

# MRO Spares & Inventory Optimisation

Leveraging inventory optimisation functionality and control operating costs without jeopardising the production capabilities

Hyatt Regency Perth Hotel, Australia  
21st & 22nd February 2011

Hilton on the Park Melbourne, Australia  
24th & 25th February 2011

**“Planning is bringing the future into the present so that you can do something about it now”**

Alan Lakein

Millions of dollars can be spent on materials to support maintenance activities. Improving and optimising your MRO spares management has become critical to control operational cost and remain your competitiveness.



## Your course leader:

**Carter McNabb** Partner  
**GRA Australia**

*Carter is a founding partner of GRA, an expert consulting firm specialising in demand, inventory and supply chain optimisation. Carter has consulted extensively in the United States, Latin America, Asia and Australia to manufacturing, distribution, retailing and after market organisations. He also authors and runs the 'Managing Supply Chain Inventory' and 'Network Modelling' courses within Monash University's Supply Chain & Logistics Masters Program and delivers courses in Forecasting and Inventory Management.*

## Testimonial from one of Carter's clients:

*"We saved \$14m in six months. We're used to being promised these kinds of numbers; we are just not used to having them delivered."*

Wing Commander

**Royal Australian Airforce (RAAF)**

## Key benefits and learning outcomes:

- **Identifying** tangible benefits of MRO Inventory Optimisation
- **Balancing** inventory needs and requirements with the need to minimise costs resulting from obtaining and holding inventory
- **Mastering** MRO inventory strategies for enhanced understanding of demand planning and forecasting to meet demand
- **Improving** your lead time management
- **Examining** critical aspects that integrates demand, inventory and supply planning
- **Optimising** the relationship between costs, constraints, risks and performance management

## 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 analysed 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.

## \*Early Bird & Group Discounts

Ask about our savings

## Course approach:

This course aims to provide audiences with

- A clear methodology applicable to all relevant organisations
- Industry standard terminology and content
- Methodology and tools that are consistent with the entire business case

## Testimonials from past MRO Inventory training courses:

*"Generally organised event over the two days. Trainer was professional and confident in material"*  
Group Manager – Group Manager – Plant and Procurement support  
**Downer EDI Mining**

*"Course provided great insight into inventory control/management. Carter was very good presenter."*

Category Manager – Procurement

**Don KRC**

*"Exceptionally detailed explanation of processes essential to manage inventory"*

Group Operations Manager – Supply and Logistics

**Newcrest Mining**

*"Exceptional presenter, wealth of knowledge and well communicated"*

Spare Equipment Officer

**SP AusNet**

*"Understanding of the 'real world'"*

Electrical Reliability Engineer

**BHP Billiton**

*"Well structure, logical course content. My organisation has implemented much of these methodologies in recent years and it is showing positive results in 18 months".*

Supply and Inventory Manager

**Western Power**

*"Very Intelligent, profound information conveyed. Best practice techniques taught".*

Inventory Manager

**BHP Billiton**

*"A very informative course + approachable instructions".*

Purchasing Stores Technician

**Peabody Energy**

**marcus evans training courses are thoroughly researched and structured to provide intense and intimate practical training to your organisation. Our format:**

- Pre-course questionnaires
- An in-depth tailored programme to address market concerns
- Diverse real life case examples
- Comprehensive course documentation
- Interactive roundtable discussion and breakout sessions

## MRO Inventory Management

Participants will gain an understanding of how to tackle MRO inventory investment and operational needs for optimal inventory management

### Session One

#### Evaluating practical insights into MRO inventory management

- The critical success factors for managing inventory, cost and service
- Benefits of facilitating improved inventory management of MRO
- Key concepts in the planning process
- Demand forecasting
- Inventory management
- Supply planning

### Session Two

#### Learning how to segment MRO inventories and assign appropriate management techniques

- Consider demand profiles, risk, criticality, service and cost to create inventory segments
- Assign appropriate management policies, methodologies and techniques to each segment
- Define review frequencies for each inventory segment
- Develop an inventory management matrix based on the above

### Session Three

#### Exploring advanced spares and inventory management

An ineffective spares management process will result in at least 15% - 35% of asset down time, often due to the lack of necessary parts and materials to perform repairs correctly and quickly the first time. To help participants successfully address these challenges, a range of different maintenance philosophies and strategies will be explored

- Addressing available approaches and methodologies for critical MRO inventory
- Exploring and determining your approach in terms of your maintenance philosophies
- Developing and differentiating a effective and capable MRO inventory strategy
- Improving internal inventory management systems

### Session Four

#### Determining the range and quantities of rotables/repairables and spares initial provisioning

- Identifying and differentiating provisioning strategies for critical, non-critical and consumable spares
- Achieving systemic control via Re-order Level (ROL) to build your spares management on consumption rate and procurement lead time via Re-order
- Establishing Proper Order Quantities for slow-moving and normal spares
- Understand the difference between item-based sparing and system-based sparing techniques in multi-echelon environments

## Spares forecasting and demand planning

The best practices in demand planning will be presented. Participants will gain an understanding of the business case for demand planning, particularly in the MRO environment, and the framework required to create forecasts and a business demand plan for MRO spares and material optimisation.

