%	38.1%	7.3%	=87.0%	*****				
S/DEPTH=.9	54.790	46.815	29.004	12.590	.243	=1.703	=3.423	=4.144	=4.230
	43.8%	36.2%	6.2%	=83.5%	*****	*****	*****	*****	*****
S/DEPTH=.8	41.483	35.628	22.417	9.992	.229	=1.284	=2.677	=3.270	=3.341
	42.0%	34.5%	5.2%	=80.7%	*****	*****	*****	*****	*****
S/DEPTH=.7	30.598	26.396	16.830	7.674	.204	=.943	=2.031	=2.501	=2.558
	40.4%	32.9%	4.2%	=78.4%	*****	*****	*****	*****	*****
S/DEPTH=.6	21.771	18.852	12.156	5.650	.171	=.667	=1.480	=1.836	=1.879
	38.9%	31.6%	3.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	14.717	12.784	8.320	3.929	.131	=.449	=1.021	=1.274	=1.304
	37.7%	30.5%	2.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	9.215	8.025	5.262	2.516	.091	=.280	=.649	=.815	=.835
	36.7%	29.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	5.097	4.447	2.932	1.416	.054	=.154	=.364	=.458	=.469
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	2.238	1.955	1.295	.630	.025	=.067	=.161	=.203	=.209
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.555	.486	.322	.157	.006	=.017	=.040	=.051	=.052
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=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
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	.000	51.609	69.185	61.672	31.234	9.874	2.787	.347	.000
	*****	89.0%	84.0%	74.0%	23.8%	=184.3%	*****	*****	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	43.010							
	*****	86.9%							
S/DEPTH=1.1	.000	33.743	55.356	59.771					
	*****	85.8%	82.8%	76.4%					
S/DEPTH=1.0	.000	26.167	43.411	47.690	30.991				
	*****	85.0%	82.0%	75.7%	39.9%				
S/DEPTH=.9	.000	19.992	33.510	37.393	25.247	9.034	2.637	.332	.000
	*****	84.2%	81.3%	75.1%	40.7%	=125.9%	*****	*****	*****
S/DEPTH=.8	.000	14.980	25.345	28.683	20.028	7.361	2.174	.275	.000
	*****	83.5%	80.6%	74.5%	41.3%	=117.8%	*****	*****	*****
S/DEPTH=.7	.000	10.938	18.663	21.384	15.376	5.786	1.726	.220	.000
	*****	82.8%	79.9%	74.0%	41.8%	=111.1%	*****	*****	*****
S/DEPTH=.6	.000	7.709	13.250	15.348	11.316	4.345	1.308	.167	.000
	*****	82.2%	79.3%	73.5%	42.1%	=105.6%	*****	*****	*****
S/DEPTH=.5	.000	5.166	8.937	10.447	7.866	3.073	.931	.120	.000
	*****	81.6%	78.8%	73.1%	42.4%	*****	*****	*****	*****
S/DEPTH=.4	.000	3.211	5.583	6.576	5.037	1.995	.608	.078	.000
	*****	*****	78.4%	72.7%	42.7%	*****	*****	*****	*****
S/DEPTH=.3	.000	1.765	3.082	3.652	2.834	1.135	.348	.045	.000
	*****	*****	*****	72.4%	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.772	1.351	1.608	1.260	.508	.156	.020	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.191	.335	.400	.315	.128	.039	.005	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=B

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	.131	.174	.188	.190
	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
	40.7%	33.6%	10.1%	=43.5%	*****	208.3%	59.2%	=104.1%	=171.1%
S/DEPTH=1.3	1.615								
	100.0%								
S/DEPTH=1.2	1.541	1.392							
	37.4%	31.6%							
S/DEPTH=1.1	1.475	1.342	1.003	.593					
	35.3%	29.9%	9.9%	=41.8%					
S/DEPTH=1.0	1.417	1.297	.990	.611	.021				
	33.4%	28.2%	9.7%	=36.2%	*****				
S/DEPTH=.9	1.365	1.257	.977	.624	.049	=.258	=.347	=.377	=.380
	31.6%	26.7%	9.5%	=32.0%	*****	210.5%	59.9%	=104.2%	=171.1%
S/DEPTH=.8	1.320	1.222	.965	.635	.074	=.246	=.343	=.376	=.380
	29.9%	25.3%	9.1%	=28.6%	*****	215.5%	60.6%	=103.1%	=171.0%
S/DEPTH=.7	1.281	1.191	.954	.643	.095	=.236	=.340	=.376	=.380
	28.3%	24.0%	8.8%	=26.0%	=555.6%	220.4%	61.2%	=100.9%	=168.1%
S/DEPTH=.6	1.248	1.165	.944	.650	.113	=.226	=.337	=.375	=.380
	26.9%	22.8%	8.4%	=24.0%	=448.9%	225.0%	61.8%	=99.1%	=165.6%
S/DEPTH=.5	1.220	1.143	.935	.654	.128	=.219	=.335	=.375	=.380
	25.7%	21.8%	8.1%	=22.4%	=383.1%	229.2%	62.2%	=97.5%	=163.5%
S/DEPTH=.4	1.198	1.125	.927	.658	.140	=.212	=.333	=.375	=.380
	24.7%	20.9%	7.8%	=21.2%	=340.4%	232.9%	62.6%	=96.2%	=161.8%
S/DEPTH=.3	1.181	1.111	.922	.660	.149	=.207	=.331	=.375	=.380
	23.9%	20.2%	7.6%	=20.3%	=312.2%	235.9%	62.9%	=95.2%	=160.5%
S/DEPTH=.2	1.169	1.102	.917	.662	.155	=.204	=.330	=.374	=.380
	23.4%	19.7%	7.4%	=19.7%	=294.3%	238.2%	63.1%	=94.5%	=159.6%
S/DEPTH=.1	1.161	1.096	.915	.663	.159	=.202	=.329	=.374	=.379
	23.0%	19.5%	7.3%	=19.3%	=284.3%	239.6%	63.2%	=94.1%	=159.0%
S/DEPTH=.0	1.159	1.094	.914	.663	.160	=.201	=.329	=.374	=.379
	22.9%	19.4%	7.3%	=19.2%	=281.1%	240.1%	63.3%	=94.0%	=158.8%

CASE 4-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	.006	.012	.015	.016	.007	-.005	-.012	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE 4-B

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%)

CASE 4-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	.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 .153834

CASE 4=C

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 = .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) =	.410159=01	X(2)/(H*T*G) =	.136907=01
X(3)/(H*T*G) =	.502967=02	X(4)/(H*T*G) =	.181193=02
X(5)/(H*T*G) =	.627541=03	X(6)/(H*T*G) =	.207353=03
X(7)/(H*T*G) =	.648095=04	X(8)/(H*T*G) =	.189477=04
X(9)/(H*T*G) =	.510130=05	X(10)/(H*T*G) =	.277270=05
X(11)/(H*T*G) =	.797584=06	X(12)/(H*T*G) =	.000000

CASE 4=C

TABLE I=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=	.058	.667	.383	.173	.041	.119	.137	.141	.142
	41.8%	26.1%	=22.8%	=150.2%	*****	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
	47.8%	31.4%	=20.8%	=159.5%	*****	218.7%	30.7%	=191.5%	=276.5%
S/DEPTH=1.5	18.038								
	100.0%								
S/DEPTH=1.4	16.585								
	100.0%								
S/DEPTH=1.3	15.341	12.813							
	38.5%	27.6%							
S/DEPTH=1.2	14.274	12.098	7.300						
	34.9%	24.3%	=19.7%						
S/DEPTH=1.1	13.360	11.472	7.222	3.130					
	31.4%	21.3%	=19.3%	=153.6%					
S/DEPTH=1.0	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
	24.9%	15.7%	=19.3%	=120.4%	*****	217.0%	31.1%	100.0%	100.0%
S/DEPTH=.8	11.339	10.039	6.952	3.651	=.455	=1.928	=2.243	=2.321	=2.330
	22.0%	13.2%	=19.6%	=109.8%	*****	218.7%	31.5%	=191.3%	=276.3%
S/DEPTH=.7	10.860	9.688	6.866	3.761	=.303	=1.884	=2.234	=2.321	=2.330
	19.3%	11.0%	=19.9%	=101.7%	*****	220.4%	31.9%	=189.1%	=275.9%
S/DEPTH=.6	10.461	9.393	6.787	3.848	=.172	=1.844	=2.226	=2.322	=2.331
	17.0%	8.9%	=20.3%	=95.5%	*****	221.9%	32.2%	=186.6%	=272.7%
S/DEPTH=.5	10.134	9.150	6.718	3.916	=.064	=1.810	=2.218	=2.322	=2.331
	14.9%	7.2%	=20.7%	=90.7%	*****	223.4%	32.5%	=184.6%	=270.0%
S/DEPTH=.4	9.874	8.955	6.660	3.968	.024	=1.781	=2.212	=2.322	=2.332
	13.2%	5.7%	=21.0%	=87.1%	*****	224.6%	32.7%	=182.9%	=267.8%
S/DEPTH=.3	9.676	8.805	6.613	4.006	.092	=1.759	=2.207	=2.322	=2.332
	11.8%	4.5%	=21.3%	=84.5%	*****	225.6%	32.8%	=181.6%	=266.1%
S/DEPTH=.2	9.538	8.700	6.580	4.032	.140	=1.742	=2.204	=2.322	=2.332
	10.8%	3.7%	=21.5%	=82.7%	*****	226.4%	33.0%	=180.7%	=264.8%
S/DEPTH=.1	9.455	8.637	6.559	4.047	.169	=1.732	=2.201	=2.322	=2.332
	10.2%	3.2%	=21.7%	=81.7%	*****	226.9%	33.0%	=180.2%	=264.1%
S/DEPTH=.0	9.428	8.616	6.553	4.052	.178	=1.729	=2.201	=2.322	=2.332
	10.0%	3.0%	=21.7%	=81.4%	*****	227.0%	33.0%	=180.0%	=263.9%

CASE 4=C

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=	.858	.667	.383	.173	-.041	-.119	-.137	-.141	-.142
	41.8%	26.1%	22.8%	150.2%	*****	208.4%	36.5%	171.3%	253.1%
SURFACE	.000	6.448	7.138	5.522	2.200	.531	.101	.009	-.000
	*****	89.0%	80.6%	64.0%	30.9%	516.3%	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000	5.655							
	*****	87.4%							
S/DEPTH=1.2	.000	4.880	6.924						
	*****	86.5%	81.2%						
S/DEPTH=1.1	.000	4.207	6.068	5.516					
	*****	85.7%	80.5%	68.6%					
S/DEPTH=1.0	.000	3.618	5.294	4.910					
	*****	84.9%	79.7%	68.0%					
S/DEPTH=.9	.000	3.097	4.591	4.333	2.051	.518	.100	.009	-.000
	*****	84.2%	79.0%	67.5%	5.1%	424.6%	*****	*****	*****
S/DEPTH=.8	.000	2.634	3.947	3.782	1.845	.472	.094	.008	-.000
	*****	83.6%	78.4%	67.1%	3.4%	409.4%	*****	*****	*****
S/DEPTH=.7	.000	2.216	3.354	3.256	1.630	.423	.086	.007	-.000
	*****	83.0%	77.8%	66.6%	2.1%	396.3%	*****	*****	*****
S/DEPTH=.6	.000	1.837	2.802	2.751	1.408	.370	.077	.007	-.000
	*****	82.4%	77.3%	66.2%	1.0%	385.1%	*****	*****	*****
S/DEPTH=.5	.000	1.488	2.286	2.265	1.181	.313	.066	.006	-.000
	*****	82.0%	76.9%	65.9%	.1%	*****	*****	*****	*****
S/DEPTH=.4	.000	1.163	1.796	1.793	.950	.254	.054	.005	-.000
	*****	81.6%	76.5%	65.6%	.6%	*****	*****	*****	*****
S/DEPTH=.3	.000	.857	1.329	1.334	.715	.193	.041	.004	-.000
	*****	81.3%	76.2%	65.4%	1.1%	*****	*****	*****	*****
S/DEPTH=.2	.000	.564	.877	.885	.478	.129	.028	.002	-.000
	*****	81.1%	76.0%	65.2%	1.4%	*****	*****	*****	*****
S/DEPTH=.1	.000	.280	.436	.441	.239	.065	.014	.001	-.000
	*****	*****	75.9%	65.2%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	-.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=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 =	.858	.667	.383	.173	-.041	-.119	-.137	-.141	-.142
	41.8%	26.1%	=22.8%	=150.2%	*****	208.4%	36.5%	=171.3%	=253.1%
SURFACE	.000	147.890	148.618	105.769	36.864	8.806	.891	.128	=.000
	*****	94.8%	89.7%	78.4%	=.9%	=486.5%	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000	129.804							
	*****	94.1%							
S/DEPTH=1.2	.000	112.669	145.200						
	*****	93.3%	89.6%						
S/DEPTH=1.1	.000	98.344	131.698	105.726					
	*****	92.5%	88.8%	79.0%					
S/DEPTH=1.0	.000	86.384	119.875	101.607					
	*****	91.6%	87.9%	78.5%					
S/DEPTH= .9	.000	76.423	109.612	97.540	38.850	9.075	.995	.130	=.000
	*****	90.6%	86.9%	78.0%	8.5%	=456.0%	*****	*****	*****
S/DEPTH= .8	.000	68.160	100.788	93.679	41.063	9.944	1.460	.147	=.000
	*****	89.7%	86.0%	77.4%	14.6%	=401.5%	*****	*****	*****
S/DEPTH= .7	.000	61.349	93.287	90.129	42.865	10.765	1.849	.168	=.000
	*****	88.7%	85.1%	76.8%	19.1%	=358.5%	*****	*****	*****
S/DEPTH= .6	.000	55.791	87.003	86.963	44.313	11.511	2.172	.189	=.000
	*****	87.7%	84.2%	76.2%	22.6%	=325.0%	*****	*****	*****
S/DEPTH= .5	.000	51.327	81.843	84.231	45.456	12.165	2.436	.208	=.000
	*****	86.7%	83.3%	75.7%	25.2%	=299.0%	*****	*****	*****
S/DEPTH= .4	.000	47.831	77.729	81.966	46.335	12.714	2.648	.225	.000
	*****	85.9%	82.6%	75.2%	27.1%	=279.4%	*****	*****	*****
S/DEPTH= .3	.000	45.207	74.595	80.189	46.983	13.149	2.810	.238	.000
	*****	85.2%	82.0%	74.8%	28.5%	=265.1%	*****	*****	*****
S/DEPTH= .2	.000	43.381	72.392	78.912	47.427	13.463	2.925	.248	.000
	*****	84.6%	81.5%	74.5%	29.5%	=255.3%	*****	*****	*****
S/DEPTH= .1	.000	42.305	71.084	78.143	47.687	13.653	2.993	.254	.000
	*****	84.3%	81.2%	74.3%	30.0%	=249.6%	*****	*****	*****
S/DEPTH= .0	.000	41.950	70.651	77.886	47.772	13.717	3.015	.256	.000
	*****	84.1%	81.1%	74.2%	30.2%	=247.7%	*****	*****	*****

CASE 4=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=	.858	.667	.383	.173	-.041	-.119	-.137	-.141	-.142
	41.8%	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
	88.2%	74.7%	156.5%	121.9%	117.4%	90.7%	*****	*****	*****
S/DEPTH=1.5	=149.583								
	100.0%								
S/DEPTH=1.4	=139.333								
	100.0%								
S/DEPTH=1.3	=127.741	=68.397							
	86.2%	74.9%							
S/DEPTH=1.2	=115.679	=66.423	25.295						
	85.8%	75.8%	159.2%						
S/DEPTH=1.1	=103.666	=62.793	15.433	62.640					
	85.5%	76.5%	189.1%	119.4%					
S/DEPTH=1.0	=91.993	=58.115	8.332	51.356					
	85.1%	76.9%	250.4%	121.6%					
S/DEPTH=.9	=80.807	=52.795	3.352	41.905	40.811	10.903	1.974	=.361	=.275
	84.7%	77.1%	*****	123.8%	114.8%	93.2%	*****	*****	*****
S/DEPTH=.8	=70.165	=47.107	.005	33.983	35.643	10.056	1.950	=.220	=.205
	84.3%	77.2%	*****	126.2%	115.2%	94.0%	*****	*****	*****
S/DEPTH=.7	=60.068	=41.229	=2.088	27.325	30.688	9.068	1.846	=.124	=.150
	84.0%	77.1%	*****	128.6%	115.5%	94.6%	*****	*****	*****
S/DEPTH=.6	=50.481	=35.273	=3.220	21.701	25.926	7.964	1.679	=.060	=.109
	83.6%	77.1%	*****	130.9%	115.8%	95.1%	*****	*****	*****
S/DEPTH=.5	=41.350	=29.308	=3.622	16.913	21.333	6.767	1.463	=.021	=.077
	83.3%	77.0%	*****	133.0%	116.0%	*****	*****	*****	*****
S/DEPTH=.4	=32.606	=23.371	=3.476	12.786	16.887	5.496	1.211	.001	=.054
	83.1%	76.9%	*****	135.0%	116.3%	*****	*****	*****	*****
S/DEPTH=.3	=24.178	=17.475	=2.928	9.165	12.559	4.170	.931	.011	=.036
	82.9%	76.8%	*****	136.6%	116.4%	*****	*****	*****	*****
S/DEPTH=.2	=15.986	=11.622	=2.099	5.912	8.322	2.802	.631	.012	=.022
	82.8%	76.8%	*****	*****	116.6%	*****	*****	*****	*****
S/DEPTH=.1	=7.953	=5.802	=1.093	2.897	4.145	1.407	.319	.007	=.010
	82.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=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/HEIGHT	.058	.667	.383	.173	.041	.119	.137	.141	.142
	41.8%	26.1%	=22.8%	=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%	=357.1%	*****	*****	*****	*****	*****
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	76.553	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	66.069	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	56.348	31.054	10.993	=.015	=2.223	=3.426	=3.774	=3.806
	24.8%	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
	20.8%	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%	=171.3%	=253.1%
SURFACE	.000	99.710	116.105	96.594	43.434	11.194	2.153	.189	=.000
	*****	91.0%	84.6%	72.8%	5.3%	=373.0%	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000	87.349							
	*****	89.7%							
S/DEPTH=1.2	.000	75.251	112.663						
	*****	88.9%	85.2%						
S/DEPTH=1.1	.000	64.722	98.833	96.483					
	*****	88.3%	84.6%	76.3%					
S/DEPTH=1.0	.000	55.503	86.268	86.116					
	*****	87.6%	84.1%	76.0%					
S/DEPTH= .9	.000	47.378	74.806	76.159	40.564	10.883	2.134	.187	=.000
	*****	87.0%	83.5%	75.7%	24.3%	=302.4%	*****	*****	*****
S/DEPTH= .8	.000	40.162	64.297	66.601	36.565	9.932	2.011	.173	.000
	*****	86.5%	83.1%	75.4%	25.7%	=290.3%	*****	*****	*****
S/DEPTH= .7	.000	33.698	54.604	57.413	32.365	8.896	1.845	.158	.000
	*****	86.0%	82.6%	75.2%	26.9%	=280.0%	*****	*****	*****
S/DEPTH= .6	.000	27.851	45.599	48.562	28.004	7.782	1.643	.140	.000
	*****	85.5%	82.2%	74.9%	27.8%	=271.2%	*****	*****	*****
S/DEPTH= .5	.000	22.503	37.166	40.006	23.513	6.597	1.412	.120	.000
	*****	85.1%	81.9%	74.7%	28.6%	=264.0%	*****	*****	*****
S/DEPTH= .4	.000	17.553	29.196	31.700	18.921	5.352	1.157	.098	.000
	*****	84.7%	81.6%	74.5%	29.1%	*****	*****	*****	*****
S/DEPTH= .3	.000	12.908	21.588	23.597	14.254	4.058	.884	.075	.000
	*****	84.5%	81.4%	74.4%	29.6%	*****	*****	*****	*****
S/DEPTH= .2	.000	8.485	14.246	15.646	9.532	2.726	.597	.051	.000
	*****	84.3%	81.2%	74.3%	29.9%	*****	*****	*****	*****
S/DEPTH= .1	.000	4.207	7.080	7.797	4.774	1.370	.301	.026	.000
	*****	*****	81.1%	74.2%	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=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	.858	.667	.383	.173	.041	.119	.137	.141	.142
	41.8%	26.1%	22.8%	150.2%	*****	208.4%	36.5%	171.3%	253.1%
SURFACE	205.529	116.895	36.554	8.108	.077	1.507	2.103	2.268	2.285
	67.3%	44.7%	57.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.5	204.928								
	100.0%								
S/DEPTH=1.4	161.499								
	100.0%								
S/DEPTH=1.3	127.118	96.091							
	47.2%	32.8%							
S/DEPTH=1.2	99.723	76.702	35.038						
	42.8%	27.9%	43.8%						
S/DEPTH=1.1	77.777	60.733	28.971	8.097					
	39.3%	24.6%	44.0%	*****					
S/DEPTH=1.0	60.125	47.569	23.559	6.996					
	36.0%	21.5%	44.3%	*****					
S/DEPTH=.9	45.891	36.721	18.785	5.879	.042	1.398	2.010	2.182	2.200
	32.9%	18.6%	44.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	34.409	27.802	14.622	4.788	.017	1.074	1.581	1.725	1.739
	30.0%	16.0%	45.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	25.171	20.506	11.042	3.757	.006	.801	1.205	1.321	1.332
	27.5%	13.7%	46.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	17.785	14.589	8.013	2.816	.002	.575	.882	.970	.979
	25.2%	11.6%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	11.953	9.861	5.505	1.987	.001	.392	.610	.674	.680
	23.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	7.450	6.174	3.492	1.287	.001	.247	.389	.431	.435
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	4.106	3.414	1.950	.731	.001	.137	.219	.243	.245
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	1.798	1.499	.862	.327	.001	.060	.097	.108	.109
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.446	.372	.215	.082	.000	.015	.024	.027	.027
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

702

CASE 4=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=	.858	.667	.383	.173	.041	.119	.137	.141	.142
	41.8%	26.1%	22.8%	150.2%	*****	208.4%	36.5%	171.3%	253.1%
SURFACE	.000	84.870	80.428	56.093	20.370	4.824	.844	.077	.000
	*****	93.0%	85.5%	70.0%	22.2%	496.1%	*****	*****	*****
S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000	68.237							
	*****	91.3%							
S/DEPTH=1.2	.000	53.100	76.257						
	*****	90.4%	86.6%						
S/DEPTH=1.1	.000	40.980	60.340	55.970					
	*****	89.6%	85.9%	77.1%					
S/DEPTH=1.0	.000	31.291	47.137	45.081					
	*****	88.9%	85.2%	76.8%					
S/DEPTH=.9	.000	23.564	36.240	35.620	17.679	4.576	.827	.075	.000
	*****	88.1%	84.5%	76.4%	21.0%	334.7%	*****	*****	*****
S/DEPTH=.8	.000	17.423	27.300	27.492	14.282	3.768	.723	.063	.000
	*****	87.4%	83.9%	76.0%	23.3%	*****	*****	*****	*****
S/DEPTH=.7	.000	12.569	20.024	20.598	11.134	2.992	.599	.051	.000
	*****	86.7%	83.3%	75.6%	25.1%	*****	*****	*****	*****
S/DEPTH=.6	.000	8.764	14.166	14.842	8.300	2.268	.468	.040	.000
	*****	86.1%	82.8%	75.3%	26.6%	*****	*****	*****	*****
S/DEPTH=.5	.000	5.819	9.523	10.134	5.831	1.617	.341	.029	.000
	*****	85.5%	82.3%	75.0%	27.7%	*****	*****	*****	*****
S/DEPTH=.4	.000	3.588	5.933	6.395	3.765	1.057	.227	.019	.000
	*****	*****	81.9%	74.7%	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	1.961	3.268	3.557	2.132	.604	.131	.011	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.853	1.430	1.568	.952	.272	.059	.005	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.211	.354	.390	.239	.068	.015	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

205

CASE 4=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=	.858	.667	.383	.173	-.041	-.119	-.137	-.141	-.142
	41.8%	26.1%	=22.8%	=150.2%	*****	208.4%	36.5%	=171.3%	=253.1%
SURFACE	1.724	1.335	.764	.349	-.086	-.238	-.273	-.282	-.283
	45.2%	30.1%	=17.2%	=139.4%	*****	225.5%	54.1%	=172.7%	=268.7%
S/DEPTH=1.5	1.723								
	100.0%								
S/DEPTH=1.4	1.631								
	100.0%								
S/DEPTH=1.3	1.546	1.296							
	38.9%	28.0%							
S/DEPTH=1.2	1.468	1.253	.768						
	36.3%	26.3%	=15.6%						
S/DEPTH=1.1	1.399	1.212	.781	.349					
	33.9%	24.6%	=12.6%	=135.5%					
S/DEPTH=1.0	1.336	1.173	.789	.385					
	31.5%	22.9%	=10.5%	=111.5%					
S/DEPTH= .9	1.281	1.138	.792	.415	-.065	-.236	-.273	-.282	-.283
	29.2%	21.2%	=9.0%	=94.8%	*****	227.1%	55.1%	100.0%	100.0%
S/DEPTH= .8	1.233	1.106	.793	.439	-.041	-.229	-.271	-.282	-.283
	27.0%	19.6%	=8.0%	=82.8%	*****	231.0%	56.7%	=172.5%	=268.5%
S/DEPTH= .7	1.192	1.078	.792	.459	-.019	-.223	-.270	-.282	-.283
	25.0%	18.1%	=7.3%	=73.8%	*****	234.7%	58.2%	=169.8%	=268.0%
S/DEPTH= .6	1.157	1.054	.791	.474	-.001	-.218	-.269	-.282	-.283
	23.3%	16.7%	=6.9%	=67.2%	*****	238.2%	59.4%	=166.7%	=264.2%
S/DEPTH= .5	1.127	1.033	.789	.486	.014	-.213	-.268	-.282	-.284
	21.7%	15.5%	=6.7%	=62.1%	*****	241.3%	60.4%	=164.1%	=261.1%
S/DEPTH= .4	1.104	1.016	.786	.496	.026	-.209	-.267	-.282	-.284
	20.4%	14.5%	=6.5%	=58.4%	*****	244.1%	61.2%	=162.0%	=258.5%
S/DEPTH= .3	1.086	1.003	.784	.503	.035	-.206	-.267	-.282	-.284
	19.3%	13.7%	=6.4%	=55.7%	*****	246.3%	61.9%	=160.4%	=256.5%
S/DEPTH= .2	1.073	.994	.783	.508	.042	-.204	-.266	-.282	-.284
	18.6%	13.1%	=6.4%	=53.9%	*****	247.9%	62.4%	=159.3%	=255.1%
S/DEPTH= .1	1.066	.988	.782	.510	.046	-.203	-.266	-.282	-.284
	18.1%	12.8%	=6.4%	=52.9%	*****	248.9%	62.6%	=158.6%	=254.2%
S/DEPTH= .0	1.063	.987	.781	.511	.047	-.202	-.266	-.282	-.284
	18.0%	12.7%	=6.4%	=52.5%	*****	249.3%	62.7%	=158.4%	=254.0%

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 CONDITON 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 (=1.6%)
- (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)		
	LINEAR	.024635	STREAM FUNCTION .000000
(11)	DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)		
	LINEAR	.017689	STREAM FUNCTION .000917
(12)	DIMENSIONLESS MAXIMUM KINEMATIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (46)		
	LINEAR	.042575	STREAM FUNCTION .000000
(13)	DIMENSIONLESS MAXIMUM DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)		
	LINEAR	.027579	STREAM FUNCTION .003661
(14)	DIMENSIONLESS KINEMATIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (48)		
	LINEAR	.317183	STREAM FUNCTION .525665
(15)	DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)		
	LINEAR	.033243	STREAM FUNCTION .278230

CASE 4=0

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 = .015553 DPT/LO = .020000
H/DPT = .777657
L/LO = .422461 PSI/(G*H*T) = -.002296

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.342654=01	X(2)/(H*T*G) =	-.123281=01
X(3)/(H*T*G) =	-.499483=02	X(4)/(H*T*G) =	-.201882=02
X(5)/(H*T*G) =	-.788821=03	X(6)/(H*T*G) =	-.298069=03
X(7)/(H*T*G) =	-.998966=04	X(8)/(H*T*G) =	-.343589=04
X(9)/(H*T*G) =	-.105353=04	X(10)/(H*T*G) =	-.304491=05
X(11)/(H*T*G) =	-.465498=06		

CASE 4=D

TABLE I=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	.889	.583	.284	.101	-.055	-.101	-.110	-.112	-.111
	43.7%	15.5%	=65.4%	=326.7%	681.4%	227.7%	21.4%	=242.4%	=348.7%
SURFACE	19.899	12.419	5.621	1.840	-.953	=1.636	=1.789	=1.799	=1.780
	51.9%	24.1%	=59.5%	=347.1%	*****	245.1%	12.9%	=273.2%	=388.6%
S/DEPTH=1.6	18.167								
	100.0%								
S/DEPTH=1.5	16.533								
	100.0%								
S/DEPTH=1.4	15.137	11.986							
	36.7%	21.4%							
S/DEPTH=1.3	13.942	11.246							
	32.3%	17.3%							
S/DEPTH=1.2	12.919	10.598	5.627						
	28.0%	13.6%	=55.3%						
S/DEPTH=1.1	12.043	10.030	5.637						
	23.9%	10.0%	=52.8%						
S/DEPTH=1.0	11.294	9.535	5.627	2.046					
	19.9%	6.6%	=51.1%	=283.0%					
S/DEPTH= .9	10.655	9.106	5.603	2.266	-.869	=1.630	=1.788	=1.799	=1.780
	16.1%	3.3%	=49.9%	=241.7%	*****	242.0%	13.2%	100.0%	100.0%
S/DEPTH= .8	10.113	8.736	5.570	2.445	-.733	=1.603	=1.780	=1.798	=1.783
	12.5%	.3%	=49.2%	=213.2%	*****	242.8%	13.7%	=273.2%	100.0%
S/DEPTH= .7	9.657	8.420	5.534	2.592	-.614	=1.579	=1.773	=1.798	=1.785
	9.3%	=2.5%	=48.7%	=192.7%	*****	243.6%	14.2%	=273.1%	=387.1%
S/DEPTH= .6	9.278	8.155	5.497	2.709	-.510	=1.556	=1.768	=1.798	=1.787
	6.4%	=4.9%	=48.5%	=177.7%	*****	244.5%	14.7%	=270.1%	=386.1%
S/DEPTH= .5	8.968	7.935	5.462	2.803	-.423	=1.537	=1.762	=1.798	=1.788
	3.8%	=7.0%	=48.4%	=166.5%	*****	245.2%	15.0%	=267.5%	=382.3%
S/DEPTH= .4	8.722	7.760	5.431	2.875	-.351	=1.521	=1.758	=1.798	=1.789
	1.7%	=8.8%	=48.4%	=158.3%	*****	245.9%	15.3%	=265.4%	=379.2%
S/DEPTH= .3	8.535	7.626	5.406	2.928	-.296	=1.508	=1.755	=1.798	=1.790
	.0%	=10.2%	=48.4%	=152.5%	*****	246.5%	15.5%	=263.8%	=376.8%
S/DEPTH= .2	8.404	7.931	5.387	2.965	-.256	=1.498	=1.753	=1.798	=1.791
	=1.2%	=11.3%	=48.4%	=148.5%	*****	247.0%	15.7%	=262.6%	=375.1%
S/DEPTH= .1	8.326	7.475	5.375	2.987	-.233	=1.493	=1.751	=1.797	=1.791
	=2.0%	=11.9%	=48.4%	=146.2%	*****	247.2%	15.8%	=261.9%	=374.1%
S/DEPTH= .0	8.300	7.456	5.372	2.994	-.225	=1.491	=1.751	=1.797	=1.791
	=2.2%	=12.1%	=48.5%	=145.5%	*****	247.3%	15.8%	=261.7%	=373.8%

CASE 4=0

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=	.889	.583	.284	.101	-.055	-.101	-.110	-.112	-.111
	43.7%	15.5%	=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	***** .000	89.1%	77.8%	53.4%	=112.8%	*****	*****	*****	*****
S/DEPTH=1.5	***** .000								
S/DEPTH=1.4	***** .000	6.539							
S/DEPTH=1.3	***** .000	88.2%							
S/DEPTH=1.2	***** .000	5.635							
S/DEPTH=1.1	***** .000	87.2%	6.534						
S/DEPTH=1.0	***** .000	86.4%	80.1%						
S/DEPTH=.9	***** .000	4.178	5.719						
S/DEPTH=.8	***** .000	85.6%	79.3%	4.186					
S/DEPTH=.7	***** .000	3.586	4.985	62.5%	1.364	.269	.045	.012	=.000
S/DEPTH=.6	***** .000	84.8%	78.5%	4.318	3.706				*****
S/DEPTH=.5	***** .000	3.065	4.318	3.706	1.240	.249	.043	.010	=.000
S/DEPTH=.4	***** .000	84.1%	77.7%	62.0%	=58.0%	*****	*****	*****	*****
S/DEPTH=.3	***** .000	2.601	3.709	3.244	1.240	.249	.043	.010	=.000
S/DEPTH=.2	***** .000	83.4%	77.0%	61.6%	=53.9%	*****	*****	*****	*****
S/DEPTH=.1	***** .000	2.185	3.149	2.799	1.106	.225	.039	.008	=.000
S/DEPTH=.0	***** .000	82.7%	76.4%	61.2%	=50.5%	*****	*****	*****	*****
S/DEPTH=.9	***** .000	1.809	2.630	2.370	.962	.198	.035	.007	=.000
S/DEPTH=.8	***** .000	82.2%	75.8%	60.8%	=47.8%	*****	*****	*****	*****
S/DEPTH=.7	***** .000	1.463	2.143	1.954	.812	.169	.030	.005	=.000
S/DEPTH=.6	***** .000	81.7%	75.4%	60.5%	=45.6%	*****	*****	*****	*****
S/DEPTH=.5	***** .000	1.142	1.684	1.549	.656	.138	.025	.004	=.000
S/DEPTH=.4	***** .000	81.3%	75.0%	60.2%	=43.9%	*****	*****	*****	*****
S/DEPTH=.3	***** .000	.841	1.245	1.154	.496	.105	.019	.003	=.000
S/DEPTH=.2	***** .000	80.9%	74.6%	60.0%	=42.6%	*****	*****	*****	*****
S/DEPTH=.1	***** .000	.553	.822	.765	.332	.071	.013	.002	=.000
S/DEPTH=.0	***** .000	80.7%	74.4%	59.8%	*****	*****	*****	*****	*****
S/DEPTH=.9	***** .000	.274	.408	.382	.167	.035	.006	.001	=.000
S/DEPTH=.8	***** .000	*****	74.3%	59.7%	*****	*****	*****	*****	*****
S/DEPTH=.7	***** .000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.6	***** .000	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=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	.889	.583	.284	.101	-.055	-.101	-.110	-.112	-.111
	43.7%	15.5%	65.4%	326.7%	681.4%	227.7%	21.4%	242.4%	348.7%

SURFACE	.000	167.815	145.513	89.352	22.551	4.026	.460	.489	-.000
	*****	95.8%	90.4%	76.4%	-55.7%	*****	*****	*****	*****
S/DEPTH=1.6	.000								

S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000	155.086							
	*****	95.5%							
S/DEPTH=1.3	.000	134.031							
	*****	94.9%							
S/DEPTH=1.2	.000	116.293	142.544						
	*****	94.3%	90.6%						
S/DEPTH=1.1	.000	101.378	129.328						
	*****	93.6%	89.8%						
S/DEPTH=1.0	.000	88.865	117.723	87.724					
	*****	92.8%	89.0%	77.6%					
S/DEPTH=.9	.000	78.402	107.624	85.398	24.251	4.194	.492	.480	-.000
	*****	92.0%	88.2%	77.4%	-36.3%	*****	*****	*****	*****
S/DEPTH=.8	.000	69.695	98.922	82.971	26.878	4.944	.702	.413	-.000
	*****	91.1%	87.4%	77.1%	-21.2%	*****	*****	*****	*****
S/DEPTH=.7	.000	62.499	91.510	80.595	29.087	5.621	.880	.359	-.000
	*****	90.3%	86.5%	76.7%	-10.6%	*****	*****	*****	*****
S/DEPTH=.6	.000	56.617	85.292	78.381	30.914	6.218	1.032	.316	-.000
	*****	89.4%	85.8%	76.4%	-3.0%	*****	*****	*****	*****
S/DEPTH=.5	.000	51.885	80.179	76.408	32.395	6.731	1.158	.283	-.000
	*****	88.5%	85.0%	76.0%	2.7%	*****	*****	*****	*****
S/DEPTH=.4	.000	48.176	76.098	74.734	33.562	7.156	1.260	.258	-.000
	*****	87.8%	84.3%	75.7%	6.8%	*****	*****	*****	*****
S/DEPTH=.3	.000	45.389	72.987	73.399	34.440	7.491	1.339	.239	-.000
	*****	87.1%	83.8%	75.4%	9.7%	*****	*****	*****	*****
S/DEPTH=.2	.000	43.450	70.799	72.428	35.052	7.731	1.396	.227	-.000
	*****	86.6%	83.4%	75.2%	11.6%	*****	*****	*****	*****
S/DEPTH=.1	.000	42.306	69.500	71.839	35.413	7.876	1.429	.219	-.000
	*****	86.3%	83.1%	75.1%	12.8%	*****	*****	*****	*****
S/DEPTH=.0	.000	41.928	69.069	71.641	35.533	7.924	1.441	.217	-.000
	*****	86.2%	83.0%	75.0%	13.1%	*****	*****	*****	*****

CASE 4=D

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	.889	.583	.284	.101	.055	.101	.110	.112	.111
	43.7%	15.5%	65.4%	326.7%	681.4%	227.7%	21.4%	242.4%	348.7%

SURFACE	=115.597	=38.568	51.018	73.423	34.530	6.247	1.883	=.002	=.740
	86.2%	59.9%	127.5%	116.1%	116.1%	47.0%	*****	*****	*****
S/DEPTH=1.6	=123.663								
	100.0%								
S/DEPTH=1.5	=124.712								
	100.0%								
S/DEPTH=1.4	=120.645	=43.516							
	86.8%	64.5%							
S/DEPTH=1.3	=113.549	=48.973							
	86.8%	70.1%							
S/DEPTH=1.2	=104.774	=50.769	47.682						
	86.7%	73.3%	126.2%						
S/DEPTH=1.1	=95.185	=50.086	34.159						
	86.5%	75.0%	133.8%						
S/DEPTH=1.0	=85.320	=47.742	24.011	63.164					
	86.3%	76.1%	143.9%	114.4%					
S/DEPTH=.9	=75.504	=44.300	16.464	52.009	32.530	6.182	1.853	.002	=.719
	86.0%	76.7%	157.9%	115.8%	113.2%	*****	*****	*****	*****
S/DEPTH=.8	=65.923	=40.148	10.926	42.582	28.948	5.798	1.646	.024	=.577
	85.7%	77.0%	177.9%	117.3%	113.3%	*****	*****	*****	*****
S/DEPTH=.7	=56.666	=35.550	6.940	34.573	25.312	5.300	1.443	.036	=.460
	85.4%	77.2%	207.7%	118.7%	113.5%	*****	*****	*****	*****
S/DEPTH=.6	=47.764	=30.683	4.149	27.721	21.658	4.708	1.240	.041	=.363
	85.1%	77.3%	*****	120.1%	113.7%	*****	*****	*****	*****
S/DEPTH=.5	=39.209	=25.663	2.272	21.799	18.006	4.038	1.037	.040	=.282
	84.8%	77.4%	*****	121.3%	113.8%	*****	*****	*****	*****
S/DEPTH=.4	=30.966	=20.565	1.084	16.613	14.369	3.304	.832	.036	=.212
	84.6%	77.4%	*****	122.5%	113.9%	*****	*****	*****	*****
S/DEPTH=.3	=22.986	=15.432	.405	11.989	10.752	2.520	.626	.029	=.152
	84.4%	77.4%	*****	123.4%	114.0%	*****	*****	*****	*****
S/DEPTH=.2	=15.209	=10.288	.082	7.773	7.155	1.700	.419	.020	=.098
	84.3%	77.3%	*****	124.1%	114.1%	*****	*****	*****	*****
S/DEPTH=.1	=7.569	=5.143	.014	3.821	3.574	.856	.210	.011	=.048
	84.2%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=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	.889	.583	.284	.101	.055	.101	.110	.112	.111
	43.7%	15.5%	=65.4%	=326.7%	681.4%	227.7%	21.4%	=242.4%	=348.7%
SURFACE	242.396	119.800	37.004	7.722	-.254	-2.190	-2.844	-2.951	-2.919
	55.0%	12.1%	=155.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	209.482								
	100.0%								
S/DEPTH=1.5	179.432								
	100.0%								
S/DEPTH=1.4	154.400	111.892							
	29.4%	5.9%							
S/DEPTH=1.3	133.295	98.412							
	24.2%	.4%							
S/DEPTH=1.2	115.284	86.495	36.344						
	20.0%	=3.4%	=124.1%						
S/DEPTH=1.1	99.730	75.868	33.170						
	16.1%	=7.0%	=122.8%						
S/DEPTH=1.0	86.134	66.307	29.996	7.423					
	12.5%	=10.3%	=121.9%	*****					
S/DEPTH=.9	74.106	57.628	26.843	6.957	-.207	-2.134	-2.799	-2.909	-2.877
	9.2%	=13.2%	=121.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	63.337	49.677	23.721	6.400	-.142	-1.873	-2.480	-2.586	-2.559
	6.3%	=15.9%	=121.0%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	53.577	42.326	20.639	5.764	-.097	-1.620	-2.165	-2.262	-2.241
	3.7%	=18.2%	=120.8%	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	44.624	35.464	17.597	5.060	-.066	-1.374	-1.851	-1.939	-1.922
	1.5%	=20.3%	=120.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	36.310	28.997	14.595	4.300	-.044	-1.135	-1.540	-1.616	-1.603
	.4%	=22.0%	=120.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	28.495	22.844	11.629	3.493	-.029	-.901	-1.230	-1.293	-1.283
	=2.0%	=23.4%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	21.058	16.931	8.693	2.650	-.019	-.672	-.921	-.969	-.962
	=3.2%	=24.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	13.893	11.193	5.782	1.781	-.011	-.446	-.614	-.646	-.642
	=4.0%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	6.903	5.568	2.887	.895	-.005	-.222	-.307	-.323	-.321
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

215

CASE 4=0

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	.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	112.131	113.465	84.554	30.122	6.076	1.025	.272	.000
	*****	92.4%	85.0%	70.0%	34.0%	766.7%	*****	*****	*****
S/DEPTH=1.6	.000								

S/DEPTH=1.5	.000								

S/DEPTH=1.4	.000	103.559							
	*****	91.7%							
S/DEPTH=1.3	.000	89.133							
	*****	91.0%							
S/DEPTH=1.2	.000	76.642	110.460						
	*****	90.5%	86.6%						
S/DEPTH=1.1	.000	65.780	96.880						
	*****	89.9%	86.1%						
S/DEPTH=1.0	.000	56.286	84.540	77.565					
	*****	89.3%	85.7%	76.2%					
S/DEPTH=.9	.000	47.939	73.285	68.907	28.787	5.989	1.018	.266	.000
	*****	88.8%	85.2%	76.0%	1.2%	612.1%	*****	*****	*****
S/DEPTH=.8	.000	40.547	62.969	60.489	26.227	5.532	.958	.221	.000
	*****	88.5%	84.8%	75.8%	4.0%	*****	*****	*****	*****
S/DEPTH=.7	.000	33.949	53.458	52.311	23.425	5.003	.879	.183	.000
	*****	87.8%	84.4%	75.7%	6.4%	*****	*****	*****	*****
S/DEPTH=.6	.000	28.000	44.627	44.364	20.422	4.410	.783	.149	.000
	*****	87.4%	84.0%	75.5%	8.3%	*****	*****	*****	*****
S/DEPTH=.5	.000	22.588	36.363	36.627	17.254	3.762	.673	.119	.000
	*****	87.1%	83.7%	75.4%	9.9%	*****	*****	*****	*****
S/DEPTH=.4	.000	17.593	28.557	29.073	13.954	3.067	.552	.092	.000
	*****	86.8%	83.5%	75.3%	11.1%	*****	*****	*****	*****
S/DEPTH=.3	.000	12.922	21.111	21.669	10.551	2.334	.422	.067	.000
	*****	86.5%	83.3%	75.2%	12.0%	*****	*****	*****	*****
S/DEPTH=.2	.000	8.487	13.929	14.381	7.075	1.572	.285	.044	.000
	*****	86.3%	83.1%	75.1%	12.6%	*****	*****	*****	*****
S/DEPTH=.1	.000	4.205	6.921	7.171	3.549	.791	.144	.022	.000
	*****	*****	83.1%	75.0%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=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=	.889	.583	.284	.101	-.055	-.101	-.110	-.112	-.111
	43.7%	15.5%	65.4%	326.7%	681.4%	227.7%	21.4%	242.4%	348.7%
SURFACE	268.061	102.640	23.042	3.628	-.179	1.041	1.309	1.348	1.330
	70.6%	26.2%	190.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=1.6	213.858								
	100.0%								
S/DEPTH=1.5	167.233								
	100.0%								
S/DEPTH=1.4	130.899	91.356							
	39.7%	17.1%							
S/DEPTH=1.3	102.378	73.144							
	33.5%	9.8%							
S/DEPTH=1.2	79.842	58.236	22.243						
	26.5%	5.0%	126.5%						
S/DEPTH=1.1	61.936	46.005	18.593						
	23.7%	.4%	124.3%						
S/DEPTH=1.0	47.646	35.958	15.260	3.318					
	19.2%	3.9%	122.8%	*****					
S/DEPTH=.9	36.208	27.707	12.264	2.875	-.135	.990	1.268	1.309	1.292
	14.9%	7.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	27.044	20.943	9.611	2.403	.080	.768	.998	1.035	1.022
	11.0%	11.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	19.717	15.425	7.298	1.927	.046	.578	.761	.792	.784
	7.4%	14.8%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	13.891	10.961	5.321	1.470	.025	.418	.557	.582	.576
	4.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	9.314	7.401	3.669	1.052	.013	.287	.386	.404	.400
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	5.794	4.630	2.334	.689	.007	.181	.246	.259	.256
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	3.188	2.559	1.307	.395	.003	.101	.138	.145	.144
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	1.395	1.123	.579	.178	.001	.045	.061	.065	.064
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.346	.279	.144	.045	.000	.011	.015	.016	.016
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 4=D

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 =	.889	.583	.284	.101	-.055	-.101	-.110	-.112	-.111
	43.7%	19.5%	65.4%	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	89.491							
S/DEPTH=1.3	***** .000	93.2%							
S/DEPTH=1.2	***** .000	69.998							
S/DEPTH=1.1	***** .000	92.4%	74.826						
S/DEPTH=1.0	***** .000	54.370	87.9%						
S/DEPTH=.9	***** .000	91.7%	59.198	40.201					
S/DEPTH=.8	***** .000	41.867	87.5%	76.7%					
S/DEPTH=.7	***** .000	91.1%	46.232	31.974	12.214	2.441	.395	.136	-.000
S/DEPTH=.6	***** .000	31.888	86.7%	31.974	6.0%	*****	*****	*****	*****
S/DEPTH=.5	***** .000	90.4%	86.1%	76.4%	10.040	2.052	.344	.098	-.000
S/DEPTH=.4	***** .000	23.949	85.5%	76.2%	1.2%	*****	*****	*****	*****
S/DEPTH=.3	***** .000	89.8%	85.0%	76.0%	7.941	1.656	.285	.070	-.000
S/DEPTH=.2	***** .000	17.659	84.5%	75.7%	2.7%	*****	*****	*****	*****
S/DEPTH=.1	***** .000	84.1%	84.5%	75.7%	5.990	1.272	.223	.048	-.000
S/DEPTH=.0	***** .000	12.704	84.1%	75.5%	5.7%	*****	*****	*****	*****
S/DEPTH=.9	***** .000	88.5%	84.1%	75.5%	4.249	.916	.162	.031	-.000
S/DEPTH=.8	***** .000	8.835	83.7%	75.4%	*****	*****	*****	*****	*****
S/DEPTH=.7	***** .000	88.0%	83.7%	75.4%	2.765	.603	.108	.019	-.000
S/DEPTH=.6	***** .000	5.852	83.7%	75.4%	*****	*****	*****	*****	*****
S/DEPTH=.5	***** .000	87.5%	83.7%	75.4%	1.575	.347	.063	.010	-.000
S/DEPTH=.4	***** .000	3.601	83.7%	75.4%	*****	*****	*****	*****	*****
S/DEPTH=.3	***** .000	*****	83.7%	75.4%	1.575	.347	.063	.010	-.000
S/DEPTH=.2	***** .000	1.964	83.7%	75.4%	*****	*****	*****	*****	*****
S/DEPTH=.1	***** .000	*****	83.7%	75.4%	1.575	.347	.063	.010	-.000
S/DEPTH=.0	***** .000	1.964	83.7%	75.4%	*****	*****	*****	*****	*****

CASE 4-D

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=	.889	.583	.284	.101	-.055	-.101	-.110	-.112	-.111
	43.7%	15.5%	=65.4%	=326.7%	681.4%	227.7%	21.4%	=242.4%	=348.7%
SURFACE	1.719	1.188	.590	.211	-.112	-.203	-.225	-.226	-.224
	46.3%	23.2%	=48.9%	=289.9%	675.8%	253.5%	52.3%	=238.9%	=372.8%
S/DEPTH=1.6	1.650								
	100.0%								
S/DEPTH=1.5	1.570								
	100.0%								
S/DEPTH=1.4	1.492	1.174							
	38.1%	22.3%							
S/DEPTH=1.3	1.417	1.144							
	35.5%	21.0%							
S/DEPTH=1.2	1.348	1.112	.596						
	32.8%	19.6%	=44.9%						
S/DEPTH=1.1	1.284	1.080	.622						
	30.2%	17.9%	=37.7%						
S/DEPTH=1.0	1.227	1.049	.640	.245					
	27.5%	16.2%	=32.6%	=226.2%					
S/DEPTH=.9	1.175	1.020	.653	.282	-.100	-.202	-.225	-.226	-.224
	25.0%	14.5%	=29.0%	=181.9%	735.0%	255.9%	53.2%	100.0%	100.0%
S/DEPTH=.8	1.130	.993	.662	.312	-.080	-.199	-.224	-.226	-.224
	22.6%	12.8%	=26.5%	=153.1%	*****	259.7%	55.7%	=238.9%	100.0%
S/DEPTH=.7	1.091	.969	.667	.336	-.063	-.195	-.223	-.226	-.224
	20.3%	11.2%	=24.7%	=133.4%	*****	263.2%	57.8%	=238.9%	=371.1%
S/DEPTH=.6	1.058	.947	.671	.356	-.048	-.192	-.222	-.226	-.225
	18.3%	9.7%	=23.4%	=119.3%	*****	266.5%	59.7%	=234.8%	=370.0%
S/DEPTH=.5	1.030	.930	.673	.372	-.035	-.189	-.221	-.226	-.225
	16.5%	8.4%	=22.4%	=109.2%	*****	269.4%	61.3%	=231.4%	=365.4%
S/DEPTH=.4	1.008	.915	.674	.384	-.025	-.187	-.220	-.226	-.225
	15.0%	7.3%	=21.8%	=101.8%	*****	271.9%	62.6%	=228.6%	=361.6%
S/DEPTH=.3	.991	.903	.674	.393	-.017	-.185	-.220	-.226	-.225
	13.8%	6.4%	=21.3%	=96.7%	*****	273.9%	63.6%	=226.4%	=358.7%
S/DEPTH=.2	.979	.895	.674	.399	-.011	-.183	-.220	-.226	-.225
	12.9%	5.8%	=21.1%	=93.2%	*****	275.4%	64.4%	=224.9%	=356.7%
S/DEPTH=.1	.972	.890	.675	.403	-.008	-.183	-.220	-.226	-.225
	12.4%	5.4%	=20.9%	=91.2%	*****	276.3%	64.8%	=224.0%	=355.5%
S/DEPTH=.0	.969	.889	.675	.404	-.007	-.182	-.219	-.226	-.225
	12.2%	5.2%	=20.9%	=90.6%	*****	276.6%	64.9%	=223.6%	=355.1%

CASE 4=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	.035	.064	.081	.079	.032	-.018	-.042	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE 4=0

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 (=.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 (=189.5%)

CASE 4-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	.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

CASE 5=A

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 = .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) = -.646213=01 X(2)/(H*T*G) = -.541774=02
X(3)/(H*T*G) = -.383873=03 X(4)/(H*T*G) = -.207385=04
X(5)/(H*T*G) = -.548613=06

CASE 5=A

TABLE I-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=	.623	.603	.548	.465	.257	.007	-.177	-.334	-.377
	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	50.9%	=14.6%	=32.6%
SURFACE	7.659	7.412	6.711	5.666	3.093	.072	=2.074	=3.844	=4.315
S/DEPTH=1.1	20.3%	18.9%	14.7%	7.1%	=25.4%	*****	50.8%	=15.2%	=33.1%
S/DEPTH=1.0	7.572	7.344	6.609						
	19.4%	18.2%	14.4%						
S/DEPTH=.9	7.200	6.991	6.390	5.468	3.072	.074			
	17.9%	16.7%	13.1%	6.4%	=23.7%	*****			
S/DEPTH=.8	6.874	6.682	6.127	5.272	3.029	.162	=1.997	=3.814	=4.298
	16.5%	15.4%	12.0%	5.8%	=21.7%	*****	50.1%	=15.2%	=33.5%
S/DEPTH=.7	6.591	6.413	5.898	5.100	2.988	.236	=1.892	=3.736	=4.237
	15.3%	14.3%	11.1%	5.2%	=20.1%	*****	48.8%	=14.5%	=31.7%
S/DEPTH=.6	6.349	6.182	5.699	4.950	2.950	.298	=1.801	=3.667	=4.183
	14.2%	13.2%	10.2%	4.7%	=18.7%	*****	47.5%	=13.8%	=30.2%
S/DEPTH=.5	6.143	5.986	5.531	4.822	2.916	.350	=1.723	=3.606	=4.136
	13.2%	12.3%	9.4%	4.3%	=17.5%	*****	46.3%	=13.2%	=28.9%
S/DEPTH=.4	5.972	5.823	5.391	4.715	2.886	.391	=1.659	=3.555	=4.096
	12.4%	11.5%	8.8%	3.9%	=16.5%	=246.2%	45.2%	=12.7%	=27.7%
S/DEPTH=.3	5.835	5.692	5.278	4.628	2.861	.424	=1.606	=3.513	=4.062
	11.7%	10.9%	8.3%	3.6%	=15.7%	=214.6%	44.3%	=12.3%	=26.8%
S/DEPTH=.2	5.730	5.592	5.190	4.561	2.841	.449	=1.566	=3.480	=4.037
	11.2%	10.4%	7.8%	3.4%	=15.2%	=193.6%	43.6%	=12.0%	=26.1%
S/DEPTH=.1	5.656	5.521	5.129	4.514	2.827	.466	=1.538	=3.457	=4.018
	10.8%	10.0%	7.5%	3.2%	=14.7%	=180.3%	43.0%	=11.8%	=25.6%
S/DEPTH=.0	5.611	5.478	5.092	4.485	2.818	.476	=1.521	=3.443	=4.007
	10.5%	9.8%	7.4%	3.1%	=14.5%	=172.9%	42.7%	=11.7%	=25.3%
S/DEPTH=.0	5.596	5.464	5.080	4.476	2.815	.480	=1.515	=3.438	=4.003
	10.5%	9.7%	7.3%	3.0%	=14.4%	=170.5%	42.6%	=11.6%	=25.2%

CASE 5=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=	.623	.603	.548	.465	.257	.007	.177	.334	.377
	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	50.9%	=14.6%	=32.6%

SURFACE	.000	1.200	2.244	3.022	3.659	3.180	2.202	.875	.000
	*****	49.6%	47.2%	43.1%	29.7%	2.0%	=37.8%	=111.7%	*****
S/DEPTH=1.1	.000	1.173	2.225						
	*****	48.5%	46.8%						
S/DEPTH=1.0	.000	1.030	1.956	2.694	3.443	3.175			
	*****	47.1%	45.1%	41.7%	30.2%	4.5%			
S/DEPTH=.9	.000	.898	1.707	2.357	3.032	2.826	2.051	.845	.000
	*****	45.9%	44.0%	40.7%	29.4%	4.5%	=34.1%	=112.6%	*****
S/DEPTH=.8	.000	.776	1.477	2.043	2.643	2.487	1.822	.758	.000
	*****	44.9%	43.0%	39.8%	28.7%	4.5%	=33.0%	=108.6%	*****
S/DEPTH=.7	.000	.662	1.262	1.748	2.273	2.156	1.593	.668	.000
	*****	44.0%	42.2%	39.0%	28.1%	4.4%	=31.9%	=105.2%	*****
S/DEPTH=.6	.000	.555	1.059	1.470	1.920	1.834	1.364	.577	.000
	*****	43.2%	41.4%	38.2%	27.6%	4.4%	=31.1%	=102.4%	*****
S/DEPTH=.5	.000	.454	.868	1.205	1.580	1.518	1.135	.483	.000
	*****	42.6%	40.7%	37.6%	27.1%	4.3%	=30.4%	=100.0%	*****
S/DEPTH=.4	.000	.358	.684	.951	1.251	1.207	.908	.388	.000
	*****	42.0%	40.2%	37.1%	26.7%	4.3%	=29.8%	=98.1%	*****
S/DEPTH=.3	.000	.266	.508	.706	.931	.902	.680	.292	.000
	*****	41.6%	39.8%	36.7%	26.4%	4.3%	=29.4%	=96.7%	*****
S/DEPTH=.2	.000	.176	.336	.467	.617	.599	.453	.195	.000
	*****	41.3%	39.5%	36.5%	26.2%	4.3%	=29.1%	=95.6%	*****
S/DEPTH=.1	.000	.087	.167	.233	.307	.299	.227	.098	.000
	*****	*****	*****	36.3%	26.1%	4.2%	=28.9%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=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	.623	.603	.548	.465	.257	.007	-.177	-.334	-.377
	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	50.9%	=14.6%	=32.6%
SURFACE	.000	15.202	28.311	37.860	44.904	37.706	25.201	9.650	.000
	*****	59.5%	57.0%	52.9%	38.5%	6.0%	=46.4%	=156.7%	*****
S/DEPTH=.1	.000	14.953	28.137						
	*****	58.8%	56.8%						
S/DEPTH=1.0	.000	13.664	25.806	35.202	43.554	37.691			
	*****	56.4%	54.4%	50.8%	37.9%	6.7%			
S/DEPTH=.9	.000	12.564	23.809	32.662	41.117	36.667	25.263	9.776	.000
	*****	54.1%	52.1%	48.7%	36.3%	7.0%	=42.5%	=151.6%	*****
S/DEPTH=.8	.000	11.630	22.110	30.491	38.998	35.730	25.316	10.103	.000
	*****	51.9%	50.0%	46.6%	34.8%	7.2%	=38.4%	=137.3%	*****
S/DEPTH=.7	.000	10.845	20.677	28.651	37.177	34.888	25.330	10.382	.000
	*****	49.8%	47.9%	44.7%	33.3%	7.3%	=35.0%	=125.6%	*****
S/DEPTH=.6	.000	10.191	19.483	27.112	35.633	34.147	25.319	10.618	.000
	*****	47.8%	46.0%	42.9%	32.0%	7.4%	=32.2%	=116.2%	*****
S/DEPTH=.5	.000	9.658	18.506	25.849	34.353	33.515	25.293	10.811	.000
	*****	46.0%	44.3%	41.3%	30.9%	7.4%	=29.9%	=108.6%	*****
S/DEPTH=.4	.000	9.234	17.729	24.843	33.323	32.993	25.260	10.966	.000
	*****	44.5%	42.8%	39.9%	29.9%	7.4%	=28.2%	=102.7%	*****
S/DEPTH=.3	.000	8.912	17.138	24.076	32.533	32.585	25.229	11.084	.000
	*****	43.2%	41.6%	38.8%	29.1%	7.4%	=26.8%	=98.3%	*****
S/DEPTH=.2	.000	8.686	16.723	23.536	31.974	32.292	25.202	11.167	.000
	*****	42.3%	40.7%	38.0%	28.5%	7.4%	=25.9%	=95.3%	*****
S/DEPTH=.1	.000	8.553	16.477	23.216	31.641	32.116	25.185	11.217	.000
	*****	41.8%	40.2%	37.5%	28.1%	7.4%	=25.3%	=93.5%	*****
S/DEPTH=.0	.000	8.508	16.395	23.110	31.530	32.057	25.179	11.233	.000
	*****	41.6%	40.0%	37.3%	28.0%	7.4%	=25.1%	=92.9%	*****

CASE 5=A

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=	.623	.603	.548	.465	.257	.007	.177	.334	.377	
	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	50.9%	=14.6%	=32.6%	
SURFACE	=38.090	=35.733	=29.253	=20.173	=1.306	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	=1.567	12.529				
	46.4%	44.3%	36.7%	18.9%	*****	123.7%				
S/DEPTH=.9	=28.791	=27.244	=22.887	=16.497	=1.921	10.627	13.557	9.729	7.420	
	45.4%	43.3%	36.0%	19.0%	=391.1%	125.4%	63.9%	=57.2%	=161.5%	
S/DEPTH=.8	=25.012	=23.704	=20.015	=14.587	=2.090	8.945	11.794	8.673	6.670	
	44.5%	42.5%	35.4%	19.1%	=299.6%	127.0%	63.8%	=54.8%	=155.4%	
S/DEPTH=.7	=21.446	=20.352	=17.260	=12.697	=2.107	7.450	10.121	7.605	5.893	
	43.7%	41.7%	34.8%	19.1%	=245.4%	128.6%	63.8%	=52.7%	=150.3%	
S/DEPTH=.6	=18.061	=17.158	=14.606	=10.830	=2.003	6.112	8.527	6.530	5.092	
	43.0%	41.0%	34.3%	19.1%	=210.4%	130.0%	63.7%	=50.9%	=145.9%	
S/DEPTH=.5	=14.827	=14.100	=12.040	=8.985	=1.802	4.904	7.002	5.449	4.272	
	42.4%	40.5%	33.8%	19.1%	*****	131.4%	63.6%	=49.4%	=142.3%	
S/DEPTH=.4	=11.717	=11.151	=9.545	=7.160	=1.525	3.802	5.533	4.363	3.437	
	41.9%	40.0%	33.5%	19.0%	*****	132.5%	63.6%	=48.3%	=139.4%	
S/DEPTH=.3	=8.704	=8.288	=7.109	=5.354	=1.191	2.782	4.110	3.275	2.588	
	41.5%	39.6%	33.2%	19.0%	*****	133.4%	63.5%	=47.4%	=137.2%	
S/DEPTH=.2	=5.763	=5.490	=4.715	=3.561	=.816	1.821	2.721	2.184	1.731	
	41.2%	39.4%	33.0%	18.9%	*****	*****	63.5%	=46.7%	*****	
S/DEPTH=.1	=2.870	=2.735	=2.350	=1.778	=.415	.901	1.355	1.092	.867	
	41.1%	39.2%	32.8%	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

227

CASE 5=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=	.623	.603	.548	.465	.257	.007	.177	.334	.377
	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	50.9%	=14.6%	=32.6%
SURFACE	44.289	41.784	35.033	25.939	8.927	.139	=2.807	=11.955	=15.643
S/DEPTH=1.1	28.1%	26.3%	20.3%	9.4%	=41.4%	*****	70.2%	=26.4%	=59.7%
S/DEPTH=1.0	43.043	40.821	34.724						
	26.1%	24.5%	19.6%						
S/DEPTH=.9	37.593	35.688	30.450	23.130	8.450	.139			
	24.7%	23.1%	17.9%	8.2%	=38.4%	*****			
S/DEPTH=.8	32.645	31.018	26.536	20.248	7.519	.137	=2.536	=11.444	=15.153
	23.7%	22.1%	17.1%	7.8%	=36.8%	*****	70.4%	=27.7%	=64.3%
S/DEPTH=.7	28.116	26.735	22.924	17.560	6.614	.133	=2.158	=10.019	=13.332
	22.8%	21.3%	16.4%	7.3%	=35.5%	*****	*****	=27.1%	=62.7%
S/DEPTH=.6	23.934	22.773	19.565	15.037	5.733	.126	=1.818	=8.650	=11.560
	22.1%	20.6%	15.8%	7.0%	=34.4%	*****	*****	=26.5%	=61.3%
S/DEPTH=.5	20.036	19.075	16.414	12.650	4.872	.116	=1.508	=7.328	=9.830
	21.4%	20.0%	15.3%	6.7%	=33.5%	*****	*****	=26.1%	=60.2%
S/DEPTH=.4	16.370	15.591	13.435	10.378	4.031	.102	=1.222	=6.047	=8.137
	20.9%	19.4%	14.9%	6.4%	=32.8%	*****	*****	=25.7%	=59.2%
S/DEPTH=.3	12.887	12.279	10.592	8.197	3.205	.085	=.956	=4.798	=6.473
	20.4%	19.0%	14.5%	6.2%	=32.2%	*****	*****	=25.4%	=58.4%
S/DEPTH=.2	9.546	9.098	7.854	6.087	2.392	.066	=.704	=3.576	=4.834
	20.1%	18.7%	14.3%	6.0%	=31.7%	*****	*****	=25.2%	=57.8%
S/DEPTH=.1	6.308	6.013	5.194	4.029	1.589	.045	=.464	=2.373	=3.213
	19.9%	18.5%	14.1%	5.9%	*****	*****	*****	=25.0%	=57.3%
S/DEPTH=.0	3.138	2.991	2.585	2.006	.793	.023	=.230	=1.183	=1.603
	19.7%	18.3%	13.9%	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=A

