

Equipment Maintenance Management and Production Cost Control

Shanghai, China
11-12 March, 2010

Trainer:
Bin Li

Had been senior production executives, production center part-time trainer, core team member of TPM activities, internal trainer in a well-known multinational company. In early 2000, changed from production management to specialize in providing education and training to production operations related staff, the main job was to provide training to nationwide sub-companies, the core suppliers and other related enterprises; after that he worked as part-time trainer, training consultant in School of Management of a domestic enterprise.

From July 2002, he worked as a professional trainer, cooperated with a number of management consultant companies engaged in management training nationwide, including internal training and public courses. As a project manager and core members, he worked with other project team members co-counseling enterprises including machinery, beer industries, etc., in which the TPM activities for a well-known enterprises in Tianjin achieved remarkable results: the downtime rate of the demonstration equipments reduced and stabilized at 1/20 of the original level, with an average increase of nearly 12% in production capacity and average savings of more than 1 million per month. Other production lines' efficiency had also been improved, the demonstrated production line's OEE increased by nearly 15%.

Mr. Li advocate training concept of "happy to learn and enjoy work", pursue of practical learning concepts of "learner-centered, easily understood, can remember, usable". Since engaged in professional training, more than 13,000 students attended his public courses, some typical clients include Bohai Shipyard of PetroChina, Dalian ITT Flygt Pump, ABB Shanghai, LG Chemical, LG Tongchuang, SGENEC, Tianjin Denso air-conditioning, Hisense mobile phone, Uni-President Enterprises Corp., SMC (China), Lenovo Computer, Gates Unitta, Chery Auto, Samsung, Siemens, Pepsi-Cola China, SONY Chemical, Timken, Sun Machinery, Liufeng Machinery, Sumitomo Electric, Flextronics, Suzhou Metrologic, Huiyuan Juice, Red Bull drinks, Qingdao Beer, 999 medicine, Lanbao pharmaceuticals, Shanghai Yongda elevator, Japanese state printing, Panasonic Communications, Daewoo Heavy Industries, Huaqiang Sanyo Dalian, Shenyang Astron chemical, Howden Weihai, etc.; Up to now has completed more than 230 in-house trainings for companies such as: Sany Heavy Industry, Shanghai Maglev, Dongfeng Honda Engine (Guangzhou), Dongfeng Honda Automobile Parts (Huiyang), Yutong Bus (Luoyang plant), Shandong aluminum plant of CHINALCO, Shanxi Aluminum Plant, Danjiangkou aluminum of Hanjiang Group, Tradex Converting Co., Ltd., Wuxi Lihu Impeller, Asiatrik Tianjin, Qinhuangdao Dicastal Wheel, Yantai Timken, Yuasa Battery (YUASA), Punch Industry (Dalian), Philips Lighting, Makita China (Kunshan), Tianwei Baobian Group (Baoding), Tianjin Tianhai synchronizer, Suzhou Grande Electronics, China-Arab fertilizer, Weishen pharmaceuticals of CSPC, Zhongnuo pharmaceutical, Taishan beer, Swire Coca-Cola, Perfect China, Nanjing Phoenix Contact, Guangzhou Pusheng Speakers, Guangdong Jinsha Paints, Sate-Lite (Foshan) Plastics, ECCO (Xiamen), Quanzhou Xinhuanghe Clothing etc.



Who Should Attend:

Manager of production/manufacturing department from manufacturing enterprises, equipment manager, equipment maintenance and repair engineer, production supervisor etc.

What the Workshop Will Help You Achieve:

- Systematically learn the basic method of equipment management, build the basic framework for the management of enterprise equipments;
- A comprehensive understanding of system approach of equipment routine maintenance, Preventive Maintenance and KAIZEN;
- Understand point inspection system of equipments, Time Based Maintenance(TBM), Condition Based Maintenance(CBM) and Reliability-Centered Maintenance(RCM) system;
- How to carry out practical method for zero fault of equipment;
- Management of equipment maintenance costs, downtime reduction, improvement of maintenance efficiency, maintenance record file and spare parts;
- Establish training system and operation methods for the maintenance staff

Training Features:

- Learner-centered, pay attention to the participation of students;
- Combine practical case studies and well-designed games, advocate discovery learning;
- Good at interpretation of the complex and boring content to simple and vivid.

