TABLE OF PRINCIPAL CHARACTERISTICS

LENGTH

OVERALL (LOA)	949.250'
BETWEEN PERPENDICULARS (LBP)	884.000'
WATERLINE LENGTH @ 33'-0" WL	889.469'
ABS RULE LENGTH FOR SCANTLINGS	883.440'
BETWEEN FORWARD AND AFT DRAFT MARKS	880.000'

BEAM AND DEPTH

BEAM, MAXIMUM (MOLDED)	105.833'
BEAM, MAXIMUM (EXTREME)	105.978'
DEPTH, MOLDED @ SIDE ("A" DECK)	90.250'
DEPTH, EXTREME @ SIDE ("A" DECK)	90.396'
DEPTH, MOLDED @ CENTERLINE ("A" DECK)	90.917'
DEPTH, EXTREME @ CENTERLINE ("A" DECK)	91.063'

(DECK CAMBER IS STRAIGHT LINE STARTING 21.50' FROM CL)

DRAFT

DRAFT, LOAD LINE	37'-0"
DRAFT, NAVIGATION	35'-0"
DRAFT, DESIGN	33'-0"
DRAFT, REQUIRED TO IMMERSE PROPELLER (@ LCG OF 867.50')	22'-5 7/8"

BUILDER, SPEED AND WETTED SURFACE

BUILDER	AVONDALE INDUSTRIES, INC.
TRIAL SPEED	24.8 knots (predicted)
WETTED SURFACE BELOW 33'-0" WL	118,566 ft^2

PROPULSION

ENGINES	(4) COLT PIELSTICK (10PC4.2V)
INSTALLED BHP	65,160
PROPELLERS	(2) CONTROLLABLE PITCH
PROPELLER DIAMETER & RPM	22'-3 ¾" W/ 4 BLADES @ 110 RPM

LIGHTSHIP INFORMATION (FROM EXPERIMENT OF JUNE 8, 2000)

WEIGHT (LONG TONS)	33,518.84
VCG (ABOVE BASELINE)	48.08'
LCG (AFT OF FP)	495.60'
TCG (FROM CENTERLINE)	0.35' PORT
DRAFT (@ FORWARD PERPENDICULAR)	12'-11 7/8"
DRAFT (@ AFT PERPENDICULAR)	28'-10 5/8"

DISPLACEMENT, DEADWEIGHT AND TONNAGE

DISPLACEMENT @ 37'-0" WL (LONG TONS SALT WATER)	67,513.10
DEADWEIGHT @ 37'-0" WL (LONG TONS SALT WATER)	33,994.26
GROSS TONNAGE	69,365
NET TONNAGE	20,809

SHIP'S SERVICE CAPACITIES

FUEL OIL (98%)	1,574,470 gals
LUBE OIL (98%)	77,235 gals
RESERVE FEED WATER (100%)	2,513 gals
POTABLE WATER (100%)	28,533 gals
FIXED BALLAST (BALLAST-CRETE®)	2,576.16 LT