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
THETA =	.0	.03	.048	.065	.087	.007	.177	.334	.377
ETA/HEIGHT=	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	50.9%	=14.6%	=32.6%
SURFACE	.000	11.822	22.246	30.246	37.628	34.025	24.389	10.026	.000
	*****	50.2%	47.9%	44.1%	31.3%	4.7%	=34.3%	=109.6%	*****
S/DEPTH=1.1	.000	11.555	22.051						
	*****	49.1%	47.5%						
S/DEPTH=1.0	.000	10.126	19.357	26.936	35.407	33.972			
	*****	47.7%	45.8%	42.7%	31.8%	7.2%			
S/DEPTH=.9	.000	8.816	16.879	23.546	31.177	30.254	22.736	9.688	.000
	*****	46.5%	44.7%	41.7%	31.1%	7.3%	=30.7%	=110.5%	*****
S/DEPTH=.8	.000	7.608	14.585	20.392	27.173	26.635	20.207	8.694	.000
	*****	45.5%	43.8%	40.8%	30.5%	7.3%	=29.5%	=106.6%	*****
S/DEPTH=.7	.000	6.485	12.448	17.437	23.367	23.105	17.674	7.669	.000
	*****	44.6%	42.9%	40.0%	29.9%	7.3%	=28.4%	=103.3%	*****
S/DEPTH=.6	.000	5.434	10.442	14.651	19.729	19.654	15.142	6.619	.000
	*****	43.8%	42.1%	39.3%	29.4%	7.3%	=27.5%	=100.5%	*****
S/DEPTH=.5	.000	4.443	8.544	12.006	16.232	16.272	12.611	5.547	.000
	*****	43.1%	41.5%	38.6%	28.9%	7.3%	=26.8%	=98.1%	*****
S/DEPTH=.4	.000	3.499	6.734	9.473	12.850	12.948	10.083	4.458	.000
	*****	42.5%	40.9%	38.1%	28.6%	7.3%	=26.2%	=96.3%	*****
S/DEPTH=.3	.000	2.593	4.992	7.029	9.559	9.670	7.559	3.355	.000
	*****	42.1%	40.5%	37.8%	28.3%	7.3%	=25.8%	=94.9%	*****
S/DEPTH=.2	.000	1.713	3.301	4.650	6.336	6.427	5.037	2.242	.000
	*****	*****	40.2%	37.5%	28.1%	7.3%	=25.5%	=93.9%	*****
S/DEPTH=.1	.000	.852	1.642	2.315	3.157	3.208	2.518	1.123	.000
	*****	*****	*****	37.3%	28.0%	7.3%	=25.3%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

229

CASE 5-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
EYA/HEIGHT	.623	.603	.548	.465	.257	.007	-.177	-.334	-.377
	19.7%	18.4%	14.3%	6.9%	-24.8%	*****	50.9%	-14.6%	-32.6%
SURFACE	27.943	25.824	21.262	15.300	4.843	.048	=1.504	=5.801	=7.432
	32.3%	30.2%	23.5%	11.2%	=47.3%	*****	71.2%	=26.4%	=58.8%
S/DEPTH=1.1	26.160	24.756	20.921						
	28.7%	27.2%	22.3%						
S/DEPTH=1.0	20.432	19.362	16.431	12.363	4.354	.048			
	26.8%	25.1%	19.6%	9.3%	=41.9%	*****			
S/DEPTH=.9	15.728	14.922	12.709	9.623	3.469	.047	=1.251	=5.332	=6.984
	25.5%	23.8%	18.5%	8.6%	=39.6%	*****	*****	=29.0%	=67.9%
S/DEPTH=.8	11.875	11.279	9.637	7.337	2.700	.044	=.930	=4.121	=5.436
	24.2%	22.6%	17.6%	8.0%	=37.7%	*****	*****	=28.1%	=65.5%
S/DEPTH=.7	8.736	8.305	7.115	5.443	2.038	.038	=.674	=3.093	=4.106
	23.2%	21.6%	16.7%	7.5%	=36.0%	*****	*****	=27.3%	=63.5%
S/DEPTH=.6	6.200	5.899	5.066	3.891	1.479	.031	=.472	=2.234	=2.982
	22.2%	20.7%	16.0%	7.1%	=34.7%	*****	*****	=26.7%	=61.7%
S/DEPTH=.5	4.182	3.981	3.426	2.640	1.016	.024	=.315	=1.529	=2.050
	21.5%	20.0%	15.3%	6.7%	*****	*****	*****	=26.1%	=60.2%
S/DEPTH=.4	2.614	2.489	2.145	1.658	.645	.016	=.195	=.967	=1.301
	20.8%	19.4%	14.8%	6.4%	*****	*****	*****	*****	*****
S/DEPTH=.3	1.443	1.375	1.187	.919	.360	.010	=.107	=.539	=.727
	20.3%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.633	.603	.521	.404	.159	.004	=.047	=.238	=.322
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.157	.150	.129	.100	.040	.001	=.012	=.059	=.080
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

230

CASE 5=A

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
THETA =	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.623	.603	.548	.465	.257	.007	-.177	-.334	-.377
	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	50.9%	=14.6%	=32.6%
SURFACE	.000	7.277	13.486	17.911	20.966	17.514	11.785	4.573	.000
	*****	54.1%	51.4%	47.0%	32.3%	2.3%	=40.2%	=117.4%	*****
S/DEPTH=1.1	.000	6.981	13.271						
	*****	52.1%	50.6%						
S/DEPTH=1.0	.000	5.480	10.440	14.450	18.689	17.460			
	*****	50.1%	48.2%	45.0%	33.5%	7.1%			
S/DEPTH=.9	.000	4.234	8.084	11.227	14.668	13.928	10.243	4.263	.000
	*****	48.6%	46.8%	43.6%	32.5%	7.2%	=33.5%	=119.9%	*****
S/DEPTH=.8	.000	3.206	6.133	8.544	11.263	10.851	8.093	3.418	.000
	*****	47.2%	45.4%	42.3%	31.6%	7.3%	=31.6%	=113.8%	*****
S/DEPTH=.7	.000	2.364	4.529	6.326	8.407	8.203	6.193	2.650	.000
	*****	46.0%	44.2%	41.2%	30.8%	7.3%	=30.0%	=108.6%	*****
S/DEPTH=.6	.000	1.680	3.224	4.514	6.041	5.959	4.547	1.967	.000
	*****	44.8%	43.1%	40.2%	30.0%	7.3%	=28.7%	=104.3%	*****
S/DEPTH=.5	.000	1.134	2.180	3.058	4.116	4.098	3.155	1.378	.000
	*****	43.8%	42.2%	39.3%	29.4%	7.3%	=27.6%	=100.7%	*****
S/DEPTH=.4	.000	.709	1.365	1.918	2.594	2.602	2.018	.888	.000
	*****	*****	41.4%	38.6%	28.9%	7.3%	=26.7%	*****	*****
S/DEPTH=.3	.000	.392	.754	1.062	1.441	1.454	1.134	.502	.000
	*****	*****	*****	38.0%	28.5%	7.3%	=26.1%	*****	*****
S/DEPTH=.2	.000	.172	.331	.466	.635	.643	.504	.224	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.043	.082	.116	.158	.160	.126	.056	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=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=	.623	.603	.548	.465	.257	.007	.177	.334	.377
	19.7%	18.4%	14.3%	6.9%	=24.8%	*****	50.9%	=14.6%	=32.6%
SURFACE	1.246	1.207	1.096	.930	.515	.015	.354	.668	.754
S/DEPTH=1.1	20.2%	18.9%	14.7%	7.3%	=24.7%	*****	52.2%	=14.5%	=32.9%
S/DEPTH=1.0	1.233	1.197	1.093						
S/DEPTH=.9	1.177	1.144	1.049	.902	.514	.015			
S/DEPTH=.8	1.128	1.098	1.010	.874	.511	.033	.339	.663	.751
S/DEPTH=.7	1.085	1.057	.976	.849	.508	.049	.319	.648	.740
S/DEPTH=.6	1.049	1.022	.946	.828	.504	.062	.301	.635	.730
S/DEPTH=.5	1.017	.993	.921	.809	.501	.073	.286	.624	.721
S/DEPTH=.4	.991	.968	.900	.793	.498	.081	.274	.614	.714
S/DEPTH=.3	.970	.948	.883	.780	.495	.088	.264	.607	.707
S/DEPTH=.2	.954	.932	.869	.770	.493	.093	.256	.601	.703
S/DEPTH=.1	.942	.921	.860	.763	.492	.097	.251	.596	.699
S/DEPTH=.0	.935	.915	.854	.759	.491	.099	.248	.594	.697
	.933	.912	.853	.757	.490	.100	.247	.593	.696
	11.2%	10.5%	8.3%	4.4%	=11.8%	=136.3%	47.8%	=10.1%	=24.5%

232

CASE 5-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	.002	.005	.006	.007	.003	-.002	-.006	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE 5-A

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)
.478 (=4.6%)
- (3) DIMENSIONLESS AVERAGE KINETIC ENERGY
DEFINED IN EQUATION (39)
.488 (=3.4%)
- (4) DIMENSIONLESS TOTAL AVERAGE ENERGY
DEFINED IN EQUATION (40)
.966 (=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)
.972 (=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%)

CASE 5-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	.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	.006863	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) =	.581513=01	X(2)/(H*T*G) =	.882370=02
X(3)/(H*T*G) =	.119908=02	X(4)/(H*T*G) =	.134049=03
X(5)/(H*T*G) =	.105424=04	X(6)/(H*T*G) =	.110024=06
X(7)/(H*T*G) =	.161493=06		

CASE 5=B

TABLE I-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 =	.716	.673	.562	.420	.150	.077	.196	.269	.284
	30.1%	26.8%	16.4%	=3.0%	=114.1%	267.7%	55.7%	=42.3%	=75.8%
SURFACE	9.268	8.684	7.192	5.313	1.840	.894	=2.220	=2.987	=3.142
S/DEPTH=1.2	31.9%	28.5%	17.8%	=2.0%	=115.3%	273.9%	54.2%	=45.1%	=77.9%
S/DEPTH=1.1	8.744	8.312	7.111						
S/DEPTH=1.0	27.8%	25.3%	16.9%						
S/DEPTH=.9	8.161	7.780	6.716	5.181					
S/DEPTH=.8	25.1%	22.7%	14.5%	=2.1%					
S/DEPTH=.7	7.657	7.318	6.369	4.991	1.889				
S/DEPTH=.6	22.8%	20.4%	12.8%	=2.6%	=101.2%				
S/DEPTH=.5	7.222	6.919	6.067	4.820	1.958	.784	=2.194		
S/DEPTH=.4	20.6%	18.3%	11.1%	=3.1%	=88.3%	289.5%	54.6%		
S/DEPTH=.3	6.850	6.576	5.805	4.668	2.011	.645	=2.091	=2.951	=3.124
S/DEPTH=.2	18.5%	16.4%	9.6%	=3.6%	=78.4%	324.0%	53.6%	=44.9%	=78.7%
S/DEPTH=.1	6.534	6.285	5.580	4.535	2.051	.527	=2.001	=2.917	=3.106
S/DEPTH=.0	16.6%	14.7%	8.3%	=4.0%	=70.7%	367.4%	52.7%	=43.0%	=75.4%
S/DEPTH=1.2	6.270	6.040	5.390	4.420	2.080	.428	=1.923	=2.886	=3.089
S/DEPTH=1.1	15.0%	13.1%	7.1%	=4.4%	=64.7%	*****	51.9%	=41.5%	=72.5%
S/DEPTH=1.0	6.052	5.839	5.232	4.323	2.102	.347	=1.858	=2.860	=3.075
S/DEPTH=.9	13.6%	11.8%	6.0%	=4.8%	=60.0%	*****	51.1%	=40.1%	=70.1%
S/DEPTH=.8	5.878	5.678	5.106	4.245	2.117	.283	=1.804	=2.839	=3.063
S/DEPTH=.7	12.4%	10.6%	5.2%	=5.1%	=56.4%	*****	50.4%	=39.0%	=68.2%
S/DEPTH=.6	5.746	5.555	5.009	4.184	2.128	.233	=1.763	=2.822	=3.054
S/DEPTH=.5	11.4%	9.8%	4.5%	=5.4%	=53.8%	*****	49.9%	=38.2%	=66.7%
S/DEPTH=.4	5.653	5.468	4.940	4.141	2.135	.199	=1.733	=2.809	=3.048
S/DEPTH=.3	10.7%	9.1%	4.0%	=5.5%	=52.0%	*****	49.4%	=37.6%	=65.6%
S/DEPTH=.2	5.597	5.416	4.899	4.115	2.138	.178	=1.716	=2.802	=3.043
S/DEPTH=.1	10.3%	8.7%	3.7%	=5.7%	=50.9%	*****	49.2%	=37.2%	=64.9%
S/DEPTH=.0	5.579	5.399	4.886	4.106	2.140	.171	=1.710	=2.800	=3.042
	10.2%	8.6%	3.6%	=5.7%	=50.5%	*****	49.1%	=37.1%	=64.7%

237

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=	.716	.673	.562	.420	.150	-.077	-.196	-.269	-.284
	30.1%	26.8%	16.4%	-3.0%	-114.1%	267.7%	55.7%	-42.3%	-75.8%
SURFACE	.000	2.084	3.580	4.289	3.963	2.452	1.252	.343	.000
S/DEPTH=1.2	***** .000	68.1% 1.909	63.7% 3.487	56.3% 3.487	30.7% 3.935	=30.7% 55.6%	=137.6% 3.428	=392.9% 3.688	***** 34.8%
S/DEPTH=1.1	***** .000	65.1% 1.656	62.7% 3.034	54.2% 3.935	34.8% 55.6%	2.273 3.240	1.225 1.225		
S/DEPTH=1.0	***** .000	61.9% 1.431	59.2% 2.630	52.9% 3.428	34.8% 3.688	=18.7% 3.240	=124.7% 1.225		
S/DEPTH=.9	***** .000	60.6% 1.231	57.9% 2.267	52.9% 2.969	33.9% 3.240	=17.8% 3.240	=119.4% 1.104		
S/DEPTH=.8	***** .000	59.3% 1.050	56.6% 1.940	51.8% 2.550	33.1% 2.818	=17.8% 2.017	=119.4% 1.104	.314	.000
S/DEPTH=.7	***** .000	.887 58.2%	1.641 55.5%	2.165 50.7%	2.418 32.4%	1.762 =17.0%	.978 =114.9%	.281 =387.7%	.000 *****
S/DEPTH=.6	***** .000	.737 57.2%	1.366 54.6%	1.808 49.8%	2.038 31.8%	1.507 =16.4%	.847 =111.1%	.246 =374.7%	.000 *****
S/DEPTH=.5	***** .000	.598 56.4%	1.111 53.7%	1.474 49.0%	1.674 31.2%	1.253 =15.8%	.711 =108.1%	.208 *****	.000 *****
S/DEPTH=.4	***** .000	.469 55.7%	.871 53.0%	1.158 48.3%	1.324 30.8%	1.001 =15.5%	.573 =105.7%	.169 *****	.000 *****
S/DEPTH=.3	***** .000	.346 55.1%	.643 52.5%	.856 47.8%	.984 30.4%	.749 =15.2%	.432 =103.9%	.128 *****	.000 *****
S/DEPTH=.2	***** .000	.228 54.7%	.424 52.1%	.565 47.5%	.652 30.2%	.499 =15.0%	.289 =102.6%	.086 *****	.000 *****
S/DEPTH=.1	***** .000	.113 *****	.211 *****	.281 47.2%	.325 30.0%	.249 =14.8%	.145 *****	.043 *****	.000 *****
S/DEPTH=.0	***** .000	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

238

CASE 5-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=	.716	.673	.562	.420	.150	-.077	-.196	-.269	-.284
	30.1%	26.8%	16.4%	-3.0%	-114.1%	267.7%	55.7%	-42.3%	-75.8%
SURFACE	.000	28.227	47.938	56.418	49.500	28.166	13.502	3.923	.000
	*****	79.1%	75.7%	69.6%	45.8%	=24.3%	=175.5%	=629.6%	*****
S/DEPTH=1.2	.000	26.016	46.821						
	*****	77.4%	75.1%						
S/DEPTH=1.1	.000	22.925	41.536	52.694					
	*****	75.2%	72.9%	68.3%					
S/DEPTH=1.0	.000	20.319	37.061	47.572	47.786				
	*****	73.1%	70.7%	66.2%	46.4%				
S/DEPTH=.9	.000	18.130	33.285	43.209	45.097	28.401	13.723		
	*****	70.9%	68.5%	64.1%	45.1%	=17.5%	=165.9%		
S/DEPTH=.8	.000	16.299	30.114	39.515	42.710	28.600	14.571	3.884	.000
	*****	68.7%	66.3%	62.0%	43.8%	=13.4%	=143.8%	=553.8%	*****
S/DEPTH=.7	.000	14.780	27.473	36.413	40.624	28.680	15.283	4.225	.000
	*****	66.5%	64.2%	59.9%	42.5%	=10.2%	=127.0%	=488.1%	*****
S/DEPTH=.6	.000	13.533	25.297	33.841	38.834	28.682	15.871	4.524	.000
	*****	64.3%	62.1%	57.9%	41.3%	=7.7%	=114.0%	=438.9%	*****
S/DEPTH=.5	.000	12.526	23.535	31.745	37.334	28.638	16.347	4.778	.000
	*****	62.3%	60.1%	56.1%	40.2%	=5.8%	=104.1%	=402.0%	*****
S/DEPTH=.4	.000	11.734	22.145	30.085	36.119	28.571	16.722	4.986	.000
	*****	60.5%	58.4%	54.5%	39.2%	=4.4%	=96.6%	=374.5%	*****
S/DEPTH=.3	.000	11.138	21.096	28.826	35.180	28.501	17.004	5.149	.000
	*****	59.0%	57.0%	53.2%	38.5%	=3.3%	=91.1%	=354.6%	*****
S/DEPTH=.2	.000	10.722	20.363	27.944	34.514	28.442	17.201	5.266	.000
	*****	57.9%	55.9%	52.2%	37.9%	=2.6%	=87.3%	=341.2%	*****
S/DEPTH=.1	.000	10.476	19.930	27.422	34.116	28.403	17.317	5.336	.000
	*****	57.2%	55.2%	51.6%	37.5%	=2.2%	=85.1%	=333.4%	*****
S/DEPTH=.0	.000	10.395	19.787	27.249	33.983	28.389	17.355	5.360	.000
	*****	56.9%	55.0%	51.4%	37.4%	=2.0%	=84.4%	=330.8%	*****

CASE 5-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=	.716	.673	.562	.420	.150	.077	.196	.269	.284
	30.1%	26.8%	16.4%	-3.0%	-114.1%	267.7%	55.7%	-42.3%	-75.8%
SURFACE	=53.925	=46.945	=29.803	=10.060	17.147	21.855	14.191	5.006	2.622
	65.6%	61.4%	43.2%	=48.9%	154.7%	103.6%	48.0%	=221.2%	*****
S/DEPTH=1.2	=49.486	=44.063	=29.397						
	62.5%	58.8%	42.4%						
S/DEPTH=1.1	=44.108	=39.535	=27.133	=10.401					
	61.4%	57.8%	42.1%	=35.5%					
S/DEPTH=1.0	=39.012	=35.166	=24.706	=10.498	14.979				
	60.4%	56.9%	42.3%	=21.9%	156.0%				
S/DEPTH=.9	=34.203	=30.981	=22.194	=10.183	11.846	19.695	13.818		
	59.5%	56.1%	42.3%	=13.0%	164.1%	104.3%	51.2%		
S/DEPTH=.8	=29.669	=26.986	=19.649	=9.562	9.311	16.833	12.233	4.574	2.426
	58.6%	55.3%	42.2%	=6.9%	172.7%	104.9%	52.2%	=228.1%	*****
S/DEPTH=.7	=25.389	=23.174	=17.104	=8.715	7.259	14.211	10.656	4.081	2.181
	57.8%	54.6%	42.0%	=2.5%	181.8%	105.6%	53.0%	=217.3%	*****
S/DEPTH=.6	=21.336	=19.532	=14.578	=7.700	5.596	11.799	9.093	3.556	1.913
	57.0%	53.9%	41.8%	.7%	191.1%	106.1%	53.7%	=208.5%	*****
S/DEPTH=.5	=17.479	=16.040	=12.082	=6.563	4.240	9.565	7.545	3.004	1.624
	56.3%	53.3%	41.6%	3.0%	200.4%	106.6%	54.2%	=201.2%	*****
S/DEPTH=.4	=13.787	=12.676	=9.617	=5.338	3.126	7.478	6.013	2.429	1.319
	55.8%	52.8%	41.3%	4.7%	209.1%	107.0%	54.6%	*****	*****
S/DEPTH=.3	=10.225	=9.416	=7.183	=4.051	2.193	5.507	4.495	1.837	1.001
	55.4%	52.4%	41.2%	5.9%	*****	107.3%	55.0%	*****	*****
S/DEPTH=.2	=6.762	=6.234	=4.773	=2.722	1.392	3.624	2.990	1.232	.673
	55.0%	52.1%	41.0%	6.7%	*****	107.6%	55.2%	*****	*****
S/DEPTH=.1	=3.365	=3.104	=2.382	=1.367	.675	1.797	1.493	.618	.338
	54.8%	52.0%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=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 =	.716	.673	.562	.420	.150	.077	.196	.269	.284
	30.1%	26.8%	16.4%	=3.0%	=114.1%	267.7%	55.7%	=42.3%	=75.8%
SURFACE	59.083	53.096	38.981	23.761	4.510	=.200	=3.281	=7.341	=8.415
S/DEPTH=.2	39.8%	35.2%	20.4%	=9.1%	=201.2%	*****	75.1%	=86.2%	=159.7%
S/DEPTH=.1	52.667	48.594	38.000						
S/DEPTH=.1	32.4%	29.2%	18.4%						
S/DEPTH=.1	45.531	42.127	33.226	22.000					
S/DEPTH=.1	29.9%	26.5%	15.2%	=8.8%					
S/DEPTH=.1	39.284	36.435	28.949	19.414	4.306				
S/DEPTH=.1	28.0%	24.7%	13.7%	=9.3%	=171.5%				
S/DEPTH=.09	33.756	31.373	25.086	17.009	3.936	=.151	=3.167		
S/DEPTH=.08	26.2%	23.0%	12.3%	=9.8%	=161.4%	*****	76.3%		
S/DEPTH=.08	28.811	26.825	21.566	14.760	3.541	=.100	=2.708	=6.504	=7.541
S/DEPTH=.07	24.7%	21.6%	11.2%	=10.2%	=153.1%	*****	*****	=95.8%	=187.7%
S/DEPTH=.07	24.338	22.695	18.329	12.644	3.128	=.065	=2.290	=5.643	=6.571
S/DEPTH=.06	23.4%	20.3%	10.1%	=10.6%	=146.3%	*****	*****	=94.0%	=183.9%
S/DEPTH=.06	20.244	18.901	15.324	10.641	2.702	=.043	=1.905	=4.801	=5.611
S/DEPTH=.05	22.2%	19.2%	9.3%	=11.0%	*****	*****	*****	=92.4%	=180.6%
S/DEPTH=.05	16.453	15.377	12.506	8.731	2.264	=.028	=1.548	=3.976	=4.661
S/DEPTH=.04	21.3%	18.3%	8.5%	=11.3%	*****	*****	*****	=91.2%	=177.9%
S/DEPTH=.04	12.898	12.065	9.836	6.897	1.819	=.018	=1.213	=3.164	=3.719
S/DEPTH=.03	20.5%	17.6%	8.0%	=11.5%	*****	*****	*****	=90.1%	=175.7%
S/DEPTH=.03	9.524	8.914	7.281	5.122	1.368	=.011	=.895	=2.364	=2.784
S/DEPTH=.02	19.9%	17.0%	7.5%	=11.7%	*****	*****	*****	*****	*****
S/DEPTH=.02	6.280	5.880	4.809	3.391	.914	=.007	=.590	=1.571	=1.853
S/DEPTH=.01	19.5%	16.6%	7.2%	=11.8%	*****	*****	*****	*****	*****
S/DEPTH=.01	3.119	2.921	2.391	1.688	.458	=.003	=.293	=.784	=.926
S/DEPTH=.00	19.2%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.00	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.00	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5-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	.716	.673	.562	.420	.150	.077	.196	.269	.284
	30.1%	26.8%	16.4%	=3.0%	=114.1%	267.7%	55.7%	=42.3%	=75.8%
SURFACE	.000	19.741	34.375	42.096	41.365	27.671	14.913	4.244	.000
	*****	70.1%	66.2%	59.7%	37.1%	=17.6%	=118.6%	=380.6%	*****
S/DEPTH=1.2	.000	18.051	33.466						
	*****	67.3%	65.3%						
S/DEPTH=1.1	.000	15.608	29.056	38.608					
	*****	65.6%	63.3%	59.0%					
S/DEPTH=1.0	.000	13.450	25.132	33.602	38.517				
	*****	64.3%	62.0%	57.8%	41.0%				
S/DEPTH=.9	.000	11.530	21.620	29.069	33.876	25.693	14.593		
	*****	63.0%	60.7%	56.7%	40.4%	=6.7%	=106.7%		
S/DEPTH=.8	.000	9.812	18.455	24.938	29.488	22.842	13.177	3.892	.000
	*****	61.8%	59.6%	55.6%	39.8%	=5.6%	=101.6%	=390.9%	*****
S/DEPTH=.7	.000	8.260	15.580	21.146	25.324	19.977	11.683	3.486	.000
	*****	60.7%	58.6%	54.7%	39.2%	=4.7%	=97.2%	=375.9%	*****
S/DEPTH=.6	.000	6.847	12.945	17.637	21.353	17.109	10.125	3.048	.000
	*****	59.7%	57.6%	53.8%	38.8%	=3.9%	=93.7%	=363.4%	*****
S/DEPTH=.5	.000	5.546	10.807	14.362	17.547	14.242	8.513	2.583	.000
	*****	58.9%	56.8%	53.1%	38.3%	=3.3%	=90.8%	=353.2%	*****
S/DEPTH=.4	.000	4.334	8.226	11.274	13.877	11.382	6.859	2.094	.000
	*****	58.2%	56.2%	52.5%	38.0%	=2.9%	=88.5%	*****	*****
S/DEPTH=.3	.000	3.192	6.066	8.332	10.314	8.528	5.172	1.587	.000
	*****	57.6%	55.6%	52.0%	37.7%	=2.5%	=86.7%	*****	*****
S/DEPTH=.2	.000	2.101	3.996	5.496	6.832	5.681	3.461	1.066	.000
	*****	*****	55.3%	51.7%	37.5%	=2.3%	=85.5%	*****	*****
S/DEPTH=.1	.000	1.042	1.983	2.731	3.403	2.839	1.734	.535	.000
	*****	*****	*****	51.5%	37.4%	=2.2%	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

242

CASE 5-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	.716	.673	.562	.420	.150	.077	.196	.269	.284
	30.1%	26.8%	16.4%	3.0%	114.1%	267.7%	55.7%	42.3%	75.8%
SURFACE	44.538	39.110	26.979	15.072	2.287	.147	.1.653	3.358	3.782
S/DEPTH=1.2	48.4%	43.4%	26.6%	8.2%	258.1%	*****	*****	80.3%	141.2%
S/DEPTH=1.1	36.581	33.565	25.792						
S/DEPTH=1.0	37.2%	34.0%	23.3%						
S/DEPTH=.9	28.367	26.121	20.297	13.078					
S/DEPTH=.8	33.9%	30.4%	18.4%	7.6%					
S/DEPTH=.7	21.800	20.138	15.802	10.362	2.077				
S/DEPTH=.6	31.4%	28.0%	16.4%	8.2%	*****				
S/DEPTH=.5	16.543	15.325	12.130	8.076	1.725	.101	1.549		
S/DEPTH=.4	29.1%	25.8%	14.6%	8.9%	*****	*****	*****		
S/DEPTH=.3	12.336	11.455	9.135	6.163	1.390	.058	1.159	2.648	3.044
S/DEPTH=.2	27.1%	23.8%	13.0%	9.5%	*****	*****	*****	99.4%	195.6%
S/DEPTH=.1	8.977	8.354	6.705	4.575	1.081	.032	.845	2.002	2.316
S/DEPTH=.0	25.2%	22.1%	11.6%	10.0%	*****	*****	*****	*****	189.8%
S/DEPTH=.9	6.314	5.886	4.750	3.272	.803	.017	.594	1.455	1.692
S/DEPTH=.8	23.6%	20.6%	10.4%	10.5%	*****	*****	*****	*****	*****
S/DEPTH=.7	4.226	3.946	3.199	2.221	.563	.009	.398	1.001	1.170
S/DEPTH=.6	22.3%	19.3%	9.3%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	2.625	2.454	1.996	1.395	.363	.004	.247	.636	.746
S/DEPTH=.4	21.2%	18.2%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	1.443	1.350	1.101	.773	.205	.002	.136	.355	.418
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.631	.590	.483	.340	.091	.001	.059	.157	.185
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	.156	.146	.120	.084	.023	.000	.015	.039	.046
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****

243

CASE 5-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
ETA/HEIGHT =	.716	.673	.562	.420	.150	-.077	-.196	-.269	-.284
	30.1%	26.8%	16.4%	-3.0%	-114.1%	267.7%	55.7%	-42.3%	-75.8%
SURFACE	.000	14.681	24.251	27.651	23.333	13.428	6.621	1.776	.000
S/DEPTH=1.2	*****	74.9%	70.4%	62.5%	34.8%	-31.4%	-144.0%	-397.3%	*****
S/DEPTH=1.1	.000	12.599	23.152						
S/DEPTH=1.0	*****	70.8%	68.9%						
S/DEPTH=.9	.000	9.787	18.076	23.701					
S/DEPTH=.8	*****	68.6%	66.3%	61.8%					
S/DEPTH=.7	.000	7.519	13.952	18.440	20.402				
S/DEPTH=.6	*****	67.0%	64.6%	60.3%	42.6%				
S/DEPTH=.5	.000	5.694	10.613	14.130	15.990	11.579	6.329		
S/DEPTH=.4	*****	65.3%	63.0%	58.8%	41.7%	-9.1%	-119.2%		
S/DEPTH=.3	.000	4.232	7.920	10.616	12.258	9.156	5.126	1.478	.000
S/DEPTH=.2	*****	63.8%	61.5%	57.4%	40.9%	-7.3%	-110.9%	-425.4%	*****
S/DEPTH=.1	.000	3.067	5.761	7.769	9.133	7.007	4.006	1.174	.000
S/DEPTH=.0	*****	62.3%	60.1%	56.1%	40.1%	-6.0%	-104.1%	*****	*****
	.000	2.147	4.047	5.487	6.551	5.143	2.994	.889	.000
	*****	61.0%	58.8%	54.9%	39.4%	-4.8%	-98.5%	*****	*****
	.000	1.430	2.704	3.683	4.456	3.566	2.107	.634	.000
	*****	59.8%	57.7%	53.9%	38.8%	-4.0%	-94.0%	*****	*****
	.000	.885	1.676	2.292	2.804	2.279	1.363	.414	.000
	*****	*****	56.7%	53.0%	38.3%	-3.3%	-90.5%	*****	*****
	.000	.484	.920	1.262	1.556	1.280	.773	.236	.000
	*****	*****	*****	*****	37.9%	*****	*****	*****	*****
	.000	.211	.401	.552	.685	.568	.346	.106	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.052	.099	.137	.170	.142	.087	.027	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

244

CASE 5-B

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 =	.716	.673	.562	.420	.150	.077	.196	.269	.284
	30.1X	26.8X	16.4X	=3.0X	=114.1X	267.7X	59.7X	=42.3X	=75.8X
SURFACE	1.431	1.345	1.123	.841	.300	-.154	-.392	-.538	-.569
	31.2X	27.9X	17.6X	=1.6X	=112.4X	270.8X	58.5X	=41.3X	=76.3X
S/DEPTH=1.2	1.366	1.300	1.114						
	28.0X	25.4X	16.9X						
S/DEPTH=1.1	1.292	1.233	1.069	.830					
	25.9X	23.5X	15.5X	=1.0X					
S/DEPTH=1.0	1.226	1.174	1.028	.813	.315				
	24.0X	21.8X	14.4X	-.4X	=96.7X				
S/DEPTH=.9	1.167	1.121	.991	.797	.336	-.131	-.387		
	22.2X	20.1X	13.3X	-.1X	=80.5X	299.4X	59.9X		
S/DEPTH=.8	1.117	1.075	.958	.781	.353	-.102	-.366	-.531	-.565
	20.5X	18.6X	12.3X	.1X	=68.7X	354.8X	60.3X	=40.8X	=77.1X
S/DEPTH=.7	1.073	1.035	.928	.767	.366	-.077	-.348	-.524	-.561
	19.0X	17.2X	11.4X	.2X	=59.9X	434.3X	60.7X	=38.9X	=73.4X
S/DEPTH=.6	1.036	1.001	.903	.754	.376	-.057	-.332	-.518	-.558
	17.6X	15.9X	10.6X	.2X	=53.2X	*****	61.1X	=36.4X	=70.1X
S/DEPTH=.5	1.005	.973	.882	.742	.384	-.040	-.319	-.513	-.555
	16.4X	14.8X	9.8X	.2X	=48.2X	*****	61.4X	=34.7X	=67.4X
S/DEPTH=.4	.980	.950	.865	.733	.390	-.026	-.308	-.508	-.553
	15.4X	13.9X	9.2X	.2X	=44.4X	*****	61.6X	=33.3X	=65.2X
S/DEPTH=.3	.961	.933	.851	.725	.394	-.016	-.300	-.505	-.551
	14.6X	13.2X	8.7X	.1X	=41.6X	*****	61.8X	=32.2X	=63.5X
S/DEPTH=.2	.947	.920	.842	.720	.397	-.009	-.294	-.503	-.550
	14.0X	12.7X	8.3X	.1X	=39.8X	*****	61.9X	=31.5X	=62.3X
S/DEPTH=.1	.939	.913	.836	.717	.399	-.004	-.290	-.501	-.549
	13.7X	12.4X	8.1X	.0X	=38.7X	*****	62.0X	=31.0X	=61.6X
S/DEPTH=.0	.937	.910	.834	.719	.399	-.003	-.289	-.501	-.549
	13.6X	12.2X	8.0X	.0X	=38.3X	*****	62.1X	=30.8X	=61.4X

245

CASE 5-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	.012	.021	.028	.030	.013	-.008	-.021	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE 5-B

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

- (1) DIMENSIONLESS WAVE LENGTH
DEFINED IN EQUATION (37)
.566 (6.1%)
- (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)
.311 (=26.9%)

CASE 5-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	.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

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

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	-.496008=01	X(2)/(H*T*G) =	-.100293=01
X(3)/(H*T*G) =	-.196720=02	X(4)/(H*T*G) =	-.344805=03
X(5)/(H*T*G) =	-.529054=04	X(6)/(H*T*G) =	-.690545=05
X(7)/(H*T*G) =	-.751650=06	X(8)/(H*T*G) =	-.102381=06
X(9)/(H*T*G) =	-.621646=07		

CASE 5=C

TABLE I=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=	.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	11.068	9.531	6.692	4.139	.748	=1.176	=1.897	=2.242	=2.306
	40.9%	32.5%	8.7%	=34.9%	=441.2%	233.3%	46.7%	=89.6%	=136.7%
S/DEPTH=1.4	10.442	9.527							
	100.0%	100.0%							
S/DEPTH=1.3	9.487	8.721							
	31.0%	26.2%							
S/DEPTH=1.2	8.678	8.031	6.333						
	27.1%	22.4%	6.1%						
S/DEPTH=1.1	7.990	7.439	5.977	4.064					
	23.5%	19.1%	4.0%	=30.2%					
S/DEPTH=1.0	7.406	6.932	5.663	3.973	.809				
	20.2%	16.0%	1.9%	=28.9%	=370.1%				
S/DEPTH= .9	6.911	6.499	5.388	3.883	.961	=1.120			
	17.0%	13.1%	=.1%	=28.0%	=283.8%	232.5%			
S/DEPTH= .8	6.493	6.131	5.148	3.797	1.085	=.988	=1.830	=2.229	=2.300
	14.0%	10.3%	=1.9%	=27.3%	=230.9%	246.3%	47.0%	=90.7%	=137.3%
S/DEPTH= .7	6.143	5.821	4.942	3.718	1.184	=.873	=1.769	=2.213	=2.292
	11.3%	7.9%	=3.6%	=26.9%	=195.7%	261.6%	46.5%	=88.6%	=137.6%
S/DEPTH= .6	5.853	5.563	4.767	3.647	1.263	=.775	=1.716	=2.199	=2.286
	8.9%	5.7%	=5.1%	=26.6%	=171.3%	278.1%	46.1%	=85.7%	=133.2%
S/DEPTH= .5	5.616	5.352	4.623	3.585	1.325	=.693	=1.670	=2.186	=2.280
	6.8%	3.7%	=6.3%	=26.4%	=153.8%	295.3%	45.6%	=83.3%	=129.4%
S/DEPTH= .4	5.429	5.185	4.506	3.533	1.372	=.628	=1.633	=2.176	=2.276
	5.1%	2.1%	=7.4%	=26.3%	=141.3%	312.4%	45.2%	=81.4%	=126.4%
S/DEPTH= .3	5.286	5.057	4.417	3.492	1.407	=.577	=1.603	=2.168	=2.272
	3.7%	.9%	=8.3%	=26.2%	=132.5%	328.1%	44.9%	=79.8%	=124.0%
S/DEPTH= .2	5.187	4.967	4.354	3.463	1.431	=.542	=1.582	=2.162	=2.270
	2.7%	=.0%	=8.9%	=26.2%	=126.6%	*****	44.6%	=78.8%	=122.3%
S/DEPTH= .1	5.128	4.914	4.316	3.445	1.445	=.521	=1.570	=2.159	=2.268
	2.1%	=.6%	=9.3%	=26.2%	=123.2%	*****	44.5%	=78.1%	=121.3%
S/DEPTH= .0	5.108	4.897	4.304	3.440	1.450	=.514	=1.565	=2.158	=2.267
	1.9%	=.8%	=9.4%	=26.2%	=122.2%	*****	44.4%	=77.9%	=121.0%

250

CASE 5=C

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=	.784	.687	.498	.318	.059	.106	.175	.209	.216
	36.3%	28.3%	5.7%	=36.1%	=42.0%	222.2%	50.3%	=82.9%	=131.9%
SURFACE	.000	3.251	4.660	4.722	3.348	1.592	.660	.145	.000
	*****	77.6%	69.6%	57.0%	12.7%	=106.6%	=342.1%	*****	*****
S/DEPTH=1.4	.000	3.248							
	*****	100.0%							
S/DEPTH=1.3	.000	2.762							
	*****	73.6%							
S/DEPTH=1.2	.000	2.352	4.063						
	*****	71.5%	67.5%						
S/DEPTH=1.1	.000	2.004	3.489	4.187					
	*****	69.7%	65.7%	58.3%					
S/DEPTH=1.0	.000	1.705	2.989	3.626	3.214				
	*****	68.0%	64.1%	56.7%	25.2%				
S/DEPTH=.9	.000	1.445	2.550	3.122	2.838	1.535			
	*****	66.4%	62.5%	55.3%	24.6%	=75.8%			
S/DEPTH=.8	.000	1.219	2.162	2.668	2.479	1.381	.605	.136	.000
	*****	65.0%	61.1%	53.9%	24.0%	=72.1%	=300.7%	*****	*****
S/DEPTH=.7	.000	1.018	1.814	2.255	2.135	1.219	.542	.123	.000
	*****	63.6%	59.8%	52.7%	23.4%	=69.1%	=287.6%	*****	*****
S/DEPTH=.6	.000	.839	1.500	1.875	1.804	1.053	.474	.108	.000
	*****	62.4%	58.6%	51.6%	22.9%	=66.6%	=277.0%	*****	*****
S/DEPTH=.5	.000	.676	1.212	1.524	1.485	.882	.402	.092	.000
	*****	61.4%	57.6%	50.7%	22.5%	=64.6%	=268.3%	*****	*****
S/DEPTH=.4	.000	.526	.946	1.194	1.176	.709	.326	.075	.000
	*****	60.5%	56.8%	49.9%	22.1%	=63.1%	=261.5%	*****	*****
S/DEPTH=.3	.000	.386	.696	.881	.875	.533	.247	.057	.000
	*****	59.8%	56.1%	49.3%	21.8%	=61.9%	=256.4%	*****	*****
S/DEPTH=.2	.000	.254	.458	.580	.580	.356	.166	.038	.000
	*****	59.3%	55.6%	48.8%	21.6%	=61.1%	*****	*****	*****
S/DEPTH=.1	.000	.126	.227	.288	.289	.178	.083	.019	.000
	*****	*****	*****	48.6%	21.5%	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=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	.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	50.364	68.093	64.962	41.385	17.209	6.659	1.472	.000
	*****	88.8%	83.6%	74.6%	37.1%	=101.1%	=463.2%	*****	*****
S/DEPTH=1.4	.000	50.323							
	*****	100.0%							
S/DEPTH=1.3	.000	42.512							
	*****	86.7%							
S/DEPTH=1.2	.000	36.118	59.780						
	*****	85.0%	81.9%						
S/DEPTH=1.1	.000	30.879	52.007	59.051					
	*****	83.2%	80.1%	73.9%					
S/DEPTH=1.0	.000	26.586	45.505	52.997	40.916				
	*****	81.3%	78.2%	72.0%	40.9%				
S/DEPTH=.9	.000	23.070	40.084	47.794	39.522	17.712			
	*****	79.3%	76.2%	70.1%	40.9%	=84.4%			
S/DEPTH=.8	.000	20.197	35.586	43.362	38.135	18.828	7.523	1.643	.000
	*****	77.2%	74.1%	68.2%	40.7%	=68.4%	=378.8%	*****	*****
S/DEPTH=.7	.000	17.861	31.880	39.628	36.816	19.697	8.293	1.845	.000
	*****	75.0%	72.0%	66.3%	40.4%	=56.8%	=324.2%	*****	*****
S/DEPTH=.6	.000	15.977	28.858	36.526	35.613	20.367	8.951	2.026	.000
	*****	72.9%	70.0%	64.4%	39.9%	=48.2%	=285.0%	*****	*****
S/DEPTH=.5	.000	14.480	26.433	33.997	34.555	20.874	9.500	2.182	.000
	*****	70.8%	68.0%	62.7%	39.5%	=41.7%	=256.3%	*****	*****
S/DEPTH=.4	.000	13.317	24.535	31.992	33.668	21.249	9.944	2.313	.000
	*****	68.9%	66.2%	61.1%	39.0%	=37.0%	=235.5%	*****	*****
S/DEPTH=.3	.000	12.450	23.112	30.473	32.964	21.517	10.285	2.416	.000
	*****	67.3%	64.7%	59.8%	38.6%	=33.5%	=220.6%	*****	*****
S/DEPTH=.2	.000	11.850	22.123	29.409	32.456	21.696	10.527	2.490	.000
	*****	66.0%	63.6%	58.8%	38.3%	=31.2%	=210.7%	*****	*****
S/DEPTH=.1	.000	11.498	21.540	28.779	32.148	21.798	10.671	2.535	.000
	*****	65.2%	62.8%	58.2%	38.1%	=29.8%	=205.0%	*****	*****
S/DEPTH=.0	.000	11.381	21.347	28.571	32.046	21.831	10.719	2.550	.000
	*****	65.0%	62.6%	58.0%	38.0%	=29.4%	=203.1%	*****	*****

CASE 5=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	.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	=62.619 72.9%	=45.440 63.7%	=14.359 =5.6%	10.040 230.1%	28.463 125.0%	20.225 92.2%	9.554 3.9%	2.395 *****	1.101 *****
S/DEPTH=1.4	=60.630 100.0%	=45.437 100.0%							
S/DEPTH=1.3	=56.258 69.9%	=43.887 62.4%							
S/DEPTH=1.2	=51.279 69.1%	=41.190 62.4%	=16.457 12.7%						
S/DEPTH=1.1	=46.099 68.3%	=37.861 62.3%	=17.379 23.7%	5.915 297.0%					
S/DEPTH=1.0	=40.953 67.5%	=34.224 62.0%	=17.288 29.8%	2.461 *****	26.561 123.6%				
S/DEPTH=.9	=35.967 66.6%	=30.477 61.4%	=16.509 33.6%	.133 *****	126.5%	19.253 94.9%			
S/DEPTH=.8	=31.202 65.6%	=26.736 60.8%	=15.267 35.9%	=1.349 *****	17.597 129.5%	16.776 95.6%	8.629 14.0%	2.230 *****	1.021 *****
S/DEPTH=.7	=26.677 64.8%	=23.065 60.1%	=13.719 37.4%	=2.195 *****	14.165 132.5%	14.399 96.3%	7.639 17.1%	2.002 *****	.911 *****
S/DEPTH=.6	=22.387 64.0%	=19.497 59.5%	=11.970 38.3%	=2.565 *****	11.264 135.5%	12.123 96.8%	6.609 19.6%	1.756 *****	.795 *****
S/DEPTH=.5	=18.311 63.2%	=16.040 58.9%	=10.093 38.9%	=2.579 *****	8.791 138.2%	9.941 97.3%	5.549 21.6%	1.492 *****	.674 *****
S/DEPTH=.4	=14.420 62.6%	=12.690 58.4%	=8.136 39.3%	=2.332 *****	6.655 140.7%	7.845 97.7%	4.465 23.2%	1.213 *****	.547 *****
S/DEPTH=.3	=10.680 62.1%	=9.431 58.0%	=6.132 39.5%	=1.897 *****	4.776 142.7%	5.819 98.0%	3.363 24.4%	.921 *****	.415 *****
S/DEPTH=.2	=7.056 61.8%	=6.245 57.7%	=4.100 39.7%	=1.332 *****	3.084 *****	3.848 98.2%	2.248 *****	.620 *****	.279 *****
S/DEPTH=.1	=3.509 61.5%	=3.110 *****	=2.053 *****	=.686 *****	1.512 *****	1.915 *****	1.126 *****	.312 *****	.140 *****
S/DEPTH=.0	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

253

CASE 5c

TABLE V-DIMENSIONLESS DRAG FORCE 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	.784	.687	.498	.310	.059	.106	.175	.209	.216
	36.3%	28.3%	5.7%	=36.1%	=442.0%	222.2%	50.3%	=82.9%	=131.9%
SURFACE	72.031	57.496	33.653	16.231	1.646	.535	=2.535	=4.198	=4.547
S/DEPTH=1.4	45.0%	33.5%	=1.9%	=75.3%	*****	*****	*****	=193.1%	=315.7%
S/DEPTH=1.3	65.383	57.452							
S/DEPTH=1.2	100.0%	100.0%							
S/DEPTH=1.1	55.471	49.141							
S/DEPTH=1.0	28.6%	22.2%							
S/DEPTH=.9	47.237	42.136	29.818						
S/DEPTH=.8	24.2%	17.6%	=6.0%						
S/DEPTH=.7	40.303	36.162	26.032	14.791					
S/DEPTH=.6	20.8%	14.4%	=8.3%	=61.8%					
S/DEPTH=.5	34.386	31.007	22.648	13.176	1.625				
S/DEPTH=.4	17.7%	11.5%	=10.3%	=61.1%	*****				
S/DEPTH=.3	29.270	26.503	19.598	11.633	1.546	.484			
S/DEPTH=.2	14.9%	8.9%	=12.2%	=60.6%	*****	*****			
S/DEPTH=.1	24.785	22.521	16.825	10.159	1.441	.373	=2.195	=3.809	=4.153
S/DEPTH=.0	12.5%	6.6%	=13.9%	=60.2%	*****	*****	*****	=223.1%	=355.1%
S/DEPTH=.9	20.799	18.954	14.282	8.747	1.312	.287	=1.871	=3.316	=3.626
S/DEPTH=.8	10.3%	4.6%	=15.3%	=59.9%	*****	*****	*****	*****	=414.4%
S/DEPTH=.7	17.206	15.717	11.928	7.392	1.162	.219	=1.567	=2.829	=3.102
S/DEPTH=.6	8.5%	2.9%	=16.6%	=59.7%	*****	*****	*****	*****	*****
S/DEPTH=.5	13.922	12.742	9.726	6.085	.994	.166	=1.281	=2.349	=2.581
S/DEPTH=.4	7.0%	1.4%	=17.6%	=59.6%	*****	*****	*****	*****	*****
S/DEPTH=.3	10.877	9.970	7.644	4.819	.812	.122	=1.009	=1.873	=2.062
S/DEPTH=.2	9.7%	.3%	=18.4%	=59.6%	*****	*****	*****	*****	*****
S/DEPTH=.1	8.010	7.351	5.655	3.586	.619	.086	=.747	=1.401	=1.585
S/DEPTH=.0	4.8%	.6%	=19.1%	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	5.272	4.842	3.734	2.377	.417	.055	=.494	=.932	=1.029
S/DEPTH=.8	4.1%	=1.3%	=19.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	2.616	2.403	1.856	1.184	.210	.027	=.245	=.466	=.514
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****

254

CASE 5=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	.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	30.717	44.928	47.121	36.648	19.258	8.432	1.913	.000
	*****	81.0%	74.4%	64.2%	29.0%	=69.6%	=284.8%	*****	*****
S/DEPTH=1.4	.000	30.693							
	*****	100.0%							
S/DEPTH=1.3	.000	26.064							
	*****	77.6%							
S/DEPTH=1.2	.000	22.143	39.152						
	*****	75.8%	72.7%						
S/DEPTH=1.1	.000	18.802	33.574	41.823					
	*****	74.4%	71.3%	65.5%					
S/DEPTH=1.0	.000	15.936	28.708	36.228	35.224				
	*****	72.9%	69.9%	64.3%	39.5%				
S/DEPTH=.9	.000	13.459	24.437	31.195	31.202	18.590			
	*****	71.6%	68.7%	63.2%	39.4%	=43.9%			
S/DEPTH=.8	.000	11.301	20.661	26.643	27.320	16.761	7.736	1.792	.000
	*****	70.3%	67.5%	62.2%	39.2%	=40.4%	=248.4%	*****	*****
S/DEPTH=.7	.000	9.402	17.294	22.499	23.573	14.833	6.944	1.617	.000
	*****	69.1%	66.4%	61.3%	38.9%	=37.6%	=236.8%	*****	*****
S/DEPTH=.6	.000	7.713	14.262	18.696	19.953	12.828	6.081	1.424	.000
	*****	68.1%	65.4%	60.4%	38.7%	=35.2%	=227.3%	*****	*****
S/DEPTH=.5	.000	6.193	11.502	15.175	16.446	10.765	5.158	1.213	.000
	*****	67.2%	64.6%	59.7%	38.5%	=33.4%	=219.7%	*****	*****
S/DEPTH=.4	.000	4.806	8.958	11.880	13.036	8.658	4.185	.988	.000
	*****	66.4%	63.9%	59.1%	38.3%	=31.9%	=213.6%	*****	*****
S/DEPTH=.3	.000	3.520	6.579	8.760	9.706	6.519	3.172	.751	.000
	*****	65.8%	63.3%	58.6%	38.2%	=30.8%	=209.1%	*****	*****
S/DEPTH=.2	.000	2.307	4.321	5.770	6.436	4.357	2.131	.506	.000
	*****	*****	62.9%	58.3%	38.1%	=30.1%	*****	*****	*****
S/DEPTH=.1	.000	1.142	2.141	2.864	3.208	2.182	1.070	.254	.000
	*****	*****	*****	58.1%	38.0%	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

255

CASE 5=C

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

THETA ETA/HEIGHT=	0 .784	10.0 .687	20.0 .498	30.0 .318	50.0 .059	75.0 .106	100.0 .175	130.0 .209	180.0 .216
	36.3X	28.3X	5.7X	=36.1X	=442.0X	222.2X	50.3X	=82.9X	=131.9X
SURFACE	66.822	49.732	25.094	10.264	.713	=.325	=1.215	=1.867	=1.999
	58.2X	46.0X	5.0X	=88.8X	*****	*****	*****	*****	*****
S/DEPTH=1.4	57.320	49.671							
	100.0X	100.0X							
S/DEPTH=1.3	43.924	38.439							
	36.4X	30.1X							
S/DEPTH=1.2	33.619	29.673	20.315						
	31.0X	24.1X	=.9X						
S/DEPTH=1.1	25.635	22.796	15.959	8.619					
	26.8X	20.2X	=3.8X	=63.2X					
S/DEPTH=1.0	19.415	17.376	12.402	6.923	.692				
	23.0X	16.5X	=6.5X	=62.0X	*****				
S/DEPTH=.9	14.549	13.093	9.502	5.456	.617	=.279			
	19.4X	13.1X	=9.0X	=61.2X	*****	*****			
S/DEPTH=.8	10.732	9.704	7.143	4.202	.528	=.184	=.925	=1.540	=1.669
	16.2X	10.1X	=11.2X	=60.6X	*****	*****	*****	*****	*****
S/DEPTH=.7	7.738	7.026	5.234	3.143	.431	=.120	=.682	=1.170	=1.274
	13.3X	7.3X	=13.2X	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	5.400	4.920	3.702	2.262	.334	=.075	=.485	=.854	=.933
	10.7X	4.9X	=15.0X	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	3.592	3.281	2.490	1.542	.241	=.046	=.327	=.590	=.646
	8.6X	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	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	.238	.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

256

CASE 5=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	.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%	=108.3%	=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	21.392	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	11.430	11.259	6.554	2.925	.668	.000
	*****	72.3%	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%	61.5%	39.0%	=38.3%	=240.4%	*****	*****
S/DEPTH=.5	.000	1.612	2.980	3.906	4.164	2.672	1.264	.296	.000
	*****	*****	65.5%	60.5%	38.8%	=35.4%	*****	*****	*****
S/DEPTH=.4	.000	.987	1.834	2.421	2.629	1.724	.827	.194	.000
	*****	*****	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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

257

CASE 5=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=	.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	1.566	1.372	.994	.635	.119	.211	.348	.419	.432
S/DEPTH=1.4	38.1%	30.4%	8.3%	=32.7%	=431.5%	225.6%	55.8%	=79.8%	=131.5%
S/DEPTH=1.3	100.0%	100.0%							
S/DEPTH=1.2	1.416	1.300							
S/DEPTH=1.1	31.6%	26.6%							
S/DEPTH=1.0	1.331	1.232	.972						
S/DEPTH=.9	29.0%	24.3%	8.0%						
S/DEPTH=.8	1.253	1.169	.945	.645					
S/DEPTH=.7	26.5%	22.3%	7.6%	=25.8%					
S/DEPTH=.6	1.184	1.112	.917	.652	.134				
S/DEPTH=.5	24.1%	20.2%	7.1%	=21.8%	=356.4%				
S/DEPTH=.4	1.123	1.060	.890	.654	.172	.199			
S/DEPTH=.3	21.7%	18.2%	6.3%	=19.0%	=249.2%	235.0%			
S/DEPTH=.2	1.069	1.015	.865	.653	.203	.170	.334	.416	.431
S/DEPTH=.1	19.5%	16.3%	5.5%	=16.9%	=191.3%	258.5%	59.8%	=81.0%	=132.2%
S/DEPTH=.0	1.023	.975	.842	.650	.228	.145	.321	.412	.429
S/DEPTH=.0	17.5%	14.5%	4.6%	=15.5%	=155.8%	286.3%	61.6%	=78.0%	=132.5%
S/DEPTH=.0	.984	.941	.821	.646	.248	.124	.310	.409	.428
S/DEPTH=.0	15.6%	12.8%	3.8%	=14.4%	=132.3%	318.5%	63.2%	=74.2%	=127.3%
S/DEPTH=.0	.952	.913	.804	.642	.264	.107	.300	.407	.427
S/DEPTH=.0	14.0%	11.4%	3.0%	=13.7%	=116.1%	355.0%	64.5%	=71.0%	=122.9%
S/DEPTH=.0	.926	.890	.789	.638	.277	.092	.292	.405	.426
S/DEPTH=.0	12.6%	10.2%	2.4%	=13.1%	=104.7%	394.3%	65.7%	=68.4%	=119.3%
S/DEPTH=.0	.906	.873	.778	.635	.286	.082	.286	.403	.425
S/DEPTH=.0	11.5%	9.2%	1.8%	=12.8%	=96.9%	433.8%	66.6%	=66.4%	=116.6%
S/DEPTH=.0	.892	.860	.770	.632	.292	.074	.281	.402	.424
S/DEPTH=.0	10.7%	8.5%	1.4%	=12.5%	=91.8%	*****	67.3%	=65.0%	=114.6%
S/DEPTH=.0	.883	.853	.765	.630	.296	.069	.279	.401	.424
S/DEPTH=.0	10.2%	8.1%	1.2%	=12.4%	=88.9%	*****	67.7%	=64.1%	=113.4%
S/DEPTH=.0	.881	.850	.763	.630	.297	.068	.278	.401	.424
S/DEPTH=.0	10.1%	7.9%	1.1%	=12.4%	=87.9%	*****	67.8%	=63.8%	=113.0%

258

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 CONDITON 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 (=38.9%)
- (5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX
DEFINED IN EQUATION (41)
.663 (=39.3%)
- (6) DIMENSIONLESS GROUP VELOCITY
DEFINED IN EQUATION (42)
.904 (=.3%)
- (7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM
DEFINED IN EQUATION (43)
.769 (=30.6%)
- (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

* (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	.079586	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

CASE 9=D

10TH 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 = .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) =	-.428991=06

CASE 5=D

TABLE I=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=	.839	.582	.363	.207	.012	-.096	-.137	-.156	-.161
	40.4%	15.4%	-29.4%	-109.2%	*****	234.6%	36.6%	-145.3%	-210.4%
SURFACE	14.072	8.793	4.993	2.733	.193	-1.014	-1.438	-1.623	-1.701
	51.7%	24.0%	-26.8%	-111.1%	*****	256.0%	30.0%	-157.2%	-214.0%
S/DEPTH=1.6	12.932								
	100.0%								
S/DEPTH=1.5	11.192								
	100.0%								
S/DEPTH=1.4	9.814	8.322							
	30.7%	19.7%							
S/DEPTH=1.3	8.708	7.551							
	24.6%	14.4%							
S/DEPTH=1.2	7.811	6.898	4.825						
	19.0%	9.7%	-23.2%						
S/DEPTH=1.1	7.077	6.343	4.621	2.757					
	13.7%	5.2%	-24.2%	-91.9%					
S/DEPTH=1.0	6.473	5.873	4.423	2.775	.210				
	8.6%	.8%	-25.6%	-84.5%	*****				
S/DEPTH= .9	5.973	5.475	4.239	2.775	.371	.990			
	3.9%	-3.2%	-27.2%	-79.1%	*****	250.0%			
S/DEPTH= .8	5.560	5.139	4.073	2.762	.504	.899	-1.400	-1.619	-1.696
	.4%	-7.0%	-28.8%	-75.0%	*****	260.7%	30.8%	-157.8%	100.0%
S/DEPTH= .7	5.220	4.859	3.925	2.743	.613	.819	-1.364	-1.614	-1.691
	-4.3%	-10.4%	-30.4%	-72.0%	*****	272.2%	30.7%	-158.5%	-215.9%
S/DEPTH= .6	4.943	4.626	3.798	2.721	.701	.748	-1.332	-1.609	-1.685
	-7.8%	-13.5%	-31.9%	-69.7%	*****	284.3%	30.5%	-153.8%	-216.2%
S/DEPTH= .5	4.719	4.437	3.690	2.698	.772	.689	-1.304	-1.604	-1.681
	-10.9%	-16.1%	-33.2%	-67.9%	-335.7%	*****	30.3%	-149.9%	-211.3%
S/DEPTH= .4	4.543	4.288	3.603	2.677	.827	.640	-1.281	-1.599	-1.677
	-13.4%	-18.3%	-34.4%	-66.7%	-300.5%	*****	30.2%	-146.7%	-207.2%
S/DEPTH= .3	4.411	4.175	3.535	2.659	.868	.603	-1.263	-1.596	-1.674
	-15.4%	-20.1%	-35.3%	-65.8%	-277.1%	*****	30.0%	-144.3%	-204.0%
S/DEPTH= .2	4.319	4.095	3.487	2.646	.896	.576	-1.250	-1.594	-1.672
	-16.8%	-21.4%	-36.0%	-65.2%	-262.0%	*****	29.9%	-142.6%	-201.8%
S/DEPTH= .1	4.264	4.048	3.458	2.637	.913	.560	-1.243	-1.592	-1.671
	-17.7%	-22.1%	-36.4%	-64.8%	-253.5%	*****	29.8%	-141.5%	-200.4%
S/DEPTH= .0	4.246	4.033	3.449	2.635	.918	.555	-1.240	-1.591	-1.670
	-18.0%	-22.4%	-36.5%	-64.7%	-250.8%	*****	29.8%	-141.2%	-200.0%

CASE 5-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	150.0	180.0
ETA/HEIGHT*	.839	.582	.363	.207	.012	.096	.137	.156	.161
	40.4%	15.4%	=29.4%	=109.2%	*****	234.6%	36.6%	=145.3%	=210.4%

