

*Principles and Practice of Total Productive Maintenance* by Bikash Bhadury  
Allied Publishers Ltd., 1998, Price not mentioned

Total productive maintenance, or TPM originated in Japan in the mid 1960s to improve plant and equipment capacity utilization. Earlier, maintenance was considered to be a separate activity from operation, and all preventive maintenance jobs were carried out by the maintenance personnels only. But as the plants became more and more automated and complex, it was not at all possible for the maintenance department to look after everything, and accordingly, it was decided that the operators themselves had to carry out the routine maintenance, which is an essential feature of TPM.

The aim of TPM has been to maximise plant and equipment effectiveness at minimum life-cycle costs. The effectiveness is measured in terms of utilization, quality and downtime of equipments, and expressed as Overall Equipment Effectiveness (OEE), which is product of availability, performance rate and quality rate. To achieve the maximum equipment effectiveness, TPM stresses the elimination of “six big losses”, which are due to breakdowns, defects, set-up and adjustments, idling and minor stoppages, operating at reduced speeds, and start/restart of equipments. “T” in TPM stands for total involvement, and the success of TPM lies in the participation of all employees at all levels of an organisation – through small group voluntary activity. Today, the benefits of TPM are experienced all over the world, and many Indian companies like Sundaram Fasteners Ltd., Hindustan Lever Ltd., HINDALCO, and Larsen and Toubro, among others, are also practising TPM.

This book by Dr Bhadury starts with the history of development of TPM, and the author tries to relate this concept with other Japanese management philosophies, namely Total Quality Management (TQM) and Just in Time (JIT). He argues that the objectives of TPM being zero breakdowns and zero defects, it becomes a necessary prerequisite for implementing TQM and JIT. The difference between productive maintenance and conventional maintenance procedures has been traced to the fact that while the latter aim to minimise the losses due to equipment breakdowns, TPM has a wider perspective stressing the elimination of six big losses, as noted earlier, and maximising equipment effectiveness. The author has discussed Terotechnology and TQM in detail, and tried to

point out their similarities and differences with TPM. He argues that while Terotechnology is a concept and TQM is a philosophy, TPM is a practice, which derives its essence from both Terotechnology and TQM.

The six big losses and their elimination strategies have been discussed in detail. The author also discusses the elements of autonomous maintenance such as cleaning, lubrication and minor adjustments, and emphasizes the need for training and development of "knowledgeable" operators. The need for employee participation in the form of small group activity and the top management support in TPM promotion in the organisation have been stressed. Different indices to measure maintenance effectiveness under conventional maintenance and TPM are discussed. The author concludes by discussing real-life case studies of implementing TPM in two Indian tyre manufacturing companies.

Though sometimes it seems that the book is filled with numerous quotes, references and repetitive statements, it can, nevertheless, be used as a handbook of TPM for practitioners and in management development programmes. The list of references at the end of each chapter is very useful, and it will come in handy for postgraduate students of engineering and management, who take Terotechnology or Reliability and Maintenance Management as an optional course.

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***Localising Global Production : Know-how Transfer in International Manufacturing*** by Klaus North, International Labour Office Geneva ; published in India by Oxford & IBH Publishing Co. Pvt. Ltd. : Rs. 350/-

The last few decades have seen a progressive lowering of barriers to international flow of goods and services. This has resulted in the distribution of manufacturing activities on a global basis. To survive in this changed scenario firms require to coordinate manufacturing activities globally and act locally. This is aptly captured in the slogan of Asea Brown Boveri (ABB) : "Being local worldwide". This book will help the practitioner to obtain an overall idea of the challenges involved in realising this dream.