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Best Practices in Lubrication Training

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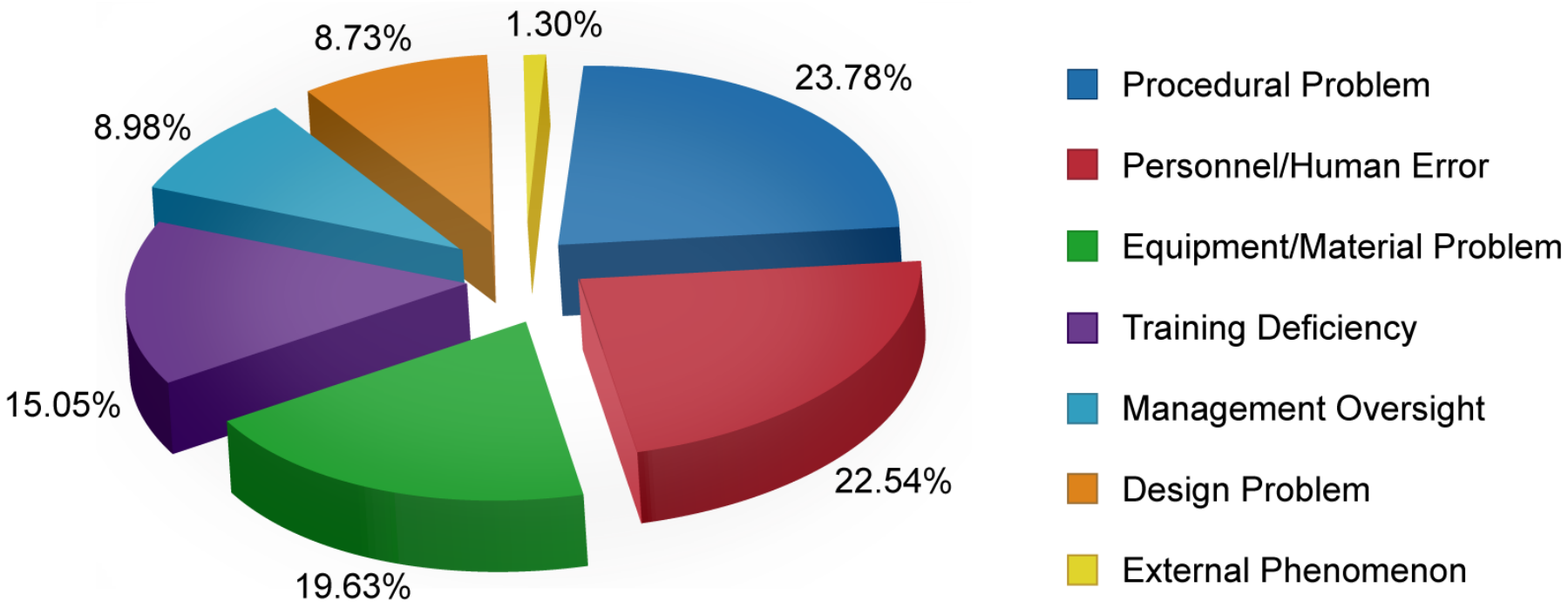
A lack of Knowledge and Skills?



Source: D.Troyer, CRE – ReliablePlant Magazine

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Knowledge versus Skill

	Knowledge	Skill
Definition	Knowledge is our understanding of the fundamentals and principles.	Skill is the ability to apply one's knowledge to a specific task.
Acquired by…	…education at college, university or further reading and studies.	…task specific training, mentoring, coaching, trial & error and experience.

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The problem with lubrication…

Knowledge

- Lack of tertiary education in the field
- Assumption of simplicity of the subject
- Ignorance of the complexity of the topic
- Supplier and OEM bias

Skills

- Poor mentoring, coaching and peer ignorance
- Lack of procedural documentation
- Inadequate OEM guidance

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Which results in…

Knowledge

- Poor management decision making
- Poor purchasing practices
- Poor personnel selection and development
- Poor engineering input
- Poor maintenance scheduling
- Poor hands-on practices

Skills

- Trial and error
- Short cuts that become the normal way of doing things

How to address these issues?