SURFACE	.000	4.291	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	3.802							
	*****	79.1%							
S/DEPTH=1.3	.000	3.113							
	*****	76.3%							
S/DEPTH=1.2	.000	2.568	3.970						
	*****	73.9%	66.7%						
S/DEPTH=1.1	.000	2.130	3.376	3.639					
	*****	71.5%	64.6%	52.0%					
S/DEPTH=1.0	.000	1.772	2.867	3.161	2.377				
	*****	69.2%	62.6%	50.4%	=1.2%				
S/DEPTH=.9	.000	1.474	2.426	2.728	2.115	.968			
	*****	67.1%	60.6%	48.8%	=1.2%	=178.8%			
S/DEPTH=.8	.000	1.224	2.042	2.333	1.860	.878	.336	.077	.000
	*****	65.1%	58.8%	47.5%	=1.3%	=170.6%	=621.3%	*****	*****
S/DEPTH=.7	.000	1.009	1.703	1.972	1.612	.781	.305	.071	.000
	*****	63.3%	57.1%	45.9%	=1.4%	=163.9%	=589.4%	*****	*****
S/DEPTH=.6	.000	.822	1.401	1.640	1.369	.679	.269	.063	.000
	*****	61.7%	55.7%	44.7%	=1.6%	=158.3%	=564.3%	*****	*****
S/DEPTH=.5	.000	.657	1.127	1.332	1.132	.572	.230	.054	.000
	*****	60.3%	54.4%	43.6%	=1.7%	=153.9%	*****	*****	*****
S/DEPTH=.4	.000	.508	.876	1.043	.899	.462	.187	.044	.000
	*****	59.1%	53.3%	42.7%	=1.9%	=150.4%	*****	*****	*****
S/DEPTH=.3	.000	.371	.643	.770	.671	.348	.142	.033	.000
	*****	58.2%	52.5%	41.9%	=2.0%	=147.7%	*****	*****	*****
S/DEPTH=.2	.000	.243	.422	.507	.445	.233	.096	.023	.000
	*****	57.5%	51.9%	41.4%	=2.1%	=145.9%	*****	*****	*****
S/DEPTH=.1	.000	.120	.209	.252	.222	.117	.048	.011	.000
	*****	*****	*****	41.1%	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 3=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	.839	.582	.363	.207	.012	.096	.137	.156	.161
	40.4%	15.4%	-29.4%	-109.2%	*****	234.6%	36.6%	-145.3%	=210.4%
SURFACE	.000	81.071	70.719	53.824	29.576	10.511	2.928	.501	.000
S/DEPTH=1.6	***** .000	93.3%	84.8%	70.4%	14.0%	=225.3%	*****	*****	*****
S/DEPTH=1.5	***** .000								
S/DEPTH=1.4	***** .000	71.867							
S/DEPTH=1.3	***** .000	92.5%							
S/DEPTH=1.2	***** .000	97.800							
S/DEPTH=1.1	***** .000	91.0%							
S/DEPTH=1.0	***** .000	46.908	62.792						
S/DEPTH=.9	***** .000	89.5%	84.3%						
S/DEPTH=.8	***** .000	38.451	54.406	51.232					
S/DEPTH=.7	***** .000	87.8%	82.7%	72.3%					
S/DEPTH=.6	***** .000	31.859	47.257	47.033	29.553				
S/DEPTH=.5	***** .000	86.0%	81.0%	71.2%	23.0%				
S/DEPTH=.4	***** .000	26.703	41.244	43.066	29.250	10.795			
S/DEPTH=.3	***** .000	84.0%	79.1%	69.8%	25.1%	=195.8%			
S/DEPTH=.2	***** .000	22.658	36.242	39.467	28.856	11.826	3.761	.758	.000
S/DEPTH=.1	***** .000	81.9%	77.2%	68.3%	26.7%	=162.0%	*****	*****	*****
S/DEPTH=0	***** .000	19.484	32.124	36.299	28.407	12.696	4.482	1.001	.000
S/DEPTH=0.9	***** .000	79.7%	75.2%	66.7%	27.8%	=137.6%	=696.2%	*****	*****
S/DEPTH=0.8	***** .000	17.002	28.777	33.583	27.938	13.413	5.062	1.179	.000
S/DEPTH=0.7	***** .000	77.4%	73.1%	65.1%	28.6%	=119.6%	=590.6%	*****	*****
S/DEPTH=0.6	***** .000	13.079	26.102	31.321	27.484	13.991	5.528	1.311	.000
S/DEPTH=0.5	***** .000	75.3%	71.2%	63.5%	29.1%	=106.2%	=521.4%	*****	*****
S/DEPTH=0.4	***** .000	13.617	24.017	29.501	27.075	14.443	5.896	1.409	.000
S/DEPTH=0.3	***** .000	73.3%	69.4%	62.1%	29.5%	=96.4%	=474.3%	*****	*****
S/DEPTH=0.2	***** .000	12.545	22.459	28.106	26.734	14.781	6.175	1.481	.000
S/DEPTH=0.1	***** .000	71.5%	67.9%	60.9%	29.7%	=89.4%	=442.1%	*****	*****
S/DEPTH=0	***** .000	11.812	21.379	27.123	26.479	15.015	6.371	1.530	.000
S/DEPTH=0.9	***** .000	70.2%	66.7%	60.0%	29.8%	=84.7%	=421.2%	*****	*****
S/DEPTH=0.8	***** .000	11.385	20.745	26.538	26.321	15.152	6.488	1.558	.000
S/DEPTH=0.7	***** .000	69.3%	65.9%	59.5%	29.9%	=82.0%	=409.3%	*****	*****
S/DEPTH=0.6	***** .000	11.245	20.535	26.344	26.267	15.197	6.526	1.568	.000
S/DEPTH=0.5	***** .000	69.0%	65.7%	59.3%	29.9%	=81.1%	=405.4%	*****	*****

265

CASE 50D

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	.839	.582	.363	.207	.012	-.096	-.137	-.156	-.161
	40.4X	15.4X	=29.4X	-109.2X	*****	234.6X	36.6X	=145.3X	=210.4X
SURFACE	=39.323	=22.431	9.042	21.388	27.257	13.651	3.805	.641	.824
S/DEPTH#1.6	59.0X	37.6X	239.3X	148.6X	115.9X	69.5X	=88.2X	*****	*****
S/DEPTH#1.5	=48.220	100.0X	=58.830	100.0X	=60.141	=27.584	75.9X	49.3X	32.387
S/DEPTH#1.4	=57.120	=32.387	75.8X	58.6X	=52.835	=33.368	75.1X	62.2X	*****
S/DEPTH#1.3	74.1X	63.5X	=195.5X	17.312	41.129	=29.961	=46.708	=32.234	=3.651
S/DEPTH#1.2	72.9X	63.7X	=45.6X	171.0X	72.9X	63.7X	=35.769	=27.108	=8.463
S/DEPTH#1.1	71.6X	63.5X	=7.6X	197.3X	70.3X	63.5X	=30.735	=23.996	=9.002
S/DEPTH#1.0	70.3X	63.0X	9.0X	237.2X	70.3X	63.0X	=26.049	=20.805	=8.813
S/DEPTH# .9	69.1X	62.3X	17.9X	302.4X	69.1X	62.3X	=21.692	=17.631	=8.132
S/DEPTH# .8	68.0X	61.6X	23.1X	*****	68.0X	61.6X	=17.628	=14.521	=7.122
S/DEPTH# .7	67.0X	60.9X	26.3X	.776	67.0X	60.9X	=13.809	=11.492	=5.892
S/DEPTH# .6	66.2X	60.3X	28.4X	.235	66.2X	60.3X	=10.187	=8.540	=4.519
S/DEPTH# .5	65.5X	59.8X	29.7X	.038	65.5X	59.8X	=6.710	=5.655	=3.056
S/DEPTH# .4	65.0X	59.4X	30.5X	.123	65.0X	59.4X	=5.331	=2.815	=1.540
S/DEPTH# .3	64.7X	*****	*****	.090	64.7X	*****	*****	*****	*****
S/DEPTH# .2	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH# .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=0

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

THEYA	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT	.839	.582	.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	45.039	20.597	8.534	.538	-.481	=1.529	=2.257	=2.470
	88.6%	5.9%	=83.9%	=265.6%	*****	*****	*****	*****	*****
S/DEPTH=1.6	75.630								
	100.0%								
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%	=11.3%							
S/DEPTH=1.2	34.792	29.600	18.594						
	=2.9%	=17.3%	=70.0%						
S/DEPTH=1.1	29.264	25.225	16.363	8.071					
	=9.1%	=22.7%	=72.2%	=196.6%					
S/DEPTH=1.0	24.684	21.500	14.319	7.305	.538				
	=14.7%	=27.7%	=74.5%	=190.6%	*****				
S/DEPTH=.9	20.820	18.286	12.444	6.534	.529	-.456			
	=19.6%	=32.1%	=76.7%	=185.9%	*****	*****			
S/DEPTH=.8	17.500	15.474	10.718	5.767	.509	-.367	=1.342	=2.052	=2.256
	=24.0%	=36.0%	=78.7%	=182.2%	*****	*****	*****	*****	*****
S/DEPTH=.7	14.600	12.979	9.120	5.009	.478	-.293	=1.151	=1.791	=1.969
	=27.7%	=39.4%	=80.6%	=179.3%	*****	*****	*****	*****	*****
S/DEPTH=.6	12.022	10.733	7.630	4.263	.435	-.232	-.969	=1.531	=1.684
	=31.0%	=42.3%	=82.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	9.692	8.682	6.229	3.529	.380	-.180	-.796	=1.273	=1.401
	=33.6%	=44.7%	=83.6%	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	7.551	6.781	4.901	2.807	.316	-.136	-.629	=1.017	=1.119
	=35.8%	=46.6%	=84.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	5.549	4.993	3.628	2.095	.244	-.098	-.467	-.761	-.838
	=37.4%	=48.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	3.647	3.286	2.397	1.392	.166	-.063	-.309	-.507	-.558
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	1.808	1.630	1.192	.695	.084	-.031	-.154	-.253	-.279
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

267

CASE 5-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#	.030	.052	.063	.077	.096	.117	.137	.156	.161
	40.4X	15.4X	-29.4X	-109.2X	*****	234.6X	36.6X	-145.3X	-210.4X
SURFACE	.000	40.665	45.107	41.273	27.928	12.707	4.834	1.115	.000
S/DEPTH#1.6	*****	86.0X	75.0X	59.7X	7.3X	-157.6X	-567.6X	*****	*****
S/DEPTH#1.5	.000								
S/DEPTH#1.4	*****	36.553							
S/DEPTH#1.3	.000	84.4X							
S/DEPTH#1.2	*****	80.9X	39.566						
S/DEPTH#1.1	.000	20.637	75.8X	38.047					
S/DEPTH#1.0	*****	79.3X	74.5X	69.7X					
S/DEPTH# .9	.000	17.136	28.644	33.135	27.643				
S/DEPTH# .8	*****	77.7X	73.2X	64.8X	28.2X				
S/DEPTH# .7	.000	14.218	24.228	28.633	24.702	12.441			
S/DEPTH# .6	*****	76.3X	71.9X	63.9X	28.6X	-109.8X			
S/DEPTH# .5	.000	11.758	20.361	24.509	21.796	11.308	4.521	1.066	.000
S/DEPTH# .4	*****	74.9X	70.7X	63.0X	29.0X	-103.0X	-505.0X	*****	*****
S/DEPTH# .3	.000	9.657	16.950	20.725	18.933	10.081	4.108	.977	.000
S/DEPTH# .2	*****	73.6X	69.6X	62.2X	29.3X	-97.3X	-477.9X	*****	*****
S/DEPTH# .1	.000	7.838	13.911	17.235	16.116	8.774	3.630	.868	.000
S/DEPTH# .0	*****	72.4X	68.6X	61.5X	29.5X	-92.7X	-456.7X	*****	*****
S/DEPTH# .9	.000	6.238	11.172	13.993	13.345	7.403	3.099	.743	.000
S/DEPTH# .8	*****	71.4X	67.7X	60.8X	29.6X	-89.0X	-440.0X	*****	*****
S/DEPTH# .7	.000	4.807	8.671	10.956	10.617	5.980	2.527	.606	.000
S/DEPTH# .6	*****	70.5X	67.0X	60.3X	29.7X	-86.1X	-427.2X	*****	*****
S/DEPTH# .5	.000	3.502	6.351	8.079	7.928	4.518	1.923	.462	.000
S/DEPTH# .4	*****	69.9X	66.8X	59.8X	29.8X	-83.9X	*****	*****	*****
S/DEPTH# .3	.000	2.287	4.163	5.321	5.268	3.027	1.295	.311	.000
S/DEPTH# .2	*****	69.4X	66.0X	59.5X	29.8X	-82.4X	*****	*****	*****
S/DEPTH# .1	.000	1.129	2.061	2.641	2.629	1.518	.651	.156	.000
S/DEPTH# .0	*****	*****	*****	59.3X	29.8X	*****	*****	*****	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH# .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5=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	.030	.382	.363	.207	.012	-.096	-.137	-.186	-.161
	40.4%	19.4%	-29.4%	-109.2%	*****	234.6%	36.6%	-149.3%	-210.4%
SURFACE	99.966	41.754	14.986	5.059	.196	-.271	-.716	-.998	-1.087
	66.2%	22.3%	-90.6%	-353.6%	*****	*****	*****	*****	*****
S/DEPTH=1.6	83.869								
	100.0%								
S/DEPTH=1.5	61.373								
	100.0%								
S/DEPTH=1.4	45.411	36.128							
	25.5%	10.2%							
S/DEPTH=1.3	33.851	27.630							
	16.1%	.3%							
S/DEPTH=1.2	25.333	21.109	12.498						
	8.4%	-6.6%	-64.0%						
S/DEPTH=1.1	18.967	16.071	9.932	4.555					
	1.1%	-13.2%	-66.8%	*****					
S/DEPTH=1.0	14.191	12.156	7.784	3.731	.196				
	-5.7%	-19.3%	-69.7%	*****	*****				
S/DEPTH=.9	10.474	9.099	6.001	2.999	.188	-.248			
	-11.9%	-25.0%	-72.5%	*****	*****	*****			
S/DEPTH=.8	7.649	6.706	4.533	2.347	.171	-.172	-.559	-.826	-.907
	-17.6%	-30.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	5.471	4.832	3.333	1.778	.148	-.117	-.416	-.630	-.692
	-22.7%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	3.793	3.370	2.364	1.293	.120	-.077	-.298	-.461	-.507
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	2.609	2.241	1.593	.889	.090	-.048	-.202	-.319	-.351
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	1.544	1.384	.995	.564	.061	-.029	-.127	-.204	-.224
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.843	.758	.549	.315	.036	-.015	-.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 5-D

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=	.839	.582	.363	.207	.012	-.096	-.137	-.196	-.161
	40.4%	15.4%	-29.4%	-109.2%	*****	234.6%	36.6%	-145.3%	-210.4%
SURFACE	.000	39.848	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	.000								
S/DEPTH=1.4	*****								
S/DEPTH=1.3	.000	33.978							
S/DEPTH=1.2	*****	87.5%							
S/DEPTH=1.1	.000	25.254							
S/DEPTH=1.0	*****	85.5%							
S/DEPTH=.9	.000	18.730	28.514						
S/DEPTH=.8	*****	83.9%	78.7%						
S/DEPTH=.7	.000	13.835	21.780	23.448					
S/DEPTH=.6	*****	82.2%	77.2%	67.9%					
S/DEPTH=.5	.000	10.153	16.447	18.286	14.131				
S/DEPTH=.4	*****	80.4%	75.6%	66.8%	27.2%				
S/DEPTH=.3	.000	7.376	12.247	14.006	11.336	3.310			
S/DEPTH=.2	*****	78.7%	74.1%	65.7%	28.0%	-126.8%			
S/DEPTH=.1	.000	5.282	8.956	10.498	8.866	4.348	1.665	.386	.000
S/DEPTH=.0	*****	77.0%	72.6%	68.6%	28.5%	-115.4%	*****	*****	*****
S/DEPTH=1.6	.000	3.704	6.394	7.657	6.718	3.428	1.356	.320	.000
S/DEPTH=1.5	*****	75.4%	71.2%	63.5%	29.0%	-106.2%	*****	*****	*****
S/DEPTH=1.4	.000	2.519	4.416	5.386	4.886	2.580	1.045	.249	.000
S/DEPTH=1.3	*****	73.8%	69.9%	62.5%	29.3%	-98.9%	*****	*****	*****
S/DEPTH=1.2	.000	1.638	2.908	3.601	3.362	1.826	.754	.180	.000
S/DEPTH=1.1	*****	*****	68.7%	61.5%	29.5%	*****	*****	*****	*****
S/DEPTH=1.0	.000	.993	1.780	2.233	2.134	1.186	.497	.119	.000
S/DEPTH=.9	*****	*****	*****	60.8%	29.7%	*****	*****	*****	*****
S/DEPTH=.8	.000	.535	.967	1.225	1.193	.675	.286	.069	.000
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.231	.419	.535	.527	.302	.129	.031	.000
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.057	.103	.132	.131	.076	.033	.008	.000
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000

270

CASE 5=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	.839	.582	.363	.207	.012	-.096	-.137	-.196	-.161
	40.4X	15.4X	-29.4X	-109.2X	*****	234.6X	36.6X	-145.3X	-210.4X
SURFACE	1.606	1.189	.739	.427	.027	-.190	-.276	-.316	-.333
S/DEPTH=1.6	41.0X	21.4X	-20.7X	-93.0X	*****	239.9X	48.5X	-134.6X	-199.0X
	1.369								
S/DEPTH=1.5	100.0X								
	1.482								
S/DEPTH=1.4	100.0X								
	1.387	1.167							
S/DEPTH=1.3	31.6X	20.0X							
	1.293	1.119							
S/DEPTH=1.2	28.2X	18.1X							
	1.206	1.066	.746						
S/DEPTH=1.1	24.8X	16.0X	-15.3X						
	1.127	1.013	.744	.446					
S/DEPTH=1.0	21.3X	13.6X	-13.2X	-76.5X					
	1.037	.964	.736	.469	.031				
S/DEPTH=.9	17.9X	11.0X	-12.3X	-64.8X	*****				
	.996	.918	.723	.485	.070	.185			
S/DEPTH=.8	14.6X	8.4X	-12.1X	-56.8X	*****	249.9X			
	.943	.878	.709	.495	.102	.165			
S/DEPTH=.7	11.4X	5.9X	-12.4X	-51.1X	-477.1X	270.8X	54.7X	-135.2X	-100.0X
	.898	.842	.695	.502	.129	.147	.260	.314	.331
S/DEPTH=.6	8.9X	3.5X	-12.9X	-47.0X	-354.4X	294.0X	58.4X	-136.0X	-201.0X
	.860	.811	.681	.505	.150	.131	.253	.313	.329
S/DEPTH=.5	5.8X	1.3X	-13.6X	-44.1X	-286.3X	319.2X	61.7X	-129.5X	-201.3X
	.829	.786	.669	.507	.167	.118	.247	.312	.328
S/DEPTH=.4	3.5X	.7X	-14.3X	-42.0X	-244.1X	345.6X	64.6X	-124.2X	-195.2X
	.804	.765	.659	.508	.181	.107	.242	.311	.328
S/DEPTH=.3	1.5X	-2.3X	-14.9X	-40.5X	-216.7X	371.9X	66.9X	-119.8X	-190.3X
	.785	.749	.650	.508	.190	.099	.238	.310	.327
S/DEPTH=.2	.0X	-3.6X	-15.5X	-39.5X	-198.7X	396.2X	68.8X	-116.5X	-186.4X
	.771	.738	.644	.508	.197	.093	.235	.309	.327
S/DEPTH=.1	-1.2X	-4.6X	-15.9X	-38.8X	-187.2X	416.2X	70.1X	-114.2X	-183.7X
	.763	.731	.641	.508	.201	.089	.233	.309	.326
S/DEPTH=.0	-1.9X	-5.2X	-16.2X	-38.4X	-180.8X	429.4X	70.9X	-112.8X	-182.1X
	.761	.729	.640	.508	.203	.088	.232	.309	.326
	-2.1X	-5.4X	-16.3X	-38.3X	-178.7X	434.0X	71.2X	-112.3X	-181.5X

CASE 5-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	.074	.132	.164	.151	.058	-.032	-.071	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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	(=128.9%)

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

CASE 6-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 = .018312 DPT/LO = .100002
H/DPT = .183115
L/LO = .718164 PSI/(G*H*T) = .003155

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = .555443=01 X(2)/(H*T*G) = .168746=02
X(3)/(H*T*G) = .300411=04

CASE 6-A

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.571	.558	.519	.458	.293	.061	-.144	-.360	-.429
	12.4%	11.7%	9.4%	5.5%	-9.6%	-112.0%	39.9%	-6.5%	-16.5%
SURFACE	5.293	5.168	4.805	4.241	2.719	.610	-1.213	-3.064	-3.645
S/DEPTH=1.1	11.3%	10.6%	8.5%	4.9%	-8.7%	-90.6%	37.3%	-6.0%	-14.9%
S/DEPTH=1.0	5.274	5.159							
	11.0%	10.4%							
S/DEPTH=.9	4.883	4.780	4.478	3.998	2.638	.612			
	9.3%	8.8%	7.1%	4.1%	-7.9%	-87.2%			
S/DEPTH=.8	4.544	4.450	4.177	3.741	2.499	.625	1.129	-3.008	-3.609
	8.3%	7.8%	6.3%	3.6%	-7.1%	-72.6%	35.9%	-6.1%	-15.4%
S/DEPTH=.7	4.252	4.167	3.917	3.518	2.376	.632	1.030	-2.856	-3.454
	7.4%	6.9%	5.5%	3.1%	-6.5%	-61.3%	33.6%	-5.6%	-14.0%
S/DEPTH=.6	4.003	3.925	3.695	3.327	2.269	.635	.947	-2.724	-3.317
	6.6%	6.2%	4.9%	2.7%	-6.0%	-52.5%	31.4%	-5.2%	-12.8%
S/DEPTH=.5	3.794	3.721	3.508	3.166	2.177	.635	.878	-2.611	-3.199
	5.8%	5.5%	4.3%	2.3%	-5.5%	-45.5%	29.4%	-4.8%	-11.7%
S/DEPTH=.4	3.621	3.553	3.353	3.032	2.100	.634	.822	-2.516	-3.099
	5.2%	4.9%	3.8%	2.0%	-5.1%	-40.1%	27.5%	-4.5%	-10.8%
S/DEPTH=.3	3.483	3.419	3.229	2.924	2.037	.632	.778	-2.439	-3.017
	4.7%	4.4%	3.4%	1.7%	-4.7%	-35.9%	25.9%	-4.2%	-10.0%
S/DEPTH=.2	3.377	3.316	3.134	2.842	1.988	.630	.744	-2.380	-2.954
	4.3%	4.0%	3.1%	1.5%	-4.5%	-32.8%	24.6%	-4.0%	-9.4%
S/DEPTH=.1	3.303	3.243	3.067	2.783	1.954	.628	.721	-2.338	-2.909
	4.0%	3.7%	2.9%	1.4%	-4.3%	-30.7%	23.6%	-3.9%	-9.0%
S/DEPTH=.0	3.259	3.200	3.027	2.749	1.933	.627	.707	-2.313	-2.882
	3.8%	3.6%	2.7%	1.3%	-4.2%	-29.4%	23.0%	-3.8%	-8.7%
S/DEPTH=.0	3.244	3.186	3.014	2.737	1.926	.626	.702	-2.304	-2.873
	3.8%	3.5%	2.7%	1.2%	-4.2%	-29.0%	22.8%	-3.8%	-8.6%

CASE 6-A

TABLE 13-DIMENSIONLESS VERTICAL VELOCITY COMPONENT FIELD...DEFINED IN EQUATION (22)

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.0	.571	.519	.458	.293	.061	-.144	-.360	-.429
	12.4%	11.7%	9.4%	5.9%	-9.6%	-112.0%	39.9%	-6.5%	-16.5%
SURFACE	.000	.830	1.595	2.240	3.058	3.203	2.686	1.363	.000
	*****	26.7%	25.3%	22.8%	15.5%	2.5%	-12.8%	-35.4%	*****
S/DEPTH=1.1	.000	.828							
	*****	26.5%							
S/DEPTH=1.0	.000	.719	1.397	1.995	2.844	3.157			
	*****	24.2%	23.2%	21.3%	15.5%	4.0%			
S/DEPTH=.9	.000	.622	1.208	1.728	2.473	2.766	2.451	1.310	.000
	*****	22.9%	21.9%	20.2%	14.6%	3.7%	-10.8%	-35.3%	*****
S/DEPTH=.8	.000	.533	1.036	1.484	2.132	2.400	2.143	1.158	.000
	*****	21.8%	20.8%	19.1%	13.8%	3.4%	-10.3%	-33.2%	*****
S/DEPTH=.7	.000	.452	.879	1.260	1.815	2.055	1.847	1.008	.000
	*****	20.8%	19.8%	18.2%	13.1%	3.1%	-9.9%	-31.4%	*****
S/DEPTH=.6	.000	.377	.733	1.052	1.520	1.729	1.563	.859	.000
	*****	19.9%	19.0%	17.4%	12.4%	2.9%	-9.5%	-30.0%	*****
S/DEPTH=.5	.000	.307	.597	.857	1.241	1.418	1.288	.713	.000
	*****	19.2%	18.3%	16.7%	11.9%	2.8%	-9.2%	-28.7%	*****
S/DEPTH=.4	.000	.241	.469	.673	.977	1.119	1.020	.568	.000
	*****	18.5%	17.7%	16.2%	11.5%	2.6%	-8.9%	-27.8%	*****
S/DEPTH=.3	.000	.178	.347	.498	.724	.831	.760	.424	.000
	*****	18.1%	17.2%	15.8%	11.2%	2.5%	-8.7%	-27.0%	*****
S/DEPTH=.2	.000	.117	.229	.329	.478	.550	.504	.282	.000
	*****	*****	16.9%	15.5%	11.9%	2.4%	-8.6%	-26.5%	*****
S/DEPTH=.1	.000	.058	.114	.163	.238	.274	.251	.141	.000
	*****	*****	*****	15.3%	10.8%	2.4%	-8.5%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

277

CASE 0=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:	.571	.558	.519	.458	.293	.061	-.144	-.360	-.429
	12.4%	11.7%	9.4%	5.5%	-9.6%	-112.0%	39.9%	-6.5%	-16.5%
SURFACE	.000	7.763	14.875	20.810	28.052	28.760	23.512	11.490	.000
	*****	37.5%	35.8%	33.0%	23.9%	6.6%	-16.5%	-55.8%	*****
S/DEPTH#1.1	.000	7.744							
	*****	37.4%							
S/DEPTH#1.0	.000	6.944	13.439	19.086	26.711	28.537			
	*****	34.3%	33.0%	30.7%	23.1%	7.2%			
S/DEPTH# .9	.000	6.267	12.154	17.318	24.491	26.680	22.787	11.463	.000
	*****	31.8%	30.5%	28.4%	21.3%	6.7%	-14.3%	-53.6%	*****
S/DEPTH# .8	.000	5.698	11.072	15.825	22.597	25.060	21.877	11.366	.000
	*****	29.4%	28.2%	26.2%	19.6%	6.2%	-12.6%	-46.7%	*****
S/DEPTH# .7	.000	5.224	10.167	14.574	20.997	23.664	21.061	11.253	.000
	*****	27.1%	25.9%	24.1%	18.0%	5.7%	-11.2%	-41.1%	*****
S/DEPTH# .6	.000	4.832	9.420	13.538	19.662	22.479	20.346	11.134	.000
	*****	24.9%	23.9%	22.2%	16.8%	5.3%	-10.0%	-36.6%	*****
S/DEPTH# .5	.000	4.514	8.813	12.695	18.568	21.494	19.736	11.019	.000
	*****	23.0%	22.1%	20.5%	15.2%	4.9%	-9.0%	-32.9%	*****
S/DEPTH# .4	.000	4.263	8.333	12.027	17.698	20.700	19.234	10.915	.000
	*****	21.4%	20.5%	19.0%	14.1%	4.6%	-8.2%	-29.9%	*****
S/DEPTH# .3	.000	4.073	7.970	11.521	17.035	20.091	18.843	10.829	.000
	*****	20.1%	19.2%	17.8%	13.2%	4.3%	-7.6%	-27.7%	*****
S/DEPTH# .2	.000	3.941	7.716	11.167	16.570	19.660	18.562	10.764	.000
	*****	19.1%	18.3%	16.9%	12.6%	4.1%	-7.1%	-26.2%	*****
S/DEPTH# .1	.000	3.862	7.565	10.957	16.294	19.403	18.398	10.725	.000
	*****	18.5%	17.7%	16.4%	12.2%	4.0%	-6.9%	-25.3%	*****
S/DEPTH# .0	.000	3.836	7.515	10.888	16.202	19.317	18.338	10.711	.000
	*****	18.3%	17.5%	16.2%	12.1%	4.0%	-6.8%	-25.0%	*****

CASE 6=A

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=	.571	.558	.519	.458	.293	.061	.144	.360	.429
	12.4%	11.7%	9.4%	5.5%	9.6%	112.0%	39.9%	6.5%	16.5%
SURFACE	=26.205	=25.246	=22.512	=18.388	=8.111	3.604	10.584	13.457	13.229
	26.1%	24.7%	20.3%	11.9%	=37.0%	180.5%	47.6%	=17.3%	=46.8%
S/DEPTH=1.1	=26.055	=25.180							
	25.7%	24.5%							
S/DEPTH=1.0	=22.899	=22.159	=20.014	=16.681	=7.809	3.489			
	23.7%	22.5%	18.7%	11.1%	=33.5%	181.7%			
S/DEPTH=.9	=19.979	=19.355	=17.546	=14.727	=7.176	2.592	9.357	12.884	12.907
	22.6%	21.4%	17.8%	10.7%	=29.3%	201.2%	47.9%	=17.5%	=48.7%
S/DEPTH=.8	=17.267	=16.744	=15.226	=12.857	=6.476	1.898	7.865	11.252	11.412
	21.5%	20.5%	17.0%	10.3%	=26.0%	224.9%	47.2%	=16.3%	=45.6%
S/DEPTH=.7	=14.734	=14.300	=13.039	=11.067	=5.727	1.366	6.546	9.689	9.933
	20.6%	19.6%	16.3%	10.0%	=23.5%	253.9%	46.6%	=15.3%	=42.9%
S/DEPTH=.6	=12.355	=12.000	=10.967	=9.348	=4.946	.964	5.369	8.187	8.472
	19.8%	18.8%	15.7%	9.6%	=21.5%	*****	46.0%	=14.4%	=40.7%
S/DEPTH=.5	=10.106	=9.821	=8.992	=7.692	=4.143	.664	4.308	6.739	7.028
	19.1%	18.2%	15.1%	9.4%	=20.0%	*****	45.4%	=13.7%	=38.9%
S/DEPTH=.4	=7.961	=7.741	=7.098	=6.089	=3.326	.444	3.341	5.337	5.601
	18.6%	17.6%	14.7%	9.1%	=18.8%	*****	45.0%	=13.2%	=37.4%
S/DEPTH=.3	=5.900	=5.738	=5.268	=4.529	=2.500	.283	2.445	3.970	4.187
	18.1%	17.2%	14.3%	8.9%	=17.9%	*****	44.6%	=12.7%	=36.4%
S/DEPTH=.2	=3.900	=3.794	=3.486	=3.001	=1.669	.166	1.602	2.632	2.785
	17.8%	16.9%	14.1%	8.8%	=17.3%	*****	44.3%	=12.5%	=35.6%
S/DEPTH=.1	=1.940	=1.887	=1.735	=1.495	=.835	.076	.792	1.311	1.391
	17.6%	16.7%	13.9%	8.7%	*****	*****	*****	=12.3%	=35.1%
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

279

CASE 6-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=	.571	.558	.519	.458	.293	.061	-.144	-.360	-.429
	12.4%	11.7%	9.4%	5.5%	-9.6%	-112.0%	39.9%	-6.5%	-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%	13.5%	10.7%	5.7%	-13.0%	*****	*****	-9.2%	-21.7%
S/DEPTH=1.0	16.996	16.336							
	13.8%	13.2%							
S/DEPTH=.9	14.420	13.870	12.314	10.014	4.711	.397			
	11.6%	10.9%	8.6%	4.6%	-11.7%	*****			
S/DEPTH=.8	12.202	11.743	10.443	8.519	4.052	.358	-.645	-5.825	-8.790
	10.7%	10.0%	7.9%	4.1%	-11.1%	*****	*****	-9.7%	-23.9%
S/DEPTH=.7	10.271	9.889	8.808	7.203	3.458	.319	-.528	-4.966	-7.944
	9.9%	9.3%	7.3%	3.7%	-10.5%	*****	*****	-9.3%	-22.6%
S/DEPTH=.6	8.569	8.254	7.361	6.033	2.919	.279	-.431	-4.189	-6.399
	9.2%	8.6%	6.7%	3.3%	-10.1%	*****	*****	-9.0%	-21.5%
S/DEPTH=.5	7.052	6.795	6.066	4.980	2.426	.238	-.348	-3.478	-5.338
	8.7%	8.1%	6.3%	3.0%	-9.7%	*****	*****	-8.6%	-20.6%
S/DEPTH=.4	5.679	5.474	4.890	4.021	1.969	.198	-.276	-2.821	-4.348
	8.2%	7.7%	5.9%	2.8%	-9.4%	*****	*****	-8.4%	-19.9%
S/DEPTH=.3	4.419	4.260	3.809	3.135	1.542	.158	-.212	-2.208	-3.413
	7.9%	7.3%	5.6%	2.6%	-9.1%	*****	*****	-8.2%	-19.3%
S/DEPTH=.2	3.244	3.128	2.798	2.305	1.137	.118	-.154	-1.628	-2.523
	7.6%	7.0%	5.4%	2.5%	-8.9%	*****	*****	-8.1%	-18.8%
S/DEPTH=.1	2.130	2.054	1.838	1.515	.749	.079	-.100	-1.072	-1.664
	7.4%	6.9%	5.2%	2.4%	*****	*****	*****	-8.0%	-18.5%
S/DEPTH=.0	1.055	1.018	.911	.751	.572	.039	-.050	-.532	-.827
	7.3%	6.8%	5.1%	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=A

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=	.571	.558	.519	.458	.293	.061	-.144	-.360	-.429
	12.4%	11.7%	9.4%	5.5%	=9.6%	=112.0%	39.9%	=6.5%	=16.5%
SURFACE	.000	5.550	10.700	15.117	20.987	22.619	19.556	10.300	.000
	*****	27.5%	26.0%	23.7%	16.5%	3.7%	=11.4%	=34.3%	*****
S/DEPTH=1.1	.000	5.534							
	*****	27.3%							
S/DEPTH=1.0	.000	4.800	9.357	13.445	19.517	22.299			
	*****	25.0%	23.9%	22.2%	16.5%	5.2%			
S/DEPTH=.9	.000	4.141	8.079	11.627	16.960	19.540	17.854	9.908	.000
	*****	23.7%	22.7%	21.0%	15.6%	5.0%	=9.5%	=34.2%	*****
S/DEPTH=.8	.000	3.543	6.919	9.972	14.608	16.955	15.621	8.767	.000
	*****	22.6%	21.6%	20.0%	14.9%	4.7%	=8.9%	=32.1%	*****
S/DEPTH=.7	.000	2.998	5.859	8.454	12.430	14.521	13.475	7.636	.000
	*****	21.5%	20.6%	19.1%	14.2%	4.5%	=8.4%	=30.4%	*****
S/DEPTH=.6	.000	2.496	4.881	7.050	10.400	12.215	11.406	6.516	.000
	*****	20.7%	19.8%	18.3%	13.6%	4.4%	=8.0%	=28.9%	*****
S/DEPTH=.5	.000	2.029	3.970	5.740	8.490	10.019	9.402	5.409	.000
	*****	19.9%	19.1%	17.7%	13.1%	4.2%	=7.6%	=27.7%	*****
S/DEPTH=.4	.000	1.591	3.114	4.505	6.679	7.910	7.455	4.312	.000
	*****	19.3%	18.5%	17.1%	12.7%	4.1%	=7.4%	=26.7%	*****
S/DEPTH=.3	.000	1.174	2.300	3.329	4.944	5.872	5.552	3.225	.000
	*****	18.8%	18.0%	16.7%	12.4%	4.0%	=7.2%	=26.0%	*****
S/DEPTH=.2	.000	.774	1.516	2.196	3.265	3.886	3.682	2.146	.000
	*****	*****	17.7%	16.4%	12.2%	3.9%	=7.0%	=25.5%	*****
S/DEPTH=.1	.000	.384	.753	1.091	1.623	1.935	1.836	1.072	.000
	*****	*****	*****	*****	12.0%	3.9%	=6.9%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=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	150.0	180.0
ETA/HEIGHT	.571	.558	.519	.458	.293	.061	.144	.360	.429
	12.4X	11.7X	9.4X	5.5X	9.6X	112.0X	39.9X	6.5X	16.5X
SURFACE	11.096	10.580	9.158	7.158	3.011	.202	-.433	-3.153	-4.527
S/DEPTH=1.1	17.5X	16.4X	13.1X	7.2X	-15.1X	*****	*****	-9.4X	-22.2X
S/DEPTH=1.0	16.5X	16.0X							
S/DEPTH=.9	8.248	7.926	7.015	5.674	2.616	.198			
S/DEPTH=.8	13.3X	12.5X	10.0X	5.5X	-13.0X	*****			
S/DEPTH=.7	6.138	5.902	5.236	4.252	1.989	.162	-.339	-2.865	-4.270
S/DEPTH=.6	12.1X	11.3X	9.0X	4.8X	-12.1X	*****	*****	-10.5X	-26.4X
S/DEPTH=.5	4.494	4.324	3.844	3.132	1.484	.128	-.240	-2.134	-3.210
S/DEPTH=.4	11.0X	10.3X	8.1X	4.3X	-11.3X	*****	*****	-9.9X	-24.6X
S/DEPTH=.3	3.217	3.097	2.757	2.253	1.079	.098	-.167	-1.550	-2.350
S/DEPTH=.2	10.1X	9.5X	7.4X	3.8X	-10.7X	*****	*****	-9.4X	-23.0X
S/DEPTH=.1	2.229	2.147	1.914	1.568	.758	.072	-.112	-1.088	-1.660
S/DEPTH=.0	9.3X	8.7X	6.8X	3.4X	-10.1X	*****	*****	-9.0X	-21.7X
S/DEPTH=.9	1.473	1.419	1.267	1.040	.507	.050	-.073	-.726	-1.115
S/DEPTH=.8	8.7X	8.1X	6.3X	3.0X	*****	*****	*****	-8.7X	-20.6X
S/DEPTH=.7	.905	.872	.779	.641	.314	.032	-.044	-.450	-.694
S/DEPTH=.6	8.2X	7.6X	5.8X	2.8X	*****	*****	*****	*****	-19.8X
S/DEPTH=.5	.493	.476	.425	.350	.172	.018	-.024	-.247	-.382
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.214	.207	.185	.152	.075	.008	-.010	-.108	-.167
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.053	.051	.046	.038	.019	.002	-.002	-.027	-.041
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=A

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	.571	.558	.519	.458	.293	.061	-.144	-.360	-.429
	12.4%	11.7%	9.4%	5.5%	-9.6%	-112.0%	39.9%	-6.5%	-16.5%
SURFACE	.000	3.438	6.563	9.126	12.120	12.229	9.931	4.874	.000
	*****	31.3%	29.6%	26.7%	18.0%	3.0%	-14.2%	-38.5%	*****
S/DEPTH=1.1	.000	3.420							
	*****	31.0%							
S/DEPTH=1.0	.000	2.650	5.155	7.383	10.610	11.907			
	*****	27.6%	26.5%	24.6%	18.3%	5.7%			
S/DEPTH=.9	.000	2.023	3.940	5.655	8.179	9.284	8.336	4.515	.000
	*****	25.9%	24.9%	23.1%	17.2%	5.4%	-10.7%	-38.8%	*****
S/DEPTH=.8	.000	1.514	2.953	4.247	6.178	7.085	6.438	3.544	.000
	*****	24.4%	23.4%	21.7%	16.1%	5.1%	-9.8%	-35.7%	*****
S/DEPTH=.7	.000	1.105	2.157	3.107	4.544	5.258	4.828	2.696	.000
	*****	23.0%	22.0%	20.4%	15.2%	4.8%	-9.1%	-33.0%	*****
S/DEPTH=.6	.000	.778	1.521	2.194	3.223	3.759	3.482	1.968	.000
	*****	21.8%	20.9%	19.3%	14.3%	4.6%	-8.5%	-30.8%	*****
S/DEPTH=.5	.000	.521	1.019	1.472	2.171	2.550	2.380	1.359	.000
	*****	*****	19.8%	18.4%	13.6%	4.4%	-8.0%	-29.0%	*****
S/DEPTH=.4	.000	.324	.634	.916	1.356	1.600	1.503	.865	.000
	*****	*****	19.0%	17.6%	13.1%	4.2%	-7.6%	-27.6%	*****
S/DEPTH=.3	.000	.178	.348	.504	.748	.887	.837	.485	.000
	*****	*****	*****	*****	12.6%	4.1%	-7.3%	*****	*****
S/DEPTH=.2	.000	.078	.152	.221	.328	.390	.369	.215	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.019	.038	.055	.081	.097	.092	.054	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

283

CASE 6-A

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.571	.558	.519	.458	.293	.061	-.144	-.360	-.429
	12.4%	11.7%	9.4%	5.5%	-9.6%	-112.0%	39.9%	-6.5%	-16.5%
SURFACE	1.142	1.115	1.037	.916	.586	.122	-.289	-.720	-.858
	11.5%	10.8%	8.7%	5.1%	-8.6%	-100.3%	35.6%	-5.6%	-14.5%
S/DEPTH=1.1	1.138	1.114							
	11.2%	10.7%							
S/DEPTH=1.0	1.060	1.038	.973	.869	.573	.123			
	9.7%	9.2%	7.5%	4.8%	-7.7%	-96.5%			
S/DEPTH=.9	.992	.972	.913	.819	.549	.133	-.266	-.705	-.849
	8.8%	8.3%	6.8%	4.1%	-6.6%	-75.7%	35.2%	-5.7%	-15.1%
S/DEPTH=.8	.933	.915	.861	.776	.527	.140	-.238	-.667	-.811
	8.0%	7.5%	6.1%	3.7%	-5.8%	-61.2%	33.8%	-5.0%	-13.5%
S/DEPTH=.7	.882	.865	.816	.737	.508	.145	-.215	-.634	-.777
	7.2%	6.8%	5.6%	3.4%	-5.0%	-50.6%	32.4%	-4.5%	-12.2%
S/DEPTH=.6	.839	.824	.778	.705	.491	.149	-.196	-.605	-.747
	6.5%	6.2%	5.0%	3.1%	-4.4%	-42.7%	31.1%	-4.0%	-11.0%
S/DEPTH=.5	.803	.789	.746	.678	.476	.152	-.181	-.581	-.723
	6.0%	5.6%	4.6%	2.8%	-4.0%	-36.7%	29.9%	-3.6%	-10.0%
S/DEPTH=.4	.775	.761	.721	.656	.464	.153	-.169	-.562	-.703
	5.5%	5.2%	4.2%	2.6%	-3.6%	-32.3%	28.8%	-3.2%	-9.2%
S/DEPTH=.3	.753	.740	.701	.639	.455	.154	-.160	-.547	-.687
	5.1%	4.8%	4.0%	2.4%	-3.3%	-29.1%	27.8%	-3.0%	-8.6%
S/DEPTH=.2	.737	.724	.687	.627	.449	.155	-.153	-.537	-.676
	4.8%	4.6%	3.7%	2.3%	-3.0%	-26.9%	27.1%	-2.8%	-8.2%
S/DEPTH=.1	.728	.715	.679	.620	.445	.156	-.149	-.531	-.669
	4.7%	4.4%	3.6%	2.3%	-2.9%	-25.7%	26.7%	-2.7%	-7.9%
S/DEPTH=.0	.725	.712	.676	.618	.443	.156	-.148	-.529	-.667
	4.6%	4.4%	3.6%	2.2%	-2.9%	-25.3%	26.5%	-2.6%	-7.8%

CASE 6-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	.004	.007	.009	.010	.005	-.003	-.008	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE 6-A

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

- (1) DIMENSIONLESS WAVE LENGTH
DEFINED IN EQUATION (37)
.718 (±1.2%)
- (2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY
DEFINED IN EQUATION (38)
.490 (±2.0%)
- (3) DIMENSIONLESS AVERAGE KINETIC ENERGY
DEFINED IN EQUATION (39)
.498 (±1.7%)
- (4) DIMENSIONLESS TOTAL AVERAGE ENERGY
DEFINED IN EQUATION (40)
.988 (±1.9%)
- (5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX
DEFINED IN EQUATION (41)
.803 (±1.6%)
- (6) DIMENSIONLESS GROUP VELOCITY
DEFINED IN EQUATION (42)
.813 (±.2%)
- (7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM
DEFINED IN EQUATION (43)
.990 (±1.1%)
- (8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION
DEFINED IN EQUATION (44)
1.106 (±1.7%)
- (9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION
DEFINED IN EQUATION (45)
.303 (±1.7%)

CASE 6-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	.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

CASE 6=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 = .036631 DPT/LO = .100002
H/DPT = .366304
L/LO = .743750 PSI/(G*H*T) = .005873

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = .535441e01 X(2)/(H*T*G) = .5340994e02
X(3)/(H*T*G) = .140295e03 X(4)/(H*T*G) = .211628e05
X(5)/(H*T*G) = .257621e06

CASE 608

TABLE I-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=	.642	.617	.549	.452	.232	.009	.178	.320	.358
	22.1%	20.2%	14.4%	4.2%	=38.6%	*****	51.1%	=19.9%	=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%	=34.7%	*****	47.9%	=19.2%	=36.1%
S/DEPTH=1.2	6.084	5.899	5.362						
	17.9%	16.7%	13.1%						
S/DEPTH=1.1	5.546	5.389	4.918	4.195					
	14.9%	13.6%	9.8%	2.5%					
S/DEPTH=1.0	5.085	4.944	4.514	3.898	2.208				
	13.0%	11.8%	8.3%	1.7%	=28.9%				
S/DEPTH=.9	4.691	4.566	4.204	3.640	2.125	.126	=1.394		
	11.2%	10.2%	6.9%	.9%	=26.0%	*****	48.1%		
S/DEPTH=.8	4.355	4.244	3.922	3.417	2.049	.201	=1.262	=2.523	=2.858
	9.6%	8.6%	5.7%	.2%	=23.5%	*****	45.8%	=19.6%	=37.8%
S/DEPTH=.7	4.073	3.973	3.682	3.227	1.980	.259	=1.151	=2.424	=2.777
	8.2%	7.3%	4.6%	=.4%	=21.4%	*****	43.6%	=18.2%	=34.7%
S/DEPTH=.6	3.837	3.746	3.482	3.066	1.918	.304	=1.058	=2.339	=2.706
	6.9%	6.1%	3.6%	=.9%	=19.7%	*****	41.4%	=17.0%	=32.0%
S/DEPTH=.5	3.644	3.561	3.317	2.933	1.865	.339	=.983	=2.267	=2.645
	5.8%	5.1%	2.8%	=1.3%	=18.5%	=162.1%	39.4%	=16.0%	=29.8%
S/DEPTH=.4	3.491	3.413	3.186	2.827	1.822	.365	=.923	=2.208	=2.594
	4.9%	4.2%	2.1%	=1.7%	=17.1%	=135.5%	37.6%	=15.2%	=27.9%
S/DEPTH=.3	3.374	3.301	3.086	2.745	1.788	.384	=.878	=2.162	=2.555
	4.2%	3.6%	1.6%	=2.0%	=16.2%	=118.1%	36.1%	=14.5%	=26.5%
S/DEPTH=.2	3.292	3.222	3.019	2.688	1.763	.396	=.846	=2.129	=2.526
	3.7%	3.1%	1.2%	=2.2%	=15.6%	=107.1%	34.9%	=14.1%	=25.5%
S/DEPTH=.1	3.244	3.175	2.974	2.693	1.748	.404	=.827	=2.110	=2.509
	3.4%	2.8%	1.0%	=2.3%	=15.2%	=101.0%	34.2%	=13.8%	=24.9%
S/DEPTH=.0	3.228	3.159	2.960	2.642	1.743	.406	=.821	=2.103	=2.504
	3.3%	2.7%	.9%	=2.3%	=15.1%	=99.0%	34.0%	=13.7%	=24.7%

CASE 6=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=	.642	.617	.549	.452	.232	-.009	-.178	-.320	-.358
	22.1%	20.2%	14.4%	4.2%	-38.6%	*****	51.1%	-19.9%	-39.5%
SURFACE	.000	1.227	2.255	2.970	3.464	2.955	2.054	.835	.000
	*****	45.0%	41.6%	36.1%	20.0%	=8.8%	=44.5%	=101.1%	*****
S/DEPTH=1.2	.000	1.180	2.252						
	*****	42.8%	41.5%						
S/DEPTH=1.1	.000	1.013	1.938	2.696					
	*****	39.3%	37.5%	34.3%					
S/DEPTH=1.0	.000	.868	1.663	2.320	3.072				
	*****	37.2%	35.4%	32.4%	21.7%				
S/DEPTH=.9	.000	.741	1.421	1.987	2.652	2.603	1.973		
	*****	35.3%	33.6%	30.6%	20.3%	=2.4%	=37.7%		
S/DEPTH=.8	.000	.628	1.206	1.690	2.272	2.260	1.741	.765	.000
	*****	33.6%	31.9%	29.0%	19.1%	=2.6%	=35.7%	=101.8%	*****
S/DEPTH=.7	.000	.527	1.013	1.423	1.924	1.937	1.513	.676	.000
	*****	32.1%	30.4%	27.6%	18.0%	=2.7%	=34.1%	=95.9%	*****
S/DEPTH=.6	.000	.435	.838	1.179	1.603	1.630	1.289	.584	.000
	*****	30.7%	29.1%	26.3%	17.0%	=2.9%	=32.8%	=91.1%	*****
S/DEPTH=.5	.000	.352	.678	.955	1.304	1.338	1.068	.490	.000
	*****	29.6%	28.0%	25.3%	16.2%	=3.1%	=31.7%	=87.2%	*****
S/DEPTH=.4	.000	.275	.529	.746	1.023	1.056	.850	.394	.000
	*****	28.6%	27.1%	24.4%	15.5%	=3.2%	=30.8%	=84.1%	*****
S/DEPTH=.3	.000	.202	.389	.550	.756	.784	.635	.297	.000
	*****	27.9%	26.3%	23.7%	15.0%	=3.3%	=30.1%	=81.8%	*****
S/DEPTH=.2	.000	.133	.256	.362	.498	.519	.422	.198	.000
	*****	*****	25.8%	23.2%	14.6%	=3.4%	=29.7%	=80.1%	*****
S/DEPTH=.1	.000	.066	.127	.180	.248	.258	.211	.099	.000
	*****	*****	*****	22.9%	14.4%	=3.4%	=29.4%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=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	.642	.617	.549	.452	.232	-.009	-.178	-.320	-.338
	22.1%	20.2%	14.4%	4.2%	-38.6%	*****	51.1%	-19.9%	-39.5%
SURFACE	.000	12.246	22.367	29.170	33.026	26.737	17.498	6.619	.000
	*****	60.0%	56.9%	51.8%	35.1%	-.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	8.932	17.032	23.574	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	.000
	*****	46.0%	44.2%	41.1%	30.1%	3.5%	-43.2%	-151.0%	*****
S/DEPTH=.7	.000	6.215	11.970	16.853	22.846	22.735	17.226	7.287	.000
	*****	43.0%	41.3%	38.4%	28.0%	3.6%	-37.5%	-128.6%	*****
S/DEPTH=.6	.000	5.614	10.846	15.350	21.149	21.690	17.035	7.550	.000
	*****	40.2%	38.6%	35.8%	26.1%	3.7%	-32.9%	-111.7%	*****
S/DEPTH=.5	.000	5.132	9.944	14.139	19.766	20.808	16.839	7.753	.000
	*****	37.6%	36.0%	33.4%	24.3%	3.7%	-29.3%	-98.9%	*****
S/DEPTH=.4	.000	4.756	9.237	13.188	18.669	20.087	16.656	7.907	.000
	*****	35.2%	33.8%	31.3%	22.8%	3.7%	-26.5%	-89.2%	*****
S/DEPTH=.3	.000	4.473	8.707	12.473	17.839	19.528	16.501	8.018	.000
	*****	33.2%	31.9%	29.6%	21.5%	3.6%	-24.5%	-82.2%	*****
S/DEPTH=.2	.000	4.277	8.338	11.975	17.256	19.130	16.383	8.094	.000
	*****	31.8%	30.5%	28.3%	20.6%	3.5%	-23.0%	-77.4%	*****
S/DEPTH=.1	.000	4.161	8.121	11.682	16.912	18.892	16.311	8.137	.000
	*****	30.8%	29.6%	27.4%	20.0%	3.5%	-22.2%	-74.6%	*****
S/DEPTH=.0	.000	4.123	8.049	11.585	16.797	18.812	16.286	8.152	.000
	*****	30.5%	29.3%	27.2%	19.8%	3.5%	-21.9%	-73.7%	*****

CASE 6-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	.642	.617	.549	.452	.232	.009	.178	.320	.358
	22.1%	20.2%	14.4%	4.2%	38.6%	*****	51.1%	19.9%	39.5%
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%	=138.8%
S/DEPTH=1.2	=30.204	=28.421	=23.337						
	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	=1.420	9.548	13.106		
	34.6%	32.5%	25.3%	8.8%	*****	108.0%	48.6%		
S/DEPTH=.8	=17.998	=17.149	=14.714	=11.021	=1.863	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	=2.047	5.997	9.239	7.882	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	=12.316	=10.701	=8.238	=2.036	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	=1.879	3.598	6.108	5.590	4.687
	29.9%	28.2%	22.3%	9.7%	=122.3%	120.4%	48.5%	=51.3%	=125.2%
S/DEPTH=.4	=8.287	=7.945	=6.960	=5.452	=1.614	2.686	4.742	4.458	3.774
	29.1%	27.4%	21.7%	9.7%	=107.1%	123.1%	48.4%	=49.1%	=120.1%
S/DEPTH=.3	=6.137	=5.888	=5.172	=4.076	=1.272	1.906	3.474	3.334	2.844
	28.4%	26.8%	21.3%	9.6%	*****	125.4%	48.4%	=47.5%	=116.2%
S/DEPTH=.2	=4.054	=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	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

292

CASE 6-B

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.642	.617	.549	.452	.232	.009	.178	.320	.358
	22.1%	20.2%	14.4%	4.2%	-38.6%	*****	51.1%	-19.9%	-39.5%
SURFACE	22.365	20.889	17.070	12.254	4.067	.101	-1.001	-4.584	-6.087
	24.9%	22.3%	14.5%	.9%	-54.8%	*****	*****	-30.7%	-56.3%
S/DEPTH=1.2	21.024	19.964	17.042						
	20.1%	18.7%	14.4%						
S/DEPTH=1.1	17.648	16.787	14.404	11.039					
	19.9%	14.3%	9.1%	-8%					
S/DEPTH=1.0	14.827	14.124	12.174	9.404	3.640				
	14.1%	12.5%	7.6%	-1.6%	-44.6%				
S/DEPTH=.9	12.442	11.867	10.268	7.985	3.171	.101	.930		
	12.4%	11.0%	6.3%	-2.3%	-42.0%	*****	*****		
S/DEPTH=.8	10.399	9.929	8.619	6.741	2.735	.098	.754	4.036	5.514
	11.0%	9.6%	5.2%	-2.9%	-39.8%	*****	*****	-34.5%	-67.8%
S/DEPTH=.7	8.626	8.244	7.176	5.639	2.330	.093	.609	3.425	4.721
	9.8%	8.5%	4.3%	-3.4%	-37.9%	*****	*****	-33.2%	-64.7%
S/DEPTH=.6	7.065	6.757	5.895	4.651	1.950	.085	.487	2.858	3.970
	8.9%	7.6%	3.5%	-3.8%	-36.4%	*****	*****	-32.2%	-62.2%
S/DEPTH=.5	5.668	5.424	4.741	3.752	1.592	.074	.383	2.329	3.254
	8.0%	6.8%	2.9%	-4.2%	-35.2%	*****	*****	-31.3%	-60.1%
S/DEPTH=.4	4.397	4.210	3.685	2.924	1.253	.062	.293	1.829	2.569
	7.4%	6.2%	2.4%	-4.4%	-34.3%	*****	*****	-30.7%	-58.5%
S/DEPTH=.3	3.221	3.085	2.703	2.149	.927	.048	.212	1.352	1.906
	6.9%	5.7%	2.1%	-4.6%	*****	*****	*****	-30.1%	-57.3%
S/DEPTH=.2	2.112	2.023	1.774	1.412	.612	.032	.138	.892	1.261
	6.6%	5.4%	1.8%	-4.8%	*****	*****	*****	*****	-56.4%
S/DEPTH=.1	1.045	1.002	.879	.700	.304	.016	.068	.443	.628
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

293

CASE 6=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	.642	.617	.549	.452	.232	.009	.178	.320	.358
	22.1%	20.2%	14.4%	4.2%	38.6%	*****	51.1%	19.9%	39.5%
SURFACE	.000	7.953	14.716	19.604	23.671	21.387	15.733	6.796	.000
S/DEPTH=1.2	*****	47.7%	44.5%	39.4%	24.2%	2.9%	37.4%	95.2%	*****
S/DEPTH=1.1	.000	7.641	14.694						
S/DEPTH=1.0	*****	45.6%	44.4%						
S/DEPTH=.9	.000	6.542	12.609	17.772					
S/DEPTH=.8	*****	42.3%	40.6%	37.7%					
S/DEPTH=.7	.000	5.586	10.789	15.260	20.989				
S/DEPTH=.6	*****	40.4%	38.7%	35.9%	26.1%				
S/DEPTH=.5	.000	4.748	9.189	13.039	18.117	18.874	15.122		
S/DEPTH=.4	*****	38.6%	37.0%	34.3%	24.9%	3.5%	30.8%		
S/DEPTH=.3	.000	4.010	7.774	11.063	15.510	16.414	13.378	6.233	.000
S/DEPTH=.2	*****	37.0%	35.5%	32.9%	23.8%	3.5%	28.8%	95.8%	*****
S/DEPTH=.1	.000	3.353	6.510	9.289	13.126	14.081	11.647	5.520	.000
S/DEPTH=.0	*****	35.5%	34.0%	31.5%	22.9%	3.5%	27.0%	90.2%	*****
S/DEPTH=1.2	.000	2.762	5.371	7.681	10.929	11.862	9.933	4.778	.000
S/DEPTH=1.1	*****	34.2%	32.8%	30.4%	22.1%	3.5%	25.6%	85.6%	*****
S/DEPTH=1.0	.000	2.226	4.333	6.209	8.885	9.738	8.240	4.012	.000
S/DEPTH=.9	*****	33.1%	31.7%	29.4%	21.4%	3.5%	24.5%	81.8%	*****
S/DEPTH=.8	.000	1.732	3.376	4.845	6.966	7.695	6.565	3.229	.000
S/DEPTH=.7	*****	32.1%	30.8%	28.6%	20.8%	3.5%	23.6%	78.9%	*****
S/DEPTH=.6	.000	1.272	2.480	3.564	5.143	5.715	4.908	2.432	.000
S/DEPTH=.5	*****	31.4%	30.1%	27.9%	20.3%	3.5%	22.9%	76.7%	*****
S/DEPTH=.4	.000	.839	1.629	2.343	3.390	3.784	3.264	1.626	.000
S/DEPTH=.3	*****	*****	29.6%	27.5%	20.0%	3.4%	22.4%	75.1%	*****
S/DEPTH=.2	.000	.414	.807	1.162	1.684	1.884	1.629	.815	.000
S/DEPTH=.1	*****	*****	*****	*****	19.8%	3.4%	22.1%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 608

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	.642	.617	.549	.452	.232	.009	.178	.320	.358
	22.1%	20.2%	14.4%	4.2%	=38.6%	*****	51.1%	=19.9%	=39.5%
SURFACE	17.087	15.757	12.417	8.441	2.418	.035	.562	=2.177	=2.785
	32.1%	29.1%	19.8%	3.2%	=67.4%	*****	*****	=29.2%	=51.3%
S/DEPTH#1.2	15.455	14.635	12.383						
	24.9%	23.7%	19.6%						
S/DEPTH#1.1	11.567	10.976	9.346	7.065					
	19.1%	17.3%	11.6%	.7%					
S/DEPTH#1.0	8.601	8.176	7.001	5.345	1.972				
	16.8%	15.1%	9.8%	=.4%	=49.9%				
S/DEPTH# .9	6.332	6.028	5.188	3.995	1.526	.035	.497		
	14.8%	13.2%	8.1%	=1.3%	=46.1%	*****	*****		
S/DEPTH# .8	4.593	4.379	3.785	2.937	1.155	.032	.347	=1.716	=2.306
	12.9%	11.4%	6.7%	=2.1%	=43.0%	*****	*****	=36.7%	=73.4%
S/DEPTH# .7	3.261	3.113	2.701	2.110	.851	.028	.238	=1.257	=1.711
	11.4%	9.9%	5.5%	=2.8%	*****	*****	*****	=34.9%	=69.0%
S/DEPTH# .6	2.245	2.145	1.867	1.466	.604	.023	.159	=.889	=1.222
	10.0%	8.6%	4.4%	=3.4%	*****	*****	*****	=33.4%	=65.3%
S/DEPTH# .5	1.475	1.411	1.231	.971	.407	.018	.102	=.597	=.829
	8.8%	7.6%	3.5%	=3.8%	*****	*****	*****	*****	*****
S/DEPTH# .4	.903	.864	.755	.598	.254	.012	.061	=.372	=.520
	7.9%	6.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .3	.490	.470	.411	.326	.140	.007	.032	=.205	=.288
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .2	.213	.204	.179	.142	.061	.003	.014	=.090	=.127
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .1	.052	.050	.044	.035	.015	.001	.003	=.022	=.031
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=B

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
	.042	.617	.549	.492	.232	.009	.178	.320	.358
	22.1%	20.2%	14.4%	4.2%	-38.6%	*****	51.1%	-19.9%	-39.5%
SURFACE	.000	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%	-48.1%	-104.2%	*****
S/DEPTH=1.1	.000	5.446	10.423						
	*****	50.7%	49.8%						
S/DEPTH=1.0	.000	4.181	8.023	11.227					
	*****	46.2%	44.4%	41.3%					
S/DEPTH=.9	.000	3.175	6.110	8.587	11.576				
	*****	43.9%	42.1%	39.1%	28.5%				
S/DEPTH=.8	.000	2.379	4.589	6.476	8.845	8.931	6.898		
	*****	41.6%	40.0%	37.1%	27.0%	3.5%	-35.3%		
S/DEPTH=.7	.000	1.750	3.384	4.794	6.627	6.839	5.416	2.432	.000
	*****	39.5%	37.9%	35.2%	25.5%	3.5%	-32.2%	-107.9%	*****
S/DEPTH=.6	.000	1.257	2.435	3.462	4.837	5.089	4.117	1.898	.000
	*****	37.6%	36.1%	33.4%	24.3%	3.6%	-29.5%	-98.9%	*****
S/DEPTH=.5	.000	.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=.4	.000	.577	1.122	1.605	2.283	2.476	2.072	.995	.000
	*****	*****	32.9%	30.4%	22.1%	3.5%	-25.7%	-86.0%	*****
S/DEPTH=.3	.000	.355	.691	.990	1.418	1.556	1.318	.643	.000
	*****	*****	*****	29.3%	21.3%	3.5%	-24.3%	*****	*****
S/DEPTH=.2	.000	.193	.377	.541	.779	.863	.738	.364	.000
	*****	*****	*****	*****	20.6%	3.5%	-23.3%	*****	*****
S/DEPTH=.1	.000	.084	.164	.236	.341	.379	.327	.162	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.021	.040	.058	.084	.094	.081	.041	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=B

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	.642	.617	.549	.452	.232	-.009	-.178	-.320	-.358
	22.1X	20.2X	14.4X	4.2X	-38.6X	*****X	51.1X	-19.9X	-39.5X
SURFACE	1.283	1.233	1.097	.904	.464	-.018	-.355	-.639	-.717
	21.0X	19.2X	13.7X	4.3X	-34.7X	*****X	45.2X	-16.9X	-33.9X
S/DEPTH=1.2	1.249	1.209	1.096						
	18.8X	17.6X	13.7X						
S/DEPTH=1.1	1.158	1.124	1.025	.872					
	16.5X	15.2X	11.3X	3.9X					
S/DEPTH=1.0	1.077	1.047	.961	.827	.463				
	14.9X	13.8X	10.3X	3.7X	-27.9X				
S/DEPTH=.9	1.006	.980	.904	.785	.460	.014	-.340		
	13.5X	12.5X	9.3X	3.4X	-23.4X	*****X	47.4X		
S/DEPTH=.8	.944	.921	.854	.748	.454	.041	-.302	-.614	-.700
	12.2X	11.3X	8.4X	3.2X	-19.9X	*****X	47.2X	-17.0X	-35.6X
S/DEPTH=.7	.891	.871	.811	.715	.448	.063	-.270	-.587	-.678
	11.0X	10.1X	7.5X	2.9X	-17.2X	*****X	47.0X	-15.0X	-32.1X
S/DEPTH=.6	.847	.828	.774	.687	.442	.080	-.243	-.564	-.659
	9.9X	9.1X	6.8X	2.6X	-15.0X	-172.5X	46.9X	-13.3X	-29.1X
S/DEPTH=.5	.809	.792	.742	.663	.435	.093	-.221	-.544	-.643
	8.9X	8.2X	6.1X	2.3X	-13.3X	-131.4X	46.7X	-11.9X	-26.5X
S/DEPTH=.4	.779	.764	.717	.643	.430	.103	-.204	-.528	-.629
	8.1X	7.5X	5.6X	2.1X	-12.0X	-106.9X	46.5X	-10.7X	-24.5X
S/DEPTH=.3	.756	.742	.698	.628	.425	.110	-.191	-.516	-.619
	7.5X	6.9X	5.1X	1.9X	-11.0X	-91.7X	46.4X	-.98X	-22.9X
S/DEPTH=.2	.740	.726	.684	.617	.422	.115	-.182	-.507	-.611
	7.0X	6.5X	4.8X	1.8X	-10.4X	-82.3X	46.3X	-.92X	-21.8X
S/DEPTH=.1	.731	.717	.676	.611	.420	.118	-.176	-.501	-.607
	6.8X	6.2X	4.6X	1.7X	-10.0X	-77.2X	46.3X	-.88X	-21.1X
S/DEPTH=.0	.727	.714	.674	.609	.419	.119	-.174	-.500	-.605
	6.7X	6.2X	4.6X	1.7X	-.98X	-75.6X	46.2X	-.87X	-20.9X