HYDROSTATIC PROPERTIES

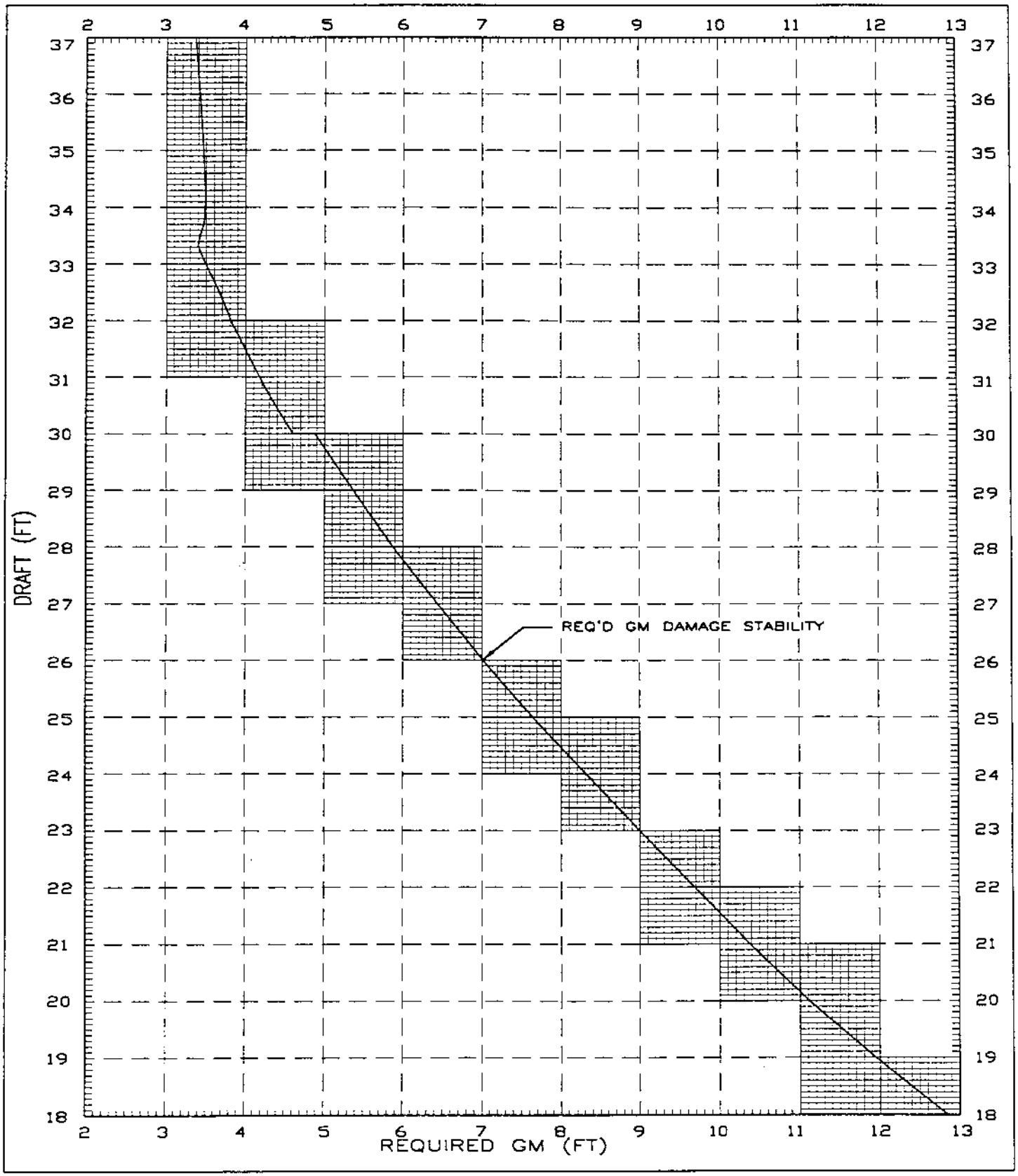
DRAFT	DSW	DFW	LCB	TPI	LCF	MT1	ML1	KMT	KML	CDIA	REQGM
33 11	60342.71	58666.48	464.05	190.32	490.26	10799.4	463.32	49.75	1938.52	10.39	3.48
33 10	60153.02	58482.05	463.96	190.13	490.09	10769.8	462.48	49.77	1939.30	10.35	3.47
33 9	59963.32	58297.63	463.88	189.94	489.93	10740.2	461.64	49.78	1940.09	10.30	3.47
33 8	59773.63	58113.20	463.79	189.75	489.76	10710.5	460.80	49.79	1940.88	10.25	3.45
33 7	59583.94	57928.78	463.71	189.56	489.59	10680.9	459.96	49.81	1941.66	10.21	3.44
33 6	59394.25	57744.35	463.62	189.36	489.42	10651.3	459.12	49.82	1942.45	10.16	3.42
33 5	59204.56	57559.93	463.54	189.17	489.25	10621.7	458.27	49.83	1943.24	10.11	3.41
33 4	59014.87	57375.50	463.46	188.98	489.08	10592.1	457.43	49.85	1944.02	10.07	3.39
33 3	58825.17	57191.08	463.37	188.79	488.92	10562.5	456.59	49.86	1944.81	10.02	3.42
33 2	58635.48	57006.65	463.29	188.60	488.75	10532.8	455.75	49.87	1945.60	9.97	3.44
33 1	58445.79	56822.23	463.20	188.41	488.58	10503.2	454.91	49.89	1946.38	9.93	3.47
33 0	58256.10	56637.80	463.12	188.22	488.41	10473.6	454.07	49.90	1947.17	9.88	3.49
32 11	58068.68	56455.59	463.04	188.03	488.24	10445.0	453.37	49.92	1948.14	9.83	3.52
32 10	57881.25	56273.38	462.95	187.84	488.07	10416.5	452.66	49.93	1949.11	9.79	3.54
32 9	57693.83	56091.18	462.87	187.65	487.90	10387.9	451.96	49.95	1950.09	9.74	3.57
