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ANALYSIS AND MODEL TESTS TO DETERMINE FORCES AND MOTIONS OF AN OIL RETENTION BOOM

W. T. Lindenmuth, et al

Hydronautics, Incorporated
Laurel, Maryland

January 1970

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HYDRONAUTICS, Incorporated

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ANALYSIS AND MODEL TESTS TO DETERMINE FORCES AND MOTIONS OF AN OIL RETENTION BOOM

By

W. T. Lindenmuth, J. O. Scherer
and P. Van Dyke

January 1970

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APPENDIX B
DYNAMIC OUTPUT

The dynamic program was used to generate data for eight model configurations at four heading angles and four wave heights. The model parameters are identical to those used for the static program and listed in Table A-1. There are twelve configurations in Table A-1. With regard to dynamic boom response, however, four of these models have identical pairs. For example, configurations "V" and "VI" are identical except for the position of the shear center which is assumed to have no bearing on the boom's dynamic behavior. Thus, these two models are treated as one in the dynamic program.

Table B-1 presents the parameters that were used as input to the dynamic program with each set of model parameters.

TABLE B-1. PARAMETERS USED IN DYNAMIC PROGRAM

Configuration	Significant Wave Height $\bar{H}_{\frac{1}{3}}$, ft.	Heading Angle, θ^*, degrees	Tension, T, lb.
I II	3.94, 5.0, 7.9 and 10.0	5, 30, 60 and 90	-30,000
III IV	7.9, 10.0, 15.8 and 20.0		-75,000
V and VI VII and VIII	3.94, 5.0, 7.9 and 10.0		0., 2000. and 4000.
IX and X XI and XII	7.9, 10.0 15.8 and 20.0		

*Note: Heading is the angle between the axis of an infinitely long, straight boom and the direction of wave propagation.

A 5-degree heading angle was used instead of zero degrees because horizontal motions are zero at zero heading. The vertical motions at the 5-degree heading are nearly the same as for zero degrees. The values for tension are based on the results of the static program (Appendix A). Configurations V through XII have a range of tensions so that interpolation may be used to find the motions of a boom at any intermediate value of tension. The tension (compression) for each configuration I through IV is, nominally, a constant so that no interpolation is needed for these configurations.

The boom dynamic response data is contained in the tables that follow. The tables are in a specific order which is indicated in the following, partial list of tables:

Parameters

Configuration	$\bar{H}_s$	θ degrees	T	Page
I	3.94	5	-30,000	B-1
I	3.94	30	-30,000	B-2
I	3.94	60	-30,000	B-3
I	3.94	90	-30,000	B-4
I	5.00	5	-30,000	B-5
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
I	5.00	90	-30,000	B-8
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
IV	20.00	90	-75,000	B-64
V and VI	3.94	5	0	B-65
V and VI	3.94	5	2,000	B-66
V and VI	3.94	5	4,000	B-67
V and VI	3.94	30	0	B-68
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
V and VI	3.94	90	4,000	B-76
V and VI	5.00	5	0	B-77
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
V and VI	10.00	90	4,000	B-112
VII and VIII	3.94	5	0	B-113
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
XI and XII	20.00	90	4,000	B-256

HYDRONAUTICS, INC.

CONFIGURATION 1

HEADING = 5.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.984E 00	0.870E 00	0.139E 01	0.177E 01	0.334E 01
BENDING MOM.	0.604E 05	0.535E 05	0.855E 05	0.108E 06	0.205E 06
SHEAR	0.366E 04	0.342E 04	0.547E 04	0.696E 04	0.131E 05
IMMERSION	0.771E 00	0.683E 00	0.109E 01	0.138E 01	0.262E 01
SLOPE	0.414E-01	0.366E-01	0.586E-01	0.746E-01	0.140E 00
CURVATURE	0.212E-02	0.187E-02	0.300E-02	0.381E-02	0.721E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.39 0.00 0.00
(IN THE RANGE 0.10 TO 2.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.275E 00	0.243E 00	0.389E 00	0.495E 00	0.935E 00
BENDING MOM.	0.267E 05	0.236E 05	0.378E 05	0.481E 05	0.909E 05
SHEAR	0.160E 04	0.142E 04	0.227E 04	0.289E 04	0.546E 04
SLOPE	0.158E-01	0.140E-01	0.224E-01	0.285E-01	0.540E-01
CURVATURE	0.936E-03	0.830E-03	0.132E-02	0.168E-02	0.319E-02

CONFIGURATION I

HEADING = 29.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.107E 01	0.953E 00	0.152E 01	0.193E 01	0.366E 01
BENDING MOM.	0.597E 05	0.528E 05	0.844E 05	0.107E 06	0.203E 06
SHEAR	0.375E 04	0.332E 04	0.531E 04	0.676E 04	0.127E 05
IMMERSION	0.694E 00	0.614E 00	0.982E 00	0.125E 01	0.236E 01
SLOPE	0.425E-01	0.376E-01	0.601E-01	0.765E-01	0.144E 00
CURVATURE	0.209E-02	0.185E-02	0.296E-02	0.377E-02	0.712E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.54 0.00 0.00
(IN THE RANGE 0.10 TO 3.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.257E 01	0.227E 01	0.363E 01	0.462E 01	0.874E 01
BENDING MOM.	0.264E 06	0.233E 06	0.373E 06	0.475E 06	0.898E 06
SHEAR	0.160E 05	0.142E 05	0.226E 05	0.288E 05	0.545E 05
SLOPE	0.153E 00	0.135E 00	0.217E 00	0.276E 00	0.522E 00
CURVATURE	0.927E-02	0.820E-02	0.131E-01	0.166E-01	0.315E-01

CONFIGURATION I

HEADING = 59.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.128E 01	0.113E 01	0.181E 01	0.231E 01	0.437E 01
BENDING MOM.	0.489E 05	0.432E 05	0.691E 05	0.880E 05	0.166E 06
SHEAR	0.308E 04	0.273E 04	0.436E 04	0.555E 04	0.104E 05
IMMERSION	0.434E 00	0.384E 00	0.614E 00	0.782E 00	0.147E 01
SLOPE	0.384E-01	0.340E-01	0.543E-01	0.692E-01	0.130E 00
CURVATURE	0.171E-02	0.151E-02	0.242E-02	0.308E-02	0.583E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.14 0.00 0.00
(IN THE RANGE 0.10 TO 3.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.131E 01	0.116E 01	0.185E 01	0.236E 01	0.446E 01
BENDING MOM.	0.126E 06	0.111E 06	0.178E 06	0.227E 06	0.429E 06
SHEAR	0.893E 04	0.790E 04	0.126E 05	0.160E 05	0.303E 05
SLOPE	0.672E-01	0.595E-01	0.951E-01	0.121E 00	0.228E 00
CURVATURE	0.442E-02	0.391E-02	0.626E-02	0.796E-02	0.150E-01

CONFIGURATION I

HEADING = 90.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.94 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.130E 01	0.115E 01	0.183E 01	0.234E 01	0.442E 01
BENDING MOM.	0.613E-02	0.543E-02	0.867E-02	0.110E-01	0.208E-01
SHEAR	0.335E-06	0.297E-06	0.475E-06	0.604E-06	0.114E-05
IMMERSION	0.319E 00	0.283E 00	0.452E 00	0.575E 00	0.108E 01
SLOPE	0.105E-04	0.935E-05	0.149E-04	0.190E-04	0.359E-04
CURVATURE	0.215E-09	0.190E-09	0.304E-09	0.387E-09	0.732E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.118E 01	0.104E 01	0.167E 01	0.212E 01	0.402E 01
BENDING MOM.	0.687E-02	0.608E-02	0.971E-02	0.123E-01	0.233E-01
SHEAR	0.397E-06	0.351E-06	0.562E-06	0.715E-06	0.135E-05
SLOPE	0.102E-04	0.909E-05	0.145E-04	0.184E-04	0.349E-04
CURVATURE	0.241E-09	0.213E-09	0.340E-09	0.433E-09	0.819E-09

CONFIGURATION I

HEADING = 5.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.142E 01	0.126E 01	0.201E 01	0.256E 01	0.485E 01
BENDING MOM.	0.711E 05	0.629E 05	0.100E 06	0.128E 06	0.241E 06
SHEAR	0.427E 04	0.378E 04	0.604E 04	0.769E 04	0.145E 05
IMMERSION	0.805E 00	0.712E 00	0.113E 01	0.144E 01	0.273E 01
SLOPE	0.531E-01	0.470E-01	0.751E-01	0.956E-01	0.180E 00
CURVATURE	0.249E-02	0.220E-02	0.352E-02	0.449E-02	0.848E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.39 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.316E 00	0.280E 00	0.448E 00	0.570E 00	0.107E 01
BENDING MOM.	0.299E 05	0.265E 05	0.423E 05	0.539E 05	0.101E 06
SHEAR	0.179E 04	0.158E 04	0.253E 04	0.322E 04	0.609E 04
SLOPE	0.179E-01	0.158E-01	0.253E-01	0.322E-01	0.608E-01
CURVATURE	0.105E-02	0.929E-03	0.148E-02	0.189E-02	0.357E-02

CONFIGURATION I

HEADING = 29.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.151E 01	0.134E 01	0.214E 01	0.272E 01	0.515E 01
BENDING MOM.	0.681E 05	0.603E 05	0.963E 05	0.122E 06	0.231E 06
SHEAR	0.406E 04	0.359E 04	0.574E 04	0.730E 04	0.138E 05
IMMERSION	0.718E 00	0.635E 00	0.101E 01	0.129E 01	0.244E 01
SLOPE	0.526E-01	0.466E-01	0.744E-01	0.948E-01	0.179E 00
CURVATURE	0.239E-02	0.211E-02	0.338E-02	0.430E-02	0.813E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.54 0.00 0.00
(IN THE RANGE 0.10 TO 2.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.282E 01	0.249E 01	0.399E 01	0.508E 01	0.959E 01
BENDING MOM.	0.286E 06	0.253E 06	0.405E 06	0.516E 06	0.975E 06
SHEAR	0.173E 05	0.153E 05	0.245E 05	0.313E 05	0.591E 05
SLOPE	0.167E 00	0.147E 00	0.236E 00	0.300E 00	0.568E 00
CURVATURE	0.100E-01	0.890E-02	0.142E-01	0.181E-01	0.342E-01

CONFIGURATION I

HEADING = 59.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.169E 01	0.150E 01	0.239E 01	0.305E 01	0.576E 01
BENDING MOM.	0.515E 05	0.456E 05	0.729E 05	0.928E 05	0.175E 06
SHEAR	0.316E 04	0.279E 04	0.447E 04	0.569E 04	0.107E 05
IMMERSION	0.444E 00	0.393E 00	0.628E 00	0.799E 00	0.151E 01
SLOPE	0.436E-01	0.386E-01	0.617E-01	0.786E-01	0.148E 00
CURVATURE	0.181E-02	0.160E-02	0.255E-02	0.325E-02	0.615E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.14 0.00 0.00
(IN THE RANGE 0.10 TO 3.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.156E 01	0.138E 01	0.221E 01	0.282E 01	0.533E 01
BENDING MOM.	0.1[illegible]9E 06	0.114E 06	0.182E 06	0.232E 06	0.439E 06
SHEAR	0.9[illegible]E 04	0.806E 04	0.128E 05	0.164E 05	0.309E 05
SLOPE	0.7[illegible]E-01	0.621E-01	0.992E-01	0.126E 00	0.238E 00
CURVATURE	0.453E-02	0.401E-02	0.640E-02	0.815E-02	0.154E-01

CONFIGURATION I

HEADING = 90.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.94 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.169E 01	0.150E 01	0.240E 01	0.305E 01	0.577E 01
BENDING MOM.	0.618E-02	0.547E-02	0.874E-02	0.111E-01	0.210E-01
SHEAR	0.319E-06	0.282E-06	0.451E-06	0.574E-06	0.108E-05
IMMERSION	0.331E 00	0.292E 00	0.468E 00	0.595E 00	0.112E 01
SLOPE	0.116E-04	0.102E-04	0.164E-04	0.209E-04	0.394E-04
CURVATURE	0.216E-09	0.191E-09	0.306E-09	0.390E-09	0.737E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.154E 01	0.137E 01	0.219E 01	0.278E 01	0.526E 01
BENDING MOM.	0.690E-02	0.611E-02	0.976E-02	0.124E-01	0.234E-01
SHEAR	0.384E-06	0.339E-06	0.543E-06	0.691E-06	0.130E-05
SLOPE	0.111E-04	0.988E-05	0.157E-04	0.201E-04	0.379E-04
CURVATURE	0.242E-09	0.214E-09	0.342E-09	0.436E-09	0.823E-09

CONFIGURATION I

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.259E 01	0.229E 01	0.366E 01	0.466E 01	0.881E 01
BENDING MOM.	0.867E 05	0.768E 05	0.122E 06	0.156E 06	0.295E 06
SHEAR	0.479E 04	0.424E 04	0.677E 04	0.862E 04	0.162E 05
IMMERSION	0.843E 00	0.746E 00	0.119E 01	0.151E 01	0.286E 01
SLOPE	0.750E-01	0.664E-01	0.106E 00	0.135E 00	0.255E 00
CURVATURE	0.304E-02	0.269E-02	0.430E-02	0.548E-02	0.103E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.39 0.00 0.00
(IN THE RANGE 0.10 TO 2.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.387E 00	0.342E 00	0.547E 00	0.697E 00	0.131E 01
BENDING MOM.	0.335E 05	0.296E 05	0.474E 05	0.603E 05	0.114E 06
SHEAR	0.199E 04	0.176E 04	0.282E 04	0.359E 04	0.678E 04
SLOPE	0.203E-01	0.179E-01	0.287E-01	0.366E-01	0.691E-01
CURVATURE	0.117E-02	0.104E-02	0.166E-02	0.211E-02	0.400E-02

CONFIGURATION I

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.265E 01	0.235E 01	0.375E 01	0.478E 01	0.903E 01
BENDING MOM.	0.799E 05	0.707E 05	0.113E 06	0.143E 06	0.271E 06
SHEAR	0.441E 04	0.391E 04	0.624E 04	0.795E 04	0.150E 05
IMMERSION	0.738E 00	0.653E 00	0.104E 01	0.132E 01	0.251E 01
SLOPE	0.712E-01	0.630E-01	0.100E 00	0.128E 00	0.242E 00
CURVATURE	0.280E-02	0.248E-02	0.396E-02	0.505E-02	0.954E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.54 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.319E 01	0.282E 01	0.451E 01	0.574E 01	0.108E 02
BENDING MOM.	0.310E 06	0.275E 06	0.439E 06	0.559E 06	0.105E 07
SHEAR	0.188E 05	0.166E 05	0.266E 05	0.338E 05	0.640E 05
SLOPE	0.181E 00	0.161E 00	0.257E 00	0.327E 00	0.618E 00
CURVATURE	0.109E-01	0.965E-02	0.154E-01	0.196E-01	0.370E-01

CONFIGURATION I

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.277E 01	0.245E 01	0.392E 01	0.499E 01	0.943E 01
BENDING MOM.	0.549E 05	0.486E 05	0.776E 05	0.988E 05	0.186E 06
SHEAR	0.323E 04	0.286E 04	0.457E 04	0.582E 04	0.110E 05
IMMERSION	0.454E 00	0.402E 00	0.643E 00	0.818E 00	0.154E 01
SLOPE	0.528E-01	0.467E-01	0.747E-01	0.951E-01	0.179E 00
CURVATURE	0.192E-02	0.170E-02	0.272E-02	0.346E-02	0.655E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.14 0.00 0.00
(IN THE RANGE 0.10 TO 3.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.232E 01	0.205E 01	0.328E 01	0.418E 01	0.791E 01
BENDING MOM.	0.132E 06	0.117E 06	0.187E 06	0.238E 06	0.449E 06
SHEAR	0.928E 04	0.821E 04	0.131E 05	0.167E 05	0.315E 05
SLOPE	0.748E-01	0.662E-01	0.105E 00	0.134E 00	0.254E 00
CURVATURE	0.464E-02	0.410E-02	0.656E-02	0.835E-02	0.157E-01

CONFIGURATION I

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.94 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.275E 01	0.244E 01	0.390E 01	0.496E 01	0.938E 01
BENDING MOM.	0.622E-02	0.550E-02	0.879E-02	0.111E-01	0.211E-01
SHEAR	0.297E-06	0.263E-06	0.420E-06	0.535E-06	0.101E-05
IMMERSION	0.345E 00	0.305E 00	0.487E 00	0.621E 00	0.117E 01
SLOPE	0.134E-04	0.119E-04	0.190E-04	0.242E-04	0.458E-04
CURVATURE	0.218E-09	0.193E-09	0.308E-09	0.392E-09	0.742E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.256E 01	0.226E 01	0.362E 01	0.461E 01	0.870E 01
BENDING MOM.	0.690E-02	0.611E-02	0.976E-02	0.124E-01	0.234E-01
SHEAR	0.358E-06	0.317E-06	0.507E-06	0.646E-06	0.122E-05
SLOPE	0.128E-04	0.113E-04	0.181E-04	0.230E-04	0.436E-04
CURVATURE	0.242E-09	0.214E-09	0.342E-09	0.436E-09	0.824E-09

CONFIGURATION I

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.339E 01	0.300E 01	0.480E 01	0.611E 01	0.115E 02
BENDING MOM.	0.924E 05	0.817E 05	0.130E 06	0.166E 06	0.314E 06
SHEAR	0.494E 04	0.437E 04	0.698E 04	0.889E 04	0.168E 05
IMMERSION	0.848E 00	0.751E 00	0.120E 01	0.152E 01	0.288E 01
SLOPE	0.856E-01	0.757E-01	0.121E 00	0.154E 00	0.291E 00
CURVATURE	0.324E-02	0.286E-02	0.458E-02	0.583E-02	0.110E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.39 0.00 0.00
(IN THE RANGE 0.10 TO 2.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.430E 00	0.380E 00	0.608E 00	0.774E 00	0.146E 01
BENDING MOM.	0.345E 05	0.305E 05	0.488E 05	0.621E 05	0.117E 06
SHEAR	0.205E 04	0.181E 04	0.290E 04	0.369E 04	0.697E 04
SLOPE	0.211E-01	0.186E-01	0.298E-01	0.379E-01	0.717E-01
CURVATURE	0.121E-02	0.107E-02	0.171E-02	0.218E-02	0.411E-02

CONFIGURATION I

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.344E 01	0.305E 01	0.487E 01	0.620E 01	0.117E 02
BENDING MOM.	0.841E 05	0.744E 05	0.118E 06	0.151E 06	0.285E 06
SHEAR	0.452E 04	0.400E 04	0.640E 04	0.815E 04	0.153E 05
IMMERSION	0.748E 00	0.662E 00	0.105E 01	0.134E 01	0.254E 01
SLOPE	0.800E-01	0.708E-01	0.113E 00	0.144E 00	0.272E 00
CURVATURE	0.295E-02	0.261E-02	0.417E-02	0.531E-02	0.100E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.54 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.339E 01	0.300E 01	0.479E 01	0.610E 01	0.115E 02
BENDING MOM.	0.317E 06	0.280E 06	0.448E 06	0.571E 06	0.107E 07
SHEAR	0.192E 05	0.169E 05	0.271E 05	0.345E 05	0.653E 05
SLOPE	0.186E 00	0.164E 00	0.263E 00	0.335E 00	0.633E 00
CURVATURE	0.111E-01	0.985E-02	0.157E-01	0.200E-01	0.378E-01

CONFIGURATION I

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.560E 05	0.495E 05	0.791E 05	0.100E 06	0.190E 06
SHEAR	0.325E 04	0.287E 04	0.459E 04	0.585E 04	0.110E 05
IMMERSION	0.456E 00	0.403E 00	0.645E 00	0.821E 00	0.155E 01
SLOPE	0.571E-01	0.506E-01	0.808E-01	0.102E 00	0.194E 00
CURVATURE	0.196E-02	0.173E-02	0.277E-02	0.353E-02	0.668E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.14 0.00 0.00
(IN THE RANGE 0.10 TO 3.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.291E 01	0.257E 01	0.411E 01	0.524E 01	0.990E 01
BENDING MOM.	0.133E 06	0.117E 06	0.188E 06	0.239E 06	0.452E 06
SHEAR	0.932E 04	0.825E 04	0.131E 05	0.167E 05	0.317E 05
SLOPE	0.770E-01	0.681E-01	0.108E 00	0.138E 00	0.261E 00
CURVATURE	0.467E-02	0.413E-02	0.660E-02	0.840E-02	0.158E-01

CONFIGURATION I

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.94 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.351E 01	0.311E 01	0.497E 01	0.632E 01	0.119E 02
BENDING MOM.	0.621E-02	0.550E-02	0.879E-02	0.111E-01	0.211E-01
SHEAR	0.287E-06	0.254E-06	0.406E-06	0.517E-06	0.977E-06
IMMERSION	0.349E 00	0.309E 00	0.493E 00	0.628E 00	0.118E 01
SLOPE	0.143E-04	0.127E-04	0.203E-04	0.259E-04	0.489E-04
CURVATURE	0.218E-09	0.193E-09	0.308E-09	0.392E-09	0.741E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.329E 01	0.291E 01	0.466E 01	0.593E 01	0.112E 02
BENDING MOM.	0.688E-02	0.609E-02	0.973E-02	0.123E-01	0.234E-01
SHEAR	0.345E-06	0.306E-06	0.489E-06	0.622E-06	0.117E-05
SLOPE	0.136E-04	0.120E-04	0.193E-04	0.245E-04	0.464E-04
CURVATURE	0.241E-09	0.213E-09	0.341E-09	0.434E-09	0.821E-09

CONFIGURATION II

HEADING = 5.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.959E 00	0.849E 00	0.135E 01	0.172E 01	0.326E 01
BENDING MOM.	0.518E 05	0.459E 05	0.733E 05	0.933E 05	0.176E 06
SHEAR	0.297E 04	0.263E 04	0.420E 04	0.535E 04	0.101E 05
IMMERSION	0.818E 00	0.724E 00	0.115E 01	0.147E 01	0.278E 01
SLOPE	0.384E-01	0.340E-01	0.543E-01	0.692E-01	0.130E 00
CURVATURE	0.182E-02	0.161E-02	0.257E-02	0.327E-02	0.618E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.49 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.257E 00	0.228E 00	0.364E 00	0.464E 00	0.876E 00
BENDING MOM.	0.300E 05	0.266E 05	0.425E 05	0.541E 05	0.102E 06
SHEAR	0.199E 04	0.176E 04	0.281E 04	0.358E 04	0.677E 04
SLOPE	0.162E-01	0.143E-01	0.229E-01	0.292E-01	0.552E-01
CURVATURE	0.105E-02	0.934E-03	0.149E-02	0.190E-02	0.358E-02

CONFIGURATION II

HEADING = 29.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.106E 01	0.944E 00	0.150E 01	0.192E 01	0.362E 01
BENDING MOM.	0.519E 05	0.459E 05	0.734E 05	0.935E 05	0.176E 06
SHEAR	0.290E 04	0.257E 04	0.411E 04	0.523E 04	0.988E 04
IMMERSION	0.738E 00	0.653E 00	0.104E 01	0.132E 01	0.251E 01
SLOPE	0.401E-01	0.355E-01	0.567E-01	0.722E-01	0.136E 00
CURVATURE	0.182E-02	0.161E-02	0.257E-02	0.328E-02	0.619E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.64 0.00 0.00
(IN THE RANGE 0.10 TO 2.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.472E 01
BENDING MOM.	0.174E 06	0.154E 06	0.246E 06	0.313E 06	0.592E 06
SHEAR	0.120E 05	0.106E 05	0.170E 05	0.216E 05	0.409E 05
SLOPE	0.904E-01	0.800E-01	0.127E 00	0.162E 00	0.307E 00
CURVATURE	0.611E-02	0.541E-02	0.865E-02	0.110E-01	0.208E-01

CONFIGURATION II

HEADING = 59.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.131E 01	0.116E 01	0.185E 01	0.236E 01	0.446E 01
BENDING MOM.	0.438E 05	0.388E 05	0.620E 05	0.789E 05	0.149E 06
SHEAR	0.247E 04	0.218E 04	0.349E 04	0.445E 04	0.840E 04
IMMERSION	0.512E 00	0.453E 00	0.724E 00	0.922E 00	0.174E 01
SLOPE	0.375E-01	0.332E-01	0.530E-01	0.675E-01	0.127E 00
CURVATURE	0.153E-02	0.136E-02	0.217E-02	0.277E-02	0.523E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.29 0.00 0.00
(IN THE RANGE 0.10 TO 3.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.105E 01	0.934E 00	0.149E 01	0.190E 01	0.359E 01
BENDING MOM.	0.858E 05	0.759E 05	0.121E 06	0.154E 06	0.291E 06
SHEAR	0.686E 04	0.607E 04	0.970E 04	0.123E 05	0.233E 05
SLOPE	0.451E-01	0.399E-01	0.638E-01	0.812E-01	0.153E 00
CURVATURE	0.301E-02	0.266E-02	0.426E-02	0.542E-02	0.102E-01

CONFIGURATION II

HEADING = 90.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.69 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.130E 01	0.115E 01	0.184E 01	0.234E 01	0.442E 01
BENDING MOM.	0.417E-02	0.369E-02	0.590E-02	0.751E-02	0.142E-01
SHEAR	0.214E-06	0.190E-06	0.303E-06	0.386E-06	0.730E-06
IMMERSION	0.471E 00	0.417E 00	0.667E 00	0.849E 00	0.160E 01
SLOPE	0.941E-05	0.833E-05	0.133E-04	0.169E-04	0.320E-04
CURVATURE	0.146E-09	0.129E-09	0.207E-09	0.263E-09	0.498E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.112E 01	0.997E 00	0.159E 01	0.202E 01	0.383E 01
BENDING MOM.	0.508E-02	0.450E-02	0.719E-02	0.915E-02	0.172E-01
SHEAR	0.232E-06	0.206E-06	0.329E-06	0.419E-06	0.791E-06
SLOPE	0.917E-05	0.811E-05	0.129E-04	0.165E-04	0.311E-04
CURVATURE	0.178E-09	0.157E-09	0.252E-09	0.321E-09	0.606E-09

CONFIGURATION II

HEADING = 5.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.141E 01	0.125E 01	0.200E 01	0.254E 01	0.481E 01
BENDING MOM.	0.626E 05	0.554E 05	0.886E 05	0.112E 06	0.213E 06
SHEAR	0.337E 04	0.298E 04	0.477E 04	0.607E 04	0.114E 05
IMMERSION	0.859E 00	0.760E 00	0.121E 01	0.154E 01	0.292E 01
SLOPE	0.505E-01	0.446E-01	0.714E-01	0.909E-01	0.171E 00
CURVATURE	0.219E-02	0.194E-02	0.311E-02	0.395E-02	0.747E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.49 0.00 0.00
(IN THE RANGE 0.10 TO 2.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.292E 00	0.259E 00	0.413E 00	0.526E 00	0.995E 00
BENDING MOM.	0.330E 05	0.292E 05	0.467E 05	0.594E 05	0.112E 06
SHEAR	0.217E 04	0.192E 04	0.303E 04	0.392E 04	0.741E 04
SLOPE	0.179E-01	0.159E-01	0.254E-01	0.323E-01	0.611E-01
CURVATURE	0.115E-02	0.102E-02	0.163E-02	0.208E-02	0.394E-02

CONFIGURATION II

HEADING = 29.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.152E 01	0.134E 01	0.214E 01	0.273E 01	0.516E 01
BENDING MOM.	0.606E 05	0.536E 05	0.857E 05	0.109E 06	0.206E 06
SHEAR	0.320E 04	0.284E 04	0.453E 04	0.577E 04	0.109E 05
IMMERSION	0.767E 00	0.679E 00	0.108E 01	0.138E 01	0.261E 01
SLOPE	0.507E-01	0.448E-01	0.717E-01	0.912E-01	0.172E 00
CURVATURE	0.212E-02	0.188E-02	0.300E-02	0.383E-02	0.723E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.64 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.154E 01	0.136E 01	0.218E 01	0.278E 01	0.525E 01
BENDING MOM.	0.186E 06	0.164E 06	0.263E 06	0.335E 06	0.632E 06
SHEAR	0.128E 05	0.113E 05	0.181E 05	0.230E 05	0.435E 05
SLOPE	0.971E-01	0.859E-01	0.137E 00	0.174E 00	0.330E 00
CURVATURE	0.653E-02	0.577E-02	0.923E-02	0.117E-01	0.222E-01

CONFIGURATION II

HEALING = 59.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.173E 01	0.153E 01	0.245E 01	0.312E 01	0.590E 01
BENDING MOM.	0.467E 05	0.413E 05	0.660E 05	0.841E 05	0.158E 06
SHEAR	0.255E 04	0.225E 04	0.360E 04	0.459E 04	0.867E 04
IMMERSION	0.534E 00	0.473E 00	0.755E 00	0.962E 00	0.181E 01
SLOPE	0.430E-01	0.381E-01	0.609E-01	0.775E-01	0.146E 00
CURVATURE	0.163E-02	0.145E-02	0.231E-02	0.295E-02	0.557E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.29 0.00 0.00
(IN THE RANGE 0.10 TO 3.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.134E 01	0.118E 01	0.189E 01	0.241E 01	0.456E 01
BENDING MOM.	0.876E 05	0.777E 05	0.124E 06	0.158E 06	0.298E 06
SHEAR	0.695E 04	0.615E 04	0.983E 04	0.125E 05	0.236E 05
SLOPE	0.480E-01	0.425E-01	0.680E-01	0.865E-01	0.163E 00
CURVATURE	0.306E-02	0.272E-02	0.435E-02	0.554E-02	0.104E-01

CONFIGURATION II

FLAPING = 90.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.69 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.171E 01	0.151E 01	0.242E 01	0.308E 01	0.582E 01
BENDING MOM.	0.419E-02	0.371E-02	0.593E-02	0.754E-02	0.142E-01
SHEAR	0.177E-06	0.156E-06	0.250E-06	0.318E-06	0.602E-06
IMMERSION	0.494E 00	0.437E 00	0.698E 00	0.889E 00	0.167E 01
SLOPE	0.105E-04	0.936E-05	0.149E-04	0.190E-04	0.359E-04
CURVATURE	0.147E-09	0.130E-09	0.208E-09	0.264E-09	0.500E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.148E 01	0.131E 01	0.210E 01	0.268E 01	0.506E 01
BENDING MOM.	0.515E-02	0.456E-02	0.728E-02	0.927E-02	0.175E-01
SHEAR	0.228E-06	0.201E-06	0.322E-06	0.410E-06	0.775E-06
SLOPE	0.100E-04	0.892E-05	0.142E-04	0.181E-04	0.342E-04
CURVATURE	0.180E-09	0.160E-09	0.255E-09	0.325E-09	0.614E-09

CONFIGURATION II

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.260E 01	0.230E 01	0.368E 01	0.469E 01	0.886E 01
BENDING MOM.	0.789E 05	0.698E 05	0.111E 06	0.142E 06	0.268E 06
SHEAR	0.388E 04	0.344E 04	0.549E 04	0.699E 04	0.132E 05
IMMERSION	0.898E 00	0.795E 00	0.127E 01	0.161E 01	0.305E 01
SLOPE	0.733E-01	0.648E-01	0.103E 00	0.131E 00	0.249E 00
CURVATURE	0.276E-02	0.245E-02	0.391E-02	0.498E-02	0.941E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.49 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.358E 00	0.317E 00	0.506E 00	0.645E 00	0.121E 01
BENDING MOM.	0.362E 05	0.321E 05	0.513E 05	0.653E 05	0.123E 06
SHEAR	0.238E 04	0.210E 04	0.336E 04	0.428E 04	0.809E 04
SLOPE	0.200E-01	0.177E-01	0.283E-01	0.361E-01	0.681E-01
CURVATURE	0.127E-02	0.112E-02	0.180E-02	0.229E-02	0.432E-02

CONFIGURATION II

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.268E 01	0.237E 01	0.380E 01	0.483E 01	0.913E 01
BENDING MOM.	0.731E 05	0.647E 05	0.103E 06	0.131E 06	0.248E 06
SHEAR	0.358E 04	0.317E 04	0.506E 04	0.645E 04	0.121E 05
IMMERSION	0.803E 00	0.711E 00	0.113E 01	0.144E 01	0.273E 01
SLOPE	0.701E-01	0.620E-01	0.991E-01	0.126E 00	0.238E 00
CURVATURE	0.256E-02	0.227E-02	0.362E-02	0.461E-02	0.872E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.64 0.00 0.00
(IN THE RANGE 0.10 TO 2.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.189E 01	0.167E 01	0.267E 01	0.340E 01	0.643E 01
BENDING MOM.	0.198E 06	0.175E 06	0.280E 06	0.357E 06	0.675E 06
SHEAR	0.136E 05	0.120E 05	0.192E 05	0.245E 05	0.463E 05
SLOPE	0.105E 00	0.932E-01	0.148E 00	0.189E 00	0.358E 00
CURVATURE	0.697E-02	0.616E-02	0.985E-02	0.125E-01	0.237E-01

CONFIGURATION II

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.282E 01	0.250E 01	0.399E 01	0.509E 01	0.961E 01
BENDING MOM.	0.503E 05	0.445E 05	0.712E 05	0.906E 05	0.171E 06
SHEAR	0.263E 04	0.233E 04	0.372E 04	0.474E 04	0.895E 04
IMMERSION	0.561E 00	0.496E 00	0.794E 00	0.101E 01	0.190E 01
SLOPE	0.527E-01	0.467E-01	0.746E-01	0.949E-01	0.179E 00
CURVATURE	0.176E-02	0.156E-02	0.249E-02	0.318E-02	0.600E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.29 0.00 0.00
(IN THE RANGE 0.10 TO 3.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.216E 01	0.191E 01	0.306E 01	0.389E 01	0.735E 01
BENDING MOM.	0.899E 05	0.796E 05	0.127E 06	0.161E 06	0.305E 06
SHEAR	0.701E 04	0.621E 04	0.992E 04	0.126E 05	0.238E 05
SLOPE	0.534E-01	0.472E-01	0.755E-01	0.961E-01	0.181E 00
CURVATURE	0.315E-02	0.279E-02	0.446E-02	0.568E-02	0.107E-01

CONFIGURATION II

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.69 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.246E 01	0.394E 01	0.502E 01	0.948E 01
BENDING MOM.	0.422E-02	0.374E-02	0.597E-02	0.761E-02	0.143E-01
SHEAR	0.144E-06	0.127E-06	0.204E-06	0.259E-06	0.490E-06
IMMERSION	0.520E 00	0.460E 00	0.736E 00	0.936E 00	0.176E 01
SLOPE	0.126E-04	0.112E-04	0.178E-04	0.227E-04	0.430E-04
CURVATURE	0.148E-09	0.131E-09	0.209E-09	0.267E-09	0.504E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.249E 01	0.220E 01	0.352E 01	0.449E 01	0.848E 01
BENDING MOM.	0.517E-02	0.457E-02	0.731E-02	0.931E-02	0.175E-01
SHEAR	0.208E-06	0.184E-06	0.294E-06	0.374E-06	0.707E-06
SLOPE	0.117E-04	0.104E-04	0.166E-04	0.212E-04	0.401E-04
CURVATURE	0.181E-09	0.160E-09	0.256E-09	0.326E-09	0.617E-09

CONFIGURATION II

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.342E 01	0.302E 01	0.484E 01	0.616E 01	0.116E 02
BENDING MOM.	0.846E 05	0.750E 05	0.119E 06	0.152E 06	0.288E 06
SHEAR	0.405E 04	0.358E 04	0.572E 04	0.729E 04	0.137E 05
INCLINATION	0.915E 00	0.810E 00	0.129E 01	0.164E 01	0.311E 01
SLOPE	0.842E-01	0.745E-01	0.119E 00	0.151E 00	0.286E 00
CURVATURE	0.297E-02	0.263E-02	0.420E-02	0.535E-02	0.101E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.49 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.402E 00	0.355E 00	0.568E 00	0.723E 00	0.136E 01
BENDING MOM.	0.371E 05	0.328E 05	0.525E 05	0.669E 05	0.126E 06
SHEAR	0.243E 04	0.215E 04	0.344E 04	0.438E 04	0.828E 04
SLOPE	0.207E-01	0.183E-01	0.293E-01	0.373E-01	0.704E-01
CURVATURE	0.130E-02	0.115E-02	0.184E-02	0.234E-02	0.443E-02

CONFIGURATION II

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.348E 01	0.308E 01	0.493E 01	0.627E 01	0.118E 02
BENDING MOM.	0.774E 05	0.685E 05	0.109E 06	0.139E 06	0.263E 06
SHEAR	0.369E 04	0.326E 04	0.522E 04	0.664E 04	0.125E 05
IMMERSION	0.808E 00	0.715E 00	0.114E 01	0.145E 01	0.275E 01
SLOPE	0.792E-01	0.701E-01	0.112E 00	0.142E 00	0.269E 00
CURVATURE	0.271E-02	0.240E-02	0.384E-02	0.489E-02	0.924E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.64 0.00 0.00
(IN THE RANGE 0.10 TO 2.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.214E 01	0.190E 01	0.303E 01	0.386E 01	0.730E 01
BENDING MOM.	0.202E 06	0.178E 06	0.285E 06	0.363E 06	0.686E 06
SHEAR	0.138E 05	0.122E 05	0.195E 05	0.248E 05	0.470E 05
SLOPE	0.108E 00	0.956E-01	0.152E 00	0.194E 00	0.367E 00
CURVATURE	0.708E-02	0.627E-02	0.100E-01	0.127E-01	0.241E-01

CONFIGURATION II

FLARING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.359E 01	0.317E 01	0.507E 01	0.646E 01	0.122E 02
BENDING MOM.	0.515E 05	0.456E 05	0.728E 05	0.927E 05	0.175E 06
SHEAR	0.265E 04	0.235E 04	0.375E 04	0.478E 04	0.903E 04
IMMERSION	0.573E 00	0.507E 00	0.810E 00	0.103E 01	0.194E 01
SLOPE	0.572E-01	0.506E-01	0.809E-01	0.103E 00	0.194E 00
CURVATURE	0.180E-02	0.160E-02	0.255E-02	0.325E-02	0.614E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.29 0.00 0.00
(IN THE RANGE 0.10 TO 3.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.277E 01	0.245E 01	0.392E 01	0.500E 01	0.944E 01
BENDING MOM.	0.906E 05	0.801E 05	0.128E 06	0.163E 06	0.308E 06
SHEAR	0.704E 04	0.623E 04	0.996E 04	0.126E 05	0.239E 05
SLOPE	0.560E-01	0.496E-01	0.793E-01	0.100E 00	0.190E 00
CURVATURE	0.317E-02	0.281E-02	0.449E-02	0.572E-02	0.108E-01

CONFIGURATION II

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -30000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.69 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.354E 01	0.314E 01	0.501E 01	0.638E 01	0.120E 02
BENDING MOM.	0.423E-02	0.375E-02	0.599E-02	0.762E-02	0.144E-01
SHEAR	0.136E-06	0.120E-06	0.192E-06	0.245E-06	0.463E-06
IMMERSION	0.528E 00	0.467E 00	0.746E 00	0.950E 00	0.179E 01
SLOPE	0.136E-04	0.120E-04	0.192E-04	0.245E-04	0.463E-04
CURVATURE	0.148E-09	0.131E-09	0.210E-09	0.267E-09	0.505E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.322E 01	0.285E 01	0.456E 01	0.581E 01	0.109E 02
BENDING MOM.	0.514E-02	0.455E-02	0.727E-02	0.926E-02	0.175E-01
SHEAR	0.196E-06	0.173E-06	0.277E-06	0.353E-06	0.667E-06
SLOPE	0.126E-04	0.111E-04	0.178E-04	0.227E-04	0.429E-04
CURVATURE	0.180E-09	0.159E-09	0.255E-09	0.325E-09	0.614E-09

CONFIGURATION III

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.258E 01	0.228E 01	0.365E 01	0.465E 01	0.879E 01
BENDING MOM.	0.181E 06	0.160E 06	0.256E 06	0.326E 06	0.616E 06
SHEAR	0.878E 04	0.777E 04	0.124E 05	0.158E 05	0.298E 05
IMMERSION	0.960E 00	0.849E 00	0.135E 01	0.172E 01	0.326E 01
SLOPE	0.709E-01	0.627E-01	0.100E 00	0.127E 00	0.241E 00
CURVATURE	0.260E-02	0.230E-02	0.368E-02	0.469E-02	0.886E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.34 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.640E 00	0.566E 00	0.905E 00	0.115E 01	0.217E 01
BENDING MOM.	0.117E 06	0.103E 06	0.165E 06	0.210E 06	0.397E 06
SHEAR	0.612E 04	0.542E 04	0.866E 04	0.110E 05	0.208E 05
SLOPE	0.324E-01	0.286E-01	0.458E-01	0.583E-01	0.110E 00
CURVATURE	0.168E-02	0.149E-02	0.238E-02	0.303E-02	0.572E-02

