UNIVERSITY OF EDINBURGH

EDINBURGH REGIONAL COMPUTING CENTRE

(Report of the Edinburgh Computing Committee for the year ending 31st July 1982)

(15th Report)

AFW/SS

REPORT OF THE EDINBURGH COMPUTING COMMITTEE FOR THE YEAR ENDING 31 July 1982

1. Committee structure

1.1 With the movement away from large central mainframes towards distributed computing it has become increasingly important that developments in computing in the academic sector should be coordinated with those in the Library and the Secretary's Office. The remit of the Edinburgh Computing Committee embraces computing matters throughout the University and the Committee has become more conscious of its coordinating role. With the approval of the University Court, the Committee has added to its membership a representative from the University Library, Miss B E Moon, and a representative from the Secretary's Office, Mr P Layhe. The full membership for 1981-82 is shown in Appendix I

1.2 The constitutional relationship between the Committee and the Research Councils has been unclear for some time. The Research Councils have two representatives on the Committee: one, Dr D P Blight, the Director of the Scottish Institute of Agricultural Engineering, is Chairman of the Research Council Users Committee which includes users of the DAFS institutes as well as those of the Research Councils proper; the other was Mr S M Lawrie, ARC Secretariat. Usage of ERCC by the Research Councils has declined in recent years and ARC has become the least important of the Research Council users. Mr Lawrie has therefore been replaced by Mr F Verdon, NERC who will represent only the NERC, the largest single Research Council user, rather than the Research Council's as a whole.

1.3 The Edinburgh Computing Committee, if it is to represent all interested parties, has to remain large. In order to facilitate the development of strategic planning the Committee has established a Computing Planning Committee to advise it on the planning policy of ERCC and on strategy for any other aspect of computing within the University. The new Committee consists of the Convener of the Edinburgh Computing Committee, the four Conveners of its other sub-committees and the Director of ERCC.

2. Mainframe systems

2.1 Usage of the main ERCC computers continued to grow rapidly. Usage for 1981-82 was 24% higher than in the previous year, with the largest increases being in Veterinary Medicine (96%), Medicine (42%) and Science (27%). Use by undergraduates also continues to grow and to be spread over a wider range of departments. Statistics of usage are given in Appendices II,III and IV.

2.2 There has been a long history of problems with the 2980 computer which provides the Regional service to Edinburgh, Glasgow and Strathclyde Universities and the Research Councils. The machine was expensive to run and maintain and reliability in the early part of 1981-82 was very poor. The computer was not due for replacement until 1987 but the high cost and poor quality of the Regional service meant that the

Committee was doubtful whether it could be retained until then. Negotiations took place with ICL on replacing the 2980 with a new computer, the 2988, which is of about the same power as the 2980 but cheaper to run and much more reliable. The Computer Board, which paid the capital and maintenance costs of the 2980, was persuaded to accept its replacement until 1987 by a leased 2988; the cost of the lease plus maintenance of the 2988 is slightly less than the maintenance costs of the 2980. The 2988 was installed in the summer vacation 1982. There have been some teething problems but the new computer should provide a much more reliable service.

2.3 Another important piece of equipment installed in the 1982 summer vacation was the distributed array processor (DAP) which was bought with partial assistance from the SERC. The DAP works as an adjunct to the 2972 computers. It is representative of a design concept which is likely to become very important in the next few years. The DAP can perform a large number of similar calculations simultaneously rather than in sequence as would normally be the case. For suitable applications, including mathematical modelling of problems in Physics and Meteorology, the DAP is as fast as the largest available mainframe computers.

2.4 On a wider perspective, the Committee has developed a strategy on large mainframe computers. In the next few years a new generation of computers will become available which will be much cheaper and more reliable than present day machines. Two machine ranges have gained acceptance in the Edinburgh academic community. The first of these is the ICL manufactured 2900 range; two ICL machines provide the main academic computing service. The second is the VAX computer manufactured by DEC which is used in a number of academic departments. Both manufacturers are likely to produce new generation machines in the next few years which are competitive. There is already considerable investment in computers from these two ranges in terms of equipment, the operating systems for the computers and user experience. The Committee agreed that the strategy which combined a reasonable degree of flexibility with continuity of service for users would be to plan to concentrate, when considering investment in new mainframes, on ICL 2900 and DEC VAX machines, and on the operating systems for these machines which are already in use in Edinburgh, (EMAS for the ICL 2900s and VMS or UNIX for the DEC VAX).

