Computerising student records

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COMPUTERISING STUDENT RECORDS

ABSTRACT

Durham University was established in 1832. Since 1969 two attempts were made to computerise its current student records but without adequate preliminary investigation and system design. The record archives since 1932 are therefore a hybrid of manual and computerised arrangements with some periods more readily accessible than others but no single arrangement adequate for user requirements.

In this thesis the existing arrangements and users' needs are analysed in the context of their available facilities and a comprehensive student record system is designed. The suitability for this purpose of the recently available SPIRES data base is investigated, trialled and found to meet with user satisfaction.

COMPUTERISING STUDENT RECORDS

by

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I thank my family, friends and colleagues whose support I enjoy and value.

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DECLARATION

None of the material contained in this thesis has previously been submitted for a degree in this or any other university, nor is it based on joint research.

SECTION I

INTRODUCTION

The project initially considered was designing a computer archive system for Durham University's Science Site student records. This if implemented, would have produced a student directory for the period early 1920s to the present. However, discussion with one of the major student record users, namely the Science Site's Assistant Registrar, emphasised an area of greater need. A gap in the student record archives exists for the period 1960-69 which significantly slows the present search procedure. The Assistant Registrar advised that closing this gap was a priority in speeding the search procedures for all major users.

A second line of interest was the investigation of the suitability of a database as a means of archiving student records. The database of interest, Stanford Public Information REtrieval System (SPIRES), was the first and only database available on the University's shared computer facility and had at that stage only recently become available.

Initial analysis of the existing student record arrangements from 1832 to the present indicated that a more functional project would be the design of a total and more comprehensive system which would both provide archives from 1832 to the present and also provide a system for processing the current year's records more closely tailored to the users' requirements.

The 2 primary considerations in doing this were

- users' needs
- available facilities.

The user's needs were established by conferences with major users and observation of the day-to-day running of the active system. To acquire a working familiarity with the particular computer facilities available, a pilot study using library records was carried out at this stage. Its purpose was to gain maximum knowledge of the idiosyncrasies of the computer facilities without distraction by the separate idiosyncrasies of the student records. It proved a most useful exercise.

The focus for sampling purposes was chosen as the most recent year of the 1960-69 gap, since this was the most needed year of the least documented records.

Before the project could proceed further, the Registrar required written assurance that all necessary privacy precautions would be exercised to prevent unauthorised access to sensitive data, and that it's confidentiality would be maintained. The statement forwarded to him, and which he found acceptable, is reproduced in Appendix 2.

Masterfiles were created in the computer's major operating system, storing all fields required by users for all past and present records. The codes in current use in the present computer system were used where adequate, otherwise new codes were created. This stage of the project produced a partially coded masterfile.

Preparation of the database to accept the masterfiles was then effected by writing file and format definitions which had to be custom designed for this specific application. This stage required documentation from the US - written for in anticipation in the first week of the project but slow to obtain - and help from the database consultant at Newcastle University. The definitions were written, trialled and debugged. This stage produced database output in partially decoded form.

For fully decoded output, 3 contrasting records were selected from the 1968-69 year. The codes and their corresponding decodes were listed in a database defined code file. This enabled the database to produce decoded records in the defined output format.

This output, being most satisfactory to the users, led to a further 3 contrasting records from the 1968-69 year being decoded and fully archived, i.e. for each student's total period in residence. Again the output satisfied the users who then expressed an interest in trialling the system for complete records of selected students of more recent vintage. This was done and once more was satisfactory. At this stage the research time ended. Some decoding of the database remained incomplete. This is discussed in the body of the report.

Overall, the database met the users' needs well. It is however of much greater sophistication than is needed for the student record system, for only a small proportion of its features were utilised. Thus in paying database costs, expenditure is incurred for provisions not needed.

In the course of the work, areas of improvement of the present student records arrangements were continually identified and methods for their improvement were discussed.

In conclusion, the following objectives were each realised:

- the initial proposal to design an archiving system for the Science Site records
- the subsequent proposal to design an archiving system to bridge the records gap
- the design of a comprehensive student record system including all past archives.

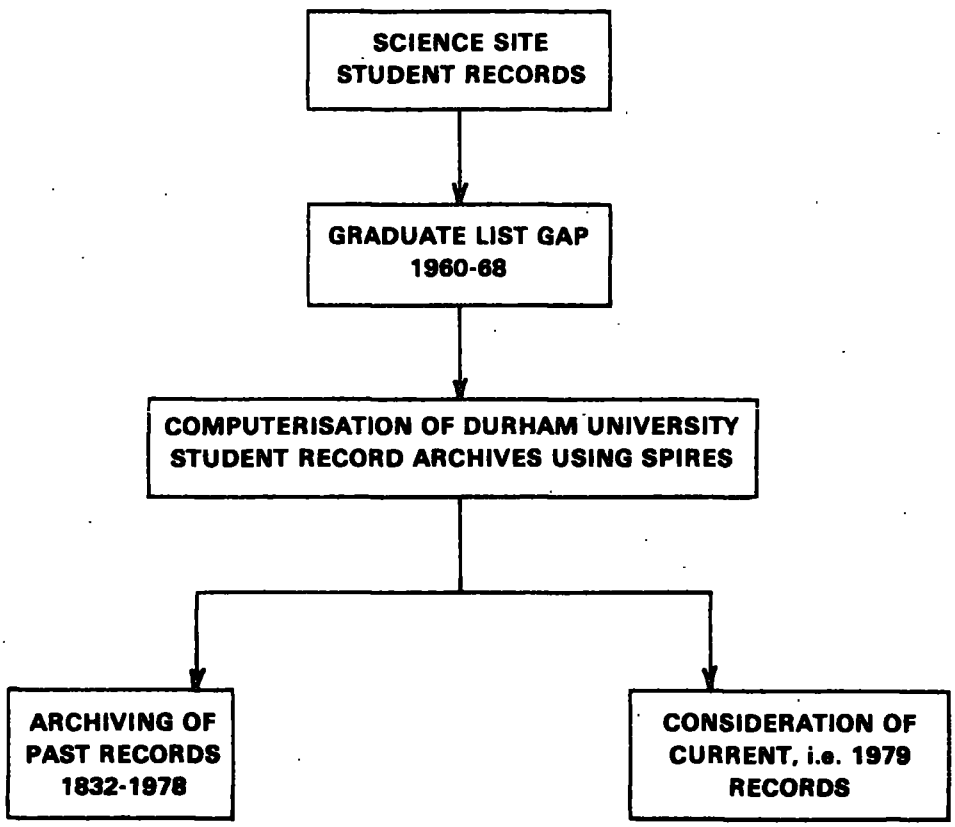


Figure 1.1 Development of research area

SECTION 2

DURHAM UNIVERSITY STUDENT RECORDS

2.1 History

From its foundation in 1832, Durham University has had no single, comprehensive student record system. It has over 15 distinct sub-systems initiated by separate departments, sections, colleges and individuals to furnish the particular information they need.

