

# **25 Tactics: MRO Spares Optimisation & Inventory Reduction**

**13<sup>th</sup> – 15<sup>th</sup> November 2017 | Stockport Manchester, UK**

Use Successful and proven methods and analysis techniques to effectively reduce inventory and costs of spares part.

## **Comments from past participants:**

"The topics covered from this course are very relevant for me to perform my daily job, which will serve better foundation whenever I want to challenge my users and suppliers."  
REPSOL

"Very useful for improving cost reduction in spare part management."  
World Largest Furniture maker

"Learn a great deal on the ROP, SS, SL and the way to optimization"  
PETRONAS ( Malaysia)

"Good example of spares management, concepts and techniques used for optimization of spares"  
SHELL CHEMICAL SERAYA (Singapore)

"Useful for our job & provided many real knowledge for our S.P inventory reduction programme "  
COCA – COLA

"Good class Excellent lecturer"  
A major semiconductor manufacturer

"We found that our stock control was very poor and we have adopted different strategies depending on cost and usage."  
Middle East Gas Producer

"We didn't realise we were significantly overstocking until we applied the techniques we learnt on your course."  
Major Beverage Producer

"The content are helpful and can be applied to the works for the improvement and on inventory and cost"  
Binh Son Refining (Vietnam)

"Good case study and exercises. Best part was – when to order & how many to buy "  
Major Timber company

"From start to end, it was a good floor. Well done. Good Course"  
A Global manufacturer of garment

"Interesting topic, especially for people who work for material planning"  
TOTAL E&P

"Facilitator is knowledgeable on this subject "  
Sarawak Shell Berhad, (Malaysia)

"We didn't know there was any science in setting reorder levels, we have always used guess work, we feel we have an important role in the company asset management programme. "

"This course is useful for our Inventory Management"  
Nghi Son Refining (Vietnam)

"Excellent Workshop"  
Major Gold – Copper mining company ( Australia)

"Experienced Instructor"  
Major Cement company (Thailand)

## **Previous clients attended:**

Continental Tyre, Lumileds, Western Digital, First Solar, Nestle Manufacturing, COCA-COLA, KPOC , HESS INDONESIA, Thai Aviation services, Siam City Cement, San Roque Power, HMC Polymers, NGHI SON REFINERY AND PETROCHEMICAL, STAR ENERGY, VICO INDONESIA, NIPPON , TNB , BRUNEI LNG , SARAWAK ENERGY , CARIGALI-PTTEPI , SHELL CHEMICAL SERAYA , GLOW ENERGY , MURPHY SARAWAK ,CARIGALI HESS , PETRONAS GAS ,STAR PETROLEUM, PTTEP SIAM , VINYTHAI , THAI OIL , MUDABALA PETROLEUM , PTT LNG , SIAM YAMATO STEEL , PTT E&P , PETROFAC , SARAWAK SHELL BERHAD , PT BADAQ NGL , TALISMAN , HESS INDONESIA , TRANS-THAI MALAYSIA , BINH SON REFINING AND PETROCHEMICAL , TOTAL E&P , SINGAPORE REFINING COMPANY, PT CABOT, SWIRE PACIFIC OFFSHORE, UMW Offshore Drilling, MAERSK, MODEC, SAPAURA KENCANA and SHELL.

**In Partnership with:**



# 25 Tactics: MRO Spares Optimisation & Inventory Reduction (3 Days)

Many companies do a bad job at managing their inventory effectively; there are many reasons for this. But it starts with bad submission of SPIR/RSPL, poor cataloguing and the selection of initial spares.

This practical newly structured 3 day workshop covers every aspect related to reducing inventory and costs of spares parts and is supported by case studies, software and practical exercise to aid understanding. [The techniques allow you to immediately apply them in the workplace and start to reduce cost.](#)

There are very few courses conducted that deal with the practical issues of spares cataloguing, optimizing spares and stock reduction. After this course, delegates will leave the workshop with tools and techniques that they can immediately apply in their own companies and start to reduce costs.

An Excel Analysis worksheet containing all formulae will be provided to conduct an audit of current inventory parameters. Two analysis techniques will be covered; first using probability for normal operating and consumable spares and the second using simulation (modelling) techniques for high value spares with logistic issues.

