

**Some pages of this thesis may have been removed for copyright restrictions.**

If you have discovered material in AURA which is unlawful e.g. breaches copyright, (either yours or that of a third party) or any other law, including but not limited to those relating to patent, trademark, confidentiality, data protection, obscenity, defamation, libel, then please read our [Takedown Policy](#) and [contact the service](#) immediately

AN INVESTIGATION OF MANAGERIAL SKILLS:  
IMPLICATIONS FOR PERSONNEL POLICY

PHILIP MOORHOUSE

SUBMITTED FOR THE DEGREE OF PH.D.

MAY 1981

THE UNIVERSITY OF ASTON IN BIRMINGHAM



# AN INVESTIGATION OF MANAGERIAL SKILLS:

## IMPLICATIONS FOR PERSONNEL POLICY

PHILIP MOORHOUSE

PH.D. 1981

This research explores the conceptual basis in adopting a skills approach to management development. The literature reveals a number of development approaches but only a limited appreciation of how the manager does his job i.e. of the skills that he needs.

An investigation of managerial skills was conducted with 10 managers mainly occupying middle and senior positions. The principal source of evidence was the manager's thoughts on what he did and how he did it, although the interviews were supplemented by formal and informal observation. There was also a dialectic value from discussions with other analysts/managers and empathy between analyst and practitioner also played a part. Each manager was invited to comment upon his own skills analysis as a check upon validity.

The study supports the view that the manager, similar to other skilled practitioners, is conceptually a model builder and operationally a navigator (Singleton 1978b). The manager variously holds enactive, pictorial, symbolic and hybrid models that enable him to understand his world and act in it. The universal managerial function is decision making and the study presents a preliminary nomenclature in classifying decision processes or perceptual skills. Managerial skills are also reflected in interpersonal interaction where the hallmark is mutual construction and attribution and in 'self management' where the requirement is to cope with the inner rather than the outer world. Differences between managers are most evident in perceptual skills, the more senior manager requiring increasing ability to process abstract information and take account of environmental uncertainty. He will also make greater use of 'off-line' information.

The practical purpose in studying managerial skills is to facilitate the improvement of managerial performance and the implications of the research for training, selection and appraisal are explored.

MANAGEMENT

SKILLS

SKILLS ANALYSIS

MANAGEMENT DEVELOPMENT

## ACKNOWLEDGEMENTS

During the course of this project I have received the co-operation of many people within both the Dunlop organisation and the University. I would like to thank all in these organisations who have contributed their time and effort to the project.

Within the University particular thanks are due to my supervisor Peter Spurgeon and to the Head of Department Professor Singleton for their insightful comments and continuous support throughout. I am also grateful for the guidance and assistance provided by my I.H.D. tutor, Ivan Robertson.

In the Company my warm appreciation extends to Norman Chell who, as industrial supervisor, provided ideas, encouragement and friendship. My thanks are also due to the 10 managers who participated in the study and gave generously of their time.



## CONTENTS

	<u>Page</u>
PREFACE	(xii)
CHAPTER 1 INTRODUCTION	1
1.1 Objectives of Chapter 1	1
1.2 The Nature of the Research	2
1.3 The Research Context	2
.1 A historical note	2
.2 Current structure of UK operations	3
.3 Divisional Management	5
.4 Company personnel and training activities	6
.5 Central Personnel Division	7
.1 Management Training	8
.2 Career Development	9
1.4 The Emergence of the Project	10
.1 Project beginnings	10
.2 Focusing the research objectives	13
.3 A note on selection and appraisal	16
1.5 Summary and Conclusions	17
CHAPTER 2 MANAGEMENT PERFORMANCE AND MANAGEMENT DEVELOPMENT	19
2.1 Objectives of Chapter 2	19
2.2 Management Development and Management Practice	19
2.3 Preliminary Remarks	22
.1 The concept of management	22
.1 A historical perspective	22
.2 Who are managers?	23
.3 What is management?	24
.2 The literature to be covered	25
2.4 Defining Managerial Performance	27
.1 The work activity perspective	27
.1 Diary studies	28
.2 Questionnaire studies	33
.3 Observation studies	34
.4 Activity sampling studies	38
.5 Critical incidents studies	38
.6 Radio transmission studies	39
.7 Studies employing several methods	39
.2 The functional perspective	43
.3 The decision making perspective	45

## Chapter 2 continued

2.4	Defining Managerial Performance (cont'd)	
.4	The human relations perspective	47
.1	Leadership	49
.2	Style	50
.3	Motivation	51
2.5	Managerial Skills	52
2.6	The state of knowledge concerning managerial practice: a critical overview in the context of management development	61
2.7	Summary and Conclusions	68
CHAPTER 3	CONCEPTUAL FRAMEWORK AND RESEARCH PROCEDURE	70
3.1	Objectives of Chapter 3	70
3.2	The Concept of Skilled Performance	70
3.3	Classification of Skilled Performance	74
3.4	Characteristics of Skilled Performance	77
3.5	Skill Taxonomies: A Cognitive Orientation	81
3.6	Models (and Routines)	85
3.7	Methodology in Skills Studies: General Remarks	87
3.8	Skills Appraisal	93
3.9	Research Procedure	96
.1	Task Analysis	96
.1	Methods and Techniques	96
.2	Pilot Studies	97
.3	The Main Study	100
.2	Skills Analysis	102
.3	Sample	106
3.10	Summary and Conclusions	108
CHAPTER 4	THE RESEARCH RESULTS	110
4.1	Objectives of Chapter 4	110
4.2	Presentation of Data	110
4.3	Manager 1 The Production Director: Senior Management	112
.1	Job Overview	112
.2	Task Description: Controlling the factory operation	114
.3	Skills Analysis	116

Chapter 4 continued

4.4	Manager 2 The Commercial Director: Senior Management	123
	.1 Job Overview	123
	.2 Task Description: Setting the strategic plan	125
	.3 Skills Analysis	129
4.5	Manager 3 The Marketing Manager: Middle Management	137
	.1 Job Overview	137
	.2 Task Description: Estimating future sales	139
	.3 Skills Analysis	141
4.6	Manager 4 The Technical Director: Senior Management	147
	.1 Job Overview	147
	.2 Task Description: Developing new products and processes	149
	.3 Skills Analysis	151
4.7	Manager 5 The Works Manager: Middle Management	158
	.1 Job Overview	158
	.2 Task Description: Estimating the works costs	161
	.3 Skills Analysis	162
4.8	Manager 6 The Manager Work Study: and Performance Records: Middle Management	169
	.1 Job Overview	169
	.2 Task Description: Maintaining and controlling the Wage Structure Agreement	170
	.3 Skills Analysis	174
4.9	Manager 7 The Departmental Manager: Mid/Jnr Management	183
	.1 Job Overview	183
	.2 Task Description: Deploying resources to meet production objectives	184
	.3 Skills Analysis	187
4.10	Manager 8 The Sales Manager: Middle Management	192
	.1 Job Overview	192
	.2 Task Description: Personal selling and the determination of pricing policy	194
	.3 Skills Analysis	196



## Chapter 4 continued

4.11	Manager 9 The Market Planning Manager: Middle Management	206
.1	Job Overview	206
.2	Task Description: Producing an 'Event line' package	209
.3	Skills Analysis	211
4.12	Manager 10 The General Manager: Senior Management	218
.1	Job Overview	218
.2	Task Description: Devising and implementing the strategic plan	220
.3	Skills Analysis	222
4.13	Summary	230
CHAPTER 5	DISCUSSION	233
5.1	Objectives of Chapter 5	233
5.2	Aspects of Skilled Performance	233
.1	Perceptual Aspects	237
.2	Interpersonal Aspects	251
.3	Self Management Aspects	256
.4	Feedback Aspects	259
.5	Experiential Aspects	261
5.3	A General Perspective on Skilled Managerial Performance	262
.1	A Systems Overview	262
.2	Management Skills: An Overview	263
.1	Models	263
.2	Developing & using models	265
.3	Information storage	268
5.4	Differences in Skilled Performance	268
5.5	Summary and Conclusions	271
CHAPTER 6	APPLYING THE RESEARCH	274
6.1	Objectives of Chapter 6	274
6.2	Current Practices in Dunlop Management Development	274
.1	General comments concerning models of skill and skill acquisition	274
.2	Particular applications	278
.1	Accountancy for non accountants	278
.2	Interactive skills	281
.3	Skills in developing skills	282

Chapter 6	continued	
6.3	Future Plans in Dunlop Management Development	283
.1	Training	283
.2	Selection	288
.3	Appraisal	291
6.4	Summary and Conclusions	293
CHAPTER 7	SUMMARY AND CONCLUSIONS	295
7.1	Objectives of Chapter 7	295
7.2	Research Overview	295
7.3	Conclusions from the Research	297
7.4	Suggestions for Further Research	303
7.5	Current and Future Applications in Dunlop	305
7.6	In Conclusion	306
REFERENCES		308

## TABLES

	<u>Page</u>
 CHAPTER 1	
Table 1.1    Product Diversity (crudely differentiated by product and market based expansion)	3
Table 1.2    Principal Centralised Departments	4
Table 1.3    Distribution of Personnel in Dunlop	5
Table 1.4    A sample of Company training courses for managers	9
 CHAPTER 2	
Table 2.1    Major empirical studies of managerial work activities	29
Table 2.2    Stewart's (1967) job profiles	32
Table 2.3    Mintzberg's (1973) managerial roles	36
Table 2.4    Stewart's (1976) job category subdivisions	42
Table 2.5    Simon's traditional and modern decision techniques	46
Table 2.6    Main conclusions of the work activity school	62
 CHAPTER 3	
Table 3.1    Smith's (1975) generic skills	81
Table 3.2    Gagne's (1977) Learning Hierarchy	83
Table 3.3    Illustrations of Gagne's capabilities	84
Table 3.4    Methods and Techniques in Work Analysis	97
Table 3.5    Interview types differentiated by question and response	103
Table 3.6    Interview Times for Sample	106
Table 3.7    The sample participating in the study	107
 CHAPTER 4	
Table 4.1    Summary of skill requirements from interviewee data	231



## CHAPTER 5

Table 5.1	Aspects of skilled performance	235
Table 5.2	Evidence in support of the skills classification from each respondent's data	258
Table 5.3	Perceptual aspects in skilled performance: a summary	272

## CHAPTER 6

Table 6.1	Illustrations of first order meanings given to accountancy terms	279
Table 6.2	Graded learning in accountancy for non accountants	281
Table 6.3	Training Methods	284
Table 6.4	Possible future training courses	285
Table 6.5	Self study implications of the research	286
Table 6.6	Means of gathering information in selection	289
Table 6.7	Illustrations of areas to probe in selection interviewing	290
Table 6.8	The Dunlop appraisal procedure	291
Table 6.9	General dimensions for performance ratings	292

## FIGURES

		<u>Page</u>
CHAPTER 1		
Figure 1.1	Main Groups within Dunlop	3
Figure 1.2	The Dunlop senior management structure	5
Figure 1.3	Organisation of personnel and training within the Company	7
CHAPTER 2		
Figure 2.1	Schematic representation of the literature review	26
Figure 2.2	Burgoyne and Stuart's (1976) hypothetical qualities of an effective manager	55
CHAPTER 3		
Figure 3.1	Functional representation of human information processing	74
CHAPTER 5		
Figure 5.1	Major parameters in decision making	234
CHAPTER 6		
Figure 6.1	Pre-research training paradigm	276
Figure 6.2	Current programme design and execution	277
Figure 6.3	Overview of training geared to personal growth	284
Figure 6.4	Theoretical basis of Rodger's 7 point plan	288
CHAPTER 7		
Figure 7.1	Modelling and mapping in skilled performance	299
Figure 7.2	Ideographic representation of Production Director's skill	299
Figure 7.3	Levels of description in thesis	300

"Skill training will probably be - and should be - the next revolution in management education." (H. Mintzberg, 1973 p.193)

" ... the harder you think in this high country of the mind, the slower you go."  
(R.M. Pirsig, 1974 p.122)

## PREFACE

This research was conducted under the Interdisciplinary Higher Degree (IHD) Scheme at the University of Aston in Birmingham. The IHD Scheme serves to encourage links between the University and industrial companies, through administering jointly supervised investigations of organisational problems. This research investigation was carried out for Dunlop Ltd.

I was recruited by Dunlop in 1976, assuming a dual status of Company employee and full time research student. My responsibilities were to both academic and industrial tutors, and the requirement was to share my time between Company and University. As a Company employee I acquired more knowledge of the Company than would be available to an external researcher. Indeed some of my time was devoted to acquainting myself with the Company. However, this inevitably meant that I was more isolated from others with similar research interests than is usual for postgraduate students.

My objectives were also of a dual nature, namely to meet the expectations and interests of the Company and the requirement of the University to make a contribution to knowledge in the field of study.



CHAPTER 1INTRODUCTION1.1 Objectives of Chapter 1

This research concerns an investigation of managerial skills which was conducted within the Dunlop organisation under the auspices of both the Company and Aston University. It had complementary practical and academic objectives; practically the purpose of the research was to facilitate the improvement of managerial performance, the formal processes for doing so being training, selection and appraisal, and academically the purpose was to contribute to **skills** theory.

The purpose of this chapter is to provide the contextual background to the investigation. There is a brief note on the type of research being undertaken, which is followed by an outline of the research context, the Dunlop Company Ltd., with particular emphasis upon the Management Development Department for whom the research was undertaken. The early stages of the project, during which the research direction was defined, are discussed in the fourth section. In particular the initial concern with 'quantitative' aspects in manpower planning is summarised and the reasons for a change in research emphasis to more 'qualitative' issues are analysed. Furthermore, something of the thinking underlying the decision to focus upon skills is presented. The final section contains a synopsis, conclusions and statement of research objectives.

## 1.2 The Nature of the Research

It is possible to distinguish several types of research engagement, this project falling under the general heading of 'action research'. As Warr (1978) points out, action research is characterised by collaboration between researcher and organisational sponsor in determining both the problem to be investigated and the methodology that will be used in its solution. The negotiable aspect of problem definition means that the issue(s) to be tackled will reflect the organisational need, although arriving at a mutually acceptable formulation may prove to be a protracted process. This was certainly the case with this research - not least because the original 'client' left his position with the organisation during the fifth term. The early development of the project is discussed more fully in Section 1.4, the more immediate requirement being to outline the nature of the organisation in which the research took place.

## 1.3 The Research Context

### 1.3.1 A historical note

The beginning of the Dunlop organisation extends back to the invention of the first practicable pneumatic tyre, the original company to develop and market the invention being set up in 1889.

The main U.K. tyre producing facility was established in Birmingham in 1900 and the acquisition of a wheel manufacturing unit quickly followed. As a result of continuous expansion during the last 90 years or so, through product-based and



market-based diversification the Company has grown to some 130 factories in 22 countries employing about 100,000 people. Tyres now account for about 55% of total turnover, the remainder concerning hundreds of other different products sold in many markets. Table 1.1 gives an indication of the product range, but this is by no means exhaustive.

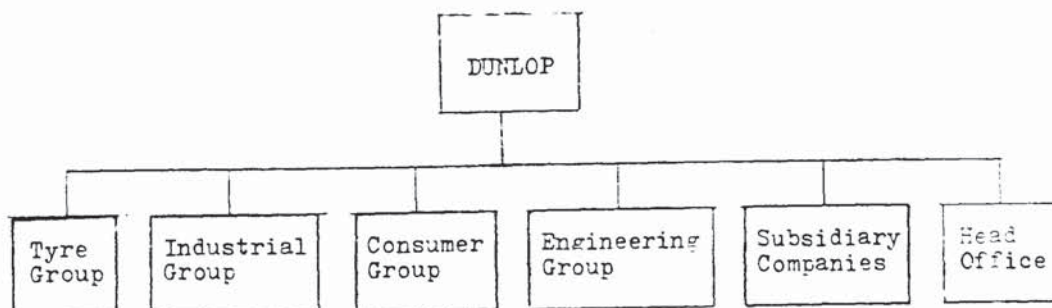
Table 1.1 Product Diversity (crudely differentiated by product and market based expansion)

<u>Product based diversification</u>	<u>Market based diversification</u>
Tyres	Wheels
Hose	Brakes
Belting	Suspensions
Bedding	Cricket bats
Tennis balls	Holdalls
Adhesives	Quilts
Footwear	Carpet tiles
Printer's blankets	Aircraft control handles
Acoustic insulants	Sportswear

### 1.3.2 Current structure of U.K. operation

The current U.K. operation is divided into a number of main groups as shown in Figure 1.1. Although it

Figure 1.1 Main Groups within Dunlop



is diminishing in size, the tyre sector continues to dominate the Company's operation, with 3 major manufacturing sites and a wide distributive network

within the U.K. Divisions within 'Industrial Group' produce a wide range of goods (including hose and belting) primarily for industrial markets. In contrast, the operations of 'Consumer Group' are oriented towards retail markets and major product lines concern bedding, footwear and floor coverings. The largest division within Engineering Group, namely Aviation Division, manufactures precision equipment for the aerospace industry. The Group also includes wheel, suspensions and plant and equipment divisions.

Towards the end of 1980 one of the major subsidiary companies, Angus Fire Armour, was sold. The other main subsidiary, International Sports Co., comprises five manufacturing sites and several selling companies including Slazenger, Dunlop and John Letters.

Table 1.2 Principal Centralised Departments

Central Personnel	Advertising
Finance	Public Relations
Corporate Planning	Central Research
Licensing	Patents
Material Supplies	Legal

Head Office, employing about 2% of the work force, is the final main group and comprises a number of departments including those outlined in Table 1.2. It was for Central Personnel Division (CPD) that this research was conducted.

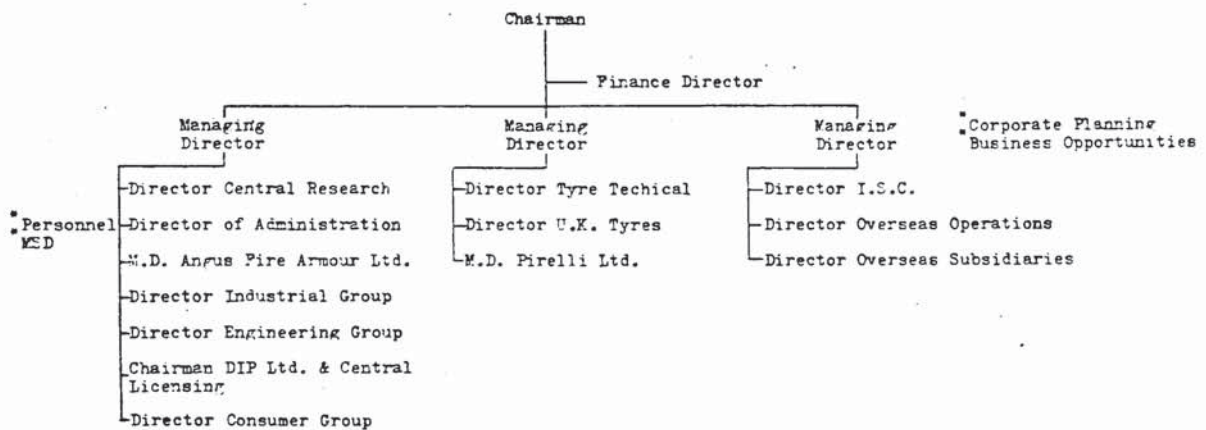
The distribution of personnel within the U.K. organisation based upon 1978 statistics is as shown in Table 1.3.



Table 1.3 Distribution of Personnel in Dunlop

<u>Group</u>	<u>Personnel</u> <u>(approx %)</u>
Tyre	38
Industrial	23
Consumer	14
Engineering	11
ISC	9
Angus Fire Armour	3
Head Office	2

### 1.3.3 Divisional Management

Fig. 1.2 The Dunlop senior management structure

Each group is the responsibility of a main board director, Figure 1.2 presenting an outline of the top management structure. However, since the Company supports a policy of decentralisation, the divisions tend to be run as independent businesses and remain autonomous with regard to profitability. Typically the divisional management hierarchy is headed by a General Manager, the next tier comprising functional heads (the 'management committee'). The

number of tiers to foreman/supervisory level and the number of subdivisions within each function varies with divisional size. By way of illustration, the hierarchy associated with the production function might typically have a production director at the apex, with other hierarchical levels comprising, in diminishing levels of responsibility, works managers, production managers and departmental managers.

#### 1.3.4 Company personnel and training activities

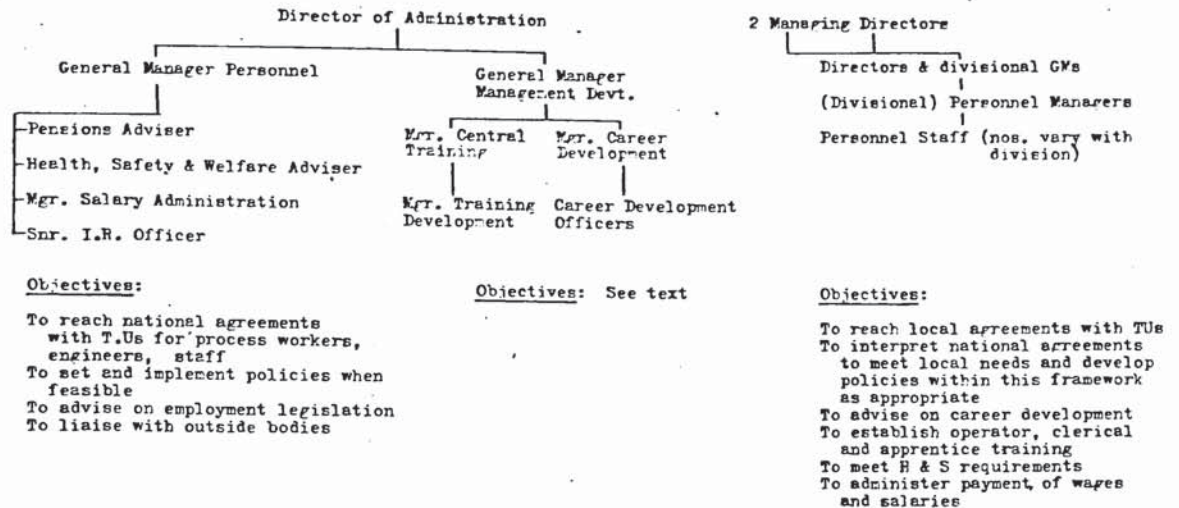
Consistent with the broader policy, the personnel function is itself largely decentralised. Typically each division will include a personnel department, its size and number of specialisms varying with the size of the division. For example, Fort Dunlop, the main tyre factory, has a large team of specialists (in safety, salary administration etc.), whilst the I.S.C. factory at Keighley merely employs one personnel officer.

Although personnel managers are responsible to divisional, not central, management, CPD do stipulate certain policies - in I.R., assessment etc. - that must be followed, and upon which divisional personnel management works closely with the centre.

Most of the training administered by divisional training personnel concerns operators, apprentices and clerical staff. Divisional trainers conduct little management training, although they become involved in the identification of managerial training needs.

A general overview of the organisation and main aims of personnel and training within the Company is as shown in Fig. 1.3.

Fig. 1.3 Organisation of personnel and training within the Company



### 1.3.5 Central Personnel Division

CPD involvement in the company operation derives from its centrality and its particular expertise in personnel matters by supporting the divisional personnel operation through policy making, advisory and operational roles. The department is organised into two sections, namely 'Industrial Relations and Salary Administration' and 'Management Development', with the latter comprising 'Career Development' based at Head Office in London and 'Management Training' formerly based at Fort Dunlop in Birmingham and now based at Stafford. It was for the Manager, Training Development, the principal management developer in the Company, that this project was undertaken.



Additional supervision was provided by the Manager, Career Development.

#### 1.3.5.1 Management Training

Central Management Training conducts most of the 'formal' management training throughout the Company (excluding the role of external institutions in accountancy, engineering etc.). Historically the tendency has been for the department to concentrate upon general educational courses culminating in the present 'MD' series of programmes. 'MD1' is an introductory course for graduates while later MD courses progressively extend material on functional interrelationships and management concepts such as style, motivation etc. MD4 also concerns wider business issues (social changes, economic changes etc.) and involves the practice of administration, chairmanship, report writing etc. A further feature of this programme is the assessment of delegates by senior company personnel. MD5 mainly presents an opportunity for senior managers to examine far-reaching business issues. Increasingly, however, the department has come to provide more specific job-related instruction in areas such as appraisal interviewing, managing people etc. and the delegate days spent on such courses now approximates to those devoted to the MD programmes. The prime objective is to provide managers with usable techniques rather than abstract theoretical notions. Table 1.4 shows the principal courses run by the department.

Table 1.4    A sample of Company training courses  
for managers

MD1 - MD5  
 Computer Appreciation 1 & 2  
 Cost and Financial Information for Managers  
 How to conduct an Appraisal Interview  
 How to write Reports  
 How to conduct a Selection Interview  
 Management of People (MOP)  
 Understanding how a business works  
 In plant supervisory modules

All the courses are open to continuous updating and improvement; the MOP course, for instance, having been progressively changed through utilising new ideas from the Social Sciences.

#### 1.3.5.2 Career Development

In broad terms the aim of Career Development is to facilitate the identification, development and deployment of present and future senior managers. There are responsibilities for co-ordinating graduate recruitment, advising divisions over management appointments and administering the company appraisal system. In this context the formal information flow of management appraisal forms is of prime importance. Appraisal forms are received regarding persons who have reached, or who are perceived to have the potential to reach, management committee level. The form is completed by the appraisee's superior who assesses current performance and future potential. In order to improve its relevance and allow better comparisons between managers in different divisions the form has been revised several times, but the general feeling is that it remains only of limited



value. Dissatisfaction concerns both the nature of the form and the manner in which it is completed, appraisors sometimes doing little more than indicating performance grades.

The appraisal information is stored by means of a manual (card index) system, with likely candidates for a divisional vacancy being detected within the system and placed upon a short list.

The other important means of acquiring information is the interview which is used both in external recruitment and in supplementing appraisal information when considering internal candidates for some vacancy.

#### 1.4 The Emergence of the Project

##### 1.4.1 Project beginnings

It was a Career Development Officer who first conceived the project by expressing an interest in quantitative and qualitative aspects of managerial manpower resourcing. The feeling was that there was room for improvement in the way that the Company acquired, utilised and developed its managers.

The 'quantitative' interest was presented in terms of a requirement to apply formal mathematical techniques to predict the future availability of managerial manpower. Such techniques are usually employed by statisticians and are most commonly associated with the field of 'manpower planning'. Hence, as a preliminary step towards establishing the

project's direction, the manpower planning literature was reviewed and subsequently evaluated, the main points being as follows.

At the core of manpower planning lie the concepts of labour supply and demand, i.e. the internal availability of manpower and the manpower requirement at the end of the forecast period (Smith 1971). Although there is no rigid procedure to follow in manpower planning, there are a number of practical steps that are useful to follow (see Bramham, 1975 and Morris, 1970):

- (1) Investigation of manpower situation
- (2) Identification of future supply and demand (linking the latter to the corporate plan)
- (3) Alleviation of supply/demand imbalances
- (4) Monitoring of proposed policies

Investigating the manpower situation is an important prerequisite on two accounts; firstly to understand the organisation and its environment and secondly to obtain accurate information for the second phase. Hence the decision was made to undertake a manpower review, with the aims firstly of defining the manpower system and secondly of obtaining information on age, LS, qualifications etc. for people within, and who had left, the system. A definition of the manpower system is an allocation of personnel into 'meaningful' groups and an identification of personnel movements and non movements (reflecting career paths) from these groups. Defining the manpower system provides the basis for the use of mathematical techniques and since the useful application of these techniques depends upon the data obtained, it is also important



to collect accurate statistics on personnel stocks and flows.

However, it was during the first stage that several practical problems began to emerge. Firstly it was recognised that the data base at CPD was inadequate as a description of the total managerial population. The department did not hold the names of the whole company management structure, largely because of the policy decision to focus upon individuals with perceived management committee potential and partly because of a reluctance by some divisions to submit appraisal forms to CPD. It was estimated that the CPD data base comprised about half of those people who should be regarded as 'managers'. Indeed there was a related problem as to who should be classed as a manager and regardless of any theoretical considerations, even if a simple criterion could be devised, it would be difficult to apply in practice from a CPD base. An additional practical problem was in identifying personnel flows (leavers, transfers etc.) for the information was not available at CPD and the evidence was that it would be near impossible to obtain from divisions. Furthermore, even if it might be possible to define a population with appropriate career paths, there was the problem of how any information might be kept up to date. It was during the third term that a very senior management decision was taken not to opt for computerised personnel records. Next, it seemed that in order to make any



progress the division of the population into groups would have to be fairly arbitrary, but it was deemed that any relatively simple classification based on salary or job title, for instance, would be of little value because of the many anomalies across divisions. Moreover salary information had a very restricted circulation within Head Office.

Related to the practical difficulties were problems of a more conceptual nature. A major conceptual problem was that of how to classify the managerial population (which reflects a wider classification problem that is pervasive within industrial psychology). The basis of any classification must rest in the nature of the work being accomplished, but most 'managerial' work taxonomies appear very general or, as will be seen in Chapter 2, far from comprehensive. Additionally, if any classification of work is to be useful in personnel practices such as training, selection etc., it is necessary to establish a relationship between the (impersonal) work demands and the personal attributes necessary to meet those demands. This step into the personal domain presents considerable difficulty, and, in general, the state of the art concerning person oriented taxonomies remains in its infancy.

#### 1.4.2 Focusing the research objectives

Because of the practical and conceptual (and political) difficulties associated with the quantitative issues and because of the emphasis placed by new

industrial supervision during the sixth term, the interest in what had been loosely labelled 'qualitative' issues was consolidated. Such issues had been under consideration throughout, and in the third and fourth terms a review of managerial personnel practices was undertaken through consulting the literature and interviewing a sample of divisional personnel management. The decision was to concentrate upon management development, in particular the formal processes of training, selection and appraisal. Additional dialogue resulted in a decision to investigate management skills, the skill concept being seen as probing to the heart of the development issue.

The rationale that led to this decision bears a number of threads. Historically the main supervisor's interest stemmed from a period when he was asked to make decisions concerning managers' skills and abilities and potential, during the MD4 programme. Since he felt ill equipped to make such decisions, he began to consider more closely management skill and task issues. There was a particular concern as to how skills might be distributed throughout the Company, but as the dialogue between researcher and 'client' continued it became clear that there was insufficient understanding concerning the very substance of the distribution problem, namely the nature of (managerial) skill itself. Hence a concern with the apportionment of skills became a concern with skills per se. This was regarded as probing a more fundamental issue and was supported by the whole supervisory team.



If the management developer has not derived an understanding of skills it is likely that he will be dealing with tasks rather than skills. However, the skill model would seem the more appropriate basis for development, for several reasons. Firstly, through merely considering tasks it is less obvious how persons may be switched effectively between jobs. In contrast, because skills have a greater generality, personnel movement between jobs on a skills basis becomes more plausible, at least in principle. The possibility is that different tasks may demand similar skills, whilst ostensibly similar tasks may demand very different skills. Secondly, there is a general recognition that there are more and less competent managers and thirdly, it is also widely recognised that the manager with some years experience is somehow different to the relatively inexperienced manager. Hence, there is a further rationale for considering skills i.e. the task domain loses the variables of competence level and experience. With regard to the former, in the management context, a definition of what produces the highly competent performance does not exist, and yet the quality of performance is at the heart of management development. Having distinguished 'virtuoso' and 'artisan' performance Miller (1978) states that rarely, if ever, has he seen the higher level competence reflected in training requirements or formal training content.

In order to train managers the management developer is looking for a 'unit' through which

behaviour may be analysed and understood; his desideratum is a currency in which to trade. Although much more will be said concerning the fundamental model in Chapter 3, it would seem that skills provide an appropriate platform from which the complexity of behaviour may be constructed. There are also implications here for selection and appraisal.

#### 1.4.3 A note on selection and appraisal

The hallmark of good selection is in having comprehensive data concerning both the job and what is required of the person doing it. Whilst there are a number of predictive devices linking personal attributes with future performance, the interview appears ubiquitous and indeed, within Dunlop, unless there were to be some high level policy change this is unlikely to be improved upon. In any interview the interviewer requires some framework upon which questions might be based. It was our hope that the empirical evidence on skills would be useful, at least to supplement the more usual interview data (typically based upon Rodger's (1952) 7 point plan). Similarly it was felt that the skills information could provide useful performance dimensions for appraisal purposes.

It would, of course, have been possible to conduct a more usual selection study, but there was little reason on 'a priori' grounds to expect that anything more than a (modest) correlation consistent with other findings would have been obtained. The



main value of a selection study is where the job in question is well understood, and if it is difficult to rate for job effectiveness and identify meaningful personal attributes, selection becomes more difficult. There were also organisational constraints in undertaking such a study and, in any event, there was a time problem because of the skills emphasis in data collection.

### 1.5 Summary and Conclusions

This research project has developed through collaboration between researcher and organisation. The sponsoring organisation is Dunlop Ltd., a multinational company with a diversified U.K. product and market base and wide geographical spread. In support of the operating divisions are Head Office departments including Central Personnel for whom the research was conducted. In particular, the main client was the Manager, Training Development, the practical objectives of the research being to assist in the process of management development.

Although pre-empting the discussion of subsequent chapters, it is our belief that the concern of management development is essentially a concern with (cognitive) skills. This was the notion that we had been circulating during the early development of the project. In fact much of the early stages was spent pursuing a general objective whilst simultaneously defining the nature of that objective. Having decided to concentrate upon more 'qualitative' personnel

matters (for practical, political and conceptual reasons), a couple of the issues to which we kept returning concerned greater and lesser competence in managerial performance and the positive effect of experience upon performance. The thesis seeks to structure and analyse these concepts and it was our hope that the research would generate the beginnings of a classification of skills, thus providing the parameters through which performance might be measured and improved. The aim was to establish a conceptual framework upon which management development might be more adequately based. More specifically, the research objectives may be stated as follows:

- to identify, understand and describe managerial skill requirements
- to assist the management developer through the application of the acquired knowledge

As Chell (in press) points out, the competent management developer requires some model(s) of skilled performance in addition to models of tasks and skill acquisition. Without an understanding of skills he is in a much weaker position to develop and transfer skills, or to understand the relationship between skill and learning and the distribution of skills throughout an organisation. The research objectives serve to facilitate skills understanding, thereby assisting the management developer and, ultimately, managers themselves.



CHAPTER 2MANAGEMENT PERFORMANCE & MANAGEMENT DEVELOPMENT2.1 Objectives of Chapter 2

In recent years, along with a recognition of the importance of effective managerial performance, there has been increasing interest in measures to develop managers. Since definitions of performance are of central importance in management development, the aim of this chapter is to review the major approaches. Although the declared research interest lies with managerial skills, it would be unreasonably doctrinaire to omit other behaviourally oriented approaches which are discussed in Section 2.4, the skills issue being confronted more directly in Section 2.5. The earlier sections contain introductory remarks concerning management and management development.

2.2 Management Development and Management Practice

According to Chell (in press) the management development function has always been linked with organisational change. In a general discussion, Porter et. al. (1975) present several approaches to organisational change, namely (a) changing organisational structures and systems (e.g. authority systems, organisational size etc.), (b) changing the organisational climate, and (c) changing individuals within the organisation. The latter approach concerns management development, where the requirement is to develop directly what is the key element in any organisational (sub) system, namely the person

(manager) responsible for the attainment of the system's goals. (Indeed, the individual remains the concern of each approach in that all are seeking to modify individual behaviour, but at different levels and 'distances' from the individual.)

Management development has been defined in various ways within the literature. The T.S.A. (1977) define management development as " ... any attempt to improve managerial effectiveness through a planned and deliberate learning process " (p.1). De Bettignies (1975) places a similar emphasis upon the planned learning features. Margerison's (1978) definition is more specific, management development being " ... a process that helps people ... in an organisation to develop their experience, ideas, knowledge, skill, relationships and personal identity so that they can contribute to effective management." (p.170). Ashton et. al. (1975) provided a similarly extensive definition, suggesting that management development objectives are " ... to ensure that managerial positions are filled by capable, suitably-trained and motivated employees according to the needs of the organisation, and that best use is made of the experience and ability available to enable individuals to find satisfaction in their work and achieve a realistic career ambition." (p.337). Heneman's (1963) viewpoint is that the problems of management development are essentially those of manpower utilisation, the aim of management development being the improved utilisation



of managerial abilities through effective practices in training, selection etc..

This sample of views suggests that management development may be regarded as varying in scope, all authors focusing upon the training activity, some incorporating other activities such as selection, maintenance and so on. The common concern lies in the goals rather than the methods, namely improved managerial practice.

As a number of authors remark in any attempt to develop and educate managers there is either an explicit or implicit assumption that the practice of management and what it requires of the individual manager are understood. Putting this another way, if the aim is to develop managers the implication is that there must be some developmental objectives, some definition of managerial practice and its requisite personal attributes. However, even a glance through the literature shows that there is considerable variety in concept and definition of managerial practice, there being neither a general theory of management nor a definitive view of what makes for an effective manager. Rather there is a divergence of approaches, with varying emphases, and the purpose of this chapter is to review these approaches, all the while remaining open to the possibility of learning something about skills.

However, firstly the concept of management will be considered in the next section, which also outlines the scope of the review in more detail.

## 2.3 Preliminary Remarks

### 2.3.1 The concept of management

#### 2.3.1.1 A historical perspective

Williams (1976) states that the English word 'manage' was originally associated with an Italian word concerning the training and handling of horses, its meaning quickly extending to include operations of war, and, from the sixteenth century, the connotation being a more general 'taking charge' or 'directing'. Its subsequent development was influenced by a linkage with 'prudent housekeeping', as 'manage' and the French 'ménage' came to overlap. Hence, the senses of the term manager extended from trainer and director to careful housekeeper.

The first application of the noun 'management' as a reference to a collective body of men was in the theatre, and by the nineteenth century had extended to those responsible for the running of newspapers. The more widespread use of the term in business in the twentieth century is, according to Williams, related to two historical tendencies: firstly the increasing employment of paid agents to run businesses (as distinct from public agents in government service - notwithstanding any similarity in actual activities), and secondly a mystification of capitalist economic



relationships. Whereas there used to be negotiations between 'employers'/'masters' and 'men', a preference developed to substitute the more abstract and neutral term 'management' in such negotiations to maintain some ideological effect.

As Mant (1977) points out there are several senses in which the term 'management' is currently used. 'Management', as an activity, has a general usage, but in the work context concerns taking charge or running things. Secondly there are ideological connotations associated with management which is, apparently, a British, British Colonial and American phenomenon. Finally management refers to a body of people who are paid to run business concerns. The first and third meanings are primarily twentieth century phenomena, coinciding with the increase in people mediating between 'owners' and 'workers' in larger and more complex organisations. Concomitantly, with the increase in size and acknowledged importance of the managerial group, there has been an increasing interest in the activities of the relatively new organisational stratum. However, the composition of the stratum (who are managers) and the nature of their activities (the practice of management) have not enjoyed universal acceptance.

#### 2.3.1.2 Who are managers?

The view taken in this project is that a manager is someone responsible for the conduct of a business/division or some integral subsystem within the total



system. This viewpoint is commensurate with the occupational group under examination in the literature (although the literature may include public service administrators/managers). More succinctly, perhaps, Stewart (1967) points out that although the term manager is used in a number of ways there are two main distinctions. On the one hand the term is used to cover all those above a certain level in the hierarchy, usually those above foreman level on the works side and those above the first level of supervision in the offices. On the other hand there is a more restrictive use for all above a certain level (usually foremen) who have subordinates and therefore manage other people directly. Stewart adopts the former position in her book and this is the position taken here.

#### 2.3.1.3 What is management?

Harbison and Myers (1959) suggested that management may be regarded in three different perspectives, namely (i) as an economic resource performing various technical functions (organising and administering other resources), (ii) as an authority system through which policy is translated into the execution of tasks, and (iii) as an elite social grouping acting as an economic resource and maintaining the associated system of authority. Integrating these perspectives it may be seen that management involves economic, political, social and technical functions.

Moving several steps down the descriptive hierarchy, one popular dictum is that management is 'getting things done through other people'. As Glover (1977) points out another potentially popular definition might be that 'management is what managers do', which is sufficiently expansive to include work irrespective of whether or not it is done through, or in spite of, other people. The idea that the study of managerial work may provide useful information about 'management' is obvious enough, but having passed the (conceptual) buck, the problem now becomes one of defining managerial activity, and, despite a relatively recent 'empirically' oriented approach, the view remains that much more needs to be known (e.g. Mintzberg 1973, Stewart 1976).

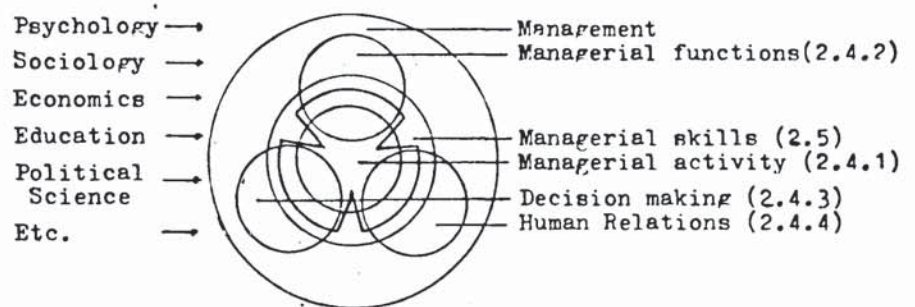
In short, notwithstanding extensive research effort, there would seem to be no universally accepted definition of management practice, rather, as mentioned earlier, there is a plurality of operational approaches.

### 2.3.2 The literature to be covered

Some 20 years ago Koontz (1961) described the field of management theory as a 'jungle', and structured the literature around various theoretical perspectives. A similar approach has been adopted here, managerial practice being considered from various 'perspectives' such as 'decision making', 'human relations' etc.. The management literature as a whole cuts across a number of disciplines (psychology, sociology, economics etc.), but the bias

here is towards psychology because of the research objectives and the perceived importance of the individual within the organisational system. The prime concern is with 'industrial', 'organisational', 'occupational', 'applied' and 'social' psychology.

Fig. 2.1 Schematic representation of the literature review



Schematically the review is as shown in Fig. 2.1. The omissions from the management literature as a whole within the review concern areas such as the 'great man' approach (see footnote p. 27) and the 'operations research' approach (which has little to say concerning human performance). It may be noted that the whole literature is included within the embryonic field of organisational behaviour (see Pugh et. al.: SSRC, 1975) which includes not only individually oriented approaches, but also structural approaches (e.g. Weber, Parsons) and economic approaches (e.g. Cyert, March).



It is worth remarking that papers concerning managerial skills hardly comprise a coherent literature. It is impossible to identify relevant papers on the basis of title alone, but a lengthy research revealed only a few papers devoted to the detailed study of managerial skills. Certainly few psychologists who understand skills appear to have studied managers as skilled practitioners. Managerial skills are considered explicitly in 2.5, other approaches to performance being considered immediately below.

## 2.4 Defining Managerial Performance

### 2.4.1 The Work Activity Perspective

As something of an antidote to rather idealistic representations of managerial practice epitomised by what Mintzberg (1973) calls the 'classical' and 'great man' schools<sup>1</sup>, a literature with a strong empirical flavour has developed over the past 30 years or so, essentially seeking to answer the question 'what do managers do?'. In Glover's (1977) terms the aims of this literature have been 'curiosity oriented' and 'policy oriented', although these may overlap in practice. The former aim concerns an extension of knowledge, an attempt to establish what managers actually do, to be set against less critically accepted generalisations in the literature. That

---

<sup>1</sup> 'Classicists' include authors such as Fayol and Barnard (see 2.4.2), the 'great men' being represented primarily through biographies and autobiographies that Mintzberg suggests are " .. rich in ... anecdotes. poor in ... theory" (1973;p.12)

there are implications for personnel policy in training, selection etc. through more careful task delineation provides a second broad purpose. In training and education, for example, the hope was that the remoteness of actual managerial experience to training content would decrease (e.g. Bates & Sykes, 1962; Stewart, 1962; Robertson, 1968). Pheysey (1972), for instance, used empirical evidence concerning managerial work in order to increase 'customer appeal' in post experience courses. She argued that in order to facilitate learning transfer " ... the context in which skills are practised on the job has to be discovered". Unfortunately the approach adopted seems somewhat limited, 6 of Hemphill's (1960) 575 questionnaire items (see 2.4.1.2 below) being rated by students enrolled on management courses, the results showing 3 to be important in 'many managers' jobs!

Table 2.1 lists many of the studies in this area, organised around the various methods that have been adopted.

#### 2.4.1.1 Diary studies

The pioneering study in the work activity school is generally accredited to Carlson (1951). In this study 9 Swedish directors kept diaries for four weeks each, noting for each work episode its duration, location, participants, communication mode, functional content and so on. One main finding was that subjects were rarely alone and had little



Table 2.1 Major empirical studies of Managerial work activities

<u>Author</u>	<u>Date</u>	<u>Method</u>	<u>Subjects</u>	<u>Main aim</u>
Carlson	1951	Diary	9 Snr M.D.s	Identification of common behaviour patterns
Burns	1954	Diary	4 Mid Mgrs.	Identification of time allocation, contacts pattern
Burns	1957	Diary	76 Mid/Snr Mgrs.	Identification of time allocation
Brewer & Tomlinson	1964	Diary	6 Snr Mgrs.	Testing of hypotheses that (i) manager is a profit maximiser and (ii) manager per se is a decision maker
Horne & Lupton	1965	Diary	66 Mid Mgrs.	Description of work activities; assessment of knowledge and skill requirements
Thomasson	1966/67	Diary	not reported	Identification of communication patterns
Stewart	1967	Diary	160 Mid/Snr Mgrs	Identification of similarities and differences in time allocation
Hemphill	1959/60	Questionnaire	93 Jun/Mid/Snr Mgrs.	Development of improved conceptualisation of managerial job
Tornow & Pinto	1976	Questionnaire	433 Jun/Mid/Snr Mgrs.	Identification of job factors for job evaluation
Mahoney, Jerdee	1963	Questionnaire	452 Jnr/Mid/Snr Mgrs.	Identification of performance patterns for management development
Sayles	1964	Unstructured observation	75 Jnr/Mid Mgrs.	Explanation of managerial behaviour patterns
Mintzberg	1973/75	Structured observation	5 Snr Executives	Identification of managerial activity
Kelly	1964	Activity Sampling	4 Section Mgrs.	Testing of method
Flanagan	1951	Critical incdts.	500 Mid/Snr Mgrs	Technique illustration
Campbell et al.	1973	Critical incdts.	537 Dept. Mgrs.	Technique comparison
Reishon & Palmer	1972	Radio Transmission	6 Snr Mgrs.	Detailed study of managerial behaviour
Marples	1967	Various	not reported	Improved conceptualisation of managerial job
Wilkie & Young	1972	Various	7 Owner/Mgrs.	Illumination of management process
Stewart	1976	Various	274 Jnr/Mid/Snr Mgrs, 16 in 'intensive' phase	Improved conceptualisation for training and selection



uninterrupted time. The data concerning functional content and kind of action taken (gathering information, giving orders etc.) was unsatisfactory in that categories did not appear mutually exclusive and subjects answered inconsistently.