CONFIGURATION III

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.266E 01	0.235E 01	0.376E 01	0.479E 01	0.905E 01
BENDING MOM.	0.168E 06	0.149E 06	0.238E 06	0.303E 06	0.573E 06
SHEAR	0.818E 04	0.724E 04	0.115E 05	0.147E 05	0.278E 05
IMMERSION	0.654E 00	0.756E 00	0.120E 01	0.153E 01	0.290E 01
SLOPE	0.679E-01	0.600E-01	0.960E-01	0.122E 00	0.230E 00
CURVATURE	0.242E-02	0.214E-02	0.343E-02	0.436E-02	0.825E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.44 0.00 0.00
(IN THE RANGE 0.10 TO 2.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.186E 01	0.165E 01	0.264E 01	0.336E 01	0.634E 01
BENDING MOM.	0.312E 06	0.276E 06	0.441E 06	0.562E 06	0.106E 07
SHEAR	0.169E 05	0.150E 05	0.240E 05	0.305E 05	0.577E 05
SLOPE	0.858E-01	0.759E-01	0.121E 00	0.154E 00	0.291E 00
CURVATURE	0.449E-02	0.397E-02	0.635E-02	0.809E-02	0.152E-01

CONFIGURATION III

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.277E 01	0.245E 01	0.392E 01	0.499E 01	0.943E 01
BENDING MOM.	0.115E 06	0.102E 06	0.163E 06	0.207E 06	0.392E 06
SHEAR	0.595E 04	0.527E 04	0.842E 04	0.107E 05	0.202E 05
IMMERSION	0.552E 00	0.488E 00	0.780E 00	0.994E 00	0.187E 01
SLOPE	0.504E-01	0.446E-01	0.713E-01	0.908E-01	0.171E 00
CURVATURE	0.166E-02	0.146E-02	0.234E-02	0.298E-02	0.564E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.04 0.00 0.00
(IN THE RANGE 0.10 TO 3.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.223E 01	0.197E 01	0.315E 01	0.401E 01	0.759E 01
BENDING MOM.	0.246E 06	0.218E 06	0.349E 06	0.444E 06	0.839E 06
SHEAR	0.153E 05	0.135E 05	0.216E 05	0.275E 05	0.520E 05
SLOPE	0.654E-01	0.578E-01	0.924E-01	0.117E 00	0.222E 00
CURVATURE	0.355E-02	0.314E-02	0.502E-02	0.639E-02	0.120E-01

CONFIGURATION III

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION - -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.74 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.273E 01	0.241E 01	0.386E 01	0.491E 01	0.928E 01
BENDING MOM.	0.121E-01	0.107E-01	0.171E-01	0.218E-01	0.411E-01
SHEAR	0.480E-06	0.425E-06	0.679E-06	0.864E-06	0.163E-05
IMMERSION	0.424E 00	0.375E 00	0.599E 00	0.763E 00	0.144E 01
SLOPE	0.125E-04	0.111E-04	0.178E-04	0.226E-04	0.428E-04
CURVATURE	0.174E-09	0.154E-09	0.246E-09	0.313E-09	0.592E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.251E 01	0.222E 01	0.355E 01	0.451E 01	0.853E 01
BENDING MOM.	0.134E-01	0.119E-01	0.190E-01	0.242E-01	0.458E-01
SHEAR	0.580E-06	0.513E-06	0.820E-06	0.104E-05	0.197E-05
SLOPE	0.120E-04	0.106E-04	0.170E-04	0.216E-04	0.409E-04
CURVATURE	0.194E-09	0.171E-09	0.274E-09	0.349E-09	0.660E-09

CONFIGURATION III

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.341E 01	0.302E 01	0.482E 01	0.614E 01	0.116E 02
BENDING MOM.	0.195E 06	0.173E 06	0.276E 06	0.352E 06	0.665E 06
SHEAR	0.916E 04	0.811E 04	0.129E 05	0.164E 05	0.311E 05
IMMERSION	0.982E 00	0.869E 00	0.138E 01	0.176E 01	0.334E 01
SLOPE	0.820E-01	0.726E-01	0.116E 00	0.147E 00	0.279E 00
CURVATURE	0.281E-02	0.249E-02	0.398E-02	0.506E-02	0.957E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.34 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.680E 00	0.602E 00	0.962E 00	0.122E 01	0.231E 01
BENDING MOM.	0.121E 06	0.107E 06	0.171E 06	0.218E 06	0.412E 06
SHEAR	0.634E 04	0.561E 04	0.897E 04	0.114E 05	0.215E 05
SLOPE	0.336E-01	0.298E-01	0.476E-01	0.606E-01	0.114E 00
CURVATURE	0.174E-02	0.154E-02	0.246E-02	0.314E-02	0.593E-02

CONFIGURATION III

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.347E 01	0.307E 01	0.491E 01	0.625E 01	0.118E 02
BENDING MOM.	0.179E 06	0.158E 06	0.253E 06	0.322E 06	0.609E 06
SHEAR	0.843E 04	0.746E 04	0.119E 05	0.151E 05	0.286E 05
IMMERSION	0.864E 00	0.764E 00	0.122E 01	0.155E 01	0.293E 01
SLOPE	0.771E-01	0.682E-01	0.109E 00	0.138E 00	0.262E 00
CURVATURE	0.257E-02	0.228E-02	0.364E-02	0.464E-02	0.876E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.44 0.00 0.00
(IN THE RANGE 0.10 TO 2.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.211E 01	0.187E 01	0.299E 01	0.380E 01	0.719E 01
BENDING MOM.	0.321E 06	0.284E 06	0.453E 06	0.577E 06	0.109E 07
SHEAR	0.174E 05	0.154E 05	0.246E 05	0.313E 05	0.591E 05
SLOPE	0.891E-01	0.788E-01	0.125E 00	0.160E 00	0.302E 00
CURVATURE	0.461E-02	0.408E-02	0.653E-02	0.831E-02	0.157E-01

CONFIGURATION III

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.354E 01	0.313E 01	0.501E 01	0.638E 01	0.120E 02
BENDING MOM.	0.118E 06	0.104E 06	0.167E 06	0.212E 06	0.401E 06
SHEAR	0.600E 04	0.531E 04	0.848E 04	0.108E 05	0.204E 05
IMMERSION	0.559E 00	0.495E 00	0.791E 00	0.100E 01	0.190E 01
SLOPE	0.549E-01	0.486E-01	0.777E-01	0.989E-01	0.186E 00
CURVATURE	0.170E-02	0.150E-02	0.240E-02	0.306E-02	0.578E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.04 0.00 0.00
(IN THE RANGE 0.10 TO 3.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.281E 01	0.248E 01	0.397E 01	0.505E 01	0.953E 01
BENDING MOM.	0.249E 06	0.220E 06	0.352E 06	0.448E 06	0.846E 06
SHEAR	0.154E 05	0.136E 05	0.217E 05	0.277E 05	0.523E 05
SLOPE	0.676E-01	0.598E-01	0.956E-01	0.121E 00	0.230E 00
CURVATURE	0.358E-02	0.317E-02	0.506E-02	0.644E-02	0.121E-01

CONFIGURATION III

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.74 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.349E 01	0.309E 01	0.494E 01	0.629E 01	0.118E 02
BENDING MOM.	0.121E-01	0.107E-01	0.171E-01	0.218E-01	0.412E-01
SHEAR	0.464E-06	0.411E-06	0.657E-06	0.836E-06	0.158E-05
IMMERSION	0.431E 00	0.382E 00	0.610E 00	0.777E 00	0.146E 01
SLOPE	0.135E-04	0.119E-04	0.191E-04	0.243E-04	0.460E-04
CURVATURE	0.174E-09	0.154E-09	0.247E-09	0.314E-09	0.593E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.324E 01	0.287E 01	0.458E 01	0.584E 01	0.110E 02
BENDING MOM.	0.134E-01	0.119E-01	0.190E-01	0.242E-01	0.458E-01
SHEAR	0.560E-06	0.496E-06	0.793E-06	0.100E-05	0.190E-05
SLOPE	0.128E-04	0.113E-04	0.182E-04	0.231E-04	0.437E-04
CURVATURE	0.194E-09	0.171E-09	0.274E-09	0.349E-09	0.659E-09

CONFIGURATION III

HEADING = 5.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.214E 06	0.189E 06	0.302E 06	0.385E 06	0.728E 06
SHEAR	0.955E 04	0.845E 04	0.135E 05	0.172E 05	0.324E 05
IMMERSION	0.986E 00	0.873E 00	0.139E 01	0.177E 01	0.335E 01
SLOPE	0.101E 00	0.898E-01	0.143E 00	0.182E 00	0.345E 00
CURVATURE	0.308E-02	0.272E-02	0.435E-02	0.554E-02	0.104E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.34 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.774E 00	0.685E 00	0.109E 01	0.139E 01	0.263E 01
BENDING MOM.	0.125E 06	0.111E 06	0.177E 06	0.226E 06	0.427E 06
SHEAR	0.657E 04	0.581E 04	0.929E 04	0.118E 05	0.223E 05
SLOPE	0.351E-01	0.310E-01	0.496E-01	0.632E-01	0.119E 00
CURVATURE	0.180E-02	0.160E-02	0.255E-02	0.325E-02	0.615E-02

CONFIGURATION III

HEADING = 29.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.561E 01	0.496E 01	0.793E 01	0.101E 02	0.190E 02
BENDING MOM.	0.192E 06	0.170E 06	0.272E 06	0.346E 06	0.655E 06
SHEAR	0.871E 04	0.770E 04	0.123E 05	0.156E 05	0.296E 05
IMMERSION	0.877E 00	0.776E 00	0.124E 01	0.157E 01	0.298E 01
SLOPE	0.933E-01	0.826E-01	0.131E 00	0.168E 00	0.317E 00
CURVATURE	0.277E-02	0.245E-02	0.391E-02	0.498E-02	0.942E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.44 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.287E 01	0.254E 01	0.406E 01	0.517E 01	0.977E 01
BENDING MOM.	0.329E 06	0.292E 06	0.466E 06	0.593E 06	0.112E 07
SHEAR	0.178E 05	0.157E 05	0.252E 05	0.321E 05	0.606E 05
SLOPE	0.937E-01	0.829E-01	0.132E 00	0.168E 00	0.318E 00
CURVATURE	0.474E-02	0.420E-02	0.671E-02	0.854E-02	0.161E-01

CONFIGURATION III

HEADING = 59.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.563E 01	0.498E 01	0.796E 01	0.101E 02	0.191E 02
BENDING MOM.	0.121E 06	0.107E 06	0.171E 06	0.218E 06	0.412E 06
SHEAR	0.604E 04	0.535E 04	0.854E 04	0.108E 05	0.205E 05
IMMERSION	0.569E 00	0.504E 00	0.805E 00	0.102E 01	0.193E 01
SLOPE	0.629E-01	0.556E-01	0.889E-01	0.113E 00	0.213E 00
CURVATURE	0.174E-02	0.154E-02	0.247E-02	0.314E-02	0.594E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.04 0.00 0.00
(IN THE RANGE 0.10 TO 3.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.448E 01	0.396E 01	0.633E 01	0.807E 01	0.152E 02
BENDING MOM.	0.251E 06	0.222E 06	0.355E 06	0.452E 06	0.854E 06
SHEAR	0.154E 05	0.137E 05	0.219E 05	0.278E 05	0.526E 05
SLOPE	0.718E-01	0.636E-01	0.101E 00	0.129E 00	0.244E 00
CURVATURE	0.361E-02	0.319E-02	0.511E-02	0.650E-02	0.122E-01

CONFIGURATION III

HEADING = 90.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.74 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.557E 01	0.493E 01	0.788E 01	0.100E 02	0.189E 02
BENDING MOM.	0.120E-01	0.106E-01	0.170E-01	0.217E-01	0.410E-01
SHEAR	0.428E-06	0.378E-06	0.605E-06	0.770E-06	0.145E-05
IMMERSION	0.439E 00	0.389E 00	0.621E 00	0.791E 00	0.149E 01
SLOPE	0.152E-04	0.134E-04	0.215E-04	0.274E-04	0.518E-04
CURVATURE	0.173E-09	0.153E-09	0.245E-09	0.312E-09	0.590E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.528E 01	0.467E 01	0.746E 01	0.950E 01	0.179E 02
BENDING MOM.	0.133E-01	0.117E-01	0.188E-01	0.239E-01	0.452E-01
SHEAR	0.512E-06	0.453E-06	0.724E-06	0.922E-06	0.174E-05
SLOPE	0.144E-04	0.127E-04	0.204E-04	0.260E-04	0.491E-04
CURVATURE	0.191E-09	0.169E-09	0.270E-09	0.344E-09	0.651E-09

CONFIGURATION III

PLANING = 5.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.711E 01	0.629E 01	0.100E 02	0.128E 02	0.241E 02
BENDING MOM.	0.220E 06	0.194E 06	0.311E 06	0.396E 06	0.748E 06
SHEAR	0.967E 04	0.856E 04	0.136E 05	0.174E 05	0.328E 05
IMMERSION	0.995E 00	0.881E 00	0.140E 01	0.179E 01	0.338E 01
SLOPE	0.110E 00	0.978E-01	0.156E 00	0.198E 00	0.375E 00
CURVATURE	0.316E-02	0.280E-02	0.448E-02	0.570E-02	0.107E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.34 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.849E 00	0.751E 00	0.120E 01	0.152E 01	0.288E 01
BENDING MOM.	0.126E 06	0.112E 06	0.179E 06	0.228E 06	0.431E 06
SHEAR	0.663E 04	0.587E 04	0.938E 04	0.119E 05	0.225E 05
SLOPE	0.355E-01	0.314E-01	0.502E-01	0.640E-01	0.120E 00
CURVATURE	0.182E-02	0.161E-02	0.258E-02	0.328E-02	0.620E-02

CONFIGURATION III

HEADING = 29.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.712E 01	0.630E 01	0.100E 02	0.128E 02	0.242E 02
BENDING MOM.	0.196E 06	0.174E 06	0.278E 06	0.354E 06	0.669E 06
SHEAR	0.876E 04	0.775E 04	0.123E 05	0.157E 05	0.298E 05
IMMERSION	0.872E 00	0.772E 00	0.123E 01	0.157E 01	0.296E 01
SLOPE	0.100E 00	0.892E-01	0.142E 00	0.181E 00	0.342E 00
CURVATURE	0.283E-02	0.250E-02	0.400E-02	0.509E-02	0.963E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.44 0.00 0.00
(IN THE RANGE 0.10 TO 2.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.349E 01	0.309E 01	0.493E 01	0.628E 01	0.118E 02
BENDING MOM.	0.332E 06	0.294E 06	0.469E 06	0.598E 06	0.113E 07
SHEAR	0.179E 05	0.158E 05	0.253E 05	0.323E 05	0.610E 05
SLOPE	0.956E-01	0.846E-01	0.135E 00	0.172E 00	0.325E 00
CURVATURE	0.478E-02	0.423E-02	0.676E-02	0.860E-02	0.162E-01

CONFIGURATION III

HEADING = 59.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.712E 01	0.630E 01	0.100E 02	0.128E 02	0.242E 02
BENDING MOM.	0.122E 06	0.108E 06	0.173E 06	0.220E 06	0.416E 06
SHEAR	0.604E 04	0.534E 04	0.854E 04	0.108E 05	0.205E 05
IMMERSION	0.568E 00	0.502E 00	0.803E 00	0.102E 01	0.193E 01
SLOPE	0.666E-01	0.590E-01	0.942E-01	0.120E 00	0.226E 00
CURVATURE	0.176E-02	0.155E-02	0.249E-02	0.317E-02	0.598E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.04 0.00 0.00
(IN THE RANGE 0.10 TO 2.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.573E 01	0.507E 01	0.810E 01	0.103E 02	0.194E 02
BENDING MOM.	0.251E 06	0.222E 06	0.356E 06	0.453E 06	0.856E 06
SHEAR	0.155E 05	0.137E 05	0.219E 05	0.279E 05	0.527E 05
SLOPE	0.740E-01	0.655E-01	0.104E 00	0.133E 00	0.251E 00
CURVATURE	0.362E-02	0.320E-02	0.512E-02	0.652E-02	0.123E-01

CONFIGURATION III

HEADING = 90.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.74 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.999E 01	0.127E 02	0.240E 02
BENDING MOM.	0.119E-01	0.105E-01	0.169E-01	0.215E-01	0.407E-01
SHEAR	0.406E-06	0.359E-06	0.574E-06	0.731E-06	0.136E-05
IMMERSION	0.441E 00	0.390E 00	0.623E 00	0.794E 00	0.149E 01
SLOPE	0.160E-04	0.142E-04	0.226E-04	0.288E-04	0.545E-04
CURVATURE	0.172E-09	0.152E-09	0.243E-09	0.310E-09	0.585E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.676E 01	0.598E 01	0.956E 01	0.121E 02	0.230E 02
BENDING MOM.	0.131E-01	0.116E-01	0.186E-01	0.236E-01	0.447E-01
SHEAR	0.483E-06	0.427E-06	0.683E-06	0.869E-06	0.164E-05
SLOPE	0.152E-04	0.134E-04	0.215E-04	0.273E-04	0.517E-04
CURVATURE	0.189E-09	0.167E-09	0.267E-09	0.340E-09	0.643E-09

CONFIGURATION IV

LEAD ANGLE = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.263E 01	0.233E 01	0.372E 01	0.474E 01	0.895E 01
BENDING MOM.	0.166E 06	0.147E 06	0.235E 06	0.300E 06	0.567E 06
SHEAR	0.722E 04	0.639E 04	0.102E 05	0.130E 05	0.245E 05
IMMERSION	0.103E 01	0.919E 00	0.146E 01	0.187E 01	0.353E 01
SLOPE	0.700E-01	0.620E-01	0.991E-01	0.126E 00	0.238E 00
CURVATURE	0.240E-02	0.212E-02	0.339E-02	0.432E-02	0.816E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.39 0.00 0.00
(IN THE RANGE 0.10 TO 2.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.327E 00	0.289E 00	0.462E 00	0.589E 00	0.111E 01
BENDING MOM.	0.653E 05	0.578E 05	0.924E 05	0.117E 06	0.222E 06
SHEAR	0.387E 04	0.343E 04	0.548E 04	0.697E 04	0.131E 05
SLOPE	0.184E-01	0.145E-01	0.232E-01	0.296E-01	0.560E-01
CURVATURE	0.940E-03	0.832E-03	0.133E-02	0.169E-02	0.319E-02

CONFIGURATION IV

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.272E 01	0.241E 01	0.385E 01	0.491E 01	0.927E 01
BENDING MOM.	0.156E 06	0.138E 06	0.220E 06	0.281E 06	0.531E 06
SHEAR	0.673E 04	0.595E 04	0.951E 04	0.121E 05	0.228E 05
IMMERSION	0.934E 00	0.827E 00	0.132E 01	0.168E 01	0.317E 01
SLOPE	0.676E-01	0.599E-01	0.957E-01	0.121E 00	0.230E 00
CURVATURE	0.224E-02	0.199E-02	0.317E-02	0.404E-02	0.764E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.54 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.173E 01	0.153E 01	0.245E 01	0.312E 01	0.590E 01
BENDING MOM.	0.342E 06	0.303E 06	0.484E 06	0.616E 06	0.116E 07
SHEAR	0.207E 05	0.183E 05	0.293E 05	0.373E 05	0.705E 05
SLOPE	0.848E-01	0.750E-01	0.119E 00	0.152E 00	0.288E 00
CURVATURE	0.492E-02	0.436E-02	0.696E-02	0.887E-02	0.167E-01

CONFIGURATION IV

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.54 1.69 0.00 0.00
(IN THE RANGE 0.10 TO 3.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.284E 01	0.251E 01	0.402E 01	0.512E 01	0.967E 01
BENDING MOM.	0.104E 06	0.927E 05	0.148E 06	0.188E 06	0.356E 06
SHEAR	0.485E 04	0.429E 04	0.685E 04	0.873E 04	0.164E 05
IMMERSION	0.726E 00	0.642E 00	0.102E 01	0.130E 01	0.246E 01
SLOPE	0.500E-01	0.443E-01	0.708E-01	0.901E-01	0.170E 00
CURVATURE	0.150E-02	0.133E-02	0.213E-02	0.271E-02	0.512E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.19 0.00 0.00
(IN THE RANGE 0.10 TO 3.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.207E 01	0.183E 01	0.293E 01	0.374E 01	0.706E 01
BENDING MOM.	0.168E 06	0.148E 06	0.237E 06	0.302E 06	0.571E 06
SHEAR	0.115E 05	0.101E 05	0.162E 05	0.207E 05	0.391E 05
SLOPE	0.473E-01	0.419E-01	0.669E-01	0.852E-01	0.161E 00
CURVATURE	0.241E-02	0.214E-02	0.341E-02	0.435E-02	0.822E-02

CONFIGURATION IV

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.49 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.276E 01	0.244E 01	0.390E 01	0.497E 01	0.939E 01
BENDING MOM.	0.821E-02	0.727E-02	0.116E-01	0.147E-01	0.279E-01
SHEAR	0.242E-06	0.215E-06	0.343E-06	0.437E-06	0.826E-06
IMMERSION	0.637E 00	0.564E 00	0.901E 00	0.114E 01	0.216E 01
SLOPE	0.116E-04	0.103E-04	0.165E-04	0.210E-04	0.397E-04
CURVATURE	0.118E-09	0.104E-09	0.167E-09	0.212E-09	0.402E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.243E 01	0.215E 01	0.343E 01	0.437E 01	0.826E 01
BENDING MOM.	0.101E-01	0.894E-02	0.142E-01	0.181E-01	0.343E-01
SHEAR	0.341E-06	0.302E-06	0.483E-06	0.615E-06	0.116E-05
SLOPE	0.109E-04	0.970E-05	0.155E-04	0.197E-04	0.373E-04
CURVATURE	0.145E-09	0.128E-09	0.205E-09	0.261E-09	0.494E-09

CONFIGURATION IV

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.347E 01	0.307E 01	0.491E 01	0.626E 01	0.118E 02
BENDING MOM.	0.182E 06	0.161E 06	0.257E 06	0.327E 06	0.619E 06
SHEAR	0.761E 04	0.673E 04	0.107E 05	0.136E 05	0.258E 05
IMPRESSION	0.105E 01	0.937E 00	0.149E 01	0.190E 01	0.360E 01
SLOPE	0.817E-01	0.723E-01	0.115E 00	0.147E 00	0.277E 00
CURVATURE	0.262E-02	0.231E-02	0.370E-02	0.471E-02	0.891E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.39 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.371E 00	0.328E 00	0.525E 00	0.668E 00	0.126E 01
BENDING MOM.	0.673E 05	0.596E 05	0.952E 05	0.121E 06	0.229E 06
SHEAR	0.398E 04	0.352E 04	0.563E 04	0.717E 04	0.135E 05
SLOPE	0.171E-01	0.151E-01	0.242E-01	0.308E-01	0.583E-01
CURVATURE	0.969E-03	0.857E-03	0.137E-02	0.174E-02	0.329E-02

CONFIGURATION IV

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.355E 01	0.314E 01	0.502E 01	0.639E 01	0.120E 02
BENDING MOM.	0.167E 06	0.148E 06	0.237E 06	0.301E 06	0.570E 06
SHEAR	0.701E 04	0.620E 04	0.991E 04	0.126E 05	0.238E 05
IMMERSION	0.962E 00	0.851E 00	0.136E 01	0.173E 01	0.327E 01
SLOPE	0.774E-01	0.685E-01	0.109E 00	0.139E 00	0.263E 00
CURVATURE	0.241E-02	0.213E-02	0.341E-02	0.434E-02	0.820E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.54 0.00 0.00
(IN THE RANGE 0.10 TO 2.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.199E 01	0.176E 01	0.282E 01	0.359E 01	0.678E 01
BENDING MOM.	0.350E 06	0.309E 06	0.495E 06	0.630E 06	0.119E 07
SHEAR	0.211E 05	0.187E 05	0.299E 05	0.381E 05	0.719E 05
SLOPE	0.877E-01	0.776E-01	0.124E 00	0.157E 00	0.298E 00
CURVATURE	0.503E-02	0.445E-02	0.712E-02	0.906E-02	0.171E-01

CONFIGURATION IV

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.54 1.69 0.00 0.00
(IN THE RANGE 0.10 TO 3.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.362E 01	0.320E 01	0.512E 01	0.652E 01	0.123E 02
BENDING MOM.	0.107E 06	0.954E 05	0.152E 06	0.194E 06	0.366E 06
SHEAR	0.490E 04	0.434E 04	0.693E 04	0.883E 04	0.166E 05
IMMERSION	0.750E 00	0.664E 00	0.106E 01	0.135E 01	0.255E 01
SLOPE	0.548E-01	0.485E-01	0.775E-01	0.987E-01	0.186E 00
CURVATURE	0.155E-02	0.137E-02	0.219E-02	0.279E-02	0.527E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.19 0.00 0.00
(IN THE RANGE 0.10 TO 3.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.268E 01	0.237E 01	0.379E 01	0.483E 01	0.913E 01
BENDING MOM.	0.169E 06	0.150E 06	0.239E 06	0.305E 06	0.577E 06
SHEAR	0.115E 05	0.102E 05	0.163E 05	0.208E 05	0.393E 05
SLOPE	0.501E-01	0.443E-01	0.708E-01	0.902E-01	0.170E 00
CURVATURE	0.244E-02	0.216E-02	0.345E-02	0.439E-02	0.830E-02

CONFIGURATION IV

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.49 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.826E-02	0.731E-02	0.116E-01	0.148E-01	0.281E-01
SHEAR	0.227E-06	0.201E-06	0.321E-06	0.409E-06	0.773E-06
IMMERSION	0.651E 00	0.576E 00	0.921E 00	0.117E 01	0.221E 01
SLOPE	0.127E-04	0.112E-04	0.179E-04	0.228E-04	0.432E-04
CURVATURE	0.118E-09	0.105E-09	0.168E-09	0.214E-09	0.404E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.316E 01	0.279E 01	0.447E 01	0.569E 01	0.107E 02
BENDING MOM.	0.101E-01	0.895E-02	0.143E-01	0.182E-01	0.343E-01
SHEAR	0.327E-06	0.289E-06	0.462E-06	0.589E-06	0.111E-05
SLOPE	0.118E-04	0.104E-04	0.167E-04	0.213E-04	0.402E-04
CURVATURE	0.145E-09	0.128E-09	0.205E-09	0.261E-09	0.494E-09

CONFIGURATION IV

HEADING = 5.00 DEG.

WAVE HEIGHT = 15.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.566E 01	0.501E 01	0.801E 01	0.102E 02	0.192E 02
BENDING MOM.	0.202E 06	0.178E 06	0.285E 06	0.363E 06	0.686E 06
SHEAR	0.804E 04	0.712E 04	0.113E 05	0.144E 05	0.273E 05
IMMERSION	0.108E 01	0.961E 00	0.153E 01	0.195E 01	0.369E 01
SLOPE	0.101E 00	0.901E-01	0.144E 00	0.183E 00	0.346E 00
CURVATURE	0.290E-02	0.257E-02	0.411E-02	0.523E-02	0.988E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.39 0.00 0.00
(IN THE RANGE 0.10 TO 2.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.504E 00	0.446E 00	0.713E 00	0.907E 00	0.171E 01
BENDING MOM.	0.694E 05	0.614E 05	0.982E 05	0.125E 06	0.236E 06
SHEAR	0.409E 04	0.362E 04	0.578E 04	0.736E 04	0.139E 05
SLOPE	0.181E-01	0.160E-01	0.256E-01	0.326E-01	0.616E-01
CURVATURE	0.999E-03	0.884E-03	0.141E-02	0.179E-02	0.339E-02

CONFIGURATION IV

HEADING = 29.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.570E 01	0.504E 01	0.806E 01	0.102E 02	0.193E 02
BENDING MOM.	0.182E 06	0.161E 06	0.257E 06	0.327E 06	0.619E 06
SHEAR	0.729E 04	0.645E 04	0.103E 05	0.131E 05	0.248E 05
IMMERSION	0.975E 00	0.863E 00	0.137E 01	0.175E 01	0.331E 01
SLOPE	0.941E-01	0.832E-01	0.133E 00	0.169E 00	0.319E 00
CURVATURE	0.262E-02	0.231E-02	0.370E-02	0.471E-02	0.890E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.54 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.280E 01	0.247E 01	0.395E 01	0.504E 01	0.952E 01
BENDING MOM.	0.358E 06	0.316E 06	0.506E 06	0.644E 06	0.121E 07
SHEAR	0.215E 05	0.190E 05	0.305E 05	0.388E 05	0.733E 05
SLOPE	0.920E-01	0.814E-01	0.130E 00	0.165E 00	0.312E 00
CURVATURE	0.515E-02	0.455E-02	0.728E-02	0.927E-02	0.175E-01

CONFIGURATION IV

HEADING = 59.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.54 1.69 0.00 0.00
(IN THE RANGE 0.10 TO 2.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.570E 01	0.505E 01	0.806E 01	0.102E 02	0.194E 02
BENDING MOM.	0.111E 06	0.986E 05	0.157E 06	0.200E 06	0.379E 06
SHEAR	0.494E 04	0.437E 04	0.699E 04	0.890E 04	0.168E 05
IMMERSION	0.770E 00	0.681E 00	0.108E 01	0.138E 01	0.261E 01
SLOPE	0.630E-01	0.558E-01	0.891E-01	0.113E 00	0.214E 00
CURVATURE	0.160E-02	0.141E-02	0.226E-02	0.288E-02	0.545E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.19 0.00 0.00
(IN THE RANGE 0.10 TO 2.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.440E 01	0.389E 01	0.622E 01	0.792E 01	0.149E 02
BENDING MOM.	0.171E 06	0.151E 06	0.241E 06	0.307E 06	0.581E 06
SHEAR	0.114E 05	0.101E 05	0.162E 05	0.206E 05	0.390E 05
SLOPE	0.553E-01	0.490E-01	0.782E-01	0.996E-01	0.188E 00
CURVATURE	0.246E-02	0.217E-02	0.348E-02	0.443E-02	0.836E-02

CONFIGURATION IV

HEADING = 90.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.49 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.561E 01	0.497E 01	0.794E 01	0.101E 02	0.190E 02
BENDING MOM.	0.827E-02	0.732E-02	0.117E-01	0.148E-01	0.281E-01
SHEAR	0.204E-06	0.180E-06	0.288E-06	0.367E-06	0.693E-06
IMMERSION	0.666E 00	0.589E 00	0.942E 00	0.119E 01	0.226E 01
SLOPE	0.145E-04	0.128E-04	0.205E-04	0.261E-04	0.494E-04
CURVATURE	0.119E-09	0.105E-09	0.168E-09	0.214E-09	0.404E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.519E 01	0.459E 01	0.734E 01	0.934E 01	0.176E 02
BENDING MOM.	0.997E-02	0.882E-02	0.141E-01	0.179E-01	0.339E-01
SHEAR	0.291E-06	0.257E-06	0.411E-06	0.524E-06	0.990E-06
SLOPE	0.134E-04	0.119E-04	0.190E-04	0.242E-04	0.457E-04
CURVATURE	0.143E-09	0.127E-09	0.202E-09	0.258E-09	0.487E-09

CONFIGURATION IV

HEADING = 5.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.719E 01	0.636E 01	0.101E 02	0.129E 02	0.244E 02
BENDING MOM.	0.208E 06	0.184E 06	0.294E 06	0.375E 06	0.708E 06
SHEAR	0.815E 04	0.721E 04	0.115E 05	0.146E 05	0.277E 05
IMMERSION	0.108E 01	0.957E 00	0.152E 01	0.194E 01	0.367E 01
SLOPE	0.111E 00	0.982E-01	0.157E 00	0.199E 00	0.377E 00
CURVATURE	0.299E-02	0.265E-02	0.424E-02	0.539E-02	0.101E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.39 0.00 0.00
(IN THE RANGE 0.10 TO 2.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.611E 00	0.541E 00	0.864E 00	0.110E 01	0.207E 01
BENDING MOM.	0.700E 05	0.619E 05	0.990E 05	0.126E 06	0.238E 06
SHEAR	0.412E 04	0.364E 04	0.582E 04	0.741E 04	0.140E 05
SLOPE	0.185E-01	0.164E-01	0.262E-01	0.333E-01	0.630E-01
CURVATURE	0.100E-02	0.891E-03	0.142E-02	0.181E-02	0.342E-02

CONFIGURATION IV

HEADING = 29.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.721E 01	0.638E 01	0.102E 02	0.129E 02	0.245E 02
BENDING MOM.	0.186E 06	0.165E 06	0.263E 06	0.336E 06	0.634E 06
SHEAR	0.738E 04	0.653E 04	0.104E 05	0.132E 05	0.250E 05
IMMERSION	0.988E 00	0.874E 00	0.139E 01	0.177E 01	0.336E 01
SLOPE	0.101E 00	0.900E-01	0.143E 00	0.183E 00	0.345E 00
CURVATURE	0.268E-02	0.237E-02	0.379E-02	0.483E-02	0.913E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 1.54 0.00 0.00
(IN THE RANGE 0.10 TO 2.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.344E 01	0.304E 01	0.487E 01	0.620E 01	0.117E 02
BENDING MOM.	0.360E 06	0.318E 06	0.509E 06	0.648E 06	0.122E 07
SHEAR	0.216E 05	0.191E 05	0.306E 05	0.390E 05	0.737E 05
SLOPE	0.939E-01	0.831E-01	0.132E 00	0.169E 00	0.319E 00
CURVATURE	0.518E-02	0.458E-02	0.732E-02	0.932E-02	0.176E-01

CONFIGURATION IV

HEADING = 59.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.54 1.69 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.719E 01	0.637E 01	0.101E 02	0.129E 02	0.244E 02
BENDING MOM.	0.112E 06	0.995E 05	0.159E 06	0.202E 06	0.382E 06
SHEAR	0.495E 04	0.438E 04	0.699E 04	0.891E 04	0.168E 05
IMMERSION	0.773E 00	0.684E 00	0.109E 01	0.139E 01	0.262E 01
SLOPE	0.668E-01	0.592E-01	0.945E-01	0.120E 00	0.227E 00
CURVATURE	0.161E-02	0.143E-02	0.228E-02	0.291E-02	0.550E-02

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 2.19 0.00 0.00
(IN THE RANGE 0.10 TO 2.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.566E 01	0.501E 01	0.801E 01	0.102E 02	0.192E 02
BENDING MOM.	0.171E 06	0.151E 06	0.242E 06	0.309E 06	0.582E 06
SHEAR	0.114E 05	0.101E 05	0.161E 05	0.205E 05	0.388E 05
SLOPE	0.580E-01	0.513E-01	0.820E-01	0.104E 00	0.197E 00
CURVATURE	0.246E-02	0.217E-02	0.348E-02	0.443E-02	0.837E-02

CONFIGURATION IV

HEADING = 90.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = -75000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 1.49 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.711E 01	0.629E 01	0.100E 02	0.128E 02	0.241E 02
BENDING MOM.	0.828E-02	0.733E-02	0.117E-01	0.149E-01	0.281E-01
SHEAR	0.199E-06	0.176E-06	0.281E-06	0.358E-06	0.676E-06
IMMERSION	0.670E 00	0.593E 00	0.948E 00	0.120E 01	0.228E 01
SLOPE	0.154E-04	0.136E-04	0.217E-04	0.277E-04	0.523E-04
CURVATURE	0.119E-09	0.105E-09	0.168E-09	0.214E-09	0.405E-09

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.667E 01	0.590E 01	0.943E 01	0.120E 02	0.226E 02
BENDING MOM.	0.993E-02	0.879E-02	0.140E-01	0.178E-01	0.337E-01
SHEAR	0.282E-06	0.249E-06	0.399E-06	0.508E-06	0.959E-06
SLOPE	0.142E-04	0.126E-04	0.201E-04	0.256E-04	0.485E-04
CURVATURE	0.142E-09	0.126E-09	0.202E-09	0.257E-09	0.485E-09

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.472E 01
BENDING MOM.	0.131E 02	0.116E 02	0.185E 02	0.236E 02	0.446E 02
SHEAR	0.903E 01	0.799E 01	0.127E 02	0.162E 02	0.307E 02
IMMERSION	0.765E-01	0.677E-01	0.108E 00	0.137E 00	0.260E 00
SLOPE	0.136E 00	0.120E 00	0.193E 00	0.245E 00	0.464E 00
CURVATURE	0.460E-01	0.407E-01	0.651E-01	0.828E-01	0.156E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.120E 00	0.106E 00	0.170E 00	0.217E 00	0.410E 00
BENDING MOM.	0.252E 01	0.223E 01	0.357E 01	0.455E 01	0.860E 01
SHEAR	0.303E 01	0.268E 01	0.429E 01	0.546E 01	0.103E 02
SLOPE	0.139E-01	0.123E-01	0.196E-01	0.250E-01	0.472E-01
CURVATURE	0.887E-02	0.785E-02	0.125E-01	0.159E-01	0.301E-01

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.122E 01	0.108E 01	0.172E 01	0.219E 01	0.415E 01
BENDING MOM.	0.315E 01	0.279E 01	0.446E 01	0.567E 01	0.107E 02
SHEAR	0.121E 01	0.107E 01	0.171E 01	0.217E 01	0.411E 01
IMMERSION	0.321E 00	0.284E 00	0.454E 00	0.578E 00	0.109E 01
SLOPE	0.803E-01	0.711E-01	0.113E 00	0.144E 00	0.273E 00
CURVATURE	0.110E-01	0.979E-02	0.156E-01	0.199E-01	0.376E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.122E 00	0.108E 00	0.173E 00	0.221E 00	0.417E 00
BENDING MOM.	0.181E 01	0.160E 01	0.256E 01	0.326E 01	0.616E 01
SHEAR	0.153E 01	0.136E 01	0.217E 01	0.277E 01	0.523E 01
SLOPE	0.133E-01	0.118E-01	0.189E-01	0.240E-01	0.454E-01
CURVATURE	0.636E-02	0.562E-02	0.899E-02	0.114E-01	0.216E-01

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.112E 01	0.999E 00	0.159E 01	0.203E 01	0.384E 01
BENDING MOM.	0.207E 01	0.183E 01	0.293E 01	0.374E 01	0.706E 01
SHEAR	0.589E 00	0.521E 00	0.833E 00	0.106E 01	0.200E 01
IMMERSION	0.425E 00	0.376E 00	0.602E 00	0.766E 00	0.144E 01
SLOPE	0.669E-01	0.592E-01	0.945E-01	0.120E 00	0.227E 00
CURVATURE	0.729E-02	0.645E-02	0.103E-01	0.131E-01	0.247E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.124E 00	0.110E 00	0.176E 00	0.224E 00	0.424E 00
BENDING MOM.	0.149E 01	0.132E 01	0.211E 01	0.269E 01	0.508E 01
SHEAR	0.103E 01	0.919E 00	0.146E 01	0.186E 01	0.353E 01
SLOPE	0.131E-01	0.116E-01	0.185E-01	0.236E-01	0.445E-01
CURVATURE	0.524E-02	0.464E-02	0.741E-02	0.944E-02	0.178E-01

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.115E 02	0.102E 02	0.163E 02	0.207E 02	0.392E 02
SHEAR	0.815E 01	0.722E 01	0.115E 02	0.146E 02	0.277E 02
IMMERSION	0.694E-01	0.614E-01	0.982E-01	0.125E 00	0.236E 00
SLOPE	0.121E 00	0.107E 00	0.172E 00	0.219E 00	0.413E 00
CURVATURE	0.404E-01	0.358E-01	0.572E-01	0.728E-01	0.137E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.693E 00	0.613E 00	0.980E 00	0.124E 01	0.235E 01
BENDING MOM.	0.123E 02	0.109E 02	0.175E 02	0.222E 02	0.421E 02
SHEAR	0.146E 02	0.130E 02	0.207E 02	0.264E 02	0.499E 02
SLOPE	0.704E-01	0.623E-01	0.996E-01	0.126E 00	0.239E 00
CURVATURE	0.434E-01	0.384E-01	0.614E-01	0.782E-01	0.147E 00

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 3.74 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.125E 01	0.110E 01	0.176E 01	0.225E 01	0.425E 01
BENDING MOM.	0.285E 01	0.252E 01	0.403E 01	0.514E 01	0.970E 01
SHEAR	0.110E 01	0.980E 00	0.156E 01	0.199E 01	0.376E 01
IMMERSION	0.285E 00	0.252E 00	0.403E 00	0.513E 00	0.969E 00
SLOPE	0.746E-01	0.660E-01	0.105E 00	0.134E 00	0.253E 00
CURVATURE	0.100E-01	0.886E-02	0.141E-01	0.180E-01	0.340E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.701E 00	0.621E 00	0.992E 00	0.126E 01	0.238E 01
BENDING MOM.	0.859E 01	0.760E 01	0.121E 02	0.154E 02	0.292E 02
SHEAR	0.696E 01	0.616E 01	0.984E 01	0.125E 02	0.236E 02
SLOPE	0.674E-01	0.596E-01	0.953E-01	0.121E 00	0.229E 00
CURVATURE	0.301E-01	0.266E-01	0.426E-01	0.542E-01	0.102E 00

