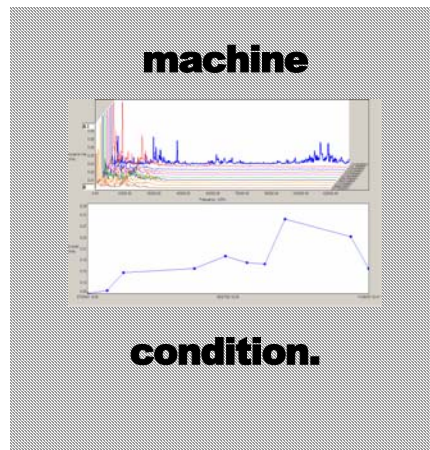
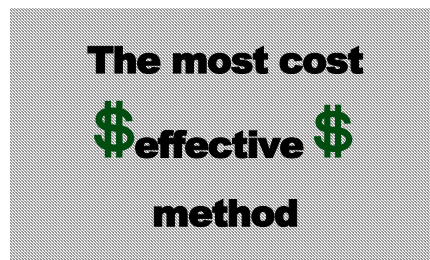
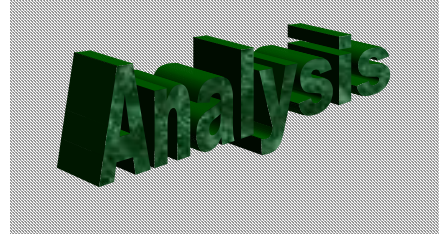


WHAT IS VIBRATION ANALYSIS?

Simply stated, *Vibration Analysis* is a technology that correlates the health of a machine with its vibration signature. Using an accelerometer (typically), a signal is acquired from the bearing locations of a machine. This signal is then processed as audio and the data is viewed using an FFT spectral plot. Much useful information on the health of the machine is derived from this data. Through extensive knowledge of what should and should not be present in a machine's spectra, (as well as by contrasting the data to previous readings taken on the machine) a qualified analyst determines if there is a problem developing in the machine. What frequencies are noted in the vibration spectra, the amplitude (how much vibration) of these frequencies, and the extent that the reading has changed (if previous data is available) are all criteria for what kind of problem (if any) is developing in the machine and how severe the problem might be. Some problems that can be detected are:

- Bearing faults
- Gear & Gearing Problems
- Poor Shaft alignment
- Pump flow problems
- Worn or rubbing components
- Some motor faults
- Imbalance



PREDICTIVE TOOLS

A doctor relies on many tools to make his determination of a patient's condition. A thermometer for checking temperature, a stethoscope for listening to the heart, and a blood pressure monitor are just a few items he might utilize. An increase in the patient's temperature, elevated blood pressure, or change in the heart's rhythm might indicate an internal problem. The doctor reviews the patient's charts, performs additional testing and makes his prognosis based on the accumulated data. Many lives are saved and prolonged because of his proper diagnosis and intervention. Likewise, data can be accumulated and analyzed on machinery. By trending the machine's vibration, the analyst has a "chart" to refer to. It is no longer a matter of subjective (it feels rough to me...), but rather, a real (trendable) value has been assigned to the unit. Additional testing such as temperature trending, ferrographic analysis, and motor circuit testing can assist in the diagnosis. The benefit...minimal loss of downtime due to planned repair, reduced repair cost due to early intervention and extended machine life.