“Case Study in use of Ultrasound in low rpm applications”
Ultrasound World Conference 2019

Joe Adam and Todd Sullivan - May 2019

The Production Support team, consisting of Engineering, Maintenance and Instrument Management, has the vision to establish effective strategies and tactics that maximize the useful life and performance of production equipment/instruments. To achieve this vision we must provide a safe and engaging work environment that supports manufacturing in minimizing process variation, optimizing equipment reliability and life-cycle costs. We own and use process/equipment information to make data-driven decisions to prioritize and justify process improvements.

Experience what`s possible.

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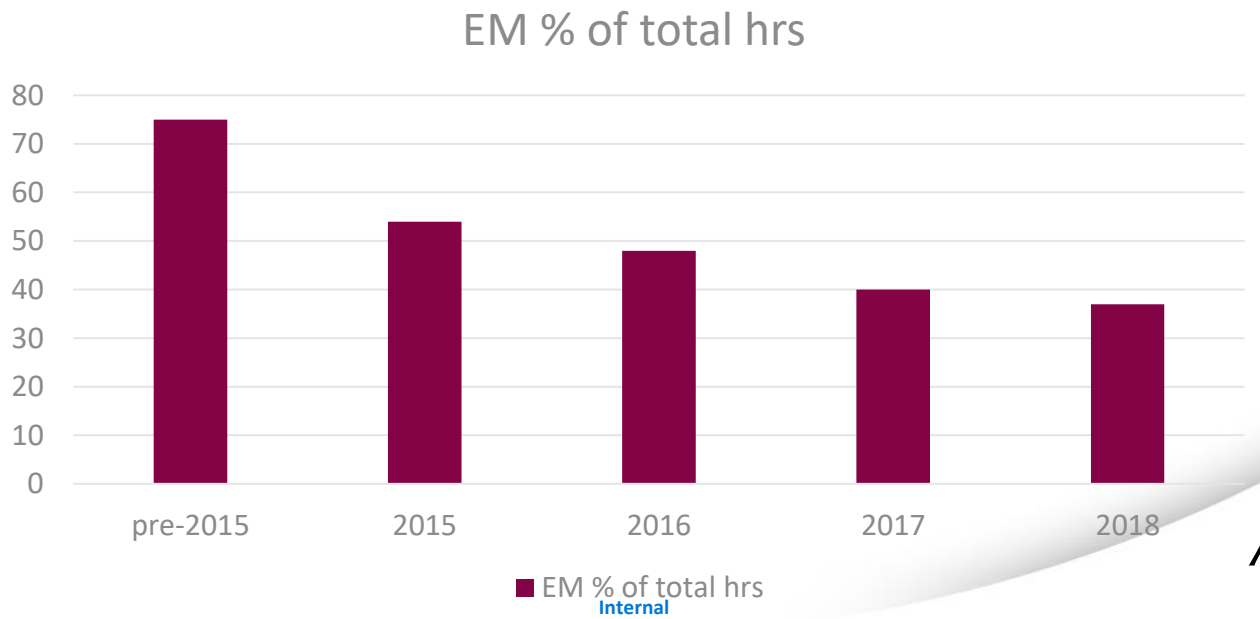
Bios

- Joe Adam, CMRP, CRL
  - 20+ years experience in maintenance, engineering, and operations management.
  - Industries – primary metals, steelmaking, automotive and currently medical device manufacturing.
  - BS in Electrical Engineering and Certificate in Maintenance Management.
  - SMRP – Indiana Chapter, Vice-Chairman.
  - Married with two grown children.

- Todd Sullivan, CRL
  - 20+ years experience as industrial electrician and controls technician.
  - Industries – automotive and currently medical device manufacturing.
  - Infrared Thermography Level 2 certification.
  - Married with one child.

