

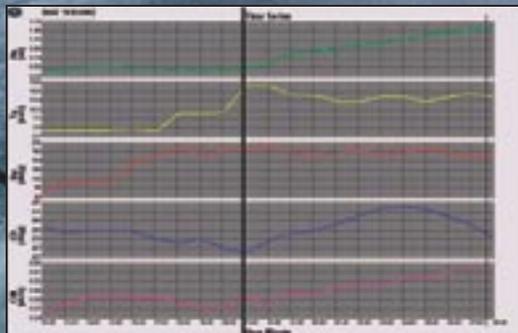
# Decision time.

*Minimize your down time with  
real-time measurement of the waves  
and currents affecting your operations*

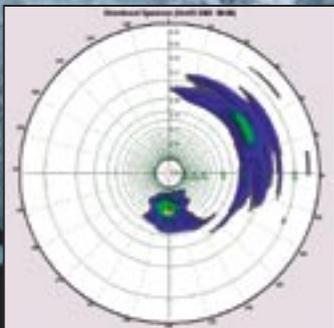
RD INSTRUMENTS' HORIZONTAL ADCP (H-ADCP) now provides precision directional wave data in addition to surface current measurement. Quickly and easily collect all the information you need to make key decisions when the environment is affecting your marine operations.

- **One instrument, one solution:** simultaneous wave and current measurements
- **Real-time measurements:** minimize your down time
- **All-weather capability:** from flat calm to raging seas
- **Simply deployed:** mounts to the platform—no buoys or mooring lines
- **Remote measurement:** beyond the wake of the platform

Learn more about the H-ADCP and RDI's many other Doppler solutions at [www.rdinstruments.com/horizontal.htm](http://www.rdinstruments.com/horizontal.htm)



The first indication of the storm is long period waves arriving from the south. The wave height and surface currents build while the wave period decreases over time, which indicates that the storm is approaching. At the end of the record the storm has arrived.



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# H-ADCP Waves Array

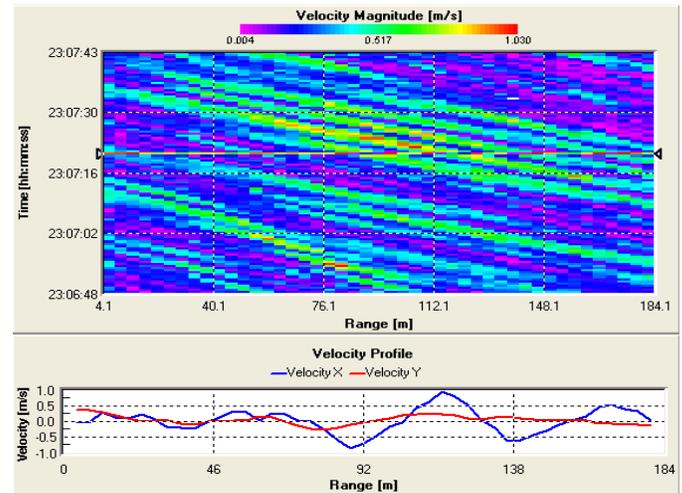
**The Horizontal ADCP from RD Instruments has added wave measurement capability to its proven ability to measure the near-surface currents affecting your operations. The H-ADCP waves array now adapts the proven RDI Waves Array Technique to the Horizontal beam geometry.**

## Velocity Measurement:

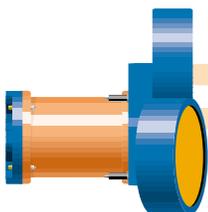
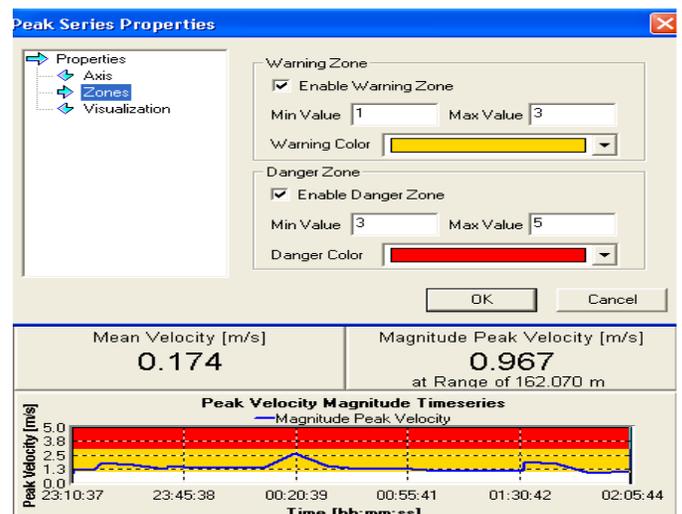
The H-ADCP provides instantaneous profiles of the velocity affecting your platform, as well as a time history of the velocity in the form of a contour plot. Shown to the right is velocity data gathered at 2 Hz, where the incoming waves are clearly visible.