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.117E 01	0.103E 01	0.165E 01	0.210E 01	0.397E 01
BENDING MOM.	0.186E 01	0.165E 01	0.264E 01	0.336E 01	0.635E 01
SHEAR	0.535E 00	0.473E 00	0.757E 00	0.963E 00	0.182E 01
IMMERSION	0.380E 00	0.337E 00	0.538E 00	0.685E 00	0.129E 01
SLOPE	0.628E-01	0.556E-01	0.889E-01	0.113E 00	0.213E 00
CURVATURE	0.655E-02	0.580E-02	0.927E-02	0.118E-01	0.223E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.710E 00	0.629E 00	0.100E 01	0.127E 01	0.241E 01
BENDING MOM.	0.715E 01	0.633E 01	0.101E 02	0.128E 02	0.243E 02
SHEAR	0.479E 01	0.423E 01	0.677E 01	0.862E 01	0.162E 02
SLOPE	0.660E-01	0.584E-01	0.934E-01	0.118E 00	0.224E 00
CURVATURE	0.251E-01	0.222E-01	0.355E-01	0.452E-01	0.853E-01

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.44 7.44 0.00 0.00
(IN THE RANGE 0.10 TO 9.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.582E 01	0.515E 01	0.824E 01	0.104E 02	0.198E 02
SHEAR	0.433E 01	0.383E 01	0.613E 01	0.780E 01	0.147E 02
IMMERSION	0.624E-01	0.552E-01	0.883E-01	0.112E 00	0.212E 00
SLOPE	0.731E-01	0.647E-01	0.103E 00	0.131E 00	0.248E 00
CURVATURE	0.204E-01	0.181E-01	0.289E-01	0.368E-01	0.695E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.120E 01	0.106E 01	0.169E 01	0.216E 01	0.408E 01
BENDING MOM.	0.105E 02	0.936E 01	0.149E 02	0.190E 02	0.359E 02
SHEAR	0.110E 02	0.976E 01	0.155E 02	0.198E 02	0.375E 02
SLOPE	0.739E-01	0.654E-01	0.104E 00	0.133E 00	0.251E 00
CURVATURE	0.371E-01	0.328E-01	0.525E-01	0.668E-01	0.126E 00

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.133E 01	0.117E 01	0.188E 01	0.239E 01	0.452E 01
BENDING MOM.	0.203E 01	0.180E 01	0.288E 01	0.366E 01	0.692E 01
SHEAR	0.806E 00	0.713E 00	0.113E 01	0.145E 01	0.274E 01
IMMERSION	0.170E 00	0.151E 00	0.241E 00	0.307E 00	0.580E 00
SLOPE	0.544E-01	0.482E-01	0.770E-01	0.980E-01	0.185E 00
CURVATURE	0.715E-02	0.632E-02	0.101E-01	0.128E-01	0.243E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.120E 01	0.106E 01	0.170E 01	0.217E 01	0.409E 01
BENDING MOM.	0.715E 01	0.633E 01	0.101E 02	0.128E 02	0.243E 02
SHEAR	0.490E 01	0.433E 01	0.693E 01	0.882E 01	0.166E 02
SLOPE	0.706E-01	0.625E-01	0.999E-01	0.127E 00	0.240E 00
CURVATURE	0.251E-01	0.222E-01	0.355E-01	0.451E-01	0.853E-01

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.128E 01	0.113E 01	0.181E 01	0.231E 01	0.437E 01
BENDING MOM.	0.127E 01	0.112E 01	0.180E 01	0.229E 01	0.433E 01
SHEAR	0.379E 00	0.335E 00	0.536E 00	0.683E 00	0.129E 01
IMMERSION	0.238E 00	0.210E 00	0.336E 00	0.428E 00	0.810E 00
SLOPE	0.472E-01	0.418E-01	0.668E-01	0.850E-01	0.160E 00
CURVATURE	0.447E-02	0.395E-02	0.632E-02	0.804E-02	0.152E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.121E 01	0.107E 01	0.171E 01	0.217E 01	0.411E 01
BENDING MOM.	0.601E 01	0.532E 01	0.851E 01	0.108E 02	0.204E 02
SHEAR	0.343E 01	0.304E 01	0.486E 01	0.619E 01	0.116E 02
SLOPE	0.691E-01	0.612E-01	0.978E-01	0.124E 00	0.235E 00
CURVATURE	0.211E-01	0.186E-01	0.298E-01	0.380E-01	0.718E-01

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.323E-06	0.286E-06	0.457E-06	0.583E-06	0.110E-05
SHEAR	0.690E-10	0.610E-10	0.976E-10	0.124E-09	0.234E-09
IMMERSION	0.657E-01	0.581E-01	0.929E-01	0.118E 00	0.223E 00
SLOPE	0.168E-04	0.149E-04	0.238E-04	0.303E-04	0.573E-04
CURVATURE	0.113E-08	0.100E-08	0.160E-08	0.204E-08	0.386E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.138E 01	0.122E 01	0.196E 01	0.249E 01	0.471E 01
BENDING MOM.	0.801E-06	0.709E-06	0.113E-05	0.144E-05	0.272E-05
SHEAR	0.241E-09	0.213E-09	0.341E-09	0.434E-09	0.821E-09
SLOPE	0.201E-04	0.178E-04	0.285E-04	0.363E-04	0.686E-04
CURVATURE	0.281E-08	0.248E-08	0.397E-08	0.505E-08	0.955E-08

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.323E-06	0.286E-06	0.457E-06	0.583E-06	0.110E-05
SHEAR	0.690E-10	0.610E-10	0.976E-10	0.124E-09	0.234E-09
IMMERSION	0.657E-01	0.581E-01	0.929E-01	0.118E 00	0.223E 00
SLOPE	0.168E-04	0.149E-04	0.238E-04	0.303E-04	0.573E-04
CURVATURE	0.113E-08	0.100E-08	0.160E-08	0.204E-08	0.386E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.138E 01	0.122E 01	0.196E 01	0.249E 01	0.471E 01
BENDING MOM.	0.801E-06	0.709E-06	0.113E-05	0.144E-05	0.272E-05
SHEAR	0.241E-09	0.213E-09	0.341E-09	0.434E-09	0.821E-09
SLOPE	0.201E-04	0.178E-04	0.285E-04	0.363E-04	0.686E-04
CURVATURE	0.281E-08	0.248E-08	0.397E-08	0.505E-08	0.955E-08

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.323E-06	0.286E-06	0.457E-06	0.583E-06	0.110E-05
SHEAR	0.690E-10	0.610E-10	0.976E-10	0.124E-09	0.234E-09
IMMERSION	0.657E-01	0.581E-01	0.929E-01	0.118E 00	0.223E 00
SLOPE	0.168E-04	0.149E-04	0.238E-04	0.303E-04	0.573E-04
CURVATURE	0.113E-08	0.100E-08	0.160E-08	0.204E-08	0.386E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.138E 01	0.122E 01	0.196E 01	0.249E 01	0.471E 01
BENDING MOM.	0.801E-06	0.709E-06	0.113E-05	0.144E-05	0.272E-05
SHEAR	0.241E-09	0.213E-09	0.341E-09	0.434E-09	0.821E-09
SLOPE	0.201E-04	0.178E-04	0.285E-04	0.363E-04	0.686E-04
CURVATURE	0.281E-08	0.246E-08	0.397E-08	0.505E-08	0.955E-08

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.131E 02	0.116E 02	0.186E 02	0.236E 02	0.447E 02
SHEAR	0.897E 01	0.794E 01	0.126E 02	0.161E 02	0.305E 02
IMMERSION	0.756E-01	0.669E-01	0.106E 00	0.136E 00	0.257E 00
SLOPE	0.143E 00	0.126E 00	0.202E 00	0.258E 00	0.487E 00
CURVATURE	0.461E-01	0.408E-01	0.652E-01	0.831E-01	0.156E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.153E 00	0.135E 00	0.217E 00	0.276E 00	0.521E 00
BENDING MOM.	0.240E 01	0.212E 01	0.340E 01	0.433E 01	0.817E 01
SHEAR	0.[illegible]73E 01	0.242E 01	0.386E 01	0.492E 01	0.930E 01
SLOPE	0.143E-01	0.126E-01	0.202E-01	0.257E-01	0.486E-01
CURVATURE	0.844E-02	0.746E-02	0.119E-01	0.151E-01	0.286E-01

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.161E 01	0.142E 01	0.227E 01	0.289E 01	0.547E 01
BENDING MOM.	0.320E 01	0.283E 01	0.453E 01	0.577E 01	0.109E 02
SHEAR	0.115E 01	0.101E 01	0.162E 01	0.207E 01	0.391E 01
IMMERSION	0.327E 00	0.289E 00	0.462E 00	0.588E 00	0.111E 01
SLOPE	0.893E-01	0.790E-01	0.126E 00	0.160E 00	0.303E 00
CURVATURE	0.112E-01	0.996E-02	0.159E-01	0.202E-01	0.382E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10[illegible]	MAX.
DISPLACEMENT	0.155E 00	0.137E 00	0.220E 00	0.280E [illegible]	0.529E 00
BENDING MOM.	0.165E 01	0.146E 01	0.233E 01	0.297E 01	0.561E 01
SHEAR	0.127E 01	0.112E 01	0.179E 01	0.228E 01	0.432E 01
SLOPE	0.137E-01	0.121E-01	0.194E-01	0.247E-01	0.466E-01
CURVATURE	0.579E-02	0.513E-02	0.819E-02	0.104E-01	0.197E-01

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.151E 01	0.134E 01	0.214E 01	0.273E 01	0.516E 01
BENDING MOM.	0.214E 01	0.189E 01	0.303E 01	0.385E 01	0.728E 01
SHEAR	0.557E 00	0.493E 00	0.788E 00	0.100E 01	0.189E 01
IMMERSION	0.438E 00	0.388E 00	0.620E 00	0.789E 00	0.149E 01
SLOPE	0.762E-01	0.674E-01	0.107E 00	0.137E 00	0.259E 00
CURVATURE	0.752E-02	0.665E-02	0.106E-01	0.135E-01	0.255E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.158E 00	0.139E 00	0.223E 00	0.284E 00	0.537E 00
BENDING MOM.	0.134E 01	0.119E 01	0.190E 01	0.242E 01	0.458E 01
SHEAR	0.839E 00	0.743E 00	0.118E 01	0.151E 01	0.285E 01
SLOPE	0.134E-01	0.119E-01	0.190E-01	0.242E-01	0.457E-01
CURVATURE	0.473E-02	0.418E-02	0.669E-02	0.852E-02	0.160E-01

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.601E 01
BENDING MOM.	0.115E 02	0.102E 02	0.163E 02	0.207E 02	0.392E 02
SHEAR	0.810E 01	0.717E 01	0.114E 02	0.145E 02	0.275E 02
IMMERSION	0.688E-01	0.609E-01	0.973E-01	0.123E 00	0.234E 00
SLOPE	0.127E 00	0.112E 00	0.180E 00	0.229E 00	0.433E 00
CURVATURE	0.405E-01	0.358E-01	0.572E-01	0.729E-01	0.137E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.880E 00	0.779E 00	0.124E 01	0.158E 01	0.299E 01
BENDING MOM.	0.118E 02	0.104E 02	0.167E 02	0.212E 02	0.401E 02
SHEAR	0.133E 02	0.117E 02	0.188E 02	0.239E 02	0.453E 02
SLOPE	0.725E-01	0.642E-01	0.102E 00	0.130E 00	0.246E 00
CURVATURE	0.414E-01	0.367E-01	0.586E-01	0.746E-01	0.141E 00

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.163E 01	0.145E 01	0.231E 01	0.294E 01	0.557E 01
BENDING MOM.	0.288E 01	0.255E 01	0.408E 01	0.520E 01	0.982E 01
SHEAR	0.105E 01	0.931E 00	0.148E 01	0.189E 01	0.357E 01
IMMERSION	0.289E 00	0.255E 00	0.408E 00	0.520E 00	0.982E 00
SLOPE	0.823E-01	0.728E-01	0.116E 00	0.148E 00	0.279E 00
CURVATURE	0.101E-01	0.897E-02	0.143E-01	0.182E-01	0.344E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.890E 00	0.788E 00	0.125E 01	0.160E 01	0.302E 01
BENDING MOM.	0.787E 01	0.696E 01	0.111E 02	0.141E 02	0.267E 02
SHEAR	0.580E 01	0.513E 01	0.820E 01	0.104E 02	0.197E 02
SLOPE	0.692E-01	0.612E-01	0.978E-01	0.124E 00	0.235E 00
CURVATURE	0.276E-01	0.244E-01	0.390E-01	0.497E-01	0.938E-01

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.156E 01	0.138E 01	0.220E 01	0.280E 01	0.530E 01
BENDING MOM.	0.191E 01	0.169E 01	0.270E 01	0.344E 01	0.649E 01
SHEAR	0.494E 00	0.437E 00	0.699E 00	0.890E 00	0.168E 01
IMMERSION	0.389E 00	0.345E 00	0.551E 00	0.701E 00	0.132E 01
SLOPE	0.709E-01	0.627E-01	0.100E 00	0.127E 00	0.241E 00
CURVATURE	0.670E-02	0.593E-02	0.948E-02	0.120E-01	0.228E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.900E 00	0.797E 00	0.127E 01	0.162E 01	0.306E 01
BENDING MOM.	0.627E 01	0.555E 01	0.886E 01	0.112E 02	0.213E 02
SHEAR	0.365E 01	0.323E 01	0.516E 01	0.657E 01	0.124E 02
SLOPE	0.674E-01	0.597E-01	0.954E-01	0.121E 00	0.229E 00
CURVATURE	0.220E-01	0.194E-01	0.311E-01	0.396E-01	0.748E-01

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.44 7.44 0.00 0.00
(IN THE RANGE 0.10 TO 9.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.250E 01	0.318E 01	0.601E 01
BENDING MOM.	0.580E 01	0.514E 01	0.821E 01	0.104E 02	0.197E 02
SHEAR	0.425E 01	0.376E 01	0.602E 01	0.766E 01	0.144E 02
IMMERSION	0.622E-01	0.550E-01	0.879E-01	0.112E 00	0.211E 00
SLOPE	0.764E-01	0.676E-01	0.108E 00	0.137E 00	0.259E 00
CURVATURE	0.203E-01	0.180E-01	0.288E-01	0.366E-01	0.693E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.152E 01	0.135E 01	0.215E 01	0.274E 01	0.518E 01
BENDING MOM.	0.100E 02	0.886E 01	0.141E 02	0.180E 02	0.340E 02
SHEAR	0.982E 01	0.869E 01	0.138E 02	0.176E 02	0.334E 02
SLOPE	0.758E-01	0.671E-01	0.107E 00	0.136E 00	0.257E 00
CURVATURE	0.351E-01	0.311E-01	0.497E-01	0.632E-01	0.119E 00

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.171E 01	0.151E 01	0.242E 01	0.308E 01	0.582E 01
BENDING MOM.	0.203E 01	0.180E 01	0.287E 01	0.366E 01	0.692E 01
SHEAR	0.773E 00	0.684E 00	0.109E 01	0.139E 01	0.262E 01
IMMERSION	0.171E 00	0.151E 00	0.242E 00	0.308E 00	0.582E 00
SLOPE	0.584E-01	0.517E-01	0.826E-01	0.105E 00	0.198E 00
CURVATURE	0.714E-02	0.632E-02	0.101E-01	0.128E-01	0.242E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.153E 01	0.135E 01	0.216E 01	0.275E 01	0.520E 01
BENDING MOM.	0.666E 01	0.589E 01	0.942E 01	0.119E 02	0.226E 02
SHEAR	0.422E 01	0.374E 01	0.598E 01	0.761E 01	0.143E 02
SLOPE	0.725E-01	0.641E-01	0.102E 00	0.130E 00	0.246E 00
CURVATURE	0.233E-01	0.206E-01	0.330E-01	0.420E-01	0.795E-01

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.167E 01	0.147E 01	0.236E 01	0.300E 01	0.568E 01
BENDING MOM.	0.127E 01	0.113E 01	0.180E 01	0.229E 01	0.434E 01
SHEAR	0.353E 00	0.313E 00	0.500E 00	0.636E 00	0.120E 01
IMMERSION	0.240E 00	0.212E 00	0.339E 00	0.432E 00	0.817E 00
SLOPE	0.515E-01	0.455E-01	0.728E-01	0.927E-01	0.175E 00
CURVATURE	0.448E-02	0.396E-02	0.633E-02	0.806E-02	0.152E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.153E 01	0.136E 01	0.217E 01	0.276E 01	0.522E 01
BENDING MOM.	0.541E 01	0.479E 01	0.765E 01	0.974E 01	0.184E 02
SHEAR	0.276E 01	0.244E 01	0.390E 01	0.497E 01	0.939E 01
SLOPE	0.707E-01	0.626E-01	0.100E 00	0.127E 00	0.240E 00
CURVATURE	0.189E-01	0.168E-01	0.268E-01	0.341E-01	0.645E-01

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO10.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.250E 01	0.318E 01	0.601E 01
BENDING MOM.	0.317E-06	0.280E-06	0.448E-06	0.570E-06	0.107E-05
SHEAR	0.631E-10	0.558E-10	0.892E-10	0.113E-09	0.214E-09
IMMERSION	0.655E-01	0.580E-01	0.926E-01	0.118E 00	0.222E 00
SLOPE	0.176E-04	0.155E-04	0.249E-04	0.317E-04	0.599E-04
CURVATURE	0.111E-08	0.984E-09	0.157E-08	0.200E-08	0.378E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO10.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.155E 01	0.249E 01	0.317E 01	0.598E 01
BENDING MOM.	0.726E-06	0.643E-06	0.102E-05	0.130E-05	0.247E-05
SHEAR	0.196E-09	0.173E-09	0.277E-09	0.353E-09	0.668E-09
SLOPE	0.206E-04	0.182E-04	0.291E-04	0.370E-04	0.700E-04
CURVATURE	0.255E-08	0.225E-08	0.360E-08	0.459E-08	0.867E-08

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO10.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.250E 01	0.318E 01	0.601E 01
BENDING MOM.	0.317E-06	0.280E-06	0.448E-06	0.570E-06	0.107E-05
SHEAR	0.631E-10	0.558E-10	0.892E-10	0.113E-09	0.214E-09
IMMERSION	0.655E-01	0.580E-01	0.926E-01	0.118E 00	0.222E 00
SLOPE	0.176E-04	0.155E-04	0.249E-04	0.317E-04	0.599E-04
CURVATURE	0.111E-08	0.984E-09	0.157E-08	0.200E-08	0.378E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO10.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.155E 01	0.249E 01	0.317E 01	0.598E 01
BENDING MOM.	0.726E-06	0.643E-06	0.102E-05	0.130E-05	0.247E-05
SHEAR	0.196E-09	0.173E-09	0.277E-09	0.353E-09	0.668E-09
SLOPE	0.206E-04	0.182E-04	0.291E-04	0.370E-04	0.700E-04
CURVATURE	0.255E-08	0.225E-08	0.360E-08	0.459E-08	0.867E-08

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO10.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.250E 01	0.318E 01	0.601E 01
BENDING MOM.	0.317E-06	0.280E-06	0.448E-06	0.570E-06	0.107E-05
SHEAR	0.631E-10	0.558E-10	0.892E-10	0.113E-09	0.214E-09
IMMERSION	0.655E-01	0.580E-01	0.926E-01	0.118E 00	0.222E 00
SLOPE	0.176E-04	0.155E-04	0.249E-04	0.317E-04	0.599E-04
CURVATURE	0.111E-08	0.984E-09	0.157E-08	0.200E-08	0.378E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO10.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.155E 01	0.249E 01	0.317E 01	0.598E 01
BENDING MOM.	0.726E-06	0.643E-06	0.102E-05	0.130E-05	0.247E-05
SHEAR	0.196E-09	0.173E-09	0.277E-09	0.353E-09	0.668E-09
SLOPE	0.206E-04	0.182E-04	0.291E-04	0.370E-04	0.700E-04
CURVATURE	0.255E-08	0.225E-08	0.360E-08	0.459E-08	0.867E-08

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.131E 02	0.116E 02	0.186E 02	0.236E 02	0.447E 02
SHEAR	0.881E 01	0.779E 01	0.124E 02	0.158E 02	0.299E 02
IMMERSION	0.732E-01	0.647E-01	0.103E 00	0.131E 00	0.248E 00
SLOPE	0.155E 00	0.137E 00	0.220E 00	0.280E 00	0.529E 00
CURVATURE	0.461E-01	0.408E-01	0.652E-01	0.831E-01	0.157E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.242E 00	0.214E 00	0.343E 00	0.437E 00	0.825E 00
BENDING MOM.	0.216E 01	0.191E 01	0.305E 01	0.389E 01	0.735E 01
SHEAR	0.219E 01	0.194E 01	0.310E 01	0.395E 01	0.747E 01
SLOPE	0.150E-01	0.133E-01	0.212E-01	0.271E-01	0.512E-01
CURVATURE	0.759E-02	0.671E-02	0.107E-01	0.136E-01	0.258E-01

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.266E 01	0.235E 01	0.376E 01	0.479E 01	0.906E 01
BENDING MOM.	0.325E 01	0.287E 01	0.459E 01	0.585E 01	0.110E 02
SHEAR	0.101E 01	0.900E 00	0.143E 01	0.183E 01	0.346E 01
IMMERSION	0.332E 00	0.294E 00	0.469E 00	0.598E 00	0.112E 01
SLOPE	0.105E 00	0.936E-01	0.149E 00	0.190E 00	0.359E 00
CURVATURE	0.114E-01	0.100E-01	0.161E-01	0.205E-01	0.387E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.245E 00	0.217E 00	0.347E 00	0.442E 00	0.835E 00
BENDING MOM.	0.134E 01	0.119E 01	0.190E 01	0.242E 01	0.458E 01
SHEAR	0.839E 00	0.743E 00	0.118E 01	0.151E 01	0.285E 01
SLOPE	0.143E-01	0.126E-01	0.202E-01	0.257E-01	0.487E-01
CURVATURE	0.473E-02	0.419E-02	0.669E-02	0.852E-02	0.160E-01

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.258E 01	0.228E 01	0.365E 01	0.464E 01	0.877E 01
BENDING MOM.	0.221E 01	0.196E 01	0.313E 01	0.399E 01	0.753E 01
SHEAR	0.491E 00	0.434E 00	0.694E 00	0.884E 00	0.167E 01
IMMERSION	0.452E 00	0.400E 00	0.640E 00	0.815E 00	0.153E 01
SLOPE	0.935E-01	0.828E-01	0.132E 00	0.168E 00	0.318E 00
CURVATURE	0.778E-02	0.688E-02	0.110E-01	0.140E-01	0.264E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.248E 00	0.219E 00	0.351E 00	0.447E 00	0.844E 00
BENDING MOM.	0.107E 01	0.952E 00	0.152E 01	0.193E 01	0.365E 01
SHEAR	0.527E 00	0.466E 00	0.745E 00	0.949E 00	0.179E 01
SLOPE	0.140E-01	0.124E-01	0.198E-01	0.252E-01	0.477E-01
CURVATURE	0.377E-02	0.334E-02	0.533E-02	0.679E-02	0.128E-01

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.502E 01	0.949E 01
BENDING MOM.	0.115E 02	0.101E 02	0.162E 02	0.207E 02	0.391E 02
SHEAR	0.790E 01	0.699E 01	0.111E 02	0.142E 02	0.268E 02
IMMERSION	0.663E-01	0.587E-01	0.938E-01	0.119E 00	0.225E 00
SLOPE	0.137E 00	0.122E 00	0.195E 00	0.248E 00	0.468E 00
CURVATURE	0.404E-01	0.357E-01	0.571E-01	0.727E-01	0.137E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.197E 01	0.250E 01	0.473E 01
BENDING MOM.	0.104E 02	0.924E 01	0.147E 02	0.187E 02	0.355E 02
SHEAR	0.103E 02	0.913E 01	0.145E 02	0.185E 02	0.350E 02
SLOPE	0.760E-01	0.673E-01	0.107E 00	0.136E 00	0.258E 00
CURVATURE	0.366E-01	0.324E-01	0.518E-01	0.659E-01	0.124E 00

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.268E 01	0.238E 01	0.380E 01	0.484E 01	0.914E 01
BENDING MOM.	0.290E 01	0.257E 01	0.410E 01	0.522E 01	0.987E 01
SHEAR	0.930E 00	0.823E 00	0.131E 01	0.167E 01	0.316E 01
IMMERSION	0.292E 00	0.258E 00	0.413E 00	0.526E 00	0.994E 00
SLOPE	0.962E-01	0.851E-01	0.136E 00	0.173E 00	0.327E 00
CURVATURE	0.101E-01	0.902E-02	0.144E-01	0.183E-01	0.346E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.140E 01	0.124E 01	0.198E 01	0.252E 01	0.477E 01
BENDING MOM.	0.649E 01	0.574E 01	0.918E 01	0.116E 02	0.220E 02
SHEAR	0.391E 01	0.346E 01	0.553E 01	0.705E 01	0.133E 02
SLOPE	0.722E-01	0.639E-01	0.102E 00	0.130E 00	0.245E 00
CURVATURE	0.227E-01	0.201E-01	0.322E-01	0.410E-01	0.775E-01

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.262E 01	0.231E 01	0.370E 01	0.471E 01	0.890E 01
BENDING MOM.	0.196E 01	0.173E 01	0.277E 01	0.353E 01	0.666E 01
SHEAR	0.443E 00	0.392E 00	0.626E 00	0.798E 00	0.150E 01
IMMERSION	0.400E 00	0.354E 00	0.565E 00	0.720E 00	0.136E 01
SLOPE	0.856E-01	0.758E-01	0.121E 00	0.154E 00	0.291E 00
CURVATURE	0.688E-02	0.609E-02	0.973E-02	0.123E-01	0.234E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.141E 01	0.125E 01	0.200E 01	0.255E 01	0.481E 01
BENDING MOM.	0.524E 01	0.463E 01	0.741E 01	0.943E 01	0.178E 02
SHEAR	0.252E 01	0.223E 01	0.357E 01	0.454E 01	0.858E 01
SLOPE	0.708E-01	0.626E-01	0.100E 00	0.127E 00	0.240E 00
CURVATURE	0.183E-01	0.162E-01	0.260E-01	0.331E-01	0.625E-01

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.44 7.44 0.00 0.00
(IN THE RANGE 0.10 TO 9.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.950E 01
BENDING MOM.	0.573E 01	0.507E 01	0.810E 01	0.103E 02	0.194E 02
SHEAR	0.405E 01	0.358E 01	0.572E 01	0.729E 01	0.137E 02
IMMERSION	0.615E-01	0.545E-01	0.870E-01	0.110E 00	0.209E 00
SLOPE	0.822E-01	0.727E-01	0.116E 00	0.147E 00	0.279E 00
CURVATURE	0.201E-01	0.178E-01	0.284E-01	0.362E-01	0.684E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.241E 01	0.213E 01	0.341E 01	0.434E 01	0.820E 01
BENDING MOM.	0.909E 01	0.804E 01	0.128E 02	0.163E 02	0.309E 02
SHEAR	0.802E 01	0.710E 01	0.113E 02	0.144E 02	0.272E 02
SLOPE	0.795E-01	0.703E-01	0.112E 00	0.143E 00	0.270E 00
CURVATURE	0.319E-01	0.282E-01	0.451E-01	0.574E-01	0.108E 00

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.275E 01	0.243E 01	0.388E 01	0.495E 01	0.935E 01
BENDING MOM.	0.200E 01	0.177E 01	0.283E 01	0.360E 01	0.680E 01
SHEAR	0.683E 00	0.605E 00	0.966E 00	0.123E 01	0.232E 01
IMMERSION	0.171E 00	0.151E 00	0.241E 00	0.308E 00	0.581E 00
SLOPE	0.655E-01	0.579E-01	0.926E-01	0.117E 00	0.222E 00
CURVATURE	0.702E-02	0.621E-02	0.993E-02	0.126E-01	0.238E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.242E 01	0.214E 01	0.342E 01	0.435E 01	0.822E 01
BENDING MOM.	0.556E 01	0.492E 01	0.787E 01	0.100E 02	0.189E 02
SHEAR	0.292E 01	0.258E 01	0.413E 01	0.526E 01	0.993E 01
SLOPE	0.755E-01	0.668E-01	0.106E 00	0.136E 00	0.256E 00
CURVATURE	0.195E-01	0.172E-01	0.276E-01	0.351E-01	0.664E-01

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.271E 01	0.240E 01	0.384E 01	0.469E 01	0.924E 01
BENDING MOM.	0.126E 01	0.112E 01	0.178E 01	0.227E 01	0.430E 01
SHEAR	0.304E 00	0.269E 00	0.430E 00	0.548E 00	0.103E 01
IMMERSION	0.241E 00	0.213E 00	0.341E 00	0.435E 00	0.821E 00
SLOPE	0.592E-01	0.524E-01	0.837E-01	0.106E 00	0.201E 00
CURVATURE	0.444E-02	0.392E-02	0.627E-02	0.799E-02	0.150E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.242E 01	0.214E 01	0.343E 01	0.436E 01	0.825E 01
BENDING MOM.	0.441E 01	0.390E 01	0.624E 01	0.794E 01	0.150E 02
SHEAR	0.181E 01	0.160E 01	0.257E 01	0.327E 01	0.618E 01
SLOPE	0.736E-01	0.651E-01	0.104E 00	0.132E 00	0.250E 00
CURVATURE	0.154E-01	0.137E-01	0.218E-01	0.278E-01	0.526E-01

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.950E 01
BENDING MOM.	0.301E-06	0.266E-06	0.426E-06	0.542E-06	0.102E-05
SHEAR	0.523E-10	0.463E-10	0.739E-10	0.941E-10	0.177E-09
IMMERSION	0.649E-01	0.574E-01	0.918E-01	0.116E 00	0.220E 00
SLOPE	0.189E-04	0.167E-04	0.267E-04	0.341E-04	0.644E-04
CURVATURE	0.105E-08	0.936E-09	0.149E-08	0.190E-08	0.359E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.278E 01	0.246E 01	0.394E 01	0.501E 01	0.947E 01
BENDING MOM.	0.607E-06	0.538E-06	0.859E-06	0.109E-05	0.206E-05
SHEAR	0.135E-09	0.119E-09	0.191E-09	0.243E-09	0.459E-09
SLOPE	0.214E-04	0.189E-04	0.302E-04	0.385E-04	0.728E-04
CURVATURE	0.213E-08	0.188E-08	0.301E-08	0.383E-08	0.725E-08

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.950E 01
BENDING MOM.	0.301E-06	0.266E-06	0.426E-06	0.542E-06	0.102E-05
SHEAR	0.523E-10	0.463E-10	0.739E-10	0.941E-10	0.177E-09
IMMERSION	0.649E-01	0.574E-01	0.918E-01	0.116E 00	0.220E 00
SLOPE	0.189E-04	0.167E-04	0.267E-04	0.341E-04	0.644E-04
CURVATURE	0.105E-08	0.936E-09	0.149E-08	0.190E-08	0.359E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.278E 01	0.246E 01	0.394E 01	0.501E 01	0.947E 01
BENDING MOM.	0.607E-06	0.538E-06	0.859E-06	0.109E-05	0.206E-05
SHEAR	0.135E-09	0.119E-09	0.191E-09	0.243E-09	0.459E-09
SLOPE	0.214E-04	0.189E-04	0.302E-04	0.385E-04	0.728E-04
CURVATURE	0.213E-08	0.188E-08	0.301E-08	0.383E-08	0.725E-08

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.950E 01
BENDING MOM.	0.301E-06	0.266E-06	0.426E-06	0.542E-06	0.102E-05
SHEAR	0.523E-10	0.463E-10	0.739E-10	0.941E-10	0.177E-09
IMMERSION	0.649E-01	0.574E-01	0.918E-01	0.116E 00	0.220E 00
SLOPE	0.189E-04	0.167E-04	0.267E-04	0.341E-04	0.644E-04
CURVATURE	0.105E-08	0.936E-09	0.149E-08	0.190E-08	0.359E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.278E 01	0.246E 01	0.394E 01	0.501E 01	0.947E 01
BENDING MOM.	0.607E-06	0.538E-06	0.859E-06	0.109E-05	0.206E-05
SHEAR	0.135E-09	0.119E-09	0.191E-09	0.243E-09	0.459E-09
SLOPE	0.214E-04	0.189E-04	0.302E-04	0.385E-04	0.728E-04
CURVATURE	0.213E-08	0.188E-08	0.301E-08	0.383E-08	0.725E-08

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.131E 02	0.116E 02	0.185E 02	0.236E 02	0.446E 02
SHEAR	0.869E 01	0.769E 01	0.122E 02	0.156E 02	0.295E 02
IMMERSION	0.715E-01	0.633E-01	0.101E 00	0.128E 00	0.243E 00
SLOPE	0.161E 00	0.143E 00	0.228E 00	0.290E 00	0.549E 00
CURVATURE	0.460E-01	0.407E-01	0.651E-01	0.829E-01	0.156E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.307E 00	0.272E 00	0.434E 00	0.553E 00	0.104E 01
BENDING MOM.	0.204E 01	0.181E 01	0.289E 01	0.368E 01	0.695E 01
SHEAR	0.196E 01	0.173E 01	0.277E 01	0.352E 01	0.666E 01
SLOPE	0.154E-01	0.136E-01	0.218E-01	0.277E-01	0.524E-01
CURVATURE	0.717E-02	0.635E-02	0.101E-01	0.129E-01	0.244E-01

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.342E 01	0.302E 01	0.483E 01	0.616E 01	0.116E 02
BENDING MOM.	0.324E 01	0.287E 01	0.459E 01	0.584E 01	0.110E 02
SHEAR	0.947E 00	0.838E 00	0.133E 01	0.170E 01	0.321E 01
IMMERSION	0.332E 00	0.294E 00	0.470E 00	0.599E 00	0.113E 01
SLOPE	0.113E 00	0.100E 00	0.160E 00	0.204E 00	0.386E 00
CURVATURE	0.114E-01	0.100E-01	0.161E-01	0.205E-01	0.387E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.310E 00	0.274E 00	0.439E 00	0.558E 00	0.105E 01
BENDING MOM.	0.120E 01	0.106E 01	0.170E 01	0.217E 01	0.410E 01
SHEAR	0.669E 00	0.592E 00	0.946E 00	0.120E 01	0.227E 01
SLOPE	0.146E-01	0.129E-01	0.206E-01	0.263E-01	0.496E-01
CURVATURE	0.423E-02	0.375E-02	0.599E-02	0.762E-02	0.144E-01

CONFIGURATION V AND VI

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.334E 01	0.296E 01	0.473E 01	0.6[illegible] 01	0.113E 02
BENDING MOM.	0.224E 01	0.198E 01	0.316E 01	0.403E 01	0.761E 01
SHEAR	0.469E 00	0.415E 00	0.663E 00	0.844E 00	0.159E 01
IMMERSION	0.456E 00	0.404E 00	0.646E 00	0.822E 00	0.155E 01
SLOPE	0.102E 00	0.903E-01	0.144E 00	0.183E 00	0.346E 00
CURVATURE	0.785E-02	0.695E-02	0.111E-01	0.141E-01	0.267E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.313E 00	0.277E 00	0.443E 00	0.564E 00	0.106E 01
BENDING MOM.	0.991E 00	0.877E 00	0.140E 01	0.178E 01	0.337E 01
SHEAR	0.445E 00	0.394E 00	0.630E 00	0.802E 00	0.151E 01
SLOPE	0.143E-01	0.127E-01	0.203E-01	0.259E-01	0.489E-01
CURVATURE	0.347E-02	0.307E-02	0.491E-02	0.626E-02	0.118E-01

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.114E 02	0.101E 02	0.162E 02	0.206E 02	0.390E 02
SHEAR	0.778E 01	0.689E 01	0.110E 02	0.140E 02	0.264E 02
IMMERSION	0.650E-01	0.576E-01	0.920E-01	0.117E 00	0.221E 00
SLOPE	0.142E 00	0.126E 00	0.202E 00	0.257E 00	0.486E 00
CURVATURE	0.402E-01	0.356E-01	0.569E-01	0.725E-01	0.137E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.317E 01	0.599E 01
BENDING MOM.	0.990E 01	0.876E 01	0.140E 02	0.178E 02	0.336E 02
SHEAR	0.926E 01	0.819E 01	0.130E 02	0.166E 02	0.314E 02
SLOPE	0.779E-01	0.689E-01	0.110E 00	0.140E 00	0.264E 00
CURVATURE	0.347E-01	0.307E-01	0.491E-01	0.625E-01	0.118E 00

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.344E 01	0.304E 01	0.487E 01	0.620E 01	0.117E 02
BENDING MOM.	0.289E 01	0.256E 01	0.409E 01	0.521E 01	0.984E 01
SHEAR	0.864E 00	0.765E 00	0.122E 01	0.155E 01	0.294E 01
IMMERSION	0.292E 00	0.258E 00	0.413E 00	0.526E 00	0.994E 00
SLOPE	0.102E 00	0.911E-01	0.145E 00	0.185E 00	0.350E 00
CURVATURE	0.101E-01	0.898E-02	0.143E-01	0.182E-01	0.345E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.177E 01	0.157E 01	0.251E 01	0.319E 01	0.604E 01
BENDING MOM.	0.585E 01	0.517E 01	0.827E 01	0.105E 02	0.198E 02
SHEAR	0.316E 01	0.280E 01	0.447E 01	0.569E 01	0.107E 02
SLOPE	0.737E-01	0.652E-01	0.104E 00	0.132E 00	0.250E 00
CURVATURE	0.205E-01	0.181E-01	0.290E-01	0.369E-01	0.698E-01

CONFIGURATION V AND VI

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.338E 01	0.299E 01	0.478E 01	0.608E 01	0.114E 02
BENDING MOM.	0.196E 01	0.174E 01	0.278E 01	0.354E 01	0.669E 01
SHEAR	0.412E 00	0.364E 00	0.582E 00	0.741E 00	0.140E 01
IMMERSION	0.402E 00	0.355E 00	0.568E 00	0.723E 00	0.136E 01
SLOPE	0.928E-01	0.821E-01	0.131E 00	0.167E 00	0.315E 00
CURVATURE	0.690E-02	0.611E-02	0.976E-02	0.124E-01	0.234E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.179E 01	0.158E 01	0.253E 01	0.322E 01	0.608E 01
BENDING MOM.	0.466E 01	0.412E 01	0.659E 01	0.839E 01	0.158E 02
SHEAR	0.198E 01	0.175E 01	0.280E 01	0.357E 01	0.675E 01
SLOPE	0.721E-01	0.638E-01	0.102E 00	0.129E 00	0.245E 00
CURVATURE	0.163E-01	0.144E-01	0.231E-01	0.294E-01	0.556E-01

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.44 7.44 0.00 0.00
(IN THE RANGE 0.10 TO 8.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.313E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.565E 01	0.500E 01	0.798E 01	0.101E 02	0.192E 02
SHEAR	0.386E 01	0.341E 01	0.546E 01	0.695E 01	0.131E 02
IMMERSION	0.610E-01	0.540E-01	0.863E-01	0.109E 00	0.207E 00
SLOPE	0.850E-01	0.752E-01	0.120E 00	0.153E 00	0.289E 00
CURVATURE	0.198E-01	0.175E-01	0.280E-01	0.356E-01	0.674E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.305E 01	0.270E 01	0.432E 01	0.550E 01	0.103E 02
BENDING MOM.	0.855E 01	0.757E 01	0.120E 02	0.153E 02	0.290E 02
SHEAR	0.706E 01	0.625E 01	0.998E 01	0.127E 02	0.240E 02
SLOPE	0.812E-01	0.719E-01	0.114E 00	0.146E 00	0.276E 00
CURVATURE	0.300E-01	0.265E-01	0.424E-01	0.540E-01	0.102E 00

CONFIGURATION V AND VI

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.349E 01	0.309E 01	0.494E 01	0.629E 01	0.118E 02
BENDING MOM.	0.197E 01	0.175E 01	0.279E 01	0.356E 01	0.672E 01
SHEAR	0.640E 00	0.566E 00	0.905E 00	0.115E 01	0.217E 01
IMMERSION	0.170E 00	0.150E 00	0.241E 00	0.306E 00	0.579E 00
SLOPE	0.689E-01	0.610E-01	0.975E-01	0.124E 00	0.234E 00
CURVATURE	0.694E-02	0.614E-02	0.981E-02	0.124E-01	0.236E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.306E 01	0.271E 01	0.433E 01	0.551E 01	0.104E 02
BENDING MOM.	0.512E 01	0.453E 01	0.724E 01	0.922E 01	0.174E 02
SHEAR	0.246E 01	0.218E 01	0.348E 01	0.443E 01	0.837E 01
SLOPE	0.771E-01	0.683E-01	0.109E 00	0.138E 00	0.262E 00
CURVATURE	0.179E-01	0.159E-01	0.254E-01	0.323E-01	0.611E-01

