



MAXSURF NEWS

Integrated Naval Architecture & Ship Construction Software

April 2004 Newsletter

Maxsurf Version 10 Released

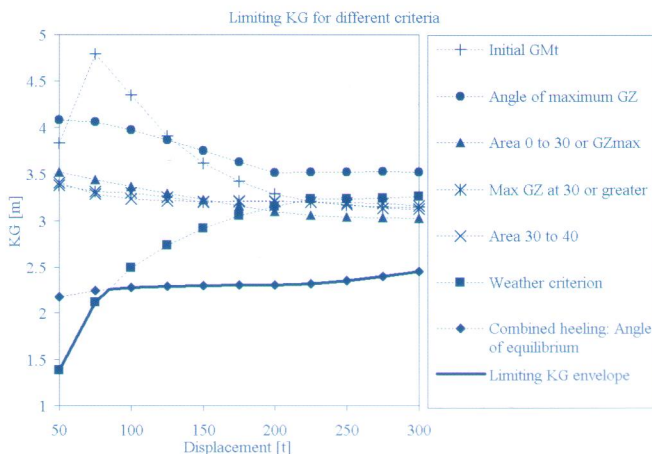
We are pleased to announce the release of version 10 of Maxsurf. It is now nearly 20 years since we first started developing Maxsurf but our program of enhancements and additions is continuing at a rapid pace. We will be sending Maxsurf version 10 to all members of our Maxsurf subscription program over the coming weeks.

New features in Maxsurf 10

Some of the new features to be found in version 10 include more stability criteria and analysis options, user interface improvements, an expanded structural shape library and a new method for resistance prediction. In addition, we have spent considerable effort improving the performance of the underlying algorithms, this together with other improvements to the user interface will increase your productivity with Maxsurf 10.

Hydromax batch processing options

The batch processing in Hydromax now includes Limiting KG and KN analyses. These analyses are carried out for all damage cases. The Limiting KG analysis includes the option for finding the limiting KG for each criterion individually and performing both Large Angle Stability and Equilibrium analyses at the



Limiting KG for multiple criteria can be easily exported for charting in Excel

final VCG. For all analyses, you can also specify that they should be carried out heeling to port or to starboard.

Tank free surface moments

It is now possible to choose the type of free surface moment correction to be applied to slack tanks in Hydromax. The options available are:

- maximum upright free surface moment of the tank at all fluid levels;
- actual upright free surface moment at the current fluid level;
- IMO free surface moment method as specified in the Code on Intact Stability A.749(18) and MSC.75(69); and
- a user specified, constant, free surface moment.

Of course it is still possible to simulate the actual shift of the fluid in the tank due to heel and trim using the "Fluid Simulation" approach. This method provides the most accurate hydrostatic analysis.

US Coast Guard Stability Criteria

Criteria	Description
Parent criteria	
US Coast Guard	
Subchapter S - Subdivision and Stability	
Part 170. Stability requirements for all inspected vessels	
170.170. a - Metacentric height	
170.173. b1 - Initial GMt	
170.173. b2 - Value of GZ	
170.173. b3 - Angle of max. GZ	
170.173. b4 - Area 0 to 30	
170.173. b5 - Area 0 to 40	
170.173. b6 - Area 30 to 40	
170.173. c1 - Initial GMt	
170.173. c2 - Angle of max. GZ	
170.173. c3 - Area 0 to 40	
170.173. c4 - Area 30 to 40	
170.173. d5 - Area under GZ curve	
170.173. e1(i) - Angle of vanishing stability	
170.173. e1(ii) - Area 0 to 40	
170.173. e2(i) - Angle of vanishing stability	
170.173. e2(ii) - Angle of downflooding	
170.173. e2(iii) - Area 0 to 40	
Part 171. Special rules pertaining to vessels carrying passenger	
Part 172. Special rules pertaining to bulk cargoes	
Subpart D	
172.065. g2 - Equilibrium heel angle after damage	
172.065. g3(i) - Range of positive stability after damage	
172.065. g3(ii) - Value of max. GZ after damage	
Subpart E - Barges carrying hazardous liquids	
Subpart F - Ships carrying hazardous liquids	
Subpart G - Bulk liquid gas carriers	
Subpart H - Great lakes dry bulk cargo vessels	
Part 174. Special rules pertaining to specific vessel types	

Criteria	Description	Value	Units
172.065: g3(i) - Value of max. GZ after damage			
1	in the range from the greater of		
2	spec. heel angle	0.0	deg
3	angle of equilibrium		deg
4	to the lesser of		
5	spec. heel angle	180.0	deg
6	spec. heel angle above equilibrium	20.0	deg
7	angle of first GZ peak		deg
8	angle of max. GZ		deg
9	first downflooding angle		deg
10	shall be greater than (*)	0.100	m

Option	Description
in the range from the greater of	Value of maximum GZ
Lower limit for heel at greater of the following specified heel angle	Lower limit for heel at greater of the following specified heel angle
User specified heel angle	User specified heel angle

US Coast Guard stability criteria