The course is of particular benefit to companies who:

- Want to audit their spares data quality or
- Need to upgrade their CMMS
- Want to reduce inventory levels and costs

**Many case studies will be shown including reduction of 50-70% in line items**

Delegates are required to bring laptop to conduct the numerous exercises. This course has a new structure designed to focus more to reduce stock levels, spares costs and stocking costs - and provide additional exercises using the optimization techniques in addition to include how to conduct improved CMMS spares cataloguing.

## **Attend this course to Master:**

- ISO5500 and what it means for inventory management
- How to achieve consistent cataloguing
- The different costs associated with spares management
- Learn techniques to improve reliability resulting in less spares usage
- How to select the right inventory policy for fast and slow moving parts
- Good practices related to SPIR forms
- How to evaluate safety stocks scientifically
- How to determine how many to buy
- Learn strategies to minimise stock
- How to justify the financial case for high value spares
- How to measure inventory performance
- What can be done in-house and what can be done with specialist software
- UNDERSTAND the different meanings of ROP for SAP Users **(new material to reflect SAP methodology)**

## **PRACTICAL INVOLVEMENT:**

- Part Naming, ABC Analysis, Total costs of ownership. Determine spares expected usage based on MTBFs. How to calculate ROPs based on formula and to compare the value obtained using statistical tables. Calculate EOQs
- A number of Excel worksheets to analyze a single spare will be used before progressing to the complete optimization tool.
- Build an Excel tool to audit your existing inventory control parameter. This worksheet will be partly developed during Day 3 to allow the participants better understanding of the required formulas. This involves building formula in Excel. However, the instructor will provide the full Excel based tool with ALL optimization formula.

## **This program is intended**

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The Course is designed to:

- Managers
- Purchasing & Logistics
- Planners
- Materials /warehouse/store personnel
- Anyone involved in cost control for spares and materials
- Project and Design Engineers who have an interest in how to minimize risk and costs of spare part inventories.
- Engineers responsible for specifying, buying spares and setting up the spares information in the CMMS.
- Anyone who want to reduce Maintenance OpEx.

**Previous Attended Job-titles:** Inventory Management, Maintenance Department , warehouse , Maintenance mechanical, Inspection & Data Management, Production , Material , Instrument & Control, Maintenance & Reliability , Buyer , Procurement & contract, Planner , Store controller, CMMS coordinator, Supply chain management , Plant Engineer, Equipment Analysis and Central service Manager.

# 25 Tactics - MRO Spares Optimisation & Inventory Reduction (3 Days)

## DAY 1 - Introduction to Spares Management

- Delegates Issues
- Common issues in inventory management with real examples
- Where we incur excess costs
- Benefits of improved inventory management
- Terms and definitions used in the workshop.

## Improving RSPL Data from Vendors

- RSPLs, their purpose and why they are submitted incorrectly, principles
- A critical review of a typical RSPL form and the associated procedures sent to vendors
- Examples of good and bad RSPL
- 10 rules for effective use of RSPL
- Proposed electronic RSPL

## Effective Spares Cataloguing

- Introduction and detailed examples of an 8 step cataloguing process, i.e.
- Defining naming formatting
- Developing spare type guides to ensure consistent part naming
- Developing rules for Mfg's Part/Nos, dimensions, abbreviations
- Define strategies i.e. who to buy from OEMs, Vendor or specialist company
- Develop a set of cataloguing best practice guides
- Many examples collected from our numerous studies will be shown of poor cataloguing including the actions to achieve best practice
- Benefits of commercial Cataloguing software

## Inventory Cost Reduction Programme

- Introduction to a 25 step inventory reduction programme, tactics including
- Auditing CMMS Data Quality
- Challenge the decision whether to stock and who pays
- Spare criticality and service levels
- Applying the 80-20 rule to AIV, Item Cost, Stock Holding Cost
- Identifying duplicate stock
- Reduce internal lead times to reduce stock holding costs
- Standardisation
- Different strategies, min-max, reorder point control, constant vendor delivery
- Replace OEM
- Make a plan

## DAY 2 - Spares Parts Cost

Different costs used in the stock management process, e.g. buying, holding cost, item cost, issue cost, penalty cost, average stock level costs, annual issue value, total costs of ownership

## Reliability Theory Related to Spares

- Normal & Poisson distribution,
- Calculating Weibull parameters for high value spares
- Explanation of service levels what they really mean
- Why is the P-F interval important
- How to estimate annual usage using MTBFs, population & utilization factors or reliability data sources

