

# Understanding the SMRP Body of Knowledge

February 2 at 6pmET - Understanding the "Body of Knowledge"

February 9 at 6pmET - Preparing for Maintenance Certifications - Tips + Tricks

February 15 at 6pmET - Everything to know about a Proactive Maintenance Storeroom

February 22 at 6pmET - Writing Repeatable Corrective Maintenance and Preventive Maintenance Procedures

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[www.worldclassmaintenance.org](http://www.worldclassmaintenance.org)



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Upkeep CMMS – Take a “Test Drive Today”



We appreciate UpKeep’s assistance sponsoring these webinars for all Maintenance and Reliability Professionals at no charge

The Maintenance Community Group is a space for all of us in maintenance and reliability — a digital break room if you will.

They host regular webinars and conversations with our Maintenance Experts. The Maintenance Community forum is backed by UpKeep which employs 100 people worldwide to broaden industry knowledge for maintenance teams.

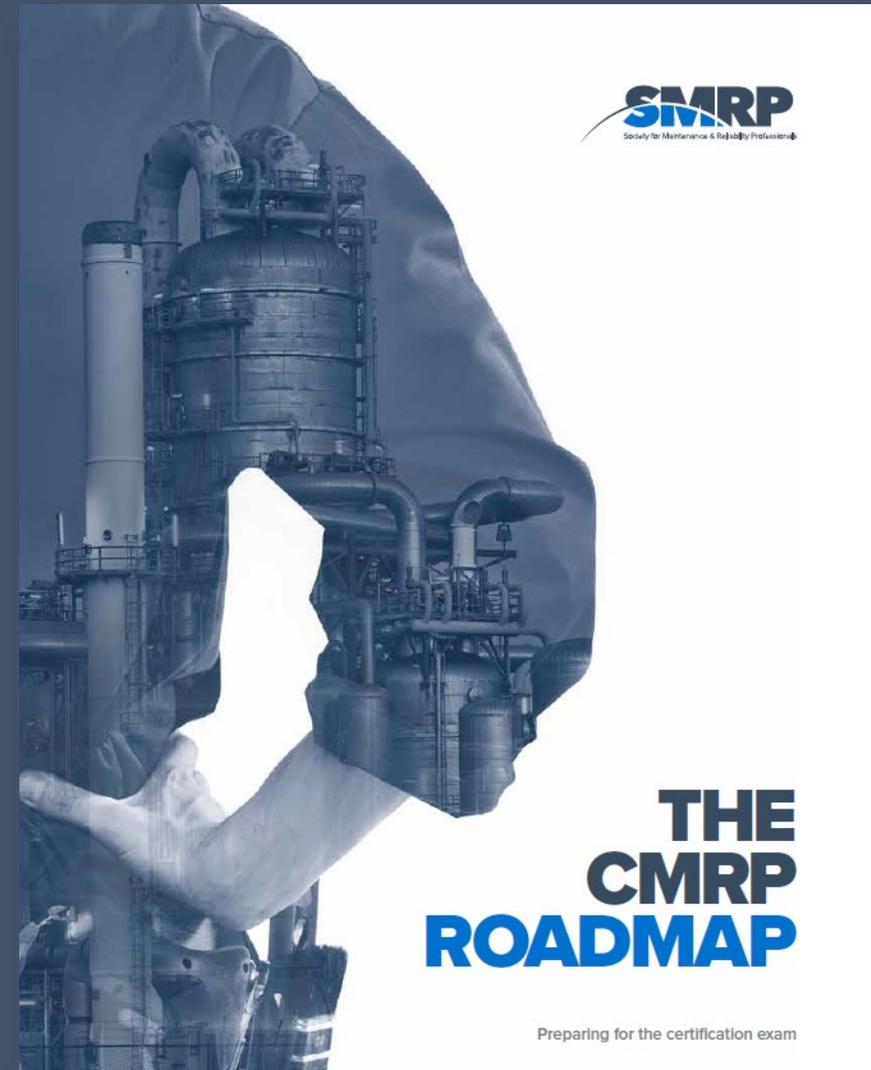
Join the Slack Group - I will text you this link:

<http://upkeep.typeform.com/to/tSeZ9fVx>



# What is the SMRP Body of Knowledge?

- The SMRP Body of Knowledge (BoK) is a roadmap to world-class performance in maintenance, reliability and physical asset management.
- The SMRP Body of Knowledge was designed to assist any organization structure and manage Maintenance and Reliability in any organization.
- The five pillars of the SMRP Body of Knowledge (BoK) are a roadmap to world-class performance.
- Each pillar details an area of maintenance, reliability and physical asset management that practitioners and professionals should be proficient in to improve their careers.
- The BoK forms the framework for all SMRP educational offerings and programs.
- Knowledge of SMRP Body of Knowledge is part of the SMRP Certifications (CMRP, CMRT, CAMA)



# The CMRP / CMRT Certification

- CMRP Certification

The Certified Maintenance & Reliability Professional (CMRP) program is the leading credential for certifying the knowledge, skills and abilities of maintenance, reliability and physical asset management professionals.

