

A CULTURAL DIVIDE;

---

NEW TECHNOLOGY AND THE WORK ORGANISATION  
OF FINANCE PERSONNEL IN BRITISH AND  
WEST GERMAN INDUSTRY

VOLUME II - APPENDICES

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FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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## CONTENTS

### VOLUME II - APPENDICES

APPENDIX 1	
INTERVIEW SCHEDULES	3
 APPENDIX 2	
DESCRIPTION OF COMPANIES, CODING FOR RESPONDENTS AND ORGANISATION CHARTS	6
Organisation I	7
Organisation II	21
Organisation III	26
Organisation IV	32
Organisation V	40
Organisation VI	49
Organisation VII	59
Organisation VIII	64
Organisation IX	74
 ANCILLIARY SECTORS	
Organisation X	80
Organisation XI	84
The Accountancy Practitioners	87
British Accountancy Institutes	87
West German Wirtschaftsprüferkammer	87
 APPENDIX 3	
CROSS-NATIONAL COMPARISONS OF FUNCTIONAL RESPONSIBILITIES OF FINANCE DEPARTMENTS	88
 APPENDIX 4	
COMPUTER SYSTEMS FLOWCHART FROM THE FINANCE DEPARTMENT, HEAD OFFICE, WEST GERMAN ORGANISATION I	96
 APPENDIX 5	
COMPUTING QUESTIONNAIRE FROM THE FINANCE DEPARTMENT, HEAD OFFICE/OPERATING SITE, WEST GERMAN ORGANISATION II	98
 APPENDIX 6	
SELECTION OF QUOTATIONS ABOUT THE EFFECT OF TECHNICAL CHANGE ON THE NATURE OF FINANCIAL ACCOUNTING WORK	109
 APPENDIX 7	
RÉSUMÉ OF RESEARCH FINDINGS	115



## APPENDIX 1

This appendix contains the two different interview schedules which were constructed in order to investigate the research issues. It was considered that senior head office managers, the top manager at operating sites and computer specialists would be able to supply information covering a wide perspective, for example, the historical profile of and strategic policies for computerisation; historical, current and future company business strategies. Thus one schedule was constructed to include this wide perspective.

A second schedule was constructed to concentrate on the personal backgrounds, experiences, detailed work roles, observations and opinions of respondents at provincial sites because it was reasoned that these employees would have limited knowledge of the wider corporate/company environment. Investigation of respondents' experiences of computerisation throughout organisational hierarchies was an essential element of the research design. This also provided a means of cross checking data collected at various levels in each company.

Both schedules were originally intended as guidelines forming the basis of questions which would elicit the essential data. As the fieldwork progressed many different issues were raised, discussed and followed up. The content of all interviews may be accessed from the original transcripts which have been deposited in the Faculty of Management and Modern Languages of the University of Aston in Birmingham.



Interview Schedule for Computer Specialists and Senior Finance/  
Functional Managers at Corporate/Company Levels

A) GENERAL/SPECIFIC GROUP/COMPANY

1. General and specific (to group/company) observations of the impact of computer technology on the following areas of accountancy (including any staff increase/decrease over past few years:
  - a) transaction accounting
  - b) preparation of accounts
  - c) consolidation of group accounts
  - d) financial analysis
  - e) treasury functions
  - f) financial policy making
  - g) audit and control of accounting practices/procedures
2. General observations of the economic climate during past few years and specific direct effects on group/company (eg disposals/acquisitions, re-structuring at corporate/company levels, employee numbers).
3. Any corporate/company management re-structuring during past few years as a direct consequence of the introduction of new computer technology.
4. Where the ultimate authority lies in decisions not/to install new technology at corporate/company levels.
5. At corporate/company levels, who is responsible for the design of computerised accounting information systems. Description of design process. Who participates and how.
6. Whether there are any general criteria underlying the design of computerised accounting systems, and if so what are they. The character and type of controls built into the systems.

B) PERSONAL

1. Brief outline of family/educational background and working career to date: any past/continuing involvement with a professional accountancy body.
2. Description of present job - function, role, tasks.
3. Analysis of how computer technology possibly affected function and work role/tasks including job satisfaction, position in wider labour market.
4. Forecasts/predictions of possible future trends in computer technology, increasing utilisation? Effects on industrial accountants' work?



Interview Schedule for Non-Senior Finance/Functional Personnel at  
Company and Operating Sites Levels

1. Brief outline of family/educational background especially route followed to accountancy qualification and why it was chosen.
2. Past/current interest/involvement, if any, with a professional body.
3. Brief outline of working career to date and future aspirations.
4. Observations of any changes in the working environment of the company over past five years and possible reasons for change, eg departmental re-structuring, economic pressures, new technology.
5. Description of scale and character of computerisation of past five years, eg time spans, hardware installed, software utilised. Possible reasons for implementation.
6. Description of recommendations, if any, made by interviewee about computer hardware, software or systems design requirements prior to implementation.
7. Description of any specialised training undertaken, company policies?
8. More detailed description of work tasks against a checklist of functional areas of accounting (as listed in A.1 of interview schedule for senior managers).
9. Interviewee's opinions of the differences that computerisation has made to:
  - a) separate work tasks;
  - b) type of skills/knowledge required;
  - c) nature of responsibilities;
  - d) role in department;
  - e) job satisfaction;
  - f) position in wider labour market;
  - h) general observations, future predictions.



## APPENDIX 2

This appendix comprises a brief description of each participating organisation together with organisation charts which show the corporate and company structural formations and the position of each respondent within the structures. The organisation charts were either supplied by respondents or configured on the basis of information from respondents. In a few cases neither formal charts nor sufficient data were provided. This was either because the organisations were undergoing structural change, or respondents had only recently assumed their positions at the time of interviewing, or data was subsequently found to be inconsistent. On the following pages a number of symbols are used.

### Key to Symbols on the Lists of Respondents

# This signifies non-finance personnel.

( ) Letters and numbers in parenthesis following a respondents' job title indicate that respondent's immediate superior. For example, (A2) would indicate the respondent's superior was coded number 2 and located in research site A.

### Key to Notation on the Organisation Charts

UK:A or

WG:B Each organisation chart has such a reference which indicates the research location (in the order of access gained) within each corporate entity and within each country. UK represents Britain; WG represents West Germany. A brief description follows each notation. For example, Organisation I, UK:A was the first access point within British Organisation I and is described as 'Corporate Head Quarters'.

1 2 These numbers refer to the respondents' individual code numbers on the immediately preceeding lists of respondents in Britain and West Germany. Thus, the placing of these code numbers on the organisation charts indicate the position of each respondent within the corporate/company structure.



## ORGANISATION I

Organisation I was a large 'energy' Group whose constituent businesses, in every geographical continent, spanned activities such as gas exploration/trading, coal mining/trading, chemicals, minerals, detergents, oil exploration (upstream) and downstream refining and marketing. The study concentrated on the oil downstream business whose International organisation in Britain employed some 9000 people and United Kingdom (UK) turnover was almost £2 billion.

Implementation of a major corporate re-structuring programme had begun in 1981. This introduced a complex matrix management configuration where regional and business product responsibilities were the two axes. The principal intention of this re-structuring was the devolution of greater operational and decision making authority to the businesses rather than, as previously, concentration at the corporate level.

The main effect on the finance functions throughout the organisation was the refinement of two different streams of financial information, one for statutory requirements and one for business control purposes. This refinement was already directly reflected in the structuring of two separate databases (with systems interfaces) at the corporate level. At the company head office level, the business control information database was in the process of construction although direct links with the financial accounting database had been established.

The West German corporate head quarters was also the company head office but the downstream oil business constituted approximately 95 per cent of the Group's activities in the Federal Republic. The German Group maintained a higher degree of centralisation of financial accounting activities and, although it was shortly to embark on a similar 'profit centre' re-organisation, no alteration of the information infrastructure was envisaged. The financial accounting and control (Treasury) departments maintained separate information systems, the latter receiving hardcopy reports of the accounting actuals data. The control department also maintained direct links with the operating sites which did not appear to the case in Britain. There were no plans to directly link the financial accounting and control department systems following structural re-organisation.

In both countries the downstream oil business had experienced substantial reduction in capacity over recent years, although the British corporation (at that time) continued to sustain substantial exploration activities. Investment in this area has since been reduced. The West German subsidiary had no exploration interests. In general terms, the effects of rationalisation had decreased the workload in most areas of financial work activity although, following re-structuring in Britain, numbers of accountants working at the corporate head quarters in financial analysis and control areas had increased and at the company head



office, it was claimed, that headcount had been prevented from increasing by more intense utilisation of technological facilities. Progressive computerisation of financial accounting systems in both countries was consistent with a progressive decline in numbers of clerical, supervisory and managerial personnel. This decline was more marked in Britain principally because the company was larger and, thus, any single development of an information system was likely to have a greater staff replacement effect.

The United Kingdom research locations (A, B, C and D) shown overleaf were all different geographical sites. The West German research location A was both the corporate head quarters of the German Group and the Oil Downstream company head office. There was no separate finance organisation for the Oil Downstream business. The Financial Accounting and Treasury/Control Departments served all the constituent businesses within West Germany.

## ORGANISATION I

### RESEARCH LOCATIONS

### CODING AND LIST OF RESPONDENTS

#### UNITED KINGDOM (UK)

UK;A Corporate Head Quarters	1#	Manager, Corporate Information Systems
	2#	Regional Controller (with responsibility for West Germany)
UK;B Company Head Office (Oil Downstream, refining and marketing)	3	Manager, Management Accounting and Control Branch
	4#	Manager, Corporate Systems Development Branch
UK;C Finance and Accounts Division (for oil downstream)	5	Manager, Finance and Accounts Division
	6#	Consultant, Systems Branch, Computer and Communications Department
UK;D Operating Site (an oil refinery)	7	Chief Accountant
	8	Cash Controller
	9	Works Accountant (D7)
	10	Capital Cost Assistant
	11	Stores and Transport Superintendent (D7)



WEST GERMANY (WG)

WG:A  
(Group Head Quarters  
and Company Head Office)

- 1 Member, Board of Management, Finance/  
Organisation [Finance Director]
- 2 Manager, Betriebswirtschaft/Finanzen  
[Treasury/Control] (A1)
- 3 Manager, Rechnungswesen [Financial  
Accounting] (A1)
- 4 Section Manager, Sales Invoicing/Stocks/  
Materials (A3)
- 5 Section Manager, Fixed Assets/Expenditure/  
Income (A3)
- 6 Co-ordinator (between Financial Accounting  
and Organisation/EDP [computer] Department  
(A3)
- 7# Deputy Manager, Organisation/EDP Department
- 8# Section Manager, Payroll [Personnel  
Department]
- 9# Manager, General Administration [this  
included purchasing and accounting]

WG:B  
Operating Site  
  
(an oil refinery)

- 10 Leiter, Versand/Kaufmannische Verwaltung  
[Manager, Despatch/Commercial  
Administration]
- 11 Manager, Kaufmannische Verwaltung  
[Commercial Administration] (B10)
- 12 Section Manager, Rechnungswesen [Financial  
Accounting] (B11)
- 13 Section Manager, Mengen/Zoll/Steuer  
[Product Accounting, Customs and Excise,  
Taxation] (B11)
- 14# Manager, Proceßkontrolle [Process Control]



United Kingdom: Level B

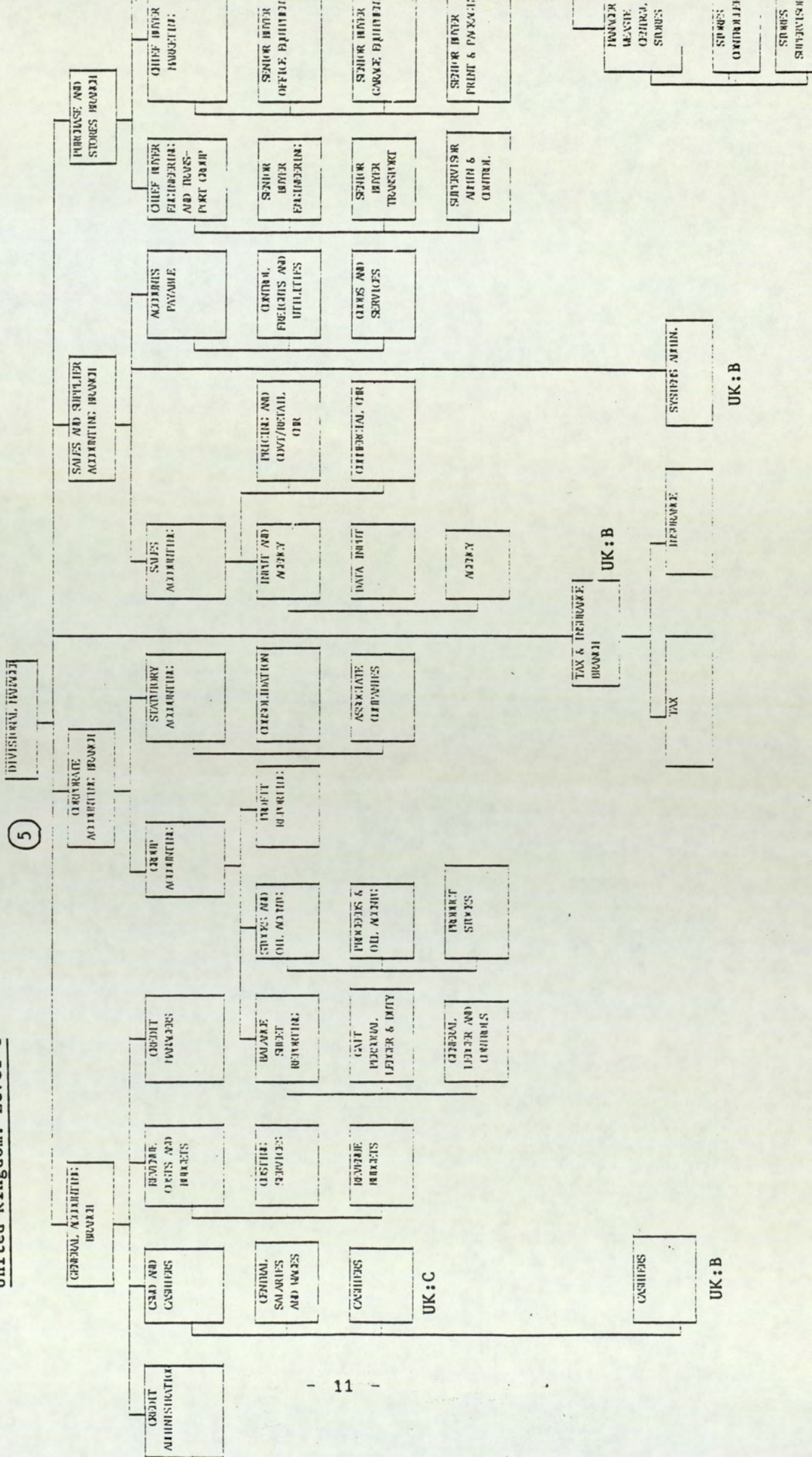
# DIRECTOR



## Level C



## United Kingdom: Level C



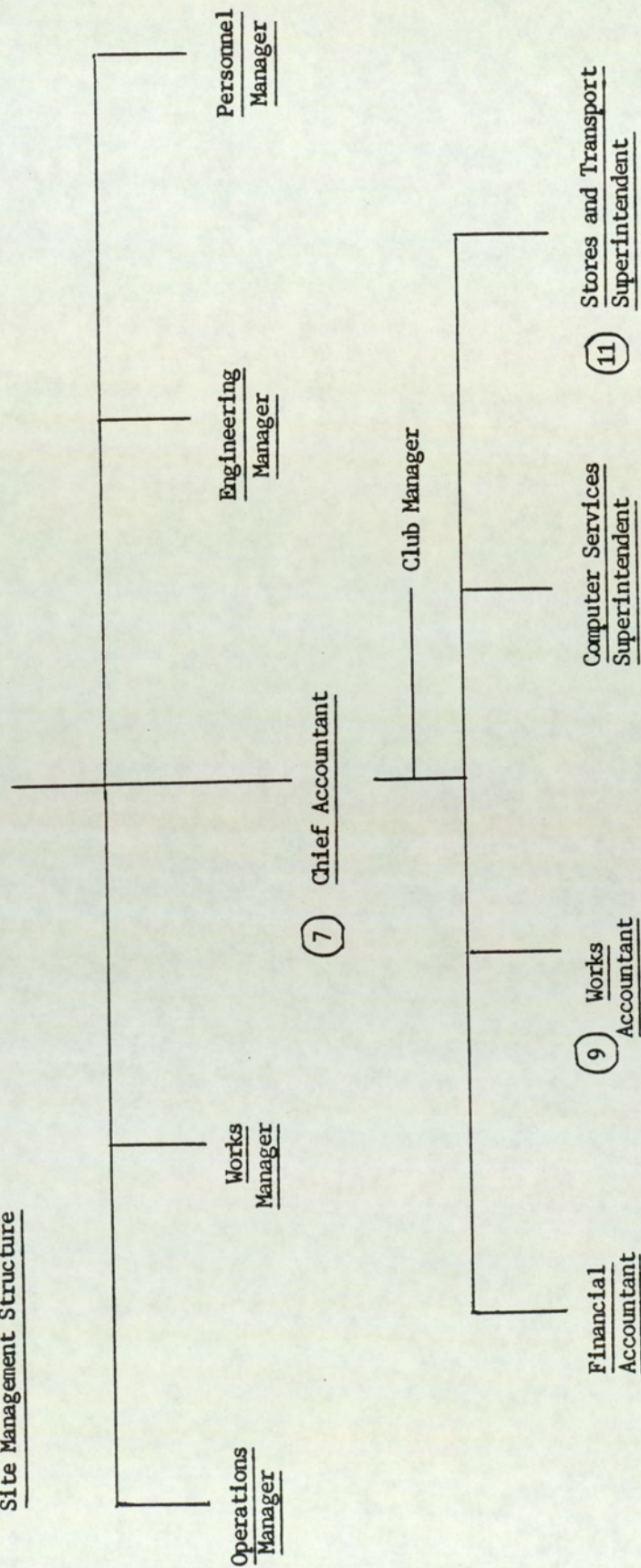


ORGANISATION I

United Kingdom: Level D

Site Management Structure

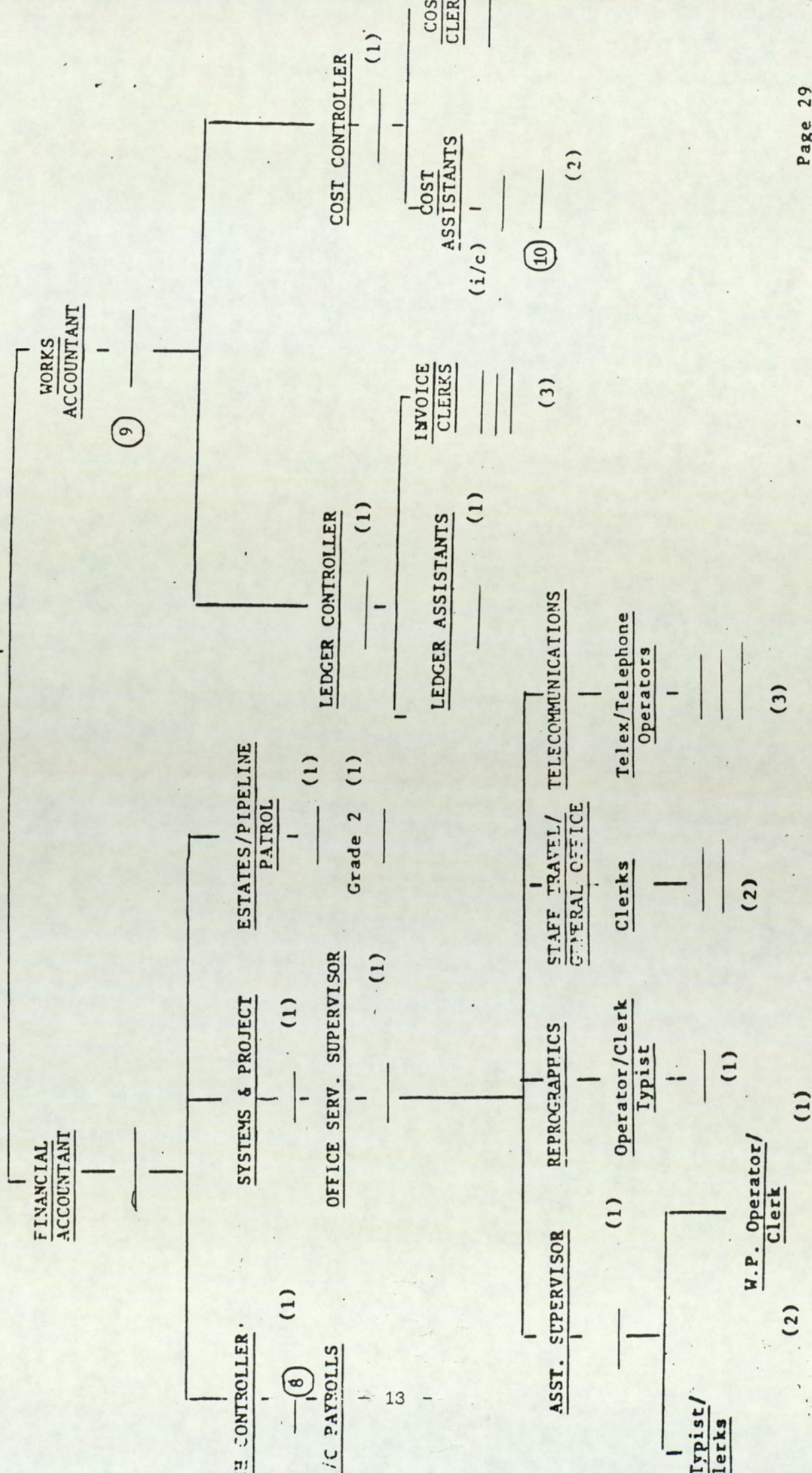
General Manager



Systems Support (4)  
Operations  
Data prep/control (6)  
(incl 6 on contract)



⑦









# ORGANISATION I

West Germany: Level A  
(Group)

CHAIRMAN BOARD OF MANAGEMENT		
OIL / COAL		
ZI	INFORM. PRESS RELATIONS GENERAL MANAGER +)	--> 2 4619
ZK	CORPORATE PLANNING	--> 3 4836
ZS	MANAGERIAL STAFF DEPT.	--> 4 2368

MEMBER BOARD OF MANAGEMENT		
OIL / COAL		
OM	OIL MARKETING GENERAL MANAGER +)	--> 1 4683
OMT	MARKETING TECHNICAL SERVICE	--> 28 4315
OML	AIR O. VON EITZEN	--> 2383
OMM	MARINE	--> 4844
	BUNKER OMBH HAMBURG	
	DEUTSCHE BERLIN OMBH	
OP	OIL PLANNING	--> 5 4337
OV	SUPPLY / OPERATIONS	--> 6 4321
OR	REFINERIES END AT 28.2.85 W.E.F. 2.3.85	--> 7
	STROMMEYER OMBH	--> 20
T	TANKSTELLEN OMBH	--> 21 4720
O J S	DELWERKE JULIUS SCHINDLER OMBH	--> 22

MEMBER BOARD OF MANAGEMENT		
CHEMICALS / RESEARCH		
CM	CHEM. MANAGEMENT SERVICES	--> 8 2271
CP	PETROCHEMICALS	--> 8 4330
C	DEUTSCHE CHEMIE OMBH	--> 23
CK	PLASTICS	--> 8 2499
	AGE PLASTIC OMBH WASSERBURD/INN	--> 24 ++)
	ETINEX KUNSTSTOFFWERKE OMBH STUTTGART	--> 23 ++)
	POLYDRESS PLASTIC OMBH MICHELSTADT/O	--> 26 ++)
FE	RESEARCH & DEVELOPMENT	--> 13 381

MEMBER BOARD OF MANAGEMENT		
FINANCE / ORGANISATION, OAS		
ZB	FINANCE & CONTROL	--> 9 4685
ZP	TAXATION / PARTICIPATIONS	--> 18 2735
ZR	FINANCIAL ACCOUNTING	--> 11 4527
ZD	ORGANISATION AND E D P	--> 12 2987
EO	NATURAL GAS	--> 4623
FO	LIQUEFIED GAS SALES	--> 4139
	PRODEHA FLUESSIGGAS OMBH CARBERG/TAUNUS	--> 27
SCS	SCIENTIFIC CONTROL SYSTEMS OMBH HAMBURG	

MEMBER BOARD OF MANAGEMENT		
PERSONNEL / LEGAL / SERVICES		
ZP	PERSONNEL	--> 13 2770
ZT	LEGAL	--> 16 2235
ZA	GENERAL ADMINISTRATION	--> 14 2374

Manager 9

Deputy Manager 7

Payroll  
Section  
Manager 8

ATT.

\*) CO-ORDINATOR ON BEHALF OF  
THE BOARD OR AT REQUEST  
OF THE OPERATING UNITS

\*\*) DIRECT REPORT TO BOARD

( --) AND FIGURE)  
REFERS TO THE CONTINUING  
PAGE OF THE ORG. CHART

GERMANY  
ORGANISATION  
RESTRICTED

POS. AS AT  
JAN. 1985

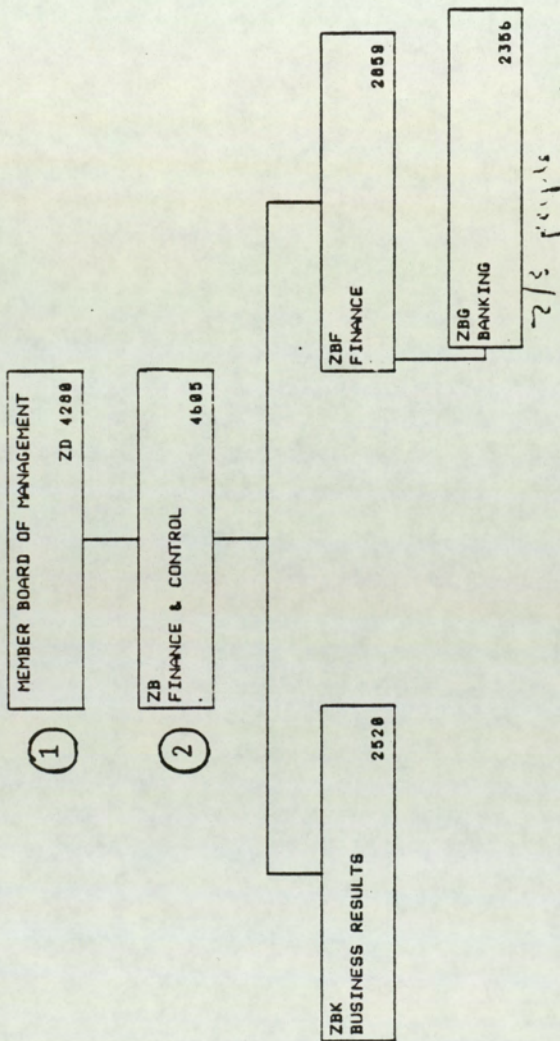
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1



