INTRODUCTION
to
THE SCOREBOARD
for
MAINTENANCE EXCELLENCE

The Maintenance Excellence Institute
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Our Three Areas of Service

Maintenance Excellence Services

Training for Maintenance Excellence

Operational Services
**Important First Steps:** Typically, our very first step with each client begins with a **Scoreboard for Maintenance Excellence** assessment to “determine where you are” with opportunities for improvement.

We also define your current strengths. Results from today’s most comprehensive assessment process clearly defines strengths, opportunities and potential gained value.

From these important first steps we then help clients implement and successfully apply today’s best practices for maintenance excellence in order to:

- Implement Preventive and Predictive Maintenance Technology
- Achieve Effective Planning and Scheduling
- Improve Maintenance Storeroom Operations
- Develop Improved MRO Materials Management
- Go Beyond RCM and TPM with Continuous Reliability Improvement (CRI)
- Maximize Asset Uptime and Overall Equipment Effectiveness (OEE)
Scoreboard Assessment May Show Need to:

- Increase Craft Wrench Time and Overall Craft Effectiveness (OCE)
- Achieve Benefits from Effective Craft Skills Development
- Develop Operator-Based Maintenance for PRIDE in Ownership
- Select and Implement Effective CMMS/EAM
- Implement Profit-Centered Maintenance Performance Measurement
- Provide Critical Asset Performance Facilitation
- Evaluate and Improve Contracted Maintenance Services
- Conduct Facility Condition Assessments and Critical Asset Condition Assessments
- Perform Energy Management, Security and Regulatory Compliance Audits
The Scoreboard for Maintenance Excellence

- Recognized as Today’s Most Complete and Comprehensive Assessment Tool
  - 27 Best Practice categories
  - 300 evaluation items
  - Provides baseline measurement of how you compare to other organizations
  - Assessment recommendations provide the path forward for maintenance excellence.
  - Used by TMEI for over 200 assessments
  - Used by over 4,000 organizations as an internal benchmarking tool
# The Scoreboard for Maintenance Excellence

## Category Descriptions (Part I)

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>The Scoreboard for Maintenance Excellence</th>
<th>Evaluation Items</th>
<th>Total Points in Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>The Organizational Culture and PRIDE in Maintenance</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>B.</td>
<td>Maintenance Organization, Administration &amp; Human Resources</td>
<td>12</td>
<td>120</td>
</tr>
<tr>
<td>C.</td>
<td>Craft Skills Development and PRIDE in Maintenance</td>
<td>12</td>
<td>120</td>
</tr>
<tr>
<td>D.</td>
<td>Operator Based Maintenance and PRIDE in Ownership</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>E.</td>
<td>Maintenance Supervision/ Leadership</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>F.</td>
<td>Maintenance Business Operations, Budget and Cost Control</td>
<td>12</td>
<td>120</td>
</tr>
<tr>
<td>G.</td>
<td>Work Management and Control: Maintenance and Repair (M/ R)</td>
<td>12</td>
<td>120</td>
</tr>
<tr>
<td>H.</td>
<td>Work Management &amp; Control: Shutdowns and Major Overhauls</td>
<td>6</td>
<td>60</td>
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<tr>
<td>I.</td>
<td>Shop Level Planning and Scheduling</td>
<td>18</td>
<td>180</td>
</tr>
<tr>
<td>J.</td>
<td>Shutdown-Major Planning/ Scheduling &amp; Project Management</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>K.</td>
<td>Manufacturing Facilities Planning and Property Management</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>L.</td>
<td>Production Asset and Facilities Condition Evaluation Program</td>
<td>6</td>
<td>60</td>
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<tr>
<td>M.</td>
<td>Storeroom Operations and Internal MRO Customer Service</td>
<td>12</td>
<td>120</td>
</tr>
<tr>
<td>N.</td>
<td>MRO Materials Management and Procurement</td>
<td>12</td>
<td>120</td>
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</tbody>
</table>
## The Scoreboard for Maintenance Excellence