- The CMRP is the only certification program of its kind accredited by the American National Standards Institute (ANSI), which follows the globally recognized ISO standards for its accreditation purposes.

- CMRT Certification

The Certified Maintenance & Reliability Technician (CMRT) program is the leading credentialing program for the knowledge, skills and abilities of maintenance and reliability technicians.

- The CMRT certification assesses the knowledge and skills of those responsible for preventative, predictive and corrective maintenance – multi-skilled individuals who play a critical role in the success of organizations worldwide.

- CAMA Certification

- The “Certified Asset Management Assessor” (CAMA) certification establishes an individual's credentials in asset management knowledge and comprehension, globally. ... Or simply establish your asset management knowledge.



# The SMRP Body of Knowledge is the Framework for the CMRP which Maps Success for any Maintenance and Reliability Professional

## MAPPING SUCCESS



### Education – Formal

Vocational training, along with two- and four-year often explore topics in their curriculum that relate to the five pillars. These learnings are a great starting point for building knowledge of the five pillars of the BoK.



### Education – Hands-on Training

There are many opportunities available to individuals outside of the classroom to continue their learning. These may include other certifications or on-the-job training programs.



### Career Level

Individuals at particular levels within their careers already possess skills that lend experience in the five pillars of the BoK. Many of these skills will be outlined in job postings and position descriptions.



### Education – Online Training

Different from both classroom learning and job training, education can also be accessed through web-based services like webinars, online courses and presentations.



### Books & Publications

Suggested readings from leading professionals and thought leaders that focus on maintenance, reliability and physical asset management topics.



### Professional Conferences

Professional conferences, including those with specific industry focuses feature sessions geared toward the five pillars of the BoK taught by successful and knowledgeable professionals.



### Job Projects

Day-to-day life in a facility or office includes oversight and execution of projects that give an individual practical, real-world knowledge that can be applied to the CMRP exam.



### Volunteer Organizations

SMRP offers a variety of opportunities for individuals to become more familiar with BoK topics through volunteer positions and responsibilities. There are also opportunities outside of SMRP with other organizations such as educational institutions and those focused on related areas.

To help individuals prepare for the exam, current CMRP-certified professionals have identified eight areas that help individuals master the five pillars of the BoK and adequately prepare for the CMRP exam.

# The CMRP Roadmap

## CMRP ROADMAP SMRP Body of Knowledge

### 1. BUSINESS & MANAGEMENT

### 2. MANUFACTURING PROCESS RELIABILITY

### 3. EQUIPMENT RELIABILITY

### 4. ORGANIZATION & LEADERSHIP

### 5. WORK MANAGEMENT



#### Education - Formal

Mechanical / Chemical / Industrial B.S. Engineering Degree	•	•	•	•	•
Technical Education (2-Year Vocation)	•	•	•	•	•
Vocational Training	•	•	•	•	•
B.S. Reliability Engineering	•	•	•	•	•
Business Degree (B.A., MBA)	•	•	•	•	•



#### Education - Hands-on Training

Military Career (Related Field)	•	•	•	•	•
Craft Training	•	•	•	•	•
CMRT Certification	•	•	•	•	•
Reliability Short Courses (3-5 Day Length)	•	•	•	•	•
CAMA Certification (ISO 55000)	•	•	•	•	•
University Reliability Diploma / Certification (Multi-Week)	•	•	•	•	•



#### Education - Web-based

Vendor Presentation	•	•	•	•	•
Online Course	•	•	•	•	•
Online Training (Multiple Courses)	•	•	•	•	•
SMRP BoK Webinar Series	•	•	•	•	•



#### Conferences

Maintenance & Reliability Conference	•	•	•	•	•
SMRP Annual Conference & Symposium	•	•	•	•	•
SMRP Chapter Conferences	•	•	•	•	•

