M.V.TWOSUCH STABILITY BOOK (Pdf version)

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CONTENTS:

HYDROSTATIC PARTICULARS

HYDROSTATIC DRAFT (m)	DISPLACEMENT (tonnes)	TPC	MCT 1cm (t - m)	LCF (m aft 0)	KM (m)
2.00	87.5	0.980	0.885	- 0.295	4.47
2.05	93.5	1.000	0.945	- 0.380	4.41
2.10	101.0	1.022	1.000	- 0.465	4.35
2.15	105.5	1.040	1.060	- 0.555	4.29
2.20	111.2	1.062	1.115	- 0.650	4.24
2.25	116.8	1.078	1.172	- 0.750	4.20
2.30	122.0	1.098	1.235	- 0.860	4.15
2.35	127.5	1.115	1.292	- 0.955	4.11
2.40	133.2	1.128	1.340	- 1.010	4.07
2.45	139.0	1.140	1.380	- 1.045	4.03
2.50	145.0	1.150	1.145	- 1.065	4.00
2.55	150.5	1.160	1.430	- 1.070	3.97
2.60	156.5	1.168	1.438	- 1.072	3.94
2.65	162.5	1.172	1.465	- 1.065	3.91
2.70	168.0	1.180	1.480	- 1.060	3.89
2.75	174.0	1.185	1.500	- 1.050	3.87
2.80	180.0	1.190	1.515	- 1.042	3.85
2.85	186.0	1.195	1.532	- 2.038	3.84
2.90	192.0	1.200	1.550	- 1.030	3.82
2.95	198.0	1.208	1.568	- 1.022	3.81
3.00	204.0	1.212	1.585	- 1.015	3.81
3.05	210.0	1.218	1.605	- 1.008	3.80
3.10	216.2	1.220	1.622	- 0.995	3.80
3.15	222.2	1.225	1.640	- 0.988	3.79
3.20	228.2	1.230	1.660	- 0.978	3.79
3.25	324.5	1.240	1.670	- 0.968	3.78

LOAD DRAFT 3.00 M

4.   SUMMARY OF SPACES

M.V. "TWOSUCH"

VALUES EACH TANK

SPACE	FRAME No	CONTENT S.G.	CAPACITY TONNE	V.C.G. M	L.C.G. M	MAX. F.S.
FRESH WATER P & S	29 - 32	FRESH WATER	4.45	2.06	+5.05	0.65
FOR'D F.O. P & S	26 - 28	FUEL OIL .833	4.50	1.78	+3.45	2.20
FOR'D D.B. P & S	20 - 26	FUEL OIL .833	6.55	1.17	+1.25	4.14
AFT D.B. P & S	14 - 20	FUEL OIL .833	6.40	1.20	-1.78	4.72
E.R. WING. P & S	8 - 14	FUEL OIL .833	6.30	2.40	-4.83	0.44
LUB. OIL	5 - 6	LUB. OIL .950	0.55	2.50	-7.90	0.18
HOLD	14 - 26	FISH 0.5T/M^3	24.00	2.60	+0.50	

It is recommended that tanks be used in the following order:

Fresh Water

FW Port
FW Std

Fuel Oil

Aft DB Std
Fwd DB Port
Fwd DB Std
Fwd FO Port
Fwd FO Std
Aft DB Port
ER Wing Port