2.5 As opportunities for investment in computers arise in the next few years it is expected that the choice of machine will be made in line with this strategy. The Committee has already agreed to ERCC buying one VAX computer (running the VMS operating system) which will give experience to ERCC of running a user service on this machine. A working party is considering whether there are other services requiring investment in new mainframes and this will be considered in the course of next year.

3. Review of the Program Library Unit

Mrs M M Barritt was the Director of the PLU from its establishment as a separate unit in 1973-74 and prior to that she was Director of a Program Library Group within ERCC. With the announcement of her impending retirement, the Committee established a Working Party to review the functions currently provided by the PLU, to consider the needs for these functions in the future, the organisational structures

within which such functions could best be provided and any new functions which could usefully be undertaken under any new arrangements which might result. The Working Party was chaired by the Convener of the ECC and included two senior members from outside the University. The Working Party's report will be considered by the Committee early in 1982-83, outside the period of this report.

4. Office systems and document preparation

There is increasing use of computers in word processing and office administration in the University. The Committee agreed that there was an urgent need to develop a coordinated policy on providing document preparation facilities. As part of that strategy the Committee asked the Court Equipment Committee for funds for central equipment to support document preparation; up to £75,000 has been set aside for expenditure on such equipment in 1982-83 subject to a further report on the precise equipment proposed being considered by the Court Equipment Committee. Much of the work on document preparation and office administration will not make use of central facilities but will use local microcomputers or word processors (which may nevertheless use the academic computing network to communicate or access special facilities). The Committee has a developing strategy on supported microcomputer systems and has appointed a member of ERCC staff, Mrs Ann Macintosh, to provide advice to users on office systems and to coordinate activities in the academic community with those in the Library and the Secretary's Office.

5. Real time computing

The ERCC has not previously provided support for real time computing although there is a great deal of activity in this area in departments which use small computers to control equipment and collect and analyse data. A new post in ERCC has been established, to be funded from earnings, to provide support for the real time computing community.

6. Security of data

An issue which is likely to become more important in the future is the question of security of data held on central University machines. Discussion on the Committee arose from a report of a Working Party in the Faculty of Medicine which has developed a code of practice to ensure the security of data on National Health Service patients held on University computers. To fully implement the code some development of ERCC systems would be required. ERCC has now determined which developments are necessary but it is not clear where the funding to implement the proposals is to come from. The problem of handling sensitive data may become more widespread, particularly when legislation follows the recent publication of the White Paper on data protection.

7. DEC system-10 Group

ERCC runs a national service for the SERC on a DEC system-10 computer in the King's Buildings. The SERC meets the costs of the service but the staff are employed by ERCC on fixed term rolling contracts. In the period of this report it became clear that the SERC wished to terminate the service no later than November 1986. Discussions have taken place with the SERC on whether there might be a new service

role for the Group in providing support for users of the PERQ personal computers which the SERC is providing for its users. Discussions on the future of the Group are continuing.

8. Finance

8.1 The financial statement for ERCC for 1981-82 is attached in Appendix V. ERCC's savings target for 1981-82 of £42.81K (at July 1979 prices) was achieved by a combination of savings in posts and materials and services costs, and by increasing earnings. The accounts show a surplus for the year of £119,011. For 1982-83 ERCC has a savings target which is much higher than pro-rata (£128.4K at October 1981 prices). ERCC has virtually achieved its savings target in the previous year.

8.2 A financial statement for PLU for 1981-82 is attached in Appendix VI. PLU's savings target for 1981-82 was £3.4K at July 1979 prices. This has been met largely from savings in posts. The accounts show a suprlus of £11,118. The savings target for 1982-83 is £8.5K at October 1981 prices.

