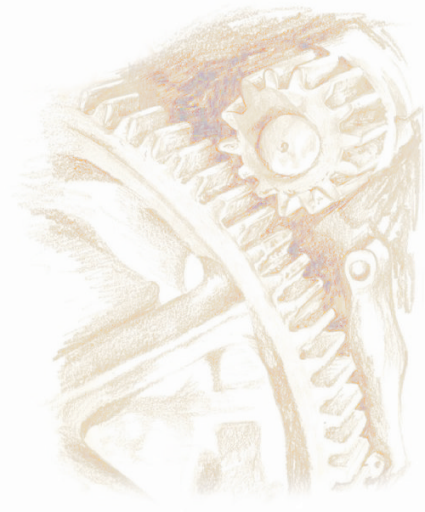
M-TECH

MAINTENANCE TECHNOLOGY PEOPLE



COMPANY BROCHURE

MAINTENANCE TECHNOLOGY

People with a passion for maintenance

About M-Tech

M-Tech was formed in 1987 as an engineering consulting firm specialising in Maintenance and Mechanical Engineering Consulting. Today the focus is solely on Maintenance Engineering. The company's motto is: 'We are driven by a passion to empower maintenance people'. In line with this, all the company's activities are focussed towards providing maintenance organisations with knowledge, training, tools and support to build an own capacity of self-help.

Following from this, the company's main activities are:

- Maintenance Training - a separate brochure is available in this regard. A fundamental role of M-Tech is to be instrumental in improving the level of Maintenance Practice. As such, it develops and formalises maintenance management theory and imparts that knowledge to Maintenance Practitioners. The drive behind this is one of helping maintenance organisations to help themselves.
- Maintenance Engineering Consulting including Reliability Centred Maintenance consulting, Root Failure Cause Analysis consulting, Statistical Failure Analysis, and Fault Finding.
- Maintenance Strategic Management Consulting including Maintenance Systemisation, Organisational Redevelopment, Maintenance Excellence, and Maintenance Control projects.
- Maintenance Auditing - M-Tech has developed an excellent audit model, which measures maintenance performance against World Class Standards. Such audit is often used by organisations as starting point for maintenance improvement projects and as measure to test to what extent World Class standards have been attained.

IFRIM International Foundation for Research in Maintenance

MP MAINTENANCE PUBLISHERS

Terotechnica MAINTENANCE COLLEGE

Knowledge Transfer

Maintenance seems to be so simple to the average person. You surely just service equipment once in a while and repair it when it is broken? However, as equipment becomes bigger, more complex, more expensive and productive, it is more and more important to keep it running for as long as possible to achieve maximum productivity levels. Failure must thus be prevented as far as is feasible, and maintenance must preferably be performed at times that are convenient for the production process.

All of the above make maintenance training more important than ever. Maintenance people at all levels should not only be trained in their specific discipline, but also in the relevant level of maintenance management, maintenance technology, specific maintenance expert areas, specific methodologies, and the specific equipment involved.

The potential benefit of correct maintenance training is huge. It firstly brings the person to understand his/her role in the maintenance organisation well, leading to a well-coordinated maintenance effort. It also empowers maintenance people to understand and practise the various techniques that are relevant to their position in the organisation. In short, maintenance training provides your organisation with much more production capability for your relatively modest investment.

M-Tech took on this challenge in 1992 and has over the last 11 years trained more than 2750 maintenance practitioners. Whether your need is thus to train your artisans in the finer points of prevention and equipment care or you want your supervisors or planners or engineers to be equipped properly, there are courses designed specifically for the need. We also provide technique-specific training, such as training in Reliability Centred Maintenance (RCM), Root Cause Failure Analysis, Shutdown and Project Management, Maintenance Decision-making, and Maintenance Control. Thirdly, we include courses for related disciplines, including courses for production operators, production superintendents and production executives.

We recently decided to change our training activity's name to Terotechnica Maintenance College: Terotechnica being derived from Terotechnology, the name selected in the late 1960's for the first scientific maintenance management model that was developed for maintenance. In the early 1980's, an existing scientific journal, Maintenance Management International from Elsevier Publishers, was renamed to Terotechnica. This journal was subsequently discontinued. It is thus with satisfaction that we revive this history-rich name.

