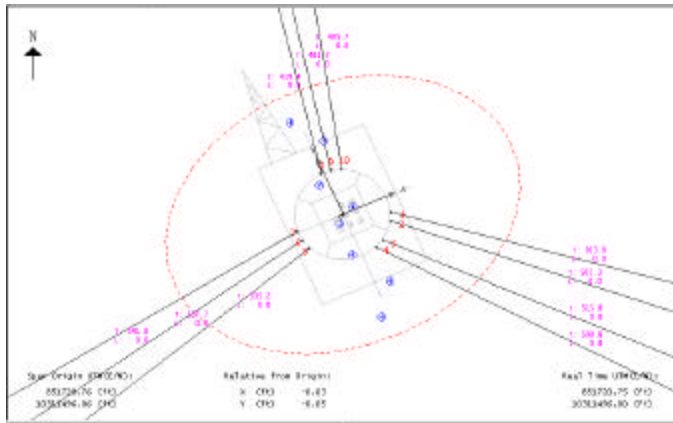


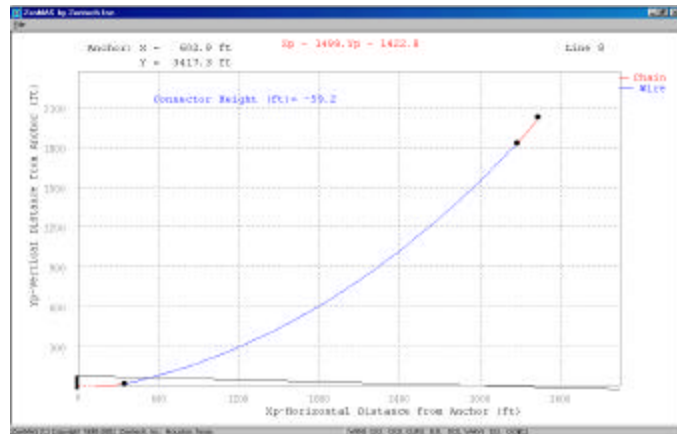
Onboard Realtime Vessel Positioning and Mooring Advisory System



ZenMAS is a powerful state-of-the-art, rig-specific Realtime Mooring Advisory System, for use onboard floating moored vessels.

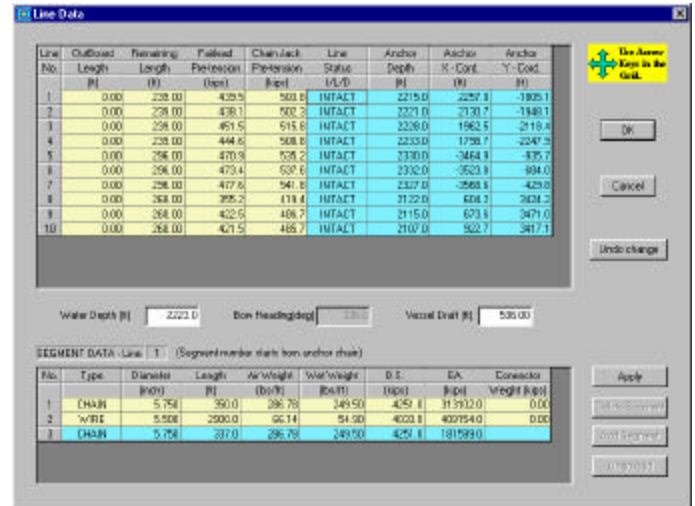
Major Features of MAS

- Real-time and Simulation Modes of Operation
- Multi-level password protection
- Multi-segment mooring lines
- Considers the influence of riser stiffness on the system
- Computation of environmental forces from weather data and vessel coefficients
- Computation of vessel position from weather data and line length changes
- Recommendation for Moves : Re-positioning the vessel by haul-in / pay-out of lines
- Static and Quasi-static analysis
- Comparison between program calculated and real-time data
- Line break transient analysis
- Check calculated parameters against limits set by the user



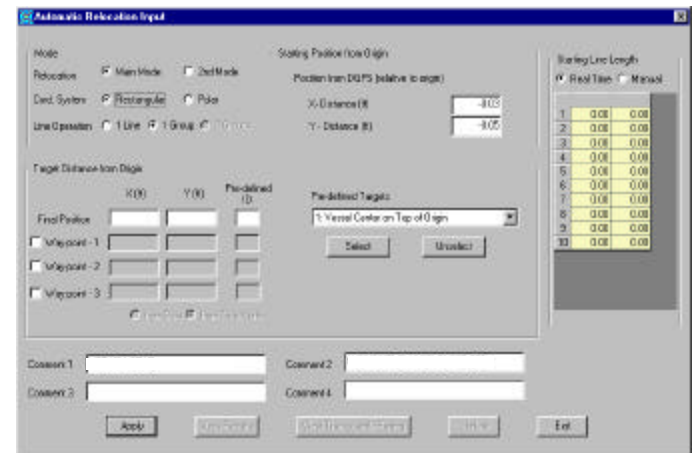
Calculations Performed

- Computes Environmental Forces from Weather Data
- Calculates Vessel offsets and Line Tensions
- Estimates Payouts and Haul-in Required for Auto Relocation
- Estimates Distance Relocated for Given Payout
- Performs Line Break Transient Analysis
- Calculates Pipeline Clearance



Major Features of MAS (contd..)

- Warning alarms for chain jack tension, pay-out/hauling etc. during relocation
- Step-wise real-time relocation, with the update of vessel position, mooring line tension and length
- Recent history of vessel movement (snake trail)
- Availability of summarized hard copy outputs for easy implementation



Graphic Displays

- Display of the mooring system showing vessel position and line tensions
- Display of catenary profile of individual lines
- Display of vessel motion history after line breakage
- Display of vessel relocation track



Invest in the Best