In this report, the term DURHAM UNIVERSITY STUDENT RECORD SYSTEM embraces all systems/sub-systems in the University involving student records.

The system can be viewed from either of these approaches -

1 its data sources
2 its users.

The target of this work is to meet the present and changing NEEDS of the system's USERS. Each of the above approaches provides both overview and detail of the system. The data sources are clearly, however, the method of choice on which to base an analysis, for not only do they give the full time span, but also incorporate the users who themselves constitute some of the sources.

2.2 Data sources

These comprise -

1 documentation
  past: 1832-1978
  current: 1979-1980
2 users
  recent past: 1930's-1978
  current: 1979-1980

They are best examined by tracing the chronological development of the student record system since 1832. An alternative examination method, that of the order of importance of the data sources, is infeasible because the degree of importance varies with the user.

The present state of Durham University's student records was aptly captured at my introduction to them as: 'Our mixed-up archives'. No

single source contains all the data. There is much overlap between them, and there are a few occasional gaps.

Table 2.1 outlines the main data sources. Sources 12 and 13 are computerised sub-systems, the others are manual sub-systems. In the source description sheets (Appendix 3) the main factors only are listed. There is of course, very much more detail.

Table 2.1 Data Sources

NO.	DURATION	SOURCE
1	1830's-1900	marks books
2	1832 -1948	graduate list 1
	1832 -1954	graduate list 2
	1854 -1960	graduate list 3
3	1832 -date?	departmental records
4	1833 -1938	university calendars
5	1837 -date	pass lists
6	1837 -date?	congregation lists
7	1976 -1939	university gazette
	1953 -date	
8	1900's-1950's	examinations department record cards 1
	1950's-date	examinations department record cards 2
9	1924 -date	science site record cards
10	1930's-date	mark sheets
11	1950? -date	students in residence booklets
12	1968 -1979	NUMAC student record archives
13	1977 -date	ICL student record system
14	1832 -date	other original documentation
15	1930's-date	recent-past and current staff & students
16		other?

2.3 Users

These are:

1. Registrar
2. Deputy registrar
3. Finance officer
4. Assistant registrar: arts, music, Institute of European Studies (IES), occasional arts students (OAS)

5 Assistant registrar: science
6 Assistant registrar: social science
7 Administrative assistant: divinity
8 Examinations clerk
9 Data processing officer
10 Careers advisory service
11 Academic departments
12 Colleges
13 University library
14 Students, present and past
15 Interviewers, e.g. prospective employers, other universities for further study
16 Other?

2.4 Users' needs

The users' needs fall into 2 groups:
- current needs
- future needs.

2.4.1 Current needs

The present major needs are listed in Table 2.2.

2.4.2 Future needs

Future interests and possibilities include:

1 Production of departmental lists; at present all departments produce their own.
2 A closer study of the seasonal variation in the enquiries pattern throughout the annual cycle would be of use to the Examinations Clerk in optimising staff allocation. July, August and September are the busiest months.
3 Production of an efficient data source for university and national statistics. This would be likely to involve analysis and comparison of data, observation of trends, modelling, forecasting and prediction, e.g. models showing what would be expected to happen if specific changes were to be made.
4 Study of the correlation between A-levels and degree class.
5 Historical investigations.

Table 2.2 Users' main needs

USER	NEEDS
1 Registrar) 2 Deputy registrar) 3 Data processing) section)	Overall administrative purposes: Of the Registrar's Dept's. total student records use, 95% is for current and 5% is for pre-current academic year 1 Registration - undergraduate - postgraduate 2 Compilation, maintenance, storage of computerised student record data, 1969-date. 3 Provision of much printout for current users. 4 Some enquiries relating to current data are passed to the Registrar's Data Processing Section.
4 Finance officer	Fees
5 Assistant registrar: arts, music, IES, OAS	Undergraduate and postgraduate data
6 Assistant registrar: science	1 Undergraduate and postgraduate data 2 Some 90% of requirements now met by printout 3 Remaining 10% met by - interrogation program for 1969-date queries for which print-out is not provided - science site record cards for pre-1969 queries
7 Assistant registrar: social science	1 Undergraduate and postgraduate data 2 A variety of statistics have to be produced for - University Grants Committee - Universities Statistical Record, these statistics being based on different criteria. They are essentially number sorting at seasonal times of the year. 3 Calculation of staff/student ratios, e.g. departmental loadings 4 Timetabling 5 Difficult postgraduate queries are passed to him
8 Admministrative assistant: divinity	Undergraduate and postgraduate data

Table 2.2 Users' main needs (cont)

USER	NEEDS
9 Examinations clerk	1 Examination administration
	2 Enquiries
	3 Times/Times Educational Supplement requires annual 1st class honours graduates list
	4 Preparation of degree parchments

2.5 Case study

To define and detail one major user's needs, a case study of the Examinations Office student records use was made.

Two of its uses of student record data are:

1 administering examinations
2 answering enquiries.

To carry out its functions the Examinations Office has developed its own:

1 subject and course codes for examination papers and timetables
2 student record sub-system.

2.5.1 Enquiries

Answering internal and external enquiries about students has become, by historical circumstance, a secondary function of the Examinations Office. It is, over the cycle of an academic year repetitively time consuming, and is therefore a particular area of the Office's work that the Examinations Clerk seeks to improve. He would welcome a method that betters the relatively high efficiency of his manual sub-system.

Of the manual sub-systems, it is the single most detailed, accurate student data source. It is referred to by users of all of the other present sub-systems including the computerised one, e.g. the staff of the Registrar's present computerised system refers to it for verification and completeness of its data.
It comprises:

1 card index
2 marks books

3 the office's own reference collection:
  3.1 copies of the 3 graduate lists
  3.2 copies of recent calendars
  3.3 copies of recent pass lists
4 Examinations Clerk and staff.

2.5.2 Enquiry sources

Enquiries originate from sources both:

1 internal, i.e. within the university, e.g. an academic department requiring information
2 external, i.e. outside the university, e.g. confirmation of qualifications.