# The CMRP Roadmap, cont.



## Career

Craft Supervisor	•	•	•	•	•
Maintenance Engineer	•	•	•	•	•
Reliability Engineer	•	•	•	•	•
Technical Manager	•	•	•	•	•
Process Engineer	•	•	•	•	•
Consultant (with MBA)	•	•	•	•	•
Maintenance Manager	•	•	•	•	•



## Books & Publications

"Maintenance Strategy" by Anthony Kelly	•	•	•	•	•
"Toyota Way: 14 Management Principles from the World's Greatest Manufacturer" by Jeffrey K. Liker	•	•	•	•	•
"Juran's Quality Handbook, 7th Edition" by Joseph A. DeFeo	•	•	•	•	•
"Maintenance & Reliability Best Practices" by Ramesh Gulati	•	•	•	•	•
"World Class Manufacturing" Richard J. Schonberger	•	•	•	•	•
"Gateway to World Class Maintenance" by Anthony M. Smith & Glenn R. Hinchcliff	•	•	•	•	•
"Making Common Sense Common Practice" by Ron Moore	•	•	•	•	•
"The 7 Habits of Highly Effective People" by Stephen R. Covey	•	•	•	•	•
"Successfully Installing TPM in a Non-Japanese Plant" by Edward H. Hartmann	•	•	•	•	•
"Computerized Maintenance Management Systems" by Terry Wireman	•	•	•	•	•
"Maintenance Planning and Scheduling Handbook" by Doc Palmer (first 3 chapters)	•	•	•	•	•



## Projects

Reliability Improvement	•	•	•	•	•
Machine Redesign	•	•	•	•	•
TPM Project	•	•	•	•	•
Parts Optimization	•	•	•	•	•
Preventive Maintenance (PM) Creation / Optimization	•	•	•	•	•
Storeroom Project	•	•	•	•	•
Lean Project	•	•	•	•	•
Six Sigma Project	•	•	•	•	•
Maintenance Strategy Deployment / Implementation	•	•	•	•	•
Root Cause Analysis	•	•	•	•	•
Business Case Development	•	•	•	•	•



## Volunteer Organizations

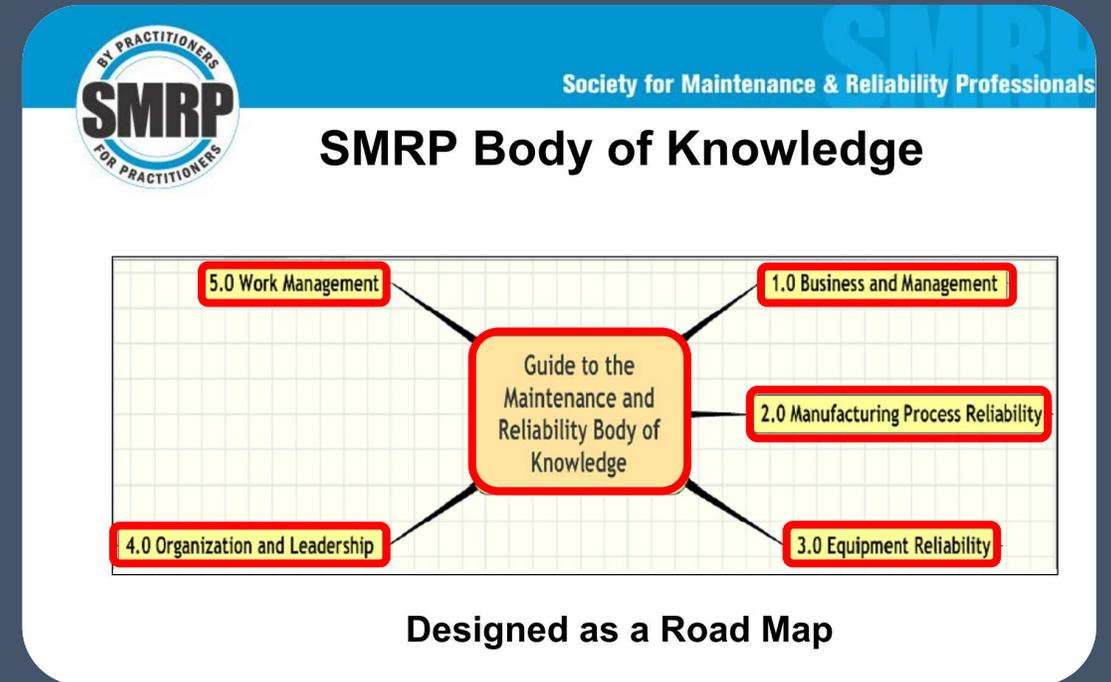
SMRP Chapter	•	•	•	•	•
SMRP Committee Participation	•	•	•	•	•
American Society of Mechanical Engineers (ASME) Chapter Participation	•	•	•	•	•
Professional Society Participation	•	•	•	•	•
Paper Presentation	•	•	•	•	•
College Internship in Reliability Field	•	•	•	•	•
Speaking at Conferences	•	•	•	•	•

