Management Handbook of Computer Operations

Compiled by
Gordon Longworth

Management Handbook of Computer Operations

Compiled by
Gordon Longworth

PUBLISHED BY NCC PUBLICATIONS

British Library Cataloguing in Publication Data

Longworth, Gordon
Management handbook of computer operations.
1. Electronic digital computers – Management
I. Title
001.64'068 QA76.5

ISBN 0-85012-360-7

Note:

First published in 1975 under the title *Standards in Operations*, the original material has been extensively revised and re-structured with increased emphasis on management and control aspects.

As part of NCC's Standards series, this manual will assist DP management and supervisors in operations departments when they are deciding where standards are necessary in an operations environment, their scope and coverage. Containing guidelines, checklists, suggestions and examples, the book follows a flexible, non-definitive line that allows it to fit in with any organisation's working methods, whilst being precise wherever possible.

This book distills the practical skills and proven experience of the members of a widely-based Working Party set up to advise the NCC in this field and will therefore prove invaluable to those working in the operations field and those teaching or studying computer operations.

First published in 1983 by:

NCC Publications, The National Computing Centre Limited,
Oxford Road, Manchester, M1 7ED, England.

Typeset in 11pt Times Roman and printed by UPS Blackburn Limited, 76-80 Northgate, Blackburn, Lancashire.

ISBN 0-85012-360-7

Acknowledgements

A working committee consisting almost entirely of practising Operations Managers from member organisations, with considerable assistance from other members and NCC staff, spent eighteen months gathering, recording and reviewing material. The members of the committee and those others who supplied material represented a wide range of operating environments, hardware and sizes of installation. Thus the practical knowledge and experience which was brought to bear on the project was extensive indeed. The following acted as an Editorial Committee:

F C H Witchell (Chairman)	Corporate Systems Standards Officer, British Leyland (UK) Ltd, Cowley
S J Gould	Head of Services, Cripps Computing Centre, The University of Nottingham
T C Lock	Computer Operating Manager, Dunlop Ltd, Birmingham
M D Rebeiro	DP Operations Manager, Halfords Ltd, Redditch
P J Smart	Systems and Data Processing Manager, Avon Cosmetics Ltd, Northampton
Mrs P Waugh	Central Computer Agency

The Editorial Committee was formed from a Working Party which produced the origin. raft material. The other members of the Working Party were:

C Calder	formerly Water Resources Board, Reading
D J Dunthorne	Central Computer Agency
A D Edwards	formerly Joseph Lucas Ltd, Birmingham
S Jackson	formerly Baker Perkins Ltd, Peterborough
A W Lang	Welsh Hospital Board Computer Centre, Cardiff
M A Male	ICL Birmingham

G Ramsden	SPL International, Nottingham
V Shiner	Sanaco Computer Services, Birmingham

Acknowledgements are also due to the following organisations who loaned copies of standards, commented on draft material, or helped in other ways:

Bejam Group, Stanmore
BMW Concessionnaires Ltd, Dover
Book Centre, London
British and French Bank, London
British Leyland (Internal Audit), Oxford
British Oxygen Co Ltd, London
Chrysler UK Ltd, Coventry
Clarke Chapman – John Thompson Ltd, Gateshead
Co-operative Insurance Society Ltd, Manchester
Ford Motor Co Ltd, Daventry

Government Departments:

Central Computer Agency, Norwich
Department of Employment, Runcorn
Department for National Savings, Lytham St. Annes
Ministry of Agriculture, Fisheries and Food, Guildford
Ministry of Defence, London
Paymaster General's Office, Crawley
Scottish Office Computer Service, Edinburgh

Joint Credit Card Co Ltd (Access), Southend
Kleinwort Benson Ltd, London
Leek and Westbourne Building Society, Leek
Overseas Containers Ltd, London
Plessey Co Ltd, Poole
Science Research Council, London
Standard Telephones and Cables, London
University of Manchester Regional Computing Centre

A considerable amount of useful material was extracted from NCC training course material, and from the ICL publication *Operations Procedures*.

This basic material was then edited and organised within NCC to form the manual *Standards in Operations* by:

J G Rickerby
G Mellor
D R A Coan

The revision of the original manual has been completed with assistance from a number of organisations who supplied manuals, documentation, information and comment. Of these, particular thanks are due to:

Datasolve Education, London

Business Statistics Office, Newport, Gwent

Insight Business Systems Limited, Greenock

Relevant material has been included which has appeared in earlier NCC publications and, also within NCC, thanks are due to R T Doswell for his assistance with security aspects.

Finally, the revision has provided the opportunity for the inclusion of material from *Checkpoint* –

an efficiency audit of computer operations based on a series of questionnaires which compare actual practice with preferred practice, giving an objective assessment of all or part of the operations department. It is expected that *Checkpoint* will be available as a service at the time of publication.

The Centre acknowledges with thanks the support provided by the Electronics and Avionics Requirements Board (EARB) for the project from which this publication derives.

Introduction to the Manual

PURPOSE OF THIS MANUAL

To assist in the definition of installation-based standards for activities concerned with the provision of operational computing facilities.

SCOPE

Management Handbook of Computer Operations forms part of NCC's Standards series which also includes:

Data Processing Documentation Standards

Standards in Programming

Project Planning and Control

Management Handbook of Computer Security

Operations departments are subject to many variables (for example, type and quantity of equipment used, services provided, responsibilities, size and structure of organisation) so that each is, in many ways, unique.

There are, however, many requirements common to most installations and it is with these requirements in mind that this manual has been written. It aims to cover all the activities and situations likely to occur in the operations environment.