2.5.3 Enquiry directions

On receipt by the University, undergraduate enquiries are directed to the Examinations Office, whilst postgraduate enquiries are channelled to the appropriate Assistant Registrar or the Administrative Assistant.

Some postgraduate enquiries are also directly or indirectly referred to the Examinations Office, it having become the most effective - in terms of comprehensiveness and accuracy - data source.

See Figure 2.1

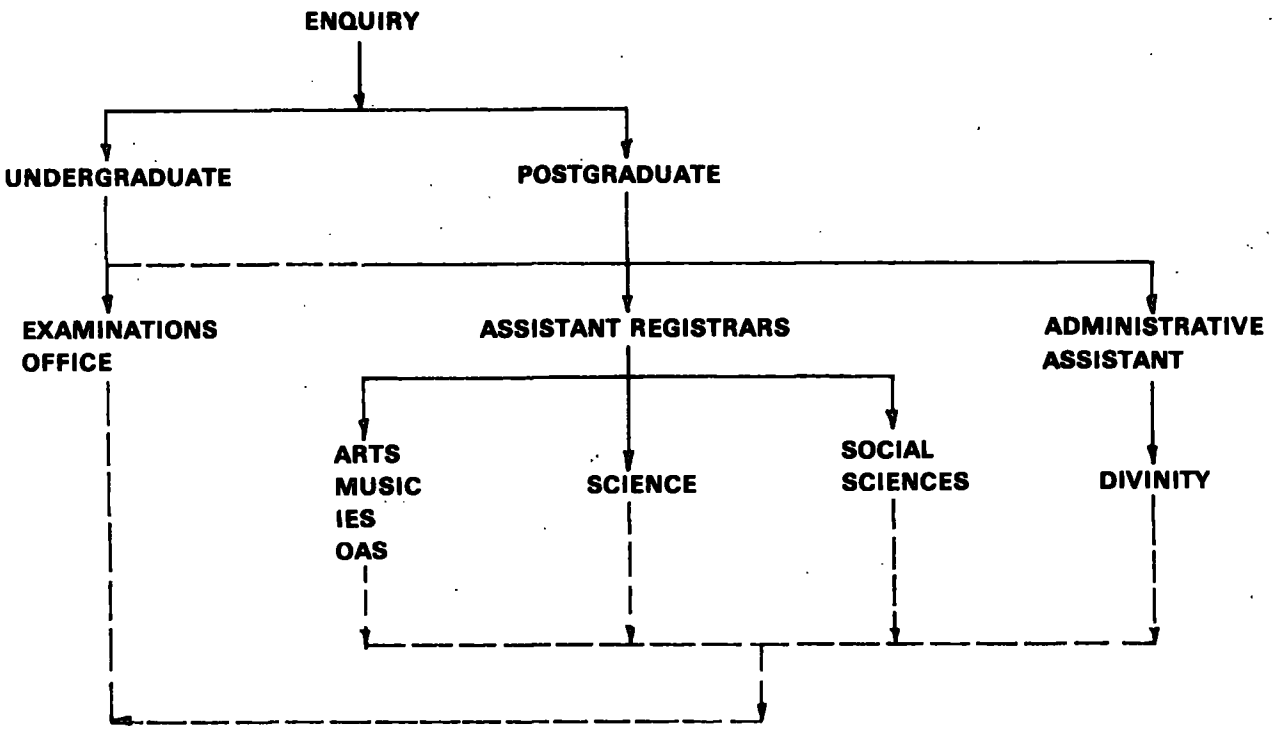


Figure 2.1 Enquiry directions

2.5.4 Enquiry types and purposes

Enquiries received by the Examination Office are:
written or telephone
and
urgent or less urgent
and
pre or post 1900
and
simple or complex
and
routine or non-routine

