KPI’S FOR CM

ALAN FRIEDMAN
ZENCOVIBE@GMAIL.COM
WWW.ZENCOVIBRATIONS.COM
WWW.LINKEDIN.COM/IN/ALANFRIEDMANVIBE
15 yrs Senior Engineer AzimaDLI

9 yrs Senior Instructor for Mobius Institute

Founder / CEO of Zenco – Vibration Experts

CMRP, CRL, Cat IV Vibe

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

1. Measure
2. Analyze
3. Detect Faults
4. Fix it or replace it

Solutions 2.0
Virtual Conference
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
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• 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)
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• How can you measure if you are planning better?
• Labor
  • Overtime
  • Labor utilization (wrench time)
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• 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
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• 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
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• 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!
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• 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!

ALAN FRIEDMAN
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/WWW.LINKEDIN.COM/IN/ALANFRIEDMANVIBE