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>The Scoreboard for Maintenance Excellence Category Descriptions (Part 2 Continued)</th>
<th>Evaluation Items</th>
<th>Total Points in Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>O.</td>
<td>Preventive Maintenance and Lubrication</td>
<td>18</td>
<td>180</td>
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<tr>
<td>P.</td>
<td>Predictive Maint. &amp; Condition Monitoring Tech. Applications</td>
<td>15</td>
<td>150</td>
</tr>
<tr>
<td>Q.</td>
<td>Process Control, Building Automation and Instrumentation Systems Technology</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>R.</td>
<td>Energy Management and Control</td>
<td>12</td>
<td>120</td>
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<tr>
<td>S.</td>
<td>Maintenance Engineering Support</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>T.</td>
<td>Safety and Regulatory Compliance</td>
<td>12</td>
<td>120</td>
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<tr>
<td>U.</td>
<td>Maintenance and Quality Control</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>V.</td>
<td>Maintenance Performance Measurement</td>
<td>12</td>
<td>120</td>
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<tr>
<td>W.</td>
<td>Computerized Maintenance Management System (CMMS/ EAM) and Business System</td>
<td>18</td>
<td>180</td>
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<tr>
<td>X.</td>
<td>Shop Facilities, Equipment, and Tools</td>
<td>9</td>
<td>90</td>
</tr>
<tr>
<td>Y.</td>
<td>Continuous Reliability Improvement</td>
<td>15</td>
<td>150</td>
</tr>
<tr>
<td>Z.</td>
<td>Asset Facilitation and Overall Equipment Effectiveness (OEE)</td>
<td>15</td>
<td>150</td>
</tr>
<tr>
<td>ZZ.</td>
<td>Overall Craft Effectiveness (OCE)</td>
<td>6</td>
<td>60</td>
</tr>
</tbody>
</table>

**Total Evaluation Items and Points**

300 3000
THE SCOREBOARD for MAINTENANCE EXCELLENCE ASSESSMENT:
Key Steps to Continuous Reliability Improvement

1. Determine the Need and Gain Commitment to Take Action

2. Preplanning for On-Site Time

3. Conduct Scoreboard for Maintenance Excellence Assessment

4. Evaluate Assessment Results, Recognize Successes

5. Determine Improvement Opportunities and Prioritize
   - Preventive/Predictive Maintenance
   - Improve Parts Inventory and Control
   - Modernize Storeroom Operation
   - Improve Parts Procurement
   - Improve Work Management
   - Effective Planning and Scheduling
   - Reliable Planning Times
   - Improve Repair Methods and Quality
   - Craft Skills Development
   - Performance Measurement
   - Implement or Improve CMMS
   - Increase Asset Uptime and Reliability
   - Operator-Based Maintenance
   - Continuous Reliability Improvement
   - Energy Management
   - Improve Regulatory Compliance
   - Improve Safety and Security


7. Develop a Measurable Plan of Action

8. Oral and Written Presentation of Assessment Results

9. Implement Plan of Action (Short and Long Term Plans)

10. Implement Maintenance Excellence Index to Validate Return on Investment

11. Achieve Maintenance Excellence and Total Operations Success

12. Continuous Reliability Improvement
Know Your Current State of Maintenance

- “The Reliability Pyramid” shown on the next page illustrates the five stages of development for a typical maintenance operation.
- Stage 1: Daily Maintenance & a desire to continuously improve & not gamble with maintenance
- Stage 5: Achieving manufacturing and reliability excellence and the goal to total operations success.
- Moving up to Proactive Maintenance in Stage 2 & beyond will achieve significant benefits.
- The Maintenance Excellence Institute defines your current “state of maintenance via The Scoreboard for Maintenance Excellence assessment process.
The Reliability Pyramid

STAGE 5
Operational Excellence
Assure alignment of financial operations, corporate leadership, sales and marketing, and customers

STAGE 4
Engineered Reliability
Systematically eliminate sources of potential system failure

STAGE 3
Organizational Excellence
Create the environment to maximize the staff contribution

