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# INTRODUCTION

## **The Australian Maintenance Excellence Awards considers seven categories and related criteria:**

- **Leadership**
- **People**
- **Planning and Scheduling**
- **Maintenance Processes and Practices**
- **Reliability Improvement**
- **Resource Management**
- **Business Performance**

By using these criteria, enterprises will be able to evaluate their capabilities of managing maintenance and its contribution to the business.

Through the Australian Maintenance Excellence Awards the IMRt seeks to provide a high quality process which acknowledges maintenance excellence, supports continuous improvement in the maintenance function, focusing on people, practices and the business impact of maintenance excellence.

Self-assessment has been recognised as a means of identifying and driving improvement opportunities by assessing current performance against a model of excellence.

This document is part of the companion set of Australian Maintenance Excellence Awards material which includes:

- Resource Booklet
- Criteria and Applications Guidelines
- Evaluation Team Booklet

This Self-Assessment Booklet is closely linked with the Resource Booklet. They are both more detailed

than the Criteria and Applications Guidelines material. While covering the same categories and criteria the Criteria and Applications Guidelines material includes more general and broader questions and is intended to provide an opportunity for a more adaptive approach for Award assessment purposes. The Criteria and Applications Guidelines provide a suggested framework for a submission for the Australian Maintenance Excellence Awards. This Self Assessment booklet may be used as 'food for thought' when preparing a submission.

The Industrial Maintenance Roundtable (IMRt) wishes to acknowledge:

- El DuPont de Nemours & Co who have provided insight and information gained through its Maintenance Excellence Recognition Process (MERP) and who very kindly made MERP material available to IMRt to assist the development of the Australian Maintenance Excellence Awards.
- the Australian Quality Council for its support and expert advice given freely to the IMRt during the development of The Australian Maintenance Excellence Awards.
- the National Minerals Industry Excellence Award for Safety and Health which provided a model for the development of this award.



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# THE SELF-ASSESSMENT PROCESS

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**It is recommended that to be most effective, the self-assessment process be carried out in a structured workshop, with a cross-functional team, and facilitated by a trained assessor.**

The workshop, during the self-assessment process, provides an assessment of where the enterprise is today compared to the maintenance excellence model. It also provides quantitative data through the questionnaire and also qualitative data on the current position of the enterprise.

A feedback report can be collated from this data which is also used as a basis for planning improvement.

Typical work sheets have been provided to assist with the analysis, refer to pages 15 and 16.

# CATEGORIES & CRITERIA

## 1. LEADERSHIP (14% of total)

The intent of this Category is to cover the role of leadership in the development of the maintaining function within the organisation at a corporate and enterprise level.

	1	2	3	4	5
a. Planned maintenance is part of our written business philosophy, mission or aim.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. We have written goals, objectives and measures that document continued improvement of the maintenance function's contribution to the business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. There is a leadership network that provides guidance and direction for continual functional improvement of the maintenance function.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Reports measuring planned maintenance performance, i.e., key parameters VS goal are periodically issued.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Company reference documents, such as "Maintenance Procedures" and "Engineering Standards" are routinely adhered to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Column Total** \_\_\_\_\_

**Multiply by**

**1    2    3    4    5**

**=**

**Category Total**

**Category, % Max. Score**

**Category Total, Weighted**

	Addition of the above
	Category Total/25 x 100%
	Category Total x 14/25

# CATEGORIES & CRITERIA

## 2. PEOPLE (18% of total)

The intent of this category is cover the extent to which the organisation provides people at all levels in the enterprise with the appropriate skills, and engenders the commitment required to achieve the maintenance goals and objectives.

	1	2	3	4	5
a. A long-range strategic plan for maintenance is in place that defines what the maintenance job will look like, what skills will be necessary and how these skills will be acquired.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. A job analysis that defines required skills has been conducted and is updated periodically.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Resource persons available to answer questions during the training process and available to assist in developing troubleshooting skills with skills demonstrations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. A formal program to refresh the skills of trades people and to introduce new skills is in place.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. A formal cross-training plan is in place to develop versatility in the workforce.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. A means of measuring results, such as task-certification programs and detailed training records to track the effectiveness of the program are in place.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. A means to train maintenance supervisory personnel in maintenance best practices and systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Column Total** \_\_\_\_\_

**Multiply by**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
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=

**Category Total**

**Category, % Max. Score**

**Category Total, Weighted**

	<b>Addition of the above</b>
	<b>Category Total/35 x 100%</b>
	<b>Category Total x 18/35</b>

# CATEGORIES & CRITERIA

## 3. PLANNING AND SCHEDULING (11% of total)

The intent of this category is to cover how the enterprise develops, implements, controls, measures and improves its planning and scheduling of its maintenance work to achieve the corporate objectives.