5.   TANK DATA

FRESH WATER TANKS

PORT AND STARBOARD

FRAMES 29 - 32

F.S.N. 0.65 Tm

sounding pipe 0.92 above
    fore deck
.07 m p & s of centre line
1.15 m for'd F 29
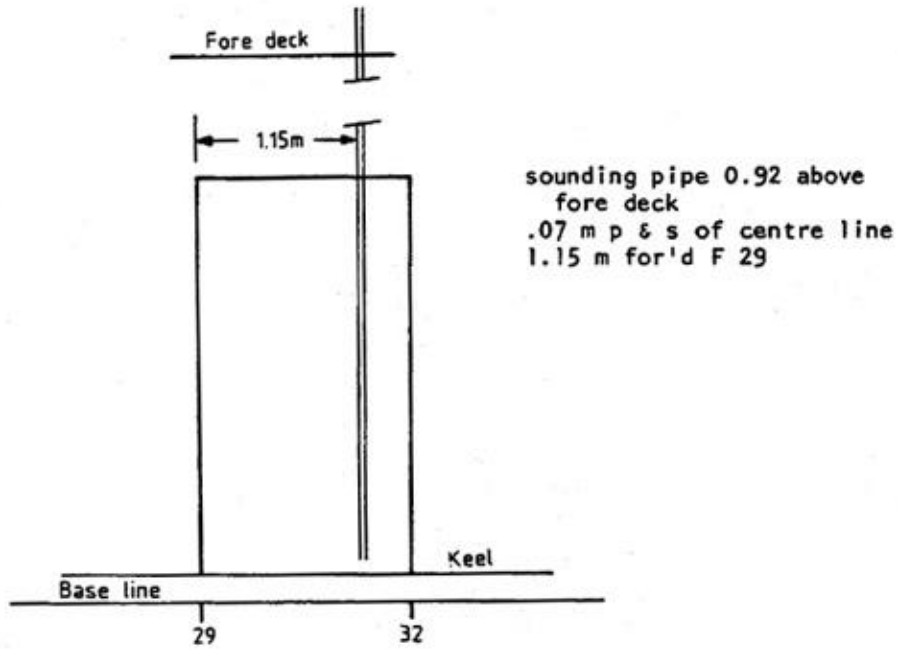
SOUNDINGS (m)	CAPACITY (Tonnes)	V.C.G. (m)	L.C.G. (m)
0.2	0.1	0.65	4.7
0.4	0.2	0.75	4.72
0.6	0.4	0.85	4.74
0.8	0.65	0.95	4.77
1.0	0.95	1.15	4.8
1.2	1.30	1.25	4.82
1.4	1.7	1.35	4.85
1.6	2.1	1.45	4.88
1.8	2.45	1.55	4.91
2.0	2.85	1.65	4.94
2.2	3.2	1.75	4.97
2.4	3.6	1.85	4.99
2.6	4.0	1.95	5.02
2.8	4.4	2.05	5.05
2.82	4.45	2.06	5.05

FORWARD FUEL OIL

PORT AND STARBOARD

FRAMES 26 - 28

FUEL OIL S.G. 0.833   F.S.N. 2.2 Tm

sounding pipe 0.23 m above
    tank top
0.20 m p & s centreline
0.90 for'd FR 26
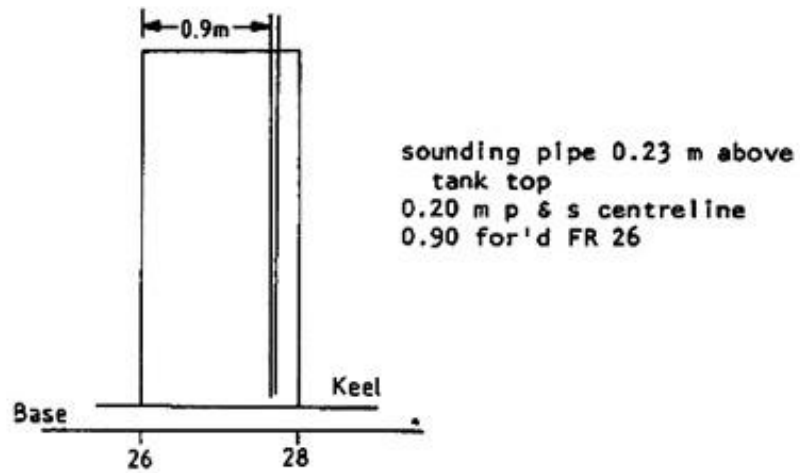
SOUNDINGS (m)	CAPACITY (Tonnes)	V.C.G. (m)	L.C.G. (m)
0.2	0.1	0.2	+ 3.45
0.4	0.3	0.36	''
0.6	0.6	0.51	''
0.8	0.9	0.67	''
1.0	1.3	0.83	''
1.2	1.8	0.99	''
1.4	2.35	1.15	''
1.6	2.75	1.30	''
1.8	3.25	1.46	''
2.0	3.75	1.52	''
2.2	4.25	1.68	''
2.3	4.5	1.78	''