### Session Five

#### Predicting demand to minimise asset downtime and loss of operational availability

- Exploring innovative forecasting techniques and tools
- Connecting spares management with your maintenance practices and requirements
- Examining critical aspects that integrates demand, inventory and supply planning
- Employing accurate prediction to identify hidden MRO cost drivers
- Too much vs. not enough inventory

### Session Six

#### Strategies to manage accurate spares demand planning and forecasting

Long lead times, unpredictable demand spikes, ever-changing prices and low usage rates, thus making them difficult to secure in a timely manner, have often influenced spares.

- Planning projected delivery dates properly to prevent critical maintenance need for spares
- Calculating and managing demand variability
- Adopting the best practice forecasting methodologies to predict your demand and minimise excessive inventories

## About your course facilitator:

### Carter McNabb Partner GRA Australia

Carter McNabb is a founding partner of GRA, an expert consulting firm specialising in supply chain strategy, planning & execution. With a 12-year history and a team of 40 professionals, GRA is Australia's premier supply chain consultancy and services clients throughout the Asia Pacific region.

#### GRA's clients include:

- The Australian Defence Forces
- Toyota Australia
- Cummins Engine
- The Super Cheap Auto Group
- Wesfarmers Industrial & Safety
- Cadbury Schweppes
- Honeywell
- QANTAS
- Amcor Fibre Packaging
- Honda Australia
- OneSteel
- Nestle Australia
- Australia Post
- Repco

For the last 20 years, Carter has helped Maintenance, Repair & Overhaul (MRO) organisations in North America, Asia and Australia deliver rapid and sustained inventory reductions, service level improvements and supply chain cost reductions through the practical application of advanced forecasting, inventory and supply chain optimisation processes, techniques and systems.

He has worked within Retail, Distribution, Manufacturing and Service / Repair organisations in industries ranging from Fast Moving Consumer Goods (FMCG) to Auto Parts to Defence at both the strategic and operational levels, and his focus areas include:

- Service Parts & Rotable / Repairable Item Management
- Maintenance, Repair & Overhaul (MRO) Supply Chain Management
- Demand Management
- Sourcing & Procurement
- Production
- Warehousing & Distribution
- Inventory
- Transportation
- Strategy, Planning & Execution

In addition to his extensive industry experience, Carter also authors and delivers Masters courses entitled "Managing Supply Chain Inventory" and "Supply Chain Network Optimisation" within Monash University's Logistics & Supply Chain Management Post Graduate Program. He presents in Melbourne University's Annual Logistics & Supply Chain Management Executive Development Program, as well. With a series of published articles and white papers, press quotes and frequent speaking engagements; Carter is a recognised expert in the field. Importantly, he brings a healthy blend of theory and practical, proven experience to the subject of demand, inventory and supply chain optimisation.

## Who must attend

**Presidents, Senior Vice Presidents, Vice Presidents, Directors, Assistant Directors, General Managers, Senior Managers, Managers, Heads of Departments, Supervisors, Engineers and Executives from the following job areas:**

- Supply Chain
- Spares Management
- Material Planning
- Purchasing / Procurement
- System Engineer
- Quality Control
- Finance
- Commercial
- Maintenance
- Warehousing / Inventory
- Industrial Engineering
- Operations / Plant Manager
- Store Manager

#### From the following industries:

- Oil and Gas
- Energy and Utilities
- Telecom
- Steel
- Aluminium
- Electrical and Electronics
- Heavy Industries
- Airlines
- Defence
- Chemicals and Petrochemicals
- Mining
- Food & Beverages
- Cement
- Automotive
- Pharmaceutical / Medical
- Heavy Manufacturing
- Transport & Logistics

## MRO Spares & Inventory Optimisation

The costs of holding spares must be accounted as part of the decision-making operating process, as the true carrying cost can be as high as 30% - 40% of the purchase cost per item per year. Participants will gain an understanding of how inventory optimisation methodologies work and will learn in detail the best practices in inventory, service and cost optimisation. The topic will cover repairable, rotatable and consumable items.