Knowledge

- Better tertiary education in lubrication
- Awareness training
- Personnel development courses

Skills

- Creation of asset and task specific procedures
- Mentoring programmes
- Ongoing assessment of skills

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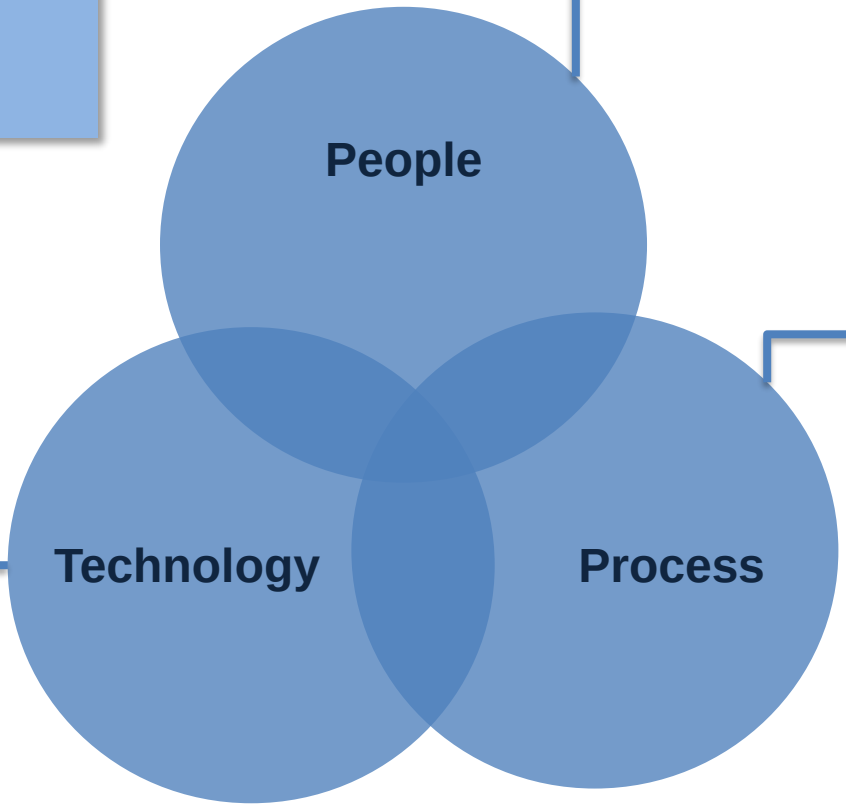
The Right Approach…

- Strategy
- Tools
- Monitoring
- Scheduling

- Attitude
- Education
- Skills
- Prioritisation



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The 5 Rights of Lubrication

The Right Lubricant…
- Check the colour coding!
- Do not mix lubricants!

At The Right Time…
- Aim for 100% on lubrication PMs!
- Don't skip the schedule!

With The Right Attitude
- Work Safe!

In The Right Quantity…
- Use the correct containers!
- Do not over grease!

At The Right Place…
- Check the location and tag!

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Improvement Strategy Rules

- It takes more than just a Champion
- A culture change is required
- Educate, train and lead by example

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Avoiding Human Error

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Who needs training in lubrication?

- Suppliers/Distributors
- OEM – Designers and Technical Support
- Management
- Personnel
- Purchasing
- Production & Operations
- Engineering
- Maintenance & Contractors
- Reliability Team
- Lubrication Team
- Internal Champions

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How much training in lubrication?

Suppliers & Distributors	Awareness	Level 1	Level 2 +	Why?
Sales	✓	✓		A minimum of Awareness to promote the message, and customer-facing a minimum of Level 1
Technical Support	✓	✓	✓	A minimum of Level 2 or higher for specialised customer support roles.

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How much training in lubrication?

OEMs	Awareness	Level 1	Level 2 +	Why?
Design & Engineering	✓	✓	✓	A minimum of Awareness to promote the message, and customer-facing a minimum of Level 1
Technical Support	✓	✓		A minimum of Level 1 or higher for specialised customer support roles.

