

The Plant Engineering and Maintenance Association of Canada (PEMAC)

***Canada's MMP (Maintenance Management
Professional) Education and Certification
Program***

***The PEMAC Commitment to
World Class Industry in Canada***





Who we are.



www.pemac.org

The Plant Engineering and Maintenance Association of Canada

◆ PEMAC is a national, not-for-profit association providing global leadership in education and certification in world class maintenance, reliability and physical asset management practices.

◆ Founded in the mid 80's of the last century (21st Anniversary)

 MainTrain
2010
Canada's Premier Asset Management Event

www.pemac.org

Maintenance Management Professional (MMP)

***Education and Certification
For Maintenance, Reliability and
Physical Asset Management
Practitioners and Professionals***



The MMP Goal of Physical Asset Management

Safe
Capable
Reliable
Repeatable

Equipment & Processes

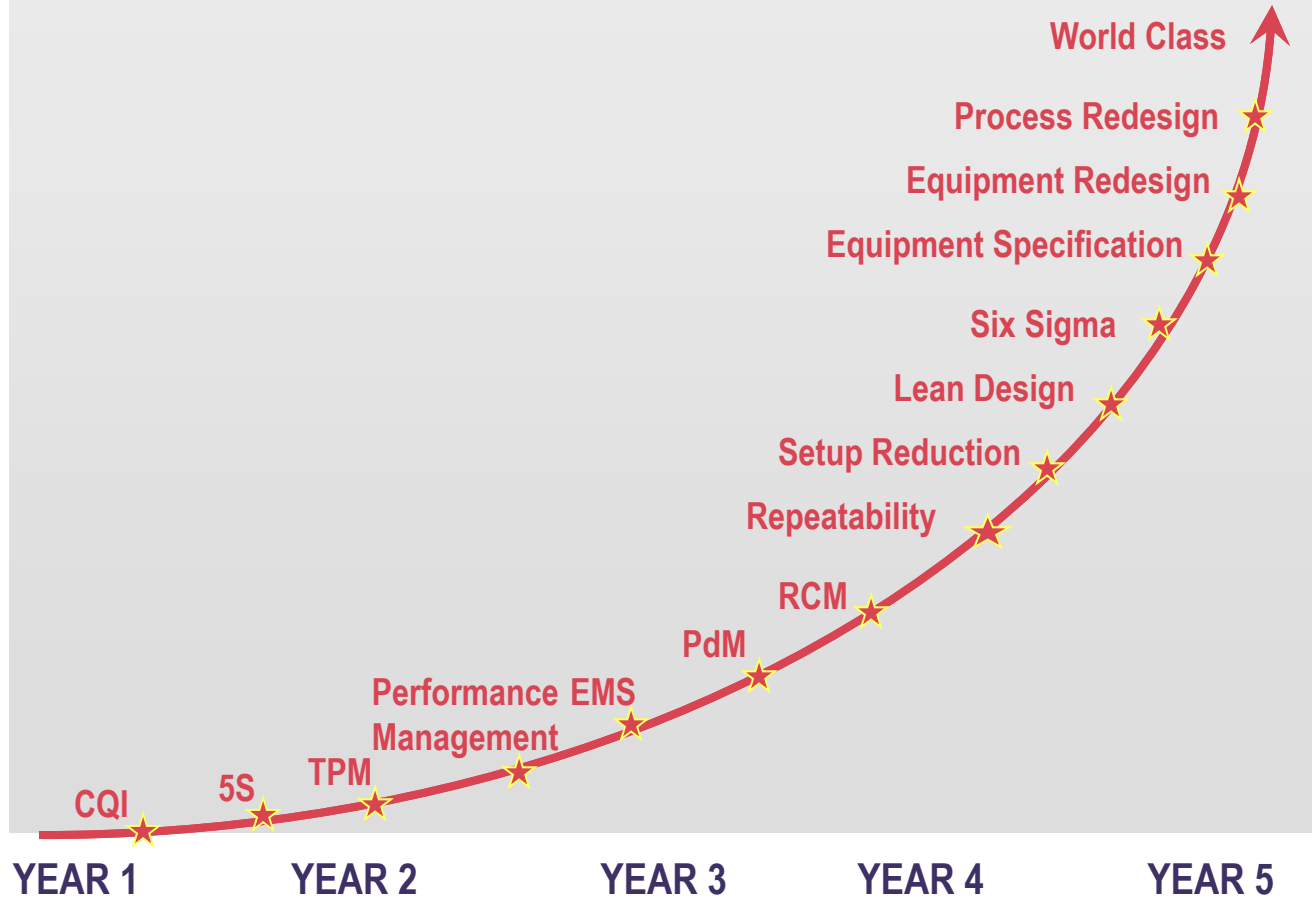
***Developing Effective Asset Management through MMP
Paves The Path To World Class Practices***