CONFIGURATION V AND VI

PLANING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.346E 01	0.307E 01	0.490E 01	0.624E 01	0.117E 02
BENDING MOM.	0.125E 01	0.111E 01	0.177E 01	0.225E 01	0.426E 01
SHEAR	0.282E 00	0.249E 00	0.399E 00	0.507E 00	0.959E 00
IMMERSION	0.241E 00	0.213E 00	0.341E 00	0.434E 00	0.820E 00
SLOPE	0.629E-01	0.556E-01	0.889E-01	0.113E 00	0.213E 00
CURVATURE	0.440E-02	0.389E-02	0.622E-02	0.792E-02	0.149E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.307E 01	0.271E 01	0.434E 01	0.552E 01	0.104E 02
BENDING MOM.	0.401E 01	0.355E 01	0.567E 01	0.722E 01	0.136E 02
SHEAR	0.149E 01	0.132E 01	0.211E 01	0.269E 01	0.508E 01
SLOPE	0.751E-01	0.665E-01	0.106E 00	0.135E 00	0.255E 00
CURVATURE	0.140E-01	0.124E-01	0.199E-01	0.253E-01	0.478E-01

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.313E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.291E-06	0.257E-06	0.412E-06	0.524E-06	0.991E-06
SHEAR	0.466E-10	0.412E-10	0.659E-10	0.839E-10	0.158E-09
IMMERSION	0.644E-01	0.570E-01	0.911E-01	0.115E 00	0.219E 00
SLOPE	0.195E-04	0.173E-04	0.277E-04	0.352E-04	0.666E-04
CURVATURE	0.102E-08	0.905E-09	0.144E-08	0.184E-08	0.347E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.352E 01	0.312E 01	0.499E 01	0.635E 01	0.119E 02
BENDING MOM.	0.551E-06	0.487E-06	0.779E-06	0.991E-06	0.187E-05
SHEAR	0.110E-09	0.974E-10	0.155E-09	0.198E-09	0.374E-09
SLOPE	0.217E-04	0.192E-04	0.308E-04	0.392E-04	0.741E-04
CURVATURE	0.193E-08	0.171E-08	0.273E-08	0.348E-08	0.657E-08

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.313E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.291E-06	0.257E-06	0.412E-06	0.524E-06	0.991E-06
SHEAR	0.466E-10	0.412E-10	0.659E-10	0.839E-10	0.158E-09
IMMERSION	0.644E-01	0.570E-01	0.911E-01	0.115E 00	0.219E 00
SLOPE	0.195E-04	0.173E-04	0.277E-04	0.352E-04	0.666E-04
CURVATURE	0.102E-08	0.905E-09	0.1[illegible]4E-08	0.184E-08	0.347E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.352E 01	0.312E 01	0.499E 01	0.635E 01	0.119E 02
BENDING MOM.	0.551E-06	0.487E-06	0.779E-06	0.991E-06	0.187E-05
SHEAR	0.110E-09	0.974E-10	0.155E-09	0.198E-09	0.374E-09
SLOPE	0.217E-04	0.192E-04	0.308E-04	0.392E-04	0.741E-04
CURVATURE	0.193E-08	0.171E-08	0.273E-08	0.348E-08	0.657E-08

CONFIGURATION V AND VI

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 4.39 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.313E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.291E-06	0.257E-06	0.412E-06	0.524E-06	0.991E-06
SHEAR	0.466E-10	0.412E-10	0.659E-10	0.839E-10	0.158E-09
IMMERSION	0.644E-01	0.570E-01	0.911E-01	0.115E 00	0.219E 00
SLOPE	0.195E-04	0.173E-04	0.277E-04	0.352E-04	0.666E-04
CURVATURE	0.102E-08	0.905E-09	0.144E-08	0.184E-08	0.347E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.352E 01	0.312E 01	0.499E 01	0.635E 01	0.119E 02
BENDING MOM.	0.551E-06	0.487E-06	0.779E-06	0.991E-06	0.187E-05
SHEAR	0.110E-09	0.974E-10	0.155E-09	0.198E-09	0.374E-09
SLOPE	0.217E-04	0.192E-04	0.308E-04	0.392E-04	0.741E-04
CURVATURE	0.193E-08	0.171E-08	0.273E-08	0.348E-08	0.657E-08

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.138E 01	0.122E 01	0.196E 01	0.249E 01	0.471E 01
BENDING MOM.	0.120E 02	0.106E 02	0.169E 02	0.216E 02	0.408E 02
SHEAR	0.758E 01	0.670E 01	0.107E 02	0.136E 02	0.257E 02
IMMERSION	0.785E-01	0.695E-01	0.111E 00	0.141E 00	0.267E 00
SLOPE	0.134E 00	0.119E 00	0.190E 00	0.242E 00	0.457E 00
CURVATURE	0.421E-01	0.373E-01	0.596E-01	0.758E-01	0.143E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.121E 00	0.107E 00	0.171E 00	0.218E 00	0.412E 00
BENDING MOM.	0.267E 01	0.236E 01	0.378E 01	0.481E 01	0.910E 01
SHEAR	0.325E 01	0.287E 01	0.459E 01	0.585E 01	0.110E 02
SLOPE	0.142E-01	0.126E-01	0.201E-01	0.256E-01	0.484E-01
CURVATURE	0.939E-02	0.831E-02	0.132E-01	0.169E-01	0.319E-01

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.119E 01	0.105E 01	0.168E 01	0.215E 01	0.406E 01
BENDING MOM.	0.276E 01	0.246E 01	0.394E 01	0.502E 01	0.948E 01
SHEAR	0.950E 00	0.841E 00	0.134E 01	0.171E 01	0.323E 01
IMMERSION	0.343E 00	0.303E 00	0.485E 00	0.618E 00	0.116E 01
SLOPE	0.763E-01	0.676E-01	0.108E 00	0.137E 00	0.259E 00
CURVATURE	0.978E-02	0.866E-02	0.138E-01	0.176E-01	0.332E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.123E 00	0.109E 00	0.175E 00	0.222E 00	0.420E 00
BENDING MOM.	0.176E 01	0.156E 01	0.250E 01	0.318E 01	0.601E 01
SHEAR	0.141E 01	0.125E 01	0.200E 01	0.255E 01	0.482E 01
SLOPE	0.135E-01	0.119E-01	0.191E-01	0.243E-01	0.459E-01
CURVATURE	0.620E-02	0.549E-02	0.878E-02	0.111E-01	0.211E-01

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.109E 01	0.967E 00	0.154E 01	0.196E 01	0.371E 01
BENDING MOM.	0.185E 01	0.164E 01	0.262E 01	0.334E 01	0.631E 01
SHEAR	0.471E 00	0.417E 00	0.666E 00	0.848E 00	0.160E 01
IMMERSION	0.455E 00	0.403E 00	0.644E 00	0.820E 00	0.154E 01
SLOPE	0.630E-01	0.557E-01	0.891E-01	0.113E 00	0.214E 00
CURVATURE	0.651E-02	0.576E-02	0.921E-02	0.117E-01	0.221E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.126E 00	0.111E 00	0.178E 00	0.227E 00	0.429E 00
BENDING MOM.	0.144E 01	0.127E 01	0.203E 01	0.259E 01	0.489E 01
SHEAR	0.936E 00	0.829E 00	0.132E 01	0.168E 01	0.318E 01
SLOPE	0.132E-01	0.117E-01	0.187E-01	0.238E-01	0.450E-01
CURVATURE	0.505E-02	0.447E-02	0.714E-02	0.910E-02	0.171E-01

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.138E 01	0.122E 01	0.196E 01	0.249E 01	0.472E 01
BENDING MOM.	0.108E 02	0.964E 01	0.154E 02	0.196E 02	0.370E 02
SHEAR	0.711E 01	0.629E 01	0.100E 02	0.128E 02	0.241E 02
IMMERSION	0.674E-01	0.597E-01	0.954E-01	0.121E 00	0.229E 00
SLOPE	0.121E 00	0.107E 00	0.171E 00	0.218E 00	0.412E 00
CURVATURE	0.382E-01	0.338E-01	0.540E-01	0.688E-01	0.130E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.695E 00	0.615E 00	0.984E 00	0.125E 01	0.236E 01
BENDING MOM.	0.132E 02	0.116E 02	0.186E 02	0.237E 02	0.449E 02
SHEAR	0.158E 02	0.140E 02	0.224E 02	0.285E 02	0.540E 02
SLOPE	0.723E-01	0.640E-01	0.102E 00	0.130E 00	0.246E 00
CURVATURE	0.463E-01	0.410E-01	0.655E-01	0.834E-01	0.157E 00

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.122E 01	0.108E 01	0.173E 01	0.220E 01	0.417E 01
BENDING MOM.	0.249E 01	0.221E 01	0.353E 01	0.449E 01	0.849E 01
SHEAR	0.862E 00	0.762E 00	0.121E 01	0.155E 01	0.293E 01
IMMERSION	0.304E 00	0.269E 00	0.430E 00	0.548E 00	0.103E 01
SLOPE	0.711E-01	0.629E-01	0.100E 00	0.128E 00	0.241E 00
CURVATURE	0.876E-02	0.775E-02	0.123E-01	0.157E-01	0.298E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.706E 00	0.625E 00	0.999E 00	0.127E 01	0.240E 01
BENDING MOM.	0.844E 01	0.747E 01	0.119E 02	0.152E 02	0.287E 02
SHEAR	0.648E 01	0.574E 01	0.917E 01	0.116E 02	0.220E 02
SLOPE	0.682E-01	0.604E-01	0.965E-01	0.122E 00	0.232E 00
CURVATURE	0.296E-01	0.262E-01	0.419E-01	0.533E-01	0.100E 00

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.113E 01	0.100E 01	0.160E 01	0.204E 01	0.387E 01
BENDING MOM.	0.166E 01	0.147E 01	0.235E 01	0.299E 01	0.565E 01
SHEAR	0.423E 00	0.374E 00	0.598E 00	0.761E 00	0.143E 01
IMMERSION	0.407E 00	0.360E 00	0.576E 00	0.733E 00	0.138E 01
SLOPE	0.595E-01	0.526E-01	0.841E-01	0.107E 00	0.202E 00
CURVATURE	0.583E-02	0.516E-02	0.825E-02	0.105E-01	0.198E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.717E 00	0.635E 00	0.101E 01	0.129E 01	0.244E 01
BENDING MOM.	0.694E 01	0.614E 01	0.981E 01	0.124E 02	0.236E 02
SHEAR	0.436E 01	0.386E 01	0.617E 01	0.786E 01	0.148E 02
SLOPE	0.668E-01	0.591E-01	0.944E-01	0.120E 00	0.227E 00
CURVATURE	0.243E-01	0.215E-01	0.344E-01	0.438E-01	0.828E-01

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO10.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.736E 01	0.652E 01	0.104E 02	0.132E 02	0.250E 02
SHEAR	0.544E 01	0.481E 01	0.769E 01	0.980E 01	0.185E 02
IMMERSION	0.354E-01	0.313E-01	0.501E-01	0.637E-01	0.120E 00
SLOPE	0.788E-01	0.698E-01	0.111E 00	0.141E 00	0.268E 00
CURVATURE	0.258E-01	0.228E-01	0.365E-01	0.465E-01	0.879E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO10.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.120E 01	0.106E 01	0.170E 01	0.217E 01	0.409E 01
BENDING MOM.	0.121E 02	0.107E 02	0.171E 02	0.218E 02	0.413E 02
SHEAR	0.134E 02	0.119E 02	0.190E 02	0.242E 02	0.457E 02
SLOPE	0.769E-01	0.681E-01	0.108E 00	0.138E 00	0.261E 00
CURVATURE	0.426E-01	0.377E-01	0.602E-01	0.767E-01	0.144E 00

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.131E 01	0.116E 01	0.186E 01	0.236E 01	0.447E 01
BENDING MOM.	0.170E 01	0.150E 01	0.240E 01	0.306E 01	0.578E 01
SHEAR	0.659E 00	0.583E 00	0.932E 00	0.118E 01	0.224E 01
IMMERSION	0.187E 00	0.165E 00	0.264E 00	0.336E 00	0.636E 00
SLOPE	0.516E-01	0.457E-01	0.730E-01	0.930E-01	0.175E 00
CURVATURE	0.597E-02	0.528E-02	0.844E-02	0.107E-01	0.203E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.121E 01	0.107E 01	0.171E 01	0.218E 01	0.411E 01
BENDING MOM.	0.763E 01	0.675E 01	0.107E 02	0.137E 02	0.259E 02
SHEAR	0.529E 01	0.468E 01	0.748E 01	0.953E 01	0.180E 02
SLOPE	0.725E-01	0.642E-01	0.102E 00	0.130E 00	0.246E 00
CURVATURE	0.267E-01	0.237E-01	0.378E-01	0.482E-01	0.910E-01

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.126E 01	0.112E 01	0.179E 01	0.228E 01	0.430E 01
BENDING MOM.	0.109E 01	0.965E 00	0.154E 01	0.196E 01	0.370E 01
SHEAR	0.295E 00	0.261E 00	0.417E 00	0.531E 00	0.100E 01
IMMERSION	0.255E 00	0.226E 00	0.361E 00	0.459E 00	0.868E 00
SLOPE	0.450E-01	0.398E-01	0.636E-01	0.810E-01	0.153E 00
CURVATURE	0.382E-02	0.338E-02	0.541E-02	0.689E-02	0.130E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.121E 01	0.107E 01	0.172E 01	0.219E 01	0.414E 01
BENDING MOM.	0.600E 01	0.531E 01	0.849E 01	0.108E 02	0.204E 02
SHEAR	0.328E 01	0.290E 01	0.464E 01	0.590E 01	0.111E 02
SLOPE	0.703E-01	0.622E-01	0.994E-01	0.126E 00	0.239E 00
CURVATURE	0.210E-01	0.186E-01	0.298E-01	0.379E-01	0.716E-01

CONFIGURATION VI. AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO15.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.926E-06	0.820E-06	0.131E-05	0.166E-05	0.315E-05
SHEAR	0.463E-09	0.409E-09	0.655E-09	0.833E-09	0.157E-08
IMMERSION	0.208E-01	0.184E-01	0.294E-01	0.374E-01	0.707E-01
SLOPE	0.197E-04	0.174E-04	0.278E-04	0.354E-04	0.670E-04
CURVATURE	0.325E-08	0.287E-08	0.459E-08	0.585E-08	0.110E-07

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO15.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.172E-05	0.152E-05	0.243E-05	0.310E-05	0.586E-05
SHEAR	0.102E-08	0.909E-09	0.145E-08	0.184E-08	0.349E-08
SLOPE	0.225E-04	0.199E-04	0.319E-04	0.406E-04	0.767E-04
CURVATURE	0.605E-08	0.535E-08	0.856E-08	0.108E-07	0.205E-07

CONFIGURATION VII AND VIII

BEARING = 90.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO15.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.926E-06	0.820E-06	0.131E-05	0.166E-05	0.315E-05
SHEAR	0.463E-09	0.409E-09	0.655E-09	0.833E-09	0.157E-08
IMMERSION	0.208E-01	0.184E-01	0.294E-01	0.374E-01	0.707E-01
SLOPE	0.197E-04	0.174E-04	0.278E-04	0.354E-04	0.670E-04
CURVATURE	0.325E-08	0.287E-08	0.459E-08	0.585E-08	0.110E-07

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO15.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.172E-05	0.152E-05	0.243E-05	0.310E-05	0.586E-05
SHEAR	0.102E-08	0.909E-09	0.145E-08	0.184E-08	0.349E-08
SLOPE	0.225E-04	0.199E-04	0.319E-04	0.406E-04	0.767E-04
CURVATURE	0.605E-08	0.535E-08	0.856E-08	0.108E-07	0.205E-07

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 3.94 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO15.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.926E-06	0.820E-06	0.131E-05	0.166E-05	0.315E-05
SHEAR	0.463E-09	0.409E-09	0.655E-09	0.833E-09	0.157E-08
IMMERSION	0.208E-01	0.184E-01	0.294E-01	0.374E-01	0.707E-01
SLOPE	0.197E-04	0.174E-04	0.278E-04	0.354E-04	0.670E-04
CURVATURE	0.325E-08	0.287E-08	0.459E-08	0.585E-08	0.110E-07

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO15.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.172E-05	0.152E-05	0.243E-05	0.310E-05	0.586E-05
SHEAR	0.102E-08	0.909E-09	0.145E-08	0.184E-08	0.349E-08
SLOPE	0.225E-04	0.199E-04	0.319E-04	0.406E-04	0.767E-04
CURVATURE	0.605E-08	0.535E-08	0.856E-08	0.108E-07	0.205E-07

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.317E 01	0.599E 01
BENDING MOM.	0.120E 02	0.106E 02	0.170E 02	0.216E 02	0.409E 02
SHEAR	0.749E 01	0.663E 01	0.105E 02	0.134E 02	0.254E 02
IMMERSION	0.770E-01	0.682E-01	0.109E 00	0.138E 00	0.262E 00
SLOPE	0.141E 00	0.125E 00	0.199E 00	0.254E 00	0.480E 00
CURVATURE	0.422E-01	0.373E-01	0.597E-01	0.760E-01	0.143E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.153E 00	0.136E 00	0.217E 00	0.277E 00	0.523E 00
BENDING MOM.	0.246E 01	0.218E 01	0.349E 01	0.444E 01	0.839E 01
SHEAR	0.276E 01	0.244E 01	0.390E 01	0.497E 01	0.939E 01
SLOPE	0.145E-01	0.128E-01	0.206E-01	0.262E-01	0.495E-01
CURVATURE	0.866E-02	0.766E-02	0.122E-01	0.155E-01	0.294E-01

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.158E 01	0.140E 01	0.223E 01	0.285E 01	0.538E 01
BENDING MOM.	0.284E 01	0.251E 01	0.401E 01	0.511E 01	0.966E 01
SHEAR	0.884E 00	0.782E 00	0.125E 01	0.159E 01	0.300E 01
IMMERSION	0.350E 00	0.310E 00	0.495E 00	0.631E 00	0.119E 01
SLOPE	0.854E-01	0.756E-01	0.120E 00	0.153E 00	0.290E 00
CURVATURE	0.997E-02	0.882E-02	0.141E-01	0.179E-01	0.339E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.156E 00	0.138E 00	0.221E 00	0.282E 00	0.533E 00
BENDING MOM.	0.154E 01	0.136E 01	0.218E 01	0.278E 01	0.525E 01
SHEAR	0.108E 01	0.956E 00	0.152E 01	0.194E 01	0.367E 01
SLOPE	0.137E-01	0.121E-01	0.194E-01	0.247E-01	0.468E-01
CURVATURE	0.542E-02	0.480E-02	0.767E-02	0.976E-02	0.184E-01

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.146E 01	0.131E 01	0.209E 01	0.266E 01	0.503E 01
BENDING MOM.	0.192E 01	0.170E 01	0.271E 01	0.345E 01	0.653E 01
SHEAR	0.439E 00	0.389E 00	0.621E 00	0.791E 00	0.149E 01
IMMERSION	0.471E 00	0.417E 00	0.666E 00	0.848E 00	0.160E 01
SLOPE	0.723E-01	0.640E-01	0.102E 00	0.130E 00	0.246E 00
CURVATURE	0.674E-02	0.596E-02	0.953E-02	0.121E-01	0.229E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.159E 00	0.141E 00	0.225E 00	0.287E 00	0.543E 00
BENDING MOM.	0.124E 01	0.109E 01	0.175E 01	0.223E 01	0.422E 01
SHEAR	0.692E 00	0.612E 00	0.978E 00	0.124E 01	0.235E 01
SLOPE	0.134E-01	0.119E-01	0.190E-01	0.242E-01	0.458E-01
CURVATURE	0.435E-02	0.385E-02	0.616E-02	0.784E-02	0.148E-01

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.317E 01	0.599E 01
BENDING MOM.	0.109E 02	0.965E 01	0.154E 02	0.196E 02	0.370E 02
SHEAR	0.703E 01	0.622E 01	0.994E 01	0.126E 02	0.239E 02
IMMERSION	0.662E-01	0.585E-01	0.936E-01	0.119E 00	0.225E 00
SLOPE	0.127E 00	0.112E 00	0.179E 00	0.228E 00	0.432E 00
CURVATURE	0.382E-01	0.338E-01	0.541E-01	0.689E-01	0.130E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.883E 00	0.781E 00	0.124E 01	0.159E 01	0.300E 01
BENDING MOM.	0.122E 02	0.108E 02	0.173E 02	0.220E 02	0.416E 02
SHEAR	0.136E 02	0.120E 02	0.192E 02	0.245E 02	0.463E 02
SLOPE	0.740E-01	0.655E-01	0.104E 00	0.133E 00	0.251E 00
CURVATURE	0.429E-01	0.380E-01	0.607E-01	0.773E-01	0.146E 00

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.161E 01	0.142E 01	0.228E 01	0.290E 01	0.549E 01
BENDING MOM.	0.253E 01	0.224E 01	0.358E 01	0.456E 01	0.862E 01
SHEAR	0.814E 00	0.720E 00	0.115E 01	0.146E 01	0.276E 01
IMMERSION	0.310E 00	0.274E 00	0.438E 00	0.558E 00	0.105E 01
SLOPE	0.788E-01	0.698E-01	0.111E 00	0.142E 00	0.268E 00
CURVATURE	0.889E-02	0.787E-02	0.125E-01	0.160E-01	0.302E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.895E 00	0.792E 00	0.126E 01	0.161E 01	0.304E 01
BENDING MOM.	0.768E 01	0.679E 01	0.108E 02	0.138E 02	0.261E 02
SHEAR	0.535E 01	0.473E 01	0.756E 01	0.963E 01	0.181E 02
SLOPE	0.699E-01	0.618E-01	0.988E-01	0.125E 00	0.237E 00
CURVATURE	0.269E-01	0.238E-01	0.381E-01	0.485E-01	0.916E-01

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.152E 01	0.135E 01	0.216E 01	0.274E 01	0.519E 01
BENDING MOM.	0.170E 01	0.151E 01	0.241E 01	0.307E 01	0.581E 01
SHEAR	0.392E 00	0.347E 00	0.554E 00	0.706E 00	0.133E 01
IMMERSION	0.419E 00	0.370E 00	0.592E 00	0.754E 00	0.142E 01
SLOPE	0.675E-01	0.597E-01	0.955E-01	0.121E 00	0.229E 00
CURVATURE	0.599E-02	0.530E-02	0.848E-02	0.107E-01	0.203E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.908E 00	0.803E 00	0.128E 01	0.163E 01	0.308E 01
BENDING MOM.	0.602E 01	0.533E 01	0.852E 01	0.108E 02	0.204E 02
SHEAR	0.327E 01	0.290E 01	0.463E 01	0.590E 01	0.111E 02
SLOPE	0.680E-01	0.602E-01	0.962E-01	0.122E 00	0.231E 00
CURVATURE	0.211E-01	0.187E-01	0.299E-01	0.380E-01	0.719E-01

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.734E 01	0.650E 01	0.103E 02	0.132E 02	0.249E 02
SHEAR	0.535E 01	0.474E 01	0.757E 01	0.964E 01	0.182E 02
IMMERSION	0.346E-01	0.306E-01	0.490E-01	0.624E-01	0.117E 00
SLOPE	0.818E-01	0.724E-01	0.115E 00	0.147E 00	0.278E 00
CURVATURE	0.257E-01	0.228E-01	0.364E-01	0.464E-01	0.876E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.153E 01	0.135E 01	0.216E 01	0.275E 01	0.520E 01
BENDING MOM.	0.114E 02	0.101E 02	0.161E 02	0.206E 02	0.389E 02
SHEAR	0.119E 02	0.105E 02	0.168E 02	0.214E 02	0.405E 02
SLOPE	0.787E-01	0.696E-01	0.111E 00	0.141E 00	0.267E 00
CURVATURE	0.401E-01	0.355E-01	0.568E-01	0.723E-01	0.136E 00

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.169E 01	0.150E 01	0.240E 01	0.305E 01	0.577E 01
BENDING MOM.	0.169E 01	0.149E 01	0.239E 01	0.304E 01	0.575E 01
SHEAR	0.608E 00	0.538E 00	0.860E 00	0.109E 01	0.207E 01
IMMERSION	0.188E 00	0.166E 00	0.266E 00	0.338E 00	0.639E 00
SLOPE	0.557E-01	0.493E-01	0.788E-01	0.100E 00	0.189E 00
CURVATURE	0.594E-02	0.525E-02	0.840E-02	0.106E-01	0.201E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.153E 01	0.136E 01	0.217E 01	0.276E 01	0.522E 01
BENDING MOM.	0.689E 01	0.609E 01	0.974E 01	0.124E 02	0.234E 02
SHEAR	0.431E 01	0.381E 01	0.609E 01	0.776E 01	0.146E 02
SLOPE	0.740E-01	0.655E-01	0.104E 00	0.133E 00	0.251E 00
CURVATURE	0.241E-01	0.214E-01	0.341E-01	0.435E-01	0.822E-01

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.165E 01	0.146E 01	0.233E 01	0.297E 01	0.562E 01
BENDING MOM.	0.109E 01	0.969E 00	0.154E 01	0.197E 01	0.372E 01
SHEAR	0.270E 00	0.239E 00	0.381E 00	0.486E 00	0.918E 00
IMMERSION	0.258E 00	0.228E 00	0.365E 00	0.465E 00	0.879E 00
SLOPE	0.493E-01	0.436E-01	0.698E-01	0.888E-01	0.167E 00
CURVATURE	0.384E-02	0.340E-02	0.543E-02	0.691E-02	0.130E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.154E 01	0.136E 01	0.218E 01	0.277E 01	0.524E 01
BENDING MOM.	0.535E 01	0.473E 01	0.757E 01	0.963E 01	0.182E 02
SHEAR	0.260E 01	0.230E 01	0.367E 01	0.468E 01	0.884E 01
SLOPE	0.716E-01	0.634E-01	0.101E 00	0.129E 00	0.243E 00
CURVATURE	0.187E-01	0.166E-01	0.265E-01	0.338E-01	0.638E-01

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO14.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.871E-06	0.771E-06	0.123E-05	0.156E-05	0.296E-05
SHEAR	0.390E-09	0.345E-09	0.552E-09	0.703E-09	0.132E-08
IMMERSION	0.206E-01	0.182E-01	0.291E-01	0.370E-01	0.700E-01
SLOPE	0.203E-04	0.179E-04	0.287E-04	0.365E-04	0.690E-04
CURVATURE	0.305E-08	0.270E-08	0.432E-08	0.550E-08	0.104E-07

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO14.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.151E-05	0.133E-05	0.213E-05	0.272E-05	0.514E-05
SHEAR	0.787E-09	0.697E-09	0.111E-08	0.141E-08	0.267E-08
SLOPE	0.228E-04	0.202E-04	0.323E-04	0.411E-04	0.776E-04
CURVATURE	0.531E-08	0.469E-08	0.750E-08	0.955E-08	0.180E-07

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO14.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.871E-06	0.771E-06	0.123E-05	0.156E-05	0.296E-05
SHEAR	0.390E-09	0.345E-09	0.552E-09	0.703E-09	0.132E-08
IMMERSION	0.206E-01	0.182E-01	0.291E-01	0.370E-01	0.700E-01
SLOPE	0.203E-04	0.179E-04	0.287E-04	0.365E-04	0.690E-04
CURVATURE	0.305E-08	0.270E-08	0.432E-08	0.550E-08	0.104E-07

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO14.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.151E-05	0.133E-05	0.213E-05	0.272E-05	0.514E-05
SHEAR	0.787E-09	0.697E-09	0.111E-08	0.141E-08	0.267E-08
SLOPE	0.228E-04	0.202E-04	0.323E-04	0.411E-04	0.776E-04
CURVATURE	0.531E-08	0.469E-08	0.750E-08	0.955E-08	0.180E-07

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 5.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO14.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.871E-06	0.771E-06	0.123E-05	0.156E-05	0.296E-05
SHEAR	0.390E-09	0.345E-09	0.552E-09	0.703E-09	0.132E-08
IMMERSION	0.206E-01	0.182E-01	0.291E-01	0.370E-01	0.700E-01
SLOPE	0.203E-04	0.179E-04	0.287E-04	0.365E-04	0.690E-04
CURVATURE	0.305E-08	0.270E-08	0.432E-08	0.550E-08	0.104E-07

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO14.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.151E-05	0.133E-05	0.213E-05	0.272E-05	0.514E-05
SHEAR	0.787E-09	0.697E-09	0.111E-08	0.141E-08	0.267E-08
SLOPE	0.228E-04	0.202E-04	0.323E-04	0.411E-04	0.776E-04
CURVATURE	0.531E-08	0.469E-08	0.750E-08	0.955E-08	0.180E-07

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.246E 01	0.394E 01	0.502E 01	0.948E 01
BENDING MOM.	0.120E 02	0.106E 02	0.170E 02	0.216E 02	0.409E 02
SHEAR	0.733E 01	0.648E 01	0.103E 02	0.131E 02	0.249E 02
IMMERSION	0.744E-01	0.658E-01	0.105E 00	0.133E 00	0.253E 00
SLOPE	0.153E 00	0.136E 00	0.217E 00	0.276E 00	0.522E 00
CURVATURE	0.422E-01	0.374E-01	0.597E-01	0.761E-01	0.143E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.243E 00	0.215E 00	0.344E 00	0.437E 00	0.827E 00
BENDING MOM.	0.220E 01	0.195E 01	0.311E 01	0.396E 01	0.749E 01
SHEAR	0.219E 01	0.194E 01	0.310E 01	0.395E 01	0.746E 01
SLOPE	0.152E-01	0.135E-01	0.215E-01	0.274E-01	0.519E-01
CURVATURE	0.773E-02	0.684E-02	0.109E-01	0.139E-01	0.262E-01

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.264E 01	0.233E 01	0.373E 01	0.475E 01	0.897E 01
BENDING MOM.	0.290E 01	0.257E 01	0.410E 01	0.522E 01	0.987E 01
SHEAR	0.800E 00	0.708E 00	0.113E 01	0.144E 01	0.272E 01
IMMERSION	0.358E 00	0.317E 00	0.507E 00	0.645E 00	0.122E 01
SLOPE	0.102E 00	0.904E-01	0.144E 00	0.183E 00	0.347E 00
CURVATURE	0.101E-01	0.901E-02	0.144E-01	0.183E-01	0.346E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.246E 00	0.218E 00	0.348E 00	0.444E 00	0.838E 00
BENDING MOM.	0.128E 01	0.114E 01	0.182E 01	0.232E 01	0.438E 01
SHEAR	0.747E 00	0.661E 00	0.105E 01	0.134E 01	0.254E 01
SLOPE	0.143E-01	0.127E-01	0.203E-01	0.259E-01	0.489E-01
CURVATURE	0.452E-02	0.400E-02	0.640E-02	0.814E-02	0.153E-01

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.254E 01	0.225E 01	0.359E 01	0.458E 01	0.865E 01
BENDING MOM.	0.200E 01	0.177E 01	0.283E 01	0.361E 01	0.681E 01
SHEAR	0.400E 00	0.354E 00	0.566E 00	0.721E 00	0.136E 01
IMMERSION	0.491E 00	0.434E 00	0.694E 00	0.884E 00	0.167E 01
SLOPE	0.898E-01	0.794E-01	0.126E 00	0.161E 00	0.305E 00
CURVATURE	0.703E-02	0.622E-02	0.995E-02	0.126E-01	0.239E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.250E 00	0.221E 00	0.353E 00	0.450E 00	0.850E 00
BENDING MOM.	0.101E 01	0.898E 00	0.143E 01	0.182E 01	0.345E 01
SHEAR	0.458E 00	0.405E 00	0.647E 00	0.824E 00	0.155E 01
SLOPE	0.141E-01	0.124E-01	0.199E-01	0.254E-01	0.479E-01
CURVATURE	0.356E-02	0.315E-02	0.503E-02	0.641E-02	0.121E-01

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.948E 01
BENDING MOM.	0.108E 02	0.963E 01	0.153E 02	0.195E 02	0.370E 02
SHEAR	0.682E 01	0.603E 01	0.964E 01	0.122E 02	0.232E 02
IMMERSION	0.633E-01	0.560E-01	0.895E-01	0.113E 00	0.215E 00
SLOPE	0.137E 00	0.121E 00	0.194E 00	0.247E 00	0.467E 00
CURVATURE	0.381E-01	0.338E-01	0.540E-01	0.687E-01	0.129E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.197E 01	0.251E 01	0.474E 01
BENDING MOM.	0.107E 02	0.948E 01	0.151E 02	0.192E 02	0.364E 02
SHEAR	0.104E 02	0.921E 01	0.147E 02	0.187E 02	0.354E 02
SLOPE	0.772E-01	0.684E-01	0.109E 00	0.139E 00	0.262E 00
CURVATURE	0.376E-01	0.332E-01	0.531E-01	0.676E-01	0.127E 00

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TRANSIT = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.266E 01	0.236E 01	0.377E 01	0.480E 01	0.907E 01
BENDING MOM.	0.256E 01	0.227E 01	0.362E 01	0.461E 01	0.872E 01
SHEAR	0.717E 00	0.635E 00	0.101E 01	0.129E 01	0.244E 01
IMMERSION	0.315E 00	0.279E 00	0.446E 00	0.567E 00	0.107E 01
SLOPE	0.930E-01	0.823E-01	0.131E 00	0.167E 00	0.316E 00
CURVATURE	0.900E-02	0.796E-02	0.127E-01	0.162E-01	0.306E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.141E 01	0.124E 01	0.199E 01	0.253E 01	0.479E 01
BENDING MOM.	0.625E 01	0.553E 01	0.884E 01	0.112E 02	0.212E 02
SHEAR	0.352E 01	0.312E 01	0.499E 01	0.635E 01	0.120E 02
SLOPE	0.727E-01	0.643E-01	0.102E 00	0.130E 00	0.247E 00
CURVATURE	0.219E-01	0.194E-01	0.310E-01	0.394E-01	0.745E-01

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.258E 01	0.229E 01	0.366E 01	0.465E 01	0.880E 01
BENDING MOM.	0.176E 01	0.156E 01	0.249E 01	0.317E 01	0.599E 01
SHEAR	0.347E 00	0.307E 00	0.491E 00	0.625E 00	0.118E 01
IMMERSION	0.432E 00	0.383E 00	0.611E 00	0.778E 00	0.147E 01
SLOPE	0.824E-01	0.730E-01	0.116E 00	0.148E 00	0.280E 00
CURVATURE	0.618E-02	0.547E-02	0.874E-02	0.111E-01	0.210E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.142E 01	0.126E 01	0.201E 01	0.256E 01	0.484E 01
BENDING MOM.	0.477E 01	0.422E 01	0.675E 01	0.859E 01	0.162E 02
SHEAR	0.204E 01	0.180E 01	0.289E 01	0.368E 01	0.695E 01
SLOPE	0.707E-01	0.625E-01	0.999E-01	0.127E 00	0.240E 00
CURVATURE	0.167E-01	0.148E-01	0.237E-01	0.301E-01	0.569E-01

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.726E 01	0.642E 01	0.102E 02	0.130E 02	0.246E 02
SHEAR	0.511E 01	0.452E 01	0.723E 01	0.920E 01	0.173E 02
IMMERSION	0.326E-01	0.289E-01	0.462E-01	0.588E-01	0.111E 00
SLOPE	0.872E-01	0.772E-01	0.123E 00	0.157E 00	0.296E 00
CURVATURE	0.254E-01	0.225E-01	0.360E-01	0.458E-01	0.866E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.24[illegible] 01	0.214E 01	0.341E 01	0.435E 01	0.822E 01
BENDING MOM.	0.101E 02	0.893E 01	0.142E 02	0.181E 02	0.343E 02
SHEAR	0.926E 01	0.820E 01	0.131E 02	0.166E 02	0.315E 02
SLOPE	0.818E-01	0.724E-01	0.115E 00	0.147E 00	0.278E 00
CURVATURE	0.354E-01	0.313E-01	0.501E-01	0.637E-01	0.120E 00

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.273E 01	0.242E 01	0.387E 01	0.493E 01	0.931E 01
BENDING MOM.	0.165E 01	0.146E 01	0.233E 01	0.297E 01	0.562E 01
SHEAR	0.505E 00	0.447E 00	0.715E 00	0.910E 00	0.171E 01
IMMERSION	0.188E 00	0.166E 00	0.266E 00	0.338E 00	0.640E 00
SLOPE	0.630E-01	0.558E-01	0.892E-01	0.113E 00	0.214E 00
CURVATURE	0.580E-02	0.513E-02	0.820E-02	0.104E-01	0.197E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.242E 01	0.214E 01	0.343E 01	0.436E 01	0.824E 01
BENDING MOM.	0.552E 01	0.488E 01	0.780E 01	0.993E 01	0.187E 02
SHEAR	0.276E 01	0.244E 01	0.390E 01	0.496E 01	0.938E 01
SLOPE	0.764E-01	0.676E-01	0.108E 00	0.137E 00	0.259E 00
CURVATURE	0.193E-01	0.171E-01	0.273E-01	0.348E-01	0.658E-01

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.270E 01	0.239E 01	0.381E 01	0.486E 01	0.918E 01
BENDING MOM.	0.108E 01	0.964E 00	0.154E 01	0.196E 01	0.370E 01
SHEAR	0.228E 00	0.201E 00	0.322E 00	0.410E 00	0.775E 00
IMMERSION	0.261E 00	0.231E 00	0.369E 00	0.469E 00	0.887E 00
SLOPE	0.572E-01	0.506E-01	0.809E-01	0.103E 00	0.194E 00
CURVATURE	0.382E-02	0.338E-02	0.540E-02	0.688E-02	0.129E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.243E 01	0.215E 01	0.344E 01	0.438E 01	0.827E 01
BENDING MOM.	0.429E 01	0.380E 01	0.607E 01	0.773E 01	0.146E 02
SHEAR	0.166E 01	0.147E 01	0.236E 01	0.300E 01	0.567E 01
SLOPE	0.742E-01	0.656E-01	0.104E 00	0.133E 00	0.252E 00
CURVATURE	0.150E-01	0.133E-01	0.213E-01	0.271E-01	0.512E-01

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO12.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.749E-06	0.663E-06	0.106E-05	0.134E-05	0.254E-05
SHEAR	0.263E-09	0.232E-09	0.372E-09	0.473E-09	0.894E-09
IMMERSION	0.200E-01	0.177E-01	0.283E-01	0.360E-01	0.681E-01
SLOPE	0.213E-04	0.189E-04	0.301E-04	0.384E-04	0.726E-04
CURVATURE	0.263E-08	0.232E-08	0.371E-08	0.473E-08	0.894E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO12.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.114E-05	0.101E-05	0.162E-05	0.206E-05	0.389E-05
SHEAR	0.449E-09	0.398E-09	0.635E-09	0.809E-09	0.152E-08
SLOPE	0.232E-04	0.206E-04	0.329E-04	0.419E-04	0.792E-04
CURVATURE	0.402E-08	0.355E-08	0.568E-08	0.723E-08	0.136E-07

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO12.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.749E-06	0.663E-06	0.106E-05	0.134E-05	0.254E-05
SHEAR	0.263E-09	0.232E-09	0.372E-09	0.473E-09	0.894E-09
IMMERSION	0.200E-01	0.177E-01	0.283E-01	0.360E-01	0.681E-01
SLOPE	0.213E-04	0.189E-04	0.301E-04	0.384E-04	0.726E-04
CURVATURE	0.263E-08	0.232E-08	0.371E-08	0.473E-08	0.894E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 6.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO12.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.114E-05	0.101E-05	0.162E-05	0.206E-05	0.389E-05
SHEAR	0.449E-09	0.398E-09	0.635E-09	0.809E-09	0.152E-08
SLOPE	0.232E-04	0.206E-04	0.329E-04	0.419E-04	0.792E-04
CURVATURE	0.402E-08	0.355E-08	0.568E-08	0.723E-08	0.136E-07

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO12.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.749E-06	0.663E-06	0.106E-05	0.134E-05	0.254E-05
SHEAR	0.263E-09	0.232E-09	0.372E-09	0.473E-09	0.894E-09
IMMERSION	0.200E-01	0.177E-01	0.283E-01	0.360E-01	0.681E-01
SLOPE	0.213E-04	0.189E-04	0.301E-04	0.384E-04	0.726E-04
CURVATURE	0.263E-08	0.232E-08	0.371E-08	0.473E-08	0.894E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO12.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.114E-05	0.101E-05	0.162E-05	0.206E-05	0.389E-05
SHEAR	0.449E-09	0.398E-09	0.635E-09	0.809E-09	0.152E-08
SLOPE	0.232E-04	0.206E-04	0.329E-04	0.419E-04	0.792E-04
CURVATURE	0.402E-08	0.355E-08	0.568E-08	0.723E-08	0.136E-07

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.635E 01	0.120E 02
BENDING MOM.	0.120E 02	0.106E 02	0.170E 02	0.216E 02	0.409E 02
SHEAR	0.722E 01	0.639E 01	0.102E 02	0.130E 02	0.245E 02
IMMERSION	0.727E-01	0.643E-01	0.102E 00	0.130E 00	0.247E 00
SLOPE	0.159E 00	0.141E 00	0.225E 00	0.287E 00	0.543E 00
CURVATURE	0.422E-01	0.373E-01	0.596E-01	0.759E-01	0.143E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.308E 00	0.272E 00	0.435E 00	0.554E 00	0.104E 01
BENDING MOM.	0.207E 01	0.183E 01	0.293E 01	0.373E 01	0.706E 01
SHEAR	0.194E 01	0.172E 01	0.275E 01	0.350E 01	0.662E 01
SLOPE	0.156E-01	0.138E-01	0.220E-01	0.281E-01	0.531E-01
CURVATURE	0.728E-02	0.644E-02	0.103E-01	0.131E-01	0.247E-01