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FORWARD DOUBLE BOTTOM

PORT AND STARBOARD

FRAMES 20 - 26

FUEL OIL S.G. 0.833   F.S.N. 4.14 Tm

sounding pipe .31 m
above main deck
1.13m p & s of centre
line

0.10 m for'd FR 20
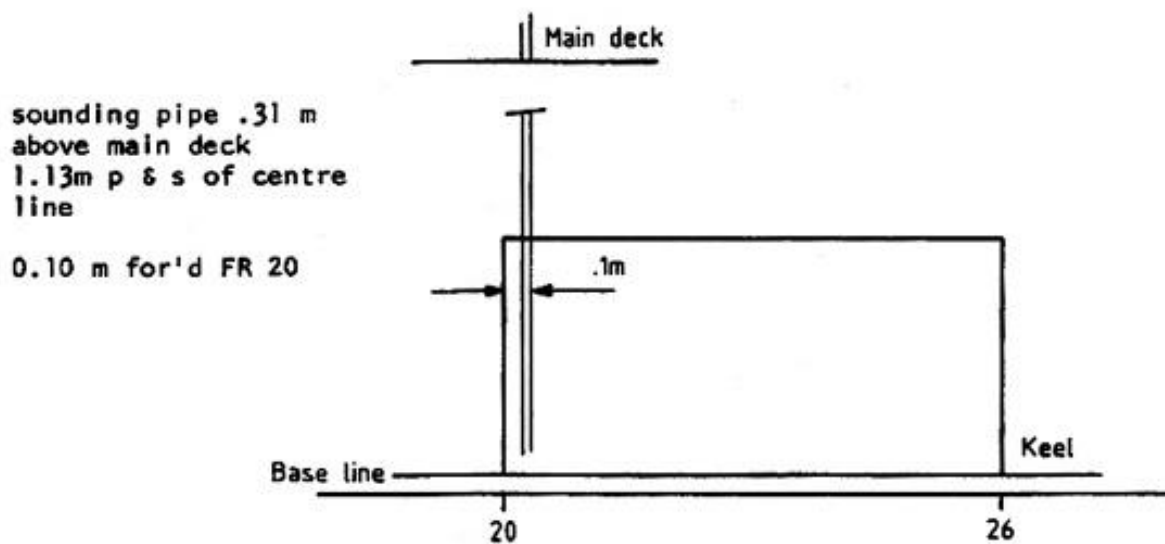
SOUNDINGS (m)	CAPACITY (Tonnes)	V.C.G. (m)	L.C.G. (m)
0.1	1.25	0.50	+ 1.25
0.2	1.99	0.58	"
0.3	2.63	0.66	"
0.4	3.27	0.74	"
0.5	3.90	0.83	"
0.6	4.54	0.91	"
0.7	5.18	0.99	"
0.8	5.71	1.07	"
0.9	6.35	1.15	"
0.93	6.55	1.17	"

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AFTER DOUBLE BOTTOM

PORT AND STARBOARD

FRAME 14 - 20

FUEL OIL S.G. 0.833   F.S.N. 4.72 Tm

main deck   sounding pipe 0.3 m above main deck

1.13m p & s of centre line

3.1 m for'd FR 14

3.1m

Base line   keel

14   20

SOUNDINGS (m)	CAPACITY (Tonnes)	V.C.G. (m)	L.C.G. (m)
0.1	1.3	0.65	- 1.78
0.2	1.7	0.71	"
0.3	2.0	0.78	"
0.4	2.6	0.84	"
0.5	3.2	0.91	"
0.6	3.8	0.97	"
0.7	4.5	1.04	"
0.8	5.3	1.11	"
0.9	6.1	1.18	"
0.93	6.4	1.20	"