The MMP Strategic Approach to Asset Management:

- a production improvement methodology
- a structured approach to improving the effectiveness and reliability of equipment
- a process of managing all maintenance activities
- improves product quality and reduces operating costs
- develops a partnership

ASSET MANAGEMENT  WORLD CLASS PRODUCTS & SERVICE

LEAN ASSET MANAGEMENT TOOLS

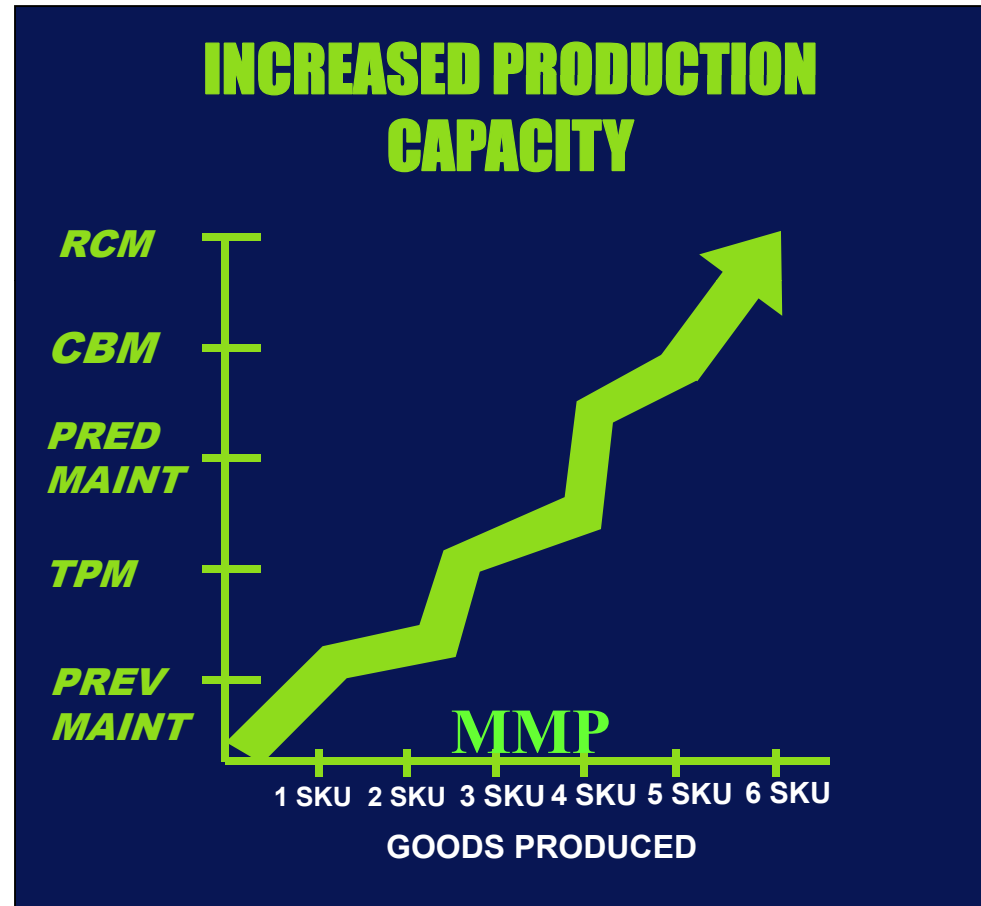


MMP



*What would your business expect
to get from a World Class
Maintenance, Reliability and
Physical Asset Management
Program?*

The Proven Path of the PEMAC MMP Approach



Developing MMP

- ◆ PEMAC knew the need (ours)
- ◆ 9 years in development
- ◆ PEMAC responsible for the program – standardization of content, certification, professional recognition and instructors
- ◆ Ministry of Training, Colleges and Universities (MTCU) and CON*NECT

Module 1 – 15h

Physical Asset Management Skills and Techniques - the beginning

- ◆ Introduces the basic concepts of Physical Asset Management.
- ◆ The latest developments, trends and tactics in effective Maintenance Management.
- ◆ Provides the basic understanding of the strategic approach to achieving “Excellence”.