### Session One

#### Spares inventory optimisation

- Ensuring the replenishment of spares in inventory maintains the targeted availability level
- Applying algorithms to calculate critical stock levels
- Preventing overstocking and deficiency
- Minimising individual spares inventory problems using multi replenishing schedules
- Finding the required spares more quickly and easily from storage
- Gaining practical insights into the true inventory costing
- Identifying and calculating the hidden inventory costs
- Exploring the best practice methods to reduce inventory cost

### Session Two

#### Introducing supply chain modeling as a way to provide results with which to make management decisions

Modeling opportunities, applications and techniques - and their associated pros and cons - will be covered in this session. Participants will be provided with a modeling tool for use during the remainder of the course and for simple modeling back in their workplace. This session will be used to develop familiarity with the modeling tools and its capabilities.

### Session Three

#### Evaluating cost saving considerations to reduce inventory expenditure wastage

To reduce these growing costs, spares inventories must be kept low while accommodating cost saving considerations that are up to standard service level and low stockouts. Here, we look into what other efforts can be made to curb or control unnecessary costs of spares inventories

- Standardising plant equipment within plants so that spares can be shared between the warehouses
- Locating your spares warehouses at key areas to easy accessibility
- Consolidating spares and suppliers to keep the number of your suppliers low and gain better prices and service
- Scheduling consignment arrangements to occur at the same time

## MRO Supply Planning

This topic covers the different supply techniques and applications used to meet supply requirements including MRP, MRP II, DRP/DRP II, TPRP, and JIT. The purchasing function and the importance of vendor management will also be addressed focusing on the aspect of supplier / repairer Planning and Control for rotatables, repairables and critical MRO spares.

### Session Four

#### Replenishment Planning

- Proactively identifying understocks and overstocks
- Creating forward supply forecasts for all stocking locations
- Collaborative planning with suppliers
- Creating an exception-based replenishment planning process

### Session Five

#### Strategic MRO Procurement

- Actively managing your spares inventory levels
- Establishing supply and procurement reliability
- Key areas to consider when sourcing spares from overseas
- Lead time analysis: To stock or not to stock?
- Examining the factors that are lengthening lead times
- Purchasing portfolio matrix
- Creating a responsive chain

**marcus evans** would like to thank everyone who has helped with the research and organisation of this event, particularly the trainer, who has kindly committed and supported the event.

## Performance Management & the Financial Link

### Session Six

#### Perceiving the importance of performance management

- Making inventory decisions that benefit the entire supply chain
- Providing an introduction to the principles behind performance management
- Illustrating how integrated operations planning can be used in an MRO environment to link and constrain activities within an MRO business
- Understanding the characteristics of a good set of performance measures and the practical roles and responsibilities within an MRO organisation practicing integrated operations planning
- Addressing the relationship between financial performance and operations management
- How to build a business case to support improvement initiatives within an MRO organisation

### Session Seven

#### Handling obsolete and surplus stock to release much needed space and capital in your spares inventory

Over time, stores accumulate spares that are no longer needed. Whether managers realise this or not, keeping unnecessary spares is costly. Spares overhead is probably the highest cost, as it becomes dead capital for the business. This session explores the need for spares managers to look at recuperating their non-moving (excess, slow-moving, dead, obsolete etc.) stock

- Evaluating total cost of holding spares in storage to ascertain lost capital
- Identifying and retrieving your obsolete and surplus spares to dispose and save money at least once a year
- Recouping your initial capital expenditure by returning to vendors for credit
- Organising a periodic disposal plan to release obsolete and surplus stock in inventory

## MRO Planning Systems

### Session Eight

#### The use, selection and implementation of forecasting and replenishment systems in an MRO organisation

- What are the capabilities to look for in organisations?
- Establishing how a selection process might be structured
- What to consider when implementing forecasting and replenishment systems

## Why you cannot miss this event

An ineffective spares management process will result in at least 15% - 35% of asset down time, often due to the lack of necessary parts and materials to perform repairs correctly and quickly the first time. It is clear that keeping stockrooms filled with excessive amounts of MRO inventory comes with a real cost to the business and it is obvious that spares management are becoming more complex, making it critical for plant operations to find solutions that will assist in synchronising its processes. In today's challenging and competitive market it is critical and more important than ever to enhance MRO Inventory processes by balancing inventory needs and requirements with the need to minimise costs resulting from obtaining and holding inventory.

This training aims to provide most updated information and best practice models on how to prevent excessive operational down time. MRO Inventory Optimisation forum is excellent for developing business opportunities and showcasing capabilities to understand the impact of hidden costs furthermore to take aggressive steps to identify and manage them.

## Programme schedule day one & two

0815	Registration & coffee
0845	Morning session commences
1015	Morning refreshments and networking breaks
1045	Workshop re-commences
1230	Networking luncheon
1330	Afternoon session begins
1515	Afternoon refreshments and networking breaks
1545	Workshop re-commences
1715	Course concludes