32 8	57506.40	55908.97	462.78	187.46	487.72	10359.4	451.25	49.97	1951.06	9.70	3.60
32 7	57318.98	55726.76	462.70	187.27	487.55	10330.8	450.55	49.98	1952.03	9.65	3.62
32 6	57131.55	55544.55	462.61	187.08	487.38	10302.3	449.84	50.00	1953.00	9.61	3.65
32 5	56944.13	55362.34	462.53	186.90	487.21	10273.7	449.14	50.02	1953.98	9.56	3.68
32 4	56756.70	55180.13	462.45	186.71	487.04	10245.1	448.44	50.03	1954.95	9.51	3.70
32 3	56569.28	54997.93	462.36	186.52	486.87	10216.6	447.73	50.05	1955.92	9.47	3.73
32 2	56381.85	54815.72	462.28	186.33	486.69	10188.0	447.03	50.07	1956.89	9.42	3.76
32 1	56194.43	54633.51	462.19	186.14	486.52	10159.5	446.32	50.08	1957.87	9.38	3.78
32 0	56007.00	54451.30	462.11	185.95	486.35	10130.9	445.62	50.10	1958.84	9.33	3.81
31 11	55821.67	54271.11	462.03	185.77	486.18	10104.0	445.09	50.12	1960.15	9.28	3.84
31 10	55636.33	54090.92	461.94	185.58	486.00	10077.2	444.56	50.14	1961.47	9.24	3.87
31 9	55451.00	53910.72	461.86	185.40	485.83	10050.3	444.04	50.17	1962.78	9.19	3.90
31 8	55265.67	53730.53	461.78	185.22	485.66	10023.4	443.51	50.19	1964.10	9.15	3.93
31 7	55080.33	53550.34	461.69	185.03	485.48	9996.6	442.98	50.21	1965.41	9.10	3.96
31 6	54895.00	53370.15	461.61	184.85	485.31	9969.7	442.45	50.23	1966.73	9.06	3.99
31 5	54709.67	53189.96	461.53	184.67	485.14	9942.8	441.92	50.26	1968.04	9.01	4.02