See Figure 2.2 and Table 2.3

Figure 2.2 Enquiry types

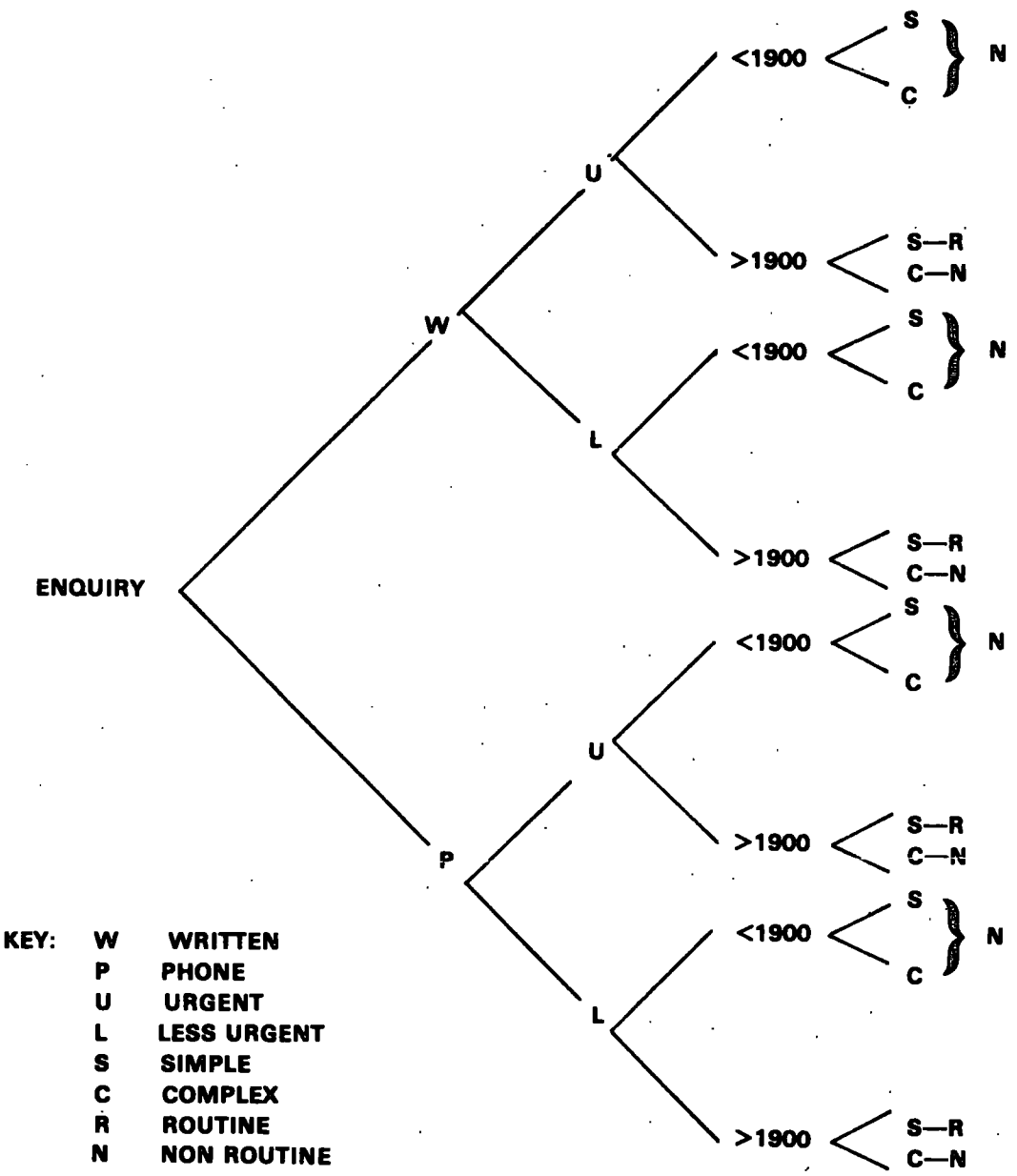


Table 2.3 Enquiry Types

					ROUTINE	NON ROUTINE
1	WRITTEN	URGENT	<1900	SIMPLE		✓
2				COMPLEX		✓
3			>1900	SIMPLE	✓	
4				COMPLEX		✓
5		LESS URGENT	<1900	SIMPLE		✓
6				COMPLEX		✓
7			>1900	SIMPLE	✓	
8				COMPLEX		✓
9	PHONE	URGENT	<1900	SIMPLE		✓
10				COMPLEX		✓
11			>1900	SIMPLE	✓	
12				COMPLEX		✓
13		LESS URGENT	<1900	SIMPLE		✓
14				COMPLEX		✓
15			>1900	SIMPLE	✓	
16				COMPLEX		✓

2.5.4.1 Telephone enquiries

Telephone enquiries often seek rapid access to data, e.g. data for an interview to be held within an hour. If possible, such enquiries are replied to in that phone call or by early return call.

2.5.4.2 Urgent/less urgent enquiries

1 urgent:- answered now

1.1 if urgent and routine, dealt with by junior secretary

1.2 if urgent and non-routine, passed immediately to Examinations Clerk who answers it as rapidly as possible

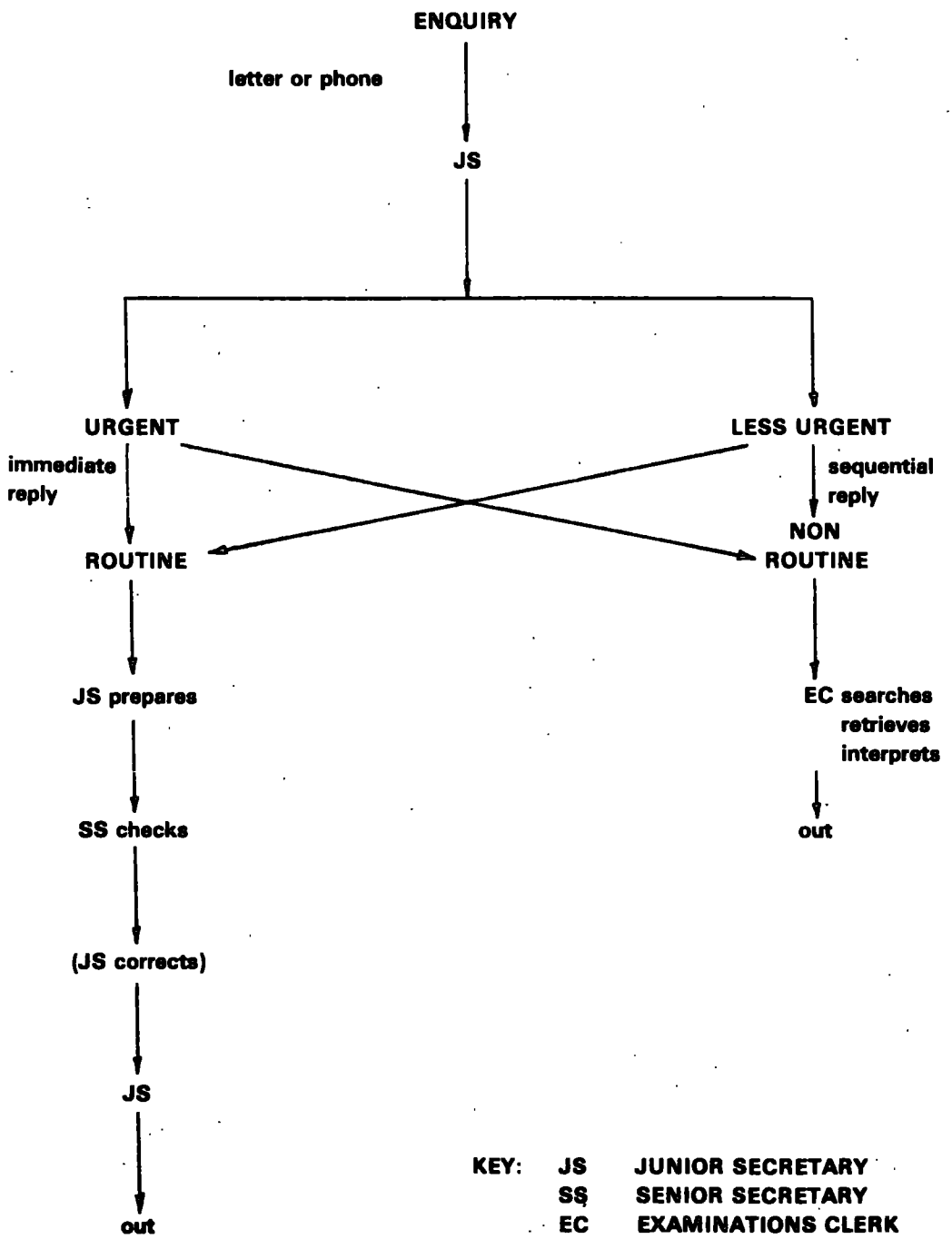
2 less urgent:- filed in queue

2.1 if less urgent and routine, junior secretary files it in her queue to be processed in sequential order of its receipt

2.2 if less urgent and non-routine, passed to Examinations Clerk who files it in his queue and processes it in sequential order of its receipt.

See Figure 2.3.