CASE 6-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	.019	.034	.044	.046	.020	.012	.030	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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)
.459 (=8.9%)
- (3) DIMENSIONLESS AVERAGE KINETIC ENERGY
DEFINED IN EQUATION (39)
.480 (=7.6%)
- (4) DIMENSIONLESS TOTAL AVERAGE ENERGY
DEFINED IN EQUATION (40)
.939 (=8.3%)
- (5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX
DEFINED IN EQUATION (41)
.775 (=7.2%)
- (6) DIMENSIONLESS GROUP VELOCITY
DEFINED IN EQUATION (42)
.826 (=1.0%)
- (7) DIMENSIONLESS TOTAL AVERAGE MOMENTUM
DEFINED IN EQUATION (43)
.955 (=5.2%)
- (8) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX IN WAVE DIRECTION
DEFINED IN EQUATION (44)
1.055 (=7.3%)
- (9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION
DEFINED IN EQUATION (45)
.280 (=7.5%)

CASE 6=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	.029388	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

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

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

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

CASE 6=C

TABLE I-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	.713	.657	.530	.390	.146	-.061	-.180	-.266	-.287
	29.9X	25.0X	11.4X	-11.1X	-120.1X	313.2X	51.8X	-44.0X	-74.4X
SURFACE	7.676	7.006	5.557	4.024	1.537	-.403	-1.419	-2.085	-2.236
S/DEPTH=1.3	30.6X	25.3X	10.9X	-11.7X	-108.0X	397.9X	47.4X	-43.9X	-69.4X
S/DEPTH=1.2	6.872	6.535							
S/DEPTH=1.1	22.5X	19.9X							
S/DEPTH=1.0	6.136	5.859	5.089	3.983					
S/DEPTH=.9	17.6X	15.0X	6.7X	-9.9X					
S/DEPTH=.8	5.520	5.289	4.645	3.706					
S/DEPTH=.7	14.5X	12.1X	4.5X	-10.4X					
S/DEPTH=.6	5.003	4.809	4.263	3.459	1.548				
S/DEPTH=.5	11.5X	9.4X	2.4X	-10.8X	-83.8X				
S/DEPTH=.4	4.570	4.405	3.937	3.241	1.550	-.308	-1.418		
S/DEPTH=.3	8.8X	6.9X	.6X	-11.3X	-72.8X	*****	49.0X		
S/DEPTH=.2	4.207	4.065	3.660	3.051	1.541	-.188	-1.293	-2.049	-2.217
S/DEPTH=.1	6.4X	4.6X	-1.1X	-11.7X	-64.2X	*****	47.1X	-46.4X	-70.8X
S/DEPTH=0	3.906	3.782	3.426	2.888	1.527	-.091	-1.186	-1.987	-2.175
S/DEPTH=0.9	4.2X	2.6X	-2.6X	-12.2X	-57.4X	*****	45.2X	-44.2X	-71.9X
S/DEPTH=0.8	3.658	3.548	3.232	2.750	1.510	-.014	-1.095	-1.932	-2.138
S/DEPTH=0.7	2.3X	.8X	-3.9X	-12.5X	-52.1X	*****	43.4X	-41.6X	-67.1X
S/DEPTH=0.6	3.457	3.358	3.073	2.635	1.492	.047	-1.021	-1.886	-2.106
S/DEPTH=0.5	.7X	-.7X	-5.0X	-12.8X	-47.8X	*****	41.6X	-39.4X	-63.0X
S/DEPTH=0.4	3.298	3.208	2.946	2.542	1.476	.094	-.962	-1.848	-2.079
S/DEPTH=0.3	-.6X	-1.9X	-5.9X	-13.1X	-44.5X	*****	40.1X	-37.6X	-59.7X
S/DEPTH=0.2	3.178	3.094	2.850	2.471	1.462	.128	-.916	-1.818	-2.058
S/DEPTH=0.1	-1.7X	-2.9X	-6.6X	-13.3X	-42.1X	*****	38.7X	-36.2X	-57.1X
S/DEPTH=0.0	3.095	3.015	2.782	2.421	1.452	.152	-.884	-1.796	-2.042
S/DEPTH=0.9	2.4X	-3.6X	-7.1X	-13.4X	-40.4X	*****	37.7X	-35.2X	-55.2X
S/DEPTH=0.8	3.045	2.967	2.742	2.392	1.445	.166	-.865	-1.783	-2.033
S/DEPTH=0.7	-2.9X	-4.0X	-7.4X	-13.5X	-39.4X	*****	37.1X	-34.6X	-54.1X
S/DEPTH=0.6	3.029	2.952	2.729	2.382	1.443	.171	-.859	-1.779	-2.030
S/DEPTH=0.5	-3.1X	-4.1X	-7.5X	-13.5X	-39.0X	*****	36.9X	-34.4X	-53.8X

CASE 6-C

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=	.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	.000	1.895	3.072	3.552	3.347	2.333	1.379	.465	.000
	*****	60.6%	52.8%	41.6%	11.4%	-41.8%	-111.0%	-226.8%	*****
S/DEPTH=1.3	.000	1.699							
	*****	56.1%							
S/DEPTH=1.2	.000	1.424	2.630	3.473					
	*****	51.5%	48.3%	42.8%					
S/DEPTH=1.1	.000	1.196	2.222	2.958					
	*****	48.5%	45.4%	40.1%					
S/DEPTH=1.0	.000	1.005	1.876	2.515	2.982				
	*****	45.8%	42.8%	37.6%	19.4%				
S/DEPTH=.9	.000	.843	1.580	2.131	2.569	2.147	1.378		
	*****	43.2%	40.3%	35.3%	17.8%	-24.1%	-97.2%		
S/DEPTH=.8	.000	.704	1.324	1.796	2.196	1.878	1.234	.443	.000
	*****	40.8%	38.0%	33.2%	16.3%	-23.5%	-91.6%	-243.2%	*****
S/DEPTH=.7	.000	.583	1.100	1.499	1.856	1.618	1.085	.398	.000
	*****	38.7%	36.0%	31.3%	14.9%	-23.0%	-87.1%	-233.1%	*****
S/DEPTH=.6	.000	.477	.902	1.234	1.543	1.368	.933	.348	.000
	*****	36.8%	34.2%	29.6%	13.8%	-22.6%	-83.4%	-220.7%	*****
S/DEPTH=.5	.000	.382	.724	.993	1.253	1.127	.779	.295	.000
	*****	35.2%	32.6%	28.2%	12.8%	-22.3%	-80.4%	-210.7%	*****
S/DEPTH=.4	.000	.296	.562	.773	.982	.893	.624	.239	.000
	*****	33.9%	31.3%	27.0%	11.9%	-22.1%	-78.1%	-203.0%	*****
S/DEPTH=.3	.000	.217	.412	.567	.724	.664	.469	.181	.000
	*****	32.8%	30.3%	26.0%	11.3%	-22.0%	-76.3%	-197.1%	*****
S/DEPTH=.2	.000	.142	.270	.372	.477	.440	.313	.122	.000
	*****	*****	29.6%	25.4%	10.8%	-21.9%	-75.1%	*****	*****
S/DEPTH=.1	.000	.070	.134	.184	.237	.219	.156	.061	.000
	*****	*****	*****	25.0%	10.6%	-21.8%	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=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=	.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	.000	22.204	34.371	37.791	32.758	20.743	11.164	3.403	.000
	*****	77.3%	71.5%	62.3%	34.0%	-29.8%	-145.5%	-433.2%	*****
S/DEPTH=1.3	.000	19.741							
	*****	74.7%							
S/DEPTH=1.2	.000	16.366	29.347	36.996					
	*****	71.3%	68.2%	62.6%					
S/DEPTH=1.1	.000	13.677	24.825	31.873					
	*****	68.3%	65.3%	59.9%					
S/DEPTH=1.0	.000	11.526	21.147	27.598	30.233				
	*****	65.1%	62.2%	57.0%	37.2%				
S/DEPTH=.9	.000	9.804	18.160	24.050	27.430	20.419	11.171		
	*****	61.9%	59.1%	54.1%	35.4%	-18.0%	-138.0%		
S/DEPTH=.8	.000	8.423	15.737	21.121	25.001	19.863	11.760	3.670	.000
	*****	58.6%	55.9%	51.1%	33.5%	-14.3%	-114.1%	-394.4%	*****
S/DEPTH=.7	.000	7.318	13.780	18.722	22.926	19.287	12.181	4.104	.000
	*****	55.3%	52.7%	48.2%	31.7%	-11.5%	-96.6%	-324.9%	*****
S/DEPTH=.6	.000	6.440	12.213	16.776	21.182	18.730	12.476	4.466	.000
	*****	52.1%	49.6%	45.3%	29.8%	-9.4%	-83.7%	-275.3%	*****
S/DEPTH=.5	.000	5.751	10.974	15.223	19.749	18.222	12.677	4.762	.000
	*****	49.0%	46.7%	42.6%	28.2%	-7.8%	-73.9%	-240.1%	*****
S/DEPTH=.4	.000	5.220	10.017	14.013	18.606	17.783	12.810	4.996	.000
	*****	46.2%	44.0%	40.2%	26.7%	-6.6%	-66.6%	-215.0%	*****
S/DEPTH=.3	.000	4.828	9.306	13.109	17.736	17.429	12.894	5.174	.000
	*****	43.7%	41.7%	38.2%	25.4%	-5.7%	-61.4%	-197.3%	*****
S/DEPTH=.2	.000	4.558	8.815	12.482	17.124	17.170	12.944	5.299	.000
	*****	41.9%	40.0%	36.6%	24.5%	-5.2%	-57.8%	-185.6%	*****
S/DEPTH=.1	.000	4.400	8.528	12.114	16.762	17.012	12.970	5.373	.000
	*****	40.7%	38.9%	35.7%	23.9%	-4.8%	-55.7%	-179.0%	*****
S/DEPTH=.0	.000	4.348	8.433	11.992	16.641	16.959	12.978	5.397	.000
	*****	40.3%	38.5%	35.3%	23.7%	-4.7%	-55.1%	-176.8%	*****

CASE 6=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	.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	=34.416	=28.996	=17.325	=5.577	10.244	15.879	12.687	6.311	4.145	
S/DEPTH=1.3	53.7%	46.6%	18.1%	=117.0%	161.2%	86.5%	25.9%	=151.6%	=320.4%	
S/DEPTH=1.2	=32.631	=28.376								
S/DEPTH=1.1	51.1%	45.4%								
S/DEPTH=1.0	=29.995	=26.624	=17.666	=5.890						
S/DEPTH=.9	49.3%	44.3%	22.4%	=101.4%						
S/DEPTH=.8	=24.033	=21.891	=17.150	=7.439						
S/DEPTH=.7	47.8%	43.4%	25.5%	=49.8%						
S/DEPTH=.6	=24.033	=21.891	=16.070	=8.085	7.675					
S/DEPTH=.5	46.1%	42.1%	26.7%	=27.7%	177.1%					
S/DEPTH=.4	=21.077	=19.363	=14.667	=8.122	5.237	13.867	12.669			
S/DEPTH=.3	44.3%	40.7%	27.1%	=16.0%	206.0%	92.1%	32.1%			
S/DEPTH=.2	=18.243	=16.873	=13.091	=7.752	3.462	11.263	10.903	5.964	3.985	
S/DEPTH=.1	42.5%	39.2%	26.9%	=9.2%	247.3%	93.9%	33.8%	=166.3%	=337.4%	
S/DEPTH=.0	=15.556	=14.465	=11.435	=7.109	2.194	9.075	9.251	5.289	3.580	
S/DEPTH=.9	40.9%	37.8%	26.4%	=5.0%	308.5%	95.6%	35.2%	=158.3%	=366.3%	
S/DEPTH=.8	=13.020	=12.157	=9.752	=6.289	1.312	7.224	7.709	4.582	3.139	
S/DEPTH=.7	39.3%	36.4%	25.8%	=2.3%	*****	97.3%	36.3%	=148.3%	=343.8%	
S/DEPTH=.6	=10.623	=9.952	=8.075	=5.352	.723	5.644	6.265	3.850	2.665	
S/DEPTH=.5	38.0%	35.2%	25.1%	=.6%	*****	98.9%	37.1%	=140.3%	=325.8%	
S/DEPTH=.4	=8.347	=7.841	=6.418	=4.342	.350	4.277	4.906	3.099	2.165	
S/DEPTH=.3	36.9%	34.2%	24.6%	=.5%	*****	100.3%	37.8%	=134.0%	=311.7%	
S/DEPTH=.2	=6.172	=5.808	=4.785	=3.286	.137	3.072	3.618	2.335	1.643	
S/DEPTH=.1	36.0%	33.3%	24.1%	1.2%	*****	101.5%	38.3%	=129.4%	*****	
S/DEPTH=.0	=4.072	=3.837	=3.176	=2.203	.034	1.985	2.382	1.561	1.104	
S/DEPTH=.9	35.3%	32.7%	23.7%	1.7%	*****	102.4%	38.6%	*****	*****	
S/DEPTH=.8	=2.023	=1.908	=1.583	=1.105	.000	.974	1.182	.782	.555	
S/DEPTH=.7	34.9%	32.4%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.6	.000	.000	.000	.000	.000	.000	.000	.000	.000	
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****	

503

CASE 6=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	160.0
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	28.788	24.998	17.442	10.534	2.428	.026	-.997	-3.032	-3.721
	33.2%	25.8%	4.9%	-29.7%	-183.1%	*****	*****	-75.9%	-118.7%
S/DEPTH#1.3	23.942	22.218							
	19.6%	16.5%							
S/DEPTH#1.2	19.721	18.386	14.861	10.308					
	12.6%	9.1%	-2.4%	-25.3%					
S/DEPTH#1.1	16.332	15.285	12.496	8.832					
	9.2%	5.9%	-4.8%	-26.0%					
S/DEPTH#1.0	13.570	12.741	10.515	7.550	2.237				
	6.1%	3.0%	-7.0%	-26.6%	-135.4%				
S/DEPTH# .9	11.284	10.622	8.836	6.429	1.997	.018	-.995		
	3.5%	.5%	-8.9%	-27.1%	-125.4%	*****	*****		
S/DEPTH# .8	9.362	8.832	7.396	5.440	1.758	.012	-.812	-2.802	-3.510
	1.2%	-1.6%	-10.5%	-27.6%	-117.5%	*****	*****	-90.4%	-131.8%
S/DEPTH# .7	7.719	7.296	6.142	4.559	1.522	.010	-.659	-2.395	-3.028
	-.7%	-3.4%	-11.8%	-27.9%	-111.1%	*****	*****	-90.5%	-156.8%
S/DEPTH# .6	6.292	5.955	5.036	3.765	1.292	.009	-.529	-2.011	-2.563
	-2.3%	-4.9%	-12.9%	-28.3%	*****	*****	*****	-87.9%	-151.3%
S/DEPTH# .5	5.029	4.765	4.044	3.041	1.066	.009	-.417	-1.647	-2.113
	-3.6%	-6.1%	-13.8%	-28.5%	*****	*****	*****	-85.7%	-146.7%
S/DEPTH# .4	3.890	3.690	3.139	2.372	.846	.009	-.319	-1.299	-1.675
	-4.7%	-7.0%	-14.5%	-28.7%	*****	*****	*****	*****	-143.1%
S/DEPTH# .3	2.843	2.699	2.301	1.745	.630	.007	-.231	-.963	-1.247
	-5.4%	-7.7%	-15.1%	-28.9%	*****	*****	*****	*****	*****
S/DEPTH# .2	1.861	1.767	1.509	1.147	.418	.005	-.150	-.637	-.827
	-6.0%	-8.2%	-15.4%	*****	*****	*****	*****	*****	*****
S/DEPTH# .1	.921	.874	.747	.569	.208	.003	-.074	-.317	-.412
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

306

CASE 6=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	.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	.000	12.276	20.096	23.637	23.495	17.786	11.295	4.066	.000
	*****	65.2%	58.3%	48.4%	22.0%	=24.9%	=89.8%	=210.9%	*****
S/DEPTH=1.3	.000	11.004							
	*****	61.2%							
S/DEPTH=1.2	.000	9.205	17.198	23.111					
	*****	57.3%	54.5%	49.6%					
S/DEPTH=1.1	.000	7.708	14.497	19.675					
	*****	54.9%	52.2%	47.5%					
S/DEPTH=1.0	.000	6.452	12.204	16.708	20.970				
	*****	52.6%	50.0%	45.6%	29.7%				
S/DEPTH=.9	.000	5.389	10.244	14.131	18.090	16.414	11.284		
	*****	50.4%	48.0%	43.8%	28.6%	=8.8%	=77.5%		
S/DEPTH=.8	.000	4.480	8.554	11.878	15.472	14.400	10.136	3.875	.000
	*****	48.4%	46.1%	42.1%	27.7%	=7.8%	=72.1%	=226.2%	*****
S/DEPTH=.7	.000	3.695	7.081	9.889	13.078	12.442	8.938	3.485	.000
	*****	46.6%	44.4%	40.3%	26.8%	=7.0%	=67.6%	=216.9%	*****
S/DEPTH=.6	.000	3.009	5.785	8.118	10.876	10.542	7.704	3.056	.000
	*****	45.0%	42.9%	39.2%	26.0%	=6.3%	=64.1%	=205.4%	*****
S/DEPTH=.5	.000	2.401	4.628	6.521	8.832	8.694	6.446	2.594	.000
	*****	43.6%	41.6%	38.0%	25.3%	=5.8%	=61.2%	=196.2%	*****
S/DEPTH=.4	.000	1.853	3.580	5.062	6.916	6.895	5.171	2.106	.000
	*****	42.4%	40.5%	37.1%	24.7%	=5.4%	=59.0%	=189.1%	*****
S/DEPTH=.3	.000	1.352	2.616	3.708	5.101	5.135	3.886	1.597	.000
	*****	41.5%	39.6%	36.3%	24.3%	=5.1%	=57.3%	=183.7%	*****
S/DEPTH=.2	.000	.884	1.712	2.431	3.360	3.406	2.593	1.073	.000
	*****	*****	39.0%	35.7%	23.9%	=5.0%	=56.1%	*****	*****
S/DEPTH=.1	.000	.437	.846	1.203	1.668	1.698	1.298	.539	.000
	*****	*****	*****	*****	23.7%	=4.8%	=55.4%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.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	-.287
	29.9%	25.0%	11.4%	-11.1%	-120.1%	313.2%	51.8%	-44.0%	-74.4%
SURFACE	26.608	22.210	14.108	7.590	1.350	.017	-.530	-1.366	-1.620
	45.1%	36.9%	12.3%	-31.6%	-249.0%	*****	*****	-66.3%	-94.3%
S/DEPTH=1.3	20.076	18.509							
	27.3%	24.3%							
S/DEPTH=1.2	14.793	13.712	10.889	7.318					
	18.2%	14.4%	1.8%	-24.1%					
S/DEPTH=1.1	10.890	10.141	8.166	5.618					
	14.1%	10.5%	-1.2%	-24.9%					
S/DEPTH=1.0	7.985	7.465	6.083	4.271	1.152				
	10.4%	7.1%	-3.8%	-25.6%	*****				
S/DEPTH=.9	5.809	5.450	4.486	3.204	.923	.009	-.528		
	7.1%	4.0%	-6.2%	-26.3%	*****	*****	*****		
S/DEPTH=.8	4.173	3.926	3.260	2.363	.720	.003	-.372	-1.175	-1.447
	4.2%	1.2%	-8.3%	-26.9%	*****	*****	*****	*****	-117.6%
S/DEPTH=.7	2.939	2.772	2.318	1.702	.544	.002	-.257	-.870	-1.085
	1.6%	-1.2%	-10.1%	-27.4%	*****	*****	*****	*****	*****
S/DEPTH=.6	2.010	1.899	1.598	1.185	.394	.002	-.172	-.620	-.782
	-.6%	-3.2%	-11.7%	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	1.314	1.244	1.052	.786	.270	.002	-.111	-.420	-.535
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.800	.759	.644	.485	.171	.001	-.066	-.263	-.338
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.433	.411	.350	.265	.095	.001	-.035	-.146	-.188
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.187	.178	.152	.115	.042	.001	-.015	-.064	-.083
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.046	.044	.037	.028	.010	.000	-.004	-.016	-.021
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

308

CASE 6=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*	.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	.000	10.774	16.234	17.301	14.220	8.914	4.983	1.617	.000
	*****	71.9%	63.8%	51.7%	17.1%	-43.2%	-115.8%	-218.8%	*****
S/DEPTH=1.3	.000	9.082							
	*****	66.6%							
S/DEPTH=1.2	.000	6.830	12.620	16.666					
	*****	61.8%	58.9%	53.7%					
S/DEPTH=1.1	.000	5.106	9.510	12.710					
	*****	59.1%	56.3%	51.4%					
S/DEPTH=1.0	.000	3.786	7.100	9.591	11.594				
	*****	56.5%	53.8%	49.1%	32.0%				
S/DEPTH=.9	.000	2.774	5.235	7.141	8.855	7.634	4.973		
	*****	53.9%	51.3%	46.8%	30.6%	-10.8%	-89.9%		
S/DEPTH=.8	.000	2.000	3.796	5.222	6.628	5.921	3.998	1.460	.000
	*****	51.4%	49.0%	44.7%	29.3%	-9.3%	-81.2%	-253.3%	*****
S/DEPTH=.7	.000	1.411	2.691	3.729	4.831	4.482	3.099	1.168	.000
	*****	49.1%	46.8%	42.7%	28.1%	-8.0%	-74.2%	-239.7%	*****
S/DEPTH=.6	.000	.964	1.846	2.576	3.398	3.217	2.298	.889	.000
	*****	46.9%	44.7%	40.9%	27.0%	-7.1%	-68.7%	-221.0%	*****
S/DEPTH=.5	.000	.629	1.209	1.697	2.272	2.200	1.606	.635	.000
	*****	*****	42.9%	39.3%	26.0%	-6.3%	-64.3%	*****	*****
S/DEPTH=.4	.000	.382	.737	1.039	1.409	1.390	1.032	.416	.000
	*****	*****	*****	37.9%	25.2%	-5.7%	-60.9%	*****	*****
S/DEPTH=.3	.000	.206	.399	.565	.773	.774	.582	.238	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.089	.172	.245	.338	.341	.259	.107	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.022	.042	.060	.084	.085	.065	.027	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

603

CASE 6=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#	.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
S/DEPTH#1.3	29.5%	24.8%	11.8%	-9.2%	-107.2%	274.6%	45.1%	-36.7%	-62.4%
S/DEPTH#1.2	1.328	1.258							
S/DEPTH#1.1	24.3%	21.5%							
S/DEPTH#1.0	1.228	1.171	1.010	.777					
S/DEPTH# .9	21.2%	18.6%	9.9%	-7.7%					
S/DEPTH# .8	1.137	1.089	.954	.755					
S/DEPTH# .7	19.0%	16.7%	9.1%	-5.9%					
S/DEPTH# .6	1.056	1.016	.901	.730	.315				
S/DEPTH# .5	16.8%	14.8%	8.1%	-4.9%	-81.3%				
S/DEPTH# .4	.984	.950	.852	.704	.335	.090	.360		
S/DEPTH# .3	14.8%	12.9%	7.0%	-4.3%	-64.8%	345.2%	49.2%		
S/DEPTH# .2	.922	.892	.808	.679	.349	.050	.322	.521	.568
S/DEPTH# .1	12.8%	11.2%	5.9%	-4.0%	-53.5%	*****	51.1%	-39.4%	-64.0%
S/DEPTH# .0	.868	.842	.769	.655	.358	.018	.290	.503	.556
S/DEPTH# .9	11.0%	9.6%	4.9%	-3.8%	-45.4%	*****	52.9%	-36.0%	-65.1%
S/DEPTH# .8	.823	.800	.735	.634	.363	.008	.263	.488	.545
S/DEPTH# .7	9.4%	8.1%	3.9%	-3.8%	-39.4%	*****	54.6%	-32.2%	-59.4%
S/DEPTH# .6	.785	.765	.707	.615	.367	.028	.241	.474	.536
S/DEPTH# .5	8.0%	6.8%	3.0%	-3.9%	-35.0%	*****	56.3%	-29.1%	-54.6%
S/DEPTH# .4	.755	.737	.684	.600	.368	.044	.223	.463	.528
S/DEPTH# .3	6.9%	5.8%	2.3%	-4.0%	-31.8%	*****	57.8%	-26.5%	-50.8%
S/DEPTH# .2	.732	.715	.666	.588	.369	.056	.210	.455	.522
S/DEPTH# .1	5.9%	4.9%	1.7%	-4.1%	-29.4%	*****	59.1%	-24.5%	-47.8%
S/DEPTH# .0	.716	.700	.653	.579	.369	.064	.200	.448	.518
S/DEPTH# .9	5.3%	4.3%	1.3%	-4.2%	-27.9%	*****	60.0%	-23.1%	-45.7%
S/DEPTH# .8	.706	.691	.646	.574	.369	.068	.195	.445	.515
S/DEPTH# .7	4.8%	3.9%	1.0%	-4.3%	-26.9%	*****	60.7%	-22.2%	-44.4%
S/DEPTH# .6	.703	.687	.643	.572	.369	.070	.193	.443	.514
S/DEPTH# .5	4.7%	3.8%	.9%	-4.3%	-26.6%	*****	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 CONDITON 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)
.848 (=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 (=21.3%)
- (9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION
DEFINED IN EQUATION (45)
.237 (=21.4%)

CASE 6=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	.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	.130353	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				

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
L/LO ■ .824414 PSI/(G*H*T) ■ -.007316

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) ■	-.410823=01	X(2)/(H*T*G) ■	-.515243=02
X(3)/(H*T*G) ■	-.628079=03	X(4)/(H*T*G) ■	-.686367=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 I=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	.782	.594	.417	.279	.079	-.071	-.151	-.205	-.218
	36.0%	17.0%	-12.8%	-55.2%	-305.9%	281.5%	42.6%	-86.8%	-129.0%

SURFACE	10.081	7.038	4.564	2.947	.895	-.503	-1.156	-1.561	-1.675
	43.5%	20.7%	-15.3%	-61.4%	-272.2%	*****	36.1%	-85.4%	-116.5%
S/DEPTH=1.5	8.847								
	100.0%								
S/DEPTH=1.4	7.483	6.716							
	23.9%	16.9%							
S/DEPTH=1.3	6.436	5.882	4.547						
	15.7%	9.1%	-12.2%						
S/DEPTH=1.2	5.615	5.202	4.172	2.942					
	10.0%	4.3%	-13.8%	-48.8%					
S/DEPTH=1.1	4.961	4.645	3.832	2.808					
	4.8%	-.1%	-15.8%	-45.6%					
S/DEPTH=1.0	4.434	4.185	3.531	2.670	.936				
	.2%	-4.2%	-17.8%	-43.6%	-203.9%				
S/DEPTH=.9	4.005	3.805	3.268	2.537	.992	.441			
	4.0%	-7.8%	-19.8%	-42.2%	-170.0%	*****			
S/DEPTH=.8	3.655	3.491	3.042	2.414	1.030	.327	-1.076	-1.543	-1.665
	7.7%	-11.1%	-21.6%	-41.3%	-145.7%	*****	36.5%	-87.5%	100.0%
S/DEPTH=.7	3.370	3.232	2.850	2.304	1.055	.235	.998	-1.509	-1.640
	11.0%	-14.0%	-23.3%	-40.6%	-127.8%	*****	34.9%	-89.9%	-121.2%
S/DEPTH=.6	3.139	3.020	2.689	2.207	1.071	.159	.931	-1.478	-1.618
	13.8%	-16.5%	-24.8%	-40.2%	-114.4%	*****	33.4%	-85.2%	-120.8%
S/DEPTH=.5	2.954	2.850	2.558	2.126	1.080	.099	.876	-1.451	-1.598
	16.2%	-18.6%	-26.1%	-39.8%	-104.2%	*****	31.9%	-81.2%	-114.7%
S/DEPTH=.4	2.810	2.717	2.453	2.059	1.085	.052	.831	-1.428	-1.582
	18.1%	-20.3%	-27.1%	-39.6%	-96.6%	*****	30.6%	-78.0%	-109.8%
S/DEPTH=.3	2.701	2.616	2.373	2.007	1.087	.017	.796	-1.410	-1.569
	19.6%	-21.7%	-28.0%	-39.4%	-91.1%	*****	29.5%	-75.6%	-105.9%
S/DEPTH=.2	2.626	2.546	2.318	1.971	1.088	.008	.771	-1.397	-1.560
	20.7%	-22.6%	-28.5%	-39.3%	-87.3%	*****	28.6%	-73.8%	-103.2%
S/DEPTH=.1	2.582	2.505	2.284	1.949	1.088	.022	.757	-1.389	-1.555
	21.4%	-23.2%	-28.9%	-39.3%	-85.1%	*****	28.1%	-72.8%	-101.5%
S/DEPTH=.0	2.567	2.491	2.273	1.941	1.088	.027	.752	-1.387	-1.553
	21.6%	-23.4%	-29.0%	-39.2%	-84.4%	*****	27.9%	-72.4%	-101.0%

CASE 600

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.782	.594	.417	.279	.079	.071	.151	.205	.218
	36.0%	17.0%	=12.8%	=55.2%	=305.9%	281.5%	42.6%	=86.8%	=129.0%
SURFACE	.000	2.733	3.318	3.263	2.649	1.628	.900	.291	.000
S/DEPTH=1.5	***** .000	69.9%	52.1%	30.8%	=19.5%	=108.8%	=216.8%	=369.4%	*****
S/DEPTH=1.4	***** .000	2.512							
S/DEPTH=1.3	***** .000	67.3%	3.289						
S/DEPTH=1.2	***** .000	1.976	53.8%						
S/DEPTH=1.1	***** .000	61.0%	2.702	3.243					
S/DEPTH=1.0	***** .000	1.579	49.7%	38.7%					
S/DEPTH=.9	***** .000	56.3%	2.233	2.750					
S/DEPTH=.8	***** .000	1.277	45.7%	35.6%					
S/DEPTH=.7	***** .000	51.8%	1.850	2.326	2.444				
S/DEPTH=.6	***** .000	1.041	42.0%	32.5%	1.6%				
S/DEPTH=.5	***** .000	47.7%	1.535	1.960	2.114	1.543			
S/DEPTH=.4	***** .000	43.8%	38.5%	29.6%	.1%	=72.7%			
S/DEPTH=.3	***** .000	40.3%	1.270	1.643	1.813	1.364	.819	.278	.000
S/DEPTH=.2	***** .000	.699	35.4%	27.0%	=1.4%	=69.9%	=188.5%	=392.2%	*****
S/DEPTH=.1	***** .000	40.3%	1.044	1.365	1.536	1.186	.725	.249	.000
S/DEPTH=.0	***** .000	37.2%	32.5%	24.5%	=2.8%	=67.8%	=179.8%	=431.2%	*****
	***** .000	.460	.849	1.118	1.280	1.010	.628	.218	.000
	***** .000	34.5%	30.0%	22.3%	=4.0%	=66.1%	=172.5%	=411.2%	*****
	***** .000	.365	.676	.897	1.041	.837	.527	.185	.000
	***** .000	32.2%	27.8%	20.4%	=5.0%	=64.7%	=166.6%	=394.9%	*****
	***** .000	.281	.522	.696	.817	.666	.424	.151	.000
	***** .000	30.2%	26.1%	18.9%	=5.9%	=63.7%	=162.0%	*****	*****
	***** .000	.204	.381	.509	.603	.497	.320	.114	.000
	***** .000	28.7%	24.7%	17.7%	=6.6%	=62.9%	=158.5%	*****	*****
	***** .000	.133	.249	.334	.397	.330	.214	.077	.000
	***** .000	*****	23.6%	16.8%	=7.1%	=62.4%	=156.0%	*****	*****
	***** .000	.066	.123	.165	.197	.165	.107	.039	.000
	***** .000	*****	*****	*****	=7.4%	*****	*****	*****	*****
	***** .000	.000	.000	.000	.000	.000	.000	.000	.000
	***** .000	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=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	.782	.594	.417	.279	.079	-.071	-.151	-.205	-.218
	36.0%	17.0%	-12.6%	-55.2%	-305.9%	281.5%	42.6%	-86.8%	-129.0%
SURFACE	.000	41.613	42.085	35.997	26.146	13.683	7.373	2.381	.000
	*****	87.7%	76.2%	59.2%	16.5%	-97.2%	-271.9%	-671.2%	*****
S/DEPTH#1.5	.000								

S/DEPTH#1.4	.000	37.880							
	*****	86.5%							
S/DEPTH#1.3	.000	28.874	41.722						
	*****	83.2%	76.9%						
S/DEPTH#1.2	.000	22.349	34.219	35.427					
	*****	80.1%	74.2%	62.9%					
S/DEPTH#1.1	.000	17.576	28.197	31.046					
	*****	76.8%	71.2%	61.0%					
S/DEPTH#1.0	.000	14.053	23.406	27.054	24.918				
	*****	73.3%	68.0%	58.7%	26.9%				
S/DEPTH# .9	.000	11.421	19.610	23.574	22.958	13.894			
	*****	69.6%	64.7%	56.1%	26.2%	-70.6%			
S/DEPTH# .8	.000	9.435	16.608	20.623	21.200	14.127	7.798	2.495	.000
	*****	65.9%	61.2%	53.2%	25.2%	-58.0%	-226.3%	-636.0%	*****
S/DEPTH# .7	.000	7.926	14.240	18.171	19.651	14.174	8.220	2.724	.000
	*****	62.1%	57.8%	50.3%	24.2%	-49.0%	-194.6%	-568.5%	*****
S/DEPTH# .6	.000	6.776	12.383	16.168	18.313	14.113	8.573	2.939	.000
	*****	58.4%	54.4%	47.5%	23.1%	-42.5%	-170.4%	-496.4%	*****
S/DEPTH# .5	.000	5.903	10.941	14.565	17.187	13.997	8.854	3.129	.000
	*****	54.8%	51.1%	44.7%	21.9%	-37.6%	-152.0%	-442.0%	*****
S/DEPTH# .4	.000	5.250	9.844	13.316	16.274	13.863	9.070	3.288	.000
	*****	51.5%	48.1%	42.2%	20.9%	-33.9%	-138.3%	-402.0%	*****
S/DEPTH# .3	.000	4.777	9.040	12.384	15.569	13.737	9.228	3.413	.000
	*****	48.7%	45.6%	40.0%	20.0%	-31.3%	-128.4%	-373.3%	*****
S/DEPTH# .2	.000	4.457	8.489	11.739	15.069	13.636	9.335	3.503	.000
	*****	46.6%	43.6%	38.4%	19.3%	-29.6%	-121.7%	-354.1%	*****
S/DEPTH# .1	.000	4.271	8.169	11.360	14.771	13.571	9.397	3.557	.000
	*****	45.2%	42.4%	37.4%	18.9%	-28.5%	-117.8%	-343.0%	*****
S/DEPTH# .0	.000	4.211	8.064	11.235	14.671	13.549	9.417	3.575	.000
	*****	44.7%	41.9%	37.0%	18.7%	-28.2%	-116.5%	-339.4%	*****

CASE 6=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=	.782	.594	.417	.279	.079	-.071	-.151	-.205	-.218
	36.0X	17.0X	-12.8X	-55.2X	-305.9X	281.5X	42.6X	-86.8X	-129.0X
SURFACE	-17.025	-16.944	-3.015	4.983	13.027	13.840	9.137	3.464	2.496
8/DEPTH=1.5	27.2X	29.6X	-252.1X	271.4X	121.9X	64.0X	-21.8X	-345.7X	-538.8X
8/DEPTH=1.4	100.0X	-32.982	-19.444	-32.669	62.4X	38.6X	23.038	-3.319	-220.3X
8/DEPTH=1.3	62.3X	48.4X	-8.312	4.786	30.219	23.313	26.1X	280.5X	60.3X
8/DEPTH=1.2	60.3X	50.2X	26.1X	280.5X	27.041	22.030	10.599	4.7X	57.7X
8/DEPTH=1.1	57.7X	49.6X	4.7X	****X	23.737	20.052	11.298	1.921	11.108
8/DEPTH=1.0	54.8X	47.9X	15.5X	-321.3X	54.8X	47.9X	15.5X	-321.3X	133.2X
8/DEPTH=.9	20.554	-17.809	-11.069	-3.357	81.8X	45.9X	20.0X	-129.8X	8.333
8/DEPTH=.8	81.8X	45.9X	20.0X	-129.8X	140.8X	76.7X	12.663	140.8X	76.7X
8/DEPTH=.7	17.581	-15.515	-10.305	-4.032	6.159	10.472	8.121	3.377	2.433
8/DEPTH=.6	49.0X	43.7X	21.8X	72.3X	158.2X	78.9X	7.5X	-357.2X	100.0X
8/DEPTH=.5	-14.837	-13.272	-9.240	-4.191	4.484	8.582	7.005	3.116	2.223
8/DEPTH=.4	46.3X	41.5X	22.3X	-48.6X	174.8X	81.0X	-3.2X	-378.3X	-617.2X
8/DEPTH=.3	-12.308	-11.123	-8.014	-4.002	3.212	6.937	5.918	2.772	1.964
8/DEPTH=.2	43.9X	39.4X	22.1X	-35.9X	193.5X	82.9X	.2X	-346.4X	-660.2X
8/DEPTH=.1	-9.970	-9.078	-6.708	-3.579	2.256	5.493	4.864	2.372	1.672
8/DEPTH=.0	41.8X	37.6X	21.6X	-28.8X	215.1X	84.6X	2.9X	-323.2X	-625.8X
8/DEPTH=.9	7.789	-7.132	-5.370	-3.001	1.543	4.210	3.845	1.934	1.359
8/DEPTH=.8	40.1X	36.0X	21.0X	-23.9X	****X	86.1X	9.0X	-306.1X	****X
8/DEPTH=.7	-5.733	-5.271	-4.022	-3.321	1.011	3.051	2.855	1.470	1.031
8/DEPTH=.6	38.7X	34.8X	20.5X	-21.1X	****X	87.3X	6.6X	****X	****X
8/DEPTH=.5	-3.771	-3.477	-2.677	-1.578	.606	1.984	1.890	.989	.693
8/DEPTH=.4	37.6X	33.9X	20.0X	****X	****X	88.1X	7.6X	****X	****X
8/DEPTH=.3	-1.870	-1.727	-1.337	-.798	.283	.977	.940	.497	.348
8/DEPTH=.2	37.0X	33.3X	****X	****X	****X	****X	****X	****X	****X
8/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
8/DEPTH=.0	****X	****X	****X	****X	****X	****X	****X	****X	****X

318

CASE 6=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#	.782	.594	.417	.279	.079	.071	.151	.205	.218
	36.0%	17.0%	=12.8%	=55.2%	=305.9%	281.5%	42.6%	=86.8%	=129.0%
SURFACE	36.475	22.255	12.216	6.441	1.172	=.040	=.708	=1.783	=2.139
	39.7%	4.9%	=53.9%	=138.3%	*****	*****	*****	*****	=222.1%
S/DEPTH#1.5	30.144								
	100.0%								
S/DEPTH#1.4	23.513	20.670							
	6.5%	=2.4%							
S/DEPTH#1.3	18.691	16.715	12.126						
	=6.9%	=15.9%	=45.5%						
S/DEPTH#1.2	15.074	13.653	10.227	6.408					
	=14.3%	=22.4%	=48.8%	=101.6%					
S/DEPTH#1.1	12.286	11.235	8.626	5.581					
	=20.7%	=28.1%	=51.9%	=99.4%					
S/DEPTH#1.0	10.086	9.290	7.272	4.630	1.124				
	=26.3%	=33.0%	=54.7%	=97.8%	*****				
S/DEPTH# .9	8.311	7.698	6.118	4.152	1.031	=.029			
	=31.1%	=37.3%	=57.2%	=96.8%	*****	*****			
S/DEPTH# .8	6.847	6.370	5.124	3.540	.928	=.014	=.597	=1.662	=2.026
	=35.1%	=40.8%	=59.4%	=96.0%	*****	*****	*****	*****	100.0%
S/DEPTH# .7	5.616	5.243	4.258	2.984	.819	=.006	=.490	=1.429	=1.753
	=38.5%	=43.9%	=61.3%	=95.5%	*****	*****	*****	*****	*****
S/DEPTH# .6	4.559	4.267	3.492	2.476	.706	=.002	=.397	=1.206	=1.488
	=41.2%	=46.3%	=62.8%	=95.1%	*****	*****	*****	*****	*****
S/DEPTH# .5	3.633	3.407	2.805	2.007	.590	=.001	=.315	=.992	=1.230
	=43.5%	=48.3%	=64.1%	=94.8%	*****	*****	*****	*****	*****
S/DEPTH# .4	2.804	2.634	2.178	1.570	.473	=.000	=.242	=.785	=.977
	=45.2%	=49.9%	=65.1%	*****	*****	*****	*****	*****	*****
S/DEPTH# .3	2.046	1.924	1.596	1.157	.355	=.000	=.176	=.563	=.729
	=46.5%	=51.1%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .2	1.338	1.259	1.047	.761	.237	=.000	=.115	=.386	=.484
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .1	.661	.623	.518	.378	.118	=.000	=.057	=.193	=.241
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

318

CASE 6=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#	.782	.594	.417	.279	.079	-.071	-.151	-.205	-.218
	36.0%	17.0%	-12.8%	-55.2%	-305.9%	281.5%	42.6%	-86.8%	-129.0%
SURFACE	.000	17.655	22.117	22.429	19.538	13.158	7.812	2.683	.000
S/DEPTH#1.5	***** .000	75.2%	61.2%	44.5%	4.5%	-70.5%	-172.2%	-345.5%	*****
S/DEPTH#1.4	***** .000	14.323							
S/DEPTH#1.3	***** .000	73.2%							
S/DEPTH#1.2	***** .000	13.010	21.935						
S/DEPTH#1.1	***** .000	68.7%	62.8%						
S/DEPTH#1.0	***** .000	10.466	18.151	22.295					
S/DEPTH# .9	***** .000	65.5%	60.2%	51.4%					
S/DEPTH# .8	***** .000	8.482	15.041	18.974					
S/DEPTH# .7	***** .000	62.5%	57.6%	49.5%					
S/DEPTH# .6	***** .000	6.910	12.470	16.073	18.061				
S/DEPTH# .5	***** .000	59.6%	55.1%	47.6%	22.6%				
S/DEPTH# .4	***** .000	5.642	10.327	13.546	15.669	12.497			
S/DEPTH# .3	***** .000	56.4%	52.8%	45.8%	22.0%	40.1%			
S/DEPTH# .2	***** .000	4.604	8.522	11.341	13.463	11.094	7.132	2.561	.000
S/DEPTH# .1	***** .000	54.4%	50.6%	44.1%	21.5%	37.1%	-147.9%	-366.8%	*****
S/DEPTH# .0	***** .000	3.739	6.984	9.405	11.422	9.678	6.331	2.300	.000
S/DEPTH# .9	***** .000	52.2%	48.7%	42.5%	20.9%	34.7%	-139.6%	-403.7%	*****
S/DEPTH# .8	***** .000	3.007	5.657	7.691	9.526	8.263	5.491	2.017	.000
S/DEPTH# .7	***** .000	50.3%	46.9%	41.1%	20.3%	32.8%	-133.1%	-385.8%	*****
S/DEPTH# .6	***** .000	2.375	4.494	6.158	7.753	6.857	4.619	1.713	.000
S/DEPTH# .5	***** .000	48.6%	45.4%	39.9%	19.9%	31.3%	-127.9%	-371.2%	*****
S/DEPTH# .4	***** .000	1.819	3.457	4.767	6.081	5.464	3.722	1.392	.000
S/DEPTH# .3	***** .000	47.2%	44.2%	38.8%	19.5%	30.2%	-123.7%	-359.6%	*****
S/DEPTH# .2	***** .000	1.319	2.515	3.484	4.491	4.084	2.807	1.056	.000
S/DEPTH# .1	***** .000	46.1%	43.2%	38.0%	19.1%	29.3%	-120.6%	*****	*****
S/DEPTH# .0	***** .000	.858	1.641	2.280	2.961	2.716	1.878	.710	.000
S/DEPTH# .9	***** .000	*****	42.5%	37.4%	18.9%	28.8%	-118.4%	*****	*****
S/DEPTH# .8	***** .000	.423	.810	1.128	1.470	1.356	.941	.357	.000
S/DEPTH# .7	***** .000	*****	*****	37.1%	18.7%	28.4%	*****	*****	*****
S/DEPTH# .6	***** .000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH# .5	***** .000	*****	*****	*****	*****	*****	*****	*****	*****

320

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%	-12.8%	-55.2%	-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%	-53.2%	-171.6%	*****	*****	*****	*****	*****
S/DEPTH=1.5	32.222								
	100.0%								
S/DEPTH=1.4	22.588	19.505							
	19.3%	10.5%							
S/DEPTH=1.3	16.066	14.157	9.844						
	3.2%	-6.5%	-39.5%						
S/DEPTH=1.2	11.536	10.323	7.467	4.430					
	-5.0%	-13.8%	-43.2%	-105.0%					
S/DEPTH=1.1	8.325	7.538	5.625	3.478					
	-12.4%	-20.4%	-46.9%	-101.7%					
S/DEPTH=1.0	6.011	5.493	4.201	2.689	.542				
	-19.0%	-26.3%	-50.3%	-99.5%	*****				
S/DEPTH=.9	4.321	3.977	3.103	2.045	.453	.022			
	-24.9%	-31.6%	-53.6%	*****	*****	*****			
S/DEPTH=.8	3.075	2.847	2.257	1.523	.366	.010	.269	.689	.830
	-30.0%	-36.2%	-56.4%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	2.150	2.000	1.606	1.106	.285	.004	.188	.515	.625
	-34.9%	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	1.462	1.365	1.108	.775	.211	.001	.128	.370	.453
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.952	.891	.729	.517	.147	.000	.083	.252	.310
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.578	.542	.447	.320	.095	.000	.050	.158	.197
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.312	.293	.243	.175	.053	.000	.027	.088	.110
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.135	.127	.105	.077	.024	.000	.012	.039	.048
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.033	.031	.026	.019	.006	.000	.003	.010	.012
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 6=D

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#	.782	.594	.417	.279	.079	-.071	-.151	-.205	-.218
	36.0%	17.0%	-12.8%	-55.2%	-305.9%	281.5%	42.6%	-86.8%	-129.0%
SURFACE	.000	17.686	18.677	16.336	11.402	6.282	3.343	1.066	.000
S/DEPTH=1.5	***** .000	80.8%	65.0%	43.4%	-11.8%	-110.4%	-213.1%	-314.4%	*****
S/DEPTH=1.4	***** .000	15.799							
S/DEPTH=1.3	***** .000	78.5%	18.439						
S/DEPTH=1.2	***** .000	11.518	67.6%						
S/DEPTH=1.1	***** .000	73.5%	13.703	16.175					
S/DEPTH=1.0	***** .000	8.133	64.8%	55.4%					
S/DEPTH=.9	***** .000	70.3%	10.122	12.352					
S/DEPTH=.8	***** .000	67.1%	62.0%	53.3%					
S/DEPTH=.7	***** .000	4.194	7.419	9.303	9.883				
S/DEPTH=.6	***** .000	63.9%	59.2%	51.1%	24.1%				
S/DEPTH=.5	***** .000	2.987	5.379	6.899	7.609	5.672			
S/DEPTH=.4	***** .000	60.8%	56.4%	49.0%	23.3%	-46.4%			
S/DEPTH=.3	***** .000	2.103	3.843	5.022	5.732	4.479	2.769	.965	.000
S/DEPTH=.2	***** .000	57.9%	53.8%	46.8%	22.6%	-41.6%	-164.7%	-357.8%	*****
S/DEPTH=.1	***** .000	1.454	2.688	3.568	4.200	3.417	2.168	.770	.000
S/DEPTH=.0	***** .000	55.1%	51.3%	44.8%	21.8%	-38.0%	-152.0%	*****	*****
S/DEPTH=.9	***** .000	.977	1.823	2.453	2.967	2.497	1.622	.586	.000
S/DEPTH=.8	***** .000	52.6%	49.0%	42.9%	21.1%	-35.1%	-141.8%	*****	*****
S/DEPTH=.7	***** .000	.628	1.182	1.608	1.990	1.724	1.143	.419	.000
S/DEPTH=.6	***** .000	*****	47.0%	41.2%	20.4%	-32.8%	-133.7%	*****	*****
S/DEPTH=.5	***** .000	.377	.715	.981	1.238	1.097	.740	.275	.000
S/DEPTH=.4	***** .000	*****	*****	39.7%	19.8%	-31.1%	*****	*****	*****
S/DEPTH=.3	***** .000	.202	.385	.531	.680	.614	.420	.157	.000
S/DEPTH=.2	***** .000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	***** .000	.087	.166	.230	.297	.272	.188	.071	.000
S/DEPTH=.0	***** .000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	***** .000	.021	.041	.056	.074	.068	.047	.018	.000
S/DEPTH=.8	***** .000	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	***** .000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.6	***** .000	*****	*****	*****	*****	*****	*****	*****	*****

322

CASE 6=D

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	.782	.594	.417	.279	.079	.071	.151	.205	.218
	36,0%	17,0%	=12,8%	=55,2%	=305,9%	281,5%	42,6%	=86,8%	=129,0%
SURFACE	1,488	1,208	.851	.573	.168	.142	.304	.415	.448
g/DEPTH=1,5	34,0%	20,2%	=7,0%	=44,2%	=245,8%	238,8%	36,1%	=68,5%	=100,6%
g/DEPTH=1,4	1,436								
g/DEPTH=1,3	100,0%								
g/DEPTH=1,2	1,337	1,189							
g/DEPTH=1,1	26,5%	18,9%							
g/DEPTH=1,0	1,231	1,120	.851						
g/DEPTH=.9	22,3%	15,9%	=5,3%						
g/DEPTH=.8	1,131	1,045	.832	.573					
g/DEPTH=.7	18,8%	13,5%	=3,7%	=38,5%					
g/DEPTH=.6	1,040	.973	.801	.581					
g/DEPTH=.5	15,3%	10,8%	=3,6%	=31,8%					
g/DEPTH=.4	.959	.906	.766	.579	.190				
g/DEPTH=.3	11,8%	8,0%	=4,3%	=27,8%	=192,1%				
g/DEPTH=.2	.888	.846	.730	.570	.221	.122			
g/DEPTH=.1	8,5%	5,2%	=5,4%	=25,4%	=146,0%	281,6%	.085	.280	.410
g/DEPTH=.0	.828	.793	.696	.558	.244	.085	.280	.410	.445
g/DEPTH=.9	5,5%	2,5%	=6,7%	=23,9%	=118,1%	369,8%	45,9%	=70,8%	100,0%
g/DEPTH=.8	.776	.747	.665	.545	.260	.055	.256	.399	.438
g/DEPTH=.7	2,6%	.1%	=8,0%	=23,1%	=99,8%	*****	50,7%	=72,8%	=105,4%
g/DEPTH=.6	.733	.708	.637	.532	.273	.030	.235	.390	.431
g/DEPTH=.5	.1%	=2,1%	=9,3%	=22,6%	=87,2%	*****	55,3%	=65,8%	=104,6%
g/DEPTH=.4	.698	.676	.614	.520	.281	.010	.218	.382	.425
g/DEPTH=.3	=2,0%	=4,1%	=10,5%	=22,4%	=78,2%	*****	59,5%	=60,0%	=97,3%
g/DEPTH=.2	.669	.650	.595	.509	.287	.005	.204	.375	.420
g/DEPTH=.1	=3,8%	=5,7%	=11,5%	=22,3%	=71,9%	*****	63,2%	=55,4%	=91,4%
g/DEPTH=.0	.648	.630	.580	.501	.291	.017	.194	.369	.417
g/DEPTH=.9	=5,3%	=7,0%	=12,4%	=22,3%	=67,5%	*****	66,4%	=51,8%	=86,8%
g/DEPTH=.8	.633	.616	.569	.495	.294	.025	.186	.365	.414
g/DEPTH=.7	=6,3%	=7,9%	=13,0%	=22,3%	=64,5%	*****	68,8%	=49,2%	=83,6%
g/DEPTH=.6	.624	.608	.563	.491	.295	.029	.181	.363	.412
g/DEPTH=.5	=6,9%	=8,5%	=13,4%	=22,4%	=62,8%	*****	70,3%	=47,7%	=81,6%
g/DEPTH=.4	.621	.605	.560	.490	.296	.031	.180	.362	.412
g/DEPTH=.3	=7,1%	=8,7%	=13,5%	=22,4%	=62,3%	*****	70,8%	=47,2%	=81,0%

323

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 EQ.(35)									
SURFACE	.000	.143	.247	.294	.248	.088	.046	.099	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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	.009	.010	.014	.020	.031	.031	.010	.033	.050
(4) DIMENSIONLESS DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR STREAM FUNCTION THEORY REPRESENTATION,... DEFINED IN EQ.(37)									
SURFACE	.038	.011	.009	.007	.005	.000	.001	.003	.006

CASE 6=D

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 (=53.6%)
- (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 .037699
(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 = .156335
L/LO = .899219 PSI/(G*H*T) = -.004328

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

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

CASE 7-A

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.544	.533	.501	.490	.306	.087	.124	.370	.456
	8.1%	7.7%	6.3%	3.8%	-5.0%	-48.0%	30.1%	-3.6%	-9.7%
SURFACE	4.068	3.988	3.754	3.384	2.339	.767	-.737	-2.454	-3.045
S/DEPTH=1.0	4.1%	3.8%	2.9%	1.4%	-3.5%	-22.3%	18.1%	-2.4%	-5.3%
	3.634	3.572	3.388	3.089	2.205	.797			
	2.8%	2.6%	2.0%	.9%	-3.0%	-20.8%			
S/DEPTH=.9	3.198	3.144	2.989	2.726	1.956	.689	-.652	-2.335	-2.948
	2.3%	2.2%	1.6%	.7%	-2.6%	-17.4%	16.9%	-2.5%	-6.0%
S/DEPTH=.8	2.832	2.785	2.646	2.419	1.745	.627	-.565	-2.082	-2.642
	2.0%	1.8%	1.4%	.6%	-2.3%	-14.6%	14.7%	-2.2%	-5.1%
S/DEPTH=.7	2.527	2.486	2.363	2.163	1.566	.573	-.495	-1.869	-2.382
	1.7%	1.5%	1.2%	.5%	-2.0%	-12.2%	12.8%	-1.9%	-4.3%
S/DEPTH=.6	2.276	2.239	2.129	1.951	1.418	.527	-.438	-1.692	-2.164
	1.4%	1.3%	1.0%	.4%	-1.7%	-10.2%	11.1%	-1.6%	-3.6%
S/DEPTH=.5	2.072	2.038	1.939	1.779	1.297	.488	-.393	-1.547	-1.985
	1.2%	1.2%	.9%	.4%	-1.4%	-8.5%	9.6%	-1.3%	-3.0%
S/DEPTH=.4	1.911	1.880	1.790	1.643	1.201	.456	-.358	-1.432	-1.843
	1.1%	1.0%	.8%	.4%	-1.2%	-7.1%	8.3%	-1.1%	-2.6%
S/DEPTH=.3	1.789	1.761	1.677	1.540	1.128	.432	-.332	-1.345	-1.734
	1.0%	.9%	.7%	.4%	-1.0%	-6.1%	7.3%	-.9%	-2.2%
S/DEPTH=.2	1.704	1.678	1.598	1.468	1.077	.415	-.314	-1.284	-1.658
	.9%	.9%	.7%	.4%	-.8%	-5.3%	6.6%	-.8%	-1.9%
S/DEPTH=.1	1.654	1.628	1.551	1.425	1.046	.405	-.303	-1.248	-1.613
	.9%	.8%	.7%	.4%	-.7%	-4.8%	6.1%	-.7%	-1.7%
S/DEPTH=.0	1.638	1.612	1.535	1.411	1.036	.401	-.300	-1.236	-1.597
	.9%	.8%	.7%	.4%	-.7%	-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 =	.544 8.1%	.533 7.7%	.501 6.3%	.450 3.8%	.306 =5.0%	.087 =48.0%	-.124 30.1%	-.370 =3.6%	-.456 =9.7%
SURFACE	.000	.676	1.315	1.884	2.719	3.119	2.882	1.662	.000
S/DEPTH=1.0	***** .000	9.1% .988	8.4% 1.154	7.3% 1.675	4.3% 2.513	=.4% 3.051	=4.9% -4.9%	=10.3% -10.3%	***** .000
S/DEPTH=.9	***** .000	7.3% .496	7.0% .972	6.3% 1.413	4.3% 2.124	.6% 2.589	3.7% 2.535	=10.1% 1.558	***** .000
S/DEPTH=.8	***** .000	6.5% .415	6.1% .815	5.5% 1.184	3.7% 1.784	.4% 2.182	=3.7% 2.145	=10.1% 1.328	***** .000
S/DEPTH=.7	***** .000	5.7% .344	5.4% .676	4.9% .983	3.3% 1.483	.3% 1.820	=3.4% 1.796	=9.1% 1.118	***** .000
S/DEPTH=.6	***** .000	5.1% .282	4.8% .553	4.3% .805	2.8% 1.216	.1% 1.495	=3.2% 1.481	=8.2% .926	***** .000
S/DEPTH=.5	***** .000	4.6% .226	4.3% .443	3.9% .645	2.5% .976	.0% 1.202	=3.0% 1.193	=7.4% .749	***** .000
S/DEPTH=.4	***** .000	4.1% .175	3.9% .343	3.5% .500	2.2% .756	-.1% .934	=2.8% .928	=6.8% .585	***** .000
S/DEPTH=.3	***** .000	3.8% .128	3.6% .251	3.2% .365	2.0% .553	-.1% .684	=2.6% .681	=6.3% .430	***** .000
S/DEPTH=.2	***** .000	***** .084	3.3% .164	2.9% .239	1.8% .362	-.2% .448	=2.5% .447	=6.0% .283	***** .000
S/DEPTH=.1	***** .000	***** .041	3.1% .081	2.8% .118	1.7% .179	-.2% .222	=2.4% .221	=5.7% .140	***** .000
S/DEPTH=.0	***** .000	***** .000	***** .000	***** .000	***** .000	***** .000	***** .000	***** .000	***** .000

CASE 7-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 =	.544	.933	.501	.450	.306	.087	.124	.370	.456
	8.1%	7.7%	6.3%	3.8%	=5.0%	=48.0%	30.1%	=3.6%	=9.7%
SURFACE	.000	4.928	9.573	13.684	19.642	22.298	20.350	11.491	.000
	*****	15.8%	14.9%	13.4%	9.2%	2.0%	=6.1%	=17.8%	*****
S/DEPTH=1.0	.000	4.345	8.511	12.330	18.349	21.903			
	*****	13.6%	13.0%	12.0%	8.9%	2.7%			
S/DEPTH=.9	.000	3.757	7.366	10.687	15.985	19.269	18.555	11.055	.000
	*****	11.9%	11.4%	10.3%	7.7%	2.4%	=4.7%	=16.7%	*****
S/DEPTH=.8	.000	3.271	6.419	9.327	14.019	17.053	16.617	10.097	.000
	*****	10.4%	10.0%	9.2%	6.7%	2.0%	=4.0%	=13.9%	*****
S/DEPTH=.7	.000	2.873	5.642	8.210	12.395	15.204	14.972	9.253	.000
	*****	9.1%	8.7%	8.0%	5.8%	1.8%	=3.4%	=11.6%	*****
S/DEPTH=.6	.000	2.549	5.010	7.299	11.066	13.678	13.597	8.526	.000
	*****	7.9%	7.5%	6.9%	5.0%	1.5%	=2.8%	=9.6%	*****
S/DEPTH=.5	.000	2.289	4.503	6.570	9.997	12.441	12.469	7.915	.000
	*****	6.8%	6.5%	6.0%	4.4%	1.4%	=2.3%	=8.0%	*****
S/DEPTH=.4	.000	2.087	4.107	5.999	9.159	11.465	11.571	7.421	.000
	*****	6.0%	5.7%	5.2%	3.8%	1.2%	=1.9%	=6.7%	*****
S/DEPTH=.3	.000	1.935	3.811	5.570	8.528	10.727	10.887	7.039	.000
	*****	5.3%	5.0%	4.6%	3.4%	1.1%	=1.6%	=5.7%	*****
S/DEPTH=.2	.000	1.829	3.605	5.273	8.089	10.212	10.407	6.769	.000
	*****	4.7%	4.5%	4.2%	3.1%	1.1%	=1.4%	=5.0%	*****
S/DEPTH=.1	.000	1.767	3.483	5.097	7.830	9.907	10.122	6.607	.000
	*****	4.4%	4.2%	3.9%	2.9%	1.0%	=1.2%	=4.6%	*****
S/DEPTH=.0	.000	1.747	3.443	5.039	7.745	9.806	10.028	6.553	.000
	*****	4.3%	4.1%	3.8%	2.8%	1.0%	=1.2%	=4.4%	*****

CASE 7-A

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 =	.544	.533	.501	.450	.306	.087	.124	.370	.456
	8.1%	7.7%	6.3%	3.8%	=5.0%	=48.0%	30.1%	=3.6%	=9.7%
SURFACE	=21.107	=20.581	=19.050	=16.650	=10.061	=.754	7.273	14.975	17.142
	8.9%	8.3%	6.7%	3.7%	=8.3%	*****	21.5%	=5.4%	=12.8%
S/DEPTH=.10	=18.619	=18.213	=17.020	=15.101	=9.526	=.812			
	7.2%	6.8%	5.5%	3.1%	=7.3%	*****			
S/DEPTH=.09	=15.956	=15.620	=14.633	=13.044	=8.411	=1.107	6.058	13.921	16.369
	6.4%	6.1%	4.9%	2.8%	=6.3%	=125.6%	21.5%	=5.5%	=13.7%
S/DEPTH=.08	=13.550	=13.274	=12.461	=11.151	=7.319	=1.232	4.823	11.654	13.860
	5.7%	5.4%	4.4%	2.5%	=5.4%	=85.1%	20.4%	=4.9%	=12.1%
S/DEPTH=.07	=11.373	=11.147	=10.482	=9.410	=6.266	=1.238	3.824	9.664	11.605
	5.1%	4.8%	3.9%	2.2%	=4.8%	=63.7%	19.3%	=4.4%	=10.8%
S/DEPTH=.06	=9.393	=9.211	=8.674	=7.807	=5.259	=1.161	3.007	7.903	9.565
	4.6%	4.4%	3.5%	1.9%	=4.3%	=50.8%	18.3%	=4.0%	=9.7%
S/DEPTH=.05	=7.580	=7.436	=7.010	=6.323	=4.299	=1.027	2.328	6.326	7.706
	4.2%	3.9%	3.2%	1.7%	=3.9%	*****	17.4%	=3.6%	=8.8%
S/DEPTH=.04	=5.903	=5.793	=5.466	=4.939	=3.382	=.855	1.752	4.895	5.994
	3.9%	3.6%	2.9%	1.6%	=3.6%	*****	16.7%	=3.4%	=8.2%
S/DEPTH=.03	=4.335	=4.255	=4.018	=3.634	=2.502	=.659	1.293	3.577	4.397
	3.6%	3.4%	2.7%	1.5%	=3.4%	*****	16.1%	=3.2%	=7.6%
S/DEPTH=.02	=2.846	=2.794	=2.639	=2.390	=1.651	=.447	.807	2.341	2.885
	3.4%	3.2%	2.5%	1.4%	=3.2%	*****	*****	=3.0%	=7.3%
S/DEPTH=.01	=1.410	=1.384	=1.308	=1.185	=.821	=.225	.395	1.157	1.429
	3.3%	3.1%	2.5%	1.3%	*****	*****	*****	=3.0%	=7.1%
S/DEPTH=.00	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 7=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 =	.544	.533	.501	.450	.306	.087	.124	.370	.456
	8.1%	7.7%	6.3%	3.8%	=5.0%	=48.0%	30.1%	=3.6%	=9.7%
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			
S/DEPTH=.8	3.2%	3.0%	2.2%	.9%	=4.0%	*****			
S/DEPTH=.7	4.262	4.124	3.730	3.131	1.653	.228	.159	=2.353	=3.849
S/DEPTH=.6	2.8%	2.6%	1.9%	.8%	=3.5%	*****	*****	=3.3%	=7.6%
S/DEPTH=.5	3.355	3.247	2.939	2.471	1.312	.185	.122	=1.866	=3.070
S/DEPTH=.4	2.4%	2.3%	1.7%	.7%	=3.1%	*****	*****	=2.9%	=6.6%
S/DEPTH=.3	2.638	2.554	2.314	1.947	1.038	.149	.094	=1.477	=2.440
S/DEPTH=.2	2.2%	2.0%	1.5%	.6%	=2.7%	*****	*****	=2.6%	=5.8%
S/DEPTH=.1	2.063	1.998	1.810	1.525	.816	.118	.072	=1.161	=1.924
S/DEPTH=.0	2.0%	1.8%	1.4%	.6%	=2.4%	*****	*****	=2.3%	=5.1%
S/DEPTH=.9	1.592	1.542	1.398	1.179	.632	.093	.055	=.899	=1.495
S/DEPTH=.8	1.8%	1.7%	1.3%	.5%	=2.1%	*****	*****	=2.0%	=4.6%
S/DEPTH=.7	1.197	1.159	1.051	.887	.477	.071	.041	=.678	=1.129
S/DEPTH=.6	1.7%	1.6%	1.2%	.5%	=1.9%	*****	*****	=1.8%	=4.2%
S/DEPTH=.5	.855	.829	.752	.634	.342	.051	.029	=.486	=.810
S/DEPTH=.4	1.6%	1.5%	1.2%	.5%	=1.8%	*****	*****	=1.6%	=3.8%
S/DEPTH=.3	.551	.534	.484	.409	.220	.033	.019	=.313	=.523
S/DEPTH=.2	1.6%	1.5%	1.1%	.5%	*****	*****	*****	*****	=3.6%
S/DEPTH=.1	.270	.262	.237	.200	.108	.016	.009	=.154	=.257
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