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.339E 01	0.300E 01	0.480E 01	0.611E 01	0.115E 02
BENDING MOM.	0.291E 01	0.257E 01	0.411E 01	0.524E 01	0.989E 01
SHEAR	0.749E 00	0.663E 00	0.105E 01	0.134E 01	0.254E 01
IMMERSION	0.360E 00	0.318E 00	0.509E 00	0.648E 00	0.122E 01
SLOPE	0.110E 00	0.975E-01	0.155E 00	0.198E 00	0.374E 00
CURVATURE	0.102E-01	0.904E-02	0.144E-01	0.183E-01	0.347E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.311E 00	0.275E 00	0.440E 00	0.560E 00	0.105E 01
BENDING MOM.	0.114E 01	0.101E 01	0.162E 01	0.206E 01	0.389E 01
SHEAR	0.588E 00	0.521E 00	0.832E 00	0.105E 01	0.200E 01
SLOPE	0.146E-01	0.129E-01	0.207E-01	0.263E-01	0.498E-01
CURVATURE	0.402E-02	0.355E-02	0.568E-02	0.723E-02	0.136E-01

CONFIGURATION VII AND VIII

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.331E 01	0.292E 01	0.468E 01	0.595E 01	0.112E 02
BENDING MOM.	0.203E 01	0.179E 01	0.287E 01	0.365E 01	0.690E 01
SHEAR	0.384E 00	0.340E 00	0.544E 00	0.692E 00	0.130E 01
INVERSION	0.497E 00	0.440E 00	0.703E 00	0.895E 00	0.169E 01
SLOPE	0.983E-01	0.870E-01	0.139E 00	0.177E 00	0.334E 00
CURVATURE	0.712E-02	0.630E-02	0.100E-01	0.128E-01	0.242E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.315E 00	0.279E 00	0.445E 00	0.567E 00	0.107E 01
BENDING MOM.	0.931E 00	0.824E 00	0.131E 01	0.167E 01	0.316E 01
SHEAR	0.383E 00	0.339E 00	0.542E 00	0.690E 00	0.130E 01
SLOPE	0.144E-01	0.127E-01	0.204E-01	0.260E-01	0.491E-01
CURVATURE	0.326E-02	0.289E-02	0.462E-02	0.588E-02	0.111E-01

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.108E 02	0.960E 01	0.153E 02	0.195E 02	0.369E 02
SHEAR	0.671E 01	0.594E 01	0.949E 01	0.120E 02	0.228E 02
IMMERSION	0.618E-01	0.547E-01	0.874E-01	0.111E 00	0.210E 00
SLOPE	0.142E 00	0.126E 00	0.201E 00	0.256E 00	0.484E 00
CURVATURE	0.380E-01	0.337E-01	0.538E-01	0.685E-01	0.129E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.101E 02	0.896E 01	0.143E 02	0.182E 02	0.344E 02
SHEAR	0.930E 01	0.823E 01	0.131E 02	0.167E 02	0.316E 02
SLOPE	0.790E-01	0.699E-01	0.111E 00	0.142E 00	0.268E 00
CURVATURE	0.355E-01	0.314E-01	0.502E-01	0.639E-01	0.120E 00

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.342E 01	0.303E 01	0.484E 01	0.616E 01	0.116E 02
BENDING MOM.	0.256E 01	0.226E 01	0.362E 01	0.461E 01	0.871E 01
SHEAR	0.669E 00	0.592E 00	0.946E 00	0.120E 01	0.227E 01
IMMERSION	0.316E 00	0.279E 00	0.446E 00	0.568E 00	0.107E 01
SLOPE	0.998E-01	0.884E-01	0.141E 00	0.179E 00	0.339E 00
CURVATURE	0.899E-02	0.796E-02	0.127E-01	0.161E-01	0.305E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.178E 01	0.157E 01	0.252E 01	0.320E 01	0.606E 01
BENDING MOM.	0.559E 01	0.494E 01	0.790E 01	0.100E 02	0.190E 02
SHEAR	0.281E 01	0.249E 01	0.398E 01	0.507E 01	0.957E 01
SLOPE	0.740E-01	0.655E-01	0.104E 00	0.133E 00	0.251E 00
CURVATURE	0.196E-01	0.173E-01	0.277E-01	0.353E-01	0.667E-01

CONFIGURATION VII AND VIII

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.335E 01	0.296E 01	0.473E 01	0.603E 01	0.113E 02
BENDING MOM.	0.177E 01	0.157E 01	0.251E 01	0.320E 01	0.604E 01
SHEAR	0.332E 00	0.294E 00	0.470E 00	0.599E 00	0.113E 01
IMMERSION	0.436E 00	0.386E 00	0.617E 00	0.785E 00	0.148E 01
SLOPE	0.897E-01	0.794E-01	0.126E 00	0.161E 00	0.305E 00
CURVATURE	0.624E-02	0.552E-02	0.882E-02	0.112E-01	0.212E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.179E 01	0.159E 01	0.254E 01	0.323E 01	0.611E 01
BENDING MOM.	0.439E 01	0.388E 01	0.621E 01	0.790E 01	0.149E 02
SHEAR	0.172E 01	0.152E 01	0.243E 01	0.310E 01	0.586E 01
SLOPE	0.723E-01	0.640E-01	0.102E 00	0.130E 00	0.246E 00
CURVATURE	0.154E-01	0.136E-01	0.218E-01	0.277E-01	0.524E-01

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.719E 01	0.636E 01	0.101E 02	0.129E 02	0.244E 02
SHEAR	0.494E 01	0.437E 01	0.699E 01	0.890E 01	0.168E 02
IMMERSION	0.314E-01	0.277E-01	0.444E-01	0.565E-01	0.106E 00
SLOPE	0.899E-01	0.795E-01	0.127E 00	0.161E 00	0.305E 00
CURVATURE	0.252E-01	0.223E-01	0.356E-01	0.454E-01	0.857E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.306E 01	0.270E 01	0.432E 01	0.550E 01	0.104E 02
BENDING MOM.	0.945E 01	0.836E 01	0.133E 02	0.170E 02	0.321E 02
SHEAR	0.811E 01	0.718E 01	0.114E 02	0.146E 02	0.276E 02
SLOPE	0.834E-01	0.738E-01	0.118E 00	0.150E 00	0.283E 00
CURVATURE	0.331E-01	0.293E-01	0.469E-01	0.597E-01	0.112E 00

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.348E 01	0.308E 01	0.493E 01	0.628E 01	0.118E 02
BENDING MOM.	0.162E 01	0.143E 01	0.229E 01	0.292E 01	0.552E 01
SHEAR	0.454E 00	0.402E 00	0.643E 00	0.818E 00	0.154E 01
IMMERSION	0.187E 00	0.165E 00	0.265E 00	0.337E 00	0.637E 00
SLOPE	0.666E-01	0.589E-01	0.942E-01	0.119E 00	0.226E 00
CURVATURE	0.570E-02	0.504E-02	0.806E-02	0.102E-01	0.193E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.306E 01	0.271E 01	0.434E 01	0.552E 01	0.104E 02
BENDING MOM.	0.489E 01	0.432E 01	0.691E 01	0.880E 01	0.166E 02
SHEAR	0.216E 01	0.191E 01	0.306E 01	0.389E 01	0.735E 01
SLOPE	0.776E-01	0.686E-01	0.109E 00	0.139E 00	0.263E 00
CURVATURE	0.171E-01	0.151E-01	0.242E-01	0.308E-01	0.583E-01

CONFIGURATION VII AND VIII

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.345E 01	0.305E 01	0.488E 01	0.621E 01	0.117E 02
BENDING MOM.	0.107E 01	0.954E 00	0.152E 01	0.194E 01	0.366E 01
SHEAR	0.205E 00	0.181E 00	0.290E 00	0.369E 00	0.697E 00
IMMERSION	0.260E 00	0.230E 00	0.368E 00	0.469E 00	0.886E 00
SLOPE	0.610E-01	0.540E-01	0.862E-01	0.109E 00	0.207E 00
CURVATURE	0.378E-02	0.334E-02	0.535E-02	0.681E-02	0.128E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.307E 01	0.272E 01	0.435E 01	0.554E 01	0.104E 02
BENDING MOM.	0.374E 01	0.331E 01	0.529E 01	0.673E 01	0.127E 02
SHEAR	0.126E 01	0.111E 01	0.178E 01	0.227E 01	0.430E 01
SLOPE	0.752E-01	0.665E-01	0.106E 00	0.135E 00	0.255E 00
CURVATURE	0.131E-01	0.116E-01	0.185E-01	0.236E-01	0.446E-01

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.684E-06	0.605E-06	0.968E-06	0.123E-05	0.232E-05
SHEAR	0.210E-09	0.186E-09	0.297E-09	0.378E-09	0.714E-09
IMMERSION	0.196E-01	0.174E-01	0.278E-01	0.354E-01	0.669E-01
SLOPE	0.218E-04	0.193E-04	0.308E-04	0.393E-04	0.742E-04
CURVATURE	0.240E-08	0.212E-08	0.339E-08	0.432E-08	0.816E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.989E-06	0.875E-06	0.139E-05	0.178E-05	0.336E-05
SHEAR	0.334E-09	0.295E-09	0.472E-09	0.601E-09	0.113E-08
SLOPE	0.235E-04	0.208E-04	0.332E-04	0.423E-04	0.799E-04
CURVATURE	0.347E-08	0.307E-08	0.490E-08	0.624E-08	0.118E-07

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.684E-06	0.605E-06	0.968E-06	0.123E-05	0.232E-05
SHEAR	0.210E-09	0.186E-09	0.297E-09	0.378E-09	0.714E-09
IMMERSION	0.196E-01	0.174E-01	0.278E-01	0.354E-01	0.669E-01
SLOPE	0.218E-04	0.193E-04	0.308E-04	0.393E-04	0.742E-04
CURVATURE	0.240E-08	0.212E-08	0.339E-08	0.432E-08	0.816E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.989E-06	0.875E-06	0.139E-05	0.178E-05	0.336E-05
SHEAR	0.334E-09	0.295E-09	0.472E-09	0.601E-09	0.113E-08
SLOPE	0.235E-04	0.208E-04	0.332E-04	0.423E-04	0.799E-04
CURVATURE	0.347E-08	0.307E-08	0.490E-08	0.624E-08	0.118E-07

CONFIGURATION VII AND VIII

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 6.19 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.684E-06	0.605E-06	0.968E-06	0.123E-05	0.232E-05
SHEAR	0.210E-09	0.186E-09	0.297E-09	0.378E-09	0.714E-09
IMMERSION	0.196E-01	0.174E-01	0.278E-01	0.354E-01	0.669E-01
SLOPE	0.218E-04	0.193E-04	0.308E-04	0.393E-04	0.742E-04
CURVATURE	0.240E-08	0.212E-08	0.339E-08	0.432E-08	0.816E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.989E-06	0.875E-06	0.139E-05	0.178E-05	0.336E-05
SHEAR	0.334E-09	0.295E-09	0.472E-09	0.601E-09	0.113E-08
SLOPE	0.235E-04	0.208E-04	0.332E-04	0.423E-04	0.799E-04
CURVATURE	0.347E-08	0.307E-08	0.490E-08	0.624E-08	0.118E-07

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.272E 02	0.241E 02	0.385E 02	0.490E 02	0.927E 02
SHEAR	0.157E 02	0.139E 02	0.222E 02	0.283E 02	0.535E 02
IMMERSION	0.893E-01	0.790E-01	0.126E 00	0.160E 00	0.303E 00
SLOPE	0.151E 00	0.133E 00	0.213E 00	0.272E 00	0.513E 00
CURVATURE	0.392E-01	0.347E-01	0.554E-01	0.706E-01	0.133E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.242E 00	0.214E 00	0.343E 00	0.436E 00	0.825E 00
BENDING MOM.	0.464E 01	0.411E 01	0.657E 01	0.836E 01	0.157E 02
SHEAR	0.418E 01	0.370E 01	0.591E 01	0.752E 01	0.142E 02
SLOPE	0.147E-01	0.130E-01	0.209E-01	0.266E-01	0.502E-01
CURVATURE	0.668E-02	0.591E-02	0.945E-02	0.120E-01	0.227E-01

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.268E 01	0.237E 01	0.379E 01	0.483E 01	0.912E 01
BENDING MOM.	0.929E 01	0.822E 01	0.131E 02	0.167E 02	0.316E 02
SHEAR	0.333E 01	0.295E 01	0.472E 01	0.601E 01	0.113E 02
IMMERSION	0.304E 00	0.269E 00	0.431E 00	0.548E 00	0.103E 01
SLOPE	0.110E 00	0.973E-01	0.155E 00	0.198E 00	0.374E 00
CURVATURE	0.133E-01	0.118E-01	0.189E-01	0.240E-01	0.454E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.244E 00	0.216E 00	0.345E 00	0.439E 00	0.830E 00
BENDING MOM.	0.349E 01	0.309E 01	0.494E 01	0.628E 01	0.118E 02
SHEAR	0.233E 01	0.206E 01	0.330E 01	0.420E 01	0.794E 01
SLOPE	0.143E-01	0.126E-01	0.202E-01	0.257E-01	0.487E-01
CURVATURE	0.502E-02	0.444E-02	0.710E-02	0.904E-02	0.170E-01

CONFIGURATION IX AND X

BEARING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.261E 01	0.231E 01	0.369E 01	0.470E 01	0.888E 01
BENDING MOM.	0.625E 01	0.553E 01	0.883E 01	0.112E 02	0.212E 02
SHEAR	0.167E 01	0.148E 01	0.236E 01	0.301E 01	0.568E 01
IMMERSION	0.417E 00	0.369E 00	0.590E 00	0.751E 00	0.141E 01
SLOPE	0.975E-01	0.863E-01	0.137E 00	0.175E 00	0.331E 00
CURVATURE	0.899E-02	0.795E-02	0.127E-01	0.161E-01	0.305E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.245E 00	0.217E 00	0.347E 00	0.442E 00	0.836E 00
BENDING MOM.	0.291E 01	0.258E 01	0.412E 01	0.525E 01	0.991E 01
SHEAR	0.161E 01	0.143E 01	0.228E 01	0.291E 01	0.549E 01
SLOPE	0.140E-01	0.124E-01	0.198E-01	0.252E-01	0.477E-01
CURVATURE	0.419E-02	0.371E-02	0.593E-02	0.755E-02	0.142E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.502E 01	0.949E 01
BENDING MOM.	0.237E 02	0.210E 02	0.335E 02	0.427E 02	0.807E 02
SHEAR	0.140E 02	0.124E 02	0.199E 02	0.253E 02	0.478E 02
IMMERSION	0.823E-01	0.728E-01	0.116E 00	0.148E 00	0.279E 00
SLOPE	0.133E 00	0.118E 00	0.189E 00	0.240E 00	0.454E 00
CURVATURE	0.341E-01	0.302E-01	0.483E-01	0.615E-01	0.116E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.196E 01	0.250E 01	0.473E 01
BENDING MOM.	0.225E 02	0.199E 02	0.318E 02	0.406E 02	0.766E 02
SHEAR	0.196E 02	0.175E 02	0.280E 02	0.357E 02	0.675E 02
SLOPE	0.747E-01	0.661E-01	0.105E 00	0.134E 00	0.254E 00
CURVATURE	0.324E-01	0.287E-01	0.458E-01	0.584E-01	0.110E 00

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.270E 01	0.239E 01	0.382E 01	0.487E 01	0.920E 01
BENDING MOM.	0.845E 01	0.748E 01	0.119E 02	0.152E 02	0.287E 02
SHEAR	0.309E 01	0.274E 01	0.438E 01	0.557E 01	0.105E 02
IMMERSION	0.266E 00	0.236E 00	0.377E 00	0.480E 00	0.906E 00
SLOPE	0.100E 00	0.886E-01	0.141E 00	0.180E 00	0.340E 00
CURVATURE	0.121E-01	0.107E-01	0.172E-01	0.219E-01	0.413E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.197E 01	0.251E 01	0.475E 01
BENDING MOM.	0.167E 02	0.148E 02	0.236E 02	0.301E 02	0.569E 02
SHEAR	0.108E 02	0.956E 01	0.152E 02	0.194E 02	0.367E 02
SLOPE	0.723E-01	0.639E-01	0.102E 00	0.130E 00	0.245E 00
CURVATURE	0.241E-01	0.213E-01	0.340E-01	0.433E-01	0.819E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.264E 01	0.234E 01	0.374E 01	0.476E 01	0.899E 01
BENDING MOM.	0.560E 01	0.496E 01	0.792E 01	0.100E 02	0.190E 02
SHEAR	0.154E 01	0.136E 01	0.217E 01	0.277E 01	0.523E 01
IMMERSION	0.368E 00	0.326E 00	0.520E 00	0.663E 00	0.125E 01
SLOPE	0.892E-01	0.789E-01	0.126E 00	0.160E 00	0.303E 00
CURVATURE	0.806E-02	0.714E-02	0.114E-01	0.145E-01	0.274E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.140E 01	0.124E 01	0.198E 01	0.253E 01	0.478E 01
BENDING MOM.	0.141E 02	0.125E 02	0.199E 02	0.254E 02	0.480E 02
SHEAR	0.763E 01	0.675E 01	0.107E 02	0.137E 02	0.259E 02
SLOPE	0.709E-01	0.628E-01	0.100E 00	0.127E 00	0.241E 00
CURVATURE	0.203E-01	0.179E-01	0.287E-01	0.365E-01	0.691E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.94 6.99 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.950E 01
BENDING MOM.	0.114E 02	0.101E 02	0.162E 02	0.206E 02	0.390E 02
SHEAR	0.692E 01	0.613E 01	0.979E 01	0.124E 02	0.235E 02
IMMERSION	0.780E-01	0.690E-01	0.110E 00	0.140E 00	0.265E 00
SLOPE	0.794E-01	0.703E-01	0.112E 00	0.143E 00	0.270E 00
CURVATURE	0.165E-01	0.146E-01	0.233E-01	0.297E-01	0.562E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.241E 01	0.213E 01	0.341E 01	0.434E 01	0.820E 01
BENDING MOM.	0.191E 02	0.169E 02	0.270E 02	0.344E 02	0.651E 02
SHEAR	0.147E 02	0.130E 02	0.208E 02	0.264E 02	0.500E 02
SLOPE	0.779E-01	0.690E-01	0.110E 00	0.140E 00	0.265E 00
CURVATURE	0.275E-01	0.243E-01	0.389E-01	0.496E-01	0.937E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.276E 01	0.244E 01	0.390E 01	0.496E 01	0.938E 01
BENDING MOM.	0.612E 01	0.541E 01	0.865E 01	0.110E 02	0.208E 02
SHEAR	0.232E 01	0.205E 01	0.328E 01	0.417E 01	0.789E 01
IMMERSION	0.146E 00	0.129E 00	0.206E 00	0.262E 00	0.496E 00
SLOPE	0.686E-01	0.607E-01	0.970E-01	0.123E 00	0.233E 00
CURVATURE	0.881E-02	0.779E-02	0.124E-01	0.158E-01	0.299E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.241E 01	0.213E 01	0.341E 01	0.434E 01	0.821E 01
BENDING MOM.	0.144E 02	0.128E 02	0.204E 02	0.260E 02	0.492E 02
SHEAR	0.823E 01	0.728E 01	0.116E 02	0.148E 02	0.279E 02
SLOPE	0.757E-01	0.670E-01	0.107E 00	0.136E 00	0.257E 00
CURVATURE	0.208E-01	0.184E-01	0.294E-01	0.375E-01	0.708E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.273E 01	0.241E 01	0.386E 01	0.491E 01	0.928E 01
BENDING MOM.	0.389E 01	0.344E 01	0.551E 01	0.701E 01	0.132E 02
SHEAR	0.112E 01	0.996E 00	0.159E 01	0.202E 01	0.383E 01
IMMERSION	0.217E 00	0.192E 00	0.307E 00	0.390E 00	0.738E 00
SLOPE	0.619E-01	0.547E-01	0.875E-01	0.111E 00	0.210E 00
CURVATURE	0.560E-02	0.496E-02	0.792E-02	0.100E-01	0.190E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.242E 01	0.214E 01	0.342E 01	0.435E 01	0.822E 01
BENDING MOM.	0.119E 02	0.106E 02	0.169E 02	0.215E 02	0.407E 02
SHEAR	0.557E 01	0.493E 01	0.788E 01	0.100E 02	0.189E 02
SLOPE	0.741E-01	0.656E-01	0.104E 00	0.133E 00	0.252E 00
CURVATURE	0.172E-01	0.152E-01	0.243E-01	0.310E-01	0.586E-01

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.950E 01
BENDING MOM.	0.604E-06	0.535E-06	0.855E-06	0.108E-05	0.205E-05
SHEAR	0.907E-10	0.803E-10	0.128E-09	0.163E-09	0.308E-09
INMERSION	0.820E-01	0.725E-01	0.115E 00	0.147E 00	0.278E 00
SLOPE	0.183E-04	0.162E-04	0.258E-04	0.329E-04	0.622E-04
CURVATURE	0.870E-09	0.770E-09	0.123E-08	0.156E-08	0.295E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.278E 01	0.246E 01	0.393E 01	0.501E 01	0.946E 01
BENDING MOM.	0.131E-05	0.116E-05	0.185E-05	0.236E-05	0.446E-05
SHEAR	0.260E-09	0.230E-09	0.368E-09	0.469E-09	0.886E-09
SLOPE	0.210E-04	0.186E-04	0.297E-04	0.378E-04	0.715E-04
CURVATURE	0.188E-08	0.167E-08	0.267E-08	0.339E-08	0.642E-08

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.950E 01
BENDING MOM.	0.604E-06	0.535E-06	0.855E-06	0.108E-05	0.205E-05
SHEAR	0.907E-10	0.803E-10	0.128E-09	0.163E-09	0.308E-09
IMMERSION	0.820E-01	0.725E-01	0.115E 00	0.147E 00	0.278E 00
SLOPE	0.183E-04	0.162E-04	0.258E-04	0.329E-04	0.622E-04
CURVATURE	0.870E-09	0.770E-09	0.123E-08	0.156E-08	0.295E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.278E 01	0.246E 01	0.393E 01	0.501E 01	0.946E 01
BENDING MOM.	0.131E-05	0.116E-05	0.185E-05	0.236E-05	0.446E-05
SHEAR	0.260E-09	0.230E-09	0.368E-09	0.469E-09	0.886E-09
SLOPE	0.210E-04	0.186E-04	0.297E-04	0.378E-04	0.715E-04
CURVATURE	0.188E-08	0.167E-08	0.267E-08	0.339E-08	0.642E-08

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.950E 01
BENDING MOM.	0.604E-06	0.535E-06	0.855E-06	0.108E-05	0.205E-05
SHEAR	0.907E-10	0.803E-10	0.128E-09	0.163E-09	0.308E-09
IMMERSION	0.820E-01	0.725E-01	0.115E 00	0.147E 00	0.278E 00
SLOPE	0.183E-04	0.162E-04	0.258E-04	0.329E-04	0.622E-04
CURVATURE	0.870E-09	0.770E-09	0.123E-08	0.156E-08	0.295E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.278E 01	0.246E 01	0.393E 01	0.501E 01	0.946E 01
BENDING MOM.	0.131E-05	0.116E-05	0.185E-05	0.236E-05	0.446E-05
SHEAR	0.260E-09	0.230E-09	0.368E-09	0.469E-09	0.886E-09
SLOPE	0.210E-04	0.186E-04	0.297E-04	0.378E-04	0.715E-04
CURVATURE	0.188E-08	0.167E-08	0.267E-08	0.339E-08	0.642E-08

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.272E 02	0.241E 02	0.385E 02	0.490E 02	0.926E 02
SHEAR	0.155E 02	0.137E 02	0.220E 02	0.280E 02	0.529E 02
IMMERSION	0.875E-01	0.774E-01	0.123E 00	0.157E 00	0.297E 00
SLOPE	0.157E 00	0.139E 00	0.222E 00	0.283E 00	0.534E 00
CURVATURE	0.391E-01	0.346E-01	0.554E-01	0.705E-01	0.133E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.307E 00	0.272E 00	0.434E 00	0.553E 00	0.104E 01
BENDING MOM.	0.438E 01	0.387E 01	0.619E 01	0.788E 01	0.148E 02
SHEAR	0.370E 01	0.327E 01	0.523E 01	0.666E 01	0.125E 02
SLOPE	0.151E-01	0.134E-01	0.214E-01	0.272E-01	0.515E-01
CURVATURE	0.630E-02	0.557E-02	0.891E-02	0.113E-01	0.214E-01

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.344E 01	0.304E 01	0.486E 01	0.619E 01	0.116E 02
BENDING MOM.	0.930E 01	0.823E 01	0.131E 02	0.167E 02	0.316E 02
SHEAR	0.320E 01	0.283E 01	0.453E 01	0.576E 01	0.108E 02
IMMERSION	0.305E 00	0.270E 00	0.432E 00	0.550E 00	0.103E 01
SLOPE	0.117E 00	0.104E 00	0.166E 00	0.212E 00	0.400E 00
CURVATURE	0.133E-01	0.118E-01	0.189E-01	0.240E-01	0.455E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.309E 00	0.273E 00	0.437E 00	0.556E 00	0.105E 01
BENDING MOM.	0.325E 01	0.288E 01	0.460E 01	0.586E 01	0.110E 02
SHEAR	0.202E 01	0.179E 01	0.286E 01	0.364E 01	0.688E 01
SLOPE	0.146E-01	0.129E-01	0.207E-01	0.264E-01	0.499E-01
CURVATURE	0.468E-02	0.415E-02	0.663E-02	0.844E-02	0.159E-01

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.337E 01	0.298E 01	0.477E 01	0.607E 01	0.114E 02
BENDING MOM.	0.626E 01	0.554E 01	0.886E 01	0.112E 02	0.213E 02
SHEAR	0.155E 01	0.137E 01	0.219E 01	0.279E 01	0.527E 01
IMMERSION	0.419E 00	0.371E 00	0.593E 00	0.755E 00	0.142E 01
SLOPE	0.105E 00	0.936E-01	0.149E 00	0.190E 00	0.359E 00
CURVATURE	0.902E-02	0.798E-02	0.127E-01	0.162E-01	0.306E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.310E 00	0.275E 00	0.439E 00	0.559E 00	0.105E 01
BENDING MOM.	0.259E 01	0.229E 01	0.366E 01	0.467E 01	0.882E 01
SHEAR	0.127E 01	0.112E 01	0.179E 01	0.229E 01	0.432E 01
SLOPE	0.143E-01	0.126E-01	0.202E-01	0.257E-01	0.487E-01
CURVATURE	0.373E-02	0.330E-02	0.527E-02	0.672E-02	0.126E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.237E 02	0.209E 02	0.335E 02	0.426E 02	0.805E 02
SHEAR	0.138E 02	0.122E 02	0.196E 02	0.250E 02	0.472E 02
IMMERSION	0.809E-01	0.716E-01	0.114E 00	0.145E 00	0.275E 00
SLOPE	0.139E 00	0.123E 00	0.196E 00	0.250E 00	0.472E 00
CURVATURE	0.341E-01	0.301E-01	0.482E-01	0.613E-01	0.115E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.317E 01	0.599E 01
BENDING MOM.	0.213E 02	0.188E 02	0.301E 02	0.384E 02	0.725E 02
SHEAR	0.177E 02	0.156E 02	0.250E 02	0.319E 02	0.602E 02
SLOPE	0.766E-01	0.677E-01	0.108E 00	0.137E 00	0.260E 00
CURVATURE	0.307E-01	0.271E-01	0.434E-01	0.552E-01	0.104E 00

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.345E 01	0.306E 01	0.489E 01	0.622E 01	0.117E 02
BENDING MOM.	0.844E 01	0.747E 01	0.119E 02	0.152E 02	0.287E 02
SHEAR	0.297E 01	0.263E 01	0.420E 01	0.535E 01	0.101E 02
IMMERSION	0.267E 00	0.236E 00	0.377E 00	0.480E 00	0.907E 00
SLOPE	0.106E 00	0.944E-01	0.150E 00	0.192E 00	0.362E 00
CURVATURE	0.121E-01	0.107E-01	0.171E-01	0.218E-01	0.413E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.177E 01	0.156E 01	0.250E 01	0.318E 01	0.602E 01
BENDING MOM.	0.156E 02	0.138E 02	0.221E 02	0.282E 02	0.533E 02
SHEAR	0.944E 01	0.835E 01	0.133E 02	0.169E 02	0.320E 02
SLOPE	0.741E-01	0.656E-01	0.104E 00	0.133E 00	0.252E 00
CURVATURE	0.225E-01	0.199E-01	0.319E-01	0.406E-01	0.767E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.340E 01	0.301E 01	0.481E 01	0.612E 01	0.115E 02
BENDING MOM.	0.560E 01	0.496E 01	0.792E 01	0.100E 02	0.190E 02
SHEAR	0.143E 01	0.126E 01	0.202E 01	0.257E 01	0.486E 01
IMMERSION	0.369E 00	0.327E 00	0.522E 00	0.665E 00	0.125E 01
SLOPE	0.962E-01	0.852E-01	0.136E 00	0.173E 00	0.327E 00
CURVATURE	0.806E-02	0.713E-02	0.114E-01	0.145E-01	0.274E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.177E 01	0.157E 01	0.251E 01	0.320E 01	0.604E 01
BENDING MOM.	0.126E 02	0.111E 02	0.178E 02	0.227E 02	0.430E 02
SHEAR	0.609E 01	0.539E 01	0.861E 01	0.109E 02	0.207E 02
SLOPE	0.724E-01	0.640E-01	0.102E 00	0.130E 00	0.246E 00
CURVATURE	0.182E-01	0.161E-01	0.257E-01	0.327E-01	0.619E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.94 6.99 0.00 0.00
(IN THE RANGE 0.10 TO 8.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.313E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.113E 02	0.100E 02	0.161E 02	0.205E 02	0.387E 02
SHEAR	0.672E 01	0.595E 01	0.951E 01	0.121E 02	0.228E 02
IMMERSION	0.777E-01	0.688E-01	0.109E 00	0.139E 00	0.264E 00
SLOPE	0.823E-01	0.729E-01	0.116E 00	0.148E 00	0.280E 00
CURVATURE	0.163E-01	0.145E-01	0.231E-01	0.295E-01	0.557E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.305E 01	0.270E 01	0.431E 01	0.549E 01	0.103E 02
BENDING MOM.	0.183E 02	0.162E 02	0.259E 02	0.330E 02	0.623E 02
SHEAR	0.134E 02	0.118E 02	0.190E 02	0.242E 02	0.457E 02
SLOPE	0.799E-01	0.707E-01	0.112E 00	0.143E 00	0.271E 00
CURVATURE	0.264E-01	0.233E-01	0.373E-01	0.475E-01	0.897E-01

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CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.350E 01	0.310E 01	0.495E 01	0.631E 01	0.119E 02
BENDING MOM.	0.606E 01	0.536E 01	0.857E 01	0.109E 02	0.206E 02
SHEAR	0.220E 01	0.195E 01	0.312E 01	0.397E 01	0.751E 01
IMMERSION	0.145E 00	0.128E 00	0.205E 00	0.261E 00	0.494E 00
SLOPE	0.719E-01	0.636E-01	0.101E 00	0.129E 00	0.244E 00
CURVATURE	0.872E-02	0.772E-02	0.123E-01	0.157E-01	0.296E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.305E 01	0.270E 01	0.432E 01	0.550E 01	0.104E 02
BENDING MOM.	0.133E 02	0.118E 02	0.189E 02	0.241E 02	0.455E 02
SHEAR	0.700E 01	0.619E 01	0.990E 01	0.126E 02	0.238E 02
SLOPE	0.774E-01	0.685E-01	0.109E 00	0.139E 00	0.263E 00
CURVATURE	0.192E-01	0.170E-01	0.272E-01	0.346E-01	0.655E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.348E 01	0.308E 01	0.492E 01	0.626E 01	0.118E 02
BENDING MOM.	0.386E 01	0.341E 01	0.545E 01	0.695E 01	0.131E 02
SHEAR	0.105E 01	0.935E 00	0.149E 01	0.190E 01	0.359E 01
IMMERSION	0.216E 00	0.191E 00	0.306E 00	0.390E 00	0.737E 00
SLOPE	0.655E-01	0.579E-01	0.926E-01	0.117E 00	0.222E 00
CURVATURE	0.555E-02	0.491E-02	0.785E-02	0.100E-01	0.188E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.306E 01	0.271E 01	0.433E 01	0.551E 01	0.104E 02
BENDING MOM.	0.109E 02	0.971E 01	0.155E 02	0.197E 02	0.373E 02
SHEAR	0.465E 01	0.411E 01	0.658E 01	0.837E 01	0.158E 02
SLOPE	0.757E-01	0.670E-01	0.107E 00	0.136E 00	0.257E 00
CURVATURE	0.157E-01	0.139E-01	0.223E-01	0.284E-01	0.536E-01

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.313E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.586E-06	0.519E-06	0.829E-06	0.105E-05	0.199E-05
SHEAR	0.812E-10	0.718E-10	0.114E-09	0.146E-09	0.276E-09
IMMERSION	0.814E-01	0.721E-01	0.115E 00	0.146E 00	0.277E 00
SLOPE	0.189E-04	0.167E-04	0.268E-04	0.341E-04	0.645E-04
CURVATURE	0.844E-09	0.747E-09	0.119E-08	0.151E-08	0.286E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.352E 01	0.312E 01	0.498E 01	0.634E 01	0.119E 02
BENDING MOM.	0.118E-05	0.104E-05	0.167E-05	0.213E-05	0.402E-05
SHEAR	0.210E-09	0.186E-09	0.297E-09	0.378E-09	0.715E-09
SLOPE	0.214E-04	0.189E-04	0.303E-04	0.385E-04	0.728E-04
CURVATURE	0.170E-08	0.150E-08	0.240E-08	0.306E-08	0.579E-08

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.313E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.586E-06	0.519E-06	0.829E-06	0.105E-05	0.199E-05
SHEAR	0.812E-10	0.718E-10	0.114E-09	0.146E-09	0.276E-09
IMMERSION	0.814E-01	0.721E-01	0.115E 00	0.146E 00	0.277E 00
SLOPE	0.189E-04	0.167E-04	0.268E-04	0.341E-04	0.645E-04
CURVATURE	0.844E-09	0.747E-09	0.119E-08	0.151E-08	0.286E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.352E 01	0.312E 01	0.498E 01	0.634E 01	0.119E 02
BENDING MOM.	0.118E-05	0.104E-05	0.167E-05	0.213E-05	0.402E-05
SHEAR	0.210E-09	0.186E-09	0.297E-09	0.378E-09	0.715E-09
SLOPE	0.214E-04	0.189E-04	0.303E-04	0.385E-04	0.728E-04
CURVATURE	0.170E-08	0.150E-08	0.240E-08	0.306E-08	0.579E-08

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.313E 01	0.500E 01	0.636E 01	0.120E 02
BENDING MOM.	0.586E-06	0.519E-06	0.829E-06	0.105E-05	0.199E-05
SHEAR	0.812E-10	0.718E-10	0.114E-09	0.146E-09	0.276E-09
IMMERSION	0.814E-01	0.721E-01	0.115E 00	0.146E 00	0.277E 00
SLOPE	0.189E-04	0.167E-04	0.268E-04	0.341E-04	0.645E-04
CURVATURE	0.844E-09	0.747E-09	0.119E-08	0.151E-08	0.286E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.352E 01	0.312E 01	0.498E 01	0.634E 01	0.119E 02
BENDING MOM.	0.118E-05	0.104E-05	0.167E-05	0.213E-05	0.402E-05
SHEAR	0.210E-09	0.186E-09	0.297E-09	0.378E-09	0.715E-09
SLOPE	0.214E-04	0.189E-04	0.303E-04	0.385E-04	0.726E-04
CURVATURE	0.170E-08	0.150E-08	0.240E-08	0.306E-08	0.578E-08

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.270E 02	0.239E 02	0.383E 02	0.487E 02	0.921E 02
SHEAR	0.151E 02	0.133E 02	0.214E 02	0.272E 02	0.514E 02
DEFLECTION	0.842E-01	0.745E-01	0.119E 00	0.151E 00	0.286E 00
SLOPE	0.168E 00	0.149E 00	0.238E 00	0.303E 00	0.572E 00
CURVATURE	0.389E-01	0.345E-01	0.551E-01	0.701E-01	0.132E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.80 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.486E 00	0.430E 00	0.687E 00	0.874E 00	0.165E 01
BENDING MOM.	0.399E 01	0.353E 01	0.564E 01	0.718E 01	0.135E 02
SHEAR	0.306E 01	0.270E 01	0.432E 01	0.551E 01	0.104E 02
SLOPE	0.158E-01	0.140E-01	0.224E-01	0.285E-01	0.540E-01
CURVATURE	0.574E-02	0.508E-02	0.812E-02	0.103E-01	0.195E-01

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.551E 01	0.487E 01	0.779E 01	0.992E 01	0.187E 02
BENDING MOM.	0.918E 01	0.813E 01	0.129E 02	0.165E 02	0.312E 02
SHEAR	0.282E 01	0.250E 01	0.399E 01	0.508E 01	0.961E 01
IMMERSION	0.303E 00	0.268E 00	0.429E 00	0.546E 00	0.103E 01
SLOPE	0.131E 00	0.116E 00	0.186E 00	0.237E 00	0.448E 00
CURVATURE	0.132E-01	0.116E-01	0.186E-01	0.237E-01	0.449E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.468E 00	0.431E 00	0.690E 00	0.878E 00	0.165E 01
BENDING MOM.	0.270E 01	0.239E 01	0.381E 01	0.486E 01	0.918E 01
SHEAR	0.136E 01	0.122E 01	0.195E 01	0.248E 01	0.469E 01
SLOPE	0.152E-01	0.135E-01	0.215E-01	0.274E-01	0.519E-01
CURVATURE	0.388E-02	0.343E-02	0.549E-02	0.699E-02	0.132E-01

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.545E 01	0.483E 01	0.771E 01	0.982E 01	0.185E 02
BENDING MOM.	0.626E 01	0.554E 01	0.886E 01	0.112E 02	0.213E 02
SHEAR	0.138E 01	0.122E 01	0.196E 01	0.249E 01	0.471E 01
IMMERSION	0.421E 00	0.372E 00	0.595E 00	0.757E 00	0.143E 01
SLOPE	0.120E 00	0.107E 00	0.171E 00	0.217E 00	0.411E 00
CURVATURE	0.901E-02	0.798E-02	0.127E-01	0.162E-01	0.306E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.490E 00	0.433E 00	0.692E 00	0.882E 00	0.166E 01
BENDING MOM.	0.219E 01	0.194E 01	0.309E 01	0.394E 01	0.745E 01
SHEAR	0.901E 00	0.797E 00	0.127E 01	0.162E 01	0.306E 01
SLOPE	0.149E-01	0.132E-01	0.211E-01	0.269E-01	0.503E-01
CURVATURE	0.315E-02	0.279E-02	0.446E-02	0.567E-02	0.107E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.556E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.235E 02	0.208E 02	0.333E 02	0.423E 02	0.800E 02
SHEAR	0.134E 02	0.119E 02	0.190E 02	0.242E 02	0.458E 02
IMMERSION	0.784E-01	0.693E-01	0.110E 00	0.141E 00	0.266E 00
SLOPE	0.148E 00	0.131E 00	0.210E 00	0.267E 00	0.505E 00
CURVATURE	0.338E-01	0.299E-01	0.479E-01	0.609E-01	0.115E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.278E 01	0.246E 01	0.394E 01	0.501E 01	0.948E 01
BENDING MOM.	0.195E 02	0.173E 02	0.276E 02	0.352E 02	0.665E 02
SHEAR	0.148E 02	0.131E 02	0.209E 02	0.267E 02	0.504E 02
SLOPE	0.802E-01	0.710E-01	0.113E 00	0.144E 00	0.272E 00
CURVATURE	0.281E-01	0.249E-01	0.398E-01	0.507E-01	0.957E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.552E 01	0.489E 01	0.781E 01	0.995E 01	0.187E 02
BENDING MOM.	0.830E 01	0.735E 01	0.117E 02	0.149E 02	0.282E 02
SHEAR	0.263E 01	0.232E 01	0.371E 01	0.473E 01	0.894E 01
IMMERSION	0.265E 00	0.234E 00	0.374E 00	0.477E 00	0.901E 00
SLOPE	0.118E 00	0.104E 00	0.167E 00	0.213E 00	0.403E 00
CURVATURE	0.119E-01	0.105E-01	0.169E-01	0.215E-01	0.406E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.395E 01	0.503E 01	0.951E 01
BENDING MOM.	0.131E 02	0.116E 02	0.185E 02	0.236E 02	0.446E 02
SHEAR	0.657E 01	0.582E 01	0.930E 01	0.118E 02	0.223E 02
SLOPE	0.771E-01	0.682E-01	0.109E 00	0.138E 00	0.262E 00
CURVATURE	0.189E-01	0.167E-01	0.267E-01	0.340E-01	0.643E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.546E 01	0.485E 01	0.775E 01	0.987E 01	0.186E 02
BENDING MOM.	0.554E 01	0.491E 01	0.784E 01	0.998E 01	0.186E 02
SHEAR	0.123E 01	0.109E 01	0.175E 01	0.222E 01	0.421E 01
IMMERSION	0.368E 00	0.326E 00	0.521E 00	0.664E 00	0.125E 01
SLOPE	0.109E 00	0.965E-01	0.154E 00	0.196E 00	0.370E 00
CURVATURE	0.798E-02	0.706E-02	0.112E-01	0.143E-01	0.271E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.280E 01	0.248E 01	0.396E 01	0.505E 01	0.954E 01
BENDING MOM.	0.103E 02	0.916E 01	0.146E 02	0.186E 02	0.352E 02
SHEAR	0.405E 01	0.358E 01	0.573E 01	0.729E 01	0.137E 02
SLOPE	0.752E-01	0.665E-01	0.106E 00	0.135E 00	0.255E 00
CURVATURE	0.147E-01	0.131E-01	0.210E-01	0.268E-01	0.506E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.94 6.99 0.00 0.00
(IN THE RANGE 0.10 TO 7.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.790E 01	0.100E 02	0.189E 02
BENDING MOM.	0.108E 02	0.963E 01	0.153E 02	0.196E 02	0.370E 02
SHEAR	0.586E 01	0.518E 01	0.829E 01	0.105E 02	0.199E 02
IMMERSION	0.764E-01	0.676E-01	0.108E 00	0.137E 00	0.260E 00
SLOPE	0.876E-01	0.776E-01	0.123E 00	0.157E 00	0.298E 00
CURVATURE	0.156E-01	0.138E-01	0.221E-01	0.282E-01	0.532E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.482E 01	0.427E 01	0.682E 01	0.869E 01	0.164E 02
BENDING MOM.	0.159E 02	0.141E 02	0.226E 02	0.287E 02	0.543E 02
SHEAR	0.101E 02	0.894E 01	0.142E 02	0.181E 02	0.343E 02
SLOPE	0.830E-01	0.735E-01	0.117E 00	0.149E 00	0.282E 00
CURVATURE	0.230E-01	0.203E-01	0.325E-01	0.414E-01	0.782E-01