Ready to take the exam? Learn more about registration fees and how to sign up for an in-person or computer-based exam at [smrp.org/certification](http://smrp.org/certification).

# Pillars of the SMRP Body of Knowledge (BoK)

The following are pillars of the BoK:

1. Business & Management;
2. Manufacturing Process Reliability;
3. Equipment Reliability;
4. Organization & Leadership;
5. Work Management.



# Pillar 1.0 – Business and Management

## 1.0 Business & Management.....

1.1 Create Strategic Direction and Plan for M&R Operation .....

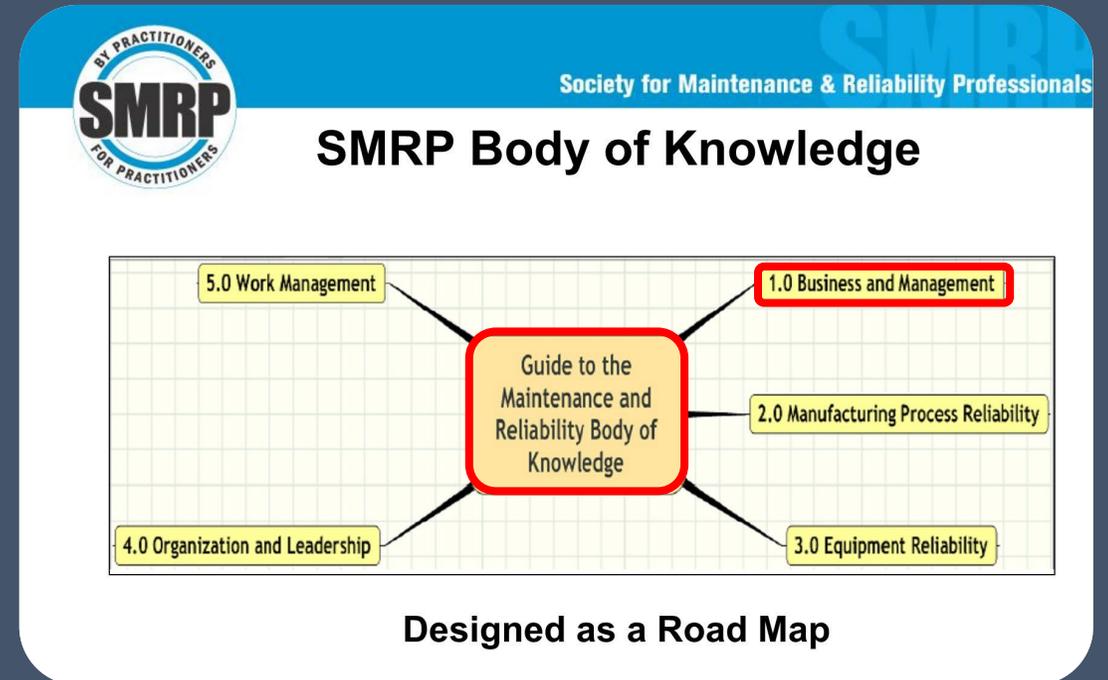
1.2 Administer Strategic Plan.....

1.3 Measure Performance .....

1.4 Organizational Changes.....

1.5 Communication with Stakeholders.....

Pillar 1 Metrics Appendix.....



# Pillar 1.0 – Business and Management, cont.

Maintenance and reliability leaders create a vision and a mission as well as a strategic plan, to guide implementation of appropriate maintenance and reliability systems and processes, in order to achieve organizational business goals.

The strategic plan provides a clear purpose (a demonstrated business need), defined goals and, in turn, benefits to the organization.