Figure 2.3 Enquiry path



2.5.4.3 Pre-1900 enquiries

Enquiries of the 1800's are characterised by:

1 few
2 rarely from official source
3 mainly from people tracing ancestors, e.g. last summer an Australian couple called by to trace grandparents' academic records.
4 from biographic authors. These enquirers tend to furnish more data from which the Examinations Clerk can work.

Pre-1900 enquiries are difficult to answer because the required data, if any, are in the marks books which are very time consuming to search. The Examinations Clerk is the only person closely acquainted with the antiquarian nature of the books: he is in effect, marks books archivist.

2.5.4.4 Complex enquiries

Complex enquiries are those too involved for the secretarial staff to answer, requiring detailed search, retrieval and interpretation. The Examinations Clerk, being most familiar with the system, deals with them. They include, in approximate order of decreasing frequency:

1 Concessions, granted for example due to a break in studies. The enquirer wishes to ascertain the periods of full-time study in cases of students who had break/s in their courses due to illness, failure or other reasons.
2 Unusual degree history, e.g. change of course.
3 Law Society exemptions.
4 Open University Credit Exemptions Office.
5 Lost degree certificates. Past students request replacement of original degree certificate or confirmation of its contents. The University does not issue replacements of lost original degree certificates, but will prepare a statement of confirmation of its contents.
6 Examinations Office student record card:
  6.1 incomplete
  6.2 inaccurate
  6.3 missing.

7 Tracing ancestry.

8 Authors writing biographies

9 Possible forgery or fraud, e.g. case of Canadian employer requesting degree verification of an alleged graduate of the University. The photostat of the 'degree parchment' forwarded by the employer differed in its detail from that of a true parchment. Further:
- no record of the 'graduate's' name could be traced in any data source
- nor in the Newcastle Division of the University
- nor at affiliated colleges of the claimed period.

Detailed processing

If more data is provided by the enquirer, the required information - insofar as it exists - is retrieved direct from primary source, e.g. marks book.

If less data provided, the graduate lists (1832-1960) and computer indexes (1969-79, 1977-date) are consulted before searching the other data sources.

2.5.4.5 Routine enquiries

ROUTINE = POST 1900 + SIMPLE

ROUTINE enquiries comprise some 95% of the total and relate to graduates 10-20 years prior to the enquiry date. Their usual purpose/s is/are one or more of:

1 validating 1st degree for an individual applying for admission to a higher degree

2 establishing Burnham Salary Scale entry point

3 applying for non-teaching work
- 3.1 verifying qualifications
- 3.2 establishing salary level.

They are characterised by:

1 Enquiry is of a simple nature, requiring only transcription not interpretation of data.

2 Enquiry can be answered by retrieving data from sources 2-8 and 10 (see Appendix 3), being relatively straight-

forward sources for the junior secretary to work from. This implies therefore, that ROUTINE includes only records of students in the university from about 1900 when the card system was begun, and excludes students prior to about 1900.

Routine processing - detail

The search procedure depends on the amount of data supplied by the enquirer. Thus, enquirer may provide:

1 more data, e.g. student's name, year/s, faculty, degree
2 less data, e.g. student's name only.

If more data is provided, the junior secretary retrieves required data from one or more of:

1 record cards
2 computer storage.

If less data is provided, the junior secretary locates student's name in one or more of:

1 graduate list
2 university calendar

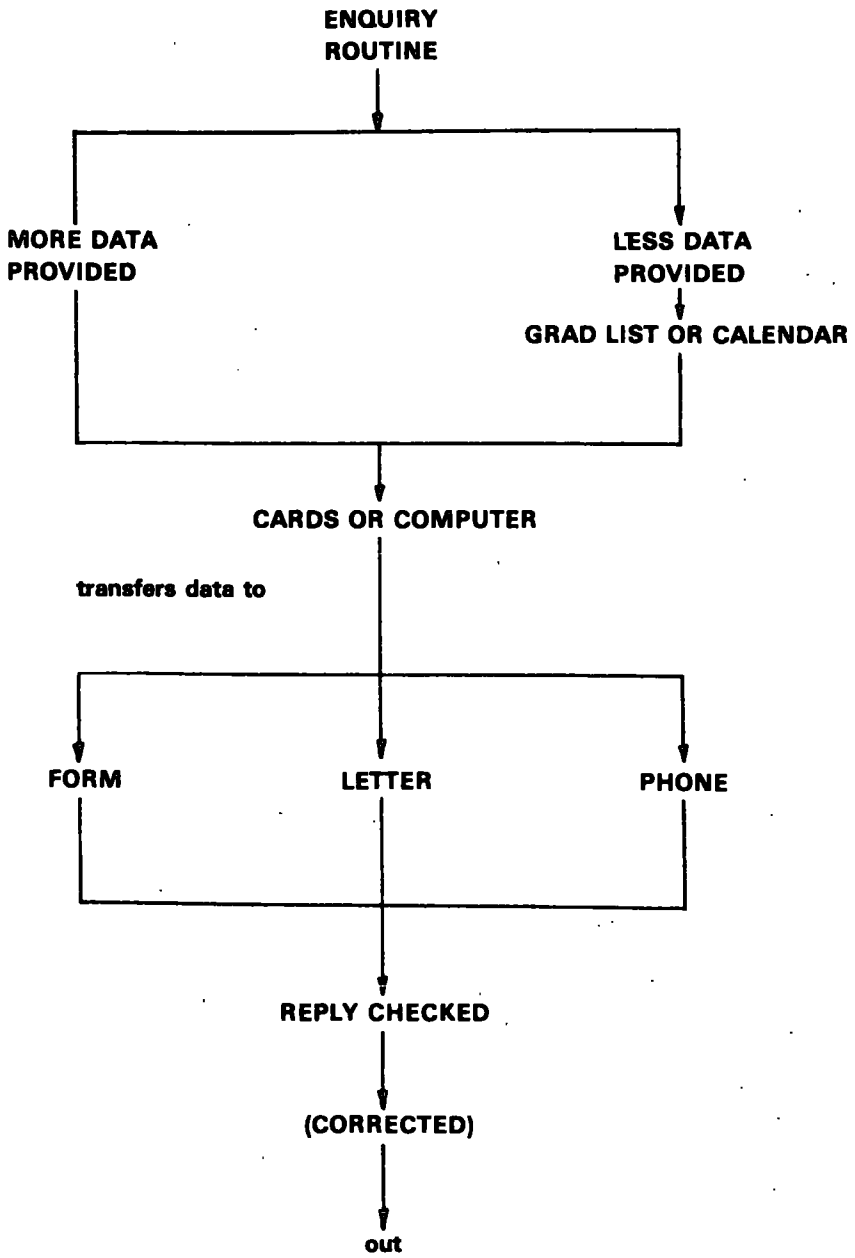
thereby establishing year, faculty, degree, then proceeds as for 'more data'.