Phone our course administrator, Hendrik Keller, at (012) 543 1477 or 086 11 00 295 or 082 855 8016 for a course brochure or request the information via e-mail at info@m-tech.co.za or visit our website at www.m-tech.co.za

Terotechnica
MAINTENANCE COLLEGE

Consulting

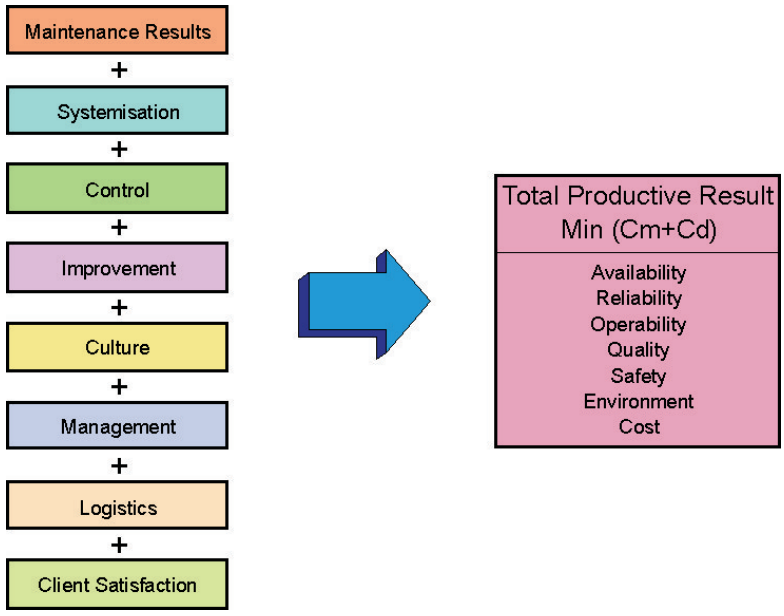
M-Tech has a unique **holistic approach** to maintenance consultation and we account for all possible secondary maintenance effects in our recommended solution to a specific maintenance problem.

This approach has lead to successful consultation projects in the following areas:

- Maintenance policy making
- Maintenance auditing
- Maintenance performance measurement
- Reliability Centred Maintenance
- Maintenance systems (needs analysis, implementation / support and optimisation)
- Capital replacement studies

The maintenance organisation is an organism of which the various parts must function in full harmony. Only then will its efforts result in achieving the maximum level of contribution towards the goals of the business. The figure shows a diagrammatic representation of the various main areas that should be in harmony if success is to be had.

A prerequisite for effective Maintenance is the formalisation of the maintenance business through proper procedures and a well thought through maintenance plan. The areas for which these must exist will only be clear following the formalisation of a maintenance policy for the business.



The solution is thus to take a cross-section (the strategically most important one) of the maintenance organisation and address all these areas simultaneously. The objective is to 'upgrade' small and manageable parts of the maintenance organisation as a whole to ensure success. And, of course, success breeds success....

In this process of cross-sectional therapy, the modus operandi is a total (holistic) intervention that brings the organisational climate and organisational processes in pace with the objectives of the business.

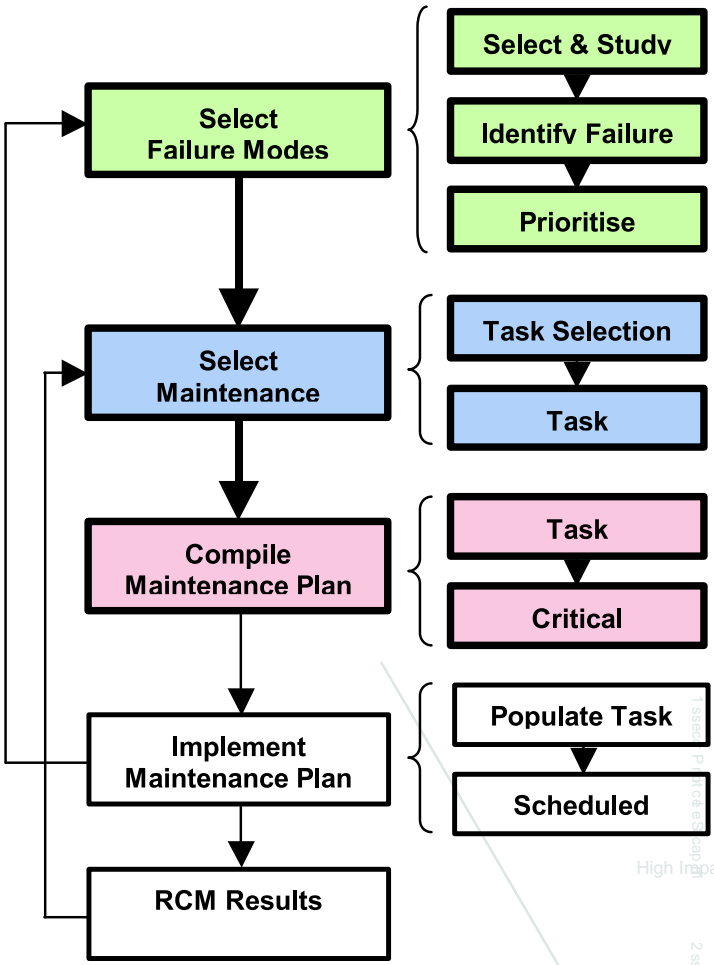
The approach is thus to apply a variety of techniques to a small part of the organisation instead of applying one technique over the total organisation. The result is an intervention that cuts deep through the organisation, resulting in marked positive effects to the organisation's bottom line. The profitability of the organisation is improved through better levels of availability of equipment and sustained higher production rates.

