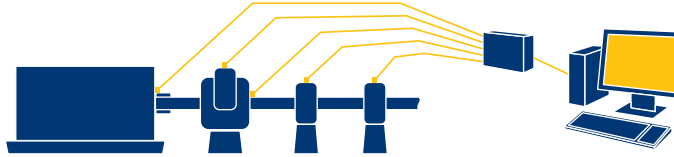


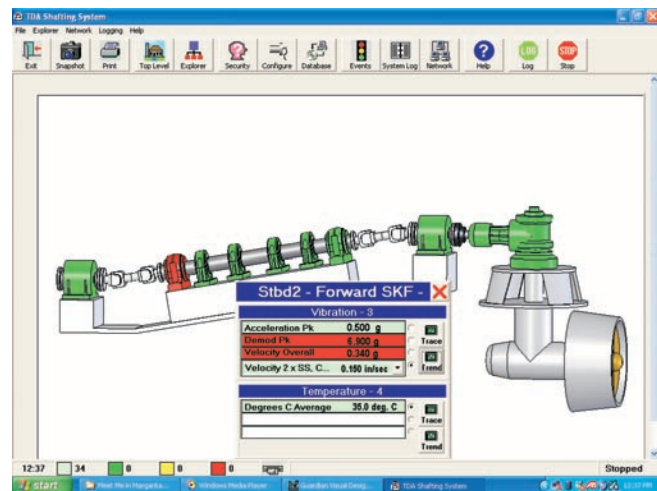
IMPACT/Guardian

“On-Line” Machinery Monitoring System



IMPACT/Guardian is a continuous “On-Line” monitoring system used to gather vital information on the condition of rotating machinery. This full featured system consists of sensors, cabling, sensor acquisition nodes, on-line monitoring software, and a desktop computer to acquire dynamic condition measurements. The **IMPACT/Guardian** system allows for alarming, trending, analysis, and data archiving. The system can be accessed locally through Ethernet cabling or remotely via the internet.

IMPACT/Guardian can process both dynamic measurements (typically vibration) and static measurements such as temperature and pressure. Installed systems are easily expandable to meet any future monitoring needs.



IMPACT/Guardian features an intuitive mimic/graphic based interface.

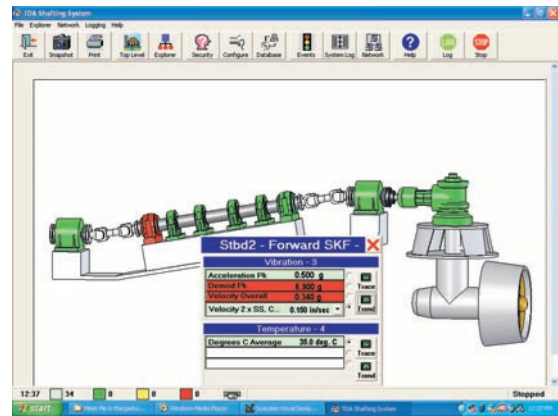
A mimic/graphic based interface allows visual trending of machine conditions. This gives the operator a clear indication of machinery status at a glance. Simple hierarchal menus and intuitive controls allow for quick operation and maximum ease of use.

This machinery monitoring software system, developed by ICON Research of West Lothian, Scotland, also utilizes 16-Channel or 20-Channel Ethernet Data Acquisition Nodes which can be used in multiples for greater flexibility.

IMPACT Engineering is currently offering complete systems (including installation) for substantially less than custom designed and built systems with comparable components. Plus, **IMPACT Engineering** provides on-site training during the initial installation as well as diagnostic and corrective maintenance support as necessary.

IMPACT/Guardian has been designed to allow the monitoring of machinery with a minimum amount of operator involvement and intervention. Overall machinery status can be seen by simply glancing at the front screen mimic. Any excursions above pre-set alarm limits are reported immediately, then acknowledged and investigated by the operator. All system activity is automatically recorded in a log so that a complete operating history is maintained.

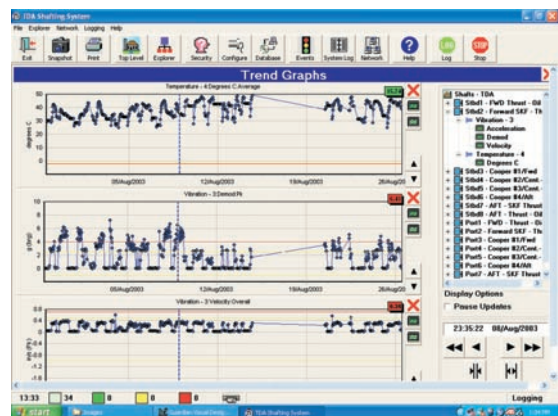
The “traffic light” display at the bottom of the screen shows the status of all measurement points. If a bearing goes into alert or alarm, that portion of the mimic changes color accordingly, thus giving clear and detailed report of an anomaly. A single mouse click brings up a measurement screen that provides further details of the highlighted condition and pinpoints the precise area of the machine needing attention. If several alerts or alarms have occurred simultaneously, these can be reviewed in order.



Color changes give a clear and detailed report of an anomaly.

Trends and Levels

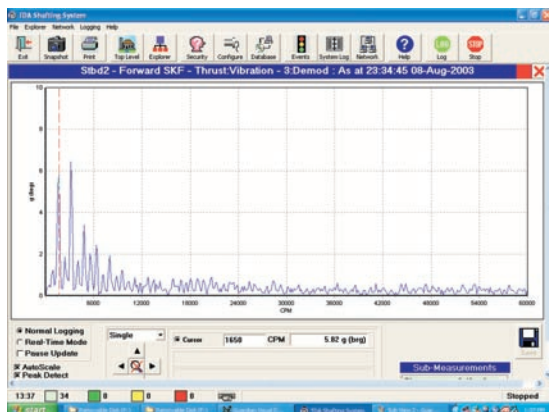
Once an abnormal condition has been identified, the next question often asked is “How long can we leave it running?” This is where trending comes in. The rate of deterioration can be assessed, and comparisons made with previous occurrences on this and other similar machines. Flexible comparison and overlay facilities are available.



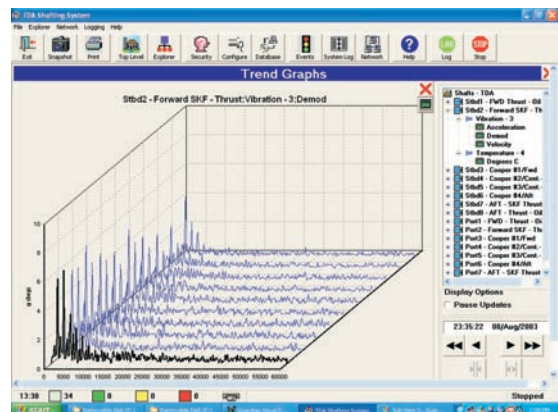
Trending allows the rate of deterioration to be accurately assessed.

Further Analysis

Additional analysis tools are available to determine the exact cause of a possible problem. Bearing condition and spectral analysis displays can be called up with the ability to overlay and compare with historical data. It is also possible to go “live” to any point on the system and see time/spectral updates in “real time”. This is especially useful where machine parameters are changing, such as speed and loads.



Detailed Spectral Display



Cascade plot showing detailed spectral plots