	1	2	3	4	5
a. Production, maintenance and technical strongly support the concept of planned and scheduled maintenance and, as partners, are committed to its success.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. A team dedicated to the planning, scheduling and coordinating of routine maintenance work is in place.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Preventive and predictive maintenance work is an integral part of this P&S effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Routinely, the right materials and resources are brought together at the right place and the right time to work on properly prepared equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Repairs are promptly made when indicated by trend analysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Inspection records include:					
1. Inspection checklists and routes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Inspection frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Systems are in place which ensure action is taken when inspections and repairs do not occur as scheduled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Systems are in place which:					
1. Describe the nature of the repair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Provide instructions to craftsmen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Record what repairs were completed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Collect labor and materials charges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Track downtime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# CATEGORIES & CRITERIA

## 3. PLANNING AND SCHEDULING (11% of total) continued ...

- i. Records for inspections and repairs meet requirements of local codes and corporate standards (pressure vessels, boilers, expansion joints, etc).

**Column Total** \_\_\_\_\_

**Multiply by** 1 2 3 4 5

= \_\_\_\_\_

**Category Total**  Addition of the above

**Category, % Max. Score**  Category Total/70 x 100%

**Category Total, Weighted**  Category Total x 11/70

# CATEGORIES & CRITERIA

## 4. MAINTENANCE PROCESSES AND PRACTICES (16% of total)

The intent of this category is to cover how the enterprise establishes, implements, monitors, analyses and improves its preventive, predictive and reactive maintenance systems to meet the goals of the organisation.

	1	2	3	4	5
a. A formal, periodic equipment inspection system is in place that is consistent with manufacturers' specifications and in compliance with government regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Predictive maintenance inspection routes have been established and inspections are made on schedule.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Inspections are always carried out exactly as specified and at the specified inspection frequency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Discrepancies are always corrected before the process/equipment is returned to operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. A lubrication program is in place to ensure equipment is lubricated routinely and adequately with the proper lubricant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Critical equipment (based on impact on safety, production, quality, environment, cost etc) have been identified and listed for the purpose of applying predictive maintenance techniques.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Alert and danger limits for parameters have been established and published.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Records are formalised and trend analysis is routinely used to monitor equipment condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. A system of inspections have been developed for:					
1. Noise level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Leaks or emissions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Hot spots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Physical condition (paint, corrosion, loose parts, missing nuts or bolts, deteriorated insulation, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. A system is in place to ensure that inspections occur.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# CATEGORIES & CRITERIA

## 4. MAINTENANCE PROCESSES AND PRACTICES (16% of total) continued ...

- k. Equipment specifications are maintained and are easily retrieved when needed.

Column Total \_\_\_\_\_

Multiply by 1 2 3 4 5

= \_\_\_\_\_

Category Total  Addition of the above

Category, % Max. Score  Category Total/70 x 100%

Category Total, Weighted  Category Total x 16/70

# CATEGORIES & CRITERIA

## 5. RELIABILITY IMPROVEMENT (18% of total)

The intent of this category is to cover how the enterprise establishes and maintains a focus on the needs of the business in particular on the reliability improvement process using problem solving techniques, increasing uptime, improving yields and process reliability and assuring quality.

	1	2	3	4	5
a. Records are maintained and periodically audited to ensure preventive maintenance is performed on each piece of equipment as intended.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. A long-range program is in place that enhances equipment reliability through:					
1. Initial design to enhance maintainability through life cycle cost analyses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Proper operation of equipment during its normal life span.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. A formal system exists to attack equipment problems that includes:					
1. Identification and qualification of the problem and definition of the underlying root cause.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Long-term corrective action.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Effective tracking of corrective action to ensure success.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Measures that emphasise uptime are identified, collected, tracked and reported throughout the organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Equipment performance and maintenance history are stored and used to trend reliability, repair frequencies, failure modes, mean time to failure, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Column Total** \_\_\_\_\_

**Multiply by**

1	2	3	4	5
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=

**Category Total** \_\_\_\_\_

**Category, % Max. Score** \_\_\_\_\_

**Category Total, Weighted** \_\_\_\_\_

	Addition of the above
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	Category Total/40 x 100%
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	Category Total x 18/40
--	------------------------

# CATEGORIES & CRITERIA

## 6. RESOURCE MANAGEMENT (11% of total)

The intent of this category is to cover the management of materials, contracts and consultants and how the enterprises establishes, implements, monitors, analyses and improves its materials and resources under contract.