2.11.82

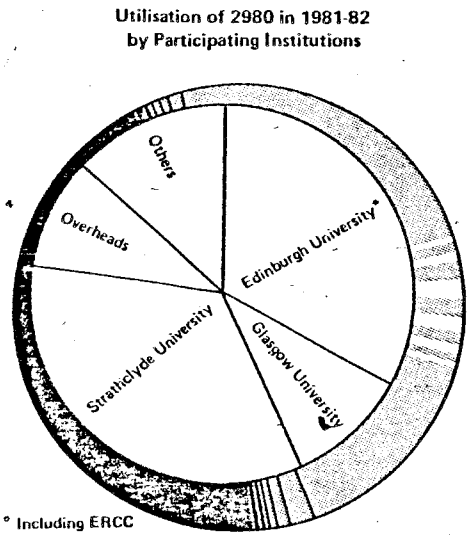
MEMBERSHIP OF EDINBURGH COMPUTING COMMITTEE

Nominees of the Educational Policy Committee	Professor M Anderson (Convener),MA,PhD Mrs M M Barritt, FBCS Dr J C P Schwarz,MA,PhD
The Director Edinburgh Regional Computing Centre	Dr G E Thomas, BSc,MSc,PhD,MIEE,FBCS,FRSE
The Deputy Directors, Edinburgh Regional Computing Centre	Dr J G Burns,BSc,PhD Mr P E Williams,BSc
Representatives of the Research Councils	Dr D P Blight, BSc,MSc,PhD,CEng,FIMechE Mr F Verdon
Representatives of the Users' Committee	Dr G M Alder,MA.,PhD Mr T W Jones,MA Miss J Muscott,BA
Representatives of the Faculty of Science	Dr M A D Fluendy, MA,DPhil,CChem,FRCS,MInstP,FRSE Professor J H D Prescott, BSc,PhD,MIBiol
Representative of the Faculty of Medicine	Professor D C Flenley, BSc,MB,ChB,PhD,FRCPE,FRCP
Representative of the Faculty of Social Sciences	Professor T A Lee,MSc,CA
Representative of the University Library	Miss B E Moon,MA,FLA
Representative of the Secretary's Office	Mr P Layhe,MBA,FCMA
The Professor of Computer Science	Professor S Michaelson, BSc,ARCS,FRSE,FIMA,FRSA
Secretary	Mr A F Woodburn,BSc,DPA

Utilisation of 2980 in 1981-82 by Participating Institutions

Institution	Computing Costs £	Proportion of Computing Costs %
Edinburgh University *	599256.82	32.93
Glasgow University	187225.27	10.29
Strathclyde University	625209.32	34.35
Other Universities	349.55	0.02
Research Councils	67837.26	3.73
Treasury Supported Users	159428.62	8.76
Commercial Users	4234.58	0.23
Overheads	176448.57	9.69
TOTALS	1819989.99	100.00

*Including ERCC

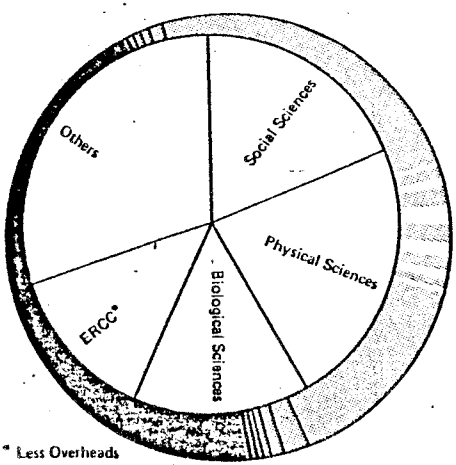


Utilisation of 2980 in 1981-82
by University of Edinburgh and Research Councils

Faculty or Sub-Faculty or Research Council	Notional Cost £	Proportion of Total Cost %
Arts	4615.79	0.69
Divinity	2083.95	0.31
Law	72.42	0.01
Social Sciences	126781.84	19.01
Music	0.05	-
Medicine	49018.15	7.35
Dentistry	3165.97	.47
Veterinary Medicine	16802.40	2.52
Physical Sciences	157432.84	23.60
Engineering Sciences	5336.72	0.80
Biological Sciences	96661.88	14.49
Non-Faculty Departments	46675.39	7.00
ERCC*	90611.78	13.58
ARC	5824.54	0.87
MRC	11272.65	1.69
NERC	50740.07	7.61
TOTALS	667096.44	100.00
Other Universities	812784.14	
Treasury Supported Users	159426.26	
Commercial Users	4234.58	
TOTALS	1643541.42	

