



MARTIN LINKING

Professional Training

Best Practices for Machinery Lubrication



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21&22 May 2009 Shanghai, China

Your Facilitator: Prof. Dazhong Wang

Mr. Wang is Professor of Harbin Institute of Technology, Director of Chinese Tribology Branch of China Mechanical Engineering Society (CMES), Chief lubrication expert & Deputy director of Education and Training Committee of the communication centre of China Equipments Management Association, Deputy director of the Science and Training division of equipment and maintenance branch of CMES, Member of Correspondence Education of China Equipments Management Association.

Professor Wang has very rich experience in both theoretical knowledge and lubrication practice. He has consulted and trained over 60 enterprises and offered them a comprehensive of solutions on machinery lubrication. Prof. Wang originally created the courses of Optimized Rapid Training Method of Enterprise Machinery Lubrication and Modern Lubrication and Non-disintegration Maintenance which both gained good evaluation from enterprises. He is also published quite a number of articles on the national authority publications.

Professor Wang has trained:

- | | |
|---------------------------------------------------------|-------------------------------------------|
| ▶ Shanghai Shenmei Beverage & Food Co., Ltd | ▶ DSM (China) Limited |
| ▶ Outokumpu Copper Tube (Zhongshan) Limited | ▶ Bunge Grain and Oil Co., Ltd |
| ▶ Shenyang Emerson Climate Technologies Co., Ltd | ▶ Tianjin TCL Building Materials Co., Ltd |
| ▶ Shandong Aluminium Industry Co., Ltd | ▶ Changsha Zhongyi Group Co, Ltd |
| ▶ China National Tobacco Corporation, Jiangsu. | ▶ Sino-Swed Pharmaceutical Corp. Ltd |
| ▶ Guangzhou Honda Automobile Engine Co., Ltd | ▶ SHIMANO Company Limited |
| ▶ Sinopec Great Wall Lubrication Oil-Beijing R&D Centre | ▶ Guangxi Laibin (B) Power Plant |

Course Description:

Scientific lubrication management can not only reduce 60% of mechanical failure, but also is an important measure to improve the operation of equipment, reducing machinery failures, improve equipment's life. **Best Practices for Machinery Lubrication** training course is scheduled on 21&22 May 2009 in Shanghai. This course focuses on the lubricants inspecting, monitoring, and pollution control; application of lubricating oil, lubricant procurement and machinery lubrication; the important role of lubricating oil played in saving energy and reducing consumption, current status of the company machinery lubrication and lubrication market developments of modern equipment. Therefore delegates will be able to rule out the machinery lubrication problems and hydraulic failure to meet the needs of modern machinery lubrication management.

Benefits of Attending Include:

- ▶ Understanding the importance of machinery lubrication, avoid misunderstanding of the lubrication
- ▶ Learning the advanced technology of oil inspection, cleaning and lubrication management
- ▶ Building reliability through contamination control
- ▶ Selecting the correct lubricants (greases) for each machine application
- ▶ Looking at ways to enhance lubricant performance through high-performance additives
- ▶ How to optimize lubricant selection/procurement
- ▶ Detecting and analysing machine wear debris
- ▶ Best practices for storing, handling and managing lubricants
- ▶ Oil rehabilitation and used oil analysis basics
- ▶ A range of case studies taken from manufacturing industry

Who Should Attend

- ▶ All Maintenance Professionals
- ▶ Equipment & Machine Operators
- ▶ Maintenance Managers/Supervisors/Technicians

- Preventive & Predictive Engineers & Supervisor
- Reliability and Lubrication Engineers

Pre-Course Questionnaire

To ensure that you gain maximum benefit from this event, a detailed questionnaire will be sent to you to establish exactly what your training needs are. The completed forms will be analyzed by the course trainer. As a result, we ensure the course is delivered at an appropriate level and that relevant issues will be addressed. The comprehensive course material will enable you to digest the subject matter in your own time.

Course Outline

Introduction

1. Brief overview of the most common lube application methods
2. Current status of oil lubrication methods and devices in China
3. What are problems in the use of lubrication in China?
4. Case study of more than 60% of machine breakdown caused by the improper lubrication
5. How to differentiate machine breakdown caused by lubricants or fittings' poor quality
6. Why there is a phenomenon: people understanding lubricants but don't know machine or people understanding machine but don't know lubricants?
7. Why encourage using high-performance lubricants? What is the high-performance lubricant? Why not use low-priced oil?
8. How high-performance lubricants affect machine reliability?
9. What is the fake lubricant and how to identify?
10. What is machine "zero maintenance", "zero breakdown" and "zero storage"? What the role of lubrication in their applications?
11. What the innovative machinery lubrication technology brings to companies?
12. What is the financial benefit of machinery lubrication? Why lubrication is called "lubrication economy" in oversea companies?

