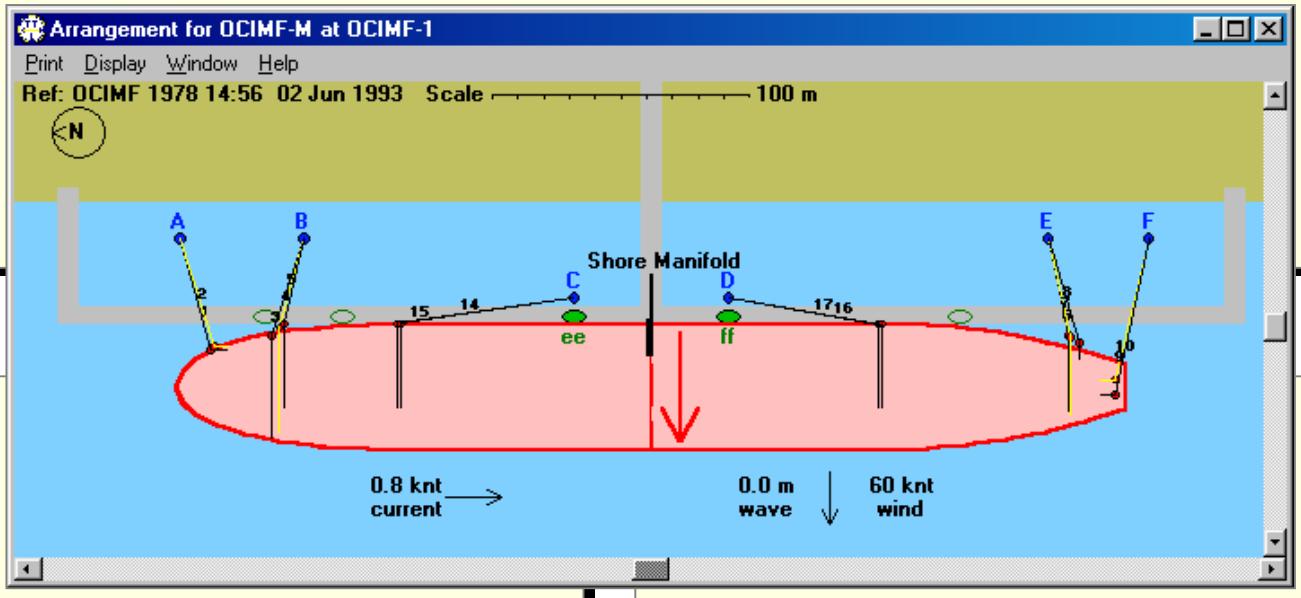
OPTIMOOR

From Synectica
Solutions, Systems & Software

MOORING ANALYSIS SOFTWARE FOR SHIPS & BARGES

OPTIMOOR is a unique, easy-to-use computer program for the analysis of vessel moorings.

In use world-wide, OPTIMOOR is proven as an essential tool for vessel and port operations personnel, especially when they have to undertake assessments to meet the requirements of the Oil Companies International Marine Forum (OCIMF) and satisfy the OPA-90 legislation.



Hand calculation of the various applied and resulting forces, using methods described in several OCIMF documents, is difficult and time consuming.

Even then, the results of such hand calculations are only approximations. Computer simulation has in the past been the work of specialists, and was time consuming and expensive.

OPTIMOOR is easy to use and employs the OCIMF recommended methods and formulae in a manner that can be run by any personnel to achieve results - fast.

Key Features

- Complex calculations made accessible in a straightforward and operator friendly way.
- In-built OCIMF methods and coefficients.
- Build a library of berth and vessel datafiles.
- Graphic plan with “drag & drop” moorings *.
- Toggle between Metric and USA units.
- Time related analyses to account for vessel draft (loading) and tide level changes.
- Auto generation of wind capability rosette *.
- Printed output of results and graphics.

* Windows version only

Licensed by Tension Technology International, the software is available in two configurations:

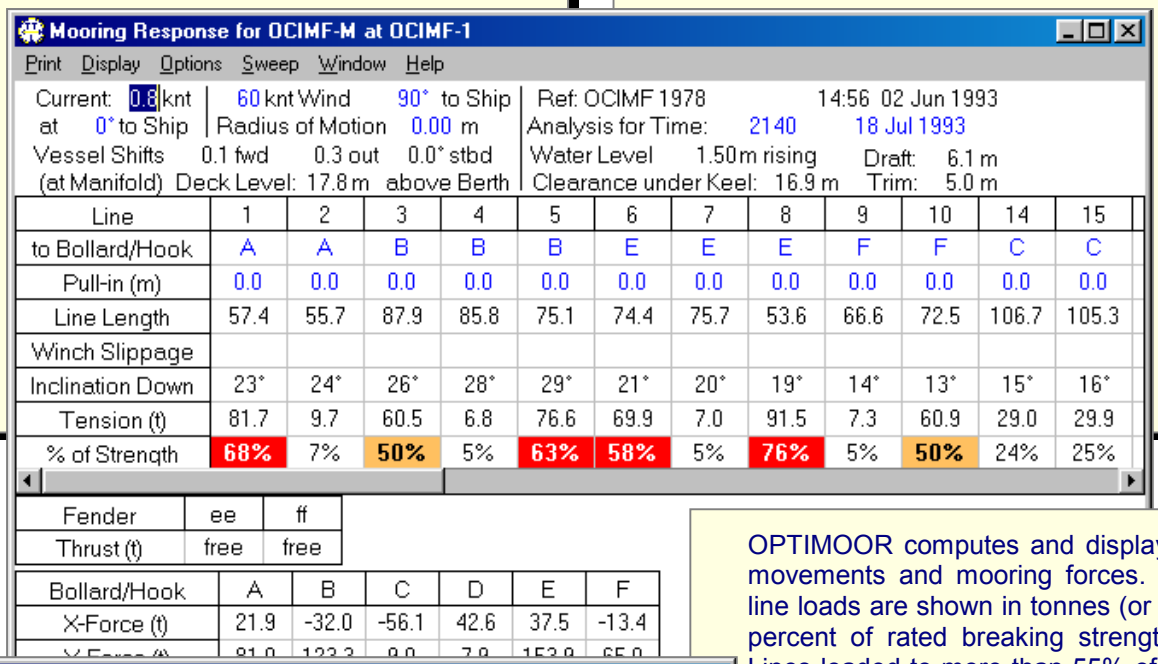
OPTIMOOR STANDARD - for quayside moorings at piers, jetties and sea islands
OPTIMOOR PLUS - quayside plus spread moorings with buoys and catenary chains