Burns (1954) also found that a high proportion of time ( $\sim 80\%$ ) was spent in conversation, much of it laterally oriented. Whilst there was an even balance of communication initiation between colleagues, there was a general tendency for communication to be initiated downwards. In his later study Burns (1957) provided two further findings, namely that there was a tendency for senior managers to segregate so that a relatively small amount of time was devoted to subordinates and secondly that the lower level managers spent more time issuing instructions and making decisions than their seniors, for whom giving and receiving information bulked larger.

A further British diary study was undertaken by Brewer and Tomlinson (1964). Once more the results showed a predominance of time spent in conversation and that 13% of time was devoted to 'decision making'. The subsequent discussion between researchers and managers appears of greater interest, however, with the managers being likened to 'explorers' as they set out on a factory tour. From a number of (unanticipated) problems the managers would choose those that were most readily soluble or those that would most likely affect the stability of the system. The guiding

principle was to control costs or lead a quiet life or both. There was a tendency for 'line blockage' problems to be passed upwards which enforced involvement in day to day activities, perhaps at the expense of longer term issues. This involvement was of training value to subordinates, in that they were given the opportunity to make decisions (the authors feeling unable to comment upon whether or not such decisions were more efficient in terms of costs and profitability than a 'computer stored and selected' programme geared to the same aims).

A unique feature of the Horne and Lupton (1965) diary study was the 'formulating, organising, unifying, regulating' categorisation, some 75% of time being devoted to the non formulating activities. The results also showed that time spent away from the organisation increased with seniority, as did involvement in 'technical' and 'commercial' functions. As for 'skills', the authors state "Middle management does not seem on this showing to require ... powers to analyse, weigh alternatives and decide. Rather it calls for the ability to shape and utilise the person to person channels of communication, to influence, to persuade, to facilitate" (p.32).

Thomasson (1966,1967) presented a series of diary studies conducted by students, the general findings being that time devoted to policy making increased with seniority whilst concern with production decreased.



In addition Thomasson also felt that it may be appropriate to dismiss the idea of hierarchically organised filters and amplifiers in communication, rather the notion of a series of 'communication centres' seemed more appropriate.

The most comprehensive diary study appears to be that of Stewart (1967), the data analysis revealing five basic job profiles which are summarised in Table 2.2.

Table 2.2 Stewart's (1967) job profiles

<u>Job Profile</u>	<u>Main Characteristics</u>	<u>Typical job titles</u>
'Emissaries'	Long hours, less fragmentation than most jobs. Much travelling and meeting people outside the organisation.	Sales Mgr.
'Writers'	Relatively less time spent with other people. Much reading, writing, dictating, figure work. Less risk of day to day problems and crises. More 'specialised' work	Computing Mgr. Technical specialist
'Discussers'	Much time spent with others, particularly colleagues and boss	Many mgrs.
'Troubleshooters'	Most fragmented work pattern. Most contacts within line hierarchy relatively more time being spent with subordinates. Much time devoted to inspection.	Factory mgr.
'Committee men'	Half the working day spent with others, often in committees. Typically found in large Cos. Wide ranging contacts inside Co., few outside it.	Works mgr.

Perhaps the main contribution of the study was its demonstration that 'management' was not a unitary activity. It suffers the usual limitations of diary studies, namely information loss and a focus upon



work characteristics only. Currently diary studies appear less popular although Austin (1975) employed the diary as a self help tool for 36 local government officers.

#### 2.4.1.2 Questionnaire studies

Hemphill's (1959, 1960) 93 respondents were asked to rate each of 575 questionnaire items for job relevance, the items having been obtained from interviews, job descriptions and the literature. The questionnaire was organised around 'activities' (e.g. checking expense accounts), 'responsibilities' (e.g. concern with long range objectives), 'demands and restrictions' (e.g. a requirement to avoid personal publicity) and 'miscellaneous characteristics' (e.g. presenting new ideas to superiors). A factor analysis of item correlations for all pairs of managers revealed ten broad factors such as 'providing a staff service', 'supervision of work', 'internal business control', 'long range planning' etc.. Slivinski (1970) and Tornow and Pinto (1976) conducted studies using modified versions of the questionnaire, the latter study extending Hemphill's range of factors.

A further self estimation study was undertaken by Mahoney et. al. (1963). Their questionnaire comprised 'functional' (and 'subject') performance dimensions, the estimated time devoted to 'planning', 'investigating' etc. yielding 8 job types (according to a percentage criterion afforded the dominant function). Each job type was represented at all

organisational levels, although, for example, 'planners' and 'generalists' were to be found more often at higher rather than middle and supervisory levels. The study yielded no new conceptualisation of the managerial position, however, and it might be noted that the data is based upon estimates of time utilisation which Burns (op.cit) and others had found to be unreliable.

#### 2.4.1.3 Observation studies

Through an 'anthropological' use of unstructured observation during several years of fieldwork within a large U.S. corporation, Sayles (1964) identified three main features of managerial work, namely 'participation in external work flows', 'leadership' and 'monitoring'. The former involves relationships with personnel outside the usual span of responsibility for trading purposes, advisory purposes and so on. 'Leadership' concerns the manager's relationship with his subordinates, directing them and responding to their initiations. As 'monitor' the manager intervenes in organisational functioning, the method being to follow work through the system rather than measuring results.

The study has been well received in the literature, particularly because of its realism. The findings emphasised the 'political' nature of managerial work and, in addition, notably when discussing the monitor role where the manager operates through identifying non random changes in the system while maintaining a



balance between change and stability, Sayles is discussing skill as the term is understood here. Methodologically the criticism is that there is a lack of 'systematic' evidence and no opportunity for hypothesis testing.

Mintzberg (1970, 1973, 1975) prefers the method of structured observation which not only allows an inductive approach, but also one that is systematic. His research concerned both the 'characteristics' and 'content' of managerial work. Findings concerning the former ran broadly consistent with what was known in the literature; for example, an attraction to the verbal medium, a heavy workload characterised by brevity and fragmentation, etc.. As for a description of work 'content', Mintzberg used the concept of 'role', i.e. " ... an organised set of behaviour belonging to an identifiable office or position" (1973: p.54). There were 3 basic role types subdivided as shown in Table 2.3. The interpersonal roles stem from the formal authority vested in the job holder, and ensure that he is in a position to obtain information. Because of his unique access to information and his formal authority, the manager may make the decisions that affect his unit. Mintzberg claims that the roles account for all that managers do, although this is disputed by Stewart (1976). Variation in the importance of the different roles in various jobs enabled Mintzberg to present a list of job types which are not that dissimilar to those of Stewart (1967).



Table 2.3 Mintzberg's (1973) managerial roles

<u>Role</u>	<u>Characterised by:</u>
Interpersonal	
Figurehead	Representation of unit
Leader	Motivation and activation of subordinates
Liaison	Trading of information and favours with those outside unit
Informational	
Monitor	Search for, and receipt of, information
Disseminator	Transmission of information within organisation
Spokesman	Information transmission outside organisation
Decisional	
Entrepreneur	Initiation of change
Disturbance handler	Crisis management
Resource allocator	Approval of all significant organisational decisions
Negotiator	Representation in major negotiations

For Weick (1974) the most 'exciting' chapter in Mintzberg's (1973) book was that on programming the managers job. As Mintzberg points out " ... a role is merely a categorisation of what the manager does; each programme is, in effect, a description of how one specific aspect of a role is carried out" (p.135). The systematic redesign or reprogramming of work provides the challenge for 'management science' according to Mintzberg, the first stage being the identification of managerial programmes, the second stage concerning their prescriptive modification. As for this first stage, Mintzberg presents studies conducted by his students depicting managerial performance much as computer programmes. This computer characterisation would appear to be only

a limited reconstruction of human performance, simply because the human does not function as the machine (see Miller, 1968, for example). Nevertheless Mintzberg is approaching the skills domain in discussing programmes, perhaps without recognising it. His own discussion on skills suggests that, on the basis of the role analysis, managers need leadership skills, conflict resolution skills etc. (1973, p. 190-193). There is a suggestion as to how such skills may be acquired, but this provides the extent of the analysis. In short, there are functional labels prefixing the word 'skills', but there is no attempt in this context to uncover the inner structure underlying the manifestation of a particular skill.

Although Whitely (1978) did not undertake an observation study, his objective was to replicate and extend Mintzberg's findings. Data from 7 managers concerning work characteristics and content was obtained through activity sampling, activities being classified according to Mintzberg's categories. In order to supplement the Mintzberg analysis Tornow and Pinto's (1976) questionnaire, which includes questions on job complexity and stress, was employed. The idea was to test Weick's (1974) hypothesis that, despite the pace of work, managers do not experience any overload. Broadly speaking, Weick's hypothesis was supported, and Mintzberg's findings were also confirmed (within the constraints of the method).



#### 2.4.1.4 Activity sampling studies

There are few published studies employing the activity sampling method, where managerial work is observed at random intervals. Since the work dimensions under study are categorised beforehand, there is little opportunity for the unexpected to occur, and, indeed, in Kelly's (1964) study the results concerning contact patterns were broadly consistent with published findings. This study provided only a partial picture of managerial work, which is perhaps an inevitable concomitant of the method.

#### 2.4.1.5 Critical incidents studies

The critical incidents technique was developed during World War 2 to assist in policy decisions concerning selection, training etc.. Flanagan (1951) applied the technique to executives, categorising effective and ineffective behavioural incidents in their work. Several categories emerged such as 'formulating problems and hypotheses', 'preparing reports', 'administering research projects' etc., there being little difference between middle and senior executives.

In the Campbell et. al. (1973) study, the original categories that had been derived were reviewed by the managerial sample and modified to include moderate, as opposed to extreme, performance levels. Incidents were sorted into the appropriate category, each incident being placed upon a 9 point



scale. The scales identified were shown to be an improvement upon non-behaviourally based scales with regard to leniency and halo effects. This retranslation development is an improvement upon the original method, but is no less laborious to administer.

#### 2.4.1.6 Radio transmission studies

Regretting the lack of data concerning 'ordinary' behaviour in psychology (in contrast to the painstaking documentation of ethology), Beishon and Palmer (1972) obtained probably the most meticulous collection of data concerning managerial behaviour through radio recording. Each manager hooked a microphone to his lapel, the signal being received by a dual channel recorder, the second channel recording observer comments. Notwithstanding the success of the technique and despite some 360 hours of data, the study revealed little that was novel. Notably, it was found that equivalent numbers of episodes resulted from meetings with others and the manager's own initiative, and Palmer and Beishon (1970) also note that "... it is not uncommon to find a large part of the day taken up by a series of events ... determined by chance encounters" (p.38).

#### 2.4.1.7 Studies employing several methods

Marples' (1967) paper in part presents a critique of diary studies. His main criticisms are those of information loss and ambiguous, unreliable classificatory dimensions. He regrets equally the lack of

an explicit relationship between activities and objectives and also the lack of theory surrounding empirical studies. His own approach is to regard the manager as a problem solver and decision maker and he likens the job to a stranded rope comprising fibres of different lengths (where length = time), each fibre coming to the surface at one or more times in observable episodes and representing a single issue. The higher the manager's position in the hierarchy the greater the average fibre length and the more intertwined the fibres become, Marples suggesting that "A prime managerial skill may be the capacity to keep a number of issues in play over a large number of episodes and long periods of time" (p. 287).

In the research Marples identified a task hierarchy for a manager, and further showed (through observation and interview) how current and background problems may be identified and differentiated in managerial work. He also pointed out how some managers maintained a 'self organising principle' to maintain a check on problem situations.

Marples' conceptualisation of the manager as a problem solver enabled him to incorporate the wider context in his analysis, but despite the potential of the approach it does not appear to have been followed up.



The study undertaken by Wilkie and Young (1972) incorporated observation, interviewing and analysis of written data, the usual findings concerning time allocation being replicated. The authors described the managers as 'energetic', their main objective being to jog everyone into action. The managers had a close knowledge of the factory floor, but there were two distinct working styles, one laissez faire where individuals were allowed to continue with their own work and communication was via formal channels, the other involving a close personal supervision of the shop floor where intermediate levels were by-passed. As a result of the study the authors reported that they were in a better position to make training recommendations.

Stewart's later work appears to have been motivated by the need for increased understanding in training and selection practices. The work is developed in Stewart (1973, 1975a,b) and presented finally in Stewart (1976). She presented a framework for investigating jobs in terms of demands (what the job holder must do), choices (what he may choose to do) and constraints (what he may not do). The main research focus concerned job demands, predominantly contact patterns. Answers to questionnaire items, administered to 274 managers, were used to develop a classification of jobs. The prime distinction was between internal and external contacts yielding 3 categories, 'internal' for jobs involving little outside



contact, 'internal/external' for jobs having some relationships outside the organisation, and 'external' where meeting people outside the organisation is a major feature of the job. These categories were further subdivided, once more according to contact patterns, as shown in Table 2.4. As Stewart puts it,

Table 2.4 Stewart's (1976) job category subdivisions

<u>Subdivision</u>	<u>Description</u>
Hub jobs	Variety of contacts extending radially to different depts. and levels
Peer Dependent jobs	Minimum of 50% of the time spent with others, at least as much time being spent with persons at the same/more senior levels as subordinates
Man Management jobs	Contacts largely restricted to personnel down the line
Solo jobs	Paperwork demands more time than meeting people

the classification is fundamentally " ... based upon the assumption that the most important difference in the behavioural demands of managerial jobs is whether it involves spanning the organisational boundary and the extent to which this is a major aspect of the job" (1975a,p.26).

16 of the managers were followed up in a more intensive phase involving observation, interviewing and diary keeping. Job profiles were presented for each of the jobs, focusing mainly on job demands, but also noting choices and constraints. Choices concerned such matters as delegation, contacts and where the manager can undertake his work. Whilst

discussing the 16 jobs in detail, skills are mentioned in passing. For example, the suggestion is that job demands in 'man management' require 'subordinate management skills', but there is little comment as to how subordinates may be managed.

#### 2.4.2 The functional perspective

A further early definition of management practice that has, in one guise or another, remained pervasive was provided by Fayol (1940). He saw management - primarily the preoccupation of relatively senior job holders - as comprising 5 elements or 'functions' as succeeding authors were to term them. The first element was that of 'planning', appraising the future and making provision for it. Secondly, 'organising' concerned the construction of the human and material structures of the undertaking (Fayol presenting several principles of organisational structure concerning centralisation, authority spans etc.). The third element was that of 'commanding', which included leading by example. The harmonising of all the organisational effort was the fourth element, that of 'co-ordination'. Finally there was the need to 'control' each of the preceding elements, ensuring that each functioned properly.

Fayol's classification was elaborated by Gulick and Urwick (1937) to include planning, organising, staffing, directing co-ordinating, reporting and budgeting. Similar to Fayol, the authors also tried to delineate the body of knowledge



that managers would require in performing these functions (e.g. Urwick 1971). Fundamentally management was seen as dealing with two subjects, namely the organisational task requirements and the individuals performing the task. Since the authors regarded behaviour as an individual and group entity, the suggestion was that the manager needed to understand:-

- (1) the nature of the tasks each individual is asked to perform
- (2) the arrangement of the different tasks group members perform
- (3) individual behaviour
- (4) group behaviour

Each of these areas was regarded as being dependent upon a different group of underlying sciences that, in total, appear to embrace the whole range of scientific knowledge, pure and applied, behavioural and physical. As such the knowledge requirement is too general to be of practical value.

Barnard (1938) linked the essentials of formal organisation with executive functions, which were " ... first, to provide the system of communication; second, to promote the securing of essential efforts; and third to formulate and define purpose" (p.127).

There is little merit in expanding upon or extending functional classifications in the present context, but such classifications do persist in management theory, with Koontz and O'Donnel (1964), for example, organising their book of management readings around functional headings.



### 2.4.3 The decision making perspective

If the size of the literature is any indication, decision making is a managerial preoccupation par excellence. In total the literature includes various approaches, descriptive and prescriptive, individual and collective, etc.. Some theorists have neglected mental processing completely, preferring to focus exclusively upon the antecedent conditions to, and consequences of, decision making. These theorists are not considered in this section, rather the concern is with an individual cognitive approach (laboratory research by social psychologists being omitted).

One distinction in individual decision making is encapsulated in Simon's (1957) 'economic' man and 'administrative' man. Economic man is assumed to be fully cognizant of all alternatives and selects the alternative holding maximum utility, behaving with what Simon terms "... a preposterously omniscient rationality" (p.xxiii)<sup>1</sup>. In contrast, administrative man 'satisfices', that is looks for a course of action that is satisfactory or good enough. He recognises that his own world view is a simplified representation of the external world and because he satisfices rather than maximises decisions may be taken without checking that all

---

<sup>1</sup> Grémion (1972) summarises criticisms of the classical rational approach

alternatives have been covered.

In a later discussion as to how executives make decisions, Simon (1965) distinguishes 'programmed' and 'non programmed' decisions as extremes upon a continuum. Programmed decisions are repetitive and do not require new procedures for each occurrence: in contrast there are no routinised procedures for non programmed decisions and reliance must rest upon intelligence and heuristic abilities. Since Simon further distinguishes 'traditional' and 'modern' decision making techniques, a summary of his viewpoint is presented in Table 2.5. The first

Table 2.5 Simon's traditional and modern decision techniques

<u>Type of decision</u>	<u>Decision making techniques</u>	
	Traditional	Modern
Programmed	Habits, Standard operating procedures	O.R., Mathematics, Computer simulation
Non Programmed	Creativity Rules of thumb	Heuristic problem Solving techniques

quadrant in the table concerns well routinised knowledge, the second more potent mathematical/computer techniques, for instance linear programming. Since traditional techniques for non programmed decisions are ill-understood psychological processes, Simon felt that training would remain a crude process. Whilst he recognised that decisions were made daily on the basis of such processes, he felt that increased understanding would lead to an improvement in decision making. In



1965 Simon suggested that the potential was evident, the modern techniques being heuristic devices amenable to research through protocol analysis (Newell and Simon 1972 providing a comprehensive account of the technique and its application).

An additional dimension in Simon's analysis concerns temporal sequencing, 3 phases being identified:

- (i) intelligence - finding scenarios requiring decisions
- (ii) design - developing courses of action
- (iii) choice - selecting a course of action

This basic classification is inherent in most 'phase' analyses in the literature. For example, Mintzberg et. al (1976), in considering 25 unstructured (unprogrammed) decisions researched by their students, developed the phase framework of 'identification', 'development' and 'selection', each phase comprising various subphases or 'routines'. However, not all the evidence supports the phase viewpoint; Witte (1972) having retrospectively analysed the documentary evidence surrounding 233 decisions found that the Brim et. al. (1962) phase theorem was not supported in pure form. The evidence was that the phases of information gathering, option development and choice making tended to occur concurrently.

#### 2.4.4 The human relations perspective

The beginning of the 'human relations' approach is linked with Elton Mayo. Invited initially to explain results demonstrating increased output under



a variety of illumination conditions for experimental and control groups in a department at the Hawthorne works of General Electric, further experimentation suggested the importance of informal social groups in determining performance norms and aspirations to Mayo and his co-workers (Roethlisberger & Dixon 1939) That management plans could be confounded by the working of a social (sub) system apparently surprised academics, and, ironically, this was presented to factory supervisors as a novel phenomenon, although it was something with which they were very familiar. As Chell (1978) further remarks, inferences drawn from the study that (a) an autocratic management style was best since workers could not be trusted as a result of their social networks and (b) supervisory attention and consideration would increase morale and output, have not been shown to be universally valid. The more contemporary persuasion is towards a contingency approach, the appropriateness of behaviour being dependent upon the context surrounding the behaviour.

A second more recent phenomenon is the diversification in research interest concerning human relations. Management developers have been attracted to topics such as 'leadership', 'style' and 'motivation', the work of some of the main contributors being mentioned here.

#### 2.4.4.1 Leadership

Many authors use the terms 'leadership' and 'management' interchangeably, the implication being that there is no difference between them. Other authors distinguish persuasion and power, informal and formal roles etc., as features of leadership and management respectively, but such debate is of little consequence to the practising manager and needs provide no detention here. The view adopted is that leadership is one parameter amongst others in managing.

The failure of an earlier trait approach to leadership (Campbell et. al 1970 provide a review) led to a contingency approach during the late 1960s. This approach adopts the view that there is no particular 'type' of person that makes for an effective leader, rather leadership performance depends upon both the leader and the situation that 'he' faces. This was recognised by Stodgill (1948), and Fiedler and Nealy (1968) commented that leadership research had abandoned the search for leadership traits and the one best way to lead. Fiedler is one of the main supporters of the contingency viewpoint, his research having operationalised and delineated the conditions under which 'task oriented' and 'relationship oriented' leaders perform most effectively (Fiedler et. al. 1975).

Vroom and Yetton (1973) also support a contingency approach, presenting a normative model, where the

leader is regarded as a problem solver and the appropriate leader behaviour is dependent upon the properties of the problem situation. There are options of autocratic, participative and consultative behaviour, the optimal decision being one derived on the basis of rules protecting the quality and acceptance of the decision. Later support for the model was obtained in experimental work by Vroom and Jago (1978).

#### 2.4.4.2 Style

The earlier writings on management style tend to be prescriptive. For example, McGregor (1960) prefers 'Theory Y' to Theory 'X', Likert (1961) prescribes the most participative 'System 4' in preference to Systems 1-3, and of their 81 styles Blake and Mouton (1962) proposed that the 9:9 style with a high concern for both production and people was best.

Whilst each of the preceding authors holds a preferred style, Reddin (1970) suggested that any style may be appropriate and introduced an 'effectiveness' dimension in addition to task and person orientations. In order to be effective the manager should change his style depending upon the situation, maintaining 'style flexibility', in contrast to 'style drift' (changing style to keep the peace) and 'style rigidity' (pursuing a style regardless of circumstances). Hersey and Blanchard (1976) further developed Reddin's ideas through linking



effectiveness with the 'maturity level' of subordinates.

#### 2.4.4.3 Motivation

Approaches to motivation have provided a good example of a strong theoretical approach in management development, with the individual manager being left to apply the theory in his own way back on the job. Some of the theoretical approaches have been labelled as 'content' oriented because of the emphasis upon what activates and sustains behaviour, whilst others are process oriented because the attempt is to define how behaviour is energised and maintained.

Two authors dominate the former category, namely Maslow (1943) and Herzberg (1966). In each case the concern is with individual needs, Maslow postulating a need hierarchy ordered according to levels of prepotency, from the 'physiological' through to higher levels of 'self actualisation'. Herzberg suggested that hygiene factors led to job dissatisfaction because of a need to avoid unpleasantness, and that motivator factors led to job satisfaction because of a need for personal growth.

'Expectancy' theories dominate the second category, for example those of Vroom (1964), Lawler (1969) and Campbell et. al. (1970), the basic notion being that motivation is dependent upon the combination of outcome expectancy and valence, where valence depends upon the instrumentality of an outcome to attain higher level outcomes. A different approach is

Adams' (1963) equity theory where motivation depends upon the subjectively perceived ratio of job inputs (time, education etc.) and outputs (pay, recognition etc.) and is partly affected by a comparison with other persons.

## 2.5 Managerial Skills

This section is addressed directly to examining the literature on managerial skills. A number of management journals and texts were examined, but whilst there is frequent reference to the term 'skill' few authors consider the nature of the information processing, that is the cognitive strategies that underlie competent performance, in any detail. When discussing skills the tendency is to discuss tasks or, from a task basis, merely to label skills in functional terms i.e. with regard to their purpose, for example 'leadership skills', 'communication skills' etc.. This is how Mintzberg (1973) and Stewart (1976), for example, discuss skills. Mintzberg in particular lists 8 basic management skills related to his basic managerial roles such as 'peer skills', 'leadership skills', 'conflict resolution skills' etc. (Lethbridge's (1975) study employed Mintzberg's skill classification, 56 U.K. managers rating each skill for job importance, the results showing leadership to be rated most importantly across the group and resource allocation being the least important).



A further example of the 'skill labelling' approach was provided by McLennan (1967). He was particularly interested in whether or not certain managerial 'skills' were universal across jobs. Managers of different firms and functions were presented with a 65 item questionnaire containing both skill and knowledge items, which the respondents were asked to rate in terms of importance to the job on a 5 point scale. Examples of items were 'communicating orally', 'personal psychology', 'statistics' etc.. Analysis of the results showed that items were neither universal nor unique to individual jobs.

Katz (1955) presented a very general skill classification. He described what he considered to be the basic skills required by an administrator (defined as someone who (a) directed the activities of other people, and (b) held the responsibility of achieving certain objectives through such efforts). He labelled the skills 'technical', 'human' and 'conceptual'. The skills were regarded as inter-related but were distinguished for descriptive purposes. Technical skills referred to proficiencies in procedures and techniques of a specific discipline. Human skill was the ability to work well in a team. This required the ability to understand, and be understood by, other people and involved creating an environment that encouraged participation and supported self expression. Conceptual skill meant

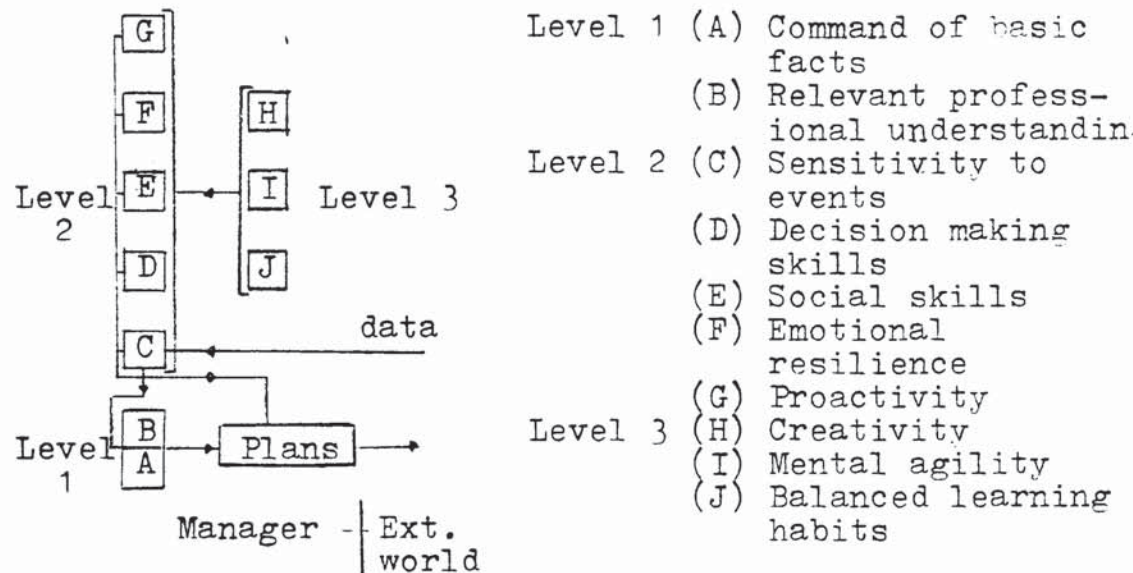


being able to understand the organisation as a whole, its various interrelationships and how the organisation might be affected by the external environment. It was suggested that technical skills were required mostly at lower levels and conceptual skill was the most necessary at higher levels. Human skills were required throughout. The evidence presented in support of the categorisation is largely 'anecdotal', collected either by the author or extracted from the literature.

This kind of paper makes a very limited contribution to the understanding of managerial skills, and provides little assistance to the management development practitioner. Recognising the value of an 'inner structure' approach Burgoyne and Stuart (1976) presented a classification of managerial skills that, they felt, "... was compatible with a concept of skills as 'programmes' " (p.21). Their model also satisfied a criterion of hierarchical organisation, with the first level of the hierarchy concerning data and facts, the second level concerning situation specific skills and the highest level concerning 'meta qualities' for aiding learning at the second level. Fundamentally they viewed the manager as an information processor, formulating 'plans' in order to meet some purpose in dealing with his job environment. The manager's effectiveness would be something to do with the appropriateness of plans to the environment, and this, the authors postulated, would

be determined by the 10 qualities/skills set out in their model. These were as shown in Fig. 2.2.

Fig. 2.2 Burgoyne and Stuart's (1976) hypothetical qualities of an effective manager



As a test of the model, measures of the skills/qualities were obtained through interviews incorporating self ratings and critical incidents and correlated with global success/effectiveness variables. The correlations were of a sufficiently high level to persuade the authors that the model held some general validity. Nevertheless a number of conceptual problems remain with the model. Firstly, the words attached to each level may not actually be describing what is occurring at various levels. For example, it seems more likely that creativity is a characteristic of the entirety of the inner processing - the whole programme, rather than some 'executive function' driving the programme. It is an aspect of the way someone functions, not a function in itself. Next, although the authors assert the importance of 'programmes', the model



eschews all such notions. Programmes are strategies for coping with information, something to do with making decisions; they concern how the manager uses his cognitive abilities whatever they may be. The Burgoyne and Stuart model has little to say on such matters.

Pheysey (1973) presents another general skill classification, focusing upon the 'intellectual' and corresponding 'social' skills used in mastering information. The process of information mastery is divided into six stages; attending, identifying, elaborating, reducing, forming intent and enacting. To take just one example, the intellectual skill associated with intending is 'recording observations' and the social skill is 'receiving impressions'. Whilst Pheysey suggests likely forms of training for each skill, there is no mention of individual differences, the effects of learning and the strategies competent individuals might develop in order to master information etc.

A similar paper was produced by Papaloizos and Nichols (1970), who also had a concern with teaching managerial skills. Their skill classification concerned 'observing', 'selecting data', 'diagnosing problems', 'formulating solutions', 'deciding', 'communicating' and 'motivating'. Various methods of training were associated with the acquisition of each skill and Guildford's (1967) tests (based upon his



120 factor 'structure of intellect' model) were considered relevant for skill evaluation.

Lawrence (1973) who defines a skilled manager as " ... one who can use techniques well, in a simple natural way" (p.177) stresses decision making skills and interactive skills - because of the decisional and interpersonal requirements of the managerial position.

The problem of developing interactive skills is taken up by Rackham et. al. (1971), Honey (1976) and Rackham and Morgan (1977). That behaviour may be described at a number of levels is the keystone to their approach; the trick lies in picking the appropriate level for description. The authors have variously suggested a number of categories for verbal behaviour which lie a few levels up the descriptive hierarchy, for example, 'proposing', 'suggesting', 'seeking clarification' etc.. In a training context the trainer may record the behavioural stream in an interactive situation and provide feedback to the speakers concerning the consequences of their speech. This is part of the learning process concerning the conditional probabilities between verbal categories. A speaker might then monitor whether or not his verbal behaviour remains consistent with his objectives, and may shape his behaviour such that it does. However, the approach is somewhat limited even at this level of description, in that non verbal behaviours are not

considered. That gestures, postures etc. are important is pointed out, for instance, by Argyle (1972). Furthermore, the supposition is that speakers will have competently established higher level cognitive strategies.

A further more restricted view of managerial skills is taken by Pedler (1977 a, b, c, 1978) who focuses specifically upon the task of negotiating. He identifies several stages in the negotiating process: setting objectives, case preparation, case negotiation, case conclusion and implementation. Concomitantly several skills/abilities are postulated, for example in setting objectives the skills required are those of problem identification, conflict diagnosis and identification of co-operative and competitive objectives.

Although most authors recognise the limitations of the mere descriptive labelling of skills, there are only tentative steps away from the approach. Birren (1969) takes a step in the right direction by presenting some strategies mature adults employ in decision making. The strategies or planful aspects of behaviour concerned both work and non work activities. Successful men and women were asked what they used to do, what they did currently and what they planned to do about managing the details of their professional and private lives. This revealed contrasts in performance based upon experience and age, the study identifying a number of devices that individuals used in



advancing their overall plans such as 'social distancing', 'authority maintenance' etc.. In addition, the respondents appeared very aware of their own competences and weaknesses and the tactics they devised to overcome weaknesses. Birren's findings are, however, presented in very general terms and the author recognised that much needed to be done in abstracting and defining the relevant strategic and tactical devices to obtain a more reliable description of individual and group differences.

The Brewer and Tomlinson (op.cit.) study also sought to determine how the managers met the demands of their cost control task. The managers' method was primarily the 'exception principle', looking for discrepancies from some ideal plan. Because acquiring the appropriate information was not a trivial matter (in this and in other tasks), managers held the strategy of making a large number of personal contacts. One advantage of this network of contacts was that it enabled the managers to anticipate possible problem areas. In problem solving the authors recounted that from a queue of problems managers selected those that could be solved most rapidly or those that were considered most likely to affect the stability of the system. As mentioned earlier the managers' guiding precept was to control costs or lead a quiet life. The authors further noted that the manner in which managers allocated priorities to problems need not be rational, for once embroiled in the day to day



operation of the factory the tendency was for problems of the moment to take precedence.

Finally, a study concerning the identification of potential is worth mentioning since it makes reference to skills, albeit obliquely. Muller (1970) reports the study which had the objectives of establishing the qualities that appraisers in the Shell organisation appeared to have in mind when differentiating promising and less promising managers. The experimental work was to determine the relation of various appraisal categories to a criterion for advancement in the company (the criterion being the highest job that an individual could be expected to attain). There were 28 appraisal categories obtained from three sources, namely biographies of men eminent in their own fields (e.g. J.S. Bach, Nobel prize winner Seaborg etc.), internal staff reports and certain indications found in the general literature. One particular quality 'breadth of mind' or the 'Helicopter Quality' (after Van Lennep) was found to have the highest relevance to the criterion for most of the managerial samples, as adjudged by their appraisers. The Helicopter Quality concerns an ability to look at problems from a high vantage point, placing problems and facts within a broader context through detecting relevant relationships within systems of wider scope.

## 2.6 The state of knowledge concerning managerial practice: a critical overview in the context of management development

Whilst the practice of management undoubtedly has a much longer history, the formal study of management practice is largely a twentieth century phenomenon. It is fair to say that such studies are growing at an increasing rate and the management developer is able to consult a variety of approaches for assistance in his task.

Relatively recently the 'work activity' school have adopted an empirical approach to management practice, the motivation being a desire to understand what executives actually did. In answering the question as to why there has been relatively few studies 'in this important area', Stewart (1972) points to theoretical, practical and methodological problems. At a seminar arranged by the Association of Teachers of Management in 1977 Stewart emphasised the main theoretical problem (and the most pressing need), namely an improved conceptualisation of managerial performance. Practically, the problem is one of managerial co-operation since empirical study tends to be time consuming. Moreover the practical difficulties in obtaining a large random sample are near insuperable. Methodologically, as Stewart (1972) points out, there is no one best approach, each method bearing positive and negative features (this issue being further discussed in the next chapter).



Notwithstanding these difficulties, from the studies that have been undertaken, it is possible to list several conclusions as shown in Table 2.6. Whilst these findings undoubtedly fill an academic gap in knowledge, they only provide a partial picture of managerial work. Frequent reliance upon the

Table 2.6    Main conclusions of the work activity  
school

1. Some differences between managers are not encapsulated in level/function variation.
2. Generally speaking, the manager's working day comprises varied, fragmented episodes, some of which are a continuation of previous episodes.
3. About  $\frac{2}{3}$  of time is spent in conversation, not much, it would seem, with superiors.
4. Management practice is, in part, of a political nature.
5. Managers not only respond to external events, they also initiate action.
6. Managers obtain valuable information via informal as well as formal channels and also make use of speculative information.

episode as the basic measure has resulted in only a limited attachment of meaning being given to the stream of events that comprise managerial behaviour. More attention should be given to the fundamental aims of managers - why they engage in episodes at all. Furthermore, additional consideration of the consequences of behaviour - how it affects fundamental objectives - is warranted.

In the search for the 'managerial' component of managers' activities, the more 'technical' aspects have been relatively neglected. And yet it is surely



as important to know that a manager is responsible for production as it is to know that he is, for example, a troubleshooter. Again it is as relevant to know that a production manager allocates work to different shops and participates in the control of work flow as it is to know that he spends little time in meetings. The predominant interest of the researcher has been with relationships and contact patterns. Perhaps this bias stems from somewhat restrictive culture-bound thinking, Fores (1977) pointing out that Britain is the only European country to emphasise the importance of 'managing' enterprises and to harbour the notion of professions. In Germany, apparently, the word 'manager' retains its association with a fly by night circus owner. Fores suggests that the 'management' idea was associated with the aims of executives to be 'professionals', which would, it seems, be a curious objective to a German industrialist who has no equivalent terminology. Mant (1977) further postulates that nurturing the idea of management stems from a more deep rooted motive of social approval. Of course other European enterprises involve management, in the sense that there are people to run operations, but there are no ideological underpinnings concerning a management movement. Perhaps, suggests Mant, 'management' means so much that it is hardly worth lumping all its inherent activities under the one heading.

All this is not to suggest that interpersonal interaction (dealing with subordinates, colleagues etc.), report writing, etc. is unimportant, but rather that such activities rarely provide the rationale for the existence of a job, rather they are means to certain ends. It is possible that a manager may hold a high degree of competence in means-type skills and yet fail to achieve the output requirements of his job, simply because the necessary 'gestalt' is missing. A more comprehensive description of managerial practice would include a wider perspective, focusing upon the more macro, as well as the micro, levels of behavioural description.

Representing management practice as a set of composite functions, for example, planning, organising, staffing, directing, co-ordinating, reporting and budgeting, affords a more general perspective, but the approach has been criticised on the grounds of failure to depict the reality of managerial practice. Carlson (op.cit.), for example, asserts that neither a manager nor 'the most highly skilled observer, would know when the manager was 'co-ordinating' , nor how much co-ordination he had achieved in any one day. He felt that similar criticism would apply to other functions, and Mintzberg (1973) felt that the functional approach merely served to label areas of ignorance. Despite Mintzberg's perjorative attitude towards the functional description, his own proposals concerning roles only narrowly avoid the functional



blandness. Moreover, Mintzberg's proposals are not so much of a replacement of the functional description but more of a complementary approach. That a manager performs decisional, informational and interpersonal roles, does not imply that he does not plan, organise etc.. For example, planning may necessitate an involvement in all three types of role, and generally speaking the two categorisations represent different ways of examining the same phenomenon. Even if the functional categorisation is limited as a description of any one manager's responsibilities, its strength lies in its general application across many managers' jobs. Certainly no other classification appears to have received such widespread use, but what is required, particularly for management development purposes, is increased understanding of the operational nature of each function.

The human relations approach has tried to come to grips with the detailed complexities concerning supervisory facets of managerial performance, although the early conclusions regarding style and supervision have been shown not to be universally valid (and have been regarded by some as shallow and manipulative). The modern viewpoint is that there is no one best style or leadership approach, but rather it all depends upon the situation that the manager faces. And, more recently, as the school has become more diversified, the tendency has been towards increasing complexity. The study of motivation is a case in point



and similarly Reddin's theory of style is more complex than that of Blake and Mouton in that it harbours more variables. In a management development context, coping with complex subject matter in a relatively protracted time span may pose problems for the learning manager. Furthermore, with the more recent contingency approach, the manager has the problems firstly of accurately diagnosing the nature of the precipitating situation and secondly of selecting and controlling the appropriate behaviour consistent with the diagnosis.

Similarly the decision making approach does not offer either the manager, or the management developer, easy solutions to the development problem. Within the decision making approach the tendency has been to move away from purely rational decision making towards the more realistic satisficing viewpoint, where only limited information may be available and assigning probabilities and utilities may prove difficult. For the management developer this shift in emphasis has affirmed the difficulty of his task by highlighting the important, though inadequately comprehended, psychological processes such as creativity, heuristic processes and so on. At the same time, in my view, the approach has pointed the way forward through attempting to understand the decisional processes employed by competent managers.

Despite the vast amount of knowledge that has accrued concerning management practice and despite considerable effort and expenditure, a concern with the foundations of management development persists. Shaefer (1978) writes of management developers:

"We have not been that successful in improving performance because we have not entirely resolved what training we should be conducting to improve performance" (p.1). Miller (1975) suggests that, in general terms, a technology of training would consist of an integrated pattern of decisions, practices and facilities linking learners, task descriptions and instructional facilities. Whilst there are a number of likely approaches within mainstream psychology and education (e.g. Bloom et. al, 1956; Gagné, 1977), in the management context there has been only limited progress. Understanding of the management task has proceeded in a somewhat disjointed manner, although as section 2.4 has illustrated, the literature does display a wide variety in thinking and descriptive level. However, there is no clear consensus over the attributes required by managers to perform their tasks, hence most management training will remain primarily concerned with tasks, with at least an implicit assumption that managers will develop the appropriate skills. Certainly few authors consider the nature of managerial skill in any detail, discussion of the mental processing underlying skilled performance being very restricted. The case method



is perhaps the best illustration where trainers are unsure of the underlying developmental changes in mental processing. Selection and appraisal studies have faced similar difficulties in finding meaningful attribute measures. In selection, for example, most individual difference measures have yielded low performance correlations for managers at around the 0.3 level (e.g. Ghiselli, 1973). Although the issue will be mentioned further in Chapter 6, it is open to debate that there has been too great a concern with test validation and insufficient attention has been given to task and attribute specifications.

## 2.7 Summary and Conclusions

The literature concerning management practice is extensive and it has only been possible here to present general trends illustrated by examples. There are various approaches that the management developer can consult and each carries forth an analysis based upon definite assumptions. It is not possible to say that any one perspective is right or wrong in an absolute sense, although each may be criticised as only a partial representation of managerial practice. The difficult requirement is for better ways of conceptualising managerial practice that will come to terms with the complexity of the subject matter. Nevertheless, with the advent of the work activity approach, executive practice has come to be better understood. There has not even been equivalent



progress with regard to managerial  
other personal attributes, with  
concomitant that development &  
themselves developed as fully;  
Interestingly enough, because  
variation in managerial practice, the  
of much management development activity are  
general task oriented descriptions that are moving  
towards, but falling short of, the skills domain.  
If the management developer is looking for a model,  
or models, of skilled managerial performance as  
Chell (in press) suggests, then the literature  
does, at best, indicate the appropriate direction.  
As a basis for our own investigation of managerial  
skills, the skills concept is explored more fully  
in the next chapter.

## CHAPTER 3

### CONCEPTUAL FRAMEWORK AND RESEARCH PROCEDURE

#### 3.1 Objectives of Chapter 3

The literature review has revealed a wide variety of approaches to managerial performance, but only a limited appreciation of managerial skills. Before making an investigation of managerial skills it seemed reasonable to determine what was known about the nature of any skill, the idea being to derive a point of departure and line of approach such as Bartlett (1958) had done some 20 years earlier. The requirement was for the analyst to build up an understanding of skill to guide the analysis, thus avoiding submergence in an unmanageable amount of data. Hence the first part of this chapter presents something of what is known concerning skilled performance based on findings from both inside and outside the laboratory. The second part of the chapter outlines the research procedure that was adopted in the study.

#### 3.2 The Concept of Skilled Performance

The way in which the term 'skill' is used in psychology is different to the way in which it is often used in everyday language. For example, in common parlance the distinction between 'skilled' and 'unskilled' work, which rests primarily upon length and kind of training, is often arbitrary and reflects a more restrictive view of skill than that within psychology. That skills may be developed

through training and experience (i.e. learning) is supported but within psychology the range of behaviour that may be regarded as skillful is greatly extended. Indeed almost all human behaviour may be regarded as dependent upon skills for there is little behaviour that is instinctive or, by definition, unskilled, most human behaviour being dependent upon learning which is just another term for skill acquisition. Even relatively simple behaviour, for example in the laboratory choice reaction (CR) experiment, is subject to modification over time.<sup>1</sup> However, generally speaking, it is more complex behaviour patterns - batting in cricket, sewing at a machine, playing chess, executive decision making etc. - that is regarded as dependent upon skills.

The skill concept may refer not only to activities (sewing, decision making etc.) but also to people and Singleton (1968) points out that skill may concern both " .. a facet of the operator or ... external manifestation in performance." (p.53-54). When considering people it is possible to say that A is more skilled than B at performing some activity. This may mean that the lesser performer has not developed more basic skills into sufficiently well coordinated patterns to produce the more skilled

---

<sup>1</sup> A CR experiment comprises a series of trials where, upon each trial, S is presented with some signal selected from a finite set and has to make a simple response as soon as possible following the signal presentation. Evidence suggests that there are 'sequential' effects dependent upon the prior sequence of stimuli experienced by S.



performance. However, rather than developing better specific skills, it may be that the 'excellent' performer puts everything together in a better way. This is Edwards (1979) view of the expert pilot, for whom, following computer terminology, the 'executive programme' is better developed. A third viewpoint is that the high level performer is distinguished by his ability to cope with stress which is a facet of 'self management' noted, for example, by Cochran (1979) in a discussion of the golfer and Drasdo (1979) considering the rock climber. A final interpretation is that such individual differences may be nothing to do with skills, but rather concern attitudes.

Miller (1978) coins different terms to distinguish proficiency levels in performance. The distinction is between job 'skills' and job 'competences' where skills are defined as "... the effective application of the more or less sequential procedures of the job or profession" (p.278). In contrast, competences involve more than mere accomplishment of task objectives and may be regarded as "... coping conceptually with strategic variables for arriving at innovative compromises, that, taken together, tend to optimise the solution (to some problem situation) .. and the operations taken for arriving at a solution" (p.278). Whilst the criteria for making this distinction remain imprecise, competence essentially involves thinking about how the task is accomplished

and viewing it in a wider context. According to Miller the virtuoso-artisan distinction applies to any activity, from wrapping a package to directing an enterprise.

Turning to definitions, Super and Crites (1962) regard skill as being synonymous with proficiency, denoting the degree of mastery acquired in some activity. Welford (1976) defines skill as a quality of performance that must be developed through training and experience and Fleishman (1972) similarly asserts that skill refers to a level of proficiency at a task or group of tasks. Each of these definitions is concerned with performance quality and there is a recognition of the importance of learning in skill acquisition. Consistent with these views and incidentally, with the OED definition of 'expertness, practised ability, facility for doing something, dexterity, tact and discernment', skills are regarded here as person-oriented attributes manifest in performance and acquired through learning. Use of an epithet may provide further clarification, for example 'perceptual' skill, or the adjective may be used to qualify some noun, for example 'skilled' operator. As for further human attributes, 'capacities' concern potential and are less subject to learning than skills. Similar properties appear to characterise 'abilities', Fleishman (1975) for example, describing an ability as a general performance-related capacity. By way of illustration, Fleishman regards the skills required

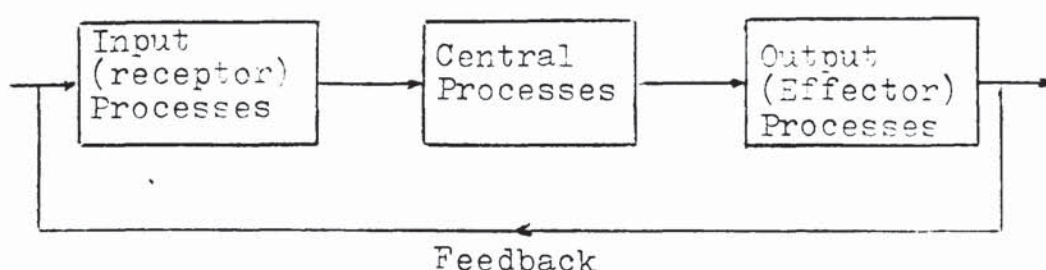


to operate an industrial machine as being dependent upon more basic abilities such as 'manual dexterity' and 'motor coordination' (see also p. 82 below). Whilst providing a suitable definition is difficult it would seem appropriate to regard abilities as relatively enduring human attributes that are more fundamental than skills and relate to performance in a variety of tasks. Abilities and skills are often distinguished from attitudes and aspirations, Cronbach (1970) referring to the former as 'maximum performance' measures and the latter as 'typical performance' measures. This is the distinction frequently made by psychologists and philosophers alike concerning what an individual can do, and what the individual will do. Finally it should be noted that a 'task' is a system-oriented (rather than a person-oriented) term and concerns some operation(s) geared to meet an organisational (system) need.

