

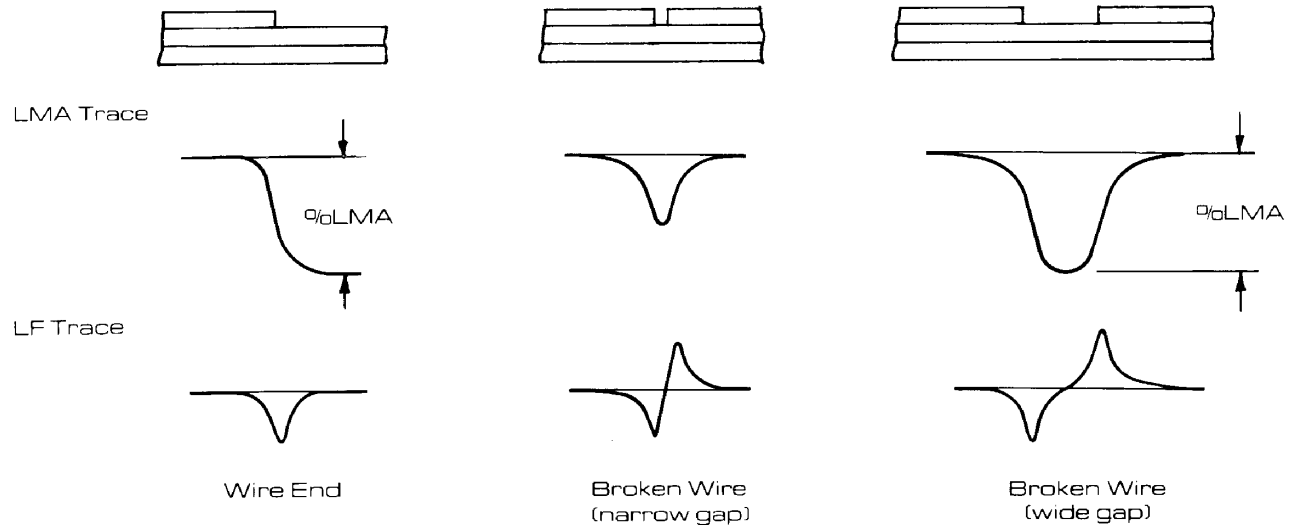
Non-Destructive Inspection with LMA-TEST™

The **LMA-TEST™** rope inspection instrument magnetically saturates a section of the steel rope with strong samarium-cobalt magnets. Where there is an irregularity in the rope, such as a broken wire, corrosion or abrasion, the distorted magnetic

flux leaks from the rope. Sensors close to the rope sense the magnetic leakage flux pattern. The magnetic leakage flux induces electrical test signals in the sensors. Signal processing circuitry modifies the test signals to make them pro-

portional to the loss of metallic area caused by rope defects. A strip chart recorder and/or a cassette tape recorder records and displays signals. For a simplified on site defect indication, warning lights and audio signals are available.

The following is a short defect catalog with typical chart patterns of important types of rope flaws:



We have two different signal traces:

- **The Loss-of-Metallic-Area (LMA) Trace** gives a quantitative indication of loss of metallic cross-sectional area caused, for instance, by broken wires, corrosion, and abrasion.

- **The Localized-Flaw (LF) Trace** is used to pinpoint the location of broken wires. After flaws have been located on the LF Trace, the LMA Trace is used for a detailed defect analysis.

Chart recordings of a rope splice. The **LMA-TEST™** recording on the left clearly indicates broken wires.

