



**CONGRESO DE
MANTENIMIENTO
& CONFIABILIDAD**

★ **PERÚ** ★



BRÚJULA
SESION

ORGANIZADO POR:



Reliability Program Management



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Reliability program management

Why do we want reliability?

Do we achieve it?

Maintenance and reliability – are putting attention where it is needed?

Maintenance and reliability today

Maintenance and reliability in the future



What is reliability?

Reliability is the **probability** of completing a defined **mission** without failure over a **specified period of time under specified conditions**

Probability – not a certainty

Mission – “function” (usually several; defined using RCM and RCM-R)

Period of time – your campaign or production run. We often want “forever” so we end up targeting maximum MTBF

Specified conditions – stay within the capabilities of the machine / system or “bets are off”



Important functions

Reliability is a function of design, operational and maintenance performance

Design – defines what reliability is achievable. We get what we pay for.

Construction – puts what we design into place

Commissioning – proves design and sets the stage for operations

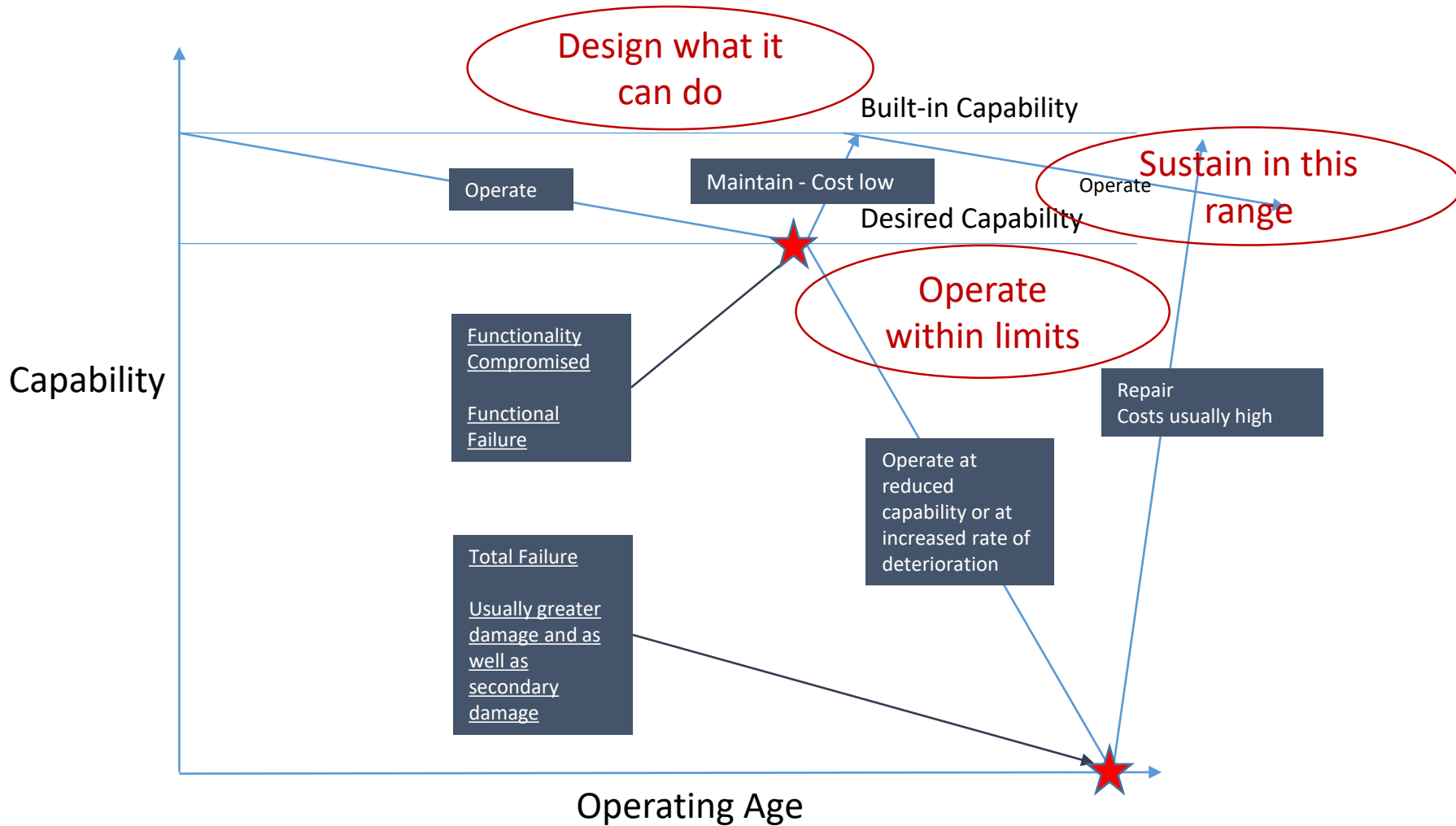
Operation – keeps within the operational envelope or asset will fail.