### 3.3 Classification of Skilled Performance

Most contemporary thinking concerning skilled performance regards the human operator as an information processing system (IPS). As shown in Fig.3.1 there are functional mechanisms for incoming information, central processing and outputs and this has led

Fig. 3.1 Functional representation of human information processing





to a conceptual distinction between input, cognitive and output skills. This classification is potentially misleading, however, since all stages of information processing are involved in any skill. The value of the classification lies in the relative importance of each stage in skilled performance. Thus in output dominated skills overt action is essential, as in ball games for example. Input dominated skills make paramount use of the receptors, as in tracking tasks. As for cognitive skills, as Welford (1958) remarks " ... the overt actions play a more incidental part, serving to give expression to a skill rather than forming an essential part of it" (p.18).

There is a little more to this classification, rough and ready though it remains. In an input dominated skill the input skill components are the key elements about which the other skill components are organised, and there are analogous situations for the other skill types. The notion of key elements was discussed by Bartlett (1951) who noted a variation in the importance of skill elements concerning several skills, observing that if key activities were properly timed and carried out the remainder would be enacted without undue problems. Singleton (1978a) also points out that key elements may be objectives, may not even be consciously selected and will, most likely, vary between performers.

An additional feature of the information flow perspective is that of feedback. The skilled man is

not only involved in doing, but also in monitoring what he is doing - although in certain well developed skills, for example in ordinary walking, monitoring may not be a conscious activity and it is only if things do not go according to plan that there is recourse to more elaborate higher level control mechanisms in consciousness. As Annett (1971) points out, feedback remains critical in skill acquisition.

A second common categorisation, based upon physiological and developmental considerations, distinguishes 'perceptual' (or 'sensory') and 'motor' skills. Translating incoming information into a decision depends upon perceptual skill and enacting the decision through the effectors requires motor skills.

Motor skills comprise sets of action patterns or, following computer terminology, libraries of subroutines that, in combination, yield the characteristically smooth response pattern of the skilled operator. By way of illustration, in car driving a decision to overtake in the face of oncoming traffic would require perceptual skill; changing gear would depend upon motor skill.

Adopting the terminology of the former categorisation, most of the texts concerning skilled performance focus upon input-output skills, Bartlett's (1958) study on thinking being a notable exception. However, subjects such as interpersonal interaction and language



have been discussed in skill terms by Welford (1976) and Fitts and Posner (1967) respectively. More recently analyses of 'real' skills, primarily concerning human performance outside the laboratory, have been compiled by Singleton (1978,1979). Findings from both inside and outside the laboratory have suggested various characteristics of skilled performance, as outlined in the next section.

### 3.4 Characteristics of Skilled Performance

The first characteristic of skilled performance is that it enables an individual to achieve some purpose. In playing a cover drive, for example, a skillful batsman intends the ball to travel in the region of a well defined area in the offside field. In the literature, a cornerstone of Reason's (1977) model of skilled performance is an 'Intention System' which provides the executive structure or overall plan to guide performance.

The second characteristic is that skilled performance is the product of learning. As Welford (1976, p.2) points out " unlike traditional learning studies, investigations of skill speak not of responses to stimuli, but of 'strategies' and 'procedures', larger organisations which, although less precisely defined, are closer to describing the units of performance that seem to occur in everyday life." For motor skills in particular, once any behaviour pattern has been learned the attention initially demanded may be freed to focus upon more advanced developments. In



fact, the routinisation of certain procedures is necessary for development and it is possible, for instance, that someone may quit learning to drive because of a failure to routinise certain fundamental motor sequences (braking, gear changing etc.) that allow advancement to the more integrated and complex procedures that are associated with ordinary driving. Fitts (1964) imposed some structure upon the learning process through dividing it into three phases, the first being the 'cognitive' or 'early' phase where the beginner seeks to understand the task which is a process characterised by attending to events and responses that will later go unnoticed. The second 'associative' or 'intermediate' phase concerns the elaboration and integration of the more basic processes and the 'autonomous' or 'final' stage is when processes become less subject to conscious control and increasingly autonomous. Outside the domain of motor skills Gagné (1977) proposes other types of learned capability and these are mentioned below (p.84).

The third characteristic concerns timing, Bartlett (1951) pointing out that the absolute time taken to complete a movement or make a decision in skilled activity is of relatively little significance. It is not 'time' but rather 'timing' that is critical. This is as important for the comedian on stage as it is for the batsman at the wicket, although Welford (1976) concludes that knowledge concerning the mechanism of timing whereby various actions become operational in correct sequence and at appropriate moments is

fragmentary. The decision over the right moment when to act depends, in part, upon anticipating what will happen next. Bartlett (1958) asserts that in all skilled action there is some apprehension as to the direction in which the evidence is moving or the likely direction in which it will move. Laboratory studies have suggested different types of anticipation, notably 'perceptual' anticipation (Poulton, 1952) and 'receptor-effector' anticipation (Bartlett, 1958). The former involves predicting what will occur and the latter is when a stimulus is previewed before presentation, the next act being planned whilst the current act is being performed. Outside the laboratory Thorne and Charles (1978) list a number of airline pilot skills including 'systems management' which involves being able to anticipate periods of high work load and organise other work around them.

Skilled activity involves selecting relevant information, using it to make decisions over what to do and then doing whatever has been decided. Monitoring the effects of a decision provides information for the next decision which will also take account of what will follow, hence the notion that skills are 'serially' organised which is the fourth characteristic.

Finally, it should be noted that all skills are hierarchically organised. The hierarchical organisation is often likened to a computer programme where there are two main constituents; firstly relatively



independent units called subroutines and secondly an executive programme with superordinate control. The executive programme may be said to run the operation and benefits through being able to refer to subroutines by title and specification of appropriate parameters. Any subroutine has access to only a little of all the information within the system and once invoked remains relatively inflexible, serving only a limited purpose in relation to the whole. Skills may be regarded analogously in that there is an overall structure that establishes the broad direction, comprising more fundamental established procedures. In discussing motor skills, Miller et. al. (1960) assert that the development of such skills involves building a hierarchy of behavioural units each guided by its own plan. By way of illustration, Bryan and Hartner (cited in Fitts and Posner, 1967) showed that in learning to send and receive morse code performance improved over a period of time as learners came to cope with increasingly complex units, initially letters and later on words, phrases and sentences.

There are two interpretations concerning the hierarchical nature of skills, firstly that component skills combine like building bricks to form the more complex skill, that is there are subskills within any skill, and secondly that each of the three information processing stages comprising the overall skill (see Fig. 3.1) does itself comprise smaller three stage information processing units.



### 3.5 Skill Taxonomies: A Cognitive Orientation

A number of authors have produced taxonomies of skills, some skill taxonomies in a managerial context having been presented in section 2.5. In this short section the taxonomic scope is widened, consideration being given initially to general skill taxonomies and latterly to taxonomic structures more closely allied to specific jobs.

The 'generic skills' approach (Smith, 1975) comprises the categories shown in Table 3.1. The

Table 3.1 Smith's (1975) 'generic skills'

1. Numerical use	6. Trouble shooting
2. Reading	7. Discretion and complexity
3. Writing	8. Supervision
4. Talking	9. Interviewing
5. Sorting and classify- ing information/ objects	10. Planning

work 'skill' in the title is rather misleading, however, for operationally, at least, this is a task oriented taxonomy, where each category comprises a number of questionnaire items for use in job analysis. In Miller's (1967) terms it is a descriptive rather than an explanatory taxonomy (which is near equivalent to a theory) and is 'non rigorous' in that membership of one category does not imply that it is absolutely exclusive of another. (The RBL system is another similar example.)

A further general taxonomy is that of Fleishman (1975) who in an extensive programme of research derived some 37 abilities through factor analysis of

scores based on 'standardised' laboratory tasks. The range of tasks was extensive (e.g. 'rotary aiming, addition etc.) and the intention was to make the range of independent abilities minimal. The approach exploits individual differences, high individual performance levels in tasks A, B and C, but not in D, E and F, suggesting that there is a common process relating to the first but not to the second trio, and to account for this an ability is postulated. The abilities (verbal comprehension, originality, memorisation, mathematical reasoning, deductive reasoning, stamina, reaction time, finger dexterity etc.) were each represented on a behaviourally anchored rating scale, with exemplary behaviours at each pole. (For example, the poles concerning 'verbal comprehension' are 'basic knowledge to understand simple communication and 'understanding of complex detailed information', represented by 'understanding a comic' and 'understanding a mortgage contract' respectively.) Hence Fleishman's basic approach is to label abilities that have been inferred from task performances. However, it may be argued that this reductionist approach has tended to obscure the essence of skill which is an integrated behavioural unit focused by the objectives that are to be obtained.

Gagné is an educationalist who has proposed various kinds of learning from signal learning to problem solving as shown in Table 3.2. He also proposes 5 types of learning outcome or capability



Table 3.2 Gagné's (1977) Learning Hierarchy

<u>Type of learning</u>	<u>Description</u>
1. Signal learning	Pavlovian conditioning
2. Stimulus response learning	Operant conditioning
3. Chaining	Connection of individual S-R units in sequence
4. Verbal association	Verbal chains
5. Discrimination learning	Similar to 2
6. Concept learning	Discrimination of stimuli classes
7. Rule learning	Chaining 2 concepts in contingency 'if-then' format
8. Problem solving	Combination of rules to form higher rules

namely intellectual skills, verbalisable information, cognitive strategies, motor skills and attitudes. Intellectual skills typically concern the use of 'rules', some method(s) of relating stimuli to responses, as in mental arithmetic, for example. A rule is a relation between at least two concepts, the learning of concepts being a necessary prerequisite to employing intellectual skills. Verbalisable information concerns being able to tell others about concepts and ideas. Cognitive strategies represent the learner's attempt to manage various cognition processes (attending, remembering etc.) and is involved in the learning of all other categories. Definitions of the remaining categories are similar to those presented previously, Table 3.3 providing relevant illustrations of all 5 capabilities.

Gagné's taxonomy is of a very general nature and, although linked to educational foundations, of wide applicability. Away from the general taxonomies.



Table 3.3 Illustrations of Gagné's capabilities

<u>Capability</u>	<u>Performance Examples</u>
Intellectual skill	Demonstrating symbolic manipulation
- Concrete concept	Identifying spatial relation 'above'
- Defined concept	Classifying prime numbers
- Rule	Division of fractions
- Higher Order rule	Generating rule for relating watts to volts and ohms
Cognitive Strategy	Using mnemonics
Verbalisable information	Stating the l.b.w. law
Motor skill	Changing gear
Attitude	Choosing to play cricket

there is a great variety of more specific taxonomies concerning 'real' skills. By way of illustration, Thorne and Charles (op.cit.) talk of 'dexterity', 'resourcefulness' and 'systems management' as being key skills of the pilot. As a further example, Eccles (1978) lists the skill requirements of the dentist as 'cognitive', 'psychomotor' and 'affective', where the cognitive skills involve the acquisition and selection of relevant information to make a treatment decision beginning with knowledge of the patient's history. It is not particularly profitable to list further similar classifications, the requirement being for more general propositions. However, making generalisations is not easy, this brief account having shown the variety of taxonomic structures to be found in the literature. This variation is, in part, linked to a variation in purpose associated with each approach. As a general overview, classifications

with broad application tend to be developed as autonomous structures and subsequently 'applied', whilst the more specific classifications are very much linked to particular tasks or jobs. The former group probably meet criteria such as reliability, nominal scaling and mutual exclusion more adequately, and they also tend to be more 'theoretically' oriented, although the concern of the more specific analysts with practical problems does not blunt an interest in good theories of behaviour. Indeed such skills analysts also try and make generalisations concerning human behaviour, typically relating their findings to current psychological theory. The general conclusion to be drawn from these studies is that the skilled man is a model builder with intricate control systems, coping not only with the external world but also with himself (Singleton, 1979 a). Since the manner in which the skilled person operates may be well described through reference to models, this is discussed further in the next section.

### 3.6 Models (and Routines)

The emphasis upon modelling means that skills psychology lies within the S-O-R tradition, exemplified by Miller et. al. (1960) who maintain that " ... the effect an event will have upon behaviour depends upon how the event is represented in the organism's picture of itself and its universe" (p.7). Models are inner representations of external reality that allow manipulations to



predict the results of decisions and thus influence the taking of those decisions (Singleton, 1967). Currently, it seems plausible to distinguish three kinds of model; firstly 'enactive' models which are extended body images concerning data from within the modeller himself. Here the modeller remains at the centre of his world looking outwards as it were, but with 'spatial' or 'pictorial' models the reverse holds with the modeller being on the outside looking in. These models provide a topologically accurate picture of the world which includes the modeller himself, the representation being in analogue mode. The models have been labelled 'pictorial' in deference to the dominance of the visual system in man but such models may be in other modes such as the auditory mode. Lastly, 'symbolic' models vary from the iconic to the very abstract, including linguistic and numerical systems and are of a digital nature. Interestingly the more remote the model from reality the easier it is to communicate with others simply because communication is in the same terms as the model. Enactive models are not very amenable to verbal communication since the concern is with body states, what 'things feel like'.

The above discussion is oriented towards perceptual skills, understanding of motor skills being enhanced through the concept of 'routines', that is smooth bodily movements that may become so highly developed that conscious control is not



required except for inaugural and terminal decisions. The distinction between models and routines does become blurred, however, for bodily skills could not operate without some developing representation of the external world as it affects performance.

### 3.7 Methodology in Skills Studies: General Remarks

Having outlined something of the nature of skilled performance, the intention is now to consider methodological issues in skills studies. Over the past 10-15 years there has been a hiatus in progress concerning skills studies, partly because of the fashion for studying human performance through laboratory experimentation, such studies providing only limited knowledge about skills simply because subjects are not usually skilled performers (Singleton, 1978a). Indeed there is a more general concern within psychology over what Westland (1978) terms the 'laboratory crisis'. This is a controversy over the value of psychological experimentation, the extremes of opinion being that only laboratory studies can provide valid psychological knowledge and, in contrast, that laboratory experiments inform little about the real substance of psychology, namely ordinary behaviour. It is not the intention to pursue the debate concerning ecological validity here, but simply to point out that an alternative, and perhaps complementary, approach does seem necessary to cope with the complexities of skilled performance. This is to support the view that advances may be made through the study of skilled persons in the natural setting. One

illustration of 'uncontrived' performance is provided by Branton (1978) who, in the context of discussing skills in train driving, points out that inside the laboratory subjects are told to attain specific targets whilst outside, contingent upon particular task demands, the operator sets his own goals and arbitrates over the limits that he will set as measures of goal attainment.<sup>1</sup>

Historically much of the impetus within skills studies came through the advent of World War 2, where the problem was to urgently understand the performance of the skilled operator in both military and non military situations (Wright et. al., 1970). Civilians were needed to take on skilled military activities and as the armed forces expanded industrial vacancies requiring skilled personnel had to be filled. Hence the need was both to comprehend skills and devise appropriate training and selection programmes.

---

<sup>1</sup> It is not only skills analysts who are concerned with the predominance of laboratory experimentation. For instance, Neisser, a cognitive theorist, states that a cognitive psychology failing to account for how people ordinarily interact with the world could become a narrow and uninteresting field (Neisser 1976) His view was that the portents were already gathering, the proliferation of artificial laboratory approaches no longer being encouraging, but rather oppressive. The main criticism was that a satisfactory theory of human cognition could hardly be based upon the responses of subjects asked to perform novel and meaningless tasks. (It is worth recalling that some years earlier Bartlett (1932) had shown that a preoccupation with nonsense material was more of a hindrance than a help in understanding human memory) Neisser's feeling was that psychology should come to terms with the sophistication and complexity of the skills that people are actually able to acquire.



Singleton (1966) has also pointed out that organisational problems often provide the stimulus to effort and provide a sense of direction without which progress may well be slow, becoming dominated by rather academic 'oneupmanship', where ideas are alternately supported and rejected by tedious experimentation.

Another feature of skills studies is the tendency to avoid the use of statistical procedures which occupy an important position in contemporary psychology. Nevertheless, as Westland (op.cit.) points out, there is an opinion that this statistical emphasis is inappropriate. Two of the main issues are firstly that a result may be statistically non significant but very interesting or highly significant statistically whilst being quite immaterial, and secondly that if samples are large enough the null hypothesis will always be rejected at a satisfactory level of significance. A related issue is the preference for nomothetic over idiographic procedures, although as Bannister and Francella (1970) remark, it may be that average results appear very different from the individual results from which they were derived. Once again it is not the intention to pursue these arguments here, the purpose being merely to offer a reminder that accepted procedures within psychology are not without critics nor above criticism.<sup>1</sup>

---

<sup>1</sup> One of the sternest critics of methodological progress in psychology is Noam Chomsky who writes: "If you go back to the early origins of scientific speculation people were raising questions about the heavenly bodies and about the sources of human action: well,



Consistent with the success of the physical sciences, within psychology the tendency is to analyse things and separate fundamental elements, but this procedure is likely to lose the essence of skill which is integrated and holistic (Singleton, 1978a). Moreover, in both the physical and behavioural sciences, the preference is for findings to be represented numerically, but numbers imply categories and as yet there is no clear consensus concerning skill categories. The lack of numerical data is a further feature of skills studies, and in this study, as in others, the data is not presented in a numerical format. However, if it seems intuitive that a lack of numbers will lead to imprecision, Spence (1973) provides a reminder that the opposite may hold. Through an illustration termed the 'Carpenter's Paradox', he shows that a number system can introduce rather than eliminate error. The carpenter's task is one of setting stakes and the 'paradox' is that an analog approach using a spacer creates fewer mistakes than a digital approach involving numerical measurement. Spence further comments: "It is not that the number is inadequate, as when someone tells us what today's temperature may be; the temperature does not capture the quality of the air ... It is more serious; by fixing a number we are forcing a continuous space-time event into a procrustean bed that may disguise its true properties" (Spence 1973, p.481).

---

we're asking exactly the same questions today about the sources of human action ... We have no idea how to approach these questions within the framework of science. We can write novels about them, but we can't construct interesting scientific theories, even false ones. (Chomsky 1978, p.217)

Through the example of 'personality' research Spence also shows how even if relevant characteristics are chosen there may be errors in converting them into numbers, and how once encased in the number system it becomes easier to manipulate numbers rather than relate the numbers back to the natural source, the subject himself.

The concern of Spence's paper is behavioural description, in particular the distinction between analog and digital description. Spence is of the opinion that the best approximations to skilled performance are analogs, the more graphic the better, but as Reason (op.cit.) remarks a verbal account (a digital representation of behaviour) may provide an adequate description. In particular some literature manages to encapsulate the nature of skilled performance simply because the objectives are not to measure or explain behaviour but rather to allow the reader to sense the phenomenon at hand. By way of illustration, R.M. Pirsig writes: "... look at a novice workman ... and compare his expression with that of a craftsman whose work you know is excellent and you'll see the difference. The craftsman isn't ever following a single line of instruction. He's making decisions as he goes along. For that reason he'll be absorbed and attentive to what he's doing even though he doesn't deliberately contrive this. His motions and the machine are in a kind of harmony. He isn't following any set of written instructions because the



nature of the material at hand determines his thoughts and motions, which simultaneously change the nature of the material at hand. The material and thoughts are changing together in a progression of changes until his mind's at rest at the same time the material's right." (Pirsig 1974, p.160-161).

Notwithstanding the descriptive value of a verbal presentation it is recognised that describing skills is difficult and it is worth discussing the issue further. In 'passing on' a skill, for example, recourse is often made to the 'master-apprentice' model where teaching is more by deed than by word. This is particularly acute in motor skills where the inner representation is of an enactive nature. For instance, because of the difficulties associated with verbal expression, the skilled cricket coach would like to 'lend his body' to player so that the latter might experience the nature of a particular stroke. In Spence's (op.cit.) terms the digital representation of performance seems inadequate and most progress appears to be made at this level once the player has acquired his own faithful analog of events. However, this may be less of a problem with mental, as opposed to bodily, skills since the inner representation may be of a symbolic (digital) nature. Thus at the level of the game the cricket coach may be more able to put his ideas across. Singleton (1967) makes further remarks concerning

the issues as follows:

"Since the information needed to control motor skills is only generated by limb movements and postural changes there can be no learning without overt participation. Since also the skills essentially take the form of time series there can be no short cuts to high level skills, systematic building seems to be the only way. This limitation does not necessarily apply to perceptual skills since these models are not inherently time dependent, and, if the optimum model or concept can be identified by the trainer, it ought, in principle, be possible to convey it to the trainee without necessarily indulging in a step by step build up."

(Singleton, 1967, p.9).

Having now considered some of the more general issues surrounding skills methodology, consideration will turn more specifically to the process of skills assessment.

### 3.8 Skills Appraisal

It seems clear that in order to conduct an analysis of real skills there must be some discussion between analyst and practitioner. The tendency is for discussion to begin informally, but there are various attempts to impose structure upon the proceedings. For example, following Newell and Simon's (1972) approach, Bainbridge (1978), in studying the



process controller, used the technique of 'protocol analysis' which is based upon the continuous account of what the operator does as he is doing it. Whilst the technique is open to various criticisms, it was undertaken simply because the process controller apparently does so very little. Even in tasks where there is much observable activity, covert processes remain critical. By way of illustration, for the forest worker the difference between good and bad 'cutting' lies largely in the planning of the directional felling, for if felling is done well it greatly facilitates subsequent operations (Petersson, 1978). In studying real skills, few investigators are able to obtain numerical measurements. Lacy's study of the tea taster includes some numerical measurements, the important properties of tea (brightness, colour, pungency etc.) being widely accepted, although some were more easy to measure than others (Lacy, 1978).

Although individual analysts devised their own approaches to skills appraisal, Singleton (1978b) suggests the following general procedure:-

- (1) Discuss the skilled activity almost ad nauseam with the practitioner and with those for whom and to whom they are responsible.
- (2) To make the discussion more precise use specific techniques (e.g. critical incidents technique).
- (3) Observe the development in trainees.

- (4) Structure the activity in identifying the dimensions of the percepts, the decision making and strategies of action.
- (5) Check as many conclusions as possible by experimentation, observation and so on.
- (6) Implement the conclusions.

Singleton came to regard step (4) above as the most tenuous and in Singleton (1979a) the suggestion was, for more complex skills, to adopt a flexible approach involving three sources of evidence:-

- (1) The performance of the skilled operator.
- (2) His introspections on what he is doing and how he is doing it.
- (3) Empathy from the skills analyst who is himself a skilled operator.

In summary, it is clear that the intercommunication between analyst and practitioner is of key importance. This will concern how the practitioner formulates and modifies his objectives and how he makes progress towards these objectives. Hence the emphasis rests upon the practitioner as a model builder, and the skills issue might be focused as 'what kind of model(s) does the practitioner hold and manipulate?' Putting this another way, the interaction between analyst and practitioner will seek to determine the strategies and tactics that enable the practitioner to progress



towards his objectives.<sup>1</sup> Furthermore, the suggestion is that the analysis should progress upon the basis that the analyst and practitioner are not independent but rather are partners in the shared enterprise of interpreting their joint skilled performance.

### 3.9 Research Procedure

Having outlined various aspects concerning the nature of skilled performance and an overview of skills appraisal, the research procedure employed in the project will now be discussed. In broad terms a skills analysis of a manager involves a progressive clarification of how he achieves his objectives. Since the analyst was unfamiliar with the managerial job in question it was necessary first of all to find out the nature of the manager's objectives, that is what he was trying to achieve. This meant conducting a task analysis to separate and describe the main tasks within the job.

#### 3.9.1 Task Analysis

##### 3.9.1.1 Methods and Techniques

There are a number of methods and techniques that may be employed in order to analyse what managers do at work and these are summarised in Table 3.4. Prior

---

<sup>1</sup> This provides another perspective and it is worth noting that, according to Birren (1969), the word 'strategy' originates from a military context, referring to the planning and directing of operations by a general officer seeking to optimise his forces. Furthermore, as Moray (1978) points out, the concern is with a rather rational agent striving in a fairly ordered universe and how the agent uses his mental hardware, whatever such hardware may be.

to undertaking the main study, observation, self recording and interviewing were employed in pilot studies, these studies being considered in the next section, which also provides a brief critique of the methods.

Table 3.4 Methods & Techniques in Work Analysis

<u>Method</u>	<u>Description</u>	<u>Techniques</u>	<u>Main Published Studies using technique</u>
Observation	In tradition of Taylor, Gilbreth etc., researcher records what he sees. Unstructured observation less systematic than structured observation, both allow the researcher to be inductive.	Structured Observation Unstructured Observation Activity Sampling	Mintzberg Sayles Kelly
Self Recording	Practitioner records what he does in predetermined categories	Diary Questionnaire	Carlson, Stew Hemphill
Participation	Task performance by analyst. Ferries (1967) points out that participation is useful for clarifying perceptual elements in a job		
Interviewing	Request for verbal information. May vary in degree of structure (see p. 104 below)	Continuous Recording Critical Incidents Depth Interview	Flanagan

### 3.9.1.2 Pilot Studies

In the observation pilot study, two managers were observed 'formally' for two days each. Through aggregating episodes (periods of time where the classificatory dimensions remained constant), it was possible to build up a picture concerning the characteristics of work, the time spent in the office, on the telephone, with others etc., but drawing more detailed conclusions incorporating why the manager did what he did was more difficult. There was not a lot that the manager did overtly that was of interest - relative to a cricketer for example. For instance on tours of inspection it was clear that the manager



took in information, but just what was being noted and why was near impossible for the observer to ascertain, the field of potential data inputs being enormous. Similarly in meetings it was difficult to gauge the value of all the interaction, and how each behaviour was mutually construed. Even the 'outputs' of the managerial position - orders to subordinates, requests to colleagues, dictations to secretary etc. - were only fully comprehensible against the wider job context. Thus it was clear that managers did acquire information and make decisions but unless the purposes behind such activities were known, only a limited meaning could be given to them by the observer. Hence the conclusion was that unless any observation was to continue for an indefinite period, for a fuller understanding the researcher ought to supplement any observation with a dialogue between himself and the manager.

Because of the early concern with the distribution of skills a further study, ultimately involving 60 managers, sought to understand managerial work through use of a questionnaire administered by interview to increase the motivation level of respondents and allow expansion of questionnaire responses. A modified version of Stewart's (1976) questionnaire was employed, the items being structured around the following categories:-

- (1) Open ended statements on decision making and information requirements.

- (2) Structured responses (in terms of job importance) concerning interpersonal contact.
- (3) Measures of time sharing between activities (talking, paperwork etc.) in % terms.
- (4) Measures of time sharing with others (colleagues, boss etc.) in % terms.
- (5) Measures of frequency concerning work patterns (e.g. attention switching).
- (6) Structured responses (in terms of job importance) concerning the manager's relationship to systems and procedures.

One problem was that it proved very difficult to encapsulate in some short statement the kinds of things managers talked about concerning their decision making, the feeling being that more time was required to come to terms with the subject matter. As for the structured responses concerning interpersonal contact and dealings with systems and procedures, frequent comments were centred around the notion that responses were little more than 'a best guess'. Furthermore, despite an underlying theoretical structure (distinguishing 'characteristics' (3), (4), (5) above and 'content', the latter comprising 'technical' (1) and 'administrative' (2) and (6) demands), it was difficult to obtain an integrated picture of managerial work. The general criticism was that the responses seemed devoid of depth that was required for more detailed understanding - especially given the ultimate objectives of skills analysis.



### 3.9.1.3 The Main Study

The questionnaire/interview study did afford an introduction to a group of managers and it was with a sample of this group that the main study was undertaken. A further pilot study where another 9 managers were interviewed concerning their duties and decisions in some detail seemed to offer greater understanding. One advantage was that managers were able to provide the context surrounding their activities. This is valuable since managerial work is subject to temporal variation (both in terms of the activities undertaken and the time span within any one activity). For example, in an observation study it is not possible to see the development of, say, a strategic plan which may take several months to compile, the subsequent monitoring and updating taking place, perhaps, over a number of years. Singleton (1974) had pointed out that where perceptual skills dominate a job, a useful beginning was to determine the prime responsibilities or duties and in the main study this format was adopted. There was a link with the questionnaire responses, in particular the decision making aspects, and additional structure was imposed upon the interviews through loosely following the H.T.A. technique developed by Duncan and others (e.g. Annett et. al., 1970; Duncan, 1972, 1975). In general terms the technique allows a redescription of a broad task statement, some responsibility or operation that may be defined in

terms of its objective. Hence, having obtained the general responsibilities, the next step was to redescribe one or more in greater detail, this redescription itself being further described and so on. As a rule the analysis became more detailed through posing 'what?' type questions and it was possible to move to more general levels through asking 'why?' type questions. Once the tasks and subtasks were identified, it was usually possible to infer where the likely problems would occur. For instance, if a manager gave a major responsibility as 'participating in maintaining and controlling a wage structure agreement', the major problems would concern the breakdown of the agreement and this provided an avenue for the analyst to explore.

Although it is possible to describe behaviour at various levels of abstraction, clearly it was necessary to phase out the analysis at some level, the choice of level being determined jointly by analyst and practitioner. The choice reflected a mixture of when the analyst felt that he understood some activity and the extent of the relatively natural units employed by the manager in describing his work. Indeed the terminology of the task analyses presented in the next chapter follows fairly closely that provided by the managers, thereby taking advantage of a personal linguistic structure that the managers found useful in understanding their jobs.



Because of this emphasis upon an individual description it would seem unrealistic to try and attain a consensus over task terminology (although this is less of a problem with skills).

As a final comment upon the task analyses, it might be noted that some managerial tasks are 'continuous' and that managerial tasks are often complex. For example, with regard to the former, one of the components of the task of strategic planning was to assess the division's competitive position in the market place, the relevant information being collected over a protracted period. As for complexity, the result may be that the analysis becomes very demanding for the analyst. As one of the interviewees put it: "I'm aware of how many things I'm saying - it's an attempt to disentangle what comes automatically."

### 3.9.2 Skills Analysis

Although the discussion between analyst and practitioner often became detailed, in the task analysis the prime concern was with what the manager did and at some stage it became necessary to make the transition into the skills domain to find out something as to how the manager was accomplishing his objectives. The broad aim was now to try and 'exteriorise' the practitioner's thinking processes underlying task attainment. It is worth considering the nature of the interview a little more closely at this stage, Bouchard (1976) identifying four interview types as shown in Table 3.5. Type 1

Table 3.5 Interview types differentiated by question and response

<u>Responses</u>	<u>Questions</u>	
	<u>Specified</u>	<u>Unspecified</u>
Specified	1	3
Unspecified	2	4

interviews are totally structured, incorporating standard questions and responses. Type 3 interviews are unusual and have not been employed according to Bouchard. In a semi structured interview (Type 2), there are specific questions, but responses are open ended, whilst in the 'non directed' or 'unstructured' interview (Type 4) neither questions nor answers are specified beforehand. In the skills analyses the concern was with interview types 2 and 4.

As the interviews in the project developed through considering skills there was still some structure, but this did not dominate what remained very much an 'on-line' process. It was useful to hold a parameter in mind - an independent variable that whilst it was not being manipulated (in the usual psychological sense) was being explored. Two parameters, in particular, that were borne in mind were those of experience (protracted learning) and high competence, although all of the ideas expressed in sections 3.2 to 3.8 were, of course, known to the analyst. Since the principal aim was to discover how the practitioner attained his objectives, illustrations of the kinds of question that were posed are as



follows:

- 'How do you formulate your intention?'
- 'What information do you require to meet your intention?'
- 'Is all information equally important?'
- 'What does the information tell you i.e. what does it mean?'
- 'What do you do with the information?'
- 'What options do you have as a result of your information in the context of your purpose?'
- 'How are options evaluated?'
- 'What informs over their appropriateness?'
- 'How might the options be implemented?'
- Etc..

The real situation was much less stylised, of course. Modelling the decision making procedure was itself a decision making procedure for the analyst and there is no definitive procedure for making decisions for either analyst or practitioner.

As a variant upon the basic interview theme, sometimes the critical incident technique was employed, thus revealing examples of occasions where some activity had been performed particularly well, or not so well. In addition, there was considerable informal discussion with the managers concerning the aims and content of the study and the interviews were supplemented by observation (of three managers in particular). Throughout, issues concerning skills were also discussed with other interested researchers. The process is one of collecting ideas into models that are supported when they 'feel right' and only rejected when the evidence is against them (Singleton, 1978a). This situation is less tidy than the hypothetico-deductive method that is imputed into

much scientific thinking and Branton (1979) talks of the research scientist holding a 'warrant of apprehension', some list of attributes that will allow that successful 'rendezvous with a stranger' and with which each experience may be compared.

A further important feature of checking any conclusions was the reaction of each individual practitioner to his skills analysis. It seems that most practitioners recognise a description of their skills even if they have not seen it previously in the terms presented. Hence the data shown in the next chapter is a revision of an earlier account that was presented to each manager for additional comment.

With its strong emphasis upon the depth interview with a small sample of subjects, the research procedure may be regarded as essentially clinical and comparative. Hunter, who made use of this kind of procedure in studying a quite remarkable mathematician probably holding unique skills, points out that in the clinical survey dealing with one individual there is no expectation that it will necessarily resemble surveys of other people's calculative skill, but that with the availability of several cases there is the opportunity for comparison (Hunter, 1977). In this study the idea was to make use of the comparative option and relate the findings to what was known about skill.



All the main interviews after the initial ones involving the questionnaire (lasting about one hour) were tape recorded and transcribed near verbatim. The time that each manager could give to formal interviewing was variable and is shown in Table 3.6.

Table 3.6 Interview Times for Sample

<u>Manager</u>	<u>Main Interviews</u> <u>(approx hours)</u>
1	15.0
2	13.5
3	7.5
4	8.0
5	7.5
6	21.0
7	7.5
8	13.5
9	8.0
10	10.5
	<hr/>
Sub Total	132.0
Follow up interviews	20.0
	<hr/>
TOTAL	<u>152.0</u>

This only reflects the time that the conversation was being recorded and does not take account of the informal discussion nor, for instance, of any digression to look at some paperwork in detail in order to facilitate the analysis. The times presented relate to both tasks and skills.

### 3.9.3 Sample

The sample of managers participating in the skills analysis was as shown in Table 3.7. The managers were employed in various functions, but for simplicity a basic producing oriented - trading oriented functional distinction was made. The General Manager

Table 3.7 . The sample participating in the study

<u>Manager</u>	<u>Position</u>	<u>Level</u>	<u>Function</u>	<u>Business of Division</u>	<u>No. of employees</u> (Approx)
1	Production Director	Snr.	Producing	Process Works	1500
2	Commercial Director	Snr.	Trading	Precision Engineering	2000
3	Marketing Mgr.	Mid.	Trading	Process Works	1500
4	Technical Director	Snr.	Producing	Process Works	1500
5	Works Mgr.	Mid.	Producing	Continuous flow production	200
6	Work Study Mgr.	Mid.	Producing	Engineering	750
7	Departmental Mgr.	Mid/Jnr	Producing	Continuous flow production	200
8	Sales Mgr.	Mid.	Trading	Process Works	1500
9	Mkt. Planning Mgr.	Mid.	Trading	Process Works	1500
10	General Mgr.	Snr.	Producing/ Trading	Process Works	1500

as head of a producing and trading unit holds ultimate responsibility for both functions.

The differentiation between organisational level remains imprecise since it is not easy to accurately define seniority comparatively across Dunlop divisions. The aim was to obtain a fairly even split between functions and to include some senior management committee personnel. The ultimate criterion of inclusion was a willingness to participate. One interviewee left the company, making the sample size of 10, which was considered adequate for synthetical and comparative purposes.



### 3.10 Summary and Conclusions

This chapter has discussed the conceptual basis underlying a skills analysis and the research procedure employed in conducting such an analysis. As for the former, skills may be regarded as prerequisites to behaviour applicable to tasks as diverse as sewing and directing enterprises. Skilled performance is purposeful, learned, integrated, hierarchically organised and has a good sense of timing. There is a great variety of human skills, but the assumption here is that there will be some fundamental skills associated with the tasks of management. The objective is to identify skills in a particular context with the supposition that there will be skills relatively independent of that context.

As for methodology, the current fashion for laboratory experimentation, statistical procedures and numerical presentation of data are avoided. The skills analysis was conducted via a clinically oriented interaction between analyst and practitioner. The main source of evidence was the manager's thoughts on what he did and how he did it, although this was supported by 'informal' and 'formal' observation. There was also a dialectic value in discussing ideas with other analysts/practitioners and the empathy between analyst and manager also played a part.

The intercommunication was structured around how the manager made progress towards his objectives. In

this context it was useful to regard the manager as a model builder and the skills issue was focused as 'what kind(s) of model did the manager hold and manipulate?' Putting this another way, 'what were the strategies and tactics that enabled the manager to progress towards his objectives?'

Since the analyst was unfamiliar with the various managerial jobs, it was necessary first of all to separate and describe the main tasks. One or more tasks was then selected for more detailed analysis, but the prime requirement was for the analyst to move (creatively) from tasks to skills and say something as to how task objectives were being accomplished. Whilst there was a high degree of confidence in the task descriptions that are presented in the next chapter, the manager providing his own terminology and the analyst merely the structure, the skills presentation is necessarily of a more speculative and interpretative nature. The relationship between the 'logic-in-use' of the manager and the reconstructed logic of the analyst (after Kaplan, 1964) may be ill defined but although there is no definitive method for skill description, it was possible to explore the parameters of experience and high competence and, importantly, to check each description by submitting it to each manager for critical assessment.

Ten managers participated in the skills analysis.



CHAPTER 4THE RESEARCH RESULTS4.1 Objectives of Chapter 4

This chapter presents the data that has been obtained concerning managerial skills. The chapter comprises ten individual cases each referring to one manager and there is a summary in the final section. For each manager there is a brief description of the job as a whole in which the main tasks are identified. One task in particular is then considered in further detail and this is followed by a description of the skills associated with the task.

4.2 Presentation of Data

When the interviews were written out they comprised in total well over half a million words and hence the data presented in this chapter is necessarily an abbreviated account concerning both tasks and skills. Condensing the interviews proved an iterative process, the data below concerning the most significant aspects and incorporating only a few specific examples in support of general statements. In addition the data has been more carefully structured to reveal the distinction between tasks and skills, the interviews being of a less stylised and more spontaneous nature. Because of the length constraint each individual case study is a more concise account than that presented to each manager, although managerial comment has been incorporated as necessary. Whilst all the interviews have been condensed, some

of the case studies are longer than others and there may be some unevenness in clarity between cases. This variation is because firstly some managers were better than others in introspecting about what they did and how they did it, and secondly some managers were able to give more time than others to interviews and supplementary discussion and observation.

The terminology of the task data closely follows that given by the managers although because of the limitation on length it has been necessary to omit some of the detail. Moreover discussion is always sufficiently general to preserve the anonymity of participants.

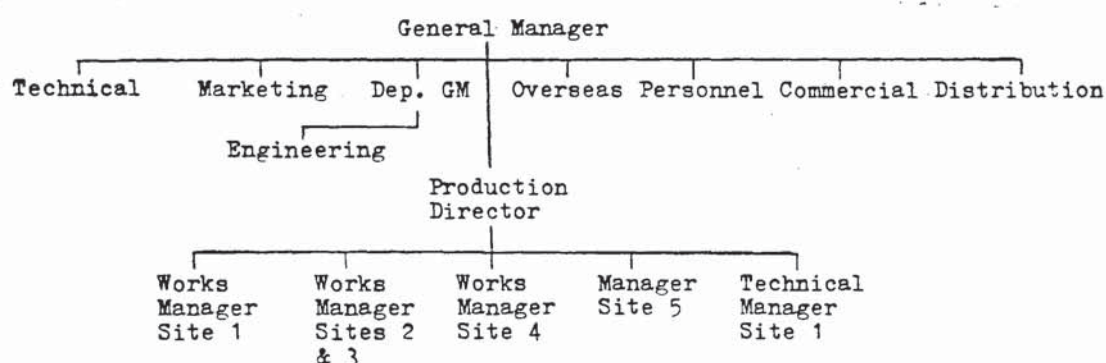
The terminology relating to skills reflects rather more of the analyst, the shift from the task to the skill domain being something of a creative leap on his part. Obviously managers talk as managers and not as skills analysts and the skills data, whilst being rooted in the interviews, is more 'interpretative' than that concerning tasks. However it is worth recalling that each manager was invited to comment upon the validity of his skill description and all did so. The general feeling was that the descriptions were valid, but specific comments were added in all but one case, as each individual manager felt necessary. Furthermore as the skill descriptions were being written, several managers were contacted with requests to clarify certain issues.



### 4.3 Manager 1 The Production Director : Senior Management

#### 4.3.1 Job Overview

The Production Director, who has held his post for about 18 months following a reorganisation of the business, is part of the management committee reporting to the General Manager. He is ultimately responsible for about eleven hundred employees in several factories, the organisational tree being as shown:



The manager distinguished two broad classes of decision making in his job, although it was clear that the boundary between the classes often became blurred. For those decisions concerned primarily with the future, the manager is closely linked with senior colleagues in contributing to a group decision process with the aim of setting a corporate strategy which will influence and be influenced by production factors. The task is to plot an optimal path through a decision tree where nodes include technology specification, equipment options, choices in operating methods and support systems. It is also necessary to determine the personnel requirement and the timing and location of the production facility. There are many factors to take into account such as costs, efficiencies,

legislative changes and so on. As for decision making with a relatively shorter term impact, two responsibilities predominate - what the manager termed 'making enough' and 'making it at the right cost'. In order to meet the sufficiency requirement it is necessary to ensure that there is the available capacity to satisfy the market demand. The orthodox view of production is that factory capacity (plant and people) is laid down to meet the forecast sales levels. If it transpires that the actual sales levels temporarily exceed planned levels, overtime working is the likely option, whereas if the increased requirement is permanent, consideration is given to securing additional production facilities. Should actual sales fall below expectations there is a situation of excess capacity and the tendency is for acceptable cost levels to come under threat. In practice, the task becomes one of planning the utilisation of equipment and people which is made more complicated by a number of factors including temporal variation in product demand. What tends to happen is that resources are geared to specific commitments and allowances are made for the remainder. A basic plan is set annually and is regularly updated according to specific circumstances. Although the manager retains the ultimate responsibility for the task his level of involvement will vary. For example there will be a high level of participation in the installation of a new piece of equipment to manufacture a new product, whereas minor product alterations will



not be of undue concern. However, it is the case that on a day-to-day basis volume problems caused by 'industrial relations' issues, process difficulties and so on, will remain of major importance in the job.

Whilst there are other important responsibilities (notably to ensure that there is compliance with Health and Safety legislative requirements) the second of the manager's more immediate responsibilities, namely the financial control of the factory operation, will now be considered.

#### 4.3.2 Task Description : Controlling the factory operation

In the firm in which the manager was employed the production operation was expected to make a positive contribution towards profit through judicious cost control. Indeed, on the assumption that selling prices remain constant in the short term, profit is dependent upon levels of production volume and costs. It has already been noted that production volume is a major concern for the manager and no less a problem is that of cost control. His task is to recover actual costs despite variation in volume and there is an additional aim which is that the factory should become increasingly more efficient. 'Recovery' may be construed as the piece rate through which costs are refunded from the standard system which will determine standard (or allowable) direct labour, material and overhead costs for a unit of production. The difference between the actual costs and the standard costs that should be incurred are termed

'variances'. As for the requirement to improve standards and increase efficiency, the manager holds an objective to meet a positive target for total factory variance (against standard costs). This gross target is divided into individual factory targets and subsequently into departmental targets (whereupon this manager's involvement ceases, otherwise the detail would become overwhelming). It is possible that targets may be altered depending upon unforeseen circumstances.

The prime source of information concerning factory variances is the monthly operating report which provides a detailed analysis by factory and department in terms of materials, waste and substandard, labour and variable overheads. However, this is not the only information source; a weekly report comprising less detail is also received and in the event of a marked change in the ongoing operation the manager would expect to be informed immediately and cost effects would be quickly, albeit crudely, calculated.

The overall task comprises a number of components. Firstly, although the factory variances presented in the operating report inform over the profit/loss situation, the manager must decide upon the validity of the figures. This means interpreting the figures against a personal knowledge of actual production events and descriptively this shades into the manager's skill. Next, having understood the variance position,



the manager must make a decision over its acceptability. 'Ceteris paribus', criteria of acceptability concern the overall planned variance target, individual factory targets and standard costs (for if the manager is satisfied that production performance is optimal, perhaps the standards will need amending). Should the variance position be unacceptable it will be necessary to initiate a programme of improvement. This will mean either changing the system in some way because of inadequacies or ensuring that the existing system functions properly in the future. Any programme that is implemented will, of course, be monitored.

#### 4.3.3 Skills Analysis

The Production Director makes a commitment to a planned target concerning factory variance which is divided into targets for individual factories and departments. An operating report provides information concerning factory performance, but this is just one of several information sources. The relationship between the manager and the information sources is dynamic and reciprocal. As a result of initiating action the manager will look for a cost effect and cost effects will, in turn, guide him in his actions. To quote the manager "It's a constant two way process of comparing what is going on in the production shops with cost data to see if I'm attaining the desired result in financial terms." Hence the cost information provides both feedback and a stimulus to action.

Whilst compiling and interpreting the cost figures may be regarded as 'keeping the score' rather than 'playing the game' it is important to note that the manager is not merely a scorer; the important point is that he reacts to the situation that the figures represent.

#### Perceptual combination and the exception principle

In order to make sense of incoming data, there must be some pre-existing model to which the information can relate. Firstly, the manager must have an understanding of the costing system to enable some fundamental meaning to be attached to the cost information. He appears to hold some body of knowledge that is organised in accordance with the rules of the knowledge domain, namely cost accounting. Secondly, a more complicated model concerns the reality of the production operation. A process of cross reference between the two allows the manager to switch between them, relating changes in the production operation to changes in costs.

The understanding of events crystallises in some expected value so that, broadly speaking, the manager knows the nature of the cost information that he will receive. He holds expectations for all departments along each cost dimension and there are a number of factors contributing to expectations. Firstly, since annual targets for savings against standard costs have already been established, the manager can anticipate a proportionate amount relative



to the year to date. Secondly, there are a number of non financial information sources (e.g. output levels, waste levels etc.) that will contribute to an expectation in cash terms. If, for example, a particular department was short of volume because of diminished market demand, the manager would expect this to show in the figures. Thirdly, there is a whole range of miscellaneous factors that seem important, for instance a strike situation or, more subtly, certain costs (such as heating or lighting) that are not adjusted seasonally but which nonetheless vary with ambient temperature so that allowances ought to be made for this. Hence it might be postulated that the manager holds some hybrid model (partly pictorial, partly symbolic), structured around the key features of the situation facing him. In short, the cost information is being read against a fairly detailed knowledge of what is actually occurring within the production departments. Since the competent manager knows what is happening his working knowledge enables him to discern the unexpected signal from the data that he receives: "Mentally if I read a set of figures I know that for a 20% shortfall in volume what sort of figures I can expect to see, and if the figures look very much out of sort, this can be spotted very quickly." The manager is freed, therefore, from routine analysis and attention may be directed to those problem areas that have not conformed to expectation and need further investigation. In this context it would seem that there are three

types of decision - at one extreme the expectation and inputs coincide whilst at the other extreme there is such a wide discrepancy between the two that the manager knows that it must be inaccurate. Between the extremes there is incomplete understanding where the information does not conform to expectation and the problem is to find out why. This would invoke some analytical process, beginning with the unexpected evidence and guided by the need for a terminal solution through a series of interconnected steps. This may require a search through existing records, discussing the matter with others and observing machine performance with its operator. It is worth remarking that if there was a large unexpected gain that could not be quickly substantiated, the manager would ask for its suspension but, on the other hand, an unexpected loss would always be recognised.