In-House Training Solutions

If you have a number of delegates with similar training needs, then you may wish to consider having an In-House Training solution delivered locally on-site. Course can be tailored to specific requirements.

Please contact **Whitney Shen** on **+86 28 65521255** or email **whitney.shen@martinlinking.net** to discuss further possibilities.

Pre-Course Questionnaire

In order to tailor this course precisely to your needs, the course leaders would value information on your knowledge, experience and requirements.

Unit 1: Financial analysis of facility management and cost reduction (about 3.5 hours)

1. Overview

- Corporate profit pattern analysis
- Analysis of continuing cost activities in the manufacturing sector and competitiveness
- The role of equipment management in cost reduction
- Development and evolution of equipment management
- Structure, content and methods of equipment maintenance
- TPM activities based on full participation
- Analysis and discussion: current problems of equipment management

2. Cost concept based on operational activities

- Supervisor' s view of cost and profit
- Basis for the control of production costs - the Loss Analysis
- Cost analysis method based on operational activities -ABC cost
- Cost drive and optimization of operational activities
- Case study

3. Data and Its Quantitative Analysis of

- The basic measure indicators of device management
- Calculation and analysis of MTTR, MTBF
- Calculation and analysis of Overall Equipment Efficiency (OEE)

- ✓ The meaning of OEE the and its financial effect
- ✓ Understand the three factors of OEE: the available level, the operational level, the quality level
- ✓ OEE calculation and case analysis
- ✓ Skills of how to use OEE to identify the losses of equipments
- ✓ Interpretation of OEE - expectations of improvement potential and financial results
- ✓ How to create device management control based on OEE
 - Case study
 - Analysis and Discussion: Practice data analysis and review
 - Two key points with regard to data analysis

Unit 2: Main points of equipment management practices and methods (about 6.5 hours)

1. Framework and content for the effective operation of equipment management

- Establishment and practice of point Inspection system of equipments
- Establish a sound system of equipment maintenance (PM, CM, BM)
- Bathtub curve analysis of equipment failures and maintenance

- Correctly handle the association of professional equipment maintenance and day to day maintenance
- The basic concept of professional maintenance system
- Basic concept of zero-fault of equipments

2. Practical operation of Autonomous Maintenance for equipment operator

- Point inspection system of equipments and Preventive Maintenance
- Basic Point Inspection and maintenance of equipments by operators
- The role of manufacturer for zero- fault of equipments
- The significance of on-site Autonomous Maintenance and KAIZEN
- Benefits of Autonomous Maintenance in improving the competitiveness of the operator
- Three basic requirements for good operators
- Seven steps and practical points for the practice of Autonomous Maintenance

3. Practical operation of equipment maintenance management

- Maintenance management with zero-fault as the basic objective
- Analysis of forced degradation and natural deterioration of equipment
- Start of pursuit of zero-fault of equipments
- Statistics and analysis of fault data
- Equipment failure analysis and countermeasures
- Use 5-why approach, PM techniques
- Temporary reference book for professional maintenance (used in professional department)
- Inspection Form for routine maintenance
- Case Study
- Device diagnostic techniques based Condition Based Maintenance (CBM)
- Introduction of diagnostic equipment
- Reliability-centered maintenance (RCM) system

4. Routine maintenance record of equipments and maintenance cost management (content&method)

- Establishment and optimization of maintenance record for equipments
- Equipment maintenance information electronization
- Maintenance cost analysis and management
- Three basic issues of the cost - structure, proportion and total amount
- Case Study
- Outsourcing management