Both configurations are available for MS-DOS and Windows operating systems. The Windows versions will run on Windows 95 / 98. Network licensing is available for the Windows version.

OPTIMOOR is “Year 2000 Compliant “ when running on computer systems that are compliant.

OPTIMOOR, files are prepared in a "spread-sheet" form describing the vessel mooring system and the berth mooring points. A simple case file is then created describing the mooring arrangement for the tanker at the berth. The only other inputs required are the wind and current velocities and directions. Provision is made for entering other applied forces, for example assisting tugs, passing ship, ice, and waves. Wave dynamic effects are also considered.

OPTIMOOR can calculate the new RBS (strength) and load-extension characteristics for mooring lines. Data is provided for wire, high modulus, nylon double braid, nylon plaited and stranded, polyester, and polypropylene. For the synthetic ropes, both new and broken-in characteristics (based on OCIMF test data) are available. OPTIMOOR calculates exposure areas, wind and current coefficients, and the resulting environmental forces on the vessel.

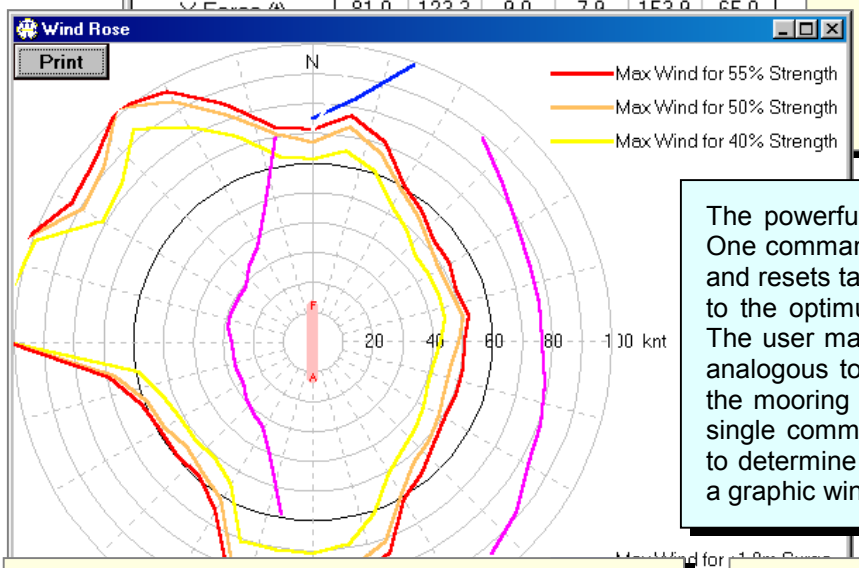


Line	1	2	3	4	5	6	7	8	9	10	14	15
to Bollard/Hook	A	A	B	B	B	E	E	E	F	F	C	C
Pull-in (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Line Length	57.4	55.7	87.9	85.8	75.1	74.4	75.7	53.6	66.6	72.5	106.7	105.3
Winch Slippage												
Inclination Down	23°	24°	26°	28°	29°	21°	20°	19°	14°	13°	15°	16°
Tension (t)	81.7	9.7	60.5	6.8	76.6	69.9	7.0	91.5	7.3	60.9	29.0	29.9
% of Strength	68%	7%	50%	5%	63%	58%	5%	76%	5%	50%	24%	25%

Fender	ee	ff
Thrust (t)	free	free

Bollard/Hook	A	B	C	D	E	F
X-Force (t)	21.9	-32.0	-56.1	42.6	37.5	-13.4

OPTIMOOR computes and displays vessel movements and mooring forces. Mooring line loads are shown in tonnes (or kips) and percent of rated breaking strength (RBS). Lines loaded to more than 55% of RBS are highlighted in red. The analysis results are also reflected on the plan graphic display and the numeric results can be printed out.



The powerful OPTIMOOR features are easy to access. One command brings a case back to its initial conditions and resets target pretensions. Another brings all lines up to the optimum tension for minimum vessel movement. The user may alter individual line tensions (in a manner analogous to tending the mooring winch) so as to bring the mooring line load distribution into better balance. A single command sweeps the wind through 360 degrees to determine the "worst-case" loading on each line, and, a graphic wind capability rosette can be generated.

OPTIMOOR has provision for initial and final draft and trim conditions and times. It also supports tidal variations via tide tables with automatic application of local correction factors. With these inputs, line tending requirements can be anticipated by stepping forward in time by minute or hour intervals. A single key command "fast-forwards" and displays the times at which various lines would become overloaded.

Vessel and port personnel can train on OPTIMOOR to learn good techniques for arranging and tending mooring lines. The advantages and problems of various mooring arrangements can be explored and demonstrated. The time-forward feature with tide, draft and trim changes, will show how to anticipate line tending requirements and decide on what might be the best tending action at a particular time.

For further information and a demonstration, contact:
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