Material Supply – ensures input materials meet intended design specs

Maintenance – sustains performance within design capability

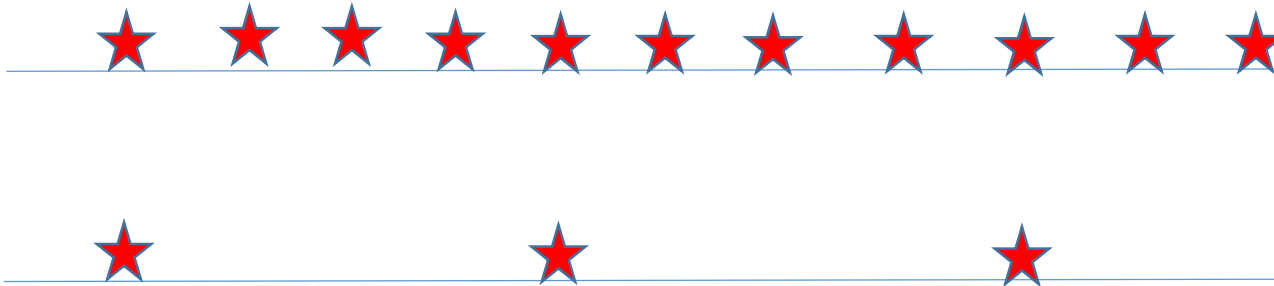


Who does what





Why reliability?



- Longer “mission” time
 - Increased production potential
 - Less disruption to operations
 - Fewer repairs and lower cost



Uptime Pyramid of Excellence in Maintenance Management

Choosing Excellence
Reliability is here
RCM
Continuous Improvement
EBAM

Effectiveness
Methods, technology, empowerment

Essentials
Maintain is here
Work Management
Basic Care
Materials Management
Performance Management
Information Systems

Efficiency
People and Processes

Leadership
Strategy
People & Teams

Enable
You with your people



Are we achieving reliability?

- Yes and no – often inconsistently
- We struggle
 - Systems (design and quality)
 - Processes
 - Process discipline
 - Right skills
 - Enough people
 - Right materials

Are we achieving reliability?

- Root cause of unreliability - lack of understanding
 - Leads to lack of funding – because we don't understand importance
 - Construction – build as inexpensively as possible
 - Compromises quality
 - Commissioning – treat it as a quick step to production
 - Lack of care leaves flaws undetected
 - Operations – lack of training and poor attitude
 - Leads to errors that damage equipment and systems
 - Materials – procure raw materials at lowest cost
 - Low cost may compromise quality (spec) of input materials and cause poor operation
 - Maintenance – it's a cost, not an investment
 - Unreliability will surely follow



Inner reflection

- Construction managers
 - Get it built on time and within budget (less is better)
- Commissioning managers / engineers
 - Focus on start up, not doing a proper check on the design and construction
- Maintenance managers
 - Many of us tend to focus on work management, problems with materials supply, schedules, planning and reporting with KPIs and your CMMS / EAM in support
 - This is all needed too
 - But it is also focused on the tactical approaches to achieving reliability
- Operational managers
 - Focus is on production volumes to meet targets
 - Running the asset hard will lower reliability
- Reliability engineers
 - Often don't exist – where it exists it is an engineer role
 - Too junior to have real impact on the organization
 - Focused on individual problems, not the big picture
- Reliability managers?



Is our emphasis misplaced?