The required data retrieved, the junior secretary does one of the following:

1 completes form
  1.1 Dept. of Education & Science form 34TT
  1.2 Durham University form prepared by the present Examinations Clerk for replies to education departments electing not to use form 34TT.
  1.3 other, sent by enquirer
2 writes letter
3 prepares telephone reply.

The prepared reply is checked by the senior secretary. The junior secretary makes any necessary corrections, then sends the reply. Figure 2.4 summarises this procedure.

Figure 2.4 Routine enquiry processing by secretaries



2.5.4.6 Non-routine enquiries

NON-ROUTINE = PRE-1900 &/OR COMPLEX

Non-routine enquiries comprise the remaining 5% and are of 3 groups:

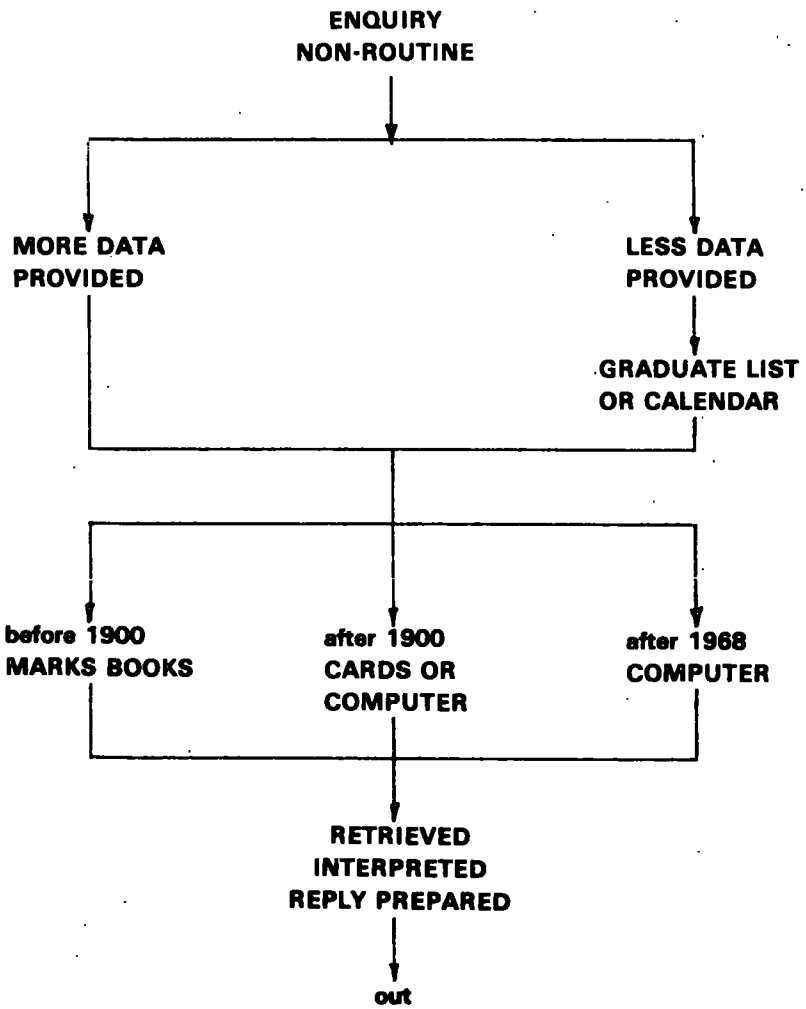
1 pre-1900

2 pre-1900 and complex

3 post-1900 and complex.

Their processing mechanism is shown in Figure 2.5.

Figure 2.5 Non-routine enquiry processing by Examinations Clerk



2.5.5 Difficulties for Examinations Office

Main difficulties for Examinations Office, in priority sequence:

1 data not in one store

2 1960-68 gap

3 time consumption due to staff movement from data source to data source

4 name change, most commonly due to marriage, but also by deed poll, to anglicise a name. University records retain the student name/s used during period in residence, updating these in the minority of cases that a name change is advised.

2.5.6 Fields needed

The main fields required by the Examinations Office are shown on the record card, Figure A11. Table A1 lists these fields, together with fields present on other card types which predate the currently used cards.

Fields to be deleted are:

3 distance of home from Durham

16 age of entry

17 occupation of parent.

The remaining fields need to be retained.

The Examinations Office also uses the following output reports from the present computerised system (refer Table A3):

1 RS10 undergraduate or postgraduate index

2 RS36 students in alphabetical order

3 RS41 course list

4 RS42 contents of course list

5 RS43 labels for exam. cards (personal information)

6 RS49 labels for exam cards ('A' levels)

17 RS70 leavers list.

Information not being captured on the present computerised system, but needed by the Examinations Office is:

1 thesis title. Provision of 4 characters has been allocated since 1968, but not yet actioned.

2 provision for the records of external students, including Bachelor of Music degree students.

The search elements used most often by the Examinations Office are:

1 student's name
2 award type/title of degree
3 award class/classification
4 subject/s
5 award date, or date of qualifying for the award.

2.5.7 Characteristics of the student record information retrieval system desired by the Examinations Office

Discussion with the Examinations Office staff revealed the desirability of these properties. They are itemised in decreasing priority order.

1 accuracy
2 privacy
3 financial viability
4 friendliness
5 controllability
6 comprehensiveness
7 accessibility
8 flexibility
9 time economy
10 space economy.

1 Accuracy

High accuracy level necessary. Errors were encountered in both the manual and computerised systems.

1.1 transcription errors

Record cards contain spelling errors, and therefore possibly other data errors less readily detectable. Record cards contain errors due to lack of clerical check, e.g. Diploma in Biblical Studies and Diploma in Theological Studies both written onto same card, when the correct title for the diploma awarded at that date was the former.

1.2 ICL output report RS36. The student populations listed are less than the actual numbers to be examined. This is inadequate for the purposes of the Examinations Clerk in arranging examinations. He therefore maintains his record card system because he finds it more accurate, reliable and controllable.

2 Privacy

Student records carry sensitive data, including:

2.1 examination marks

2.2 some concession data

2.3 some funding source data

2.4 other personal confidential data.