## Challenge Vendors Recommended Quantities

- Calculate estimated annual demand rates based on MTBFs to allow challenging of vendor proposed values
- Case studies where actual consumption has exceeded initial estimated

## Setting Re-Order and Safety Stock Levels

- Different approaches to set safety stock
- Using the Poisson distribution to set re-order points based on lead time, annual usage and criticality and the typical issue quantity
- Demonstrate how rules of thumb approaches are incorrect
- Alternative strategies including Constant Vendor Delivery

## How Many to Order? Determining the EOQ

- How to determine the quantity of the order
- The effects of ordering too many or too few,

## DAY 3 - Auditing current inventory Parameters effectiveness

- Use an Excel worksheet to identify opportunities to reduce stock levels and stock holding costs. The worksheet has the provision for existing, optimum and proposed values
- Metrics include service levels; safety stock. ROP, Average stock levels, No of years of stock, Annual Issues Rates and value, stock holding value, average stock levels ALL metrics calculated at line item level

## Database Solution

- Demonstration of an MS Access Based Application to simplify the analysis

## Evaluate policies for insurance spares

- Use monte - carlo simulation, failure patterns and stock out costs to evaluate policies for high value, long lead time items

## Alternative Spares

- What to do if the EOQ is not valid – the Min-Max and Constant Vendor Delivery Model
- Evaluating whether discounts are worth accepting for higher order quantities

## KPI Reporting system

- Discuss Purchasing & Inventory KPIs Using 7 Key result areas
- What makes a Performance management system

## Course Review and Delegates Action Plan

## TAKE AWAY MATERIAL

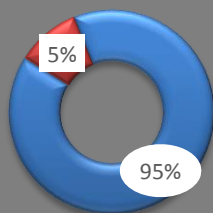
- An electronic SPIR/RSPL worksheet to overcome current issues with vendor data.
- The 25 tactics to Reduce Inventory & Spares Costs.
- Laptop is required



# MRO Spares Class in UK, Africa, Middle East and Asia Pacific



Past delegates rating on the effect on training



Effective Fairly effective



# 25 Tactics: MRO Spares Optimisation & Inventory Reduction (3 Days)

Programme Facilitator – David Thompson



## David Thompson, RAMsoft UK – MAINTENANCE RELIABILITY CONSULTANT

David extensive experience covers all aspects in Maintenance, Reliability and Operation management. His area of strength covers specifically in maintenance management audit reports , RCA , Shutdown planning and failure code systems ,CMMS , KPIs , Spares Optimization , RCM and RAM Modelling.

### RAMsoft, UK

For the past 40 years, David had been actively involved in:

- Conducted over 400 audits including fast track audits, in-depth audits and distance audits in maintenance management
- Currently working for Worley Parsons in UK writing document for a number of FEED projects worldwide.
- Interest in helping companies collect better data and to try and make reliability of interest to the regular maintenance engineer by concentrating on applications rather than complex mathematical theory.
- Developed Policy and procedures documents for a number of Oil & Gas Companies.
- Wrote standard and guidelines on many topics on maintainability, RCA, work packs, Shutdown planning and failure code systems.
- Wrote over 400 audits reports covering excellence in Maintenance management and in specialist topics spares, CMMS, KPIs and Reliability Management system.
- Presented Papers at several Maintenance & Reliability Symposiums in Europe, Malaysia and Brazil.
- Online distant learning instructor for Robert Gordon University in Assets integrity and Reliability Management.
- Undertaking a major CMMS data Cleansing Project as part of a CMMS upgrading.

### Symposiums

- European & world Maintenance Congress 2007
- Applied Reliability Symposiums – Europe 2009, Brazil 2008, Asia 2006, 2009, 2010.
- Presented paper at the Applied Reliability Symposium Singapore 2013 (4<sup>th</sup> Year)

David has worked for many blue chip companies either directly or through a consulting role.

### David's International Clients:

Nippon Oil , Talisman , Petrofac , MODEC , State Oil Dubai Petroleum , Silterra, Novartis , EGGBOROUGH POWER STATIONS , Chinese Oil & Gas company ,Worley parsons , sabic, Qatar petroleum , Scottish power , wood group , shell Nigeria , Hunstsman , ENI oil , Saudi Aramco and SONANDOL P&P.