Module 1 – Learning Outcomes

- **Provides the foundation for the entire MMP program**
- **High level overview of each of the 8 Modules – the roadmap and journey to world class practices**
- **1st lesson – assignment – benchmark yourself and your company using Innocence to Excellence Maintenance Maturity Grid**

Maintenance Maturity Grid

“Uptime – 2nd Edition” – John Dixon Campbell and James V. Reyes-Picknell

	Strategy	People	Work Management	Materials Management	Basic Care	Performance Management	Support Systems	Asset Reliability	Teamwork	Processes
Excellence	Complete strategy developed with full participation including plans	Fully developed multi-skilling, autonomous teams in place	Long term planning cycles and extensive use of standard job plans.	Stockouts rare. Service level 98% plus. Inventory turns > 2 times.	Full regulatory compliance. PM program features extensive CBM. Operators do some minor PM. Equipment condition good.	Fully balanced score cards for teams. Improvement results evident in performance trends.	Full user acceptance and widespread use of management systems. CBM, reliability analysis and decision support systems in use.	PM program fully developed using RCM. RCFA used but not needed very often. Mtc inputs to design of new assets.	Autonomous teams of maintainers and operators used extensively. Support by management and specialists. Consistent maintenance standards in use.	Processes are efficient and effective. No work arounds in use. Regular reviews carried out to keep processes fresh. Support systems automate parts of the processes.
Competence	Complete strategy developed by key personnel with plans	Multi-skilling and managed teams of maintainers and operators	Scheduling and planning well established for most work. Compliance high.	Inventory turns > 1. Service level 95% plus. Stockouts less than 5%.	Full regulatory compliance. PM program features some CBM. Operators help with PM. Equipment condition good.	Reliability measures in use and improvement programs monitored, trends being developed.	Extensive management systems used mostly by management. Some CBM, reliability analysis and decision support systems use.	RCM in use to define PM programs. RCFA in use.	Area or unit based teams of maintainers and operators with management. Maintenance standards applied in each area.	Processes are efficient and effective. Some work arounds may be in use. Reviews carried out infrequently.
Understanding	Management defined strategy & plans	Some multi-skilling. Mostly distributed maintenance teams with conventional supervision	Scheduling established, compliance good. Planning for major work and shutdowns as work arises.	Inventory turns > 0.7. Service level 90% plus. Inventory analysis being performed.	Partial regulatory compliance. PM program based on fixed interval tasks with little CBM. Equipment condition fair.	Basic maintenance performance measures in use.	Management systems in use. Some reporting is used. Some CBM support systems in use.	Reliability improvement program in place. RCFA and possibly PM Optimization in use.	Maintenance working in area teams under maintenance supervision. Operations separate.	Maintenance processes reviewed. Interfacing processes untouched. Work arounds in use.
Awareness	Documented goals but no plans	Partly de-centralized organization based on trades	Scheduling with about 50% compliance. Plans for shutdowns only	Inventory improvement plans in place. Measurement of stores performance started.	Poor regulatory compliance. PM program under development using traditional methods. Equipment condition fair.	Financial measures used to analyze spend patterns. Some downtime records.	Management systems use is spotty and providing little valuable output. Ad hoc systems still in use. CBM support being considered.	Downtime analysis is performed and some improvements are implemented.	Mix of centralized (shop) labor and individuals assigned to production areas. Conventional supervision.	Processes documented but not reviewed. Work arounds in use. Inefficiency evident particularly at functional hand offs.
Innocence	No documented strategy. Maintenance is largely reactive	Centralized organization based on trades demarcation	No planning, little scheduling and poor compliance to schedule	Frequent stockouts. Service level poor. Jobs frequently waiting for parts.	Poor regulatory compliance. Minimal or non-existent PM program. Equipment condition poor.	Only financial measures being watched but no analysis of costs performed.	Little to no use of management systems. May be using variety of ad hoc systems.	Plenty of downtime but no analysis of causes or attempts to improve.	No teamwork. Conventional supervision.	Processes not documented and inefficient. Plenty of work arounds. Plenty of complaining.