CONFIGURATION IX AND X

BEARING = 59.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.556E 01	0.492E 01	0.786E 01	0.100E 02	0.189E 02
BENDING MOM.	0.587E 01	0.519E 01	0.830E 01	0.105E 02	0.199E 02
SHEAR	0.194E 01	0.171E 01	0.274E 01	0.349E 01	0.659E 01
IMMERSION	0.143E 00	0.126E 00	0.202E 00	0.257E 00	0.486E 00
SLOPE	0.779E-01	0.690E-01	0.110E 00	0.140E 00	0.265E 00
CURVATURE	0.845E-02	0.748E-02	0.119E-01	0.152E-01	0.287E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.483E 01	0.427E 01	0.683E 01	0.870E 01	0.164E 02
BENDING MOM.	0.113E 02	0.100E 02	0.159E 02	0.203E 02	0.384E 02
SHEAR	0.495E 01	0.438E 01	0.699E 01	0.891E 01	0.168E 02
SLOPE	0.803E-01	0.711E-01	0.113E 00	0.144E 00	0.273E 00
CURVATURE	0.162E-01	0.144E-01	0.230E-01	0.292E-01	0.553E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.554E 01	0.490E 01	0.784E 01	0.998E 01	0.188E 02
BENDING MOM.	0.374E 01	0.331E 01	0.529E 01	0.673E 01	0.127E 02
SHEAR	0.903E 00	0.799E 00	0.127E 01	0.162E 01	0.307E 01
IMMERSION	0.214E 00	0.189E 00	0.303E 00	0.385E 00	0.729E 00
SLOPE	0.720E-01	0.637E-01	0.101E 00	0.129E 00	0.244E 00
CURVATURE	0.538E-02	0.476E-02	0.761E-02	0.969E-02	0.183E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.483E 01	0.428E 01	0.684E 01	0.871E 01	0.164E 02
BENDING MOM.	0.906E 01	0.802E 01	0.128E 02	0.163E 02	0.308E 02
SHEAR	0.314E 01	0.278E 01	0.445E 01	0.566E 01	0.107E 02
SLOPE	0.785E-01	0.695E-01	0.111E 00	0.141E 00	0.267E 00
CURVATURE	0.130E-01	0.115E-01	0.184E-01	0.234E-01	0.443E-01

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 15.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.790E 01	0.100E 02	0.189E 02
BENDING MOM.	0.544E-06	0.481E-06	0.769E-06	0.979E-06	0.184E-05
SHEAR	0.635E-10	0.562E-10	0.897E-10	0.114E-09	0.215E-09
IMMERSION	0.800E-01	0.708E-01	0.113E 00	0.144E 00	0.272E 00
SLOPE	0.201E-04	0.178E-04	0.285E-04	0.363E-04	0.686E-04
CURVATURE	0.782E-09	0.692E-09	0.110E-08	0.140E-08	0.266E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.557E 01	0.493E 01	0.788E 01	0.100E 02	0.189E 02
BENDING MOM.	0.965E-06	0.854E-06	0.136E-05	0.173E-05	0.328E-05
SHEAR	0.137E-09	0.121E-09	0.194E-09	0.247E-09	0.467E-09
SLOPE	0.221E-04	0.195E-04	0.313E-04	0.398E-04	0.752E-04
CURVATURE	0.138E-08	0.122E-08	0.196E-08	0.249E-08	0.472E-08

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.556E 01	0.494E 01	0.790E 01	0.100E 02	0.189E 02
BENDING MOM.	0.544E-06	0.481E-06	0.769E-06	0.979E-06	0.184E-05
SHEAR	0.635E-10	0.562E-10	0.897E-10	0.114E-09	0.215E-09
IMMERSION	0.800E-01	0.708E-01	0.113E 00	0.144E 00	0.272E 00
SLOPE	0.201E-04	0.178E-04	0.285E-04	0.363E-04	0.686E-04
CURVATURE	0.782E-09	0.692E-09	0.110E-08	0.140E-08	0.266E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.557E 01	0.493E 01	0.788E 01	0.100E 02	0.189E 02
BENDING MOM.	0.965E-06	0.854E-06	0.136E-05	0.173E-05	0.328E-05
SHEAR	0.137E-09	0.121E-09	0.194E-09	0.247E-09	0.467E-09
SLOPE	0.221E-04	0.195E-04	0.313E-04	0.398E-04	0.752E-04
CURVATURE	0.138E-08	0.122E-08	0.196E-08	0.249E-08	0.472E-08

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.790E 01	0.100E 02	0.189E 02
BENDING MOM.	0.544E-06	0.481E-06	0.769E-06	0.979E-06	0.184E-05
SHEAR	0.635E-10	0.562E-10	0.897E-10	0.114E-09	0.215E-09
DIVERSION	0.800E-01	0.708E-01	0.113E 00	0.144E 00	0.272E 00
SLOPE	0.201E-04	0.178E-04	0.285E-04	0.363E-04	0.686E-04
CURVATURE	0.782E-09	0.692E-09	0.110E-08	0.140E-08	0.266E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.557E 01	0.493E 01	0.788E 01	0.100E 02	0.189E 02
BENDING MOM.	0.965E-06	0.854E-06	0.136E-05	0.173E-05	0.328E-05
SHEAR	0.137E-09	0.121E-09	0.194E-09	0.247E-09	0.467E-09
SLOPE	0.221E-04	0.195E-04	0.313E-04	0.398E-04	0.752E-04
CURVATURE	0.138E-08	0.122E-08	0.196E-08	0.249E-08	0.472E-08

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.626E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.269E 02	0.238E 02	0.380E 02	0.484E 02	0.915E 02
SHEAR	0.147E 02	0.130E 02	0.208E 02	0.265E 02	0.501E 02
IMMERSION	0.813E-01	0.720E-01	0.115E 00	0.146E 00	0.276E 00
SLOPE	0.173E 00	0.153E 00	0.245E 00	0.313E 00	0.591E 00
CURVATURE	0.387E-01	0.342E-01	0.547E-01	0.697E-01	0.131E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.615E 00	0.544E 00	0.870E 00	0.110E 01	0.209E 01
BENDING MOM.	0.374E 01	0.331E 01	0.529E 01	0.673E 01	0.127E 02
SHEAR	0.268E 01	0.237E 01	0.379E 01	0.482E 01	0.911E 01
SLOPE	0.162E-01	0.143E-01	0.229E-01	0.291E-01	0.551E-01
CURVATURE	0.538E-02	0.476E-02	0.761E-02	0.969E-02	0.183E-01

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.701E 01	0.620E 01	0.991E 01	0.126E 02	0.238E 02
BENDING MOM.	0.905E 01	0.801E 01	0.128E 02	0.162E 02	0.307E 02
SHEAR	0.257E 01	0.228E 01	0.364E 01	0.464E 01	0.876E 01
INMERSION	0.300E 00	0.266E 00	0.425E 00	0.541E 00	0.102E 01
SLOPE	0.138E 00	0.122E 00	0.196E 00	0.249E 00	0.471E 00
CURVATURE	0.130E-01	0.115E-01	0.184E-01	0.234E-01	0.442E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.617E 00	0.546E 00	0.873E 00	0.111E 01	0.210E 01
BENDING MOM.	0.238E 01	0.211E 01	0.337E 01	0.429E 01	0.812E 01
SHEAR	0.107E 01	0.951E 00	0.151E 01	0.193E 01	0.365E 01
SLOPE	0.155E-01	0.137E-01	0.219E-01	0.279E-01	0.527E-01
CURVATURE	0.343E-02	0.304E-02	0.485E-02	0.618E-02	0.116E-01

CONFIGURATION IX AND X

HEADING = 5.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.696E 01	0.616E 01	0.984E 01	0.125E 02	0.236E 02
BENDING MOM.	0.620E 01	0.549E 01	0.877E 01	0.111E 02	0.210E 02
SHEAR	0.126E 01	0.111E 01	0.178E 01	0.227E 01	0.428E 01
IMMERSION	0.418E 00	0.370E 00	0.591E 00	0.752E 00	0.142E 01
SLOPE	0.128E 00	0.113E 00	0.181E 00	0.230E 00	0.435E 00
CURVATURE	0.892E-02	0.790E-02	0.126E-01	0.160E-01	0.303E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.619E 00	0.548E 00	0.876E 00	0.111E 01	0.210E 01
BENDING MOM.	0.190E 01	0.169E 01	0.270E 01	0.343E 01	0.649E 01
SHEAR	0.680E 00	0.602E 00	0.962E 00	0.122E 01	0.231E 01
SLOPE	0.151E-01	0.134E-01	0.214E-01	0.273E-01	0.516E-01
CURVATURE	0.274E-02	0.243E-02	0.388E-02	0.494E-02	0.934E-02

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CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.626E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.233E 02	0.206E 02	0.330E 02	0.420E 02	0.794E 02
SHEAR	0.131E 02	0.115E 02	0.185E 02	0.235E 02	0.445E 02
IMMERSION	0.762E-01	0.675E-01	0.107E 00	0.137E 00	0.259E 00
SLOPE	0.153E 00	0.135E 00	0.216E 00	0.275E 00	0.521E 00
CURVATURE	0.336E-01	0.297E-01	0.475E-01	0.605E-01	0.114E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.635E 01	0.120E 02
BENDING MOM.	0.184E 02	0.163E 02	0.260E 02	0.331E 02	0.626E 02
SHEAR	0.131E 02	0.116E 02	0.185E 02	0.236E 02	0.446E 02
SLOPE	0.819E-01	0.725E-01	0.115E 00	0.147E 00	0.278E 00
CURVATURE	0.265E-01	0.234E-01	0.375E-01	0.477E-01	0.901E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.702E 01	0.621E 01	0.993E 01	0.126E 02	0.238E 02
BENDING MOM.	0.816E 01	0.722E 01	0.115E 02	0.147E 02	0.277E 02
SHEAR	0.240E 01	0.212E 01	0.339E 01	0.432E 01	0.816E 01
IMMERSION	0.262E 00	0.232E 00	0.371E 00	0.472E 00	0.892E 00
SLOPE	0.124E 00	0.110E 00	0.175E 00	0.223E 00	0.422E 00
CURVATURE	0.117E-01	0.104E-01	0.166E-01	0.211E-01	0.399E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.354E 01	0.313E 01	0.500E 01	0.637E 01	0.120E 02
BENDING MOM.	0.117E 02	0.103E 02	0.165E 02	0.210E 02	0.398E 02
SHEAR	0.520E 01	0.460E 01	0.735E 01	0.936E 01	0.176E 02
SLOPE	0.783E-01	0.693E-01	0.110E 00	0.141E 00	0.266E 00
CURVATURE	0.168E-01	0.149E-01	0.238E-01	0.303E-01	0.572E-01

CONFIGURATION IX AND X

HEADING = 29.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONAN. FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.698E 01	0.618E 01	0.987E 01	0.125E 02	0.237E 02
BENDING MOM.	0.547E 01	0.484E 01	0.774E 01	0.985E 01	0.186E 02
SHEAR	0.112E 01	0.992E 00	0.158E 01	0.201E 01	0.381E 01
IMMERSION	0.366E 00	0.323E 00	0.517E 00	0.658E 00	0.124E 01
SLOPE	0.115E 00	0.101E 00	0.162E 00	0.207E 00	0.391E 00
CURVATURE	0.788E-02	0.697E-02	0.111E-01	0.141E-01	0.267E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.355E 01	0.314E 01	0.502E 01	0.639E 01	0.120E 02
BENDING MOM.	0.908E 01	0.803E 01	0.128E 02	0.163E 02	0.308E 02
SHEAR	0.310E 01	0.274E 01	0.438E 01	0.558E 01	0.105E 02
SLOPE	0.763E-01	0.675E-01	0.107E 00	0.137E 00	0.259E 00
CURVATURE	0.130E-01	0.115E-01	0.184E-01	0.235E-01	0.444E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.94 6.99 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.626E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.103E 02	0.918E 01	0.146E 02	0.186E 02	0.352E 02
SHEAR	0.512E 01	0.453E 01	0.724E 01	0.922E 01	0.174E 02
IMMERSION	0.756E-01	0.669E-01	0.106E 00	0.136E 00	0.257E 00
SLOPE	0.901E-01	0.798E-01	0.127E 00	0.162E 00	0.306E 00
CURVATURE	0.149E-01	0.132E-01	0.211E-01	0.268E-01	0.507E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.24 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.611E 01	0.541E 01	0.865E 01	0.110E 02	0.208E 02
BENDING MOM.	0.144E 02	0.128E 02	0.204E 02	0.260E 02	0.492E 02
SHEAR	0.823E 01	0.728E 01	0.116E 02	0.148E 02	0.280E 02
SLOPE	0.844E-01	0.747E-01	0.119E 00	0.151E 00	0.287E 00
CURVATURE	0.208E-01	0.184E-01	0.294E-01	0.375E-01	0.708E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.705E 01	0.624E 01	0.997E 01	0.127E 02	0.239E 02
BENDING MOM.	0.573E 01	0.507E 01	0.811E 01	0.103E 02	0.195E 02
SHEAR	0.178E 01	0.157E 01	0.252E 01	0.321E 01	0.606E 01
IMMERSION	0.141E 00	0.125E 00	0.199E 00	0.254E 00	0.480E 00
SLOPE	0.809E-01	0.716E-01	0.114E 00	0.145E 00	0.275E 00
CURVATURE	0.825E-02	0.730E-02	0.116E-01	0.148E-01	0.280E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.612E 01	0.541E 01	0.865E 01	0.110E 02	0.208E 02
BENDING MOM.	0.103E 02	0.913E 01	0.145E 02	0.185E 02	0.350E 02
SHEAR	0.410E 01	0.363E 01	0.580E 01	0.738E 01	0.139E 02
SLOPE	0.818E-01	0.724E-01	0.115E 00	0.147E 00	0.278E 00
CURVATURE	0.148E-01	0.131E-01	0.210E-01	0.267E-01	0.504E-01

CONFIGURATION IX AND X

HEADING = 59.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.703E 01	0.623E 01	0.995E 01	0.126E 02	0.239E 02
BENDING MOM.	0.365E 01	0.323E 01	0.517E 01	0.658E 01	0.124E 02
SHEAR	0.820E 00	0.726E 00	0.116E 01	0.147E 01	0.279E 01
IMMERSION	0.212E 00	0.187E 00	0.300E 00	0.382E 00	0.722E 00
SLOPE	0.752E-01	0.665E-01	0.106E 00	0.135E 00	0.255E 00
CURVATURE	0.526E-02	0.466E-02	0.744E-02	0.947E-02	0.179E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.612E 01	0.542E 01	0.866E 01	0.110E 02	0.208E 02
BENDING MOM.	0.816E 01	0.722E 01	0.115E 02	0.146E 02	0.277E 02
SHEAR	0.254E 01	0.225E 01	0.359E 01	0.458E 01	0.865E 01
SLOPE	0.799E-01	0.707E-01	0.113E 00	0.143E 00	0.271E 00
CURVATURE	0.117E-01	0.103E-01	0.166E-01	0.211E-01	0.399E-01

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.626E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.514E-06	0.455E-06	0.727E-06	0.926E-06	0.175E-05
SHEAR	0.537E-10	0.475E-10	0.760E-10	0.968E-10	0.182E-09
IMMERSION	0.788E-01	0.698E-01	0.111E 00	0.141E 00	0.268E 00
SLOPE	0.207E-04	0.183E-04	0.293E-04	0.373E-04	0.706E-04
CURVATURE	0.740E-09	0.655E-09	0.104E-08	0.133E-08	0.251E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.706E 01	0.625E 01	0.999E 01	0.127E 02	0.240E 02
BENDING MOM.	0.850E-06	0.752E-06	0.120E-05	0.153E-05	0.289E-05
SHEAR	0.105E-09	0.936E-10	0.149E-09	0.190E-09	0.359E-09
SLOPE	0.224E-04	0.198E-04	0.317E-04	0.404E-04	0.763E-04
CURVATURE	0.122E-08	0.108E-08	0.173E-08	0.220E-08	0.416E-08

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.626E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.514E-06	0.455E-06	0.727E-06	0.926E-06	0.175E-05
SHEAR	0.537E-10	0.475E-10	0.760E-10	0.968E-10	0.182E-09
IMMERSION	0.788E-01	0.698E-01	0.111E 00	0.141E 00	0.268E 00
SLOPE	0.207E-04	0.183E-04	0.293E-04	0.373E-04	0.706E-04
CURVATURE	0.740E-09	0.655E-09	0.104E-08	0.133E-08	0.251E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.706E 01	0.625E 01	0.999E 01	0.127E 02	0.240E 02
BENDING MOM.	0.850E-06	0.752E-06	0.120E-05	0.153E-05	0.289E-05
SHEAR	0.105E-09	0.936E-10	0.149E-09	0.190E-09	0.359E-09
SLOPE	0.224E-04	0.198E-04	0.317E-04	0.404E-04	0.763E-04
CURVATURE	0.122E-08	0.108E-08	0.173E-08	0.220E-08	0.416E-08

CONFIGURATION IX AND X

HEADING = 90.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 3.89 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.626E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.514E-06	0.455E-06	0.727E-06	0.926E-06	0.175E-05
SHEAR	0.537E-10	0.475E-10	0.760E-10	0.968E-10	0.182E-09
IMMERSION	0.788E-01	0.698E-01	0.111E 00	0.141E 00	0.268E 00
SLOPE	0.207E-04	0.183E-04	0.293E-04	0.373E-04	0.706E-04
CURVATURE	0.740E-09	0.655E-09	0.104E-08	0.133E-08	0.251E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.706E 01	0.625E 01	0.999E 01	0.127E 02	0.240E 02
BENDING MOM.	0.850E-06	0.752E-06	0.120E-05	0.153E-05	0.289E-05
SHEAR	0.105E-09	0.936E-10	0.149E-09	0.190E-09	0.359E-09
SLOPE	0.224E-04	0.198E-04	0.317E-04	0.404E-04	0.763E-04
CURVATURE	0.122E-08	0.108E-08	0.173E-08	0.220E-08	0.416E-08

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.278E 01	0.246E 01	0.394E 01	0.502E 01	0.948E 01
BENDING MOM.	0.252E 02	0.223E 02	0.357E 02	0.454E 02	0.858E 02
SHEAR	0.133E 02	0.117E 02	0.188E 02	0.239E 02	0.452E 02
IMMERSION	0.889E-01	0.787E-01	0.125E 00	0.160E 00	0.302E 00
SLOPE	0.149E 00	0.132E 00	0.211E 00	0.269E 00	0.509E 00
CURVATURE	0.363E-01	0.321E-01	0.513E-01	0.654E-01	0.123E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.243E 00	0.215E 00	0.344E 00	0.437E 00	0.827E 00
BENDING MOM.	0.475E 01	0.420E 01	0.671E 01	0.855E 01	0.161E 02
SHEAR	0.419E 01	0.370E 01	0.592E 01	0.754E 01	0.142E 02
SLOPE	0.150E-01	0.132E-01	0.212E-01	0.270E-01	0.510E-01
CURVATURE	0.683E-02	0.605E-02	0.966E-02	0.123E-01	0.232E-01

HYDRONAUTICS, INC.

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.266E 01	0.235E 01	0.376E 01	0.479E 01	0.905E 01
BENDING MOM.	0.808E 01	0.715E 01	0.114E 02	0.145E 02	0.274E 02
SHEAR	0.255E 01	0.225E 01	0.360E 01	0.459E 01	0.867E 01
IMMERSION	0.328E 00	0.290E 00	0.464E 00	0.590E 00	0.111E 01
SLOPE	0.106E 00	0.936E-01	0.149E 00	0.190E 00	0.360E 00
CURVATURE	0.116E-01	0.102E-01	0.164E-01	0.209E-01	0.395E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.245E 00	0.217E 00	0.346E 00	0.441E 00	0.833E 00
BENDING MOM.	0.338E 01	0.299E 01	0.478E 01	0.608E 01	0.114E 02
SHEAR	0.211E 01	0.187E 01	0.299E 01	0.381E 01	0.719E 01
SLOPE	0.144E-01	0.127E-01	0.204E-01	0.259E-01	0.490E-01
CURVATURE	0.486E-02	0.430E-02	0.687E-02	0.875E-02	0.165E-01

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.257E 01	0.228E 01	0.364E 01	0.464E 01	0.877E 01
BENDING MOM.	0.556E 01	0.492E 01	0.787E 01	0.100E 02	0.189E 02
SHEAR	0.130E 01	0.115E 01	0.184E 01	0.235E 01	0.444E 01
IMMERSION	0.449E 00	0.397E 00	0.635E 00	0.809E 00	0.152E 01
SLOPE	0.937E-01	0.829E-01	0.132E 00	0.168E 00	0.318E 00
CURVATURE	0.801E-02	0.708E-02	0.113E-01	0.144E-01	0.272E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.247E 00	0.218E 00	0.349E 00	0.445E 00	0.840E 00
BENDING MOM.	0.278E 01	0.246E 01	0.393E 01	0.501E 01	0.946E 01
SHEAR	0.143E 01	0.126E 01	0.202E 01	0.257E 01	0.487E 01
SLOPE	0.141E-01	0.125E-01	0.199E-01	0.254E-01	0.480E-01
CURVATURE	0.400E-02	0.354E-02	0.566E-02	0.721E-02	0.136E-01

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.246E 01	0.394E 01	0.502E 01	0.948E 01
BENDING MOM.	0.228E 02	0.202E 02	0.323E 02	0.411E 02	0.777E 02
SHEAR	0.124E 02	0.110E 02	0.176E 02	0.224E 02	0.423E 02
IMMERSION	0.757E-01	0.670E-01	0.107E 00	0.136E 00	0.257E 00
SLOPE	0.134E 00	0.118E 00	0.189E 00	0.241E 00	0.456E 00
CURVATURE	0.329E-01	0.291E-01	0.465E-01	0.592E-01	0.111E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.139E 01	0.123E 01	0.197E 01	0.251E 01	0.474E 01
BENDING MOM.	0.232E 02	0.205E 02	0.329E 02	0.418E 02	0.791E 02
SHEAR	0.201E 02	0.178E 02	0.284E 02	0.362E 02	0.685E 02
SLOPE	0.761E-01	0.673E-01	0.107E 00	0.137E 00	0.258E 00
CURVATURE	0.334E-01	0.296E-01	0.473E-01	0.602E-01	0.113E 00

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.268E 01	0.237E 01	0.379E 01	0.483E 01	0.913E 01
BENDING MOM.	0.722E 01	0.639E 01	0.102E 02	0.130E 02	0.245E 02
SHEAR	0.233E 01	0.207E 01	0.330E 01	0.421E 01	0.795E 01
IMMERSION	0.288E 00	0.255E 00	0.407E 00	0.518E 00	0.979E 00
SLOPE	0.964E-01	0.853E-01	0.136E 00	0.173E 00	0.327E 00
CURVATURE	0.104E-01	0.920E-02	0.147E-01	0.187E-01	0.353E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.140E 01	0.124E 01	0.198E 01	0.252E 01	0.477E 01
BENDING MOM.	0.163E 02	0.144E 02	0.231E 02	0.294E 02	0.555E 02
SHEAR	0.991E 01	0.877E 01	0.140E 02	0.178E 02	0.337E 02
SLOPE	0.729E-01	0.645E-01	0.103E 00	0.131E 00	0.248E 00
CURVATURE	0.235E-01	0.208E-01	0.332E-01	0.423E-01	0.799E-01

CONFIGURATION XI AND XII

HEADING = 29. 9 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.261E 01	0.231E 01	0.370E 01	0.471E 01	0.889E 01
BENDING MOM.	0.492E 01	0.435E 01	0.696E 01	0.886E 01	0.167E 02
SHEAR	0.115E 01	0.102E 01	0.163E 01	0.207E 01	0.392E 01
IMMERSION	0.395E 00	0.350E 00	0.559E 00	0.712E 00	0.134E 01
SLOPE	0.859E-01	0.760E-01	0.121E 00	0.154E 00	0.292E 00
CURVATURE	0.708E-02	0.627E-02	0.100E-01	0.127E-01	0.240E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.141E 01	0.125E 01	0.199E 01	0.254E 01	0.480E 01
BENDING MOM.	0.130E 02	0.115E 02	0.184E 02	0.235E 02	0.444E 02
SHEAR	0.634E 01	0.561E 01	0.896E 01	0.114E 02	0.215E 02
SLOPE	0.710E-01	0.628E-01	0.100E 00	0.127E 00	0.241E 00
CURVATURE	0.188E-01	0.166E-01	0.266E-01	0.338E-01	0.639E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.152E 02	0.134E 02	0.215E 02	0.274E 02	0.518E 02
SHEAR	0.934E 01	0.826E 01	0.132E 02	0.168E 02	0.317E 02
IMMERSION	0.395E-01	0.349E-01	0.558E-01	0.711E-01	0.134E 00
SLOPE	0.853E-01	0.755E-01	0.120E 00	0.153E 00	0.290E 00
CURVATURE	0.219E-01	0.194E-01	0.310E-01	0.394E-01	0.745E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.64 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.241E 01	0.213E 01	0.341E 01	0.435E 01	0.822E 01
BENDING MOM.	0.219E 02	0.194E 02	0.310E 02	0.395E 02	0.747E 02
SHEAR	0.180E 02	0.159E 02	0.254E 02	0.324E 02	0.612E 02
SLOPE	0.808E-01	0.715E-01	0.114E 00	0.145E 00	0.274E 00
CURVATURE	0.316E-01	0.279E-01	0.447E-01	0.569E-01	0.107E 00

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.274E 01	0.243E 01	0.388E 01	0.494E 01	0.934E 01
BENDING MOM.	0.505E 01	0.447E 01	0.714E 01	0.909E 01	0.171E 02
SHEAR	0.185E 01	0.164E 01	0.262E 01	0.334E 01	0.631E 01
IMMERSION	0.170E 00	0.151E 00	0.241E 00	0.307E 00	0.580E 00
SLOPE	0.655E-01	0.580E-01	0.927E-01	0.118E 00	0.222E 00
CURVATURE	0.726E-02	0.643E-02	0.102E-01	0.130E-01	0.247E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.242E 01	0.214E 01	0.342E 01	0.436E 01	0.823E 01
BENDING MOM.	0.150E 02	0.133E 02	0.213E 02	0.271E 02	0.512E 02
SHEAR	0.845E 01	0.748E 01	0.119E 02	0.152E 02	0.287E 02
SLOPE	0.773E-01	0.684E-01	0.109E 00	0.139E 00	0.263E 00
CURVATURE	0.216E-01	0.191E-01	0.306E-01	0.390E-01	0.737E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.271E 01	0.240E 01	0.384E 01	0.488E 01	0.923E 01
BENDING MOM.	0.322E 01	0.285E 01	0.456E 01	0.581E 01	0.109E 02
SHEAR	0.848E 00	0.751E 00	0.119E 01	0.152E 01	0.288E 01
IMMERSION	0.238E 00	0.210E 00	0.336E 00	0.428E 00	0.809E 00
SLOPE	0.593E-01	0.525E-01	0.839E-01	0.106E 00	0.201E 00
CURVATURE	0.464E-02	0.411E-02	0.657E-02	0.836E-02	0.157E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.242E 01	0.214E 01	0.343E 01	0.436E 01	0.825E 01
BENDING MOM.	0.119E 02	0.105E 02	0.168E 02	0.214E 02	0.404E 02
SHEAR	0.526E 01	0.466E 01	0.744E 01	0.948E 01	0.179E 02
SLOPE	0.752E-01	0.665E-01	0.106E 00	0.135E 00	0.255E 00
CURVATURE	0.171E-01	0.151E-01	0.242E-01	0.308E-01	0.582E-01

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.158E-05	0.140E-05	0.223E-05	0.284E-05	0.538E-05
SHEAR	0.502E-09	0.444E-09	0.710E-09	0.904E-09	0.170E-08
IMMERSION	0.254E-01	0.225E-01	0.359E-01	0.457E-01	0.864E-01
SLOPE	0.208E-04	0.184E-04	0.295E-04	0.375E-04	0.709E-04
CURVATURE	0.227E-08	0.201E-08	0.321E-08	0.409E-08	0.774E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.256E-05	0.227E-05	0.363E-05	0.462E-05	0.873E-05
SHEAR	0.927E-09	0.821E-09	0.131E-08	0.166E-08	0.315E-08
SLOPE	0.230E-04	0.204E-04	0.326E-04	0.415E-04	0.784E-04
CURVATURE	0.369E-08	0.326E-08	0.522E-08	0.665E-08	0.125E-07

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.158E-05	0.140E-05	0.223E-05	0.284E-05	0.538E-05
SHEAR	0.502E-09	0.444E-09	0.710E-09	0.904E-09	0.170E-08
IMMERSION	0.254E-01	0.225E-01	0.359E-01	0.457E-01	0.864E-01
SLOPE	0.208E-04	0.184E-04	0.295E-04	0.375E-04	0.709E-04
CURVATURE	0.227E-08	0.201E-08	0.321E-08	0.409E-08	0.774E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.256E-05	0.227E-05	0.363E-05	0.462E-05	0.873E-05
SHEAR	0.927E-09	0.821E-09	0.131E-08	0.166E-08	0.315E-08
SLOPE	0.230E-04	0.204E-04	0.326E-04	0.415E-04	0.784E-04
CURVATURE	0.369E-08	0.326E-08	0.522E-08	0.665E-08	0.125E-07

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 7.90 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 11.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.156E-05	0.140E-05	0.223E-05	0.284E-05	0.538E-05
SHEAR	0.502E-09	0.444E-09	0.710E-09	0.904E-09	0.170E-08
IMMERSION	0.254E-01	0.225E-01	0.359E-01	0.457E-01	0.864E-01
SLOPE	0.208E-04	0.184E-04	0.295E-04	0.375E-04	0.709E-04
CURVATURE	0.227E-08	0.201E-08	0.321E-08	0.409E-08	0.774E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 11.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.256E-05	0.227E-05	0.363E-05	0.462E-05	0.873E-05
SHEAR	0.927E-09	0.821E-09	0.131E-08	0.166E-08	0.315E-08
SLOPE	0.230E-04	0.204E-04	0.326E-04	0.415E-04	0.784E-04
CURVATURE	0.369E-08	0.326E-08	0.522E-08	0.665E-08	0.125E-07

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.635E 01	0.120E 02
BENDING MOM.	0.252E 02	0.223E 02	0.356E 02	0.454E 02	0.857E 02
SHEAR	0.131E 02	0.116E 02	0.185E 02	0.236E 02	0.446E 02
IMMERSION	0.869E-01	0.769E-01	0.122E 00	0.156E 00	0.295E 00
SLOPE	0.159E 00	0.137E 00	0.220E 00	0.280E 00	0.530E 00
CURVATURE	0.363E-01	0.321E-01	0.513E-01	0.653E-01	0.123E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.308E 00	0.272E 00	0.435E 00	0.554E 00	0.104E 01
BENDING MOM.	0.446E 01	0.394E 01	0.630E 01	0.802E 01	0.151E 02
SHEAR	0.368E 01	0.326E 01	0.521E 01	0.664E 01	0.125E 02
SLOPE	0.153E-01	0.136E-01	0.217E-01	0.276E-01	0.522E-01
CURVATURE	0.641E-02	0.568E-02	0.907E-02	0.115E-01	0.218E-01

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.341E 01	0.302E 01	0.483E 01	0.615E 01	0.116E 02
BENDING MOM.	0.807E 01	0.714E 01	0.114E 02	0.145E 02	0.274E 02
SHEAR	0.238E 01	0.210E 01	0.336E 01	0.428E 01	0.809E 01
IMMERSION	0.328E 00	0.291E 00	0.464E 00	0.591E 00	0.111E 01
SLOPE	0.113E 00	0.100E 00	0.161E 00	0.205E 00	0.387E 00
CURVATURE	0.116E-01	0.102E-01	0.164E-01	0.209E-01	0.395E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.310E 00	0.274E 00	0.438E 00	0.558E 00	0.105E 01
BENDING MOM.	0.301E 01	0.266E 01	0.426E 01	0.542E 01	0.102E 02
SHEAR	0.168E 01	0.148E 01	0.237E 01	0.302E 01	0.571E 01
SLOPE	0.146E-01	0.130E-01	0.207E-01	0.264E-01	0.499E-01
CURVATURE	0.433E-02	0.384E-02	0.613E-02	0.781E-02	0.147E-01

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.334E 01	0.295E 01	0.472E 01	0.601E 01	0.113E 02
BENDING MOM.	0.560E 01	0.495E 01	0.792E 01	0.100E 02	0.190E 02
SHEAR	0.121E 01	0.107E 01	0.172E 01	0.219E 01	0.413E 01
IMMERSION	0.453E 00	0.401E 00	0.640E 00	0.815E 00	0.154E 01
SLOPE	0.102E 00	0.904E-01	0.144E 00	0.183E 00	0.347E 00
CURVATURE	0.806E-02	0.713E-02	0.113E-01	0.145E-01	0.274E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.312E 00	0.276E 00	0.441E 00	0.562E 00	0.106E 01
BENDING MOM.	0.245E 01	0.217E 01	0.347E 01	0.442E 01	0.835E 01
SHEAR	0.111E 01	0.983E 00	0.157E 01	0.199E 01	0.377E 01
SLOPE	0.143E-01	0.127E-01	0.203E-01	0.258E-01	0.488E-01
CURVATURE	0.353E-02	0.312E-02	0.499E-02	0.636E-02	0.120E-01

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.228E 02	0.202E 02	0.322E 02	0.410E 02	0.776E 02
SHEAR	0.122E 02	0.108E 02	0.173E 02	0.220E 02	0.416E 02
IMMERSION	0.741E-01	0.655E-01	0.104E 00	0.133E 00	0.251E 00
SLOPE	0.139E 00	0.123E 00	0.197E 00	0.250E 00	0.473E 00
CURVATURE	0.328E-01	0.290E-01	0.464E-01	0.591E-01	0.111E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.176E 01	0.156E 01	0.249E 01	0.318E 01	0.600E 01
BENDING MOM.	0.219E 02	0.194E 02	0.310E 02	0.394E 02	0.745E 02
SHEAR	0.178E 02	0.158E 02	0.252E 02	0.321E 02	0.607E 02
SLOPE	0.778E-01	0.689E-01	0.110E 00	0.140E 00	0.264E 00
CURVATURE	0.315E-01	0.279E-01	0.446E-01	0.567E-01	0.107E 00

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.344E 01	0.304E 01	0.486E 01	0.619E 01	0.117E 02
BENDING MOM.	0.719E 01	0.637E 01	0.101E 02	0.129E 02	0.244E 02
SHEAR	0.217E 01	0.192E 01	0.307E 01	0.391E 01	0.739E 01
IMMERSION	0.288E 00	0.255E 00	0.407E 00	0.519E 00	0.980E 00
SLOPE	0.103E 00	0.912E-01	0.145E 00	0.185E 00	0.350E 00
CURVATURE	0.103E-01	0.916E-02	0.146E-01	0.186E-01	0.352E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.177E 01	0.157E 01	0.251E 01	0.319E 01	0.603E 01
BENDING MOM.	0.146E 02	0.129E 02	0.207E 02	0.263E 02	0.498E 02
SHEAR	0.798E 01	0.706E 01	0.112E 02	0.143E 02	0.271E 02
SLOPE	0.743E-01	0.657E-01	0.105E 00	0.133E 00	0.252E 00
CURVATURE	0.211E-01	0.186E-01	0.298E-01	0.379E-01	0.717E-01

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.337E 01	0.298E 01	0.477E 01	0.608E 01	0.114E 02
BENDING MOM.	0.495E 01	0.438E 01	0.700E 01	0.891E 01	0.168E 02
SHEAR	0.109E 01	0.972E 00	0.155E 01	0.197E 01	0.373E 01
IMMERSION	0.398E 00	0.352E 00	0.563E 00	0.717E 00	0.135E 01
SLOPE	0.930E-01	0.823E-01	0.131E 00	0.167E 00	0.316E 00
CURVATURE	0.712E-02	0.630E-02	0.100E-01	0.128E-01	0.242E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.178E 01	0.158E 01	0.252E 01	0.321E 01	0.607E 01
BENDING MOM.	0.120E 02	0.106E 02	0.170E 02	0.217E 02	0.410E 02
SHEAR	0.539E 01	0.477E 01	0.763E 01	0.971E 01	0.183E 02
SLOPE	0.727E-01	0.643E-01	0.102E 00	0.130E 00	0.247E 00
CURVATURE	0.173E-01	0.153E-01	0.245E-01	0.312E-01	0.590E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.151E 02	0.134E 02	0.214E 02	0.272E 02	0.515E 02
SHEAR	0.916E 01	0.810E 01	0.129E 02	0.164E 02	0.311E 02
IMMERSION	0.385E-01	0.341E-01	0.545E-01	0.694E-01	0.131E 00
SLOPE	0.880E-01	0.779E-01	0.124E 00	0.158E 00	0.299E 00
CURVATURE	0.218E-01	0.193E-01	0.308E-01	0.392E-01	0.741E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.44 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.306E 01	0.270E 01	0.432E 01	0.550E 01	0.104E 02
BENDING MOM.	0.209E 02	0.185E 02	0.296E 02	0.377E 02	0.713E 02
SHEAR	0.164E 02	0.145E 02	0.232E 02	0.295E 02	0.558E 02
SLOPE	0.825E-01	0.730E-01	0.116E 00	0.148E 00	0.280E 00
CURVATURE	0.302E-01	0.267E-01	0.427E-01	0.543E-01	0.102E 00

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.349E 01	0.309E 01	0.494E 01	0.629E 01	0.118E 02
BENDING MOM.	0.495E 01	0.438E 01	0.700E 01	0.891E 01	0.168E 02
SHEAR	0.168E 01	0.149E 01	0.238E 01	0.303E 01	0.572E 01
IMMERSION	0.169E 00	0.150E 00	0.240E 00	0.305E 00	0.577E 00
SLOPE	0.689E-01	0.610E-01	0.975E-01	0.124E 00	0.234E 00
CURVATURE	0.712E-02	0.630E-02	0.100E-01	0.128E-01	0.242E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.306E 01	0.271E 01	0.433E 01	0.551E 01	0.104E 02
BENDING MOM.	0.134E 02	0.118E 02	0.190E 02	0.242E 02	0.457E 02
SHEAR	0.672E 01	0.594E 01	0.950E 01	0.120E 02	0.228E 02
SLOPE	0.785E-01	0.695E-01	0.111E 00	0.141E 00	0.267E 00
CURVATURE	0.193E-01	0.171E-01	0.273E-01	0.348E-01	0.657E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.346E 01	0.306E 01	0.490E 01	0.624E 01	0.117E 02
BENDING MOM.	0.319E 01	0.282E 01	0.451E 01	0.575E 01	0.108E 02
SHEAR	0.781E 00	0.691E 00	0.110E 01	0.140E 01	0.265E 01
IMMERSION	0.238E 00	0.210E 00	0.336E 00	0.428E 00	0.809E 00
SLOPE	0.630E-01	0.558E-01	0.892E-01	0.113E 00	0.214E 00
CURVATURE	0.459E-02	0.406E-02	0.650E-02	0.827E-02	0.156E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.307E 01	0.271E 01	0.434E 01	0.552E 01	0.104E 02
BENDING MOM.	0.108E 02	0.957E 01	0.152E 02	0.194E 02	0.367E 02
SHEAR	0.434E 01	0.384E 01	0.614E 01	0.782E 01	0.147E 02
SLOPE	0.766E-01	0.678E-01	0.108E 00	0.137E 00	0.260E 00
CURVATURE	0.155E-01	0.137E-01	0.220E-01	0.280E-01	0.529E-01