David is a certified instructor in RCA and Reliability Methods and Techniques. He has developed and delivered training programs worldwide including both to offshore and onshore facilities, topics include RCM, FMECA, Weibull Analysis, RAM Modelling, Reliability Growth, Analysis, and Fault Tree Analysis, Incident /Root Cause Analysis, Work Planning and Control, Spares Optimisation & Rationalisation. Recent workshops that have been well received are Achieving CMMS Data Integrity, Implementing Asset Management Systems to support ISO55000 and Reducing OPEX costs.

David has presented papers at several Maintenance & Reliability Symposiums in Europe, Malaysia, and Brazil. He is an Online Distant Learning Instructor for the Robert Gordon University for a distance learning MSc Course in Asset Integrity and Reliability Management. David's workshops include many case studies and examples gaining from working in the Middle East, Africa, and Asia.

David has conducted many reliability studies over the past 20 years. He has a particular interest in helping companies collect better data and to try and make reliability of interest to the regular maintenance engineer by concentrating on applications rather than complex mathematical theory. He has worked for many blue chip companies either directly or through consultants.

### Early days

David initially started in the steel making and mining sectors and for the past 15 years in the oil & gas sector. David was the UK partner for Reliasoft one of the world's leading reliability engineering companies, and is currently part of a team to implement improved Asset Reliability in the Middle East, including RAM and RCM studies.



RAMSOFT have been partnering with PETRO1/ ENERGY1 since the year 2012 offering training and consultancy in MRO spares parts management in the Asia Pacific Region. (Malaysia, Singapore, Indonesia, Thailand, Vietnam, Philippines and China.) Since then PETRO1/ ENERGY have expanded their expertise in MRO spares training in the oil & gas industry to include electronics manufacturing, food & beverage, mining, general manufacturing, power & utilities, aerospace and renewable energy.

Energy1 is a sub-division of PETRO1 focus on provide trainings & technical Consultancy services ranging from Revenue losses reduction, Maintenance & reliability, spares parts optimization, electrical & electronics and business related activities in the Energy & Utilities industry. We had successfully made impact to energy & utilities professional mainly the top players in the South East Asia Region.

- |   |                                       |                              |
|---|---------------------------------------|------------------------------|
| ▪ Metropolitan Waterworks Authority Thailand. | ▪ Star Energy Geothermal              | • Sandisk Storage            |
| ▪ Tenaga Nasional berhad.                     | ▪ Perbadanan bekalan air pulau pinang | • Muehlbauer                 |
| ▪ San Fernando Electric Light & Power co, Inc | ▪ Aliran ihsan resources berhad       | • Dominant OPTO Technologies |
| ▪ Sarawak Energy                              | ▪ Visayan Electrical company          | • Finisar Malaysia           |
| ▪ SP Powergrid ltd.                           | ▪ Glow Company                        | • Sanmina System             |
| ▪ Power Seraya                                | ▪ Suruhanjaya Tenaga                  | • Bose System                |
| ▪ SMT Technologies                            | ▪ Indah Water Konsortium              | • Amkor Technology           |
| ▪ SONY  | ▪ Jimah O&M                           | • EDM Electronics            |
| ▪ ST Microelectronics                         | ▪ Renesas Semiconductor               | • AUO SUNPOWER               |
| ▪ Celestica                                   | ▪ Apple                               | • Tridonic                   |
|   | ▪ Osram                               | • Mattel                     |
|   | ▪ Hayco                               |                              |

# 25 Tactics : MRO Spares Optimisation & Inventory Reduction Registration Form

25 Tactics: MRO Spares Optimisation & Inventory Reduction	Per Participant	<p align="center"><b>PROGRAM DETAILS</b>                  Venue: Stockport Manchester, UK                  Date: 13<sup>th</sup> – 15<sup>th</sup> November 2017</p> <p align="center"><b>REGISTER NOW</b>                  Please sent any enquiries or registration form to                  Harn (Marketing Director) :  <a href="mailto:harn@petro1.com.my">harn@petro1.com.my</a>                  MAIN: +44 (0)7519019430 (UK)</p>
Full 3 Days	GBP 700 ( )	
<ul style="list-style-type: none"> <li>The above investment fee are inclusive of course material, tea breaks and lunch.</li> <li>The course fee does not include accommodation or travel cost.</li> </ul>		
( ) I would like to organize this training on-site and <b>save at least 25%</b> on the total course Fees! Please call <b>+603 7727 3952</b> for more about our in-house training or email <a href="mailto:ihtraining@petro1.com.my">ihtraining@petro1.com.my</a> (Terms & Conditions apply)		

