Fundamentals of Bearing Maintenance
(in collaboration with SKF Malaysia)

January 27 - 29, 2015
SKF Malaysia, Kuala Lumpur

This workshop is designed to cover both the theory and practical aspect of bearing failure analysis. It is in accordance with the ISO 15243:2004 Standard which describes the characteristics and possible causes of failure of rolling bearings, occurring in service. Participants will analyse actual bearings from a variety of distress, damage and failure conditions to determine the root cause of the failure mechanism.

CONTENTS

- **General Rolling Theory**
  - Sliding Motion and Rolling Motion
  - Thrust Load, Radial Load and Combined Load
- **Basic Bearing Designation System**
  - Basic Designation According to ISO Standard
  - Supplement Designation
- **Bearing Internal Clearance**
- **Types of Bearing and Their Application**
  - Deep Groove Ball Bearing
  - Self-Aligning Ball Bearing
  - Angular Contact Ball Bearing
  - Cylindrical Roller Bearing
  - Spherical Roller Bearing
  - Taper Roller Bearing
  - Compact Aligning Roller Bearing
  - Linear Bearing
- **Fits and Tolerances**
- **Bearing Failure Prevention**
- **Reasons for Bearing Failures**
  - Failure Analysis
  - Case Study
- **Bearing Life Calculation**
  - Standard Estimation and SKF Method
- **Lubrication Theory**
  - Oil vs Grease
  - Grease Amount Calculation
  - Relubrication Interval

**Theory** - 75%
**Practical** - 25%
**Mr Lim Ann Hock** is a graduate from Southern Illinois University with a major in Mechanical Engineering. He has vast experience in engineering software industries and he has conducted more than 400 hours of training prior to joining SKF Malaysia. He developed training programmes on Bearing Technology and Maintenance, from Basic to Advanced levels. Currently he conducts training for SKF in the Bearing Technology and Maintenance courses (basic and advanced levels). He is also involved in the practical training for Mounting and Dismounting of Bearing via SKF Mechanical Method, Induction Heaters and Drive Up Method. He is a PSMB certified trainer.

**Mr Chong Tong Leong** joined SKF Malaysia as a trainer in 2007. He is well-versed in Bearing Technology and Maintenance, Precision Shaft Alignment, SKF Industrial Shaft Seal and Lubrication of Rolling Elements Bearing. He holds Bachelor of Science in Electrical Engineering and Master of Business Administration degrees. In addition, he has working experience as a Plant Manager in the Bedding and Packing industry. He is a PSMB certified trainer.

**Encik Zainul Rashid Shamsudin** is an Application Engineering Specialist working with SKF Malaysia since early 2005 under the Maintenance Support Centre, Training and Services. His involvement in bearing maintenance support to end-users, distributors and dealers, ranges from design projects to installation, precision shaft alignment job to failure analysis while conducting training was his primary function. He holds a degree in Mechanical (Aeronautics) Engineering and has worked as a Maintenance Engineer and Technical Trainer at several companies in Malaysia prior to joining SKF. He has a combined experience in technical training of more than 10 years. He is a PSMB certified trainer.

*Note: Anyone of the above facilitators will facilitate the workshop.*

**WHO SHOULD ATTEND**

Service, Maintenance, Machine Repair, Plant/Facility Engineering staff of industrial plant, OEM facility, public utility or commercial building which uses rolling bearings and related equipment will find this course beneficial.

**OBJECTIVES**

- Gain knowledge in bearing maintenance
- Improve the performance of rolling-element bearings
- Improve the reliability of rotating equipment
- Learn the proper way of bearing mounting and dismounting
- Identify the causes of bearing failure

**FACILITATOR**

**Fees**

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<th>Category</th>
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<td>FMM Members</td>
<td>RM2,500 per participant</td>
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<tr>
<td>Non Members</td>
<td>RM2,800 per participant</td>
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(All fees include course materials, Certificate of Attendance, lunch and refreshments)

**ADMINISTRATIVE DETAILS**

**Dates:** January 27 - 29, 2015

**Time:** 9.00 am – 5.00 pm

**Venue:** SKF Malaysia
432, Jalan Ipoh,
51200 Kuala Lumpur

**Fees:**

- FMM Members - RM2,500 per participant
- Non Members - RM2,800 per participant

(All fees include course materials, Certificate of Attendance, lunch and refreshments)

Enjoy 10% discount for registration of two (2) and 20% discount for registration of three (3) or more participants from the same organisation and of the same billing source.

**Note:**

- Registration is on a first-come first-served basis. Cheques made in favour of the “FMM Institute” should be forwarded one week before the commencement of the programme. Completed registration form, that is faxed, mailed or e-mailed to FMM Institute, would be deemed as confirmed.
- All cancellations must be made in writing. There will be no charge for cancellation received 14 or more working days before the start of the programme. Cancellation received 7 – 13 working days before the start of the programme is subject to a cancellation fee of 50% of the course fees. Cancellation received 6 working days and below before the start of the programme is subject to a cancellation fee of 100% of the course fees. If the participant fails to attend the programme, the full course fees are payable. However, replacement can be accepted at no additional cost.
- 10% discount is applicable for registration of two (2) participants and 20% discount is applicable for registration of three (3) or more participants from the same organisation and of the same billing source.
- A 6% GST will be imposed for training programmes scheduled from April 1, 2015 onwards.
- The FMM Institute reserves the right to change the facilitator, reschedule or cancel the programme and all efforts will be taken to inform participants of the changes. Should the programme be cancelled or postponed, FMM Institute is not responsible for covering airfare, hotel or other travel costs incurred by the participants.

For further enquiries, please contact:
Pn Fataihah / Pn Hafifah
FMM Institute
Tel: 03-62867200
Fax: 03-62776712
Visit us at www.fmm.edu.my
Dear Madam,
Please register the following participant(s) for the above programme.
(To be completed in BLOCK LETTERS)

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(If space is insufficient, please attach a separate list)

Enclosed cheque/bank draft No. __________________________ for RM __________________________

being payment for ________________ participant(s) made in favour of the “FMM Institute”.

Submitted by:

Name: ______________________________________________________________________

Designation: __________________________________________________________________ E-mail: __________________________________________________________________

Company: ____________________________________________________________________ FMM Membership No: ____________________________

Address: ____________________________________________________________________

My Corporate Identity No.: _______________________ GST Registration No.: _______________________

Tel No.: _______________________ Fax No.: _______________________ Date: ________________