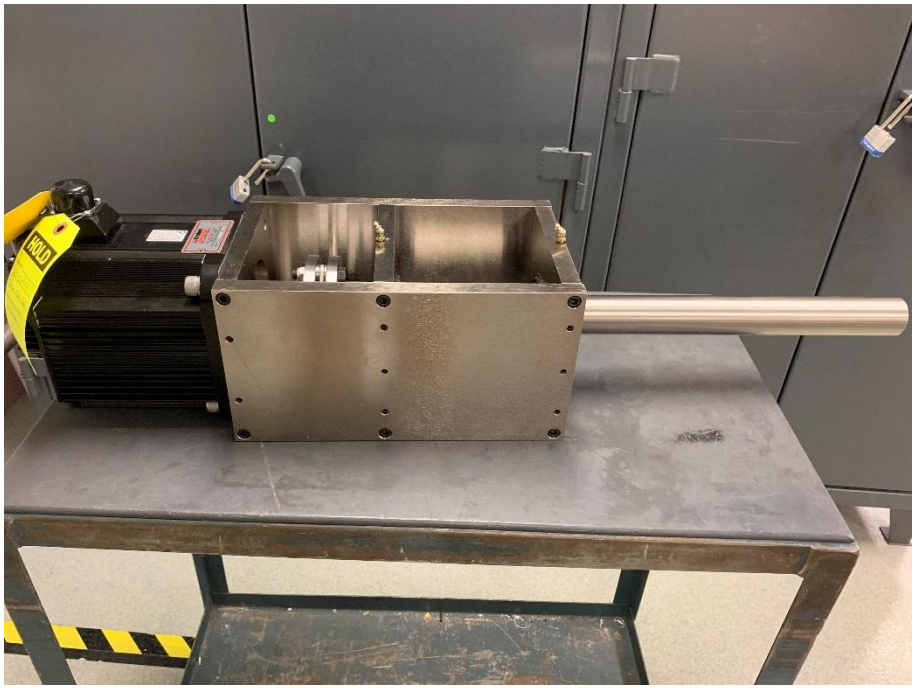
Background

- Reliability Journey
  - Pre-2015 – primarily a RTF and PM based strategy.
  - 2015-2016 – implemented use of Criticality Assessment to determine use case for other Reliability Strategies.
  - Through these assessments we were able to deploy a PdM/CBM strategy with initial focus on IR and Ultrasound