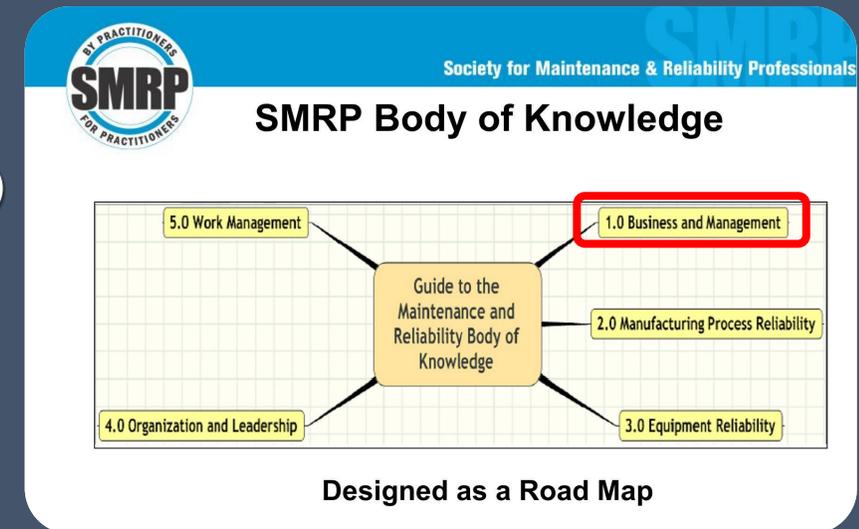
Goals should be clear, measurable and established in a top-down (cascading) manner.

Maintenance and reliability leaders utilize their knowledge of industry benchmarks to assist in establishing these goals, provide a measurement system, and determine gaps in their maintenance and reliability processes.

It is important for operations, maintenance, and other involved disciplines to agree on the goals and the measures used to quantify them.

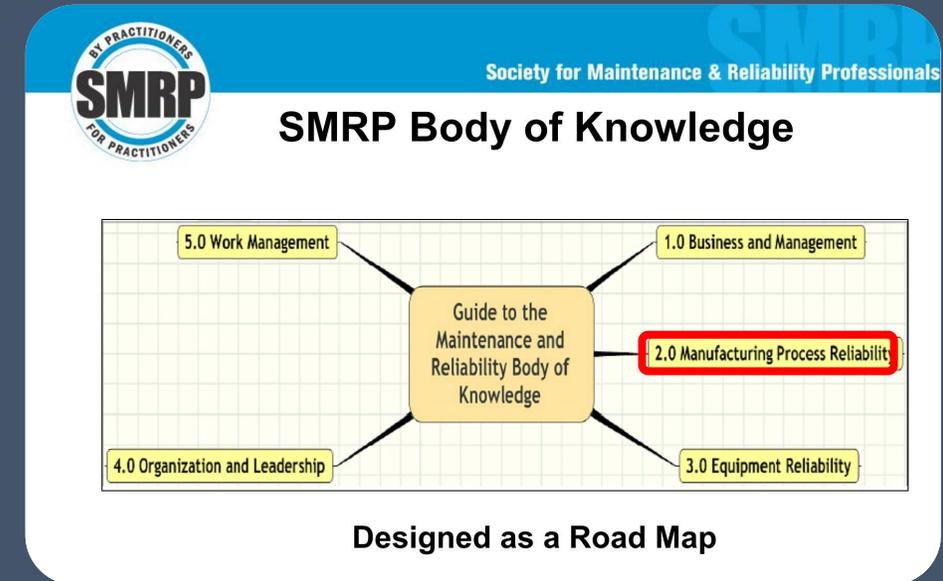
Equally important is an understanding of everyone's role in the strategic plan and the responsibilities they have.

Routine review and discussion of progress will provide team commitment and allow for periodic adjustments to the plan that may be required.



# Pillar 2.0 – Manufacturing Process Reliability

- This subject area relates maintenance and reliability activities to the manufacturing or production process of the organization, to ensure that maintenance and reliability activities improve the manufacturing or production process.
- This subject requires an understanding of applicable processes: document process flow, process parameters, quality specifications, process risk and operating procedures.
- A complete understanding of processes that influence the performance and safety across all disciplines and at all levels of the organization can provide tremendous benefit.
- The ability to react appropriately to changing conditions in the process allows for real-time process control and optimization. This ability to react to change applies not only to one's direct function but also to its effects on the total process.
- Process understanding includes how to start up, operate, shut down, analyze and troubleshoot; and it also includes methods for communicating and documenting continuous improvement activities in operations, maintenance, quality and safety.
- Clearly defined the standard operating procedures and flow diagrams of processes are helpful tools in communicating and documenting the desired process performance.