STAGE 2
Proactive Maintenance
Gain control of equipment condition

STAGE 1
Daily Maintenance
Gain control of the work

The Maintenance Excellence Institute: Worldwide Services – Measured Shop Level Results
We will review each of these key steps within this plan of action

1. Preparation for Scoreboard for Maintenance Excellence (SFME) Assessment
2. Conduct SFME Assessment
3. Document SFME Assessment Results
4. Develop and Implement the Client’s Maintenance Excellence Index (MEI)
5. Present Written and Oral Report of Assessment Results & Path Forward Plan
6. Gain Consensus on Path Forward
7. Establish recommended Maintenance Excellence Implementation Plan of Action
8. Focus on specific **TARGETS**
1. Preparation for SFME Assessment and Key Deliverables for Implementation

a) Sometimes improving or setting up a planning and scheduling process
b) Sometimes establishing/improving asset numbering
c) Sometimes improving PM/PdM and reliability tools
d) Always implementing a Maintenance Excellence Index
e) Always helping the maintenance leader define and justify maintenance improvement needs
f) Always improved PRIDE-in-Maintenance

Duration: 2 Days Off Site (4 man days)
2. Conduct the Scoreboard for Maintenance Excellence (SFME) Assessment

a) Key Site Data Provided Before Start
b) Kick Off Meeting Scheduled Day 1
c) Interview Schedules Set By the Client
d) Out briefing end of Day 5 with preliminary results; key recommendations
e) Recommend & gain consensus on TARGETS training during 2\textsuperscript{nd} week of onsite time

Duration: 5 Days On Site (10 man days) and 2 TMEI staff: Pete Peters and Bob Gaskins
3. Document SFME Assessment Results
   a) Define All Improvement Opportunities
   b) Confirm Potential Benefits
   c) Define CMMS Improvements
   d) Define Recommended Plan of Action
   e) Preliminary Review With Your Maintenance staff

Duration: 5 Days Off Site (10 man days)
4. Develop the Maintenance Excellence Index (MEI)
   a) Client Approves KPI’s
   b) Client Approves KPI Performance Goals
   c) Define KPI Weighted Values
   d) Define Data Sources
   e) Implement MEI

Duration: Included as Part of Assessment
5. Preliminary Review of Assessment with Maintenance Leaders
   • Confirm **TARGET** training needs
   • Develop client specific modules
   • Establish dates

   a) TMEI presents results to the Client Team
   b) Additional areas for improvement will be identified

**Duration:** Included as part of Assessment
Step

7. Gain Consensus on Path Forward
   a) Internal Resources Required
   b) External Resources Required
   c) Timeline for project activities
   d) Priority of Action
   e) And a Focus on TARGETS
Focusing on **TARGETS**
Taking Aim at Recommendations to Gain Excellence from Training Success

A Profit-Centered Approach to Reliability & Maintenance Training

**The Scoreboard for Maintenance Excellence Assessment Process**
5 days On Site

**Document Your Results:**
- Identify Current Successes
- Identify Opportunities and Roadblocks
- Define Potential Benefits and Savings
- Define Method to Measure Results

**Define Top Priorities and a Recommended Plan of Action**

**Top Leader Review & Approval for Resources**

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**A Guaranteed Return on Your Maintenance Investments!**
*Just in Time Training Using Modules from These Internationally Acclaimed TrueWorkShops!*

1. Advanced Maintenance Practices for Reliability and Maintenance Excellence
2. Continuous Reliability Improvement for Rotating Equipment
4. Modernizing Your Maintenance Storeroom and MRO Materials Management
5. Effective Maintenance Leadership for Improving Craft Productivity
6. Maximizing the Value of Your CMMS
7. Maximizing the Value of Contract Maintenance Services
8. PRIDE-in-Maintenance: A one day session exclusively for crafts people and staff

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**Training for Maintenance Excellence**
Focused on Assessment Top Priorities. Results Based Training That Allows Client to Implement With Minimal Support.
Focusing on **TARGETS**: Taking Aim at Recommendations to Gain Excellence from Training Success