ENGINE ROOM WING TANKS

PORT AND STARBOARD

FRAMES 8 - 14

FUEL OIL S.G. 0.833

F.S.N. 0.44 Tm

SOUNDINGS (m)	CAPACITY (Tonnes)	V.C.G. (m)	L.C.G. (m)
0.2	1.0	4.85	- 4.65
0.4	1.7	1.95	- 4.67
0.6	2.2	2.05	- 4.69
0.8	2.7	2.15	- 4.71
1.0	3.4	2.20	- 4.73
1.2	4.0	2.25	- 4.75
1.4	4.5	2.29	- 4.77
1.6	5.2	2.33	- 4.79
1.8	5.7	2.37	- 4.81
2.0	6.3	2.4	- 4.83

WEIGHT, KG AND LCG OF ITEMS

Crew and effects:

Take the weight of crew and effects as 0.10 tonnes per crew member.
The number of crew on board is taken to be 10, therefore their weight is

0.10 x 10 = 1.0 tonnes

Their position may be taken to be the same as in the standard loading conditions pages 12
18, i .e.

KG = 4.0m LCG = +6.0m

Provisions

Estimate the weight of provisions remaining. For this example the weight is taken as 1.0
tonnes.
The centre of gravity may be taken to be the same as in the standard loading conditions i.e

KG = 2.0m LCG = +7.0m

Stores

Estimate the weight of stores remaining. For this example the weight is taken as 3.0
tonnes. From the standard loading conditions we obtain:

KG = 3.0m
LCG = 0.0 (i .e. amidships)

Brine Tank

Estimate the weight of water in the brine tank, which when full contains 3.0 tonnes of
water. Free surface moment is negligible and may be ignored. From the standard loading
conditions we obtain:

KG = 4.4m LCG = -5.5m

Note: If the tank is partially full the KG of the contents should be taken to be at a level of

half the depth of brine above the bottom of the tank.

Catch

The weight of the catch should be estimated by multiplying the number of boxes by the
weight per box. Alternatively, estimate the fraction of
the hold volume and multiply the fraction by the total capacity of the hold (24 tonnes) to
obtain the mass in tonnes.

KG of the catch should be taken as 2.6m. If they are stacked across the floor the KG of the catch will be 1.0m plus half the average height of the stack as shown in Figure 2.
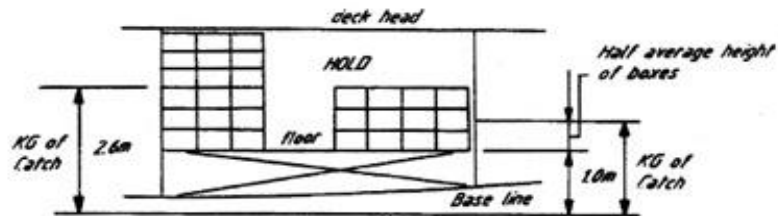

FIGURE 2.