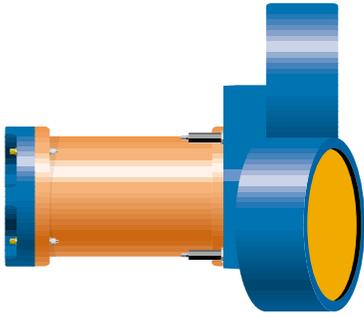
A tabular display of up to three selected ranges can be displayed. For example, a nearby range to measure immediately next to the platform, a mid-range location for measurement outside the influence of the platform, and a far-range measurement – for example, at the range of an off-loading buoy.

The operator has the option of setting up an averaging window to monitor both the mean velocity and the peak velocity (along with its range) . A time series is generated and plotted against a background allowing the operator to setup **WARNING** and **DANGER** zones based on the platform characteristics. This allows a straightforward visual cue of possible risks to operations.



Tabular Velocity Magnitude		
Range [m]	Velocity [m/s]	Bin Depth [m]
62	0.230	2
122	0.481	3
182	0.335	4



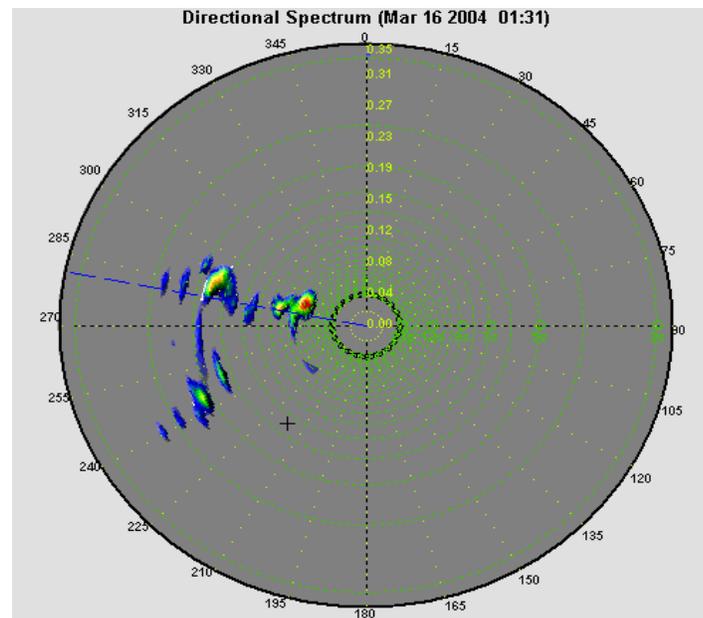
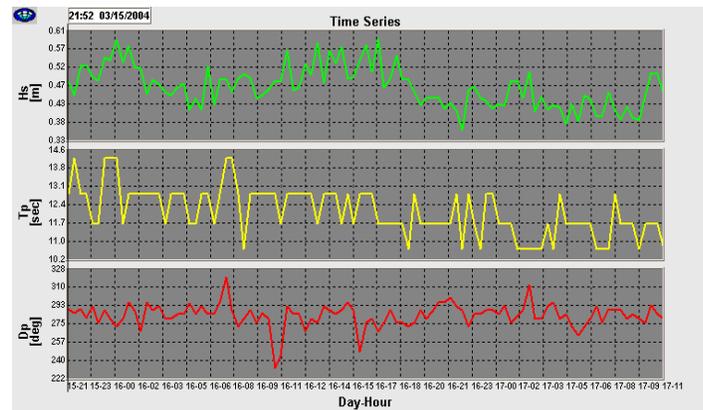
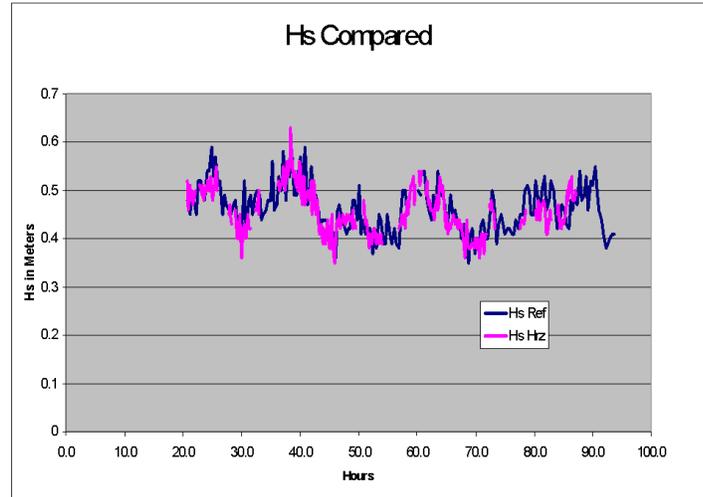