Just In-Time Training Using Modules from These Internationally Acclaimed TrueWorkShops

1. Advanced Maintenance Practices for Reliability and Maintenance Excellence
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4. Effective Maintenance Leadership for Craft Productivity Improvement
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6. Maximizing the Value of Your CMMS
7. Maximizing the Value of Contracted Maintenance
8. PRIDE-in-Maintenance: Exclusive, one day of fun for crafts people and support staff

Three Days On Site Training & 10 Days of Application Support Designed for Client’s Specific Needs
The Ultimate Goal

The Ultimate Goal: The ultimate goal of The Maintenance Excellence Institute (TMEI) is to implement and measure results of solutions we define by each assessment or TrueWorkShop event.

Our Commitment: We are committed to a long term partnership for achieving measurable results.

- To help continuously expand current successes
- To help implement our recommendations
- To document results & the value of our services
- To become a valuable technical resource
- To have all client’s use maintenance for profit optimization.
The Maintenance Excellence Institute’s Commitment and Your Investment

The Maintenance Excellence Institute’s (TMEI) Makes a Long-Term Commitment to the Client’s Journey Toward Reliability and Maintenance Excellence:

- Fixed Fee: Approx 40 - 60 man days total: onsite & offsite
  - Scoreboard Assessment and Recommendations
    - Confirm Client Benefits
    - Develop Overall Plan of Action
    - Implement the Clients’s Maintenance Excellence Index
  - Focused on site training for TARGETS solutions
  - Unlimited e-mail and teleconferencing support
  - 10 man days of on site support after Targets training
- Training for Maintenance Excellence: 15 attendees to any of TMEI’s public TrueWorkShop offerings
- Travel expenses
- A two year commitment from TMEI for additional support to implement the overall action plan Step 7 if required
Next Steps

✓ Client Commits to Implementation & Measuring Results
  ✓ TMEI Does Not Conduct Assessments only to Deliver Reports with Fancy Presentations
  ✓ We Only Pursue a Small Number of “Selected Clients”
  ✓ We Have Quality Staff That Perform Quality Work

✓ TMEI Executes a Contract as Required by the Client
✓ Client and TMEI Establish a Start Date
✓ Clients Provides TMEI a Small Work Space When on Site
✓ Initial Payment: 40% of Fixed Fees Due on Start Date
✓ Progress Payments Per Approved Schedule
✓ Confirm a Project Start Date as Soon as Possible
✓ To Ensure Clients Receives Their Potential Benefits as Soon as Practical

Like NIKE Says! Just DO It!
## Your Return on Maintenance Investment

<table>
<thead>
<tr>
<th>Financial Results</th>
<th>Customer Satisfaction Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 5% to 20% increase in capacity/throughput</td>
<td>• 10% to 30% increase in asset availability/reliability</td>
</tr>
<tr>
<td>• 20% to 30% increase in craft productivity/wrench time</td>
<td>• 10% to 20% reduction in stock outs</td>
</tr>
<tr>
<td>• 10% to 20% reduction in actual maintenance costs</td>
<td>• 20% to 30% greater inventory accuracy and control</td>
</tr>
<tr>
<td>• 10% to 20% decrease in parts inventory &amp; asset accountability</td>
<td>• 20% to 30% increase in planned work and schedule compliance</td>
</tr>
</tbody>
</table>

Fully implemented projects of this type provide a conservative range of direct savings/benefits and gained value from 10% to 20% in annual maintenance and MRO materials costs. Most operations achieve significant measurable improvements in many key performance measures. Also this project will also provide important intangible benefits for employee relations, attitudes and internal and external customer satisfaction.
1. Alliance Team Resumes
2. References
3. Case Studies

Contact:
Bob Gaskins: 919-841-0705
Pete Peters: 919-280-1253
Our Proven Approach is the Foundation of the new McGraw-Hill Book By TMEI Founder Ralph W. “Pete” Peters