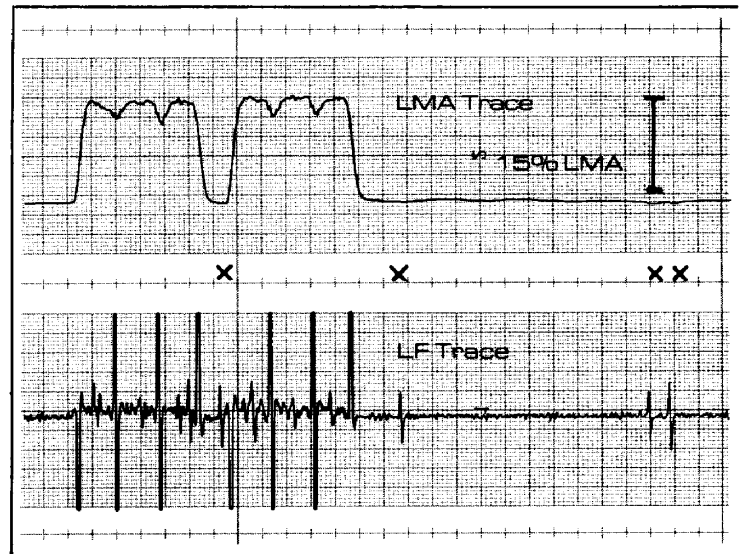
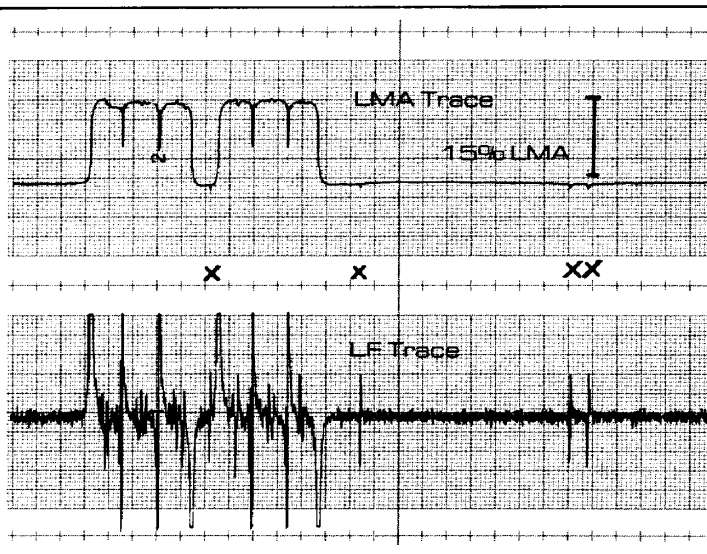
The broken wire signals are conspicuously missing from the competitor's LMA signal trace on the right.

