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## Using Statistics in Industry - Quality Improvement Through Total Process Control

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# USING STATISTICS IN INDUSTRY

Quality Improvement  
Through Total  
Process Control

GORDON BETTELEY, NEVILLE METTRICK  
EDWARD SWEENEY & DAVID WILSON



THE MANUFACTURING PRACTITIONER SERIES

# THE MANUFACTURING PRACTITIONER SERIES

## USING STATISTICS IN INDUSTRY

### Quality Improvement Through Total Process Control

Gordon Betteley, Neville Mettrick, Edward Sweeney & David Wilson

For many years the need to bridge the gap between theoretical and practical technology has been recognised, but it is only recently that universities and industrial companies have collaborated successfully to relate learning to the ongoing practical needs of industry.

*Using Statistics in Industry* is an ideal workplace reference for anyone who needs to improve their understanding of the use of statistics in process control. Using practical examples the authors explain and illustrate all the basic statistical techniques and, since much of the material is derived from courses jointly developed by Warwick University and household name industrial firms such as Rover Group, Rolls-Royce, British Airways and Lucas, the authors have ensured that content and coverage is proven to be relevant and presented in an easily accessible style.

#### Contents include

- Data presentation
- Probability and probability distributions
- Estimation
- Significance testing
- Process control
- Control charts

*Using Statistics in Industry* provides an invaluable resource for production and technical support staff working in quality management, and section leaders and cell managers responsible for ensuring that processes are under control. It may be read as a whole or used as a reference as the need arises. No previous knowledge of statistics is assumed or required but references to further reading are included in every chapter.

Equally it can be used on first and second year Industrial Statistics and Quality Control courses and first year Applied Statistics courses.

Gordon Betteley is in the department of Statistics and Operational Research at Coventry University, and has written numerous papers, books and industrial reports; Neville Mettrick is Statistical Process Control Manager in the Rover Group, has been involved with development of Total Quality Management in the motor vehicle industry since the mid 1960s, and is an advisor and visiting lecturer at several UK universities; Edward Sweeney is a member of the Warwick Manufacturing Group at the University of Warwick and works in collaboration with the leading UK and international engineering companies. David Wilson, after several years as an engineer in manufacturing industry, is now head of the Applied Statistics Group at Aston Business School.



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