If the hold is filled by filling the centre first and working fore and aft, the LCG of the catch should be taken as +0.5m* as shown in Figure 3. If filled from one end the LCG of the catch will be 0.5m* plus (minus) the distance from the centre of the hold to the centre of the catch if it is stowed forward (aft) as shown in Figure 4.
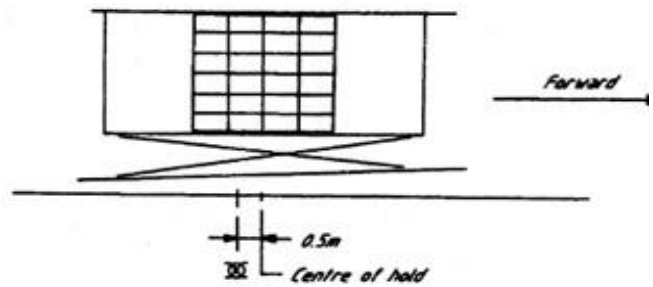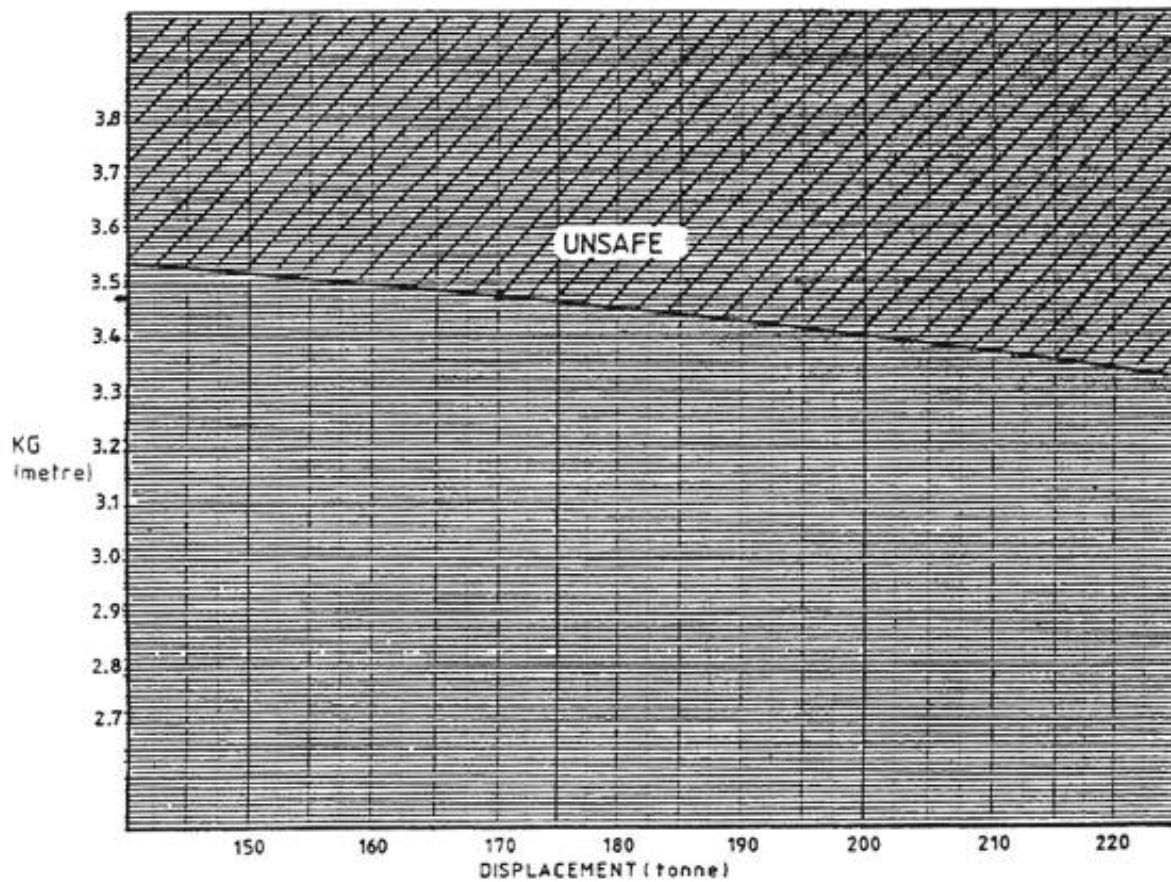

FIGURE 3.
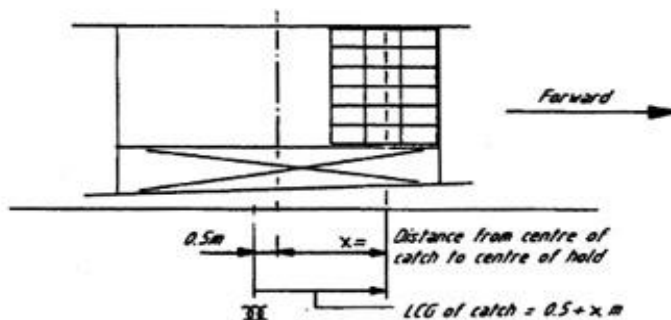
FIGURE 4.