Reliability Centred Maintenance

RCM ProActiv ™

RCM ProActiv ™ takes the best concepts from all Reliability Centred Maintenance (RCM) authors and combine that with years of industrial experience to give you a total new methodology. **RCM ProActiv ™** is starting a new chapter in the history of preventive maintenance strategy setting.

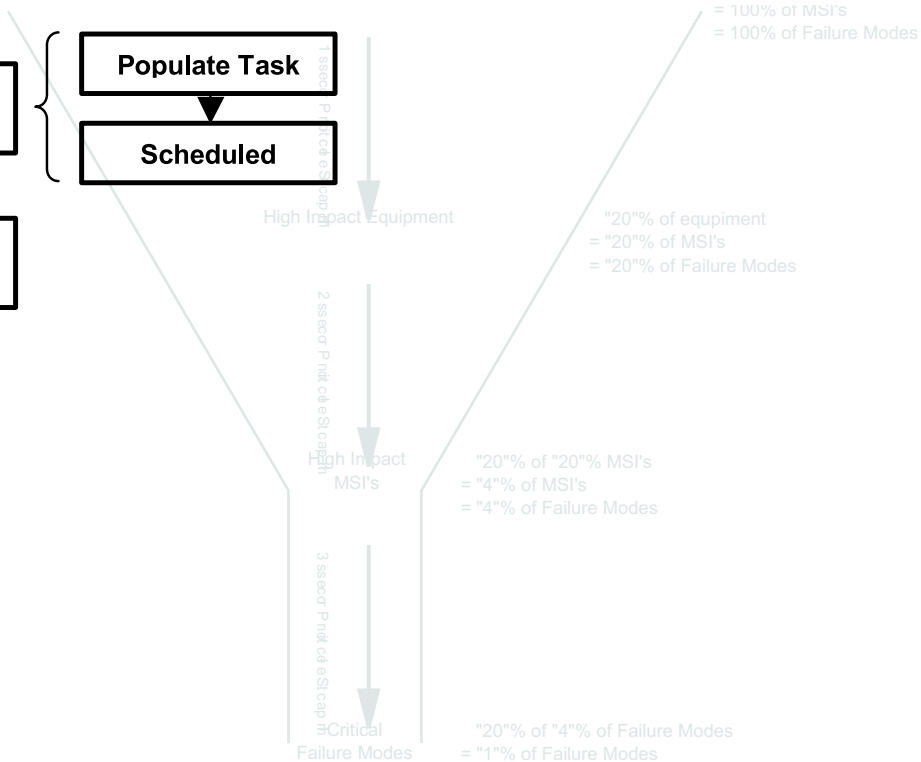
M-Tech's long association with RCM, and its industrial implementation plus an innovative approach eliminates most of the problems previously experienced with RCM. **RCM ProActiv ™** is a scientific but practical approach to combine the use of RCM for the most important failure modes with conventional maintenance task defining methods to form a total methodology for the typical industry.



RCM ProActiv ™ also introduces the application of sound management principles in the implementation of RCM.

Total Methodology

RCM ProActiv ™ is your opportunity to achieve World Class manufacturing and Maintenance standards!



Statistical Failure Analysis

Statistical Failure Analysis is an essential element of the analyses done in designing a maintenance plan. Our capabilities in this critical area support the maintenance function in setting up optimal maintenance strategies as a part of RCM, thereby giving maintenance the competitive edge.

We can safely claim that M-Tech is by far the leaders in statistical failure analysis in South Africa and is recognised internationally. Our expertise in statistical failure analysis are outlined below:

Renewal analysis

- Probabilistic techniques based on continuous distributions;
- Optimal replacement analysis where the advantages of preventive replacement are balanced against wastage of useful remaining life.
- Spare part usage forecast for situations where several similar machines are used.

Repairable systems analysis

- Trend testing for identification of reliability growth or deterioration.
- Dependence testing.
- Non-Homogeneous Poison Process (NHPP) analysis.
- Optimal capital replacement analysis using time value of money principles.

M-Tech is also the distributor of various international software packages that could assist maintenance engineers with statistical failure analysis in their own organisations.

More Information ....

More information regarding M-Tech and its activities are available at:

- Its website at **www.m-tech.co.za**
- Its national information line: 086 11 00 295
- Vanderbijlpark office: (016) 932 1629
- Pretoria office: (012) 543 1477
- Its information e-mail address: **info@m-tech.co.za**

Do not hesitate to request information of how we can be of assistance to you. Your maintenance success is our concern.