5. Analysis and management of spare parts

- Use the actual consumption as the basis of statistical analysis
- ABC analysis and optimization of spare parts
- Inventory control of spare parts and maintenance on time
- Different parts have different procurement strategies
- Cooperation of spare parts procurement and equipment department
- Case Study
- Discussion: practical question of spare parts management

Unit 3. Education and training of maintenance (about 1 hour)

- Planning maintenance training materials
- Maintenance personnel training --training methods and mechanisms of multi-skills
- Operator training -- Zero-error operation and Autonomous Maintenance
- Using OPL (One Point Lesson) for training
- maintenance performance appraisal: MTTR and maintenance efficiency
- Video Learning and Case Analysis

Unit 4. Introduction of Full participated TPM activities (about 1 hour)

1. What is TPM?

- The meaning and evolution of TPM
- The relationship of TPM activities and equipment maintenance
- TPM's main content and its inherent logic association

2. Skills and the necessary preparations for successful implementation of TPM activities within the enterprise

- Organizational guarantee: organization structure and effective operation skills for the implementation of TPM
- Practice assurance: Inter-departmental communication and cooperation
- Personnel guarantee: preparation of desire, preparation of methods , preparation of abilities
- Practical skills: selective implementation of TPM activities based on enterprise realities
- Key points of TPM activities: support from high level executives
- Analysis of TPM implementation strategic of the current enterprises in China

About Martin Linking

Martin Linking Business Consulting plans to produce more than 80 trainings and conferences and works with senior executives from the majority of the world's top 1000 companies to improve their business strategy and match their learning and training needs in one year. And we continue to grow.

We also invite the leading business practitioners, industry decision makers and innovators to share insights, best business practice, and new technology at our forums. **We are dedicated to give attendees cutting edge information they can use immediately.** We constantly research and listen to all industry sectors to ensure that the business intelligence we provide is timely and cutting-edge.

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Workshop Schedule -Day One & Day Two

0830	Registration and coffee
0900	Workshop commences
1045	Morning refreshments
1115	Workshop re-commences
1200	Luncheon
1300	Workshop commences
1500	Afternoon refreshments
1530	Workshop re-commences
1700	Workshop concludes

设备维修管理与生产成本控制

上海，中国

2010年3月11日至12日



培训师:

李斌

曾经担任著名跨国企业高级生产主管，生产中心兼职培训师，TPM 活动小组核心成员，内部培训师。2000年初，从生产管理转向专门对生产运作相关员工进行教育训练，主要工作是在全国范围内相关兄弟公司、核心供应商及其他关联企业实施培训；后在国内企业管理学院担任兼职培训师、培训顾问。

2002年7月始作为职业培训师，与多家管理顾问公司合作，全国范围内从事管理培训工作，包括内部培训和公开课培训。作为项目经理和核心成员，与项目组成员共同辅导的企业包括机械、啤酒等，其中天津某著名企业的 TPM 活动，取得显著效果：示范设备故障停机率降低并稳定在原来的 1/20，平均产能提升接近 12%，月平均节约 100 多万元，其他生产线效率也得到改善，示范生产线的 OEE 水平提高近 15%。

