KPI'S FOR CM

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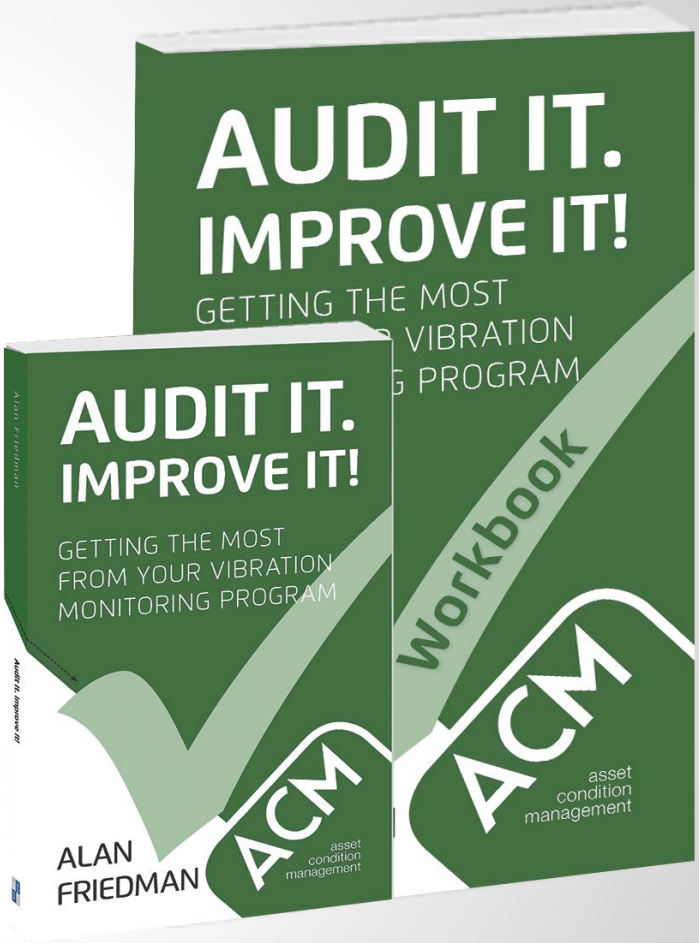
CMRP, CRL, Cat IV Vibe

Author of the best selling:
Audit it. Improve it! Getting the most from your vibration monitoring program



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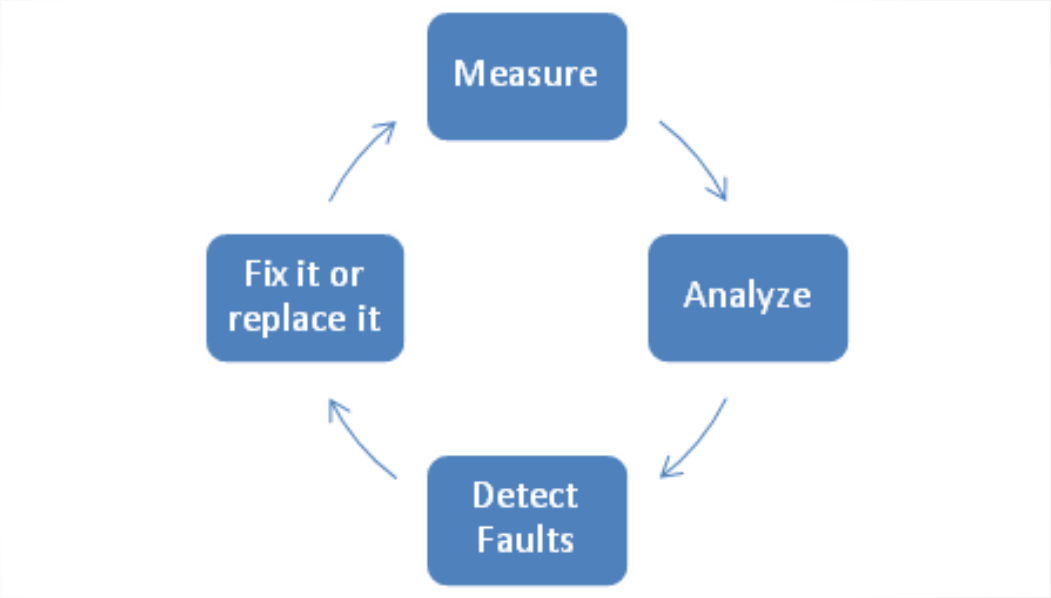
CONDITION MONITORING



WHAT IS A KPI?

