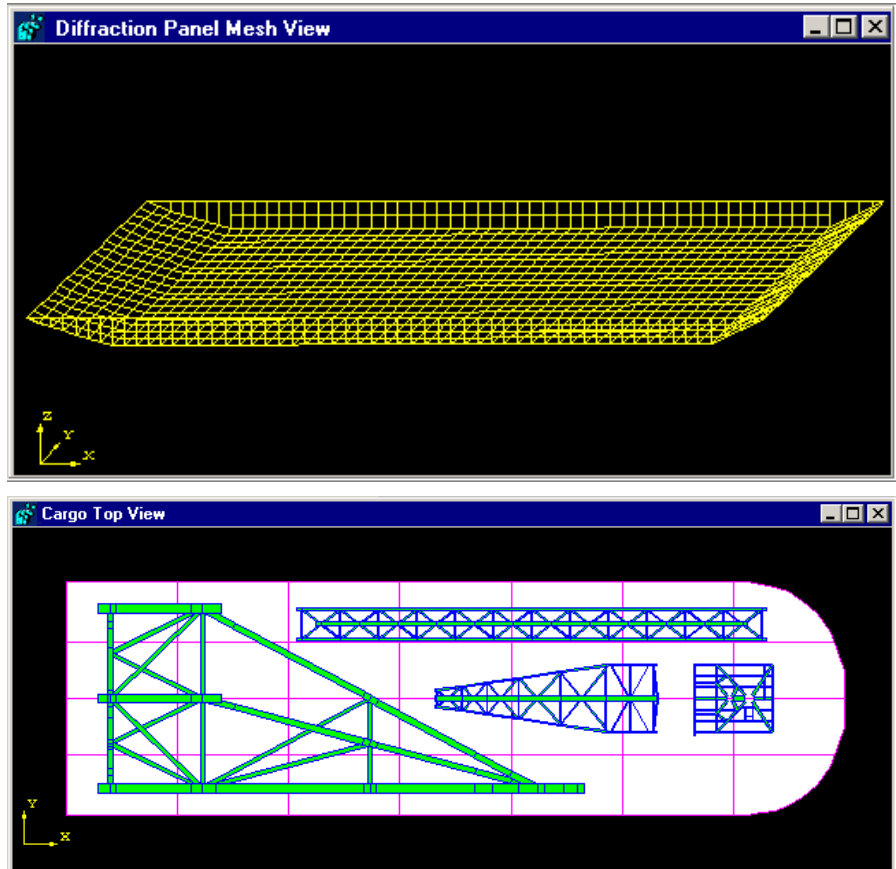


Through a partnership with *Martec, Ltd.*, the *SACS™* system has been expanded to include transportation, motion, intact and damage stability capabilities.

Overview

The SACS™ motion and transportation system has been developed to predict motions and stability characteristics of hulled structures with specialized features applicable to barges.

The system utilizes 3D linear diffraction theory that includes bottom effects and hull interaction as well as vessel forward speed, m-term effects, drift and frequency dependant viscous damping for barges and mono hulls. The diffraction panel model hydrostatic and hydrodynamic mesh can be developed automatically from hull offset data input by the user, hull data included in the extensive barge library or from an existing panel model.



General Capabilities

The *Motion/Transportation* system contains an extensive barge library that includes general properties, hull station offsets and compartment definitions. The library interface allows for creation of hull plots and reports interactively.

Ballasting capabilities include automatic ballast, automatic draft and trim features as well as fixed volume and varying volume compartments.

Numerous cargo models are supported as well as user defined added joint and member weights applied to cargo are supported (multiple cargos are *not* required to be combined into a single cargo model file). Draft stations where draft data is to be reported and plotted can be defined along with additional barge weights.

Name	Description	Length (ft)	Beam (ft)	Depth (ft)	Weight (kip)	Compa...
OC350	Otto Candies 350	350.0	100.0	20.0	7024.6	28
OPI405	OPI405	300.0	90.0	20.0	4562.0	0
PC315	PC315	315.0	90.0	20.0	4741.0	0
PEMEX574	Pemex 574	232.0	48.0	11.8	1052.0	0
PTRADER	Pictou Trader	300.0	72.0	18.5	3386.3	10
SMIT5	SMIT Barge V	300.0	90.0	20.0	3489.8	21
SPVII	SPVII	250.0	82.0	18.0	3060.0	0
TMAR240	Tide Mar 240	240.0	72.0	18.0	2211.0	0
TMAR252	Tide Mar 252	250.0	72.0	16.0	2079.0	0
TMAR253	Tide Mar 253	250.0	72.0	16.0	2083.0	0
TMAR290	Tide Mar 290	290.0	90.0	20.0	3519.0	20
TMAR300	Tide Mar 300	296.0	100.0	20.0	3519.0	32
TJ2501	TJ2501	250.0	72.0	17.0	2250.0	0
UR91	Generic 300 x 90 ft B...	300.0	90.0	20.0	3991.0	20