	1	2	3	4	5
a. Where appropriate, integrated supply, vendor stocking, vendor consignment, vendor direct delivery, etc are a part of the overall materials management process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Rebuilding programs for appropriate items (motors, valves, seals, etc) are operational.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. An alternative materials procurement is in place and used where appropriate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Corporate convergence efforts are supported and the EEA (Effective Equipment Acquisition) agreements are utilised where appropriate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Measurement techniques for stores performance (investment, service, utilisation, etc) are routinely used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Equipment parts lists are readily available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. There is a site materials improvement cross-functional network that provides direction and processes improvement opportunities for maintenance requisition order materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Electronic means for procurement is maximised where functional capability exists.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Site principles are in place that define what work is contracted and what is kept in-house.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. A training program for contract administrators that covers all aspects of contractor monitoring is in place.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. An audit system is in place to monitor the quality, productivity, and cost of work performed by contractors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. A contractor selection process is in place that considers capabilities, types of contracts, best practices, and corporate guidelines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# CATEGORIES & CRITERIA

## 6. RESOURCE MANAGEMENT (11% of total) continued...

- m. An effective working relationship that supports continuous improvement is built with primary contractors.

<b>Column Total</b>					
<b>Multiply by</b>	1	2	3	4	5
	=				
<b>Category Total</b>		Addition of the above			
<b>Category, % Max. Score</b>		Category Total/65 x 100%			
<b>Category Total, Weighted</b>		Category Total x 11/65			

# CATEGORIES & CRITERIA

## 7. BUSINESS PERFORMANCE (12% of total)

The intent of this category is to cover the extent to which the operation demonstrates sustained improvement to the key objectives and performance indicators and how this contributes to the overall performance of the organisation.

	1	2	3	4	5
a. Goals have been set and performance is measured and reported throughout the organisation; corrective action is aimed at continued improvement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Performance reports exist that show progress toward a long-range strategic plan for maintenance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Where maintenance of a facility impacts quality, it is identified, measured and reported: e.g., out of tolerance or variable tolerance product associated with machine breakdown or out of tolerance equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Where maintenance of a facility impacts the amount of product produced, it is identified, measured and reported, i.e., rate reduction or scrap associated with machine breakdown or out of tolerance equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Where maintenance of a facility impacts bottom line cost, it is identified, measured and reported, i.e., cost reductions through improved maintenance procedures/programs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Column Total** \_\_\_\_\_

**Multiply by**

1	2	3	4	5
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=

**Category Total**



**Addition of the above**

**Category, % Max. Score**



**Category Total/25 x 100%**

**Category Total, Weighted**



**Category Total x 12/25**

# SELF-ASSESSMENT SCORING GUIDELINES

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Each question within a section is weighed equally. Points are assigned as follows:

- 1 = No system in place
- 2 = System planning beginning
- 3 = System planning complete
- 4 = System implemented
- 5 = System implemented and mature

Results provide a general guide relative to Maintenance Excellence scoring and help identify areas for improvement opportunities.

## SELF-ASSESSMENT SCORING

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It should be noted that the score in and of itself is not important. What is important is that this self-assessment process provides an opportunity to identify which best practice areas require most attention for improvement and which are strongest.

The questions may also provide guidance regarding particular strengths and opportunities for improvement. A page to assist with this exercise is included on page 16.

The process for identifying opportunities can be assisted by the data summary chart on page 15 which shows:

- the percentage of the maximum score for each category (% Category Max. Score);
- the weighted category score; and
- the relative ranking of each category score.

## USE OF THE SCORING SYSTEM

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Scores are used to analyse relative ranking of each category.

- Low scores indicate categories for improvement opportunities;
- High scores indicate strengths;
- Gap between scores and maximum possible scores attainable indicate opportunities for improvement in striving to achieve excellence.

# SCORE TABLE

Category	Category Total	Category, % Max. Score	Weighted Score	Relative Ranking
Leadership				
People				
Planning and Scheduling				
Maintenance Processes and Practices				
Reliability Improvement				
Resource Management				
Business Performance				