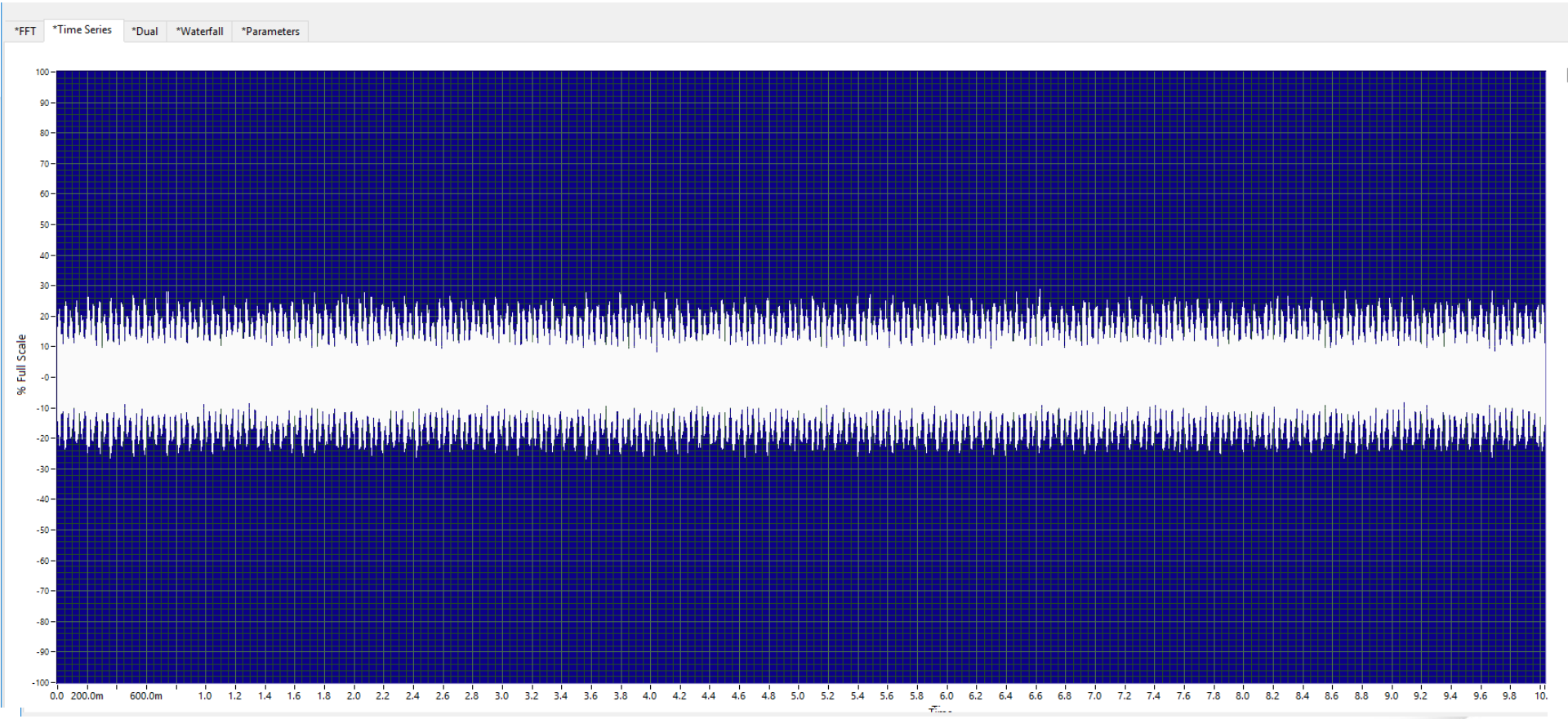


Case #1 – LA

1. Laser Ablation process yield loss during ramp portion of material production
2. Wear of main vacuum nip drive bearings and couplers



Case #1 – LA
Learning Curve



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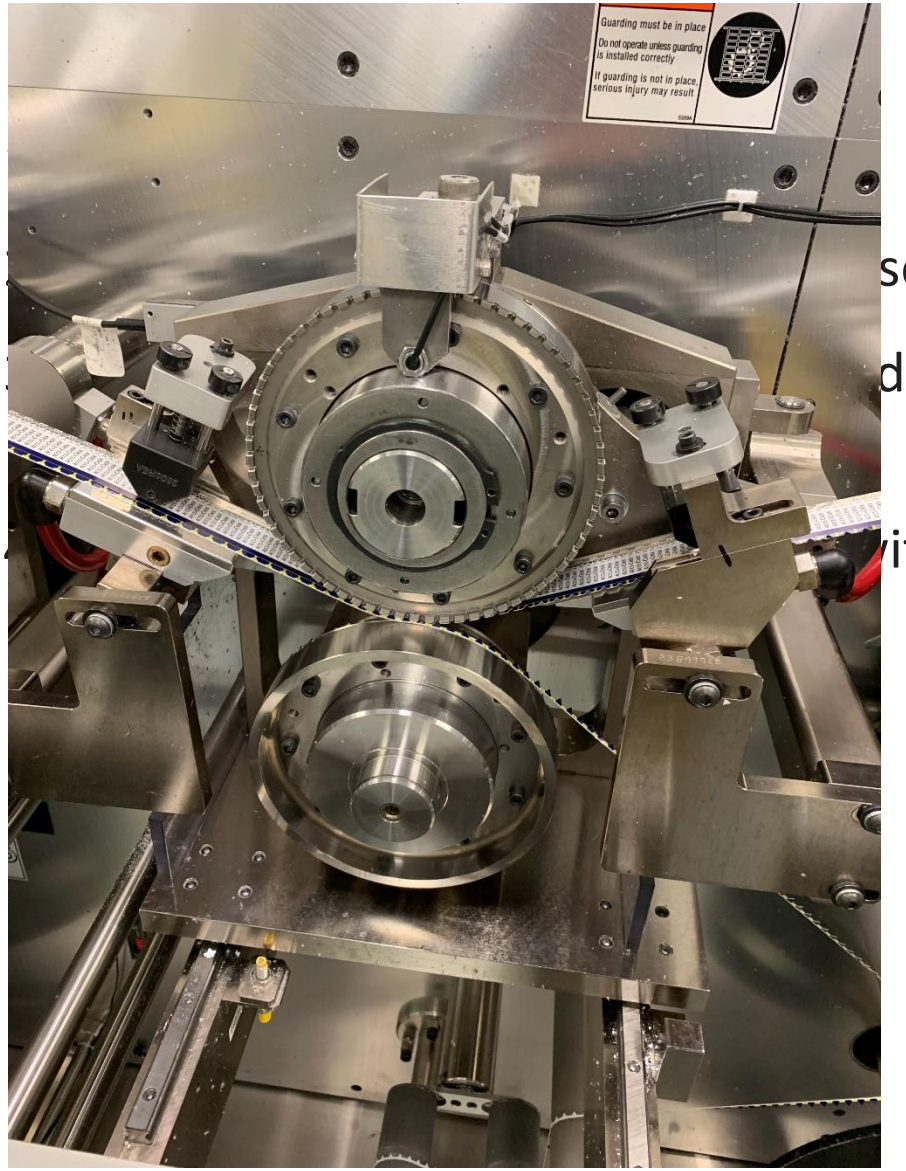
Case #1 – LA
What did we learn?