Application

1. What is lubricant (grease)?
2. The role of lubricant in national economy and what is lubrication fundamentals and features?
3. Summary of the various lubrication materials
4. Production processes of lubricant (grease)
5. Introduction of the most common lubricant (grease) quality index and their applications
6. Introduce the most use of several lubricants
7. Engine lubrication types, their application and troubleshooting engine problems
8. Hydraulic Fluid types, their application and troubleshooting hydraulic system problems
9. Gear types, their application and troubleshooting gearing problems
10. Introduce the use of other lubricants according to delegates' needs
11. Introduce some common mineral grease types, application and troubleshooting methods(around 10 types)
12. Introduce some common synthetics oil (grease) composition, types and application (around 20 types)

Maintenance

1. Lubricants drains, flushing and reservoir management
2. Why lubricants become black, thick and white? Can we use them?
3. How to know when to perform a flush?
4. Selecting appropriate cleaning and flushing procedures?
5. Can we use various additives on the market? Whether the effects can be achieved as advertised?
6. Interval vs. condition-based oil change intervals
7. Best practices for oil changes
8. How to optimize and extend oil change intervals
9. How to accessorize equipment for lubrication excellence
10. Leakage management strategies for lubrication excellence

Management

1. What are 'five fixations' and 'three filters' of lubrication?
2. How to conduct a proper lubrication procedure
3. What is the lubrication station? What kinds of facilities are in the lubrication station? Do we have to establish it?
4. Do we have to establish lubricant laboratory? What are common indicators for laboratory test?
5. How to correctly select lubricating oil? Is there any principle for oil mix and oil replacement?
6. Does used oil have to be poured away? Is there any way to rehabilitation it?
7. Educating your team to success
8. What is the lubrication advisory organization? What factors need to be considered in the lubrication advisory organization? How to initiate the project? What are the steps?
9. Currently companies do not have enough lubrication technicians, how can we get help from the lubrication advisory organization if there are problems occurred?

Training Schedule

Day One 21st May 2009, Thursday	Day Two 22nd May 2009, Friday
0800 Registration	0800 Registration
0830 Training commence	0830 Training commence
The impact of the new concept of lubrication to plants	Optimize lubricant selection/procurement
1000 Break	1000 Break
1020 Training recommence	1020 Training recommence
Re-recognize lubricants	Best practices for inspecting/testing lubricant
1200 Lunch	1200 Lunch
1400 Training commence	1400 Training commence
Re-recognize lubricants(continued)	Used oil analysis basics
1450 Break	1450 Break
1510 Training recommence	1510 Training recommence
Selecting correct lubricants(greases)	Managing Lubricants
1630 Break	1630 Break
1640 Q&A	1640 Q & A
1730 End of Day One	1730 End of Day Two

讲师介绍 王大中教授

哈尔滨工业大学教授，中国机械工程学会摩擦学分会理事，中国设备管理协会专题交流中心首席润滑专家，教育培训委员会副主任，中国机械工程学会设备与维修工程分会科普与培训委员会副主任，中国设备管理协会函授教育委员。

王大中教授是一位理论造诣和现场实际经验都十分丰富的润滑专家，提出了“以科学管理为基础的润滑技术应用与实施”和现代润滑理论——“润滑经济”的全新观点；他先后 60 余次赴各行业大、中企业讲课和咨询，为企业解决了许多难题；独创了《企业全优设备润滑快速培训法》和《现代化润滑与不解体维修》培训课程，获得企业高度评价；曾在国内权威专业杂志上发表论文多篇。

王大中教授培训过的企业包括

- | | |
|------------------|------------------|
| ▶ 上海申美饮料有限公司 | ▶ 南京 DSM 中国有限公司 |
| ▶ 邦基粮油有限公司 | ▶ 天津 TCL 建材有限公司 |
| ▶ 华瑞制药有限公司 | ▶ 长沙中意电冰箱有限公司 |
| ▶ 广东中山奥托昆普钢管有限公司 | ▶ 沈阳艾默生环境优化公司 |
| ▶ 禧玛诺实业有限公司 | ▶ 山东铝业股份有限公司 |
| ▶ 江苏烟草总公司 | ▶ 广西来宾（B）电厂 |
| ▶ 广州本田汽车发动机有限公司 | ▶ 中石化长城润滑油北京研发中心 |

