

# Maintenance Key Performance Indicator O24 – and others

By Paul Dean, CEng  
Shire Systems Ltd

*First published in Industrial Plant & Equipment magazine*

**N**ever heard of it? Many probably won't have. But, if you're a manufacturing manager or a professional involved in plant maintenance management, it's imperative that you're aware - so please do read on.

In March 2007 a new maintenance-related British Standard was published - BS EN 15341, *Maintenance – Maintenance Key Performance Indicators*. It describes a system for measuring maintenance performance. The standard aims to help organisations in all sectors appraise and improve their asset maintenance efficiency and effectiveness in pursuit of better global performance and competitive advantage.

The new standard presents a superb set of indicators for measuring the outcome of

complex maintenance activities. It brings a welcome degree of clarity, order and authority to this crucial, yet insufficiently understood area of maintenance management.



The standard defines a structure of Key Performance Indicators (KPIs) - 24 'economical', 21 'technical' and 26 'organisational'. You're urged to

select the indicators which align directly with your business objectives, then apply them to the management of maintenance activities within your organisation.

## Use a CMMS

Amongst the set of organisational indicators is O24 – *the percentage of the direct maintenance personnel using CMMS software*. The implications for best maintenance practice are clear. In the first place, an organisation is expected to have a CMMS (Computerised Maintenance Management System) and secondly, workers carrying out maintenance tasks should be using it in a hands-on manner.

A CMMS is needed to collect and correlate maintenance data efficiently. It's highly impractical to administer day-to-day maintenance activities and

compile KPI trend information with a paper-based system. Maintenance is 90% information management and 10% engineering, so the value of CMMS usage as a driver of operational performance can't be over-stated.



## Implement operator maintenance

Another notable indicator is O4, which reports operator maintenance manhours as a percentage of total maintenance

manhours. This is a much-favoured measure within TPM and Lean environments. Operator maintenance is not merely a displacement of manhours from the maintenance department to operations. Way beyond the saving in direct labour costs, it leverages greatly enhanced asset availability and capability. It's a fundamental element of an effective, collaborative maintenance strategy, representing a sea-change in asset care mentality away from the historical 'we break, you fix' approach.

### Analyse and plan

Further notable indicators are T18, measuring the incidence of RCM-type risk assessment of plant systems, and T19, systematic planning of work. Note these, together with O24 and O4, aren't the conventional 'lagging' indicators of maintenance achievement; they're new-age 'leading' indicators. They measure the prerequisites of successful maintenance performance, rather than maintenance performance

itself. In management parlance, they're also known as 'critical success factors' – drivers of operational performance which must be present for an organisation to achieve its objectives.



There's a direct relationship between these causal factors and the actual maintenance performance achievable in the workplace. Improvements made in these areas assuredly feed through to higher future plant availability, workforce productivity, product quality, people safety and protection of the environment.

### Effectiveness and efficiency evolves

Maintenance is, or should be, an evolutionary process in which operational effectiveness and efficiency are continually improved. The journey of cultural and technical change towards increasing maintenance maturity and competitive advantage is not easy and there are few shortcuts. However, with a moderate degree of planning, abortive and frustrating deviations off-track can be avoided and rapid results achieved. The new British Standard is invaluable for working out a roadmap to maintenance success and then putting route markers in place to guide progress along the way.

Traditionally, an organisation's maintenance performance has been inferred by assessing the presence or absence of best practices. These prerequisites of success don't require quantified performance measurement because they're assessed by

observation in the workplace. The new standard reaffirms pre-eminent maintenance best practices and, in addition, provides for their measurement. The standard also specifies comprehensive measures for resulting maintenance outcomes.

Effectiveness is 'doing the right things' and efficiency is 'doing the right things right'. When formulating a maintenance improvement plan, appropriate elements of performance in both areas should be decided and actioned - effectiveness being of greater importance.

### Focus

In any performance improvement program, it's crucial that the prerequisites of success are addressed first. Achieving and then holding on to transformational performance gains depends entirely on the attention given to the critical success factors. You could disregard them and try to drive up overall performance using dogged

determination, but the improvements made would be tiny in comparison with your efforts to achieve them - and there's little likelihood of gains being sustainable.

Don't fall into the trap of putting more effort into measuring and quantifying the chaos your organisation may be in rather than putting a stop to it. Yes, you need to appraise the status quo and establish the baseline level of performance, but do concentrate main efforts on implementing the prerequisite good practices – overall performance will automatically ratchet up as a consequence.

Evaluate where you're at and what successes you can reasonably aim to achieve in the coming period. Select only a few handfuls of indicators that can really help you manage activities and broadcast progress - and that your team can use for self-control. The chosen measures have to directly align with corporate objectives and fully

reflect your actual work activities and current improvement emphasis.

Publish trend graphs of performance measures monthly. The on-going stream of pertinent information will help boost morale and energise the maintenance and operations team to greater achievement. It shouldn't take longer than three months before you feel congratulatory slaps on the back.

### **Don't over-measure**

The central tendency is to be over-zealous when compiling the list of performance measures. Resist this temptation, or else you'll find yourself with a pile of unhelpful KPIs that are all gong with no promise of dinner.

Obsession with performance measurement for its own sake diverts attention away from the real business of performance improvement, squandering scarce time and resources. Be particularly wary that your CMMS doesn't

foster the gathering of piles of dubious data for processing into stacks of valueless reports. With its hefty data crunching and output capability, a CMMS can very easily develop into the centre of attention. But it's just a tool, albeit a very important one, and should never become a distraction away from the hands-on management of maintenance improvements in the workplace.

### **Leadership**

In any asset-intensive organisation the maintenance manager is the lynch-pin of operational success. Who else is going to bring about the maintenance effectiveness and efficiency that will ensure the cost, safety, quality and legality objectives of the organisation are met?

Besides keeping the wheels turning, the maintenance manager is faced with the added responsibility of educating those up and across the organisation as to the value-adding contribution of asset maintenance management -

then orchestrating their essential contributions. So, a maintenance manager must be very knowledgeable, as well as persuasive, courageous and tenacious!



The degree of success of any strategic change initiative is ultimately determined by the expectations and involvement of senior management. To clinch support at this level and assure his success, the maintenance manager must become as adept at engaging attention in the board room as he is in the workshop. BS EN 15341 can only help – do get it! ■