# ORGANISATION I

West Germany: Level A

Finance Organisation

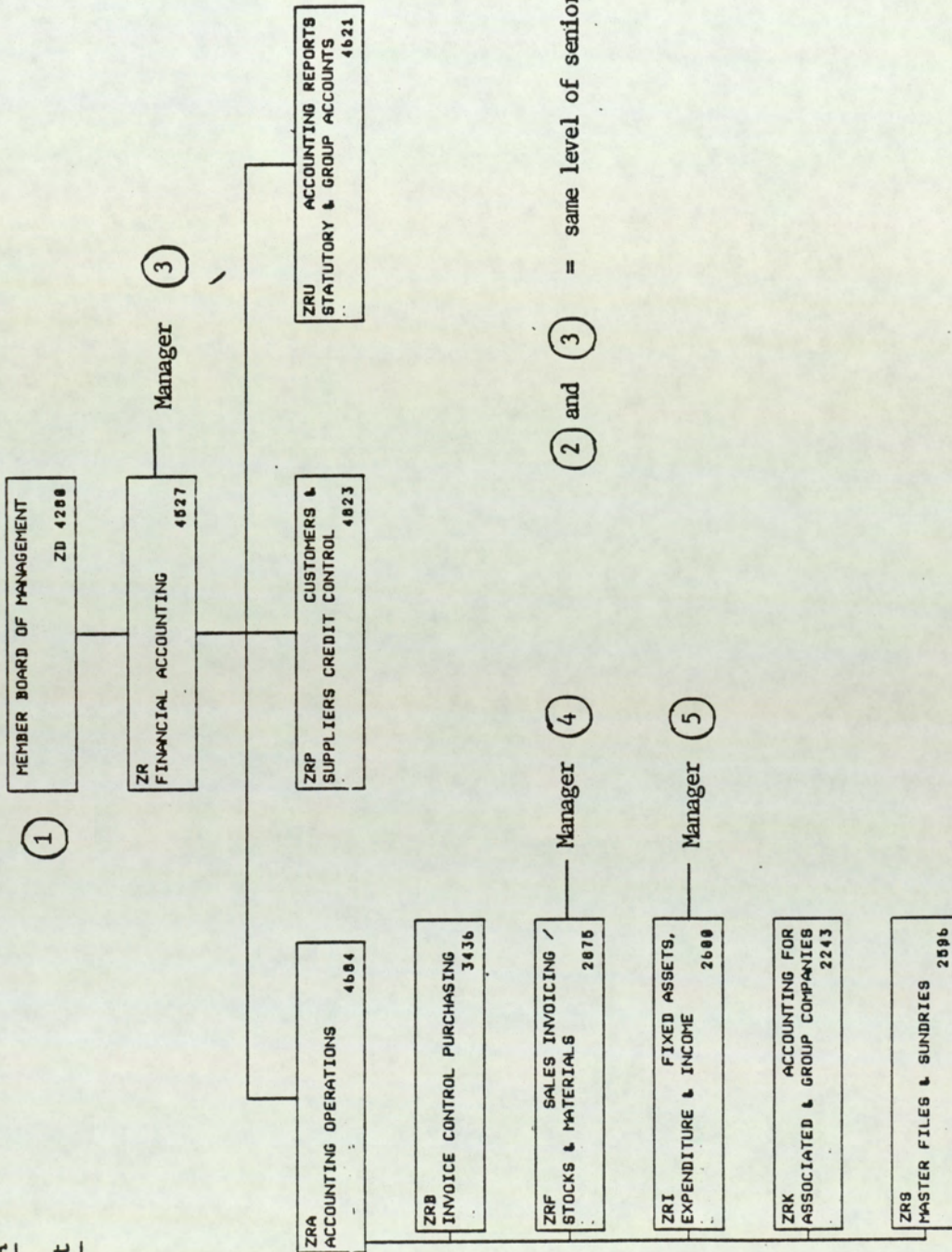




ORGANISATION I

West Germany: Level A

Accounting Department



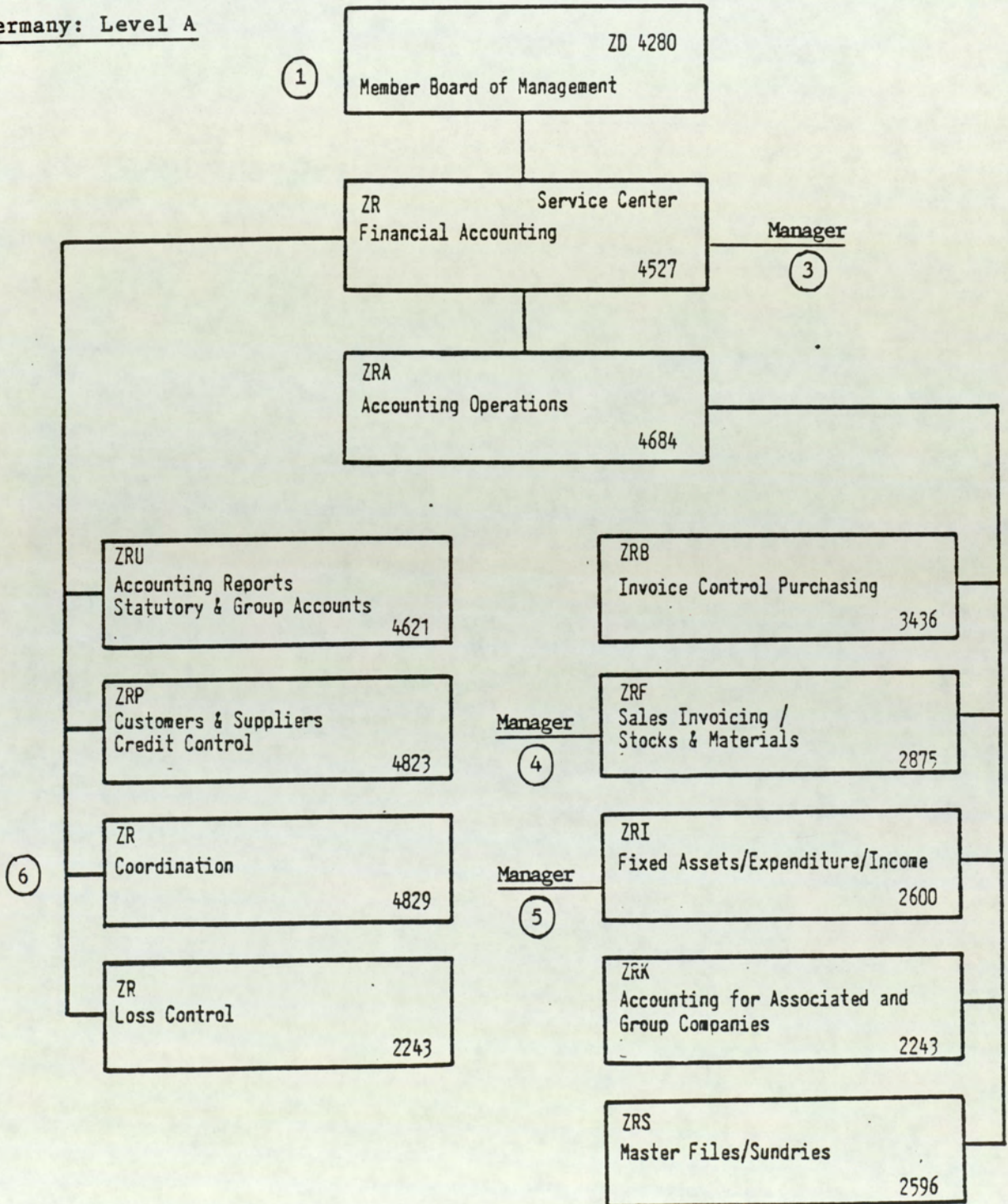
2 and 3 = same level of seniority



# Organization of the Accounts Department

## ORGANISATION I

### West Germany: Level A

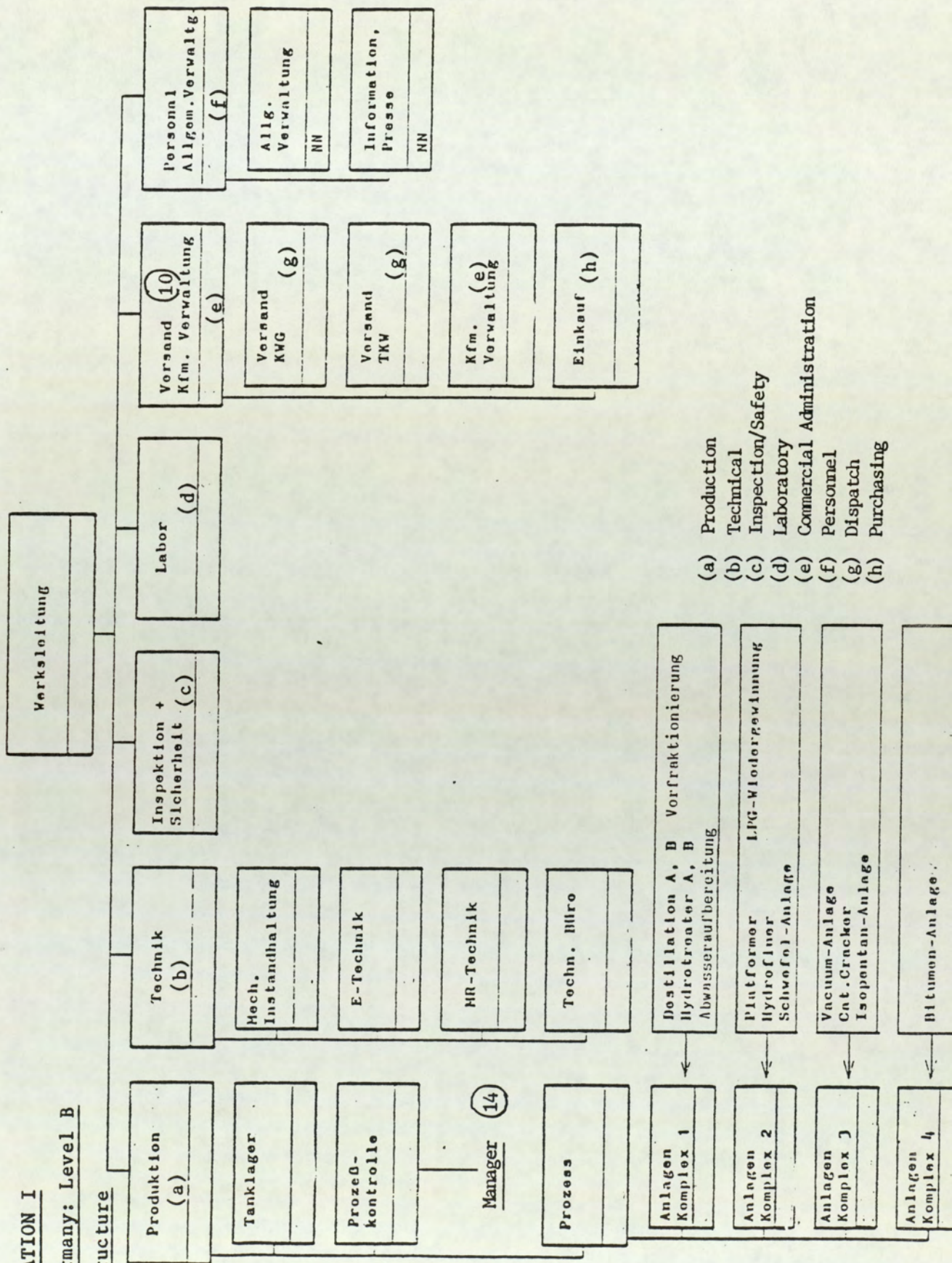




# ORGANISATION I

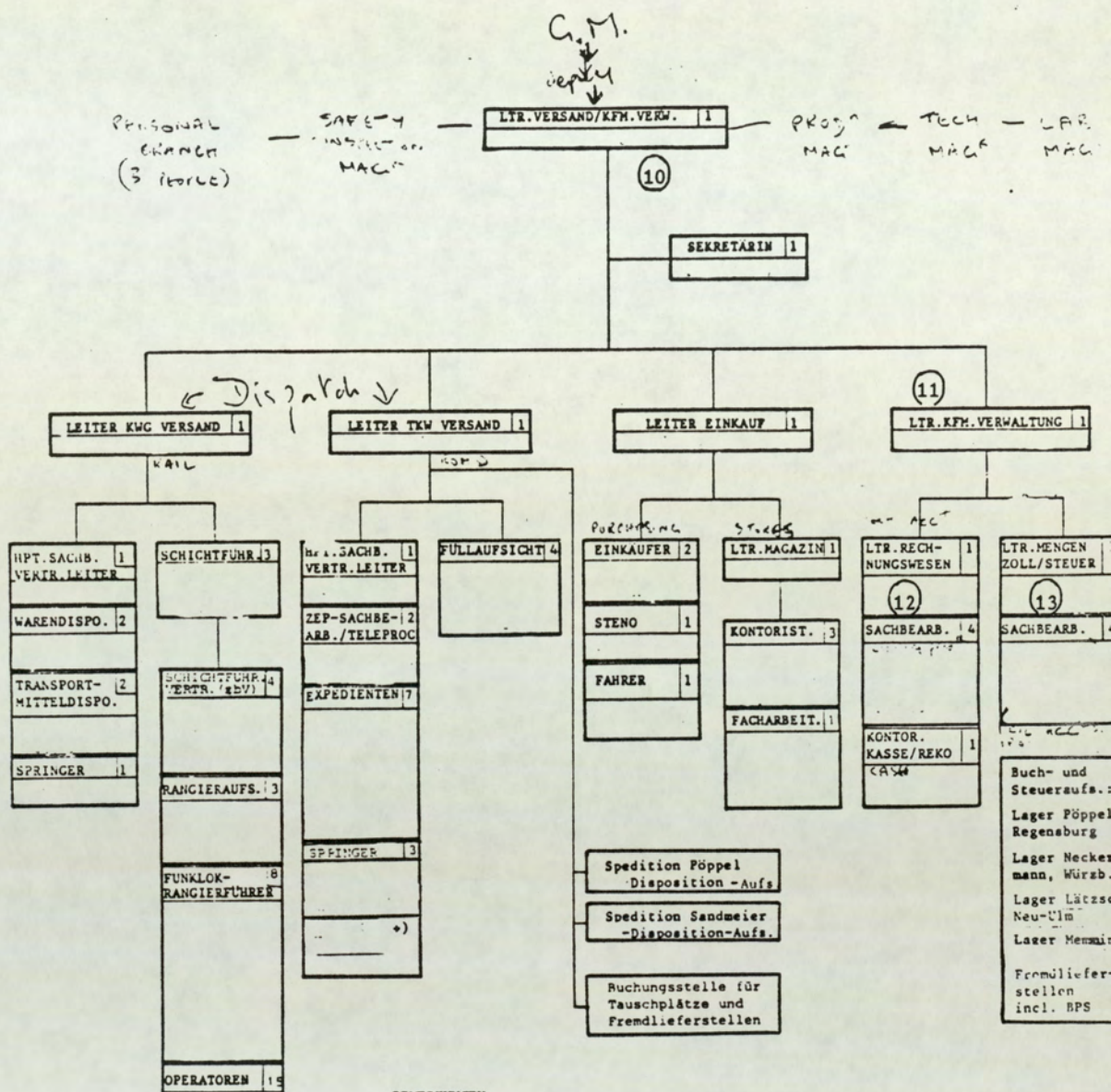
West Germany: Level B

## Site Structure



- (a) Production
- (b) Technical
- (c) Inspection/Safety
- (d) Laboratory
- (e) Commercial Administration
- (f) Personnel
- (g) Dispatch
- (h) Purchasing





#### BEMERKUNGEN:

1. RVT 3-Schichten-Betrieb (von Sonntag 22,15 Uhr durchgehend - Samstag 10,00 Uhr)
2. RVS 3-Schichten-Betrieb (Hofseite), 2-Schichten-Betrieb (Büro)
3. Alle Besetzungen einschließlich Urlaubs- und Krankheitsvertretung:  
RVT-Büro 3 Springer  
RVS-Büro 1 Springer / RVS/RVT-Betrieb 3 Springer  
\*) H. Stiegler wurde bis Anfang 1986 für das Projektteam "Vera" abgestellt.

#### ORGANISATION I

West Germany: Level B

Commercial Administration  
Department

STAND: 1. März 1985

BESETZUNGSÜBERSICHT  
VERSAND  
KFM. VERWALTUNG



## ORGANISATION II

Organisation II was a major fibres, fabrics, plastics, paints and consumer products Group operating worldwide. The Group had undergone significant rationalisation since 1979, especially within the textiles business. The study concentrated on the specialist paint and powder coatings company whose trading interests in 80 countries worldwide contributed to the 1983 sales turnover of £356.5 million.

In 1981 the company experienced a limited structural re-organisation, one factory was closed, new profit centres (by product type) were introduced and some previously head office accounting functions and the Group Information Services Department were transferred to the factory location UK:C (below).

This re-organisation coincided with the formulation of a 'systems strategy'. In the company document published in 1983 this strategy was described as focusing on the development of a suite of sixteen standard integrated business systems eventually to be implemented worldwide. However, less than a year later the company was experiencing severe developmental problems and difficulties with existing factory systems which had been modified in ad hoc fashion.

By contrast, the much smaller West German subsidiary, although operating with limited autonomy, had joined the German Paintmakers Association which had developed a complex software program designed to accommodate operational contingencies peculiar to paintmaking. The hardware and integrated financial accounting package had been supplied by Kienzle after the Finance Director and his Deputy had conducted the systems analysis and defined the specification. The Computing Questionnaire which they devised has been consigned to Appendix 5. They also trained the clerical personnel and implemented the system with only telephone assistance from the systems designers. At the time of interviewing no problems had been experienced with the operation of the system.



## ORGANISATION II

### RESEARCH LOCATIONS

#### UNITED KINGDOM (UK)

UK;A  
Corporate Head Quarters

UK;B  
Company Head Office

UK;C  
Operating Site  
(a production factory)

#### WEST GERMANY (WG)

WG;A  
Company Head Office  
and Operating site  
(a production factory)

### CODING AND LIST OF RESPONDENTS

- |     |  |
|-----|--|
| 1   | Group Financial Controller                             |
| 2   | Group Finance Director                                 |
| 3#  | Chief Executive  |
| 4   | Finance Director (C3)                                  |
| 5   | Chief Accountant (C4)                                  |
| 6   | Development Accountant (C4)                            |
| 7   | Divisional (Product Group) Accounts Assistant          |
| 8   | Supervisor, Bought Ledger Section (C5)                 |
| 9#  | Project Manager, Group Information Services Department |
| 10# | Manager, Planning and Resources Section                |

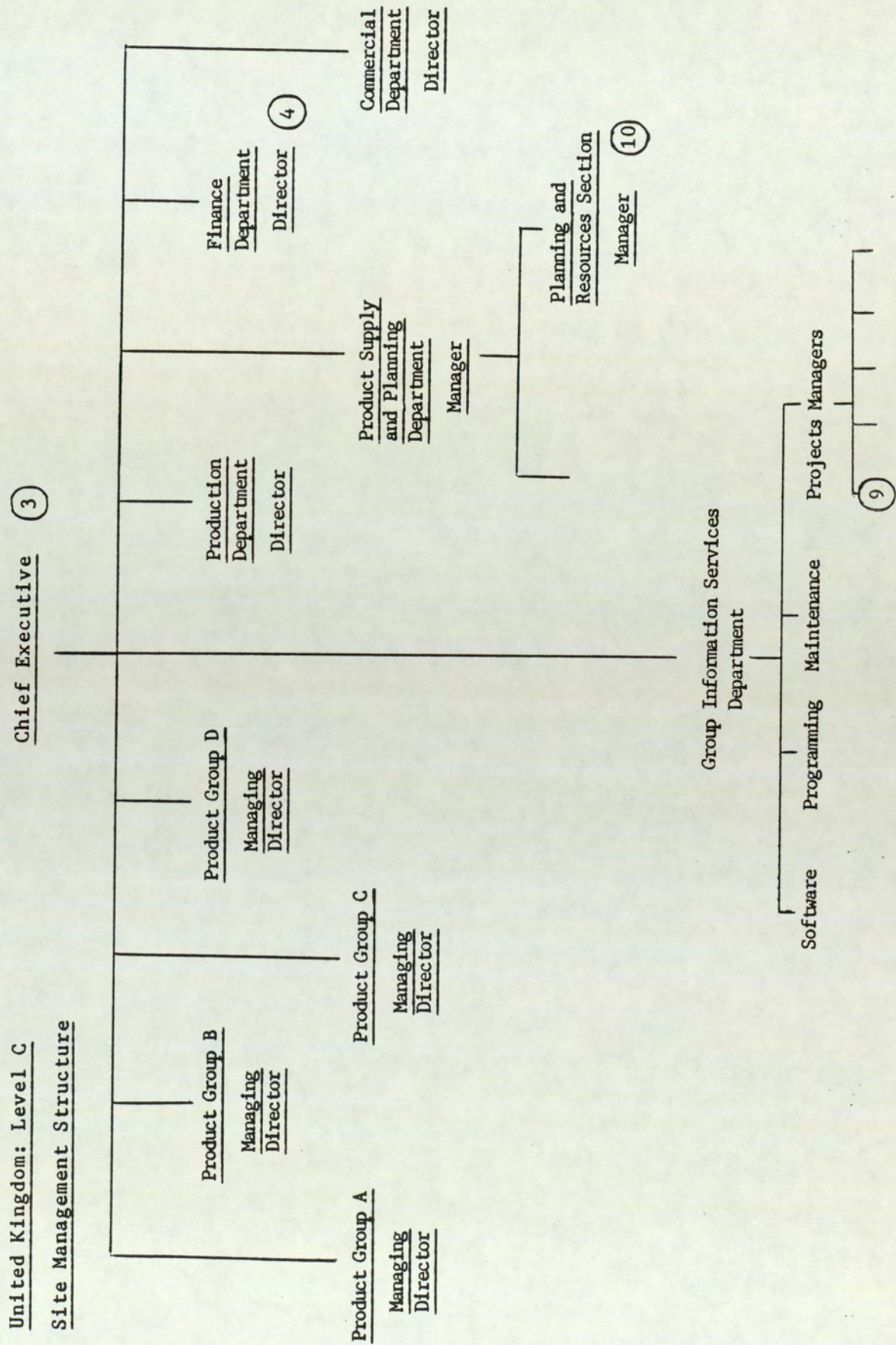
- |   |  |
|---|--|
| 1 | Director, Finance and Administration             |
| 2 | Deputy Director, Finance and Administration (A1) |
| 3 | Clerk, General Accounts Section (A2)             |
| 4 | Clerk, Invoicing Section (A2)                    |



ORGANISATION II

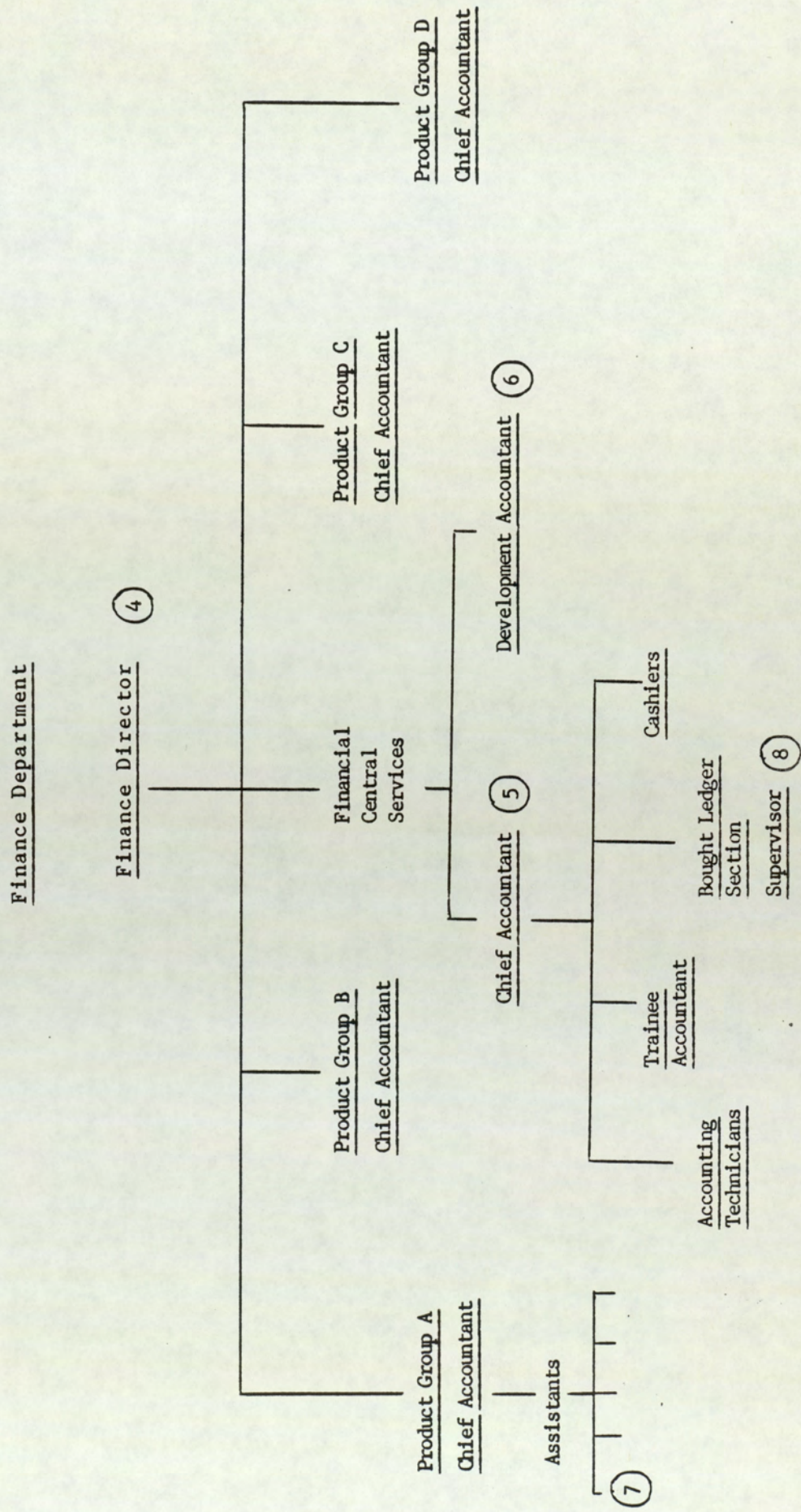
United Kingdom: Level C

Site Management Structure



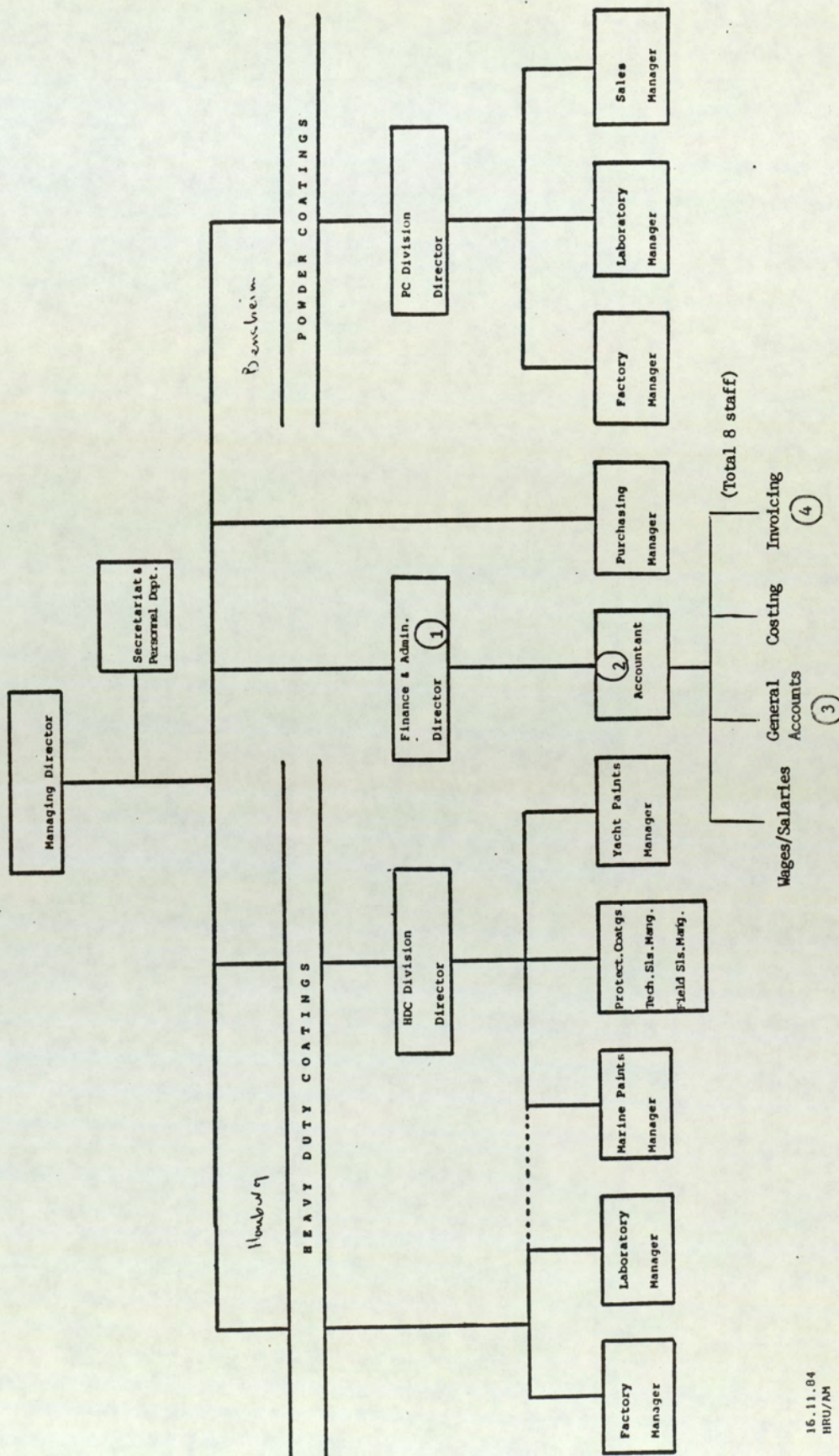


ORGANISATION II  
United Kingdom:Level C





Haburg & Bensheim  
 Organisation Chart 1985  
ORGANISATION II  
West Germany: Level A  
Management/Site Structure





### ORGANISATION III

Organisation III was a diversified leisure, consumer services and consumer products Group operating mainly in Britain, Europe and America. The Group had grown rapidly by acquiring smaller companies throughout the 1970s. Towards the end of the decade the Group had begun to consolidate by re-structuring product group divisions and defining reporting and financial reporting requirements. At the time of interviewing, although corporate head quarters personnel amounted to only 50, Group systems policies were being formulated and it appeared that this was integral to a corporate intention to take greater control of constituent companies which had hitherto operated with a high degree of autonomy.

The study concentrated on the United Kingdom Brewing Division which comprised one umbrella Company further divided into nine regionally based companies trading under individual brand names. Turnover of the division for 1984 was almost £609 million. The Company itself had grown by acquisition and had been taken over by the Corporate Group in 1972, this Company together with other smaller brewing companies had then formed the UK Brewing Division. Rationalisation within the Company had been limited although economic recessions, unemployment and changing habits in beer drinking had clearly affected the trading environment and put pressure on the Company to reduce production costs.

The largest beer company which formed the present UK Brewing Division had originally acquired a 77.7 per cent interest in the West German subsidiary in the mid 1970s with the intention of creating a nationally distributed pils beer in the Federal Republic. However, without adequate understanding of the character of the German market, the strategy failed and British intervention in the operation of the German subsidiary had declined until recently when the corporate entity had begun to take more interest in all constituent businesses. This increased interest included a concern with systems development, although at the time of interviewing the West German subsidiary had not been influenced to any significant degree by the British side. It had maintained autonomy in the process of systems development and acquired a 5 per cent interest in a small German software company which was undertaking the design of new systems. The subsidiary's in-house computer department continued to modify older systems. Since the fieldwork, the UK company has sold its 77.7 per cent share in the West German subsidiary.

The UK research locations listed overleaf as A, B, C, and D, were all different geographical sites. The single research location in West Germany was both the Company head office and one of a total of three operating sites in Germany.



### ORGANISATION III

#### RESEARCH LOCATIONS

#### CODING AND LIST OF RESPONDENTS

##### UNITED KINGDOM (UK)

UK;A  
Corporate Head Quarters

1 Deputy Financial Controller

UK;B  
Overseas Brewing Division  
Head Office

2 Finance Manager

UK;C  
UK Brewing Division  
Head Office

3 Group Chief Accountant

UK;D  
Operating Site  
(a brewery)

4 Chief Accountant

5 Management Accountant (D4)

6 Section Leader (this section was not titled  
but costed the purchase of raw materials  
and beer products)

7 Manager, Credit Control Department

8 Assistant Financial Analyst

##### WEST GERMANY

WG;A  
Company Head Office and  
Operating Site  
(a brewery)

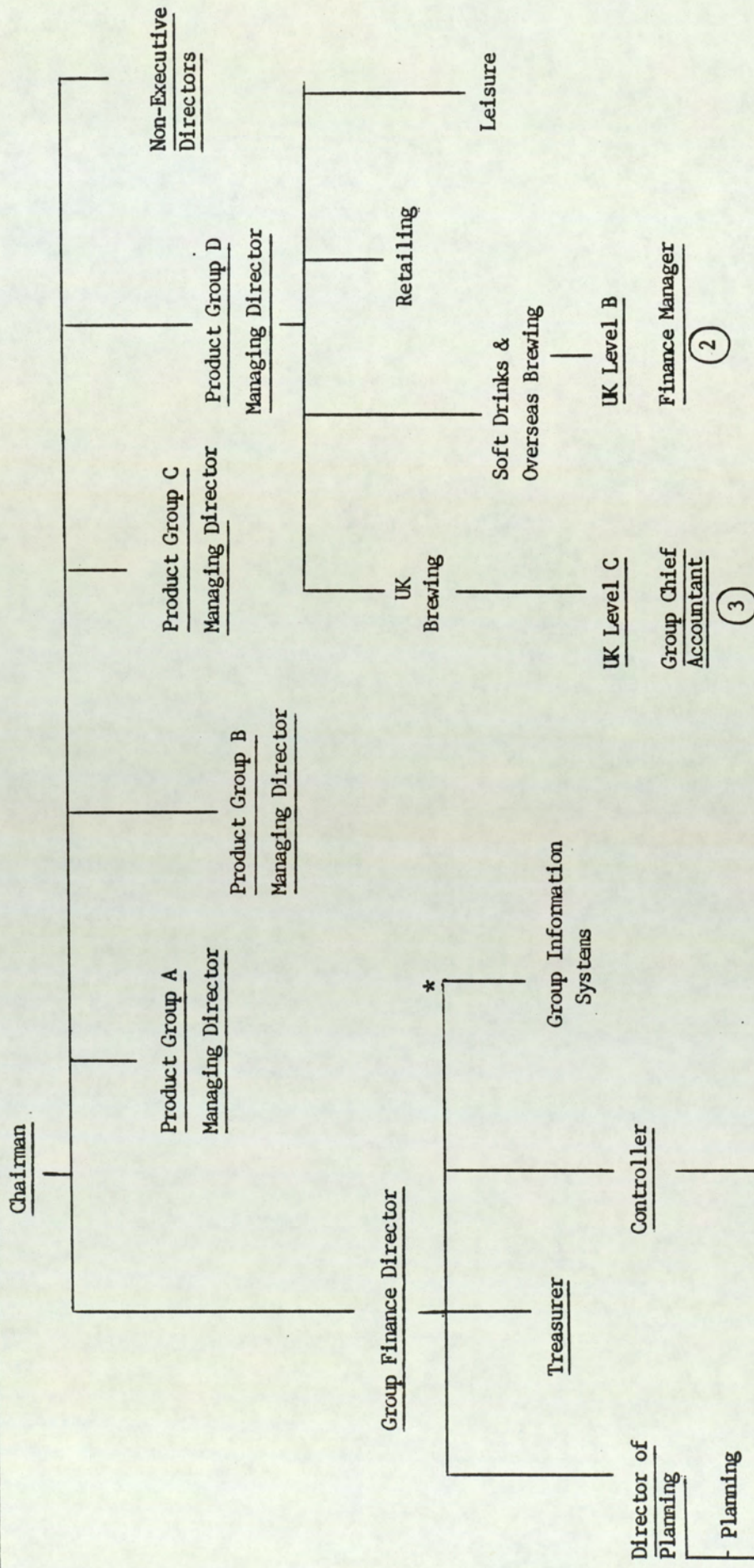
1 Member of Vorstand, Finanzen/Verwaltung  
[Finance/Administration Director]



# ORGANISATION III

## United Kingdom: Level A

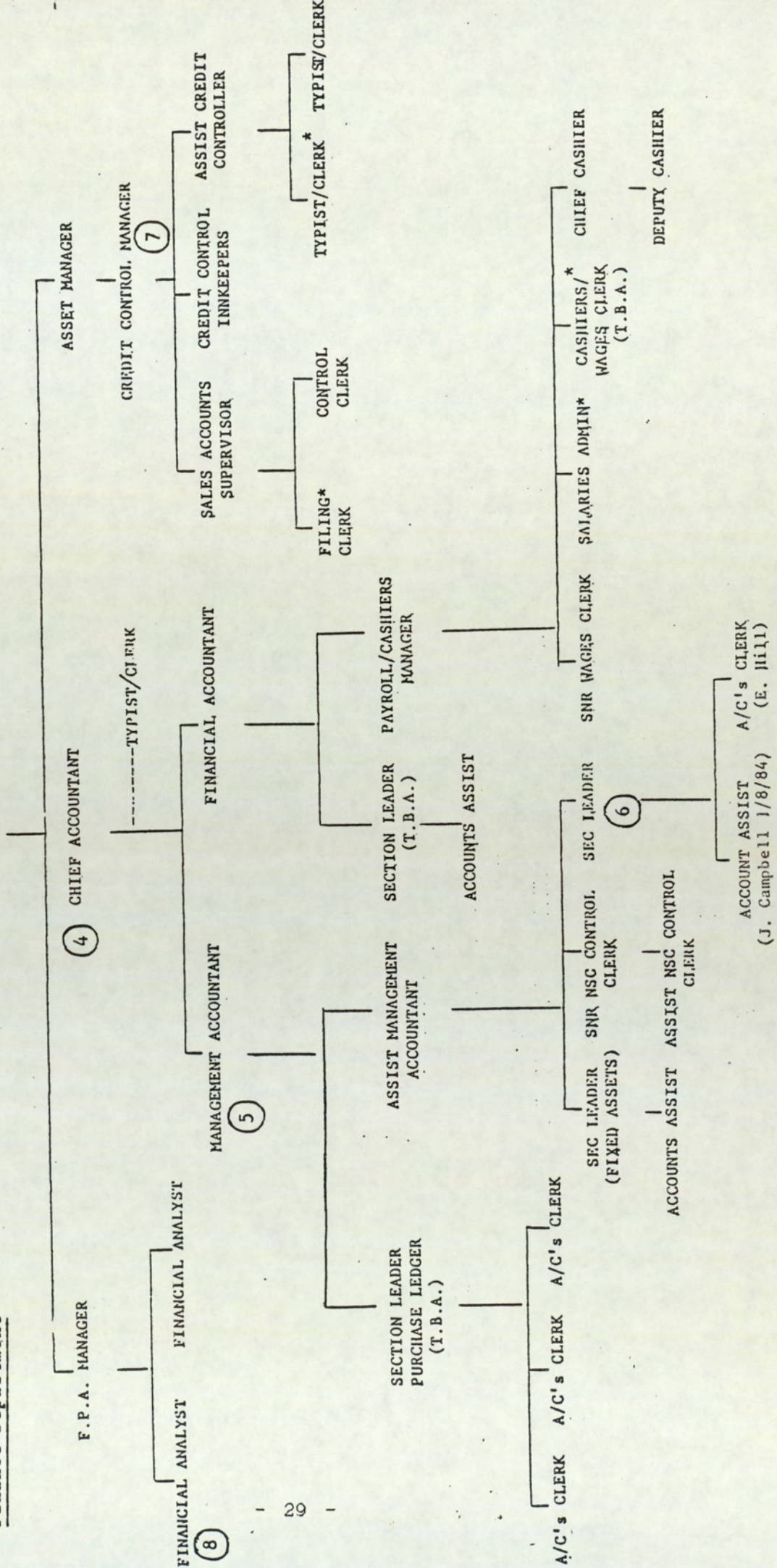
### Business/Management Structure



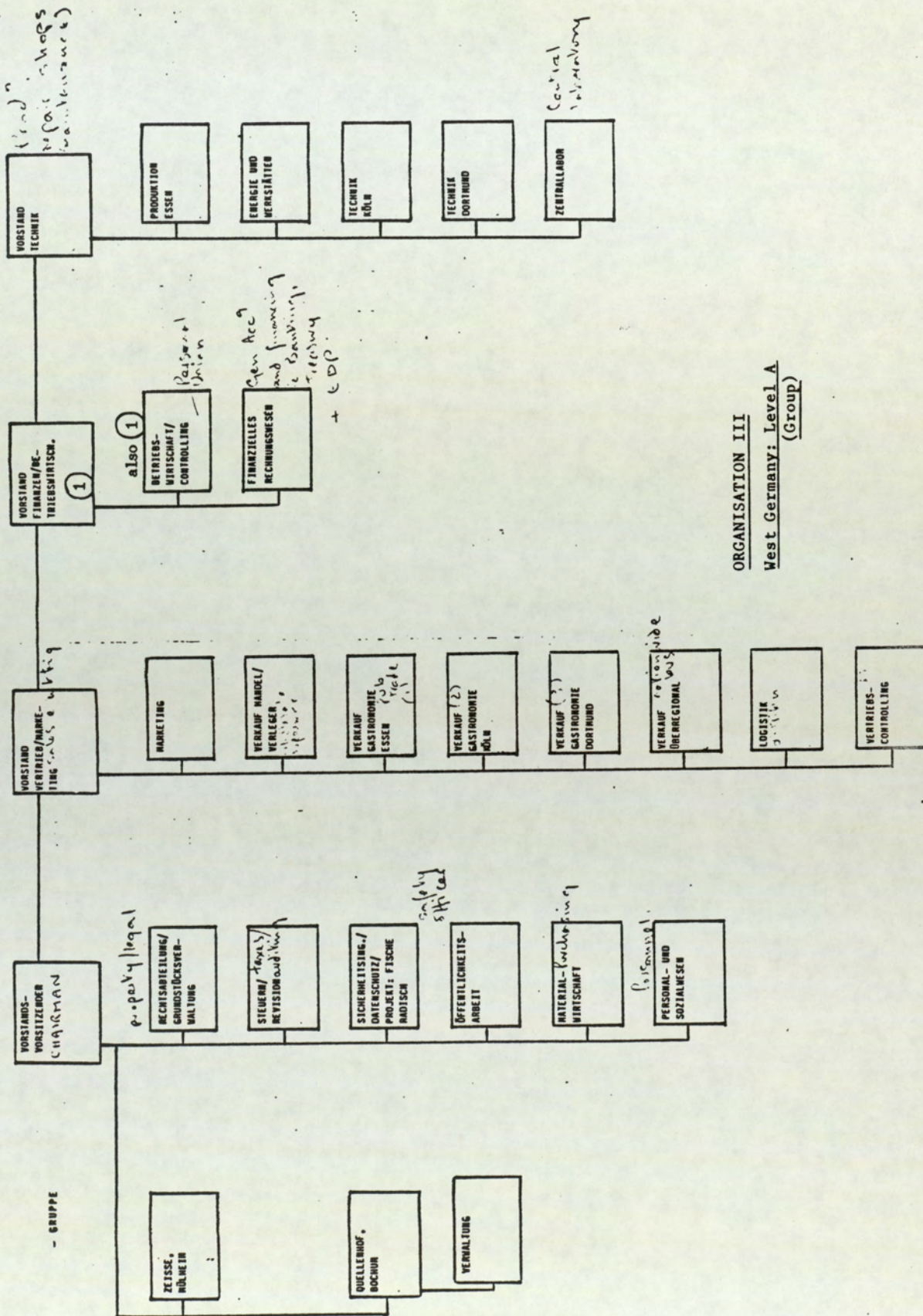


## Finance Department

**FINANCE DIRECTOR**







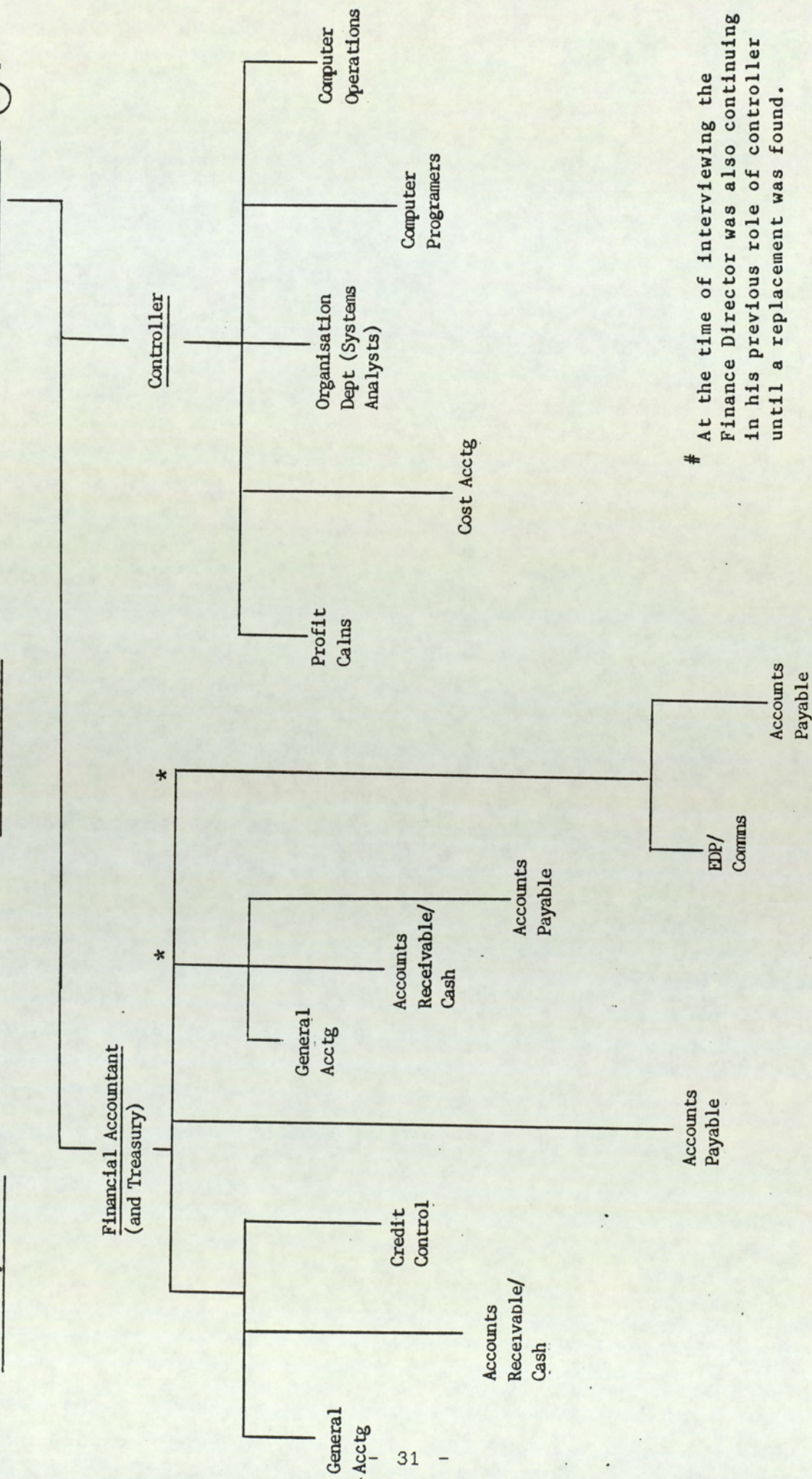
ORGANISATION III  
West Germany: Level A  
(Group)



West Germany: Level A

Finance Director

①#



#

At the time of interviewing the Finance Director was also continuing in his previous role of controller until a replacement was found.

