

The Line Monitor

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Line Control System for tugboats

Softline usage/tension data tracked

Measurement Technology NW introduces an all new line monitoring program for tugboats: "TugDAC". This software/hardware package tracks line tension history and for the first time lets towing and ship assist operators accurately track the safe working life of their synthetic ropes.

The "TugDAC" PC software interface works with or without an LCI display to process sensor data and provide automatic, real-time tension tracking as well as an accumulated tension history of the rope being monitored.

These rope work summary reports are a valuable tool for determining the remaining safe working life of synthetic or wire ropes. Reports can include the CBS rating of the line being monitored and the percent of total bollard pull reached during any tracked job. The data collection and parsing functions can be initiated for each job, and analyzed afterwards (by job or by job group) to provide an insightful view of winch line usage.

Handy features ease the Captain's paperwork load by replacing manual paper forms commonly used today with a series of pull-down data-entry fields for tug and vessel information, tug maneuvers, sea and weather conditions, as well as any job related comments the Captain determines are relevant.

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Reports can be viewed at the PC screen or printed out for distribution. Data is logged to disk by job, and if desired, past jobs can be reloaded and viewed in a variety of graphic formats including line and histogram.

With LCI display hardware in place, additional features include an

automatic minimum rope alarm, and high tension caution/alarm functions. An automatic layer compensation algorithm ensures measurement accuracy regardless of the active layer. The LCI hardware is network configurable (allowing use of remote displays), and it includes the PC data logging interface used by TugDAC.

Our LCI-90 or LCI-100 winch displays provide the performance, readability, and reliability needed for demanding workboat applications. Multi-channel I/O and a bright electroluminescent screen permit wide-angle viewing of

"TugDAC" software tracks the real-time and cumulative tension history of workboat softlines to help determine their remaining safe working life"

tension, payout, and line speed status regardless of the lighting conditions. (See page 2 for more details on the sophisticated EL technology used in the LCI). All display features, including on-screen calibration, screen layout, alarms, and diagnostic and security capabilities can be accessed via the front panel pushbuttons.



LCI installation on the tug *Lindsey Foss*

What's an "EL" (electroluminescent) display, and why is it better?



The thin-film electroluminescent (EL) panel used in our LCI-90 and LCI-100 displays provide higher contrast and brightness than comparable LCD technology, and feature an amazing 160° viewing angle (in both vertical and horizontal directions) for crisp data viewing in any application.

Electroluminescence refers to the direct conversion of electrical energy into light, caused when a material emits photons (light) in response to an electric current passing through it. In the LCI's display, the EL screen is a luminescent phosphor layer sandwiched between transparent dielectric layers with column and row electrodes arranged in an X-Y format.


When a voltage of sufficient amplitude is applied at a row-column intersection, light is emitted. Each intersection (there are 76,800 in all) is an individually addressed pixel controlled by the LCI.

A circuit board containing the drive and control electronics is connected to the back of the EL screen. The result of this solid-state design is a compact, reliable, very rugged display with exceptionally fast response times (< 1 ms).

Built-in contrast (dimming) controls can be set for comfortable nighttime viewing. Crisp image quality is maintained at all times - even at high/low temperature extremes - and our EL panels retain more than 75% of their original luminance after more than 100,000 hours of operation.

Display construction satisfies the new RoHS "lead-free" criteria, and superior shock, vibration, and electromagnetic resistance place our LCI series at the leading edge of display technology.

All LCI-90 displays are in full compliance with:
EMC Directive 89/336/EEC
 EN Standards: EN 61326-1: 1997 + A1: 1998, Class A
 Emissions Test: EN 55011: 1998 + A2: 2003
 Immunity Test: EN/IEC 61000-4-3: 2002 + A1: 2002
 EN/IEC 61000-4-2: 1995 + A1: 1998 + A2: 2001



Eastern Universities go West for new LCI winch display systems

LCI-90 winch display systems were recently selected by the University of Delaware, Duke University's Marine Laboratory, and the University of Rhode Island for their UNOLS vessels.

A similar dedicated LCI-90 display system with switched remote viewing capability was also installed on Duke University's *Cape Hatteras*, to monitor their three-winch configuration.

displayed at each winch on its local LCI-90 display, and those readings are also broadcast via RS-485 serial network to a central PC running MTNW's WinchDAC software.