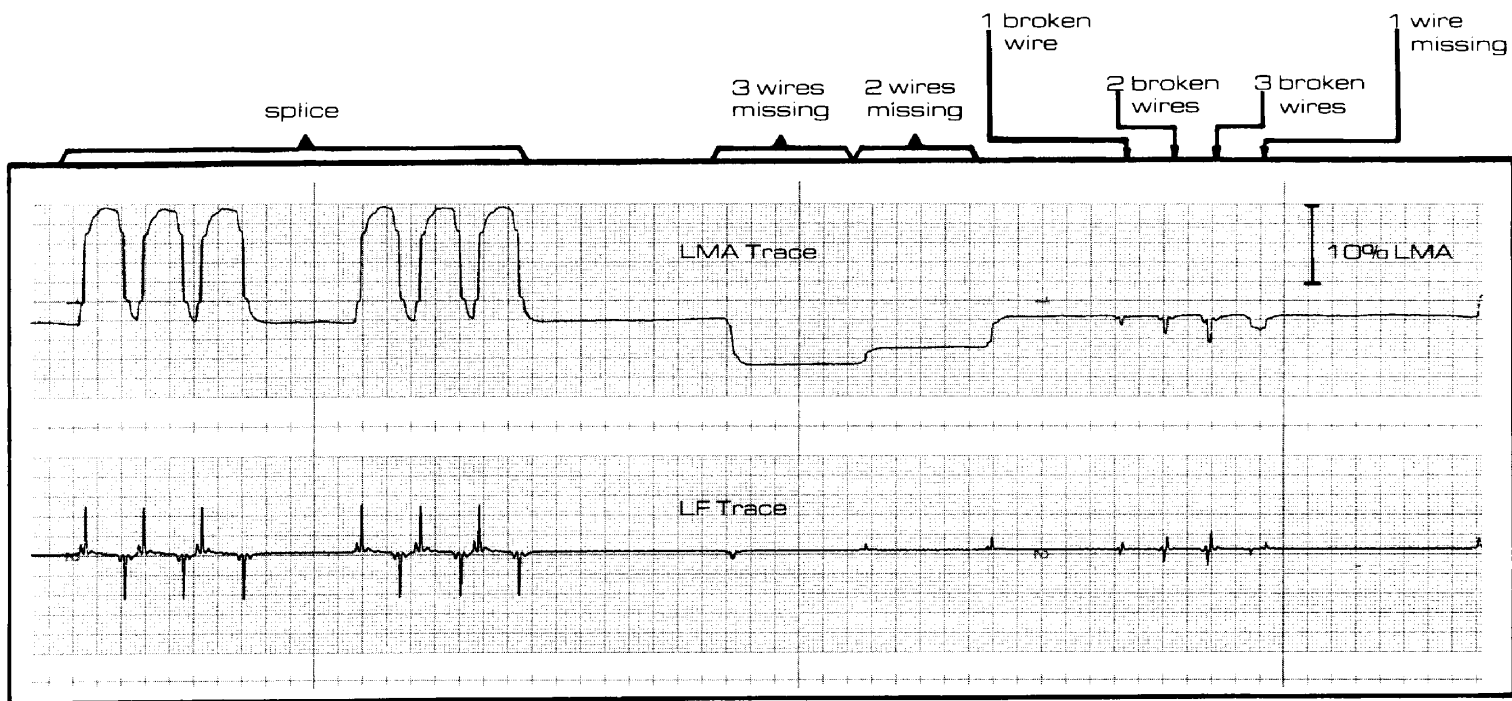
LMA-TEST™

COMPETITOR

X Broken Wire

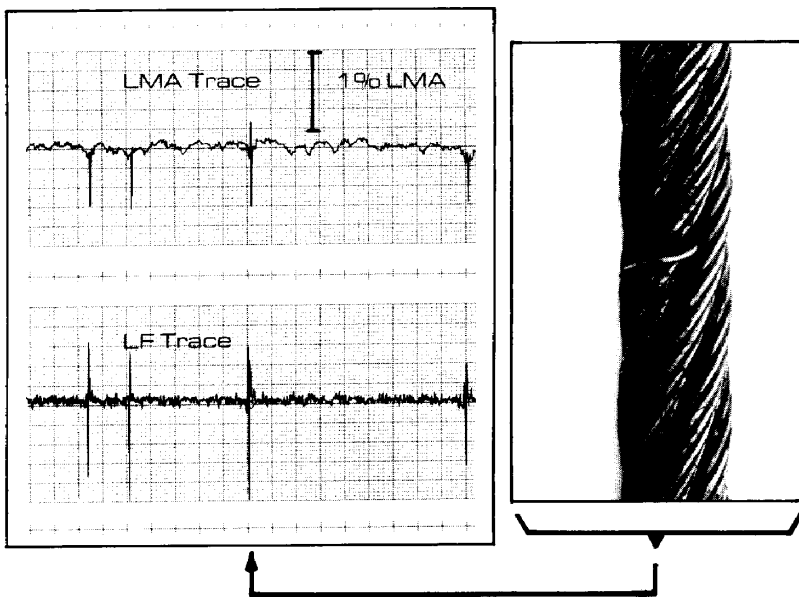
X Broken Wire





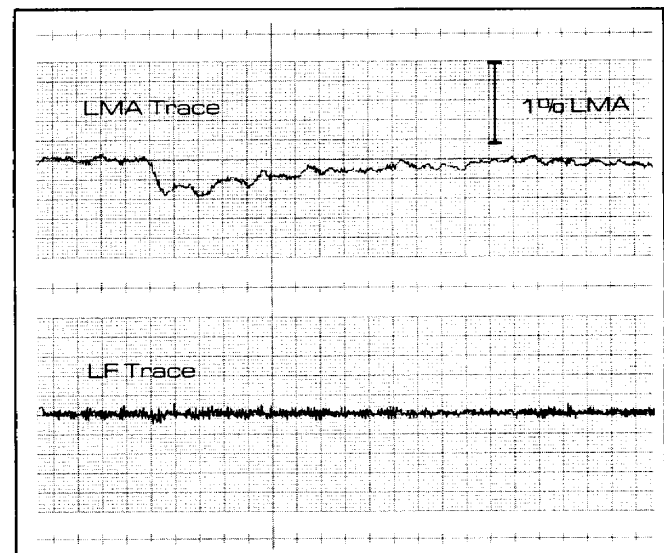
The above chart recording of a test rope with well defined standard flaws illustrates the perform-

ance of the **LMA-TEST**™ system. Using the defect catalog, this chart recording is self explanatory.



The chart recording on the left illustrates the amazing accuracy and resolving power of the **LMA-TEST**™ rope inspection system. The broken wire in this rope is bent back, causing first an increase and then a decrease of metallic cross-sectional area. The corresponding chart pattern of the LMA trace shows this increase and decrease with astonishing detail. The chart recording also indicates additional broken wires.

The LMA trace in this recording shows a 0.5% loss of metallic cross-sectional area caused by abrasion.