These sections were prepared on different sites



#### ORGANISATION IV

The worldwide operations of this large divisionalised Group included mainly agrichemicals, oil, petrochemicals and plastics, pharmaceuticals, organic and general chemicals. Sales turnover for the United Kingdom in 1984 was approximately £3 billion, of which about £90 million derived from the chemicals business.

Within the Group as a whole, significant rationalisation had occurred during the 1980s with closure of capacity, thousands of redundancies and the removal of several tiers of management. The compression of management hierarchies, shortened communication lines and the devolvement of operational responsibility further down the line management structure had resulted in faster turn around times of decision making, this had been one of the intentions of the re-structuring policy.

In recent years, the general chemicals division - the subject of the study - had established a computer development group at the divisional head office with a remit to develop an integrated divisional accounting system. Economic difficulties added impetus to this work effort which resulted in the rapid implementation of a very complex, integrated system and subsequent installation of on-line facilities within operating sites. The scale and speed of this implementation provided a clear example of the direct labour displacement effects of new technology and an interesting case study of changes in work organisation.

The West German head office was basically an administration/consolidation centre. The operating site was firmly controlled by the British division and was essentially a production site, all marketing and selling operations were a British responsibility. The West German factory had been developed and planned as a greenfield site to utilise very advanced process technology with direct communications links between the commercial (including finance) department and the plants. One of the aims of this heavy capital investment was stated as the reduction of administrative overheads.

All the design work for the sophisticated plant process systems, the communications links with the commercial department and the accounting database was conducted by British computer personnel at the divisional head office. None of the West German finance respondents had participated in the design process but several were involved in the continuing implementation of systems modifications. The integrated divisional accounting system in the British head office and the systems implemented in the German site were originally proposed as initial stages in the development of a Pan European common accounting system. However, after fieldwork had been completed the Divisional Information Systems Manager (respondent 2) left the company and indicated during personal contact that the Pan European development had been abandoned.



## ORGANISATION IV

### RESEARCH LOCATIONS

### CODING AND LIST OF RESPONDENTS

#### UNITED KINGDOM (UK)

UK;A  
Corporate Head Quarters

1 Deputy Controller

UK;B  
Divisional Head Office

2# Manager, Divisional Information Systems  
Development Department

3 Assistant Chief Accountant

4 Product Group Accountant

UK;C  
Operating Site  
(a process production  
factory)

5 Commercial Manager

6 Works Accountant (C5)

#### WEST GERMANY (WG)

WG;A  
Group Head Quarters

1 Finance Director

WG;B  
Operating Site  
(a process production  
factory)

2 Manager, Commercial Services

3# Manager, Computer Services (B2)

4 Management Accountant

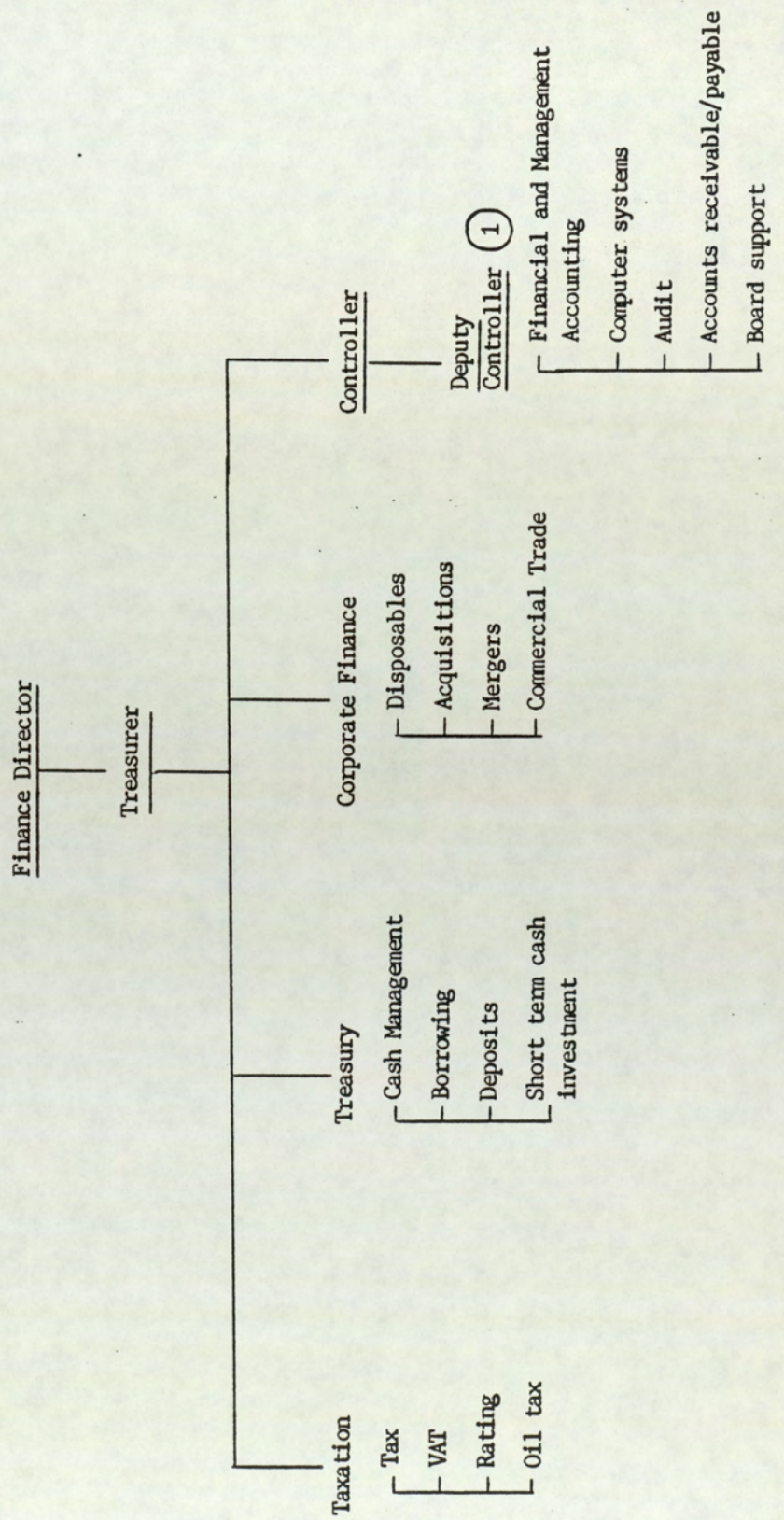
5 Financial Accountant



ORGANISATION IV

United Kingdom: Level A

FINANCE DEPARTMENT

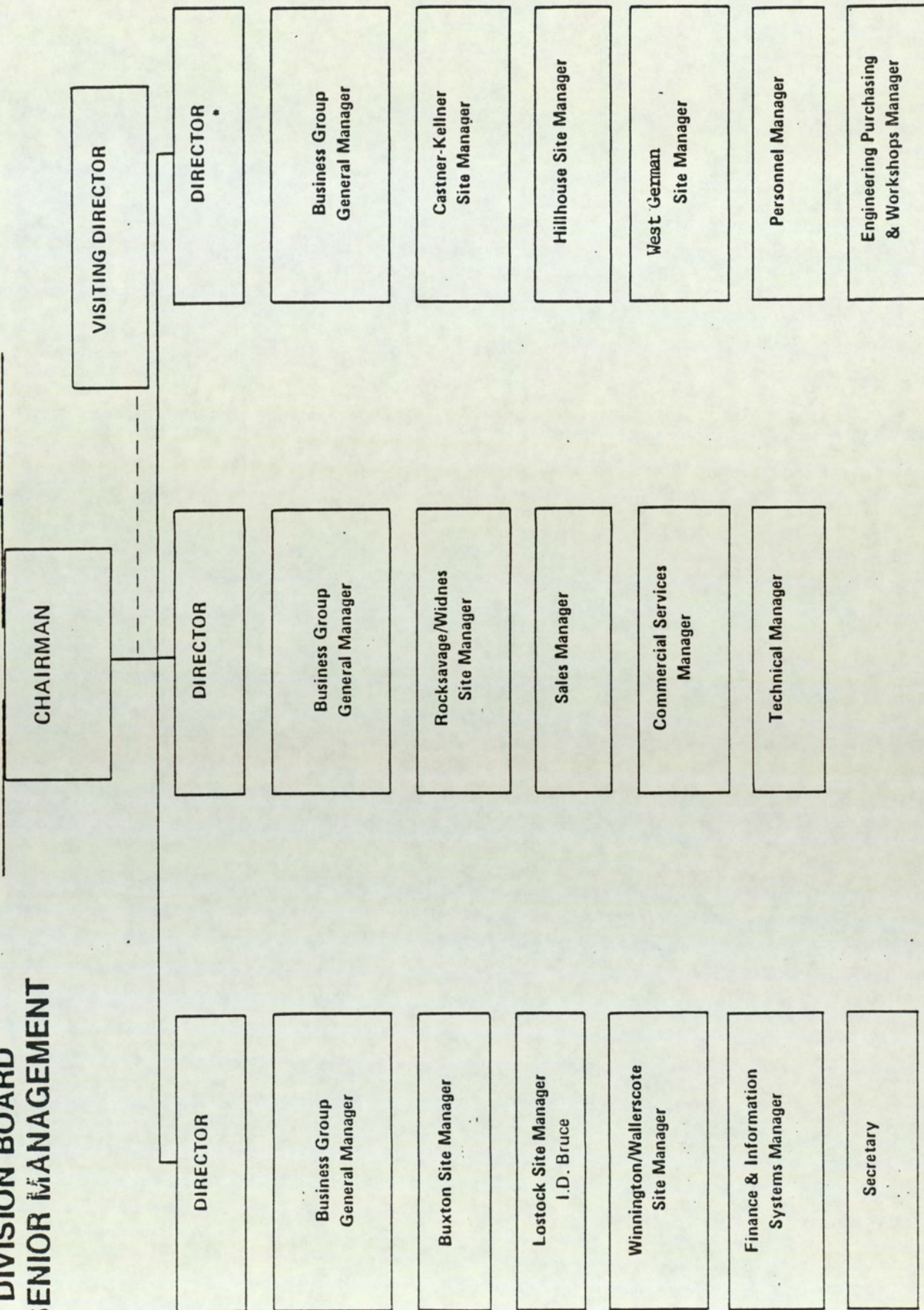




# DIVISION BOARD AND SENIOR MANAGEMENT

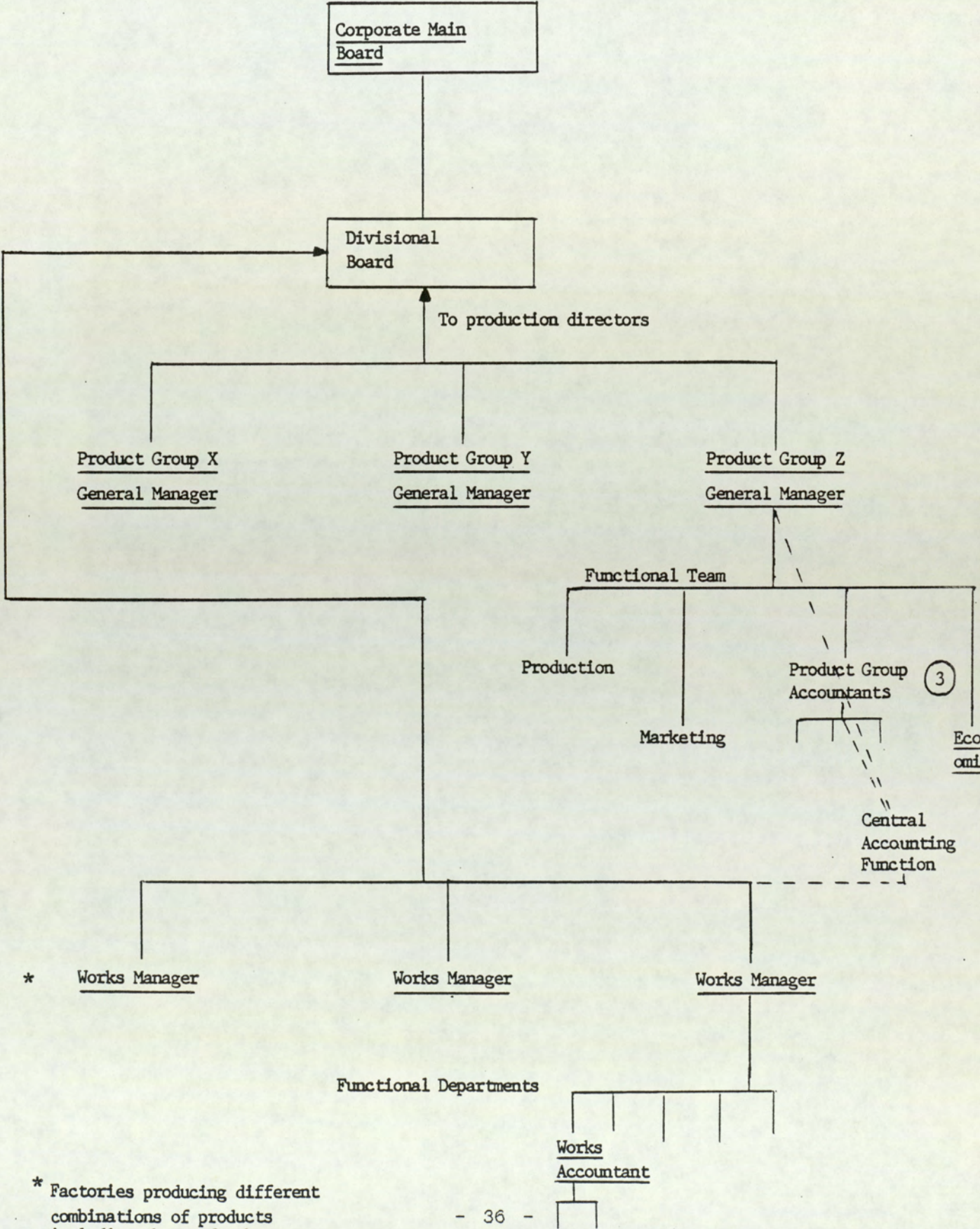
ORGANISATION IV      United Kingdom: Level B

1 Sep 84





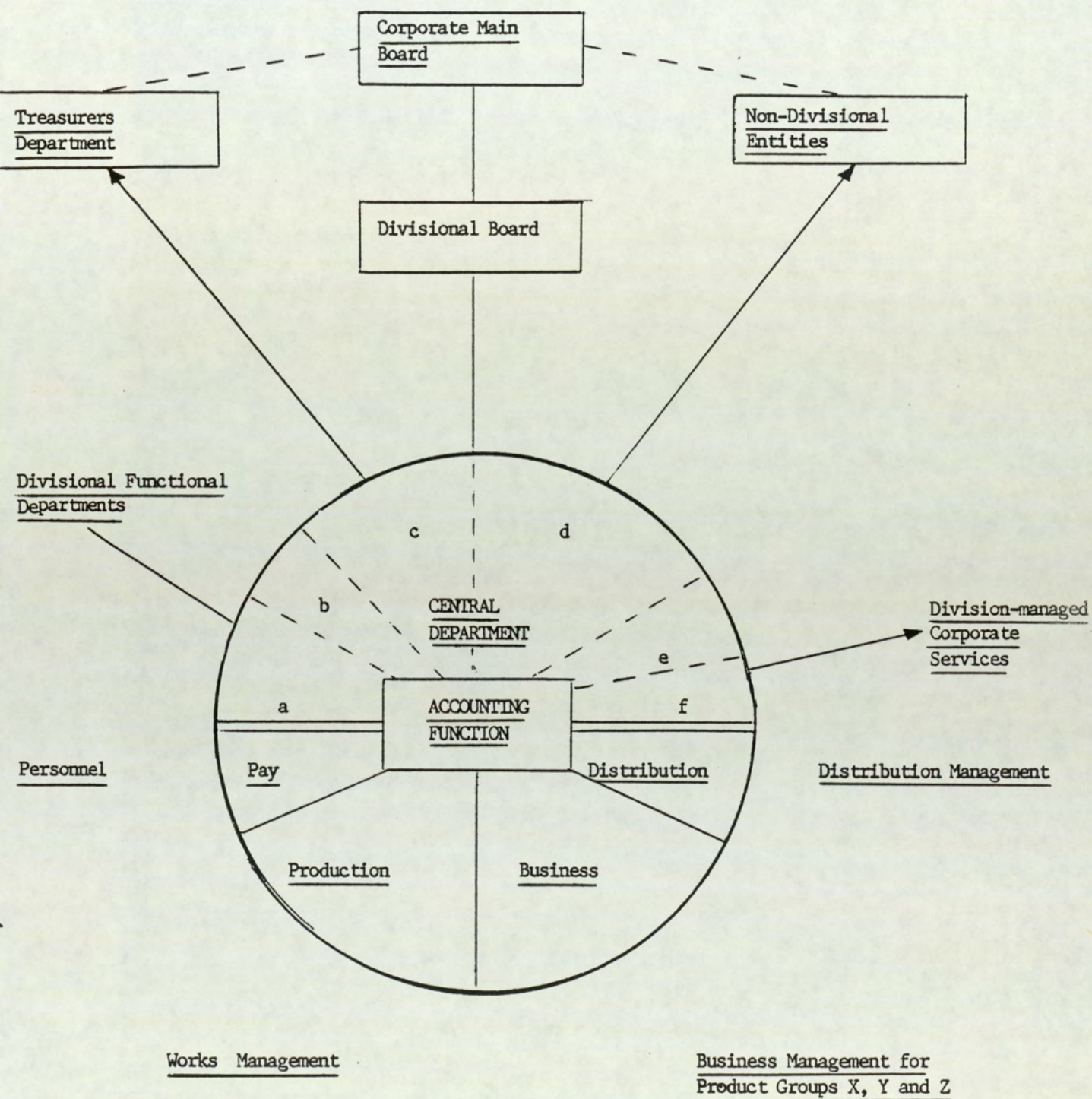
ORGANISATION IV  
United Kingdom: Level B  
Divisional Structure



\* Factories producing different combinations of products including those of other divisions



ORGANISATION IV  
United Kingdom: Level B  
Central Accounting Function



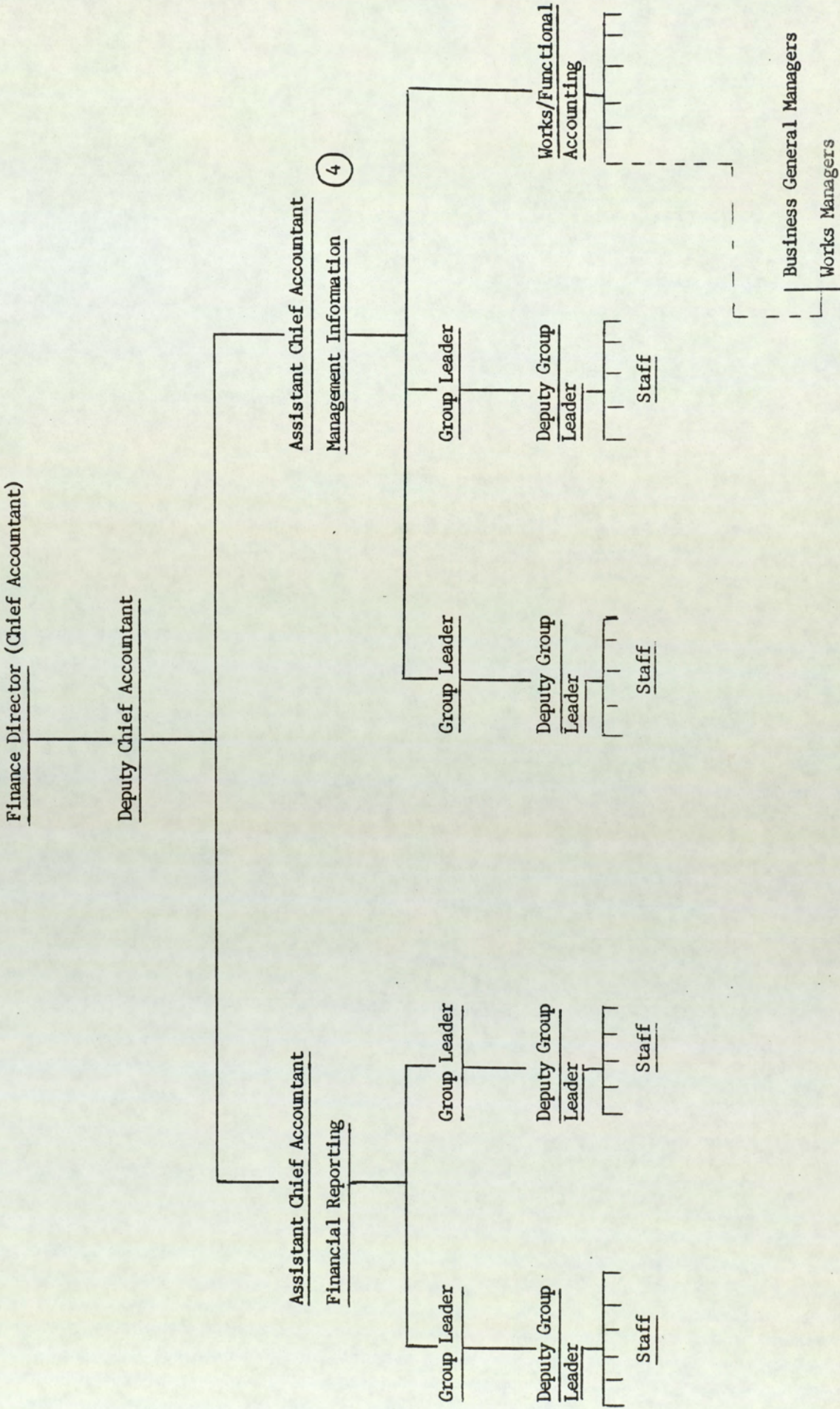
- a Management of Division's cash/bank accounts
- b Audit and Investigation
- c Management Information Group
- d Financial Reporting Group
- e Capital assets/construction accounting
- f Technical (research, engineering) accounting



ORGANISATION IV

United Kingdom: Level B

Structure of Central Accounting Function



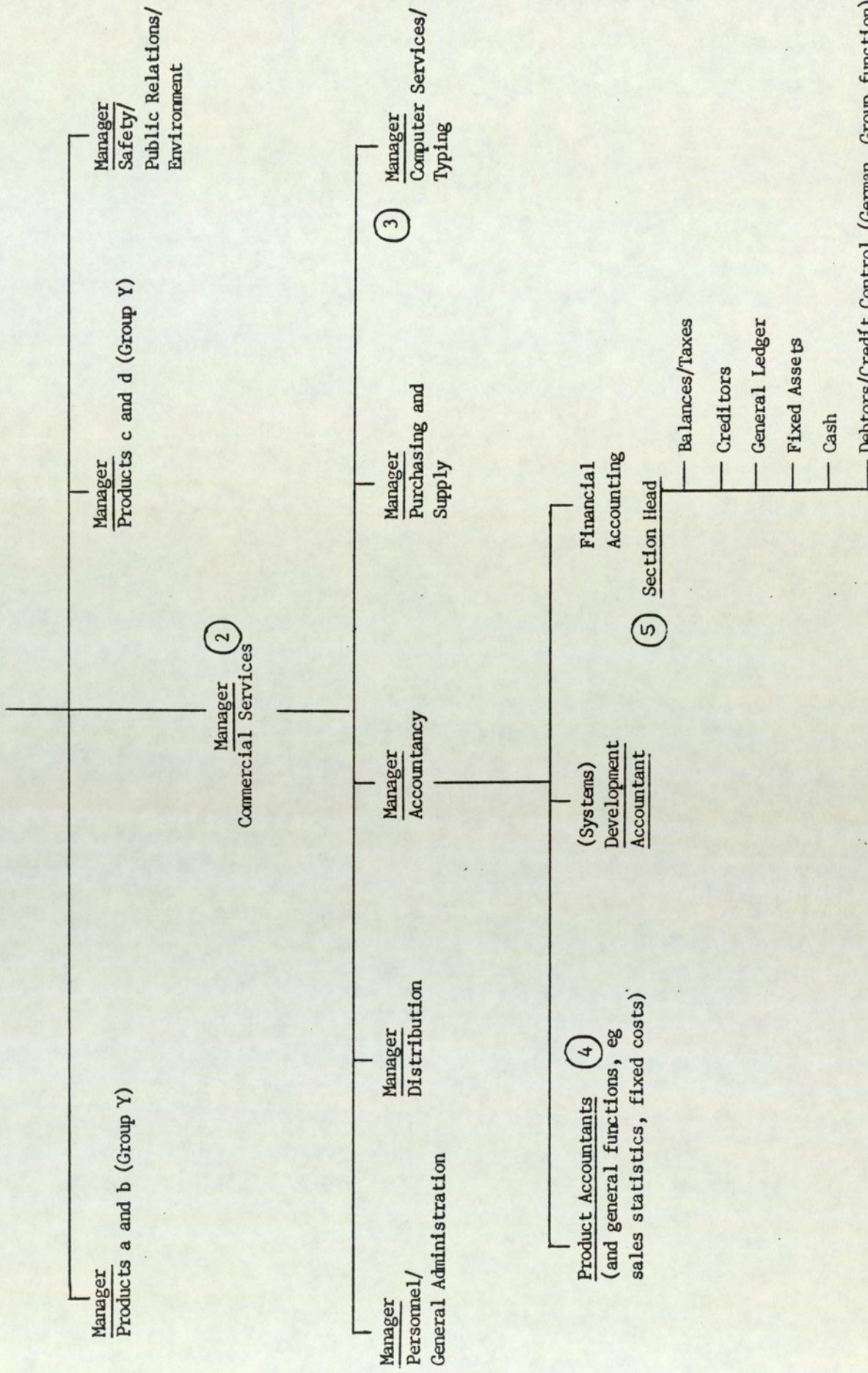


ORGANISATION IV

West Germany: Level B

Site Structure

General Manager (for two operating sites)





## ORGANISATION V

An interesting feature of Corporation V was that it was not divided into separate company entities although the corporate structure was divisionalised by function, by product group and by region. Organisation V not only manufactured mainframe, mini and micro computers but also developed both large and small systems for different areas of business and administrative activity. The British operation (employing 15,000 people) together with approximately 80 overseas subsidiaries (with a total of 7,000 people) contributed to sales turnover of £865 million in 1984.

In recent years the corporation had twice plunged into a loss making situation. The 1981 crisis had resulted in Central government assistance, the appointment of a new Chairman, a major senior managerial shake-out, divisional and business centre restructuring, rationalisation of productive capacity and a more vigorous in-house utilisation of new technology. Shortly after fieldwork was completed the corporation was acquired by a large British electronics firm although its independent identity was retained.

The West German business was a marketing and sales operation only, receiving all finished products from British manufacturing sites (with the exception on one high quality printer made by a West German company). The research location was the head office which co-ordinated and accounted for all selling activities throughout the West German network. All the computerised accounting systems were designed and developed in Britain with some tailoring for local purposes.



ORGANISATION V

RESEARCH LOCATIONS

CODING AND LIST OF RESPONDENTS

UNITED KINGDOM (UK)

UK;A  
Corporate Head Quarters

2 Group Chief Accountant

UK;B  
Regional Sales Area

1 Regional Controller

UK;C  
Operating Site  
(a transaction accounting  
centre)

3 Manager, Accounting (UK Division)  
4 Manager, Financial Accounting (C3)  
5 Supervisor, Banking and VAT  
6 Clerk, Sales Ledger Section  
7 Trainee Accountant, Machine Population File  
Update

WEST GERMANY

WG;A  
Company Head Office

1# Manager, Personnel Department  
2 Assistant Controller  
3 Development Accountant

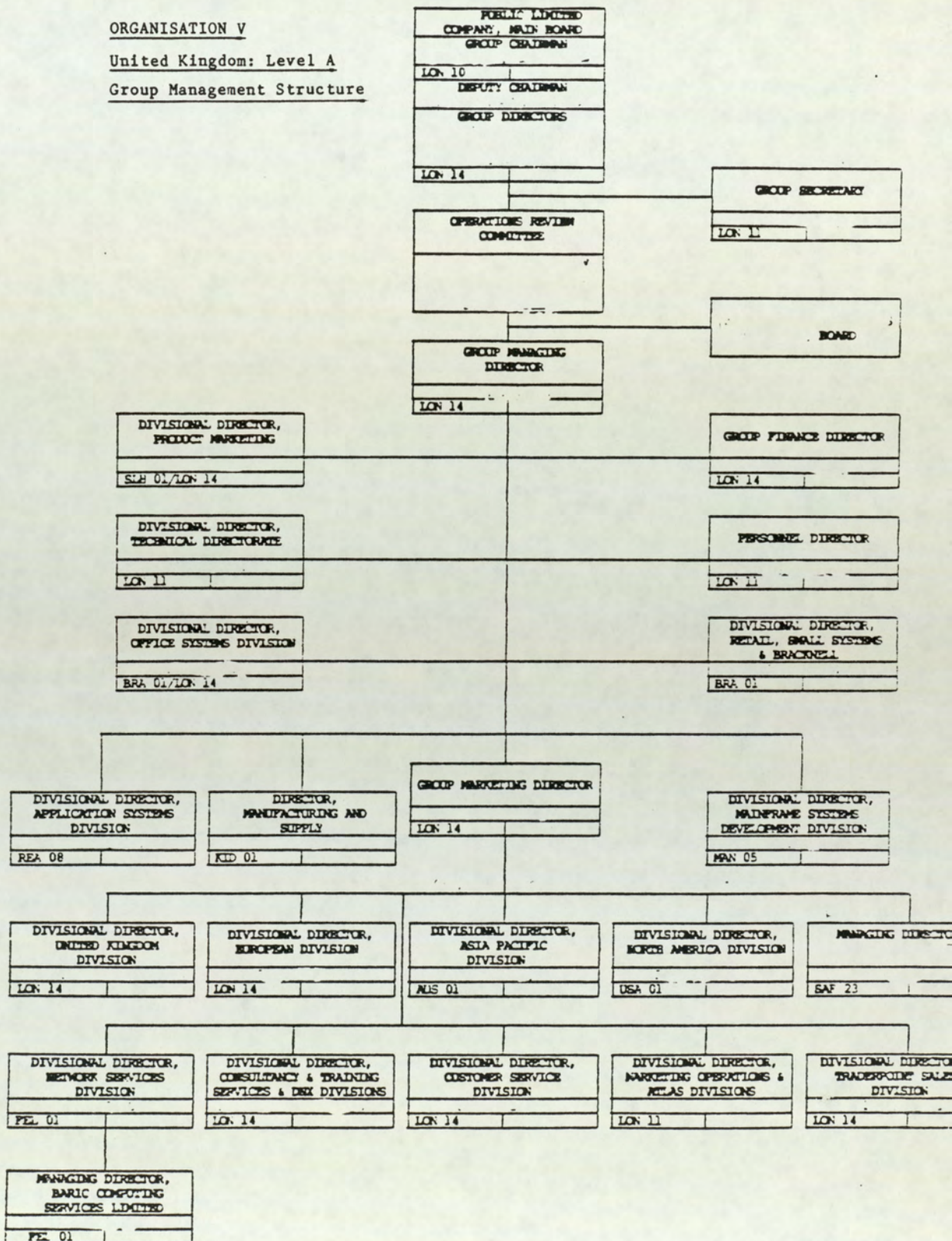


GROUP MANAGEMENT STRUCTURE

ORGANISATION V

United Kingdom: Level A

Group Management Structure



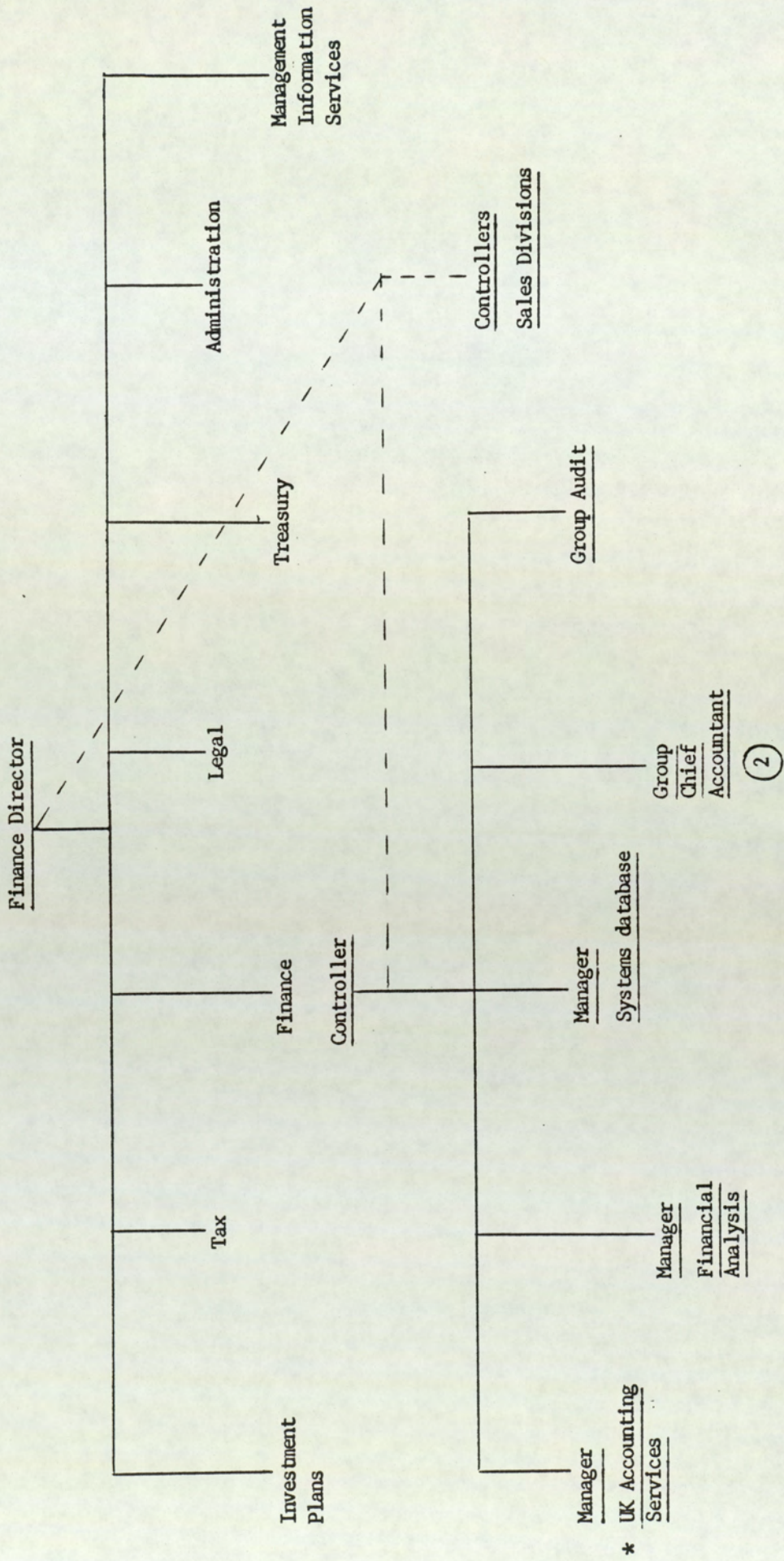
Issued by Group Secretariat  
Effective 1st January 1984