332

CASE 7-A

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#	.544	.533	.501	.450	.306	.087	.124	.370	.456
	8.1%	7.7%	6.3%	3.8%	5.0%	48.0%	30.1%	3.6%	9.7%
SURFACE	.000	2.921	5.689	8.171	11.898	13.859	13.042	7.710	.000
	*****	10.0%	9.3%	8.2%	5.2%	.6%	=3.9%	=9.2%	*****
S/DEPTH=1.0	.000	2.535	4.982	7.257	10.990	13.597			
	*****	8.3%	7.9%	7.3%	5.3%	1.6%			
S/DEPTH=.9	.000	2.131	4.190	6.108	9.277	11.503	11.476	7.235	.000
	*****	7.4%	7.1%	6.5%	4.7%	1.4%	=2.7%	=9.1%	*****
S/DEPTH=.8	.000	1.780	3.502	5.110	7.780	9.690	9.720	6.178	.000
	*****	6.7%	6.4%	5.9%	4.3%	1.3%	=2.4%	=8.0%	*****
S/DEPTH=.7	.000	1.474	2.900	4.235	6.462	8.080	8.143	5.211	.000
	*****	6.1%	5.8%	5.3%	3.9%	1.2%	=2.1%	=7.1%	*****
S/DEPTH=.6	.000	1.203	2.369	3.461	5.291	6.638	6.717	4.323	.000
	*****	5.6%	5.3%	4.9%	3.5%	1.1%	=1.9%	=6.4%	*****
S/DEPTH=.5	.000	.962	1.894	2.769	4.240	5.334	5.415	3.502	.000
	*****	5.2%	4.9%	4.5%	3.3%	1.0%	=1.7%	=5.8%	*****
S/DEPTH=.4	.000	.743	1.465	2.142	3.284	4.141	4.215	2.737	.000
	*****	4.8%	4.6%	4.2%	3.1%	1.0%	=1.5%	=5.3%	*****
S/DEPTH=.3	.000	.543	1.069	1.564	2.401	3.033	3.094	2.014	.000
	*****	*****	4.3%	4.0%	2.9%	1.0%	=1.4%	=5.0%	*****
S/DEPTH=.2	.000	.355	.699	1.023	1.572	1.988	2.031	1.325	.000
	*****	*****	4.2%	3.8%	2.8%	.9%	=1.3%	=4.7%	*****
S/DEPTH=.1	.000	.175	.346	.506	.777	.984	1.006	.657	.000
	*****	*****	*****	*****	2.7%	.9%	=1.3%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

333

CASE 7=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	.544	.533	.501	.450	.306	.087	.124	.370	.456
	8.1%	7.7%	6.3%	3.8%	5.0%	48.0%	30.1%	3.6%	9.7%
SURFACE	4.801	4.612	4.080	3.307	1.577	.180	.128	1.522	2.349
S/DEPTH# 1.0	6.7%	6.2%	4.7%	2.2%	5.9%	*****	*****	3.3%	6.5%
S/DEPTH# .9	3.486	3.370	3.041	2.544	1.325	.172			
S/DEPTH# .8	3.7%	3.4%	2.6%	1.1%	4.7%	*****			
S/DEPTH# .7	2.377	2.299	2.077	1.741	.913	.122	.091	1.300	2.112
S/DEPTH# .6	3.2%	2.9%	2.2%	.9%	4.1%	*****	*****	3.9%	8.9%
S/DEPTH# .5	1.604	1.552	1.404	1.178	.622	.086	.060	.885	1.448
S/DEPTH# .4	2.8%	2.5%	1.9%	.7%	3.6%	*****	*****	3.4%	7.7%
S/DEPTH# .3	1.065	1.031	.933	.785	.416	.059	.039	.593	.975
S/DEPTH# .2	2.4%	2.2%	1.6%	.6%	3.1%	*****	*****	3.0%	6.7%
S/DEPTH# .1	.690	.668	.605	.510	.272	.039	.024	.387	.639
S/DEPTH# 0	2.1%	2.0%	1.5%	.6%	2.7%	*****	*****	2.6%	5.8%
S/DEPTH# 1.0	.430	.417	.378	.318	.170	.025	.015	.242	.402
S/DEPTH# .9	1.9%	1.8%	1.3%	.5%	*****	*****	*****	2.2%	5.1%
S/DEPTH# .8	.252	.244	.221	.187	.100	.015	.009	.142	.237
S/DEPTH# .7	1.8%	1.7%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .6	.132	.128	.116	.098	.053	.008	.004	.075	.125
S/DEPTH# .5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .4	.056	.054	.049	.041	.022	.003	.002	.032	.053
S/DEPTH# .3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .2	.014	.013	.012	.010	.005	.001	.000	.008	.013
S/DEPTH# .1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# 0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

334

CASE 7-A

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	.544	.533	.501	.450	.306	.087	-.124	-.370	-.456
	8.1%	7.7%	6.3%	3.8%	-5.0%	-48.0%	30.1%	-3.6%	-9.7%
SURFACE	.000	1.876	3.629	5.155	7.271	8.055	7.201	3.996	.000
	*****	12.2%	11.3%	9.9%	6.0%	.1%	=5.4%	=11.1%	*****
S/DEPTH=.10	.000	1.474	2.894	4.208	6.341	7.750			
	*****	9.7%	9.2%	8.5%	6.2%	1.8%			
S/DEPTH=.09	.000	1.089	2.140	3.116	4.712	5.796	9.728	3.558	.000
	*****	8.6%	8.2%	7.6%	5.5%	1.6%	=3.3%	=11.0%	*****
S/DEPTH=.08	.000	.791	1.555	2.266	3.437	4.253	4.233	2.659	.000
	*****	7.7%	7.3%	6.7%	4.9%	1.4%	=2.8%	=9.5%	*****
S/DEPTH=.07	.000	.561	1.103	1.609	2.447	3.044	3.049	1.934	.000
	*****	6.9%	6.6%	6.0%	4.4%	1.3%	=2.5%	=8.3%	*****
S/DEPTH=.06	.000	.385	.757	1.105	1.685	2.106	2.121	1.356	.000
	*****	*****	5.9%	5.4%	3.9%	1.2%	=2.1%	=7.2%	*****
S/DEPTH=.05	.000	.252	.495	.724	1.106	1.388	1.404	.904	.000
	*****	*****	5.3%	4.9%	3.5%	1.1%	=1.9%	=6.4%	*****
S/DEPTH=.04	.000	.153	.302	.441	.675	.850	.863	.559	.000
	*****	*****	*****	4.5%	3.2%	1.0%	=1.7%	=5.7%	*****
S/DEPTH=.03	.000	.083	.163	.239	.366	.462	.471	.306	.000
	*****	*****	*****	*****	*****	1.0%	=1.5%	*****	*****
S/DEPTH=.02	.000	.036	.070	.103	.158	.200	.204	.133	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.01	.000	.009	.017	.025	.039	.049	.050	.033	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.00	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

335

CASE 7-A

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

THETA = ETA/HEIGHT =	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.544 8.1%	.533 7.7%	.501 6.3%	.490 3.8%	.306 5.0%	.087 48.0%	.124 30.1%	.370 3.6%	.456 9.7%
SURFACE	1.089 4.9%	1.067 4.6%	1.002 3.7%	.900 2.2%	.612 2.8%	.175 25.5%	.248 15.1%	.740 1.7%	.911 4.5%
S/DEPTH = 1.0	.981 3.7%	.964 3.5%	.912 2.9%	.829 1.8%	.582 2.3%	.174 24.0%			
S/DEPTH = .9	.871 3.3%	.856 3.1%	.812 2.6%	.740 1.7%	.525 1.8%	.168 18.8%	.214 14.9%	.701 1.8%	.880 5.1%
S/DEPTH = .8	.777 2.9%	.764 2.8%	.726 2.3%	.663 1.6%	.475 1.4%	.160 14.9%	.180 13.8%	.620 1.3%	.784 4.2%
S/DEPTH = .7	.698 2.7%	.687 2.5%	.653 2.1%	.598 1.5%	.432 1.0%	.153 11.9%	.192 12.7%	.552 .9%	.703 3.3%
S/DEPTH = .6	.632 2.4%	.622 2.3%	.592 2.0%	.543 1.4%	.395 .7%	.145 9.5%	.131 11.7%	.496 .5%	.636 2.6%
S/DEPTH = .5	.578 2.2%	.569 2.1%	.542 1.9%	.498 1.4%	.365 .4%	.138 7.6%	.114 10.7%	.451 .2%	.581 2.0%
S/DEPTH = .4	.535 2.1%	.527 2.0%	.502 1.8%	.462 1.4%	.340 .2%	.132 6.2%	.101 9.9%	.415 .1%	.538 1.4%
S/DEPTH = .3	.503 2.0%	.495 1.9%	.472 1.7%	.435 1.4%	.322 .0%	.127 5.1%	.091 9.3%	.388 .3%	.505 1.0%
S/DEPTH = .2	.480 1.9%	.473 1.9%	.451 1.7%	.416 1.4%	.308 .2%	.124 4.3%	.085 8.7%	.370 .5%	.482 .7%
S/DEPTH = .1	.466 1.9%	.459 1.8%	.439 1.6%	.404 1.4%	.301 .3%	.121 3.9%	.081 8.4%	.358 .6%	.468 .5%
S/DEPTH = .0	.462 1.9%	.455 1.8%	.434 1.6%	.401 1.4%	.298 .3%	.121 3.7%	.080 8.3%	.355 .6%	.463 .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 CONDITON 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

337

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 (1.1%)
- (2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY
DEFINED IN EQUATION (38)
.494 (=1.1%)
- (3) DIMENSIONLESS AVERAGE KINETIC ENERGY
DEFINED IN EQUATION (39)
.501 (=1.7%)
- (4) DIMENSIONLESS TOTAL AVERAGE ENERGY
DEFINED IN EQUATION (40)
.995 (=1.4%)
- (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 7-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	.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 = .062490 DPT/LO = .199999
H/DPT = .312451
L/LO = .931055 PSI/(G*H*T) = .006220

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) = .661278=07
X(5)/(H*T*G) = .290160=08

CASE 7-B

TABLE I-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	160.0
ETA/HEIGHT =	.893	.576	.527	.453	.270	.038	.152	.345	.407
	19.7%	14.5%	10.8%	4.5%	-18.9%	-236.9%	43.1%	-10.9%	-22.9%
SURFACE	4.702	4.567	4.188	3.627	2.241	.527	-.838	-2.161	-2.567
	8.1%	7.2%	4.3%	-.5%	-15.2%	-82.5%	29.2%	-8.2%	-13.8%
S/DEPTH=1.1	4.169	4.083	3.832	3.431					
	3.7%	3.2%	1.6%	-1.3%					
S/DEPTH=1.0	3.638	3.566	3.334	3.014	2.035	.526			
	2.9%	2.4%	1.0%	-1.5%	-11.6%	-73.9%			
S/DEPTH=.9	3.194	3.133	2.952	2.662	1.821	.509	-.768		
	2.2%	1.8%	.6%	-1.6%	-10.3%	-58.9%	29.3%		
S/DEPTH=.8	2.825	2.772	2.616	2.366	1.638	.487	-.654	-1.959	-2.396
	1.7%	1.3%	.3%	-1.6%	-9.0%	-47.5%	26.3%	-8.6%	-15.9%
S/DEPTH=.7	2.519	2.473	2.337	2.120	1.482	.464	-.564	-1.772	-2.188
	1.3%	1.0%	.1%	-1.5%	-7.8%	-38.5%	23.4%	-7.4%	-13.6%
S/DEPTH=.6	2.268	2.227	2.108	1.916	1.352	.442	-.492	-1.615	-2.011
	1.1%	.8%	.0%	-1.4%	-6.7%	-31.5%	20.8%	-6.4%	-11.5%
S/DEPTH=.5	2.065	2.029	1.923	1.751	1.245	.421	-.435	-1.487	-1.864
	.9%	.7%	.0%	-1.2%	-5.7%	-25.9%	18.4%	-5.4%	-9.8%
S/DEPTH=.4	1.906	1.874	1.777	1.621	1.159	.403	-.392	-1.384	-1.746
	.9%	.7%	.1%	-.9%	-4.8%	-21.5%	16.4%	-4.6%	-8.2%
S/DEPTH=.3	1.787	1.757	1.667	1.523	1.094	.388	-.361	-1.306	-1.655
	.8%	.7%	.2%	-.7%	-4.1%	-18.2%	14.7%	-3.9%	-7.0%
S/DEPTH=.2	1.703	1.675	1.591	1.454	1.049	.377	-.339	-1.252	-1.591
	.9%	.7%	.2%	-.6%	-3.5%	-15.8%	13.4%	-3.4%	-6.2%
S/DEPTH=.1	1.654	1.626	1.545	1.414	1.021	.371	-.326	-1.219	-1.552
	.9%	.7%	.3%	-.4%	-3.2%	-14.4%	12.6%	-3.0%	-5.6%
S/DEPTH=.0	1.638	1.610	1.530	1.400	1.012	.369	-.322	-1.208	-1.540
	.9%	.7%	.3%	-.4%	-3.1%	-14.0%	12.4%	-2.9%	-5.4%

178

CASE 7-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	.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	.000	.855	1.621	2.236	2.941	2.996	2.500	1.286	.000
S/DEPTH# 1.1	*****	19.0%	16.8%	13.3%	4.3%	-7.9%	-18.4%	-29.1%	*****
S/DEPTH# 1.0	.000	.743	1.447	2.080					
S/DEPTH# .9	*****	14.1%	13.2%	11.7%					
S/DEPTH# .8	.000	.622	1.213	1.746	2.548	2.938			
S/DEPTH# .7	*****	12.3%	11.5%	10.1%	5.6%	-3.2%			
S/DEPTH# .6	.000	.519	1.014	1.461	2.143	2.494	2.306		
S/DEPTH# .5	*****	10.7%	10.0%	8.7%	4.6%	-3.4%	-14.0%		
S/DEPTH# .4	.000	.432	.843	1.217	1.792	2.102	1.963	1.125	.000
S/DEPTH# .3	*****	9.4%	8.6%	7.5%	3.7%	-3.9%	-13.0%	-28.7%	*****
S/DEPTH# .2	.000	.356	.696	1.005	1.485	1.754	1.652	.960	.000
S/DEPTH# .1	*****	8.2%	7.5%	6.4%	2.9%	-3.6%	-12.1%	-25.9%	*****
S/DEPTH# 0	.000	.290	.567	.819	1.214	1.442	1.368	.804	.000
S/DEPTH# .9	*****	7.2%	6.6%	5.6%	2.3%	-3.7%	-11.4%	-23.7%	*****
S/DEPTH# .8	.000	.231	.452	.654	.972	1.160	1.107	.656	.000
S/DEPTH# .7	*****	6.4%	5.8%	4.9%	1.9%	-3.7%	-10.8%	-21.9%	*****
S/DEPTH# .6	.000	.178	.349	.505	.752	.901	.864	.516	.000
S/DEPTH# .5	*****	5.7%	5.2%	4.3%	1.5%	-3.7%	-10.3%	-20.5%	*****
S/DEPTH# .4	.000	.130	.255	.369	.530	.660	.636	.382	.000
S/DEPTH# .3	*****	*****	4.7%	3.9%	1.2%	-3.7%	-9.9%	-19.5%	*****
S/DEPTH# .2	.000	.085	.166	.241	.360	.433	.418	.252	.000
S/DEPTH# .1	*****	*****	4.4%	3.6%	1.0%	-3.7%	-9.6%	-18.7%	*****
S/DEPTH# 0	.000	.042	.082	.119	.178	.214	.207	.125	.000
S/DEPTH# .9	*****	*****	*****	*****	.9%	-3.7%	-9.5%	*****	*****
S/DEPTH# .8	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH# .7	*****	*****	*****	*****	*****	*****	*****	*****	*****

342

CASE 7=8

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=	.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	.000	6.618	12.485	17.094	22.044	21.783	17.554	8.577	.000
S/DEPTH=1.1	*****	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					
S/DEPTH=.9	*****	27.3%	26.1%	24.0%					
S/DEPTH=.8	.000	4.849	9.432	13.505	19.360	21.448			
S/DEPTH=.7	*****	24.6%	23.5%	21.5%	15.1%	1.4%			
S/DEPTH=.6	.000	4.116	8.023	11.525	16.696	18.898	16.705		
S/DEPTH=.5	*****	22.0%	21.0%	19.2%	13.4%	1.2%	=16.9%		
S/DEPTH=.4	.000	3.523	6.878	9.912	14.506	16.748	15.220	8.236	.000
S/DEPTH=.3	*****	19.6%	18.7%	17.1%	11.8%	1.1%	=14.2%	=43.1%	*****
S/DEPTH=.2	.000	3.043	5.953	8.605	12.714	14.951	13.921	7.848	.000
S/DEPTH=.1	*****	17.4%	16.6%	15.1%	10.4%	1.1%	=11.9%	=35.2%	*****
S/DEPTH=0	.000	2.659	5.211	7.554	11.262	13.467	12.809	7.472	.000
S/DEPTH=0	*****	15.5%	14.7%	13.4%	9.2%	1.1%	=9.9%	=28.9%	*****
S/DEPTH=0	.000	2.356	4.625	6.722	10.103	12.264	11.881	7.130	.000
S/DEPTH=0	*****	13.7%	13.0%	11.9%	8.2%	1.1%	=8.2%	=23.9%	*****
S/DEPTH=0	.000	2.122	4.171	6.077	9.201	11.314	11.132	6.835	.000
S/DEPTH=0	*****	12.2%	11.6%	10.6%	7.4%	1.2%	=6.8%	=20.1%	*****
S/DEPTH=0	.000	1.948	3.834	5.597	8.526	10.596	10.555	6.598	.000
S/DEPTH=0	*****	11.0%	10.5%	9.6%	8.7%	1.3%	=5.7%	=17.1%	*****
S/DEPTH=0	.000	1.828	3.601	5.265	8.058	10.095	10.148	6.425	.000
S/DEPTH=0	*****	10.1%	9.6%	8.8%	8.2%	1.4%	=4.9%	=15.1%	*****
S/DEPTH=0	.000	1.758	3.465	5.071	7.783	9.798	9.905	6.319	.000
S/DEPTH=0	*****	9.5%	9.1%	8.4%	8.0%	1.4%	=4.4%	=13.9%	*****
S/DEPTH=0	.000	1.735	3.420	5.006	7.692	9.700	9.824	6.284	.000
S/DEPTH=0	*****	9.4%	8.9%	8.2%	8.2%	1.4%	=4.3%	=13.5%	*****

678

CASE 7-B

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

THETA	0	10.0	20.0	30.0	50.0	79.0	100.0	130.0	180.0
ETA/HEIGHT	.593	.576	.527	.453	.270	.038	.192	.345	.407
	15.7%	14.5%	10.8%	4.5%	-18.9%	-236.9%	43.1%	-10.9%	-22.9%
SURFACE	=21.464	=20.567	=18.037	=14.389	=5.679	3.950	9.975	13.268	13.516
	18.4%	16.9%	12.2%	3.4%	=46.5%	98.6%	21.7%	=19.9%	=36.1%
S/DEPTH=1.1	=19.418	=18.768	=16.871	=13.882					
	14.7%	13.6%	10.1%	3.0%					
S/DEPTH=1.0	=17.056	=16.528	=14.985	=12.546	=5.766	3.747			
	13.1%	12.1%	9.0%	2.9%	=34.9%	105.5%			
S/DEPTH=.9	=14.802	=14.373	=13.119	=11.133	=5.575	2.356	8.803		
	11.6%	10.7%	8.0%	2.6%	=27.3%	127.9%	25.1%		
S/DEPTH=.8	=12.688	=12.341	=11.326	=9.714	=5.176	1.399	6.925	11.310	12.094
	10.2%	9.4%	7.0%	2.2%	=22.4%	164.4%	24.6%	=20.3%	=39.9%
S/DEPTH=.7	=10.724	=10.445	=9.627	=8.327	=4.648	.756	5.427	9.413	10.255
	9.0%	8.3%	6.1%	1.9%	=19.1%	*****	24.1%	=18.1%	=35.4%
S/DEPTH=.6	=8.903	=8.681	=8.030	=6.992	=4.042	.341	4.220	7.718	8.540
	8.0%	7.3%	5.3%	1.5%	=16.7%	*****	23.6%	=16.4%	=31.8%
S/DEPTH=.5	=7.213	=7.040	=6.530	=5.716	=3.394	.090	3.233	6.190	6.938
	7.1%	6.5%	4.6%	1.1%	=15.0%	*****	23.2%	=15.0%	=29.0%
S/DEPTH=.4	=5.634	=5.503	=5.115	=4.496	=2.724	.043	2.412	4.797	5.432
	6.4%	5.9%	4.1%	.9%	=13.8%	*****	22.8%	=13.9%	=26.8%
S/DEPTH=.3	=4.146	=4.051	=3.772	=3.326	=2.045	.095	1.712	3.509	4.004
	5.9%	5.4%	3.7%	.7%	=12.9%	*****	22.4%	=13.1%	=25.1%
S/DEPTH=.2	=2.726	=2.665	=2.484	=2.195	=1.363	.091	1.097	2.298	2.636
	5.5%	5.0%	3.4%	.5%	=12.3%	*****	22.1%	=12.5%	=24.0%
S/DEPTH=.1	=1.352	=1.321	=1.233	=1.091	=.681	.054	.535	1.136	1.308
	5.3%	4.8%	3.2%	.4%	*****	*****	*****	=12.2%	=23.3%
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

77C

CASE 7-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 =	.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	8.601	8.162	6.982	5.386	2.262	.191	-.235	-2.112	-3.148
S/DEPTH=1.1	11.0%	9.6%	5.4%	-1.3%	-22.1%	*****	*****	-9.9%	-15.3%
S/DEPTH=1.0	6.926	6.670	5.945	4.867					
S/DEPTH=.9	3.6%	2.9%	.9%	-2.9%					
S/DEPTH=.8	5.406	5.211	4.657	3.831	1.876	.188			
S/DEPTH=.7	2.9%	2.3%	.4%	-2.8%	-15.7%	*****	*****		
S/DEPTH=.6	4.242	4.092	3.666	3.027	1.505	.161	.201		
S/DEPTH=.5	2.3%	1.8%	.2%	-2.6%	-13.7%	*****	*****		
S/DEPTH=.4	3.339	3.223	2.892	2.397	1.206	.136	.151	-1.722	-2.700
S/DEPTH=.3	2.0%	1.5%	.1%	-2.4%	-12.1%	*****	*****	-11.5%	-21.2%
S/DEPTH=.2	2.627	2.537	2.280	1.895	.964	.114	.114	-1.374	-2.176
S/DEPTH=.1	1.7%	1.3%	.1%	-2.2%	-10.7%	*****	*****	-10.2%	-18.6%
S/DEPTH=.0	2.056	1.986	1.788	1.489	.763	.093	.086	-1.088	-1.736
S/DEPTH=1.1	1.6%	1.2%	.1%	-1.9%	-9.5%	*****	*****	-9.1%	-16.5%
S/DEPTH=1.0	1.587	1.534	1.382	1.153	.595	.075	.065	-.848	-1.361
S/DEPTH=.9	1.5%	1.2%	.2%	-1.6%	-8.5%	*****	*****	-8.1%	-14.8%
S/DEPTH=.8	1.194	1.155	1.041	.870	.451	.058	.048	-.643	-1.036
S/DEPTH=.7	1.5%	1.2%	.2%	-1.4%	-7.7%	*****	*****	-7.4%	-13.5%
S/DEPTH=.6	.854	.826	.745	.623	.324	.042	.034	-.462	-.747
S/DEPTH=.5	1.5%	1.2%	.3%	-1.2%	*****	*****	*****	-6.8%	-12.6%
S/DEPTH=.4	.551	.533	.481	.402	.210	.028	.021	-.299	-.485
S/DEPTH=.3	1.5%	1.2%	.4%	*****	*****	*****	*****	*****	-11.9%
S/DEPTH=.2	.270	.261	.236	.197	.103	.014	.010	-.147	-.238
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

345

CASE 7-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 =	.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	.000	3.679	6.995	9.696	12.959	13.607	11.767	6.360	.000
	*****	22.5%	20.3%	17.0%	8.5%	-3.5%	-13.6%	-24.1%	*****
S/DEPTH=1.1	.000	3.186	6.233	9.008					
	*****	17.9%	17.0%	15.5%					
S/DEPTH=1.0	.000	2.658	5.206	7.540	11.213	13.348			
	*****	16.3%	15.4%	14.1%	9.7%	1.1%			
S/DEPTH=.9	.000	2.211	4.335	6.292	9.415	11.334	10.870		
	*****	14.8%	14.1%	12.9%	8.9%	1.1%	-9.2%		
S/DEPTH=.8	.000	1.830	3.592	5.223	7.858	9.555	9.276	5.585	.000
	*****	13.6%	12.9%	11.8%	8.1%	1.1%	-8.1%	-23.6%	*****
S/DEPTH=.7	.000	1.502	2.952	4.299	6.500	7.972	7.820	4.781	.000
	*****	12.5%	11.9%	10.9%	7.5%	1.1%	-7.2%	-20.9%	*****
S/DEPTH=.6	.000	1.218	2.396	3.493	5.304	6.554	6.485	4.015	.000
	*****	11.6%	11.1%	10.1%	7.0%	1.2%	-6.4%	-18.8%	*****
S/DEPTH=.5	.000	.968	1.905	2.781	4.238	5.270	5.252	3.286	.000
	*****	10.9%	10.4%	9.5%	6.6%	1.2%	-5.8%	-17.1%	*****
S/DEPTH=.4	.000	.745	1.466	2.143	3.275	4.093	4.103	2.588	.000
	*****	10.3%	9.8%	9.0%	6.3%	1.2%	-5.3%	-15.8%	*****
S/DEPTH=.3	.000	.541	1.067	1.560	2.390	2.999	3.020	1.917	.000
	*****	*****	9.4%	8.6%	6.1%	1.3%	-4.9%	-14.8%	*****
S/DEPTH=.2	.000	.353	.696	1.018	1.563	1.966	1.986	1.266	.000
	*****	*****	9.1%	8.3%	5.9%	1.3%	-4.6%	-14.1%	*****
S/DEPTH=.1	.000	.174	.343	.503	.772	.973	.985	.630	.000
	*****	*****	*****	*****	5.8%	1.3%	-4.4%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

976

CASE 7-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=	.593	.576	.527	.453	.270	.038	.152	.345	.407
	19.7%	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	-1.138	-1.625
S/DEPTH=1.1	14.8%	13.0%	7.7%	-.7%	-27.5%	*****	*****	-10.0%	-14.0%
S/DEPTH=1.0	5.072	4.880	4.336	3.530					
S/DEPTH=.9	4.3%	3.5%	1.1%	-3.1%					
S/DEPTH=.8	3.473	3.544	2.981	2.440	1.173	.107			
S/DEPTH=.7	3.4%	2.7%	.6%	-3.2%	-18.2%	*****			
S/DEPTH=.6	2.364	2.279	2.037	1.675	.819	.081	-.119		
S/DEPTH=.5	2.7%	2.1%	.2%	-3.0%	-16.0%	*****	*****		
S/DEPTH=.4	1.594	1.838	1.378	1.138	.565	.060	-.076	-.807	-1.250
S/DEPTH=.3	2.2%	1.7%	.0%	-2.8%	-14.0%	*****	*****	-13.4%	-24.8%
S/DEPTH=.2	1.059	1.022	.918	.760	.383	.043	-.048	-.546	-.856
S/DEPTH=.1	1.9%	1.4%	-.0%	-2.5%	-12.3%	*****	*****	-11.7%	-21.5%
S/DEPTH=.0	.687	.663	.596	.496	.252	.030	-.030	-.360	-.569
S/DEPTH=1.1	1.7%	1.2%	-.0%	-2.2%	*****	*****	*****	-10.2%	-18.7%
S/DEPTH=1.0	.429	.414	.373	.311	.159	.020	-.018	-.227	-.363
S/DEPTH=.9	1.6%	1.2%	.1%	*****	*****	*****	*****	*****	-16.4%
S/DEPTH=.8	.251	.243	.219	.183	.094	.012	-.010	-.135	-.216
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.132	.128	.115	.096	.050	.006	-.005	-.071	-.115
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.056	.054	.049	.041	.021	.003	-.002	-.030	-.049
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.014	.013	.012	.010	.005	.001	-.001	-.007	-.012
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

347

CASE 7-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
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	.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%	8.3%	-7.0%	-18.9%	-28.0%	*****
S/DEPTH=1.0	.000	2.129	4.155	5.982					
S/DEPTH=.9	*****	20.5%	19.5%	17.8%					
S/DEPTH=.8	.000	1.573	3.075	4.439	6.531	7.618			
S/DEPTH=.7	*****	18.6%	17.7%	16.1%	11.1%	1.1%			
S/DEPTH=.6	.000	1.148	2.247	3.251	4.820	5.703	5.353		
S/DEPTH=.5	*****	16.8%	16.0%	14.6%	10.0%	1.1%	-11.2%		
S/DEPTH=.4	.000	.824	1.615	2.341	3.495	4.189	3.996	2.342	.000
S/DEPTH=.3	*****	15.2%	14.5%	13.2%	9.1%	1.0%	-9.7%	-28.3%	*****
S/DEPTH=.2	.000	.578	1.134	1.648	2.475	3.001	2.903	1.739	.000
S/DEPTH=.1	*****	13.8%	13.2%	12.0%	8.3%	1.1%	-8.4%	-24.4%	*****
S/DEPTH=.0	.000	.393	.771	1.123	1.696	2.078	2.035	1.241	.000
	*****	*****	12.0%	11.0%	7.6%	1.1%	-7.4%	-21.3%	*****
	.000	.255	.501	.731	1.109	1.370	1.356	.839	.000
	*****	*****	11.0%	10.1%	7.0%	1.2%	-6.4%	-18.8%	*****
	.000	.154	.303	.443	.675	.840	.838	.525	.000
	*****	*****	*****	9.4%	6.6%	1.2%	-5.7%	-16.9%	*****
	.000	.083	.163	.238	.365	.457	.458	.290	.000
	*****	*****	*****	*****	*****	1.3%	-5.1%	*****	*****
	.000	.036	.070	.103	.157	.198	.200	.127	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.009	.017	.025	.039	.049	.049	.032	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

878

CASE 7-B

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 =	.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	1.186	1.151	1.053	.907	.541	.077	-.305	-.691	-.814
S/DEPTH=1.1	11.1%	10.2%	7.5%	3.1%	-11.6%	-130.6%	21.1%	-5.0%	-9.8%
S/DEPTH=1.0	1.075	1.051	.981	.869					
S/DEPTH=1.0	7.6%	7.1%	5.4%	2.5%					
S/DEPTH=.9	.959	.939	.880	.785	.510	.080			
S/DEPTH=.9	6.8%	6.4%	4.9%	2.4%	-6.2%	-121.9%			
S/DEPTH=.8	.858	.841	.791	.710	.474	.099	.274		
S/DEPTH=.8	6.2%	5.8%	4.5%	2.4%	-6.5%	-76.0%	24.3%		
S/DEPTH=.7	.770	.756	.713	.643	.439	.111	.224	.619	.755
S/DEPTH=.7	5.6%	5.3%	4.2%	2.3%	-5.1%	-52.7%	24.2%	-5.0%	-11.9%
S/DEPTH=.6	.696	.683	.646	.586	.408	.117	.185	.553	.683
S/DEPTH=.6	5.2%	4.9%	4.0%	2.4%	-3.9%	-38.8%	24.1%	-3.3%	-9.3%
S/DEPTH=.5	.633	.622	.590	.537	.380	.121	.154	.499	.624
S/DEPTH=.5	4.9%	4.6%	3.8%	2.4%	-2.9%	-29.6%	24.2%	-1.8%	-6.9%
S/DEPTH=.4	.582	.572	.544	.497	.357	.122	.131	.454	.574
S/DEPTH=.4	4.6%	4.4%	3.7%	2.5%	-2.0%	-23.3%	24.3%	.5%	-4.9%
S/DEPTH=.3	.541	.533	.507	.464	.337	.122	.113	.419	.535
S/DEPTH=.3	4.5%	4.3%	3.7%	2.6%	-1.3%	-18.9%	24.5%	.7%	-3.2%
S/DEPTH=.2	.510	.502	.478	.439	.322	.122	.100	.393	.505
S/DEPTH=.2	4.4%	4.2%	3.7%	2.7%	.7%	-15.8%	24.8%	1.7%	-1.9%
S/DEPTH=.1	.488	.481	.459	.422	.311	.121	.091	.375	.484
S/DEPTH=.1	4.3%	4.1%	3.7%	2.8%	.3%	-13.7%	25.0%	2.4%	.9%
S/DEPTH=.0	.475	.468	.447	.411	.305	.121	.086	.364	.472
S/DEPTH=.0	4.3%	4.1%	3.7%	2.9%	.1%	-12.5%	25.2%	2.8%	.3%
S/DEPTH=.0	.471	.464	.443	.408	.302	.120	.084	.360	.467
S/DEPTH=.0	4.3%	4.1%	3.7%	2.9%	.0%	-12.1%	25.3%	3.0%	.1%

673

CASE 7-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	.031	.057	.073	.072	.030	.018	.042	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE 7-B

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)
.474 (=5.4%)
- (3) DIMENSIONLESS AVERAGE KINETIC ENERGY
DEFINED IN EQUATION (39)
.492 (=7.2%)
- (4) DIMENSIONLESS TOTAL AVERAGE ENERGY
DEFINED IN EQUATION (40)
.966 (=6.4%)
- (5) DIMENSIONLESS TOTAL AVERAGE ENERGY FLUX
DEFINED IN EQUATION (41)
.682 (=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%)

CASE 7-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	.044026	STREAM FUNCTION .000000
(11)	DIMENSIONLESS ROOT MEAN SQUARE DYNAMIC FREE SURFACE BOUNDARY CONDITION ERROR DEFINED IN EQUATION (47)		
	LINEAR	.030598	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	.303966	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

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 = .093785 DPT/LO = .199999
H/DPT = .468925
L/LO = .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 I-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	.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	5.653	5.313	4.812	3.578	1.847	.208	-.886	-1.812	-2.072
S/DEPTH=1.3	15.3%	11.7%	2.1%	-11.2%	-49.2%	*****	34.2%	-20.2%	-28.8%
	5.596								
S/DEPTH=1.2	14.4%	4.619	4.209						
	4.764	2.5%	-2.1%						
S/DEPTH=1.1	4.0%	3.977	3.652	3.155					
	4.091	.6%	-3.3%	-10.2%					
S/DEPTH=1.0	1.9%	3.451	3.188	2.782	1.692				
	3.542	-.8%	-4.1%	-10.0%	-34.3%				
S/DEPTH=.9	.2%	3.019	2.803	2.466	1.546	.252	-.852		
	3.093	-1.9%	-4.7%	-9.7%	-29.9%	*****	36.3%		
S/DEPTH=.8	-1.0%	2.664	2.484	2.200	1.415	.282	-.722	-1.719	-2.014
	2.726	-2.6%	-5.0%	-9.3%	-26.1%	*****	33.2%	-23.7%	-32.6%
S/DEPTH=.7	-1.9%	2.373	2.220	1.979	1.301	.299	-.618	-1.573	-1.870
	2.425	-2.5%	-3.2%	-8.7%	-22.8%	-115.2%	30.2%	-21.0%	-32.9%
S/DEPTH=.6	-2.5%	2.137	2.005	1.796	1.203	.307	-.536	-1.450	-1.745
	2.182	-3.4%	-5.1%	-8.1%	-19.9%	-88.9%	27.3%	-18.5%	-28.6%
S/DEPTH=.5	-2.8%	1.987	1.832	1.648	1.121	.311	-.471	-1.347	-1.639
	1.987	-3.0%	-4.9%	-7.5%	-17.4%	-70.5%	24.6%	-16.3%	-24.8%
S/DEPTH=.4	-3.0%	1.835	1.697	1.532	1.054	.311	-.422	-1.265	-1.553
	1.835	-3.0%	-4.7%	-6.9%	-15.2%	-57.4%	22.2%	-14.4%	-21.7%
S/DEPTH=.3	-3.0%	1.721	1.595	1.443	1.003	.309	-.385	-1.203	-1.487
	1.721	-2.9%	-4.4%	-6.3%	-13.5%	-48.2%	20.2%	-12.8%	-19.2%
S/DEPTH=.2	-2.9%	1.642	1.524	1.382	.967	.308	-.360	-1.158	-1.439
	1.642	-2.8%	-4.1%	-5.8%	-12.2%	-42.1%	18.6%	-11.7%	-17.3%
S/DEPTH=.1	-2.8%	1.596	1.482	1.345	.946	.306	-.346	-1.132	-1.411
	1.596	-2.8%	-4.0%	-5.5%	-11.4%	-38.5%	17.7%	-11.0%	-16.2%
S/DEPTH=.0	-2.8%	1.580	1.468	1.333	.939	.306	-.341	-1.123	-1.401
	1.580	-2.7%	-3.9%	-5.4%	-11.2%	-37.4%	17.3%	-10.7%	-15.9%

354

CASE 7=C

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	160.0
ETA/HEIGHT=	.653	.616	.528	.420	.207	-.010	-.165	-.305	-.347
	23.4%	20.1%	11.0%	=3.1%	=55.6%	*****	47.3%	=29.4%	=44.0%
SURFACE	.000	1.209	2.098	2.628	2.944	2.607	1.968	.912	.000
	*****	35.6%	28.1%	18.2%	=3.2%	=28.0%	=47.2%	=64.4%	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	.999	1.904						
	*****	25.7%	23.2%						
S/DEPTH=1.1	.000	.814	1.559	2.182					
	*****	21.7%	19.5%	15.9%					
S/DEPTH=1.0	.000	.666	1.281	1.805	2.485				
	*****	18.2%	16.2%	13.0%	3.2%				
S/DEPTH=.9	.000	.546	1.054	1.492	2.080	2.238	1.904		
	*****	15.2%	13.4%	10.6%	1.7%	=15.2%	=38.0%		
S/DEPTH=.8	.000	.447	.866	1.230	1.732	1.893	1.639	.848	.000
	*****	12.6%	11.0%	8.4%	.4%	=15.0%	=35.3%	=70.7%	*****
S/DEPTH=.7	.000	.365	.707	1.008	1.430	1.584	1.392	.736	.000
	*****	10.4%	9.0%	6.6%	=.8%	=14.7%	=33.1%	=64.3%	*****
S/DEPTH=.6	.000	.294	.571	.816	1.166	1.306	1.162	.625	.000
	*****	8.6%	7.3%	5.1%	=1.7%	=14.5%	=31.2%	=59.1%	*****
S/DEPTH=.5	.000	.233	.453	.648	.931	1.052	.946	.517	.000
	*****	7.1%	5.9%	3.9%	=2.4%	=14.3%	=29.6%	=55.0%	*****
S/DEPTH=.4	.000	.179	.348	.498	.720	.819	.742	.410	.000
	*****	5.9%	4.8%	2.9%	=3.0%	=14.1%	=28.4%	=51.7%	*****
S/DEPTH=.3	.000	.130	.253	.363	.525	.601	.548	.305	.000
	*****	*****	4.0%	2.2%	=3.4%	=14.0%	=27.4%	=49.3%	*****
S/DEPTH=.2	.000	.084	.165	.236	.343	.394	.361	.203	.000
	*****	*****	3.4%	1.7%	=3.7%	=13.9%	=26.8%	=47.6%	*****
S/DEPTH=.1	.000	.042	.081	.117	.170	.195	.179	.101	.000
	*****	*****	*****	*****	=3.9%	=13.8%	=26.4%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 7=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 =	.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	.000	11.228	18.598	22.164	23.029	19.010	13.470	5.745	.000
	*****	56.3%	48.7%	38.3%	14.1%	=19.5%	=56.5%	=114.8%	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	9.057	16.745						
	*****	48.2%	44.6%						
S/DEPTH=1.1	.000	7.220	13.538	18.371					
	*****	43.5%	40.4%	35.5%					
S/DEPTH=1.0	.000	5.837	11.059	15.227	19.800				
	*****	39.1%	36.4%	32.1%	18.4%				
S/DEPTH=.9	.000	4.781	9.131	12.720	17.006	17.109	13.296		
	*****	35.0%	32.6%	28.8%	16.6%	=8.3%	=47.6%		
S/DEPTH=.8	.000	3.967	7.625	10.724	14.695	15.357	12.522	5.806	.000
	*****	31.2%	29.1%	25.7%	14.9%	=6.9%	=39.6%	=108.0%	*****
S/DEPTH=.7	.000	3.337	6.448	9.142	12.805	13.853	11.775	5.838	.000
	*****	27.7%	25.9%	22.9%	13.3%	=5.7%	=33.1%	=86.6%	*****
S/DEPTH=.6	.000	2.849	5.529	7.895	11.276	12.585	11.090	5.808	.000
	*****	24.6%	23.0%	20.3%	11.9%	=4.7%	=27.8%	=70.8%	*****
S/DEPTH=.5	.000	2.473	4.820	6.924	10.060	11.541	10.488	5.743	.000
	*****	21.8%	20.4%	18.1%	10.7%	=3.8%	=23.6%	=58.9%	*****
S/DEPTH=.4	.000	2.190	4.281	6.182	9.116	10.708	9.984	5.665	.000
	*****	19.5%	18.2%	16.2%	9.7%	=3.0%	=20.1%	=49.9%	*****
S/DEPTH=.3	.000	1.983	3.887	5.637	8.413	10.073	9.586	5.590	.000
	*****	17.6%	16.5%	14.7%	8.9%	=2.4%	=17.5%	=43.4%	*****
S/DEPTH=.2	.000	1.842	3.617	5.263	7.927	9.628	9.299	5.530	.000
	*****	16.2%	15.2%	13.6%	8.3%	=1.9%	=15.6%	=38.9%	*****
S/DEPTH=.1	.000	1.760	3.461	5.045	7.642	9.363	9.125	5.490	.000
	*****	15.3%	14.4%	12.9%	8.0%	=1.6%	=14.5%	=36.3%	*****
S/DEPTH=.0	.000	1.733	3.409	4.974	7.548	9.276	9.068	5.477	.000
	*****	15.0%	14.1%	12.7%	7.9%	=1.5%	=14.1%	=35.4%	*****

356

CASE 7=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	150.0	180.0
ETA/HEIGHT#	.683	.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	=21.189	=19.098	=14.296	=8.919	.388	7.795	10.681	10.330	9.460
S/DEPTH#1.3	33.9%	28.9%	14.0%	=15.5%	*****	60.0%	8.7%	=51.3%	=80.5%
S/DEPTH#1.2	=21.149	=18.442	=14.424						
S/DEPTH#1.1	33.8%	26.8%	14.8%						
S/DEPTH#1.0	=18.100	=16.997	=13.949	=9.584					
S/DEPTH# .9	26.5%	23.8%	14.6%	=6.5%					
S/DEPTH# .8	=16.065	=15.232	=12.893	=9.456	=1.207				
S/DEPTH# .7	23.0%	20.8%	13.3%	=2.9%	=341.2%				
S/DEPTH# .6	=14.016	=13.377	=11.568	=8.859	=2.139	5.634	10.142		
S/DEPTH# .5	19.8%	17.9%	11.5%	=1.6%	=145.5%	79.0%	16.8%		
S/DEPTH# .4	=12.044	=11.551	=10.144	=8.009	=2.574	3.964	8.056	9.441	9.005
S/DEPTH# .3	16.9%	15.2%	9.8%	=1.3%	=92.4%	87.8%	18.0%	=58.8%	=89.6%
S/DEPTH# .2	=10.189	=9.808	=8.712	=7.034	=2.673	2.752	6.361	7.970	7.788
S/DEPTH# .1	14.4%	12.9%	8.1%	=1.5%	=68.3%	98.6%	19.0%	=52.5%	=91.6%
S/DEPTH# .0	=8.461	=8.167	=7.318	=6.007	=2.547	1.881	4.975	6.611	6.594
S/DEPTH# .9	12.3%	10.9%	6.6%	=1.9%	=55.1%	111.5%	19.8%	=47.5%	=82.4%
S/DEPTH# .8	=6.853	=6.628	=5.979	=4.970	=2.273	1.261	3.828	5.352	5.431
S/DEPTH# .7	10.5%	9.2%	5.3%	=2.4%	=47.0%	126.7%	20.4%	=43.5%	=75.2%
S/DEPTH# .6	=5.351	=5.184	=4.699	=3.943	=1.902	.823	2.864	4.179	4.299
S/DEPTH# .5	9.0%	7.9%	4.2%	=2.8%	=41.8%	*****	20.8%	=40.5%	=69.6%
S/DEPTH# .4	=3.936	=3.817	=3.473	=2.934	=1.468	.516	2.037	3.074	3.196
S/DEPTH# .3	7.9%	6.9%	3.4%	=3.2%	=38.4%	*****	21.2%	=38.2%	=65.5%
S/DEPTH# .2	=2.587	=2.511	=2.290	=1.943	=1.997	.298	1.307	2.020	2.116
S/DEPTH# .1	7.2%	6.1%	2.8%	=3.4%	*****	*****	21.4%	=36.6%	=62.7%
S/DEPTH# .0	=1.282	=1.245	=1.137	=1.968	=1.503	.136	.639	1.001	1.054
S/DEPTH# .0	6.7%	5.7%	2.5%	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH# .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

357

CASE 7=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/HEIGHT#	.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	11.311	10.232	7.835	5.329	1.759	.087	-.256	-1.589	-2.242
	18.0%	12.8%	=.9%	=20.8%	=77.3%	*****	*****	=26.8%	=34.6%
S/DEPTH#1.3	11.119								
	16.6%								
S/DEPTH#1.2	8.445	8.041	6.929						
	=.9%	=2.8%	=8.6%						
S/DEPTH#1.1	6.492	6.199	5.388	4.232					
	=2.8%	=4.4%	=9.4%	=18.3%					
S/DEPTH#1.0	5.039	4.824	4.221	3.353	1.456				
	=4.2%	=5.6%	=9.8%	=17.4%	=49.0%				
S/DEPTH# .9	3.942	3.780	3.326	2.666	1.194	.082	-.239		
	=5.1%	=6.3%	=10.0%	=16.5%	=43.3%	*****	*****		
S/DEPTH# .8	3.098	2.975	2.629	2.123	.976	.075	-.177	1.412	2.087
	=5.7%	=6.7%	=9.9%	=15.6%	=38.6%	*****	*****	=36.0%	=44.6%
S/DEPTH# .7	2.436	2.342	2.078	1.687	.791	.066	-.132	1.142	1.710
	=5.9%	=6.9%	=9.7%	=14.7%	=34.7%	*****	*****	=32.6%	=50.9%
S/DEPTH# .6	1.907	1.835	1.632	1.332	.635	.057	-.099	.914	1.384
	=6.1%	=6.9%	=9.4%	=13.9%	=31.6%	*****	*****	=29.8%	=46.1%
S/DEPTH# .5	1.474	1.419	1.265	1.036	.500	.048	-.074	.719	1.098
	=6.0%	=6.8%	=9.1%	=13.2%	*****	*****	*****	=27.6%	=42.3%
S/DEPTH# .4	1.110	1.069	.955	.784	.382	.038	-.054	.548	.844
	=6.0%	=6.7%	=8.8%	=12.5%	*****	*****	*****	*****	=39.4%
S/DEPTH# .3	.794	.766	.684	.563	.277	.028	-.038	.397	.613
	=5.9%	=6.5%	=8.5%	*****	*****	*****	*****	*****	=37.2%
S/DEPTH# .2	.513	.494	.442	.364	.180	.019	-.024	.258	.400
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .1	.251	.242	.217	.179	.089	.009	-.012	.127	.197
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

358

CASE 7=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=	.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	.000	5.244	9.159	11.973	13.306	12.332	9.803	4.860	.000
	*****	41.0%	34.2%	25.3%	5.8%	=16.6%	=34.4%	=51.9%	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	4.346	8.317						
	*****	32.2%	29.9%						
S/DEPTH=1.1	.000	3.536	6.810	9.614					
	*****	29.1%	27.0%	23.7%					
S/DEPTH=1.0	.000	2.887	5.585	7.940	11.236				
	*****	26.4%	24.6%	21.6%	12.5%				
S/DEPTH=.9	.000	2.358	4.580	6.547	9.400	10.614	9.499		
	*****	24.0%	22.4%	19.7%	11.5%	=4.4%	=26.0%		
S/DEPTH=.8	.000	1.922	3.745	5.379	7.819	8.993	8.208	4.531	.000
	*****	21.9%	20.5%	18.1%	10.6%	=3.8%	=23.2%	=57.4%	*****
S/DEPTH=.7	.000	1.558	3.044	4.389	6.447	7.535	6.993	3.948	.000
	*****	20.2%	18.9%	16.7%	9.9%	=3.3%	=20.9%	=51.6%	*****
S/DEPTH=.6	.000	1.250	2.447	3.539	5.246	6.215	5.851	3.366	.000
	*****	18.7%	17.5%	15.6%	9.3%	=2.8%	=19.0%	=46.9%	*****
S/DEPTH=.5	.000	.985	1.931	2.800	4.181	5.010	4.773	2.788	.000
	*****	17.5%	16.4%	14.6%	8.8%	=2.4%	=17.5%	=43.2%	*****
S/DEPTH=.4	.000	.753	1.477	2.147	3.225	3.900	3.750	2.217	.000
	*****	16.6%	15.6%	13.9%	8.4%	=2.1%	=16.3%	=40.3%	*****
S/DEPTH=.3	.000	.544	1.070	1.558	2.350	2.862	2.772	1.655	.000
	*****	*****	14.9%	13.3%	8.1%	=1.9%	=15.3%	=38.2%	*****
S/DEPTH=.2	.000	.354	.696	1.014	1.535	1.879	1.829	1.099	.000
	*****	*****	14.4%	12.9%	8.0%	=1.7%	=14.7%	=36.7%	*****
S/DEPTH=.1	.000	.174	.343	.500	.758	.930	.909	.548	.000
	*****	*****	*****	*****	7.8%	=1.6%	=14.3%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

359

CASE 7=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 =	.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
S/DEPTH=1.3	25.6%	19.5%	2.6%	=23.0%	=100.9%	*****	*****	=24.4%	=27.1%
S/DEPTH=1.2	10.372	7.023	5.697						
S/DEPTH=1.1	23.8%	.6%	=1.5%	=8.2%					
S/DEPTH=1.0	4.772	4.546	3.922	3.042					
S/DEPTH=.9	=1.7%	=3.6%	=9.3%	=19.7%					
S/DEPTH=.8	3.243	3.098	2.694	2.117	.883				
S/DEPTH=.7	=3.9%	=5.1%	=10.0%	=18.9%	=57.1%				
S/DEPTH=.6	2.198	2.104	1.842	1.463	.634	.036	=.142		
S/DEPTH=.5	=4.7%	=6.1%	=10.3%	=18.0%	=50.1%	*****	*****		
S/DEPTH=.4	1.479	1.418	1.248	1.000	.447	.030	=.090	=.650	=.942
S/DEPTH=.3	=5.5%	=6.7%	=10.3%	=16.9%	*****	*****	*****	=40.7%	=44.3%
S/DEPTH=.2	.981	.943	.833	.673	.309	.023	=.056	=.447	=.659
S/DEPTH=.1	=5.9%	=7.0%	=10.2%	=15.9%	*****	*****	*****	*****	=57.7%
S/DEPTH=.0	.637	.612	.543	.441	.207	.017	=.035	=.299	=.447
S/DEPTH=.9	=6.1%	=7.0%	=9.9%	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.398	.383	.340	.278	.133	.012	=.021	=.191	=.289
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.233	.225	.200	.164	.079	.008	=.012	=.114	=.175
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.123	.118	.106	.087	.042	.004	=.006	=.061	=.094
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.052	.050	.045	.037	.018	.002	=.002	=.026	=.040
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.013	.012	.011	.009	.004	.000	=.001	=.006	=.010
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	.000	.000	.000	.000	.000	=.000	=.000	=.000
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****

360

CASE 7=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	.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	.000	4.491	7.434	8.777	8.761	6.925	4.846	2.109	.000
	*****	48.4%	40.0%	28.5%	2.2%	=27.5%	=46.9%	=56.4%	*****
S/DEPTH=1.3	.000								

S/DEPTH=1.2	.000	3.371	6.403						
	*****	36.6%	34.0%						
S/DEPTH=1.1	.000	2.439	4.667	6.525					
	*****	33.1%	30.8%	27.0%					
S/DEPTH=1.0	.000	1.756	3.379	4.764	6.588				
	*****	29.9%	27.8%	24.5%	14.1%				
S/DEPTH=.9	.000	1.253	2.422	3.439	4.842	5.296	4.569		
	*****	27.0%	25.2%	22.2%	12.8%	=5.4%	=31.2%		
S/DEPTH=.8	.000	.882	1.712	2.444	3.496	3.917	3.471	1.837	.000
	*****	24.4%	22.8%	20.2%	11.7%	=4.6%	=27.3%	=68.6%	*****
S/DEPTH=.7	.000	.608	1.185	1.700	2.465	2.822	2.560	1.399	.000
	*****	22.2%	20.8%	18.4%	10.8%	=3.9%	=24.0%	=59.7%	*****
S/DEPTH=.6	.000	.408	.796	1.147	1.683	1.963	1.816	1.021	.000
	*****	*****	19.0%	16.8%	9.9%	=3.3%	=21.2%	=52.6%	*****
S/DEPTH=.5	.000	.261	.512	.740	1.097	1.299	1.223	.703	.000
	*****	*****	17.5%	15.5%	9.3%	=2.8%	=19.0%	=47.0%	*****
S/DEPTH=.4	.000	.157	.307	.445	.666	.799	.762	.446	.000
	*****	*****	*****	*****	8.7%	=2.4%	=17.3%	*****	*****
S/DEPTH=.3	.000	.084	.164	.239	.359	.435	.420	.249	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.036	.070	.102	.155	.189	.184	.110	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.009	.017	.025	.038	.047	.045	.027	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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
	23.4X	20.1X	11.0X	=3.1X	=55.6X	*****	47.3X	=25.4X	=44.0X
SURFACE	1.305	1.233	1.056	.840	.413	.021	.329	.611	.695
S/DEPTH=1.3	19.6X	16.7X	9.0X	=2.0X	=36.8X	*****	21.4X	=12.1X	=18.9X
S/DEPTH=1.2	1.297								
S/DEPTH=1.1	19.1X	1.126	1.013						
S/DEPTH=1.0	1.166	11.2X	6.7X						
S/DEPTH=.9	12.6X	1.013	.922	.782					
S/DEPTH=.8	1.044	9.6X	5.9X	.9X					
S/DEPTH=.7	10.8X	.910	.836	.721	.410				
S/DEPTH=.6	9.36X	8.1X	5.0X	.6X	=25.8X				
S/DEPTH=.5	9.2X	.819	.758	.663	.399	.020	.314		
S/DEPTH=.4	8.40X	6.9X	4.2X	.5X	=20.7X	*****	28.5X	.575	.673
S/DEPTH=.3	7.8X	.740	.689	.609	.384	.050	.257	=15.6X	=22.7X
S/DEPTH=.2	6.6X	5.9X	3.6X	.4X	=17.0X	*****	31.0X	.520	.619
S/DEPTH=.1	6.86X	.672	.629	.561	.367	.071	.211	=11.3X	=22.6X
S/DEPTH=.0	5.7X	5.0X	3.1X	.3X	=14.2X	=128.5X	33.7X	.473	.574
S/DEPTH=.9	6.27X	.615	.578	.520	.350	.086	.175	.435	.535
S/DEPTH=.8	4.9X	4.4X	2.7X	.2X	=12.0X	=88.9X	36.6X	=7.5X	=17.4X
S/DEPTH=.7	4.9X	.578	.536	.485	.335	.096	.147	.435	.535
S/DEPTH=.6	4.4X	3.9X	2.5X	.1X	=10.2X	=67.5X	39.8X	=4.2X	=13.1X
S/DEPTH=.5	.540	.530	.502	.456	.322	.102	.126	.405	.504
S/DEPTH=.4	4.0X	3.6X	2.3X	.1X	=8.8X	=54.6X	43.0X	=1.4X	=9.4X
S/DEPTH=.3	.510	.501	.476	.434	.311	.106	.110	.382	.480
S/DEPTH=.2	3.8X	3.4X	2.2X	.2X	=7.7X	=46.4X	46.1X	.9X	=6.5X
S/DEPTH=.1	.489	.481	.458	.419	.303	.109	.100	.366	.464
S/DEPTH=.0	3.6X	3.3X	2.2X	.3X	=6.9X	=41.3X	48.8X	2.6X	=4.4X
S/DEPTH=.9	.477	.469	.447	.410	.298	.110	.094	.356	.453
S/DEPTH=.8	3.5X	3.2X	2.2X	.4X	=6.5X	=38.6X	50.6X	3.7X	=3.2X
S/DEPTH=.7	.473	.465	.443	.407	.297	.111	.092	.353	.450
S/DEPTH=.6	3.5X	3.2X	2.2X	.5X	=6.3X	=37.7X	51.2X	4.0X	=2.7X

362

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 CONDITON 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 XI=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) DIMENSIONLESS 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, $LO = (G/6.28318) * T^{**2}$
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 = .124492 DPT/LO = .199999
H/DPT = .622465
L/LO = 1.035156 PSI/(G*H*T) = .010896

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) =	= .332090=01	X(2)/(H*T*G) =	= .145664=02
X(3)/(H*T*G) =	= .638587=04	X(4)/(H*T*G) =	= .351129=05
X(5)/(H*T*G) =	= .400131=06	X(6)/(H*T*G) =	= .323351=07
X(7)/(H*T*G) =	= .807129=08	X(8)/(H*T*G) =	= .231839=08
X(9)/(H*T*G) =	= .564928=09		

CASE 7=D

TABLE I=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	.147	.247	.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	1.425	1.607	
	30.4%	6.2%	22.3%	50.7%	130.5%	*****	27.3%	42.9%	52.8%	
S/DEPTH=1.4	6.670									
	20.4%									
S/DEPTH=1.3	5.323	4.946								
	1.8%	4.1%								
S/DEPTH=1.2	4.386	4.156	3.586	2.873						
	4.3%	8.4%	19.9%	37.9%						
S/DEPTH=1.1	3.692	3.536	3.125	2.564						
	8.7%	11.8%	20.7%	35.6%						
S/DEPTH=1.0	3.155	3.042	2.733	2.288	1.226					
	12.0%	14.4%	21.5%	33.7%	85.3%					
S/DEPTH=.9	2.733	2.647	2.405	2.048	1.158	.061	.778			
	14.3%	16.2%	22.1%	32.1%	73.4%	*****	30.3%			
S/DEPTH=.8	2.395	2.327	2.134	1.841	1.089	.116	.664	1.372	1.577	
	15.9%	17.5%	22.3%	30.6%	63.9%	*****	27.4%	48.4%	100.0%	
S/DEPTH=.7	2.125	2.070	1.911	1.667	1.023	.155	.572	1.270	1.480	
	17.0%	18.2%	22.2%	29.1%	56.2%	*****	24.6%	49.9%	65.9%	
S/DEPTH=.6	1.909	1.863	1.729	1.522	.963	.182	.498	1.183	1.396	
	17.5%	18.6%	21.9%	27.6%	49.8%	*****	21.8%	45.3%	60.7%	
S/DEPTH=.5	1.738	1.698	1.584	1.405	.910	.200	.440	1.110	1.324	
	17.7%	18.6%	21.4%	26.2%	44.5%	*****	19.2%	41.2%	54.5%	
S/DEPTH=.4	1.606	1.571	1.470	1.311	.867	.212	.395	1.051	1.266	
	17.7%	18.5%	20.8%	24.8%	40.2%	*****	16.8%	37.8%	49.3%	
S/DEPTH=.3	1.507	1.476	1.385	1.240	.832	.219	.361	1.005	1.221	
	17.6%	18.2%	20.2%	23.7%	36.8%	*****	*****	35.0%	45.1%	
S/DEPTH=.2	1.439	1.410	1.326	1.191	.808	.224	.338	.973	1.188	
	17.4%	17.9%	19.7%	22.8%	34.4%	*****	*****	32.9%	42.1%	
S/DEPTH=.1	1.399	1.371	1.291	1.162	.793	.226	.325	.954	1.169	
	17.2%	17.8%	19.4%	22.2%	32.9%	*****	*****	31.6%	40.3%	
S/DEPTH=.0	1.386	1.358	1.279	1.152	.788	.227	.320	.948	1.162	
	17.2%	17.7%	19.3%	22.0%	32.4%	*****	*****	31.2%	39.7%	

367

CASE 7=0

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=	.724	.860	.443	.326	.137	.033	-.147	-.247	-.276
	31.0%	15.1%	-6.1%	-32.7%	-134.7%	*****	41.0%	-55.3%	-81.2%

SURFACE	.000	1.827	2.348	2.554	2.486	2.011	1.430	.632	.000
	*****	52.3%	28.4%	7.0%	-31.8%	-71.1%	-98.2%	-114.1%	*****
S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000	1.478							
	*****	41.6%							
S/DEPTH=1.2	.000	1.096	1.954	2.537					
	*****	32.2%	25.1%	15.7%					
S/DEPTH=1.1	.000	.844	1.551	2.067					
	*****	24.5%	19.0%	11.2%					
S/DEPTH=1.0	.000	.665	1.243	1.687	2.143				
	*****	18.0%	13.7%	7.0%	-12.2%				
S/DEPTH=.9	.000	.531	1.003	1.379	1.795	1.782	1.414		
	*****	12.7%	9.0%	3.2%	-13.9%	-44.7%	-85.9%		
S/DEPTH=.8	.000	.426	.811	1.125	1.495	1.518	1.232	.599	.000
	*****	8.2%	5.0%	-.1%	-15.5%	-43.3%	-60.0%	-126.0%	*****
S/DEPTH=.7	.000	.342	.654	.914	1.234	1.278	1.057	.525	.000
	*****	4.5%	1.7%	-2.9%	-16.8%	-42.2%	-75.2%	-130.2%	*****
S/DEPTH=.6	.000	.273	.523	.735	1.006	1.059	.890	.450	.000
	*****	1.4%	-1.1%	-5.2%	-17.9%	-41.2%	-71.3%	-120.9%	*****
S/DEPTH=.5	.000	.214	.412	.581	.803	.857	.729	.375	.000
	*****	-1.1%	-3.4%	-7.1%	-18.8%	-40.4%	-68.1%	-113.5%	*****
S/DEPTH=.4	.000	.163	.315	.445	.620	.669	.575	.299	.000
	*****	-3.1%	-5.2%	-8.7%	-19.6%	-39.8%	-65.6%	-107.8%	*****
S/DEPTH=.3	.000	.118	.228	.323	.452	.492	.427	.224	.000
	*****	*****	-6.5%	-9.8%	-20.1%	-39.3%	-63.7%	-103.4%	*****
S/DEPTH=.2	.000	.077	.148	.210	.296	.323	.282	.149	.000
	*****	*****	-7.5%	-10.6%	-20.5%	-38.9%	-62.4%	-100.4%	*****
S/DEPTH=.1	.000	.038	.073	.104	.146	.160	.140	.074	.000
	*****	*****	*****	*****	-20.7%	-38.7%	-61.6%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