Private subfiles, with access limited to designated identifier holders, will be created.

3 Financial viability

This could be realised by implementing the system in priority stages as funds and/or staff are available, as is in fact intended with the present computerised system.

Priority stages in decreasing order are:

3.1 computerise the most urgently needed areas for the current year

3.2 computerise remaining areas of current year

3.3 computerise past archives, working backwards from the most recent past, i.e. from academic years 1978-79 backwards.

4 Friendliness

The system needs to be comprehensible to its users.

4.1 Any coded data needs to be decoded for terminal display and printout. Uncoded/decoded data should be expressed in terminology familiar to the users.

Printout regarded as 'unfriendly' by Examinations Office staff is shown in Figure A17, whilst Table A27 illustrates comprehensible printout.

Reasons against coded printout:

4.1.1 impersonal and deterring to the prospective lay user

4.1.2 increases the probability of error. Machine decoding presents one error stage, i.e. the decoding program, whereas manual decoding is more susceptible to the vagaries of environmental influence, as well as to staff change.

4.1.3 manual decoding is more time-consuming.

4.2 Maximum necessary inter-communication between users and computing staff is needed; see 5 below.

4.3 Terminals need to be simple to operate by non computer trained staff.

5 Controllability

Users need to feel that they can participate in influencing the accuracy and input/output of the system. This overlaps with the communication factor of 4.2 above. This need can be recognised, met, and at least partly realised by a good communication system incorporating review meetings designed to clear matters relating to smooth running, e.g. systematic or occasional errors, omissions, deletion of obsolete programs, inclusion of new programs.

6 Comprehensiveness

6.1 sole system serving all users

6.2 one IRS and therefore one databank

6.3 databank comprising 2 masterfiles: undergraduate and postgraduate

6.4 IRS programmed for 2 groups of subfiles: public and private.

7 Accessibility

Real-time system desirable, because instant access is needed for some enquiries. The masterfiles and specified programs are required on-line during university administration hours, or rapidly available on call.

8 Flexibility

A dynamic system is imperative, amenable to correction, improvement and review.

9 Time economy

9.1 One terminal in each user-office would decrease staff time consumption, e.g. present staff movement from data source to data source

9.2 Automate the processing of enquiry replies, e.g. forms, some letters, phone enquiries, by writing programs enabling Examinations Office staff to print the required reply and retain its duplicate on file.

10 Space economy

The university archives are increasing in bulk. Computerised archives could decrease this bulk and possibly its growth rate.

2.6 References

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SECTION 3

FACILITIES AVAILABLE

3.1 Hardware

3.1.1 NUMAC

The Northumbrian Universities Multiple Access Computer (NUMAC) is the main computing facility used by the Universities of Durham and Newcastle upon Tyne, and Newcastle upon Tyne Polytechnic. Currently the facility comprises 2 IBM computers, the 360 model 67 and the 370 model 168, plus peripherals.[1]

3.1.2 ICL2903

In 1977 the Durham University Registrar's Department installed an ICL2903 computer. The configuration comprises:

central control unit
2 magnetic disc units
printer
card punching machine and batch processor
3 VDU terminals.

3.1.3 The change from NUMAC to ICL

NUMAC is used for administrative, teaching, research and consultancy purposes. From 1968 to 1979 its facilities were used by Durham University for the processing and archiving of student records.

During that 10 year period, replacement of the Finance Department's old NCR cash machines was due. It was considered desirable to implement a routine payroll system which could also process student records, for reasons of:

- convenience

  It is more convenient for the University administration to control its own machine: owning its own ICL system confers that greater control.

- cost

  Although the cost effectiveness of the system change is of questionable value:

  . NUMAC a more expensive system
  . ICL a less expensive system

it was felt that the Finance Department's requirements (mostly payroll work) and the Registrar's Department's student records requirements could be met by the cheaper running system.

In 1977 the Registrar's Data Processing Section began using the ICL2903 to process the 1977-78 academic year's first year student intake. This continued in the 1978-79 academic year, whilst their processing was also concurrently being maintained on NUMAC's established system. In the 1978-79 academic year, with NUMAC continuing its processing, the somewhat parallel processing on the ICL2903 developed by processing the records of its continuing students now in their second year, and by placing the 1978-79 academic year's new student intake onto its data file. At the end of the 1978-79 academic year the computerised student record system was transferred in entirety to the ICL2903 and NUMAC ceased to be used for student records processing. There is thus a two year, viz. 1977 to 1979 overlap during which student records are stored on both the NUMAC and ICL2903 computers (Figure 3.1).

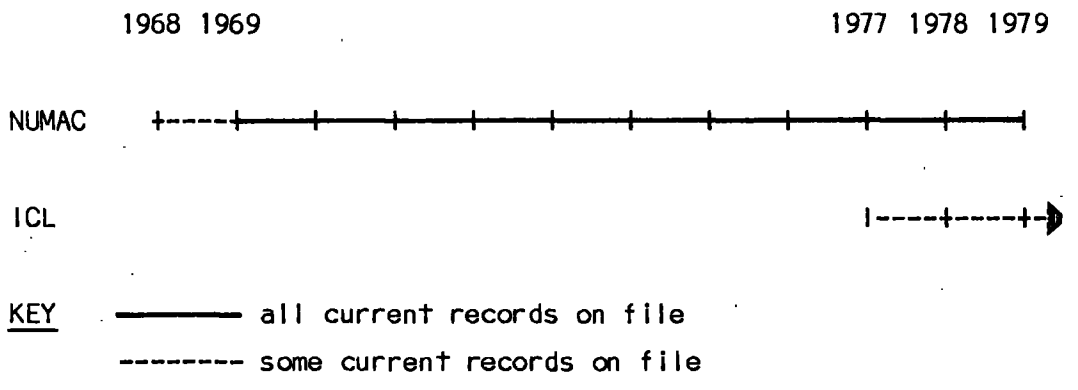


Figure 3.1 Duration and overlap of the two computerised student record systems

The system on the ICL2903 is being tested at present, and there has not yet been an opportunity to fully review it. It will not be known until the end of the 1979-80 academic year which programs are/are not wanted.

3.2 Software

3.2.1 NUMAC: MTS

NUMAC runs 2 operating systems:

1 Michigan Terminal Systems (MTS)[2-5] - run on the 370 during day and part of night

2 IBM Standard Operating System (OS/MVS) - run on the 360 for approximately 18 hr/day and the 370 overnight.

Advantages of MTS over OS for student record archiving are:

1 MTS Command Language is a direct and simple control language. Its commands are shorter and more intelligible than OS Job Control Language commands.