ORGANISATION V

United Kingdom: Level A

FINANCE DEPARTMENT



\* UK Accounting Services

\* Located elsewhere

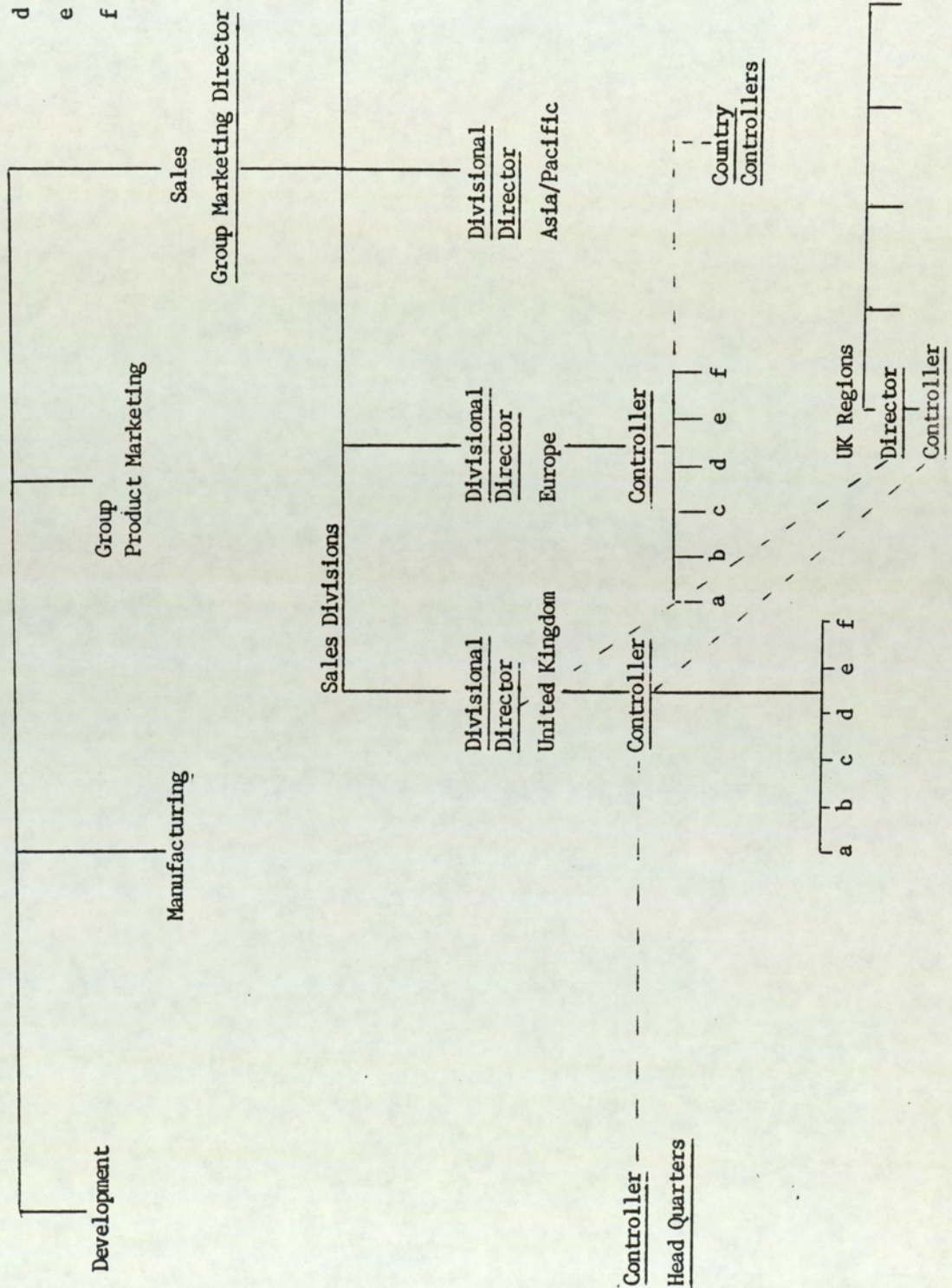


ORGANISATION V

United Kingdom: Level B

Business Organisation

- a Financial accounting
- b Personnel
- c Management analysis
- d Administration
- e Treasury
- f Systems

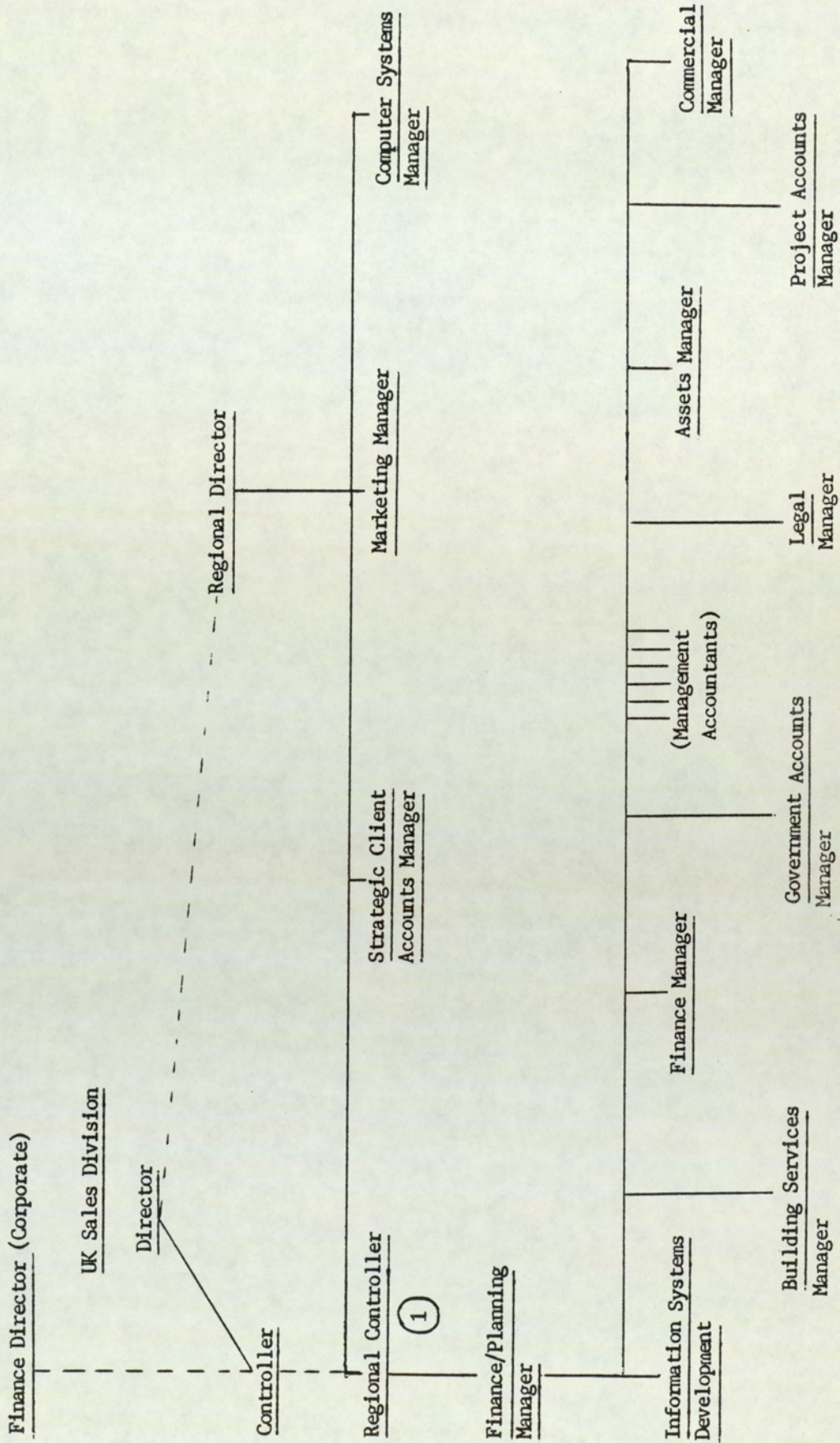




ORGANISATION V

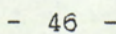
United Kingdom: Level B

Regional Organisation





ORGANISATION V  
United Kingdom: Level C  
Accounting Centre Structure

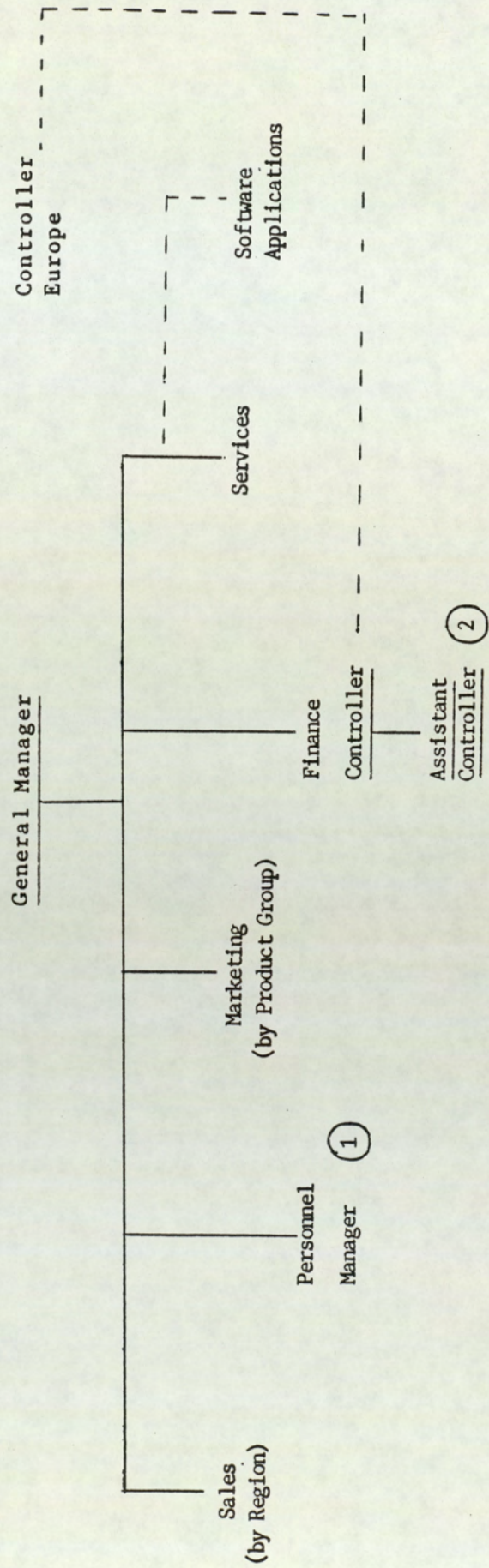




ORGANISATION V

West Germany: Level A

Sales Head Office Structure





## ORGANISATION V

West Germany: Level A

Finance Department

8 F	Bereich FINANZEN Controller
40BL	

8 F-S	SEKRETARIAT
41	

1 A 0	AUFTRAGS- ABTEILUNG
-------------	------------------------

82 FR 40	FINANZ- UND RECHNUNGSWESEN Assistant Controller
----------------	---

83 FV 40	ZENTRALE VERWALTUNG
----------------	------------------------

(2)

E 1.4. (3)

811 FAP 40 41	VERTRAGS- PRÜFUNG
------------------------	----------------------

821 FRP 40	PLANUNG u. BERICHTS- WESEN
------------------	----------------------------------

812 FAA 41 41 41 41	AUFTRAGS- ABWICKLUNG
------------------------------------	-------------------------

822 FRB 40 41 40 41 41	BUCHHALTUNG
--	-------------

813 FAV 41 41	VERTRAGS- VERWALTUNG
------------------------	-------------------------

823 FRD 41 41 41 41	DEBITOREN- BUCHHALTUNG
------------------------------------	---------------------------

814 FAB 41	ANLAGEN- BUCHHALTUNG
------------------	-------------------------

825 FRG 41	GEBÄUDE- VERWALTUNG NÜRNBERG
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## ORGANISATION VI

Corporation VI was a very large and extremely structurally complex multi-national energy Group. In this case Research Level A was the corporate head quarters of the British operating company responsible for co-ordinating and managing all the activities of its three component divisions - Exploration and Production, Oil (Manufacturing, Transportation and Marketing) and Chemicals. In 1984 the sales turnover of the British company exceeded £4 billion, employees exceeded 20,000.

This case study provided a direct comparison with that of Organisation I, both were related to the Downstream Oil business. However, whilst both Organisations were very large and had substantial in-house computer resources, it was clear that whereas the systems utilised in Organisation I were highly integrated, sophisticated and effective (they operated as intended), the systems in Organisation VI were not as advanced and some were a source of complaint. Finance personnel, particularly at the operating site, claimed they had been designed without any consultation or participation on their part and the data output, when retrieval was possible, was not in appropriate formats.

The finance function of Downstream Oil business in Organisation VI had been re-structured at all levels, in part contingent upon some closure of capacity in recent years. The trading climate, however, had more seriously affected the West German business: although major organisational re-structuring was imminent, within the finance function this would be minimal because (a) there was a pre-existing greater centralisation (and thus economies of scale) of accounting work within the Group head quarters; and (b) this function serviced all of the West German divisions, not only the Downstream Oil business as was the case in Britain.

Respondents in both countries suggested that the West German Group operated autonomously from the British counterpart. Certainly all of the systems design and development in West Germany was undertaken and implemented independently of British participation, although an ongoing conversion to IBM mainframes was said to have been influenced by British policy: and the utilisation of certain software which automatically converted German financial accounts and management information statistics to British requirements was clearly a function of British ownership.



## ORGANISATION VI

### RESEARCH LOCATIONS

### CODING AND LIST OF RESPONDENTS

#### UNITED KINGDOM (UK)

UK;A  
Corporate Head Quarters  
(UK Operating Company)

Group discussion with;  
1 Financial Controller  
2 Senior Finance Manager, Exploration and  
Production  
3 Senior Finance Manager, Downstream Oil  
4 Senior Finance Manager, Chemicals

UK;B  
Oil Division Head Office

5 Manager, Management Accounting Branch

UK;C  
Operating Site  
(an oil refinery)

6 Manager, Management and Oils/Chemicals  
Accounting  
7 Plant Accountant (C6)  
8 Assistant, Special Chemicals, Detergents  
and Distribution Handling (C7)  
9 Capital Accountant, Oils and Chemicals  
10 Assistant Project Accountant (C9)  
11# Manager, Personnel Services

#### WEST GERMANY

WG;A  
Group Head Quarters

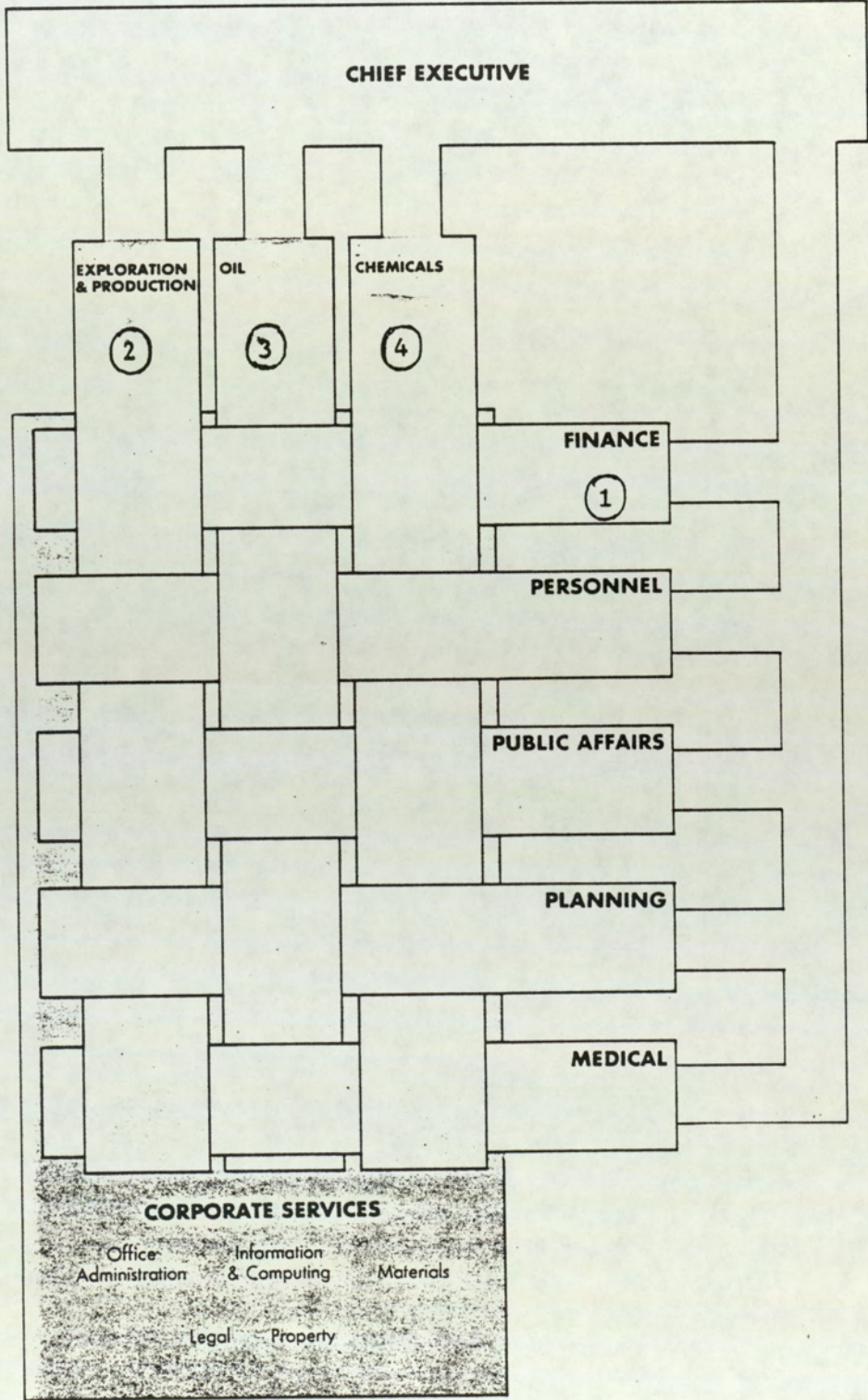
1 Finance Director  
2 Controller, Accounting and Management  
Information Department (A1)  
3 Section Head, Budgets/Forecasts (A2)  
4 Section Head, Profitability Calculations  
(A2)  
5 Assistant, Profitability Calculations (A4)  
6 Assistant, Investment Evaluation (A4)  
7# Section Head, Conversion Database  
Standards, Computer Administration  
Department  
8# Economist, Oil Economics and Supply  
Department

WG;B  
Operating Site  
(an oil refinery)

9 Controller, Finance Department  
10 Clerk, Cost Control/Budgets  
11 Clerk, Oil Accounting (Quantities)  
12# Works Superintendent

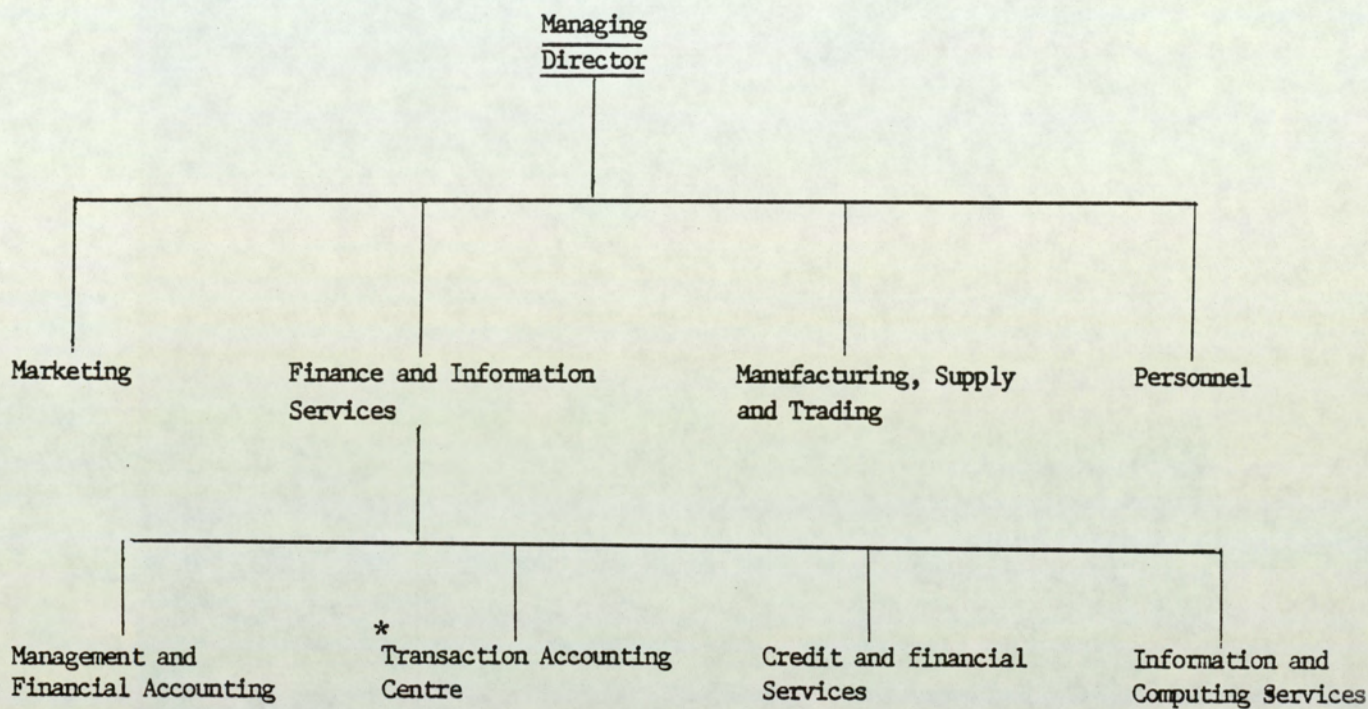


ORGANISATION VI  
United Kingdom: Level A  
Business Organisation





ORGANISATION VI  
United Kingdom: Level B  
Downstream Oil Division Structure



\* Located elsewhere

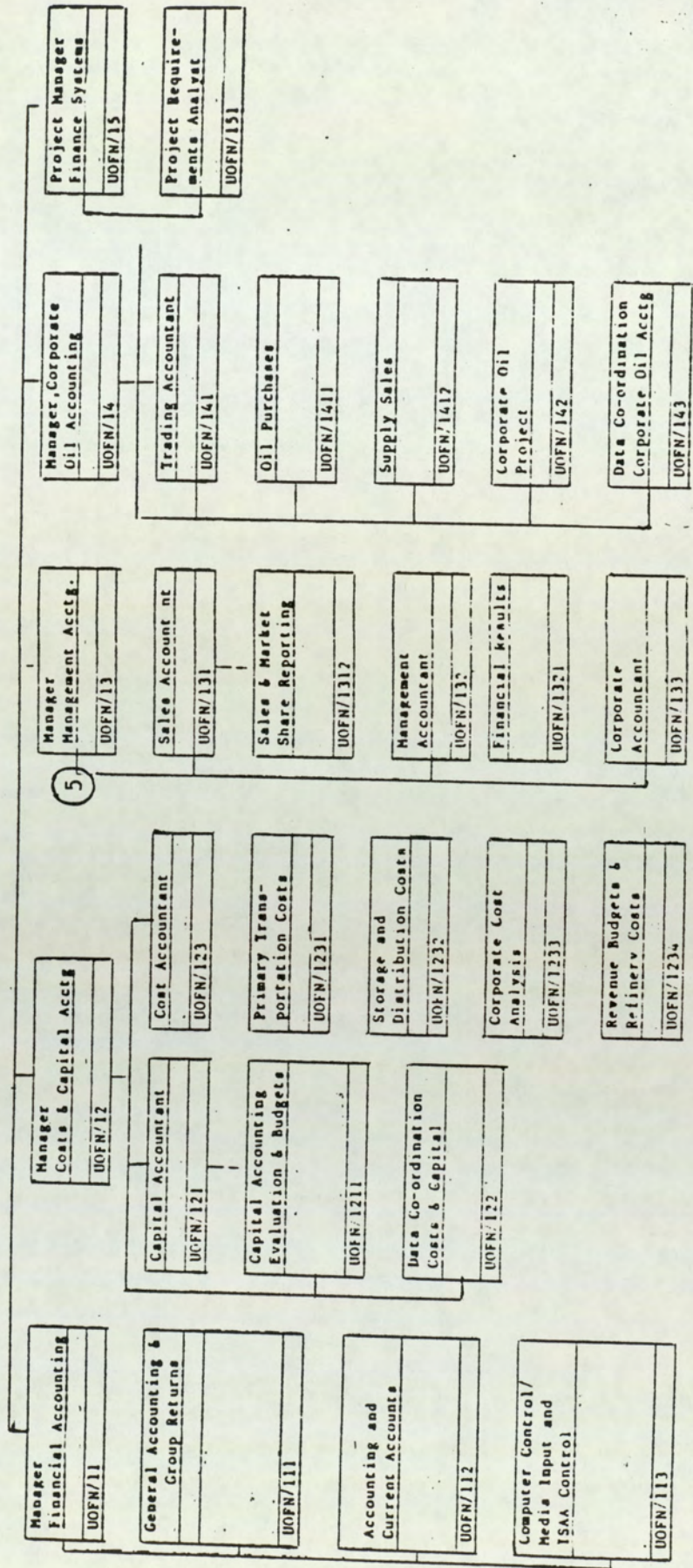


FROM 1.4.84 - 30.9.84

## ORGANISATION VI

United Kingdom: Level B

MANAGEMENT AND FINANCIAL ACCOUNTING
Secretary
UOFN/1



MYTHENSHAWZ

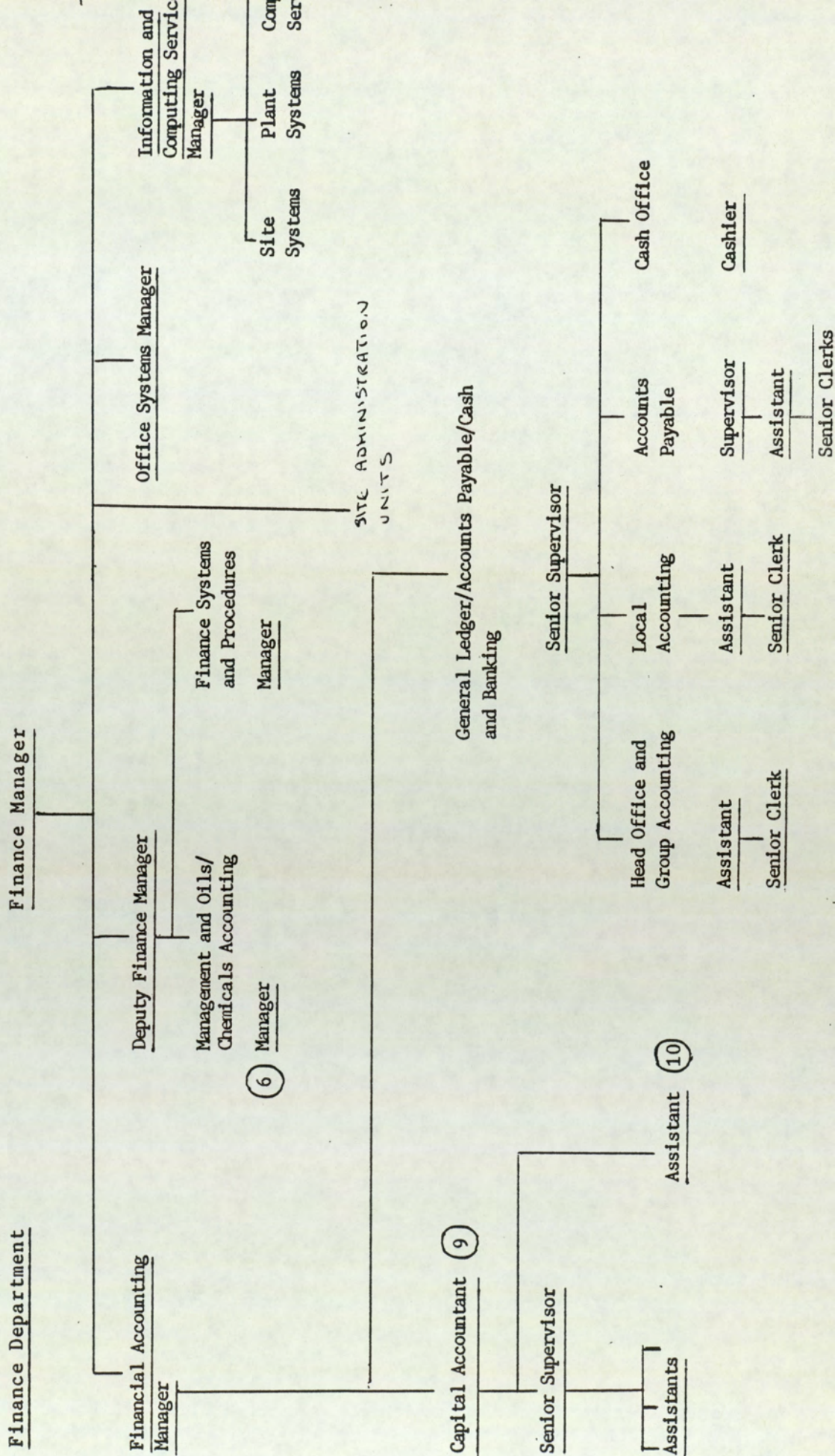
Product Stocks  
F.I. Bally



ORGANISATION VI

United Kingdom: Level C

Finance Department





# ORGANISATION VI

## United Kingdom: Level C

### MANAGEMENT AND OILS/CHEMICALS ACCOUNTING

#### FINANCE

HCF/00/01

Finance Manager

FHM/00/01

Deputy Finance Manager

FMA/00/01

Manager  
Management & Oils/Chemical Accounting

FMA/10/01

Accountant

Management/Accounting

FMA/20/01

Accountant

Oil Accounting

FMA/30/01

Accountant

Luboil  
Installation

FMA/40/01

Accountant

Higher Olefins &  
Derivatives

FMA/50/01

Accountant

Solvents &  
Resins

Management  
Accounting  
Supervisor

Assistant

Chemicals  
Consolidation

Snr. Assistant

Recoveries

Snr. Assistant

Consolidation/  
Development

Snr. Assistant

Operations Accounting  
Snr Supervisor

Assistant

North Operations  
Supervisor

Assistant

South Operations  
Supervisor

P.A. Turton

Snr. Clerk

Finished Products &  
Customs Accounting  
Snr. Supervisor

Assistant

Finished Products  
Operations  
Supervisor

Snr Clerk

Customs & Sales  
Assistant

Home  
Snr. Supervisor

Supervisor

Snr. Clerk

(Agency)

Export  
Assistant

Vacancy  
Supervisor

Snr. Clerk

Snr Clerk

Alcohols  
Assistant

Additives &  
Intermediates  
Supervisor

Assistant

SHOP  
Supervisor

Solvents &  
Bought-In  
Products  
Supervisor

Assistant

Resins/  
Phenol  
Supervisor

Assistant

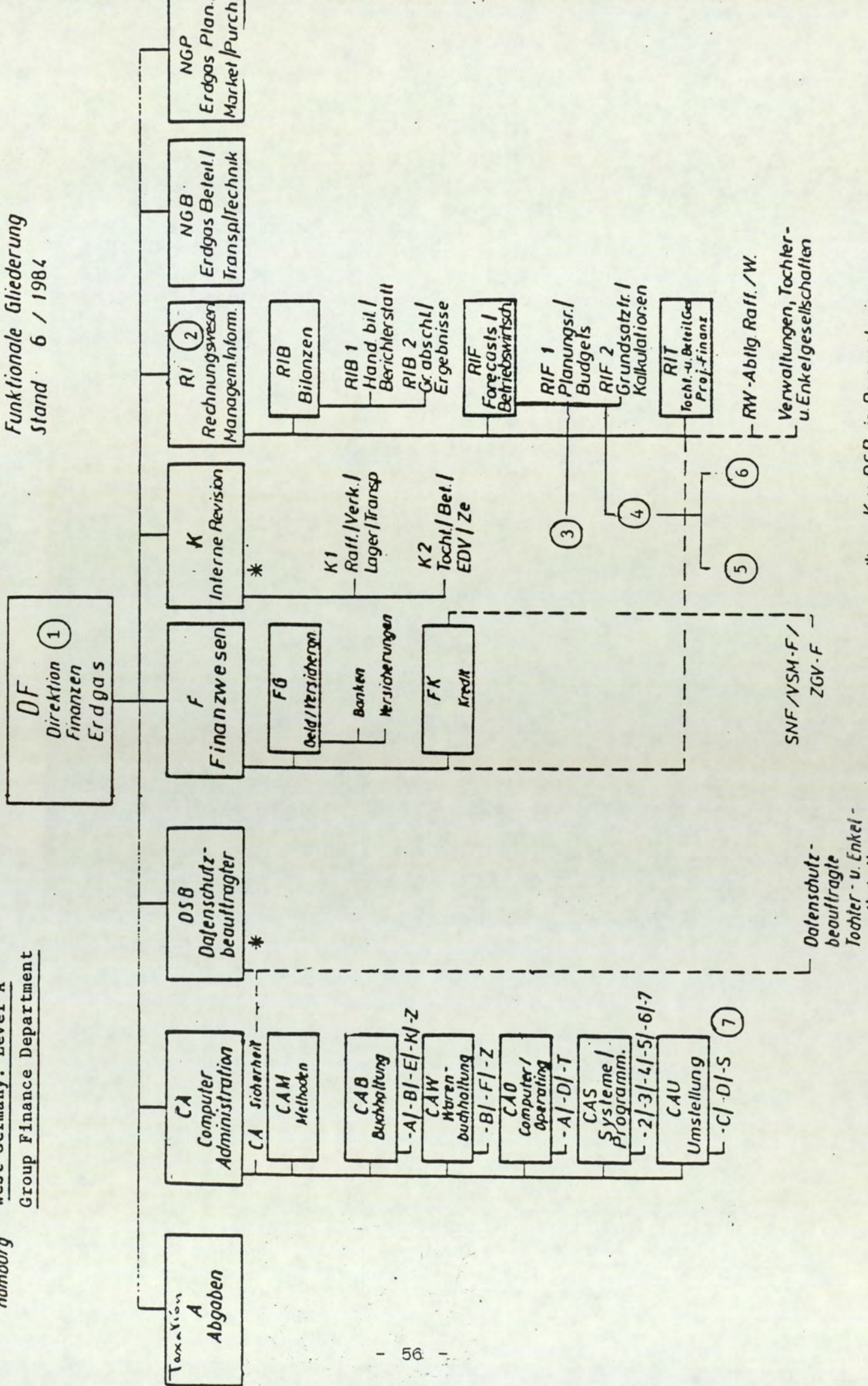
SCAD & Dist/  
Handling  
Assistant

(8)