In order to avoid any erroneous expectation the competent manager will try to keep his model up to date. This means ensuring that relevant information is continually received. There is, of course, a time lag between production and receipt of the monthly report - indeed the weekly report is received some days after the week ending - and, as a result, in order to keep up to date the manager ensures that he talks with his subordinates continually.

Having understood a variance figure (whether or not it conforms to expectation) the manager then



determines whether or not the figure is acceptable. In this context 'unacceptable' means that there is room for improvement and reflects a value judgement that the manager makes. It is possible to indicate several factors influencing the decision and these will now be discussed.

### Exercising Judgement

The manager holds a firm objective, the plan target, and if this is not being attained action is required. Moving down from the aggregate position, a variance that does not jeopardise the aggregate target but nonetheless falls short of expected recovery may be construed as unacceptable - it all depends upon the nature of the discrepancy. Firstly, if too great a sum is being incurred in the materials cost of a product, this is unacceptable. Materials, waste and substandard aggregate to provide the materials cost of any good product. The highest nett yield is required from raw materials and if one product cannot be made without incurring a loss in material costs, making more only exacerbates the situation. Secondly, whilst negative labour and variable overhead variances are partially related to waste, they are primarily volume related. Thus, for example, if money is being lost simply because people are short of work, an increase in sales will improve the situation. Where production volume is the problem a number of issues relate to the making of a decision, and once more the manager appears to hold a classification scheme.

Between the extremes where a situation is either obviously acceptable or unacceptable there is a range of situations requiring a more subtle assessment where nothing may be done because the manager may elect to wait and see what happens or because in trying to maximise his pay-offs reacting to one figure will seem less important than reacting to another. With the passage of time and, perhaps, the emergence of additional evidence, there is a stage when it is felt that something 'ought' to be done. At this stage there are additional parameters to consider; essentially the issue concerns the possibilities that might be accomplished.

An important issue relates to seeing each individual department against the background of the whole operation. Through holding the overall picture the decision to act is a balanced judgement that might be made inter-departmentally or intra-departmentally (along cost dimensions). For example, consider the latter where it is the case that material costs are rapidly escalating. Each unit amount of materials that may be recovered is worth increasingly more and a decision had been taken to 'overspend' on labour to recover 'scrap' products because of the cost benefits. Turning now to the consideration of one department against another, the manager is out to maximise his gain and the actual decision hinges on the comparison of relationships linking estimated probabilities with anticipated outcomes. Whatever



has created the variance figure will influence the assessment of likelihood i.e. if the manager understands why a particular variance has arisen he will try and gauge whether or not any remedial action will be easily implemented. In this context the manager may well be dependent upon advice from others, whereupon he has to assess the source as well as the content of the advice. The decision is further influenced by a time factor and the manager may find himself in the difficult position where not to act may incur short term costs but acting may jeopardise a long term gain.

#### Skills Summary

The hallmark of this kind of skill is that the manager is very clear about his objectives and the criteria that inform over their attainment which vary from the shorter to the longer term and comprise a whole series of feedback mechanisms. The manager's skills lie partly in combining perceptions of the real (production) situation with the associated numerical (cost) evidence. He must also remain sensitive to inputs that do not meet expectations, any discrepancy providing the stimulus for remedial action. In fact the manager places inputs into three categories; at one extreme data and expectation match whilst at the other extreme the mismatch is so great that the manager recognises that there must be an error in the paperwork and between these extremes the reason for any discrepancy has to be determined.

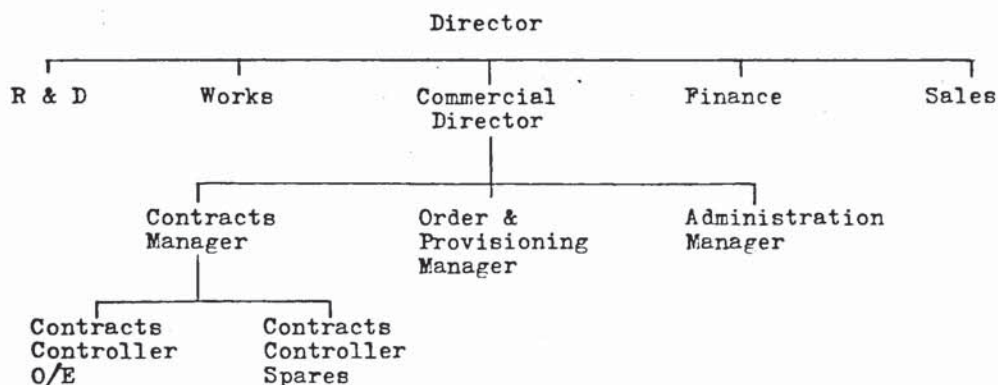
If the accounts are in order so that the manager is not chasing myths, attention will be directed to the factory to determine the anomaly. Once the variance is understood there is a further decision over its acceptability. Although there is a firm overall target, particular circumstances provide a series of moving targets. Again the manager classifies the situation he faces. On the one hand there is a clear indication to act; on the other hand the manager may be satisfied that costs are as low as possible. Additional parameters are relevant between the two extremes. Since there is some flexibility as to how the aggregate target might be attained there is an opportunity to balance different factors and reaching a decision seems close to a process of comparing anticipated likelihood and utility combinations, although assigning probabilities may not be easy.

#### 4.4 Manager 2 The Commercial Director : Senior Management

##### 4.4.1 Job Overview

The Commercial Director is a member of the Management Committee that holds corporate responsibility for running the Division. Prior to taking up his current post he held the job of Contracts Manager. It seems fair to say that his role is still developing, certainly the responsibilities of the post were substantially revised when he took it. Currently, about thirty employees head up to him, the organisational structure being as shown overleaf:





The Commercial Director distinguished a number of responsibilities, the first being that of recommending strategic policy (the word 'recommend' being used since the ultimate authorisation of any recommendations will lie elsewhere). This is the long term back-drop extending over 5 - 10 years against which more immediate decisions should be viewed and will be considered in detail below. Secondly there is a requirement to plan ahead for the medium term (the next few years), identifying problem areas and suggesting ways to resolve them. The third responsibility is to ensure that the short term targets of the business are being met, that the business remains profitable over the next year or so. On the planning side the manager will provide a detailed forecast for the year, estimating volume of business, debtor level, stock level, profitability etc.,

and will set targets for each parameter. As any year's plan is implemented there are specific day to day responsibilities. These may concern difficulties that others in the department have failed to resolve, for example whether or not to impose credit restrictions upon debtors, one-off pricing problems and so on. Other tasks include arranging major contracts, quoting for possible business deals (as anticipated in both shorter and longer term plans) and loading the factory so that there is the right level and mix of customer orders to enable the works to produce efficiently.

#### 4.4.2 Task Description: Setting the strategic plan

From the above outline it is evident that a major concern of the Commercial Director lies in planning and guiding the course of the business operation. Several years ago the company altered its system of planning and as a result senior managers in all divisions have to produce a strategic plan each year. As a formal requirement this is the mechanism that ensures strategy receives attention throughout the company. For the individual managers the task is to produce the plan by a set date, although it is clear that thinking about strategic issues is not merely a one-off event, rather it remains an ongoing process.

The aim in making the plan is to look to the future to anticipate important issues facing the division and against this background devise a course



of action for the division to take. The plan essentially imposes some order upon the division's future path by prescribing how the division should react to its environment. The product of the decision process will be some choice over products and markets that the division should pursue. This may mean expanding in present markets, diversifying into new ones or divesting of old ones. The strategic course ultimately relates to the very 'philosophy' underlying the business (represented in terms of growth/profitability), and the planning process is an exercise, in part, to see if this philosophy may be upheld.

Because of the need to produce the plan by a fixed date, the manager had just completed the formal requirement around the time of the initial interviews. Clearly he had to liaise with other senior managers in producing the plan, but the responsibility for the plan was his alone.

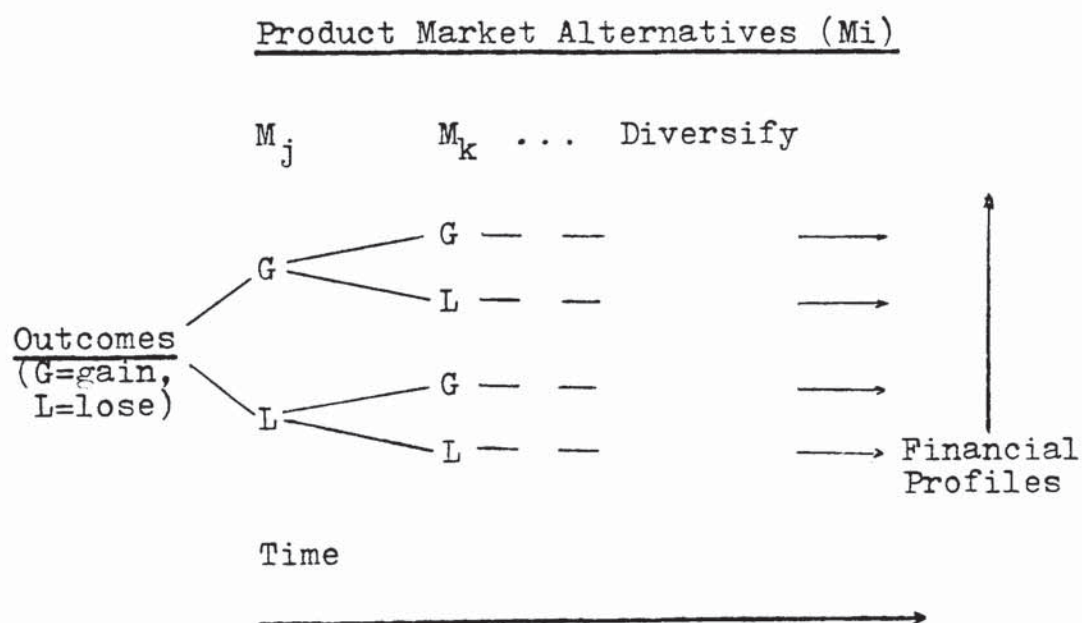
#### Identifying market opportunities

In order to determine whether or not there are opportunities for future growth the market potential related to the division's products needs to be identified. The gross market is segmented and likely opportunities are aggregated for each segment. Information concerning opportunities will emanate from salesmen, trade press etc. and will be represented in cash terms. A major problem is that surrounding any forecast there is incomplete knowledge - nothing is known for sure and, for example, changes in one

variable (political climate, say) could dramatically affect the nature of the market.

### Setting the strategic course

Growth Having identified likely market opportunities the manager then has to speculate over the effects of realising or not realising such opportunities. The task is to link the available opportunities with the outcomes that may result. The consequences of 'gaining' or 'losing' opportunities yields a number of scenarios that are represented in financial terms, as shown below:



If it transpires that the business objectives are not being met through the following product market combinations:

<u>product</u>	<u>market</u>	
existing	existing	(market consolidation penetration)
new	existing	(product development)
existing	new	(market development)

the need will be to look for new products in new



markets. The task now becomes one of thinking of ways in which to diversify.

Having constructed product/market alternatives a choice has to be made concerning which alternatives to pursue. Having made some selection(s) the requirement is then to progress in this direction, which is considered below.

Harvesting and Selling The strategic plan concerns a recommendation that will have to be authorised by Head Office management and part of the brief is to consider harvesting and selling options. The former concerns the effects of running the business down over a period and is, in part, a 'technical' exercise measuring the effects in financial terms. What is much less easily assessed is the 'social' impact of the option.

#### Realising strategic options

The Commercial Director described setting the strategic back-drop as " ... relatively easy in many ways - it is easy to say 'break into a particular market', the difficult thing is to do it." This also requires careful thought, the fundamental question being 'how might some opportunity actually be realised?' Firstly an assessment over the strengths and weaknesses of the division in a particular market has to be made. The division is competing with other suppliers in the market place and the task is to compare the division against other competitors with regard to important factors such as price, product performance, service

in the context of the strategic

plan, a broad general assessment is made, wherever possible the information being of a factual nature. A further task is to check that the division has the capacity that will be necessary to support a proposed course of action. Fundamentally there is the problem of securing funds for any growth and how other limiting factors may be overcome will be discussed with the manager concerned (e.g. R & D back-up and production capacity etc.).

### Monitoring the Plan

Once the strategic plan has been set, the objective is to monitor events over time against the plan. Whilst surveillance of strategic issues may be an on-going process, there need be no major review of the plan until a significant event occurs, i.e. there is some unforeseen change on the outcome of a particular bid for business. Some events are not easy to recognise and interpret (for example circumstances leading up to political change), and, with regard to implementing the plan, some events may be recognised too late (e.g. price information concerning a competitor).

#### 4.4.3 Skills Analysis

In recommending strategic policy the basic aim is to look ahead over a number of years and devise an appropriate course for the division to take. The question 'where will the division be in several years time and how will it get there?' is posed and the



task is to come up with an answer. One set of key decisions concern the development of alternative scenarios and another set lies in actually making progress along the proposed strategic course.

In advancing towards his objectives the manager knows roughly where he is going in general terms, but for most of the time he neither knows, nor does not know, his terminal point which evolves as thinking develops. Furthermore his thinking is never entirely constrained in direction, neither is it entirely free. The truth is that at different times within the overall process there are leaning towards either mode.

#### Understanding the nature of the business

As a basis for any planning activity the Commercial Director stressed the importance of understanding the business. For example " .. if you are trying to get from A to B there is no way you can do so without understanding your business, the competition, the environment you're in. You've got to have this knowledge." Just as it is not possible, for instance, to build a picture frame without establishing the relationships between wooden laths, nails and hammer, similarly it is not possible to set a strategy unless the inter-relationships between the substance of the business are known. The manager must understand the very nature of key variables (stocks, debtors, margins and so on) and how they relate to one another i.e. how changes in one variable

will affect the others. How else could the manager competently set a strategic course if he did not understand what this would mean to the division?

What the manager holds is a model which is organised such that manipulations may be made that remain in accord with the rules of business functioning. The dynamic nature of the model may be encapsulated by a number of 'if - then' connections where the 'if' precedes some causal variable and the 'then' precedes some consequence. For example, if turnover falls by  $a\%$  then margins will be affected by  $b\%$ ; if stocks fall then ceteris paribus funds employed will fall and so on. Whilst such rules may have a general validity, they have certainly been adapted to suit the particular divisional operation. The model has been experientially influenced: "When I first took on the job I didn't understand the business as well as I do now .... I've learned through errors and successes how parts interact." It is not merely a store of associations, however: "each problem is slightly different and you mustn't react to it identically (as in the past)." In order to react appropriately to the variety of issues he faces the competent manager has internalised his own set of rules as to how the business functions and this allows him to manipulate the key variables, to see the consequences of his manipulations and hence select optimal responses.



Assimilating information and assessing possibilities

In developing the strategy there are only a few fundamental options open to the business, namely growth, selling and harvesting. Since the former option was the recommendation this is considered below.

Expansion The first step is one of identifying market opportunities where, under conditions of uncertainty, the manager is trying to obtain as accurate a picture as possible. He is building his model piecemeal, aggregating opportunities to provide the overall view. Any opportunity is, however, evaluated against a personal expectation derived from experience and general knowledge surrounding the opportunity. The result is a likelihood estimate that the opportunity will actually prevail, some opportunities being given low chances of going ahead, others being regarded as 'near certainties'. The estimate of the magnitude of the opportunity will also be tempered by judgement. To try and reduce the effects of uncertainty as much information as possible surrounding any possibility will be obtained.

At this stage the concern essentially lies with broad chunks of information, general scenarios described in cash terms. In order to see how the division might approach the future, the manager must undertake a transformation process, moving from the general to the particular. Even at a general level " ... it is fairly obvious some things are possible

and some are not." Hence the more fanciful propositions are filtered out, but the more realistic a possibility is regarded the more is the need to consider detail. The question is not so much 'is it theoretically possible?' but rather 'will it earn a profit?' The manager must, therefore, manipulate the alternatives into a format that will allow interpretation and evaluation in terms of profitability. As a result he may now determine the consequences of attaining or not attaining an opportunity and may select those opportunities that will enable the division to meet its basic objective of obtaining a satisfactory return on funds employed. In making his selection the manager is tentatively setting a strategic course, some product-market choice. The selection is only 'tentative' because the manager, in his thinking, needs to advance still further forward to determine what is required in order to realise the product-market choice and it is possible that some choice(s) may be filtered out at this stage.

The problem is to identify some competitive advantage and it would appear that the manager constructs inner scales representing important real world variables, the division and its competitors being placed upon the scales for comparative purposes. Establishing scale locations also requires judgement: for example it may be necessary to adjudge the price at which a competitor might bid for business. At this level the manager is really operating on the



basis of what feels appropriate through a general assimilation of information concerning what competitors have tended to do and the nature of the particular opportunity in question. The process is one of interpolation, bridging the gap between present and future in establishing the inductive credibility of competitor action(s). There is no way of avoiding this inductive inference in the context of the plan, but as real world events unfold, as much relevant information as possible will be obtained to test the validity of the inference.

There is some scope for balancing variables against one another such as a price-delivery trade-off etc. The skill lies in being able to relate customer values to the product at hand, and then assessing the consequences for the division based upon the working knowledge of the business.

Having made the assessment on competitive position, in realising some opportunity the general approach will be to build upon comparative strengths and minimise weaknesses.

#### Unconstrained thinking

As mentioned above, if the business objectives will not be attained through some combination of existing/new product markets, then there is the option of diversification. Indeed because of the conditions of uncertainty surrounding the strategy it may well be appropriate to consider this option

anyway. In the first instance it is important to actually generate options and establish their 'validity' later on. At this stage the eventual terminus is unimportant; thinking should be focused upon coming up with options. In this context the manager spoke of "scanning all the bits of information I've acquired" to try and yield some option. He also mentioned: "In my mind there are often unrelated little bits of information gleaned through reading the press, talking to others, doing my job and somehow .... they're all whirled about to see what patterns emerge. And the more understanding and knowledge I have, the better the outcomes are likely to be." In this case, the process is not one of merely looking for likely ideas, rather it is one of 'synergy', taking facts of somewhat limited individual value that in combination yield something of great value.

A hurdle that had to be overcome was that of concentrating upon some restricted avenue of thought - rather it was necessary to roam around and consider various possibilities. Quoting the Commercial Director again "My worry is that opportunities I haven't thought about do exist - and I haven't thought of them either because I haven't got the necessary bits of information or because I lack the intellectual ability to think of them."

It might be inferred, then, that the manager needs a comprehensive knowledge base concerning the



division and its environment, but, interestingly enough, at this stage he is trying to make a 'path independent step', unduly unencumbered by the traditions and past history of the division. Some possibilities may be very unlikely in that they are too remote from the prevailing technology and expertise, but in any case the ideas will be evaluated much as above - 'will any new venture be practicable and profitable?'

#### Self Monitoring : A note

In the interviews a further performance aspect was mentioned, namely a monitoring of the manager's own capabilities. The manager has collected ideas into models and these are checked against inputs from other sources not only to improve the inner representation of external reality, but also to check that the manager himself is functioning properly. In short, the skilled man checks not only the outer, but also his own inner, world. He is aware of his own limitations and will try to compensate for them.

#### Skills Summary

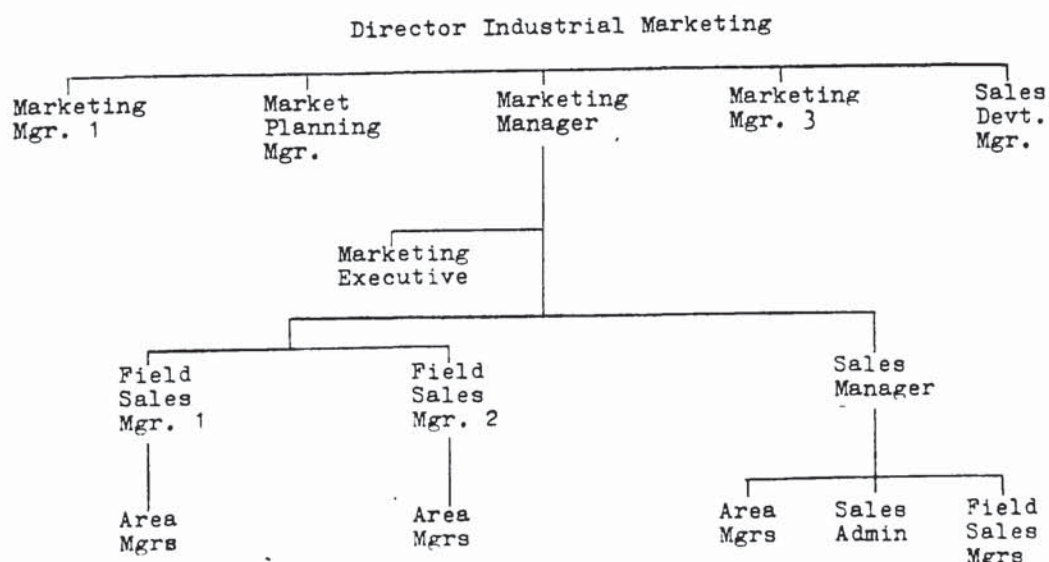
A part of the manager's skill is an acquired expertise concerning the understanding of the way the business operates. This is no mere 'lexical knowledge', rather it is a working model organised in accordance with the functioning of the business. A further component of the skill lies in looking for possible options for the division to take. Thinking will be relatively less constrained in the case of

diversification - the skill is to come up with appropriate ideas. With the remaining options of expansion, the skill lies in developing an accurate picture of real world opportunities. A detailed analysis is necessary for satisfactory evaluation of options. The overall process appears to be one where propositions are filtered out as more detailed evidence concerning the nature of an opportunity accrues, and the evaluation is against criteria of profitability and practicability. The skill in setting course will depend upon the manager being able to evaluate the consequences for the division of some potential opportunity.

#### 4.5 Manager 3 The Marketing Manager : Middle Management

##### 4.5.1 Job Overview

The Marketing Manager is part of the industrial marketing management team and is responsible for 19 persons in all, with four immediate subordinates. The position of the job in the organisation is as shown:





The manager's overall objective is to attain good sales results in the three markets for which he holds responsibility. There are two major aspects related to this objective, firstly the provision of volume and turnover forecasts which is considered in some detail below, and secondly the organisation and control of the selling effort to achieve the planned forecast. With regard to the latter there are several sub-objectives, for example the planning and organisation of various support factors such as publicity, market research, advertising and technical backing. The manager must also estimate his own departmental resources that are needed to meet the plan, and the selling expenses that will be incurred. A further sub-objective is to establish the pricing framework and other facets of commercial practice, such as rebate schemes, commission schemes and credit facilities. In addition the manager will encourage ideas concerning new products or changes to existing products, any likely developments being passed to the Sales Development Manager. He will also maintain personal contact with the principal accounts, (partly because of his seniority) and hence he should be acquainted with various members of customer organisations including purchasing, technical and design personnel. The final sub-objective is to maintain a continual surveillance of competitor activity and react to particular developments.

#### 4.5.2 Task Description : Estimating Future Sales

The aim is to estimate sales levels in terms of volume and turnover at current prices for each product group across the markets for which the manager holds responsibility. The projected sales are presented in numerical form, although the figures are supported by a short narrative. The forecast period is 12 months and this is broken down by month to reflect fluctuations in demand.

Since there are few fixed contracts, there is little certainty in the forecast. Rather, the forecast reflects the 'assumption' that the manager has made. Furthermore as there is always an incomplete picture of events, decisions are made in an uncertain environment.

Essentially the subsidiary objectives relate to acquiring (and assessing) different kinds of information and compiling this information in order to provide the forecast. Specifically, the manager accrues volume forecasts from the front line salesmen who submit their forecasts both in terms of product groups and main customers (and likely new accounts). In addition, he will talk personally with the major customers about their product requirements, tempering any anticipated demand with his own assessment of their estimate (which is part of his skill). Further specific information includes the relatively recent results incorporating known gains and losses (taken over a period long enough to avoid freak fluctuations).



In this context it is necessary to identify why a particular effect has occurred: is it because of factors over which the manager has little influence such as the external market situation, or is it because of controllable factors, for example poor customer service? If it is the latter the issue becomes whether or not to take some action, to offset negative factors and capitalise upon those that are positive.

The general information requirements are varied and emanate from a number of different sources. For example, there are national economic trends, legislative changes, consumer trends, design trends and so on, obtained from trade journals, newspapers, Head Office, discussions with other managers and so on. Competitor performance is also monitored. Broadly speaking, the acquisition of this information is not a finite task, rather it is a continuous activity. Although the information gathering is carried out as a matter of course - exhibitions are attended, journals are read and so on - compiling the plan requires that the manager should take stock of the situation at a particular point in time.

Both specific and general inputs are integrated in some way to provide the estimated sales volume for each product group which is the final requirement in the compilation of the forecast.

On the basis of the sales estimates, the annual business plan is issued by the Accounts Department. This is presented in terms of turnover, costs and margins and is divided by product group. Actual sales are monitored against the plan, the sales results being provided through a computer based system each week, with the most detailed breakdown by customer supplied monthly. Set against the planned estimates actual results may well provide the rationale for initiating action such as increasing selling activity, revising prices etc.

#### 4.5.3 Skills Analysis

The objective of the planning task is to estimate sales levels for various product-markets, subsidiary objectives concerning the acquisition and assessment of information. Plainly this is what the manager does, he gathers information from his sales managers, customers, Head Office reports etc. However, the boundary between the task domain and the skills domain becomes blurred at this level of analysis since information pick-up depends upon the individual; the more he knows the more he will perceive. The objective of this section is to examine the nature of the mental operations that allow for the competent use of information in making the sales estimate.

#### The Overall Plan

The overall strategy that the manager might pursue is perhaps open to speculation. For instance is it that, on the basis of some model or schema,



a prediction is made whereby the manager 'turns around on his schema'<sup>1</sup> to seek information that will either confirm or refute the prediction? Or is it that the estimate is built up as information accrues in the direction of the general objective? The evidence of the interviews tends to support the latter viewpoint in that the manager reported that he deliberately avoided writing down any total figures before assembling relevant data. He recognised that at the back of his mind there may be some picture of the likely course of events, but the aim was to avoid "making the foot fit the shoe".

In any event it is possible to make further progress for, on the evidence of the interviews, it is clear that the exact sales estimates are not known until the terminal state is reached and at this level of description the goal may be said to evolve.

### Calculating Sales

In progressing towards his goal the manager recognises that he will never hold a complete picture of events incorporating all relevant factors, and his strategy is one of minimising error to arrive progressively nearer the best estimate. The analogy was to tuning a radio, firstly arriving in the region of the correct wavelength and then making more subtle adjustments to attain a precise value. Because of the flexibility of the division's operations some error can be accommodated but considerable error will cause

---

<sup>1</sup> Bartlett's (1932) terminology.

difficulties somewhere.<sup>1</sup> Attainment of the best estimate and control of the error appears to be achieved as follows.

The manager's model is based upon the specific factors: "This is the coarse turning that enables me to get into the right area ... (and) removes the big margin of error". The relatively tangible information sources (customer trends, sales manager reports etc.) provide an initial picture (or "first thoughts") and any contradictory or illogical pieces of information would be queried and pursued until a satisfactory answer was found. This may be relatively straightforward in practice. For example, the manager may have noticed an increasing sales trend for a particular product to a particular customer that is not reflected in a sales manager's estimate. A discussion with the manager concerned may reveal that the account has been lost, and hence this is reflected in the estimate. However, the manager may find himself returning to issues that he has previously encountered, "checking, rechecking and challenging" his model.

---

<sup>1</sup> The sales estimate will be what the manager anticipates will be sold (which will require the sales managers to sell well) but it is worth digressing to illustrate the importance of an accurate prediction. The sales figures will be used by senior management for policy making throughout the division. If the actual sales turn out to be less than the estimate, i.e. the manager has been optimistic, then things will become progressively worse as the variance increases for there will be excess factory capacity and a danger that fixed costs will not be recovered. On the other hand if the estimate transpires to be too low and orders outstrip ~~plan~~ i.e. the manager has been pessimistic, at some



Turning to "feelings" or "hunches", there may be a plethora of relevant factors as indicated previously. The interview evidence suggests that these will influence the finer tuning in the attainment of the estimate, where the relevance may be to individual product groups or to sales as a whole. The manager is really looking for key features to incorporate in his model, but these will vary, not only across products but also over time. "Each year there will be certain important elements that did not exist the previous year. For example, I can't behave the same way this year with the public sector (one of the major customers) because of the current spending cuts". To take another example, if a competitor were to introduce a product equalling that of the division, but selling at a considerably reduced price, as an obvious threat it would become heavily weighted in the decision process.

The acquisition of this general information as to how things are going may be via other people. To quote the manager "I'll talk to people in the industry who are saying 'overtime has stopped' and 'we're not replacing someone who has left'. In good times the same people will be saying 'we can't find people anywhere' and even though there are no actual numbers, the feeling is that the business is growing." Where people provide the information source, they must also be assessed 'qua' people. Thus the manager is very much reliant upon subjective categories, experience

having provided him with a person-oriented predictive typology.

### Predicting the Future

The overall result is, of course, that the manager can be predictive: "If all the indications are that the industry will be busy, then the effects of competition upon the division's own performance will be much less in all probability, but if things are slack they (competitors) will do things that they would not ordinarily do, for example, cut prices." If such were to become an internalised maxim there may be the appropriate reinforcement from actual events. The manager commented "I was saying that I thought the business was dropping off before there was any actual reduction (in volume) in the factory."

### Adapting to changes

Finally, the manager must avoid the problem of rigidity, of having unyielding preconceived ideas. If he is inflexible, he will not take into account relevant changes in his somewhat unstable external world. All the while he must remain open to current information, thus avoiding being 'caught out' by such changes. Putting this another way, he must be prepared to align his model to external reality and this is a further aspect of avoiding forcing the estimate into a procrustean bed.

Whilst the manager is trying to make his inner model as accurate as possible through acquiring up to date information, checking the validity of information



etc. he remarked that this was not conducted entirely at the expense of other aspects of the plan, or, in a wider context, the job as a whole. This is to say that there are opportunity costs within the forecast process and between different tasks, which reflect a further aspect of the manager's judgement.

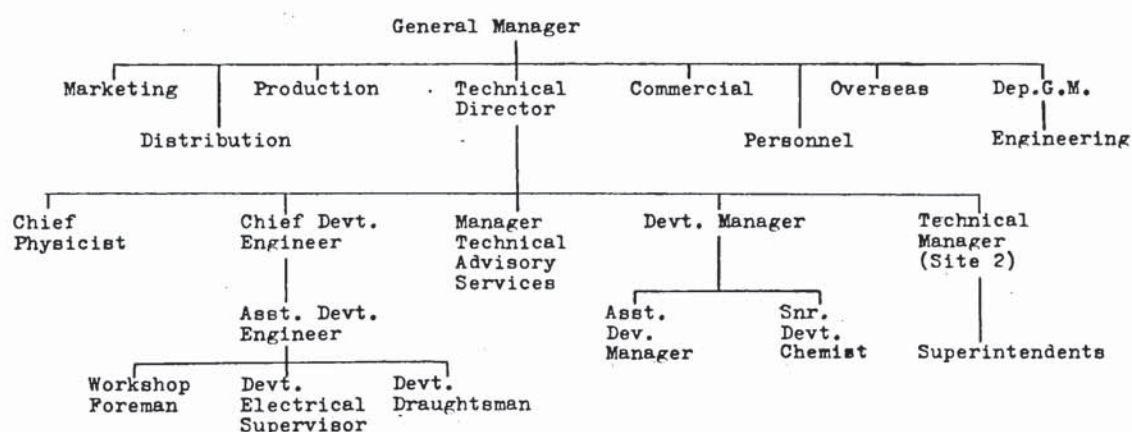
### Skills Summary

In estimating the level of sales, the skill lies partly in minimising error based on specific factors and from a general feel as to the way things are going, and partly in keeping the mental model inherently flexible in order to assimilate up to date information and early warnings of future events. Putting this another way, part of the skill lies in saying 'I know that I cannot get the estimate to be more accurate than this' and the remainder in saying 'I need to keep the information channels open to make the estimate as accurate as possible'. In a very real sense the manager is not locked into a 'closed loop' merely responding to what has occurred, rather he is making a response to something that will occur on the basis of his internal model. In calculating likely sales, the majority of error appears to be removed by the specific factors, but the decision is a balanced judgement incorporating general factors, the nature and importance of which will vary across products and over time.

#### 4.6 Manager 4 The Technical Director : Senior Management

##### 4.6.1 Job Overview

The Technical Director is responsible for the Technical and Development Function within the division, having a staff of 40 or so people in total. Most of the staff are based at the division's main research and development unit located at one of the principal sites. (The factory technical functions are the responsibility of the Production Director.) His position in the organisational structure is as shown:



He is a member of the Management Committee with the corporate responsibility of running the division, and has held his current post for about 8 years. He joined the Company over 30 years ago when the commercial application of what is the division's fundamental technology was at its inception. Since this beginning he has been involved in the sometimes dramatic pioneering and development work. After an



inaugural period with the Company Research Centre he joined the division and some 20 years ago he helped set up one of the division's main production plants. Before taking up his present post he held the job of Development Manager. Currently his responsibilities extend beyond the division and he represents the industry on a number of national and international institutional and governmental committees. Visits to overseas subsidiaries of the company ensure that part of his year is spent abroad.

In the interviews the manager outlined a number of principal responsibilities. Firstly there is the responsibility of optimising current product manufacture through applying technology, providing necessary departmental facilities, and advising over a raw material procurement strategy. The overall requirement is to manufacture products without incurring unnecessary costs and without compromising upon quality. The manager is also looking to extend the business operation through the development of new products and processes and this second responsibility is considered below. Thirdly there is the responsibility of participating in setting the overall business strategy. A fourth objective concerns the earning of revenue through technology transfer. This includes technical aid fees, the manager being chairman of an international technical policy committee where he provides relevant technical information to various overseas companies. In addition, there is the selling

of patents, licences, plant and equipment as a result of technical innovation. Finally there are wider responsibilities for the whole industry where the basic objective has been to establish an approach to issues faced by the industry as a whole. This has involved liaising with various interested bodies - for example, university departments.

#### 4.6.2 Task Description: Developing new products and processes

As mentioned previously one of the manager's main tasks is to develop new products and processes, to extend current capabilities through innovation. In practice the role is to direct the departmental effort in research and development work, taking projects from their inception to a satisfactory commercial conclusion. The manager may deploy resources (i.e. people and equipment) in support of some project and equally resources may be withdrawn. In either instance a wrong decision may be made at any time; that is a project that would have succeeded may be curtailed or one that will ultimately fail may be encouraged. Whether or not to lend support to developmental work is the key decision that is the hallmark of this task. The decision remains ubiquitous throughout the course of the project.

##### Starting a project

Initially the manager must decide whether or not to begin any development work, although sometimes this will not be his sole responsibility. One facet of the decision concerns resource allocation for associated with any development work are opportunity



costs - the requisite resources could be employed elsewhere. It may be noted at this stage that it would be very rare for the Technical Director to carry out the experimental work himself. His concern is essentially with 'policy setting', his subordinates actually conducting the experiments. Contrasting his job with that of the Development Manager so far as product development is concerned the latter is much closer to the empirical work. His contribution to decision making with longer term impact will be limited by his position of authority and lack of information through not being privy to overall divisional strategy (e.g. in the face of continuing negative evidence he may be unable to justify further resource allocation).

#### Nurturing and concluding a project

When resources have been allocated and the project gets under way, it is continually under review and the task is to monitor progress. If the work is markedly innovative it is likely that there will be significant problems to overcome. If the continuing belief is that the project is worthwhile and attainable the need will be to provide a safeguard during difficult times often in the face of negative attitudes. This will require a careful analysis and evaluation of research findings. These circumstances are particularly apparent when the developmental work is near completion and production proper is about to begin. The task is now to ensure that there will be a satisfactory transition and translation to the

larger scale. In the ordinary production situation the process will not be so carefully controlled and monitored by a strong technical presence. Furthermore the generally supportive atmosphere of the laboratory where there is familiarity with experimental failure will give way to the more relentless pressures of production where the requirement is for relatively prompt success. Once production personnel have taken over the manager will continue to monitor events particularly in the early days, and resolve miscellaneous problems. This final stage may be reached some several years following the decision of inauguration.

#### 4.6.3 Skills Analysis

In order to facilitate the continuing commercial viability of the division the Technical Director has an objective to develop new products and processes. It is at his discretion that resources will be allocated to or taken from research projects, and, having decided to embark upon a project, its development will be under continuous review until it is satisfactorily concluded.

For any research project the manager will know, albeit in general terms at times, his objectives, even if he is unsure as to how he might achieve them. His skill lies in being able to decide on the basis of evidence available at a particular point in time whether or not the objective will be attained. Equally, however, he must be able to recognise the



potential of a particular idea where it is not formally linked to any objective. Putting this another way, when the unexpected occurs its potential worth to a possibly vague objective certainly outside the existing scheme of things must be discerned. In practice this would be the starting point for further development work and if its potential was confirmed the project would become established.

The manager holds some representation of an ideal concluding state in any research project, a fundamental process being one of measuring how close the development work is to attaining this ideal. Since he is never absolutely certain that the project will be successful he is making a judgement under uncertain conditions. As a basis for judgement the manager appears to reflexively pose the question 'is my model sufficiently integrated such that I can anticipate a pattern of events, devoid of unsurmountable problems, that will allow progress to be made from the laboratory to the market place?'

#### A preoccupation with technology

In order to exercise his judgemental skills the manager must have a mastery of the technology of the business. How else might the plethora of technical information that is received be competently interpreted? Through his technological understanding the manager will be able to view any new proposal against existing accomplishments. He will know something of the interrelationships between key parameters, and the

likely difficulties that will occur. Suppose, for instance, that someone within the department was working upon a problem that the manager had failed to resolve in the past: "I don't say 'don't do that, I did it some years ago and it didn't work.' But any such result has, of course, registered; it's negative point number one. It will not prejudice the issue, but if I find two or three things come along that support my original viewpoint the alarm bell rings very clearly." Hence the manager's knowledge will provide an early warning signal - the first negative feature in this instance - that alerts the manager as to the future course of events. Putting this another way, it enables the manager to begin 'one step ahead' in anticipating the outcome of the empirical work and also in establishing an approach towards attaining the objectives i.e. the means to the ends..

#### Predicting research feasibility

Essentially the initial state of the thinking process is one devoid of any experimental evidence provided by ongoing laboratory work; there is merely some idea in embryo. If the idea satisfies a criterion of commercial viability (which will be determined by a group decision process), a second important criterion, which is the prime concern of the technical manager, is whether or not the project is technically feasible.

The manager appears to make a number of decisions, organised around various categories. On the one



hand it would seem that on the basis of his experience and knowledge the manager may be able to label a project as feasible without recourse to experimental work. He knows that by proceeding along well established and well understood technical/scientific lines progress will be made. It is recognised that problems will occur but the feeling is that these will not prove insoluble. Perhaps the best example is where the research work has already been undertaken by technologists elsewhere; the reliance is upon the regularity of science i.e. what has occurred once may be repeated. On the other hand, some desideratum may be classified as being outside the bounds of feasibility and if the requirement is for a 'philosopher's stone', the manager knows that its attainment falls outside the laws of nature. Between the poles the position is more uncertain and the decision to proceed clearly depends upon being able to see how to proceed. Where it is difficult to see a way forward one heuristic device is to look for even remotely similar work that has been undertaken previously. In short the inference was that through competence in his field the manager could perceive subject matter in a distinctive manner, being able to evaluate notions along a continuum shading from high to low feasibility. In the extreme it seems that it is possible to know that something is possible before knowing how it is possible, but in less clear cut cases ways of making progress become more important.

Assessing research evidence

Once the developmental work is under way and as the evidence begins to build up, the odds of success may be revised. Indeed it is important to point out that there is no substitute for empirical work; notwithstanding his preliminary notions the manager would wish to collect hard evidence on an issue. The recognition was that preconceived ideas could be misleading and it is also possible to regard this affirmation of empiricism as a constraint upon more fanciful theorising.

The mere accumulation of hard data is only part of the story, however. The manager uses the additional evidence to warn over the appropriateness of direction; it is a further contribution to a developing predictive base. The process is one of tagging each piece of evidence with some weighted value set against the objective. "In simple terms (it is a matter of) this looks positive, that looks negative ... this is the type of thing that could be a major problem, that could be a minor problem ... one positive feature in a critical area may be worth several other features in less critical areas." There is a comparison with what is known, the evidence being set against a framework built upon experience. Thus the manager may recognise, for example, that some negative issues may be easily corrected whilst others may lead into a 'box' wherein the solution will most likely remain elusive. The integration of evidence



within the existing model will push the manager closer to the critical choice point where the prediction is that the project will succeed or that the next experiment will solve nothing. This is the important decision, the judgement being determined by the balance of the weighted evidence - which is put together to yield some whole - and clearly made that much more difficult by vacillating evidence. For example, quoting the manager, "one project went on for two years too long, against my better judgement. But the people working on it were so sure that the problem could be resolved ... and (paradoxically) my own intuition told me it was capable of solution. But, as I say, it was formally closed some years ago - yet even now we keep coming back to it ... there looks to be one more likely approach ... we know once we crack it it opens an entire new technology ... people are working on this throughout the world."

There is a further dimension in the progression towards an objective, namely the practical limit upon resource allocation. Clearly a constraint upon the manager's thinking is that the development work should not become prohibitively expensive. Furthermore since resources are limited the need is to set priorities. One important factor in addition to technical considerations, is the urgency of the situation in a business sense.

### Analysing problem situations

The transition to production presents its own set of problems where the position is much less one of speculation because so much more is known, and where concern rests upon practical difficulties created through changes in scale. Typically problems will be presented in terms of symptoms - for example, that there is a high number of substandard products - from which the manager might diagnose the fault. There is a broad distinction between operating faults and process faults, where the cause of the former tends to be human error and that of the latter some inherent technical weakness. As a general heuristic if there is a radical departure from expectations the implication is that it is human error; a more subtle problem may well be a process fault. The application of a range of widely recognised analytical methods will assist in establishing causal connections of the latter.

### Accommodating new evidence

Throughout the whole decision process the manager must remain sufficiently flexible to perceive any new insights or opportunities that are presented. Even if the need is to develop a particular type of product to meet a known market demand, unexpected properties may also be exploited. What is required is an ability to connect quite disparate elements, a process of accommodation where the existing model is restructured to accord with the new information.



A sudden realisation of the potential of hitherto unconnected elements may also prove useful in making progress towards known objectives: "Suppose a harder product is required. I know about hardening agents and those that are used in fields other than my own .... it clicks that something used elsewhere may be of relevance."

### Skills Summary

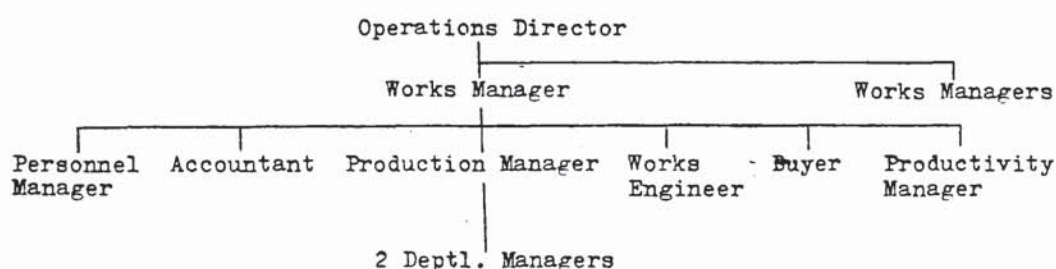
In the context of limited resources, the manager must determine whether or not to lend support to project work on the basis of incomplete evidence. His skill lies in the development of a predictive model founded upon the dynamic relationship between previous learning (expectations) and cumulative data, but there appear to be several fundamental processes underlying the manager's use of that data including 'analysis' where evidence is broken down into more basic elements that are differentially weighted, 'synthesis' where evidence is compiled into a wholeness and 'synergy' where pieces of evidence of somewhat limited value, in perhaps unlikely combination, yield something of greater value.

## 4.7 Manager 5 The Works Manager : Middle Management

### 4.7.1 Job Overview

The Works Manager is employed in a division where marketing/selling and production functions are not only organisationally distinctive but also geographically separate. The production function

is organised around a number of sites, the Works Manager being responsible to the Operations Director for one of these sites. In total there are over 200 employees at the site, the basic organisational structure being as shown:-



The Works Manager has held his current post for about two years, his previous job being that of production manager.

In the Works Manager's own terms the broad objective of the job is "... (to attain) the smooth and efficient running of the factory to meet the sales requirement." The term 'efficient' implies that the factory operation should be cost effective, which was a pervading theme throughout the interview. To try and convey the flavour of controlling the operation the Works Manager offered: "Basically it's a question of pulling the strings and seeing what the situation is, laying down guidelines and playing it by ear week by week."

Taking a more structural view of the job, the Works Manager identified a number of principal tasks. The first concerns the estimation of works costs,



which is the task that was considered in some detail and is discussed below. The plan period is twelve months and as the plan is implemented actual costs are checked against those of plan. Secondly, since Sales provide the output levels that the factory should attain, the manager maintains a close liaison with Sales personnel. He will also monitor actual output against the planned levels. A further liaison is with R & D personnel when there are specific problems concerning products/equipment and opportunities over future developments, and this was the third task. A further task concerned negotiations with Trade Unions. In particular there are annual wage negotiations where any decisions made by the Works Manager will be constrained by overall policy within the parent organisation. The manager will also serve as the eventual arbiter over serious industrial relations problems within the factory. Next, the manager has the task of allocating resources on a day to day basis consistent with the capital expenditure plan. Finally, the manager mentioned a 'miscellaneous problem solving' task, which conveyed something of the dynamic and varied nature of his job. By way of illustration, during the course of the interviews the manager resolved some interdepartmental conflict and ensured deliveries were made to a 'special' customer.

#### 4.7.2 Task Description: Estimating the Works Costs

The task objective is to produce a plan outlining the works costs in the forthcoming year to meet the anticipated production targets as presented by the sales operation. Putting this another way, the Works Manager has the responsibility of planning the allocation of resources that the factory will require for the following year. Following the usual accounting terminology, planned expenditure is of three types - variable, constant and capital expenditure. The plan period is for one calendar year, the plan being compiled around September time of the previous year. The importance of the plan to the factory is that it provides guidelines for expenditure for the following year - deviating from plan will require a good reason, particularly, say, with regard to increasing numbers of staff. As indicated above the process begins with the receipt of the production targets broken down by type. This is the baseline - any expenditure should be justified in terms of meeting the targets. Once the targets have been obtained there are a number of stages to the process, divided fairly arbitrarily as follows.