31 4	54524.33	53009.77	461.44	184.48	484.96	9916.0	441.39	50.28	1969.35	8.97	4.05
31 3	54339.00	52829.58	461.36	184.30	484.79	9889.1	440.87	50.30	1970.67	8.92	4.08
31 2	54153.67	52649.38	461.28	184.12	484.62	9862.2	440.34	50.32	1971.98	8.88	4.11
31 1	53968.33	52469.19	461.19	183.93	484.44	9835.4	439.81	50.35	1973.30	8.83	4.14
31 0	53783.00	52289.00	461.11	183.75	484.27	9808.5	439.28	50.37	1974.61	8.79	4.17
30 11	53599.81	52110.90	461.03	183.58	484.09	9784.7	438.90	50.40	1976.59	8.75	4.21
30 10	53416.62	51932.80	460.94	183.41	483.92	9760.9	438.52	50.42	1978.57	8.70	4.24
30 9	53233.42	51754.70	460.86	183.23	483.74	9737.2	438.14	50.45	1980.55	8.66	4.28
30 8	53050.23	51576.60	460.78	183.06	483.57	9713.4	437.76	50.48	1982.53	8.61	4.31
30 7	52867.04	51398.50	460.70	182.89	483.39	9689.6	437.38	50.51	1984.51	8.57	4.35
30 6	52683.85	51220.40	460.61	182.72	483.22	9665.8	437.01	50.53	1986.50	8.52	4.38
30 5	52500.66	51042.30	460.53	182.54	483.04	9642.1	436.63	50.56	1988.48	8.48	4.42
30 4	52317.47	50864.20	460.45	182.37	482.86	9618.3	436.25	50.59	1990.46	8.43	4.46
30 3	52134.27	50686.10	460.37	182.20	482.69	9594.5	435.87	50.62	1992.44	8.39	4.49
30 2	51951.08	50508.00	460.28	182.03	482.51	9570.8	435.49	50.64	1994.42	8.34	4.53
30 1	51767.89	50329.90	460.20	181.85	482.34	9547.0	435.11	50.67	1996.40	8.30	4.56
30 0	51584.70	50151.80	460.12	181.68	482.16	9523.2	434.73	50.70	1998.38	8.25	4.88