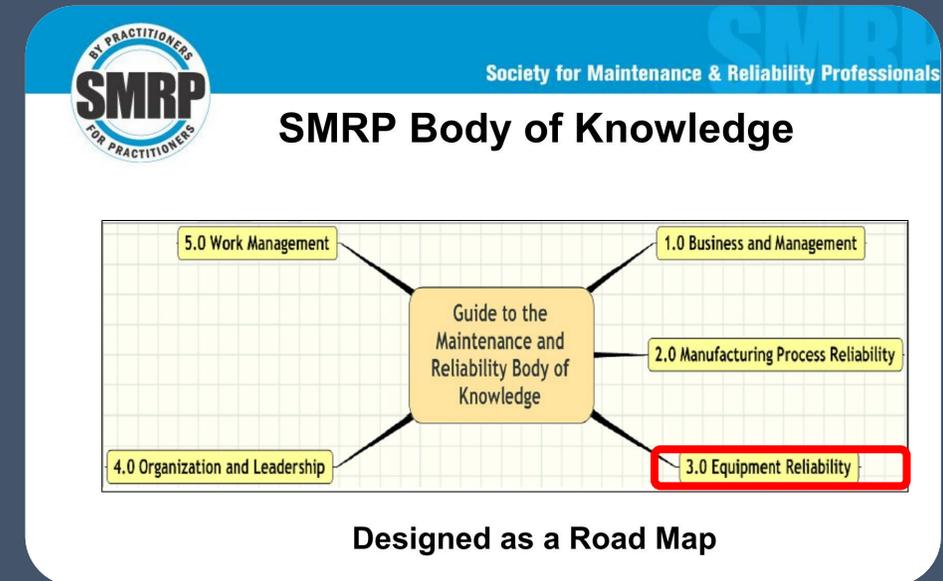
# Pillar 3.0 – Manufacturing Process Reliability

This subject area describes two kinds of activities.

They concern the equipment and processes for which the maintenance and reliability professional is accountable.

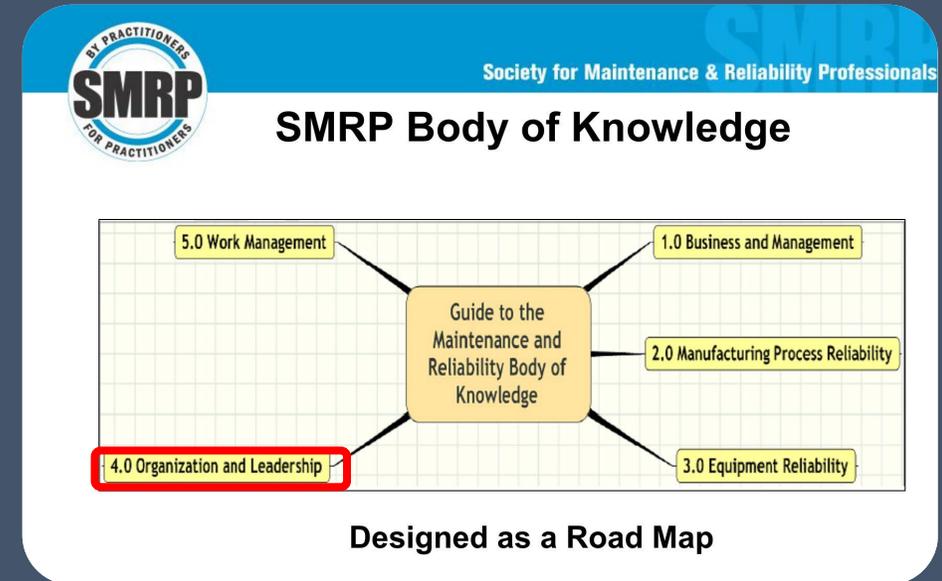
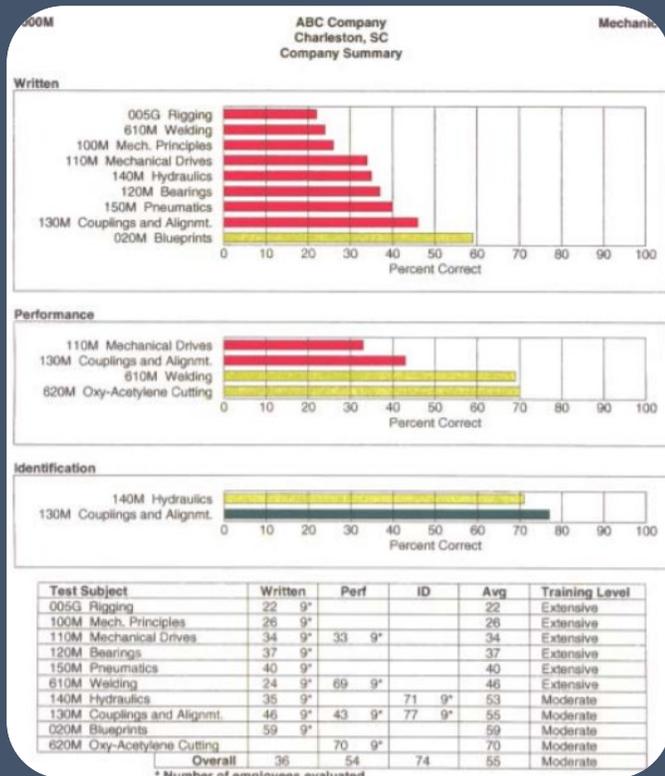
The first kind is used to assess the current capabilities of the equipment and processes in terms of reliability, availability, maintainability, and criticality.