## Wave Measurement:

The first order of business in transferring the waves array technique to the horizontal platform was a rigorous comparison with a known reference. A comparison of the significant wave heights measured over several day is shown.

Time series of significant wave height, peak period and peak direction are displayed. As with the velocity time series, **WARNING** and **DANGER** zones can be configured for an easy visual cue of potential risks for the operator.

Polar plots showing the directional distribution of the wave energy are also generated by the software. The array generated by the Horizontal ADCP allows excellent directional resolution, and the processing technique allows the resolution of multiple waves of similar frequency but different direction of travel. Shown here are waves of about six second period that are simultaneously propagating from 290° and 250°.



# H-ADCP Waves Array



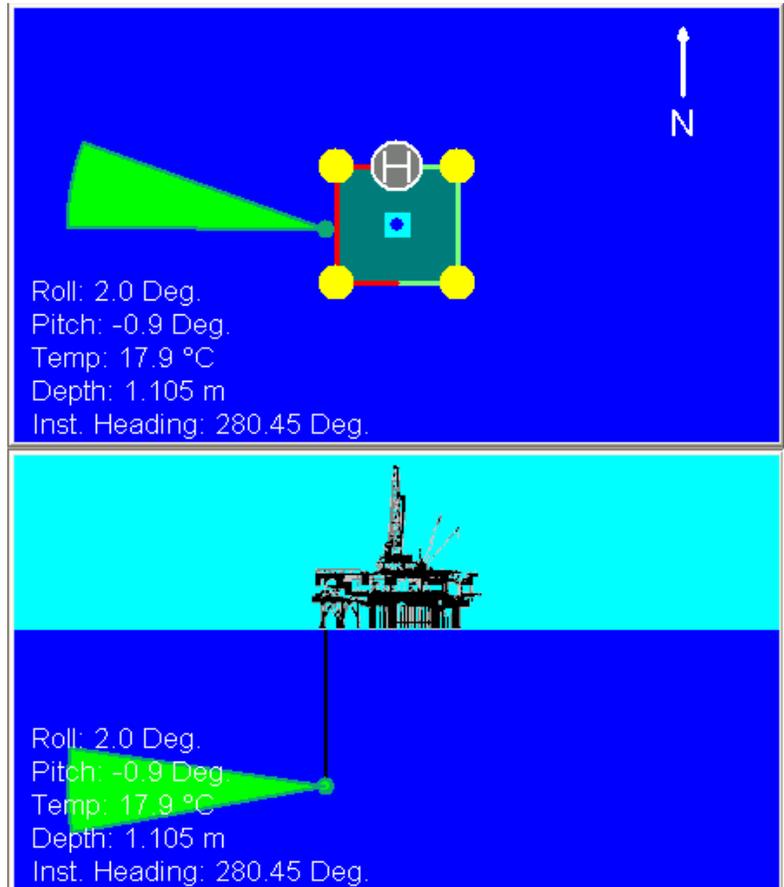
## Instrument Environment:

The software also provides an overview of instrument operation. The user can toggle between the plan and side views shown.

The instrument position can be relocated in the image to accurately represent its location on the platform. The display shows the location of the measurement volume, and it updates with changes in the heading pitch or roll of the instruments.

Water temperature and depth of the instrument are also displayed.

**For more information visit:**  
**[www.rdinstruments.com](http://www.rdinstruments.com)**



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