李老师倡导“快乐学习、享受工作”的培训理念，追求“以学员为中心、听得懂、记得住、用得上”的实用学习理念。从事职业培训以来，公开课学员累计已超过 13000 人，部分代表性客户如中石油渤海修船厂、大连ITT飞力泵业、上海 ABB、LG 化学、LG 同创、北京首钢日电、天津电装空调、海信手机、统一工业、SMC（中国）、联想电脑、盖茨优霓塔、奇瑞汽车、三星电子、西门子、百事可乐中国、索尼凯美高、铁姆肯、太阳机械、六丰机械、住友电工、伟创力电子、苏州码捷、汇源果汁、红牛饮料、青岛啤酒、三九药业、蓝宝制药、上海永大电梯、日邦印刷、松下通信、大宇重工、大连华强三洋、沈阳阿斯创化工、威海豪顿华工程等；截止目前入厂内部培训企业已完成230多家，服务的部分代表性客户如：三一重工、上海磁悬浮、东风本田发动机（广州）、东风本田汽车零部件（惠阳）、宇通客车（洛阳工厂）、中国铝业集团山东铝厂、山西铝厂、汉江集团丹江口铝业、特瑞胶黏配件有限公司、无锡蠡湖叶轮制造、亚实履带天津公司、秦皇岛戴卡轮毂、烟台铁姆肯、汤浅蓄电池（YUASA）、大连盘起工业、飞利浦照明、牧田中国（昆山）、天威保变集团（保定）、天津天海同步器、苏州群鑫电子、中国-阿拉伯化肥、石药集团维生制药、中诺制药、泰山啤酒、太古可口可乐、完美中国、南京菲尼克斯电气、广州普笙音箱、广东鲸鲨制漆、顺德赛特莱特塑胶制品、厦门ECCO（丹麦）鞋业、泉州新黄河服装等。

培训对象:

制造企业生产/制造部经理、设备部经理，设备保养及维修工程师、生产主管

该培训将帮助您达到什么目标:

- 系统学习设备管理的基本方法，构建企业设备管理的基本架构；
- 全面了解设备日常保养、预防保养与改善的系统方法；
- 了解设备点检体系、定期保养 TBM、状态保养 CBM 和以可靠性为中心的维修体系 RCM；
- 如何开展设备零故障的实务方法；
- 对设备保养费用、减少故障时间、提升保养效率、维修履历档案及备品备件管理；
- 建立维修人员训练机制与操作方法。

培训特点:

- 以学员为中心，注重学员的参与；
- 实务案例分析与精心设计的游戏相结合，倡导启发式学习；
- 培训中听得懂、培训后记得住，这样才能学得会——擅长把枯燥复杂演绎得生动简单。

内训方案

如果公司有很多人有着类似的培训需要，那么您不妨考虑内部培训的解决方案。

培训将在贵公司现场举行。并且培训可以根据您具体的要求来进行。

请联系 **Whitney Shen** 来讨论合作的可能：

电话：+86 28 6552 1255

电邮：whitney.shen@martinlinking.net

课前问卷调查

为了使这一课程真正适合您的需求，培训师将会评估你现有的知识，经验和需求。

设备维修管理与生产成本控制

单元一、设备管理与成本降低的财务分析（约 3.5 小时）

1. 概论

企业盈利模式分析
制造业持续的成本降低活动（Cost Down）与竞争力分析
设备管理对降低成本的作用
设备管理的发展及其演进过程
设备保养架构、内容与方法
以全员参与为基础的 TPM 活动
分析与讨论：当前设备管理中的问题

2、基于作业活动的成本观

主管的成本观与利润观
生产成本控制的基础—损失（Loss）分析
基于作业活动的成本分析方法-ABC 成本
成本动因与作业活动优化
案例分析

3、数据化及其量化分析

设备管理的基本衡量指标
MTTR、MTBF 计算与分析
设备综合效率 OEE 计算与分析
✓ OEE 的实质意义及其财务效果
✓ 认识 OEE 的三个构成因素：可用水平，运行水平，质量水平
✓ OEE 计算要素与实例分析
✓ 如何利用 OEE 识别设备损失（LOSS）的技巧
✓ 解读 OEE--改善潜力与财务效果期望
✓ 如何建立基于 OEE 的设备管理监控
案例学习
分析与讨论：实务数据分析与检讨
关于数据分析的两个关键点

培训时间表——第一天和第二天

0830 签到及早茶
0900 培训开始
1045 上午休息
1115 培训继续
1200 午餐
1300 培训开始
1500 下午休息
1530 培训继续
1700 培训总结

单元二、设备管理实务要点与方法（约 6.5 小时）

1、设备管理有效运作的框架与内容

设备点检体系的建立与实践
建立健全设备保养体系（PM、CM、BM）
设备故障的浴缸曲线分析与保养
正确处理设备专业保养与日常保全的关联
专业保养的基本观念体系
设备零故障的基本观念