The second kind is used to select and apply the most appropriate maintenance practices, so the equipment and processes continue to deliver their intended capabilities in the safest and most cost-effective manner.



# Pillar 4.0 – Organization and Leadership

This subject area describes processes for assuring that the maintenance and reliability staff is well qualified and assigned to achieve the maintenance and reliability organization goals.



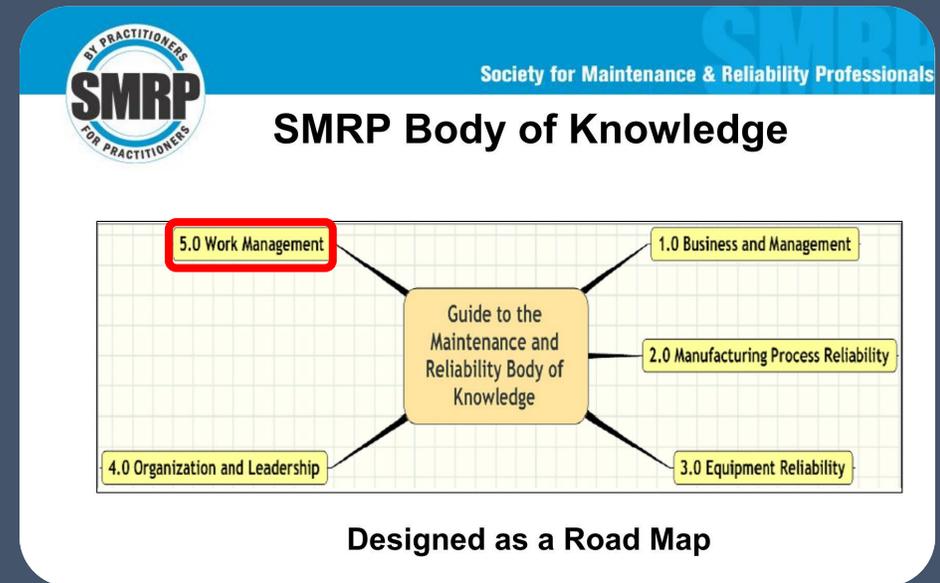
# Pillar 5.0 – Work Management

The persons who identify maintenance requirements need to know types of actions that can be taken and when they should be taken from a technical standpoint.

Capabilities to assess the business justification for the maintenance plan and develop data support systems are also important.

The ability to manage the work, maintain the appropriate backlog, and minimize overdue work are also necessary.

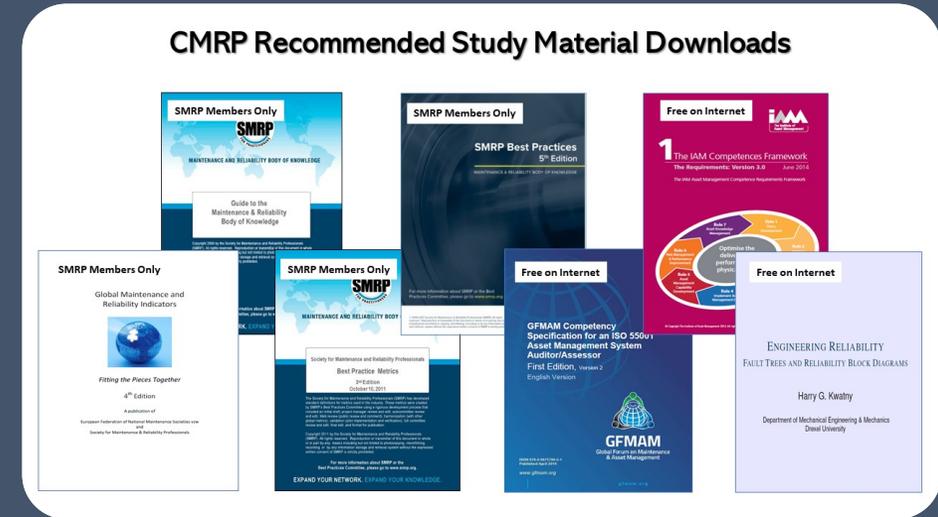
The maintenance professional needs to understand the inputs to the work identification phase of a planned work process. Planning, scheduling, reliability, and supply chain management all depend upon the early identification of work to be successful.