##### Developing the plan

In developing the plan firstly there will be a review of the current year to date which enables the Works Manager to establish the variances that have occurred and exercise his skill in determining whether or not such are unavoidable and should be



incorporated into the plan. Secondly the individual departmental heads will submit their own plans for the remainder of the current year and for the forthcoming year. The Works Manager will consider each item in the plan and the two managers will discuss whether or not the proposed expenditure is justified.

#### Finalising the plan

A further important stage in the decision process will be the challenge of the Operations Director to the plan. The Works Manager will have to justify the plan, and, depending upon the more senior management requirement, be prepared to revise costs as necessary. Once the plan has been finally agreed it will be issued to the sales operation. The format will give the component costs of a unit of production in terms of material costs, waste costs, labour costs and variable overhead costs.

#### Monitoring the plan

The events of the forthcoming year will be monitored against the plan, the manager receiving a monthly report concerning actual costs, which is an important source of information. If there is a variance between costs and plan some action will need to be taken.

### 4.7.3 Skills Analysis

The objective of the planning task is to estimate the costs that the works will incur in order to meet the output requirement of the selling operation. The

decision process begins with the receipt of output targets and these will be borne in mind. If the targets are the same as those of the previous year the manager will have a fair idea of the eventual cost estimates. If the targets are different in relation to those previously established the underlying process nevertheless remains similar.

The Works Manager makes progress towards his terminal state (relatively unknown or otherwise) through the acquisition of information from a number of sources. The specific input of the department heads has already been mentioned, but in order to evaluate their contributions, the Works Manager must already hold a developing schema or model. This will enable him to make sense of the new inputs and will, in turn, be modified by the inputs.

#### A general appreciation of the factory operation

The Works Manager frequently spoke of his own "intuition" and "feel for the situation" as assisting in the compilation of the plan. This appeared to refer to his experience in running the factory, a close involvement with its functioning. In this context the Works Manager spoke of the value of 'inspecting' the shop floor each morning: "You derive a feel for the place by walking around in a morning seeing how things are going." He would not necessarily be looking for anything in particular, rather he would be looking for everything in general, taking in WIP stocks, people doing their jobs, various production figures and so on. He would be looking



for, and would react to, the unexpected. An example that the manager provided was that of looking at the daily production reports (the weekly reports are received as a matter of course) where he queried a figure that was unexpectedly low. The answer was that the department had suffered from absenteeism which provoked further questioning - 'How many? Who? For what reasons?' Equally the reply to a question about an unexpectedly high figure was that the machines had run without problems for a period and that one of the operators had worked to a performance level well above standard performance. It is this kind of input, derived from factory tours or other sources, that has enabled the Works Manager to understand the nature of the factory operation, this understanding permeating the derivation of cost estimates.

#### Discrepancy sensitivity and signal/noise aspects

Turning to inputs that are of more specific value in compiling the cost estimate, one important information source is that of the formal review. This informs as to whether or not the factory is keeping to the current plan, and presents the cumulative expenditure position some two thirds of the year through. The main value of this information lies in the unexpected or the incongruous; the more probable the information, the less value it will contain. The manager knows roughly what to expect in cost terms. and, furthermore, he recognises that figures may well fluctuate because of particular

circumstances. In this context he operates through extracting the salient signal, notwithstanding any such surrounding 'noise'. Putting this another way, the skilled manager will not allow input noise (transient production events) to disturb perception of important signals (real cost changes). He is essentially looking for deviations from plan, and trying to establish what they will mean for the future.

### Extrapolation

Thus he has to find out why there is a variance at all and then decide if it is a one-off phenomenon or part of a trend that will persist throughout the forthcoming plan period. If, for example, there is an adverse figure because the manufacturing process has been changed in some way, then if these causal conditions are to continue, the costs would be estimated in accordance with this change. On the other hand, if some anomaly has arisen unnecessarily a contingency plan would be worked out with the manager concerned to rectify the situation and the forecast would not be adjusted upwards. One example was that the Works Manager identified that staff overtime in a particular department was increasing, as it transpired through no good reason, and hence the decision was to reduce the overtime worked and not forecast increased costs in this area. In short, the manager is gathering various inputs concerning future costs. His skill lies in assessing each input which is fed into a picture that is itself developing with each new input.



### Assessing people

In a previous section it was mentioned how the Works Manager liaises with sales personnel and persons in divisional R & D, both of whom may give indications of future developments. Similarly the Works Manager maintains close contact with the Operations Director so that he remains aware of his specific requirements for the following year. By way of illustration, there may be pressure to increase the number of first grade products or reduce raw material costs, both of which would affect future expenditure. It is the case, however, that there may be conflicting information: "I'll find Sales say it's imperative that we do x ... then R & D say we should in fact do y, and the Operations Director may say that neither will occur." In such circumstances it becomes a matter of assessing the source as well as the content of the information, and seeking clarification through accruing further inputs.

In meeting with the departmental heads to discuss the cost estimates the manager also reported the need to assess his subordinates as individuals. This is to say that he has abstracted some person oriented categories that serve essentially as an early warning prior to treating any issue upon its merits.

### Relating costs to production data

Throughout the above discussion there has been a constant reference to the reality of the factory

situation, the representation of that reality in terms of cost figures and by implication a process of cross reference between the two. Numerical manipulation, whilst being necessary, is not a sufficient basis to produce the plan. This may be nicely illustrated in the situation where the Operations Director challenges the plan.

For whatever reason the Operations Director had requested that the proposed plan for next year be reduced by x thousand pounds. (The somewhat paradoxical request of wanting a cost reduction on the best possible estimate was not lost on either party!) Although the Works Manager believed that he had set the individual estimates and hence the aggregate at the right level, he nonetheless determined to cut costs in whatever way might be feasible. Thus it was necessary to generate likely ideas, and it transpired a couple of cost cutting means were found, both avoiding the more rigorous procedure that the accountant would have preferred to follow but which nonetheless correlated more closely with the reality of factory practice. Thus it is necessary to understand what any figures might mean in terms of the reality of the factory operation; the two modes are complementary.

Finally it is worth mentioning in particular the case where the output targets are increasing. For the factory as a whole there will be the obvious benefits accruing from indirect labour (e.g. that the



same number of men can run extra machines for the mixing of raw materials) and services (e.g. engineering). What is less easy to estimate are factors such as the increase in labour requirement, not only to increase finished stocks but also WIP stocks. Once again the Works Manager spoke of having a "feel for the situation". He appears to reach his goal intuitively rather than through the application of formal analytical techniques. Perhaps it is an iterative process, where there are considerable benefits to be derived from experience: "Someone who was new wouldn't have a feel for the average WIP stock, wouldn't have an idea as to what extra labour would be required and at what stages would he take on extra labour?"

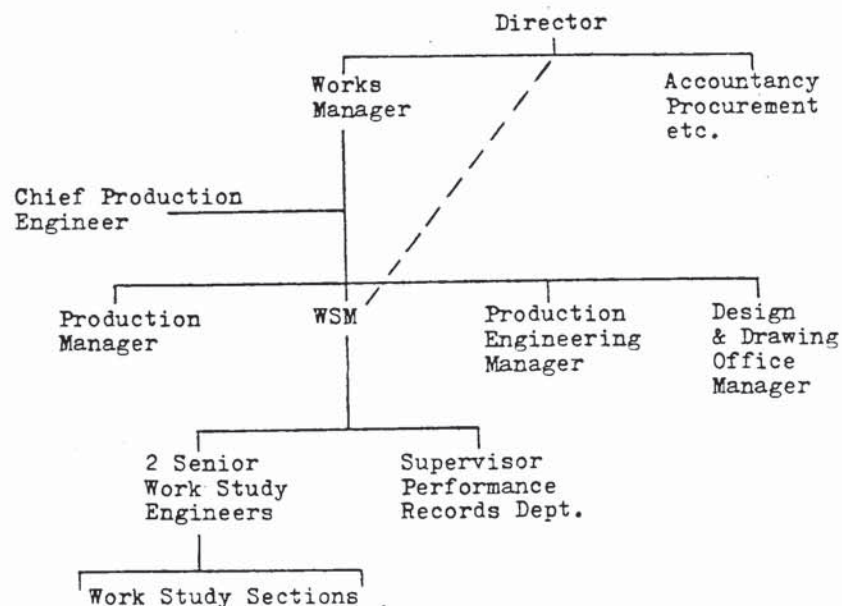
### Skills Summary

A lot of the Works Manager's skill lies in acquiring and interpreting information: the more that he knows the better he will be able to attain an accurate picture of works costs. His developing model appears of a hybrid nature, being built up from a number of sources. There are specific inputs concerning both past and future and a more general "feeling" as to the nature of the external operation based largely upon experience. Substantial advances are made through the principle of 'management by exception', being able to detect the unexpected signal and determine why it exists. The one-off occurrences will be ignored, but, through extrapolation, the more persistent trends will be included in the plan.

#### 4.8 Manager 6 The Manager Work Study and Performance Records : Middle Management

##### 4.8.1 Job Overview

The Manager Work Study and Performance Records has held his current post for about 14 years, having spent the last twenty years or so within the industrial engineering field. His industrial career began on the shop floor, his first move being into a technical liaison post. In between this and taking up with industrial engineering he spent a period in the training department as a foreman/instructor. His previous post was that of Senior Work Study Engineer. Currently he heads up to the Works Manager (with a dotted line to the Divisional Director), and has a staff of just over 20 people in the work study and performance records sections. His position in the organisational structure is as shown:





In the interviews the manager outlined several major responsibilities. Firstly he has to analyse monthly information concerning production performance measures and submit a report to higher management comprising, in summary form, the analysis and implications of the month's performance. Secondly he fulfils the role of training liaison officer for the division. He maintains a close contact with the training department to administer any arrangements necessary for management training. This will involve ensuring training needs are identified, keeping records of training undertaken, checking availability of delegates for courses, giving advice on training and so on. His responsibilities extend beyond his department in that he may be asked by the Director to conduct 'special' projects, which is the third major task. The terms of reference vary across projects which are often one-off occurrences. Fourthly he mentioned the task of running the department which involves the determination of work load, the delegation of work as appropriate etc. The fifth task, which was considered to comprise the bulk of the job, was that of 'maintaining and controlling the Wage Structure Agreement', and this is discussed below.

#### 4.8.2 Task Description: Maintaining and Controlling the Wage Structure Agreement

Any payment system obviously plays a major part in running a business and thus there is an important

need to adequately control the system. The responsibility of maintaining and controlling the payment system or 'wage structure' rests with the manager, who pointed out that "Everyone in the division has the responsibility to work to it - it's my job to see that they do." The manager identified a number of components to this task which are discussed below. Essentially the concern is with anticipating and solving problems and checking up on the procedures of the Agreement. Firstly, however, the Agreement itself will be briefly described.

#### The Wage Structure Agreement

The parties to the Agreement are the divisional management and the hourly paid employees. The Agreement resulted from negotiations between management members and the Joint Shop Stewards Negotiating Committee who are elected Union representatives.

Two of the principal objectives of the Agreement are to define pay rates and relate earnings to performance against work standards and manning standards. Hence the Agreement sets out a Pay Grade Structure (based on a jointly evaluated Job Grade Structure) and describes the systems of payment based on work standards obtained through techniques of work study. Earnings are thus determined by Pay Grade, performance against work standards (for direct incentive employees), together with any additional premiums or allowances. The Agreement also includes



a number of related conditions and procedures such as working arrangements, work standard checks, holiday pay, and so on. It is part of the conditions of employment for hourly paid employees.

For direct incentive workers the calculation of pay levels assumes that the Pay Performance of individual workers will fall within the range 75-125 on the BS scale.<sup>1</sup> Indeed, if performance falls below 75 or exceeds 125 it is written into the Agreement that management and unions reserve the right to investigate the reasons for this and take action accordingly. The rates of pay for indirect workers are based on a separate grading structure.

To some extent the introduction of the Agreement provided the opportunity for management and shop floor representatives to work on a bilateral basis over payment issues; without any Agreement the tendency was for each party to function with greater independence.

Resolving Shop Floor problems associated with the Agreement

If there is some problem facing the Agreement it is very likely that the work study manager will become involved in developing the problem solution. He

---

<sup>1</sup> Pay performance is the ratio of credits earned and attendance time (expressed as a percentage) i.e. Pay Performance equals:

$$\frac{\text{Standard hours credits} + \text{lost time credits} + \text{unmeasured work credits}}{\text{attendance time}} \times 100$$

To balance out fluctuations it is calculated over a two week period, and may be calculated either for one individual or, where appropriate, for a group of part of a production team.

categorised two kinds of problems, firstly those concerning the pay performance system and secondly those concerning the determination of work standards.

#### Developing various projects

A further task component was to develop various kinds of projects within the context of the Agreement. A project may be linked to a problem and the estimate was that project development and problem resolution comprised the bulk of the time devoted to maintaining and controlling the Agreement. Projects may be self started or the terms of reference may be provided by higher management, but in any event the manager will have the task of deciding what is to be done and monitoring subsequent events.

#### Monitoring wage structure agreement procedures

Ensuring that the Pay Performance System operates efficiently is completed with the task of examining various types of information concerning the pay performances. Firstly, there are daily and weekly summaries of pay performance and output levels for one particular department. Secondly, fortnightly pay performance summaries for all departments are received, and lastly there is comprehensive production control information which is received monthly. Generally speaking in each case the aim is to establish the 'acceptability' of the various figures and react to an 'unacceptable' situation.



The manager must also monitor a procedure that is automatically invoked if shop floor employees have not accepted prescribed standards (which is a right they hold). The procedure involves further job studies and as the manager may have to resolve issues that crop up in procedure, this may be regarded as a special case of the more general problem solving task.

Finally, monitoring the job grading system was considered to be the least important and least time consuming task component. In this context the manager would be approached because of some error in allocating a grade or because of a significant change in job circumstances. In conjunction with a union representative the task is to assess the validity of the appeal/request.

#### 4.8.3 Skills Analysis

The evidence was that the manager controlled the Wage Structure Agreement primarily through solving particular problems as they emerged and checking up on the various procedures inherent in the Agreement.

##### Reconciling the Agreement and shop floor demands

In resolving problems associated with the Agreement the manager's skill lies in reconciling on the one hand the terms of the Wage Structure and on the other the demands of the shop floor. For the lesser skilled the terms of the Agreement may well break down, issues may be left unresolved or

production may be fraught with stoppages. The evidence is that these have not occurred since the Agreement was introduced some years ago, and this is, at least in part, testimony to the skill of the manager. In order to exercise his skill it is inferred that he must hold some inner representations as follows: he must know the terms of the Agreement; he must understand any problem; he must be able to devise a solution based on that understanding (i.e. he must be able to devise a plan consistent with the problem definition) and he must be able to actually execute the plan (i.e. implement the decision in the factory).

#### Interpreting the Agreement

The manager has to know the nature of the Agreement - the pay grade structure, how pay performances are determined and so on. There is also an advantage in knowing the circumstances surrounding the Agreement i.e. why it was drawn up, its history and the more subtle 'spirit' that the Agreement may encapsulate. All this assists in being able to interpret the letter of the Agreement when it is under 'threat' because of some problem. Thus it is not simply a matter of being able to assimilate lexical knowledge, rather it is a case of being able to see what the terms mean in the context of the factory and being able to impose subtle tolerances on the terminology, i.e. being able to define appropriate semantic limits based on an understanding of factory practices. Knowing the history and



context of the Agreement enables the manager to adopt a flexible approach in problem solving, his interpretation being aligned to factory and other changes.

#### Understanding the problem

The evidence of the interviews was that problem understanding was facilitated through problem analysis, that is determining the constituent elements of the problem. Furthermore, particularly in the context of industrial relations issues, it is important to check that the problem definition is adequate and hence the manager must be prepared to restructure his existing model of events pending additional evidence.

#### Enumerating problem solutions

That a problem exists at all is because the Agreement is in some way being disputed, but a major constraint in devising a solution is that the terms and conditions of the Agreement should not be contravened. Related to this is the need to avoid setting precedents that may lead to future problems and a further limitation concerns the cost effectiveness of any solution.

In resolving a problem the manager must keep within such constraints and a further difficulty is to enumerate likely problem solutions. The suggestion was that arriving at the terminal state to conclude the problem solving process was not nearly so difficult as devising the means of linking the problem data with the perceived goal. In this context, the

indications were that there was no 'standard' set of techniques or practices, but there were a few useful approaches. Firstly the manager may divide the issue into a series of more manageable components and seek to resolve each in turn. By way of illustration, in response to a union request to exclude a certain section from the pay performance calculation since the section was subject to an interim pay performance scheme that was low compared to other sections, thereby adversely affecting pay, the manager felt that the request should not be pursued as the consequences of extracting credits was far reaching and the pay performance system would be eroded. Hence the decision was to eliminate the interim scheme and introduce a more positive scheme, but this provoked suspicion since it was likely that job losses would result and certainly the men concerned would have to work harder. Faced with the issue of how to put in the new scheme, the manager subdivided the issue, considering the type of incentive, the way the investigation was to be conducted and so on. In short, it became a matter of devising the component means to the overall end.

A further useful device was to relate the problem to others with which the manager, through his experience, was familiar. Whilst it is possible experience may lead to negative effects in that new or alternative options are not considered adequately, the interviews provided no evidence that the manager



became locked into an intransigent viewpoint. On a number of occasions he mentioned the value of consulting his subordinates or colleagues to test the validity of his proposals; perhaps they may perceive factors that he had missed.

#### Implementing a solution

Having devised some solution the requirement is then that it should be implemented. In this context a major part of skill will concern dealing with other people i.e. union representatives etc., and persuading them that the proposed solution is appropriate. The domain here is that of interpersonal skills, the meeting of two or more human adaptive systems. The interviews revealed, in very general terms, a few features of skill in this type of interaction. The manager mentioned the benefit of knowing the people involved, "... you get to understand how people will react", and equally of having the confidence of the the people concerned. In either instance the models will have been built up over the long term. Presumably the better people know and respect one another, the greater is the potential for their successful co-ordination.

A further feature of the interpersonal dimension lies in being able to perceive any issue from the other person's viewpoint, and in being able to reach a compromise which is a useful strategy for the alleviation of conflict.

### Anticipating problems

In addition to solving problems as they arise, the manager might also anticipate problem areas, thus avoiding future difficulties. In this context the manager is contrasting some prediction of the external state of events with an idealised representation of what is required of those same events. In the examples that the manager provided the predictive component concerned the extrapolation of some historical trend, a directive from someone else and a more subtle 'feeling' as to how things may turn out. In avoiding future difficulties through reducing the difference between the required and predicted features, the accuracy of the prediction can not be measured against the continuation of events, since the events themselves are being manipulated to alleviate their anticipated effects. Rather the validity of the model rests upon the non-occurrence of anticipated effects through removing their cause.

### Monitoring procedures: categorisations & incongruities

Over time the manager has developed an expectation concerning likely output levels and how output and performance levels covary. Hence in receiving daily and weekly performance summaries the manager operates largely by looking for the incongruous piece of information that does not match up to expectation. In addition to looking for dramatic changes in data the manager is also monitoring trends and this reflects another aspect of his skill. He appears to operate through the following tripartite discrimination. There



are situations demonstrating such a deviation from expectation that they would be investigated; equally there are situations conforming to expectation where the manager would do nothing other than register that very fact. Thirdly there is a 'grey' area where "... if it was only a minor movement I'd perhaps wait a fortnight to see what the next figure was." Hence the manager is prepared to play a waiting game, looking to see what happens and delaying any action until he has acquired further evidence.

The up-to-date daily information also provided the manager with early warnings of possible problems. If, for example, pay performance was at a level of 117.9, merely 0.1 below the boundary of the top grade, the manager might anticipate that the shop floor members would explore all avenues to try and increase the figure. Thus the manager would try and sort out the issue in advance of the potential 'storm'.

#### A note on self awareness

The industrial career of this particular manager is well advanced, and a little of the effects of age was mentioned in the interviews. The manager stated that he could compare his current performance or ability with that of previous years: " ... as I get older I'm very conscious of whether or not my abilities in certain respects are declining." One subjectively perceived weakness was that of being able to remember things - his compensatory strategy being to keep careful records of important events and a readiness to consult subordinates. Indeed he reported an increasing

willingness to draw on the assistance of others (although this may be at least partially because his department is now in a position to be able to offer that assistance because of the development of his subordinates). On the positive side he reported an increasing self control (temperamentally) and an increasing tolerance of people and events. Furthermore there was an increased feeling of competence. the manager reporting a more thoughtful, planful approach to problems. He added that in later years he had come to see better ways of dealing with problems, at least partly through being less impulsive and through adopting a broader outlook. He also commented: "In my younger days I was more prone to feel that everything I did was right, but with increasing age I'm more prone to question my initial outlook". Just as judgement had improved with experience, so too had forward thinking, the manager stating that relating to improvements in systems/schemes, "my mind remains as lively if not more lively in this respect". Furthermore, as mentioned earlier, one strategy in dealing with current issues is through reliance upon past experience, being able to draw upon an accumulation of previous self encountered events. This appears important in an ability to recognise that an issue is capable of resolution before the actual means of how to resolve the issue are known, which was another feature of skill that was mentioned.



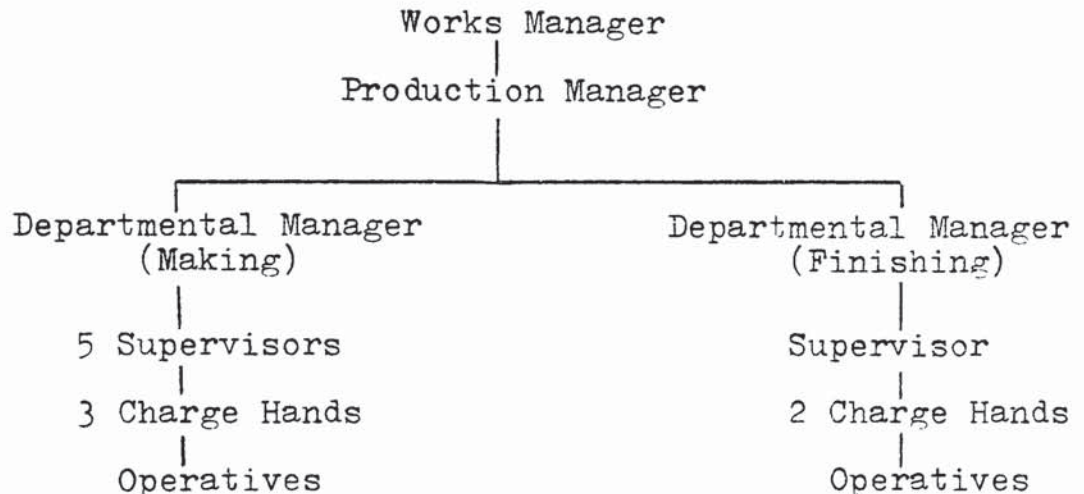
### Skills Summary

In dealing with problems concerning the wage structure, skill is exercised in balancing two schemata, namely the terms of the Agreement and the demands made upon the Agreement by 'shop floor' employees. The manager must therefore be able to interpret the Agreement (which requires knowledge of its history and context) and to understand the problem at hand. In devising the problem solution it is necessary to operate within the constraints bounding the thinking process. A further difficulty lies in enumerating possible problem solving options, but a couple of heuristic (rather than algorithmic) devices appeared useful in this context, particularly that of relating the current problem to similar problems encountered previously. Implementing the solution will depend upon interpersonal skills; this is where the two schemata will be tested in reality. At a meta-level the strategy may be one of compromise; lower level skills will involve a myriad subtleties in communication e.g. listening, questioning, cajoling etc. The manager might also exercise skill in anticipating problems which requires a comparison between a prediction of events and some prescribed idealised construction of the same events. In monitoring the wage structure systems the manager operates largely through identifying the signal that does not match up to expectation, but he may be prepared to play a waiting game before acting.

#### 4.9 Manager 7 The Departmental Manager : Mid/Jnr Management

##### 4.9.1 Job Overview

The Departmental Manager holds responsibility for the operation of one of two departments within the production function and reports to the Production Manager. The organisation structure is as shown:



Part of the way through the interview schedule the Departmental Manager moved from the 'making' side to the 'finishing' side of the production function. However, although the constituent sections and working arrangements are different for each department, the Departmental Manager nonetheless emphasised the similarities between the two posts; broadly speaking the job objectives remain the same. Prior to taking up his current level of responsibilities which he has held for about 3 years, the Departmental Manager was a Departmental Supervisor.

The overall objective of the Departmental Manager's job may be simply put, namely to participate in ensuring that the required production output is attained each week. In order to meet this objective



several major duties were identified. The first is that of resolving 'low key' industrial relations issues, primarily through relatively informal discussion with union representatives. Secondly, the manager must liaise with technical/maintenance personnel, at least partly because of problems that have occurred (e.g. quality problems) and partly in order to accommodate project work or maintenance work that technical or engineering departments may wish to implement. The third major duty is to ensure that the department is kept in a tidy condition and does not contravene Health and Safety regulations. The manager will also try to resolve issues that seek to erode employee morale and he will generally seek to enhance performance. Finally there is a whole miscellany of more minor duties that the manager will undertake, for example resolving wage queries, taking responsibility for the fire register, visiting suppliers and so on. However, attention will now turn to a main objective that was considered in some detail, namely the deployment of available resources to maintain the flow of work through the department.

#### 4.9.2 Task Description: Deploying resources to meet production objectives

The manager must ensure that there is sufficient work to keep each section throughout the department operating effectively. Putting this another way, decisions must be made to facilitate an adequate flow of work through the department by means of the appropriate deployment of resources. By way of

background information the production system is one of flow production where similar products are machined and assembled in a prescribed order. There are a number of stages each comprising a particular working cycle, with operations at each being conducted on a piece work basis mostly demanding specialist skills. The numbers and types of operatives together with the working arrangements are shown for the making department (with a similar line for the finishing department):-

Production System	Approx No. Operatives	Working Arrangements (Days (D)/ Shifts (S) )	Male (M)/ Female (F)
Raw Materials			
↓			
Milling & Mixing	3	D	M
↓			
Section 2	6 (2,2,2)	S (3 x 8 hours)	M
↓			
Section 3	25	D	F
	25 (9,8,8)	S (1x5,2x4 hours) <sup>1</sup>	F
Sec. 4	2 (1,1)	S	M
Sec. 5	1	D	F
↓			
Assembly	3	D	F
↓			
Section 7	5 (2,2,1)	S (1x5,2x4 hours) <sup>1</sup>	M
↓			
Section 8	6	D	F
↓			
Finishing Dept.			
	+ 3 multiskilled	On call any time	M
	3 utility	S (1x5,2x4 hours) <sup>1</sup>	F
		<sup>1</sup> Shifts 9am-1pm: 1pm-5pm; 6pm-9pm	

If there were no machine breakdowns, absenteeism, raw material supply problems etc., the feeling was that the inherent logic of the production process



and the adaptability of the human operators would produce the required output. The manager must, however, resolve those problems that disrupt the ordinary functioning of the process. His task is to become involved with the production process to determine why there is, or will be, an inadequate flow of work and rectify the situation. Quoting the manager: "It would be no good sitting here churning out memos ...", the manager must actively perceive events upon the shop floor and react to them.

The stimuli that provoke the manager's response predominantly concern operator absenteeism, machine breakdowns (and rare instances where a machine may be out of commission for a few days), and other situations where there are inadequate stocks for some section (because, for instance, operations have exceeded the usual time cycle or certain of the work has been defective through human, machine or material faults). When faced with such problems the manager must determine what to do in order to ensure that the output requirements are met as well as possible and this is dependent upon his skill. The deployment of labour is considerably enhanced through the availability of 'multiskilled' operators, who can perform any job in the factory operation and remain permanently on call, and 'utility' operators who have developed the necessary skills to work in more than one section.

In general terms, therefore, the manager is at the 'sharp end' of the production operation, controlling the flow of work through the department

and ensuring that there is sufficient work to meet the demands of each section in producing the requisite output through deploying the available resources (particularly people) that are at his disposal. He is the key adaptive element in the system ensuring that it functions effectively through his intervention in resolving difficulties.

#### 4.9.3 Skills Analysis

The manager's basic objective is to deploy his resources in a manner that enables the system to continue functioning in the face of unexpected events.

##### Understanding the departmental operation

As a basis for any deployment of resources the manager must understand the nature of the departmental operation. Firstly it is necessary to know the production target, which is broken down into a daily requirement - hence the overall objectives are represented symbolically. Secondly the work in process stocks that should be maintained at each section must also be known. The manager knows the machines that will need to be operated and the numbers of operatives (at standard performance) that are required to run the machines in order to maintain the necessary stock levels. Finally there is understanding how the production system functions in real time, that is how long it takes for products to be processed at different stages throughout the system. As a result the manager is able to predict



the consequences of particular events. To take a simple illustration, the manager knows that as twenty four hours must elapse between operations at one particular stage and those of the next stage any work produced in the former section on any one day will not be ready for further processing until the next day. This situation is reflected throughout the production process so that it is not possible to increase output in any one section without increasing output in previous sections. In sum, the manager holds a model organised in a manner consistent with the external operation of the production process. The solution to any problem concerning the disruption of work flow is intimately bound up with this knowledge.

Whilst there is a daily stock take, the manager updates his model from sources other than stock sheets. Throughout the course of the day he will receive reports from subordinates and will see what is happening through departmental tours. Hence, although the manager may operate primarily via some numerical representation he knows what the numbers represent in terms of physical stocks on the factory.

#### Devising problem solutions

If the manager is faced with a problem that calls for his intervention he will seek to restore an equilibrium to the operation of the departmental system. One of the most persistent problems is that of absenteeism and the manager must offset the

reduction in personnel in order to maintain the output requirement. His overall approach might be summed up as 'looking before leaping', not merely to find people to fill vacant spaces on the production line, but rather to establish the best way of meeting the required output. The competent manager will consider any problem in the context of the entire departmental operation, taking a broad rather than a narrow view of the issue. Within this framework it is then a matter of looking for suitable solutions to the problem. There are a number of options, such as moving people between sections, utilising multiskilled labour, persuading people to work overtime etc., and the manager must determine a course of action dependent upon the consequences of that action. In this context it seems appropriate to say that the manager holds a number of precepts or rules of thumb. He is not operating upon the world directly at this stage, but upon a collection of notions he holds about the problem facing him. Each problem that the manager faces will vary in detail concerning numbers of persons, sections, shifts, current pressures etc., and so the following examples are necessarily simplifications.

Taking an extreme example, if there was an absentee in the 'milling and mixing' section where there are only three people working ordinary daytime hours, the manager would, virtually without hesitation, call in a multiskilled operator because of the prime



importance of the department and the output loss which would be felt all the way along the line. In this case the manager is very limited in what he might do. Since the assembly section requires no specialist skills and therefore virtually any non-handicapped person could be employed in the work, there is less of a constraint upon a solution and the rule of thumb is to utilise any likely individual. However, for other sections the manager would adjudge whether or not there would be fairly normal functioning despite the absenteeism. He knows, for example, that other operatives could compensate through higher performance and this approach could be tried, with the manager closely monitoring output levels. If stock levels were low (and the manager knows what this means) the options would be to deploy utility operators, that is those operators with the necessary skills in other sections and to instigate overtime working. Hence the manager appears to run through the available options that have been learned through experience, almost checking them off along a path of least resistance.

#### Decision implementation

Having come up with a proposal, the requirement is then that it should be implemented. Since any decision is implemented through the efforts of other people, the manager will take into account the likely reactions of his subordinates to that decision. The situation may be regarded as one of salesmanship, where the manager has to 'sell' his decision to

individuals who may turn out to be less than sympathetic. Like any good salesman the manager will want to understand the needs of the 'customer' and he must be open to developing his model through internalising those held by other individuals. Subsequently, the manager will aim to influence the same individuals through mapping his model onto their own representation of events. In this context it will be an advantage to 'know' the individuals concerned since this will facilitate predicting their responses and this kind of knowledge is acquired over the longer term. The manager commented "I want to be able to assess people ... to guess reactions to proposals so that I am one in front before I go to see them. If I want something doing, is it going to involve me in a long argument or will they simply say yes? I need to be able to play to the characters ...". In dealing with people the manager will, of course, require 'lower level' skills involving the selection of the appropriate behaviour (questioning, suggesting, proposing etc.) that runs consistent with the overall purpose. This was obviously evident during periods of observation.

### Skills Summary

In exercising his skill the manager is clear about his objective, namely to meet the production target and he receives prompt and efficient feedback as to whether or not the objectives are being attained from the actual output levels. Indeed

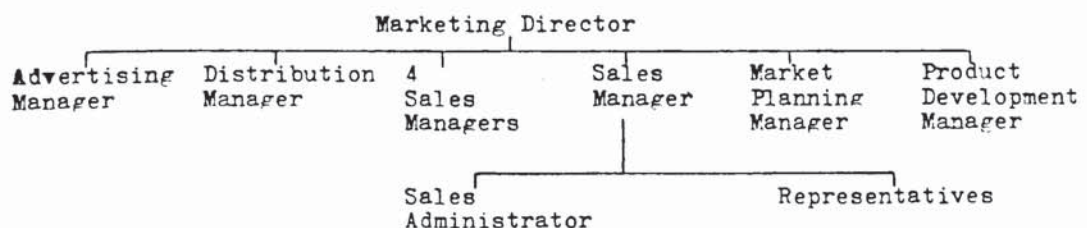


information concerning stock levels is of prime importance and this is part of a more complete model organised in a manner consistent with the departmental operation. On the basis of his understanding of the departmental operation the manager can identify problems and predict their consequences. This understanding also provides the framework within which he is able to develop his own rules of thumb in problem solving. Finally, the implementation of any decision will depend upon interpersonal skills, the overall strategy being one of persuasion with lower level skills focusing upon the adaptive situation of face to face communication.

#### 4.10 Manager 8 The Sales Manager : Middle Management

##### 4.10.1 Job Overview

The Sales Manager has held his current post for about 8 years. He is the first holder of the post which was created following divisional reorganisation. His previous job was that of a Senior Marketing Assistant and he began his career in the production function. Currently he responds to the Marketing Director and has five subordinates, the position in the organisational structure being as shown:



The Sales Manager holds responsibility for one section of the division's sales, the section extending over a number of different product-market combinations. The markets are, in fact, varied and include, for example, oil rigs and hotels.

Quoting the Sales Manager, the overall objective of the job is " ... to sell the division within the parameters of the Management Plan". The manager identified a number of constituent tasks associated with Plan preparation. The main decision involves the estimation of sales volume and revenue which involves integration of various types of information. Product ranges will be reviewed and updated as necessary and other tasks concern the planning of support requirements such as advertising and equipment. Upon completion the Plan is submitted to higher management and subsequently reviewed.

Once the Plan is finalised, the objective becomes one of achieving planned targets during the Plan period. The manager holds individual responsibility for selling to certain customers and this is considered in detail below. An important element in selling is that of pricing, this manager being responsible for determination of the pricing policy. The sales representatives work within this policy, the manager assisting them in attaining sales, perhaps by accompanying them on visits or providing sales leads in the first instance, and generally seeking to facilitate their performance. Actual sales are monitored against



Plan and the manager also mentioned the task of administering the operation of the department, which involved a miscellany of lesser tasks.

4.10.2 Task Description: Personal selling and the determination of pricing policy

The manager is personally responsible for sales to certain customers. For some customers the actual sale may conclude a fairly lengthy process. In the first instance it may well be necessary to identify a potential customer, as in the case of new business. It is likely that there will be a continuing dialogue with existing customers. Having obtained a sales lead, the next step will be to determine the nature of the customer requirement, and hence the manager will have to interrogate the customer concerning his needs. Having understood the requirement and determined that the division can meet it, the manager's task is to 'persuade' the potential customer to buy from him (the division) rather than a competitor. In these circumstances there may be a whole host of relevant facts that it will be beneficial to know (depending upon the circumstances surrounding the potential sale), but it is particularly important to be aware of competitor activities. Sometimes making a sale will take place in a face to face meeting, whilst on other occasions the manager will have to submit a tender for contract business and the decision over a supplier will be taken with no potential suppliers present. In these latter circumstances it is important to ensure that a deadline is met, for if

it is not the business will inevitably be lost (and the author recalls one interview during a motorway dash where a sample and documentation were submitted with a few minutes to spare).

The price is an important factor in selling and the manager has to establish prices for all product-markets consistent with the Plan requirement. In this wider context the objective is clear, namely to attain a particular amount of cash, but the attainment of the objective may be via a number of routes and is dependent upon the manager's skill. To simplify the picture for illustrative purposes, the manager may adopt a strategy of high volume with low profit margins or lower volume with higher margins. He is guided, however, in any decision making by tradition: historically different product ranges have enjoyed different levels of contribution. A price list is produced for a standard range of goods as a one-off exercise each year and quotations will also be given to customers with special requirements.

A first step in pricing is to review the margins on existing products, as a check upon how decisions have affected the overall level. In the manager's own terms the subtask "... provides a necessary barometer to enable me to see where I am, and am not, making cash." Whilst this subtask relates to a factual state of affairs, the next subtask concerns setting the future desired levels of margins, consistent with the overall requirement. Higher



management may provide an important input, their intervention being particularly apposite in the case of 'marginal' business, where margins are low relative to the more usual levels; whether or not the factory needs the volume at such margins can only really be assessed by higher management who have access to information concerning the entire selling operation. The costs associated with each product are provided for the manager and it is then a matter of simple arithmetic to obtain the selling price through adding the margin to cost. The manager must, however, decide whether or not the derived price is 'satisfactory'. With regard to special products the individual customer is of prime consideration, for the standard price list competitor prices bulk large. In this context the manager builds up a portfolio of competitor activity.

#### 4.10.3 Skills Analysis

The manager has the responsibility of meeting sales targets, and as part of the sales effort he is personally responsible for sales to certain of the division's customers.

##### Perceiving the situation

It may seem an obvious statement that the manager should treat each potential sales situation upon its own merits, but it does appear to be a strategem learned from experience. The manager recalled an example where he met one of the division's long-standing customers for the first time shortly after

commencing the job. Following the divisional reorganisation and personnel changes, the customer had obtained a lot of information on competitor products, and the manager recalled how a great deal of time had been devoted to discussing issues surrounding any further sales. As the manager himself put it "And all it really needed was for me to convince them that the decisions they'd made in the past were the right ones and that the division's recommendations over products were right in all respects". Thus, the manager felt that, with hindsight, a lot of time had been given over to discussions that, at heart, was not very important. As in all skilled acts, the practitioner must align his internal processes to the external situation that he faces.

#### Understanding the customer requirement

As part of the selling process the manager must understand the nature of the customer's need. Part of the manager's skill here lies in being able to appraise the customer 'type'. Any market is categorised, the manager holding readily verbalisable labels for each category. Around the time of the interviews, in making a launch into the hotel market, a product range compatible with the market categorisation was offered. Upon visiting a hotel in the course of the interviews, when asked the Sales Manager readily categorised it. As to how he did this, the reply was "Through the smell of the place". This ability is essentially the product of experience. Perhaps this



kind of appraisal might be regarded as an early warning signal over customer intention. It assists the Sales Manager in matching a product with the customer, but he will, of course, seek to establish the customer's precise need through discussion. Hence there is the opportunity for the Sales Manager to test his conjecture and build up a more precise picture of the requirement. As the manager remarked during an opportune moment in a meeting with customers: "One of the most important things here is for me to find out as much as possible about the company and the opportunities available."

#### Identifying with the customer

In this context the Sales Manager's strategy is tantamount to imagining himself as the person to whom he is trying to make the sale. "I always try to put myself in the position of the customer. I'm thinking of his best interests. (To take a specific example) I'm thinking of his clients, the people who will use this hotel .... I find myself in a different position with regard to another customer." Hence the Sales Manager is attempting to personally identify with the customer's requirement, and assisting him in doing his job in making appropriate purchasing decisions. Putting this another way, the manager is trying to develop his own model through internalising the model held by the customer concerning his requirement, and indeed concerning other aspects surrounding the potential sale. Clearly an important intercommunication tactic is to listen, and the

strategy, over the long term, is to establish a rapport so that the customer might regard him as a 'specialist resource' to be consulted over opportunities and problems.

#### Knowing the product

Having identified the customer requirement the Sales Manager will need to offer an appropriate product to meet that requirement and hence he will require a knowledge of products - their nature, performance and so on. Having made his selection over a product, the manager must be able to make his recommendation to the customer, "in his language". Hence, regardless of the manner in which he holds his own knowledge, the Sales Manager must be able to present it in terms that the customer will understand; his own model must now be mapped onto that held by the customer. There are benefits from experience here: "Experience ... has taught me to listen and apply the knowledge I have to the situation. And the more experience I have, the more knowledge I have ... if someone criticises the product the very first time you are unrehearsed even if not unprepared (for such an event)".

#### Knowing competitor products and identifying 'added value'

The manager must also know of competitor products so that he can compare them with those offered by the division. "I need to be able to talk to the customer and persuade him to buy our products and the more information I have about other products the more convincing my case will be." Thus the manager



must be able to discriminate between products and identify the benefits or 'added value' of those offered by the division. This enables him to sell additional benefits inherent in the product which assists in the process of persuasion. At this stage the Sales Manager is essentially trying to influence (further) the model the potential customer holds of the situation. In the manager's own terms: "I must be able to justify my product compared to someone else's. Customers will be weighing up the pros and cons of competitor products and so it's up to me to know as much as possible about those products and what the potential customer is thinking about." In these circumstances the manager warned against 'overselling' which is often the result of taking things too quickly and not allowing the customer to present his requirements.

#### Remaining alert to purchasing signals

The manager commented that it was important throughout to watch for 'buying signals'. That the customer makes a positive response to the manager's comments indicates customer interest. Asking open ended questions allows the customer to express his need and knowledgeable replies facilitate the process of persuasion.

#### Letting the product speak for itself

The manager provided a number of instances where there was the opportunity for the customer to 'try out' the product before committing himself to an order. His approach might be summed up by the

adage 'the proof of the pudding lies in its eating', which is a testimony to the confidence the manager holds in the product. With regard to one example of effective selling the manager said "They were impressed with our presentation, and our honesty, initially and they were grateful finally for the opportunity to try out the product." Empirical trial and customer involvement are thus regarded as desiderata.

### Setting prices

Price may, of course, prove critical in clinching a deal and something of the manager's overall approach will now be considered. It may be recalled that an important subtask was that of evaluating current product prices and margins. The manager's strategy is to look for a range of information centred about expected values based upon tradition and further understanding is obtained through being able to recollect particular circumstances. The manager provided an illustration where for a particular product the margin was unexpectedly high compared to the more usual levels for the product group. The question 'why should it be so high?' was reflexively posed and the answer, quoting from the interview, was "I suddenly realised that they were products written down in value because they'd been in store so long. And yet I'd found someone who bought them at face value so that I got additional contribution out of it." Whilst this kind of information is important in any decision concerning the price of an



individual product, the decision will also depend upon understanding the immediate divisional requirement and the market situation. The divisional requirement is to attain a cash target and the manager's approach is to set prices for individual products around levels usually enjoyed by various product groups consistent with the overall need. For the price list items the manager must ensure that the price to product relationship is satisfactory across the various listed products. Furthermore, the price must meet a market requirement: "...what I feel, with market knowledge, the market will tolerate." The manager's understanding of market prices will be built upon evidence from a number of sources, for example competitor price lists or recollection of lost orders. Perhaps more subtly, there is also the effect of the manager's own successes and failures in bidding for business in the past. His own experience of the consequences of setting particular prices will contribute to his pricing decision through his own 'intuition' over what will, and what will not, prove successful. In the case of special products (and also 'special' customers), there may be specific features associated with a deal that the manager will take into account. Perhaps, for example, the customer may specify a price limit or a particular product type and so on. Moreover, in order to make a package more attractive, the manager may engage in a cost cutting exercise in collaboration with colleagues. In this context the evidence was

that there was some pictorial representation of the product that the manager could manipulate, changing various parameters in identifying ways of saving costs. (In general there is more flexibility associated with pricing special items compared with listed items.)

If the manager is informed by higher management that increased margins are required in the plan, one rule of thumb is to creep prices through concentrating upon products that hold unique benefits for the division vis`a vis competitors. A further option may be to launch a new product, relatively unique products enjoying better margins than those competing against established products. And, of course, the manager can seek to reduce costs as mentioned earlier. In the context of personal selling this understanding provides a backdrop for 'on-line' decisions. The products and their prices provide benchmarks against which other products and prices are appraised. In this context the manager also spoke of "seeing a picture" of the product in question, hence the evidence is that there are pictorial and symbolic aspects associated with this facet of selling.

#### Developing customer relationships

The Sales Manager felt that it was of benefit to know the customer, to have established a relationship over the longer term based upon mutual confidence and trust. He gave a recent example of a dialogue between a longstanding customer and himself over a



price rise concerning a likely contract. The Sales Manager felt that a compromise solution was only reached because of the mutual rapport which had allowed an exploration of the relevant issues. Had the original price been quoted by an 'unknown' supplier it was the Sales Manager's view that the deal would have been lost.

Even if business is not obtained the Sales Manager, wherever possible, will try to maintain contact with potential customers. In pursuing this strategy one ploy was to present the (potential) customer with some facility that may be of use to him. "(This) ... may be very remote (to selling) in the first instance, but it does give me the opportunity to come back at him (the customer) later and follow it up."

#### Other interpersonal aspects

The manager also spoke of assessing the nature of the interrelationship between himself and the customer. He spoke of being able to 'sense' the goodwill between the customer and the division, manifest in the social situation. And he spoke of occasions when the customer and himself, 'qua' people would be unable to interact successfully. The strategy in such circumstances was to "depersonalise the situation", shifting attention from any subjective irritation to the more objective content of the potential sale. In this way it was hoped that an avenue for communication would be left

open; in ordinary circumstances the preference of either person would be to disengage themselves from the situation (and ultimately, of course, it may come to this).

More positively, at the tactical level, from observation of the Sales Manager it is possible to highlight other aspects of his interactive performance. The context was a meeting to discuss a possible sales venture where the Dunlop product would be sold as part of a package. At the tactical level it was clear that the manager was able to apply a number of 'techniques' such as listening, proposing, building, questioning etc. as appropriate. By way of illustration, part of the dialogue was as follows:

- X We're talking about a product that cost £a ..
- Y It should be in our range
- SM That's the way we've put it. It makes us look more professional in the market. We can say 'what price do you put on safety?'  
(BUILD)
- Y Yes it's necessary to sell it to the people buying the product.
- SM Yes, but we need to be careful that the new product is not oversold - the old product is not dangerous. We are merely recognising a need for a new product in this area ..  
(PROPOSE/BUILD)

Observing the overall dialogue which lasted several hours, it was clear that the participants understood each other well and that there was considerable empathy between them. Taking a gross perspective, after the preliminary greeting, the manager opened by enquiring if a particular deal in the U.S. market was going well and this led to discussion on factory activity, margins, distribution, supplies, deliveries etc. Other projects came to be discussed, the manager



drawing attention to similarities between Dunlop and customer experiences, thereby facilitating rapport. This led to the discussion concerning the possible sales venture where the manager presented his case, the dialogue reflecting his persuasive strategy and simultaneous concern for the customer viewpoint.