课程概述

科学的润滑管理不但能够有效降低 60% 的机械故障，而且切实搞好设备润滑更是改善设备运行状态、减少设备故障、提高设备经济使用寿命的重要措施。合理润滑管理模式培训班定于 2009 年 5 月 21 日-22 日在上海举办。本期课程重点传授油品检测、监测、污染与控制；油品润滑应用、采购及设备润滑；油品润滑在节能降耗中起到的重要作用、公司设备润滑现状和现代化设备润滑的市场发展动态。使学员能够有效排除机械润滑和液压故障，以满足现代化装备对润滑管理和技术的客观需要。

参加本次课程的收益

- ▶ 清楚设备润滑的重要性，避免润滑认识的误区
- ▶ 了解先进的油品检测、净化、润滑技术和管理方法
- ▶ 学习油品污染对设备造成的危害及如何有效控制
- ▶ 关键设备的润滑油/脂选择指南
- ▶ 掌握如何在油中加入高性能添加剂，提高元部件承载耐磨能力
- ▶ 判断油脂好坏，学习正确购油的技巧
- ▶ 润滑与磨损特征以及典型故障诊断
- ▶ 如何维护油品正常运行，减少设备故障
- ▶ 油品康复处理以及“废油”利用
- ▶ 众多制造业的典型调查和案例分析

谁应该参加

- ▶ 主管设备和生产的企业领导
- ▶ 企业高、中层设备管理人员

- ▶ 设备维修、润滑、油品采购和使用部门主管及相关业务人员
- ▶ 设备维护、维修、润滑工作的机、电、液、仪工程师
- ▶ 设备使用、润滑、维修技师或技术骨干

课前问卷调查

参会者将会收到详细的课前问卷，提交培训需求，以保证获得最大的收益。培训讲师会对收回的问卷进行分析，有针对地设计课程内容和案例，并提供完整的课程资料以供日后参考。

课程大纲

综合篇

1. 简述油品应用发展史
2. 目前我国用油水平现状及差距
3. 我国国内油品更新换代状况及存在问题
4. 通过实例讲解为什么 60% 以上设备故障是由润滑不良引起的
5. 怎么区分设备故障是“油”引起的，还是由配件质量不好引起的
6. 为什么会出现懂“油”的不懂“设备”、懂“设备”的不懂“油”的现象？
7. 为什么提倡用高性能油？什么是高性能油？用廉价油有什么不好？
8. 高性能油给企业带来了什么？
9. 什么是伪劣假冒油？怎么识别？
10. 什么是设备“零维修”、“零故障”、“零储备”？润滑在这方面有何作为？
11. 设备润滑技术创新给企业带了什么？
12. 什么是“润滑经济”？为什么国外将润滑称之为“润滑经济”？

应用篇

1. 什么是润滑油（脂）
2. 润滑油在国民经济中有何作用？其功能和特点是什么？
3. 各种润滑材料简介
4. 润滑油（脂）生产过程
5. 润滑油（脂）常用质量指标介绍及其使用上的意义
6. 介绍几种用量较大油种
7. 内燃机油的分类、性能、应用及常见问题和排除方法
8. 液压油的分类、性能、应用及常见问题和排除方法
9. 齿轮油的分类、性能、应用及常见问题和排除方法
10. 根据用户需要可以讲解所需其他油种
11. 介绍一些常用矿物脂分类、性能、应用及排除方法（约 10 种）
12. 介绍常用合成油、合成脂的构成、分类、应用（约 20 种）

维护篇

1. 润滑油需要经常维护吗？有些现场人员讲，我们不维护，设备也使用很长时间，这怎么理解？
2. 润滑油发黑、变稠、变白是什么原因？还能不能用？
3. 换机油时为什么要清洗？怎么清洗？不清洗行不行？
4. 油需要净化吗？怎么净化？不净化行不行？

- 5. 目前市场上推销的各种“添加剂”、“膏”、“精”等，能否使用？是否收到宣传上所讲的效果？
- 6. 什么是定期换油？什么是按质换油？有没有一个换油指标作依据（即标准）？我们没定期换也没发现什么问题，这种看法对吗？
- 7. 有没有一种方法告诉我们，什么时候换油最合理？用什么手段来监测？（当然不是凭经验）
- 8. 有没有方法延长用油时间，少换或不换油达到少维修目的
- 9. 我们现下没有检测手段，有没有简易办法来判断油质量好坏的仪器？
- 10. 现下企业设备“跑、冒、滴、漏”现象，除了在密封上改进外，从“油”上有何办法治理吗？