Even general requirements will vary between installations. Some aspects will be more important to one than to another; some will be irrelevant. The means of fulfilling the requirements will also vary. As an example, consider 'scheduling'. Most, but not all, operations managers will agree on the importance of scheduling. Not all will agree on its relative importance compared with other activities, or when and how it should be done. A definitive and widely acceptable standard for scheduling (or any other aspect of operations) cannot be written in general terms. But a precisely defined standard can be written locally, preferably by someone involved, and the aim of this manual is to give guidance in that task.

It is a matter for local decision what standards are necessary, the emphases to be placed, and their scope, coverage and content. This manual guides as far as possible, giving checklists and, where appropriate, illustrations. It must be stressed that in most cases the examples and recommendations are not intended to be exhaustive: they represent a selection from what is often a long list of alternatives.

ASSUMPTIONS

In drawing up this manual a number of assumptions had to be made. These should be borne in mind when using the manual and are set out below.

1 That 'Operations' include all those activities and functions concerned with:

- The receipt of data at a computer installation;
- Conversion of data to machine-acceptable form;
- Processing of data by a computer;

— Conversion of results to user-acceptable form;

— Distribution of output from a computer installation.

2 That 'Operations' will be concerned with the planning and control of the resources needed for the above activities.

3 That procedures for using equipment are available elsewhere.

4 That certain fundamental decisions concerning the nature of the equipment in use, organisation, staff, etc; have already been made. This manual aims to set down a code of practice to be followed for dealing with each activity or facility likely to be encountered in 'Operations'. It does not attempt to argue the merits and demerits of alternatives for these decisions, except in certain cases where general experience mitigates against specific practice: in such instances recommendations have been included.

5 That the basic tools of management and supervision are known and understood. However, where there are constraints on, exceptions to, or ramifications in, these basic tools which are peculiar to 'Operations', then these have been included.

6 That 'Operations' at a medium-sized mainframe batch processing installation, operating in shifts, provide a suitable basis for examples. Much of the material will be immediately relevant to other types of installation. Significant points which would differ have been incorporated (for example, terminal operations, which are relevant only to on-line processing).

HOW TO USE THE MANUAL

The manual is not intended to be read through from start to finish. It has been organised primarily for reference purposes rather than for sequential instruction. It is suggested that the reader will gain more value by looking up particular subjects of interest and, through the cross-references, build up a collection of information on the practices recommended for the subjects selected.

There is a choice of three entry points, depending on how familiar the reader has become with the organisation of the material:

Contents List: providing reference to chapter, section and sub-section headings, each describing a specific aspect of Operations.

Documentation Requirements (Appendix A4): a list of all the control documents identified in the main body of the text, cross-referenced to the appropriate part of the manual, and supplemented with samples of control documentation forms.

Index: giving cross-references to detailed topics within the manual.

Cross-references identify where the reader may find, if needed, either supporting information on related topics or a more detailed examination of specific points.

When all of the relevant material has been assembled, the reader should decide:

— If any interpretation is needed to fit the specific environment;

— Whether the practice recommended meets existing and expected requirements;

— Whether the material provided requires modification or extension;

— Whether, if the procedures and documents described do not resemble existing (or projected) practice, they nevertheless have desirable attributes which may be extracted and incorporated.

The results of these decisions will then suggest what has to be done in defining or revising installation-based standards.

DEVELOPING INSTALLATION STANDARDS

These notes are aimed more at installations without operations standards. They will be useful to others for evaluating, and possibly adding to, existing standards.

Plan Action:

The first requirement is to determine priorities, responsibilities and an overall schedule. This should be undertaken in conjunction with the senior management with overall responsibility for the computing facilities.

Nominate Staff:

The number of people responsible for the detailed drafting of standards will obviously depend on the size and complexity of the operations organisation. In any case they should represent all functions within the area to be covered by installation standards.

The principal considerations in selecting staff are:

— Knowledge of the relevant functions;

— Understanding of installation objectives;

— Ability to consider alternatives to established practice;

— Appreciation of the consequences of change;

— Facility to write clearly and unambiguously.

Each person nominated must be responsible for a defined section of the manual. An overall editor is desirable, and the work should proceed under the control of a senior manager who will determine matters of policy.

Determine Requirements:

The detailed subjects to be covered should be listed, and a schedule of work drawn up from the list.

Draft Standards:

Each nominee should study the sections of this manual appropriate to the function(s) he/she represents to decide what modifications, extensions or deletions are necessary before the work of drafting installation standards is commenced.

Discussion:

Draft installation standards should be open for discussion with those who will have to use them. Ambiguities, omissions and irrelevances should be exposed and corrective action applied. Disagreements must be reconciled, perhaps by a revised form of wording. The opinion of others indirectly involved must also be sought: for example, a revised distribution procedure must be acceptable to the recipients of whatever is distributed.

Publication:

When the contents of drafts have been agreed, the installation standards manual can be finalised and published.

A sectional manual is recommended for operations, each person receiving the part(s) appropriate to his/her work.

Education:

Before the standards are implemented, education in revised and additional procedures must be undertaken, both for existing staff and as part of the basic training of new staff.

Review:

After implementation it is necessary to review standards regularly and to update where necessary. It is generally advisable to call a moratorium on changes to standards until staff have become familiar with their use.

Staff should be given every opportunity to make suggestions for extending or clarifying standards. It will be necessary to have a focal point for submitting suggestions and also to provide ad hoc interpretation and arbitration of disputes.

(Further information on the content of installation standards manuals is given in section 8.2 of this manual.)

FURTHER DEVELOPMENT

It is inevitable that this NCC Manual could be usefully extended. Suggestions for improvements will be welcomed and should be addressed to Data Processing Methods Division, NCC.

Contents