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.146E-05	0.129E-05	0.207E-05	0.263E-05	0.498E-05
SHEAR	0.412E-09	0.364E-09	0.583E-09	0.742E-09	0.140E-08
IMMERSION	0.250E-01	0.221E-01	0.354E-01	0.451E-01	0.852E-01
SLOPE	0.213E-04	0.189E-04	0.302E-04	0.385E-04	0.727E-04
CURVATURE	0.210E-08	0.186E-08	0.298E-08	0.379E-08	0.716E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.224E-05	0.198E-05	0.317E-05	0.403E-05	0.762E-05
SHEAR	0.705E-09	0.624E-09	0.997E-09	0.126E-08	0.239E-08
SLOPE	0.233E-04	0.206E-04	0.329E-04	0.419E-04	0.793E-04
CURVATURE	0.322E-08	0.285E-08	0.456E-08	0.580E-08	0.109E-07

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 11.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.146E-05	0.129E-05	0.207E-05	0.263E-05	0.498E-05
SHEAR	0.412E-09	0.364E-09	0.583E-09	0.742E-09	0.140E-08
IMMERSION	0.250E-01	0.221E-01	0.354E-01	0.451E-01	0.852E-01
SLOPE	0.213E-04	0.189E-04	0.302E-04	0.385E-04	0.727E-04
CURVATURE	0.210E-08	0.186E-08	0.298E-08	0.379E-08	0.716E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 11.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.224E-05	0.198E-05	0.317E-05	0.403E-05	0.762E-05
SHEAR	0.705E-09	0.624E-09	0.997E-09	0.126E-08	0.239E-08
SLOPE	0.233E-04	0.206E-04	0.329E-04	0.419E-04	0.793E-04
CURVATURE	0.322E-08	0.285E-08	0.456E-08	0.580E-08	0.109E-07

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 10.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.146E-05	0.129E-05	0.207E-05	0.263E-05	0.498E-05
SHEAR	0.412E-09	0.364E-09	0.583E-09	0.742E-09	0.140E-08
IMMERSION	0.250E-01	0.221E-01	0.354E-01	0.451E-01	0.852E-01
SLOPE	0.213E-04	0.189E-04	0.302E-04	0.385E-04	0.727E-04
CURVATURE	0.210E-08	0.186E-08	0.298E-08	0.379E-08	0.716E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO11.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.224E-05	0.198E-05	0.317E-05	0.403E-05	0.762E-05
SHEAR	0.705E-09	0.624E-09	0.997E-09	0.126E-08	0.239E-08
SLOPE	0.233E-04	0.206E-04	0.329E-04	0.419E-04	0.793E-04
CURVATURE	0.322E-08	0.285E-08	0.456E-08	0.580E-08	0.109E-07

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.250E 02	0.221E 02	0.354E 02	0.450E 02	0.851E 02
SHEAR	0.125E 02	0.111E 02	0.178E 02	0.226E 02	0.428E 02
IMMERSION	0.818E-01	0.724E-01	0.115E 00	0.147E 00	0.278E 00
SLOPE	0.167E 00	0.147E 00	0.236E 00	0.300E 00	0.568E 00
CURVATURE	0.360E-01	0.318E-01	0.509E-01	0.648E-01	0.122E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.486E 00	0.430E 00	0.688E 00	0.875E 00	0.165E 01
BENDING MOM.	0.390E 01	0.345E 01	0.552E 01	0.702E 01	0.132E 02
SHEAR	0.282E 01	0.249E 01	0.399E 01	0.508E 01	0.959E 01
SLOPE	0.160E-01	0.141E-01	0.226E-01	0.288E-01	0.544E-01
CURVATURE	0.561E-02	0.497E-02	0.794E-02	0.101E-01	0.190E-01

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.549E 01	0.486E 01	0.777E 01	0.989E 01	0.186E 02
BENDING MOM.	0.799E 01	0.707E 01	0.113E 02	0.143E 02	0.271E 02
SHEAR	0.208E 01	0.184E 01	0.294E 01	0.375E 01	0.709E 01
IMMERSION	0.327E 00	0.289E 00	0.462E 00	0.588E 00	0.111E 01
SLOPE	0.128E 00	0.113E 00	0.181E 00	0.231E 00	0.436E 00
CURVATURE	0.115E-01	0.101E-01	0.162E-01	0.207E-01	0.391E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.489E 00	0.432E 00	0.691E 00	0.880E 00	0.166E 01
BENDING MOM.	0.245E 01	0.217E 01	0.346E 01	0.441E 01	0.834E 01
SHEAR	0.111E 01	0.982E 00	0.156E 01	0.199E 01	0.377E 01
SLOPE	0.152E-01	0.134E-01	0.215E-01	0.273E-01	0.517E-01
CURVATURE	0.353E-02	0.312E-02	0.499E-02	0.635E-02	0.120E-01

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.543E 01	0.480E 01	0.768E 01	0.977E 01	0.184E 02
BENDING MOM.	0.562E 01	0.497E 01	0.795E 01	0.101E 02	0.191E 02
SHEAR	0.109E 01	0.971E 00	0.155E 01	0.197E 01	0.373E 01
IMMERSION	0.455E 00	0.403E 00	0.644E 00	0.820E 00	0.155E 01
SLOPE	0.117E 00	0.104E 00	0.166E 00	0.211E 00	0.399E 00
CURVATURE	0.809E-02	0.716E-02	0.114E-01	0.145E-01	0.275E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.491E 00	0.434E 00	0.695E 00	0.884E 00	0.167E 01
BENDING MOM.	0.205E 01	0.181E 01	0.289E 01	0.369E 01	0.697E 01
SHEAR	0.770E 00	0.681E 00	0.108E 01	0.138E 01	0.261E 01
SLOPE	0.149E-01	0.132E-01	0.211E-01	0.269E-01	0.509E-01
CURVATURE	0.295E-02	0.261E-02	0.417E-02	0.531E-02	0.100E-01

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 15.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.226E 02	0.200E 02	0.319E 02	0.407E 02	0.769E 02
SHEAR	0.117E 02	0.103E 02	0.165E 02	0.211E 02	0.399E 02
IMMERSION	0.697E-01	0.617E-01	0.985E-01	0.125E 00	0.237E 00
SLOPE	0.148E 00	0.131E 00	0.210E 00	0.268E 00	0.506E 00
CURVATURE	0.325E-01	0.288E-01	0.460E-01	0.585E-01	0.110E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.14 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.279E 01	0.247E 01	0.394E 01	0.502E 01	0.949E 01
BENDING MOM.	0.193E 02	0.171E 02	0.273E 02	0.348E 02	0.657E 02
SHEAR	0.139E 02	0.123E 02	0.196E 02	0.250E 02	0.472E 02
SLOPE	0.810E-01	0.717E-01	0.114E 00	0.145E 00	0.275E 00
CURVATURE	0.278E-01	0.246E-01	0.393E-01	0.501E-01	0.946E-01

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.551E 01	0.487E 01	0.779E 01	0.992E 01	0.187E 02
BENDING MOM.	0.709E 01	0.627E 01	0.100E 02	0.127E 02	0.241E 02
SHEAR	0.189E 01	0.167E 01	0.268E 01	0.341E 01	0.644E 01
IMMERSION	0.286E 00	0.253E 00	0.405E 00	0.515E 00	0.974E 00
SLOPE	0.115E 00	0.102E 00	0.163E 00	0.207E 00	0.392E 00
CURVATURE	0.102E-01	0.903E-02	0.144E-01	0.183E-01	0.346E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.280E 01	0.248E 01	0.396E 01	0.504E 01	0.952E 01
BENDING MOM.	0.120E 02	0.106E 02	0.170E 02	0.217E 02	0.410E 02
SHEAR	0.539E 01	0.477E 01	0.763E 01	0.971E 01	0.183E 02
SLOPE	0.769E-01	0.681E-01	0.108E 00	0.138E 00	0.261E 00
CURVATURE	0.173E-01	0.153E-01	0.245E-01	0.312E-01	0.590E-01

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.546E 01	0.483E 01	0.772E 01	0.983E 01	0.185E 02
BENDING MOM.	0.493E 01	0.436E 01	0.697E 01	0.887E 01	0.167E 02
SHEAR	0.958E 00	0.848E 00	0.135E 01	0.172E 01	0.326E 01
IMMERSION	0.398E 00	0.352E 00	0.563E 00	0.717E 00	0.135E 01
SLOPE	0.106E 00	0.939E-01	0.150E 00	0.190E 00	0.360E 00
CURVATURE	0.709E-02	0.627E-02	0.100E-01	0.127E-01	0.241E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.281E 01	0.248E 01	0.397E 01	0.506E 01	0.956E 01
BENDING MOM.	0.974E 01	0.862E 01	0.137E 02	0.175E 02	0.331E 02
SHEAR	0.350E 01	0.309E 01	0.494E 01	0.630E 01	0.119E 02
SLOPE	0.753E-01	0.666E-01	0.106E 00	0.135E 00	0.256E 00
CURVATURE	0.140E-01	0.124E-01	0.198E-01	0.252E-01	0.476E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.147E 02	0.130E 02	0.208E 02	0.265E 02	0.501E 02
SHEAR	0.840E 01	0.743E 01	0.118E 02	0.151E 02	0.285E 02
IMMERSION	0.350E-01	0.309E-01	0.494E-01	0.630E-01	0.119E 00
SLOPE	0.930E-01	0.823E-01	0.131E 00	0.167E 00	0.316E 00
CURVATURE	0.212E-01	0.187E-01	0.299E-01	0.381E-01	0.721E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.483E 01	0.427E 01	0.683E 01	0.870E 01	0.164E 02
BENDING MOM.	0.181E 02	0.160E 02	0.256E 02	0.326E 02	0.616E 02
SHEAR	0.122E 02	0.108E 02	0.173E 02	0.220E 02	0.416E 02
SLOPE	0.854E-01	0.755E-01	0.120E 00	0.153E 00	0.290E 00
CURVATURE	0.261E-01	0.231E-01	0.369E-01	0.469E-01	0.887E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.555E 01	0.491E 01	0.785E 01	0.100E 02	0.188E 02
BENDING MOM.	0.472E 01	0.417E 01	0.667E 01	0.850E 01	0.160E 02
SHEAR	0.137E 01	0.121E 01	0.194E 01	0.247E 01	0.467E 01
IMMERSION	0.167E 00	0.148E 00	0.236E 00	0.301E 00	0.568E 00
SLOPE	0.752E-01	0.665E-01	0.106E 00	0.135E 00	0.255E 00
CURVATURE	0.679E-02	0.601E-02	0.960E-02	0.122E-01	0.231E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 6.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.484E 01	0.428E 01	0.684E 01	0.871E 01	0.164E 02
BENDING MOM.	0.108E 02	0.957E 01	0.152E 02	0.194E 02	0.367E 02
SHEAR	0.434E 01	0.384E 01	0.614E 01	0.782E 01	0.147E 02
SLOPE	0.809E-01	0.716E-01	0.114E 00	0.145E 00	0.275E 00
CURVATURE	0.155E-01	0.137E-01	0.220E-01	0.280E-01	0.529E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.553E 01	0.489E 01	0.782E 01	0.996E 01	0.188E 02
BENDING MOM.	0.307E 01	0.272E 01	0.434E 01	0.553E 01	0.104E 02
SHEAR	0.628E 00	0.556E 00	0.888E 00	0.113E 01	0.213E 01
IMMERSION	0.235E 00	0.208E 00	0.332E 00	0.423E 00	0.800E 00
SLOPE	0.698E-01	0.617E-01	0.987E-01	0.125E 00	0.237E 00
CURVATURE	0.442E-02	0.391E-02	0.625E-02	0.796E-02	0.150E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.484E 01	0.429E 01	0.685E 01	0.872E 01	0.164E 02
BENDING MOM.	0.847E 01	0.749E 01	0.119E 02	0.152E 02	0.288E 02
SHEAR	0.266E 01	0.235E 01	0.376E 01	0.479E 01	0.904E 01
SLOPE	0.787E-01	0.696E-01	0.111E 00	0.141E 00	0.267E 00
CURVATURE	0.121E-01	0.107E-01	0.172E-01	0.219E-01	0.414E-01

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.120E-05	0.106E-05	0.170E-05	0.217E-05	0.410E-05
SHEAR	0.256E-09	0.227E-09	0.362E-09	0.462E-09	0.872E-09
IMMERSION	0.240E-01	0.213E-01	0.340E-01	0.433E-01	0.818E-01
SLOPE	0.222E-04	0.197E-04	0.315E-04	0.401E-04	0.758E-04
CURVATURE	0.173E-08	0.153E-08	0.245E-08	0.312E-08	0.590E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.165E-05	0.146E-05	0.233E-05	0.297E-05	0.562E-05
SHEAR	0.381E-09	0.338E-09	0.540E-09	0.687E-09	0.129E-08
SLOPE	0.237E-04	0.209E-04	0.335E-04	0.426E-04	0.805E-04
CURVATURE	0.237E-08	0.210E-08	0.336E-08	0.428E-08	0.808E-08

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.120E-05	0.106E-05	0.170E-05	0.217E-05	0.410E-05
SHEAR	0.256E-09	0.227E-09	0.362E-09	0.462E-09	0.872E-09
IMMERSION	0.240E-01	0.213E-01	0.340E-01	0.433E-01	0.818E-01
SLOPE	0.222E-04	0.197E-04	0.315E-04	0.401E-04	0.758E-04
CURVATURE	0.173E-08	0.153E-08	0.245E-08	0.312E-08	0.590E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.165E-05	0.146E-05	0.233E-05	0.297E-05	0.562E-05
SHEAR	0.381E-09	0.338E-09	0.540E-09	0.687E-09	0.129E-08
SLOPE	0.237E-04	0.209E-04	0.335E-04	0.426E-04	0.805E-04
CURVATURE	0.237E-08	0.210E-08	0.336E-08	0.428E-08	0.808E-08

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 15.80 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.120E-05	0.106E-05	0.170E-05	0.217E-05	0.410E-05
SHEAR	0.256E-09	0.227E-09	0.362E-09	0.462E-09	0.872E-09
IMMERSION	0.240E-01	0.213E-01	0.340E-01	0.433E-01	0.818E-01
SLOPE	0.222E-04	0.197E-04	0.315E-04	0.401E-04	0.758E-04
CURVATURE	0.173E-08	0.153E-08	0.245E-08	0.312E-08	0.590E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 9.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
BENDING MOM.	0.165E-05	0.146E-05	0.233E-05	0.297E-05	0.562E-05
SHEAR	0.381E-09	0.338E-09	0.540E-09	0.687E-09	0.129E-08
SLOPE	0.237E-04	0.209E-04	0.335E-04	0.426E-04	0.805E-04
CURVATURE	0.237E-08	0.210E-08	0.336E-08	0.428E-08	0.808E-08

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.999E 01	0.127E 02	0.240E 02
BENDING MOM.	0.248E 02	0.220E 02	0.351E 02	0.447E 02	0.845E 02
SHEAR	0.122E 02	0.108E 02	0.172E 02	0.220E 02	0.415E 02
IMMERSION	0.784E-01	0.694E-01	0.110E 00	0.141E 00	0.266E 00
SLOPE	0.172E 00	0.152E 00	0.244E 00	0.310E 00	0.587E 00
CURVATURE	0.357E-01	0.316E-01	0.506E-01	0.644E-01	0.121E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.616E 00	0.545E 00	0.871E 00	0.110E 01	0.209E 01
BENDING MOM.	0.363E 01	0.322E 01	0.514E 01	0.655E 01	0.123E 02
SHEAR	0.245E 01	0.216E 01	0.346E 01	0.441E 01	0.833E 01
SLOPE	0.163E-01	0.144E-01	0.230E-01	0.293E-01	0.554E-01
CURVATURE	0.523E-02	0.463E-02	0.740E-02	0.942E-02	0.178E-01

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.699E 01	0.619E 01	0.989E 01	0.125E 02	0.237E 02
BENDING MOM.	0.794E 01	0.702E 01	0.112E 02	0.142E 02	0.269E 02
SHEAR	0.196E 01	0.173E 01	0.277E 01	0.353E 01	0.667E 01
IMMERSION	0.325E 00	0.287E 00	0.460E 00	0.585E 00	0.110E 01
SLOPE	0.135E 00	0.119E 00	0.191E 00	0.243E 00	0.460E 00
CURVATURE	0.114E-01	0.101E-01	0.161E-01	0.205E-01	0.388E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.34 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.618E 00	0.547E 00	0.875E 00	0.111E 01	0.210E 01
BENDING MOM.	0.224E 01	0.198E 01	0.317E 01	0.404E 01	0.763E 01
SHEAR	0.928E 00	0.821E 00	0.131E 01	0.167E 01	0.315E 01
SLOPE	0.155E-01	0.137E-01	0.219E-01	0.279E-01	0.527E-01
CURVATURE	0.323E-02	0.285E-02	0.456E-02	0.581E-02	0.109E-01

CONFIGURATION XI AND XII

HEADING = 5.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.693E 01	0.614E 01	0.981E 01	0.124E 02	0.235E 02
BENDING MOM.	0.558E 01	0.494E 01	0.789E 01	0.100E 02	0.189E 02
SHEAR	0.100E 01	0.890E 00	0.142E 01	0.181E 01	0.342E 01
IMMERSION	0.453E 00	0.401E 00	0.640E 00	0.815E 00	0.154E 01
SLOPE	0.125E 00	0.110E 00	0.176E 00	0.225E 00	0.425E 00
CURVATURE	0.803E-02	0.711E-02	0.113E-01	0.144E-01	0.273E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 3.84 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.621E 00	0.549E 00	0.878E 00	0.111E 01	0.211E 01
BENDING MOM.	0.176E 01	0.156E 01	0.250E 01	0.318E 01	0.601E 01
SHEAR	0.571E 00	0.506E 00	0.808E 00	0.102E 01	0.194E 01
SLOPE	0.151E-01	0.134E-01	0.214E-01	0.272E-01	0.515E-01
CURVATURE	0.254E-02	0.225E-02	0.359E-02	0.458E-02	0.865E-02

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.224E 02	0.198E 02	0.317E 02	0.404E 02	0.763E 02
SHEAR	0.113E 02	0.100E 02	0.161E 02	0.205E 02	0.387E 02
IMMERSION	0.669E-01	0.592E-01	0.945E-01	0.120E 00	0.227E 00
SLOPE	0.153E 00	0.135E 00	0.217E 00	0.276E 00	0.522E 00
CURVATURE	0.322E-01	0.285E-01	0.456E-01	0.581E-01	0.109E 00

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.94 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.353E 01	0.312E 01	0.499E 01	0.636E 01	0.120E 02
BENDING MOM.	0.181E 02	0.160E 02	0.256E 02	0.326E 02	0.616E 02
SHEAR	0.121E 02	0.107E 02	0.172E 02	0.219E 02	0.414E 02
SLOPE	0.826E-01	0.731E-01	0.116E 00	0.148E 00	0.280E 00
CURVATURE	0.260E-01	0.230E-01	0.368E-01	0.469E-01	0.886E-01

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.701E 01	0.620E 01	0.991E 01	0.126E 02	0.238E 02
BENDING MOM.	0.698E 01	0.618E 01	0.987E 01	0.125E 02	0.237E 02
SHEAR	0.172E 01	0.152E 01	0.243E 01	0.310E 01	0.586E 01
IMMERSION	0.283E 00	0.250E 00	0.400E 00	0.510E 00	0.964E 00
SLOPE	0.121E 00	0.107E 00	0.171E 00	0.218E 00	0.412E 00
CURVATURE	0.100E-01	0.889E-02	0.142E-01	0.180E-01	0.341E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.354E 01	0.313E 01	0.501E 01	0.638E 01	0.120E 02
BENDING MOM.	0.106E 02	0.941E 01	0.150E 02	0.191E 02	0.361E 02
SHEAR	0.416E 01	0.370E 01	0.591E 01	0.753E 01	0.142E 02
SLOPE	0.780E-01	0.691E-01	0.110E 00	0.140E 00	0.265E 00
CURVATURE	0.153E-01	0.135E-01	0.216E-01	0.275E-01	0.520E-01

CONFIGURATION XI AND XII

HEADING = 29.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.696E 01	0.616E 01	0.984E 01	0.125E 02	0.236E 02
BENDING MOM.	0.488E 01	0.432E 01	0.690E 01	0.878E 01	0.165E 02
SHEAR	0.875E 00	0.774E 00	0.123E 01	0.157E 01	0.297E 01
IMMERSION	0.395E 00	0.350E 00	0.559E 00	0.712E 00	0.134E 01
SLOPE	0.112E 00	0.994E-01	0.158E 00	0.202E 00	0.382E 00
CURVATURE	0.702E-02	0.621E-02	0.993E-02	0.126E-01	0.238E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 4.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.355E 01	0.314E 01	0.503E 01	0.640E 01	0.120E 02
BENDING MOM.	0.846E 01	0.748E 01	0.119E 02	0.152E 02	0.287E 02
SHEAR	0.263E 01	0.233E 01	0.372E 01	0.474E 01	0.895E 01
SLOPE	0.762E-01	0.675E-01	0.107E 00	0.137E 00	0.259E 00
CURVATURE	0.121E-01	0.107E-01	0.172E-01	0.219E-01	0.413E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.143E 02	0.127E 02	0.203E 02	0.259E 02	0.489E 02
SHEAR	0.787E 01	0.697E 01	0.111E 02	0.141E 02	0.267E 02
IMMERSION	0.327E-01	0.289E-01	0.462E-01	0.588E-01	0.111E 00
SLOPE	0.954E-01	0.844E-01	0.134E 00	0.171E 00	0.324E 00
CURVATURE	0.207E-01	0.183E-01	0.292E-01	0.372E-01	0.704E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 7.54 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.612E 01	0.542E 01	0.866E 01	0.110E 02	0.208E 02
BENDING MOM.	0.167E 02	0.148E 02	0.237E 02	0.302E 02	0.571E 02
SHEAR	0.104E 02	0.929E 01	0.148E 02	0.188E 02	0.356E 02
SLOPE	0.866E-01	0.768E-01	0.122E 00	0.156E 00	0.295E 00
CURVATURE	0.241E-01	0.213E-01	0.341E-01	0.435E-01	0.821E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.704E 01	0.623E 01	0.996E 01	0.126E 02	0.239E 02
BENDING MOM.	0.459E 01	0.406E 01	0.649E 01	0.827E 01	0.156E 02
SHEAR	0.123E 01	0.109E 01	0.175E 01	0.223E 01	0.421E 01
IMMERSION	0.165E 00	0.146E 00	0.234E 00	0.297E 00	0.562E 00
SLOPE	0.782E-01	0.692E-01	0.110E 00	0.140E 00	0.266E 00
CURVATURE	0.661E-02	0.585E-02	0.935E-02	0.119E-01	0.224E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.613E 01	0.542E 01	0.866E 01	0.110E 02	0.208E 02
BENDING MOM.	0.977E 01	0.865E 01	0.138E 02	0.176E 02	0.332E 02
SHEAR	0.354E 01	0.313E 01	0.501E 01	0.638E 01	0.120E 02
SLOPE	0.821E-01	0.727E-01	0.116E 00	0.147E 00	0.279E 00
CURVATURE	0.140E-01	0.124E-01	0.198E-01	0.253E-01	0.478E-01

CONFIGURATION XI AND XII

HEADING = 59.99 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 0.00 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.702E 01	0.622E 01	0.993E 01	0.126E 02	0.239E 02
BENDING MOM.	0.301E 01	0.266E 01	0.425E 01	0.541E 01	0.102E 02
SHEAR	0.565E 00	0.500E 00	0.799E 00	0.101E 01	0.192E 01
IMMERSION	0.233E 00	0.206E 00	0.329E 00	0.419E 00	0.792E 00
SLOPE	0.730E-01	0.646E-01	0.103E 00	0.131E 00	0.248E 00
CURVATURE	0.433E-02	0.383E-02	0.612E-02	0.779E-02	0.147E-01

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 5.04 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.613E 01	0.543E 01	0.867E 01	0.110E 02	0.208E 02
BENDING MOM.	0.755E 01	0.668E 01	0.106E 02	0.136E 02	0.256E 02
SHEAR	0.211E 01	0.187E 01	0.298E 01	0.380E 01	0.718E 01
SLOPE	0.799E-01	0.707E-01	0.113E 00	0.143E 00	0.271E 00
CURVATURE	0.108E-01	0.962E-02	0.153E-01	0.195E-01	0.369E-01

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CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 0.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.106E-05	0.945E-06	0.151E-05	0.192E-05	0.363E-05
SHEAR	0.193E-09	0.171E-09	0.273E-09	0.348E-09	0.657E-09
IMMERSION	0.233E-01	0.206E-01	0.330E-01	0.420E-01	0.795E-01
SLOPE	0.227E-04	0.200E-04	0.321E-04	0.408E-04	0.772E-04
CURVATURE	0.153E-08	0.136E-08	0.217E-08	0.276E-08	0.522E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.139E-05	0.123E-05	0.196E-05	0.250E-05	0.472E-05
SHEAR	0.269E-09	0.238E-09	0.381E-09	0.485E-09	0.917E-09
SLOPE	0.238E-04	0.211E-04	0.337E-04	0.429E-04	0.811E-04
CURVATURE	0.200E-08	0.177E-08	0.282E-08	0.360E-08	0.680E-08

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 2000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.106E-05	0.945E-06	0.151E-05	0.192E-05	0.363E-05
SHEAR	0.193E-09	0.171E-09	0.273E-09	0.348E-09	0.657E-09
IMMERSION	0.233E-01	0.206E-01	0.330E-01	0.420E-01	0.795E-01
SLOPE	0.227E-04	0.200E-04	0.321E-04	0.408E-04	0.772E-04
CURVATURE	0.153E-08	0.136E-08	0.217E-08	0.276E-08	0.522E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.139E-05	0.123E-05	0.196E-05	0.250E-05	0.472E-05
SHEAR	0.269E-09	0.238E-09	0.381E-09	0.485E-09	0.917E-09
SLOPE	0.238E-04	0.211E-04	0.337E-04	0.429E-04	0.811E-04
CURVATURE	0.200E-08	0.177E-08	0.282E-08	0.360E-08	0.680E-08

CONFIGURATION XI AND XII

HEADING = 90.00 DEG.

WAVE HEIGHT = 20.00 FT.

TENSION = 4000.00 LB.

VERTICAL PLANE--

RESONANT FREQUENCIES AT 5.54 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.106E-05	0.945E-06	0.151E-05	0.192E-05	0.363E-05
SHEAR	0.193E-09	0.171E-09	0.273E-09	0.348E-09	0.657E-09
IMMERSION	0.233E-01	0.206E-01	0.330E-01	0.420E-01	0.795E-01
SLOPE	0.227E-04	0.200E-04	0.321E-04	0.408E-04	0.772E-04
CURVATURE	0.153E-08	0.136E-08	0.217E-08	0.276E-08	0.522E-08

HORIZONTAL PLANE--

RESONANT FREQUENCIES AT 0.10 0.00 0.00 0.00
(IN THE RANGE 0.10 TO 8.74 RADIANS)

QUANTITY	RMS	AVG.	3RD	10TH	MAX.
DISPLACEMENT	0.707E 01	0.625E 01	0.100E 02	0.127E 02	0.240E 02
BENDING MOM.	0.139E-05	0.123E-05	0.196E-05	0.250E-05	0.472E-05
SHEAR	0.269E-09	0.238E-09	0.381E-09	0.485E-09	0.917E-09
SLOPE	0.238E-04	0.211E-04	0.337E-04	0.429E-04	0.811E-04
CURVATURE	0.200E-08	0.177E-08	0.282E-08	0.360E-08	0.680E-08

APPENDIX C
STATIC EQUATIONS

NOTATION

A	Effective structural cross-sectional area of boom
CA	Angular (α) mooring spring constant
CB	Angular (β) mooring spring constant
C_D	Drag coefficient
CG	Distance from boom axis to center of gravity
CT	Angular (θ) mooring spring constant
CX	X direction mooring spring constant
CY	Y direction mooring spring constant
CZ	Z direction mooring spring constant
E	Modulus of elasticity
G	Shear modulus of elasticity
I_H	Horizontal boom section moment of inertia
I_V	Vertical boom section moment of inertia
J	Boom section polar moment of inertia
L	Total boom length; a characteristic length
ℓ	One half length of boom element (Fig. C-2)
MN	Bending moment in normal plane on end of boom element (Fig.C-3)
MT	Bending moment in tangential plane on end of boom element (Fig. C-3)
Q	Torque on end of boom element (Fig. C-3)
Q'	Distributed torque along boom element (Fig. C-3)
SN	Shear on end of boom element in normal plane (Fig. C-3)

SNL	Distributed shear along boom element in normal plane (Fig. C-3)
ST	Shear on end of boom element in tangential plane (Fig. C-3)
STL	Distributed shear along boom element in tangential plane (Fig. C-3)
T	Tension on end of boom element (Fig. C-3)
TL	Distributed tension along boom element (Fig. C-3)
x	Reference streamwise coordinate of end of a boom element (Fig. C-1)
y	Reference coordinate normal to streamwise direction of end of a boom element (Fig. C-1)
z	Reference vertical coordinate of end of a boom element (Fig. C-1)
α	Angle between x-z plane and projection of end of boom element on the water surface (x-y plane) (Fig. C-1)
β	Angle between boom element and water surface (x-y plane) (Fig. C-1)
η	Linear deflection of boom element in the normal plane (Fig. C-2)
$\Delta\beta$	Change in β (angular deflection) in one-half the length of a boom element (Fig. C-2)
$\Delta\theta$	Change in θ (torsional deflection) in one half the length of a boom element (Fig. C-2)
$\Delta\Phi$	Change in Φ (angular deflection) in one half the length of a boom element (Fig. C-2)

δ Linear deflection of end of boom element in the tangential plane (Fig. C-2)

σ Torsional deflection (Roll angle) of boom element (Fig. C-2)

ϕ Angle between x-z plane and end of boom element

ρ Axial elongation in one half of boom element (Fig. C-2)

Subscripts

i i'th element on boom

1 first element of boom

k last element of boom

The numerical solution for the loads and configuration of an oil retention boom under conditions of steady wind and current requires the simultaneous solution of four types of equations. These equations are described in the following paragraphs.

The forces, moments, and geometry are defined in Figures C-1, C-2 and C-3 for a typical element of the boom. The four types of equations and their basic functions are listed below.

(1) "Equilibrium" equations: These equations relate the forces and moments on one end of an element to the forces and moments on the other end of the element in terms of the deflections and the applied loads.

$$(T_i + T_{i+1}) \cos \Delta\beta_i \cos \Delta\Phi_i - 2\ell\, TL + (ST_i + ST_{i+1})\Delta\beta_i + (SN_i + SN_{i+1})\, \Delta\Phi_i = 0 \qquad (C\text{-}1)$$

$$(SN_i - SN_{i+1}) \cos \Delta\Phi_i - 2\ell\, SNL - (T_i + T_{i+1})\, \Delta\Phi_i = 0 \qquad (C\text{-}2)$$

$$(ST_i - ST_{i+1}) \cos \Delta\beta_i - 2\ell\, STL - (T_i + T_{i+1})\, \Delta\beta_i = 0 \qquad (C\text{-}3)$$

$$(M_i - M_{i+1}) \cos \Delta\beta_i \cos \Delta\Phi_i - 2\ell\, QL + (MT_i + MT_{i+1})\, \Delta\beta_i - (MN_i + MN_{i+1})\, \Delta\Phi_i = 0 \qquad (C\text{-}4)$$

$$(MN_i - MN_{i+1}) \cos \Delta\Phi_i - (ST_i + ST_{i+1})\, \ell + (Q_i + Q_{i+1})\, \Delta\Phi_i = 0 \tag{C-5}$$

$$(MT_i - MT_{i+1}) \cos \Delta\beta_i - (SN_i + SN_{i+1})\, \ell - (Q_i + Q_{i+1})\, \Delta\beta_i = 0 \tag{C-6}$$

The distributed loading along the boom (SNL acting normal to the vertical reference plane and STL acting tangential to the vertical reference plane) is assumed to be uniformally distributed along the length of the element.

(2) "Deflection" equations: These equations express the deflections of each element in terms of the applied loads and the forces and moments on the ends.

$$\rho_i = \frac{1}{2} \frac{\ell}{EA} (T_i + T_{i+1}) \tag{C-7}$$

$$\delta_i = \frac{1}{2}\, \ell \cdot \Delta\beta_i \tag{C-8}$$

$$\gamma_i = \frac{1}{2}\, \ell \cdot \Delta\Phi_i \tag{C-9}$$

$$\Delta\theta_i = \frac{1}{2} \frac{\ell}{GV} (Q_i + Q_{i+1}) \tag{C-10}$$

$$\Delta\beta_i \cdot \left\{ 2 - \frac{1}{6} \frac{\ell^2}{EI_V} (T_i + T_{i+1}) \right\} =$$

$$\frac{\ell}{EI_V} (MN_i + MN_{i+1})$$

$$- \frac{1}{2} \frac{\ell^2}{EI_V} (ST_i - ST_{i+1}) \cos \Delta\beta_i$$

$$+ \frac{1}{3} \frac{\ell^3}{EI_V} STL \qquad \text{(C-11)}$$

$$\Delta\Phi_i \cdot \left\{ 2 - \frac{1}{6} \frac{\ell^2}{EI_H} (T_i + T_{i+1}) \right\} =$$

$$\frac{\ell}{EI_H} (MT_i + MT_{i+1})$$

$$- \frac{1}{2} \frac{\ell^2}{EI_H} (SN_i - SN_{i+1}) \cos \Delta\Phi_i$$

$$+ \frac{1}{3} \frac{\ell^3}{EI_H} SNL \qquad \text{(C-12)}$$

Equations (C-8) and (C-9) assume that each element has a circular arc deflection curve. This assumption is necessary to make the tension terms in the deflection and equilibrium equations compatible in the limiting case of a boom with zero stiffness.

(3) "Shape" equations: These equations relate the position of one end of each element to the position of the other end in terms of its angular position and the deflections within the element. They determine that the end of each element has the same position and orientation in space as the adjacent end of the mating element (i.e., the boom forms a smooth continuous curve).

$$x_{i+1} - x_i = (\ell+\rho_i)(\cos\beta_i \cos\alpha_i + \cos\beta_{i+1} \cos\alpha_{i+1}) \qquad \text{(C-13)}$$

$$y_{i+1} - y_i = (\ell+\rho_i)(\cos\beta_i \sin\alpha_i + \cos\beta_{i+1} \sin\alpha_{i+1}) \qquad \text{(C-14)}$$

$$z_{i+1} - z_i = (\ell+\rho_i)(\sin\beta_i + \sin\beta_{i+1}) \qquad \text{(C-15)}$$

$$\theta_{i+1} - \theta_i = 2\Delta\theta_i \qquad \text{(C-16)}$$

$$\beta_{i+1} - \beta_i = 2\Delta\beta_i \qquad \text{(C-17)}$$

$$\alpha_{i+1} - \alpha_i = \Delta\Phi_i\ (\sec\beta_i + \sec\beta_{i+1}) \qquad \text{(C-18)}$$

(4) "Boundary Condition" equations: These equations relate the forces and moments on the ends of the boom to their location and orientation in space. The equations for the free end of the first element are:

$$T_1 \cos \alpha_1 \cos \beta_1 - SN_1 \sin \alpha_1 - ST_1 \cos \alpha_1 \sin \beta_1 = (x_1 - \hat{x}_1)\, CX_1 \qquad \text{(C-19)}$$

$$SN_1 \cos \alpha_1 + T_1 \sin \alpha_1 \cos \beta_1 - ST_1 \sin \alpha_1 \sin \beta_1 = (y_1 - \hat{y}_1)\, CY_1 \qquad \text{(C-20)}$$

$$ST_1 \cos \beta_1 + T_1 \sin \beta_1 = (z_1 - \hat{z}_1)\, CZ_1 \qquad \text{(C-21)}$$

$$Q_1 = (\theta_1 - \hat{\theta}_1)\, CT_1 \qquad \text{(C-22)}$$

$$MN_1 = (\beta_1 - \hat{\beta}_1)\, CB_1 \qquad \text{(C-23)}$$

$$MT_1 \cos \beta_1 + Q_1 \sin \beta_1 = (\alpha_1 - \hat{\alpha}_1)\, CA_1 \qquad \text{(C-24)}$$

where CX, CY, CZ, CT, CB and CA are the mooring spring constants in the x, y, z, θ, β, α directions repsectively. Initial (zero force) positions of the moorings are specified as $\hat{x}_1$, $\hat{y}_1$, $\hat{z}_1$, $\hat{\theta}$, $\hat{\beta}_1$ and $\hat{\alpha}_1$. The subscript 1 refers to the free end of the 1' st element.

Boundary conditions for the free end of the last element have the same form as the above equations but have the opposite sign on the right hand terms.

All of the above equations may be expressed as a linear, small amplitude perturbation about an assumed solution. The resulting "expanded" equation include the derivatives of all the applied load functions with respect to boom position. These are needed to ensure a stable set of equations and are evaluated at the mid-point of each element. The expanded equations are presented below. Terms marked ($\bar{\ }$) are assumed values and are obtained from the previous iteration. They form the basis for the linear expansion.