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How much training in lubrication?

Internal	Awareness	Level 1	Level 2 +	Why?
Senior Management	✓			Awareness with a focus on reliability and the cost implications.
Personnel	✓			Awareness with an understanding of the opportunities for personnel development and qualification.
Purchasing	✓	✓		Awareness with a higher level for specialised roles and a focus on life-cycle costing.
Production & Operations	✓	✓		Awareness with a higher level for specialised roles and a focus on uptime impact and root causes.

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How much training in lubrication?

Internal	Awareness	Level 1	Level 2 +	Why?
Engineering	✓	✓		Awareness as a minimum with a focus on design stage criteria.
Maintenance & Contractors	✓	✓		Awareness as a minimum with an understanding of the impact of contamination and root causes.
Reliability Team	✓	✓	✓	The focus should be on integration within condition monitoring and focusing on root causes.
Lubrication Team	✓	✓	✓	A minimum of Level 1 and higher depending on role.
Champion	✓	✓	✓	Be able to spread the message.

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Don't just ☑

Competency	Internal Assessment	External Level 1	External Level 2	External Level 3
Purchasing	✓	✓*		
Production	✓	✓*		
Engineering	✓	✓*	✓*	
Maintenance	✓	✓*	✓*	
Reliability Team	✓	✓	✓	✓*
Lubrication Team	✓	✓	✓*	
Champions	✓	✓	✓	✓
Contractors	✓	✓*	✓*	✓*

✓* - Dependent on role and focus of effort.

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Certifying Bodies

ISO 18436-1:2012 specifies requirements for persons and organizations ("assessment body") operating conformity assessment systems for personnel who perform machinery condition monitoring, identify machine faults, and recommend corrective action.

Procedures for the conformity assessment of condition monitoring and diagnostic personnel are specified.

Training organisations

ISO 18436-3:2012 defines the requirements for bodies operating training programmes for personnel who perform machinery condition monitoring, identify machine faults, and recommend corrective action.

Procedures for training of condition monitoring and diagnostics personnel are specified.

Certification Goals

ISO 18436-4:2014 specifies the requirements for qualification and assessment of personnel who perform machinery condition monitoring and diagnostics using field lubricant analysis. It provides recognition of the qualifications and competence of individuals to perform field lubricant analysis for machinery condition monitoring. The procedure is not applicable to apply to specialized equipment or other specific situations.

ISO 18436-4:2014 specifies a three-category classification programme based on the technical areas delineated therein.

Contract Laboratory Services

ISO 18436-5:2012 specifies the requirements for qualification and assessment of personnel who perform machinery condition monitoring and diagnostics using laboratory-based lubricant analysis.

A certificate or declaration of conformity to ISO 18436-5:2012 provides recognition of the qualifications and competence of individuals to perform laboratory-based lubricant analysis for machinery condition monitoring. It is possible that this procedure is not applicable to specialized equipment or other specific situations.

ISO 18436-5:2012 covers a three-category classification programme that is based on the technical areas delineated herein.

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Obvious tips for Trainers

- KISS – Keep It Short & Simple
- Focus on the end-user's needs
- Involve the attendees through questions
- Use sample products to demonstrate
- Use examples from your experience
- Be prepared for the weird and wonderful
- Never stop learning and looking for news ways to present a point
- Never take yourself too seriously!

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Encourage attendees to…

- Ask questions
- Interact by answering questions
- Discuss their site specific issues
- To make notes in the manual
- Take regular breaks
- Put their phones away
- Do a site walk around if possible

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Avoid the pitfalls…

- Get management involved – ensure that the attendees are aware of why the training is taking place and what the objectives are
- Lubrication is not rocket science – avoid heavy chemistry, acronyms and fancy jargon
- Present at the level of the attendees - never talk down to them
- Win the audience over – remember, the attendees are often under the impression initially that there's nothing new to learn
- State at the start if there's an exam – nothing focuses the attendees' minds better!

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Thank you.

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In conjunction with:
The International Council for Machinery Lubrication.
www.lubecouncil.org