DRAFT = LCF KEEL DRAFT, FT-IN
DSW = DISPLACEMENT SW, L.TONS
DFW = DISPLACEMENT FW, L.TONS
LCB = LONG'L CENTER OF BUOYANCY, FT
TPI = TONS PER INCH IMMERSION
LCF = LONG'L CENTER OF FLOATATION, FT

MT1 = MOM TO TRIM 1", FT-L.TONS/IN
ML1 = MOM TO LIST 1", FT-L.TONS/IN
KMT = TRANVERSE METACENTRIC HT., FT
KML = LONG'L METACENTRIC HT., FT
CDIA = CHG IN DISPL PER IN. OF TRIM AFT
REQGM = REQUIRED GMT, FT

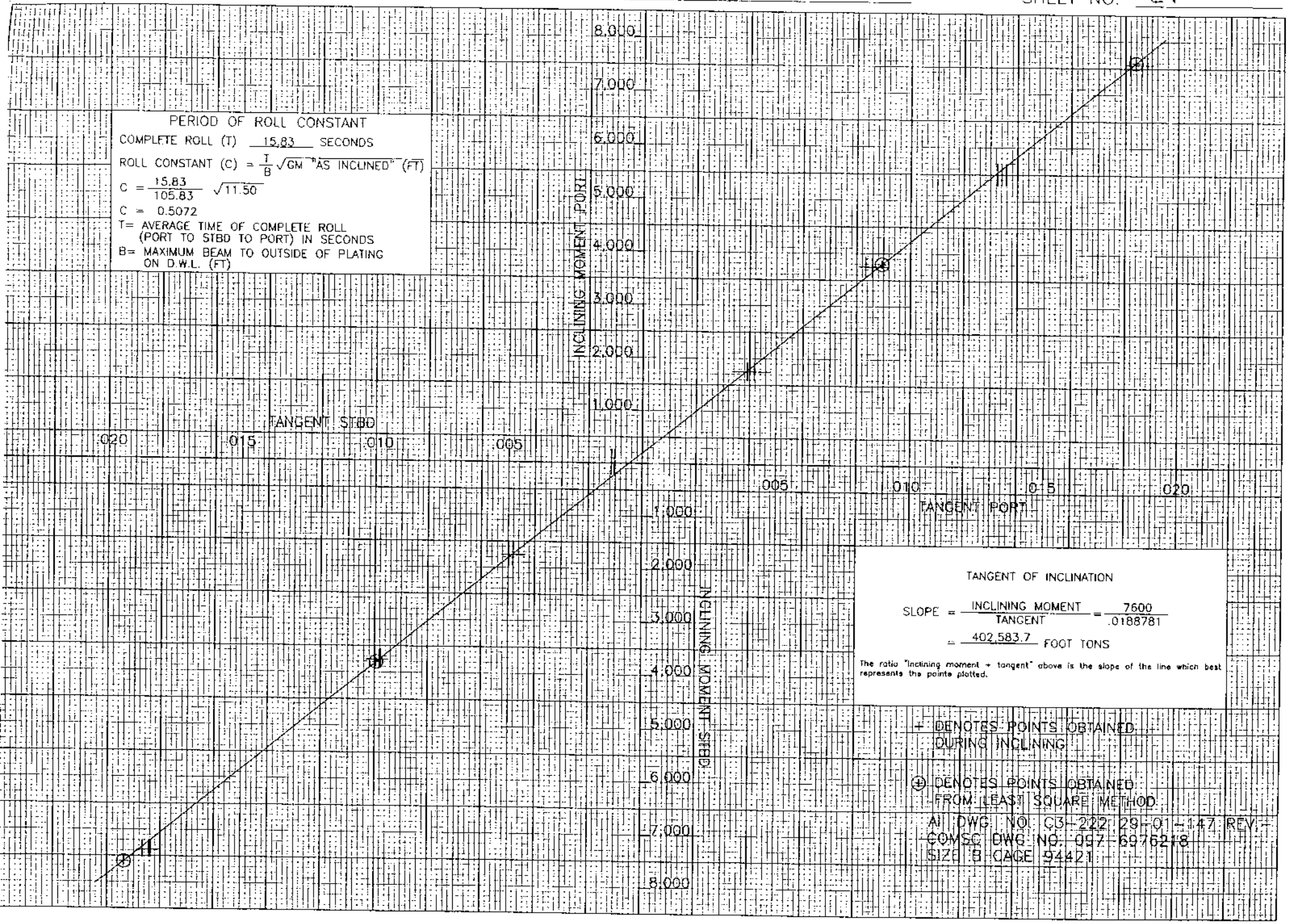
REFERENCE FOR LCB/LCF: 0.00 FT AFT OF FP

ASSUMED KG FOR MT1 & ML1: 40.00 FT


DRAFT (FT)
REQUIRED GM (FT)
REQ'D GM DAMAGE STABILITY
2 3 4 5 6 7 8 9 10 11 12 13
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37

STABILITY TEST USNS BENEVIDEZ

SHEET NO. 21



PERIOD OF ROLL CONSTANT

COMPLETE ROLL (T) 15.83 SECONDS

ROLL CONSTANT (C) $= \frac{T}{B}\sqrt{GM \text{ "AS INCLINED"}}$ (FT)

$C = \frac{15.83}{105.83}\sqrt{11.50}$

C = 0.5072

T= AVERAGE TIME OF COMPLETE ROLL (PORT TO STBD TO PORT) IN SECONDS

B= MAXIMUM BEAM TO OUTSIDE OF PLATING ON D.W.L. (FT)

TANGENT OF INCLINATION

$$\text{SLOPE} = \frac{\text{INCLINING MOMENT}}{\text{TANGENT}} = \frac{7600}{.0188781}$$

$$= \frac{402,583.7}{\text{FOOT TONS}}$$

The ratio "Inclining moment ÷ tangent" above is the slope of the line which best represents the points plotted.