### Skills Summary

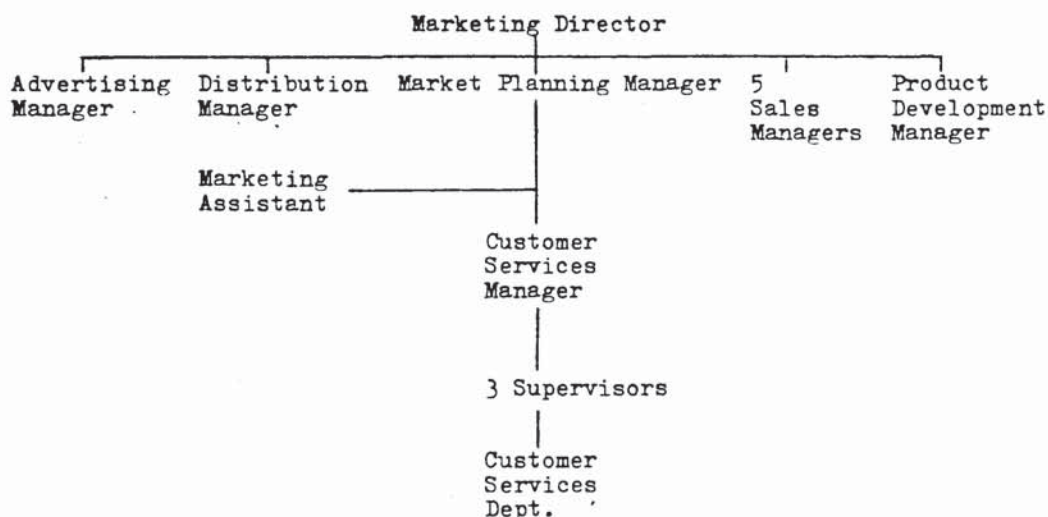
The manager's skills involve identifying with the customer through internalising his requirement and influencing him through allowing him to internalise projected comparative product values. The manager will seek to maintain contact with the customer, steering the intercommunication at the tactical and strategic level and he must remain alert to 'buying signals'. The interpersonal aspect is facilitated through a developing confidence and trust. The price mix is established through examining discrepancies around expected values influenced by past and future variables.

## 4.11 Manager 9 The Market Planning Manager : Middle Management

### 4.11.1 Job Overview

The Market Planning Manager has held his post for about two years. He is the first holder of the post which was created following divisional reorganisation. His industrial career began at Head Office where he was a Marketing Trainee, having joined the company after graduating from university.

During this period he was seconded to a division as a sales representative, his next post being Assistant to a Market Research Manager (at Head Office). He then joined his current division as an Assistant to the Commerical Development Manager, a post he held for two years. Immediately prior to taking his present job he was a Sales Manager responsible for one section of the division's markets and also Assistant to the (then) General Sales Manager. As the organisation has developed the latter has now become Marketing Director and this is to whom the Market Planning Manager continues to respond. He has 16 subordinates, the organisational structure being as shown:



The manager has retained the role of assisting the Marketing Director and, indeed, as the latter's role is developing to include a greater emphasis upon marketing strategy, the Market Planning Manager is



taking over certain of his more immediate responsibilities. A further task is to direct/conduct market research. Last year, for instance, the division, in liaison with Gallup, polled a sample of traders and consumers in an attitude survey. Thirdly, the manager will engage in co-ordinating promotional activity, where he ensures that various aspects of a promotion, for example point of sale (P.O.S.) material, competition forms, gifts etc., are satisfactorily organised. Fourthly, for certain of the division's markets the manager is responsible for pricing - recommending price revisions and ensuring that any decisions are implemented. Fifthly, the manager runs the Customer Services Department. The department's operation includes giving quotations, accepting orders, processing complaints etc. The day to day management of the department is delegated, the manager essentially directing policy, disseminating information to facilitate the departmental operation and resolving major problems (e.g. complaints). Next, the manager identified a whole miscellany of tasks that he may undertake, including tasks resulting from his detailed knowledge of the division's marketing/sales operation and membership of various committees/Associations. Finally, the Market Planning Manager mentioned his task of 'launching' new products which incorporates some of the above tasks to some degree, and this is considered below. New products are presented to the market fairly regularly, and in

particular there are 'Special Event' lines which are taken as a case in point.

#### 4.11.2 Task Description: Producing an Event line Package

In order to supplement the standard range of merchandise, the division has a policy of producing 'Special Event' lines four times during the year. The Events were established in response to a market need and now account for about 60% of turnover within the division's retail markets. The manager has the task of planning and co-ordinating the Event but he is dependent upon other people performing certain tasks throughout.

##### Assessing market climate

One subtask is to assess the market climate. In order to make the assessment the manager will collect information from a variety of sources. In particular he will need to review past and current Events in terms of their success, although this is more of an ongoing activity than a task that is formally undertaken at a particular point in time. With regard to the current Event, a further task will be to predict its outcome in terms of eventual sales. The manager will also want to ascertain competitor activity, and, lastly, try to estimate the overall market state.

##### Determining the nature of the package and estimating sales

A number of decisions need to be made in the compilation of the Event package. It is necessary to determine the number of models in the range and their



specifications, and decisions will have to be taken concerning the kind of promotion to support the products for both the trader (retailer) and customer. Promotions aimed at the customer will include advertising, special offers and so on. For the presentation to the trader both the method and content of the presentation will need to be determined. Further decisions concern pricing and the timing for both selling-in and deliveries. Having determined the package and the market climate a further task component is to assess the likely sales. (This will be important for Production Planning and Buying personnel, amongst others)

#### Checking proposal feasibility and compiling the Plan

Thus far concern with the Event has rested primarily with marketing personnel. The manager will formally check that the proposals forwarded are open to practical implementation. Therefore, he will check that it is possible to obtain proposed materials in time, that there is adequate machine capacity etc., which will require a dialogue with other managers. Furthermore, as the planning progresses, he will ensure that proposals are being actioned by relevant departments, for example that the Advertising Department has obtained likely samples for P.O.S. material etc. The task is to ensure that all components to the package are progressing satisfactorily. Once the package has taken shape the requirement is for the manager to compile the Marketing Plan which is a

formal authoritative statement on the nature of the event. It presents the division's intention concerning the package, outlining the products, prices, terms, sales estimates, timing and promotional support. All internal departments will operate on the basis of the plan; for instance it will issue the date from which the Customer Service Department will be able to accept orders etc.

#### Monitoring the proposals

As the plan is being implemented the manager will monitor its progress. There will be a regular appraisal of sales, where estimates will be revised as necessary and the manager will have to resolve ad hoc problems.

#### 4.11.3 Skills Analysis

The manager has a clear objective (at least at a general level) in producing the Event line package. However, the feedback concerning its success is not so clear cut nor is it immediate. Furthermore feedback on the manager's own performance is not available in a precise format, although his contribution will be 'assessed' by knowledgeable persons throughout, where there is ample opportunity to discriminate between greater and lesser competence in performance.

#### The overall plan

In progressing towards the conclusion of the Event, the evidence was that the manager held a general plan of what needed to be undertaken. Essentially, this appeared to comprise a series of jobs/tasks to



be completed at certain periods. In this context timing is particularly important, to avoid the programme becoming behind schedule. Thus the manager must remember that there are certain lead times associated with obtaining materials, components and so on. Errors disrupting the smooth progression of the package are likely to result through forgetting temporal requirements. Generally speaking, devising a successful programme is assisted through practice: "With the benefit of experience you'd know more how you stood vis`a vis time, which is always in short supply in these circumstances." The manager also commented that he would try to give the task high priority, keeping it at the forefront of the workload. "I must ensure that I'm co-ordinating and prompting all the while to ensure things happen on time."

There is another important feature of the manager's plan, namely that the end of one task or event provides a signal for the next to begin. At a 'meta-level' the manager is operating via a sequence of signals each acting as a trigger for the subsequent task. In the interview the manager readily listed the (then) forthcoming pattern of events concerning the Autumn package, frequently remarking that the conclusion of one Event would prompt him to undertake another. Moreover, the manager knows, at least partly, what each task will involve, for example the people whom he will have to contact etc., but his knowledge is incomplete because of unforeseen

contingencies that may arise in the course of events. Indeed it is important that the manager should be able to adapt to particular circumstances for problems frequently do crop up. "We know that these things never run smoothly, and therefore I am aware there is a likelihood that something will go wrong. It's no great surprise; I'm attuned to problems occurring."

#### Adapting to the fallibility of colleagues

Because of the magnitude of the task and the involvement of other people, a further part of the manager's strategy is to delineate the tasks that he will do himself (and the tasks that others will undertake). Moreover, he must ensure that everyone is 'kept in the picture', which is attained through both formal and informal discussion. His relationships with others have been affected through experience: "You know the right people to contact, the right approach with the right people to ensure that their part in the programme is carried out ... There are some people in the organisation to whom it would be a waste of time sending a memo. It's not even worthwhile my giving them a verbal reminder - I have to go and sit next to them to ensure they do something .... Knowledge of people ... is vital." The manager must, therefore, be adaptable in dealing with other personnel and models acquired over the longer term concerning relationships facilitate interpersonal interaction.



Building a picture of the market

In developing a picture of the market some information will concern previous Events. The manager will evaluate factors such as a special offer, a promotional package and so on. He recognises, however, that he will be unable to establish an unequivocal cause and effect relationship between some facet of the package and its perceived effect. Putting this another way, he will not operate via formal rules of inference because he cannot establish a satisfactory premise to begin with. Quoting the manager "We'll never say 'x' was the critical thing: we'll be satisfied by saying those 2 or 3 elements helped us sell that particular (product)." The manager operates through an amalgam of opinion from the Sales force, Marketing Director and so on, and checks out his developing model by looking for inconsistencies. To quote the manager once more "If it is reported often enough in the trade press that it was a bumper Spring there is no way (salesmen) can say that it was because of a falling market that sales were low." The manager will thus give differential weightings to various pieces of information in yielding his ultimate opinion over the Event's success. There was evidence that his judgements had certainly been influenced by experience. Sometimes the effect was obvious, for example where a well known colleague might be "plugging a hobby-horse", but other judgements were described as intuitive and had been derived still more subtly it

would seem. As for the current Event, the manager is inevitably functioning with incomplete information, and the process is one of revising the odds of success as new information accrues.

The manager will also want to take account of competitor activity and relies upon various types of information such as press articles, T.V. adverts and opinions offered by the sales force. There is a similar process in assessing the general market state where the manager will again build his model piecemeal, acquiring information from national press, trade press etc. The manager's own report suggested that each piece of information was linked with his existing picture altering it "by degrees". The manager will thus have a feel for the market which he encapsulated in words such as 'optimism', 'pessimism' etc., and he described the market as 'buoyant', 'depressed' etc. When asked why he needed all this information and what he did with it, the manager replied "I'd try and remember it. It's another part of the jigsaw that is giving a feel as to what the market is going to be like over the next few months."

#### Creative thinking in coming up with the goods

The Event line was a novelty in itself when first introduced, but the manager felt that there was a perpetual need to come up with something new to maintain interest. The skill here, then, is essentially that of being creative, and this is a



pervasive theme throughout the manager's thinking concerning the nature of the package. So far as the products are concerned, although there is basically a core range now, the aim will be to introduce something that is different for each Event. The manager is constantly looking for variation on a theme; there are only so many parameters associated with the product that may be changed, and thinking is constrained through costs. He is essentially trying to look at an old problem in a new perspective: "You know what's 'safe', what will do the job, but you're after that little extra spark to make the product stand out and attract attention." The manager must therefore generate likely options, altering the parameters of the problems and he must then restructure his existing model in some way in order to accept this new piece of information. The proposal will subsequently be evaluated against criteria of costs and practicability.

#### Combining the market assessment with the proposed package

In estimating sales the manager reported that his experience of previous sales for corresponding events provided general guidelines. The more specific derivation of a figure is obtained through integrating the market assessment with the proposed package; in short, the manager can combine apples with pears.

#### Adjudging pricing mix

Prices are obtained through marking up total variable costs, but there is some subtlety in pricing

in that the trade price will be set a value that yields a market price slightly more than some key price level in the hope that the retailer will absorb the difference and offer the product at a more competitive price. Furthermore, taking the package as a whole, in order to ensure that there is an approximately equal price differential across the range, the decision may well be to 'transfer' costs from one product to another.

#### Problem solving aspects

In resolving problems during the implementation of the Marketing Plan, an important feature is the competent identification of the problem effect upon service to the trade and the customer. Generating possible solutions will be constrained by time, costs and availability of personnel.

#### Skills Summary

As a broad strategy the manager operates according to a plan of events where the conclusion of any one Event signals the beginning of the next. He is operating within a continuously developing model advancing into what is essentially unknown territory, relying upon personal resources and adaptability to survive whatever situation he faces. It is a hybrid model with an enactive basis used for intuitive assessment and weighting of evidence. There appear to be pictorial aspects associated with various parameters of the package and symbolic aspects to do with the detailed complexities. In developing his

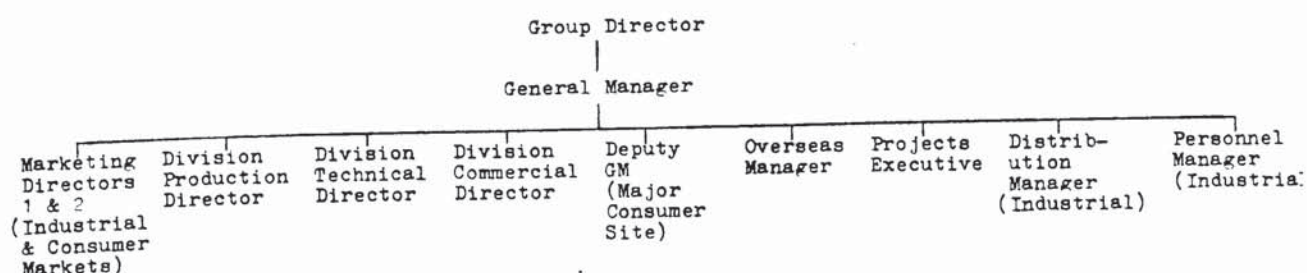


model he is capable of combining what appears to be disparate features of his world.

#### 4.12 Manager 10 The General Manager : Senior Management

##### 4.12.1 Job Overview

The General Manager took up his current post about two years ago following reorganisation of the management structure. He has the overall responsibility for a divisional operation that comprises a number of sites throughout the U.K. and employs in total about 1500 people. The division serves 'industrial' and 'consumer' markets and this classification permeates and crudely differentiates divisional activity. Prior to taking his present position the General Manager was responsible for the 'industrial' sector of the business and, indeed, it has been within this sector, in the marketing function, that much of his experience in manufacturing industry has been gained. Some of his immediate management team hold responsibilities across the entire division whilst others are responsible for a more limited part. The organisational structure is as shown:



The interviews did not seek to elicit an exhaustive list of responsibilities, rather the tendency was to concentrate upon the more major tasks. Planning is of central importance, in particular the manager holds responsibility for the longer term strategic plan and the more detailed Management Plan which outlines the anticipated pattern of business over the forthcoming 12 months. There are a number of tasks that might be regarded as contributing towards meeting planned targets. For instance the manager will need to compile major business quotations, the nature of this task varying with customer type. He will also have to adjudicate over priorities concerning resources both material and human. By way of illustration, a decision may concern the resolution of incompatible sales claims upon a fixed quantity of goods, where an inappropriate decision may result in a loss of profit and revenue in both the shorter and longer term. A further task is to monitor and react to competitor activity where, for example, it may be that a major account informs that a competitor has offered to reduce prices and invites a response. The kernel of the problem is to re-evaluate the implications of holding, and not holding, the business. Next, the manager mentioned the task of negotiating with Trade Unions when the usual negotiating procedures had failed to resolve some issue. Of fundamental concern is the effect of any settlement upon the divisional operation and in the wider context upon the Group as a whole. A



further example of plan implementation concerns the allocation of capital expenditure and in the context of strategic planning this is considered below.

#### 4.12.2 Task Description: Devising and Implementing the Strategic Plan

Each year the manager has the task of meeting the company requirement to produce a strategic plan (see also Manager 2). The aim is to identify the way ahead for the division over the next half decade, the plan document presenting a prescriptive statement of what the manager thinks that the division should accomplish in the next five years. The plan is of a general nature devoid of detailed analysis and objectives which are reserved for the one year plan. The approach to the latter will be more stereotyped across divisions and over time than that to the strategic plan.

##### Identifying strategic issues

One subtask is to identify important strategic issues, and whilst it is only practical to write up the plan annually it is clear that thinking about strategic issues remains an ongoing activity. The main problem is in coping with the uncertainty in any predictions.

##### Devising the strategic course

Against the background of the identified strategic issues, the manager will set the strategic course. The task is to specify the divisional objectives - choices concerning product/market combinations - and

how they might be attained. The manager may select whatever objectives he thinks are appropriate, but he will need to justify his selection. Furthermore, it will be necessary to spell out the implications of the decisions in financial terms, and include a time-scale for the anticipated pattern of events. That there is the necessary capacity to meet any proposed action will also need to be ascertained.

#### Monitoring the plan

The strategic plan is the formal expression of the manager's thinking concerning the division's future. Whatever assumptions have been employed in setting out the strategy will be checked out against the actual pattern of events and the course revised as necessary. Most immediately it may be necessary to alter any proposals not because of logistics, but simply because there is insufficient cash available to cover their funding. The overall scenario that has been presented may remain relevant, but the decisions that were made together with the anticipated financial impact would need to be revised.

#### Implementing the strategy: the example of capital allocation

Each year the manager holds a sum of money, part of which will be used to fund capital expenditure i.e. relatively fixed assets. In accountancy fixed assets are regarded as long-term costs which are apportioned over the working life of the asset through depreciation and, indeed, there would be little point investing such money if the business held no



viable future. Hence the capital requirement must be considered against the longer term direction of the business as presented in the strategic plan. The capital requirements are a consequence of the plan and as the strategic period unfolds the capital requirements will be planned in greater detail in the Management Plan, consistent with the longer term objectives. The amount of money to be spent upon capital is of a flexible nature and the manager has the task initially of assessing the opportunity costs involved. Furthermore, as the year progresses the manager will be presented with sanctions (i.e. requests for money supported by a technical and financial narrative) from a number of sources and he must decide whether or not to uphold the sanction. Part of the problem is that, notwithstanding the plan, frequently the total demand for money exceeds the sum available. Additionally, of course, the manager must determine the merits of any capital request. And there is no real constraint upon how the money should be spent; the plan provides a guideline but there is sufficient flexibility to meet non-planned expenditure if it is adjudged to be a priority.

#### 4.12.3 Skills Analysis

##### Predicting the future

As a prerequisite to setting a strategic course the manager will need to develop some view of the future that the division will face. The evidence of the interviews was that in identifying important

strategic issues there was a continuous accumulation of information "which ... in some cases is recorded in writing; in some cases it is so fundamental that it's fixed firmly in mind." Some of the information will concern the future directly, for example knowledge that a competitor may well be going out of business; other information will need to be processed further in order that the manager might say something about the future, for example historical information concerning inflation levels. Indeed this reflects the heart of the manager's problem; generally speaking he is trying to depict the future whilst being inevitably bound to the present, and his whole estimate will be some inference based on the data that he has obtained and interpreted.

The manager referred to inputs as a "shifting pool of information", some inputs being of a general nature (e.g. political change) whilst others were more oriented towards particular divisional circumstances (e.g. raw material supplies). In any event the manager operates through extracting the salient features of the situation - the important items of information in a strategic sense - and building his impressions piece by piece. Any input will serve to develop existing impressions and may well direct further exploration of external events. Perhaps the fundamental process here is one of comparison; each piece of new information being compared with existing stored information, the outcome serving to direct



subsequent activity. In addition it is important that the manager should remain open to updating his existing model so that his predictive base might be as accurate as possible. Quoting the manager "(it is necessary to) ... seek all means possible to confirm your view." He is developing tentative hypotheses that are open to challenge against each new piece of information.

Available information may derive from a number of sources, people within the industry, trade press etc. However, there may be gaps in the evidence and it is not always easy to recognise the significance of particular inputs nor what they really mean for the future operation of the division. At this stage there will be no feedback concerning some 'hypothesis' or subsidiary decision (taking the term 'feedback' to refer to the usual loop closure of the information processor); the manager can merely accrue other information that may itself be uncertain or ambiguous. And, of course, any developing hypothesis may turn out to be invalid as the real world events unfold, perhaps because of some unforeseen contingency. For example, a situation of assumed stability concerning raw material prices may be transformed through political change; industrial relations may deteriorate as attitudes towards co-operation with other working groups harden and so on. This incertitude over the future is obviously a major hurdle, but the suggestion was that the interpretation of information and

speculation over the future was enhanced through experience. The more competent manager may well perceive events differently to the less competent, on the basis of his experience. It is open to speculation that the longer the involvement with the phenomena at hand the better the point of departure for prediction.

Devising and evaluating a proposed strategic course

It is against the background of identified strategic issues that the General Manager will set the course that the division will take. The chosen path will bear some relationship to the strategic issues; the appropriate relationship is a product of the manager's skill. There is the option to run with the tide or to turn defiantly against it; the option to change course or maintain it etc. Because of the inherent uncertainty in planning the manager must exercise his judgement in coming to a decision over a particular path. In these circumstances the manager will choose a path because it feels right, integrating perceived strategic issues and business requirements within certain constraints, for example resources. Although the manager may operate enactively any proposal must be represented in cost and revenue terms to meet the company requirement and this provides a firmer basis for evaluation. If there was a perceived need to diversify, the evidence was that the manager may well make progress through extrapolation from current developments or analogies with previous developments, and sometimes, it seems,



there are 'out of the blue' ideas.

### Deciding over capital expenditure

It would be impossible to maintain a personal concern with all items of capital expenditure across all sites and to avoid a situation of mental overload the manager is primarily concerned with the major planned items although he knows, broadly speaking, the constituent elements of lesser categories of expenditure across the various sites. Furthermore his own experience informs over likely and acceptable expenditure levels. This is to say that, over the long term, the manager has developed some cognitive structure that enables him to attach meaning to values of expenditure categories and also make some evaluation over their magnitude. Hence he can make comparative rather than absolute judgements.

As to the nature of any judgement, at one extreme in the short term there is really no choice. For example, if it is known that if a particular piece of equipment is not purchased then the Factory Inspectorate will close a plant, this establishes an immediate priority. Where the certainty over a satisfactory return is somewhat less than that mentioned immediately above, the decision is more difficult. Once more uncertainty - a fluctuating economy, unstable political climate etc. - is a major hurdle. To take just one example, a major investment may provide additional capacity for unrealised product demand. Any judgement will, therefore, incorporate a balance of relevant factors

and, when operationalised, invoke a willingness to take a risk. In practice the manager will need to check out information provided by others, comparing his own model with that held by others in the management team. And he must be prepared to change his model accommodating new information where fidelity to perceived reality appears jeopardised.

Notwithstanding any uncertainty, it will be necessary to evaluate the consequences of any proposed expenditure. The manager must be satisfied that any proposal is better, in financial terms, than the status quo; there is a discipline to demonstrate an improved return wherever possible. Moreover the decision will be in accord with the prevailing circumstances. If, for example, money is tight, greater discipline will be brought to bear on any particular sanction; times of austerity sort out sanctions of sheep from those of goats. In general terms, the manager is operating with a shifting set of norms, and differing criteria at differing times. And if, for example, the objectives outlined in the strategy focus upon maximum efficiency rather than speculative development work, say, the decision would be to buy equipment that would decrease the likelihood of plant breakdowns and customer delays, and hence reduce the chance of competition obtaining the business. For major items of expenditure, at least, the manager will receive feedback over whether or not anticipated targets are being achieved through in-built financial measures (e.g. savings, change in turnover etc.) and



there are additional indicators of a more general nature such as the value of fixed assets, return on funds etc.

#### Relating to subordinates

A recurring theme during the interviews was that of managing subordinates. The manager felt this to be important and indeed the smooth functioning of the division as a group of people will depend upon his interpersonal skills in 'leadership', "skills that keep the whole division in shape". The interviews suggested several features concerning this aspect of skills. Firstly, quite obviously, it would be impossible for one man to make all the decisions relating to the successful operation of the business; clearly the manager is dependent upon the skills of others. Hence he will delineate the tasks that he will personally undertake and those that will be delegated. In this way the manager avoids a situation where he is overloaded with information and duties which may lead to decision making devoid of due consideration. His choice of task will be governed by what he construes his main abilities (and those of his management team) to be. He recognised, for example, that his transforming the divisional operation via personal development of new products and processes was impossible; because of his background and experience he would direct his attention more towards the organisational interface with the market.

Although the manager is reliant upon others, the evidence was that he attended to a wide range of subject matter, thereby avoiding negligence over issues that are his ultimate responsibility (e.g. Health & Safety). He mentioned keeping an "open door" so that he was frequently available to organisational members. Whilst this may add to an already heavy workload, positive benefits may well accrue through gaining feedback concerning the manner in which the organisation is functioning. It did seem that there were considerable benefits in knowing each of the team in that the manager may be able to predict the response of individuals to particular circumstances, and this may facilitate his choice of behaviour in interacting with them.

### Skills Summary

In strategic planning the manager is co-ordinating a number of different types of data from a variety of sources in generating a multi-dimensional model to serve as a predictive base. New information is being accrued continually, some inputs may well have been held in memory for a period. The more competent manager may perceive events differently because of his experience, but will, in any event, seek to be well informed, checking each input against his developing model. There is no injective correspondence between the inputs received and the decision over the strategic path; that is to say the data need not indicate directly what action should be taken. The



requirement is for the manager to exercise his judgement, in some way integrating his anticipated scenario and business requirements, and although there is a need for a numerical representation, "the numbers are what you feel about the situation." The manager will also exercise his judgement in allocating capital where there are fluctuating norms. There are conceptual models allowing numerical manipulation, but there are also more intuitive aspects, the manager's 'feel for the future'. With regard to leadership, the manager appears to arrive at a delicate balance of avoiding information overload whilst encouraging feedback. He attends to a wide range of subject matter and interaction will be further facilitated through knowing group members.

#### 4.13 Summary

It is convenient to summarise the preceding data in Table 4.1 which is organised around tasks and skills. Inevitably in summary form, there is some information loss and the phrases describing skills are more of a convenient label than a definition. Furthermore there is no strong attempt to adopt a consistent terminology at this stage. The nature of each skill is obviously presented in more detail earlier in this chapter, but more formal, less context dependent, definitions are to be found in the following chapter.

Table 4.1 Summary of skill requirements from interviewee data

Manager	Title	Task Objective	Importance	Main parameters	Skills
1	Production Director	To control factory costs	Positive contribution to profit-ability	Factory variance targets Factory variance figure Production events (incl. variation in volume)	Interpreting cost data Combining cost and production data Remaining sensitive to incongruous cost data Utilising key production features Adapting to production changes Devising and evaluating possibilities for action
2	Commercial Director	To set the strategic plan	Imposition of order upon future business path	Market opportunities Financial outcomes Comparative strengths Unknown variables	Interpreting strategic inputs Assimilating market inputs Assessing market inputs Unconstrained thinking in product-market diversification Evaluating outcome possibilities Monitoring own capacities
3	Marketing Manager	To estimate future sales	Establishing volume requirement	Existing patterns of client purchase purchase Economic climate Industry specific variables Competitive state Divisional market oriented inputs	Assimilating market inputs Assessing general and specific market oriented inputs Calculating sales possibilities Adapting to market changes Predicting market state Assessing people
4	Technical Director	To develop new products and processes	Extension of business operation	Resource allocation Research results Production pressures Off-line inputs	Detecting early warnings Predicting research outcome Assessing research evidence Synthesising research evidence Accommodating new evidence Analysing production problems
5	Works Manager	To estimate works costs	Securing resources for production operation	Sales objectives Past expenditure Departmental budgets Budgetary constraints	Looking for departures from cost/factory expectations Filtering out unimportant factory/cost information Extrapolating factory trends Combining cost & production data Assessing people



Table 4.1 Summary of skill requirements from interviewee data (cont'd)

Manager	Title	Task Objective	Importance	Main parameters	Skills
6	Work Study Manager	To maintain and control wage structure agreement	System maintenance	Miscellaneous problems Laid down agreement Pay performance and output levels	Interpreting the wage structure agreement Adapting to factory & other changes Enumerating problem solutions Implementing a decision (in an interpersonal context) Looking for discrepancies from expectations (production data) and ideals (payment system) Detecting early warnings in production data Monitoring own capacities
7	Departmental Manager	To deploy resources in maintaining work flow	Meeting production targets	Production system Operating disturbances	Assimilating stock information Predicting consequences of production problems Devising problem solutions Evaluating problem solutions Implementing decisions through other people
8	Sales Manager	To sell goods and determine prices	Major contribution to divisional profit and revenue	Customer contact Competition activity Price Profit margins	Adapting to selling contingencies Categorising customer inputs Understanding customer requirements Communicating product assessments Examining price discrepancies around expected values Perceiving pricing in the wider context Developing personal relationships
9	Market Planning Manager	To produce a sales package	Meeting a market requirement	Market climate Sales package Capacity Marketing Plan Miscellaneous problems	Planning sales package Liaising with colleagues Assimilating product-market inputs Adapting to market changes Creative thinking concerning package Combining product-market information Adjudging pricing mix
10	General Manager	To devise and implement the strategic plan	Prescribing and developing future business path	Strategic issues Financial outcomes Availability of capital	Interpreting strategic information Predicting multidimensional future Devising strategic path Evaluating strategic path and capital expenditure Categorising capital expenditure inputs Attending to a wide range of subject matter Organising self

CHAPTER 5DISCUSSION5.1 Objectives of Chapter 5

The purpose of this chapter is to discuss the data presented in the previous chapter. The first section is analytical, highlighting various aspects of skilled performance. The main concern is with perceptual aspects, reflecting the main emphasis of the research (because of time constraints), although interpersonal aspects and self management aspects are also considered. Threads are drawn together in a general overview in section 5.3, differences in skills being outlined in section 5.4. Whilst the prime data source is the evidence of Chapter 4, inevitably personal experience and observations subsequent to the data collection have contributed to overall understanding.

5.2 Aspects of Skilled Performance

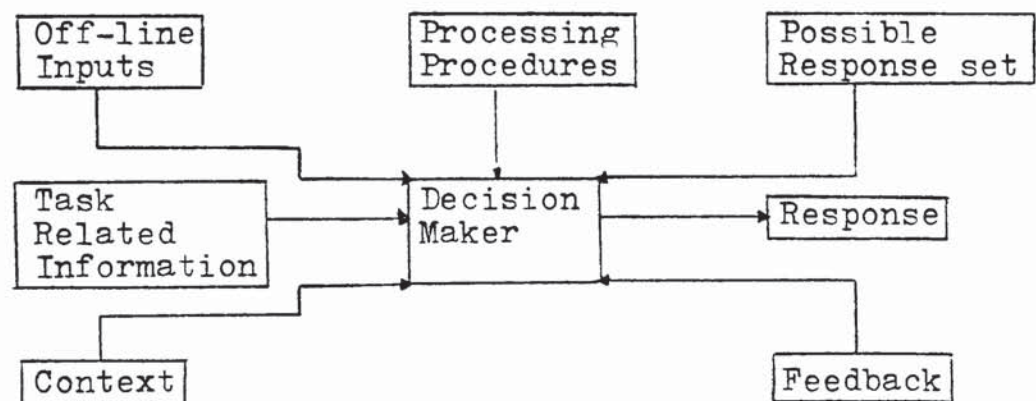
The objectives of this section are to highlight aspects of skilled performance that are important to successful managers in meeting their task demands and to examine their psychological implications in further detail. The fundamental distinction is between perceptual, interpersonal and self management skills. Perceptual skills involve the registration and manipulation of inputs for decision making purposes. The additional dimension in social skills is that of mutual construing, where inputs emanate from another (human) adaptive system. Skills in



self management relate to dealing with oneself, rather than the external situation or other people. Whilst the main distinction is between perceptual, social and self management skills, the nature of feedback and the value of experience are discussed separately.

As a backdrop to the following discussion, it is useful to sketch out the main variables in managerial performance. A ubiquitous feature of management is decision making, the important concepts being data, data processing and outputs. Within this framework, consistent with Miller's (1971) viewpoint, the main parameters surrounding any decision may be set out in Figure 5.1. On the input side there are

Fig. 5.1 Major parameters in decision making



task related variables, contextual referents (including organisational and extra-organisational factors) and off-line inputs may also be important. The output is some response, selected from a number of possible responses, and there are processing 'rules' or 'procedures' (ways of dealing with data) that link inputs with responses. It is with such

... discussion is largely concerned.

The method in structuring this discussion was to compare any one skills analysis with any other and to identify commonalities in skilled performance across the analyses. Inevitably this has resulted in a number of general skill categories, the evidence in support of each category concerning the group as a whole set out in Table 5.2. Differences in skilled performance are discussed in section 5.4. In the narrative of this section, because of the length constraint, illustrations of general statements are usually taken from just one or two skills analyses. It is possible to summarise the main points of this section as shown in Table 5.1.

#### 5.2.1 Perceptual Aspects

Input interpretation It is an obvious inference from discussions concerning task performances with managers that they are able to attach significant meaning to inputs that they receive. A hallmark of their competence concerns being able to understand events in a manner that eludes the unskilled - just as De Groot (1965) reports that the chess master often 'sees' possibilities in board configurations that remain hidden to the novice. It is clear that interpretative skills are only possible because of structures or models that exist independently of current inputs, that is current inputs comprise only part of the total data requirement. In Bion's terms there must be some pre-conception as well as sense data in order to yield some conception (Palmer, 1971).



Table 5.1 Aspects of Skilled Performance

Category	Description	Evidence from skills analyses
<u>Perceptual aspects</u>		
1 Input interpretation	Attaching meaning to inputs: being able to comprehend data	Implicit in all interviews and observation e.g. Mgr. 1 can attach meaning to cost data because of his costing and production models
2 Perceptual categorisation	Identifying inputs as being of a particular type (experience yielding finer categorisation)	Various perceptual classifications e.g. Mgr. 6's general 'match-mismatch' wait and see' categories
3 Early warning detection	Discerning signals giving advanced warning over future system state	Detecting the presence of some cue e.g. Mgr. 4 being alerted over a likely research outcome
4 Discrepancy sensitivity	Looking for departures from expectations/ideals	Exception principle operated e.g. by Mgr. 5 remaining sensitive to deviations from planned expenditure (costs)
5 Input weighting	Tagging inputs with differential values of importance which will vary over time depending upon purpose and context	Assessing conditions and events e.g. the variable data concerning market circumstances (Mgr. 3)
6 Wide band perception	Reviewing inputs in a wider context and not as isolated units	Taking a broad view of events e.g. Mgr. 6 viewing a payments problem in the context and history of the wages agreement
7 Perceptual combination	Integrating perceptions of different entities	Combining perceptions e.g. Mgr. 9 integrating product and market perceptions
8 Input assimilation	Absorbing inputs into an existing structure; updating a model piecemeal fashion	Input accrual piece by piece e.g. Mgr. 7 updating the departmental stock position
9 Input accommodation	Modifying an existing structure in alignment with new inputs	Creative thinking e.g. Mgr. 2 generating new business opportunities in strategic planning
10 Input analysis	Dividing inputs into their constituent elements; relating inputs at one level to those at another	Data analysis e.g. Mgr. 4 diagnosing process faults

Table 5.1 Aspects of Skilled Performance (cont'd)

<u>Category</u>	<u>Description</u>	<u>Evidence from skills analysis</u>
11 Contingency adaptation	Tailoring processes to changes in the external system	Adaptive strategies e.g. Mgr. 8 meeting the customer requirement
12 Option enumeration	Working out answers to particular problems, through applying heuristic, rules of thumb and procedures	Problem solving e.g. Mgr. 7 resolving the departmental resources problem
13 Prediction	Forecasting events and conditions using past and present data	Anticipating what will hold forward in time e.g. Mgr. 10 anticipating future business scenarios
14 Option Selection	Assessing possibilities and choosing some possibility consistent with objectives	Various judgements e.g. Mgr. 9 assessing sales package
<u>Interpersonal Aspects</u>		
1 Interpersonal sensitivity	Predicting another's likely response	The importance of knowing others e.g. Mgr. 7 implementing decisions through subordinates
2 Interactive tactics	Communication facilitation through the application of fundamental social techniques	Implicit in all comments concerning interaction; evident through observation of Mgr. 9 discussing opportunities/sales with customer
3 Interactive strategies	Guiding the communications in a planful, yet flexible manner	Various strategies e.g. Mgr. 6 seeking a compromise with the shop floor
<u>Self Management Aspects</u>		
1 Self organisation	Coping with work stresses	Mainly anecdotal evidence not mentioned in chapter 4
2 Self Monitoring	Checking upon one's own capacities/abilities and inclinations	Self appraisal e.g. Mgr. 6 managing himself through applying strategies such as delegation and consultancy



For example, the Production Director is only able to understand the cost data he receives because of his well developed models concerning costing and the production operation. Indeed, the better developed the model the more the manager will be able to perceive, and it also follows that the manager will be able to identify salient inputs from a noisy background (e.g. the Works Manager). Furthermore, a related skill mechanism enables the manager to know whether his model is inadequate or whether it is the inputs that are in error (and this provides the basis of a classification scheme held by the Production Director).

Perceptual categorisation If the manager recognises what inputs mean, they may be assigned to particular classes or sets. For example, the Work Study Manager holds a 'match-mismatch-wait and see' classification relating to expected and actual production data. Categories presumably facilitate cognitive order, particularly as the manager may well be managing a number of parallel events, each providing signals periodically. That perceptual categories are also useful for decision making is evident from several managers notably the Sales Manager, who structured a particular product-market launch around a perceptual (customer) typology. The notion is that categories will be organised around how they will be used rather than around input properties. Putting this another way, the skilled manager may be regarded as developing

'categories with known remedies', particular categories being associated with particular actions or kinds of action.

It seems likely that the kinds of category system mentioned here are not based upon one uniform property varying across each category, rather categories may be of a 'polythetic' nature (after Sokal, 1977), sharing a number of properties but not necessarily agreeing in any particular property. Hence the manager is operating with a shifting multidimensional structure where the importance of particular dimensions will depend upon context and purpose.

Early warning detection The skilled manager is capable of detecting information providing advanced warning over future events. For R.B. Miller, detection is a process with the objective of determining the presence or absence of a cue or condition and clearly, the greater the contrast between cue and background the greater the reliability of detection (Miller, 1971). The additional aspect of this skill is in being able to gauge what the information means for the future. It seems appropriate to regard early warnings as 'first base hypotheses'. For example, the Sales Manager looks for signals concerning likely customer intention which he collects into some 'hypothesis' which is then tested deductively against further evidence. Once more it is evident



that any input must be fed into an existing model - indeed, since the tendency is to notice what is expected (in ordinary perception), detecting early warnings is likely to depend upon the richness of existing models.

Although not recorded in Chapter 4, the Technical Director spoke of being able to 'sense' likely new research developments when something did not accord with his expectations and hence exceptions may provide the cue over what the future may hold.

Discrepancy sensitivity Adopting an overall systems perspective, remaining sensitive to information that does not conform to expectations or ideals enables the manager to cope with the complexity of the system state and allows a highly pertinent response. Brewer and Tomlinson (op.cit.) report that managers devote considerable time to acquiring and systematising information and so managing 'by exception' need not be a simple and straightforward matter. The evidence of the interviews was that the exception principle was employed by a number of managers including the Works Manager who looks for departures from expected works costs. Similarly the Technical Director reflexively poses the question 'does the research evidence fit my expectations?' In Branton's (1979) terms the critical decision concerns a 'rendezvous with a stranger', a paradoxical recognition that the research answer has arrived. Finally, in anticipating problems, the Work Study Manager is essentially looking

for discrepancies between predicted events and ideals.

Input weighting In order to meet their objectives managers require various kinds of information. The evidence is that such information is tagged with differently weighted values consistent with the overall purpose and context. For instance, the Marketing Manager, in obtaining his sales estimate, will weight specific and general pieces of information where the former concerns estimates of front line salesmen, firm orders etc. and the latter concerns factors such as likely public sector spending, new legislation etc. The Works Manager employs a similar process in compiling factory costs. That some information is regarded as more important than other information means that managers are assessing or evaluating inputs. It is clear that this assessment cannot be conducted in isolation - it is conducted through relating the current information to other information. It is my perception that the most influential factors affecting this judgement process (as with other judgements - see, for instance, Abercrombie, 1960), are the well developed models that managers hold. The Marketing Manager, for example, has had many years experience in compiling the plan so that he knows the weighting that each should be given consistent with the purpose of producing the sales estimate. Hence the skilled manager will not ignore what really counts and, on



the input side, this is related to the key elements phenomenon discussed by Bartlett (1951) (see p. 75). Another relevant illustration is provided by the Production Director who anchors his expectations around a stretched target, production factors and other performance variables.

Wide band perception The skilled manager does not operate with some isolated event or merely with the 'here and now'; rather he can see the relation of the part to the whole and can also take the longer as well as the shorter term view. Although it may seem platitudinous to talk of executives 'getting the big picture', nevertheless the concern with both field and particle, the big things and the little things that count, was evident in a number of the skill analyses. For example, whilst the Sales Manager will operate around various important levels he will always remain aware of the overall contribution requirement, and the evidence was that the Work Study Manager will view any payment problem against the background of the history and context of the Wage Structure Agreement. What has been termed 'wide band perception' appears close to Van Lennep's 'Helicopter Quality' or breadth of mind (Müller, 1970).

Perceptual combination Managers acquire information in a number of forms and combining perceptions of different entities or differential perceptions of the same entity is in the nature of some managerial skills. By way of illustration, the ability of the

Production Director to link perceptions of the real (production) situation with the associated numerical (cost) information would, most likely, distinguish the production man from the accountant. Moreover, comparing the process to mere 'number crunching' gives an indication of the superiority of the skilled man over the unskilled and the computer. A further illustration of combining perceptions, that of the Market Planning Manager, who in estimating sales impact somehow integrates a market assessment with the nature of the package, is more difficult to understand. This 'apples and pears' combination is worthy of further investigation.

Input assimilation Many managerial models are built piecemeal fashion. This is inevitable since the environment in which managers operate is continuously changing - new products are marketed, new contracts are won and lost, personnel arrive and depart, etc. Hence there is a necessity to update models to maintain fidelity to the external world and ensure that input interpretation and assessment remains optimal. The process is one of adding some new piece of information to the existing structure. For example, the Departmental Manager holds some model of the stock position throughout the department which is updated from various sources such as stock sheets, subordinate reports and tours of inspection. The importance of not functioning solely upon the basis of preconceived ideas is also evident in the case of



the Marketing Manager, where, without the assimilation of current information, the ultimate forecast would harbour greater error. Having worked with managers it is clear that they dislike being 'caught out' by changing circumstances and this desire to keep informed is noted in the literature by Mintzberg (1970) and Brewer and Tomlinson (op.cit), for example. Hence, a general overview is that managers operate in an iterative manner, checking models against reality and updating models as they are found to be inadequate through external system changes.

Input accommodation A number of the managerial tasks under consideration required the generation of new ideas. This creative skill is important in finding new business opportunities during strategic planning and in product marketing, for example. A feature of creative skill may concern linking perhaps hitherto unlikely elements that, in combination, yield some 'added value' (and this may call for relatively uninhibited search techniques). The most important feature is that of 'accommodation', restructuring an existing model to accord with the new piece of information. This has also been termed 'divergent thinking' (e.g. Hudson, 1970) and 'loose construing', a slackening of the connections between constructs and aligning them in an unusual way (Bannister and Francella, op.cit.). Inevitably, however, creative thinking also requires 'tight construing', an alternating convergence of thought to

consolidate the more divergent aspects and provide some unity amidst the divergent variation. In management it is possible to discriminate degrees of divergence or accommodation, the requirement for more drastic changes being reflected in a more creative approach.

Input analysis Analytical processes concern the subdivision of chunks of information into their constituent elements. Problem diagnosis involves analytical processes as in the case of the Work Study Manager who, in the face of a payment problem, will seek to determine the constituent nature of the problem. In this context the manager is moving up and down a hierarchy relating elements at one level to those at another. A further illustration is that of the Technical Director who, in resolving production problems, will move up and down a hierarchy concerning process and human factors.

Contingency adaptation The interviews suggested either implicitly or explicitly that managers will adapt to the particular circumstances that they face in the course of meeting task objectives. For the Sales Manager in particular this 'alignment' strategy was the product of experience. He must identify with the customer need and tailor his response to meet that need within the constraint of factory convenience. Generally speaking, the manager must be able to allocate any incoming information to



to the appropriate model of events, otherwise the tendency would be towards 'cognitive entropy'. This importance of being able to maintain diffuse and developing models is implicit in Marples' (op.cit) discussion of managerial behaviour and it derives, not least, from the brevity and variety that characterises managerial work. On the output side the manager must be able to monitor any action against the overall purpose, as in the case of the Production Director who holds multiple variance targets.

Option enumeration     A widespread managerial preoccupation is with problem solving - indeed it is possible to construe this as the prime managerial task - and there are a number of ways in which the manager might make progress in order to attain a problem solution. The on-line problem solver may make recourse to heuristic devices, the Work Study Manager, for example, reporting that he did not hold a 'standard' set of practices to deal with the miscellany of problems that he faced. Rather the evidence was that he made recourse to one or two ploys to facilitate progress and this mode of operating applies to the Sales Manager and others. One frequently mentioned ploy was that of relating the current problem to similar problems and their means of solution that have occurred in the past.

More specific and better established methods include 'rules of thumb', the execution of which

enable the Departmental Manager to resolve his resource problem. Brewer and Tomlinson (op.cit.) also point out that supervisory problem solving may be conducted by means of stored 'programmes' but it is worth **exploring** the 'rule'/'programme' concept further to avoid misunderstanding. Miller's (1968) example of teaching geometry is helpful in this context. The problem is to find the area of a right angled triangle where height and hypotenuse are given. With one teaching method pupils are assisted to discover the relationship between the area of the triangle and a rectangle of same base and height and how the Pythagorean theorem can be used to calculate the base of the triangle and rectangle. With the second teaching method, the pupil is taught to memorise six steps that will mechanically yield the result. In Miller's terms the first method is 'insightful and productive', the second 'stupid and ugly'. The evidence was that problem solving rules or programmes are acquired by productive learning rather than by rote. This means that the effects of learning are cumulative, thus facilitating information storage and providing a framework within which the manager has been able to develop his own subroutines or rules of thumb in problem solving. Furthermore each successive response and its effect will change the existing stored model in some way, allowing a flexibility that is prohibited with mere rote learning. As a result of this productive process the manager is



able to think more broadly about the system that he runs; he has the general picture to which the details might be related.

All this is not to suggest that there are no 'formal' techniques, principles or bodies of knowledge that will assist the manager. On the contrary, the Production Director, for example, makes recourse to the procedures of cost accounting which are supported by mathematics, the Technical Director has a mastery of a physical science that enables him to understand inputs and so on. Similarly other managers, particularly the more senior people, will make recourse to relatively abstract models concerning various disciplines, and something of their nature is mentioned below (p.263).

In devising problem solutions, managers encounter constraints (and the manner in which constraints are negotiated may provide further insights into skilled performance). To take an instance, the Work Study Manager is limited by the need to avoid setting dangerous precedents and exceeding cost levels. Whilst this imposes restrictions upon problem solutions, simultaneously it provides the stimulus for more creative thinking.

Prediction Prediction involves using present and past information to forecast the external system state at appropriate forward time intervals. This is the process of extrapolation where the manager

extends the current scheme of things to a terminal point that he fixes. The Commercial Director, for example, must extrapolate beyond current data in order to establish the 'inductive credibility' (after Gilson and Abelson, 1965) of competitor activity. There are a couple of ways through which such advances may be made, namely taking a step at a time in building a path to the terminus, or through reaching the end point directly (perhaps 'intuitively') and then turning back to fill the gap.