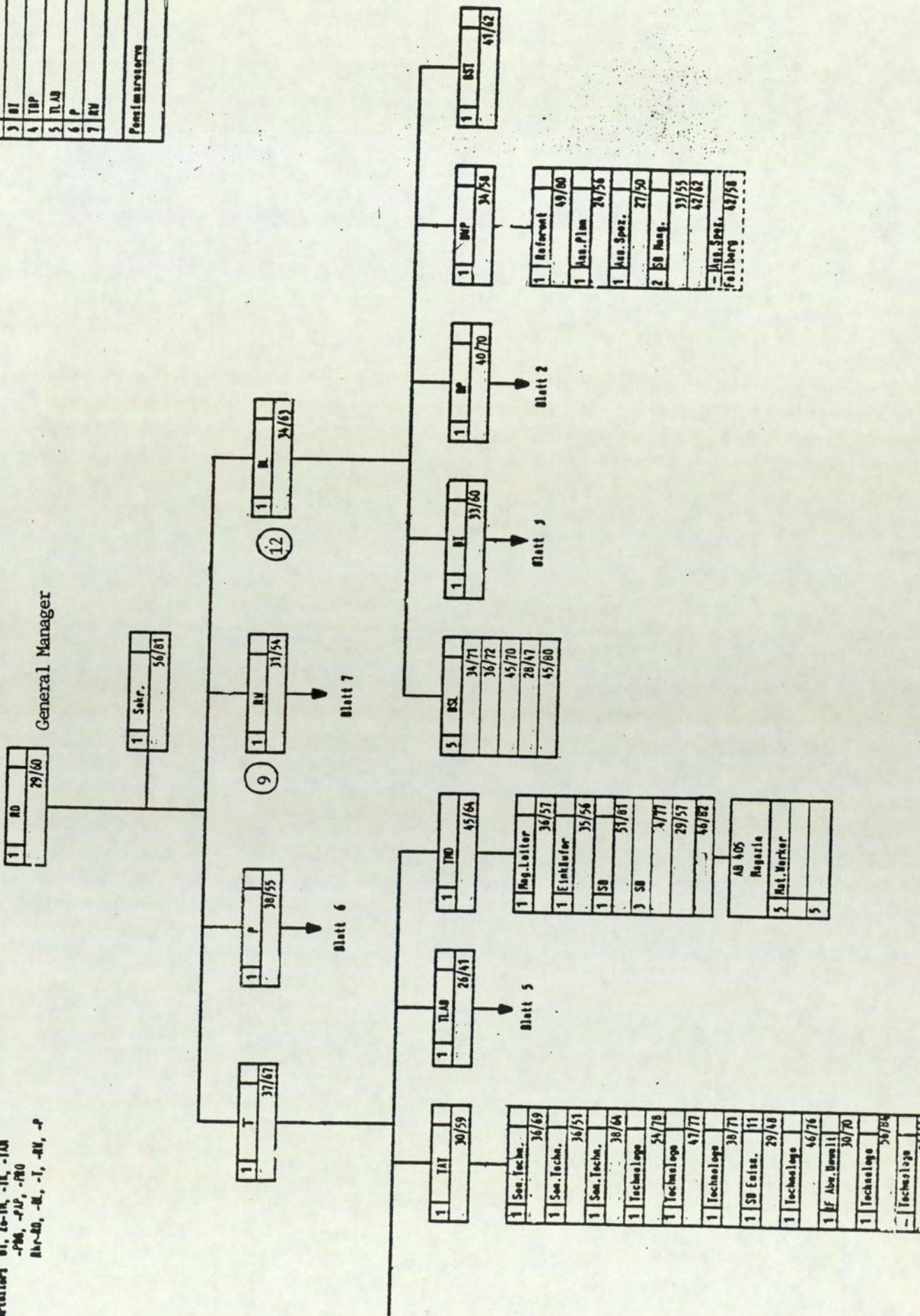
# Organisationsplan DF

Funktionale Gliederung  
Stand 6 / 1984





BL	Abtvl	Aug.	obs
1	AD, BL, T, TAT, TMD, BAP, BS, BSL	36	5
2	BP	54	252
3	BT	48	140
4	TBP	20	4
5	TAB	35	5
6	P	16	19
7	EV	30	2
Pessimistische		243	477
		243	431





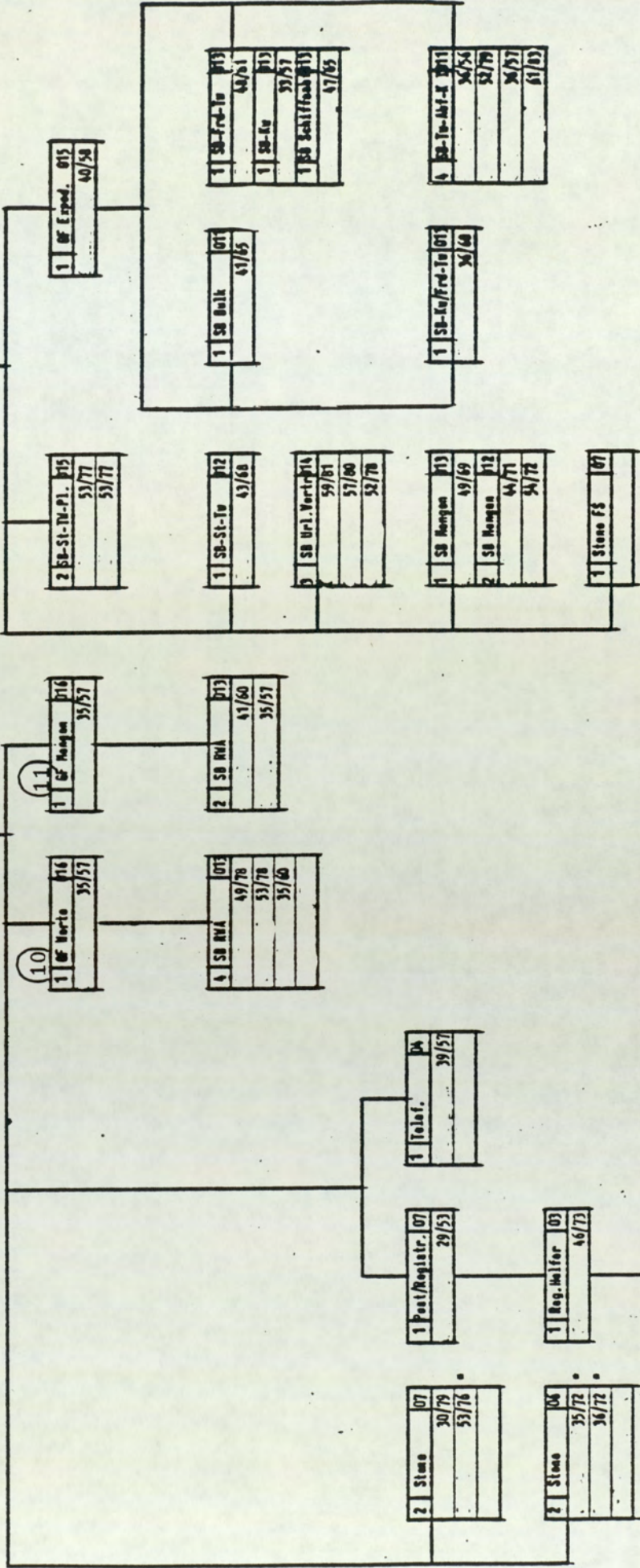
Stellstellen	
Arbeitsstelle	2
Arbeitsplatz	2
Arbeitsplatz	40

Organisationsplan  
West Germany: Level B  
Finance Department

1	EW	31/54
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1	EW/B	34/55
---	------	-------

1	RVA	33/59
---	-----	-------



1	Telaf.	34
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1	Post/Registr.	07
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2	Steno	07
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1	Reg. Hefor	03
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2	Steno	04
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1	Registrat.	03
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2	Steno	03
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## ORGANISATION VII

Corporation VII was a multi-national encompassing engineering, consumer electronics, domestic appliances, lighting and entertainments businesses. United Kingdom sales turnover in 1983 was almost £2 billion with Group employees totalling 73,559 (including those working on a part-time basis).

Within the generic label of 'entertainments', the highly specialised area of music royalties accounting was selected for study. The downturn in record sales in both Britain and West Germany which had characterised the late 1970s had reversed during the 1980s, although the improved performance of the music company was reported in the business press to have been, at least in part, a result of its takeover by the engineering, electronics and domestic appliances Group. This takeover was quickly followed by a fundamental re-structuring of the music company's organisation and operation of the royalties departments.

The upturn in record sales had also underlined the outdated nature of the computerised royalties accounting system. Although at the time of interviewing this system was soon to be replaced, there was a good deal of uncertainty surrounding the nature of the new system, any further re-organisation of UK royalties processing and how work tasks might be affected. Little information was available evidently because not even the manager of the royalties accounting department had been consulted or informed about the characteristics of the new system. Other data, such as organisation charts, were also difficult to obtain.

The West German music company claimed autonomy from the British counterpart although liason between royalty accounting departments was said to be very close. Whilst the International Organisation in Britain exercised a power of veto over, for example, hardware purchased, the responsibility for all systems design and development was retained within the West German business.



## ORGANISATION VII

### RESEARCH LOCATIONS

### CODING AND LIST OF RESPONDENTS

#### UNITED KINGDOM (UK)

UK;A  
Corporate Head Quarters

1 Financial Controller

UK;B  
Music Company Head  
Office

2 Controller, Europe and International

UK;C  
Operating Site  
(Music Company and UK  
Record Company Royalties  
Department)

3 Manager, Royalties Processing UK  
4 Accountant, Audit and Control (C3)  
5 Supervisor, Group Royalties (C4)  
6 Assistant, Licences

#### WEST GERMANY

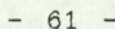
WG;A  
Record Company Head  
Office and Operating Site  
(Royalties Department)

1 Manager, Royalties Accounting  
2 Assistant Manager, Royalties Accounting



United Kingdom: Level C  
Music Company: Royalties  
Accounting Department

United Kingdom: Level C  
Music Company: Royalties  
Accounting Department



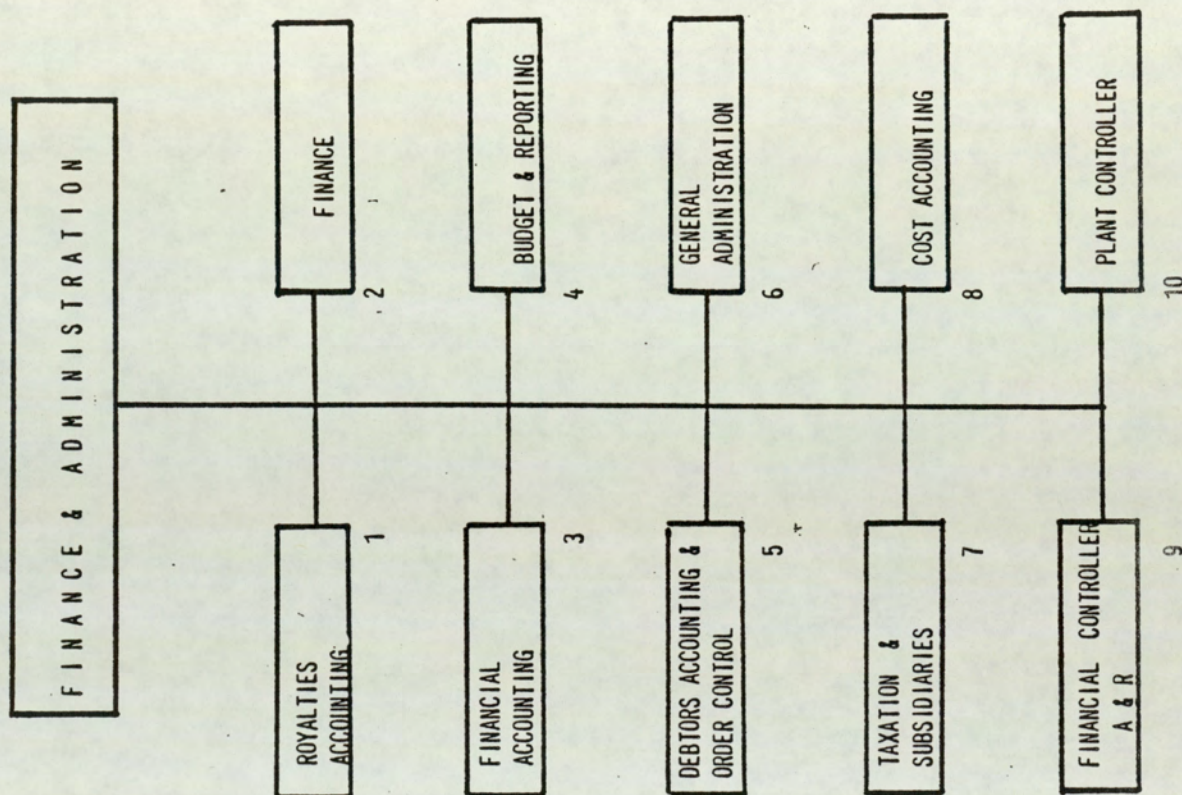


ORGANISATION VII

West Germany: Level A

FINANCE & ADMINISTRATION

ORGANIZATION CHART  
.....



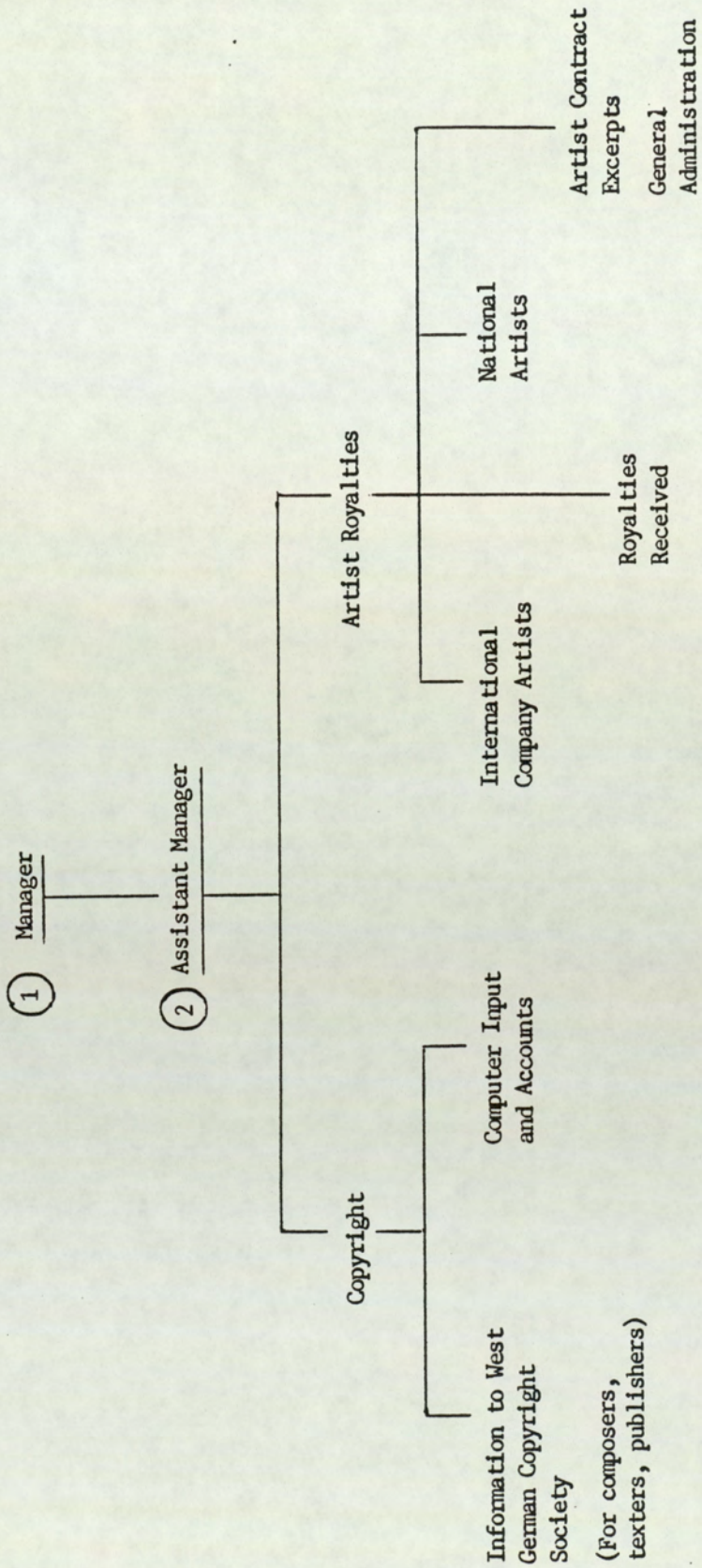


ORGANISATION VII

West Germany: Level A

Record Company

Royalties Accounting Department





## ORGANISATION VIII

Recognised as the world's largest fast moving consumer goods Group, Corporation VIII comprised many, highly diversified and autonomous subsidiaries operating under their own identity. The devolvment of decision making authority to operating companies was a long standing policy within Corporation VIII, it was reflected in the relatively few employees at the corporate head quarters with controlling responsibilities.

On a world wide basis, principal business activities included foodstuffs, drinks, plantations, animal feeds, paper and plastics packaging, chemicals, detergents and personal products. The European region represented the Group's highest concentration of business activity (some 65 per cent of total sales), 240 companies employing 156,000 people contributed to the 1982 sales turnover of £8.63 billion.

The study concentrated on the British and West German personal products companies. In 1982 the sales turnovers of these companies were £165 and approximately £130 million respectively. This case study provided the most robust cross-national comparison and highlighted some important policy contrasts between this conglomerate and the other eight in the sample. For example, whereas it was common in West Germany for finance personnel to be more generically entitled 'commercial', this was not the case in Britain except in Organisation VIII. Neither was this merely a matter job titles, the higher degree of integration of finance within a wider commercial environment was reflected in the nature of responsibilities of senior managers, their career profiles and future aspirations which, in general, were notably less limited and finance-specific than was evident elsewhere.

However, it was suggested that this environment was not typical of the Group as a whole. Thus the fast moving nature of the business, high market profile and the important influences of branding and image on the company's sales performance may have been factors associated with the high degree of commercial and market awareness within the finance function. These factors may also have contributed to an apparent progressive attitude towards technological change, evident in both countries, and what appeared to be a relatively high level of involvement of the British senior managers at various stages of the computerisation process.

Another interesting feature of this case study was that the legal entity, the Holding Company, was Anglo-Dutch. This gave rise to a situation where the management reports and financial accounts of the British personal products company were evaluated and consolidated within the London corporate head quarters whilst those of the German company were transmitted to Rotterdam. Clearly then, in structural terms the German company operated autonomously of its British counterpart and was reflected, for example, in the nature of computerisation, all systems design and development was entirely in-house.



Nevertheless, within both the British and Dutch corporate structures, the function of 'Co-ordination' provided a forum for information exchange and, as the name suggests, monitoring and co-ordinating the activities of the personal products companies throughout Europe. One individual in London and a counterpart in Rotterdam both delivered responsibilities for 'personal products' and 'Europe'. Whilst these closely-knit roles did not formally include executive authority over the operating companies, the remit of Co-ordination extended to strategic appraisals, 'making suggestions' and calling senior operating managers to account for poor company performances. Moreover, another aspect of Group policy was to promote frequent liaison between operating companies across different countries: this was clearly manifest during interviews with senior managers in both countries by their exceptionally high level of awareness of the operating environment in the other country. Thus, although ostensibly the two companies operated autonomously, other mechanisms encouraged information exchange and liaison.

## ORGANISATION VIII

### RESEARCH LOCATIONS

### CODING AND LIST OF RESPONDENTS

#### UNITED KINGDOM (UK)

UK:A Corporate Head Quarters	1#	Commercial Member of Personal Products Co-ordination
	2	Controller
UK:B Company Head Office	3	General Commercial Manager
UK:C Operating Site (a production factory)	4	Commercial Manager (B3)
	5	Company Financial Accountant (C4)
	6	Factory Accountant (C4)
	7	Clerk, Accounts Payable Section
	8#	Aerosol Relay Production Manager

#### WEST GERMANY (WG)

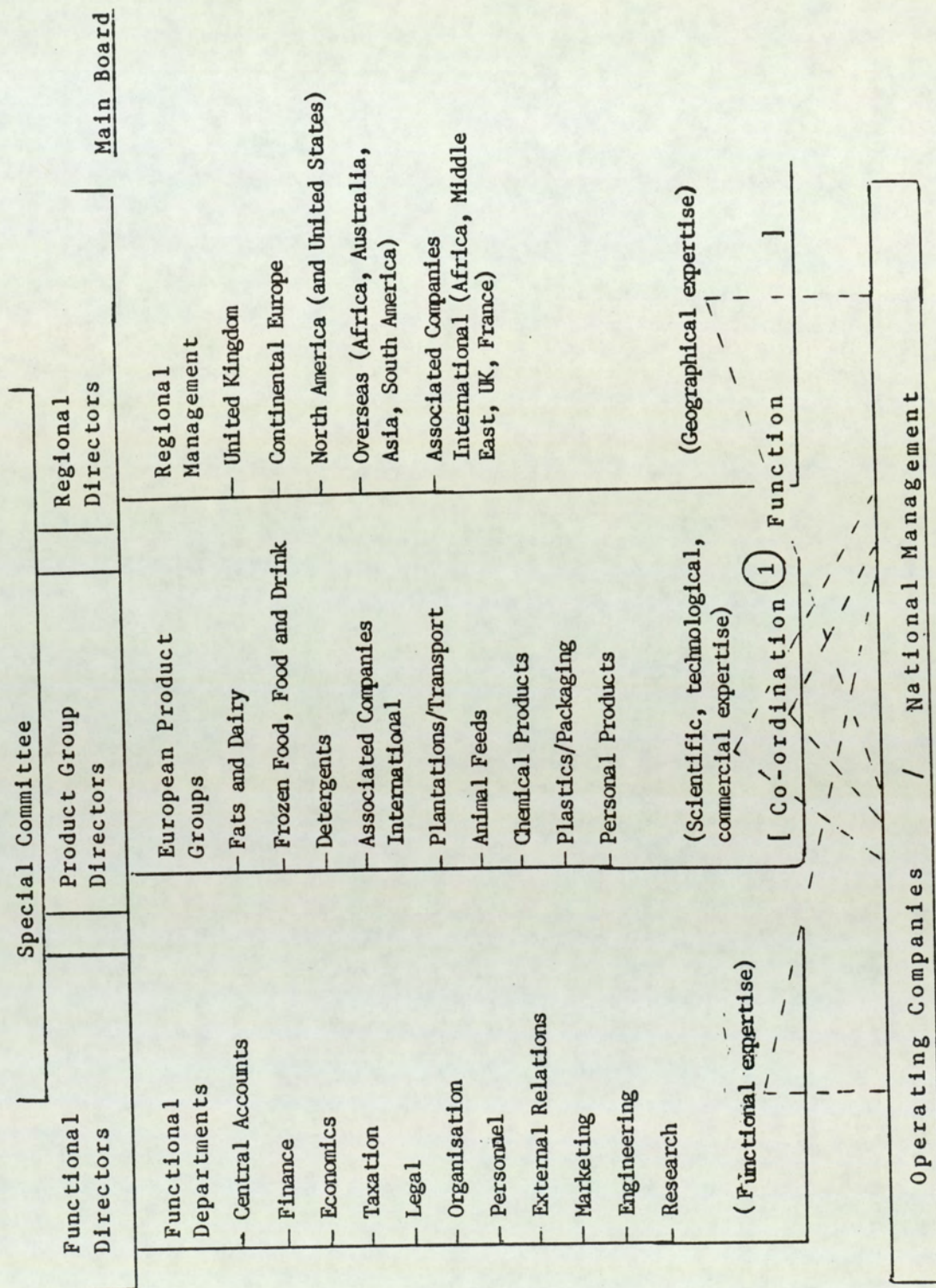
WG:A Company Head Office	1	General Commercial Manager
	2	Management Accountant (A1)
	3#	Manager, Organisation and Data Processing Department
WG:B Operating Site (a production factory)	4	Commercial Works Director
	5	Buyer (B4)



# ORGANISATION VIII

United Kingdom: Level A

## Corporate Organisation







ORGANISATION VIII

United Kingdom: Level A

Controller's lines of contact

Commercial Director (Main Board)

UK HQ and European HQ

2

Controller

Consolidation of Group Results

Tax

Economics

Computing and Communications

Regional Management/Accountants

(Regional Accountant)

Continental Europe

United Kingdom

North America

Overseas

Associated Companies International

Product Group Management

Fats/Dairy

Frozen Food

Detergents

ACI

Plantations

Animal Feeds

Chemical Products

Plastics/Packaging

Personal Products

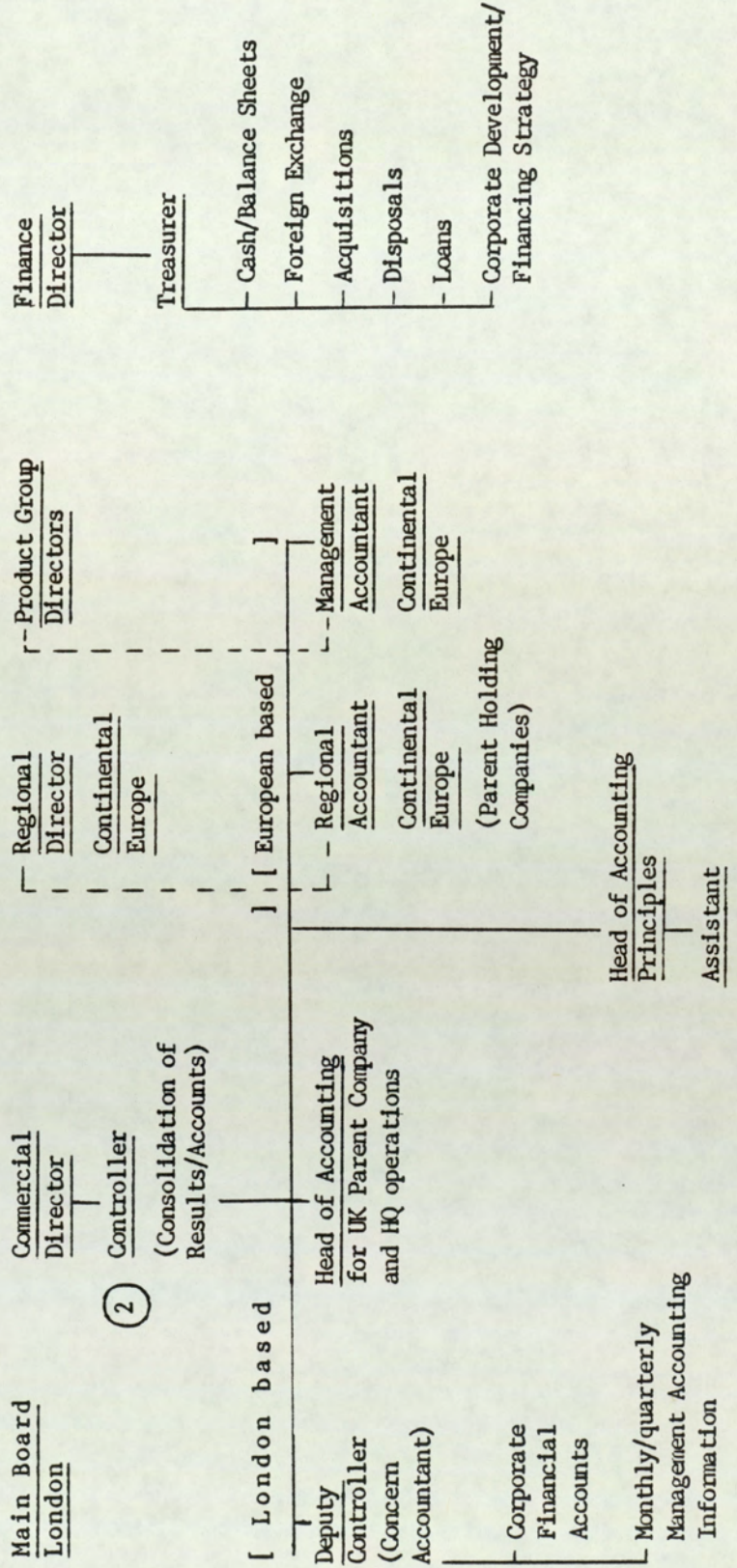
Co-ordination Function



# ORGANISATION VIII

## United Kingdom: Level A

## Commercial/Finance Organisation

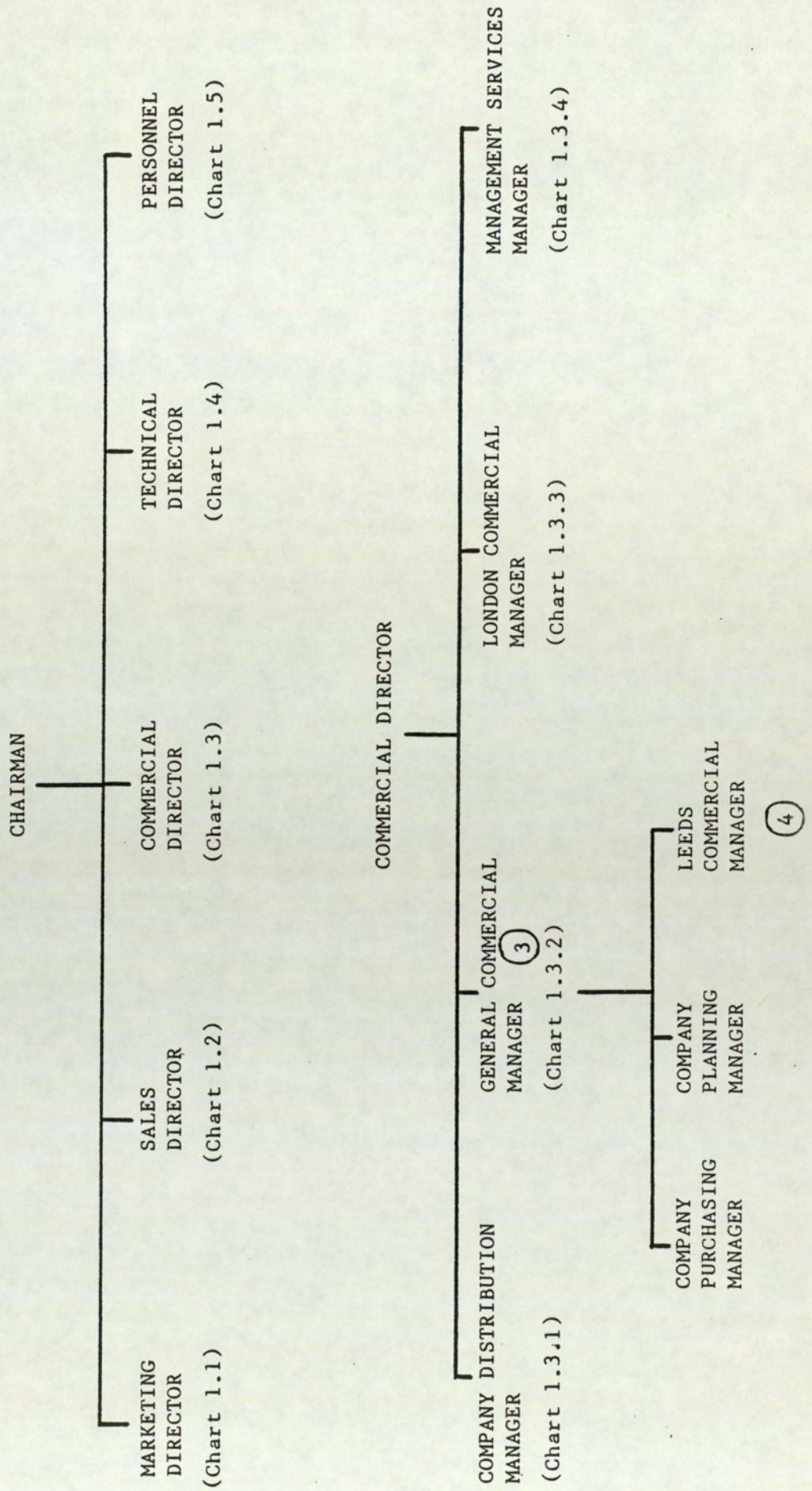




ORGANISATION VIII

United Kingdom: Level B

Senior Management





# ORGANISATION VIII

United Kingdom: Level C

Commercial Department

GENERAL COMMERCIAL MANAGER

(3)

COMPANY PURCHASING  
MANAGER

PRINT  
BUYER

PLASTICS  
BUYER

TUBE &  
AEROSOL  
HARDWARE  
SNR. BUYER

CHEMICALS  
BUYER

CONTRACT  
PACKING &  
OUTER BUYER

LEEDS COMMERCIAL  
MANAGER

(4)

COMPANY PLANNING  
MANAGER

PRODUCT PLANNER  
(Aerosols)

PRODUCT PLANNER  
(Dental (Liquids) & Creams)

PRODUCT PLANNER  
2 BRAND PLANNERS

SEACROFT FACTORY  
ACCOUNTANT

COST  
ACCOUNTANT

CASH/SALARIES  
SUPERVISOR

COMPANY FINANCIAL  
ACCOUNTANT

(5)

WHITEHALL ROAD & WHITWOOD  
FACTORY ACCOUNTANT

(6)

COST  
ACCOUNTANT

CASH/SALARIES  
SUPERVISOR

COST  
ACCOUNTANT

WAGES  
SUPERVISOR

OFFICE SERVICES  
SUPERVISOR

APV  
SUPERVISOR

ASSISTANT  
FINANCIAL  
ACCOUNTANT

MANAGEMENT INFORMATION  
SUPERVISOR

Accounts  
Payable  
Clerks

Balance sheet  
Fixed assets  
Exports

Trading results  
Information for Co-ordination  
and Head Office planners

(7)