1. Sweet spot for slower speeds
2. Save full 10 second FFT file
3. Time Series gives you the most usable information
4. Not just a bearing issue but a system issue
5. We could identify the start of a potential issue 4 weeks before previous used methods
6. Always room for improvement
7. Push Precision Maintenance

Case #2 – SL Profile Dies



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die assembly inspect

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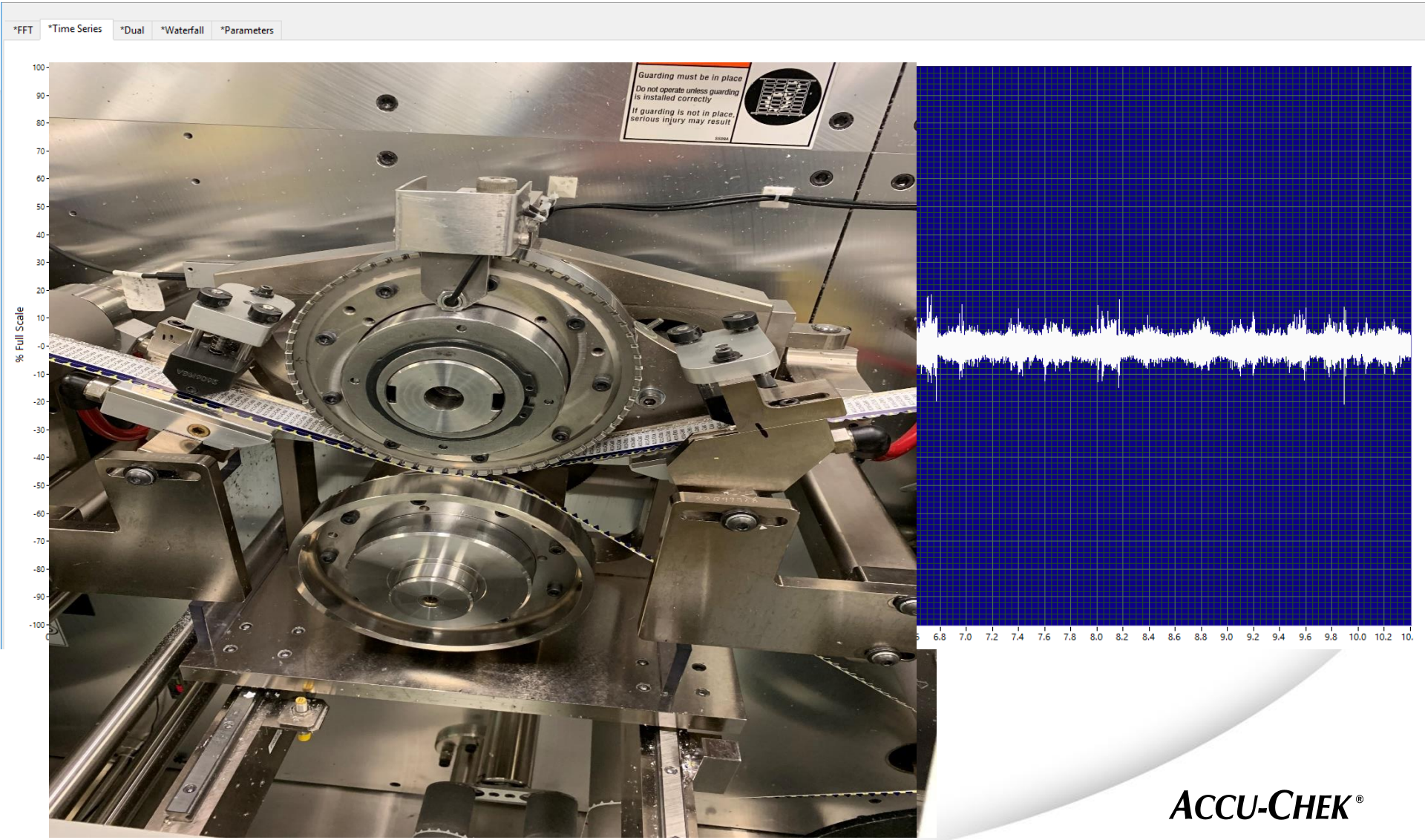
Case #2 – SL Profile Dies Learning Curve



Case #2 – SL Profile Dies
What did we learn?

1. Remote mounting option are nice
2. Develop processes to achieve target
3. Can’t set to 30Hz and call it good
4. Time Series gives you the most usable information
5. Complex equipment set up may need to be isolated
6. Save full 10 second FFT file

Lessons Learned or Next steps

- Don’t rest on ‘its always been that way’ mentality.
- What is some focus areas next for us?

Questions

Doing now what patients need next

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