360

CASE 7=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	.724	.580	.443	.326	.137	-.033	-.147	-.247	-.276
	31.0%	15.1%	-6.1%	-32.7%	-134.7%	*****	41.0%	-55.3%	-81.2%
SURFACE	.000	23.658	23.538	22.850	19.677	14.544	9.342	3.816	.000
	*****	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%	8.3%	-35.7%	-111.2%		
S/DEPTH=.8	.000	4.234	7.882	10.613	13.181	12.402	9.196	3.945	.000
	*****	37.8%	33.8%	27.3%	7.3%	-31.2%	-91.1%	-201.1%	*****
S/DEPTH=.7	.000	3.444	6.501	8.915	11.532	11.383	8.932	4.129	.000
	*****	32.8%	29.3%	23.7%	6.2%	-27.4%	-76.6%	-170.7%	*****
S/DEPTH=.6	.000	2.862	5.459	7.597	10.178	10.495	8.627	4.229	.000
	*****	28.3%	25.4%	20.5%	5.1%	-24.2%	-65.5%	-141.2%	*****
S/DEPTH=.5	.000	2.431	4.675	6.584	9.089	9.744	8.327	4.279	.000
	*****	24.5%	21.9%	17.6%	4.2%	-21.5%	-56.8%	-119.8%	*****
S/DEPTH=.4	.000	2.115	4.094	5.822	8.238	9.131	8.056	4.299	.000
	*****	21.3%	19.0%	15.3%	3.4%	-19.3%	-50.1%	-104.1%	*****
S/DEPTH=.3	.000	1.889	3.675	5.266	7.603	8.657	7.832	4.303	.000
	*****	18.7%	16.7%	13.4%	2.9%	-17.5%	-45.0%	-92.8%	*****
S/DEPTH=.2	.000	1.738	3.393	4.889	7.163	8.319	7.666	4.300	.000
	*****	16.8%	15.0%	12.0%	2.5%	-16.2%	-41.5%	-85.2%	*****
S/DEPTH=.1	.000	1.651	3.230	4.671	6.904	8.118	7.564	4.295	.000
	*****	15.6%	14.0%	11.2%	2.2%	-15.4%	-39.4%	-80.8%	*****
S/DEPTH=.0	.000	1.622	3.177	4.599	6.819	8.051	7.529	4.293	.000
	*****	15.3%	13.6%	10.9%	2.2%	-15.2%	-38.7%	-79.3%	*****

69C

CASE 7=D

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	.724	.580	.443	.326	.137	-.033	-.147	-.247	-.276	
	31.0%	15.1%	-6.1%	-32.7%	-134.7%	*****	41.0%	-55.3%	-81.2%	
SURFACE	=9.174	=10.405	=5.814	=2.687	4.379	7.942	8.962	7.412	6.689	
	11.1%	25.3%	=14.2%	=81.4%	101.3%	18.5%	=28.4%	=103.1%	=132.5%	
S/DEPTH#1.4	=16.934									
	51.6%									
S/DEPTH#1.3	=20.523	=14.288								
	59.2%	44.8%								
S/DEPTH#1.2	=19.490	=15.962	=8.928	=2.785						
	50.4%	42.1%	10.0%	=117.5%						
S/DEPTH#1.1	=17.434	=15.295	=10.410	=5.072						
	42.1%	36.3%	16.3%	=38.2%						
S/DEPTH#1.0	=15.216	=13.827	=10.369	=6.102	2.175					
	34.5%	30.1%	15.4%	=20.0%	234.2%					
S/DEPTH# .9	=13.082	=12.129	=9.628	=6.311	.513	6.354	8.802			
	27.9%	24.3%	12.5%	=13.9%	*****	52.9%	=16.4%			
S/DEPTH# .8	=11.106	=10.427	=8.587	=6.031	-.478	4.721	7.098	6.905	6.419	
	22.1%	19.1%	9.2%	=12.0%	*****	61.0%	=12.1%	=118.1%	100.0%	
S/DEPTH# .7	=9.303	=8.808	=7.439	=5.477	=1.015	3.460	5.692	5.887	5.531	
	17.1%	14.5%	6.0%	=11.8%	*****	69.5%	=8.3%	=123.7%	=181.2%	
S/DEPTH# .6	=7.663	=7.298	=6.275	=4.778	=1.243	2.501	4.813	4.937	4.697	
	13.0%	10.6%	3.0%	=12.3%	=157.2%	78.5%	=5.1%	=112.8%	=172.1%	
S/DEPTH# .5	=6.168	=5.899	=5.138	=4.008	=1.261	1.778	3.514	4.037	3.889	
	9.5%	7.4%	.5%	=13.1%	=121.1%	87.8%	=2.5%	=104.0%	=158.8%	
S/DEPTH# .4	=4.793	=4.598	=4.043	=3.208	=1.137	1.234	2.655	3.178	3.095	
	6.7%	4.8%	=1.5%	=14.0%	=102.2%	97.1%	=.4%	=97.1%	=148.4%	
S/DEPTH# .3	=3.513	=3.377	=2.989	=2.402	-.919	.822	1.902	2.353	2.311	
	4.6%	2.8%	=3.1%	=14.7%	*****	*****	1.2%	=92.0%	=140.6%	
S/DEPTH# .2	=2.303	=2.217	=1.971	=1.597	-.642	.500	1.227	1.554	1.536	
	3.1%	1.4%	=4.2%	=15.2%	*****	*****	2.3%	=88.5%	=135.2%	
S/DEPTH# .1	=1.140	=1.099	=.979	-.797	-.329	.236	.601	.772	.766	
	2.3%	.6%	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

370

CASE 7=D

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.724	.580	.443	.326	.137	.033	.147	.247	.276
	31.0%	15.1%	6.1%	32.7%	134.7%	*****	41.0%	55.3%	81.2%
SURFACE	15.161	9.973	6.198	3.739	1.044	.033	.210	1.049	1.437
	25.9%	8.0%	52.7%	103.0%	237.2%	*****	*****	67.2%	74.8%
S/DEPTH=1.4	12.580								
	10.7%								
S/DEPTH=1.3	9.023	8.303							
	21.0%	27.6%							
S/DEPTH=1.2	6.684	6.241	5.117	3.712					
	27.5%	32.4%	47.0%	72.1%					
S/DEPTH=1.1	5.061	4.768	3.994	2.974					
	31.9%	35.8%	47.6%	68.3%					
S/DEPTH=1.0	3.895	3.690	3.138	2.386					
	34.8%	38.0%	47.8%	65.0%	.910				
S/DEPTH=.9	3.031	2.884	2.480	1.917	138.3%				
	36.7%	39.3%	47.5%	62.1%	122.9%	.033	.205		
S/DEPTH=.8	2.376	2.267	1.966	1.540	.642	.032	.154	.958	1.365
	37.7%	40.0%	47.0%	59.4%	*****	*****	*****	83.0%	100.0%
S/DEPTH=.7	1.867	1.785	1.558	1.233	.530	.031	.115	.784	1.132
	38.2%	40.2%	46.3%	57.0%	*****	*****	*****	93.2%	121.9%
S/DEPTH=.6	1.462	1.400	1.228	.979	.432	.028	.087	.634	.926
	38.4%	40.1%	45.5%	55.0%	*****	*****	*****	*****	118.5%
S/DEPTH=.5	1.130	1.084	.954	.765	.344	.024	.065	.503	.741
	38.3%	39.9%	44.7%	53.2%	*****	*****	*****	*****	*****
S/DEPTH=.4	.852	.817	.721	.581	.265	.020	.048	.386	.573
	38.1%	39.5%	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.610	.586	.518	.419	.193	.015	.033	.281	.419
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.394	.378	.335	.271	.126	.010	.021	.183	.274
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.193	.186	.165	.133	.062	.005	.010	.090	.136
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 7=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=	.724	.580	.443	.326	.137	.033	.147	.247	.276
	31.0%	15.1%	6.1%	32.7%	134.7%	*****	41.0%	55.3%	81.2%
SURFACE	.000	7.634	10.353	11.559	11.676	10.009	7.541	3.578	.000
	*****	56.0%	37.1%	19.7%	13.1%	46.7%	72.2%	92.6%	*****
S/DEPTH=1.4	.000								

S/DEPTH=1.3	.000	6.363							
	*****	47.8%							
S/DEPTH=1.2	.000	4.841	8.722	11.486					
	*****	41.6%	35.6%	27.7%					
S/DEPTH=1.1	.000	3.768	6.977	9.409					
	*****	36.3%	31.7%	25.0%					
S/DEPTH=1.0	.000	2.977	5.606	7.694	10.096				
	*****	31.9%	28.1%	22.3%	5.4%				
S/DEPTH=.9	.000	2.373	4.518	6.284	8.469	8.895	7.463		
	*****	28.2%	25.0%	19.9%	4.7%	23.1%	61.5%		
S/DEPTH=.8	.000	1.898	3.643	5.119	7.056	7.598	6.535	3.397	.000
	*****	25.1%	22.3%	17.8%	4.1%	21.3%	55.9%	102.9%	*****
S/DEPTH=.7	.000	1.516	2.927	4.146	5.823	6.410	5.628	2.993	.000
	*****	22.5%	20.0%	16.0%	3.6%	19.8%	51.4%	106.5%	*****
S/DEPTH=.6	.000	1.202	2.331	3.323	4.739	5.317	4.750	2.874	.000
	*****	20.4%	18.2%	14.5%	3.2%	18.6%	47.8%	98.6%	*****
S/DEPTH=.5	.000	.939	1.826	2.617	3.778	4.307	3.902	2.149	.000
	*****	18.7%	16.7%	13.4%	2.8%	17.5%	44.9%	92.4%	*****
S/DEPTH=.4	.000	.712	1.389	1.998	2.914	3.364	3.083	1.720	.000
	*****	17.4%	15.5%	12.4%	2.5%	16.7%	42.6%	87.5%	*****
S/DEPTH=.3	.000	.513	1.002	1.445	2.123	2.476	2.289	1.289	.000
	*****	*****	14.6%	11.7%	2.3%	16.1%	40.9%	83.9%	*****
S/DEPTH=.2	.000	.332	.650	.939	1.387	1.628	1.515	.859	.000
	*****	*****	14.1%	11.2%	2.2%	15.6%	39.8%	81.4%	*****
S/DEPTH=.1	.000	.163	.319	.462	.685	.807	.754	.429	.000
	*****	*****	*****	*****	2.1%	15.4%	39.0%	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

372

CASE 7=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	.724	.580	.443	.326	.137	.033	.147	.247	.276
	31.0%	15.1%	-6.1%	-32.7%	-134.7%	*****	41.0%	-55.3%	-81.2%
SURFACE	17.042	10.013	5.528	2.987	.669	.012	-.126	-.508	-.663
	39.0%	1.0%	-55.3%	-124.9%	*****	*****	*****	*****	*****
S/DEPTH=1.4	13.360								
	22.2%								
S/DEPTH=1.3	8.546	7.788							
	-16.9%	=24.4%							
S/DEPTH=1.2	5.614	5.205	4.189	2.955					
	-24.3%	-30.0%	=47.1%	=77.1%					
S/DEPTH=1.1	3.743	3.507	2.894	2.105					
	-29.7%	=34.2%	=48.1%	=73.0%					
S/DEPTH=1.0	2.515	2.373	1.993	1.486	.529				
	-33.4%	-37.2%	=48.7%	=69.3%	*****				
S/DEPTH=.9	1.693	1.605	1.367	1.040	.394	.012	-.122		
	-35.9%	-39.0%	=48.7%	=66.0%	*****	*****	*****		
S/DEPTH=.8	1.134	1.080	.929	.718	.286	.011	-.077	-.433	-.605
	-37.5%	-40.1%	=48.2%	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.752	.717	.622	.487	.203	.010	-.049	-.303	-.430
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.487	.466	.407	.322	.139	.008	-.030	-.205	-.295
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.305	.292	.256	.204	.090	.006	-.018	-.132	-.194
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.179	.172	.151	.121	.055	.004	-.010	-.080	-.118
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.094	.090	.080	.064	.030	.002	-.005	-.043	-.064
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.040	.038	.034	.027	.013	.001	-.002	-.018	-.028
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.010	.009	.008	.007	.003	.000	-.001	-.005	-.007
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

373

CASE 7=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/HEIGHT#	.724	.580	.443	.326	.137	-.033	-.147	-.247	-.276
	31.0%	15.1%	=6.1%	=32.7%	=134.7%	*****	41.0%	=55.3%	=81.2%
SURFACE	.000	7.536	8.946	8.967	7.552	5.422	3.570	1.495	.000
	*****	63.8%	41.7%	19.1%	=26.5%	=70.4%	=93.2%	=88.8%	*****
S/DEPTH#1.4	.000								

S/DEPTH#1.3	.000	5.844							
	*****	54.1%							
S/DEPTH#1.2	.000	3.936	6.925	8.881					
	*****	47.5%	40.9%	31.9%					
S/DEPTH#1.1	.000	2.700	4.915	6.488					
	*****	41.7%	36.5%	28.9%					
S/DEPTH#1.0	.000	1.868	3.473	4.685	5.903				
	*****	36.7%	32.4%	25.9%	6.5%				
S/DEPTH# .9	.000	1.292	2.437	3.344	4.355	4.374	3.499		
	*****	32.3%	28.7%	23.0%	5.7%	=26.3%	=72.4%		
S/DEPTH# .8	.000	.888	1.691	2.351	3.152	3.271	2.710	1.346	.000
	*****	28.5%	25.4%	20.4%	5.0%	=23.9%	=64.1%	=109.6%	*****
S/DEPTH# .7	.000	.601	1.153	1.620	2.226	2.379	2.030	1.043	.000
	*****	25.2%	22.5%	18.1%	4.3%	=21.8%	=57.5%	=120.8%	*****
S/DEPTH# .6	.000	.396	.765	1.084	1.521	1.668	1.459	.771	.000
	*****	*****	20.1%	16.1%	3.6%	=20.0%	=52.2%	=108.5%	*****
S/DEPTH# .5	.000	.251	.487	.695	.991	1.112	.992	.537	.000
	*****	*****	18.0%	14.4%	3.1%	=18.6%	=47.9%	=98.9%	*****
S/DEPTH# .4	.000	.149	.290	.416	.602	.687	.624	.344	.000
	*****	*****	*****	*****	2.7%	=17.4%	=44.5%	*****	*****
S/DEPTH# .3	.000	.079	.154	.222	.324	.376	.346	.193	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .2	.000	.034	.066	.095	.140	.164	.152	.086	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .1	.000	.008	.016	.023	.034	.040	.038	.021	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH# .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

374

CASE 7=D

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#	.724	.580	.443	.326	.137	.033	.147	.247	.276
	31.0%	15.1%	=6.1%	=32.7%	=134.7%	*****	41.0%	=55.3%	=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	1.333	1.118							
S/DEPTH#1.2	17.0%	12.1%							
S/DEPTH#1.1	1.209	1.020	.868	.672					
S/DEPTH#1.0	12.4%	9.0%	.7%	=16.9%					
S/DEPTH# .9	1.081	.920	.805	.646					
S/DEPTH# .8	12.4%	5.7%	=1.9%	=15.1%					
S/DEPTH# .7	.963	.827	.738	.610	.300				
S/DEPTH# .6	8.3%	.827	.738	.610	.300				
S/DEPTH# .5	.859	.744	.674	.570	.308	.026	.292		
S/DEPTH# .4	4.7%	.744	.674	.570	.308	.026	.292		
S/DEPTH# .3	.769	.672	.616	.531	.308	.009	.241	.480	.552
S/DEPTH# .2	1.6%	.672	.616	.531	.308	.009	.241	.480	.552
S/DEPTH# .1	.692	.611	.565	.494	.303	.035	.201	.439	.515
S/DEPTH# .0	1.0%	.611	.565	.494	.303	.035	.201	.439	.515
S/DEPTH# .9	.627	.44%	.8.0%	=14.5%	=40.9%	*****	36.3%	=30.5%	=45.4%
S/DEPTH# .8	3.2%	.560	.522	.462	.295	.053	.168	.405	.482
S/DEPTH# .7	.573	.518	.485	.434	.287	.067	.143	.376	.455
S/DEPTH# .6	.49%	.485	.456	.411	.280	.076	.123	.353	.432
S/DEPTH# .5	.529	.459	.434	.393	.273	.083	.109	.336	.415
S/DEPTH# .4	.6.2%	.442	.418	.380	.268	.087	.099	.323	.403
S/DEPTH# .3	.494	.442	.418	.380	.268	.087	.099	.323	.403
S/DEPTH# .2	.7.2%	.431	.409	.372	.265	.089	.093	.316	.396
S/DEPTH# .1	.468	.431	.409	.372	.265	.089	.093	.316	.396
S/DEPTH# .0	.439	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .9	.435	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .8	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .7	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .6	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .5	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .4	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .3	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .2	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .1	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393
S/DEPTH# .0	.8.8%	.428	.406	.370	.264	.090	.091	.314	.393

375

CASE 7-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	.371	.587	.629	.443	.137	-.066	-.135	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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	-.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

CASE 7=0

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 .039687
(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

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 = .041995 DPT/LO = .499998
H/DPT = .083990
L/LO = 1.013086 PSI/(G*H*T) = .005178

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(H*T*G) = .714280E02 X(2)/(H*T*G) = .622897E06

CASE 8-A

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.534 6.3X	.524 6.0X	.494 4.9X	.447 3.0X	.310 3.6X	.097 32.8X	.116 25.0X	.373 2.6X	.466 7.3X
SURFACE	3.575	3.511	3.322	3.021	2.156	.812	-.533	-2.153	-2.737
S/DEPTH=1.0	.5X 3.111 -1.3X	.6X 3.063 -1.3X	.9X 2.921 -1.3X	-1.2X 2.690 -1.4X	-2.2X 1.990 -1.8X	-3.9X .792 -3.0X	-.3X	-1.3X	-.9X
S/DEPTH=.9	2.283	2.248	2.144	1.975	1.462	.584	-.401	-1.743	-2.270
S/DEPTH=.8	.9X 1.678 .4X	.9X 1.653 .4X	.9X 1.577 .5X	-1.0X 1.452 .5X	-1.2X 1.076 .7X	-2.1X .430 -1.3X	.4X -.294 .5X	-1.2X -1.282 .7X	-1.4X -1.671 .8X
S/DEPTH=.7	1.238	1.219	1.163	1.071	.794	.318	-.216	-.946	-1.234
S/DEPTH=.6	.0X .917 .5X	.0X .903 .5X	.0X .862 .5X	.0X .794 .5X	.1X .589 .4X	.6X .236 .1X	.7X -.160 *****	.1X -.702 .4X	.3X -.915 .3X
S/DEPTH=.5	.686 1.1X	.676 1.1X	.645 1.1X	.594 1.0X	.441 1.0X	.177 *****	.120 *****	.525 1.0X	.685 .9X
S/DEPTH=.4	.522 1.6X	.514 1.6X	.490 1.6X	.452 1.6X	.335 1.6X	.135 *****	-.091 *****	-.399 1.6X	-.521 1.5X
S/DEPTH=.3	.408 2.2X	.402 2.2X	.383 2.2X	.353 2.2X	.262 2.1X	.105 *****	-.071 *****	-.312 2.1X	-.408 2.1X
S/DEPTH=.2	.334 2.7X	.329 2.7X	.314 2.7X	.289 2.7X	.214 2.7X	.086 *****	-.058 *****	-.256 2.7X	-.334 2.6X
S/DEPTH=.1	.292 3.1X	.287 3.1X	.274 3.1X	.253 3.1X	.188 3.0X	.075 *****	-.051 *****	-.224 3.0X	-.292 3.0X
S/DEPTH=.0	.278 3.2X	.274 3.2X	.262 3.2X	.241 3.2X	.179 3.2X	.072 *****	-.048 *****	-.213 3.2X	-.278 3.2X

080

CASE 8=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	.534	.524	.494	.447	.310	.097	-.116	-.373	-.466
	6.3%	6.0%	4.9%	3.0%	-3.6%	-32.8%	29.0%	-2.6%	-7.3%
SURFACE	.000	.620	1.211	1.747	2.578	3.064	2.945	1.789	.000
	*****	-.2%	-.4%	-.8%	-1.6%	-2.4%	-2.6%	-1.8%	*****
S/DEPTH=.0	.000	.540	1.063	1.553	2.376	2.987			
	*****	-.9%	-1.0%	-1.0%	-1.2%	-1.5%			
S/DEPTH=.9	.000	.395	.777	1.135	1.737	2.186	2.223	1.446	.000
	*****	-.6%	-.7%	-.7%	-.8%	-1.1%	-1.3%	-1.7%	*****
S/DEPTH=.8	.000	.288	.567	.829	1.269	1.597	1.625	1.058	.000
	*****	-.3%	-.3%	-.4%	-.5%	-.6%	-.8%	-1.1%	*****
S/DEPTH=.7	.000	.210	.413	.604	.924	1.164	1.185	.772	.000
	*****	.0%	.0%	-.0%	-.1%	-.2%	-.3%	-.5%	*****
S/DEPTH=.6	.000	.152	.299	.437	.670	.844	.859	.560	.000
	*****	*****	.4%	.4%	.3%	.2%	.1%	-.0%	*****
S/DEPTH=.5	.000	.109	.215	.314	.480	.605	.617	.402	.000
	*****	*****	.7%	.7%	.7%	.6%	.5%	.4%	*****
S/DEPTH=.4	.000	.077	.151	.221	.338	.426	.434	.283	.000
	*****	*****	*****	1.0%	1.0%	1.0%	.9%	.8%	*****
S/DEPTH=.3	.000	.052	.102	.149	.228	.288	.293	.191	.000
	*****	*****	*****	*****	1.3%	1.3%	1.2%	1.2%	*****
S/DEPTH=.2	.000	.032	.063	.092	.141	.178	.181	.118	.000
	*****	*****	*****	*****	*****	1.5%	1.4%	*****	*****
S/DEPTH=.1	.000	.015	.030	.044	.067	.085	.086	.056	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 8=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	.534	.924	.494	.447	.310	.097	.116	.373	.466
	6.3%	6.0%	4.9%	3.0%	3.6%	32.8%	25.0%	2.6%	7.3%
SURFACE	.000	3.935	7.684	11.080	16.319	19.352	18.554	11.244	.000
S/DEPTH=1.0	***** .000	.6% 3.427	.4% 6.746	.0% 9.852	1.1% 15.046	2.2% 18.867	2.7% 18.867	2.4% 11.244	***** .000
S/DEPTH=.9	***** .000	.2% 2.507	.3% 4.936	.4% 7.211	.7% 11.024	1.3% 13.848	1.3% 14.058	2.1% 9.122	***** .000
S/DEPTH=.8	***** .000	.1% 1.839	.1% 3.620	.2% 5.290	.4% 8.093	.9% 10.180	1.4% 10.351	2.1% 6.730	***** .000
S/DEPTH=.7	***** .000	.2% 1.353	.1% 2.664	.1% 3.893	.1% 5.960	.4% 7.505	.8% 7.641	1.3% 4.977	***** .000
S/DEPTH=.6	***** .000	.5% 1.000	.4% 1.970	.4% 2.880	.3% 4.412	.0% 5.562	.2% 5.668	.6% 3.698	***** .000
S/DEPTH=.5	***** .000	.8% .747	.8% 1.471	.8% 2.151	.7% 3.296	.5% 4.159	.4% 4.243	.1% 2.772	***** .000
S/DEPTH=.4	***** .000	***** .967	1.3% 1.116	1.2% 1.632	1.2% 2.503	1.1% 3.161	.9% 3.228	.8% 2.112	***** .000
S/DEPTH=.3	***** .000	***** .442	1.8% .871	1.7% 1.274	1.7% 1.955	1.6% 2.471	1.5% 2.526	1.4% 1.655	***** .000
S/DEPTH=.2	***** .000	***** .361	***** .711	2.3% 1.040	2.2% 1.597	2.2% 2.020	2.1% 2.067	2.0% 1.356	***** .000
S/DEPTH=.1	***** .000	***** .315	***** .621	2.7% .909	2.7% 1.395	2.7% 1.766	2.6% 1.809	2.6% 1.188	***** .000
S/DEPTH=.0	***** .000	***** .300	***** .592	***** .866	3.1% 1.330	3.1% 1.685	3.0% 1.726	3.0% 1.133	***** .000
	*****	*****	*****	*****	3.2%	3.2%	3.2%	3.2%	*****

382

CASE 8=A

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
	.834	.524	.494	.447	.310	.097	.116	.373	.466
	6.3%	6.0%	4.9%	3.0%	3.6%	32.8%	25.0%	2.6%	7.3%
SURFACE	=19.160	=18.749	=17.621	=15.789	=10.535	=2.382	5.741	15.485	18.980
	.3%	.2%	.1%	.5%	=1.6%	=4.1%	=1.8%	=1.9%	=1.6%
S/DEPTH=1.0	=17.022	=16.719	=15.819	=14.353	=9.929	=2.390			
	.5%	.5%	.6%	.8%	=1.3%	=4.1%			
S/DEPTH=.9	=12.926	=12.706	=12.052	=10.985	=7.764	=2.262	3.879	12.192	15.443
	.4%	.4%	.5%	.6%	=1.0%	=2.8%	.2%	=1.7%	=2.1%
S/DEPTH=.8	=9.696	=9.536	=9.060	=8.284	=5.939	=1.926	2.563	8.659	11.050
	.2%	.2%	.2%	.3%	.6%	=1.9%	.2%	=1.1%	=1.3%
S/DEPTH=.7	=7.198	=7.082	=6.737	=6.174	=4.470	=1.550	1.723	6.177	7.927
	.1%	.1%	.1%	.0%	.2%	=1.2%	.6%	=.5%	=.7%
S/DEPTH=.6	=5.288	=5.204	=4.954	=4.547	=3.314	=1.200	1.172	4.407	5.680
	.4%	.4%	.4%	.3%	.2%	.6%	1.0%	.0%	.1%
S/DEPTH=.5	=3.831	=3.771	=3.592	=3.300	=2.417	=.901	.802	3.126	4.041
	.7%	.7%	.7%	.7%	.5%	*****	*****	.5%	.4%
S/DEPTH=.4	=2.714	=2.671	=2.546	=2.341	=1.720	=.654	.544	2.181	2.826
	1.1%	1.0%	1.0%	1.0%	.9%	*****	*****	.9%	.8%
S/DEPTH=.3	=1.842	=1.814	=1.729	=1.591	=1.171	=.451	.359	1.465	1.902
	1.3%	1.3%	1.3%	1.3%	1.2%	*****	*****	1.2%	1.1%
S/DEPTH=.2	=1.141	=1.123	=1.071	=.985	=.727	=.282	.218	.901	1.171
	1.5%	1.5%	1.5%	1.5%	*****	*****	*****	*****	1.4%
S/DEPTH=.1	=.545	=.536	=.511	=.471	=.347	=.136	.103	.429	.557
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

383

CASE B=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=	.534 6.3%	.524 6.0%	.494 4.9%	.447 3.0%	.310 -3.6%	.097 -32.8%	-.116 29.0%	-.373 -2.6%	-.466 -7.3%
SURFACE	2.089 .1%	2.015 -.0%	1.805 -.5%	1.494 -1.1%	.764 -2.8%	.109 -5.4%	-.046 *****	-.766 -1.0%	-1.241 -.0%
S/DEPTH=1.0	1.589 -1.3%	1.340 -1.3%	1.402 -1.4%	1.189 -1.5%	.652 -1.9%	.104 *****	*****	*****	*****
S/DEPTH=.9	.867 -.3%	.841 -.3%	.765 -.4%	.650 -.5%	.357 -.8%	.057 *****	.027 *****	.507 .8%	.861 -1.1%
S/DEPTH=.8	.478 .7%	.464 .7%	.422 .6%	.358 .6%	.197 .3%	.032 *****	-.015 *****	.280 .3%	.476 .1%
S/DEPTH=.7	.267 1.7%	.259 1.7%	.236 1.7%	.200 1.6%	.110 1.5%	.018 *****	.008 *****	.157 1.5%	.266 1.3%
S/DEPTH=.6	.152 2.7%	.148 2.7%	.135 2.7%	.114 2.7%	.063 *****	.010 *****	.005 *****	.089 *****	.152 2.5%
S/DEPTH=.5	.089 *****	.086 *****	.078 *****	.067 *****	.037 *****	.006 *****	.003 *****	.052 *****	.089 *****
S/DEPTH=.4	.053 *****	.051 *****	.046 *****	.039 *****	.022 *****	.004 *****	.002 *****	.031 *****	.053 *****
S/DEPTH=.3	.031 *****	.030 *****	.028 *****	.023 *****	.013 *****	.002 *****	.001 *****	.018 *****	.031 *****
S/DEPTH=.2	.018 *****	.017 *****	.016 *****	.013 *****	.007 *****	.001 *****	.001 *****	.010 *****	.018 *****
S/DEPTH=.1	.008 *****	.008 *****	.007 *****	.006 *****	.003 *****	.001 *****	.000 *****	.005 *****	.008 *****
S/DEPTH=.0	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****

388

CASE 8=A

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 =	.534	.524	.494	.447	.310	.097	-.116	-.373	-.466
	6.3%	6.0%	4.9%	3.0%	-3.6%	-32.8%	25.0%	-2.6%	-7.3%
SURFACE	.000	1.252	2.446	3.530	5.212	6.203	5.969	3.635	.000
S/DEPTH=1.0	*****	1.2%	1.0%	.7%	.1%	-.9%	-1.1%	-.3%	*****
S/DEPTH=.9	.000	1.091	2.147	3.138	4.803	6.046			
S/DEPTH=.8	*****	.5%	.5%	.4%	.3%	-.0%			
S/DEPTH=.7	.000	.796	1.568	2.292	3.510	4.424	4.507	2.938	.000
S/DEPTH=.6	*****	.8%	.8%	.7%	.6%	.4%	.2%	-.2%	*****
S/DEPTH=.5	.000	.581	1.144	1.672	2.562	3.232	3.296	2.152	.000
S/DEPTH=.4	*****	1.1%	1.1%	1.1%	1.0%	.8%	.7%	.4%	*****
S/DEPTH=.3	.000	.422	.832	1.217	1.865	2.354	2.403	1.571	.000
S/DEPTH=.2	*****	1.5%	1.5%	1.4%	1.4%	1.3%	1.1%	1.0%	*****
S/DEPTH=.1	.000	.306	.602	.881	1.351	1.706	1.743	1.141	.000
S/DEPTH=.0	*****	*****	1.8%	1.8%	1.7%	1.7%	1.6%	1.5%	*****
S/DEPTH=1.0	.000	.219	.432	.631	.969	1.224	1.251	.820	.000
S/DEPTH=.9	*****	*****	2.2%	2.1%	2.1%	2.1%	2.0%	1.9%	*****
S/DEPTH=.8	.000	.154	.303	.444	.681	.861	.881	.578	.000
S/DEPTH=.7	*****	*****	*****	2.5%	2.4%	2.4%	2.4%	2.3%	*****
S/DEPTH=.6	.000	.104	.205	.299	.460	.582	.595	.391	.000
S/DEPTH=.5	*****	*****	*****	*****	2.7%	2.7%	2.7%	2.6%	*****
S/DEPTH=.4	.000	.064	.126	.185	.284	.359	.368	.241	.000
S/DEPTH=.3	*****	*****	*****	*****	*****	2.9%	2.9%	*****	*****
S/DEPTH=.2	.000	.031	.060	.088	.135	.171	.175	.115	.000
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 8=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	160.0
ETA/HEIGHT	.534 6.3%	.524 6.0%	.494 4.9%	.447 3.0%	.310 3.6%	.097 32.8%	.116 25.0%	.373 2.6%	.466 7.3%
SURFACE	1.833 .2%	1.766 =.0%	1.578 =.5%	1.300 =1.3%	.655 =3.3%	.092 =6.3%	=.038 *****	=.612 =1.3%	=.981 =.1%
S/DEPTH=.10	1.321 =1.6%	1.281 =1.6%	1.165 =1.7%	.988 =1.8%	.542 =2.3%	.086 *****			
S/DEPTH=.09	.632 =.7%	.613 =.7%	.558 =.8%	.473 =.9%	.260 =1.2%	.042 *****	=.019 *****	=.369 =1.2%	.627 =1.5%
S/DEPTH=.08	.299 .2%	.290 .2%	.264 .2%	.224 .1%	.123 =.2%	.020 *****	=.009 *****	=.175 =.1%	.297 =.4%
S/DEPTH=.07	.140 1.2%	.136 1.2%	.124 1.1%	.105 1.1%	.058 *****	.009 *****	=.004 *****	=.082 *****	.139 .8%
S/DEPTH=.06	.065 *****	.063 *****	.057 *****	.048 *****	.027 *****	.004 *****	=.002 *****	=.038 *****	.064 *****
S/DEPTH=.05	.029 *****	.028 *****	.026 *****	.022 *****	.012 *****	.002 *****	=.001 *****	=.017 *****	.029 *****
S/DEPTH=.04	.013 *****	.012 *****	.011 *****	.010 *****	.005 *****	.001 *****	=.000 *****	=.008 *****	.013 *****
S/DEPTH=.03	.005 *****	.005 *****	.005 *****	.004 *****	.002 *****	.000 *****	=.000 *****	=.003 *****	.005 *****
S/DEPTH=.02	.002 *****	.002 *****	.002 *****	.001 *****	.001 *****	.000 *****	=.000 *****	=.001 *****	.002 *****
S/DEPTH=.01	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	=.000 *****	=.000 *****	.000 *****
S/DEPTH=.00	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	.000 *****	=.000 *****	=.000 *****	.000 *****

CASE 8=A

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	.534	.524	.494	.447	.310	.097	.116	.373	.466
	6,3%	6,0%	4,9%	3,0%	3,6%	32,8%	25,0%	2,6%	7,3%
SURFACE	.000	.936	1.823	2.618	3.807	4.424	4.155	2.455	.000
	*****	1,3%	1,0%	.5%	-.6%	-1,7%	-1,9%	.8%	*****
S/DEPTH=1,0	.000	.771	1.518	2.218	3.393	4.267			
	*****	.2%	.2%	.1%	-.1%	-.5%			
S/DEPTH=.9	.000	.491	.966	1.412	2.161	2.721	2.770	1.803	.000
	*****	.4%	.4%	.4%	.2%	-.0%	-.3%	-.7%	*****
S/DEPTH=.8	.000	.307	.604	.883	1.353	1.705	1.737	1.133	.000
	*****	.7%	.7%	.7%	.6%	.4%	.2%	-.1%	*****
S/DEPTH=.7	.000	.188	.370	.541	.828	1.045	1.066	.696	.000
	*****	*****	1,1%	1,0%	1,0%	.8%	.7%	.5%	*****
S/DEPTH=.6	.000	.112	.220	.321	.493	.622	.635	.415	.000
	*****	*****	1,4%	1,4%	1,4%	1,3%	1,2%	1,0%	*****
S/DEPTH=.5	.000	.064	.126	.184	.282	.356	.363	.238	.000
	*****	*****	*****	*****	1,8%	1,7%	1,6%	1,5%	*****
S/DEPTH=.4	.000	.034	.067	.099	.151	.191	.196	.128	.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 8=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	.524	.494	.447	.310	.097	.116	.373	.466
	6.3%	6.0%	4.9%	3.0%	3.6%	32.8%	25.0%	2.6%	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	.4%	.4%	.3%	.3%	.0%	1.3%			
S/DEPTH=.7	.702	.690	.657	.602	.437	.154	.163	.596	.766
S/DEPTH=.6	.7%	.7%	.6%	.6%	.3%	.7%	1.6%	.3%	.1%
S/DEPTH=.5	.523	.514	.490	.450	.329	.121	.113	.432	.557
S/DEPTH=.4	1.0%	1.0%	1.0%	.9%	.7%	.3%	2.3%	1.0%	.8%
S/DEPTH=.3	.389	.383	.365	.336	.246	.093	.079	.315	.408
S/DEPTH=.2	1.4%	1.4%	1.4%	1.3%	1.1%	.1%	3.1%	1.6%	1.5%
S/DEPTH=.1	.290	.286	.273	.251	.185	.071	.056	.231	.300
S/DEPTH=.0	1.8%	1.8%	1.8%	1.7%	1.5%	.4%	4.0%	2.3%	2.2%
	.218	.215	.205	.189	.140	.055	.041	.172	.224
	2.2%	2.2%	2.2%	2.1%	1.9%	.6%	*****	3.0%	2.9%
	.167	.164	.157	.144	.107	.042	.030	.130	.170
	2.6%	2.6%	2.6%	2.5%	2.2%	*****	*****	3.8%	3.6%
	.131	.129	.123	.113	.084	.034	.023	.101	.132
	3.0%	3.0%	2.9%	2.9%	2.5%	*****	*****	4.6%	4.3%
	.107	.106	.101	.093	.069	.028	.019	.083	1.08
	3.3%	3.3%	3.3%	3.2%	2.8%	*****	*****	5.3%	5.0%
	.094	.092	.088	.081	.060	.025	.016	.072	.094
	3.6%	3.6%	3.5%	3.4%	3.0%	*****	*****	5.9%	5.5%
	.090	.088	.084	.078	.058	.023	.015	.069	.090
	3.7%	3.6%	3.6%	3.5%	3.1%	*****	*****	6.1%	5.7%

888

CASE 8-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	160.0
(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 CONDITON 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

CASE 8-A

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

* (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

CASE 8=8

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

CASE 8=B

TABLE I-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 =	.370	.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
	=2.1%	=2.6%	=4.0%	=6.1%	=11.2%	=20.2%	.5%	=4.9%	=3.5%
S/DEPTH = 1.0	3.005	2.956	2.811	2.577	1.876	.706			
	=4.8%	=4.9%	=5.3%	=5.9%	=7.9%	=15.4%			
S/DEPTH = .9	2.225	2.190	2.085	1.914	1.401	.537	=.411	=1.672	=2.158
	=3.5%	=3.5%	=3.8%	=4.2%	=5.7%	=11.0%	2.8%	=5.5%	=6.7%
S/DEPTH = .8	1.694	1.628	1.550	1.425	1.047	.407	=.301	=1.249	=1.616
	=1.9%	=2.0%	=2.2%	=2.4%	=3.5%	=7.3%	2.8%	=3.4%	=4.3%
S/DEPTH = .7	1.234	1.215	1.158	1.065	.784	.308	=.222	=.935	=1.213
	=.2%	=.3%	=.4%	=.6%	=1.4%	=4.1%	3.2%	=1.3%	=1.9%
S/DEPTH = .6	.927	.912	.870	.800	.591	.233	=.165	=.704	=.915
	1.6%	1.5%	1.4%	1.3%	.8%	=1.2%	*****	.8%	.3%
S/DEPTH = .5	.703	.692	.660	.608	.449	.178	=.124	=.536	=.697
	3.4%	3.4%	3.4%	3.3%	2.9%	*****	*****	2.9%	2.6%
S/DEPTH = .4	.543	.534	.510	.469	.347	.138	=.096	=.414	=.539
	5.4%	5.4%	5.4%	5.3%	5.0%	*****	*****	5.0%	4.8%
S/DEPTH = .3	.431	.424	.405	.373	.276	.110	=.076	=.329	=.429
	7.4%	7.4%	7.3%	7.3%	7.1%	*****	*****	7.1%	6.9%
S/DEPTH = .2	.357	.352	.336	.309	.229	.092	=.063	=.273	=.356
	9.1%	9.1%	9.1%	9.1%	9.0%	*****	*****	9.0%	8.8%
S/DEPTH = .1	.316	.311	.297	.273	.203	.081	=.055	=.242	=.315
	10.4%	10.4%	10.4%	10.4%	10.3%	*****	*****	10.3%	10.2%
S/DEPTH = .0	.302	.298	.284	.262	.194	.078	=.053	=.231	=.302
	10.9%	10.9%	10.9%	10.9%	*****	*****	*****	10.8%	10.7%

393

CASE 8=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	.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	.711	1.366	1.922	2.666	2.943	2.668	1.532	.000
S/DEPTH=1.0	*****	.5%	.8%	2.7%	6.9%	10.4%	10.6%	7.4%	*****
S/DEPTH=.9	.000	.531	1.043	1.519	2.302	2.853			
S/DEPTH=.8	*****	2.7%	2.9%	3.3%	4.4%	6.3%			
S/DEPTH=.7	.000	.389	.765	1.115	1.696	2.111	2.124	1.362	.000
S/DEPTH=.6	*****	2.1%	2.2%	2.5%	3.3%	4.6%	6.0%	7.9%	*****
S/DEPTH=.5	.000	.286	.562	.820	1.249	1.560	1.575	1.015	.000
S/DEPTH=.4	*****	1.2%	1.3%	1.5%	2.0%	3.0%	4.0%	5.4%	*****
S/DEPTH=.3	.000	.209	.412	.602	.918	1.150	1.164	.752	.000
S/DEPTH=.2	*****	.1%	.1%	.3%	.7%	1.4%	2.2%	3.2%	*****
S/DEPTH=.1	.000	.153	.301	.440	.672	.843	.855	.554	.000
S/DEPTH=.0	*****	1.1%	1.0%	.9%	.6%	.1%	.4%	1.2%	*****
	.000	.111	.218	.318	.487	.611	.621	.403	.000
	*****	2.2%	2.2%	2.2%	1.9%	1.6%	1.1%	.6%	*****
	.000	.078	.155	.226	.345	.434	.441	.287	.000
	*****	3.3%	3.3%	3.3%	3.1%	2.8%	2.5%	2.1%	*****
	.000	.053	.105	.154	.235	.296	.301	.196	.000
	*****	4.2%	4.2%	4.2%	4.1%	3.9%	3.6%	3.3%	*****
	.000	.033	.065	.095	.146	.184	.187	.122	.000
	*****	4.9%	4.9%	4.9%	4.7%	4.7%	4.5%	*****	*****
	.000	.016	.031	.046	.070	.088	.089	.058	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

39%

CASE 8-B

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	130.0	180.0
	.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	4.720	9.019	12.601	17.196	18.635	16.671	9.450	.000
	*****	5.7%	4.0%	1.4%	-4.3%	-9.8%	-11.7%	-10.2%	*****
S/DEPTH# 1.0	.000	3.481	6.823	9.897	14.829	18.074			
	*****	1.5%	1.0%	.2%	-2.1%	-5.7%			
S/DEPTH# .9	.000	2.534	4.974	7.234	10.916	13.436	13.363	8.452	.000
	*****	1.1%	.8%	.2%	-1.4%	-3.9%	-6.7%	-10.3%	*****
S/DEPTH# .8	.000	1.858	3.652	5.320	8.067	10.002	10.019	6.393	.000
	*****	1.4%	1.2%	.8%	-.3%	-2.2%	-4.2%	-6.8%	*****
S/DEPTH# .7	.000	1.372	2.699	3.936	5.990	7.469	7.525	4.836	.000
	*****	2.1%	2.0%	1.7%	.9%	-.4%	-1.8%	-3.7%	*****
S/DEPTH# .6	.000	1.022	2.011	2.935	4.479	5.609	5.677	3.671	.000
	*****	3.2%	3.1%	2.9%	2.4%	1.5%	.5%	-.9%	*****
S/DEPTH# .5	.000	.769	1.515	2.213	3.384	4.254	4.323	2.810	.000
	*****	*****	4.5%	4.4%	4.0%	3.4%	2.7%	1.8%	*****
S/DEPTH# .4	.000	.590	1.162	1.698	2.602	3.281	3.346	2.185	.000
	*****	*****	6.1%	6.0%	5.8%	5.4%	4.9%	4.3%	*****
S/DEPTH# .3	.000	.465	.917	1.341	2.058	2.603	2.663	1.746	.000
	*****	*****	7.8%	7.8%	7.6%	7.3%	7.0%	6.6%	*****
S/DEPTH# .2	.000	.384	.757	1.108	1.702	2.158	2.213	1.456	.000
	*****	*****	*****	9.4%	9.3%	9.1%	8.9%	8.6%	*****
S/DEPTH# .1	.000	.338	.666	.975	1.501	1.906	1.958	1.292	.000
	*****	*****	*****	10.6%	10.5%	10.4%	10.3%	10.1%	*****
S/DEPTH# .0	.000	.323	.637	1.063	1.436	1.824	1.876	1.238	.000
	*****	*****	*****	11.0%	11.0%	10.9%	10.8%	10.6%	*****

CASE 8-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	.570	.555	.514	.450	.285	.061	.138	.356	.430	
	12.2%	11.3%	8.5%	5.9%	12.6%	110.9%	36.9%	7.6%	16.2%	
SURFACE	=17.699	=17.161	=15.630	=13.321	=7.397	.451	7.261	14.559	16.997	
	4.9%	4.4%	2.9%	.8%	-3.9%	*****	=10.7%	=8.6%	=7.1%	
S/DEPTH=1.0	=14.638	=14.307	=13.332	=11.761	=7.162	.280				
	1.0%	.8%	.2%	.7%	=4.0%	*****				
S/DEPTH=.9	=11.598	=11.363	=10.669	=9.548	=6.226	.756	5.093	12.645	15.494	
	.1%	.0%	.4%	=1.1%	=3.6%	*****	=3.7%	=9.1%	=10.7%	
S/DEPTH=.8	=8.982	=8.814	=8.316	=7.509	=5.100	=1.085	3.265	8.961	11.133	
	.1%	.0%	.3%	.8%	=2.7%	=12.6%	=1.0%	=5.9%	=7.2%	
S/DEPTH=.7	=6.841	=6.720	=6.360	=5.776	=4.027	=1.087	2.131	6.391	8.029	
	.7%	.6%	.4%	.0%	=1.4%	=8.0%	1.1%	=3.3%	=4.3%	
S/DEPTH=.6	=5.132	=5.044	=4.785	=4.363	=3.095	.951	1.413	4.567	5.787	
	1.5%	1.4%	1.3%	.9%	.1%	=4.8%	2.9%	=1.1%	=1.9%	
S/DEPTH=.5	=3.783	=3.720	=3.535	=3.232	=2.320	.771	.945	3.249	4.145	
	2.4%	2.4%	2.3%	2.0%	1.2%	*****	4.4%	.8%	.2%	
S/DEPTH=.4	=2.718	=2.674	=2.543	=2.330	=1.686	.589	.630	2.275	2.917	
	3.4%	3.4%	3.3%	3.1%	2.4%	*****	*****	2.4%	1.9%	
S/DEPTH=.3	=1.867	=1.837	=1.748	=1.603	=1.167	.421	.410	1.534	1.974	
	4.3%	4.2%	4.2%	4.0%	3.5%	*****	*****	3.6%	3.2%	
S/DEPTH=.2	=1.165	=1.147	=1.092	=1.002	=.732	.270	.247	.947	1.221	
	5.0%	4.9%	4.9%	4.7%	*****	*****	*****	4.6%	4.2%	
S/DEPTH=.1	=.559	=.551	=.524	=.482	=.352	.131	.116	.451	.583	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 8=8

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

THETA ETA/HEIGHT	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
	.570	.555	.514	.450	.285	.061	.138	.356	.430
	12.2%	11.3%	8.9%	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
	.0%	.8%	-3.2%	-6.8%	-15.1%	*****	*****	-2.7%	.6%
S/DEPTH=.0	1.538	1.489	1.350	1.139	.612	.091			
	-4.6%	-4.7%	-5.2%	-5.9%	-8.6%	*****			
S/DEPTH=.9	.859	.833	.756	.639	.346	.053	.028	.492	.826
	-1.2%	-1.3%	-1.6%	-2.2%	-4.0%	*****	*****	-3.8%	-5.4%
S/DEPTH=.8	.486	.471	.428	.362	.197	.031	.016	.280	.472
	2.3%	2.2%	2.0%	1.7%	.4%	*****	*****	.5%	.6%
S/DEPTH=.7	.279	.271	.246	.209	.114	.018	.009	.162	.274
	5.9%	5.8%	5.7%	5.5%	*****	*****	*****	4.6%	3.9%
S/DEPTH=.6	.164	.159	.144	.122	.067	.011	.005	.095	.161
	9.4%	9.4%	9.3%	*****	*****	*****	*****	*****	8.0%
S/DEPTH=.5	.098	.095	.086	.073	.040	.006	.003	.057	.097
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.059	.058	.052	.044	.024	.004	.002	.035	.059
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.036	.035	.032	.027	.015	.002	.001	.021	.036
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.021	.020	.018	.015	.008	.001	.001	.012	.020
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.009	.009	.008	.007	.004	.001	.000	.006	.009
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

397

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=1.0	*****	5.9%	4.6%	2.8%	-1.1%	-4.2%	-4.4%	-1.2%	*****
S/DEPTH=.9	.000	1.114	2.190	3.192	4.845	6.022			
S/DEPTH=.8	*****	2.9%	2.7%	1.3%	1.3%	1.3%	4.502	2.904	.000
S/DEPTH=.7	.000	.816	1.605	2.342	3.568	4.458	.0%	-1.7%	*****
S/DEPTH=.6	*****	3.6%	3.4%	3.2%	2.5%	1.3%	3.341	2.166	.000
S/DEPTH=.5	.000	.598	1.178	1.720	2.627	3.295	3.341	2.166	.000
S/DEPTH=.4	*****	4.5%	4.4%	4.2%	3.7%	2.9%	1.9%	.7%	*****
S/DEPTH=.3	.000	.438	.863	1.261	1.929	2.428	2.470	1.608	.000
S/DEPTH=.2	*****	5.5%	5.5%	5.3%	5.0%	4.4%	3.7%	2.9%	*****
S/DEPTH=.1	.000	.319	.629	.920	1.410	1.779	1.815	1.186	.000
S/DEPTH=.0	*****	6.6%	6.6%	6.5%	6.3%	5.8%	5.4%	4.7%	*****
	.000	.231	.454	.664	1.020	1.289	1.318	.864	.000
	*****	*****	7.7%	7.7%	7.5%	7.2%	6.8%	6.4%	*****
	.000	.163	.321	.470	.723	.915	.938	.616	.000
	*****	*****	8.8%	8.7%	8.6%	8.4%	8.1%	7.8%	*****
	.000	.111	.218	.320	.491	.623	.639	.421	.000
	*****	*****	*****	9.6%	9.5%	9.4%	9.2%	8.9%	*****
	.000	.069	.135	.198	.305	.387	.397	.262	.000
	*****	*****	*****	*****	*****	10.1%	10.0%	*****	*****
	.000	.033	.065	.095	.146	.185	.190	.126	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

866

CASE 8-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 =	.570	.555	.914	.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	2.499	2.378	2.048	1.599	.703	.080	-.036	-.470	-.721
	.3%	-.7%	-3.5%	-7.6%	-17.5%	*****	*****	-3.8%	.5%
S/DEPTH=1.0	1.267	1.227	1.112	.938	.503	.074			
	-5.9%	-6.0%	-6.5%	-7.3%	-10.2%	*****			
S/DEPTH=.9	.619	.600	.544	.460	.249	.038	-.020	-.354	-.593
	-2.8%	-2.9%	-3.2%	-3.8%	-5.8%	*****	*****	-5.6%	-7.3%
S/DEPTH=.8	.300	.291	.264	.224	.121	.019	-.010	-.173	-.291
	.6%	.5%	.2%	-.2%	*****	*****	*****	-1.5%	-2.7%
S/DEPTH=.7	.144	.140	.127	.108	.059	.009	-.005	-.083	-.141
	4.0%	3.9%	3.8%	*****	*****	*****	*****	*****	1.7%
S/DEPTH=.6	.068	.066	.060	.051	.028	.004	-.002	-.040	-.067
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.032	.031	.028	.024	.013	.002	-.001	-.019	-.031
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.014	.014	.013	.011	.006	.001	-.000	-.008	-.014
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.006	.006	.005	.005	.002	.000	-.000	-.004	-.006
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.002	.002	.002	.002	.001	.000	-.000	-.001	-.002
	*****	*****	*****	*****	*****	*****	*****	*****	*****
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 8-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
ETA/HEIGHT =	.970	.555	.514	.450	.285	.061	-.138	-.356	-.430
	12.2%	11.3%	8.5%	5.9%	-12.6%	-110.9%	36.9%	-7.6%	-16.2%
SURFACE	.000	1.181	2.248	3.120	4.177	4.389	3.806	2.080	.000
S/DEPTH=1.0	*****	6.3%	4.7%	2.2%	-3.1%	-7.5%	-7.7%	-3.1%	*****
S/DEPTH=.9	.000	.783	1.539	2.240	3.392	4.199			
S/DEPTH=.8	*****	2.0%	1.7%	1.3%	.0%	-2.0%			
S/DEPTH=.7	.000	.499	.982	1.431	2.176	2.709	2.726	1.749	.000
S/DEPTH=.6	*****	2.5%	2.3%	2.0%	1.1%	-.4%	-2.0%	-4.1%	*****
S/DEPTH=.5	.000	.314	.617	.901	1.373	1.717	1.736	1.121	.000
S/DEPTH=.4	*****	3.2%	3.1%	2.9%	2.3%	1.2%	.0%	-1.5%	*****
S/DEPTH=.3	.000	.193	.380	.555	.848	1.065	1.081	.701	.000
S/DEPTH=.2	*****	*****	4.2%	4.0%	3.6%	2.8%	2.0%	.9%	*****
S/DEPTH=.1	.000	.116	.228	.333	.510	.641	.653	.425	.000
S/DEPTH=.0	*****	*****	5.4%	5.3%	5.0%	4.4%	3.8%	3.0%	*****
	.000	.067	.131	.192	.294	.371	.379	.248	.000
	*****	*****	*****	*****	6.4%	6.0%	5.6%	5.0%	*****
	.000	.036	.071	.104	.160	.202	.207	.136	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.018	.035	.051	.078	.099	.102	.067	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.007	.014	.020	.031	.040	.041	.027	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.002	.003	.005	.007	.009	.010	.006	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

400

CASE 8=B

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=	.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	1.139	1.110	1.027	.901	.571	.123	.275	.712	.861
	4.7%	4.3%	3.1%	1.5%	2.4%	9.7%	.8%	.9%	2.6%
S/DEPTH=1.0	.895	.877	.828	.750	.515	.123			
	1.9%	1.8%	1.5%	1.0%	.8%	10.1%			
S/DEPTH=.9	.685	.673	.638	.580	.408	.118	.201	.625	.789
	2.3%	2.3%	2.0%	1.6%	.0%	8.1%	6.1%	.5%	.5%
S/DEPTH=.8	.522	.513	.487	.445	.318	.103	.135	.455	.579
	3.0%	3.0%	2.8%	2.4%	.9%	6.9%	10.3%	3.5%	2.6%
S/DEPTH=.7	.396	.390	.371	.340	.246	.085	.093	.334	.428
	3.9%	3.8%	3.6%	3.3%	1.8%	6.2%	14.9%	6.5%	5.5%
S/DEPTH=.6	.302	.297	.283	.259	.189	.069	.065	.248	.319
	4.8%	4.7%	4.5%	4.2%	2.6%	6.2%	20.5%	9.5%	8.5%
S/DEPTH=.5	.231	.227	.217	.199	.146	.055	.047	.186	.241
	5.7%	5.6%	5.4%	5.0%	3.2%	*****	*****	12.8%	11.5%
S/DEPTH=.4	.180	.177	.169	.155	.115	.045	.034	.142	.185
	6.5%	6.4%	6.1%	5.7%	3.6%	*****	*****	16.2%	14.7%
S/DEPTH=.3	.143	.141	.135	.124	.092	.036	.026	.112	.146
	7.1%	7.0%	6.7%	6.2%	3.8%	*****	*****	19.7%	17.9%
S/DEPTH=.2	.119	.118	.112	.103	.077	.031	.021	.093	.121
	7.6%	7.5%	7.2%	6.5%	3.8%	*****	*****	23.0%	20.9%
S/DEPTH=.1	.106	.104	.099	.092	.069	.028	.018	.082	.107
	8.0%	7.8%	7.5%	6.8%	3.7%	*****	*****	25.5%	23.1%
S/DEPTH=.0	.101	.100	.095	.088	.066	.027	.017	.078	.102
	8.1%	7.9%	7.5%	6.8%	3.6%	*****	*****	26.4%	23.9%

107

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 CONDITON 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%)

CASE 8-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	.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

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 = .129988 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) =	-.931214=02	X(2)/(H*T*G) =	-.168029=04
X(3)/(H*T*G) =	-.938674=07	X(4)/(H*T*G) =	-.939917=09
X(5)/(H*T*G) =	-.900754=11	X(6)/(H*T*G) =	-.823671=13
X(7)/(H*T*G) =	-.194169=14		

CASE 8=C

TABLE I-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=	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.2%	=32.4%	*****	42.0%	=16.3%	=28.7%
SURFACE	4.591	4.397	3.903	3.269	1.959	.551	.528	=1.608	=1.958
	=1.9%	=4.2%	=10.0%	=17.6%	=33.3%	=63.9%	3.3%	=10.9%	=8.4%
S/DEPTH=1.1	3.874	3.792	3.554	3.183					
	=11.3%	=12.0%	=14.0%	=17.3%					
S/DEPTH=1.0	2.859	2.805	2.645	2.392	1.669	.544			
	=10.2%	=10.6%	=11.9%	=14.1%	=21.3%	=49.7%			
S/DEPTH=.9	2.130	2.092	1.980	1.801	1.279	.442	.431	=1.535	=1.947
	=8.1%	=8.4%	=9.3%	=10.7%	=15.7%	=34.9%	7.2%	=14.9%	=9.0%
S/DEPTH=.8	1.598	1.571	1.491	1.361	.978	.352	.314	=1.171	=1.494
	=5.5%	=5.7%	=6.2%	=7.2%	=10.7%	=23.9%	6.7%	=10.3%	=12.8%
S/DEPTH=.7	1.208	1.188	1.129	1.033	.749	.278	.231	=.895	=1.149
	=2.4%	=2.6%	=3.0%	=3.7%	=6.1%	=15.2%	7.0%	=5.8%	=7.7%
S/DEPTH=.6	.921	.906	.862	.790	.577	.219	.172	=.688	=.887
	.9%	.8%	.5%	.0%	=1.7%	*****	*****	=1.5%	=2.9%
S/DEPTH=.5	.710	.699	.666	.611	.448	.173	.130	=.535	=.691
	4.4%	4.4%	4.2%	3.8%	2.6%	*****	*****	2.7%	1.8%
S/DEPTH=.4	.558	.550	.524	.481	.354	.138	.101	=.422	=.547
	8.1%	8.0%	7.9%	7.7%	6.8%	*****	*****	6.9%	6.2%
S/DEPTH=.3	.452	.445	.424	.390	.287	.113	.081	=.343	=.445
	11.6%	11.6%	11.5%	11.3%	10.8%	*****	*****	10.8%	10.3%
S/DEPTH=.2	.381	.375	.358	.329	.243	.096	.068	=.290	=.377
	14.8%	14.8%	14.7%	14.6%	14.2%	*****	*****	14.2%	13.9%
S/DEPTH=.1	.341	.336	.320	.295	.218	.087	.060	=.260	=.338
	17.0%	17.0%	16.9%	16.9%	*****	*****	*****	16.6%	16.3%
S/DEPTH=.0	.328	.323	.308	.284	.210	.084	.058	=.250	=.326
	17.8%	17.8%	17.8%	17.7%	*****	*****	*****	17.5%	17.2%

907

CASE 8=C

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	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.2%	=32.4%	*****	42.0%	=16.3%	=28.7%
SURFACE	.000	.881	1.606	2.124	2.645	2.671	2.297	1.262	.000
	*****	8.5%	2.8%	=4.3%	=17.4%	=25.8%	=25.6%	=17.8%	*****
S/DEPTH=.1	.000	.742	1.441	2.059					
	*****	.7%	=2.2%	=4.5%					
S/DEPTH=.0	.000	.529	1.033	1.489	2.197	2.624			
	*****	=3.0%	=3.9%	=5.4%	=9.5%	=15.5%			
S/DEPTH=.9	.000	.384	.752	1.090	1.626	1.971	1.935	1.206	.000
	*****	=3.3%	=3.9%	=4.9%	=7.7%	=12.0%	=16.4%	=21.8%	*****
S/DEPTH=.8	.000	.282	.553	.803	1.207	1.478	1.464	.922	.000
	*****	=2.6%	=3.0%	=3.7%	=5.6%	=8.7%	=11.9%	=16.0%	*****
S/DEPTH=.7	.000	.207	.407	.592	.895	1.105	1.102	.699	.000
	*****	=1.1%	=1.4%	=1.9%	=3.3%	=5.5%	=7.9%	=11.0%	*****
S/DEPTH=.6	.000	.152	.299	.436	.662	.821	.823	.525	.000
	*****	.6%	.4%	.1%	.9%	=2.5%	=4.3%	=6.7%	*****
S/DEPTH=.5	.000	.111	.218	.318	.484	.603	.606	.389	.000
	*****	*****	2.4%	2.1%	1.4%	.2%	=1.2%	=2.9%	*****
S/DEPTH=.4	.000	.079	.156	.228	.347	.433	.437	.281	.000
	*****	*****	4.3%	4.1%	3.5%	2.6%	1.5%	.2%	*****
S/DEPTH=.3	.000	.054	.107	.156	.238	.298	.301	.194	.000
	*****	*****	*****	5.7%	5.3%	4.6%	3.7%	2.6%	*****
S/DEPTH=.2	.000	.034	.067	.097	.149	.186	.189	.122	.000
	*****	*****	*****	*****	6.7%	6.0%	5.4%	*****	*****
S/DEPTH=.1	.000	.016	.032	.047	.071	.090	.091	.059	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

407

CASE 8=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=	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.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	.000
S/DEPTH=1.1	*****	25.2%	17.7%	7.9%	=11.1%	=25.9%	=30.1%	=25.9%	*****
S/DEPTH=1.0	.000	5.552	10.548	14.622					
S/DEPTH=.9	*****	15.4%	12.3%	7.5%					
S/DEPTH=.8	.000	3.787	7.304	10.342	14.593	16.529			
S/DEPTH=.7	*****	9.5%	7.6%	4.6%	=3.7%	=15.6%			
S/DEPTH=.6	.000	2.669	5.189	7.433	10.779	12.577	11.949	7.194	.000
S/DEPTH=.5	*****	6.2%	5.0%	3.0%	=2.6%	=11.0%	=19.3%	=29.7%	*****
S/DEPTH=.4	.000	1.924	3.757	5.420	8.001	9.546	9.230	5.661	.000
S/DEPTH=.3	*****	4.9%	4.1%	2.8%	=1.0%	=7.0%	=13.1%	=20.7%	*****
S/DEPTH=.2	.000	1.410	2.763	4.003	5.982	7.256	7.120	4.437	.000
S/DEPTH=.1	*****	5.0%	4.5%	3.6%	.9%	=3.3%	=7.6%	=13.2%	*****
S/DEPTH=.0	.000	1.050	2.061	2.995	4.514	5.546	5.507	3.480	.000
S/DEPTH=1.1	*****	6.1%	5.8%	5.2%	3.4%	.4%	=2.7%	=6.7%	*****
S/DEPTH=1.0	.000	.795	1.562	2.276	3.452	4.283	4.296	2.748	.000
S/DEPTH=.9	*****	*****	7.8%	7.4%	6.2%	4.2%	2.0%	.8%	*****
S/DEPTH=.8	.000	.615	1.209	1.765	2.691	3.366	3.405	2.200	.000
S/DEPTH=.7	*****	*****	10.3%	10.1%	9.3%	7.9%	6.4%	4.5%	*****
S/DEPTH=.6	.000	.490	.966	1.411	2.160	2.721	2.771	1.807	.000
S/DEPTH=.5	*****	*****	13.1%	12.9%	12.4%	11.5%	10.5%	9.2%	*****
S/DEPTH=.4	.000	.409	.806	1.180	1.812	2.294	2.349	1.543	.000
S/DEPTH=.3	*****	*****	*****	15.6%	15.3%	14.7%	14.0%	13.2%	*****
S/DEPTH=.2	.000	.363	.716	1.049	1.614	2.050	2.108	1.391	.000
S/DEPTH=.1	*****	*****	*****	17.6%	17.4%	17.0%	16.9%	15.8%	*****
S/DEPTH=.0	.000	.349	.687	1.006	1.550	1.972	2.030	1.342	.000
	*****	*****	*****	18.4%	18.2%	17.8%	17.4%	16.8%	*****