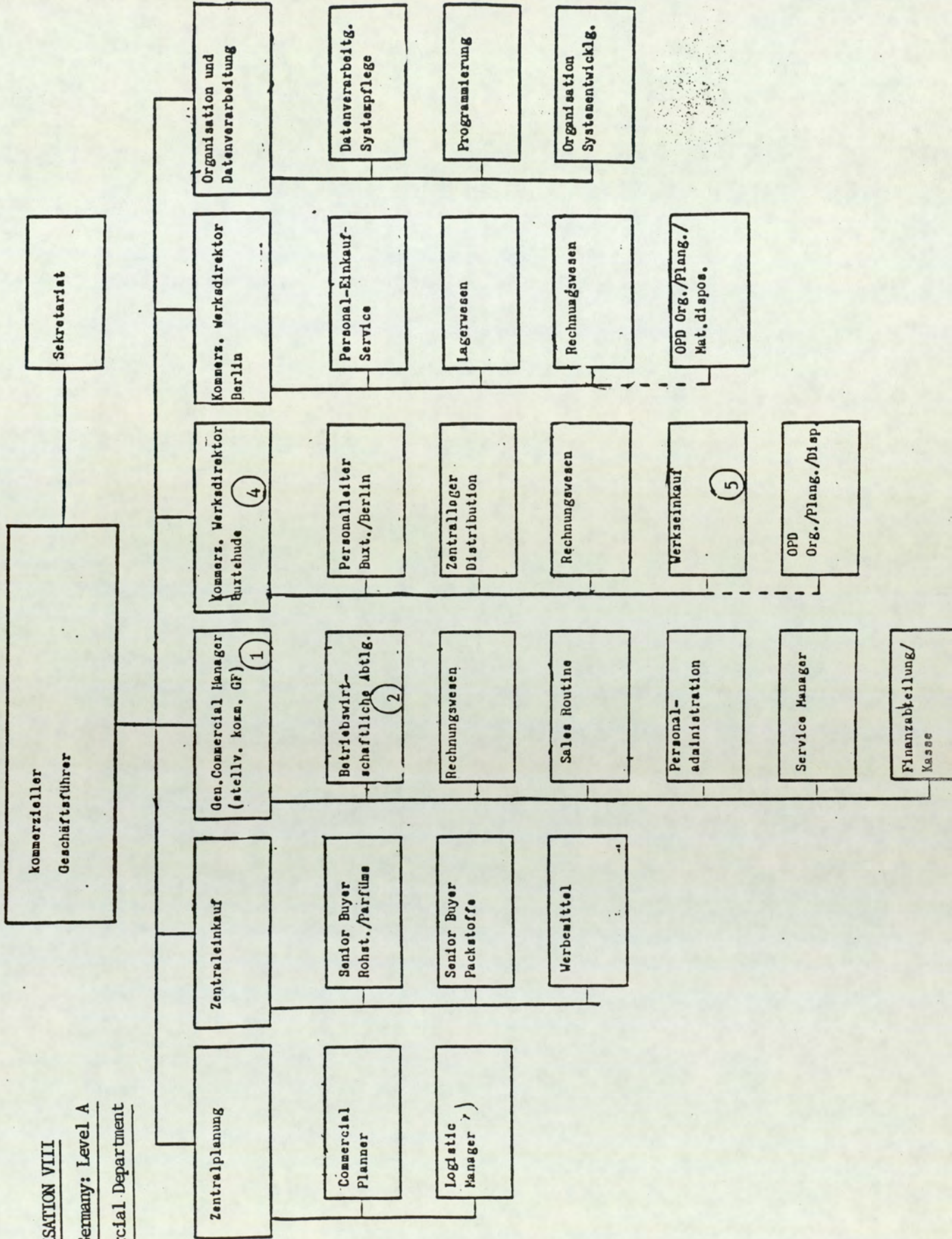




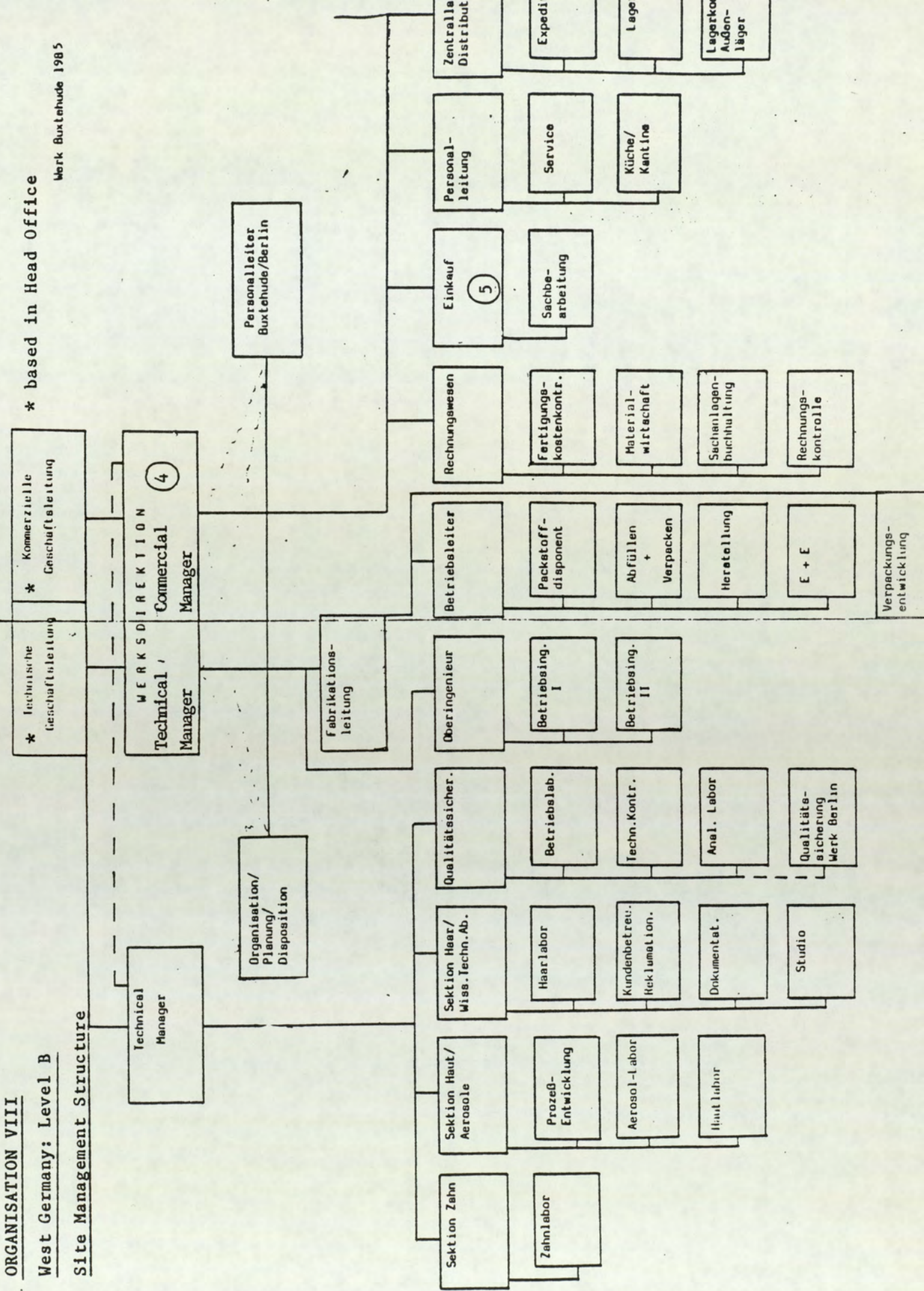
# ORGANISATION VIII

West Germany: Level A

Commercial Department









## ORGANISATION IX

The core activity of Corporation IX was engineering - the basis for interests in vehicle, engine, components and machine tools manufacture and a wide range of equipment produced to supply mining, marine, aerospace, medical and office markets. The Group's sales turnover in 1982 was fractionally more than £656 million, employees numbered 24,100 worldwide of whom 18,000 were UK based. £76.4 million of sales derived from the subject company, lithographic plate and supplies, which, unlike many of Group's subsidiaries, did not trade under the corporate identity.

In this company, as in the Group as a whole, recent years had been characterised by increasing sales revenue but declining profits though there was no evidence on any major re-structuring since the original formation (by amalgamation) of the present company in 1970. In Britain in 1983 the head office, including the company's finance function, had been re-located 'across the road' from the main factory site. Some respondents claimed this had led to a further social distancing between administration and production functions but for the purposes of this study the head office and operating site were classified as sharing the same geographical location. Between 1983 and 1984 several changes had been made to the structure and roles of personnel within the finance department. Although economic pressures may have had some bearing, these changes resulted from the aims of the incoming Group Financial Controller to exact greater efficiency from the department. Technological change was said to have had no influence on departmental re-structuring, a view arguably supported by the relatively unsophisticated level of the systems being utilised. Even though the company maintained an in-house computer development resource, a proportion of accounts processing continued to be contracted out to an external agency.

The West German operation comprised only a network of sales and distribution offices, the accounting for which was processed in Holland. The Dutch site combined both a head office and production factory, hence the fieldwork was conducted here rather than in West Germany. Although business activities in Holland encompassed production through to marketing and sales, there was a broad consensus that the Dutch management exercised no strategic planning, policy or decision making authority which included the nature of computer systems development. Company policy dictated that the systems utilised were developed by the British company with some tailoring for local needs.



## ORGANISATION IX

### RESEARCH LOCATIONS

### CODING AND LIST OF RESPONDENTS

#### UNITED KINGDOM (UK)

UK:A  
Corporate Head Quarters

1 Group Financial Controller

UK:B  
Company Head Office  
and Operating Site  
(a production factory)

2 Group Financial Controller  
3 Group Chief Accountant (B2)  
4 UK Chief Accountant (B2)  
5 UK Cost Accountant (B4)  
6 Works Accountant (B5)  
7 UK Management Accountant

#### HOLLAND (H)

H:A  
Company Head Office  
and Operating Site  
(a production factory)

1 Chief Accountant  
2 Stafffunktionaris [f]  
3# Manager, Planning Department  
4# Manager, Distribution

f No direct translation but responsibilities were for development, management accounting and computer systems,



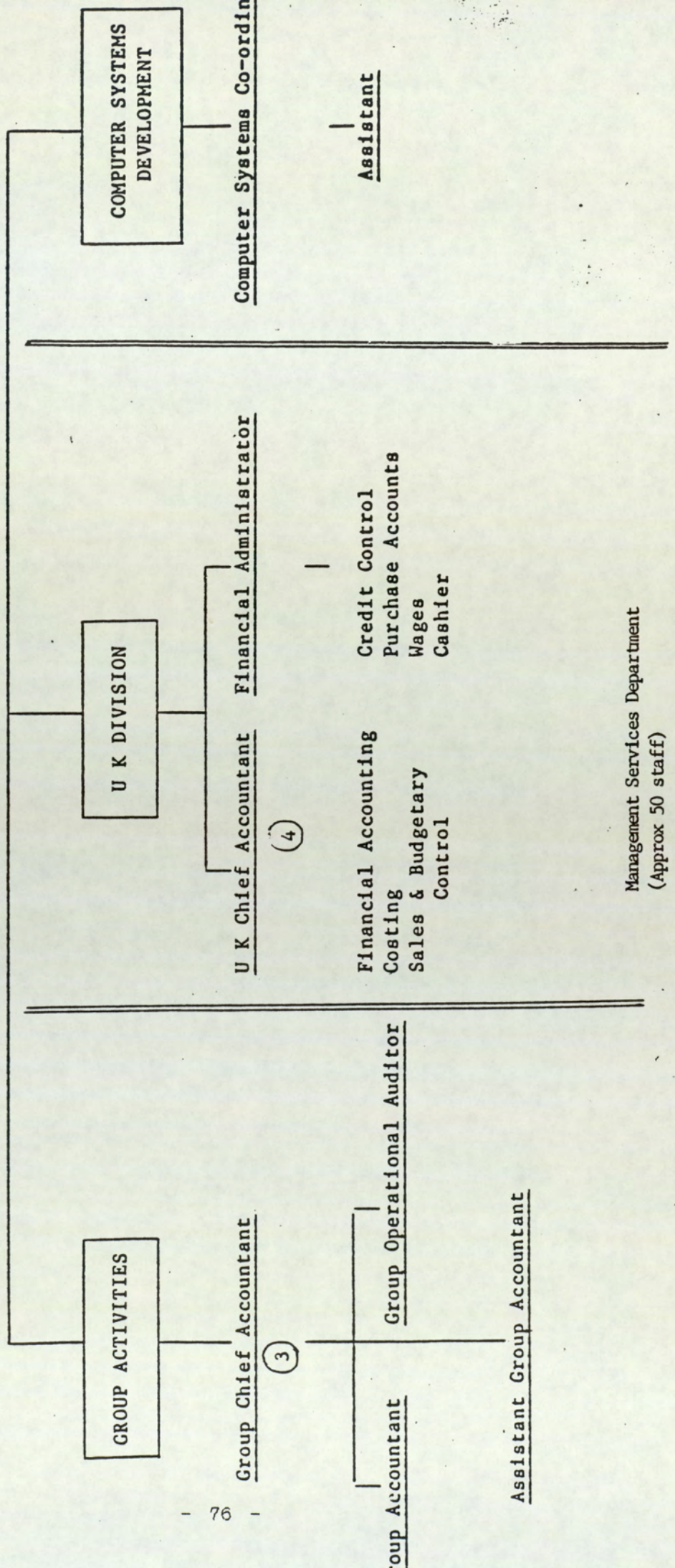
ORGANISATION IX

United Kingdom: Level B

Commercial Director (ICMA)

GROUP FINANCIAL SERVICES DEPARTMENT

(2) Group Financial Controller



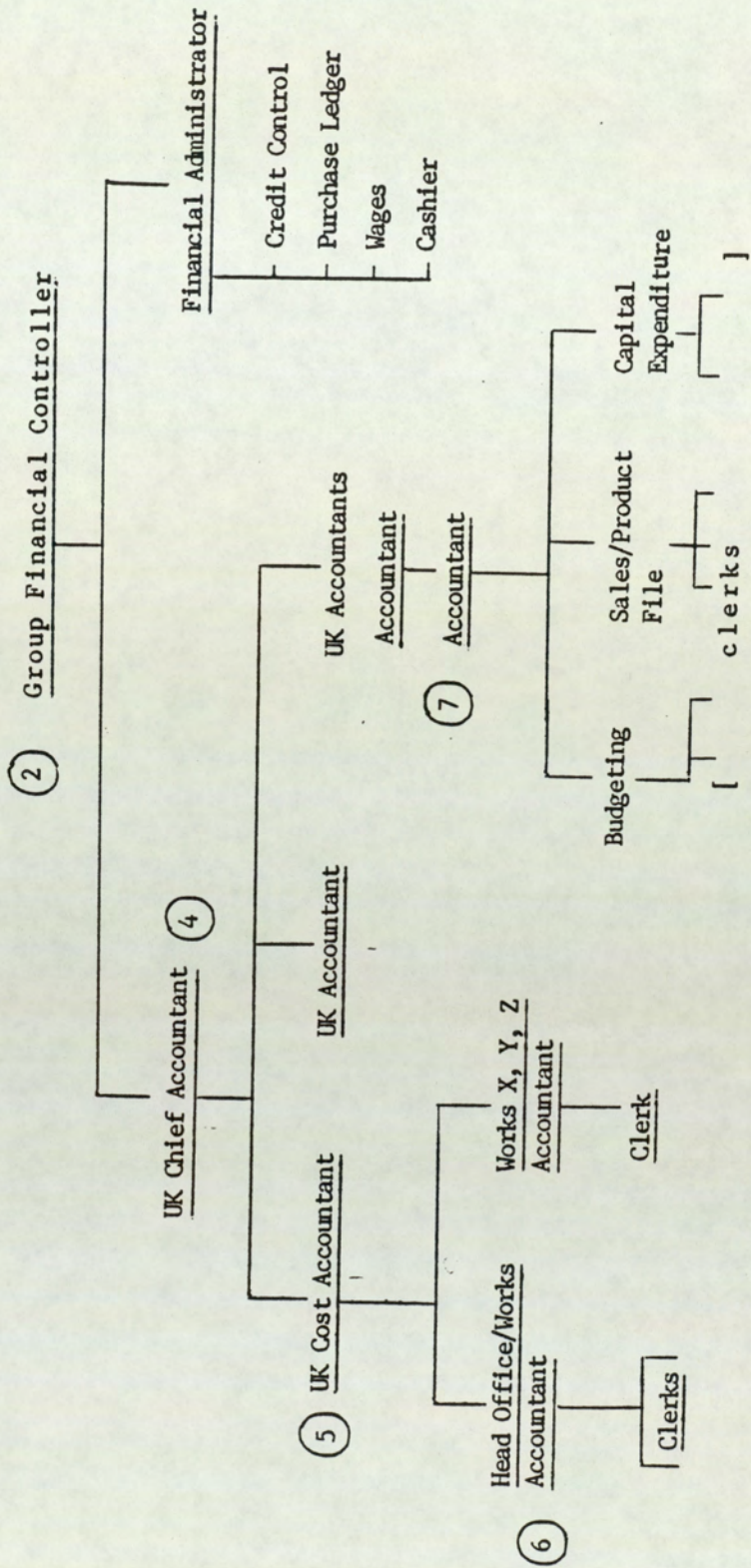
Management Services Department  
(Approx 50 staff)



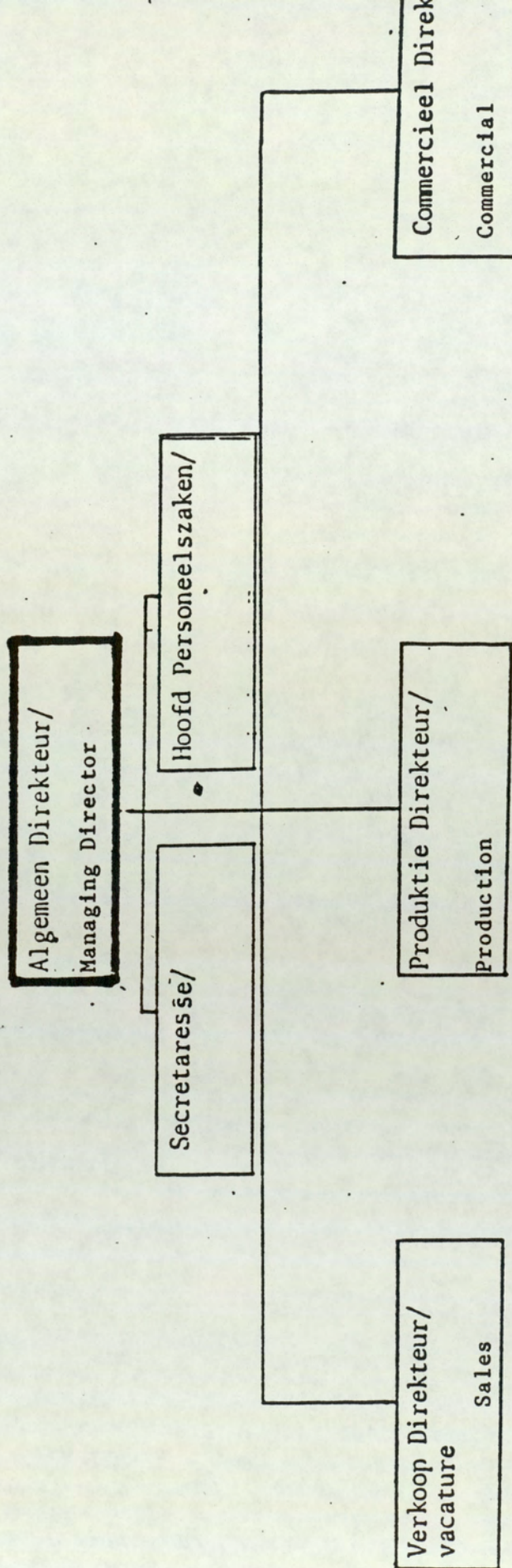
ORGANISATION IX

United Kingdom: Level B

United Kingdom Accounting Division





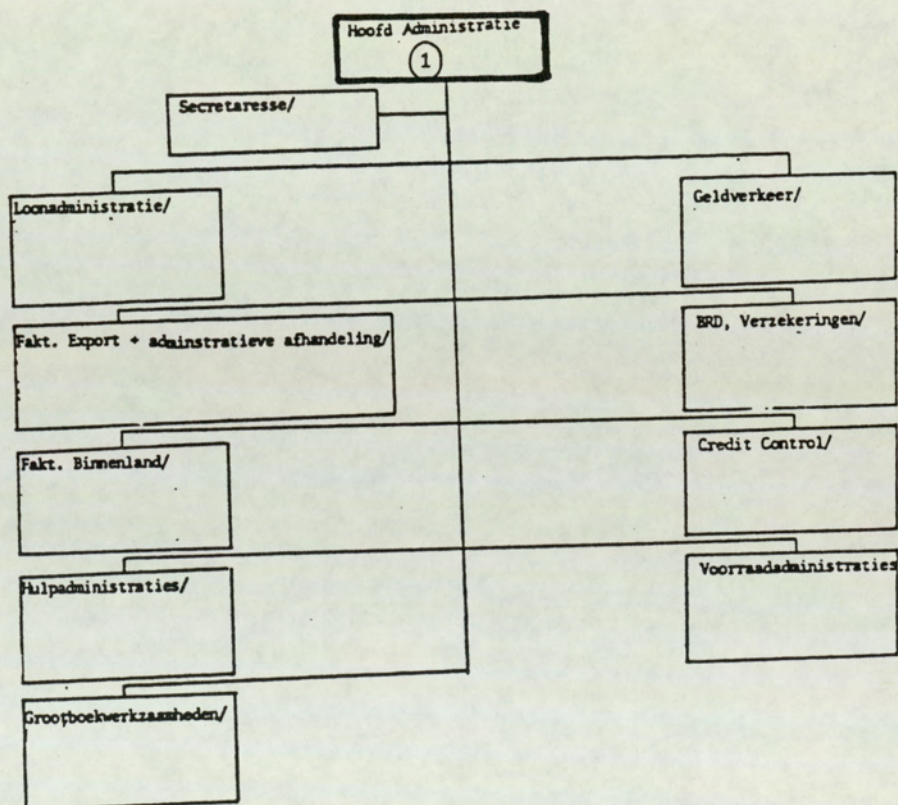
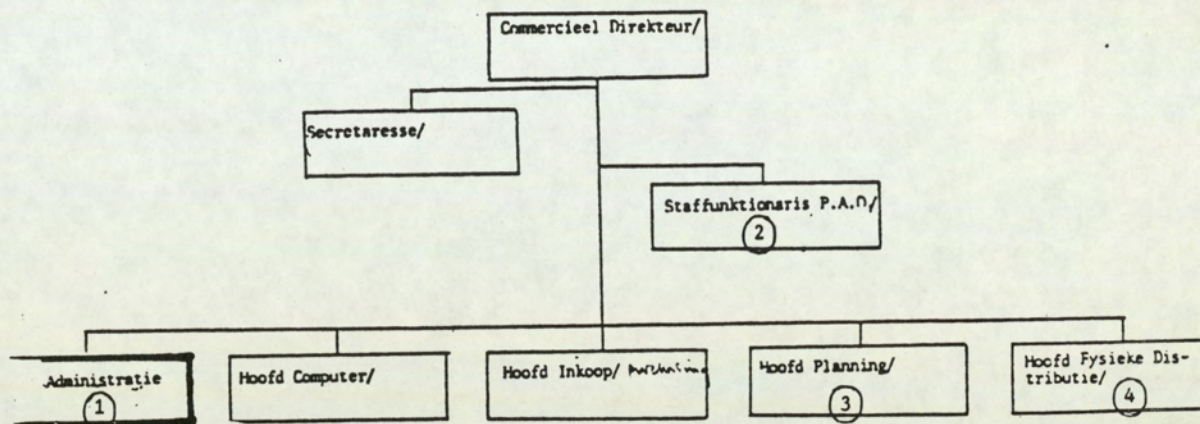


ORGANISATION IX

Holland: Level A

Senior Management





ORGANISATION IX  
Holland: Level A  
Administration Department



## ANCILLIARY SECTORS

### ORGANISATION X

This was a Regional Health Authority (RHA) - one of fourteen in England - employing 2,500 staff in four different locations. The RHA was responsible for the distribution of a £900 million annual Central Government budget. This budget was distributed within the RHA and its 22 District Health Authorities (DHA).

The single site research was conducted within the Treasurer's Department at the RHA's administrative head quarters.

No re-structuring had occurred since the major Government initiative directed at the Health Service in 1974. The RHA was, however, undertaking substantial research into the development of a costing service/value system together with computerised support facilities.

### RESEARCH LOCATION

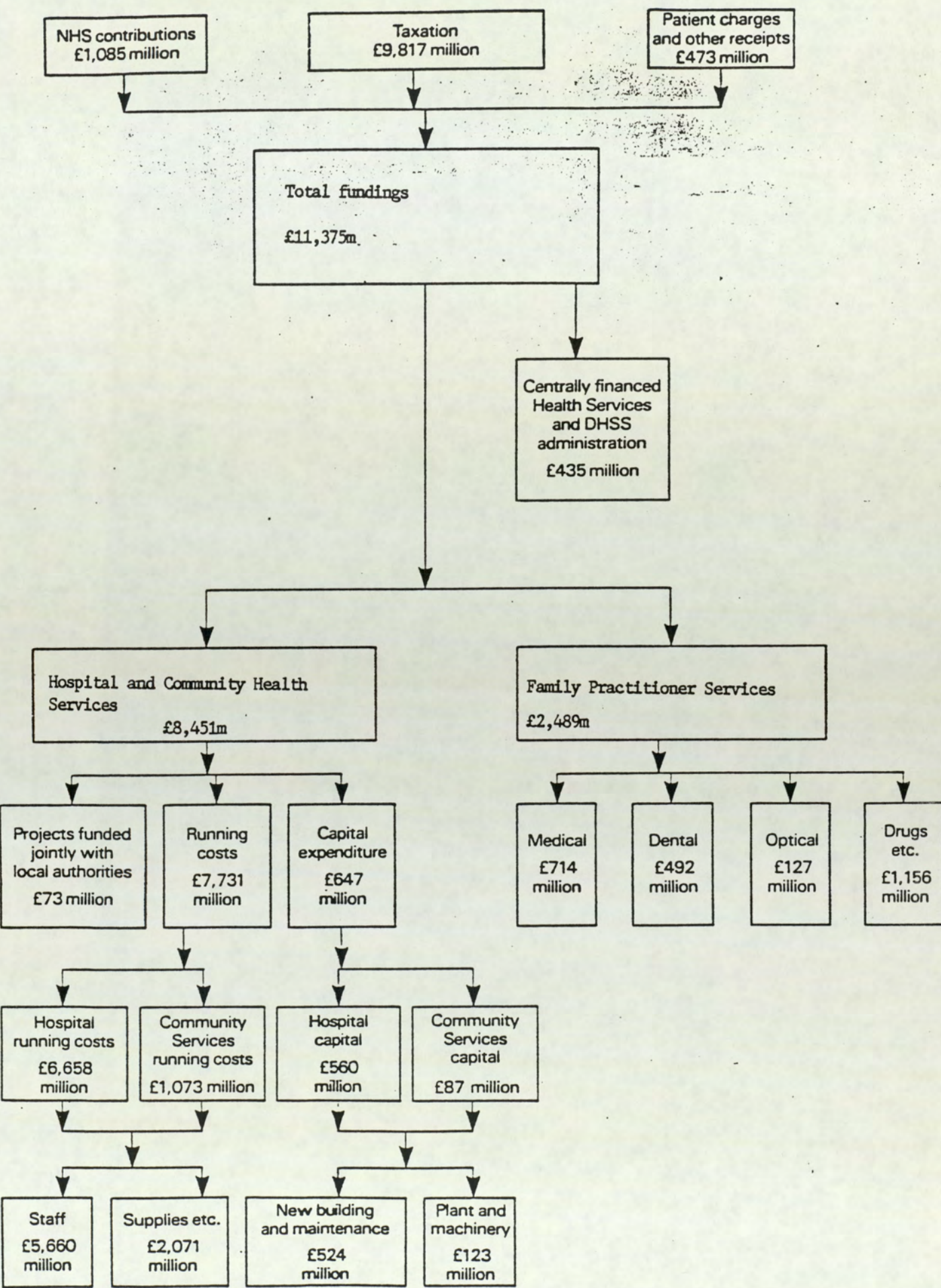
RHA:A  
Regional Health Authority  
Head Quarters

### CODING AND LIST OF RESPONDENTS

- 1 Regional Treasurer
- 2 Principal Assistant Regional Treasurer,  
RHA Services (A1)
- 3# Regional Computer Auditor (A2)
- 4 Assistant Regional Treasurer, RHA Services,  
Management Accounts (A4)
- 5 Assistant Management Accountant (A4)
- 6 Assistant Regional Treasurer, Resource  
Allocation Section
- 7 Principal Financial Plannner (A6)



**Figure 1**  
**National Health Service funding and expenditure in England, 1981-82**





ORGANISATION X  
United Kingdom: Level A  
Regional Structure

Figure 4 Framework of the RHA organisation

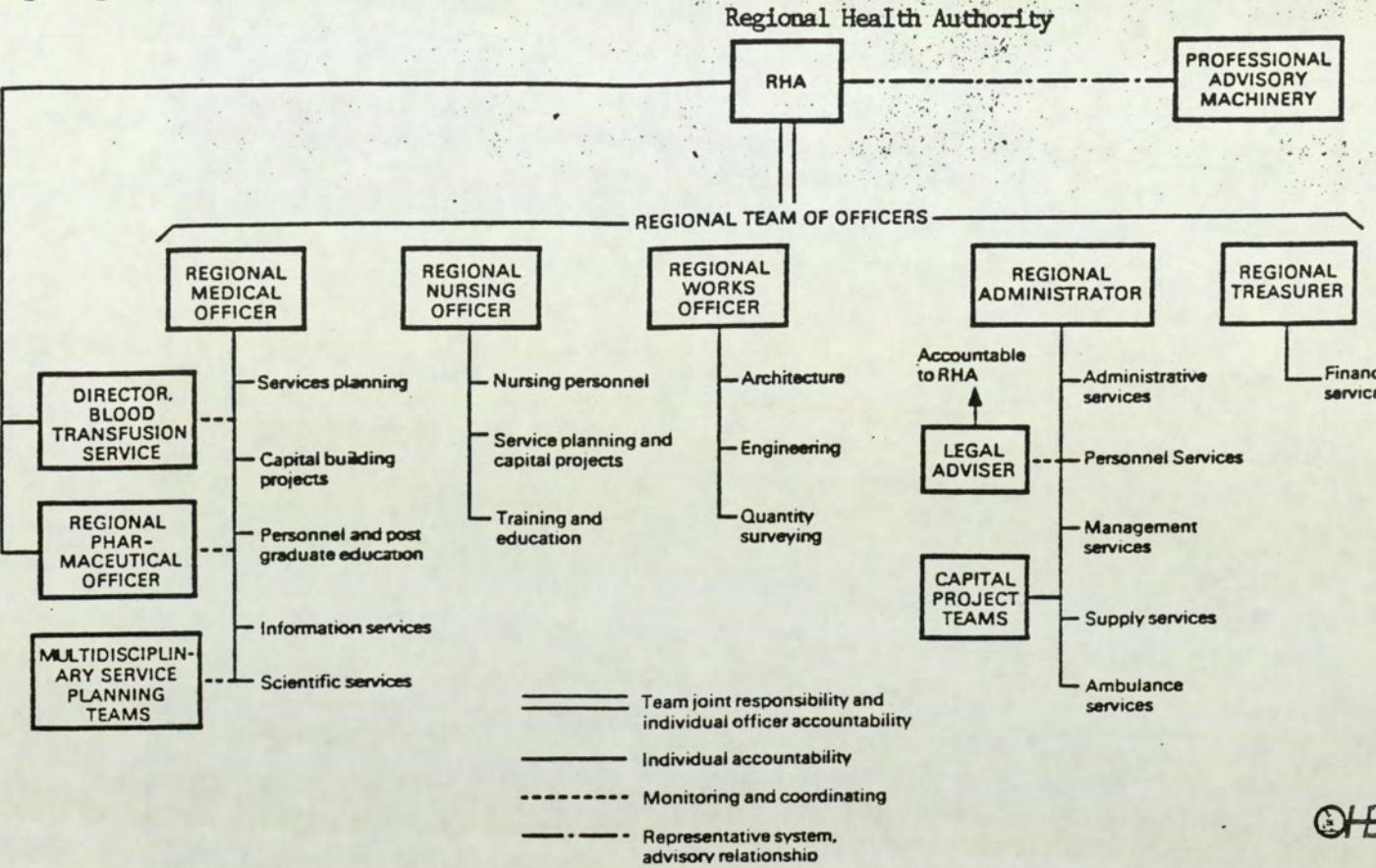
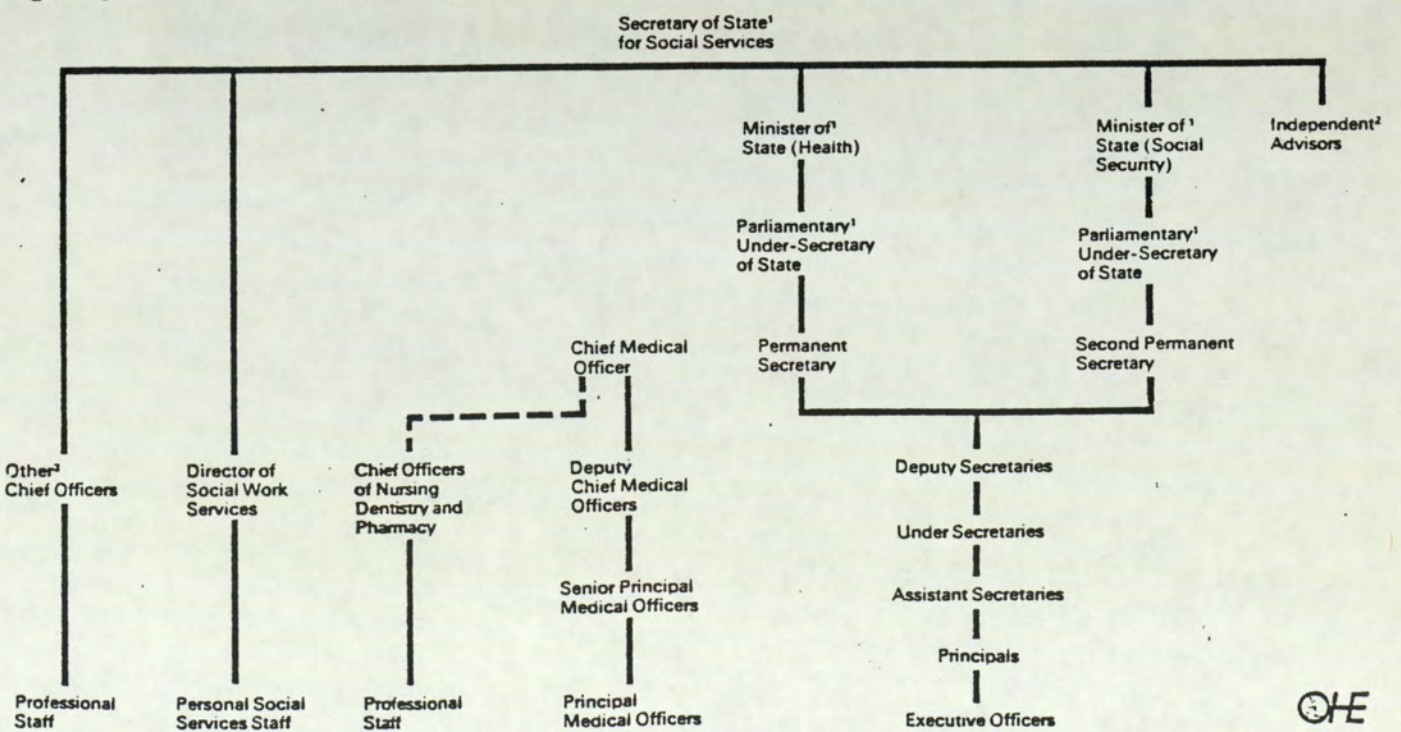


Figure 5 The organisation of the DHSS

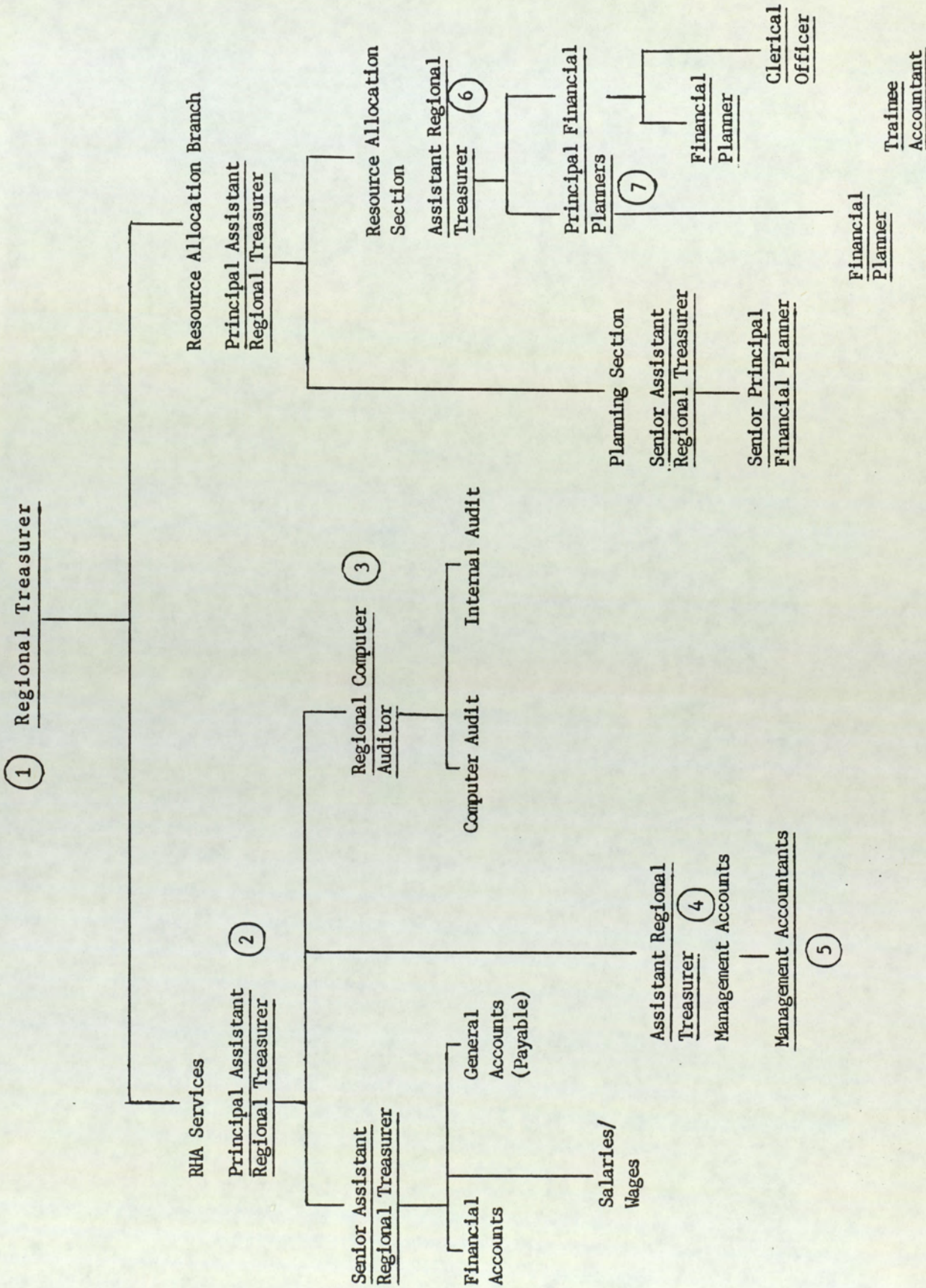


Notes

1. Indicates must be either a Member of Parliament (Commons) or a member of the House of Lords.
2. Ministers have increasingly, since 1970, tended to introduce their own personal advisers who are independent of both the DHSS and Parliament. Some of them are on the civil service payroll, others are seconded from their usual employment, and some are paid for by the political party in power.
3. Chief scientist, chief statistician,

Source Levitt 1976







## ORGANISATION XI

This was a Greater London Borough Local Authority whose gross revenue income for 1982-83 was £130 million. The Borough comprised 70,408 households - total population of 199,200. Local Authority employees were divided into two groups, Operational staff involved in direct services to ratepayers (total 5113) and Support staff engaged in central administrative functions, a total of 755 of which approximately 230 were finance personnel.