Equilibrium Equations

$$
\begin{aligned}
&(T_i - T_{i+1}) \cos \Delta\bar{\beta}_i \cos \Delta\bar{\Phi}_i + (\bar{T}_i - \bar{T}_{i+1})(\Delta\bar{\beta}_i - \Delta\beta_i) \sin \overline{\Delta\beta}_i \cos \overline{\Delta\Phi}_i \\
&\quad + (\overline{T_i} - \overline{T_{i+1}})(\Delta\bar{\Phi}_i - \Delta\Phi_i) \cos \Delta\bar{\beta}_i \sin \Delta\bar{\Phi}_i + (ST_i + ST_{i+1}) \overline{\Delta\beta}_i \\
&\quad - (\overline{ST}_i + \overline{ST}_{i+1})(\overline{\Delta\beta}_i - \Delta\beta_i) + (SN_i + SN_{i+1}) \overline{\Delta\Phi}_i \\
&\quad - (\overline{SN}_i + \overline{SN}_{i+1})(\Delta\bar{\Phi}_i - \Delta\Phi_i) \\
&\quad + [(\bar{z}_i - z_i) + (\bar{z}_{i+1} - z_{i+1})]\, \ell \cdot \frac{dTL}{dz} \\
&\quad + [(\bar{\theta}_i - \theta_i) + (\bar{\theta}_{i+1} - \theta_{i+1})]\, \ell \cdot \frac{dTL}{d\theta} \\
&\quad + [(\bar{\beta}_i - \beta_i) + (\bar{\beta}_{i+1} - \beta_{i+1})]\, \ell \cdot \frac{dTL}{d\beta} \\
&\quad + [(\bar{\alpha}_i - \alpha_i) + (\bar{\alpha}_{i+1} - \alpha_{i+1})]\, \ell \cdot \frac{dTL}{d\beta} - 2\ell \cdot TL = 0 \qquad (C\text{-}25)
\end{aligned}
$$

$$
\begin{aligned}
&(SN_i - SN_{i+1}) \cos \overline{\Delta\Phi}_i + \\
&(\overline{SN}_i - \overline{SN}_{i+1})(\Delta\overline{\Phi}_i - \Delta\Phi_i) \sin \Delta\overline{\Phi}_i \\
&\quad - (T_i + T_{i+1})\Delta\overline{\Phi}_i + (\overline{T}_i + \overline{T}_{i+1})(\Delta\overline{\Phi}_i - \Delta\Phi_i) \\
&\quad + [(\overline{z}_i - z_i) + (\overline{z}_{i+1} - z_{i+1})]\, \ell \cdot \frac{dSNL}{dz} \\
&\quad + [(\overline{\theta}_i - \theta_i) + (\overline{\theta}_{i+1} - \theta_{i+1})]\, \ell \cdot \frac{dSNL}{d\theta} \\
&\quad + [(\overline{\beta}_i - \beta_i) + (\overline{\beta}_{i+1} - \beta_{i+1})]\, \ell \cdot \frac{dSNL}{d\beta} \\
&\quad + [(\overline{\alpha}_i - \alpha_i) + (\overline{\alpha}_{i+1} - \alpha_{i+1})]\, \ell \cdot \frac{dSNL}{d\alpha} \\
&\quad - 2\lambda \cdot SNL = 0 \qquad (C\text{-}26)
\end{aligned}
$$

$$
\begin{aligned}
&(ST_i - ST_{i+1}) \cos \overline{\Delta\beta} \\
&\quad + (\overline{ST}_i - \overline{ST}_{i+1})(\Delta\overline{\beta}_i - \Delta\beta_i) \sin \Delta\overline{\beta}_i \\
&\quad - (T_i + T_{i+1})\, \Delta\overline{\beta}_i + (\overline{T}_i + \overline{T}_{i+1})(\Delta\overline{\beta}_i - \Delta\beta_i) \\
&\quad + [(\overline{z}_i - z_i) + (\overline{z}_{i+1} - z_{i+1})]\, \ell \cdot \frac{dSTL}{dz} \\
&\quad + [(\overline{\theta}_i - \theta_i) + (\overline{\theta}_{i+1} - \theta_{i+1})]\, \ell \cdot \frac{dSTL}{d\theta} \\
&\quad + [(\overline{\beta}_i - \beta_i) + (\overline{\beta}_{i+1} - \beta_{i+1})]\, \ell \cdot \frac{dSTL}{d\beta} \\
&\quad + [(\overline{\alpha}_i - \alpha_i) + (\overline{\alpha}_{i+1} - \alpha_{i+1})]\, \ell \cdot \frac{dSTL}{d\alpha} \\
&\quad - 2\ell \cdot STL = 0
\end{aligned}
\tag{C-27}
$$

$$
\begin{aligned}
&(Q_i - Q_{i+1}) \cos \Delta\bar{\beta}_i \cos \Delta\bar{\Phi}_i \\
&\quad + (\bar{Q}_i - \bar{Q}_{i+1})(\Delta\bar{\beta}_i - \Delta\beta_i) \sin \Delta\bar{\beta}_i \cos \Delta\bar{\Phi}_i \\
&\quad + (\bar{Q}_i - Q_{i+1})(\Delta\bar{\Phi}_i - \Delta\Phi_i) \cos \Delta\bar{\beta}_i \sin \Delta\bar{\Phi}_i \\
&\quad + (MT_i + MT_{i+1}) \Delta\bar{\beta}_i - (\overline{MT}_i + \overline{MT}_{i+1})(\Delta\bar{\beta}_i - \Delta\beta_i) \\
&\quad - (MN_i + MN_{i+1}) \overline{\Delta\Phi}_i + (\overline{MN}_i + \overline{MT}_{i+1})(\Delta\bar{\Phi}_i - \Delta\Phi_i) \\
&\quad + [(\bar{z}_i - z_i) + (\bar{z}_{i+1} - z_{i+1})] \, \ell \cdot \frac{dQL}{dz} \\
&\quad + [(\bar{\theta}_i - \theta_i) + (\bar{\theta}_{i+1} - \theta_{i+1})] \, \ell \cdot \frac{dQL}{d\theta} \\
&\quad + [(\bar{\beta}_i - \beta_i) + (\bar{\beta}_{i+1} - \beta_{i+1})] \, \ell \cdot \frac{dQL}{d\beta} \\
&\quad + [(\bar{\alpha}_i - \alpha_i) + (\bar{\alpha}_{i+1} - \alpha_{i+1})] \, \ell \cdot \frac{dQL}{d\beta} \\
&\quad - 2\ell \cdot QL = 0
\end{aligned}
\tag{C-28}
$$

$$(MN_i - MN_{i+1}) \cos \overline{\Delta\Phi}_i$$

$$+ (\overline{MN}_i - \overline{MN}_{i+1})(\overline{\Delta\Phi}_i - \Delta\Phi_i) \sin \overline{\Delta\Phi}_i$$

$$+ (Q_i + Q_{i+1})\overline{\Delta\Phi}_i - (\overline{Q}_i + \overline{Q}_{i+1})(\overline{\Delta\Phi}_i - \Delta\Phi_i)$$

$$- (ST_i + ST_{i+1})\, \ell = 0 \qquad \text{(C-29)}$$

$$(MT_i - MT_{i+1}) \cos \overline{\Delta\beta}_i$$

$$+ (\overline{MN}_i - \overline{MN}_{i+1})(\overline{\Delta\beta}_i - \Delta\beta_i) \sin \overline{\Delta\beta}_i$$

$$- (Q_i + Q_{i+1})\, \overline{\Delta\beta}_i - (\overline{Q}_i + \overline{Q}_{i+1})\, (\overline{\Delta\beta}_i - \Delta\beta_i)$$

$$- (SN_i + SN_{i+1})\, \ell = 0 \qquad \text{(C-30)}$$

Deflection Equations

$$2\rho_i EA = \ell\, (T_i + T_{i+1}) \qquad \text{(C-31)}$$

$$2\delta_i = \ell \Delta\beta_i \qquad \text{(C-32)}$$

$$2\gamma_i = \ell \Delta\Phi_i \qquad \text{(C-33)}$$

$$2\Delta\theta_i\, GJ = \ell (Q_i + Q_{i+1}) \qquad \text{(C-34)}$$

$$
\begin{aligned}
12\Delta\beta_i \, EI_v = \; & \\
& \ell^2 \left[(T_i + T_{i+1}) \, \Delta\bar{\beta}_i - (\bar{T}_i + \bar{T}_{i+1})(\Delta\bar{\beta}_i - \Delta\beta_i) \right] \\
& - 3\ell^2 \left[(ST_i - ST_{i+1}) \cos \overline{\Delta\beta}_i \right. \\
& \left. + (\overline{ST}_i - \overline{ST}_{i+1})(\Delta\bar{\beta}_i - \Delta\beta_i) \sin \Delta\bar{\beta}_i \right] \\
& + 6\ell \, (MN_i + MN_{i+1}) \\
& - 2\ell^3 \left[(\bar{z}_i - z_i) + (\bar{z}_{i+1} - z_{i+1}) \right] \frac{dSTL}{dz} \\
& - 2\ell^3 \left[(\bar{\theta}_i - \theta_i) + (\bar{\theta}_{i+1} - \theta_{i+1}) \right] \frac{dSTL}{d\theta} \\
& - 2\ell^3 \left[(\bar{\beta}_i - \beta_i) + (\bar{\beta}_{i+1} - \beta_{i+1}) \right] \frac{dSTL}{d\beta} \\
& - 2\ell^3 \left[(\bar{\alpha}_i - \alpha_i) + (\bar{\alpha}_{i+1} - \alpha_{i+1}) \right] \frac{dSTL}{d\alpha} \\
& + 2\ell^3 \; STL
\end{aligned}
\tag{C-35}
$$

$$
\begin{aligned}
12\Delta\Phi_i \, EI_H = \; & \\
& \ell^2[(T_i + T_{i+1})\Delta\bar{\Phi}_i - (\bar{T}_i + \bar{T}_{i+1})(\Delta\bar{\Phi}_i - \Delta\Phi_i)] \\
& - 3\ell^2[(SN_i - SN_{i+1}) \cos \Delta\bar{\Phi}_i \\
& + (\overline{SN}_i - \overline{SN}_{i+1})(\Delta\bar{\Phi}_i - \Delta\Phi_i) \sin \Delta\bar{\Phi}_i] \\
& + 6\ell \, (MT_i + MT_{i+1}) \\
& - 2\ell^3 \, [(\bar{z}_i - z_i) + (\bar{z}_{i+1} - z_{i+1})] \frac{dSNL}{dz} \\
& - 2\ell^3 \, [(\bar{\theta}_i - \theta_i) + (\bar{\theta}_{i+1} - \theta_{i+1})] \frac{dSNL}{d\theta} \\
& - 2\ell^3 \, [(\bar{\beta}_i - \beta_i) + (\bar{\beta}_{i+1} - \beta_{i+1})] \frac{dSNL}{d\beta} \\
& - 2\ell^3 \, [(\bar{\alpha}_i - \alpha_i) + (\bar{\alpha}_{i+1} - \alpha_{i+1})] \frac{dSNL}{d\alpha} \\
& + 2\ell^3 \cdot SNL
\end{aligned}
\tag{C-36}
$$

Shape Equations

$$x_{i+1} - x_i = (\ell + \rho_i)(\cos \bar{\beta}_i \cos \bar{\alpha}_i + \cos \bar{\beta}_{i+1} \cos \bar{\alpha}_{i+1})$$

$$+ (\ell + \bar{\rho}_i)(\bar{\beta}_i - \beta_i) \sin \bar{\beta}_i \cos \bar{\alpha}_i$$

$$+ (\ell + \bar{\rho}_i)(\bar{\beta}_{i+1} - \beta_{i+1}) \sin \bar{\beta}_{i+1} \cos \bar{\alpha}_{i+1}$$

$$+ (\ell + \bar{\rho}_i)(\bar{\alpha}_i - \alpha_i) \cos \bar{\beta}_i \sin \bar{\alpha}_i$$

$$+ (\ell + \bar{\rho}_i)(\bar{\alpha}_{i+1} - \alpha_{i+1}) \cos \bar{\beta}_{i+1} \sin \bar{\alpha}_{i+1} \qquad \text{(C-37)}$$

$$y_{i+1} - y_i = (\ell + \rho_i)(\cos \bar{\beta}_i \sin \bar{\alpha}_i + \cos \bar{\beta}_{i+1} \sin \bar{\alpha}_{i+1})$$

$$+ (\ell + \bar{\rho}_i)(\bar{\beta}_i - \beta_i) \sin \bar{\beta}_i \sin \bar{\alpha}_i$$

$$+ (\ell + \bar{\rho}_i)(\bar{\beta}_{i+1} - \beta_{i+1}) \sin \bar{\beta}_{i+1} \sin \bar{\alpha}_{i+1}$$

$$- (\ell + \bar{\rho}_i)(\bar{\alpha}_i - \alpha_i) \cos \bar{\beta}_i \cos \bar{\alpha}_i$$

$$- (\ell + \bar{\rho}_i)(\bar{\alpha}_{i+1} - \alpha_{i+1}) \cos \bar{\beta}_{i+1} \cos \bar{\alpha}_{i+1} \qquad \text{(C-38)}$$

$$z_{i+1} - z_i = (\ell + \rho_i)(\sin \bar{\beta}_i + \sin \bar{\beta}_{i+1})$$

$$- (\ell + \bar{\rho}_i)[(\bar{\beta}_i - \beta_i) \cos \bar{\beta}_i$$

$$+ (\bar{\beta}_{i+1} - \beta_{i+1}) \cos \bar{\beta}_{i+1}] \qquad \text{(C-39)}$$

$$\theta_{i+1} - \theta_i = 2\Delta\theta_i \qquad \text{(C-40)}$$

$$\beta_{i+1} - \beta_i = 2\Delta\beta_i \qquad \text{(C-41)}$$

$$\alpha_{i+1} - \alpha_i = (\Delta\Phi_i - \Delta\bar{\Phi}_i)(\sec \bar{\beta}_i + \sec \bar{\beta}_{i+1})$$

$$+ \Delta\bar{\Phi}_i [\cos \bar{\beta}_i + (\bar{\beta}_i - \beta_i) \sin \bar{\beta}_i]^{-1}$$

$$+ \Delta\bar{\Phi}_i [\cos \bar{\beta}_{i+1} + (\bar{\beta}_{i+1} - \beta_{i+1}) \sin \bar{\beta}_i]^{-1} \qquad \text{(C-42)}$$

Boundary Conditions

$$
\begin{aligned}
T_1 \cos \bar{\alpha}_1 \cos \bar{\beta}_1 &+ \bar{T}_1 (\bar{\alpha}_1 - \alpha_1) \sin \bar{\alpha}_1 \cos \bar{\beta}_1 \\
&+ \bar{T}_1 (\bar{\beta}_1 - \beta_1) \cos \bar{\alpha}_1 \sin \bar{\beta}_1 \\
&- SN_1 \sin \bar{\alpha}_1 + \overline{SN}_1 (\bar{\alpha}_1 - \alpha_1) \cos \bar{\alpha}_1 \\
&- ST_1 \cos \bar{\alpha}_1 \sin \bar{\beta}_1 \\
&- \overline{ST}_1 (\bar{\alpha}_1 - \alpha_1) \sin \bar{\alpha}_1 \sin \bar{\beta}_1 \\
&+ \overline{ST}_1 (\bar{\beta}_1 - \beta_1) \cos \bar{\alpha}_1 \cos \bar{\beta}_1 \\
&= (x_1 - \hat{x}_1) CX_1 \qquad \text{(C-43)}
\end{aligned}
$$

$$
\begin{aligned}
SN_1 \cos \bar{\alpha}_1 &+ \overline{SN}_1 (\bar{\alpha}_1 - \alpha_1) \sin \bar{\alpha}_1 + T_1 \sin \bar{\alpha}_1 \cos \bar{\beta}_1 \\
&- \bar{T}_1 (\bar{\alpha}_1 - \alpha_1) \cos \bar{\alpha}_1 \cos \bar{\beta}_1 \\
&+ \bar{T}_1 (\bar{\beta}_1 - \beta_1) \sin \bar{\alpha}_1 \sin \bar{\beta}_1 \\
&- ST_1 \sin \bar{\alpha}_1 \sin \bar{\beta}_1 + \overline{ST}_1 (\bar{\alpha}_1 - \alpha_1) \cos \bar{\alpha}_1 \sin \bar{\beta}_1 \\
&+ \overline{ST}_1 (\bar{\beta}_1 - \beta_1) \sin \bar{\alpha}_1 \cos \bar{\beta}_1 \\
&= (y_1 - \hat{y}_1) CY_1 \qquad \text{(C-44)}
\end{aligned}
$$

$$ST_1 \cos \bar{\beta}_1 + \overline{ST}_1 (\bar{\beta}_1 - \beta_1) \sin \bar{\beta}_1$$

$$+ T_1 \sin \bar{\beta}_1 - \bar{T}_1 (\bar{\beta}_1 - \beta_1) \cos \bar{\beta}_1$$

$$= (z_1 - \hat{z}_1) CZ_1 \qquad \text{(C-45)}$$

$$Q_1 = (\theta_1 - \hat{\theta}_1) CT_1 \qquad \text{(C-46)}$$

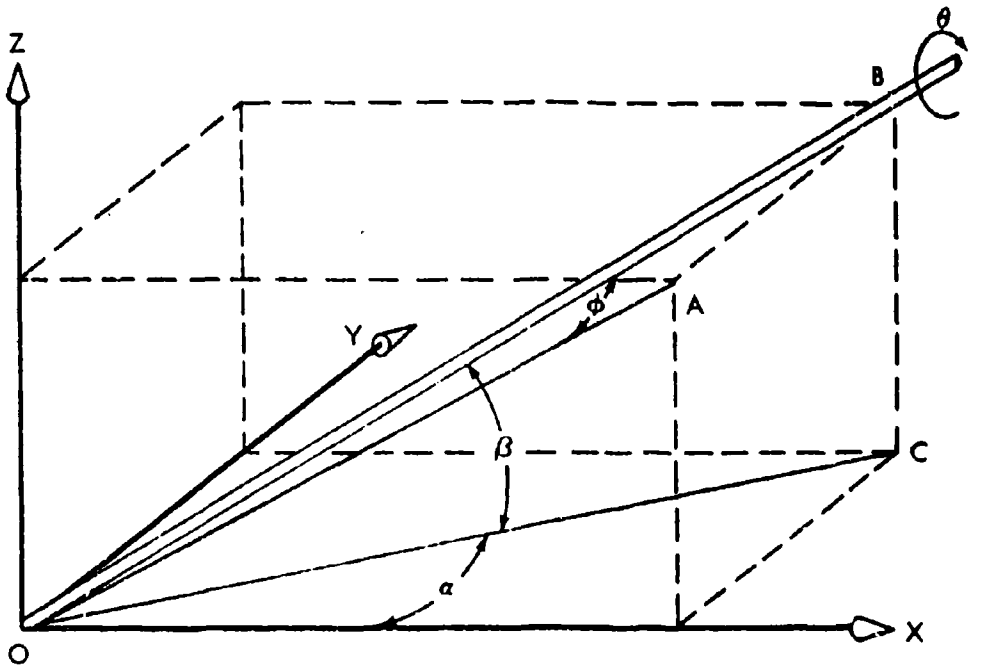
$$MN_1 = (\beta_1 - \hat{\beta}_1) CB_1 \qquad \text{(C-47)}$$

$$MT_1 \cos \bar{\beta}_1 + \overline{MT}_1 (\bar{\beta}_1 - \beta_1) \sin \bar{\beta}_1$$

$$+ Q_1 \sin \bar{\beta}_1 - \bar{Q}_1 (\bar{\beta}_1 - \beta_1) \cos \bar{\beta}_1$$

$$= (\alpha_1 - \hat{\alpha}_1) CA_1 \qquad \text{(C-48)}$$

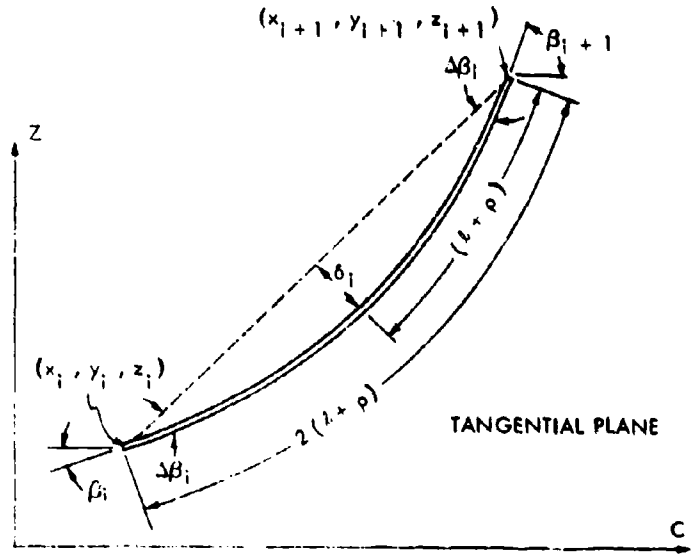
The numerical solution of these equations is carried out on an IBM 1130 digital computer. They have been arranged in matrix form and are solved using Gauss' reduction method (Reference 1). Because of the necessity of expanding non-linear terms, an iterative calculation procedure is required. The calculations for the hydrodynamic loads on the boom (TL, SNL, STL, QL) are based on the boom position in the previous iteration. The calculated position from the previous iteration thus forms the assumed position for the expansion in each successive iteration.



PLANE O-A-B IS "NORMAL PLANE"

PLANE O-B-C IS "TANGENTIAL PLANE"

FIGURE C-1 - DEFINITION SKETCH OF COORDINATE SYSTEM



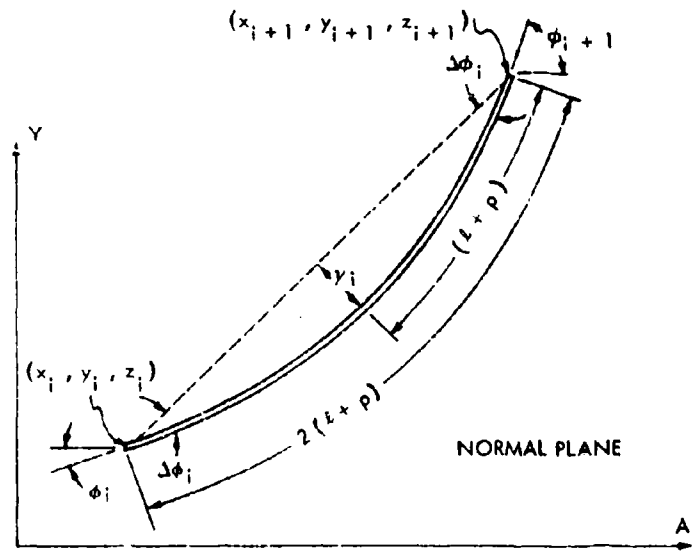
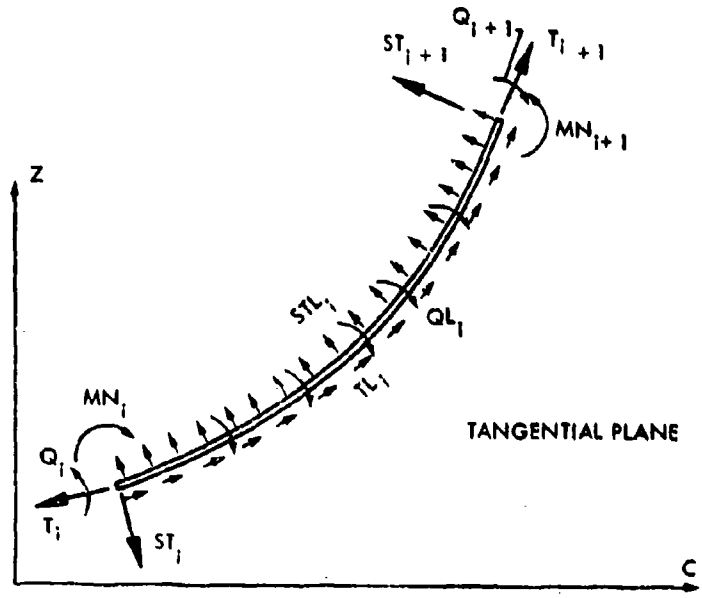


FIGURE C-2 - DEFINITION SKETCH OF GEOMETRY OF TYPICAL BOOM ELEMENT



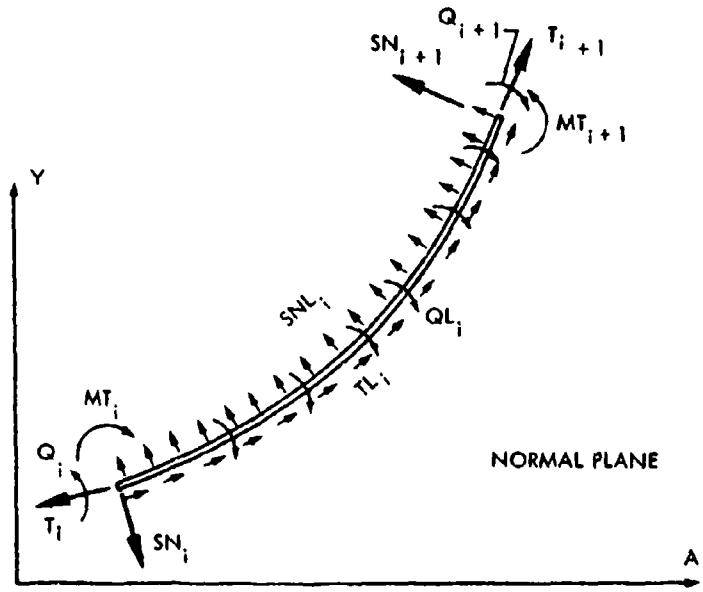


FIGURE C-3 - DEFINITION SKETCH OF FORCES AND MOMENTS ON A TYPICAL BOOM ELEMENT

APPENDIX D
DYNAMIC EQUATIONS

The following paragraphs provide a brief description of the method currently in use for analysis of the dynamic performance of an oil retention boom in a seaway.

The Seaway

The seaway is assumed to be made up of a spectrum of longcrested, sinusoidal waves. Therefore, in the boom coordinate system the unit amplitude wave potential, Φ_W may be expressed as

$$\Phi_W = c\, e^{-k_o z + i[\omega t - k_o(x \cos\theta + y \sin\theta)]} \qquad \text{(D-1)}$$

where

c = wave speed, ft-sec^{-1}, $= \omega/k_o = \sqrt{g/k_o}$

k_o = wave number, ft^{-1}, $= 2\pi/\lambda = \omega^2/g$

z = vertical position coordinate measured from the mean water surface (positive down), ft

ω = wave frequency, rad-sec^{-1}

t = time, sec

x = position coordinate on the mean free surface and parallel to the boom axis, ft

y = position coordinate on the mean free surface and normal to the boom axis, ft

θ = angle between the boom axis and direction of wave propagation, rad

λ = wave length, ft

The unit amplitude wave particle velocities in the x, y, and z directions are given by the partial derivatives $\partial\varphi_W/\partial x$, $\partial\varphi_W/\partial y$, and $\partial\varphi_W/\partial z$, respectively. Similarly, particle accelerations in these three directions are given by $\partial^2\varphi_W/\partial t\partial x$, $\partial^2\varphi_W/\partial t\partial y$, and $\partial^2\varphi_W/\partial t\partial z$. The unit amplitude postion of the free surface, ξ, is given by

$$\frac{1}{g}\left.\frac{\partial\Phi_W}{\partial t}\right|_{z=0} = \frac{ic\omega}{g}e^{i[\omega t - k_o(x\cos\theta + y\sin\theta)]} \qquad (D\text{-}2)$$

It is convenient to focus attention to the point x = 0, y = 0. Then, Equation (D-2) reduces to

$$\xi = ie^{i\omega t}, \text{ ft per ft of wave amplitude} \qquad (D\text{-}3)$$

The motion equations in the vertical (heave) and horizontal (sway) planes are generally similar, but are discussed separately to point out important differences.

Motion Equations on the Vertical Plane

The oil boom is treated as a continuous elastic beam floating on the water surface. The governing differential equation is:

$$EI\frac{\partial^4 w}{\partial x^4} - T\frac{\partial^2 w}{\partial x^2} + M\frac{\partial^2 w}{\partial t^2} = P_W - P_H \qquad (D\text{-}4)$$

where

E = modulus of elasticity, lb-ft^{-2}

I = boom section moment of inertia, ft^4

T = tension, lb

M = boom mass per unit length, lb-sec^2-ft^{-2}

w = vertical displacement of the boom, ft

P_W = hydrodynamic loading per unit length on a straight boom due to waves, lb-ft^{-1}

P_H = hydrodynamic loading per unit length on a deflected boom in still water, lb-ft^{-1}

Note that the right hand side of Equation (D-4) ($P_W - P_H$) is the combined hydrodynamic loading on a moving boom in a moving sea.

P_W and P_H can be expressed as

$$P_W = \frac{K}{g} \frac{\partial \varphi_W}{\partial t}\bigg|_{z=0} + (m^* + m') \frac{\partial^2 \varphi_W}{\partial t \partial z} + \delta \frac{\partial \varphi}{\partial z} \qquad (D\text{-}5)$$

$$P_H = m' \frac{\partial^2 w}{\partial t^2} + \delta \frac{\partial w}{\partial t} + Kw \qquad (D\text{-}6)$$

where

K = buoyant stiffness per unit length of the boom due to its waterplane area, lb-ft^{-2}

m^*= mass of the displanced water per unit length of boom = M

m' = added mass per unit length, lb-sec^2-ft^{-2}

δ = boom damping coefficient per unit length, lb-sec-ft^{-2}

Hydrodynamic coefficients which may be approximated by formulae found in the literature concerning ship motions are added mass m', damping δ, and buoyant stiffness K:

$$m' \approx \frac{\pi}{8} \rho B^{*2}$$

$$\delta \approx \frac{\rho g^2}{\omega^3} \left(\frac{\omega^2 B^*}{g} \right)^2$$

$$K \approx \rho g B^* \qquad \text{(D-7)}$$

where

ρ = mass density of water, lb-sec^2-ft^{-4}

B^* = beam at the waterline, ft

The vertical displacement of the boom, w, is assumed to have the form

$$w = (a + ib)\, e^{i(\omega t - k_x x - k_y y)} \qquad \text{(D-8)}$$

The preceding equations are used to obtain:

$$(a + ib) \left[EI\, k_x^4 + Tk_x^2 + K + i\delta\omega - (m + m')\, \omega^2 \right] e^{i(\omega t - k_x x - k_y y)}$$

$$= \left\{ i \left[K - (m^* + m')\, e^{-k_o z_\ell} \omega^2 \right] - \delta e^{-k_o z_\ell} \omega \right\} \cdot e^{i(\omega t - k_x x - k_y y)} \qquad \text{(D-9)}$$

where

$k_x = k_o \cos \theta$

$k_y = k_o \sin \theta$

z_ℓ = "effective" hydrodynamic depth, ft.

The term z_ℓ replaces z in Equation (D-1); z accounts for the reduction, with depth, of orbital velocity in water waves. The effective depth z_ℓ is approximately one-half the boom draft.

The real and imaginary parts of Equation (D-8) are separated to determine the quantities a and b, the "in-phase" and "out-of-phase" components of the boom response.

$$a = \frac{\left[-\Omega + Ke^{k_o z_\ell} - (m^* + m')\omega^2\right] \delta\omega e^{-k_o z_\ell}}{\left[\Omega^2 + (\delta\omega)^2\right]} \qquad \text{(D-10)}$$

$$b = \frac{\left\{\Omega\left[Ke^{k_o z_\ell} - (m^* + m')\omega^2\right] + (\delta\omega)^2\right\} e^{-k_o z_\ell}}{\left[\Omega^2 + (\delta\omega)^2\right]} \qquad \text{(D-11)}$$

where

$$\Omega \equiv EI\, k_x^4 + Tk_x^2 + K - (m + m')\omega^2 \qquad \text{(D-12)}$$

Resonance occurs at frequencies (ω's) for which the term Ω is numerically equal to zero. In the absence of the hydrodynamic damping δ, the response would be unbounded at the resonant frequenci s.

The unit heave response amplitude $|w|$ can now be defined using a and b from Equations (D-10) and (D-11):

$$|w|^2 = a^2 + b^2 \qquad \text{(D-13)}$$

Thus, the heave for a unit amplitude wave is given (at $x = 0$, $y = 0$) by:

$$w = \sqrt{|w|^2}\; e^{i(\omega t + \varphi_1)} \qquad \text{(D-14)}$$

where φ_1 = phase angle between waves and motions.

The unit response amplitudes for various quantities of interest are now defined.

<u>Immersion</u>. The relative position of the boom with respect to the free surface:

$$h = w - \xi = [a + i\,(b-1)]\; e^{i\omega t}$$

$$= \sqrt{|h|^2}\; e^{i(\omega t + \varphi_2)} \qquad \text{(D-15)}$$

Note: φ_2 the phase angle has a different value here than φ_1 in Equation (D-14).

Bending Moment.

$$M = -EI \frac{\partial^2 w}{\partial x^2} = EI\ k_x^2 \sqrt{|w|^2}\ e^{i(\omega t + \varphi_1)}$$

$$= \sqrt{|M|^2}\ e^{i(\omega t + \varphi_1)} \qquad \text{(D-16)}$$

Shear.

$$S = -EI \frac{\partial^3 w}{\partial x^3} = -i\ EI\ k_x^3 \sqrt{|w|^2}\ e^{i(\omega t + \varphi_1)}$$

$$= \sqrt{|S|^2}\ e^{i(\omega t + \varphi_3)} \qquad \text{(D-17)}$$

Slope.

$$\frac{\partial w}{\partial x} = ik_x \sqrt{|w|^2}\ e^{i(\omega t + \varphi_1)} = \sqrt{\left|\frac{\partial w}{\partial x}\right|^2}\ e^{i(\omega t + \varphi_4)} \qquad \text{(D-18)}$$

Curvature.

$$\frac{M}{EI} = \frac{1}{EI} \sqrt{|M|^2}\ e^{i(\omega t + \varphi_1)} \qquad \text{(D-19)}$$

Relative Pitch Angle Between Two Adjacent Points

The linearized pitch angle at any point is given (in radians) by the slope $\partial w/\partial x$. The relative pitch between any two points along the boom axis separated by a distance Δx is

given by the change in slope between the two points.

$$\beta = \left.\frac{\partial w}{\partial x}\right|_{x=0} - \left.\frac{\partial w}{\partial x}\right|_{x=\Delta x} = \left(1-e^{-ik_x\Delta x}\right)\frac{\partial w}{\partial x}$$

$$= \sqrt{|\beta|^2}\, e^{i(\omega t + \varphi_\beta)} \qquad \text{(D-20)}$$

This quantity is used for comparison with the model tests where Δx corresponds to the segment length of the model.

Motion Equations in the Horizontal Plane

The governing differential equation in the horizontal plane is:

$$EI\,\frac{\partial^4 v}{\partial x^4} - T\,\frac{\partial^2 v}{\partial x^2} + M\,\frac{\partial^2 v}{\partial t^2} = P_W - P_H \qquad \text{(D-21)}$$

This equation is analogous to Equation (D-4); for simplicity, the same symbols are used here, but their values are generally not the same as in the horizontal plane.

The hydrodynamic loading terms have the same form as for the vertical plane except there are no buoyant stiffness terms:

$$P_W = (m^* + m')\left(\frac{\partial^2 \varphi_w}{\partial t\,\partial y}\right) + \delta\left(\frac{\partial \varphi_w}{\partial y}\right) \qquad \text{(D-22)}$$

$$P_H = m'\,\frac{\partial^2 v}{\partial t^2} + \delta\,\frac{\partial v}{\partial t} \qquad \text{(D-23)}$$

The hydrodynamic added mass and damping coefficients in the horizontal plane are approximated by: (Reference 5)

$$m' = \frac{\pi}{2} \rho H^{*2} \left[Q_1 + \frac{4H^*}{\pi g} \omega^2 \left(Q_2 + Q_3 - Q_4 \right) \right] \qquad \text{(D-24)}$$

and

$$\delta = \frac{\rho \omega^5}{16 g^2} B^{*4} \left[\frac{\pi (1 - a_1)}{(1 + a_1 + a_3)^2} \right]^2 \qquad \text{(D-25)}$$

where Q_1, Q_2, Q_3, Q_4, a_1 and a_3 are all functions only of the beam B^* and draft H^* of the boom.

The horizontal displacement is assumed to have the form

$$v = (c + id)\, e^{i(\omega t + k_x x - k_y y)} \qquad \text{(D-26)}$$

Then, Equation (D-21) may be solved:

$$(c + id) \left[EI\, k_x^4 + T k_x^2 - (m + m')\, \omega^2 + i\delta\omega \right] e^{i(\omega t - k_x x - k_y y)}$$

$$= \left[(m^* + m')\, \omega^2 - i\delta\omega \right] \left[(\sin\theta)\, e^{-k_o z_\ell} \right] e^{i(\omega t - k_x x - k_y y)} \qquad \text{(D-27)}$$

Therefore:

$$c = \frac{\left[\Omega\, (m^* + m') - \delta^2 \right] \omega^2 (\sin\theta)\, e^{-k_o z_\ell}}{\left[\Omega^2 + (\delta\omega)^2 \right]} \qquad \text{(D-28)}$$

$$d = \frac{-\left[\Omega + (m^* + m')\ \omega^2\right] \delta\omega\ (\sin\theta)\ e^{-k_o z_\ell}}{\left[\Omega^2 + (\delta\omega)^2\right]} \qquad \text{(D-29)}$$

where

$$\Omega = EI\ k_x^4 + Tk_x^2 - (m + m')\ \omega^2 \qquad \text{(D-30)}$$

Resonant frequencies occur at values of Ω equal to zero, as in the vertical plane. However, the resonant frequencies in the two planes do not coincide because the spring constant K does not appear in the horizontal equations and the added mass (m') term has different magnitudes in the two planes.

The unit sway response amplitude $|v|$ is now determined by:

$$|v|^2 = c^2 + d^2 \qquad \text{(D-31)}$$

The sway for a unit amplitude wave is, then:

$$v = \sqrt{|v|^2}\ e^{i(\omega t + \varphi_6)} \qquad \text{(D-32)}$$

Equations analogous to those given for the vertical plane are used to define the unit response amplitudes for bending moment, shear, slope, curvature and yaw angle in the horizontal plane.

Statistical Evaluation of Boom Response

Once the response of the boom has been determined in terms of unit response amplitudes, it is relatively easy to find the response spectra for any desired spectrum of wave energy. In

this study the Pierson-Moskowitz spectrum was used (Equation (13)). The spectral density of any quantity $q(\omega)$ at any wave frequency is just the product of its unit response amplitude squared $|q(\omega)|^2$ and the (amplitude squared) spectral density of the wave spectrum $S(\omega)$. The root-mean-squared amplitude of a spectrum is found by integrating to find the square root of the area under the curve of spectral density. Thus, the rms wave amplitude is given by:

$$a_{rms} = \left[\int_0^\infty S(\omega)\, dw \right]^{\frac{1}{2}} \qquad \text{(D-33)}$$

The rms value of the quantity q is then

$$q_{rms} = \left[\int_0^\infty |q(\omega)|^2\, S(\omega)\, dw \right]^{\frac{1}{2}} \qquad \text{(D-34)}$$

Finally, the statistical properties of the Rayleigh distribution formula are used to find:

average, $\bar{q} = 0.885\, q_{rms}$

average of one-third highest (significant), $\bar{q}_{\frac{1}{3}} = 1.41\, q_{rms}$

average of one-tenth highest, $\bar{q}_{1/10} = 1.80\, q_{rms}$

and

maximum expected value, $|q|_{max} = 3.4\, q_{rms}$

Note: The significant wave height $\overline{H}_{\frac{1}{3}}$ is just twice the significant wave amplitude. Thus,

$$\overline{H}_{\frac{1}{3}} = 2.83 \left[\int_0^\infty S(\omega)\, dw \right]^{\frac{1}{2}} \qquad \text{(D-35)}$$

where $S(\omega)$ is defined by Equation (13).

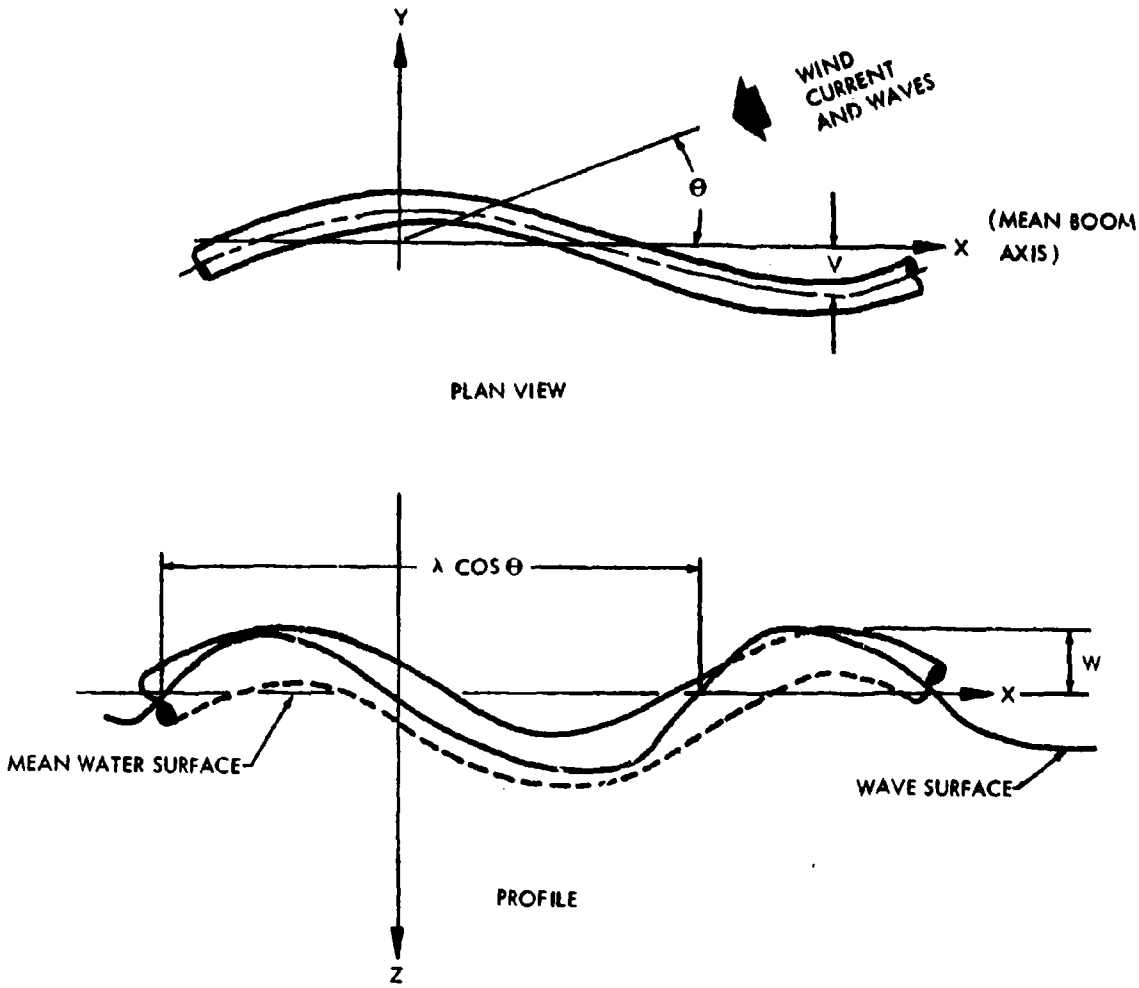


FIGURE D-1 - DYNAMIC PROGRAM COORDINATE SYSTEM

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A theoretical analysis of the loads and motions of a continuous, elastic, oil retention boom of arbitrary configuration is presented. The boom is subjected to loads of wind, current, and an irregular sea. The analytical method was programmed for an IBM 1130 computer and used to generate data for a variety of oil booms. Towing tank test were conducted on selected boom configurations and serve to check the theoretical analysis.

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