管理篇

- 1. “五定”、“三过滤”、是什么意思？
- 2. 现代设备润滑管理还要规章制度吗？那么有哪些规章制度必须要定呢？
- 3. 什么是润滑站？润滑站里有什么设施？用油单位一定要建立吗？
- 4. 用油单位一般都要建油品化验室吗？常见化验指标有哪些？
- 5. 怎么正确选油、代油和混油有什么原则可依据吗？
- 6. 用过的油，所谓“废油”都要倒掉吗？有没有康复办法？
- 7. 为什么润滑人员要现场培训？怎么培训？
- 8. 润滑咨询站是什么机构？它考虑哪些因素？如何立项？有哪些步骤？
- 9. 企业目前润滑技术人员较少，一旦出现问题如何能得到润滑咨询站的帮助？

培训日程表

第一天： 2009 年 5 月 21 日， 星期四	第二天： 2009 年 5 月 22 日， 星期五
0800 签到	0800 签到
0830 培训课程开始 润滑新理念对于工厂企业的影响	0830 培训课程开始 正确购油&正确选油
1000 休息	1000 休息
1020 培训课程继续 重新认识油品	1020 培训课程继续 正确用油&运行中的油品化验与检测
1200 午餐	1200 午餐
1400 培训课程开始 重新认识油品（续）	1400 培训课程开始 超界限值油品更换及康复处理&废油回收与处理
1450 休息	1450 休息
1510 培训课程继续 正确选用油脂	1510 培训课程继续 润滑管理
1630 休息	1630 休息
1640 互动和答疑时间	1640 互动和答疑时间
1730 第一天培训结束	1730 第二天培训结束

Best Practices for Machinery Lubrication 2009

SH 09013-Sales Contract-Please Complete in Capital Letters and Black Ink

Sales Contract

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All the registered delegates are entitled for a set of documentation free of charge

☐ DOCUMENTATION RMB 1000

If you are unable to attend the conference/training but wish to receive copies of the conference/training documentation, please complete the sales contract, tick this box and return the contract with payment details.

Full Payment is required within 5 working days

Name: _____

Position: _____

Email: _____

Name: _____

Position: _____

Email: _____

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Email: _____

Organisation: _____

Address: _____

Town: _____ State: _____ Postcode: _____

Tel: _____ Fax: _____

Nature of Business: _____

Company Size: ☐ 1-99 ☐ 100-249 ☐ 250-499

☐ 500-999 ☐ 1000+

Authorization

(Signatory must be authorized to sign on behalf of contracting organization.)

Name: _____

Position: _____

Signature: _____ Date: _____

This booking is invalid without a signature.



Register Now

Contact: Sales Department

Tel: +86 28 6552 1255

Fax: +86 28 6552 1233

Email: whitney.shen@martinlinking.net

Business Opportunities

An exhibition space is available at the conference. Sponsorship opportunities covering lunch, evening receptions and advertising in documentation packs are also available. Please contact Ms. Whitney Shen at +86 28 6552 1255.

Payment Method

Our payment terms are 5 working days on receipt of invoice and full payments can be made by bank transfer.

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CONFIRMATION DETAILS: After receiving payment, a receipt will be issued.

If you do not receive a letter outlining the conference details two weeks prior to the event, please contact the Conference Coordinator at Martin Linking.

Terms & Conditions:

1. Fees are inclusive of program materials and refreshments.
2. Payment Terms - Following completion and return of the registration form, full payment is required within five (5) working days upon the issuance of invoice. Payment must be received prior to the conference/training date. A receipt will be issued on payment. Due to limited conference/training seats, we advise early registration to avoid disappointment. We reserve the right to refuse admission if payment is not received on time.
3. Client's Cancellation/substitution - Provided the total fee has been paid, client's cancellation must be received in writing by MAIL or FAX four (4) weeks prior to the event in order to obtain an 85% credit to attend for any future **Martin Linking** Events. Under such circumstances, **Martin Linking** will retain the other 15% service fee to cover expenses for prior cost that has already been incurred upon the acceptance of registration. All bookings carry a 50% cancellation liability immediately after a signed sales contract has been received by **Martin Linking**.
4. If, for any unexpected circumstances or reasons that **Martin Linking** decides to postpone this event, the client hereby indemnifies and holds **Martin Linking** harmless from any cost incurred in by the client. The event fee will not be refunded, but can be credited to future **Martin Linking**'s events. **Martin Linking** reserves the right to change the content without notice.
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6. Important note: In the event that **Martin Linking** permanently cancels the event for any reason whatsoever, (Including, but not limited to any force majeure occurrence) and provided that the event is not postponed to a later date nor is merged with another event, the client shall receive a refund for the amount that the Client has paid to such permanently cancelled event.