*Less Overheads

Utilisation of 2980 in 1981-82
by University of Edinburgh and Research Councils

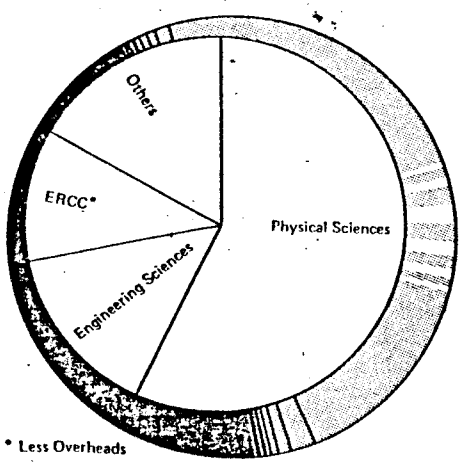


* Less Overheads

Utilisation of 2972s in 1981-82

Faculty or Sub-Faculty or Research Council	Notional Cost £	Proportion of Total Cost %
Arts	12050.11	0.61
Divinity	-	-
Law	-	-
Social Sciences	139840.65	7.04
Music	-	-
Medicine	18083.76	0.91
Dentistry	1260.12	0.06
Veterinary Medicine	360.26	0.02
Physical Sciences	1139533.24	57.36
Engineering Sciences	295936.06	14.90
Biological Sciences	117743.16	5.92
Non-Faculty Departments	41500.86	2.09
ERCC*	215256.91	10.84
ARC	297.05	0.02
MRC	254.91	0.01
NERC	4397.20	0.22
TOTALS	1986514.29	100.00
Other Universities	2052.16	
Treasury Supported Users	26810.68	
Commercial Users	24465.23	
TOTALS	2039842.36	
Less Overheads*		

Utilisation of 2972 in 1981-82
by University of Edinburgh and Research Councils



Edinburgh Regional Computing Centre

INCOME AND EXPENDITURE ACCOUNT

CONSOL

Income	£	£
Computer Board direct grant		619,665.00
Fully charged out services		
Research Councils	91,962.53	
Commercial	83,836.22	
Treasury supported	206,667.01	
Edinburgh University	40,378.85	
Other universities	518.59	
Software contracts	189,897.17	
Staff contracts	2,564.06	
		615,824.43
SERC Contract		
SERC payments	256,477.99	
Sales	21,676.56	
		278,154.55
Miscellaneous		1,284.17
Recoveries		196,432.56
Administrative services		174,993.29
Edinburgh University contribution		1,652,458.00
Adjustments to SERC Contract for 1980/81		5,231.37
Balances b/fwd from 1980/81		
ERCC		270,570.31
		£3,814,613.68

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Final Accounts for 1981/82

IDATED

Expenditure	£	£
Staff costs		
Academically related	1,122,167.50	
Other	505,913.63	
Casual	83,966.11	
		1,712,047.24
Materials and services		
Travel and subsistence	29,292.26	
Computer materials and exp	132,748.20	
External svc charges & rents	357,364.25	
Mainframe maintenance	380,245.85	
Telecomms	180,490.03	
Engineering development	42,296.54	
Information and training	54,138.47	
General expenses	185,111.86	
	1,361,687.46	
less Stocks-in-hand	22,729.14	1,338,958.32
Overheads		
Edinburgh University svcs ERCC	196,861.00	
Edinburgh University svcs SERC	14,695.00	211,556.00
Bad debts written off		1,367.03
Transfer to capital account		84,900.00
Transfer to PLU		25,000.00
Balance b/fwd from 1980/81		
SERC Contract underpayment		46,590.46
Balances c/fwd to 1982/83		
SERC overpayment		4,613.84
ERCC balance		389,580.79
		£3,814,613.08

Income and expenditure account 1981/82

Income	£	£
Computer Board grants		
Software	6215.00	
Salaries	4461.75	
		10,676.75
Fees for services		81,891.15
Transfer from ERCC		25,000.00
University award		
Salaries	119,969.89	
Materials and services	12,162.00	
University overheads	4,250.00	
		136,381.89
Balance b/fwd from 1980/81		140.87
		254,090.66

LARY UNIT

Expenditure

	£	£
Salaries		
University establishment	141,141.05	
Externally financed staff	28,410.25	
		169,551.30
Materials and services		
Royalty repayments	15,952.50	
UK Universities software costs	6,215.00	
General expenses	45,488.53	
		67,656.03
University overheads		5,000.00
Balances c/fwd 1982/83		
Computer Board grant overpayment		765.00
PLU balance		11,118.33
		254,090.66