The Council was pursuing a policy of improving direct services whilst economising on its central support functions. The implementation of new computerised systems, not only within the finance function, was a policy element perceived as necessary to increase efficiency. New technology had contributed to the reduction in Central administrative headcount by 31 or 3.9 per cent during the financial year 1982-83.

The profile of Local Authority spending for any prospective year was planned, budgetted and approved within a committee structure. In Organisation XI the Policy and Resources Committee, assisted by three sub-committees, was responsible for the provision, management, allocation, control and use of the financial, manpower and land resources of the Council and exercised a co-ordinating role in respect of six Service or Spending Committees. Finance personnel were either members of these committees or, as in the case of particular services, provided both a financial and management accounting input: for example, costing, the preparation of financial accounts and budgets.

The single site research was conducted within the finance department of the Borough's administrative centre.

## ORGANISATION XI

### RESEARCH LOCATION

#### LOCAL AUTHORITY (LA)

LA;A  
Administrative Centre

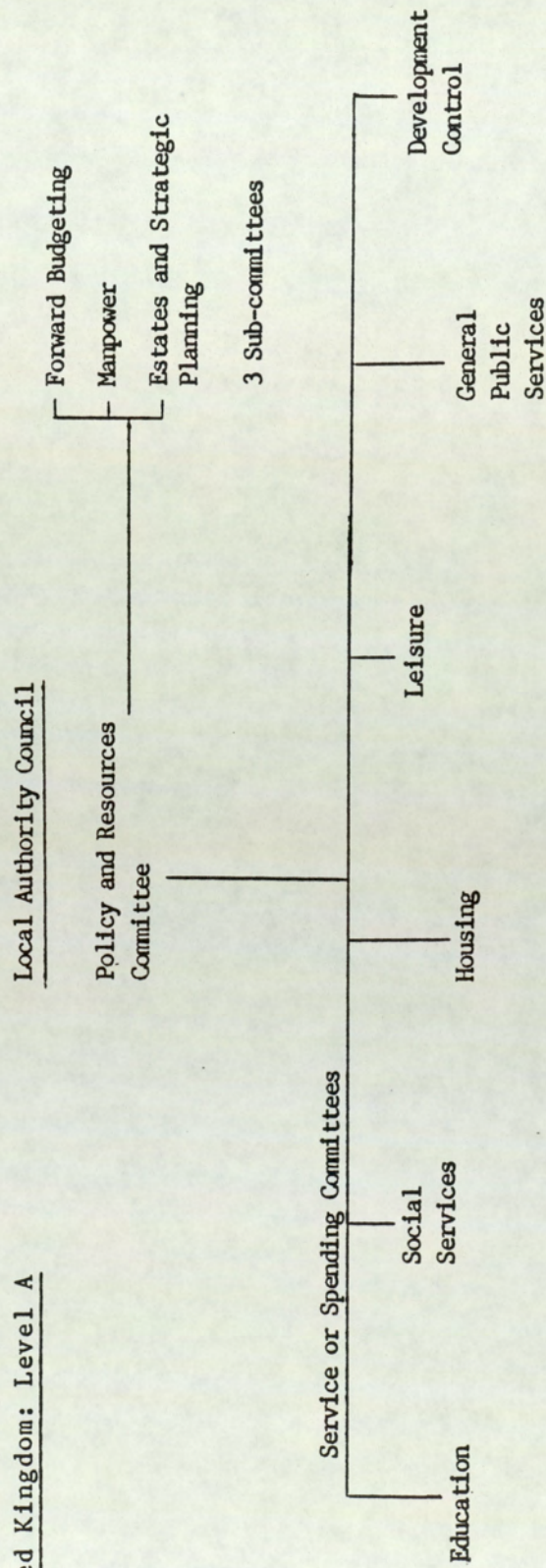
### CODING AND LIST OF RESPONDENTS

- 1 Accountancy Assistant Controller
- 2 Principal Accountant, Technical Section (A1)
- 3 Principal Accountant, Co-ordination and Control Section (A1)
- 4 Principal Accountant, General Public Services Section (A1)
- 5 Senior Accountant, General Public Services Section (A4)
- 6# Computer Division Project Leader



ORGANISATION XI

United Kingdom: Level A

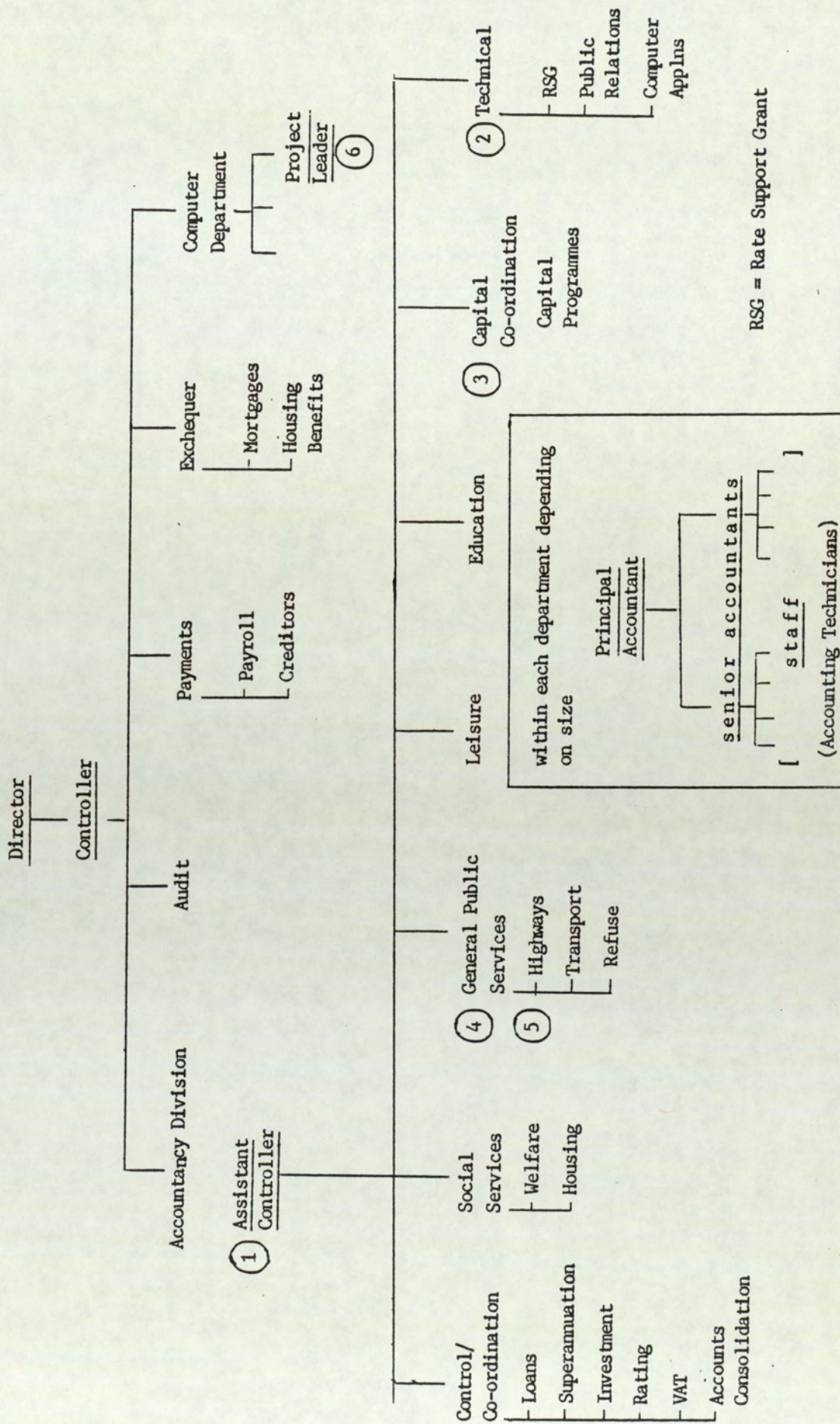




ORGANISATION XI

United Kingdom: Level A

Finance Department





## ORGANISATION XII - THE ACCOUNTANCY PRACTITIONERS

This was one of the 'Big Four' British firms of accountancy practitioners, access was gained to the same firm in West Germany.

UK:A 1 Computer Audit Manager, Birmingham Office

UK:B 2 Computer Audit Manager, London Head Office

WG:A 3 Computer Audit Manager, West German Head Office

## BRITISH ACCOUNTANCY INSTITUTES

The following respondents were representatives of the British professional accountancy bodies.

### A) The Institute of Chartered Accountants in England and Wales

1 Secretary, International Affairs

2 Secretary, Information Technology Group

3 Director, Education and Training

### B) The Institute of Cost and Management Accountants

1 Director of Student and Technical Affairs

### C) The Association of Certified Chartered Accountants

1 Secretary, Technical Department

### D) The Chartered Institute of Public Finance Accountancy

1 Assistant Secretary of the Institute

## WEST GERMAN WIRTSCHAFTSPRÜFERKAMMER

The following respondent was a representative of the West German auditors' institute.

1 Secretary, Hamburg Wirtschaftsprüferkammer



### APPENDIX 3

This appendix contains cross-national comparisons of the functional responsibilities of finance departments other than those presented in Chapter 5.3.2

In the following tables M=Monthly, Q=Quarterly, 2A=Twice Annually and A=Annually. Notes are at the end of the Appendix.

#### ORGANISATION II

##### BRITISH OPERATING SITE

###### CENTRAL ACCOUNTING SERVICES

- local payroll
- local accounts payable/receivable
- VAT
- cost accounting
- capital accounting/appraisal
- cash flow analysis/magt
- financial planning/forecasting
- accounts processing for the Dutch company

###### EXPORTS ACCOUNTING

- foreign currency planning
- management reports

###### PRODUCT GROUP ACCOUNTING

- contract profitability
- market share analysis
- credit control

###### LIAISON

- with auditors

###### REPORTS TO UK HEAD OFFICE

- profit/loss (M)
- balance sheet (M)
- operating plan (A)
- management reports (Q)
- cash flow statements (M)
- capital expenditure reports (Q)

###### EMPLOYEES

- CAS/EA 18
- Product Group Accounting 21
- total 39
- director 1

##### WEST GERMAN OPERATING SITE/HEAD OFFICE

###### FINANCE & ADMINISTRATION

- company payroll
- general accounts (including taxation, sales/marketing analysis
- cost accounting
- accounts payable/receivable

###### LIAISON

- with banks, tax authorities, auditors

###### REPORTS TO UK HEAD OFFICE

- profit/loss (M)
- balance sheet (M)
- operating plan (A)
- management reports (M)
- cash flow statements (M)
- capital expenditure reports (Q)

###### EMPLOYEES

- total 2
- manager 1

TABLE 3A.1



### ORGANISATION III

#### BRITISH OPERATING SITE

##### FINANCIAL ANALYSIS/PLANNING

- operating plan
- cash flow analysis

##### MANAGEMENT ACCOUNTING

- accounts payable
- cost accounting
- stock control
- capital accounting

##### FINANCIAL ACCOUNTING

- loan/deposits from tenanted public houses
- local payroll
- local cash

##### ASSET MANAGEMENT

- accounts receivable
- credit control

##### LIAISON

- with auditors

##### REPORTS TO UK HEAD OFFICE

- profit/loss (M)
- balance sheet (M)
- operating plan (A)
- management reports (M)
- cash flow statements (M)

##### EMPLOYEES

- FAP 2
- accounting 23
- asset mgt 8

total 33

- managers 3
- director 1

#### WEST GERMAN OPERATING SITE/HEAD OFFICE

##### FINANCIAL ACCOUNTING/TREASURY

- accounts payable/receivable
- credit control
- company payroll
- asset management
- cash
- finance/banking

##### CONTROLLER

- profitability calculations
- sales statistics
- cost accounting
- financial analysis/planning
- systems development
- computer programming
- computer operations

##### LIAISON

- with banks, tax authorities, auditors, Works Council, legal authorities concerning employment and data protection

##### REPORTS TO UK HEAD OFFICE

- profit/loss (M)
- balance sheet (M)
- operating plan (A)
- management reports (M)
- cash flow statements (M)

##### EMPLOYEES

- financial accounting/T 14
- controller 22

total 36

- director 1

TABLE 3A.2



## ORGANISATION IV

### BRITISH OPERATING SITE

(Management Services Dept)

#### MANAGEMENT SERVICES

- micro computing advice
- site systems development
- work study

#### OFFICE SERVICES

- post, typing, telex

#### WEIGHBRIDGE

- checking lorry load weights for automatic customer invoicing

#### ACCOUNTING

##### Financial

- local accounts receivable
- local payroll
- local cash

##### Management

- cost accounting
- capital accounting
- process records (production, stock control, local sales)

#### LIAISON

- with auditors

#### REPORTS TO HEAD OFFICE

- profit/loss (M)
- balance sheet (M)
- operating plan (A)
- management reports (M)
- capital expenditure (Q)

#### EMPLOYEES

- management services 5
- office services 15
- weighbridge 5
- accounting 10

total 35

- manager 1

### WEST GERMAN OPERATING SITE (1)

(Commercial Services Dept)

#### PERSONNEL/GENERAL ADMINISTRATION

#### DISTRIBUTION

#### PURCHASING/SUPPLY

#### COMPUTER SERVICES/TYPING

#### ACCOUNTING

##### Financial

- accounts payable/receivable
- credit control
- taxation
- general ledger
- payroll
- cash/banking
- systems development

##### Management

- cost accounting
- capital accounting
- process records (production, stock control, sales analysis)

#### LIAISON

- with tax authorities, banks, auditors, legal authorities related to employment and data protection

#### REPORTS TO UK HEAD OFFICE

- profit/loss (M)
- balance sheet (M)
- operating plan (A)
- management reports (M)
- capital expenditure (Q)

#### EMPLOYEES

- personnel 13
- distribution 7
- purchasing 19
- computer/typing 6
- accounting 15

total 60

- managers 5
- CS manager 1

TABLE 3A.3



## ORGANISATION V

### BRITISH OPERATING SITE (21)

#### SPECIAL PROJECTS/ACCOUNTING SYSTEMS DEVELOPMENT

##### INVOICING SERVICES

- special accounts
- services invoicing
- standard invoicing
- equipment sales invoicing
- regional liason

##### COMMERCIAL SYSTEMS CONTROL

- database file control
- sales ledger file control

##### PAYABLES/ADMINISTRATION

- building services
- accounts payable
- group cash services

##### OVERSEAS ACCOUNTS

- services and current accounts
- transaction control
- management accounts

##### PAY CENTRE

- payroll control
- tour staff payroll
- PAYE/pensions

##### ACCOUNTING

- financial accounting
- corporate accounts
- machine population file

##### LIAISON

- with auditors

### WEST GERMAN OPERATING SITE/HEAD OFFICE (31)

#### CONTRACTS

- contracts processing
- order processing
- hire/sales accounts payable
- fixed assets/equipment

#### FINANCE/GENERAL ACCOUNTING

- accounts receivable
- credit control
- taxation
- payroll
- bookkeeping/ledgers
- travel expenses
- building administration
- budgeting/forecasting

#### CENTRAL ADMINISTRATION

- reports compilation
- computer systems development

#### LIAISON

- with tax authorities, auditors

#### REPORTS TO UK HEAD OFFICE

- profit/loss (M)
- balance sheet (M)
- operating plan (A)
- management reports (M)

#### EMPLOYEES

- contracts 10
- F/general accounts 12,5
- CA 1

total 23.5

- controller 1



REPORTS TO UK HEAD OFFICE

- profit/loss (2A)
- balance sheet (2A)
- operating plan compilation (A)
- management reports (M)

EMPLOYEES

-projects/ASD	19
-invoicing services	24
-commercial systems control	13
-payables/administration	16
-overseas accounts	28
-pay centre	10
-accounting	46
<u>total</u>	<u>156</u>
managers	24

TABLE 3A.4



## ORGANISATION VII

### BRITISH OPERATING SITE

#### COMPUTER LIAISON

- VDU operations

#### UK RECORD COMPANY

- major accounts
- releases
- sales

#### INTERNATIONAL CLASSIC DIVISION

- royalties payments (between countries)
- sales reports
- cash flow analysis/forecasting

#### AUDIT/CONTROL

- group royalties
- licences/copyright

#### LIAISON

- with auditors

#### REPORTS TO HEAD OFFICE

- record sales (Q)
- royalties statements to artists (Q)
- management reports (M/Q)
- international cash flow (Q)

#### EMPLOYEES

-computer liaison	4
-UK record company	22
-ICD	4
-audit/control	8
<u>total</u>	<u>38</u>
-manager	1

### WEST GERMAN OPERATING SITE (4)

#### COPYRIGHT

- reports to GEMA, German copyright society (for publishers, texters, composers)
- computer input/accounts

#### ARTIST ROYALTIES

- international company artists
- national artists
- royalties received
- artists contracts
- general administration

#### LIAISON

- with tax authorities, auditors recording artists, copyright and legal authorities

#### REPORTS TO UK HEAD OFFICE

- royalties reports internal/external (M)
- royalties statements to artists (2A)
- reports to GEMA (2A)
- management reports (M/Q)

#### EMPLOYEES

-copyright	1
-artists royalties	6
<u>total</u>	<u>7</u>
-assistant manager	1
-manager	1

TABLE 3A.5



## ORGANISATION IX

### BRITISH OPERATING SITE/HEAD OFFICE

#### GROUP ACTIVITIES

- currency conversion of subsidiaries' monthly accounts
- accounts consolidation
- sales analysis
- internal audit
- financial planning/forecasting

#### UK DIVISION

- financial accounting
- cost accounting
- sales/accounts receivable
- capital accounting
- budgeting

#### Financial administration

- accounts payable
- credit control
- payroll
- cashier

#### COMPUTER SYSTEMS DEVELOPMENT

- co-ordination

#### LIAISON

- with auditors

#### REPORTS PRODUCED

- profit/loss (M)
- balance sheet (M)
- consolidated balance sheet (M)
- operating plan (A)
- management reports (Q)

#### EMPLOYEES

- |                   |           |
|-------------------|-----------|
| -group activities | 4         |
| -UK division      | 43        |
| -CSD              | 2         |
| <u>total</u>      | <u>49</u> |
| -managers         | 3         |
| -controller       | 1         |

### DUTCH OPERATING SITE/HEAD OFFICE

#### ADMINISTRATION

- payroll
- cash/cashier
- export invoicing
- West German stock control/ contracts
- accounts receivable
- credit control
- general ledger/administration
- stock administration

#### LIAISON

- with tax authorities, auditors

#### REPORTS TO UK HEAD OFFICE

- profit/loss (M)
- balance sheet (M)
- operating plan (A)
- management reports (M)

#### EMPLOYEES

- |              |           |
|--------------|-----------|
| <u>total</u> | <u>19</u> |
| -manager     | 1         |

TABLE 3A.6



Notes to Appendix 3

1. Although the British Divisional Head Office of Organisation IV controlled marketing and sales functions, the West German factory was responsible for distribution and sales accounting for two process production sites of much larger capacity than the British factory.
2. The Operating Site of Organisation V in Britain was a centre delivering accounting services for the whole company entity.
3. The West German business of Organisation V was solely sales and distribution, all finished manufactured products (except for one high quality printer) were received from Britain.
4. Both British and West German Operating Sites were specialist Royalty Accounting Departments.

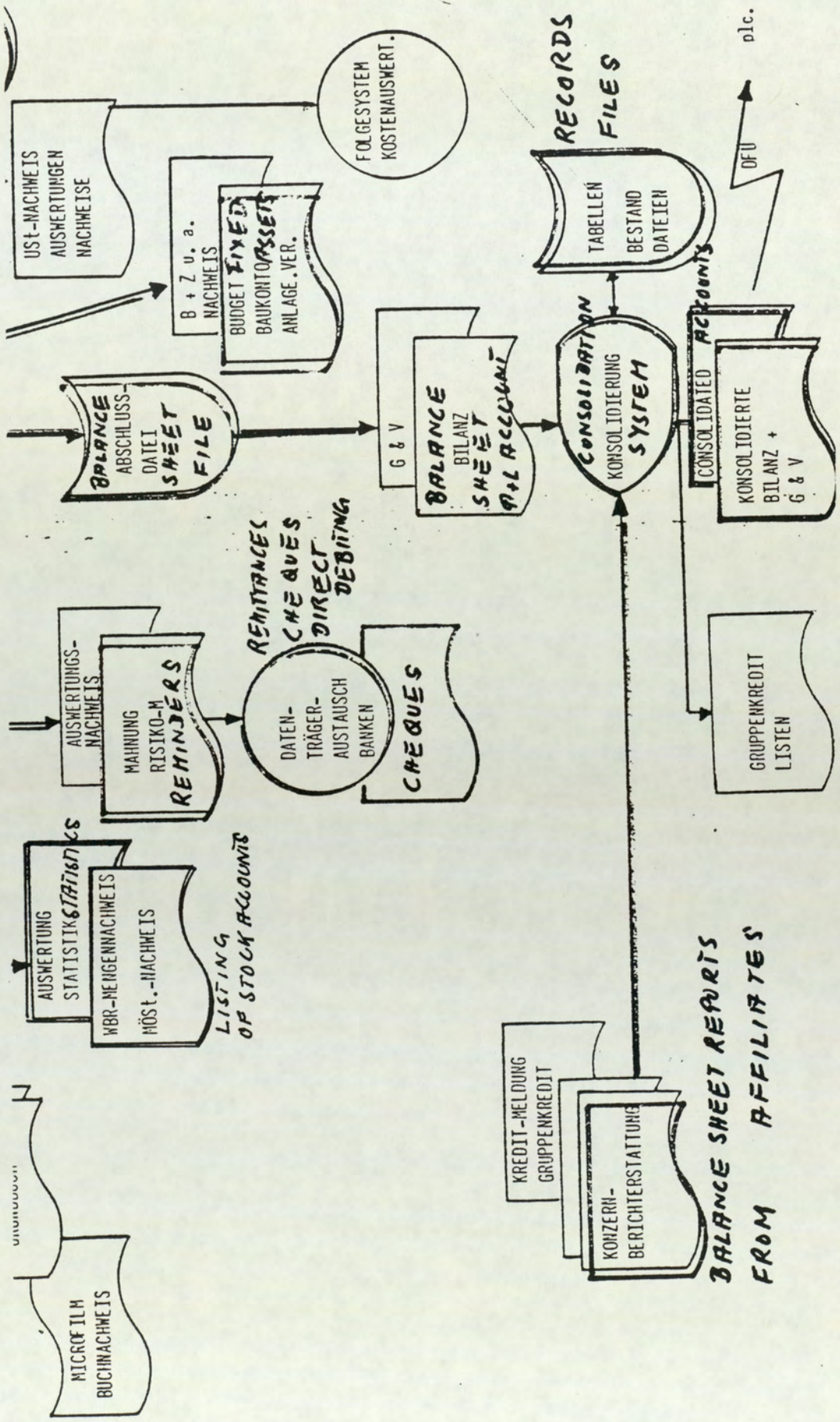


#### APPENDIX 4

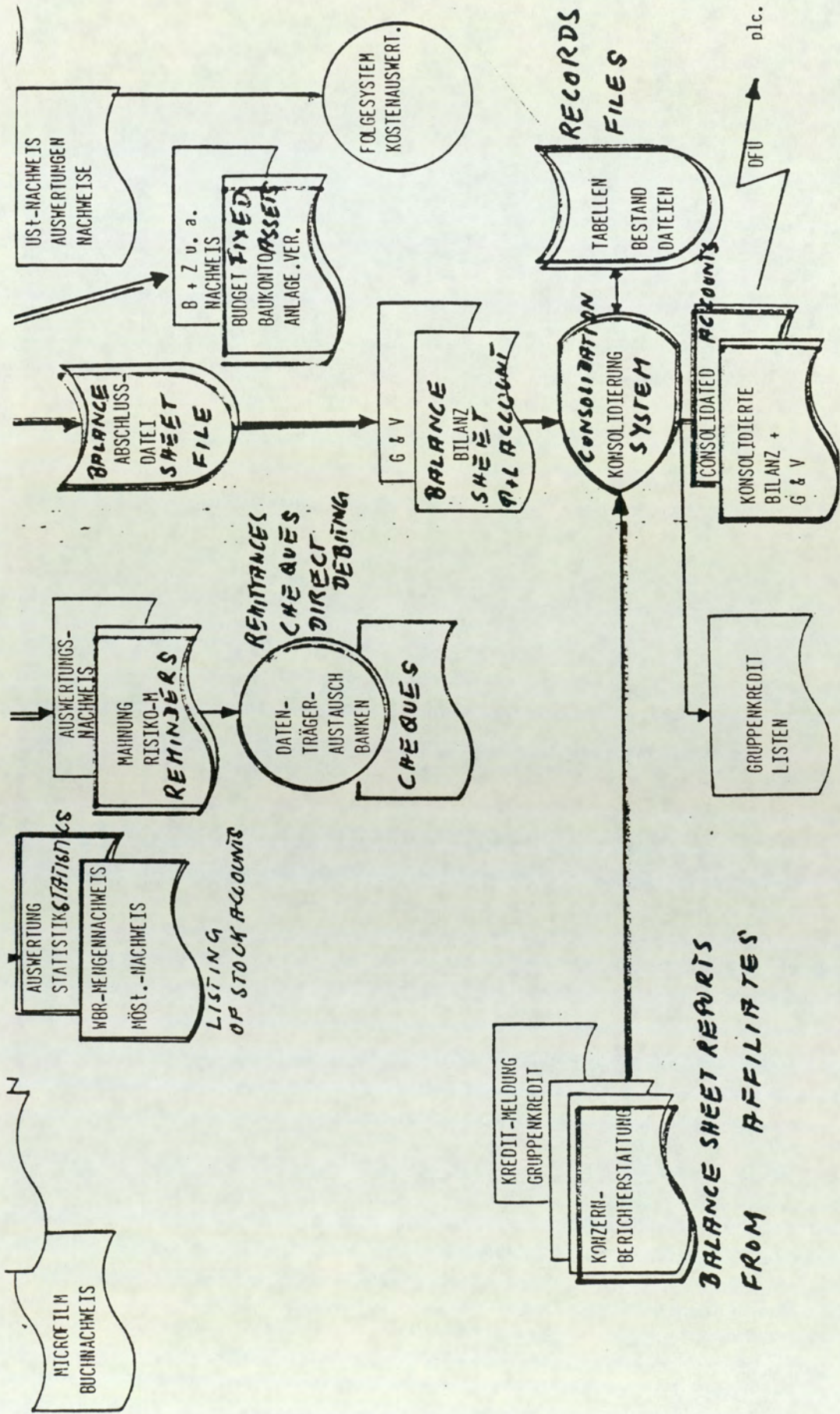
This appendix contains the data flowchart of the computer systems operated by the Financial Accounting Department of the Group Head Office of the West German Organisation I.

The flowchart is a simplified diagramatic representation of the computer systems planned and designed principally by the Manager of the Department and the Co-ordinator. This planning and design followed the systems analysis of work organisation also undertaken within the Financial Accounting Department.

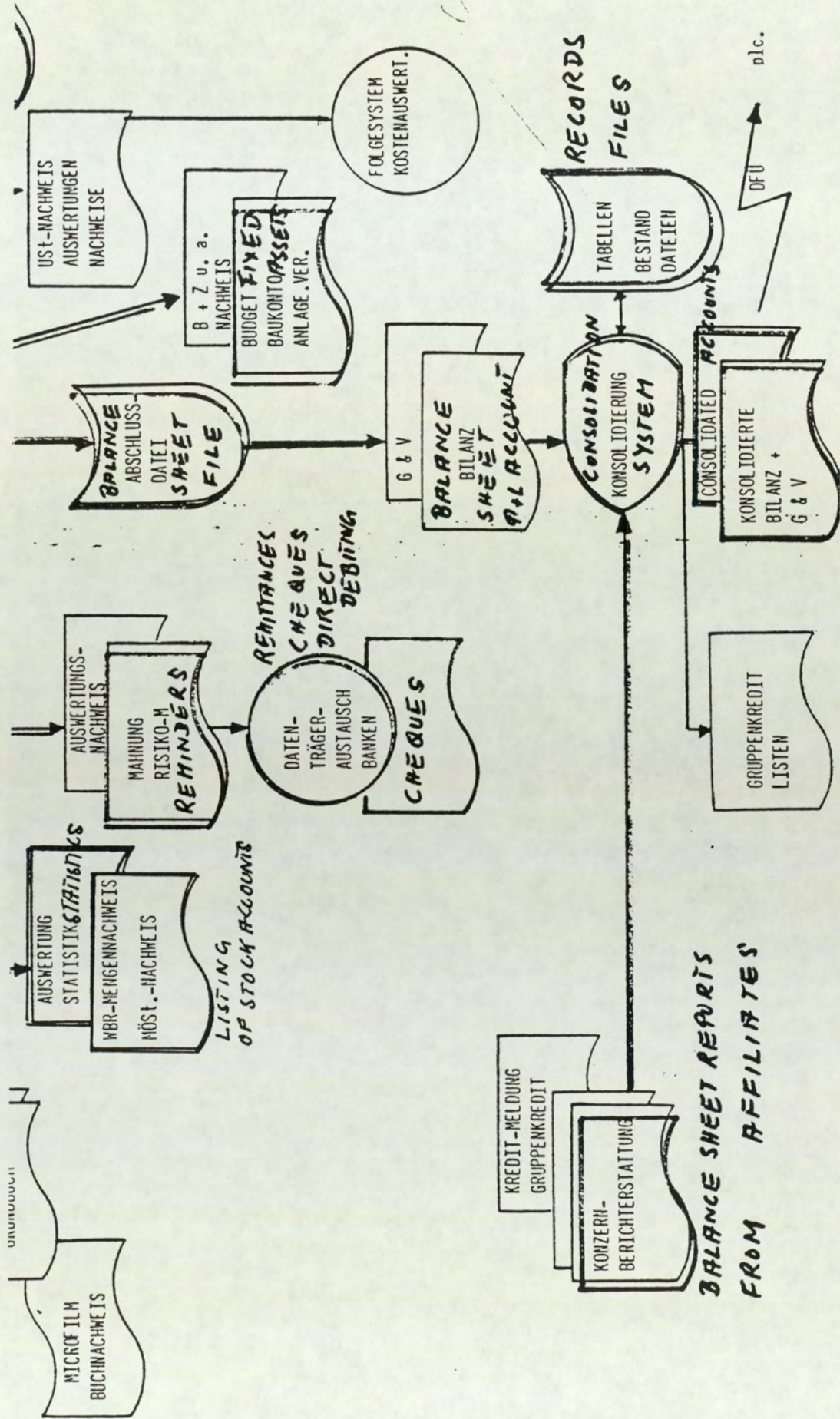














## APPENDIX 5

This appendix (pages 99 to 108) contains a copy of the computing questionnaire constructed by the Finance Director and his Deputy (respondents 1 and 2 respectively) of the West German Organisation II.

Following systems analysis of existing work organisation, it was constructed initially as a means of clarifying the data processing requirements within the Finance Department of Organisation II. It was then utilised to assess the appropriateness to Organisation II of the integrated software development proposed by the German Paintmakers Association together with the hardware to be supplied by Kienzle.

The German Paintmakers Association had proposed to form a consortium of paintmaking firms to fund the development of a software package which would (a) integrate the data processing systems within accounting departments; (b) integrate systems which interfaced between finance and other functions, such as production; and (c) which would accommodate the operating contingencies specific to paint makers. For example, the inclusion of a 'limited access' database containing product specifications which could be easily amended; or facilities which would automate the labelling of paint cans containing certain substances where this labelling was required under German law.

Organisation II was one of approximately 20 firms which participated in the consortium, the cost to each firm for the entire development was approximately £20,000. Following installation of the hardware, the Finance Director and his Deputy implemented the computer systems with only telephone assistance from the software designers and trained all personnel in the use of the new systems. No problems had been experienced with the operation of the new system and, at the time of interviewing, the Finance Director and his Deputy were preparing documentation for further systems development.



## WEST GERMAN ORGANISATION II

### COMPUTING QUESTIONNAIRE

#### 1. What is the set up ?

1.1 Diagram of equipment used at present and proposed to be installed during 1985

Appendix 1

1.2 Diagram of systems and functions covered at present

Appendix 2

1.3 Description of present use and details of functions and results

Appendix 3

#### 2. What do we have and when did we acquire it ?

Description of hardware configuration and details on software

Appendix 4

#### 3. Who uses what we have and for what purpose ?

Usage of applications systems

Appendix 5

#### 4. Who services the equipment and the user ?

The service of the equipment is dealt with by the manufacturer (Kienzle), a hardware maintenance and service contract is maintained. The software maintenance is mainly dealt with by the paint maker associations' consultants. At present no fulltime operator is employed, the equipment is handled by the accounting department's staff being familiar with the day to day operational functions, two authorized persons are involved in and familiar with operational functions requiring more detailed knowledge in respect of D.P. handling.  
For eventual problems and/or advise requirements regarding hardware and/or software direct contact to the hardware manufacturer and operating software supplier (Kienzle) is in use (tele-diagnostic-system)

#### 5. How much did, does and will it all cost ?

Schedule of total cost incurred for the system from year of initial acquisition (1980) to date including future cost for proposed office automatisisation.

Appendix 6

#### 6. What plans do we have for the future ?

6.1 Data processing equipment - implementation (1985 until mid 1986) of the applications not yet installed to complete the full operation of the paint makers association's computer package, i.e.  
- production and production planning  
- stock control (to be completed) and material requirement planning  
- purchasing and suppliers orders  
- cost accounting  
for which additional hardware (1 printer, 3 VDU's, increase processor capacity) will be required.