(*+0.5m is the LCG of the centre of the fish hold of this vessel and the actual LCG should be inserted).

8. CURVE OF LIMITING KG

In any condition of loading the KG from line G of the Displacement Table must lie within the area under the curve.

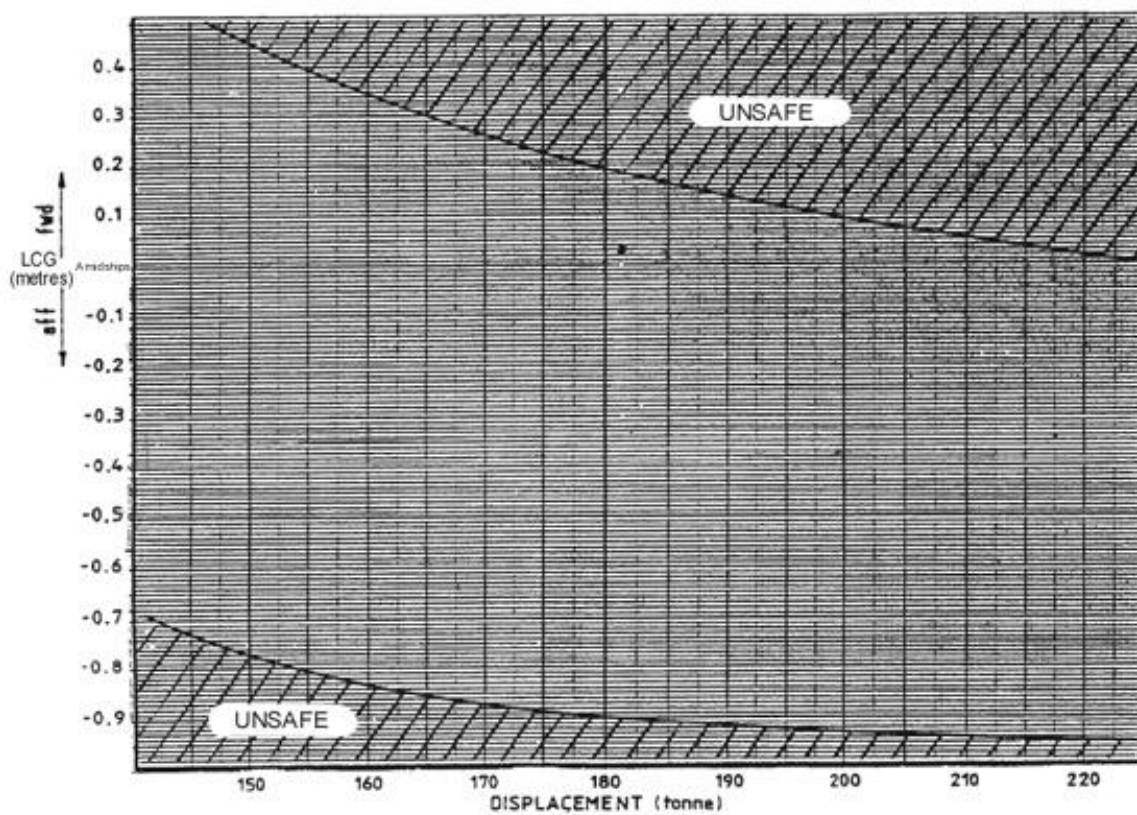The curve of limiting KG allows for the free surface effect only when the tanks are managed in accordance with the recommended usage.

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9.   CURVE OF LIMITING LCG

In any condition of loading the LCG from column 4 line D of the Displacement Table must lie in the area within the curves.