+ DENOTES POINTS OBTAINED DURING INCLINING

⊕ DENOTES POINTS OBTAINED FROM LEAST SQUARE METHOD

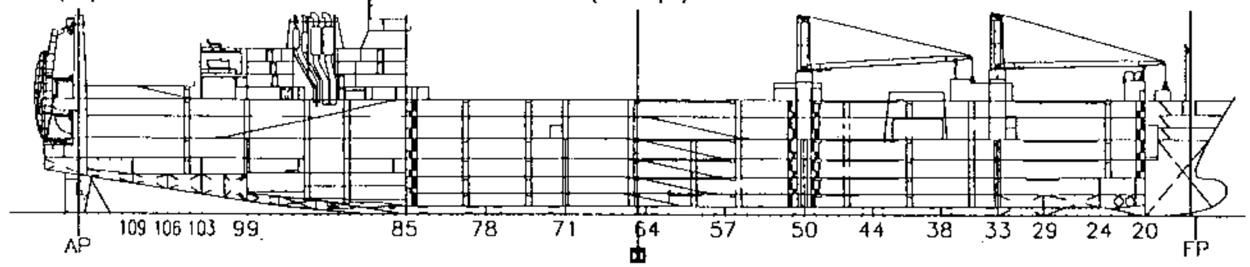
AI DWG NO. C3-222 29-01-147 REV.-
COMSC DWG NO. 097-6976218
SIZE B CAGE 94421

TRIM TABLE

AFT Draft Mks
@ 884' aft FP
(AP)

MID Draft Mks
@ 442' aft FP
(Midships)