Option selection A further ubiquitous feature of management is decision making. In meeting task demands or resolving problems the manager must decide over the most appropriate response, the process being one of evaluating possible responses against criteria defined by objectives and context. Evaluation may well concern a comparison of anticipated likelihood-utility combinations (as in the case of the Production Director) and the selection 'rule' may be to choose the maximum value (gain). However, criteria change over time (which was the reported experience of the General Manager) and sometimes there will only be one choice as in a situation where factory installations must be procured in order to meet safety requirements.

All assessments are not made so 'clinically', however, and some may be described as more 'intuitive' in that whilst they are not necessarily 'immediate', they are not supported by obvious reasoning processes. The Market Planning Manager's feeling over the



success of a product in the market place is made intuitively and, consistent with Branton's (1979), account it appears that competent managers intuit on the basis of an extensive knowledge base. The Market Planning Manager spoke at length in the interviews, and in casual conversation, about the nature of products, markets and related phenomena and, similarly, it was evident that the General Manager had sought to derive a deep understanding of the business and its environment and this enabled the more 'intuitive' judgements to be made competently.

One interesting aspect of this is reflected by a first feeling that something is possible, the reasons as to why it is possible being adduced later on. This is the reported introspection of the Technical Director and it is only possible to speculate why this is the case. As mentioned there is certainly some experience/knowledge base and consistent with Minsky's (1977) ideas, the notion of a 'stereotype' may be of value here. When faced with some novel situation it might be supposed that some stereotypical model is recalled and in the absence of specific values for certain of the 'data slots', the stereotype will allow the insertion of some 'typical' or 'ideal' value. Hence, given that certain data slots are filled, in the case of the Technical Director it is possible that the decision over some development work may be specified by default.

The decisions that managers make will be subject to temporal variation since circumstances will change. For example, the General Manager's decision over capital expenditure will depend upon current business objectives and the availability of cash. Resources also present a problem for the Technical Director who likewise makes commitments consistent with objectives. These examples illustrate the importance of context and off-line inputs in decision making. Moreover, often if not always, information is incomplete - perhaps most notably in strategic planning. Sometimes information is uncertain and ambiguous, which is the problem faced by managers requiring data concerning the external environment. (e.g. Marketing Manager, General Manager). A further problem concerns a noisy background, as in the case of the Works Manager who is looking for significant cost changes.

#### 5.2.2 Interpersonal Aspects

Personal experience, observation, interviews and the literature all testify to the considerable proportion of time that managers spend with other people, both inside and outside their own organisation. Often there is a reliance upon others for the supply of relevant information and in implementing decisions managers are frequently dependent upon subordinates and others. Hence managers must be able to communicate downwards to subordinates and they may



well have to communicate upwards in responding to subordinate initiations. Furthermore, managers will liaise with colleagues and hence there is the need to maintain a network of contacts for the acquisition of information and resources. There is also a need for reciprocal trust and cooperation.

Relating to other people in a competent manner is dependent upon social skills, where the hallmark is mutual influence and construing. Social skills, similar to perceptual skills, involve data processing and decision making, the distinctive feature being a perceptual reciprocity between (at least) two human adaptive systems. Hence, where inputs emanate from another person, the additional dimension in skills concerns initiative and attribution (imputing what the other person is thinking and feeling). The skills analyses revealed one or two aspects of this type of skill, but as mentioned, the interpersonal aspects were not the main research focus.

Interpersonal sensitivity There was the suggestion from a number of managers that it was advantageous to know certain individuals with whom they would have to interact. The Departmental Manager, for example, commented "I want to be able to assess people ... to guess reactions to proposals ... to be able to play to characters." The advantage in knowing subordinates is worth exploring further since one theoretical perspective is that the manager as an order taker and order giver will incur problems only

as a result of 'insubordination' or a 'breakdown in communication'. From this perspective, knowing individuals, being able to predict their responses to initiations, hardly seems important. The problem is, however, that this is too simple a view of the pattern of organisational relationships as Sayles (op.cit.) remarks. He found that organisational relationships will impose various patterns of initiation and response that fluctuate according to organisational circumstances. Thus the manager must change his own behaviour accordingly, but the enduring objective is to build what Sayles termed "a predictable, reciprocating system of relationships, the behavioural patterns of which stay within reasonable physical limits" (p.258-259). The manager wants to know who he can count on and for what, and this is important in lateral as well as vertical relationships, for as Welford (1976) points out once people get to know each other well they may be able to predict the reactions of others sufficiently well so that the team may be able to function 'ballistically'. Hence leadership and liaison aspects are facilitated through a person oriented predictability that appears to be built over the longer term. It appears likely, therefore, that the manager has abstracted some classificatory scheme where classes have predictive connotations and inclusion within a class affords some measure upon which individuals may be assessed. Argyle (1972) reports that a number of studies show that the most effective group leaders tend to have



better social perceptions and are able to discriminate between people more sharply.

Interactive tactics Whilst knowing how people are likely to respond to communications will facilitate dealing with others, there are other aspects involved in the process. Through observing managers (notably the Sales Manager during the project, and latterly managers within my own division), it seems clear that those who are competent in social interaction are able to conduct the interaction in a smoothly interwoven pattern, steering intercommunications along a desired path whilst taking account of the other person's responses. At a fundamental level the manager must not overload the other person with information but, equally, he must not provide too little information since this will create uncertainty and indecision. Clearly a useful tactic is to ask if the communication is understood and the manager must be able to apply other verbal, and non verbal, techniques. This means that the manager must decide when to make proposals, offer suggestions, build upon previous statements etc. and decisions concerning non verbal aspects such as looking, smiling etc. will also facilitate the process. Such decisions will depend upon the manager's objectives and the context surrounding the interaction. If, for example, the requirement is to keep communication channels open in the context of making a sale, suggesting, building, open ended questioning etc. will be likely options. The decision

over the best response will involve similar processes to those mentioned above - interpretation, assessment etc. - which are relatively general information processing aspects.

Interactive strategies At a more elevated level the manager may make a number of decisions as to how to organise the communication, Wright et. al. (1970) delineating the order of presentation of elements within the overall communication and degree of emotional arousal as two major variables.

At still higher levels within the hierarchy there may be a need for compromise as in the case of the Work Study Manager who must implement a problem solution in the context of the wages agreement. This manager also pointed out the importance of generating confidence in his integrity as well as his ability. It is also important to 'identify' with the other person, this being the process of considering how any communication will be received. The managers who dealt directly with the shop floor spoke of this as did the Sales Manager who is trying to understand the customer need.

The development of mutual rapport is also useful for managers who must communicate across an organisational boundary. Again this is important for the Sales Manager who is seeking to develop customer relationships. Initially the process may involve something as simple as recognising a personal interest and building on it. Progress will be made through



questioning the customer concerning his requirements and the manager must also support his product. Observation of this situation reveals that the participants understand what each is saying, sharing ideas and perceptions in a relaxed manner, each feeding upon the responses of the other. This is a mark of much smooth intercommunication. As for the nature of the communicator as opposed to the process of communication, it seems desirable that he should not be anxious and should demonstrate a general understanding and control of the situation.

### 5.2.3 Self Management Aspects

In addition to evidence concerning the management of organisational systems and people, there is also evidence of a 'self management' aspect. This means that feedback relates to the internal self as well as the external environment. Managing oneself was not a major concern of the analyses, however, and some of the evidence here is anecdotal.

Self organisation It has already been noted that widely recognised characteristics of managerial work are 'variety' and 'fragmentation'. It is my experience that the requirement to switch quickly and often between tasks/subtasks imposes a strain, and the ability to cope with this is a facet of skill. Indeed there is observational and anecdotal evidence that as the situation deteriorates, the performance of the skilled manager does not. Managers, who

typically have a heavy workload, must be able to decide which of a number of inputs (meetings, correspondence etc.) will receive attention. Although it was not mentioned in Chapter 4, the Commercial Director reported that he came into work early each morning in order to deal with relatively minor administration and establish work priorities. Whilst this 'planning' aspect is important for the Commercial Director, the on-line situation may well dominate and as mentioned above the manager must be able to allocate inputs to the appropriate model of events, and it seems that speed in switching between events competently will be facilitated through holding well developed models.

Self monitoring One or two of the research sample reported that they were aware of their own best abilities and how they might overcome deficiencies. With regard to the latter, one compensatory approach is to rely more heavily upon others, which is a facet of 'self conservation' (cf. Birren, 1969) in that it reduces mental workload. An illustration was provided by the General Manager who recognised that it would be impossible for him to transform the divisional operation through a personal involvement in process development because of his lack of expertise. Rather he left this work to others, electing instead to devote his abilities to work aspects for which he felt most suited. Similarly the Work Study Manager mentioned the value in consulting others and in letting



**Table 5.2** Evidence in support of the skills classification from each respondent's data

<u>Skills</u>		<u>Respondent</u>										Frequency %
		1	2	3	4	5	6	7	8	9	10	
<u>Perceptual</u>												
1	Input interpretation	X	X	X	X	X	X	X	X	X	X	100
2	Perceptual categorisation	X			X		X		X			40
3	Early warning detection				X		X		X			30
4	Discrepancy sensitivity	X		X	X	X	X		X			60
5	Input weighting	X	X	X	X	X					X	60
6	Wide band perception	X	X				X	X	X			50
7	Perceptual combination	X				X	X			X		40
8	Input assimilation	X	X	X	X	X	X	X		X	X	90
9	Input accommodation			X		X				X		30
10	Input analysis	X	X		X	X	X					50
11	Contingency adaptation	X		X		X	X		X		X	60
12	Option enumeration	X	X		X		X	X	X	X	X	80
13	Prediction	X	X	X	X	X	X	X	X	X	X	100
14	Option evaluation	X	X		X		X	X	X	X	X	80
<u>Interpersonal</u>												
1	Interpersonal sensitivity	X		X		X	X	X	X	X	X	80
2	Interactive tactics	I	I	I	I	I	I	X	X	I	I	100
3	Interactive strategies	I	I	I	I	I	X	X	X	I	I	100
<u>Self Management</u>												
1	Self organisation	I	I	I	I	I	I	I	I	I	I	100
2	Self monitoring			X				X			X	30

X = Evident in respondent data  
I = Implicit in respondent data

Note: A lack of respondent data in support of a particular aspect of skilled performance does not mean that this is unimportant for the manager in his job, or even in performing the task under consideration. It is possible that the interviews failed to elicit some performance aspects, or that, in the process of condensing data, some aspect has been omitted from the account in Chapter 4.

his subordinates conduct their affairs in a largely autonomous manner, seeking to develop them and being tolerant of their mistakes. This manager also reported an increased feeling of competence with increasing years as manifest in a more thoughtful, planful approach to problem solving and improved judgement. Rather than being impulsive the manager reported a willingness to question his impulses and, as mentioned, a willingness to consult other people, perhaps trusted colleagues where the relationship has developed over a protracted period. In conclusion there is evidence that this manager is monitoring himself and he clearly believes that he manages himself differently now in comparison to how he did so in the past.

#### 5.2.4 Feedback Aspects

Much human action is dependent upon the results of preceding action. Receipt of feedback serves to regulate performance much as a thermostat regulates room temperature. Withholding knowledge of results may well induce error, although at some level it is possible that the skilled performer may operate in 'open-loop' mode, devoid of conscious control but nonetheless under the auspices of some higher level mechanism.

For performance in a number of managerial tasks there is prompt feedback concerning the effects of any action taken. The hallmark of the Production



Director's skill, for example, is the clearcut nature of his objectives and the criteria that inform over their attainment. Criteria vary from the shorter to the longer term, relating to comments from production personnel, weekly documents etc., and provide a whole series of feedback mechanisms.

In other situations feedback is not so clearcut, nor is it immediate. Information concerning a sales package for the Market Planning Manager may fluctuate and it may be received too late for further action (once the package is with the retailer, say). Furthermore, there is always a time constraint and reaction to any proposal will have to be provided by other persons throughout. A lack of prompt feedback is particularly apposite in the task of strategic planning where the estimate over the future will be an inference based upon past and present data, and all the manager can do is check the ideas that he has collected into a model (or models) against additional data, which will include other informed opinion. Hence uncertainty in managerial decision making concerns not only inputs where there is often incomplete information, but also the effects of decisions i.e. feedback, about which, at times, there may be no information, except over an extended time scale. This phenomenon obviously makes performance difficult to regulate.

### 5.2.5 Experiential Aspects

The interviews frequently revealed benefits accruing from experience. As a result of learning through various task assignments, something of value is extracted from each assignment and stored for future usage. This is the process of assimilating information in developing a model as mentioned above, but because of the importance of good models in all skilled performance, experience will affect each aspect of performance.

By way of illustration, in devising possibilities for action in problem solving the manager seems able to begin at a more advanced point of departure in his thinking. Furthermore, experience increases the range of options for dealing with problems (as reported by the Work Study Manager, for example) and there is also the advantage of being able to relate the current problem to similar problems and the process of their resolution in the past.

A further example concerns data interpretation and categorisation. Having encountered a particular task or problem on a number of occasions, subsequent encounters may be quickly interpreted and categorised and there is a known remedy. By contrast an inexperienced manager facing a problem or task for the first time may well react in an uncertain manner, being unsure as to how the situation should be interpreted and hence unsure as to how it should be resolved.



A more general, but related, aspect concerns the nature of the unit of information processed by the experienced manager. The suggestion is that the unit of information for processing becomes qualitatively different with increasing experience. (This has been noted by De Groot (op.cit.) as a property of chess masters and by Birren (op.cit.) as an effect of the ageing process.) In particular the notion is that the unit of information for processing is bigger as a result of experience. A personal observation of managers at work is that the experienced manager may 'accept' a problem because he recognises, albeit in general terms, that he will be able to resolve it, the inexperienced manager being reluctant to accept the problem because he is unsure as to what the problem will entail. With increasing experience, it would seem that managers are able to deal with situations ostensibly containing less information. However, it should also be noted that with increasing expertise managers are able to impose finer discriminations and categories upon data and it is the richness of their perception that provides one reason as to why the inexperienced find it difficult to understand their skills.

### 5.3 A general perspective on skilled managerial performance

#### 5.3.1 A Systems Overview

It is convenient to regard the business operation, of which the manager is a part, as a system.

Berrien (1976) defines a system as " ... a set of components (also systems) interacting with each other enclosed by a boundary which selects both kind and rate of flow of outputs to and from the system." (p.43). The boundaries of the system may be arbitrarily assigned by an observer, but they will be influenced by objectives. In terms of the overall system the manager is active in a number of systemic functions, although the importance of such functions, for example policy setting, will vary. Fundamentally, however, his job is to run the (sub)system for which he holds responsibility. Since the system will change over time, 'running the system' means managing a pattern of events proceeding in time. In providing a definition of the manager's skill, the issue is to explain the manner in which he meets the demands of this process. The method hitherto has been to identify common aspects across individual performances, and the concern now is to generalise back into 'mainstream' skills theory. This process will inevitably incorporate personal experience and general observation as a supplement to research findings.

### 5.3.2 Management Skills: An Overview

#### 5.3.2.1 Models

The individual manager clearly seeks to attain task objectives, his goals being part of a more complete representation of external reality. In



Chapter 3 reference was made to three kinds of representation of reality or model:-

1. Enactive - 'extended body images', unvisualised and not amenable to logical reasoning
2. Pictorial - closely related to external reality and termed pictorial in deference to the dominance of the visual system (although 'sensory' would be a more general term)
3. Symbolic - furthest removed from direct sensory experience and extending to abstract levels involving concepts, language and numbers

Enactive, pictorial and symbolic models remain apposite as descriptions of the manner in which the skilled manager understands and controls his situation, although an additional 'hybrid' category is also relevant to include representations incorporating more than one model 'type'. By way of illustration the Market Planning Manager operates within a continuously developing hybrid model with an enactive base used for the intuitive assessment or weighting of evidence, additional pictorial aspects associated with the sales package and symbolic aspects for the detailed numerical and conceptual complexities. A further illustration is provided by the Production Director who holds a well developed abstract model concerning production costs which may be juxtaposed with actual production data where this data may be represented pictorially (some image of the factory state, say), symbolically (some conceptual understanding of strike effects, say) and enactively (some feeling concerning decision feedback).

Models, as entities, are hierarchically organised. Much model building is at a micro level, but there is also a need to relate the micro elements to a more macro perspective. Thus, for instance, a senior production manager may be presented with some information concerning departmental costs which he will want to relate to an overall factory budget. Similarly a commercial manager will wish to evaluate a proposed contract against a general pricing policy and so on. The evidence of the previous chapter further reveals that each manager operates from some fundamental base, usually of functional substance. It is possible that managers may well retreat to these 'tried and tested' foundations when faced by difficult circumstances. (For example, the author knows one manager (a non interviewee) who regularly retreats to an industrial engineering base to try and make sense of difficult issues.)

#### 5.3.2.2 Developing and using models

Models are frequently developed piecemeal fashion, but there are other aspects in developing representations of the world - modelling - as outlined in section 5.2. For example, inputs feeding into the existing structure may be weighted, set in some context, integrated with other inputs and so on. It is clear that there must always be some pre-conception or independent representation of the external world to make sense of current inputs.



Managers not only develop representations of the world but they also develop ways of dealing with it. Managerial models are continuously changing according to attempts to map them onto reality, the mapping aspect concerning a utilisation of the model to make additional progress towards objectives. Quite simply, competent managers not only understand their world, they act in it. The manager will identify options that are worth undertaking (where the worth is established against objectives), and he will predict the consequences of any particular option. The key decision over the option to follow will rarely be made with complete information. Moreover, there will be a need to draw upon supplementary information, and personal experience may well prove valuable. There was also the suggestion from one manager in particular (the Work Study Manager) and this is supported by personal experience, that there is a need to check upon personal abilities and dispositions. Decisions are often implemented by other people, hence communication can be less precise than with a machine, say. but there is still a need to communicate skilfully. Communication decisions at the tactical level concern an assessment of conditional probabilities associated with some response, the overall process being guided by some plan, and there is an advantage in knowing others since this facilitates prediction. Feedback (when available) provides a check upon the mapping process.

Perceptually there is a close relationship between modelling and mapping and one is only of limited value without the other. By way of illustration, for the child memorising the rules concerning the calculation of the area of a triangle, in the absence of the appropriate understanding of geometrical relationships it would be more difficult to identify mistakes and nearly impossible to correct them. Similarly for the Departmental Manager with an absenteeism problem, merely to fill gaps in a production line without understanding the departmental operation may well lead to a suboptimal use of resources.

The distinction between modelling and mapping has been highlighted by a number of authors. In a management context, Pounds (1969) distinguishes 'problem finding', the difference between desired and existing situations and 'problem solving', reducing the difference through the execution of some 'operator'. More generally, Miller et. al. (1960) talk of 'images' and 'plans' where the former concern the accumulated knowledge that the individual has of himself and his world and the latter refer to hierarchical processes controlling behaviour. These authors point out that since plans may be learned they may be incorporated in the image and, equally, the image (what is known about the world may comprise part of a plan. Extending the discussion to other species, Morrison (1979) provides an interesting



account of the modelling and mapping associated with the termite 'macrotermes'.

#### 5.3.2.3 Information Storage

It is worth identifying an accumulated data store specifically. Following computer terminology there are 'files' for recording past experience, some files remaining relatively invariant, for example learned procedures, whilst others may record a changing situation, for example an ongoing research project. Methods of access will vary although it is likely that there will be least structure in inductive type processes. Without adequate access and retrieval, however, it is likely that performance errors will result as in the case of the Market Planning Manager who must remain aware of various time constraints, for example, lead times concerning materials, literature etc.

#### 5.4 Differences in Skilled Performance

Much of this chapter comprises general statements concerning skilled performance, but an examination of the data also reveals differences. Contrasting the managers according to level it may be seen that, not surprisingly, the more senior managers are exercising their skills over a wider perspective both temporally and organisationally. Hence there is a need to maintain diffuse and developing models which is mentioned by Marples (op.cit.). Perceiving the manager as a problem solver and decision maker, Marples

likened the managerial job to a stranded rope comprising fibres of different length (where length= time), the higher the management position the greater the average fibre length and the more intertwined the fibres (issues). Marples' suggestion was that "A prime managerial skill may be the capacity to keep a number of issues in play over a large number of episodes and long periods of time." (p.287). The concern with the long term was very evident for the General Manager and Commercial Director who are steering their businesses on a future course. Part of their role is to set the business objectives, the role of less senior managers being to implement such policy decisions. The policy making aspects are also appropriate for the Production and Technical Directors.

The more senior managers will need models of of increasing conceptual complexity in order to cope with relatively more abstract data. The more junior manager is much more restricted to the immediate situation, his inputs being less remote from actual events. Balance sheets, profit and loss accounts, policy statements etc. largely concern the higher echelons, but it is also worth reiterating that it is in the nature of some managerial skills to be able to relate the micro to the more macro data.

Turning to output aspects, whilst many managerial decisions will comprise both on-line and off-line inputs, it would seem that the latter assume a greater



importance with organisational seniority. Although senior managers certainly require information concerning the current system state, they remain particularly aware of the more superordinate system goals and policies. The decision making at lower levels is more restricted to the live situation, decisions seeking to maintain a shifting equilibrium, partly through containing (minor) crises. This was evident through the discussion with, and observation of, the Departmental Manager. It is also my observation in my current position, and furthermore, it would seem that middle managers will pick up crises that filter through the lower level, accommodating these more immediate demands whilst implementing longer term policy. Dealing with both the shorter and longer term is reported for the Works Manager, but, although not explicitly mentioned, it is a characteristic of all the middle management sample. For example, the Sales Manager is essentially seeking to achieve a gross sales target, through his own actions and those of his representatives, and he also spoke of dealing with the more immediate matters of resolving quotation or delivery problems highlighted by the representatives.

A further characteristic of decision making at more senior levels is that of increased uncertainty which is attributable, at least in part, to the extensive time scale. Uncertainty and limited data would seem to imply an increasing reliance upon

intuition, although this is generally evident. It does seem, however, that the tendency is for decision making lower in the hierarchy to lean towards the 'programmed' pole of Simon's (1965) continuum, because of the relatively routinised problem presentation.

Contrasting the managers by function, as noted previously, it would seem that each manager operates from a fundamental base of a functional nature. For example, the Commercial Director holds an acquired expertise concerning the manner in which the business operates and similarly other managers hold market, technology, manufacturing etc. bases. In general, for comparable levels of seniority, it would appear that the technical and commercial people will require more abstract models and greater competence in processing abstract information than those more closely associated with production. The concrete demands of the production operation probably require the production man to deal with information of lesser abstraction and place greater reliance upon experiential learning. However, it is the case that the more complex the product, the greater is the need for someone to hold a composite model linking technology, process and product and it is quite possible that this may be a manager within the production function.

## 5.5 Summary and Conclusions

It is clear that the skill model outlined in Chapter 3 holds for managers just as it does for other



skilled practitioners. Managers hold objectives, they adopt flexible means to attain objectives and they improve through experience.

The main distinction in this chapter is between perceptual, interpersonal and self management skills. Perceptual skills involve developing and utilising models for decision making purposes, important features being summarised in Table 5.3. These

Table 5.3   Perceptual aspects in skilled performance: a summary

<u>Category</u>	<u>Aide memoire</u>
Input interpretation	What does something mean?
Perceptual categorisation	What type is it?
Early warning detection	Is it a cue over the future?
Discrepancy sensitivity	Is something what is expected/wanted?
Input weighting	Tagging inputs for importance
Wide band perception	Getting the big picture
Perceptual combination	Integrating differential percepts
Input assimilation	Adding to what is known
Input accommodation	Restructuring what is known
Input analysis	What does something comprise?
Contingency adaptation	Relating to changes
Option enumeration	Devising possibilities
Prediction	How will things turn out?
Option evaluation	What is the best possibility?

labels are intended to connote a preliminary nomenclature of classification, although the aphoristic phrases should be regarded as 'aides-memoire', not definitions. A general characteristic associated with decision making is incomplete information, which affirms the importance of intuitive judgement. Off-line information is also important, particularly for senior managers who also tend to require more abstract models. Although the evidence from this study is limited, the

suggestion is that managers must attend to the inner as well as the outer world and this is what is meant by self management. Interacting with people is also important, social skills involving coping with mutual attribution and construction.



## CHAPTER 6

### APPLYING THE RESEARCH

#### 6.1 Objectives of Chapter 6

The purpose of this chapter is to outline the influence of the research upon management development practice. The research has initiated a fundamental shift in development activity, although, inevitably, thinking about future implementation continues to develop. The first part of the chapter provides both a general overview and specific illustrations of research benefits and more speculative plans for the future then follow.

#### 6.2 Current practices in Dunlop management development

##### 6.2.1 General comments concerning models of skill and skill acquisition

As noted in Chapter 2, management development is a process concerning improved management performance. In improving the performance of the individual manager it is convenient to distinguish on and off the job learning. The latter relates to more formal training activity and includes specific programmes geared to organisational and individual need utilising various techniques (lectures, simulations, T Groups etc.). This learning serves to augment experiential aspects back on the job and is marked by learning support and a purification of feedback.

The first consideration for the management developer is what needs to be learned, and before the author left to take up his substantive post,

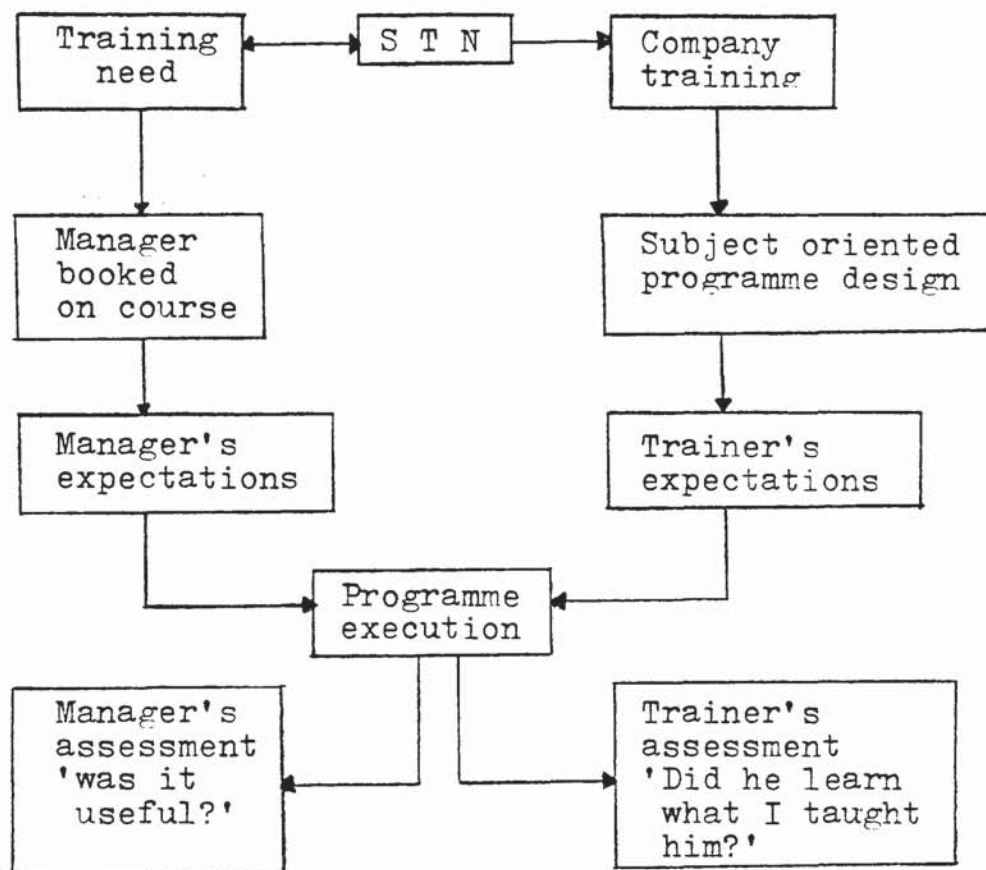
having undertaken the skills analyses, the general implications from the research were clear. Where the requirement is to develop skills, the emphasis should rest upon allowing the manager to develop inner models and acquire directly or experientially procedures for making further progress towards objectives, and this is now the cornerstone of the management developer's approach.

In programme design the objectives will concern activities geared to progressively develop the interrelationship between models and procedures. At each stage the requirement will be to restrict discussion to ideas and concepts that will be understood by the learner. In executing the programme there is the additional dimension of feedback involving a dialogue between management developer and manager to advance the learning process. The management developer now holds a richer structure through which he might interpret feedback. For instance, it may be that the learner experiences difficulties in interpreting information or in relating different types of representation. Furthermore, the management developer should recognise the influence of negative attitudes with what may prove to be a difficult process for mature adults. Operationally he may derive feedback through the insertion of 'what we learned yesterday' sessions and a more in depth involvement with individual managers who may be requested to represent understanding ideographically.



The basic change in development activity may be represented as shown in Figs. 6.1 and 6.2. Before the research was undertaken, a subject (content) oriented programme would be designed to meet a widely identified training need (Fig. 6.1). There

Fig. 6.1 Pre-research training paradigm



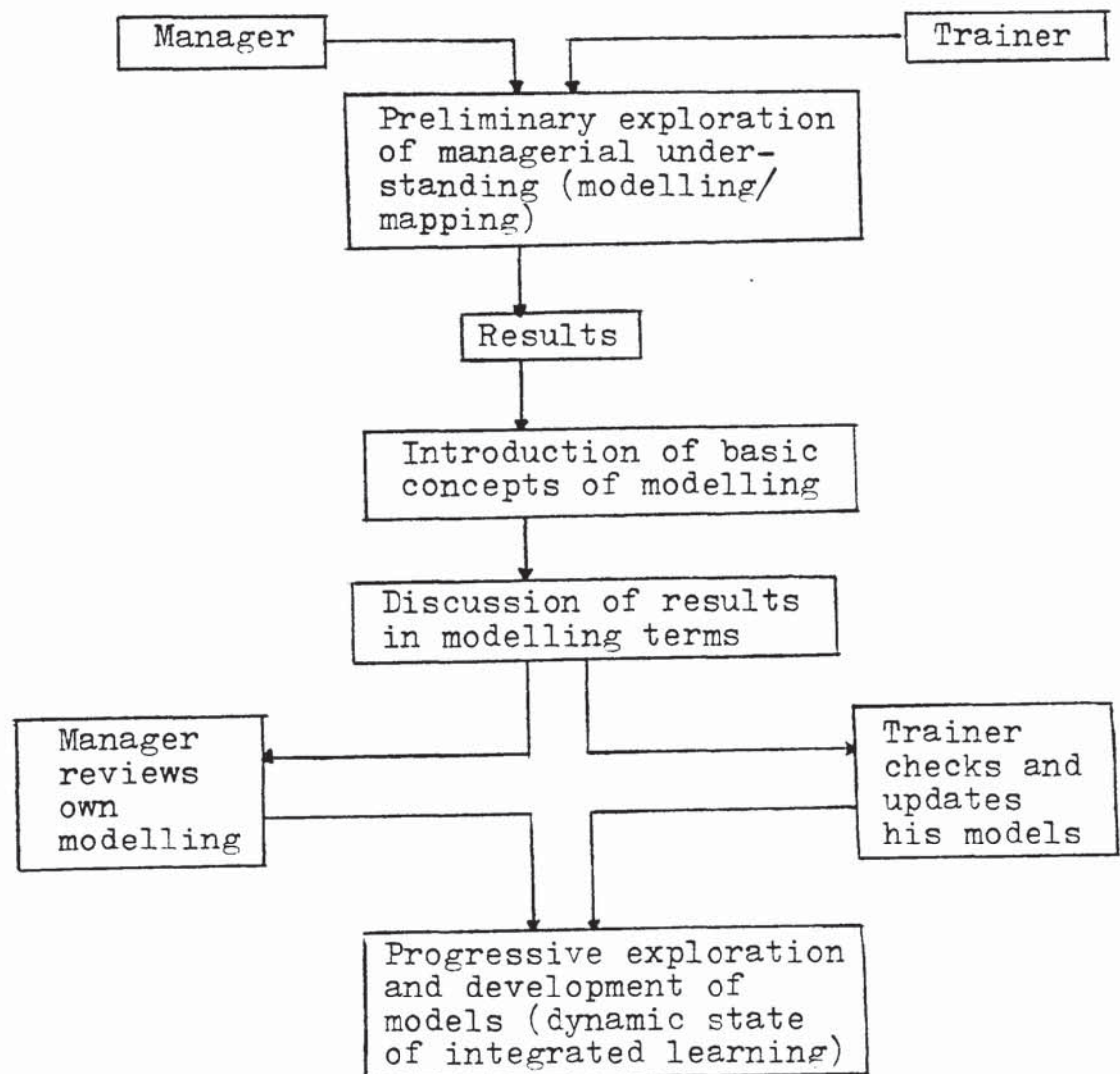
was a very limited appreciation of the nature of managerial skill. In contrast, however, current development activities are much more skills oriented, and are geared to foster the development and utilisation of models as outlined in Fig. 6.2. In particular the design and execution of the programme serve to assist the manager in understanding his problem through:-

1. Providing a language with which the manager and trainer can discuss the problem (the modelling concept)

2. Providing opportunities for the manager to explore and develop his models and compare them with the models of other delegates and the trainer
3. Providing time for all to review and update their models
4. Directing the programme consistent with the developing needs of the delegates

Hence through the dialogue between researcher and management developer concerning management skills, the research project has inculcated a fundamental

Fig. 6.2 Current programme design and execution



shift in programme objectives, emphasising the importance of modelling and mapping. However the project has highlighted one of the difficulties



recognised by management developers, namely that the development of good models may be a protracted process. There is little substitute for the experiential development of certain models such as models of markets, customers, admin. systems etc. It is possible to raise awareness of the processes involved and to provide specific inputs, but such models only remain relevant through regular real world application.

More positively, a couple of examples as to how the project has been of particular assistance will be briefly considered.

## 6.2.2 Particular Applications

### 6.2.2.1 Accountancy for non accountants

One example of programme design centred around skill acquisition is accountancy training for non accountants (see also Chell, in press). The first problem for the management developer is where to begin, and it is often useful to start by sharing meanings about widely held words and gearing the rate of progress to the level of understanding displayed by the group. Initial discussion is limited to what Chell terms 'first order meanings', fundamental and simple definitions. Some illustrations are shown in Table 6.1. On the basis of these simple definitions it is possible to build up 'second order' meanings through considering issues such as why some costs may be directly

Table 6.1 Illustrations of first order meanings given to accountancy terms

<u>Term</u>	<u>First order meaning</u>
Direct costs	Costs that may be conveniently associated with a unit of cost - some product, batch, contract etc.
Indirect costs	Costs that are not conveniently associated with a product, batch, contract etc. and must be apportioned to the cost unit on some appropriate basis
Prime cost	Aggregate of all direct costs (labour, materials etc.)
Factory Overhead	Aggregate of all indirect costs
Total costs	Sum of prime cost and factory overhead

associated with a cost unit, the criteria for differentiating direct and indirect costs etc. The requirement is to determine how the entities relate to each other and to determine similarities and differences. Additional first order definitions may be introduced for terms such as fixed costs, variable costs, standard costs etc. which, when understood, will lead to the expanded second order meanings. Once the meanings associated with such terms are comprehended they may be used to define broader concepts such as 'full costing' (where unit cost comprises both direct and indirect costs), 'marginal costing' (where unit cost comprises direct costs only) and so on. Understanding the concepts will consolidate the understanding associated with particular terms, the learners being encouraged to explain concepts through recourse to diagrams and shapes.



The terms and concepts may be illustrated by examples throughout as the management developer attempts to relate the more abstract concepts to the realities experienced by the group. Once the terms and concepts are understood, the programme enables the learner to apply his understanding to some problem situation. Each problem should be capable of solution through current understanding and each should serve to illustrate some aspect of what has been presented previously. At this stage the learner will need frequent reminders and prompts, and opportunities to consolidate learning and remove misconceptions. With increasing first hand experience participants may be encouraged to develop their own means or procedures to reach problem solutions. Such procedures will, most likely, be tentative initially, but further experiences will refine both models and procedures and the latter will become relatively routinised. It is possible to extend understanding further to cover more advanced concepts, for example to consider the effects of variance between planned and actual sales upon working capital, cash flow, stocks etc.

The process is one of controlled and graded learning, in contrast to the more typical ad hoc learning of everyday work, and the process may be summarised as shown in Table 6.2. It is worth noting that (some of) the perceptual aspects of Table 5.1 will be evident at this stage in that the manager

Table 6.2 Graded learning in accountancy for non accountants

<u>Phase</u>	<u>Description</u>
1	Clarification of word meanings
2	Clarification of concept meanings
3	Rule/procedure abstraction
4	Rule/procedure application
5	Inter-communication concerning main relationships
6	Removal of misunderstanding and misconception
7	Coping with negative feelings
8	Removal of learning blocks
9	Rule-model revision

will be able to interpret and categorise inputs, combine perceptions and so on.

#### 6.2.2.2 Interactive Skills

The research project has also influenced a programme recognising the need of the manager to achieve objectives through and with people. Once more the influence is primarily manifest in the general structure of the programme, where participants are exposed to situations devised to raise awareness of their perceptions and decisions in interpersonal interaction. It is possible to establish the extent to which managers persist with decisions, even when they are clearly unsuccessful and it is also possible to explore the circumstances surrounding a decision to reject a more rational approach in favour of more emotional behaviour. The programme also affords the opportunity to develop richer models of interpersonal perception and develop better means of behavioural



control consistent with objectives. In particular the manager is presented with 'techniques' for analysing and modifying behaviour which he is encouraged to apply to a specific problem that he faces. This whole activity is linked to setting objectives and standards.

#### 6.2.2.3 Skills in developing skills

The skill model applies to the tutor just as it does to the tutored. The management developer will himself require extensive social skills in interacting with managers who may be anxious about, or wary of, the training programme. His skills are also related to other task variables associated with running a programme and this will be reflected in decisions such as whether or not to adhere to the training plan, the degree of dependence between learner and tutor, the composition of subgroups etc. The skilled tutor will present a view of learning from the learner's viewpoint, explaining the nature and consequences of the learning process (i.e. skill acquisition) and what it will feel like to learn. At this level the findings from the research concerning the development and use of models feed into the content of the training programme. The management developer himself now holds a richer model through which he is able to structure and describe skill and skill acquisition in relation to both on and off the job learning. In a training programme he will be

able to discuss the learning process with programme participants relating his aims to their learning and values. Similar to other skilled performers he will compare his appreciation of events with what his model will lead him to expect and if there is some mismatch this may well indicate the need for action. If it becomes necessary to change programme objectives, some other model(s) may well be required and, significantly, for the skilled practitioner the alternatives are available.

### 6.3 Future plans in Dunlop management development

Plans for utilising the research in further management development activity may be organised around training, selection and appraisal practices. Such plans are necessarily of a general nature and will be developed further in the forthcoming months.

#### 6.3.1 Training

The training process includes several phases, namely (1) defining objectives, (2) designing training schedules, (3) exposing trainees to schedules, and (4) determining training effects.<sup>1</sup> Objectives concern the purposes of the programme and training schedule design relates to training content and how it should be presented to trainees.

---

<sup>1</sup> This is similar to the view taken by most authors in the literature, e.g. Smith and Wakely, 1972; Smith, 1977; Patrick and Stammers, 1977 etc.



The main methods employed in management training are listed and evaluated in Table 6.3. After

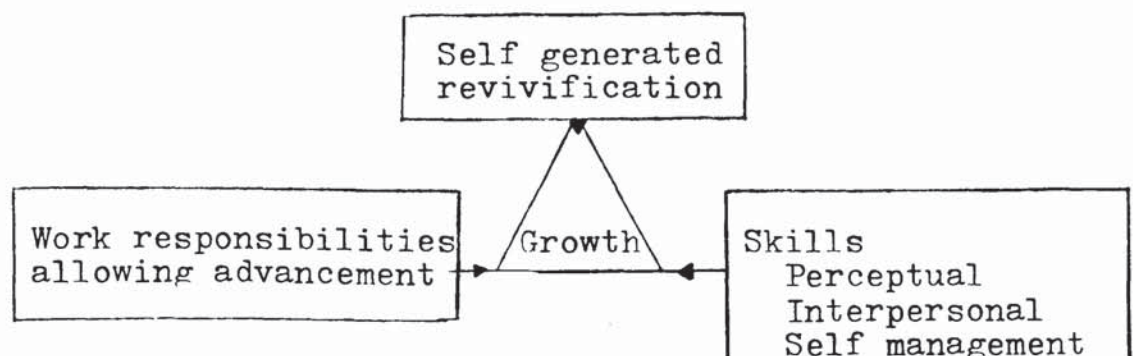
Table 6.3 Training Methods

<u>Method</u>	<u>Description</u>	<u>Evaluation</u>	
		+	-
Lecture	Verbal presentation of material	Economic information transfer	No recognition of individual differences. No feedback
Seminar	Group discussion of issues/problems	Participant involvement. Immediate feedback	Possible negative affective aspects. Lack of structure
T Group	Group discussion geared to raising self awareness and interpersonal sensitivity through discussing here and now issues	Participant involvement. Feedback to actions	Possible negative affective aspects. Lack of structure
Case Study	Problem resolution of written case by group or individual	'Discovery learning' Issues may be of direct relevance	Lack of structure, control, real feedback and general principles
Business games/ Role Playing	Simulated running of business system	High personal involvement. Facilitation of insight into other's viewpoint	On-line dynamics may submerge training objective
Projects/Exercises	In-depth problem investigation	Information transfer Discovery learning	Unstructured

trainees have been exposed to training, the training effects may be evaluated at varying intervals from the training exposure.

Turning specifically to the Dunlop situation, preliminary discussion with the management developer has revealed the fundamental objective of facilitating personal growth, as outlined in Fig. 6.3. Increasingly

Fig. 6.3 Overview of training geared to personal growth



there is a recognition that managers must be committed to growth and this is an additional constraint. The organisational system should allow for growth through advancement in work responsibilities. Managers relate to tasks through skills including self management skills which incorporate an element of self awareness.

The research has identified important aspects in perceptual, social and self management skills and this understanding will be mapped onto future and current needs. Training concerns the utilisation of procedures to facilitate the acquisition of these skills which provide the criteria of success. Whilst skills may be described in a content independent manner, clearly the exercise of skills is manifest in some content, and Table 6.4 outlines two possible programmes.

Table 6.4    Possible future training courses

<u>Title</u>	<u>Format</u>	<u>Methods</u>	<u>Objectives</u>
Budgetary Planning and Control	External	Lectures	To demonstrate need for planning, measure- ment and control To develop real/ financial models of business operation To relate stimulus sampling to measure- ment norms To develop control procedures
Strategic Planning	1 day work- shop	Discussions	To pose questions over future planning in facilitating group discussion



Since the company holds only limited resources for management development, inevitably the 'self development' option is relevant. This is a meta level concern with learning how to learn, the research having identified a number of aspects that managers may consider in self study. Some of the questions that managers may pose reflexively are shown in Table 6.5. Such questions may seem trite and rhetorical but the idea is to provide a useful framework concerning perceptual, interpersonal and self management skill aspects that will enable the manager to advance his own development.

Table 6.5 Self study implications of the research

<u>Skill aspect</u>	<u>Self Study implication</u>
Input interpretation /categorisation	Am I satisfied with the meanings that I may attach to situations and events? Do I hold sufficient relevant information? Can I adequately categorise events? Do I know the action implications of particular kinds of input?
Early warning detection and discrepancy sensitivity	Can I perceive cues over the likely course of events? Can I find such cues? Have I sufficient understanding to be able to recognise inputs that do not fit the existing scheme of things?
Input weighting	Do I know what is of major importance for making decisions?
Wide band perception	Am I able to relate inputs to the broader context?
Perceptual combination	Am I sufficiently aware of real world events that belie symbolic data?
Input assimilation	Do I operate with too many pre-conceived ideas? Am I sufficiently well informed? Am I open to receiving information? Will circumstances allow this?

Table 6.5 (cont'd)

<u>Skill aspect</u>	<u>Self Study implication</u>
Accommodation	Am I able to think sufficiently freely to devise novel solutions to persistent problems?
Analysis	Am I able to subdivide information into sufficient detail for my work? Should I understand more about work at lower levels in the hierarchy?
Adaptation	Am I precipitate in my action? Am I able to recognise and react to significant changes?
Option enumeration and prediction	Are there better methods of solving persistent problems? What experiences will facilitate problem solving? Do I predict the consequences of my problem solutions?
Option selection	Am I adopting the best criteria in making decisions? Are my 'intuitions' based upon extensive knowledge? Am I sufficiently aware of off-line information - other organisational goals, for example?
Interpersonal sensitivity	Are my contact patterns sufficiently well developed so that I might obtain requisite information for decision making? Do I know people sufficiently well to predict reactions to my initiations?
Interactive strategies and tactics	Am I able to set and meet objectives relating to others?
Self organisation	Is my work dominated by current pressures? Am I able to switch effectively between aspects of my work
Self monitoring	Am I aware of personal inclinations in decision making? Might I delegate more of my work?

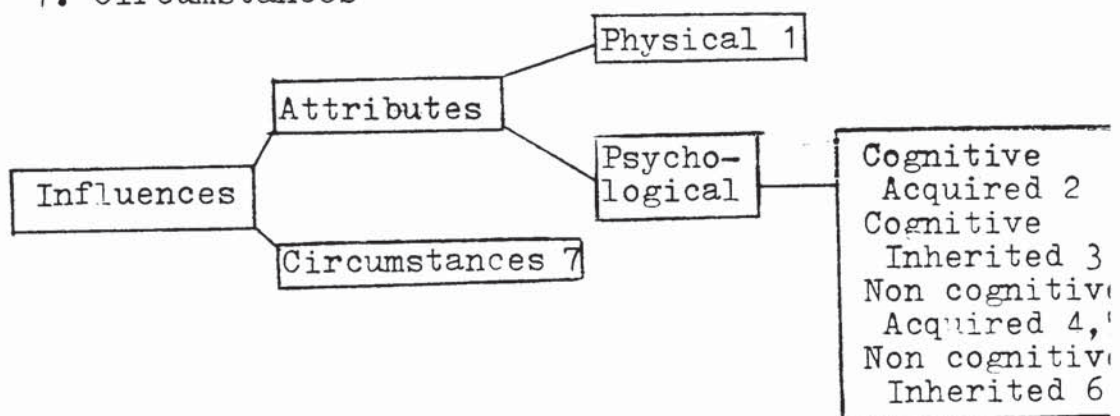


### 6.3.2 Selection

The basic principle underlying selection is that of matching individual differences with differences in job demands, a process with the objective of fitting 'round pegs into round holes'. The success of the process depends upon a definition of job demands, measures of individual differences and the validity of the measuring process. The established procedure in measuring individual differences is Rodger's 7 point plan (de Belder, 1973), the theoretical basis of which is as shown in Fig. 6.4, although the taxonomic structure is neither 'rigorous' nor 'explanatory' (Singleton, 1975). The means of

Fig. 6.4 Theoretical basis of Rodger's 7 point plan

1. Physical make up
2. Attainments (educational and occupational)
3. General intelligence
4. Special aptitudes
5. Interests
6. Disposition
7. Circumstances



gathering relevant information include tests, situational measures and interviews as outlined in Table 6.6. There are several ways of validating

Table 6.6 Means of gathering information in selection

<u>Category</u>	<u>Description</u>	<u>Comments</u>
Psychometric tests:		
1. Maximum performance	Ability tests	Correlations around 0.3 for managers (Ghiselli, 1973)
2. Typical behaviour	'Personality' and interest measures	Poor predictive validity (Campbell et al., 1970)
Situational measures	Inbasket tests, LGDs etc.	Popular in 'assessment centre' approach. Improve prediction in conjunction with other measures. Most useful for behavioural prediction (Campbell et al., 1970)
<u>Interviews</u>	Face to face questioning	Most widely used (Ash and Kroeker, 1975) Systematic approach best (Ulrich & Trumbo, 1965) Judgemental prediction better able to encapsulate 'factorially complex behaviour' (Bray and Moses, 1972)

individual difference measures i.e. relating measures to performance criteria such as predictive validity, concurrent validity etc., but in the management sphere good validation has proved difficult. Chowdry (1969) is critical of the usual selection paradigm in a managerial context and states " ... we do not know how and what to evaluate in executive performance." (p.103). A more general conclusion is that there has been too great a preoccupation with validating tests at the expense of more precisely predicting performance (Guion, 1976).