# Resources if you plan to Take the CMRP

One must have “Knowledge” concerning the following:

- Known Maintenance and Reliability Best Practices
- SMRP Body of Knowledge (SMRP Membership Required)
- SMRP Metrics Definitions (SMRP Membership Required)
- SMRP Best Practices (SMRP Membership Required)
- SMRP Global Maintenance and Reliability Indicators (SMRP Membership Required)
- GFMAM Asset Management Landscape
- IAM Competency Framework
- ENGINEERING RELIABILITY FAULT TREES AND RELIABILITY BLOCK DIAGRAMS by Harry G. Kwatny
- ADKAR (Book) A Model for Change in Business, Government, and our Community



For more information to help with the CMRP Exam go to [www.worldclassmaintenance.org](http://www.worldclassmaintenance.org)

# If you plan to Take the CMRP Exam these are my recommendations

## Recommendations:

Step 1 – Download “CMRP Candidate Guide for Certification and Recertification” FREE – Does not require membership to download

Step 2 – Join SMRP ([www.smrp.org](http://www.smrp.org))

Step 3 – Go to [www.worldclassmaintenance.org](http://www.worldclassmaintenance.org) and download the documents under “CMRP Help Information”

Step 3 – Join one of the SMRP Chapters or Special Interest Groups and Participate, meet others and learn from each other

Step 4 – Purchase and Study “Maintenance Best Practices” by Ramesh Gulati and “Maintenance Planning and Scheduling” by Doc Palmer

Step 5 – Take the practice exam in “Maintenance Best Practices” by Ramesh Gulati, focus on the questions you miss on the exam go to the chapters where the questions are from and study

Step 6 – Download and Study “GFMAM Asset Management Landscape”, IAM Competency Framework, ENGINEERING RELIABILITY FAULT TREES AND RELIABILITY BLOCK DIAGRAMS by Harry G. Kwatny ([www.worldclassmaintenance.org](http://www.worldclassmaintenance.org))

Step 7 – Learn what is “ADKAR - a MODEL FOR CHANGE”

Step 8 – Download and Study the following from SMRP Website as a member. (SMRP Body of Knowledge, SMRP Metrics, and SMRP Best Practices, Global Maintenance and Reliability Indicators)

Step 9 – Join the Slack Group and look for the Certifications Section and ask any questions you want concerning the CMRP Exam

<http://upkeep.typeform.com/to/tSeZ9fVx>

# If you plan to Take the CMRT ....

- 1<sup>st</sup>. Download the “CMRT Candidate Guide to Certification and Re-Certification” (FREE) and review all “4 Domains”
- 2<sup>nd</sup>. Purchase “Industrial Machinery Repair” (PDF so you can search what you need to know) by Keith Mobley and Ricky Smith and review)
- 3<sup>rd</sup>. Take the Exam in the book and score yourself, identify the areas you may be weak in “Industrial Machinery Repair” and study areas you are weak, retest if needed.



SOCIETY OF MAINTENANCE AND RELIABILITY PROFESSIONALS  
CERTIFYING ORGANIZATION

CMRT Candidate Guide for  
Certification and Re-certification

# Questions/Comments?

## BEST MAINTENANCE TECHNICIAN PRACTICES

THREE DAY WORKSHOP

DATE : FEBRUARY 23-25

PRICE : \$750USD/PERSON

RSVP OR REQUEST MORE INFO BY EMAILING  
RSMITH@WORLDCLASSMAINTENANCE.ORG



## Preventive Maintenance Best Practices plus PM Optimization Workshop

March 19-21, 2021

Hosted Live at Southern Wesleyan University and virtually via ZOOM (internet)

For more information send request to:  
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