The University-National Oceanographic Laboratory System (UNOLS) is an association of 64 academic institutions active in oceanographic research and joined for the purpose of coordinating oceanographic ships' schedules and research facilities.

For the University of Delaware's new 146' research vessel *Hugh R. Sharp*, the LCI winch monitoring system was designed as an active winch system capable of displaying one, two, or all four winches simultaneously at a

The complete *Hugh R. Sharp* system consists of four LCI-90 local displays, one flat panel PC with touchscreen and WinchDAC software (at the aft control station), and one remote VGA display (in the forward control station). From the panel PC, operators can view and log data from any winch. WinchDAC software automatically polls each LCI display for parameter information, and scans the vessel's four winches every 0.5 seconds to

For the University of Rhode Island's 185' research vessel *Endeavor*, the choice was a dedicated winch system, using strain-gauge equipped LCI-90 displays to interface with the vessel's existing Metrox winch sensors.

central control station. Line speed, payout, and tension readings are

In this system, the *Endeavor's* three winches each have a dedicated local LCI-90 display for viewing tension, speed and payout status at the winch, while a central control box contains system power and winch select switches. The position of the winch selector switch determines which winch is displayed at the two remote monitoring stations. Data is also output to the shipboard computer system via the LCI-90 RS-485 isolated serial port.



R/V *Hugh R. Sharp*



R/V *Endeavor*

show real-time line speed, tension, payout, and alarm status. For more detail, clicking on a winch screen icon takes the operator to screens showing current status of that particular winch.

The operator can also view graphs that track any winch parameter versus time, and the program's single point marker tool can be used to determine the exact values experienced at any point in time. WinchDAC automatically logs and summarizes data, giving operators the ability to review/analyze past casts.

All these installations are complete and ready to take on this year's busy UNOLS research schedule.



Don't miss hearing what our customers have had to say about the LCI system and the after-the-sale service provided by Measurement Technology NW. As of this newsletter's publication date, eight Project Profile stories have been posted for your review on the

MTNW website, under the section titled "Background". Use this link (<http://www.mtnw-usa.com/linesystems/casestudies.html>) to access all of them. New project profile stories are posted on a regular basis, so check in often for the latest MTNW customer feedback.

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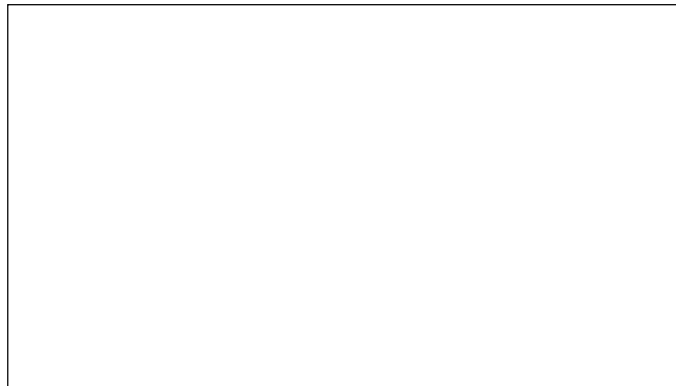
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Measurement Technology NW designs and manufactures rugged, multi-channel winch line control instruments used to monitor speed, payout, and tension (both cable and chain) in single or multi-winch systems used for ROV/equipment deployment, barge and platform positioning, fixed-place mooring, drawbridge controls, helicopter or ship towed arrays, mining and oilfield drilling, and wherever accurate and reliable line control is required.



MTNW is your complete winch instrumentation provider

Measurement Technology NW is more than just the manufacturer of LCI displays - we are (or should be) your source for count and force sensors, load pins, running line tensiometers, PC software for single or multi-winch installations, and a provider of full system instrumentation packages.

From single-display installations to complex serial networks of a dozen displays or more, MTNW equipment is fast, accurate, very readable, easy to use, and so reliable that every display we've built to-date is still performing

out in the field. That's a track record we're proud of, because when we do our job right, you can do yours without worry (and who wouldn't like to have one less thing to worry about?).

Look to MTNW for innovative designs, proven performance, cutting-edge features, comprehensive technical support, and the best "total value" in advanced line control systems.

Look for MTNW at Oceans 2006, September 18th-21st, in Boston. Our LCI-90 and LCI-100 systems will be on display in booth 705. Check out all the LCI models and learn why so many organizations have chosen the LCI system for their winch monitoring needs.