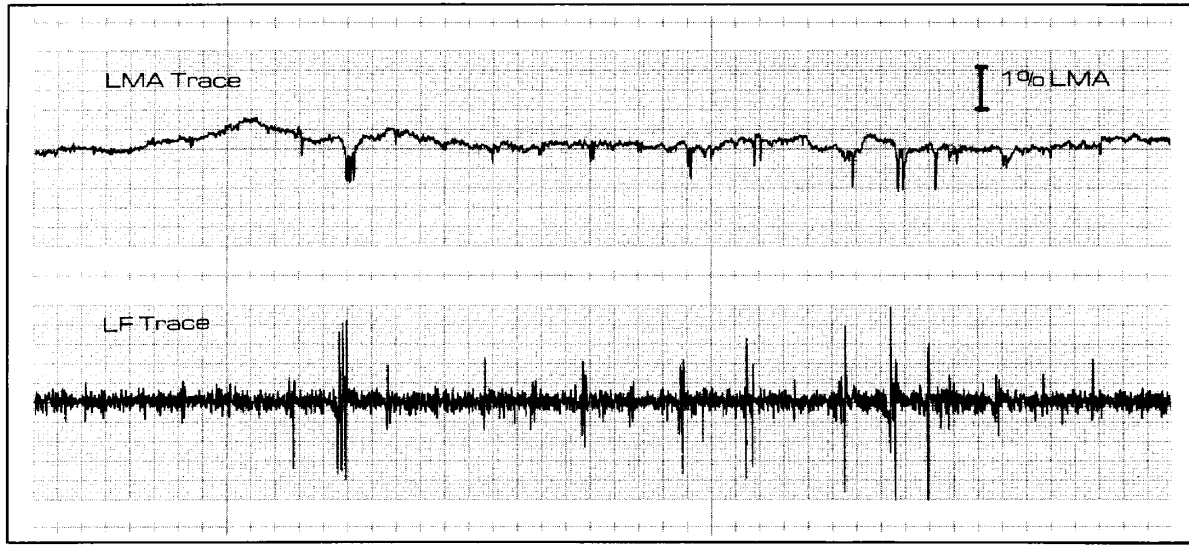


LMA-TEST™ vs. Competitor

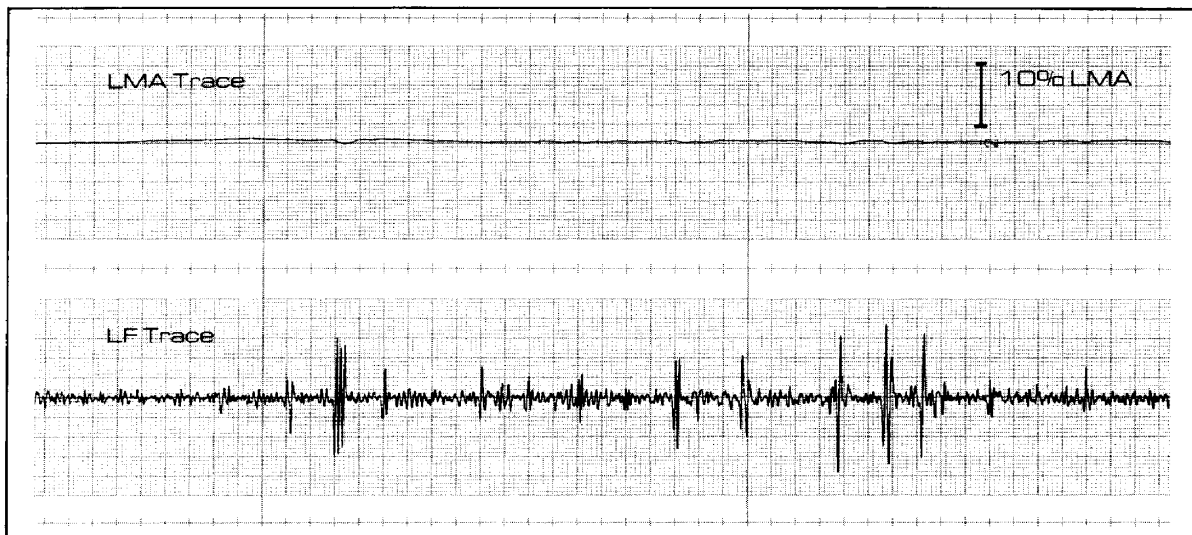
The following chart recordings compare the **LMA-TEST™** inspection system with the next best competing instrument.

These recordings demonstrate the superior accuracy and resolving power of the **LMA-TEST™** system.

LMA-TEST™



COMPETITOR



The **LMA-TEST™** recording shows considerably more detail, including broken wires, than the corresponding recording by the competing instrument. The

resolution of the **LMA-TEST™** LMA trace is an order of magnitude better than that of the competitor.