6.2 Installation of a colour computer at the later part of 1985

6.3 Acquisition and installation of a word-processor unit for the sales and marketing departments during 1985



C O M P U T E R   S Y S T E M SDIAGRAM OF EQUIPMENT USED AT PRESENT  
AND PROPOSED TO BE INSTALLED DURING 1985NotesD.P. Department

1 Central Processing Unit  
 3 Disk Drives  
 2 Printers  
 1 VDU-Terminal  
 1 Modem (Tele-Diagnostic System)

(1)  
 (1)  
 (1)  
 (1)  
 (1)

General Accounting Department and Cost Accounting

2 VDU-Terminals

(1)

Invoicing Department

1 VDU-Terminal  
 1 Printer

(1)  
 (2)

Sales Department

1 VDU-Terminal

(2)

Purchasing Department

1 VDU-Terminal

(2)

Laboratory

1 VDU-Terminal

(2)

Notes: (1) - installed at present  
 (2) - proposed to be installed during 1985



C O M P U T E R   S Y S T E M S

DIAGRAM OF SYSTEMS AND FUNCTIONS

COVERED AT PRESENT

Results

Monthly Operating Report (Form B)  
Annual Accounts (Form A) - actuals  
German Accounts  
Legal Accounting Requirements

Transactions

General Ledger  
Sales Ledger  
Sales Statistics / Market Sector Statistics  
Purchase Ledger  
Fixed Assets Ledger  
Payroll Ledger

Data Files

Customer data-base  
Supplier data-base  
Product data-base (including Formulations)  
Product costing  
Fixed Assets register  
Payroll data-base



COMPUTER SYSTEMSPRESENT USE AND DETAILS OF FUNCTIONGENERAL LEDGER/FINANCIAL ACCOUNTING(a) Processing Activities

- General ledger - all entries of general nature, i.e. petty cash, travel expense accounts, adjustments.
- Sales ledger - (document: invoices to customers or automatic processing from invoicing) incl. automatic up-date of individual customers' records.
- Purchase ledger (suppliers' invoices) incl. automatic up-date of individual suppliers' records, all relevant data re payment terms, discounts, information re cost accounting etc.
- Cash receipts and automatic up-date of customers' records incl. adjustments of discounts taken, VAT etc.
- Cash payments (by bank remittance or cheque, both being automatically processed and printed together with summarised information) and automatic up-date of suppliers' records.
- Automatic processing of standard entries incl. customers' records up-date/suppliers' records up-date as well as all sorts of recurring transactions, i.e. tax payments, monthly accruals, amounts withheld from payroll processing.
- Automatic transfer of data from payroll processing.

(b) Results

- Journal for evidence of all entries.
- General ledger records.
- Aged debtors' balances reports.
- Aged creditors' reports.
- Print-outs/letters to customers in respect of reminders.



- Trial balances
- Balance sheet, profit & loss account and cash flow statements (monthly print-out but available on daily basis) in the format required for International Paint purposes and/or German tax and commercial purposes containing information: current month, previous month, current year, last year.
- Print-out for VAT purposes (as per legal requirements).
- All information is available by permanent access to general ledger cards, customers' and suppliers' records etc.

## INVOICING AND SALES STATISTICS

### (a) Processing Activities

- Customers' orders servicing, handling and filing of customers order from time of orders placed until invoicing.
- Invoicing incl. all relevant data, i.e. payment terms, discounts, despatch notes - all information re customer and product available at filing stage.
- Processing of invoices and credit notes and automatic transfer to customers' records data, sales ledger and financial accounting records.

### (b) Results

- Sales statistics by customers, products, product groups, customers' groups and industries stating volume, value and gross contribution.
- Market sector analysis, actual compared to budget with regard to volume, value, gross contribution, totals expressed as a percentage of total sales, on a monthly and cumulative basis compared to month/cum. of last year. Automatic up-date of information being available permanently, e.g. daily.
- Automatic calculation of cost of product (print-out).
- Sales statistics are up-dated during processing incl. credit notes for rebates etc.

Contd.....



PAYROLL(a) Processing Activities

- Processing and calculation of gross wages and salaries, calculation of payroll deductions, i.e. taxes, social security contributions and old-age insurances, other social deductions and deductions in accordance with legal requirements as well as calculation of net pay.

(b) Results

- Print-outs to cover legal requirements.
- Printing of payment slips.
- Print-outs re total wages and salaries split into departmental expense centres etc.
- Print-out of wage taxes and social security returns.
- Automatic transfer of data to financial accounting.

FIXED ASSETS REGISTER(a) Processing Activities

- Details available of all individual assets i.e. acquisition data, cost, depreciation for the year, accumulated depreciation, net book value segregated into cost centre, fixed asset group containing replacement values (e.g. for fire insurance purposes).
- Calculation of depreciation for commercial, tax, and cost accounting purposes.
- Selection of assets possible by reference to year of acquisition.

(b) Results

- Print-out for balance sheet purposes, balance showing additions and disposals.



- Print-out for tax purposes (property tax, calculation of certain assets required on basis of replacement value).
- Print-out showing the prognosis for the next (up to 50) years in respect of depreciation, net book value and replacement values (possibility of indexing-up).
- Automatic transfer of data to financial accounting system.



## C O M P U T E R   S Y S T E M S

### DESCRIPTION OF HARDWARE CONFIGURATION

#### AND DETAILS ON SOFTWARE

#### Hardware Configuration

#### Date of Acquisition

Manufacturer: Kienzle, Model 9066-40

Central processing unit

- memory size 256 KB

March 1981

- increase memory size to 512 KB

March 1982

2 disk drives (capacity 44 million Bytes each)

March 1981

1 disk drives (                      - dto -                      )

March 1982

4 VDU-Terminals

March 1981

1 Line-Printer (300 lines per minute)

March 1981

1 Printer (small version)

March 1981

#### Software

##### 1. Application Software

Software package developed by the German Paintmakers Association in conjunction with the computer manufacturer Kienzle, covering the following applications:

Customer order servicing including invoicing, sales statistics by customer, customer group, products, products group, industries, market sectors, etc.

Production including production planning, in particular designed for production process in the paint industry, batchcards, filling reports and calculation of production losses, etc.

Calculations regarding labeling requirements (EEL health and safety regulations, hazard materials regulations, etc.)

Stock control including outside locations, material requirement planning and inventory accounting.

Purchasing and suppliers orders  
General (financial) accounting  
Fixed Assets register  
Payroll calculations

Cost accounting (full costs) by product, product group, batch sizes, pack sizes, etc. including marginal calculations/accounting and break-even analysis

Product development

The whole package respectively the right to use it was acquired in 1980. The package is permanently improved and further developed by an association being joined by approx. 25 German paint companies (which share the costs). In addition a few individual programs were designed to suit our purposes, i.e. on sales statistics, etc.

##### 2. Operating Software

MTOS - Multi-Task Operating Systems, language COBOL

acquired in March 1981, up-dated in June 1982 and July 1984



COMPUTER SYSTEMSUSAGE OF APPLICATIONS SYSTEMS

The purposes of employing the computer systems as implemented at present and as existing and developed software will be implemented during 1985 until probably mid 1986 is to further strengthen the information system in the operation for the benefit of improving the company's efficiency in the key areas, i.e. marketing and sales, production and product development, purchasing and stock control. No doubt, a major aim of using inter-related computer systems in an operation is the rationalisation effect leading to significant cost savings when the costs for hardware, software and maintenance can be kept at a low level as set out on Appendix 6.

Usage of applications installed at present:

<u>User</u>	<u>Results/Output</u>	<u>Purpose</u>
Finance Department	Complete details re financial accounting packages, i.e. merger forms, forms A and B, German version of accounts	Management info system, IP-group and legal requirements
	Complete general accounting records, including details on debtors and creditors, etc., cash payments and remittances, etc.	Working capital control, cash management, legal requirements
	Payroll calculations and pay slip print-outs including details for legal requirements	
	Fixed assets register	Legal requirements and for control purposes
	Stock control outside locations	
Sales Department	Sales statistic by customer, product group, product, industries; volume, value, GC, etc.	Management info system, customer order servicing, marketing tools, control tools, pricing, etc.
	Market sector statistics. - info same as above -	- dto -
Laboratory	Product data file (raw materials and finished products)	Development of formulation/cost accounting and cost reductions
Purchase Department	Product data file (raw materials)	Purchase price control



C O M P U T E R   S Y S T E M SC O S T

DM '000

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
<u>Revenue Costs</u>								
Hardware Costs								
- Hardware lease	--	26	60	63	63	70	72	75
- Hardware depreciations	--	--	11	11	11	11	11	--
- Hardware maintenance	--	--	9	17	17	17	18	19
Software Costs								
- initial cost for use of package	50	--	--	--	--	--	--	--
- share of maintenance and further development of package	--	8	10	11	9	10	8	8
- individual programs	--	26	9	7	10	20	10	5
- maintenance	--	17	5	6	12	7	9	8
Operating Costs								
- personnel (pro rata)	--	30	35	37	39	41	44	48
- consumables	--	2	4	5	4	4	4	4
Systems Development Costs								
- personnel (pro rata)	--	10	10	10	10	10	10	10
Other spending on computers								
- office automatisisation	--	--	--	--	--	10	12	18
- colour computers	--	--	--	--	--	20	48	50
Total spending on computers	50	119	153	167	175	220	246	245
	==	===	===	===	===	===	===	===
Capital Costs								
- capital expenditure in the year	N/A	54	N/A	N/A	N/A	N/A	N/A	N/A
Computing related assets at end of year (net after depreciation)	--	54	43	32	21	10	--	--
	==	==	==	==	==	==	==	==



## APPENDIX 6

This appendix comprises a selection of quotations related to observations of the effects of technical change on the nature of financial accounting work and the educational profile of employees. Of particular importance are the cross-nationally contrasting opinions and the consistencies within each country.

In Britain, there were repeated references to the polarisation of work, of skills and abilities associated with computerisation. Automated systems, it was suggested, were progressively eliminating the 'intermediate' or 'middle' levels: work tasks were then characterised as those at the bottom inputting data and those at the top 'analysing', 'interpreting' or 'using' the processed data. To the British respondents it appeared axiomatic that employees' educational profiles were also polarising: 'low calibre people at the bottom, high calibre people at the top'. It was generally assumed that high calibre people were to be equated with those possessing university degrees and professional qualifications.

In West Germany, there was a significant absence of references to the polarisation of work, of skills and abilities associated with computerisation. No evidence could be found which suggested that the companies were subsequently equating the possession of an university degree with a high calibre employee. Indeed, many of the German respondents continued to praise and support the vocational training system which resulted in 'all people being educated and well trained' regardless of the stage of computerisation. Further evidence suggested that this vocational educational certification promoted confidence in the skills and abilities of employees at lower organisational levels. Substantive responsibilities were, thus, delegated downwards and performance in the practical execution of work tasks was considered as the most important indicator of managerial potential.

The clear picture which emerged from the cross-national comparison was that, whereas new technology may impose broad boundaries on work organisation, the nature of technical change is most importantly influenced by social choice. The question then focused on the nature of influences on social choice. The compelling conclusion here was that influences on social choice cannot be dissociated from the cultural context. Indeed, that deep rooted values and ideologies are the most persuasive influences on new technology and work organisation: and, thus, the nature of the cultural divide is of paramount significance.



## Technology, social choice and the re- or de-skilling of labour

"In 1963 we had a lot of people in the lowest grades 1 and 2 doing a sort of manual work and this has dramatically reduced and there's much more people now in 5 and 6, some in 7 and 8....normally in a West German company all people are educated and well trained....the basis of all our accounting operations are these people with standard apprenticeships, that's a solid basis."

(Respondent 3, WG Organisation I)

"It was also a social thing because in changing from a largely clerical function....I suppose, in some ways or in some jobs, the jobs were almost deskilled in that you could program far more into the system and rely far less on peoples' interpretive powers."

(Respondent 1, UK Organisation I)

"When there's clerical effort in the production of an invoice.... they'll be forced to adopt certain routines....less skills I think, yes. The skill is setting up the controls in the first place, once you've established them, operating them tends to be routine, procedures you don't have to think about....Up until 3 years ago there were probably 6 or 7 divisional managers in the category of finance, now they're down to 3. Yes we've taken out whole bands of senior management in the past. You don't have bookkeepers any more, they've gone, the computer keeps the books, what you have is people inputting information and people interpreting it and people manipulating it, you don't actually have people recording it. If you had the perfect system you wouldn't need any accountants at all."

(Respondent 5, UK Organisation I)

"Whenever I explain anything it's my feeling that it's very essential not only to know what to do and how to do it but what the aim or result is, that is, you give them full understanding which includes everything around it of course....I think having apprenticeships, which is the practical approach to a future job, this is very efficient because, after their general knowledge in school, people get specific knowledge of the industry and the job they would like to enter."

(Respondent 1, WG Organisation II)

"I've a belief that this will polarise things, I think the introduction of computer systems kills the need for the middle, you need some high calibre guys who can use the information and some low calibre people who feed the machine, you don't need the ones in between."

(Respondent 1, UK Organisation II)

"It's no good running computer systems with wallys who don't understand the implications of putting wrong information into it....putting a minus instead of a plus....we've replaced staff with different sorts of staff, for example, instead of having lots



of little clerks writing out invoices, you have hopefully a better quality of staff keying documents in."

(Respondent 5 UK Organisation II)

"We have most types of apprentice and we found by experience that it's absolutely worthwhile to educate our apprentices because, after they learnt here and become Industrie Kaufmann, they're very good employees....These two did evening study which takes four semesters after work to qualify, then all the other ones are Industrie Kaufmann even the people in the higher positions."

(Respondent 1, WG Organisation III)

"You either get the sort of moron type people stuffing the computers and other people thinking about what the results are, previously you had more of a pyramid I suspect but it's now knocked out part of the middle ground....Previously when we paid bills we'd get someone stamping them when they came in, another one coding them, another keying in, another checking them, what we've done is give one person the whole job....It means they have to be brighter, we all do at head office."

(Respondent 3, UK Organisation III)

"All the managers are qualified accountants....so you're looking for graduates. We like people with relevant degrees because you don't have to start from square one....I see us making more use of computers....I think it'll give us a different sort of structure within finance departments, you'll get a lot more people at the bottom end putting a lot more information into the computer, not so many people in the middle but more at the top who can interpret the information that's coming out."

(Respondent 4, UK Organisation III)

"On 1 January 1980 that work group had 142 people, currently it has 80 and the business has increased enormously....We had three groups, now we've got 1 department with 2 section heads....In all we've got a far higher proportion of qualified accountants than before."

In one group we had a manager, a section manager, a unit leader, a deputy unit leader, a supervisor and then the people who actually did the work. As a result of putting this computer system in, only a fraction of that manager is involved so we've taken him out, as an overall manager he's combining what he did before as a full time job with two or three other aspects. The section manager has been elevated and has much more responsibility, he's really doing a major part of what the manager did. The unit leader has had more authority delegated to him, with his screen he can now monitor what's going on amongst the operatives because the deputy and the supervisor have disappeared."

We took an overseas credit group and a UK credit group and put them together, one manager retired and the other now manages the two. So the head man is now taking a much more active role in setting credit policies....for example, an export credit clerk,



the standard job pre the computer environment was 50 per cent form filling, paperwork reconciliations and 50 per cent talking to customers. That could now have changed to 15 per cent form filling, 60-70 talking to customers and the other 15-20 per cent could be developing ways of improving the documentation flows."

(Respondent 1, UK Organisation IV)

"Now our problem here was we had to reduce headcount and we had a lot of legal restraints, so when we recruit now we're just looking for young people with very good training and the potential to become managers in some years....there's nobody in this whole group who hasn't at one time carried a sales quota himself, been out selling and that's very important."

(Respondent 1, WG Organisation V)

"Clerical grades are the routine functions, CSE and 'O' level, at the very lowest clerical level where they're creating data, they don't really have a view of what happens to it, they create it, off it goes, it comes back, somebody else corrects the errors, it goes into the ledger and the accountants produce the accounts and they don't actually see any perception of that...The department was 70 people 3 years ago, it's now 50, it was made up of about 25 technical and professional and 45 clerical, now it's more like 25 and 25. So 20 of those clerical jobs have gone, so in percentage terms it's moving up that way because what you've got to have is people who actually interpret the information."

(Respondent 3, UK Organisation V)

"But I think over here we do a lot of things centrally although we've got the principle that a lot of information and administration work is delegated down to the user. So we say that the coding of a travelling document has been done by the one who's travelling, the checking is done by the one who signs the document ....Formally we had to check within the controller's department who did the accounting for the Magazin [warehouse], now that's being done by the people in the Magazin...Mostly we have here people who have had an apprenticeship, they needn't go on to study, they get their training on the job, we in West Germany see whether you can do it and if you can we don't ask for exams."

(Respondent 2, WG Organisation VI)

"Our aim over the last few years has been to link all the systems together, now we've developed into on-line systems. What's happened is that as these new systems have come along, we've programmed the knowledge into the computer program especially errors...The standard of recruitment has increased the educational level because you don't need this army of clerks, they're interpreters now rather than doers....There's also less management jobs, I'm doing the job where there were 2 before."

(Respondent 6, UK Organisation VI)

"You will never find a special apprenticeship for royalties department, it's impossible....if we wanted someone here we would ask for Industrie Kaufmann, we have 6 or 7 apprentices here a year



and they're trained by one guy but normally they learn all the things in the school and there's a job rotation plan, of course.

(Respondent 1, WG Organisation VII)

"The problem as a company was that because volume and profits were high we didn't look closely at the people.... We used to be structured in a very specialised way, you'd have a query on artists' statements and the person handling that statement couldn't answer the question and I did introduce a new supervisory level... With the new system, the problem has been that the actual project has not been welded together as a cohesive unit, I was standing outside it before....our involvement at the time was very little, so I didn't know whether I would be running a department in the future or even who was going to be around....In 3 years time they'll have the right sort of people around, they're going to need a different type of manager."

(Respondent 3, UK Organisation VII)

"People who have the education for a business clerk are located in Rechnungswesen....what came out of bookkeeping for myself seemed relatively weak and I wanted to increase the input of the financial accounting side into the corporate result, so my basic idea was to get the guys up just by the organisation. They know that they are challenged more than before."

(Respondent 1, WG Organisation VIII)

"The harsh facts of life are very simple, we become the most cost effective producer in Europe or (a) we go out of business or (b) Co-ordination says it's cheaper to produce in Germany....The vast majority of people in the more senior positions are now qualified....In overall terms what I see is a shift away from the drudgery of producing the information....We have very integrated computer systems....on-line validation which makes the system tighter than it used to be, so if the clerk in the accounts payable system puts a wrong combination in, it's rejected there and then and she'll know she's made an error."

(Respondent 4, UK Organisation VIII)

"As far as transaction accounting is concerned the effect computers have had here is enormous, I'd have armies of clerks out there pushing pieces of paper, 1 or 2 might be trainee accountants but generally they would be clerks and they would have a specific task....So I think what's going to happen is that you're going to get far more skilled accounting and a lot less intermediate accounting, you know the people who prided themselves on producing the trial balance without any difference on anything, that'll no longer be required. The skills that are required are interpreting what the numbers are telling you and, again, half of the con job in accounting is that most non-accounting managers haven't got the first idea what a set of accounts are....It would be quite possible to run most of the accounts department without anybody being here."

(Respondent 3, UK Organisation IX)



"People are about 18-20 years old and have done special studies, for example economics, but it's possible direct from school to start, especially now everything is computerised....I think in England for every special thing there is someone working, here is more and more a combination of everything, if you have more people who can do it, you're not weak anymore."

(Respondent 1, Dutch Organisation IX)



## APPENDIX 7

### RÉSUMÉ OF RESEARCH FINDINGS

#### Chapter Four

- 4.1 There were considerable differences between the State education systems in Britain and West Germany. These differences were apparent in the structure, curricula, certification and underlying values and philosophy embedded in the historical context. Perhaps the most salient differences here were that, relative to Britain, in West Germany (a) the meaning of education embraces vocational education, no distinction is made between education and training; (b) primary and secondary education is less specialised; (c) there is a closer relationship between work and education, in the content of curricula and in way that the system operates at all levels; (d) accountancy is not offered as a specific subject.
- 4.2 In West Germany the subject of 'business economics' includes the principles of financial accounting and the economics of the firm. This subject is widely studied within broad, including technical, specialisations. It is an university degree subject and may be studied by those undertaking engineering or other technical/scientific degrees.
- 4.3 In Britain, although government initiatives have increased vocational training provision, the content and certification of training is not nationally standardised. Training is not integrated within the State educational system and vocational programmes are designed and attract those who, for whatever reason, do not attain higher level educational qualifications. In West Germany, vocational education is part of the integrated whole and not viewed as mutually exclusive or inferior to more academic traditions. In industry, a high status is accorded to those who qualify for their Beruf (profession) as Industrie Kaufmänner (industrial commercial people - this cannot be translated directly because there is no comparative qualification in Britain). The meaning of 'profession' is cross-nationally different, thus this label is indexical in the national context.
- 4.4 The West German education system reflects the historical emphasis of this country as primarily a manufacturing economy but also the values of training the mind, orderliness and thoroughness. It is difficult to assess what the British education system reflects, liberalism, character building and perhaps the inherent elitism of a past imperialist colonial power. The extreme specialisation with the British education system may be progressively counter-productive as computerisation increasingly demands perceptual flexibility and versatility.



4.5 West Germany has been described as having a legalistic-bureaucratic culture. Jurisprudence is based on comprehensively codified legal regulations. These embrace the certification, structure, operation of the occupation of Wirtschaftsprüfer (auditors) and regulations for financial accounting within industry. Rules become embodied in law under the auspices of the Federal Ministry for Economics: underlying these rules is a formalised, clear and unambiguous conceptual framework.

4.6 British jurisprudence operates quite differently under the system of Common Law. Various Companies Acts enshrine certain rules applicable to financial accounting within industry but do not cohere around a clear conceptual framework. Responsibility for establishing rules of certification, structure and operation of the occupation of auditing rests with the independent Institute of Chartered Accountants (ICAEW). This body also exercises most authority (within an umbrella organisation comprising representatives of the principal independent accountancy institutes) for setting industrial accounting standards.

Thus the British occupation of accountancy, its regulation, policing and control are outside State jurisdiction: the accountancy profession (and especially the ICAEW) continue to play a vital role in shaping its own destiny and has maintained the legitimation of a structural position which permits government of economic activity and a dirigent influence of the reproduction of social relations of production. Further, the profession has successfully evaded demands which would operationalise the social accountability of accounting actors. It is difficult not to conclude that the privileged position of the profession stems from the accumulation of political power which has accumulated through an ideological complicity with the dominant elements of capitalism but that this situation does not pertain to West Germany. It is also quite misleading to refer to the 'accountancy' professions in Britain and West Germany as if they were comparable. There are considerable cross-national differences in structure, operation and role besides the indexicality of the label 'profession'.

4.7 These structural differences were found to have operational implications. In West Germany (a) the process of qualifying as a Wirtschaftsprüfer is long and arduous, requires considerably more practical experience and proof of such in an exacting examination process. All aspects of this process are nationally standardised and the emphasis is on technicity - the skilled application of knowledge; (b) there is no prerequisite industrial qualification for or a recognised socio-managerial group of accountants: generally accounting actors receive both broad-based theoretical and practical training: managerial progression depends largely on working competence: knowledge of financial accounting and business



economics is not confined within finance functions, thus it is not mystified.

In Britain (a) the process of qualifying as an auditor is relatively short (as little as three years) and provided an actor is socially acceptable within practising offices, qualification is largely dependent on passing theoretical examinations; (b) industrial accountants must possess certification from a relevant institution, indeed, managerial promotion is almost solely dependent on success in theoretical examinations; (c) industrial accountants form a recognised socio-managerial group which historically has been distanced from productive activity and maintained mystification of accounting knowledge.

## Chapter Five

- 5.1 Aside from the societal function of auditing, no relevant functional basis could be found to support the existing segmentation of the accountancy profession in Britain.
- 5.2 Only minimal evidence corroborated the claim of the British accountancy bodies that occupational members primarily and continually identify with an occupational value system.
- 5.3 The absence of a conceptual accounting framework and the incongruity between the requirements of the occupational and educational systems in Britain has had three main consequences: (a) the learning content of accountants' professional training often appears to bear little relevance to what they need to know in the workplace; (b) there is no consistent conceptualisation of the meanings of and relationship between financial and management accounting - although this distinction is becoming clearer with increasing economic pressures and utilisation of computer technology; (c) there is no standard or universal precept applied to the way in which work is organised and divided between financial and management accounting.
- 5.4 The conceptual confusion surrounding accountancy in Britain was also reflected in the inconsistency of corporate/company financial reporting throughout the sample companies.
- 5.5 Because the codified German legal system embodies a comprehensive conceptual framework for statutory industrial accounting, there is neither the flexibility nor the ambiguity which prevails in Britain. There is a clear distinction between the information categories and associated work activities comprising financial accounting and those which comprise business economics.
- 5.6 In the three most robust cross-nationally comparative companies, there was a higher degree of centralisation of



financial accounting work in West Germany and a correspondingly wider span of technical or commercial responsibilities located within finance (or controller) departments at factory sites. Company size or type of business activity were not found to be contributory factors. What appeared most influential was the ethos underlying German institutional and attitudinal processes which, most significantly here, led to the cross-fertilisation of technical and financial knowledge both within and beyond the formal education system and the maxim that the job of factory employees is to produce and not administrate.

## Chapter Six

6.1 In the West German sample, there was a diverse range of educational qualifications at all levels in the hierarchies of finance functions. Many senior and middle management respondents had attained vocational qualifications before embarking upon more academic university studies. In Britain, managerial progression was virtually impossible without an university degree and professional certification. Thus, between the two countries there was a clear distinction in the educational qualifications which characterised the division of labour (between supervisory and non-supervisory employees) within finance functions. This distinction reflected similar nationally-oriented values which underpin the structure, curricula and processes of the respective education systems - egalitarianism and technicity in Germany, theory-based elitism in Britain.

6.2 There appeared to be a rigid circularity characterising the division of labour within finance functions in Britain. Job descriptions included requisite educational qualifications, without these, actors were not considered capable of exercising substantive responsibility. Thus, they were unlikely ever to accrue such responsibilities and, in turn, unlikely to rise to positions of greater responsibility.

In West Germany this rigidity appeared far less prevalent. Much greater status was attributed to vocational qualifications and much greater emphasis was placed on practical competence in the workplace. There appeared to be a greater propensity to delegate substantive responsibilities to non-supervisory levels where knowledge and practical skills were accumulated, on the basis of which managerial promotion becomes a possibility.

6.3 An accountancy qualification bore no significance in West German industrial finance functions, yet actors clearly developed the necessary skills, knowledge and expertise to execute the same work activities as in Britain. Therefore, there is a strong case for suspecting that British



accountancy certification represents little more than an ability to pass theoretical examinations.

- 6.4 The essence of theoretical knowledge is that it is documentable and codifiable. If the accreditation of British professional industrial accountants depends on certification of theoretical ability, which has also promoted technical and social closure, and this theoretical ability is codifiable within computer software (which it is), then this represents a fundamental weakness in the technical, socio-economic and possibly managerial position of accountants in British industry.
- 6.5 Since no comparative dimensions of professionalism exist for finance personnel in West German industry, the question of professional deskilling or proletarianisation, associated with the computerisation of accounting activities, alludes only to the British (or Anglo-Saxon) context.
- 6.6 The specialist British occupational niche of accountancy has promoted a continuing closer connectedness between financial and management accounting and a corresponding greater distance between management accounting and wider commercial functions than was found to be the case in West Germany. This was reflected in cross-nationally different work experience profiles and responsibilities of financial and management accounting managers.
- 6.7 There were implications for the conduct of control within industrial enterprises of the cross-nationally different institutional and attitudinal processes. In Britain, the historical development of the banking system and equity trading may have been instrumental in the formation of financial measurements and accounting products as the primary mechanism of control over productive processes. Many of these measurements and accounting products remain mystified. In West Germany, different historical circumstances have resulted in production criteria as the primary mechanism of control over productive processes. Where financial control mechanisms are now employed, these have never been the subject of mystification and are utilised primarily by those responsible for the activity of manufacturing.

## Chapter Seven

- 7.1 There was (a) no consistent corporate policy towards technical change; (b) no consistent location or type of computer resource cross-nationally or between sample companies; (c) considerable variability in the sophistication of computer systems being used; (d) all sample companies except West German Organisations IV, V and (Dutch) IX enjoyed considerable autonomy in the selection, development and implementation of computer systems.



- 7.2 The movement towards increasing computerisation in both countries stemmed from perceptions of competitive pressures arising in capitalist economies. Although new technology was generally perceived as increasing the cost effectiveness of production, job displacement, as integral to cost reduction, appeared to emanate primarily from decisions to rationalise rather than de facto technical change.
- 7.3 Although the possibility of transferring 'expert' work tasks (via computer technology) to less knowledgeable actors was mentioned only once in West Germany, it was necessary to understand this in the context of possible cross-nationally different meanings attaching to the definition of 'expert'. In West German finance functions, actors appeared to perceive an 'expert' as applying primarily to those who had accumulated practical working competence. In Britain, 'expert' was understood by actors to apply primarily to those possessing professional certification. Since this certification measures theoretical knowledge which is programmable within computer software, there is a strong case for suspecting that the non-transference of professional work tasks to non-qualified accounting actors is due to socio-political rather than technical factors.
- 7.4 During the systems design and implementation stages of technical change, the intellectual and practical contribution of potential users/beneficiaries was considerably higher in West Germany. The formation of computer departments was underpinned by cross-nationally different philosophies. The West German subsidiaries relied more on those who 'had a feel for computing' rather than on formally trained and designated specialists as in Britain.
- 7.5 Much evidence suggested a lower degree of commercial functional specialisation in West Germany. This may have contributed to what appeared to be less friction and a better understanding between broadly commercial, including computing, functions than in Britain.
- 7.6 In both countries, pre-existing work arrangements were found to be the single most important factor influencing the nature of technical change. Thus, changes in work organisation associated with new technology were primarily influenced by precisely the same factors which influenced work organisation prior to technological change. One major theme which emerged from the findings was that these core factors are culture-bound.
- 7.7 Essentially the same developmental stages of computerisation within finance functions were found in both countries. That is, centralised batch processing, micro computing and information technology (the linking of computer and communications facilities). However, it appeared that the movement towards integrated financial accounting systems was



sometimes more advanced in West Germany whilst micro computing and on-line systems was generally more advanced in Britain. This may, in part, have been related to the larger size and dedicated resources of the British sample companies, although other surveys have also suggested higher utilisation of computers in Britain.

## Chapter Eight

- 8.1 All systems development except in the British Organisation IV had been incremental.
- 8.2 Computerisation has progressively eliminated clerical financial accounting work in both countries. In Britain, this has also led to the elimination of supervisory tiers partly because much of this supervisory work was instituted to correct the mistakes and solve the problems created at lower clerical levels. None of the West German firms reported the elimination of managerial tiers associated with technical change.
- 8.3 The overall effect of computerisation on financial accounting functions has been a sharpening of the hierarchical pyramid. This was not evident in West Germany. Contributory factors appeared to be, in Germany (a) smaller size of the subsidiaries; (b) more complex and stringent statutory regulations for accounting which may raise the threshold of the minimum necessary number of staff; (c) greater centralisation of financial accounting and, therefore, greater economies of scale existing before technological change; (d) possibly large, integrated finance systems utilised for a longer period of time which distorted respondents perception of hierarchical shrinkage; (e) companies probably originally employed relatively fewer staff because of their superior training, understanding of the business and less likelihood of making mistakes, thus hierarchies were probably comparatively flatter; (f) much routine financial accounting work was conducted within departments where documentation originated whereas in Britain comparative work was conducted within finance departments.
- 8.4 In West Germany, values, attitudes and institutional arrangements appeared to manifest as a preparedness to invest in the human resource at lower organisational levels and then to trust actors with high degrees of qualitative responsibility. This preparedness did not seem to have diminished with progressive computerisation of data processing. Neither was there any evidence of an associated upward shift in educational requirements.
- 8.5 In the British firms, financial accounting clerical staff were often regarded as a liability (a hindrance to efficiency). There was universal agreement that progressive



computerisation was associated with an upward shift in requisite educational qualifications. There were mixed reports of de- and re- skilling of clerical labour but no evidence could be found to suggest that technical change was associated with the annexation of qualitatively higher levels of responsibility within clerical strata. Several reports alleged increased managerial responsibilities which, at top levels, were cited as strategic or policy making. Thus, technical change, rather than diminishing, appears to be reinforcing the rigid mechanisms which underpin the division of labour in British industrial financial accounting functions.

- 8.6 Further technological advance is likely to further eliminate managerial tiers and flatten hierarchical pyramids. British professional financial accountants may not become a redundant industrial group because of the continuing close relationship with management accounting.
- 8.7 In management accounting, micro computing was encouraging the increasing frequency of ad hoc or 'one off' analysis tasks. This was also symptomatic of increasing specificity in business monitoring and control procedures. For a number of reasons (especially limited operating autonomy), this was less evident in West Germany.
- 8.8 At lower organisational levels in Britain, the time saved by computerised facilities was wholly or partly offset by demands for more, and more detailed, information and increased emphasis on analysis/interpretation. This increased the task variability of work roles but was rarely associated with increases in qualitative responsibilities. Rather, the same or more work was delivered respectively by fewer or the same number of staff. This implies more of the same type of work activities conducted by fewer staff possessing higher educational qualifications.
- 8.9 In Britain, personal use of new technology at the top two senior management levels was virtually non-existent because here routine analytical tasks were not generally conducted. Thus, there was no perception of the personal utility of micro computers or that this technology provided leverage for downloading work tasks to subordinates.
- 8.10 In West Germany, there was greater recognition at lower hierarchical levels that new technology allowed the accumulation of wider responsibilities but that was not accompanied by greater recognition of downward delegation of work tasks. However, this latter must be viewed in the light of the type of responsibilities exercised at lower levels prior to the utilisation of micro computers. Here, evidence suggested that work tasks of a judgemental and indeterminate nature were more frequently conducted at these lower hierarchical levels than was the case in Britain.



- 8.11 Evidence suggested that senior British finance managers relied on subordinates for the production of more reliable information, applied judgemental assessments and then effectively utilised these products to traject their work tasks into more indeterminate spheres such as policy making. Thus, technical change did not appear to be narrowing the horizontal cleavage, observed by others, within the industrial finance fraternity.
- 8.12 The development of real-time computer systems in Britain was beginning to encourage the monitoring of production costs primarily where these costs were generated - within production functions. In the West German companies, this appeared to have been the historical condition especially since knowledge of business economics has never been subject to mystification.
- 8.13 In Britain, technical change appeared to be assisting the decoupling of financial and management accounting activities stemming from an increasing awareness that accounting for statutory purposes 'is not particularly helpful in running the business'. In some cases, especially where direct downloading of financial actuals was possible, financial or business analysts had usurped the intellectual property rights (such as preparation of reports) previously belonging to financial accountants. It was clear, especially in the large, autonomous German companies, that bookkeeping and business economics have been historically developed as separate activities for different purposes.
- 8.14 In Britain, the heightened emphasis on business analysis and monitoring has stemmed from increasingly fierce competitive conditions. This, in turn, has encouraged the continuing preference for industrially trained accountants whose cognitive horizons develop with prevailing industrial circumstances. As the nature of training in chartered accountancy has become less and less appropriate to these circumstances, firms have become more reluctant to engage chartered accountants on the basis of an honorific label and associated social status. There was, of course, no parallel situation in the Federal Republic.
- 8.15 Intensified economic pressures and the analytical flexibility of computer facilities have begun to encourage a perception within British firms that over-specialisation within broadly commercial departments may be increasingly counter-productive. In some cases, structural re-organisation had taken place: in other cases qualified accountants have been replaced by actors with wider business training and knowledge, such as MBAs or economics graduates. Again, there was no parallel development in West Germany because accountants have never constituted a particular occupational group.



- 8.16 There was no evidence to suggest that institutional, organisational, attitudinal and ideological factors in West Germany were becoming more akin to those in Britain as integral to the process of industrialisation. In Britain, the movement towards the monitoring of costs by production personnel, the decoupling of financial and management accounting, the increasing awareness of the need to extend wider commercial understanding and the embryonic replacement of accountants by actors with wider business knowledge all appeared to be developments akin to German practices.

However, it was argued that these were *prima facie*, fundamental underlying institutional, organisational, attitudinal and ideological factors do not appear to be changing in the direction of the German model. The evidence of this research suggests that, if in the future Britain does witness such changes, any connection with a logic of industrialisation may be far more remote than the impact of Britain's changed economic fortunes.

- 8.17 The compelling logic which emerged from the research findings was that understanding the effects of technical change on work organisation requires an appreciation of the cultural context. Thus, the adequacy of those theoretical perspectives which do not allude to the influence of cultural factors was considered open to question. It was argued that a cultural perspective may provide the necessary insight which extends understanding and knowledge of phenomena and change within societies: apprehending the nature of the cultural divide may provide leverage for future contributions to sociological knowledge.