As mentioned in Chapter 1, within Dunlop the main predictive device is the interview. This research has provided a structure concerning the nature of skilled performance that it will be useful to probe in a face to face situation. It is possible to formulate a number of relevant questions based upon the research, examples of which are shown in Table 6.7.



Table 6.7 Illustrations of areas to probe in selection interviewing

Perceptual Aspects

Does the manager demonstrate that he has a good understanding of his environment? What does he regard as important? What experiences can he relate?

What evidence is there of the manager taking the macro as well as the more micro view?

Managers build many models piecemeal fashion: what is the current state of his model? How aware is he of current relevant developments?

What is the evidence in support of creative problem solving? What problems has the manager had to face and how has he been able to resolve them? How have hurdles been negotiated?

What are the significant and routine decisions that the manager has made? What importance has he had to attach to off-line inputs and what abstract models has he developed?

Interpersonal Aspects

The interview itself provides evidence of social skills

Relevant aspects to probe would be the evidence of past cooperation with colleagues and extra departmental members

Is the manager able to initiate and respond to 'trading' relationships? Can he direct subordinate groups?

Self Management Aspects

What coping strategies does the manager hold in meeting a demanding workload?

What is the evidence that the manager manages himself differently now compared with how he did so in the past?

This presentation is necessarily of a general nature and may be adapted to square with any particular job as necessary, the basic objective being to obtain some insight into the kinds of models that managers hold, good models having been derived through good mapping. It may also be possible to link the identified skills with other measures of individual differences, for example, situational measures.

### 6.3.3 Appraisal

According to Adams (1973) a trait oriented approach tended to dominate managerial appraisal until the 1960s. Subsequently appraisals have tended to be performance oriented and are frequently linked to specific objectives. The widely employed MbO (Management by Objectives) approach requires definitions of starting and finishing points and the time allowed to transist the two (Reid, 1973). More general performance aspects serve comparative purposes, the aim being to compare managers occupying different positions.

In Dunlop the appraisal procedure is broadly as shown in Table 6.8. The collection of appraisal forms

Table 6.8    The Dunlop appraisal procedure

<u>Phase</u>	<u>Description</u>
Performance/ Potential appraisal	Job performance assessed by superior against specific criteria and along general dimensions. Potential also assessed.
Form completion	Appraisal form completed
Dialogue	Assessment discussed between superior and manager
Form submission	Form submitted to Central Personnel Division
Data utilisation	Data base comprising appraisal forms used in personnel practices


is obviously of major importance to CPD for the identification and comparison of likely candidates for divisional vacancies. General performance aspects are included on the appraisal form because of the comparative requirement (and it is unlikely



that any two managers would perform identical tasks). Performance appraisal remains under continuous review, and the research has identified aspects of managerial performance that it would be possible to incorporate as shown in Table 6.9.

Table 6.9   General dimensions for performance ratings

Dimensions of performance ratings

<u>Decision making</u>	Rating
Demonstrating understanding of events	
Detecting cues over future events	
Perceiving what is important	
Perceiving incongruities	
Relating minor details to macro issues	
Relating real and symbolic representations	
Keeping up to date on events	
Demonstrating a creative approach	
Analysing events	
Adapting to circumstances	
Resolving problems	
Predicting events	
Making decisions with limited information	
<u>Interpersonal interaction</u>	
Assessing people	
Directing subordinates	
Responding to other's initiations	
Cooperating with others	
Communicating with others	
<u>Self Management</u>	
Organising self	
Checking personal inclinations and abilities	

Being able to assess skill is itself a skill and any appraisal should be undertaken by skilled practitioners.

There are similarities between the processes of assessing potential and selection in that both attempt to predict performance in deciding who is likely to perform successfully in the future. Currently the company is considering adopting an assessment centre

approach and the research will feed into the formulation of a likely procedure.

#### 6.4 Summary and Conclusions

Throughout the course of the research the regular dialogue between researcher and management developer has enabled emergent ideas and concepts to be included in training programmes. There has been a fundamental shift from subject oriented to process oriented programmes with an emphasis upon needs. By way of illustration, in both accountancy and interactive skills courses the objectives are to encourage the development of related models and procedures. The general discussion on learning from the learner's viewpoint included in all courses has been directly influenced by the research.

The research has identified important aspects in skilled performance and thus understanding will be mapped onto future needs. Current thinking supports a general integrated attitude-skill model of training, likely opportunities concerning budgetary planning and control and strategic planning. The self development option remains attractive partly because of limited resources and, as in the case of selection and appraisal, the subdivision is into perceptual, interpersonal and self management skills. An assessment centre approach to appraising potential is currently receiving attention.



Finally it is worth reiterating that developing managers need be no easy task, simply because many managerial models need to be acquired experientially over the longer term and require regular real world mapping to maintain relevance. The importance of experiential learning means that developing managers should be well coached by their superiors and this may provide a further avenue for training activity.

## CHAPTER 7

### SUMMARY AND CONCLUSIONS

#### 7.1 Objectives of Chapter 7

Since it is our view that the technical problems of management development are best discussed on the basis of what is known about managerial skills, this research has sought to apply and extend the skill model presented in Chapter 3 in a managerial context. This chapter presents an evaluative overview of the research and conclusions which are drawn freely from the data. The application of the research and suggestions for further research are also discussed.

#### 7.2 Research Overview

Management development is a relatively recent industrial specialism, the prime objective of the management developer being to improve managerial performance. The main formal organisational processes for accomplishing this are training, selection and appraisal. There is a voluminous management literature concerning management practice and its application to development activities that may be of potential value to the management developer. However, as Chapter 2 demonstrated, most of the published research concerns tasks rather than skills, and in the task literature there is an overemphasis upon relationships aspects of work. Nonetheless managerial tasks have come to be better understood, not least through the advent of the work activity school, but progress concerning managerial skills has been much more limited. There



are few papers examining managerial skills in detail, yet the advantages of considering skills rather than tasks for the management developer are that skills are the more general, being less linked to specific system demands and reflect competence level and benefits from experience.

In order to make progress towards understanding managerial skills the starting point was what was known about any skill and this provided an embryonic structure and line of approach. In practice it was necessary first of all to understand the nature of the manager's job. A conventional task analysis seeks to identify the logical interrelationships between subtasks, but this is difficult to impose upon managerial work because of the relative complexity and variety of inputs and outputs. Nevertheless it was possible to separate and describe the main tasks and to extend the analysis to more detailed levels. Having understood the content - what was being attained - the need was then to understand the underlying process, that is how objectives were being attained. Making this transition into the skill domain presented further difficulties and as Singleton (1967) points out " ... (there is) the need for each analysis to be regarded as an intelligent creative activity (and) there will never be completely standard methods for arriving at a skills analysis"(p.8).

There were several sources of evidence in the skills analyses, most importantly the practitioner's thoughts on how he did what he did. This was supported by both formal and informal observation, particularly with the Sales Manager and Departmental Manager. Empathy between analyst and practitioner also played a part and this was subsequently enhanced through the analyst working within a management team. There were also benefits through talking to other interested researchers and practitioners. In collecting the data the aim was to avoid a situation of 'ignotum per ignotius' where analysis only served to obscure the skill phenomenon and practitioner reactions provided some cushion against this. Indeed each practitioner was invited to comment upon his own skills analysis, his comments having been incorporated in the data presented in Chapter 4, although this is an abbreviated account because of the length constraint. The author's own experience in management subsequent to the research has obviously contributed to current understanding and has influenced the writing of Chapters 5 - 7.

### 7.3 Conclusions from the Research

The first conclusion is that the skill model discussed in Chapter 3 holds for the manager, as it does for other skilled performers. Briefly, managers act purposefully; they adopt flexible means for attaining their purposes and they improve with



experience. Conceptually the manager may be regarded as a model builder and categoriser, similar to other skilled performers (Singleton, 1978b). Managerial skills are variously founded upon enactive, pictorial, symbolic and hybrid representations of the external world. Some of the problems in intercommunication between analyst and practitioner stem from the enactive basis of skills, in particular the intuitive weighting of inputs and options. These processes are difficult to approach and describe, and understanding seems best attained through an empathy derived from personal experience. There is explicit evidence of enactive/intuitive aspects in seven of the skill analyses, and it is only a small step to envisage similarities for the remainder of the sample. Perhaps this is most obvious for the Market Planning Manager where inputs feed into a basic enactive model, the intuitive aspects being supported by pictorial and symbolic aspects for the detailed complexities including forward thinking.

Operationally Singleton (1978b) regards the skilled performer as a 'navigator' and this also seems apposite for the manager. The consecration of managerial activity lies in the attainment of practical results and the manager holds and develops adaptive means of attaining results. The overall perspective is that skill execution concerns modelling reality and mapping the model back into reality. Models require frequent mapping to maintain relevance

and it is only possible to undertake good mapping on the basis of good models. Schematically these aspects may be represented as in Fig. 7.1 (which is similar to the heuristic model of Fig. 5.1). By way of illustration, an ideographic representation of the skills of the Production Director is shown in Fig. 7.2.

Fig. 7.1 Modelling and mapping in skilled  
skilled performance

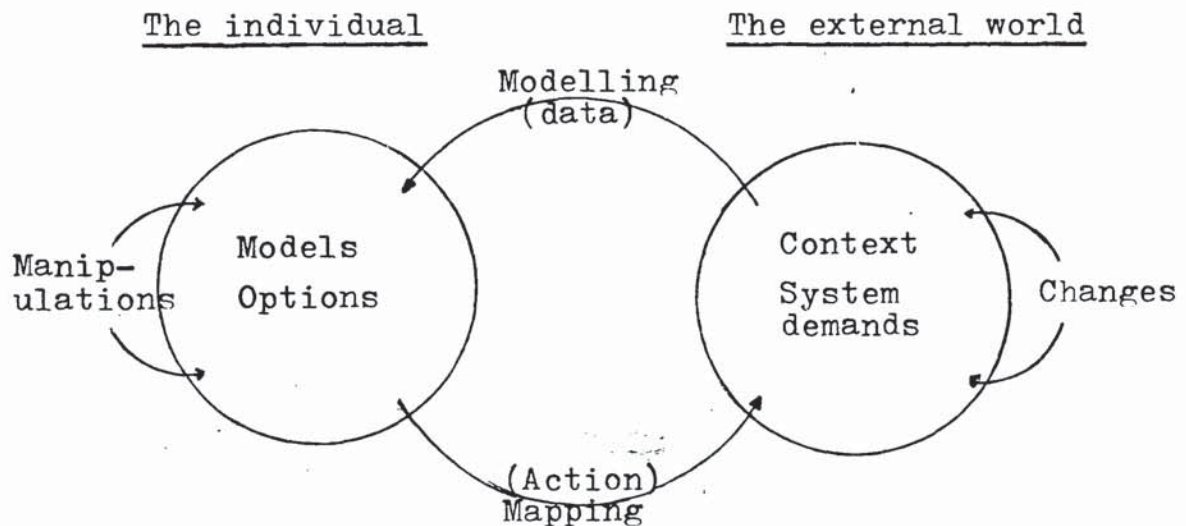
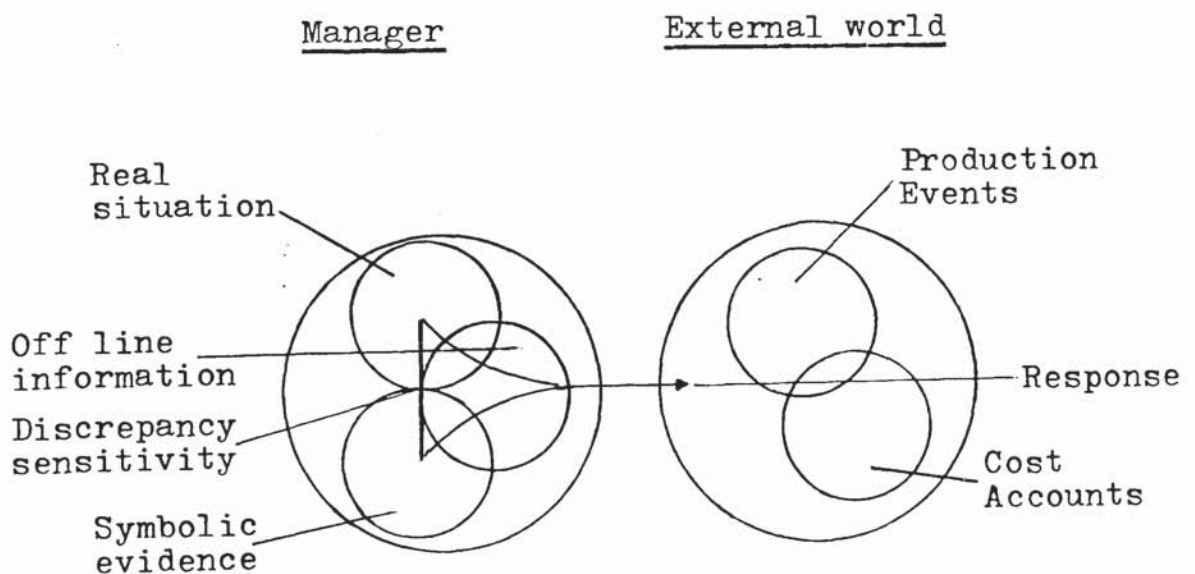


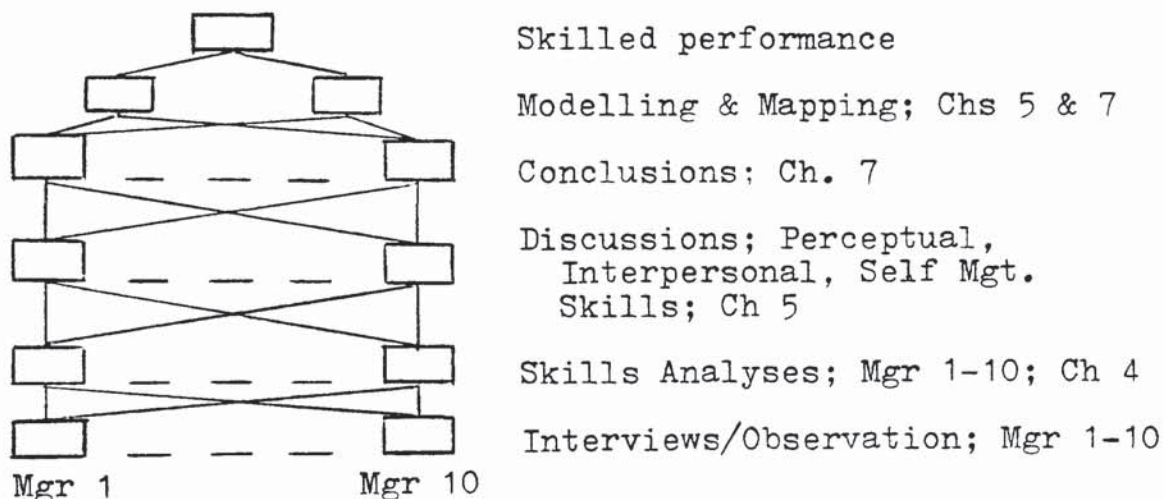
Fig. 7.2 Ideographic representation of  
Production Director's skill





Moving down the descriptive hierarchy it is possible to identify several interwoven themes in skilled managerial performance, although these are not evident with equal frequency nor with equal force in Chapter 5. Schematically the level of analysis is now shown in Fig. 7.3. The importance of intuition has been mentioned earlier in this section, and a further theme is that managers often operate iteratively, testing out their developing record of events against external reality

Fig. 7.3 Levels of description in thesis



and updating the record as inadequacies are revealed and new information accrues. Hence models are built piecemeal fashion and managers arrive at 'wait and see' decisions, declining to act until additional evidence is received. A further illustration of an iterative process is analysis, although it is possible that this may involve less of an extensive time scale. An additional dynamic aspect of managerial activity concerns the use of shifting weighting and cost functions for the evaluation of inputs and outputs.

The manager can identify what is important and when, and this decision will change according to changes in circumstance. Moreover he will decide over priorities taking account of the opportunity cost in attending to some input or deciding over some option, where costs are of a variable nature. Next, managerial decision makers, similar to other decision makers and perhaps more so, rarely operate with isolated events. Rather, since they are managing a process i.e. a pattern of events developing over time, they will find it advantageous to know the history of the process together with other contextual aspects. The more senior managers will remain particularly aware of off-line inputs in decision making, and they also require more abstract models of organisational functioning. The junior manager will be primarily concerned with a more immediate time scale and with the 'live' process. All managers must be able to identify relevant signals (most likely against a noisy background) and as skill increases so does the possibility of control by exception where the manager remains sensitive to discrepancies from expectations and ideals. It is also the case that with increasing skill more advanced categorisation will allow a shift away from detail towards more remote objectives and data. The ability to process larger chunks of information is the product of experience, and experience also serves to increase the range of options in problem solving. Working out what to do will be supported by procedures,



rules and heuristics and may depend upon accommodation or model restructuring in order to generate novel options. The manager will predict the consequences of any option, indeed his concern is not merely to understand the present but also to forecast the future. The decision over what to do will only infrequently be made with full information because of the uncertainty in the manager's environment and because of limitations in communications to the manager who, sometimes, receives little feedback concerning his decisions. The implementation of the decision may well be through other people and there is also a need to liaise with others in cooperative or negotiable ventures. In an interpersonal context, consistent with some overall objective it will be necessary to decide over what information to release and how to release it and more basic interactive skills will revolve around conditional probabilities associated with verbal (and non verbal) initiations and the balance between initiation and response. Knowing people will facilitate communication at all levels, hence it is advantageous to develop personal relationships. An additional dimension of skill is that the manager must also cope with himself, and this is linked to individual aspirations. He will check up on his own abilities and aspirations or inclinations and the latter serves as a reminder of the importance of 'motivation' upon performance. This is one area that would benefit through further clarification: what are the manager's aspirations/

inclinations and how do these bound the exercise of skills? The study also suggests other lines along which further research may be conducted as outlined in the next section.

#### 7.4 Suggestions for further research

This research represents a single attempt to apply the skill model of Chapter 3 to managers. As a result the skills that have been delineated merit further study. A number of issues seem apposite. For example, it is known that managers develop categories, thus imposing structure on both inputs and outputs, but how do categories develop? Indeed longitudinal studies charting the development of skills would be of value for all aspects. It would be interesting to know more about the decisions managers make in tagging inputs with values of importance. Is it possible to describe what is happening psychologically in further detail? Similarly what is the detailed nature of the human facility that enables the manager to combine information located along different axes, to combine apples with pears? Next, how does the manager, and particularly the manager at a senior level, use off-line information in his decision making? What strategies do managers develop for keeping up to date concerning changes in context? What coping strategies do managers employ for dealing with a heavy workload? The study may be regarded as a starting point in the delineation of managerial skills. The classification of skills in Chapter 5 may not be regarded as exhaustive



since only a limited number of tasks have been considered and it would be advantageous to undertake further studies with a more diversified group. Moreover it would be useful to examine further the differences between managers occupying different hierarchical positions. We know that the more senior people require more extensive and more abstract models and in setting policy deal with increasing uncertainty, but are there other differences? How does the middle manager cope with reconciling the longer term policy implementation with the shorter term crises?

In any event, as Chapter 2 revealed, there is all too little information concerning managerial skills, and further research is required. Because of the difficulties associated with understanding both tasks and skills, in depth studies with individual practitioners seem a good starting point. Communication will present difficulties particularly concerning the important intuitive aspects, but as this study has shown it is possible to make progress. The analyst should seek to check his conclusions with data from a supplementary source and should be prepared to exercise patience as his picture develops. It would be useful to check skill development in trainees and, inevitably, understanding will be enhanced through a personal experience of skills practice. It would be interesting to make a link with Personal Construct Theory and this may form a part of the approach in Dunlop.

## 7.5 Current and future applications in Dunlop

The ideas that have emerged from the project have been integrated into a number of training programmes. In general terms, there has been a fundamental shift in programme objectives which are now geared to graded model development and utilisation. Such programmes provide support for on-the-job learning and application. Most programmes include sessions on learning from the learner's viewpoint and the research results concerning the nature and consequences of skill acquisition have been of direct influence.

The Company's development needs are dynamic and the aim is to map the research findings onto prevailing requirements. Perception of the more immediate needs reveals a concern for planning and control over both the shorter and longer term. In a training context the research has implications for self development and programmes to raise awareness concerning learning - learning how to learn - and skill may well be devised. Additional programmes may concern subordinate coaching. The research implications for selection are that prediction should be based upon exploration of managerial models, good models having been derived through good mapping. Such exploration should also provide evidence concerning the capacity of the individual to perform the tasks in question. Predicting performance is the central concern in identifying potential



and the research will feed into the formulation of an assessment centre approach. A further delineation of the skill requirements of the top managers would be of value in this context. The skill aspects identified by the research could also provide a framework for general performance appraisal.

#### 7.6 In Conclusion

That the skilled manager is conceptually a model builder and operationally a navigator is supported by this research. As entities models vary in type, including a hybrid form incorporating enactive, pictorial and symbolic aspects. Models allow the manager to understand his world and enable him to intervene in it. Intervention involves the universal managerial function of decision making. Decisions are typically made with limited information under uncertain conditions and this is particularly acute for the senior manager who is more concerned with an extensive time scale. Furthermore, since the senior manager is more remote from live events he requires increasing ability to process abstract information. Self management is important throughout the hierarchy, as is the ability to act through and with people where skills are marked by a concern for what the other person(s) is(are) thinking and feeling. In brief, interpersonal skills involve decisions over what to communicate and how to do so in order to secure an appropriate response. Summarising the perceptual aspects in skilled performance, the

conclusions are that the manager frequently operates along an iterative path, with dynamic norms for the evaluation of inputs and outputs and with an awareness of the general context surrounding some event. A further facet of skill is the identification of relevant signals and the allocation of signals to a category associated with which is some known type of response. Rules, procedures and other knowledge are important in decision making, but these will often support the manager's own intuitions.

In order to extend the study reported here, an indepth involvement with the individual manager appears to offer the best approach, and a personal experience in exercising managerial skills will be no disadvantage.

Through the identification of managerial skill requirements the findings of this research have already influenced Dunlop management development activity and will be mapped onto future needs.



# REFERENCES

- Abercrombie M.L.J. (1960) The anatomy of judgement. London: Hutchinson.
- Adams J.S. (1963) Towards an understanding of inequity. *J. of Abnormal and Social Psychology*, 67, 422-436.
- Adams R. (1973) Performance Appraisal and Counselling. In Torrington D.P. and Sutton D.F. (Eds.) *The Handbook of Management Development*. London: Gower Press.
- Annett J. (1971) Acquisition of Skill. *Br.Med.Bull.* 27, (3), 266-271.
- Annett J., Duncan K.D., Stammers R.B. and Gray M.J. (1971) Task Analysis. Training Information Paper 6. London: HMSO.
- Argyle M. (1972) *The Psychology of Interpersonal Behaviour* 2nd Edn. Harmondsworth: Penguin.
- Ash P. and Kroeker L.P. (1975) Personnel selection, classification and placement. *Ann.Rev.Psych.*, 26, 481-507.
- Ashton D, Easterby-Smith M. and Irvine C. (1975) Management development: theory and practice. *J. European Training*, 4, (6), 331-360.
- Austin B.M. (1975) Time analysis of a local government manager's working day. *Local Government Studies*, 1, April, 61-72.
- Bainbridge L. (1978) The process controller. In Singleton W.T. (Ed.) *The Study of Real Skills Vol. 1: The analysis of practical skills*. Lancaster: MTP Press.
- Bannister D. and Francella F. (1970) *Inquiring man*. Harmondsworth, Penguin.
- Barnard C. (1938) *The Functions of the Executive*. Cambridge, Mass: Harvard University Press.
- Bartlett F.C. (1932) *Remembering*. Cambridge: University Press.
- Bartlett F.C. (1951) The bearing of experimental psychology upon human skilled performance. *Br. J. Industr. Med.*, 8, 209-217
- Bartlett F.C. (1958) *Thinking*. London: Unwin.
- Bates J. and Sykes A.J.M. (1962) Studies of executive behaviour and their significance for management education. *Mgt. International Rev.*, 2, (6), 44-53.

- Beishon R.J. and Palmer A.W. (1972) Studying managerial behaviour. *International Studies of Management and Organisation*, 2, (1), 38-64.
- Berrien K.F. (1976) A general systems approach to organisations.  
In Dunnette M.D. (Ed.) *Handbook of Industrial and Organisational Psychology*. Chicago: Rand McNally.
- Birren J.E. (1969) Age and decision strategies.  
In Welford A.T. and Birren J.E. (Eds.) *Decision making and Age*. Basel: Karger.
- Blake R.R. and Mouton J.S. (1964) *The Managerial Grid*. Houston: Gulf.
- Bloom B.S. (Ed.) (1956) *Taxonomy of Educational Objectives Book 1 Cognitive Domain*. Chicago: McKay Inc.
- Bouchard T.J. (1976) Field research methods: Interviewing, questionnaires, participant observation, systematic observation, unobstructive measures.  
In Dunnette M.D. (Ed.) *Handbook of Industrial and Organisational Psychology*. Chicago: Rand-McNally.
- Bramham J. (1975) *Practical Manpower Planning*. London: IPM.
- Branton P. (1978) The train driver.  
In Singleton W.T. (Ed.) *The Study of Real Skills Vol. 1: The analysis of practical skills*. Lancaster: MTP Press.
- Branton P. (1979) The research scientist.  
In Singleton W.T. (Ed.) *The Study of Real Skills Vol. 2: Compliance and Excellence*. Lancaster: MTP Press.
- Bray D.W. and Moses J.L. (1972) Personnel Selection. *Ann.Rev.Psych.* 23, 545-575.
- Brewer E. and Tomlinson J.W.C. (1964) The manager's working day. *J.Ind. Economics*, 12, 191-197.
- Brim O.G., Glass D.C., Lavin D.E. and Goodman N.E. (1962) *Personality and decision processes in the social psychology of thinking*. Stanford: Stanford U.P.
- Burgoyne J. and Stuart R. (1976) The nature, use and acquisition of managerial skills and other attributes. *Personnel Review*, 5, (4), 19-29.
- Burns T. (1954) The direction of activity and communication in a departmental executive group. *Human Relations*, 7, 73-97.



- Burns T. (1957) Management in action. Operational Research Quarterly, 8, (2), 45-60.
- Campbell J.P., Dunnette M.D., Lawler E.E. and Weick K.E. (1970) Managerial Behaviour, Performance and Effectiveness. New York: McGraw-Hill.
- Campbell J.P., Dunnette M.D., Arvey R.D. and Hellervik L.D. (1973) The development and evaluation of behaviourally based rating scales. J. App. Psych., 57, (1), 15-22.
- Carlson S. (1951) Executive behaviour: A study of the workload and the working methods of managing directors. Stockholm: Stromberg.
- Chell H.N. (1978) Theories of man management. Unpublished paper.
- Chell H.N. (in press) Management development. In Singleton W.T. (Ed.) The Study of Real Skills Vol. 3: Managerial Skills. Lancaster: MTP Press.
- Chomsky N. (1978) The ideas of Chomsky. In Magee B. (Ed.) Men of Ideas. London:BBC.
- Chowdhry K. (1969) Selection of executives and administrators: implications of recent research. Personnel Journal, 48, (2), 102-107.
- Cochran A. (1979) The golfer. In Singleton W.T. (Ed.) The Study of Real Skills Vol. 2: Compliance and Excellence. Lancaster: MTP Press.
- Cronbach L.J. (1970) Essentials of psychological testing. 3rd Edn. New York: Harper & Row.
- De Belder D. (1973) Recruitment and selection of potential managers. In Torrington D.P. and Sutton D.F. (Eds.) Handbook of Management Development. London: Gower Press.
- De Bettignies H.C. (1975) Management development: the international perspective. In Taylor B. and Lippitt G.L. (Eds.) Management Development and Training Handbook. New York: McGraw Hill.
- De Groot A.D. (1965) Thought and choice in chess. The Hague: Mouton.
- Drasdo H. (1979) The rock climber. In Singleton W.T. (Ed.) The Study of Real Skills Vol. 2: Compliance and Excellence. Lancaster: MTP Press.

- Duncan K.D. (1972) Strategies for the analysis of the task.  
In Hartley J. (Ed.) Strategies for programmed instruction: an educational technology. London: Butterworths.
- Duncan K.D. (1975) An analytical technique for industrial training.  
In Singleton W.T. and Spurgeon P. (Eds.) Measurement of Human Resources. London: Taylor & Francis.
- Eccles J.D. (1978) The dentist.  
In Singleton W.T. (Ed.) The Study of Real Skills Vol. 1: The analysis of practical skills. Lancaster: MTP Press.
- Edwards E. (1979) The expert pilot.  
In Singleton W.T. (Ed.) The Study of Real Skills Vol. 2: Compliance and Excellence. Lancaster: MTP Press.
- Fayol H. (1949) General and Industrial Management. London: Pitman.
- Ferries G. (1967) Task analysis - the first steps in training design. University of Aston Dept. of Applied Psychology A.P. Report 17.
- Fiedler F.E. and Nealy S.M. (1968) Second level management: a review and analysis. U.S. Civil Service Commission: Office of Career Development.
- Fiedler F.E., Bons P.M., Hastings L.L. (1975) New strategies for leadership utilisation.  
In Singleton W.T. and Spurgeon P. (Eds.) Measurement of Human Resources. London: Taylor & Francis.
- Fitts P.M. (1964) Perceptual-motor skill learning.  
In Melton A.W. (Ed.) Categories of human learning. New York: Academic Press.
- Fitts P.M. and Posner M.I. (1967) Human Performance. Belmont: Brookings-Cole.
- Flanagan J.C. (1951) Defining the requirements of the executive's job. Personnel, 28, 28-35.
- Fleishman E.A. (1972) On the relation between abilities, learning and human performance. American Psychologist, 27, 1017-1032.
- Fleishman E.A. (1975) Taxonomic problems in human performance research.  
In Singleton W.T. and Spurgeon P. (Eds.) Measurement of Human Resources. London: Taylor & Francis.



- Fores M. (1977) Managerial work: Glover's (1977) literature review. Unpublished paper.
- Gagné R.M. (1977) The Conditions of learning. 3rd Edn. New York: Holt, Rinehart & Winston.
- Ghiselli E.E. (1973) The validity of aptitude tests in personnel selection. *Personnel Psych.*, 26, 461-477.
- Gilson C.R. and Abelson R.P. (1965) The subjective use of inductive evidence. *J. Pers. Soc. Psychol.*, 2, 301-310.
- Glover I.A. (1977) Managerial work: a review of the evidence. Dept. of Industry: Unpublished paper.
- Grémion C. (1972) Toward a new theory of decision making. *International Studies of Management and Organisation*, 2, (2), 125-141.
- Guildford J.P. (1967) The nature of human intelligence. New York: McGraw Hill.
- Guion R.M. (1976) Recruiting, selection and job placement. In Dunette M.D.(Ed.) *Handbook of industrial and organisational psychology*. Chicago: Rand McNally.
- Gulick L.H. and Urwick L.F. (1937) (Eds.) *Papers on the Science of Administration*. New York: Columbia U.P.
- Harbison F. and Myers C.A. (1959) *Management in the industrial world*. New York: McGraw Hill.
- Hemphill J.K. (1959) Job descriptions for executives. *Harvard Business Review*, 37, 55-67.
- Hemphill J.K. (1960) Dimensions of executive positions. Ohio State University: Bureau of Business Research, Monograph No. 98)
- Heneman H.G. (1963) 'Preface' in Mahoney T.J. et. al. (op.cit.)
- Hersey P. and Blanchard K.H. (1976) *Management and Organisational Behaviour: Utilising Human Resources*. 3rd Edn. Englewood Cliffs, N.J.: Prentice Hall.
- Herzberg F. (1966) *Work and the nature of man*. Cleveland: World Publishing Co.
- Honey P. (1976) *Face to Face*. London: IPM.
- Horne J.H. and Lupton T. (1965) The work activities of middle managers - an exploratory study. *J. Management Studies*, 2, (1), 14-33.

- Hudson L. (1970) Frames of mind. Harmondsworth: Penguin.
- Hunter I. (1977) Mental Calculation.  
In Johnson-Laird P.N. and Wason P.C. (Eds.)  
Thinking. Cambridge: Cambridge U.P.
- Kaplan A. (1964) The conduct of inquiry. San Fransisco:  
Chandler.
- Katz R.L. (1955) Skills of an effective administrator.  
Harvard Business Review, Jan-Feb. 1955, 33-42.
- Kelly J. (1964) The study of executive behaviour by  
activity sampling. Human Relations, 17, 277-287.
- Koontz H. (1961) The management theory jungle.  
Academy of Management Journal, 4, (3) 174-188.
- Koontz H. and O'Donnel C. (1964) Management: a book of  
readings. New York: McGraw Hill.
- Lacy B.A. (1978) The tea blender.  
In Singleton W.T. (Ed.) The Study of Real Skills  
Vol. 1: The analysis of practical skills.  
Lancaster: MTP Press.
- Lawler E.E. (1969) Job design and employee motivation.  
Personnel Psychology, 22, 426-435.
- Lawrence J.K. (1973) Management training: techniques  
and skills.  
In Torrington D.P. and Sutton D.F. (Eds.)  
Handbook of Management Development. London: Gower  
Press.
- Lethbridge D. (1975) The top skills of management.  
Management Today, July, 52-112.
- Likert R. (1961) New patterns of management.  
New York: McGraw Hill.
- Mahoney T.A., Jerdee T.H. and Carrol S.J. (1963)  
Development of managerial performance: a research  
approach. Cincinnati: South Western.
- Mant. A.D. (1977) The Rise and Fall of the British  
Manager. London: Macmillan.
- Margerison C. (1978) Where is management development  
going? BACIE Journal, Nov., 170-172.
- Marples D.L. (1967) Studies of managers - a fresh start?  
J. Mgt. Studies, 4, 282-299.
- Maslow A. (1943) A theory of human motivation.  
Psych. Rev., 50, 370-396.
- McGregor D. (1960) The Human Side of Enterprise.  
New York: McGraw Hill.



- McLennan K. (1967) The manager and his job skills.  
Academy of Management Journal, 3, 235-245.
- Miller G.A. (1968) The Psychology of Communication.  
Harmondsworth: Penguin.
- Miller G.A., Galanter E. and Pribram K.H. (1960)  
Plans and the structure of behaviour.  
New York: Holt, Rinehart & Winston.
- Miller R.B. (1967) Task taxonomy: science or technology?  
In Singleton W.T., Easterby R.S. and Whitfield D.  
(Eds.) The Human Operator in Complex Systems.  
London: Taylor & Francis.
- Miller R.B. (1971) Development of a taxonomy of human  
performance: Design of a systems task vocabulary.  
Washington: American Institutes for Research.
- Miller R.B. (1975) Taxonomies for training.  
In Singleton W.T. and Spurgeon P. (Eds.)  
Measurement of Human Resources. London: Taylor  
& Francis.
- Miller R.B. (1978) The information system designer.  
In Singleton W.T. (Ed.) The Study of Real Skills  
Vol. 2: The analysis of practical skills.  
Lancaster: MTP Press.
- Minsky M. (1977) Frame system theory.  
In Johnson-Laird P.N. and Wason P.C. (Eds.) Thinking  
Cambridge: Cambridge U.P.
- Mintzberg H. (1970) Structured observation as a method  
to study managerial work. J. Mgt. Studies, 15,  
87-104.
- Mintzberg H. (1973) The nature of managerial work.  
New York: Harper & Row.
- Mintzberg H. (1975) The manager's job: folklore and fact..  
Harvard Business Review: July-Aug., 49-61.
- Mintzberg H., Raisinghani D. and Theoret A. (1976)  
The structure of unstructured decision processes.  
Admin. Sci. Quarterly, 21, 246-275.
- Moray N. (1978) The Strategic Control of Information  
Processing  
In Underwood E. (Ed.) Strategies of information  
processing. London: Academic Press.
- Morris B. (1970) Recruitment, Promotion and Career  
Management - The use of quantitative models.  
Brighton: IMS.
- Morrison P. (1979) Termites and telescopes.  
The Listener, 23 August 1979, 234-238.

- Muller H. (1970) The search for qualities essential to advancement in a large industrial group: An exploratory study. The Hague: Carel van Bylandtlaan.
- Neisser U. (1976) Cognition and Reality. San Fransisco: S.H. Freeman & Co.
- Newell A. and Simon H.A. (1972) Human Problem Solving. New York: Prentice Hall.
- Palmer A.W. and Beishon R.J. (1970) 'How the day goes'. Personnel Mgt., April, 36-40.
- Palmer B.W.M. (1971) Thinking about thought. Human Relations, 26, (1), 127-141.
- Papaloizois A. and Nicholls J.R. (1970) An approach to measuring effectiveness of participative methods in teaching managerial skills. Training and Development Journal, 24, (6), 10-14.
- Patrick J. and Stammers R. (1977) The psychology of training. London: Methuen.
- Pedler M. (1977a) Negotiation skills training - part 1. J. Euro.Ind.Trng., 1, (4), 18-21.
- Pedler M. (1977b) Negotiation skills training - part 2. J. Euro.Ind.Trng., 1, (5), 12-16.
- Pedler M. (1977c) Negotiation skills training - part 3. J. Euro.Ind. Trng., 1, (6), 25-34.
- Pedler M. (1978) Negotiation skills training - part 4. J. Euro.Ind. Trng., 2, (1) 20-25.
- Petersson B. (1978) The forest worker.  
In Singleton W.T. (Ed.) The Study of Real Skills  
Vol. 1: The analysis of practical skills.  
Lancaster: MTP Press.
- Pheysey D.C. (1972) Activities of middle managers - a training guide. J. Mgt. Studies, 9, (2), 158-171.
- Pheysey D.C. (1973) Individual skills and organisational requirements. Personnel Review, 2, (1), 14-24.
- Pirsig R.M. (1974) Zen and the art of motor cycle maintenance. London: Bodley Head.
- Porter L.W., Lawler E.E. and Hackman J.R. (1975) Behaviour in Organisations. New York: McGraw Hill.
- Pounds W.F. (1969) The process of problem finding. Industrial Management Review, 11, (FALL), 1-19.



- Poulton E.C. (1952) Perceptual anticipation in tracking using two pointer and one pointer displays. *Brit. J. Psychol.*, 43, 222-232.
- Pugh D.S., Mansfield R. and Warner M./S.S.R.C. (1975) Research in organisational behaviour: A British Study. London: Heinemann.
- Rackham N., Honey P. and Colbert M. (1971) Developing Interactive Skills. London: Wellens Publishing.
- Rackham N. and Morgan T. (1977) Behaviour analysis in training. London: McGraw Hill.
- Reason J.T. (1977) Skill and error in everyday life. In Howe M.J.A. (Ed.) *Adult Learning*. London: Wiley.
- Reddin W.J. (1970) Managerial Effectiveness. New York: McGraw Hill.
- Reid A. (1973) The management by objectives approach. In Torrington D.P. and Sutton D.F. (Eds.) *The Handbook of management development*. London: Gower Press.
- Robertson A. (1968) Imparting management thinking. *Int. Soc. Sci. J.*, XX, (1), 63-76.
- Rodger A. (1952) The seven point plan. Paper No. 1. (N.I.I.P.)
- Roethlisberger F.J. and Dickson W.J. (1939) Management and the worker. Cambridge, Mass: Harvard U.P.
- Sayles L. (1964) Managerial Behaviour. New York: McGraw Hill.
- Shaefer T. (1978) An approach to the analysis of management training. Resource Development International: Mgt. Devt. Workshop.
- Simon H.A. (1957) Administrative Behaviour 2nd Edn. New York: Free Press.
- Simon H.A. (1965) The shape of automation for men and management. New York: Harper & Row.
- Singleton W.T. (1966) The development and use of psychology. Inaugural lecture: University of Aston in Birmingham.
- Singleton W.T. (1967) Acquisition of skills - the theory behind training design. University of Aston Dept. of Applied Psychology A.P. Report 16.
- Singelton W.T. (1968) Some recent experiments on learning and their training implications. *Ergonomics*, 11, (1), 53-59.

Singleton W.T. (1974) Man Machine Systems.  
Harmondsworth: Penguin.

Singleton W.T. (1975) The role of the computer in vocational guidance.  
In Singleton W.T. and Spurgeon P. (Eds.)  
Measurement of Human Resources. London: Taylor & Francis.

Singleton W.T. (1978) (Ed.) The Study of Real Skills  
Vol. 1: The analysis of practical skills.  
Lancaster: MTP Press.

Singleton W.T. (1978a) 'Introduction'.  
In Singleton W.T. (Ed.) The Study of Real Skills  
Vol. 1: The analysis of practical skills.  
Lancaster: MTP Press.

Singleton W.T. (1978b) Final Discussion.  
In Singleton W.T. (Ed.) The Study of Real Skills  
Vol. 1: The analysis of practical skills.  
Lancaster: MTP Press.

Singleton W.T. (1979) The Study of Real Skills Vol. 2:  
Compliance and Excellence. Lancaster: MTP Press.

Singleton W.T. (1979a) 'Conclusion'  
In Singleton W.T. (Ed.) The Study of Real Skills  
Vol. 2: Compliance and Excellence. Lancaster:  
MTP Press.

Singleton W.T. (1979b) 'Introduction'  
In Singleton W.T. (Ed.) The Study of Real Skills  
Vol. 2: Compliance and Excellence. Lancaster:  
MTP Press.

Slivinski L.W. (1970) Investigations into the work of some managers in the public service. Studies in Personnel Psychology, 2, 27-43.

Smith A. De W. (1975) Generic Skills Research and Development. Prince Albert, Saskatchewan: Training Research and Development Station.

Smith A.R. (1971) Developments in manpower planning. Personnel Review, 1, 44-54.

Smith H.C. and Wakely J.H. (1972) Psychology of Industrial Behaviour. New York: McGraw Hill.

Smith J.M. (1977) Adult learning and industrial training.  
In Howe M.J.A. (Ed.) Adult learning. London: Wiley.

Sokal R.R. (1977) Classification: purposes, principles, progress, prospects.  
In Johnson-Laird P.N. and Wason P.C. (Eds.)  
Thinking. Cambridge: Cambridge U.P.



- Spence D.P. (1973) Analog and digital descriptions of behaviour. *American Psychologist*, 28, 479-488.
- Stewart R. (1967) *Managers and their jobs*. London: Macmillan.
- Stewart R. (1968) Management education and our knowledge of managers' jobs. *Int. Soc.Sci.J.*, XX, (1), 77-89.
- Stewart R. (1972) Studies of managerial jobs: methodologies and profiles. *International studies of management and organisation*, 2, (1), 7-37.
- Stewart R. (1973) A behavioural classification of managerial jobs. *Omega, The International Journal of Management Science*, 1, (3), 297-303.
- Stewart R. (1975a) Classifying different types of managerial jobs. *Personnel Review*, 4, (2), 25-30.
- Stewart R. (1975b) The manager and his job: a behavioural viewpoint. *New Behaviour*, 24 April, 20-22.
- Stewart R. (1976) *Contrasts in Management*. London: McGraw Hill.
- Stewart R. (1977) *Management Education and Managerial Work*. Thames Valley Regional Management Centre: Occasional Paper No. 1.
- Stodgill R.M. (1948) Personal factors associated with leadership: A survey of the literature. *J. of Psych.*, 25, 37-71.
- Super D.E. and Crites J.O. (1962) *Appraising vocational fitness (Rev. Edn.)*. New York: Harper & Row.
- Thomasson G.E. (1966) Managerial work roles and relationships: part I. *J. Mgt. Studies*, 3, 270-284.
- Thomasson G.F. (1967) Managerial work roles and relationships: part II. *J. Mgt. Studies*, 4, 17-30.
- Thorne R.G. and Charles G.W.F. (1978) The pilot. In Singleton W.T. (Ed.) *The Study of Real Skills Vol. 1: The analysis of practical skills*. Lancaster: MTP Press.
- Tornow W.W. and Pinto P.R. (1976) The development of a managerial job taxonomy: a system for describing, classifying and evaluating executive positions. *J. App. Psych.*, 61, (4) 410-418.
- Training Services Agency (1977) *A discussion document on management development*.

- Ulrich L. and Trumbo D. (1965) The selection interview since 1949. Psych. Bull., 63, (2), 100-116.
- Urwick L.F. (1971) Why the so called 'classicists' endure. Mgt. International Review, 11, (1), 3-4.
- Vroom V.H. (1964) Work and motivation. New York: Wiley.
- Vroom V.H. and Yetton P.W. (1973) Leadership and decision making. Pittsburg: Univ. of Pittsburg Press
- Vroom V.H. and Jago A.G. (1978) On the validity of the Vroom-Yetton model. J. App. Psych., 63, (2), 151-162.
- Warr P. (1978) Action Research  
In Banbury J. and Stamper R.K. (Eds.) Management Information Systems.
- Weick K.E. (1974) 'Review' of Mintzberg H. (1973) 'The Nature of Managerial Work'. Admin. Sci. Quarterly, 19, (1), 111-118.
- Welford A.T. (1958) Ageing and Human Skill. Oxford: Oxford University Press.
- Welford A.T. (1976) Skilled Performance: Perceptual and Motor Skills. Glenview: Scott, Foresman & Co.
- Westland G. (1978) Current crises of psychology. London: Heinemann.
- Whitely W.T. (1978) Nature of managerial work revisited. Academy of Mgt. Proceedings, 1978, 195-199.
- Wilkie R. and Young J.N. (1972) Managerial behaviour in the furniture and timber industries. International studies of Management and Organisation, 2, (1), 65-84.
- Williams R. (1976) Keywords. London: Fontana.
- Witte E. (1972) Field research on complex decision making processes - the phase theory. International Studies of Management and Organisation, 2, (2), 156-182.
- Wright D.S., Taylor A., Davies D.R., Sluckin W., Lee S.G.M. and Reason J.T. (1970) Introducing psychology: An experimental approach. Harmondsworth: Penguin.



progress with regard to managerial skills and other personal attributes, with the inevitable concomitant that development activities have not themselves developed as fully as might be hoped. Interestingly enough, because of the wide variation in managerial practice, the foundations of much management development activity are general task oriented descriptions that are moving towards, but falling short of, the skills domain. If the management developer is looking for a model, or models, of skilled managerial performance as Chell (in press) suggests, then the literature does, at best, indicate the appropriate direction. As a basis for our own investigation of managerial skills, the skills concept is explored more fully in the next chapter.