- To the financial costs are to be minimized
 - Capital is to be minimized to maximize ROI (design, construction and commissioning costs are all trimmed and quality, operability and maintainability suffer)
 - Maintenance is needed but let's get away with as little as possible
 - Sadly they don't quite understand that it is not that simple
- Reliability is not something we truly understand
 - It requires capital investment – strategic to company goals
 - Like any investment, it requires management to sustain value
 - By focusing on reducing capital costs we reduce operational (earning) capability
 - By managing maintenance, we are really missing the point

A shift in emphasis might help

- Focus on reliability management, not individual disciplines like construction, operations and maintenance
 - Put the emphasis on results – sustaining value
 - Value = productive capacity
 - Define the tactical activities needed to deliver that value
 - Design
 - Build
 - Commission
 - Material support
 - O&M
- Reliability management requires a shift in thinking
 - Reliability produces results – so focus on reliability



What do we really want?

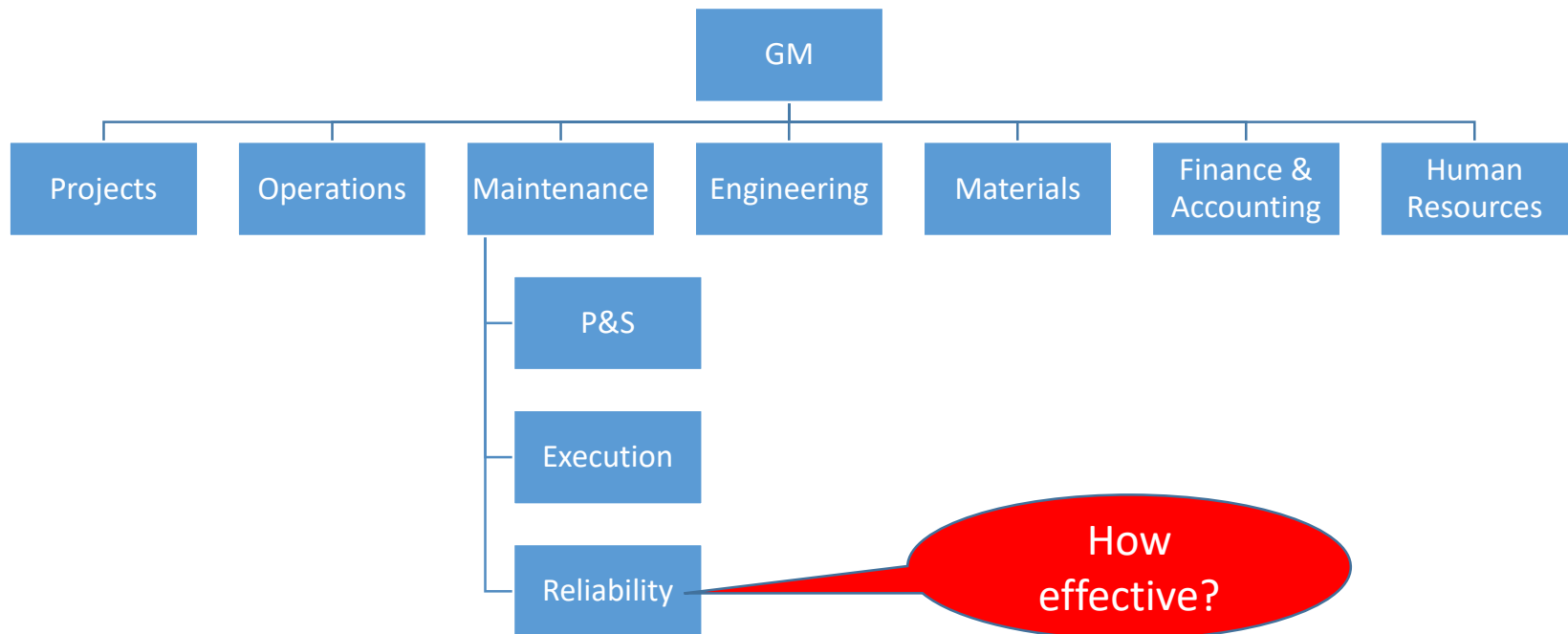
- Capital projects
- Start ups
- Purchasing
- Operations
- Maintenance tactics and activities

Or

- Reliable delivery of product / services?