CASE 8=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 =	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.2%	=32.4%	*****	42.0%	=16.3%	=28.7%
SURFACE.	=15.982	=15.005	=12.580	=9.572	=3.554	2.862	7.787	12.668	14.218
	24.9%	22.8%	17.4%	11.2%	7.1%	=39.0%	=28.8%	=21.6%	=18.0%
S/DEPTH=1.1	=15.289	=14.575	=12.580	=9.664					
	19.5%	18.4%	15.1%	10.1%					
S/DEPTH=1.0	=13.063	=12.627	=11.376	=9.460	=4.387	2.690			
	9.1%	8.3%	6.1%	2.4%	=10.1%	=2.0%			
S/DEPTH=.9	=10.610	=10.326	=9.501	=8.205	=4.607	.735	5.894	11.975	14.127
	4.0%	3.4%	1.9%	.7%	=9.8%	*****	=13.2%	=26.8%	=18.8%
S/DEPTH=.8	=8.380	=8.187	=7.623	=6.725	=4.158	.182	3.801	8.631	10.378
	1.8%	1.4%	.3%	=1.5%	=8.1%	*****	=6.3%	=18.6%	=22.2%
S/DEPTH=.7	=6.492	=6.358	=5.964	=5.330	=3.487	-.548	2.480	6.246	7.631
	1.4%	1.2%	.4%	=1.0%	=5.8%	*****	.9%	=12.0%	=14.9%
S/DEPTH=.6	=4.947	=4.852	=4.573	=4.122	=2.795	.636	1.637	4.521	5.596
	2.1%	1.9%	1.3%	.3%	=3.3%	*****	3.4%	=6.7%	=9.1%
S/DEPTH=.5	=3.699	=3.632	=3.434	=3.113	=2.161	.591	1.088	3.253	4.069
	3.3%	3.1%	2.7%	1.9%	=.9%	*****	6.7%	=2.5%	=4.4%
S/DEPTH=.4	=2.692	=2.645	=2.506	=2.281	=1.609	.489	.721	2.301	2.902
	4.6%	4.5%	4.2%	3.6%	1.4%	*****	*****	.9%	=.7%
S/DEPTH=.3	=1.868	=1.836	=1.742	=1.590	=1.133	.368	.466	1.565	1.985
	6.0%	5.9%	5.6%	5.1%	3.3%	*****	*****	3.5%	2.1%
S/DEPTH=.2	=1.175	=1.156	=1.098	=1.003	=.720	.243	.279	.971	1.237
	7.1%	7.0%	6.8%	6.4%	*****	*****	*****	5.4%	4.2%
S/DEPTH=.1	=.567	=.558	=.530	=.485	=.349	.120	.131	.465	.594
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

60%

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/HEIGHT=	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.2%	=32.4%	*****	42.0%	=16.3%	=28.7%
SURFACE	3.530	3.268	2.637	1.906	.731	.068	=.045	=.490	=.743
	.3%	=3.2%	=12.4%	=24.7%	=50.3%	*****	*****	=6.4%	.1%
S/DEPTH=1.1	2.564	2.470	2.202	1.809					
	=16.7%	=17.5%	=20.0%	=24.1%					
S/DEPTH=1.0	1.442	1.392	1.250	1.037	.530	.066			
	=11.6%	=12.1%	=13.7%	=16.3%	=25.5%	*****			
S/DEPTH=.9	.825	.797	.719	.601	.313	.042	=.031	=.448	=.735
	=5.5%	=5.9%	=6.9%	=8.6%	=14.7%	*****	*****	=13.9%	=1.0%
S/DEPTH=.8	.480	.464	.420	.353	.187	.026	=.017	=.266	=.441
	1.0%	.8%	.1%	=1.0%	=5.1%	*****	*****	=4.6%	=7.8%
S/DEPTH=.7	.285	.276	.250	.210	.113	.017	=.010	=.160	=.267
	7.6%	7.4%	7.0%	6.2%	*****	*****	*****	*****	1.6%
S/DEPTH=.6	.172	.167	.151	.128	.069	.010	=.006	=.098	=.164
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.106	.103	.093	.079	.043	.007	=.003	=.061	=.103
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.066	.064	.058	.049	.027	.004	=.002	=.038	=.065
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.041	.040	.036	.031	.017	.003	=.001	=.024	=.040
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.024	.023	.021	.018	.010	.002	=.001	=.014	=.024
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.011	.011	.010	.008	.005	.001	=.000	=.006	=.011
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

017

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	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.2%	32.4%	*****	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%	*****
S/DEPTH=1.0	.000	1.628	3.161	4.526					
S/DEPTH=.9	*****	9.0%	7.7%	5.7%					
S/DEPTH=.8	.000	1.168	2.281	3.292	4.871	5.852			
S/DEPTH=.7	*****	7.7%	6.9%	5.6%	2.0%	3.2%			
S/DEPTH=.6	.000	.849	1.663	2.412	3.612	4.405	4.352	2.739	.000
S/DEPTH=.5	*****	7.7%	7.1%	6.3%	3.9%	.2%	3.5%	8.1%	*****
S/DEPTH=.4	.000	.622	1.221	1.775	2.680	3.306	3.299	2.099	.000
S/DEPTH=.3	*****	8.5%	8.1%	7.6%	5.9%	3.3%	.6%	2.8%	*****
S/DEPTH=.2	.000	.457	.898	1.308	1.987	2.471	2.486	1.597	.000
S/DEPTH=.1	*****	9.9%	9.6%	9.2%	8.1%	6.2%	4.2%	1.7%	*****
S/DEPTH=.0	.000	.335	.658	.961	1.466	1.835	1.858	1.203	.000
S/DEPTH=.9	*****	11.5%	11.3%	11.0%	10.2%	8.9%	7.5%	5.6%	*****
S/DEPTH=.8	.000	.243	.479	.700	1.070	1.347	1.371	.893	.000
S/DEPTH=.7	*****	*****	13.1%	12.9%	12.3%	11.3%	10.3%	8.9%	*****
S/DEPTH=.6	.000	.173	.341	.499	.765	.967	.988	.647	.000
S/DEPTH=.5	*****	*****	14.8%	14.6%	14.2%	13.5%	12.7%	11.6%	*****
S/DEPTH=.4	.000	.118	.233	.341	.524	.665	.681	.448	.000
S/DEPTH=.3	*****	*****	*****	16.1%	15.8%	15.3%	14.6%	13.8%	*****
S/DEPTH=.2	.000	.074	.145	.213	.327	.416	.427	.282	.000
S/DEPTH=.1	*****	*****	*****	*****	17.0%	16.6%	16.1%	*****	*****
S/DEPTH=.0	.000	.035	.070	.102	.157	.200	.206	.136	.000
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****

111

CASE 8=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=	.611	.586	.521	.434	.243	.025	.150	.329	.389
	18.2%	16.0%	9.8%	.2%	=32.4%	*****	42.0%	=16.3%	=28.7%
SURFACE	3.449	3.170	2.507	1.763	.635	.054	.036	.354	.524
S/DEPTH=1.1	1.8%	=2.2%	=12.9%	=27.4%	=58.7%	*****	*****	=8.2%	.1%
	2.360	2.271	2.022	1.656					
	=18.7%	=19.6%	=22.4%	=26.9%					
S/DEPTH=1.0	1.175	1.134	1.017	.842	.427	.052			
	=14.2%	=14.8%	=16.5%	=19.5%	=29.8%	*****			
S/DEPTH=.9	.586	.566	.510	.426	.221	.029	.022	.316	.517
	=8.6%	=9.0%	=10.1%	=12.1%	=19.1%	*****	*****	=18.1%	=1.3%
S/DEPTH=.8	.291	.282	.255	.214	.113	.016	.011	.161	.265
	=2.5%	=2.7%	=3.5%	=4.8%	*****	*****	*****	*****	=12.6%
S/DEPTH=.7	.144	.139	.126	.106	.057	.008	.005	.081	.134
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.070	.068	.062	.052	.028	.004	.002	.040	.067
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.034	.033	.030	.025	.014	.002	.001	.019	.033
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.016	.015	.014	.012	.006	.001	.001	.009	.015
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.007	.007	.006	.005	.003	.000	.000	.004	.007
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.003	.002	.002	.002	.001	.000	.000	.001	.002
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.001	.001	.000	.000	.000	.000	.000	.000	.001
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

412

CASE 8=C

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

YHEA	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%	=28.7%
SURFACE	.000	1.636	2.920	3.756	4.391	4.114	3.327	1.716	.000
S/DEPTH=.1	*****	19.2%	13.0%	5.0%	=10.3%	=20.3%	=19.3%	=8.0%	*****
S/DEPTH=.0	.000	1.306	2.529	3.603					
S/DEPTH=.9	*****	8.8%	7.2%	4.8%					
S/DEPTH=.8	.000	.822	1.602	2.304	3.379	4.010			
S/DEPTH=.7	*****	6.8%	5.8%	4.2%	=.2%	=6.8%			
S/DEPTH=.6	.000	.518	1.013	1.466	2.180	2.632	2.576	1.603	.000
S/DEPTH=.5	*****	6.2%	5.5%	4.5%	1.4%	=3.3%	=8.0%	=13.8%	*****
S/DEPTH=.4	.000	.324	.636	.923	1.386	1.696	1.678	1.058	.000
S/DEPTH=.3	*****	6.7%	6.2%	5.5%	3.4%	.0%	=3.5%	=7.8%	*****
S/DEPTH=.2	.000	.200	.393	.571	.864	1.068	1.067	.680	.000
S/DEPTH=.1	*****	*****	7.6%	7.1%	5.6%	3.2%	.6%	=2.6%	*****
S/DEPTH=.0	.000	.120	.236	.345	.524	.653	.658	.423	.000
S/DEPTH=.9	*****	*****	9.3%	9.0%	7.9%	6.2%	4.4%	2.0%	*****
S/DEPTH=.8	.000	.070	.137	.200	.306	.383	.389	.252	.000
S/DEPTH=.7	*****	*****	*****	*****	10.4%	9.1%	7.8%	6.1%	*****
S/DEPTH=.6	.000	.038	.075	.110	.168	.212	.216	.141	.000
S/DEPTH=.5	*****	*****	*****	*****	*****	11.8%	10.9%	*****	*****
S/DEPTH=.4	.000	.019	.037	.054	.083	.105	.108	.071	.000
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.008	.015	.022	.034	.043	.044	.029	.000
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.002	.004	.005	.008	.010	.010	.007	.000
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****

613

CASE 8=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	.611	.586	.521	.434	.243	.025	.150	.329	.389
	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
	12.0%	10.5%	6.5%	1.5%	=8.7%	*****	=1.9%	2.1%	5.4%
S/DEPTH=1.1	1.088	1.060	.979	.853					
	5.7%	5.2%	3.7%	1.3%					
S/DEPTH=1.0	.861	.842	.787	.699	.446	.052			
	3.6%	3.2%	2.1%	.3%	=6.1%	*****			
S/DEPTH=.9	.673	.660	.620	.557	.373	.078	=.232	=.625	=.772
	2.9%	2.6%	1.7%	.2%	=5.4%	=46.2%	12.6%	=1.8%	4.8%
S/DEPTH=.8	.522	.513	.484	.439	.303	.081	=.156	=.463	=.579
	2.9%	2.7%	1.9%	.6%	=4.5%	=38.3%	23.6%	5.5%	2.8%
S/DEPTH=.7	.404	.397	.377	.343	.242	.075	=.107	=.345	=.437
	3.3%	3.1%	2.4%	1.2%	=3.9%	=35.9%	36.1%	12.6%	9.7%
S/DEPTH=.6	.314	.309	.293	.268	.192	.065	=.075	=.260	=.332
	3.8%	3.6%	2.9%	1.6%	=3.7%	=36.6%	51.2%	19.8%	16.6%
S/DEPTH=.5	.245	.241	.230	.211	.153	.055	=.053	=.199	=.256
	4.1%	3.9%	3.1%	1.8%	=4.1%	*****	*****	27.4%	23.6%
S/DEPTH=.4	.195	.192	.183	.168	.123	.046	=.039	=.155	=.201
	4.2%	3.9%	3.1%	1.5%	=5.2%	*****	*****	35.3%	30.7%
S/DEPTH=.3	.159	.156	.149	.137	.101	.040	=.030	=.125	=.162
	3.9%	3.6%	2.7%	.9%	=6.8%	*****	*****	43.5%	37.9%
S/DEPTH=.2	.135	.133	.127	.117	.087	.035	=.024	=.105	=.137
	3.4%	3.1%	2.0%	.1%	=8.6%	*****	*****	50.9%	44.3%
S/DEPTH=.1	.121	.119	.114	.105	.078	.032	=.021	=.093	=.122
	3.0%	2.6%	1.4%	=.7%	=10.1%	*****	*****	56.4%	49.0%
S/DEPTH=.0	.116	.115	.110	.101	.075	.031	=.020	=.090	=.118
	2.8%	2.4%	1.2%	=1.0%	=10.7%	*****	*****	58.4%	50.8%

717

CASE 8=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	.173	.295	.345	.281	.096	-.049	-.102	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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

CASE B-C

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%)

CASE 8=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	.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			

CASE B=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 = .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) =	-.955492=02	X(2)/(H*T*G) =	-.393876=04
X(3)/(H*T*G) =	-.504770=06	X(4)/(H*T*G) =	-.959530=08
X(5)/(H*T*G) =	-.207965=09	X(6)/(H*T*G) =	-.948658=11
X(7)/(H*T*G) =	-.391081=12	X(8)/(H*T*G) =	-.259064=13

CASE B-D

TABLE I-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 =	.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	6,199	4,782	3,558	2,729	1,464	.328	-.496	-1,290	-1,544	
	13,8%	-9,1%	-36,7%	-57,9%	-94,2%	-184,9%	-.5%	-25,0%	-20,6%	
S/DEPTH=1,2	5,389									
	.9%									
S/DEPTH=1,1	3,584	3,437	3,068	2,604						
	-20,3%	-23,6%	-32,1%	-43,4%						
S/DEPTH=1,0	2,565	2,495	2,298	2,012	1,294					
	-22,8%	-24,4%	-28,8%	-35,6%	-56,5%					
S/DEPTH=.9	1,894	1,851	1,729	1,541	1,034	.297	-.417	-1,269		
	-21,6%	-22,5%	-25,1%	-29,4%	-43,2%	*****	4,1%	-27,1%		
S/DEPTH=.8	1,422	1,394	1,311	1,182	.816	.257	-.303	-.988	-1,240	
	-18,5%	-19,1%	-20,8%	-23,5%	-32,8%	*****	*****	-30,6%	-36,0%	
S/DEPTH=.7	1,081	1,062	1,003	.910	.642	.216	-.223	-.772	-.976	
	-14,4%	-14,7%	-15,8%	-17,7%	-23,9%	*****	*****	-22,8%	-26,8%	
S/DEPTH=.6	.833	.818	.776	.707	.505	.178	-.166	-.606	-.771	
	-9,5%	-9,8%	-10,5%	-11,7%	-16,0%	*****	*****	-15,4%	-18,4%	
S/DEPTH=.5	.651	.640	.608	.556	.401	.147	-.126	-.480	-.614	
	-4,3%	-4,4%	-4,9%	-5,8%	-8,7%	*****	*****	-8,3%	-10,5%	
S/DEPTH=.4	.519	.511	.486	.445	.324	.122	-.098	-.387	-.498	
	1,2%	1,1%	.7%	.2%	-1,8%	*****	*****	-1,6%	-3,1%	
S/DEPTH=.3	.427	.420	.400	.367	.268	.103	-.079	-.320	-.413	
	6,5%	6,4%	6,2%	5,8%	*****	*****	*****	4,6%	3,5%	
S/DEPTH=.2	.365	.359	.342	.315	.231	.090	-.067	-.276	-.357	
	11,1%	11,0%	10,9%	10,6%	*****	*****	*****	*****	9,0%	
S/DEPTH=.1	.330	.325	.310	.285	.210	.082	-.060	-.250	-.324	
	14,3%	14,2%	*****	*****	*****	*****	*****	*****	12,7%	
S/DEPTH=.0	.319	.314	.299	.275	.203	.079	-.057	-.242	-.313	
	15,4%	15,4%	*****	*****	*****	*****	*****	*****	14,0%	

CASE 8-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=	.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	.000	1.466	1.922	2.143	2.318	2.167	1.803	.969	.000
	*****	37.3%	8.0%	=16.0%	=45.9%	=60.5%	=56.3%	=38.4%	*****
S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000	.823	1.499	1.997					
	*****	9.2%	1.8%	=7.8%					
S/DEPTH=1.0	.000	.527	1.004	1.400	1.936				
	*****	=3.4%	=7.0%	=12.1%	=24.2%				
S/DEPTH= .9	.000	.365	.706	1.004	1.437	1.663	1.577	.954	
	*****	=8.8%	=10.9%	=13.9%	=21.9%	=32.8%	=42.8%	=40.6%	
S/DEPTH= .8	.000	.261	.509	.732	1.071	1.266	1.219	.746	.000
	*****	=10.5%	=11.8%	=13.7%	=19.1%	=26.9%	=34.5%	=43.3%	*****
S/DEPTH= .7	.000	.190	.372	.538	.798	.960	.935	.579	.000
	*****	=10.1%	=10.9%	=12.2%	=15.9%	=21.5%	=27.2%	=34.1%	*****
S/DEPTH= .6	.000	.140	.273	.397	.593	.722	.710	.444	.000
	*****	=8.4%	=9.0%	=9.9%	=12.5%	=16.6%	=20.9%	=26.2%	*****
S/DEPTH= .5	.000	.102	.200	.290	.437	.536	.531	.335	.000
	*****	*****	=6.7%	=7.3%	=9.2%	=12.3%	=15.5%	=19.6%	*****
S/DEPTH= .4	.000	.073	.143	.209	.315	.389	.387	.246	.000
	*****	*****	=4.2%	=4.7%	=6.2%	=8.5%	=11.0%	=14.3%	*****
S/DEPTH= .3	.000	.050	.099	.144	.218	.270	.270	.172	.000
	*****	*****	*****	=2.4%	=3.6%	=5.4%	=7.4%	=10.1%	*****
S/DEPTH= .2	.000	.031	.062	.090	.137	.170	.170	.109	.000
	*****	*****	*****	*****	=1.6%	=3.1%	=4.8%	*****	*****
S/DEPTH= .1	.000	.015	.030	.043	.066	.082	.082	.053	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

420

CASE 8=0

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 =	.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	.000	17.938	17.450	16.162	15.609	13.153	10.582	5.588	.000
	*****	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	.000
	*****	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	.000
	*****	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	.000
	*****	3.3%	2.3%	.6%	4.1%	11.3%	18.6%	27.4%	*****
S/DEPTH=.5	.000	.763	1.494	2.162	3.222	3.896	3.818	2.382	.000
	*****	*****	4.0%	2.9%	.2%	5.2%	10.4%	16.7%	*****
S/DEPTH=.4	.000	.590	1.158	1.683	2.536	3.117	3.099	1.966	.000
	*****	*****	6.9%	6.2%	4.1%	.7%	2.9%	7.4%	*****
S/DEPTH=.3	.000	.473	.929	1.355	2.058	2.562	2.579	1.659	.000
	*****	*****	10.4%	9.9%	8.5%	6.2%	3.8%	.6%	*****
S/DEPTH=.2	.000	.397	.781	1.141	1.745	2.192	2.228	1.449	.000
	*****	*****	*****	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	.000
	*****	*****	*****	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	.000
	*****	*****	*****	17.2%	16.6%	15.5%	14.2%	12.5%	*****

CASE 8=D

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	.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	=10.202	=8.804	=5.079	=3.883	=0.035	3.617	6.973	9.848	10.717	
	67.3%	65.4%	56.8%	78.2%	*****	=118.8%	=69.7%	=49.3%	=41.9%	
S/DEPTH=1.2	=14.839									
	77.5%									
S/DEPTH=1.1	=15.225	=13.062	=8.578	=4.801						
	51.5%	46.6%	32.9%	21.6%						
S/DEPTH=1.0	=12.343	=11.515	=9.432	=6.854	=1.645					
	25.1%	22.3%	14.5%	3.6%	=34.1%					
S/DEPTH=.9	=9.744	=9.332	=8.204	=6.599	=2.840	1.658	5.557	9.657		
	9.8%	8.1%	3.4%	4.1%	=28.8%	=12.0%	=45.2%	=52.2%		
S/DEPTH=.8	=7.595	=7.355	=6.674	=5.646	=3.004	.520	3.670	7.165	8.358	
	1.5%	.4%	=2.7%	=7.8%	=24.8%	*****	=30.4%	=53.2%	=60.6%	
S/DEPTH=.7	=5.857	=5.705	=5.265	=4.581	=2.722	.054	2.442	5.309	6.313	
	2.5%	3.2%	=5.3%	=8.9%	=21.0%	*****	=18.7%	=39.2%	=45.2%	
S/DEPTH=.6	=4.466	=4.364	=4.068	=3.600	=2.284	.300	1.633	3.919	4.735	
	3.8%	4.3%	=5.8%	=8.3%	=17.2%	*****	=9.8%	=28.5%	=33.4%	
S/DEPTH=.5	=3.351	=3.281	=3.078	=2.754	=1.821	.367	1.094	2.867	3.509	
	3.5%	3.8%	4.9%	6.8%	=13.6%	*****	=3.1%	=20.2%	=24.3%	
S/DEPTH=.4	=2.449	=2.402	=2.263	=2.038	=1.386	.344	.728	2.055	2.542	
	2.4%	2.6%	3.5%	4.9%	=10.2%	*****	*****	=13.8%	=17.3%	
S/DEPTH=.3	=1.708	=1.676	=1.583	=1.433	=0.992	.276	.472	1.412	1.761	
	1.0%	1.2%	1.9%	3.1%	7.3%	*****	*****	=9.1%	=12.1%	
S/DEPTH=.2	=1.079	=1.060	=1.002	=0.910	=0.637	.190	.283	.884	1.108	
	.2%	.1%	=.5%	=1.5%	*****	*****	*****	=5.8%	=8.4%	
S/DEPTH=.1	=0.522	=0.513	=0.486	=0.442	=0.311	.096	.132	.425	.535	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

422

CASE 8=0

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
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
	7.7%	24.5%	66.7%	105.6%	172.5%	*****	*****	24.8%	13.0%
S/DEPTH=1.2	4.036								
	13.4%								
S/DEPTH=1.1	2.089	1.977	1.688	1.312					
	43.3%	46.8%	56.5%	71.0%					
S/DEPTH=1.0	1.159	1.109	.973	.781	.364				
	38.8%	40.7%	46.0%	54.5%	82.8%				
S/DEPTH=.9	.667	.642	.571	.467	.228	.025	.029	.333	
	30.4%	31.5%	34.6%	39.8%	*****	*****	*****	28.8%	
S/DEPTH=.8	.395	.381	.341	.283	.143	.017	.016	.206	.333
	20.3%	20.9%	22.9%	26.1%	*****	*****	*****	*****	42.7%
S/DEPTH=.7	.240	.231	.208	.174	.090	.012	.009	.129	.211
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.149	.144	.130	.109	.057	.008	.005	.082	.135
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.094	.091	.082	.069	.037	.005	.003	.053	.087
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.060	.058	.053	.044	.024	.004	.002	.034	.057
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.038	.037	.033	.028	.015	.002	.001	.022	.036
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.022	.022	.020	.017	.009	.001	.001	.013	.022
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.010	.010	.009	.008	.004	.001	.000	.006	.010
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

423

CASE 8=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 =	.677	.572	.456	.355	.177	.002	.140	.278	.323
	26.1%	13.9%	=2.9%	=21.9%	=61.2%	*****	37.8%	=37.8%	=54.7%
SURFACE	.000	2.970	4.180	4.832	5.358	5.093	4.286	2.340	.000
	*****	38.7%	16.3%	=1.9%	=25.3%	=36.0%	=31.6%	=15.9%	*****
S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000	1.832	3.363	4.527					
	*****	19.3%	13.4%	5.9%					
S/DEPTH=1.0	.000	1.211	2.310	3.233	4.502				
	*****	11.2%	8.3%	4.1%	=5.8%				
S/DEPTH=.9	.000	.846	1.637	2.334	3.360	3.923	3.756	2.304	
	*****	7.7%	6.0%	3.5%	=3.1%	=12.0%	=20.0%	=17.7%	
S/DEPTH=.8	.000	.607	1.184	1.704	2.507	2.994	2.912	1.809	.000
	*****	6.7%	5.7%	4.1%	=.3%	=6.7%	=12.7%	=19.7%	*****
S/DEPTH=.7	.000	.442	.865	1.253	1.869	2.270	2.238	1.409	.000
	*****	7.4%	6.7%	5.6%	2.6%	=2.0%	=6.5%	=11.9%	*****
S/DEPTH=.6	.000	.323	.634	.921	1.388	1.708	1.702	1.084	.000
	*****	8.9%	8.4%	7.7%	5.6%	2.3%	=1.1%	=5.3%	*****
S/DEPTH=.5	.000	.235	.462	.673	1.020	1.268	1.275	.820	.000
	*****	*****	10.5%	10.0%	8.5%	6.0%	3.4%	.1%	*****
S/DEPTH=.4	.000	.168	.330	.482	.734	.919	.931	.603	.000
	*****	*****	12.6%	12.3%	11.1%	9.2%	7.2%	4.6%	*****
S/DEPTH=.3	.000	.115	.226	.331	.506	.637	.649	.423	.000
	*****	*****	*****	14.2%	13.3%	11.8%	10.2%	8.0%	*****
S/DEPTH=.2	.000	.072	.142	.207	.317	.401	.410	.268	.000
	*****	*****	*****	*****	15.1%	13.8%	12.4%	10.4%	*****
S/DEPTH=.1	.000	.035	.068	.100	.153	.193	.198	.130	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

424

CASE 8=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=	.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	5.290	3.577	2.200	1.338	.403	.026	-.031	-.239	-.345
	13.0%	-22.5%	-71.6%	-118.9%	-204.8%	*****	*****	*****	-10.4%
S/DEPTH=1.2	4.173								
	-10.3%								
S/DEPTH=1.1	1.920	1.813	1.538	1.186					
	-45.9%	-49.8%	-60.8%	-77.3%					
S/DEPTH=1.0	.939	.897	.784	.625	.286				
	-43.0%	-45.0%	-51.1%	-61.0%	-93.9%				
S/DEPTH=.9	.469	.451	.400	.325	.157	.016	-.021	-.230	
	-35.6%	-36.9%	-40.5%	-46.6%	*****	*****	*****	*****	
S/DEPTH=.8	.236	.228	.204	.168	.084	.010	-.010	-.121	-.195
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.119	.115	.104	.086	.044	.006	-.005	-.063	-.103
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.060	.058	.052	.044	.023	.003	-.002	-.033	-.054
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.029	.029	.026	.022	.011	.002	-.001	-.016	-.027
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.014	.014	.012	.010	.006	.001	-.000	-.008	-.013
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.006	.006	.005	.005	.003	.000	-.000	-.004	-.006
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.002	.002	.002	.002	.001	.000	-.000	-.001	-.002
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.001	.001	.000	.000	.000	.000	-.000	-.000	-.001
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	-.000	-.000	-.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

425

CASE 8=D

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=	.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	.000	2.836	3.678	3.980	3.983	3.416	2.659	1.340	.000
	*****	44.4%	18.3%	4.8%	36.6%	51.9%	44.5%	19.4%	*****
S/DEPTH=1.2	.000								

S/DEPTH=1.1	.000	1.525	2.756	3.642					
	*****	22.0%	15.0%	5.9%					
S/DEPTH=1.0	.000	.869	1.646	2.279	3.101				
	*****	12.1%	8.5%	3.3%	9.1%				
S/DEPTH=.9	.000	.521	1.005	1.422	2.014	2.302	2.167	1.307	
	*****	7.1%	5.0%	1.8%	6.5%	18.0%	28.4%	22.4%	
S/DEPTH=.8	.000	.318	.618	.885	1.286	1.511	1.448	.886	.000
	*****	5.2%	3.9%	1.8%	3.9%	12.1%	20.0%	29.1%	*****
S/DEPTH=.7	.000	.193	.378	.545	.806	.967	.942	.585	.000
	*****	*****	4.4%	3.0%	.9%	6.8%	12.7%	19.7%	*****
S/DEPTH=.6	.000	.116	.227	.329	.492	.600	.592	.373	.000
	*****	*****	6.0%	5.1%	2.4%	1.9%	6.2%	11.5%	*****
S/DEPTH=.5	.000	.067	.132	.192	.289	.357	.357	.227	.000
	*****	*****	*****	*****	5.7%	2.6%	.6%	4.6%	*****
S/DEPTH=.4	.000	.037	.072	.105	.160	.200	.201	.130	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.018	.036	.052	.080	.100	.102	.066	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.007	.015	.021	.033	.041	.042	.027	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.002	.003	.005	.008	.010	.010	.007	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

426

CASE 8=D

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	.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	1.329	1.149	.916	.716	.357	.002	.281	.558	.649
	24.5%	15.0%	1.9%	=8.5%	=26.5%	*****	=9.3%	=.1%	5.6%
S/DEPTH=1.2	1.272								
	21.1%								
S/DEPTH=1.1	1.020	.973	.855	.703					
	7.6%	5.3%	=.6%	=8.0%					
S/DEPTH=1.0	.800	.775	.707	.605	.348				
	.6%	=1.9%	=5.5%	=11.0%	=29.1%				
S/DEPTH=.9	.625	.610	.565	.497	.310	.038	.228	.548	
	=5.6%	=6.5%	=9.0%	=13.3%	=28.8%	*****	14.1%	=1.9%	
S/DEPTH=.8	.488	.477	.447	.399	.263	.054	.156	.415	.511
	=8.7%	=9.4%	=11.4%	=15.0%	=29.2%	*****	38.3%	.2%	=5.8%
S/DEPTH=.7	.381	.374	.352	.317	.217	.058	.108	.317	.395
	=10.9%	=11.5%	=13.4%	=16.7%	=30.5%	*****	66.3%	14.7%	8.1%
S/DEPTH=.6	.299	.294	.278	.253	.177	.054	.076	.244	.307
	=13.0%	=13.6%	=15.4%	=18.8%	=33.1%	*****	100.3%	29.3%	21.6%
S/DEPTH=.5	.237	.233	.221	.202	.145	.049	.054	.190	.242
	=15.4%	=16.0%	=18.0%	=21.5%	=37.1%	*****	*****	44.4%	35.2%
S/DEPTH=.4	.192	.188	.179	.164	.119	.043	.040	.151	.194
	=18.4%	=19.0%	=21.2%	=25.1%	=42.5%	*****	*****	60.2%	49.0%
S/DEPTH=.3	.159	.156	.149	.137	.100	.038	.031	.124	.160
	=21.8%	=22.6%	=25.0%	=29.4%	=48.8%	*****	*****	76.1%	62.5%
S/DEPTH=.2	.137	.135	.128	.118	.087	.035	.025	.106	.137
	=25.3%	=26.1%	=28.7%	=33.6%	=55.1%	*****	*****	90.4%	74.5%
S/DEPTH=.1	.124	.122	.117	.107	.080	.032	.021	.095	.125
	=27.9%	=28.8%	=31.6%	=36.9%	=59.9%	*****	*****	100.8%	83.1%
S/DEPTH=.0	.120	.118	.113	.104	.077	.031	.020	.092	.120
	=28.9%	=29.8%	=32.7%	=38.1%	=61.7%	*****	*****	104.6%	86.2%

427

CASE A=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	1.196	1.470	1.267	.689	.184	-.083	-.163	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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)
.655 (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, $LO=(G/6.28318)*T**2$.

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 = .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 I-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	.534	.523	.494	.446	.310	.097	.116	.373	.466	
	6.3%	5.9%	4.8%	3.0%	3.7%	32.8%	24.9%	2.6%	7.2%	
SURFACE	3.561	3.498	3.310	3.010	2.151	.813	.526	2.142	2.724	
S/DEPTH=1.0	.7%	.8%	1.0%	1.4%	2.2%	3.5%	1.2%	1.3%	.8%	
S/DEPTH=.9	1.667	1.641	1.566	1.443	1.070	.429	.291	1.275	1.662	
S/DEPTH=.8	.898	.885	.844	.778	.577	.232	.156	.688	.897	
S/DEPTH=.7	.484	.477	.455	.419	.311	.125	.084	.371	.484	
S/DEPTH=.6	.261	.257	.246	.226	.168	.068	.045	.200	.261	
S/DEPTH=.5	.141	.139	.133	.122	.091	.037	.025	.108	.141	
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	

132

CASE 9-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=	.534	.523	.494	.446	.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%	*****
S/DEPTH= .9	.000	.539	1.060	1.550	2.371	2.985			
S/DEPTH= .8	*****	-1.2%	-1.2%	-1.3%	-1.4%	-1.6%			
S/DEPTH= .7	.000	.290	.571	.834	1.277	1.609	1.638	1.068	.000
S/DEPTH= .6	*****	.4%	.4%	.4%	.5%	.6%	.7%	.9%	*****
S/DEPTH= .5	.000	.156	.307	.449	.688	.867	.884	.576	.000
S/DEPTH= .4	*****	.5%	.5%	.5%	.5%	.4%	.3%	.3%	*****
S/DEPTH= .3	.000	.084	.166	.242	.371	.468	.477	.311	.000
S/DEPTH= .2	*****	1.5%	1.4%	1.4%	1.4%	1.4%	1.4%	1.3%	*****
S/DEPTH= .1	.000	.045	.089	.131	.200	.252	.257	.168	.000
S/DEPTH= .0	*****	*****	*****	*****	2.4%	2.4%	2.4%	2.4%	*****
S/DEPTH= .9	.000	.024	.048	.070	.108	.136	.138	.090	.000
S/DEPTH= .8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	.000	.013	.026	.038	.058	.073	.074	.048	.000
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.007	.014	.020	.031	.039	.039	.026	.000
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.004	.007	.010	.015	.020	.020	.013	.000
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.001	.003	.004	.006	.008	.008	.005	.000
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

433

CASE 9=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=	.534 6.3%	.523 5.9%	.494 4.8%	.446 3.0%	.310 =3.7%	.097 =32.8%	.116 24.9%	.373 =2.6%	.466 =7.2%
SURFACE	.000	3.908	7.632	11.006	16.220	19.255	18.487	11.225	.000
	*****	.0%	=.2%	=.6%	=1.5%	=2.4%	=2.6%	=1.9%	*****
S/DEPTH=1.0	.000	3.400	6.693	9.776	14.942	18.767			
	*****	=.7%	=.8%	=.9%	=1.1%	=1.5%			
S/DEPTH=.9	.000	1.829	3.594	5.252	8.037	10.114	10.289	6.697	.000
	*****	=.1%	=.2%	=.2%	=.3%	=.5%	=.8%	=1.0%	*****
S/DEPTH=.8	.000	.982	1.934	2.827	4.328	5.452	5.552	3.618	.000
	*****	.6%	.6%	.6%	.5%	.4%	.3%	.2%	*****
S/DEPTH=.7	.000	.529	1.042	1.523	2.333	2.940	2.995	1.953	.000
	*****	*****	1.5%	1.5%	1.5%	1.4%	1.4%	1.3%	*****
S/DEPTH=.6	.000	.285	.562	.821	1.258	1.586	1.616	1.054	.000
	*****	*****	*****	*****	2.5%	2.4%	2.4%	2.3%	*****
S/DEPTH=.5	.000	.154	.303	.443	.679	.856	.873	.570	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.083	.164	.240	.368	.464	.473	.309	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.046	.090	.132	.202	.255	.260	.169	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.026	.051	.075	.115	.145	.148	.097	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.017	.033	.048	.074	.093	.095	.062	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.014	.028	.040	.062	.078	.080	.052	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

737

CASE 9-A

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=	.534 6.3%	.523 5.9%	.494 4.8%	.446 3.0%	.310 3.7%	.097 32.8%	.116 24.9%	.373 2.6%	.466 7.2%
SURFACE	.19,095 .0%	.18,707 .1%	.17,569 .3%	.15,751 .7%	.10,535 1.4%	.2,420 1.6%	5,699 2.8%	15,499 1.8%	19,033 1.2%
S/DEPTH=1.0	.16,963 .7%	.16,662 .7%	.15,771 .8%	.14,317 .9%	.9,927 1.1%	.2,427 1.7%			
S/DEPTH=.9	.9,753 .2%	.9,593 .2%	.9,116 .3%	.8,339 .3%	.5,986 .5%	.1,954 1.0%	2,569 .4%	8,733 .9%	11,159 1.1%
S/DEPTH=.8	.5,435 .6%	.5,349 .5%	.5,093 .5%	.4,676 .5%	.3,411 .4%	.1,241 .0%	1,198 .7%	4,531 .3%	5,844 .2%
S/DEPTH=.7	.2,982 1.5%	.2,935 1.5%	.2,798 1.4%	.2,573 1.4%	.1,893 1.4%	.724 *****	.592 *****	2,391 1.4%	3,101 1.3%
S/DEPTH=.6	.1,622 2.4%	.1,597 2.4%	.1,523 2.4%	.1,402 2.4%	.1,036 2.4%	.406 *****	.303 *****	1,274 2.4%	1,657 2.4%
S/DEPTH=.5	.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 *****	.033 *****	.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 *****

435

CASE 9=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 =	.534	.523	.494	.446	.310	.097	.116	.373	.466
	6.3%	5.9%	4.8%	3.0%	3.7%	32.8%	24.9%	2.6%	7.2%
SURFACE	1.025	.989	.886	.733	.375	.054	.022	.372	.602
	.2%	.3%	.8%	1.4%	2.9%	4.9%	*****	1.1%	.0%
S/DEPTH=1.0	.774	.750	.683	.580	.318	.051			
	1.6%	1.6%	1.7%	1.7%	2.0%	*****			
S/DEPTH=.9	.225	.218	.198	.168	.093	.015	.007	.132	.224
	.3%	.3%	.3%	.3%	.1%	*****	*****	.1%	.0%
S/DEPTH=.8	.065	.063	.058	.049	.027	.004	.002	.038	.065
	2.3%	2.3%	2.3%	*****	*****	*****	*****	*****	2.1%
S/DEPTH=.7	.019	.018	.017	.014	.008	.001	.001	.011	.019
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.006	.005	.005	.004	.002	.000	.000	.003	.006
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.002	.002	.001	.001	.001	.000	.000	.001	.002
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.001	.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

436

CASE 9=A

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=	.534 6.3%	.523 5.9%	.494 4.8%	.446 3.0%	.310 3.7%	.097 32.8%	.116 24.9%	.373 2.6%	.466 7.2%
SURFACE	.000	.629	1.229	1.774	2.619	3.116	2.997	1.824	.000
S/DEPTH= 1.0	***** .000	1.0% .548	.8% 1.079	.5% 1.577	.2% 2.413	.9% 3.037	.9% 1.667	.0% 1.087	***** .000
S/DEPTH= .9	***** .000	.3% .295	.3% .581	.3% .849	.2% 1.300	.0% 1.637	.8% 1.667	.7% 1.087	***** .000
S/DEPTH= .8	***** .000	1.1% .159	1.1% .313	1.1% .457	1.1% .700	1.0% .883	.8% .899	.7% .587	***** .000
S/DEPTH= .7	***** .000	2.0% .086	2.0% .169	2.0% .246	2.0% .377	1.9% .476	1.9% .485	1.8% .316	***** .000
S/DEPTH= .6	***** .000	***** .046	3.0% .091	3.0% .133	3.0% .203	2.9% .256	2.9% .261	2.9% .171	***** .000
S/DEPTH= .5	***** .000	***** .025	***** .049	***** .071	3.9% .110	3.9% .138	3.9% .141	3.9% .092	***** .000
S/DEPTH= .4	***** .000	***** .013	***** .026	***** .038	***** .059	***** .074	***** .076	***** .049	***** .000
S/DEPTH= .3	***** .000	***** .007	***** .014	***** .020	***** .031	***** .039	***** .040	***** .026	***** .000
S/DEPTH= .2	***** .000	***** .004	***** .007	***** .010	***** .016	***** .020	***** .020	***** .013	***** .000
S/DEPTH= .1	***** .000	***** .001	***** .003	***** .004	***** .007	***** .008	***** .008	***** .006	***** .000
S/DEPTH= .0	***** .000	***** .000	***** .000	***** .000	***** .000	***** .000	***** .000	***** .000	***** .000

437

CASE 9=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	.534	.523	.494	.446	.310	.097	.116	.373	.466
	6.3%	5.9%	4.8%	3.0%	3.7%	32.8%	24.9%	2.6%	7.2%
SURFACE	.966	.931	.833	.688	.349	.050	=.020	=.336	=.541
	=.2%	=.3%	=.8%	=1.5%	=3.1%	=5.3%	*****	=1.2%	.0%
S/DEPTH=1.0	.711	.690	.628	.533	.293	.047			
	=1.7%	=1.7%	=1.8%	=1.9%	=2.2%	*****			
S/DEPTH=.9	.184	.179	.163	.138	.076	.012	=.006	=.108	=.183
	.2%	.2%	.1%	.1%	.1%	*****	*****	=.0%	=.2%
S/DEPTH=.8	.047	.046	.041	.035	.019	.003	=.001	=.028	=.047
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.012	.011	.010	.009	.005	.001	=.000	=.007	=.012
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.003	.003	.003	.002	.001	.000	=.000	=.002	=.003
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.001	.001	.001	.001	.000	.000	=.000	=.000	=.001
	*****	*****	*****	*****	*****	*****	*****	*****	*****
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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

438

CASE 9=A

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	.534	.523	.494	.446	.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	.542	1.057	1.522	2.231	2.626	2.499	1.500	.000
S/DEPTH=1.0	*****	.9%	.7%	.3%	.6%	1.4%	1.4%	.3%	*****
S/DEPTH=.9	.000	.460	.905	1.323	2.024	2.547			
S/DEPTH=.8	*****	.1%	.1%	.0%	.1%	.3%			
S/DEPTH=.7	.000	.218	.429	.628	.961	1.210	1.232	.803	.000
S/DEPTH=.6	*****	.8%	.8%	.8%	.7%	.6%	.5%	.3%	*****
S/DEPTH=.5	.000	.102	.200	.293	.448	.565	.576	.376	.000
S/DEPTH=.4	*****	*****	1.7%	1.7%	1.6%	1.6%	1.5%	1.4%	*****
S/DEPTH=.3	.000	.046	.091	.134	.205	.258	.263	.172	.000
S/DEPTH=.2	*****	*****	*****	2.6%	2.6%	2.5%	2.5%	2.4%	*****
S/DEPTH=.1	.000	.021	.041	.059	.091	.114	.117	.076	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	.000	.009	.017	.025	.039	.049	.050	.032	.000
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	.004	.007	.010	.015	.020	.020	.013	.000
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.001	.003	.004	.006	.007	.007	.005	.000
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.000	.001	.001	.002	.002	.002	.001	.000
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

439

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 6.3%	.523 5.9%	.494 4.8%	.446 3.0%	.310 3.7%	.097 32.8%	.116 24.9%	.373 2.6%	.466 7.2%
SURFACE	1.067 1.0%	1.047 .9%	.988 .7%	.893 .4%	.620 .3%	.195 1.2%	.231 .5%	.747 .3%	.933 .9%
S/DEPTH=1.0	.937 .3%	.922 .3%	.876 .3%	.802 .2%	.577 .0%	.192 .7%			
S/DEPTH=.9	.521 1.0%	.513 .9%	.488 .9%	.448 .9%	.327 .7%	.120 .2%	.113 2.2%	.432 1.1%	.557 1.0%
S/DEPTH=.8	.285 1.7%	.281 1.6%	.268 1.6%	.246 1.6%	.181 1.3%	.069 .1%	.056 4.4%	.228 2.5%	.296 2.3%
S/DEPTH=.7	.155 2.2%	.153 2.2%	.146 2.2%	.134 2.1%	.099 1.7%	.039 *****	.029 *****	.122 4.0%	.159 3.7%
S/DEPTH=.6	.084 2.5%	.083 2.5%	.079 2.4%	.073 2.3%	.054 1.7%	.021 *****	.015 *****	.066 5.9%	.085 5.4%
S/DEPTH=.5	.045 *****	.045 *****	.043 *****	.039 *****	.029 *****	.011 *****	.008 *****	.035 *****	.046 *****
S/DEPTH=.4	.024 *****	.024 *****	.023 *****	.021 *****	.016 *****	.006 *****	.005 *****	.019 *****	.025 *****
S/DEPTH=.3	.013 *****	.013 *****	.013 *****	.012 *****	.008 *****	.003 *****	.003 *****	.011 *****	.014 *****
S/DEPTH=.2	.007 *****	.007 *****	.007 *****	.006 *****	.005 *****	.002 *****	.002 *****	.006 *****	.008 *****
S/DEPTH=.1	.005 *****	.005 *****	.004 *****	.004 *****	.003 *****	.001 *****	.001 *****	.004 *****	.005 *****
S/DEPTH=.0	.004 *****	.004 *****	.004 *****	.003 *****	.002 *****	.001 *****	.001 *****	.003 *****	.004 *****

077

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 CONDITON 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

177

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)
- (9) DIMENSIONLESS TOTAL AVERAGE MOMENTUM FLUX TRANSVERSE TO WAVE DIRECTION
DEFINED IN EQUATION (45)
.004 (239.7%)

442

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	STREAM FUNCTION	.149151
(15)	DIMENSIONLESS DYNAMIC FREE SURFACE BREAKING PARAMETER DEFINED IN EQUATION (49)			
	LINEAR	.130687	STREAM FUNCTION	.129512

277

CASE 9=B

4TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

LO = DEEP WATER WAVE LENGTH, CALCULATED FROM LINEAR WAVE THEORY, $LO=(G/6.28318)*T**2$
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) = .433331e03 X(2)/(H*T*G) = .100012e07
X(3)/(H*T*G) = .160018e11 X(4)/(H*T*G) = .331298e15

777

CASE 9=B

TABLE I-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	.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	3.994	3.898	3.627	3.216	2.154	.733	-.513	-1.867	-2.327
S/DEPTH=1.0	2.7%	3.2%	4.5%	6.5%	11.2%	18.8%	1.5%	4.9%	3.3%
S/DEPTH=.9	2.980	2.932	2.790	2.559	1.868	.712			
S/DEPTH=.8	5.3%	5.4%	5.7%	6.2%	8.0%	14.1%			
S/DEPTH=.7	1.638	1.613	1.537	1.413	1.040	.406	.296	-1.240	-1.608
S/DEPTH=.6	2.3%	2.3%	2.5%	2.7%	3.6%	6.7%	1.6%	3.5%	4.2%
S/DEPTH=.5	.904	.890	.849	.781	.577	.229	.161	.688	.895
S/DEPTH=.4	1.1%	1.1%	1.0%	.9%	.4%	-1.2%	*****	.5%	.1%
S/DEPTH=.3	.500	.493	.470	.433	.320	.128	.088	.382	.497
S/DEPTH=.2	4.6%	4.6%	4.5%	4.4%	4.2%	*****	*****	4.2%	4.0%
S/DEPTH=.1	.277	.273	.260	.240	.178	.071	.048	.212	.276
S/DEPTH=.0	8.0%	8.0%	8.0%	7.9%	*****	*****	*****	7.8%	7.7%
S/DEPTH=1.0	.154	.152	.145	.133	.099	.040	.027	.118	.154
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.086	.084	.081	.074	.055	.022	.015	.066	.086
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.049	.048	.046	.042	.031	.013	.008	.037	.048
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.029	.028	.027	.025	.018	.007	.005	.022	.029
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.019	.019	.018	.016	.012	.005	.003	.015	.019
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.016	.016	.015	.014	.010	.004	.003	.012	.016
S/DEPTH=1.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

577

CASE 9-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	.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%	-1.7%	-3.5%	-7.5%	-10.6%	-10.4%	-6.7%	*****
S/DEPTH=1.0	.000	.527	1.037	1.511	2.292	2.848			
	*****	-3.3%	-3.5%	-3.9%	-4.9%	-6.5%			
S/DEPTH=.9	.000	.287	.565	.825	1.258	1.574	1.592	1.029	.000
	*****	-1.3%	-1.4%	-1.5%	-2.0%	-2.8%	-3.6%	-4.7%	*****
S/DEPTH=.8	.000	.158	.311	.454	.694	.871	.884	.974	.000
	*****	1.6%	1.6%	1.5%	1.2%	.8%	.4%	-.2%	*****
S/DEPTH=.7	.000	.087	.171	.251	.383	.482	.491	.319	.000
	*****	*****	4.8%	4.7%	4.6%	4.4%	4.2%	3.8%	*****
S/DEPTH=.6	.000	.048	.095	.139	.212	.267	.272	.177	.000
	*****	*****	*****	*****	8.0%	7.9%	7.8%	7.6%	*****
S/DEPTH=.5	.000	.027	.052	.077	.117	.148	.151	.098	.000
	*****	*****	*****	*****	*****	11.2%	11.2%	*****	*****
S/DEPTH=.4	.000	.015	.029	.042	.065	.081	.083	.054	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.008	.016	.023	.035	.044	.045	.029	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.004	.008	.012	.018	.023	.023	.015	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.002	.003	.005	.008	.010	.010	.006	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 9=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%	=12.5%	=108.7%	36.7%	=7.5%	=16.0%
SURFACE	.000	4.657	8.905	12.449	17.020	18.496	16.612	9.473	.000
S/DEPTH=1.0	*****	4.3%	2.6%	.2%	=5.4%	=10.4%	=11.6%	=9.0%	*****
S/DEPTH=.9	.000	3.434	6.733	9.771	14.663	17.929			
S/DEPTH=.8	*****	.3%	=.2%	=.9%	=3.0%	=6.2%			
S/DEPTH=.7	.000	1.840	3.617	5.269	7.993	9.919	9.952	6.371	.000
S/DEPTH=.6	*****	.7%	.5%	.1%	=.9%	=2.5%	=4.2%	=6.2%	*****
S/DEPTH=.5	.000	1.002	1.972	2.878	4.387	5.485	5.543	3.577	.000
S/DEPTH=.4	*****	2.6%	2.5%	2.4%	1.9%	1.0%	.2%	=1.0%	*****
S/DEPTH=.3	.000	.551	1.084	1.583	2.419	3.036	3.080	1.997	.000
S/DEPTH=.2	*****	*****	5.3%	5.2%	5.0%	4.5%	4.1%	3.4%	*****
S/DEPTH=.1	.000	.304	.598	.874	1.337	1.682	1.710	1.112	.000
S/DEPTH=0	*****	*****	*****	*****	8.2%	8.0%	7.8%	7.4%	*****
S/DEPTH=0.9	.000	.168	.331	.484	.741	.934	.951	.619	.000
S/DEPTH=0.8	*****	*****	*****	*****	*****	11.4%	11.3%	*****	*****
S/DEPTH=0.7	.000	.094	.185	.270	.413	.521	.530	.346	.000
S/DEPTH=0.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=0.5	.000	.053	.104	.152	.233	.294	.300	.196	.000
S/DEPTH=0.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=0.3	.000	.031	.061	.090	.138	.174	.177	.115	.000
S/DEPTH=0.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=0.1	.000	.021	.041	.059	.091	.115	.117	.077	.000
S/DEPTH=0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=0.9	.000	.018	.034	.050	.077	.097	.099	.065	.000
S/DEPTH=0.8	*****	*****	*****	*****	*****	*****	*****	*****	*****

47

CASE 9=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 =	.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	=17.555	=17.028	=15.529	=13.264	=7.433	.335	7.151	14.597	17.129
	4.5%	4.0%	2.7%	.8%	=2.6%	*****	=12.9%	=8.3%	=6.1%
S/DEPTH=1.0	=14.546	=14.221	=13.263	=11.720	=7.192	.167			
	.6%	.5%	.0%	.8%	=3.0%	*****			
S/DEPTH=.9	=9.036	=8.869	=8.372	=7.567	=5.160	=1.134	3.256	9.065	11.305
	.1%	.0%	=.2%	=.6%	=2.0%	=7.9%	=2.3%	=5.5%	=6.4%
S/DEPTH=.8	=5.299	=5.210	=4.944	=4.511	=3.210	=1.002	1.440	4.720	5.996
	2.0%	2.0%	1.9%	1.6%	.8%	=2.4%	2.6%	=.3%	=.8%
S/DEPTH=.7	=3.025	=2.976	=2.832	=2.596	=1.885	=.670	.685	2.521	3.239
	4.9%	4.9%	4.8%	4.6%	4.2%	*****	*****	4.0%	3.6%
S/DEPTH=.6	=1.703	=1.676	=1.597	=1.467	=1.076	=.406	.345	1.367	1.769
	8.1%	8.0%	8.0%	7.9%	7.6%	*****	*****	7.8%	7.6%
S/DEPTH=.5	=.950	=.936	=.892	=.821	=.605	=.235	.180	.747	.971
	11.3%	11.3%	11.2%	*****	*****	*****	*****	*****	11.1%
S/DEPTH=.4	=.526	=.518	=.494	=.455	=.336	=.133	.096	.409	.532
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	=.287	=.282	=.269	=.248	=.184	=.073	.051	.221	.288
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	=.148	=.146	=.139	=.128	=.095	=.038	.026	.114	.149
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	=.063	=.062	=.059	=.054	=.040	=.016	.011	.048	.063
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	=.000	=.000	=.000	=.000	=.000	=.000	=.000	=.000	=.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

877

CASE 9=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=	.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	1.329	1.267	1.101	.870	.396	.048	=.021	=.296	=.463	
S/DEPTH=1.0	=1.0%	=1.9%	=4.2%	=7.7%	=15.7%	*****	*****	=3.3%	.5%	
	.744	.720	.653	.552	.298	.045				
	=5.7%	=5.8%	=6.2%	=6.9%	=9.2%	*****				
S/DEPTH=.9	.226	.219	.199	.169	.092	.014	=.007	=.131	=.221	
	.9%	.9%	.7%	.4%	.8%	*****	*****	=.7%	=1.6%	
S/DEPTH=.8	.069	.067	.061	.052	.028	.004	=.002	=.040	=.068	
	7.7%	7.6%	*****	*****	*****	*****	*****	*****	6.4%	
S/DEPTH=.7	.021	.021	.019	.016	.009	.001	=.001	=.012	=.021	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.6	.007	.006	.006	.005	.003	.000	=.000	=.004	=.007	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.5	.002	.002	.002	.002	.001	.000	=.000	=.001	=.002	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.4	.001	.001	.001	.000	.000	.000	=.000	=.000	=.001	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
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	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

677

CASE 9=B

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
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	.750	1.442	2.030	2.823	3.126	2.844	1.640	.000
	*****	5.3%	4.1%	2.4%	=1.3%	=4.1%	=4.0%	=4.4%	*****
S/DEPTH=1.0	.000	.561	1.103	1.606	2.438	3.030			
	*****	2.7%	2.5%	2.1%	1.2%	=.3%			
S/DEPTH=.9	.000	.306	.602	.878	1.340	1.676	1.695	1.095	.000
	*****	4.7%	4.6%	4.5%	4.0%	3.3%	2.5%	1.5%	*****
S/DEPTH=.8	.000	.168	.331	.483	.739	.928	.942	.611	.000
	*****	7.5%	7.4%	7.3%	7.1%	6.7%	6.3%	5.8%	*****
S/DEPTH=.7	.000	.093	.183	.267	.408	.514	.523	.340	.000
	*****	*****	10.4%	10.4%	10.3%	10.1%	9.9%	9.6%	*****
S/DEPTH=.6	.000	.051	.101	.148	.226	.284	.290	.189	.000
	*****	*****	*****	*****	13.5%	13.4%	13.2%	13.1%	*****
S/DEPTH=.5	.000	.028	.056	.082	.125	.157	.160	.105	.000
	*****	*****	*****	*****	*****	16.5%	16.4%	*****	*****
S/DEPTH=.4	.000	.016	.031	.045	.069	.087	.088	.058	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.008	.017	.024	.037	.047	.048	.031	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.004	.009	.013	.019	.024	.025	.016	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.002	.004	.005	.008	.010	.011	.007	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 9-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%	8.4%	3.8%	12.5%	108.7%	36.7%	7.5%	16.0%
SURFACE	1.282	1.221	1.056	.830	.372	.044	.019	.262	.406
	.8%	1.8%	4.3%	8.1%	16.8%	*****	*****	3.7%	.5%
S/DEPTH=1.0	.681	.660	.598	.505	.272	.041			
	6.2%	6.4%	6.8%	7.5%	9.8%	*****			
S/DEPTH=.9	.184	.179	.162	.137	.075	.012	.006	.106	.180
	.3%	.3%	.1%	.3%	1.4%	*****	*****	1.3%	2.3%
S/DEPTH=.8	.049	.048	.044	.037	.020	.003	.002	.029	.049
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.013	.013	.012	.010	.005	.001	.000	.008	.013
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.003	.003	.003	.003	.001	.000	.000	.002	.003
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.001	.001	.001	.001	.000	.000	.000	.000	.001
	*****	*****	*****	*****	*****	*****	*****	*****	*****
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 9-8

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
THETA =	.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	.662	1.267	1.772	2.421	2.617	2.329	1.311	.000
	*****	5.2%	3.8%	1.8%	-2.6%	-6.0%	-5.8%	-1.6%	*****
S/DEPTH= 1.0	.000	.468	.920	1.340	2.031	2.520			
	*****	1.8%	1.6%	1.3%	.2%	-1.4%			
S/DEPTH= .9	.000	.224	.442	.644	.982	1.228	1.241	.801	.000
	*****	3.7%	3.6%	3.4%	2.9%	2.0%	1.2%	.0%	*****
S/DEPTH= .8	.000	.107	.210	.307	.468	.588	.596	.387	.000
	*****	*****	6.2%	6.1%	5.8%	5.4%	4.9%	4.3%	*****
S/DEPTH= .7	.000	.050	.098	.143	.219	.275	.280	.182	.000
	*****	*****	*****	9.0%	8.9%	8.6%	8.4%	8.0%	*****
S/DEPTH= .6	.000	.023	.044	.065	.099	.125	.127	.083	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.010	.019	.028	.043	.055	.056	.036	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	.004	.008	.012	.018	.023	.023	.015	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.002	.003	.004	.007	.008	.009	.006	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	.000	.001	.001	.002	.003	.003	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.000	.000	.000	.000	.001	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

452

CASE 9=B

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
	4.5%	4.1%	3.0%	1.4%	-2.0%	-6.7%	-1.7%	1.2%	3.2%
S/DEPTH=1.0	.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%
S/DEPTH=.8	.295	.291	.277	.254	.185	.066	-.065	-.244	-.314
	4.4%	4.3%	4.1%	3.7%	2.1%	-7.3%	20.7%	9.7%	8.6%
S/DEPTH=.7	.166	.164	.156	.143	.105	.040	-.033	-.133	-.172
	5.2%	5.1%	4.8%	4.3%	1.9%	*****	*****	16.4%	14.7%
S/DEPTH=.6	.093	.091	.087	.080	.059	.023	-.018	-.073	-.095
	4.4%	4.2%	3.7%	2.9%	-1.0%	*****	*****	25.1%	22.3%
S/DEPTH=.5	.052	.051	.049	.045	.033	.013	-.010	-.040	-.053
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.029	.028	.027	.025	.018	.007	-.005	-.022	-.029
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.016	.016	.015	.014	.010	.004	-.003	-.013	-.017
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.010	.009	.009	.008	.006	.002	-.002	-.008	-.010
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.006	.006	.006	.005	.004	.002	-.001	-.005	-.007
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.005	.005	.005	.005	.003	.001	-.001	-.004	-.006
	*****	*****	*****	*****	*****	*****	*****	*****	*****

453

CASE 9-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	.045	.082	.104	.100	.040	.023	.052	.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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 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%)

455

CASE 9-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	.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	.246908	STREAM FUNCTION .238033

CASE 9-C

3TH ORDER STREAM FUNCTION WAVE THEORY

DEFINITIONS

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

M = 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
M/DPT = .128025
L/LO = 1.132813 PSI/(G*M*T) = -.013501

LISTING OF DIMENSIONLESS STREAM FUNCTION COEFFICIENTS

X(1)/(M*T*G) = -.596822=03 X(2)/(M*T*G) = -.981606=07
X(3)/(M*T*G) = -.289623=10

CASE 9-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=	.609	.585	.522	.436	.245	.026	.149	.330	.391
	17.9%	15.9%	9.9%	.6%	=31.1%	*****	41.6%	=15.9%	=27.9%
SURFACE	4.518	4.342	3.881	3.269	1.969	.564	=.509	=1.594	=1.954
	=3.8%	=5.7%	=10.9%	=17.7%	=32.6%	=59.8%	.1%	=10.9%	=7.4%
S/DEPTH=1.0	2.825	2.773	2.620	2.375	1.668	.557			
	=11.1%	=11.5%	=12.6%	=14.4%	=20.9%	=45.9%			
S/DEPTH=.9	1.580	1.553	1.475	1.348	.972	.355	.305	=1.163	=1.492
	=6.1%	=6.2%	=6.8%	=7.6%	=10.8%	=22.2%	4.5%	=10.4%	=12.3%
S/DEPTH=.8	.895	.880	.838	.769	.562	.214	.166	.671	.866
	.0%	.0%	.3%	.8%	=2.3%	*****	*****	=2.2%	=3.3%
S/DEPTH=.7	.510	.502	.478	.440	.324	.126	.092	.386	.500
	6.4%	6.3%	6.2%	6.0%	5.2%	*****	*****	5.2%	4.6%
S/DEPTH=.6	.292	.287	.274	.252	.186	.074	.052	.222	.289
	12.7%	12.6%	12.6%	12.4%	*****	*****	*****	*****	11.7%
S/DEPTH=.5	.168	.165	.157	.145	.107	.043	.030	.128	.167
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.097	.095	.091	.084	.062	.025	.017	.074	.097
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.057	.056	.053	.049	.037	.015	.010	.044	.057
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.035	.034	.033	.030	.022	.009	.006	.027	.035
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.024	.024	.023	.021	.015	.006	.004	.018	.024
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.021	.020	.020	.018	.013	.005	.004	.016	.021
	*****	*****	*****	*****	*****	*****	*****	*****	*****

857

CASE 9=C

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=	.609	.585	.522	.436	.245	.026	.149	.330	.391
	17.9%	15.9%	9.9%	.6%	=31.1%	*****	41.6%	=15.9%	=27.9%
SURFACE	.000	.850	1.567	2.095	2.638	2.674	2.309	1.284	.000
S/DEPTH=1.0	*****	4.8%	.1%	=6.1%	=18.0%	=25.8%	=24.8%	=15.5%	*****
	.000	.521	1.019	1.474	2.186	2.624			
	*****	=4.6%	=5.3%	=6.5%	=10.0%	=15.6%			
S/DEPTH=.9	.000	.283	.556	.808	1.218	1.497	1.488	.945	.000
	*****	=2.7%	=3.1%	=3.6%	=5.3%	=8.1%	=10.9%	=14.0%	*****
S/DEPTH=.8	.000	.158	.311	.453	.688	.856	.860	.552	.000
	*****	1.7%	1.6%	1.3%	.4%	=.9%	=2.4%	=4.2%	*****
S/DEPTH=.7	.000	.089	.176	.257	.391	.490	.495	.320	.000
	*****	*****	7.2%	7.0%	6.6%	5.9%	5.1%	4.1%	*****
S/DEPTH=.6	.000	.051	.100	.146	.223	.280	.285	.185	.000
	*****	*****	*****	12.9%	12.7%	12.3%	11.9%	11.3%	*****
S/DEPTH=.5	.000	.029	.057	.083	.128	.160	.163	.106	.000
	*****	*****	*****	*****	*****	18.3%	18.0%	*****	*****
S/DEPTH=.4	.000	.016	.032	.047	.073	.091	.093	.061	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.009	.018	.027	.041	.051	.052	.034	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.005	.010	.014	.022	.027	.028	.018	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.002	.004	.006	.009	.012	.012	.008	.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 =	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.609	.585	.522	.436	.245	.026	.149	.330	.391
	17.9%	15.9%	9.9%	.6%	=31.1%	*****	41.6%	=15.9%	=27.9%
SURFACE	.000	6.228	11.279	14.705	17.490	16.684	13.915	7.647	.000
	*****	18.3%	12.8%	5.0%	=11.8%	=26.7%	=30.2%	=21.9%	*****
S/DEPTH=1.0	.000	3.644	7.072	10.095	14.430	16.383			
	*****	6.0%	4.6%	2.3%	=4.7%	=16.3%			
S/DEPTH=.9	.000	1.893	3.701	5.346	7.911	9.452	9.162	5.698	.000
	*****	3.4%	2.7%	1.5%	=1.9%	=7.6%	=13.1%	=18.7%	*****
S/DEPTH=.8	.000	1.028	2.018	2.932	4.412	5.406	5.355	3.382	.000
	*****	5.1%	4.7%	4.2%	2.4%	=.4%	=3.3%	=6.8%	*****
S/DEPTH=.7	.000	.573	1.126	1.641	2.490	3.091	3.100	1.983	.000
	*****	*****	8.9%	8.6%	7.7%	6.3%	4.7%	2.7%	*****
S/DEPTH=.6	.000	.324	.637	.930	1.417	1.771	1.789	1.154	.000
	*****	*****	*****	13.8%	13.4%	12.6%	11.8%	10.7%	*****
S/DEPTH=.5	.000	.185	.363	.531	.811	1.018	1.032	.669	.000
	*****	*****	*****	*****	*****	18.7%	18.3%	*****	*****
S/DEPTH=.4	.000	.106	.209	.306	.468	.588	.598	.389	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.062	.123	.179	.274	.345	.352	.229	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.038	.075	.110	.168	.212	.216	.141	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.026	.052	.076	.116	.146	.149	.097	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.023	.045	.065	.100	.126	.129	.084	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 9=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	.609	.585	.522	.436	.245	.026	.149	.330	.391
	17.9%	15.9%	9.9%	.6%	=31.1%	*****	41.6%	=15.9%	=27.9%
SURFACE	=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=1.0	=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=.9	=8.430	=8.242	=7.689	=6.804	=4.252	=2.261	3.766	8.788	10.702
	1.9%	1.6%	.7%	.8%	=6.1%	*****	=8.4%	=17.4%	=19.4%
S/DEPTH=.8	=5.144	=5.047	=4.762	=4.300	=2.938	=1.705	1.664	4.720	5.883
	3.3%	3.1%	2.6%	1.8%	=1.1%	*****	2.7%	=4.8%	=6.4%
S/DEPTH=.7	=3.048	=2.996	=2.841	=2.591	=1.841	=1.584	.785	2.594	3.290
	7.6%	7.5%	7.3%	6.8%	5.2%	*****	10.4%	4.4%	3.3%
S/DEPTH=.6	=1.779	=1.750	=1.665	=1.525	=1.105	=1.393	.394	1.449	1.859
	13.0%	12.9%	12.8%	12.5%	11.6%	*****	*****	11.8%	11.1%
S/DEPTH=.5	=1.029	=1.013	=.964	=.886	=.649	=.244	.207	.817	1.055
	18.5%	18.5%	18.4%	18.3%	*****	*****	*****	18.2%	17.7%
S/DEPTH=.4	=.589	=.580	=.553	=.509	=.375	=.145	.112	.461	.598
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	=.331	=.326	=.311	=.286	=.212	=.083	.061	.257	.334
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	=.176	=.173	=.165	=.152	=.113	=.045	.032	.136	.177
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	=.076	=.075	=.072	=.066	=.049	=.019	.014	.059	.076
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	=.000	=.000	=.000	=.000	=.000	=.000	=.000	=.000	=.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