## Delegate Details

1. Name: \_\_\_\_\_ Mr  Mrs  Ms  Dr

Job Title: \_\_\_\_\_

Email : \_\_\_\_\_

Contact No: \_\_\_\_\_

Department: \_\_\_\_\_

2. Name: \_\_\_\_\_ Mr  Mrs  Ms  Dr

Job Title: \_\_\_\_\_

Email : \_\_\_\_\_

Contact No: \_\_\_\_\_

Department: \_\_\_\_\_

3. Name: \_\_\_\_\_ Mr  Mrs  Ms  Dr

Job Title: \_\_\_\_\_

Email : \_\_\_\_\_

Contact No: \_\_\_\_\_

Department: \_\_\_\_\_

Head of Department: \_\_\_\_\_

## Invoice Details

Invoice Attention to: \_\_\_\_\_

Company: \_\_\_\_\_

Industry: \_\_\_\_\_

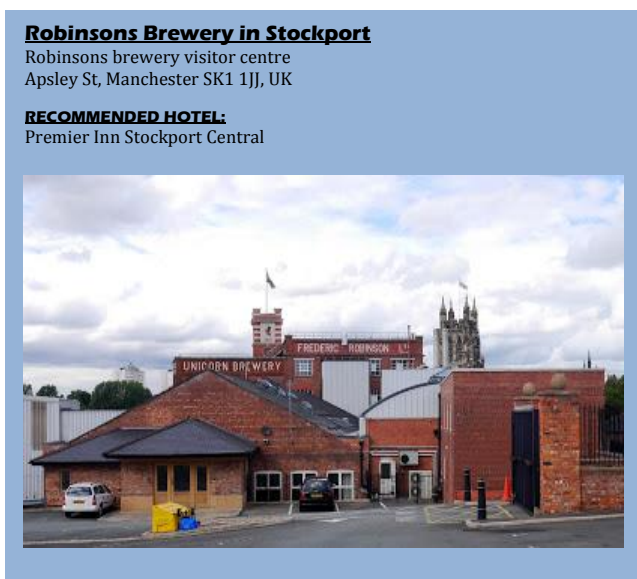
Address: \_\_\_\_\_

Postcode: \_\_\_\_\_ Country: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Authorized Signature : \_\_\_\_\_



**Robinsons Brewery in Stockport**  
 Robinsons brewery visitor centre  
 Apsley St, Manchester SK1 1JJ, UK

**RECOMMENDED HOTEL:**  
 Premier Inn Stockport Central

**Payment Method**  
 By Direct Transfer: Please quote invoice numbers on remittance advice.

ACCOUNT NAME : Ramsoft (UK) Ltd  
 BANK : The Royal Bank of Scotland Plc  
 ACCOUNT NO : 11176074 (GBP)  
 Sort Code: 83-04-25  
**All bank charges to be borne by payers. Please ensure that Ramsoft (UK) Ltd received the full invoice amount.**

**Payment Policy:**  
 Upon receipt of a completed registration form, it confirms that the organization is registering for the seat(s) of the participant(s) to attend the conference or training workshop. Payment is required with registration and must be received prior to the event to guarantee the seat. Payment has to be received 7 working days prior to the event date to confirm registration.

**DATA PROTECTION**  
 The information you provide will be safeguarded by Ramsoft / Petro1 that may be used to keep you informed of relevant products and services. We take it seriously when it come s to protection of our client data.

**Cancellation & Substitutions:**  
 Upon receipt of a completed registration form, it confirms that the organization is registering for the seat(s) of the participant(s) to attend the conference or training workshop. Should you be unable to attend, substitutes are always welcome at no additional cost. Please inform us as early as possible. Payment is non-refundable if cancellation occurs 7 working days prior to event commencement. However a substitute is welcome at no additional charges. If cancellation occurs 5 working days prior to the registration date and there is no substitute, the organizer reserves the right to charge 50% of the total investment from your organization.

Ramsoft is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. Ramsoft shall assume no liability whatsoever in the event this training course is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, war, fire, labor strike, extreme weather or other emergency.

**Walk in Registration:**  
 Walk-in participants with payment will only be admitted on the basis of seat availability at the event and with immediate full payment.

**Program Change policy:**  
 The organizer reserves the right to make any amendments and/or changes to the workshop, venue, facilitator replacements and/or modules if warranted by