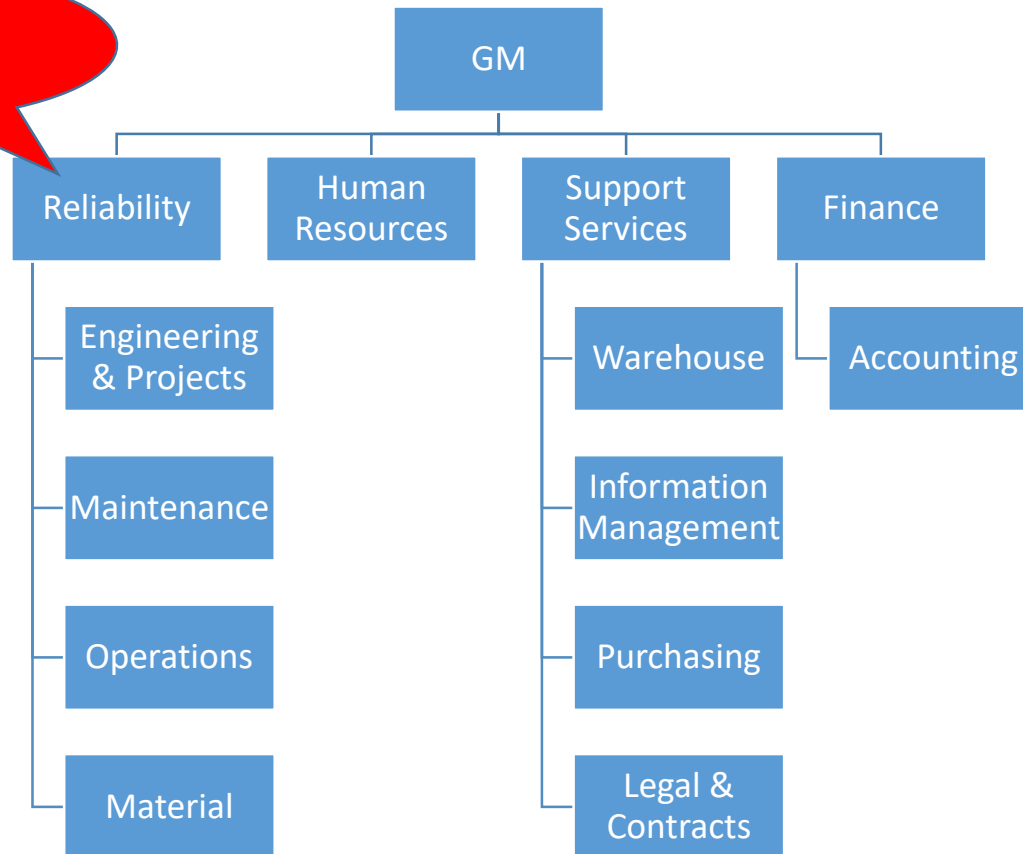
Today's organization





Consider ...

How
effective?





Emphasize what we want to achieve

Professional engineering / management background and training

Ensure you get the designs you need to achieve what you want

Ensure it is built to standard and at high quality

Use commissioning to check as well as prove capability

Ensure you get the maintenance needed to achieve the reliability you designed into your systems

Elevate the reliability function to the level of investment

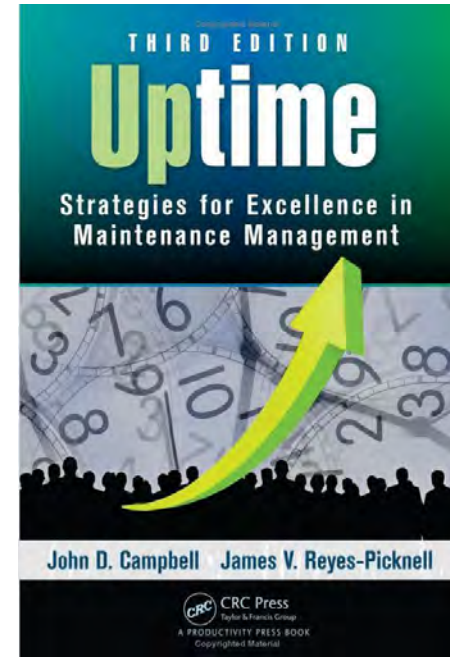
Target maintenance spending more effectively from the start

Emphasis is on the result, not the method



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