Industrial Control Handbook
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This book is the second of a three volume series on the subject of industrial control and is concerned with the technologies of electronics, pneumatics and hydraulics as applied to the motivation and control of what is found in the process industry. The work is based on practical experience in the steel industry, but it covers such a range that it is easily applicable to most chemical plants, both in the organic and inorganic fields.

The first part of the book deals with the basic principles of control circuits as applied to dc amplifiers and power electronics. This part covers all the important thyristor circuits. The section on rotating electrical machines also deals with stepper motors and digital circuits. The explanation of the latter is very easy to follow. The chapter dealing with computers in control is evidence of the author’s practical involvement in the application of systems which employ this highly versatile and easily managed means of control. The evidence is contained in statements, such as that the correction of errors is a subject under change due to scientific advance or technological change (eg biochemistry related).

However, the author rightly states the caveat, that computer programs, whilst easy to change, can suffer from documentation errors during alteration or commissioning, unless these are most conscientiously recorded and documented is always kept up-to-date. The book contains an explanation of the FORTH Language and shows useful and simple applications to batch processes for control of addition, agitation, level and temperature and also furnace control. Inevitably, some parts dealing with mass storage on computers are dated. However, the fundamentals are there. Robots are also treated briefly and this paragraph may well have been overtaken by developments.

The part on hydraulics deals first with gear- and piston pumps. It neglects the peristaltic pump. The flow control deals with all the mechanical means, but again it is more of a short review of this complex technology. Maybe, the same can be said about the chapter entitled ‘pneumatics and process control valves’. It is pathetic that these two chapters, in a book published in 1987, are not using exclusively ISO units (c.f. pp 287, 297, 324).

The chapter on sensing devices again shows the author’s expertise. His description of principles of LEDs, LCDs and multiplexers, as well as utilisation of colour VDUs for MIMICS or trend displays are noteworthy. They might have been expanded to show the advantage of VDUs in the workplace as the tool of the process operator. The latter is acknowledged in the chapter on ergonomics as well that on maintenance. Sensors and transducers are not treated.

In recommending this book to production engineers and process engineers, it is important to recognise the imbalance of investment in microprocessor technology and IT in batch process industry. It is often seen that expensive and even dangerous processes are operated with sensing and gauging systems which are 20-25 years old, whereas the managers and process men, whose livelihood they provide, own expensive television and television sets, or even home computer sets.

Are we operating on double standards? Does the process man not deserve to know instantly the status of the process for which he is accountable and ought not the information which he sees on his plantside VDU be equally available to the process control manager, or director?

Should the process man not know the deviation of the product from the standard and if so by how much and if it so, is it tolerable or safe? Are we employing people to respond mechanically, or should we not replace all that by the microchip and rather use the God-given and unique critical faculty of people to manage plants and equipment so as to improve quality and output. This book provides the data in answer to these challenges.

The techniques which allow the achievement of BS 5750 in British process technology are treated in fundamental form in this volume. Therefore, it should be accepted as a useful reference.

G S Elfer
Library and Information Services Committee

Defining your terms

IFIP Glossary of terms used in Production Control

The International Federation for Information Processing has written a glossary covering the full range of ideas necessary for discussions on production control (PC) (with over 10 times the number of BSI definitions), and defines each word or group as used in PC. A wide use of associated terms and words describing new ideas (not yet in common usage) are special features of the glossary.

The book is divided into 3 parts:
Part 1—introduction, discusses PC development, sub-categories of PC and glossary objectives, choice of terms and definitions, and glossary arrangement
Part 2—(over half the book) is the classified glossary. This is arranged:
  a) Management
  b) Production design
  c) Production planning
  d) Purchasing
  e) Marketing
  f) Production control (with 6 sub classifications)
  g) Finance
  h) Personnel
  i) Secretarial
  j) Library and Information Services

Part 3 is an alphabetical glossary.

At the back there is an alphabetical index, against which are cross references to the classified glossary (by code and page number), and alphabetical glossary (by page number). The data of the index perhaps could have been incorporated into the alphabetical glossary which is otherwise identical.

However, the book is altogether a concise and handy 113 pages of reference work, and its classified arrangement enhances its appeal.

C Lloyd-Lucas
Library and Information Services Committee

Making money through quality

The Chain of Quality: Market Dominance through Product Superiority
Dr John M Groocock
Published by Wiley and Sons Inc, New York 1986

Now well the subtitle of this book: it is a theme which concerns us on every page. In no sense is this a textbook since the examples with which it is liberally endowed assume a grounding in basic quality techniques, practices and procedures. Nevertheless, the book is as suited to the undergraduate, intent on a career in manufacturing industry, as it is to the practising quality manager who cannot fail to benefit from the great authority of the author. Based largely upon experiences acquired over many years with major European and American manufacturing industries, the work analyses and examines all of those underlying principles and practices of quality management (the word management is extremely important here) which contribute to a superior product.

So much in this book is new, fresh and invigorating. A reader is most unlikely to feel that he has seen it all before, even in the author’s previous classic ‘The Cost of Quality’, and in risk of out of print. Despite the important message which he conveys, Dr Groocock is not afraid to lighten it with a little humour: for example read his account of correspondence with his daughter about that August inscription which failed to offer his daughter the ‘goodness’ of service which a customer might reasonably expect.

No opportunity is lost of stressing the importance of businessmen really understanding the meaning of quality and the contribution it can make to commercial success. Quality costs are examined in depth while the reader’s attention is drawn to the vital importance of good design and the role of quality in marketing.

When dealing with techniques, such as attribute sampling, the author always looks at them from an original and stimulating point of view. He examines and reiterates his earlier contention that ‘hypothesised relationships between quality and price are not very useful’, believing they stem largely from arguments which fail to address the realities of a situation. In his chapter dealing with Inspection and Test, Dr Groocock examines the oft-quoted assertion ‘you can’t inspect quality into a product’, arguing that a vital function of inspection must be to improve the quality of the goods sold. He believes, in fact, that the only methods of improving quality in widespread use are sampling, the author always looks at them from an original and stimulating point of view. He examines and reiterates his earlier contention that ‘hypothesised relationships between quality and price are not very useful’, believing they stem largely from arguments which fail to address the realities of a situation. In his chapter dealing with Inspection and Test, Dr Groocock examines the oft-quoted assertion ‘you can’t inspect quality into a product’, arguing that a vital function of inspection must be to improve the quality of the goods sold. He believes, in fact, that the only methods of improving quality in widespread use are sampling.

The chapter includes a fascinating case-study describing the inspection of an aircraft hydraulic pump.

Another valuable and extremely readable book which covers every conceivable aspect of the management of quality. It will assuredly influence new generations of quality managers, whatever their job titles. Admirably summed up by Dr Groocock’s quality essentials: POLICY, HONESTY, PRIORITY & CAPABILITY.

K F Sherwood
Quality Management Activity Group.

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