- **Key Performance Indicator**
- **Something you can measure**
  - Lets you know if you are reaching your goal

KPI'S FOR CM

- **Only measure it if the outcome will change your behavior**

KPI'S FOR CM

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KPI'S FOR CM

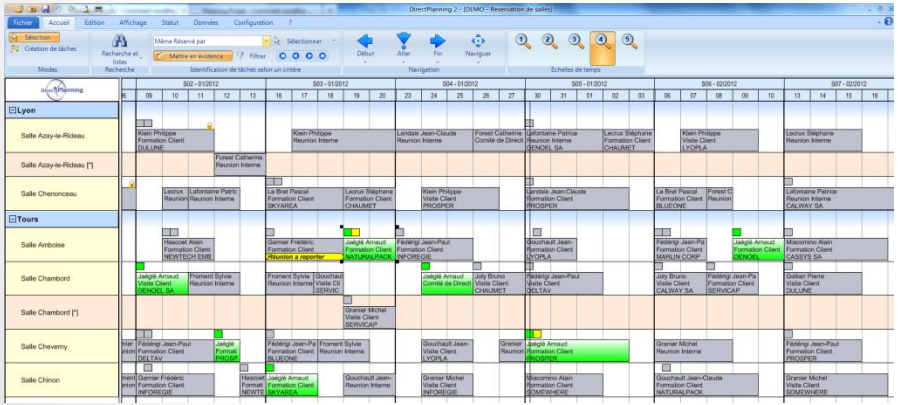
- **Leading and lagging indicators**
  - Rain forecasts => Umbrella sales
    - Forecasts are a leading indicator
  - # of Accidents => Safety training
    - Reduction in accidents is a lagging indicator

KPI'S FOR CM

- **Causal and casual relationships**
  - Rain forecasts => Umbrella sales
  - Rain forecasts => Increase in # of pink umbrellas
  - # of Accidents => Plant is shut down!

KPI'S FOR CM

- **A CM program provides early warning of machine failure**
  - Helps planners plan better
  - Helps avoid catastrophic failures



KPI'S FOR CM

- **Helps planners plan better**
  - Parts
  - Labor
  - Production

KPI'S FOR CM

- **How can you measure if you are planning better?**
  - Time from fault diagnosis to repair
  - Planned / Unplanned work

KPI'S FOR CM

- **How can you measure if you are planning better?**
- **Parts**
  - Lead time cost savings on spare parts
    - Ability to shop around
  - Reduced spare parts inventory (just in time)
  - Mean time to repair (MTTR)

KPI'S FOR CM

- **How can you measure if you are planning better?**
- **Labor**
  - Overtime
  - Labor utilization (wrench time)

KPI'S FOR CM

- **How can you measure if you are planning better?**
- **Production**
  - More uptime / Less unplanned downtime
  - Overall Equipment Effectiveness (OEE)
  - Less planned downtime

KPI'S FOR CM

- **CM helps avoid catastrophic failure**
  - Accidents
  - Spills
  - Secondary damage
  - Insurance
  - Compliance / Regulators

KPI'S FOR CM

- **How can you quantify reductions in catastrophic failures?**
  - Accidents / injuries / deaths due to machine failures
  - Cost to repair machine (secondary damage)
  - Number of non compliance events
  - Cost of non compliance (fines)
  - Cost avoidance

KPI'S FOR CM

- **Cost avoidance**
  - What would have happened if you did not catch the failure and the machine actually failed?
  - Worst case scenario
  - Moderate scenario
  - Actual historical scenario

KPI'S FOR CM

- **Cost avoidance**
  - Hard for people to digest because the event did not actually happen
  - If I hadn't gotten new tires, this might have happened!

KPI'S FOR CM

- **CM Program KPI's**
  - Number of machines tested
  - Cost per machine per quarter
  - % machines in alarm
    - Level 1
    - Level 2
    - Level 3
    - No faults

KPI'S FOR CM

- **CM Program KPI's**
  - Defects detected by type
    - Bearing wear
    - Bearing lubrication
    - Misalignment
    - Unbalance
    - Looseness
  - By machine type, area of responsibility etc.

KPI'S FOR CM

- **CM Program KPI's**
  - Defects verified (number)
  - Diagnosis accuracy %
  - Root case failure analysis carried out (%)

KPI'S FOR CM

- **Cautions**
  - Don't use too many KPI's
  - Don't measure it if you aren't going to fix the problem
  - Don't use KPI's just to make yourself look good
  - Make sure there is a clear cause and effect relationship between the actions you take and the KPI's you measure

THANK YOU!

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