Units: English Metric KG Metric KN

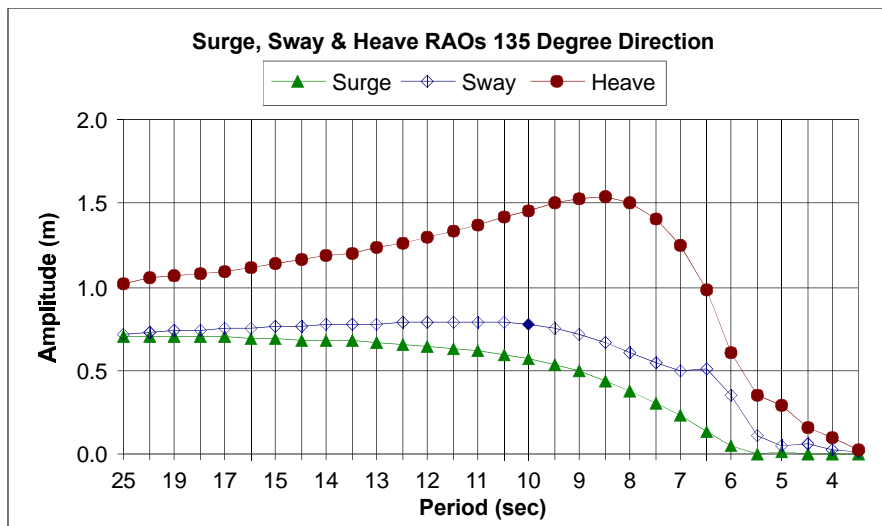
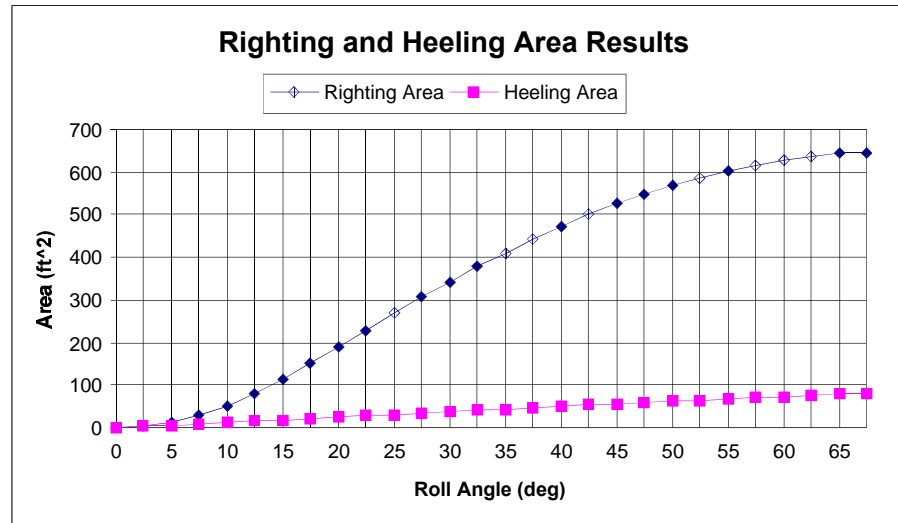
STABILITY AND MOTION ANALYSIS

Stability Analysis

Intact and damage stability capabilities include righting and heeling arm curves for various drafts and trim angles and supports ABS, DNV, Lloyds, Germanischer Lloyd's, Bureau Veritas and Noble Denton stability assessment criteria.

The system contains free flooding, full and partially full (with free surface effect) damaged compartments and allows users to ballast a vessel to achieve a desirable and/or optimized floatation condition.

Longitudinal strength calculations showing deflection and moments at stations along the hull as well as floodable length calculations are available.



Motion Analysis

Barge motion statistics for acceleration, displacement, velocity and force can be determined from ISSC, Pierson-Moskovitz, Jonswap or Bretschneider wave spectrum types at any location specified by the user. System includes user defined, RMS, average peak, significant, 1/10, as well as numerous other statistical factors. Full reporting and plot capabilities are implemented.

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