



2KG TRAINING

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Root Cause & Failure Analysis

Presenter: Riaan Breedt

ABOUT THE PRESENTER: Riaan Breedt



Riaan Breedt has a BSc Eng (Mech) from Pretoria University followed by a 20-year career perfecting rotor dynamic design and developing high speed test equipment. Riaan founded the company Vibrakon in 1984 that mainly dealt with machine rotor dynamic design; the development of high-speed test equipment; the solving of related machine dynamic problems, and vibration analysis of industrial equipment.

From 1990 to 1997 Riaan was involved in the introduction of “SKF Condition Monitoring” to the South African market with Vibrakon (his company founded in 1984) responsible for marketing, sales, implementation, and training of the then newly introduced SKF products. A team of eight people were involved with this task with Riaan responsible for the installation and commissioning of the first on-line vibration monitoring system on a paper machine in South Africa at Mondi Kraft, Richards Bay.

Riaan spent 1997 – 2009 rendering consulting services to clients, with the emphasis on implementation, training, and operating reliability programs as part of their maintenance strategies. The platform for introducing these reliability programs is the Design Maintenance Systems Inc. (DMSI) software (Maintelligence), marketed in South Africa by Vibrakon.

Number of days: 2

CPD Points: 2

LIVE VIRTUAL CLASSROOM

2KG Training Live Virtual Courses offer participants the same instructors, training systems, course materials, personal support, and face-to-face engagement with instructors and other participants that they would expect to find in a conventional classroom.

The Root Cause & Failure Analysis Live Virtual Course brings participants together in a virtual classroom, where they receive training from an expert via a live video link. Participants are interconnected via audio and video, enabling them to interact both with the instructor and with their classmates. Learners can speak to their instructor at any time to ask questions, request assistance, and instructors can provide hands-on support.

WHO SHOULD ATTEND

- All personnel involved in process and quality improvements
- All problem-solving team members and leaders
- All personnel involved in the production and maintenance disciplines

COURSE OUTLINE

The course is very closely aligned to the Continual Improvement paragraph of ISO 55000 which states that when a nonconformity or incident occurs in its assets, the organization SHALL take action to control it; deal with the consequences; review the details; determine the causes; implement corrective actions and review the effectiveness of such corrective actions.

RCA/RCFA with related corrective actions is thus fundamental to any asset improvement program and as such should be entrenched in the organization's processes. This not only refers to the RCA/RCFA methodology being used but to the management of all related processes, i.e. record the incidents; trigger and scale the investigation; analyze all relevant data; identify best possible corrective actions; implement these to realize the benefits of it not recurring. The training addresses all the above items to ensure an effective Continual Improvement Process is setup and managed within the organization.

A further aim of the course is to establish a "preventive or defect elimination culture" within the organization by moving away from blaming during RCA/RCFA sessions. This is done by using Cause-Mapping as the analysis methodology which is based on a "Scientific Based Evidence Chain of Events". It builds on detailed analyses and cumulative learning from earlier RCA/RCFA cases and fosters accountability and assists with FMEA studies.

Workshops are conducted based on typical industry examples, training attendees in the use of the Cause Mapping methodology and guide them in structuring and entrenching the RCA/RCFA process within their organizations.

OUTCOMES

After this training, you will be able to:

- Understand the important influence of processes and people on the organization's performance.
- Establish the necessary failure recording, analysis, and management of corrective action processes.
- Use the impact on company goals to trigger and scale RCA/RCFA investigations with related improvement actions.
- Break down and analyze any problem within the organization by applying the cause and effect (cause mapping) principle.
- Use the cause map to identify and execute solutions that will avoid recurrence of failures.
- Understand how to develop and apply a prevention instead of a blame culture during an RCA/RCFA investigation.

COURSE HIGHLIGHTS

Day 1

RCA FUNDAMENTALS

- RCFA Introduction
- Video – Swiss Cheese Model
- RCFA Terminology
- Physical/Human/Latent Failure Elements
- People & Process influences
- Risk mitigation
- **Video – Bowtie Risk Evaluation**
- RCFA Methodologies
 - 5 Why
 - Fishbone
 - Fault tree
 - Cause Mapping
- **Video – Fishbone & Five-Why**
- RCA/RCFA Cause Map Fundamentals
- RCA/RCFA Process
- RCA/RCFA Triggers & Scale
- RCA/RCFA Business Impact
- RCA/RCFA Program Failures
- RCA/RCFA vs. FMEA/RCM
- **Workshop – Fishbone & 5-Why Application**

Day 2

RCA/RCFA IN RELIABILITY IMPROVEMENT

Typical Improvement Elements

- Asset Hierarchy
- Asset Criticality
- Maintenance Content Optimization (PMO & RCM)
- Workflow Management
- Condition Monitoring
- Proactive Maintenance
- Spares Management
- FRACAS
- RCA/RCFA
- Defect Elimination
- Video – Optimum Defect Elimination & Downtime/Delay Recording
- Workshop – Recording Failure Data & \$-Pareto Application
- Workshop – RCA Triggers & RCA Scale
- Workshop – Cause Mapping Application



Registration Form

How to register for the course:

1. Complete this registration form and fax it to Phindi Mbedzi: Tel: 011 325 0686 Fax: 011 325 0488 Email: phindi@2kg.co.za
2. Acknowledgement will be emailed to you.
3. Final confirmation and details will be faxed or emailed to you approximately 7 days before the commencement of the seminar.

Cancellation Policy:

By signing and returning the registration form, the authorizing signatory on behalf of the stated company is subject to the following terms and conditions.

- All cancellations must be received in writing
- Any cancellations received less than 7 working days before the date of the event, the full fee will be payable and the delegate can attend the next scheduled training course.
- In case of insufficient applications for the workshop 2KG reserves the right to cancel the seminar. Applicants will be informed and all fees will be refunded immediately.

Delegate information:

Title: _____ Surname: _____ Name: _____

Full Company name: _____ Job Title: _____

Postal Address (to which invoice must be sent): _____

Code: _____ VAT number: _____

Tel: () _____ fax: () _____

Cell: _____ Email: _____

Contact/ Accounts information:

Title: _____ Surname: _____ Name _____

Tel: () _____ fax: () _____

Cell: _____ Email: _____

Please tick the course that you would like to attend:

Conventional Classroom

19-20 May 2025, (2 Days)
Johannesburg
R9 000.00 (excl VAT)

13 – 14 October 2025, (2 Days)
Johannesburg
R9 000.00 (excl VAT)

Live Virtual Classroom

Currently unavailable, a date to be advised (2 Days)
R7 200.00 (excl VAT)

I have read and agreed to all the conditions of registration as stipulated in this brochure.

Signature

Date

For more info and to register contact Phindi Chauke on tel: 011 325 0686 or cell: 071 125 6188 and email: phindi@2kg.co.za or visit www.2kg.co.za