461

CASE 9=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/HEIGHT=	.609	.585	.522	.436	.245	.026	.149	.330	.391	
	17.9%	15.9%	9.9%	.6%	-31.1%	*****	41.6%	-15.9%	-27.9%	
SURFACE	1.720	1.597	1.296	.940	.360	.034	=.021	=.232	=.352	
S/DEPTH=1.0	-.21%	-.53%	-.140%	-.25.9%	-.51.1%	*****	*****	-.7.7%	-.1%	
S/DEPTH=.9	.691	.667	.600	.499	.257	.033				
S/DEPTH=.8	-.13.8%	-.14.3%	-.15.7%	-.18.1%	-.26.5%	*****				
S/DEPTH=.7	.220	.213	.193	.162	.086	.012	=.008	=.123	=.204	
S/DEPTH=.6	-.1.7%	-.1.9%	-.2.6%	-.3.6%	-.7.5%	*****	*****	-.7.1%	-.9.8%	
S/DEPTH=.5	.071	.069	.063	.053	.029	.004	=.002	=.041	=.068	
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.3	.023	.023	.021	.017	.010	.001	=.001	=.014	=.023	
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.1	.008	.008	.007	.006	.003	.001	=.000	=.005	=.008	
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.9	.003	.003	.002	.002	.001	.000	=.000	=.002	=.003	
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.7	.001	.001	.001	.001	.000	.000	=.000	=.001	=.001	
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.5	.000	.000	.000	.000	.000	.000	=.000	=.000	=.000	
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	=.000	=.000	=.000	
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	=.000	=.000	=.000	
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 9=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=	.609	.585	.522	.436	.245	.026	-.149	-.330	-.391
	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
	*****	14.3%	10.2%	4.9%	=5.4%	=11.9%	=10.8%	=2.4%	*****
S/DEPTH=1.0	.000	.586	1.147	1.658	2.460	2.955			
	*****	6.9%	6.2%	5.2%	2.1%	=2.8%			
S/DEPTH=.9	.000	.320	.628	.914	1.377	1.693	1.683	1.069	.000
	*****	9.0%	8.7%	8.2%	6.7%	4.2%	1.8%	-.9%	*****
S/DEPTH=.8	.000	.179	.352	.513	.779	.969	.974	.625	.000
	*****	13.0%	12.9%	12.6%	11.9%	10.7%	9.4%	7.8%	*****
S/DEPTH=.7	.000	.101	.199	.291	.443	.555	.561	.362	.000
	*****	*****	17.9%	17.7%	17.4%	16.7%	16.0%	15.2%	*****
S/DEPTH=.6	.000	.058	.113	.166	.253	.318	.322	.209	.000
	*****	*****	*****	22.9%	22.7%	22.4%	22.1%	21.6%	*****
S/DEPTH=.5	.000	.033	.065	.094	.144	.182	.185	.120	.000
	*****	*****	*****	*****	*****	27.7%	27.5%	*****	*****
S/DEPTH=.4	.000	.019	.037	.054	.082	.103	.105	.069	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.010	.021	.030	.046	.058	.059	.039	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.006	.011	.016	.024	.031	.031	.020	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.002	.005	.007	.011	.013	.014	.009	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

697

CASE 9-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	.609	.585	.522	.436	.245	.026	.149	.530	.391
	17.9%	15.9%	9.9%	.6%	=31.1%	*****	41.6%	=15.9%	=27.9%
SURFACE	1.705	1.578	1.269	.909	.339	.031	.019	.201	.302
S/DEPTH=1.0	=1.4%	=4.8%	=14.2%	=27.0%	=54.6%	*****	*****	=8.2%	.1%
	.630	.608	.547	.455	.233	.030			
S/DEPTH=.9	=14.8%	=15.3%	=16.8%	=19.3%	=28.2%	*****			
	.179	.173	.156	.131	.070	.010	.006	.099	.165
S/DEPTH=.8	=2.9%	=3.1%	=3.8%	=4.9%	*****	*****	*****	=8.6%	=11.4%
	.051	.049	.045	.038	.020	.003	.002	.029	.048
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.014	.014	.013	.011	.006	.001	.000	.008	.014
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.004	.004	.003	.003	.002	.000	.000	.002	.004
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.001	.001	.001	.001	.000	.000	.000	.001	.001
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

597

CASE 9=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=	.609	.585	.522	.436	.245	.026	.149	.330	.391
	17.9%	15.9%	9.9%	.6%	=31.1%	*****	41.6%	=15.9%	=27.9%
SURFACE	.000	.862	1.574	2.078	2.541	2.485	2.084	1.124	.000
S/DEPTH=1.0	*****	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			
S/DEPTH=.8	*****	5.7%	5.0%	3.8%	.3%	=5.2%			
S/DEPTH=.7	.000	.233	.457	.664	.999	1.224	1.213	.768	.000
S/DEPTH=.6	*****	7.2%	6.8%	6.2%	4.5%	1.7%	=1.1%	=4.2%	*****
S/DEPTH=.5	.000	.112	.220	.321	.487	.605	.607	.388	.000
S/DEPTH=.4	*****	*****	10.7%	10.4%	9.5%	8.1%	6.5%	4.7%	*****
S/DEPTH=.3	.000	.053	.105	.154	.234	.292	.295	.191	.000
S/DEPTH=.2	*****	*****	*****	15.2%	14.8%	14.0%	13.2%	12.1%	*****
S/DEPTH=.1	.000	.025	.049	.072	.109	.137	.159	.090	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	19.6%	19.2%	*****	*****
	.000	.011	.022	.032	.049	.062	.063	.041	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.005	.009	.014	.021	.026	.027	.018	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.002	.004	.005	.008	.010	.010	.007	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.001	.001	.002	.003	.003	.003	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.001	.001	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

657

CASE 9-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 =	.609	.585	.522	.436	.245	.026	-.149	-.330	-.391
	17.9%	15.9%	9.9%	.6%	=31.1%	*****	41.6%	=15.9%	=27.9%
SURFACE	1.214	1.167	1.043	.872	.490	.052	-.297	-.660	-.782
S/DEPTH=1.0	11.4%	10.1%	6.7%	2.2%	-7.2%	*****	=3.5%	2.7%	6.7%
	.857	.838	.784	.698	.448	.055			
S/DEPTH=.9	3.2%	2.9%	2.0%	.4%	=5.2%	*****			
	.519	.510	.482	.436	.302	.080	-.156	-.464	-.583
S/DEPTH=.8	2.6%	2.3%	1.6%	.4%	=4.5%	=37.6%	23.0%	6.0%	3.6%
	.307	.302	.286	.262	.187	.062	-.075	-.257	-.327
S/DEPTH=.7	2.9%	2.6%	1.9%	.6%	=4.9%	=40.1%	51.5%	20.1%	16.8%
	.179	.176	.168	.154	.112	.041	-.038	-.144	-.185
S/DEPTH=.6	1.3%	1.0%	.0%	=1.7%	=9.4%	*****	*****	36.2%	31.2%
	.104	.102	.098	.090	.066	.025	-.020	-.081	-.105
S/DEPTH=.5	=5.1%	=5.5%	=7.0%	=9.7%	=21.7%	*****	*****	58.0%	49.6%
	.060	.060	.057	.052	.039	.015	-.011	-.046	-.060
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.035	.035	.033	.031	.023	.009	-.006	-.026	-.034
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.021	.021	.020	.018	.014	.006	-.003	-.015	-.020
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.013	.013	.012	.011	.009	.004	-.002	-.009	-.012
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.009	.009	.009	.008	.006	.003	-.001	-.006	-.008
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.008	.008	.008	.007	.005	.003	-.001	-.005	-.007
	*****	*****	*****	*****	*****	*****	*****	*****	*****

997

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 CONDITON 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

467

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 (=11.3%)
- (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=D

TABLE I=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	.661	.595	.483	.375	.187	.002	.146	.291	.339	
	24.4%	17.3%	2.7%	=15.6%	=72.0%	*****	40.3%	=31.7%	=47.7%	
SURFACE	5.508	4.849	3.804	2.899	1.551	.366	.492	=1.319	=1.588	
	2.9%	=7.7%	=27.9%	=48.7%	=83.2%	=154.9%	=1.0%	=21.2%	=16.0%	
S/DEPTH=1.1	5.025	4.815								
	=6.4%	=8.5%								
S/DEPTH=1.0	2.599	2.535	2.352	2.075	1.356					
	=20.8%	=21.9%	=25.4%	=31.0%	=48.8%					
S/DEPTH=.9	1.456	1.428	1.346	1.216	.846	.274	.305	=1.022	=1.288	
	=15.1%	=15.6%	=17.0%	=19.4%	=27.3%	*****	4.7%	=25.6%	=30.1%	
S/DEPTH=.8	.841	.826	.783	.715	.512	.183	.166	.613	.782	
	=6.4%	=6.6%	=7.3%	=8.4%	=12.2%	*****	*****	=11.7%	=14.4%	
S/DEPTH=.7	.492	.484	.461	.422	.307	.115	.093	.367	.472	
	3.0%	2.9%	2.6%	2.0%	.1%	*****	*****	.3%	=1.2%	
S/DEPTH=.6	.291	.286	.272	.250	.184	.071	.053	.219	.283	
	12.3%	12.2%	*****	*****	*****	*****	*****	*****	10.0%	
S/DEPTH=.5	.173	.170	.162	.149	.110	.043	.031	.131	.170	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.4	.104	.102	.097	.089	.066	.026	.018	.079	.103	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.3	.063	.062	.059	.055	.041	.016	.011	.048	.063	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.2	.041	.040	.038	.035	.026	.010	.007	.031	.040	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.1	.029	.029	.027	.025	.019	.007	.005	.022	.029	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	.025	.025	.024	.022	.016	.007	.004	.020	.025	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

471

CASE 9=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=	.661	.595	.483	.375	.187	.002	-.146	-.291	-.339
	24.4%	17.3%	2.7%	-15.6%	-72.0%	*****	40.3%	-31.7%	-47.7%
SURFACE	.000	1.222	1.893	2.213	2.395	2.262	1.891	1.020	.000
	*****	24.7%	6.5%	-12.5%	-41.4%	-53.8%	-49.1%	-31.5%	*****
S/DEPTH=1.1	.000	1.210							
	*****	23.9%							
S/DEPTH=1.0	.000	.523	1.006	1.420	1.991				
	*****	-4.2%	-6.7%	-10.5%	-20.8%				
S/DEPTH=.9	.000	.272	.531	.765	1.126	1.342	1.301	.802	.000
	*****	-7.0%	-8.0%	-9.6%	-14.0%	-20.6%	-26.9%	-34.2%	*****
S/DEPTH=.8	.000	.152	.298	.432	.649	.793	.784	.493	.000
	*****	-2.3%	-2.8%	-3.5%	-5.6%	-8.9%	-12.3%	-16.6%	*****
S/DEPTH=.7	.000	.087	.172	.250	.379	.469	.470	.299	.000
	*****	*****	4.8%	4.5%	3.4%	1.7%	-.1%	-2.5%	*****
S/DEPTH=.6	.000	.051	.100	.146	.223	.278	.280	.180	.000
	*****	*****	*****	12.9%	12.3%	11.4%	10.5%	9.2%	*****
S/DEPTH=.5	.000	.030	.059	.086	.131	.164	.166	.108	.000
	*****	*****	*****	*****	20.7%	20.2%	19.7%	*****	*****
S/DEPTH=.4	.000	.017	.034	.050	.077	.097	.098	.064	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.010	.020	.029	.044	.056	.057	.037	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.005	.011	.016	.024	.030	.031	.020	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.002	.005	.007	.011	.013	.014	.009	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

472

CASE 9=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	150.0	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	.000	11.904	16.722	17.445	15.804	13.743	11.016	5.723	.000
	*****	51.4%	33.5%	10.4%	=34.6%	=59.1%	=60.7%	=47.3%	*****
S/DEPTH=1.1	.000	11.768							
	*****	50.8%							
S/DEPTH=1.0	.000	4.269	7.956	10.695	13.349				
	*****	19.8%	15.2%	7.8%	=13.2%				
S/DEPTH=.9	.000	1.969	3.795	5.365	7.521	8.446	7.815	4.616	.000
	*****	7.2%	5.1%	1.9%	=7.2%	=20.4%	=32.6%	=46.6%	*****
S/DEPTH=.8	.000	1.032	2.013	2.898	4.251	5.027	4.823	2.938	.000
	*****	5.4%	4.5%	3.0%	=1.3%	=8.0%	=14.7%	=22.9%	*****
S/DEPTH=.7	.000	.574	1.126	1.633	2.445	2.974	2.923	1.825	.000
	*****	*****	8.9%	8.1%	6.0%	2.6%	=1.1%	=5.7%	*****
S/DEPTH=.6	.000	.330	.648	.943	1.426	1.762	1.757	1.116	.000
	*****	*****	*****	15.0%	14.0%	12.2%	10.2%	7.7%	*****
S/DEPTH=.5	.000	.193	.379	.553	.841	1.048	1.055	.677	.000
	*****	*****	*****	*****	22.0%	21.1%	20.0%	*****	*****
S/DEPTH=.4	.000	.114	.225	.329	.501	.628	.636	.411	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.069	.137	.200	.305	.384	.390	.253	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.044	.087	.127	.195	.246	.250	.163	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.032	.062	.091	.139	.176	.179	.117	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.028	.055	.080	.122	.154	.158	.103	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

473

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	.339
	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	=0.237	3.645	7.076	10.322	11.539
	72.9%	73.3%	73.7%	84.4%	*****	=118.5%	=67.3%	=42.3%	=31.7%
S/DEPTH=1.1	=13.266	=10.872							
	76.2%	73.6%							
S/DEPTH=1.0	=12.131	=11.488	=9.726	=7.257	=1.961				
	23.9%	22.3%	17.3%	9.2%	=11.4%				
S/DEPTH=.9	=7.860	=7.627	=6.959	=5.936	=3.243	.454	3.840	7.642	9.102
	4.1%	3.3%	.8%	3.2%	=16.5%	*****	=25.4%	=43.7%	=48.5%
S/DEPTH=.8	=4.853	=4.746	=4.435	=3.941	=2.537	.383	1.754	4.338	5.281
	1.8%	1.4%	.2%	1.9%	=8.8%	*****	=4.2%	=18.9%	=22.5%
S/DEPTH=.7	=2.944	=2.888	=2.726	=2.465	=1.698	.457	.841	2.482	3.094
	6.4%	6.1%	5.5%	4.5%	.7%	*****	9.2%	=2.4%	=4.8%
S/DEPTH=.6	=1.769	=1.738	=1.649	=1.503	=1.070	.351	.425	1.437	1.822
	13.4%	13.3%	13.0%	12.4%	10.4%	*****	*****	9.9%	8.4%
S/DEPTH=.5	=1.056	=1.038	=0.987	=0.904	=0.655	.236	.225	.838	1.074
	21.0%	21.0%	20.8%	20.5%	*****	*****	*****	19.7%	18.8%
S/DEPTH=.4	=0.624	=0.614	=0.585	=0.537	=0.393	.148	.123	.489	.631
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	=0.361	=0.356	=0.339	=0.312	=0.229	.089	.068	.281	.364
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	=0.197	=0.194	=0.185	=0.170	=0.126	.049	.036	.152	.198
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	=0.087	=0.085	=0.081	=0.075	=0.055	.022	.016	.067	.087
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	=0.000	=0.000	=0.000	=0.000	=0.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

474

CASE 9=D

TABLE V=0 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	.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	2.303	1.874	1.259	.795	.258	.019	.019	.171	.253
	1.0%	-16.1%	-50.0%	-86.6%	-149.7%	*****	*****	-19.2%	-7.0%
S/DEPTH=1.1	1.965	1.851							
	-16.1%	-17.6%							
S/DEPTH=1.0	.591	.567	.501	.404	.191				
	-32.9%	-34.4%	-38.7%	-45.9%	-70.1%				
S/DEPTH=.9	.195	.188	.169	.140	.071	.009	.008	.102	.166
	-15.1%	-15.7%	-17.4%	-20.3%	*****	*****	*****	*****	-35.3%
S/DEPTH=.8	.067	.064	.058	.049	.026	.004	.002	.037	.060
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.023	.022	.020	.017	.009	.001	.001	.013	.022
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.008	.008	.007	.006	.003	.001	.000	.005	.008
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.003	.003	.003	.002	.001	.000	.000	.002	.003
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.001	.001	.001	.001	.000	.000	.000	.001	.001
	*****	*****	*****	*****	*****	*****	*****	*****	*****
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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

475

CASE 9=0

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=	.661	.595	.483	.375	.187	.002	.146	.291	.339
	24.4%	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
	*****	31.9%	17.5%	2.7%	-19.6%	-28.7%	-24.2%	-9.3%	*****
S/DEPTH=1.1	.000	1.343							
	*****	31.3%							
S/DEPTH=1.0	.000	.620	1.194	1.688	2.374				
	*****	12.0%	10.0%	6.8%	-1.4%				
S/DEPTH=.9	.000	.327	.659	.921	1.357	1.619	1.569	.969	.000
	*****	11.0%	10.2%	8.9%	5.2%	-0.2%	-5.3%	-11.3%	*****
S/DEPTH=.8	.000	.183	.360	.522	.784	.959	.948	.597	.000
	*****	15.2%	14.8%	14.2%	12.5%	9.8%	6.9%	3.5%	*****
S/DEPTH=.7	.000	.106	.208	.302	.458	.568	.568	.363	.000
	*****	*****	21.2%	20.9%	20.1%	18.6%	17.1%	15.2%	*****
S/DEPTH=.6	.000	.062	.121	.177	.269	.336	.339	.218	.000
	*****	*****	*****	27.9%	27.4%	26.7%	25.9%	24.9%	*****
S/DEPTH=.5	.000	.036	.071	.104	.159	.199	.202	.131	.000
	*****	*****	*****	*****	34.3%	34.0%	33.6%	*****	*****
S/DEPTH=.4	.000	.021	.042	.061	.093	.117	.119	.077	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.012	.024	.035	.054	.068	.069	.045	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.007	.013	.019	.029	.037	.037	.024	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.003	.006	.008	.013	.016	.016	.011	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

476

CASE 9=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 =	.661	.595	.483	.375	.187	.002	.146	.291	.339
	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
	3.2%	=14.8%	=51.2%	=91.3%	=161.7%	*****	*****	=19.6%	=6.1%
S/DEPTH=1.1	1.994	1.877							
	=14.9%	=16.4%							
S/DEPTH=1.0	.538	.516	.454	.366	.172				
	=34.6%	=36.1%	=40.7%	=48.3%	=74.0%				
S/DEPTH=.9	.157	.151	.136	.112	.057	.007	=.006	=.082	=.133
	=17.1%	=17.7%	=19.6%	*****	*****	*****	*****	*****	=38.6%
S/DEPTH=.8	.047	.045	.041	.034	.018	.002	=.002	=.026	=.042
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.014	.014	.012	.010	.006	.001	=.000	=.008	=.013
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.004	.004	.004	.003	.002	.000	=.000	=.002	=.004
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.001	.001	.001	.001	.000	.000	=.000	=.001	=.001
	*****	*****	*****	*****	*****	*****	*****	*****	*****
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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

477

CASE 9=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/HEIGHT=	.661	.595	.483	.375	.187	.002	-.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%	-25.8%	-37.2%	-31.7%	-13.1%	*****
S/DEPTH=1.0	.000	1.282							
	*****	33.4%							
S/DEPTH=.9	.000	.517	.993	1.397	1.945				
	*****	11.2%	8.9%	5.3%	-4.2%				
S/DEPTH=.8	.000	.237	.462	.664	.973	1.153	1.110	.681	.000
	*****	8.8%	7.8%	6.3%	2.0%	-4.3%	-10.4%	-17.5%	*****
S/DEPTH=.7	.000	.114	.223	.323	.484	.589	.580	.363	.000
	*****	12.1%	11.7%	11.0%	8.9%	5.6%	2.2%	-2.0%	*****
S/DEPTH=.6	.000	.055	.108	.157	.238	.294	.294	.187	.000
	*****	*****	*****	17.3%	16.2%	14.5%	12.6%	10.2%	*****
S/DEPTH=.5	.000	.026	.052	.075	.114	.143	.144	.092	.000
	*****	*****	*****	*****	23.5%	22.6%	21.6%	*****	*****
S/DEPTH=.4	.000	.012	.024	.035	.053	.067	.067	.043	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.005	.010	.015	.023	.029	.030	.019	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.002	.004	.006	.009	.012	.012	.008	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.001	.001	.002	.003	.004	.004	.003	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.001	.001	.001	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

478

CASE 9=D

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=	.661	.595	.483	.375	.187	-.002	-.146	-.291	-.339
	24.4%	17.3%	2.7%	-15.6%	-72.0%	*****	40.3%	-31.7%	-47.7%
SURFACE	1.303	1.193	.978	.758	.377	-.002	-.293	-.584	-.681
S/DEPTH=1.1	23.1%	18.2%	8.2%	-2.4%	-19.0%	*****	-5.1%	4.9%	10.8%
S/DEPTH=1.0	1.254	1.190							
S/DEPTH=.9	20.1%	18.0%							
S/DEPTH=.8	.819	.795	.729	.628	.365				
S/DEPTH=.7	1.6%	.7%	-2.1%	-6.8%	-22.7%				
S/DEPTH=.6	.503	.492	.461	.412	.272	.054	-.167	-.440	-.542
S/DEPTH=.5	-9.2%	-5.8%	-7.7%	-11.1%	-24.6%	*****	41.6%	6.0%	.7%
S/DEPTH=.4	.304	.299	.282	.256	.178	.052	-.082	-.254	-.319
S/DEPTH=.3	-10.0%	-10.6%	-12.4%	-15.8%	-30.6%	*****	100.1%	33.6%	26.2%
S/DEPTH=.2	.182	.179	.170	.155	.111	.037	-.043	-.148	-.189
S/DEPTH=.1	-19.0%	-19.8%	-22.2%	-26.6%	-46.4%	*****	*****	65.2%	53.8%
S/DEPTH=.0	.109	.107	.102	.093	.068	.024	-.024	-.087	-.112
S/DEPTH=.9	-38.2%	-39.4%	-42.9%	-49.6%	-79.5%	*****	*****	108.2%	89.4%
S/DEPTH=.8	.065	.064	.061	.056	.041	.015	-.014	-.052	-.067
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	140.5%
S/DEPTH=.6	.039	.038	.036	.033	.024	.009	-.008	-.031	-.041
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.023	.023	.022	.020	.015	.005	-.005	-.020	-.025
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.015	.015	.014	.013	.009	.003	-.004	-.013	-.016
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.010	.010	.010	.009	.006	.002	-.003	-.009	-.012
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.009	.009	.008	.008	.005	.002	-.003	-.008	-.011
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****

479

CASE 9=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	1.266	1.528	1.300	.699	.186	-.084	-.163	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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 PUNCTION THEORY REPRESENTATION.... DEFINED IN EQ.(37)									
SURFACE	.010	-.001	-.006	-.004	-.002	-.001	.001	.001	.002

CASE 9=0

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, $LO = (G/6.28318)*T**2$
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 = .042602 DPT/LO = 1.999993
H/DPT = .021301
L/LO = 1.017773 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) = .382598=21

CASE 10=A

TABLE I-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=	.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	3.561	3.497	3.310	3.010	2.151	.813	-.526	-2.142	-2.724
	.7%	.8%	-1.0%	-1.4%	-2.2%	-3.5%	-1.2%	-1.3%	-.8%
S/DEPTH=1.0	3.094	3.047	2.906	2.677	1.982	.792			
	-1.4%	-1.5%	-1.5%	-1.6%	-1.8%	-2.5%			
S/DEPTH=.9	.899	.885	.844	.778	.577	.232	.157	.688	-.897
	.5%	.5%	.5%	.4%	.4%	.2%	*****	.4%	.3%
S/DEPTH=.8	.261	.257	.246	.226	.168	.068	.045	.200	.261
	2.5%	2.5%	2.5%	2.5%	*****	*****	*****	2.4%	2.4%
S/DEPTH=.7	.076	.075	.071	.066	.049	.020	.013	.058	.076
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.022	.022	.021	.019	.014	.006	.004	.017	.022
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.006	.006	.006	.006	.004	.002	.001	.005	.006
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.002	.002	.002	.002	.001	.000	.000	.001	.002
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.001	.001	.001	.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

187

CASE 10=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=	.533 6.3%	.523 5.9%	.494 4.8%	.446 3.0%	.310 =3.7%	.097 =33.0%	.116 25.0%	.374 =2.5%	.467 =7.2%
SURFACE	.000	.619	1.208	1.744	2.574	3.062	2.946	1.792	.000
	*****	.5%	.7%	=1.0%	=1.8%	=2.5%	=2.5%	=1.6%	*****
S/DEPTH=1.0	.000	.539	1.061	1.550	2.372	2.985			
	*****	=1.2%	=1.2%	=1.3%	=1.4%	=1.6%			
S/DEPTH=.9	.000	.156	.308	.450	.688	.868	.884	.577	.000
	*****	.5%	.5%	.5%	.5%	.4%	.4%	.3%	*****
S/DEPTH=.8	.000	.045	.089	.131	.200	.252	.257	.168	.000
	*****	*****	*****	*****	2.5%	2.5%	2.4%	2.4%	*****
S/DEPTH=.7	.000	.013	.026	.038	.058	.073	.075	.049	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.004	.008	.011	.017	.021	.022	.014	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.001	.002	.003	.005	.006	.006	.004	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.000	.001	.001	.001	.002	.002	.001	.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

485

CASE 10=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=	.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	.000	3.908	7.632	11.007	16.221	19.255	18.486	11.225	.000
	*****	.0%	.2%	.6%	1.5%	2.4%	2.6%	1.9%	*****
S/DEPTH=1.0	.000	3.400	6.694	9.778	14.944	18.768			
	*****	.7%	.8%	.8%	1.1%	1.5%			
S/DEPTH=.9	.000	.982	1.935	2.828	4.329	5.453	5.553	3.619	.000
	*****	.7%	.7%	.6%	.6%	.5%	.3%	.2%	*****
S/DEPTH=.8	.000	.285	.562	.821	1.258	1.586	1.616	1.054	.000
	*****	*****	*****	*****	2.5%	2.5%	2.4%	2.4%	*****
S/DEPTH=.7	.000	.083	.163	.239	.366	.461	.470	.307	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.024	.048	.069	.106	.134	.137	.089	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.007	.014	.020	.031	.039	.040	.026	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.002	.004	.006	.009	.011	.012	.008	.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=A

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

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.	=19.097	=18.709	=17.570	=15.753	=10.536	=2.420	5.699	15.499	19.033
	=0%	=1%	=3%	=6%	=1.4%	=1.7%	=2.8%	=1.8%	=1.2%
S/DEPTH=1.0	=16.966	=16.665	=15.773	=14.319	=9.928	=2.427			
	=.7%	=.7%	=.8%	=.9%	=1.1%	=1.8%			
S/DEPTH=.9	=5.437	=5.351	=5.095	=4.677	=3.413	=1.241	1.199	4.532	5.846
	=.6%	=.6%	=.6%	=.5%	=.4%	=.1%	=.8%	=.3%	=.2%
S/DEPTH=.8	=1.624	=1.599	=1.525	=1.404	=1.037	=.406	.304	1.275	1.659
	2.5%	2.5%	2.5%	2.5%	2.4%	*****	*****	2.4%	2.4%
S/DEPTH=.7	=.476	=.469	=.447	=.412	=.305	=.122	.084	.367	.479
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	=.139	=.137	=.130	=.120	=.089	=.036	.024	.107	.139
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	=.040	=.040	=.038	=.035	=.026	=.010	.007	.031	.040
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	=.012	=.012	=.011	=.010	=.008	=.003	.002	.009	.012
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	=.003	=.003	=.003	=.003	=.002	=.001	.001	.003	.003
	*****	*****	*****	*****	*****	*****	*****	*****	*****
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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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	-.2%	-.3%	-.7%	-1.4%	-2.9%	-4.9%	*****	-1.1%	.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%	*****	*****	*****	*****	*****	2.2%
	.003	.003	.002	.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

CASE 10-A

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=	.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	.000	.315	.615	.887	1.310	1.558	1.499	.912	.000
S/DEPTH=1.0	*****	1.0%	.8%	.5%	-.2%	-.9%	-.9%	-.0%	*****
S/DEPTH=.9	.000	.274	.540	.789	1.207	1.519			
S/DEPTH=.8	*****	.4%	.4%	.3%	.2%	.0%			
S/DEPTH=.7	.000	.079	.156	.229	.350	.442	.450	.293	.000
S/DEPTH=.6	*****	2.1%	2.1%	2.1%	2.0%	2.0%	1.9%	1.9%	*****
S/DEPTH=.5	.000	.023	.045	.066	.102	.128	.131	.085	.000
S/DEPTH=.4	*****	*****	*****	*****	4.0%	4.0%	4.0%	3.9%	*****
S/DEPTH=.3	.000	.007	.013	.019	.030	.037	.038	.025	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.002	.004	.006	.009	.011	.011	.007	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	.000	.001	.001	.002	.003	.003	.003	.002	.000
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	.000	.000	.000	.001	.001	.001	.001	.000
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

687

CASE 10=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=	.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	.498	.480	.430	.355	.181	.026	-.011	-.177	-.286
	-.2%	-.3%	-.8%	-1.4%	-3.0%	-5.1%	*****	-1.2%	.1%
S/DEPTH=1.0	.371	.360	.328	.278	.153	.025			
	-1.6%	-1.6%	-1.7%	-1.8%	-2.1%	*****			
S/DEPTH=.9	.028	.027	.025	.021	.012	.002	-.001	-.016	-.028
	2.3%	2.3%	*****	*****	*****	*****	*****	*****	2.1%
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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

490

CASE 10-A

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 =	.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	.000	.293	.572	.824	1.212	1.435	1.374	.831	.000
S/DEPTH=1.0	*****	1.0%	.8%	.4%	.4%	1.1%	1.1%	.2%	*****
S/DEPTH=.9	.000	.252	.496	.725	1.109	1.396			
S/DEPTH=.8	*****	.3%	.2%	.2%	.1%	.1%			
S/DEPTH=.7	.000	.065	.128	.187	.287	.362	.368	.240	.000
S/DEPTH=.6	*****	*****	1.9%	1.9%	1.9%	1.8%	1.8%	1.7%	*****
S/DEPTH=.5	.000	.017	.033	.048	.073	.092	.094	.061	.000
S/DEPTH=.4	*****	*****	*****	*****	3.8%	3.8%	3.8%	*****	*****
S/DEPTH=.3	.000	.004	.008	.012	.018	.023	.024	.015	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.001	.002	.003	.004	.006	.006	.004	.000
S/DEPTH=0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=0	.000	.000	.000	.001	.001	.001	.001	.001	.000
S/DEPTH=0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=0	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10-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=	.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	1.067	1.047	.987	.893	.620	.195	-.232	-.747	-.934
	1.0%	.9%	.7%	.4%	-.4%	-1.4%	-.3%	.3%	.9%
S/DEPTH=1.0	.937	.922	.876	.802	.577	.191			
	.3%	.3%	.2%	.2%	-.0%	-.8%			
S/DEPTH=.9	.285	.281	.267	.246	.181	.069	-.057	-.229	-.297
	1.0%	1.6%	1.5%	1.5%	1.2%	.4%	5.0%	2.7%	2.5%
S/DEPTH=.8	.084	.082	.078	.072	.053	.021	-.016	-.066	-.086
	2.2%	2.2%	2.1%	1.9%	*****	*****	*****	6.4%	5.9%
S/DEPTH=.7	.024	.024	.022	.021	.015	.006	-.005	-.020	-.025
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.007	.006	.006	.006	.004	.001	-.002	-.006	-.008
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.001	.001	.001	.001	.001	-.000	-.001	-.002	-.003
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	-.000	-.000	-.000	-.000	-.000	-.001	-.001	-.001
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	-.000	-.000	-.000	-.000	-.000	-.001	-.001	-.001	-.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-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 CONDITON 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 (=.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

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 = .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

CASE 10=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=	.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	3.993	3.898	3.627	3.217	2.154	.733	.513	1.867	2.327	
S/DEPTH=1.0	2.7%	3.2%	4.5%	6.5%	11.2%	18.8%	1.5%	4.9%	3.2%	
S/DEPTH=.9	2.980	2.932	2.790	2.559	1.869	.712				
S/DEPTH=.8	5.3%	5.4%	5.7%	6.2%	8.0%	14.2%				
S/DEPTH=.7	.904	.890	.849	.781	.577	.229	.160	.688	.895	
S/DEPTH=.6	1.1%	1.1%	1.0%	.9%	.4%	1.2%	****	.4%	.1%	
S/DEPTH=.5	.277	.273	.260	.240	.178	.071	.048	.212	.276	
S/DEPTH=.4	8.0%	8.0%	8.0%	7.9%	****	****	****	7.8%	7.7%	
S/DEPTH=.3	.085	.084	.080	.074	.055	.022	.015	.065	.085	
S/DEPTH=.2	****	****	****	****	****	****	****	****	****	
S/DEPTH=.1	.026	.026	.025	.023	.017	.007	.005	.020	.026	
S/DEPTH=.0	****	****	****	****	****	****	****	****	****	
S/DEPTH=.9	.008	.008	.008	.007	.005	.002	.001	.006	.008	
S/DEPTH=.8	****	****	****	****	****	****	****	****	****	
S/DEPTH=.7	.002	.002	.002	.002	.002	.001	.000	.002	.002	
S/DEPTH=.6	****	****	****	****	****	****	****	****	****	
S/DEPTH=.5	.001	.001	.001	.001	.000	.000	.000	.001	.001	
S/DEPTH=.4	****	****	****	****	****	****	****	****	****	
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	.000	.000	.000	
S/DEPTH=.2	****	****	****	****	****	****	****	****	****	
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000	
S/DEPTH=.0	****	****	****	****	****	****	****	****	****	

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=	.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	.706	1.357	1.911	2.656	2.939	2.672	1.541	.000
	*****	-.4%	-1.7%	-3.5%	-7.5%	-10.6%	-10.4%	-6.7%	*****
S/DEPTH=1.0	.000	.527	1.036	1.510	2.292	2.848			
	*****	-3.4%	-3.6%	-3.9%	-4.9%	-6.4%			
S/DEPTH= .9	.000	.158	.311	.454	.694	.871	.884	.574	.000
	*****	1.6%	1.6%	1.5%	1.2%	.8%	.4%	-.2%	*****
S/DEPTH= .8	.000	.048	.095	.139	.212	.267	.272	.177	.000
	*****	*****	*****	*****	8.0%	7.9%	7.8%	7.6%	*****
S/DEPTH= .7	.000	.015	.029	.043	.065	.082	.084	.055	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	.005	.009	.013	.020	.025	.026	.017	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.001	.003	.004	.006	.008	.008	.005	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	.000	.001	.001	.002	.002	.002	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.000	.000	.000	.001	.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=B

TABLE III-DIMENSIONLESS HORIZONTAL ACCELERATION COMPONENT FIFLD...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			
	*****	.2%	-.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
	*****	*****	*****	*****	8.2%	8.0%	7.7%	7.4%	*****
S/DEPTH= .7	.000	.093	.183	.267	.410	.516	.526	.343	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	.029	.056	.082	.126	.159	.162	.105	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.009	.017	.025	.039	.049	.050	.032	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	.003	.005	.008	.012	.015	.015	.010	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.001	.002	.002	.004	.005	.005	.003	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	.000	.001	.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=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=	.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	17.539	17.017	15.530	13.274	7.438	.347	7.153	14.590	17.138
	4.4%	3.9%	2.7%	.9%	-2.5%	*****	-12.8%	-8.3%	-6.1%
S/DEPTH=1.0	14.540	14.216	13.263	11.724	7.195	.177			
	.6%	.5%	.0%	-.7%	-2.9%	*****			
S/DEPTH=.9	5.299	5.210	4.944	4.511	3.210	1.002	1.440	4.720	5.997
	2.0%	2.0%	1.9%	1.6%	.8%	2.4%	2.6%	.3%	.8%
S/DEPTH=.8	1.704	1.677	1.598	1.469	1.077	.406	.345	1.368	1.770
	8.1%	8.1%	8.0%	7.9%	7.7%	*****	*****	7.8%	7.6%
S/DEPTH=.7	.531	.523	.499	.459	.340	.134	.097	.413	.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

500

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=	.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	.664	.634	.550	.435	.198	.024	.011	.148	.231
S/DEPTH=1.0	=1.0%	=1.9%	=4.2%	=7.7%	=15.7%	*****	*****	=3.4%	.5%
	.372	.360	.327	.276	.149	.022			
S/DEPTH=.9	=5.7%	=5.9%	=6.3%	=6.9%	=9.2%	*****			
	.035	.033	.030	.026	.014	.002	.001	.020	.034
S/DEPTH=.8	7.6%	7.6%	*****	*****	*****	*****	*****	*****	6.3%
	.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

CASE 10=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=	.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	.375	.721	1.015	1.412	1.563	1.422	.820	.000
	*****	5.2%	4.1%	2.4%	=1.3%	=4.1%	=4.0%	=.4%	*****
S/DEPTH=1.0	.000	.280	.551	.803	1.219	1.515			
	*****	2.6%	2.4%	2.1%	1.2%	=.3%			
S/DEPTH=.9	.000	.084	.165	.242	.369	.464	.471	.306	.000
	*****	7.5%	7.4%	7.3%	7.1%	6.7%	6.3%	5.8%	*****
S/DEPTH=.8	.000	.026	.051	.074	.113	.142	.145	.094	.000
	*****	*****	*****	*****	13.5%	13.4%	13.3%	13.1%	*****
S/DEPTH=.7	.000	.008	.015	.023	.035	.044	.045	.029	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.002	.005	.007	.011	.013	.014	.009	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.001	.001	.002	.003	.004	.004	.003	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.000	.000	.001	.001	.001	.001	.001	.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

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%	8.4%	3.8%	-12.4%	-108.7%	36.7%	-7.5%	-16.0%
SURFACE	.652	.622	.539	.425	.192	.023	-.010	-.140	-.217
S/DEPTH=1.0	-1.0%	-1.8%	-4.3%	-7.9%	-16.2%	*****	*****	-3.5%	.5%
S/DEPTH=.9	.356	.345	.313	.264	.142	.021	*****	*****	*****
S/DEPTH=.8	.6.0%	.6.1%	.6.5%	.7.2%	.9.5%	*****	*****	*****	*****
S/DEPTH=.7	.030	.029	.026	.022	.012	.002	-.001	-.017	-.029
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.002	.002	.002	.002	.001	.000	-.000	-.001	-.002
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	-.000	-.000	-.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	-.000	-.000	-.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10-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
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	.353	.677	.950	1.311	1.435	1.292	.737	.000
S/DEPTH=1.0	*****	5.2%	3.9%	2.1%	1.9%	5.0%	4.8%	.9%	*****
S/DEPTH=.9	.000	.257	.505	.736	1.117	1.387			
S/DEPTH=.8	*****	2.2%	2.0%	1.7%	.8%	.8%			
S/DEPTH=.7	.000	.069	.135	.197	.301	.378	.384	.249	.000
S/DEPTH=.6	*****	6.9%	6.8%	6.8%	6.6%	6.1%	5.7%	5.1%	*****
S/DEPTH=.5	.000	.018	.036	.053	.081	.102	.104	.068	.000
S/DEPTH=.4	*****	*****	*****	*****	12.9%	12.8%	12.6%	*****	*****
S/DEPTH=.3	.000	.005	.010	.014	.021	.027	.027	.018	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.001	.002	.004	.005	.007	.007	.005	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=1.0	.000	.000	.001	.001	.001	.002	.002	.001	.000
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

50%

CASE 10=B

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%	-12.4%	-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%	-6.8%	-1.7%	1.1%	3.2%
S/DEPTH= .9	.890	.874	.826	.748	.515	.124			
S/DEPTH= .8	1.7%	1.6%	1.4%	.9%	.5%	-7.5%			
S/DEPTH= .7	.295	.291	.277	.254	.185	.066	.065	.244	.314
S/DEPTH= .6	4.4%	4.3%	4.1%	3.7%	2.1%	-7.3%	20.7%	9.7%	8.6%
S/DEPTH= .5	.093	.091	.087	.080	.059	.023	.018	.073	.095
S/DEPTH= .4	4.4%	4.2%	3.8%	2.9%	-1.0%	*****	*****	25.0%	22.2%
S/DEPTH= .3	.029	.028	.027	.025	.018	.007	.005	.022	.029
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.009	.009	.008	.008	.006	.002	.002	.007	.009
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .9	.003	.003	.002	.002	.002	.001	.001	.002	.003
S/DEPTH= .8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .7	.001	.001	.001	.001	.000	.000	.000	.001	.001
S/DEPTH= .6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****

505

CASE 10=8

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 CONDITON 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)
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)
.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) = .237092=05 X(2)/(H*T*G) = .930477=12
X(3)/(H*T*G) = .183259=17

CASE 10=C

TABLE I=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=	.608	.584	.521	.435	.245	.026	.149	.331	.392	
	17.8%	15.7%	9.8%	.5%	=31.3%	*****	41.9%	=15.6%	=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%	
	2.832	2.779	2.626	2.380	1.670	.555				
S/DEPTH=.9	=10.8%	=11.2%	=12.3%	=14.2%	=20.8%	=46.3%				
	.898	.883	.840	.771	.563	.215	=.167	=.673	=.868	
S/DEPTH=.8	.4%	.3%	.0%	=.4%	=2.0%	*****	*****	=1.9%	=3.0%	
	.293	.288	.275	.253	.187	.074	=.052	=.223	=.290	
S/DEPTH=.7	13.0%	13.0%	12.9%	12.8%	*****	*****	*****	*****	12.0%	
	.096	.095	.091	.083	.062	.025	=.017	=.074	=.096	
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****	
	.032	.031	.030	.028	.020	.008	=.006	=.024	=.032	
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****	
	.010	.010	.010	.009	.007	.003	=.002	=.008	=.010	
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****	
	.003	.003	.003	.003	.002	.001	=.001	=.003	=.003	
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****	
	.001	.001	.001	.001	.001	.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	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 10=C

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=	.608	.584	.521	.435	.245	.026	.149	.331	.392
	17.8%	15.7%	9.8%	.5%	=31.3%	*****	41.9%	=15.6%	=27.6%

SURFACE	.000	.851	1.569	2.098	2.642	2.678	2.312	1.286	.000
S/DEPTH=1.0	*****	5.0%	.3%	=5.8%	=17.7%	=29.6%	=24.7%	=15.5%	*****
S/DEPTH=.9	.000	.523	1.023	1.478	2.192	2.629			
S/DEPTH=.8	*****	4.2%	=5.0%	=6.2%	=9.7%	=15.3%			
S/DEPTH=.7	.000	.159	.312	.455	.691	.859	.863	.553	.000
S/DEPTH=.6	*****	2.1%	1.9%	1.7%	.8%	.6%	=2.1%	=3.9%	*****
S/DEPTH=.5	.000	.051	.101	.147	.225	.282	.286	.186	.000
S/DEPTH=.4	*****	*****	*****	13.4%	13.1%	12.8%	12.3%	11.8%	*****
S/DEPTH=.3	.000	.017	.033	.048	.074	.093	.095	.062	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.006	.011	.016	.024	.031	.031	.020	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

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=	.608	.584	.521	.435	.245	.026	.149	.331	.392
	17.8%	15.7%	9.8%	.5%	=31.3%	*****	41.9%	=15.6%	=27.6%
SURFACE	.000	6.244	11.311	14.747	17.533	16.707	13.923	7.647	.000
	*****	18.7%	13.1%	5.4%	=11.4%	=26.5%	=30.1%	=22.0%	*****
S/DEPTH=1.0	.000	3.662	7.105	10.139	14.480	16.413			
	*****	6.5%	5.1%	2.7%	=4.3%	=16.1%			
S/DEPTH=.9	.000	1.033	2.026	2.944	4.428	5.423	5.369	3.389	.000
	*****	5.5%	5.1%	4.5%	2.8%	=.1%	=3.1%	=6.6%	*****
S/DEPTH=.8	.000	.325	.639	.933	1.422	1.777	1.795	1.157	.000
	*****	*****	*****	14.2%	13.7%	13.0%	12.1%	11.0%	*****
S/DEPTH=.7	.000	.106	.208	.304	.465	.585	.595	.386	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.035	.068	.100	.153	.193	.197	.128	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.011	.023	.033	.051	.064	.065	.042	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.004	.007	.011	.017	.021	.021	.014	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.001	.002	.004	.006	.007	.007	.005	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.000	.001	.001	.002	.002	.002	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.001	.001	.001	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.000	.001	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

512

CASE 10=C

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
THETA =	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.608	.584	.521	.435	.245	.026	.149	.331	.392
	17.8%	15.7%	9.8%	.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	=4.534	2.575			
	8.5%	8.0%	6.4%	3.7%	-5.6%	=8.0%			
S/DEPTH= .9	=5.165	=5.068	=4.781	=4.317	=2.947	=.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	=.395	.396	1.457	1.869
	13.5%	13.4%	13.3%	13.0%	12.1%	*****	*****	12.3%	11.6%
S/DEPTH= .7	=.600	=.591	=.563	=.518	=.382	=.148	.114	.469	.609
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	=.199	=.196	=.187	=.172	=.128	=.051	.036	.154	.200
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	=.066	=.065	=.062	=.057	=.042	=.017	.012	.051	.066
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	=.022	=.021	=.020	=.019	=.014	=.006	.004	.017	.022
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	=.007	=.007	=.007	=.006	=.005	=.002	.001	.006	.007
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	=.002	=.002	=.002	=.002	=.002	=.001	.000	.002	.002
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	=.001	=.001	=.001	=.001	=.000	=.000	.000	.001	.001
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .0	.000	.000	.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	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT=	.608	.584	.521	.435	.245	.026	.149	.331	.392
	17.8%	15.7%	9.8%	5%	31.3%	*****	41.9%	15.6%	27.6%
SURFACE	.860	.799	.648	.470	.180	.017	=.010	=.116	=.177
	=1.8%	=5.0%	=13.6%	=25.4%	=50.6%	*****	*****	=7.4%	=.0%
S/DEPTH=1.0	.347	.335	.302	.251	.129	.016			
	=13.2%	=13.7%	=15.1%	=17.5%	=26.1%	*****			
S/DEPTH=.9	.036	.035	.032	.027	.014	.002	=.001	=.020	=.034
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.8	.004	.004	.003	.003	.002	.000	=.000	=.002	=.004
	*****	*****	*****	*****	*****	*****	*****	*****	*****
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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

514

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=	.608	.584	.521	.435	.245	.026	.149	.331	.392
	17.8%	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%	=2.2%	*****
S/DEPTH= .9	.000	.295	.576	.833	1.235	1.482			
S/DEPTH= .8	*****	7.3%	6.7%	5.6%	2.5%	=2.5%			
S/DEPTH= .7	.000	.090	.177	.258	.391	.487	.489	.314	.000
S/DEPTH= .6	*****	13.5%	13.3%	13.1%	12.3%	11.1%	9.8%	8.2%	*****
S/DEPTH= .5	.000	.029	.057	.083	.127	.160	.162	.105	.000
S/DEPTH= .4	*****	*****	*****	23.5%	23.3%	22.9%	22.6%	22.1%	*****
S/DEPTH= .3	.000	.010	.019	.027	.042	.053	.054	.035	.000
S/DEPTH= .2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .1	.000	.003	.006	.009	.014	.017	.018	.012	.000
S/DEPTH= .0	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.001	.002	.003	.005	.006	.006	.004	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.001	.001	.002	.002	.002	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.000	.000	.001	.001	.000	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.000	.000	.000	.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 10=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=	.608	.584	.521	.435	.245	.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	.010	.109	.164
S/DEPTH=1.0	=1.5%	=4.8%	=13.7%	=25.9%	=52.3%	*****	*****	=7.6%	.1%
S/DEPTH=.9	.332	.321	.288	.240	.123	.016	.016	.018	.029
S/DEPTH=.8	=13.7%	=14.2%	=15.6%	=18.1%	=26.9%	*****	.001	.001	.003
S/DEPTH=.7	.031	.030	.027	.023	.012	.002	.000	.000	.000
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.003	.003	.003	.002	.001	.000	.000	.000	.000
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10=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	.608	.584	.521	.435	.245	.026	.149	.331	.392
	17.8%	15.7%	9.8%	.5%	=31.3%	*****	41.9%	=15.6%	=27.6%
SURFACE	.000	.453	.632	1.107	1.378	1.377	1.174	.645	.000
S/DEPTH=1.0	*****	14.9%	10.5%	4.8%	=6.4%	=13.6%	=12.5%	=3.4%	*****
S/DEPTH=.9	.000	.269	.527	.761	1.127	1.349			
S/DEPTH=.8	*****	6.7%	6.1%	4.9%	1.6%	=3.6%			
S/DEPTH=.7	.000	.073	.143	.209	.317	.394	.396	.254	.000
S/DEPTH=.6	*****	12.5%	12.4%	12.1%	11.3%	10.0%	8.6%	6.8%	*****
S/DEPTH=.5	.000	.021	.041	.059	.091	.114	.115	.075	.000
S/DEPTH=.4	*****	*****	*****	*****	22.2%	21.8%	21.4%	20.9%	*****
S/DEPTH=.3	.000	.006	.011	.017	.026	.032	.033	.021	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.002	.003	.005	.007	.009	.009	.006	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.000	.001	.001	.002	.002	.002	.002	.000
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.000	.000	.000	.001	.001	.000	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10=C

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
THETA =	.0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
ETA/HEIGHT =	.608	.584	.521	.435	.245	.026	.149	.331	.392
	17.8%	15.7%	9.8%	.5%	=31.3%	*****	41.9%	=15.6%	=27.6%
SURFACE	1,216	1,169	1,045	.873	.490	.050	.299	.663	.786
	11.5%	10.2%	6.8%	2.2%	=7.4%	*****	=2.6%	3.0%	7.0%
S/DEPTH=1.0	.859	.840	.786	.699	.448	.053			
	3.4%	3.1%	2.2%	.6%	=5.3%	*****			
S/DEPTH=.9	.307	.302	.286	.261	.186	.061	.077	.259	.330
	2.9%	2.7%	2.0%	.6%	=5.1%	*****	52.3%	20.7%	17.5%
S/DEPTH=.8	.103	.102	.097	.089	.065	.024	.021	.083	.107
	=5.7%	=6.2%	=7.7%	=10.6%	=23.3%	*****	*****	58.6%	50.2%
S/DEPTH=.7	.034	.033	.032	.029	.021	.008	.007	.028	.036
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.011	.010	.010	.009	.006	.002	.003	.010	.012
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.003	.003	.003	.002	.002	.000	.002	.004	.005
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.000	.000	.000	.000	.001	.001	.002	.002
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.001	.001	.001	.001	.001	.001	.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 CONDITON 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 10C

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

- (1) DIMENSIONLESS WAVE LENGTH
DEFINED IN EQUATION (37)
1.134 (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 VELOCITY
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	.340130	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) = .488993=05 X(2)/(H*T*G) = .863825=11
X(3)/(H*T*G) = .638304=16

CASE 10=D

TABLE I=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=	.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	5.295	4.827	3.929	3.036	1.584	.336	.499	=1.324	=1.610
S/DEPTH=1.0	-1.2%	=8.4%	=24.1%	=42.3%	=79.7%	=177.4%	.5%	=20.5%	=14.2%
S/DEPTH=.9	2.624	2.564	2.390	2.118	1.376				
S/DEPTH=.8	=19.6%	=20.5%	=23.4%	=28.3%	=46.7%				
S/DEPTH=.7	.860	.845	.801	.730	.522	.185	.170	.625	.799
S/DEPTH=.6	=4.0%	=4.3%	=4.9%	=6.1%	=10.1%	*****	*****	=9.6%	=12.0%
S/DEPTH=.5	.299	.295	.280	.258	.189	.073	.055	.225	.291
S/DEPTH=.4	14.9%	14.8%	14.6%	*****	*****	*****	*****	*****	12.6%
S/DEPTH=.3	.106	.104	.100	.092	.068	.027	.019	.081	.105
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.038	.037	.036	.033	.024	.010	.007	.029	.038
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	.014	.013	.013	.012	.009	.003	.002	.010	.013
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.005	.005	.005	.004	.003	.001	.001	.004	.005
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.002	.002	.002	.001	.001	.000	.000	.001	.002
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.001	.001	.001	.001	.000	.000	.000	.000	.001
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10-D

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

	0	10.0	20.0	30.0	50.0	75.0	100.0	130.0	180.0
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	1.103	1.832	2.236	2.477	2.287	1.889	1.038	.000
	*****	16.3%	3.1%	=11.5%	=36.9%	=52.2%	=49.1%	=29.1%	*****
S/DEPTH=1.0	.000	.521	1.010	1.438	2.042				
	*****	=4.6%	=6.3%	=9.1%	=17.8%				
S/DEPTH= .9	.000	.156	.305	.443	.664	.810	.800	.504	.000
	*****	.2%	=.3%	=1.0%	=3.1%	=6.6%	=10.2%	=14.1%	*****
S/DEPTH= .8	.000	.053	.104	.151	.230	.287	.289	.186	.000
	*****	*****	*****	15.7%	15.2%	14.2%	13.2%	12.0%	*****
S/DEPTH= .7	.000	.019	.036	.053	.081	.102	.104	.067	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .6	.000	.007	.013	.019	.029	.037	.037	.024	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .5	.000	.002	.005	.007	.010	.013	.015	.009	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .4	.000	.001	.002	.002	.004	.005	.005	.003	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .3	.000	.000	.001	.001	.001	.002	.002	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH= .2	.000	.000	.000	.000	.000	.001	.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
	*****	38.6%	26.2%	10.6%	=24.0%	=58.5%	=66.4%	=40.5%	*****
S/DEPTH=1.0	.000	4.078	7.776	10.782	14.099				
	*****	16.0%	13.3%	8.6%	=7.1%				
S/DEPTH=.9	.000	1.059	2.067	2.976	4.362	5.131	4.900	3.005	.000
	*****	7.9%	7.0%	5.6%	1.3%	=5.8%	=12.9%	=20.2%	*****
S/DEPTH=.8	.000	.340	.668	.972	1.470	1.813	1.806	1.146	.000
	*****	*****	*****	17.7%	16.6%	14.7%	12.7%	10.2%	*****
S/DEPTH=.7	.000	.117	.231	.337	.514	.644	.651	.420	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.041	.082	.119	.183	.230	.233	.152	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.015	.029	.043	.065	.082	.084	.054	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.005	.010	.015	.023	.029	.030	.019	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.002	.004	.005	.008	.011	.011	.007	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.2	.000	.001	.001	.002	.003	.004	.004	.003	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.001	.001	.001	.002	.002	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.0	.000	.000	.000	.000	.001	.001	.001	.001	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****

525

CASE 10-D

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=	.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	.11,375	.10,924	.08,892	.05,841	.0032	4.465	7,036	10,281	11,868	
S/DEPTH=1.0	74.0%	75.5%	79.3%	90.9%	*****	80.0%	68.7%	42.7%	27.8%	
S/DEPTH=.9	.23,6%	.22,6%	.19,7%	.14,4%	.13,4%					
S/DEPTH=.8	.04,961	.04,852	.04,532	.04,022	.02,570	.0357	1,805	4,423	5,413	
S/DEPTH=.7	.04,0%	.03,6%	.02,4%	.03%	.07,2%	*****	.01,5%	.16,7%	.19,6%	
S/DEPTH=.6	.01,827	.01,796	.01,703	.01,552	.01,103	.0358	.442	1,485	1,883	
S/DEPTH=.5	.16,2%	.16,1%	.15,7%	.15,1%	.13,0%	*****	*****	12,7%	11,3%	
S/DEPTH=.4	.06,660	.06,649	.06,618	.06,568	.06,415	.06,156	.131	.517	.667	
S/DEPTH=.3	.31,7%	.31,7%	.31,6%	*****	*****	*****	*****	*****	30,7%	
S/DEPTH=.2	.02,237	.02,233	.02,222	.02,205	.02,151	.02,059	.043	.183	.238	
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	.0085	.0083	.0080	.0073	.0054	.0022	.015	.065	.085	
S/DEPTH=.9	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.8	.0030	.0030	.0028	.0026	.0019	.0008	.005	.023	.030	
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.6	.0011	.0011	.0010	.0009	.0007	.0003	.002	.008	.011	
S/DEPTH=.5	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.4	.0004	.0004	.0004	.0003	.0002	.0001	.001	.003	.004	
S/DEPTH=.3	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.2	.0001	.0001	.0001	.0001	.0001	.0000	.000	.001	.001	
S/DEPTH=.1	*****	*****	*****	*****	*****	*****	*****	*****	*****	
S/DEPTH=.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	*****	*****	*****	*****	*****	*****	*****	*****	*****	

CASE 10=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=	.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	1.137	.965	.671	.426	.134	.009	.010	.088	.131
S/DEPTH=1.0	.7%	13.2%	41.3%	74.9%	141.5%	*****	*****	16.1%	3.3%
	.306	.294	.260	.210	.098				
S/DEPTH=.9	28.6%	29.8%	33.7%	40.3%	64.9%				
	.035	.034	.031	.026	.013	.002	.001	.019	.032
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.004	.004	.004	.003	.002	.000	.000	.002	.004
S/DEPTH=.7	*****	*****	*****	*****	*****	*****	*****	*****	*****
	.001	.001	.000	.000	.000	.000	.000	.000	.001
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=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=	.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	.638	1.071	1.319	1.479	1.378	1.145	.632	.000
S/DEPTH=1.0	*****	27.6%	17.0%	5.3%	=14.8%	=26.5%	=23.2%	=6.2%	*****
S/DEPTH=.9	.000	.313	.607	.864	1.228				
S/DEPTH=.8	*****	12.8%	11.3%	9.0%	1.9%				
S/DEPTH=.7	.000	.095	.186	.270	.405	.494	.488	.307	.000
S/DEPTH=.6	*****	18.0%	17.6%	17.0%	15.3%	12.5%	9.6%	6.3%	*****
S/DEPTH=.5	.000	.032	.063	.092	.141	.175	.177	.114	.000
S/DEPTH=.4	*****	*****	*****	30.9%	30.4%	29.7%	28.9%	27.8%	*****
S/DEPTH=.3	.000	.011	.022	.033	.050	.062	.063	.041	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.004	.008	.012	.018	.022	.023	.015	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.9	.000	.001	.003	.004	.006	.008	.008	.005	.000
S/DEPTH=.8	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.7	.000	.001	.001	.001	.002	.003	.003	.002	.000
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.000	.000	.001	.001	.001	.001	.001	.000
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

CASE 10=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	.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	1.152	.973	.669	.420	.129	.009	.010	.081	.120
S/DEPTH=1.0	.3%	=12.6%	=41.7%	=76.9%	=147.2%	*****	*****	=16.4%	=2.9%
S/DEPTH=.9	.292	.280	.248	.200	.094				
S/DEPTH=.8	=29.4%	=30.7%	=34.6%	=41.4%	=66.8%				
S/DEPTH=.7	.030	.029	.026	.022	.011	.002	.001	.016	.027
S/DEPTH=.6	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.003	.003	.003	.002	.001	.000	.000	.002	.003
S/DEPTH=.4	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.3	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.2	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.1	.000	.000	.000	.000	.000	.000	.000	.000	.000
S/DEPTH=.0	*****	*****	*****	*****	*****	*****	*****	*****	*****

529

CASE 10=D

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=	.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	.621	1.029	1.251	1.369	1.244	1.015	.552	.000
	*****	28.4%	17.1%	4.4%	-17.6%	-30.6%	-26.9%	-8.0%	*****
S/DEPTH=1.0	.000	.286	.554	.788	1.116				
	*****	12.2%	10.7%	8.2%	.6%				
S/DEPTH=.9	.000	.077	.150	.218	.326	.397	.391	.246	.000
	*****	16.6%	16.2%	15.6%	13.7%	10.6%	7.5%	4.0%	*****
S/DEPTH=.8	.000	.023	.045	.065	.099	.123	.124	.080	.000
	*****	*****	*****	29.3%	28.8%	27.9%	27.1%	25.9%	*****
S/DEPTH=.7	.000	.007	.013	.020	.030	.038	.038	.025	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.6	.000	.002	.004	.006	.009	.011	.011	.007	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.5	.000	.001	.001	.002	.003	.003	.003	.002	.000
	*****	*****	*****	*****	*****	*****	*****	*****	*****
S/DEPTH=.4	.000	.000	.000	.000	.001	.001	.001	.001	.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
	*****	*****	*****	*****	*****	*****	*****	*****	*****

530

CASE 10=D

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=	.0	.657	.603	.496	.385	.189	.004	.148	.294
	23.9%	18.4%	5.3%	-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%				
	.314	.308	.291	.264	.184	.053	.084	.261	.328
S/DEPTH=.8	6.7%	7.3%	9.2%	-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

531

CASE 10-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	1.349	1.594	1.337	.710	.188	-.085	-.164	-.000
(2) DIMENSIONLESS KINEMATIC FREE SURFACE BOUNDARY CONDITON 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-D

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

- (1) DIMENSIONLESS WAVE LENGTH
DEFINED IN EQUATION (37)
1.222 (18.1%)
- (2) DIMENSIONLESS AVERAGE POTENTIAL ENERGY
DEFINED IN EQUATION (38)
.392 (=27.4%)
- (3) DIMENSIONLESS AVERAGE KINETIC ENERGY
DEFINED IN EQUATION (39)
.444 (=48.1%)
- (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)
.883 (=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 (338.0%)

CASE 10=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	.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 .013588
(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 .321853

534

Dean, Robert G.

Evaluation and development of water wave theories for engineering applications. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1974.

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.

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.

1. Water waves - Mathematical analysis. 2. Wave theory. 3. Water waves - Tables. 4. Coastal engineering. I. Title. (Series) (Contract)

TC203 .U581sr no. 1 627 .U581sr

Dean, Robert G.

Evaluation and development of water wave theories for engineering applications. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1974.

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.

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.

1. Water waves - Mathematical analysis. 2. Wave theory. 3. Water waves - Tables. 4. Coastal engineering. I. Title. (Series) (Contract)

TC203 .U581sr no. 1 627 .U581sr

Dean, Robert G.

Evaluation and development of water wave theories for engineering applications. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1974.

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.

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.

1. Water waves - Mathematical analysis. 2. Wave theory. 3. Water waves - Tables. 4. Coastal engineering. I. Title. (Series) (Contract)

TC203 .U581sr no. 1 627 .U581sr

Dean, Robert G.

Evaluation and development of water wave theories for engineering applications. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1974.

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.

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.

1. Water waves - Mathematical analysis. 2. Wave theory. 3. Water waves - Tables. 4. Coastal engineering. I. Title. (Series) (Contract)

TC203 .U581sr no. 1 627 .U581sr