Module 2 – 30h

Production and Operations Management

Focuses on Asset Management relative to:

- ◆ Detailed Planning & Scheduling methods
- ◆ Production issues and methods
- ◆ Quality control methods
- ◆ Concepts of Lean Process & Production
- ◆ Identifying & eliminating all forms of waste

Module 2 Learning Outcomes

- Provides the participants with a sound understanding of the processes and challenges of production and operations management and how maintenance can be more effective in supporting them.
- Continually evaluate the tools and methods used by operations and production and incorporate them into the practices of maintenance management

Module 3 – 30h

Human Resources Management

This module discusses how Human Resources relates to Maintenance teams in respect to:

- ◆ Legal issues
- ◆ Labour issues
- ◆ Team building (and managing)
- ◆ Managing group change
- ◆ Performance management

Module 3 Learning Outcomes

- Summarize content and structure of HR as it applies to maintenance environment
- Describes process HR follows to hire qualified people in competitive market
- Compares different performance evaluation methods to maintain and motivate the maintenance workforce
- Differentiate the roles that union and management have in a harmonious work environment
- List various stages of change, the stress they create and how great leaders learn to recognize and manage them
- Evaluate the validity of OHSA as it applies to maintenance management function.

Module 4 – 30h

Financial Management for the Maintenance Manager

- ◆ Basic accounting principles
- ◆ Cost flow through CMMS/EAM
- ◆ Budgeting
- ◆ Variance Analysis
- ◆ Management Decisions
- ◆ Estimating ROI
- ◆ MRO Inventory Management

Module 4 Learning Outcomes

- Understand basic accounting principles
- Explain and track maintenance costs through a CMMS/EAM system
- Develop and evaluate capital acquisition proposals
- Perform basic budgeting and develop a budget for your maintenance department
- Understand cost elements necessary in managerial decision making

Module 5 – 30h

Developing and Implementing Maintenance Tactics:

- ◆ Focus on Maintenance efforts to ensure assets safely, capably, reliably and repeatedly perform to designed specifications
 - ◆ Focus on techniques to develop maintenance tactics that will address how assets are used, how they fail, the consequences of failure
 - ◆ Topics include FMEA, RCFA and RCM decision process.
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Module 5 Learning Outcomes

- Understand importance of effective maintenance to your organization
- Apply a development and implementation process for maintenance tactics
- Understand importance of FMEA (Failure Modes and Effects Analysis)
- Evaluate failure consequences
- Select appropriate maintenance tasks using RCM Decision Diagram
- Understand relative strengths & challenges of RCM +

Module 6 – 30h

Maintenance Planning and Scheduling

- ◆ Basic principles & benefits of P & S
- ◆ Effective P & S – skills, knowledge, experience
- ◆ Proven & Effective Methods of maintenance P and S
- ◆ Process of Planning and Scheduling
- ◆ Inventory control and materials management
- ◆ Principles of project management applies to P and S
- ◆ Effective use of KPIs / metrics in maintenance P & S
- ◆ Effective use of planning and scheduling

Module 6 Learning Outcomes

- Understanding of the primary elements of Planning, Scheduling and Work Coordination.
- Understanding the benefits of P, S & WC
- Define skills necessary for P, S & WC
- Define the processes and implementation of effective P, S & WC

Module 7 – 30h (CMMS)

Computerized Maintenance Management Systems

- ◆ Study of features/benefits and effective use of a CMMS / EAM work management process
- ◆ Topics – selection, implementation and optimization of a suitable CMMS or EAM system
- ◆ Ongoing support and upgrading of CMMS/EAM based on changing requirements

Module 7 Learning Outcomes

- understand CMMS, its evolution & benefits provided through a successful implementation
- Develop aspects of the business plan for the implementation of a CMMS & demonstrate this knowledge.
- Demonstrate expertise in the selection, implementation and support of a CMMS
- Understand how to optimize a CMMS
- Understand CMMS functionality and work flow

Module 8 – 30h

Capstone

- ◆ 10 – week project/case study development
- ◆ Small groups develop a project that draws on the knowledge acquired from Modules 1-7.
- ◆ The goal of the Capstone is to complete a project that can be implemented at the student's place of employment.

Module 8 Learning Outcomes

- Degree of effectiveness that Maintenance Management can offer their customer now depends on their ability to develop and implement clear goals, objectives and strategies.
- The goal is to provide the participants the opportunity to develop and document that strategy and create a true World Class maintenance organization

Certification – Maintenance Management Professional - MMP

- **MMP**
 - 225h in-class or on-line instruction
 - Total Commitment = 675h to 900h
 - Offered through selected colleges, institutes and universities – CE (Continuing Education) or CT (Contract Training) using in class, on site or live, on line formats in both official languages

Contact Information

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