FWD Draft Mks
@ 4' aft FP



FEET FROM FP	35'-0" DRAFT FWD	35'-0" DRAFT AFT	33'-0" DRAFT FWD	33'-0" DRAFT AFT	28'-0" DRAFT FWD	28'-0" DRAFT AFT	22'-0" DRAFT FWD	22'-0" DRAFT AFT
900	-1.63	+2.24	-1.75	+2.40	-2.05	+2.81	-2.44	+3.37
	-1.53	+2.16	-1.65	+2.31	-1.94	+2.71	-2.30	+3.25
	-1.43	+2.08	-1.55	+2.23	-1.82	+2.61	-2.16	+3.12
	-1.33	+2.00	-1.44	+2.14	-1.70	+2.51	-2.03	+3.00
	-1.23	+1.92	-1.34	+2.06	-1.58	+2.40	-1.89	+2.87
800	-1.13	+1.84	-1.23	+1.97	-1.46	+2.30	-1.76	+2.75
	-1.03	+1.76	-1.13	+1.89	-1.34	+2.20	-1.62	+2.63
	-0.94	+1.68	-1.02	+1.80	-1.23	+2.10	-1.48	+2.50
	-0.84	+1.61	-0.92	+1.71	-1.11	+2.00	-1.35	+2.38
	-0.74	+1.53	-0.81	+1.63	-0.99	+1.89	-1.21	+2.25
700	-0.64	+1.45	-0.71	+1.54	-0.87	+1.79	-1.08	+2.13
	-0.54	+1.37	-0.60	+1.46	-0.75	+1.69	-0.94	+2.01
	-0.44	+1.29	-0.50	+1.37	-0.63	+1.59	-0.80	+1.88
	-0.34	+1.21	-0.39	+1.29	-0.51	+1.49	-0.67	+1.76
	-0.25	+1.13	-0.29	+1.20	-0.40	+1.39	-0.53	+1.64
600	-0.15	+1.05	-0.18	+1.12	-0.28	+1.28	-0.39	+1.51
	-0.05	+0.97	-0.08	+1.03	-0.16	+1.18	-0.26	+1.39
	+0.05	+0.89	+0.02	+0.95	-0.04	+1.08	-0.12	+1.26
	+0.15	+0.81	+0.13	+0.86	+0.08	+0.98	+0.01	+1.14
	+0.25	+0.74	+0.23	+0.77	+0.20	+0.88	+0.15	+1.02
500	+0.35	+0.66	+0.34	+0.69	+0.31	+0.77	+0.29	+0.89
	+0.45	+0.58	+0.44	+0.60	+0.43	+0.67	+0.42	+0.77
	+0.54	+0.50	+0.55	+0.52	+0.55	+0.57	+0.56	+0.64
	+0.64	+0.42	+0.65	+0.43	+0.67	+0.47	+0.69	+0.52
	+0.74	+0.34	+0.76	+0.35	+0.79	+0.37	+0.83	+0.40
400	+0.84	+0.26	+0.86	+0.26	+0.91	+0.27	+0.97	+0.27
	+0.94	+0.18	+0.97	+0.18	+1.03	+0.16	+1.10	+0.15
	+1.04	+0.10	+1.07	+0.09	+1.14	+0.06	+1.24	+0.02
	+1.14	+0.02	+1.18	+0.01	+1.26	-0.04	+1.38	-0.10
	+1.23	-0.06	+1.28	-0.08	+1.38	-0.14	+1.51	-0.22
300	+1.33	-0.13	+1.38	-0.17	+1.50	-0.24	+1.65	-0.35
	+1.43	-0.21	+1.49	-0.25	+1.62	-0.34	+1.78	-0.47
	+1.53	-0.29	+1.59	-0.34	+1.74	-0.45	+1.92	-0.59
	+1.63	-0.37	+1.70	-0.42	+1.86	-0.55	+2.06	-0.72
	+1.73	-0.45	+1.80	-0.51	+1.97	-0.65	+2.19	-0.84
200	+1.83	-0.53	+1.91	-0.59	+2.09	-0.75	+2.33	-0.97
	+1.93	-0.61	+2.01	-0.68	+2.21	-0.85	+2.46	-1.09
	+2.02	-0.69	+2.12	-0.76	+2.33	-0.96	+2.60	-1.21
	+2.12	-0.77	+2.22	-0.85	+2.45	-1.06	+2.74	-1.34
	+2.22	-0.85	+2.33	-0.93	+2.57	-1.16	+2.87	-1.46
100	+2.32	-0.93	+2.43	-1.02	+2.68	-1.26	+3.01	-1.59
	+2.42	-1.00	+2.54	-1.11	+2.80	-1.36	+3.15	-1.71
	+2.52	-1.08	+2.64	-1.19	+2.92	-1.46	+3.28	-1.83
	+2.62	-1.16	+2.75	-1.28	+3.04	-1.57	+3.42	-1.96
	+2.71	-1.24	+2.85	-1.36	+3.16	-1.67	+3.55	-2.08
0	+2.81	-1.32	+2.95	-1.45	+3.28	-1.77	+3.69	-2.21

EXPLANATION:

1. The above table shows correction, in inches, to draft (at the draft marks) forward and aft, for a weight of 100 tons loaded at any location on the vessel
2. The corrections (from a condition of neutral trim) are computed for four drafts to facilitate interpolation. In practice, it will be sufficiently accurate to use the table nearer the ship's draft.
3. When discharging, reverse the plus and minus signs.

EXAMPLE:

Find the new draft, at the draft marks, after loading 400 tons at a location 200 feet aft of the forward perpendicular.

	AFT	FWD
Initial Draft:	30'- 0"	30'- 0"
Corr'n for 33'- 0" Draft:	4.0(-0.59")= -2.36"	4.0(+1.91")= +7.64"
Corr'n for 28'- 0" Draft:	4.0(-0.75")= -3.00"	4.0(+2.09")= +8.36"
Corr'n for 30'- 0" Draft:	-2.74"	+8.07"
Corrected Draft:	29'- 9 1/4"	30'- 8 1/16"

NOTE: The above values are for approximate estimates only. Actual values are attained by performing the calculations in step 8 of the procedure.