2、设备操作者的自主保全操作实务

设备点检制与预防性维修
生产操作者对设备的基础性点检与保养
生产单位对于设备零故障的作用
现场自主保全、改善活动意义
自主保全对提高操作工的竞争能力有何益处
优秀操作工的三点基本要求
实践自主保全的 7 个步骤和实践要点

3、设备维修管理操作实务

以零故障为基本目标的维修管理
设备的强制劣化与自然劣化分析
追求设备的零故障方法展开
故障数据的统计和分析
设备故障原因分析与对策
5-why 手法、PM 手法运用
专业保养临时基准书（专业部门用）
日常保养点检表格表单
实例分析
基于设备诊断技术的状态维修（CBM）
诊断仪器设备简介
以可靠性为核心的维修管理（RCM）体系

4、设备日常维修履历资料与保养费用管理（内容、方法）

设备维修履历资料的建立和优化
设备保养信息 e 化
保养费用分析与管理
关于费用的三个基本问题—结构、比例和总额
案例分析
委外维修管理

5、维修备件分析与与管理

以实际消耗量为统计分析基础
备件的 ABC 分析及其优化
维修备件的库存控制与维修及时性
不同备件适用不同的采购策略
备件采购与设备部门的合作
实例分析
讨论：关于备件管理的实务问题

设备维修管理与生产成本控制

单元三、保养教育训练 (约 1 小时)

规划保养训练教材
 维修人员培养--多技能训练方法与机制
 操作人员训练--零错误操作与自主保养
 利用 OPL (One Point Lesson) 进行训练
 维修绩效考核 MTTR 及维修效率
 录像学习与实例分析

单元四、全员参与的 TPM 活动简介 (约 1 小时)

1、TPM 是什么?

TPM 的含义及其演进过程
 TPM 活动与设备保养的关联
 TPM 的主要内容和其内在逻辑关联

2、企业内部成功实践 TPM 活动的技巧与必要准备

组织保证: 内部推行 TPM 的组织架构及其有效运行技巧
 实践保证: 跨部门沟通与合作
 人员保证: 意愿准备, 方法准备, 能力准备
 实践技巧: 与企业实际相结合, 有选择性地实施 TPM 活动
 TPM 活动的关键点: 高阶主管支持
 关于当前我国企业实践 TPM 的策略分析

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 1115 培训继续
 1200 午餐
 1300 培训开始
 1500 下午休息
 1530 培训继续
 1700 培训总结

关于马汀令可

马汀令可商务咨询计划每年组织超过80场的培训和会议, 与全球1000强公司的高层经理一起提高他们的商务战略, 满足他们的学习和培训需求。并且我们在不断成长。

我们邀请领先企业的管理者, 决策者和创新者在我们的活动中分享他们的思想观念, 最佳商业实践和新技术。我们致力于为我们的客户提供即刻可用的前沿信息。我们不断地研究和聆听所有行业的声音来保证我们提供商业信息的及时性和前沿性。

内训方案

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电邮: whitney.shen@martinlinking.net

Equipment Maintenance Management and Production Cost Control

SH 10026-Sales Contract-Please Complete in Capital Letters and Black Ink

Sales Contract

Please complete this form immediately and fax back to

Whitney Shen

Fax No: +86 28 6552 1233

Fee Per Delegate

Two Day Training Fee RMB 5995 per person

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

DOCUMENTATION RMB 500

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: _____

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Name: _____

Position: _____

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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: Whitney Shen

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:

- Fees are inclusive of program materials and refreshments.
- 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.
- 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**.
- 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.
- Copyright etc. - All Intellectual Property rights in all materials produced or distributed BY **Martin Linking** in connection with this event is expressly reserved and any unauthorized duplication, publication or distribution is strictly prohibited.
- 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.