

<b>TITLE:</b>	<b>USE OF SPREADSHEETS FOR STABILITY CALCULATIONS</b>	<b>DATE:</b>	<b>02/02/06</b>
<b>CATEGORY:</b>	<b>ALL VESSELS</b>	<b>AREA:</b>	<b>WORLDWIDE</b>

Further to Lookout Bulletin No. 24/04, the Club promotes the use of spreadsheets to ease and quicken the task of calculating a vessels initial stability condition when a dedicated computer programme is not available.

However there is a need to draw Members' attention to a cautionary warning over the use of spreadsheets for these important calculations.

Unless the formula and data entry has been set up by persons fully familiar with spreadsheets and only the cells which require data input are left unprotected, there is a possibility that cells within the calculation area can be changed or even deleted by persons who are not familiar with the program resulting in incorrect answers being obtained. To avoid this happening, all cells which do not require data input from the user should be protected and the spreadsheet itself locked so that cells cannot be corrupted or deleted.

In addition, we suggest that at regular intervals prior to use, a test condition should be entered into the spreadsheet and the results obtained compared with a known answer. A condition from the stability book can be used for this purpose. This practice would readily highlight any shortcomings in the calculations and is essential when critical stability conditions are anticipated.

By undertaking these precautions, the possibility of obtaining an incorrect indication of the vessel's initial stability condition is greatly reduced.

The following example suggests the cells which should be locked.

ITEM	MASS	Kg	V MOMENT	Lcg	H MOMENT	FSM
Water Ballast	726.20	1.26	914.76	39.52	28702.41	95.69
Gas Oil	184.36	0.94	174.04	30.24	5574.78	171.67
Fresh Water	10.00	4.36	43.60	1.09	10.90	25.20
Misc Tanks	13.94	2.67	37.28	9.02	125.75	6.63
Containers	1978.73	5.85	11571.57	37.49	74185.56	
Crew & Stores	12.00	9.00	108.00	60.00	720.00	
CO2 Room	6.00	8.50	51.00	69.00	414.00	
Dwt Constant	130.10	5.30	689.53	51.70	6726.17	
Total DWT	3061.33		13589.77		116459.55	299.19
LIGHTSHIP	1090.60	6.19	6750.81	31.77	34648.36	
<b>DISPLACEMENT</b>	<b>4151.93</b>	<b>4.90</b>	<b>20340.59</b>	<b>36.39</b>	<b>151107.91</b>	<b>299.19</b>
	<b>F.S.M</b>	0.07	LBC	35.79		
	KG (Fluid)	4.97	Lever	-0.61		
	KM	5.81	MCTC	48.66		
	GM (fluid)	0.64	TRIM	0.52	by head	
<b>DRAFTS</b>	<b>MEAN</b>	5.23				
	FWD	5.50			= Locked Cells	
	AFT	4.99				