2 Its terminal availability, allowing much user control and flexibility, and with rapid response, in file creation, editing, data listing and printout.

3 MTS user services, which include:
- advisory services
- documentation:
  * Users' Documentation Set
  * manuals
  * NUMAC newsletter, published monthly
- courses
- michrofiche: a possibility of interest prior to this project to the Examinations Clerk.

Disadvantages of MTS are:

1 Although MTS is less precise than OS, thereby conferring less control over file handling, its degree of precision satisfies the needs of student record archiving.

2 Portability problems may exist in transferring an MTS program to another operating system, another computer installation, or another make of computer. This should not, however, constitute a significant difficulty in work internal to the university.

For the specific brief of student record processing and archiving involving data conversion from manual to automated systems, MTS presents good capabilities. It offers facilities for file sort, merge, print, reproduction, update, record and program storage, and enables the

execution of the necessary program applications, e.g. in executing a complete enquiry operation which involves more than one program.

Overall, MTS is the better time sharing system for a university environment.

3.2.2 NUMAC: SPIRES

Available on NUMAC is a range of pre-programmed packages, one of which, SPIRES[5-12], may suit the operation of a student record system.

SPIRES is available on MTS but not on OS/MVS. Thus the selection of MTS became manadatory for SPIRES to be tested.

It is the only data base at present available on NUMAC, originates from the Leland Stanford Junior University, and is designed for unrestricted teaching and research but no commercial use. It was developed to meet the need for a generalized data base management system which could support a variety of applications including administrative and research needs.

Advantages of SPIRES are stated to be:

1. Cost. Since development costs are spread over its many users, a generalized system such as SPIRES brings data base services within cost range of many smaller applications.
2. Simplicity. By contrast with most commercially available data base systems, SPIRES provides a simple but richer command language for inquiry, searching and updating.
3. Control. SPIRES users may develop and administer their own data base applications without the usual constraints found in systems requiring centralized administration.
4. Development. SPIRES undergoes continual development and implementation of new facilities, about which its users are regularly informed. Innovations are announced as a message at the beginning of each SPIRES run and in the NUMAC newsletter. This is further discussed in Section 11.4.

3.2.3 ICL

ICL manuals and documentation for the 2903 are available from the Registrar's data processing staff and are in a form directly intelligible to the reader.

3.2.4 1968-79 student record system documentation

The system run on NUMAC is documented in a number of comprehensive manuals and miscellaneous loose sheets. These well-worn, and in some cases the only extant copies of each, are preserved in the Registrar's Student Record Data Processing Section. References 13-16 identify the 4 manuals referred to directly in this project.

The input documents and programs available are shown in the Users Guide contents list, reproduced for the reader's convenience in Table A2. The programming language used was PL/1. Specimens of the blank coding, registration and other input forms may be seen bound into the manuals, and have therefore not been included in this work.

The most useful output document now used from this system is the Student Record Archive Report 1968-79.

At this stage, both input and output documents were scrutinised and discussed with the Examinations Clerk to review the fields his office needs.

3.2.5 1977-date student record system documentation

The present system has drawn extensively on its predecessor for design and content of its descriptive and input documents. In addition, programs for the ICL2903 written in RPG2 for the Registrar's Department's current main needs, are available.

The reference documentation in current use is:

1. its 3 published manuals
2. the NUMAC documentation
3. unpublished manuals prepared by the Student Records Data Processing Clerk[17-19]
4. information sheets.

Input documents, blank specimens of which may be seen in Appendix 4 include:

1 undergraduate matriculation form (Figure A18)
2 undergraduate registration form (Figure A19)
3 postgraduate registration form (Figure A20)
4 a set of 13 coding sheets. These are more comprehensive than that used in the 1968-1979 system. Some of the fields are not yet implemented, e.g. certain fields relating to fees
5 undergraduate course changes form (Figure A21)
6 form description sheet, form DP14 (Figure A22)
7 batch header (Figure A23).

The output reports are listed in Table A3.

3.2.6 Other documentation

Nationally used reference manuals pertaining to student registration and statistics were also used in this project. These were mainly publications of the Universities Central Council on Admissions (UCCA), and Universities Statistical Record (USR), which is managed by UCCA.

3.3 Personnel

3.3.1 NUMAC: MTS

NUMAC staff are available by phone or visit for information, consultation and assistance. They include:

1 DU Computer Unit staff, including the Duty Adviser during stated hours
2 NUMAC central site staff, Newcastle University.

3.3.2 NUMAC: SPIRES

NUMAC's advisory, support category for SPIRES is 'partial'. In real terms this means:

1 No Durham staff with specialist SPIRES knowledge but the SPIRES United Kingdom Consultant, Dr BN Rossiter, Newcastle University Computer Unit, for proximate discussion and help.
2 Almost no SPIRES documentation in Durham: in June 1979

references 6 and 12 only; the remainder were ordered by the writer from the US.

3 Many SPIRES procedures not yet implemented in the UK. Information on these available from the Data Base Systems Group, Stanford Center for Information Processing, but no UK consultant yet experienced in these areas.

3.3.3 ICL

The University administration has 6 data processing staff, one with the Registrar's Student Record Section, five with the Finance Department. Their support was available to this project.

3.4 References

1 Introduction to NUMAC; NUMAC Documentation Group, 1978.

2 Introduction to MTS, JW Steele; NUMAC Documentation Group, 1978.

3 MTS Users Guide, JM Harrison; NUMAC Documentation Group, 1978.

4 MTS 5: System Services; IBM, 1976.

5 SPIRES/370 File Definition; GR Jackson and RE Senda; University of Alberta, 1978, 293 pp.

6 SPIRES Searching and Updating; GR Jackson (ed); University of Alberta, 1978, 177pp.

7 SPIRES/370 Data Base Management, RE Senda (ed); University of Alberta, 1978, 47 pp.

8 SPIRES/370 Formats Language; University of Alberta, 1976, 97pp.

9 SPIRES/370 Protocol Language; GR Jackson (ed); University of Alberta, 1976, 83pp.

10 Introduction to SPIRES; BN Rossiter; NUMAC Computing Service, 1980, 71+ pp.

11 Introduction to SPIRES File and Format Definition; BN Rossiter; NUMAC Computing Service, 1980, 72+ pp.

12 SPIRES/370 Implementation of the historical information system, P-computing project report: DA Young, University of Durham, 1979, 41+pp.

13 University of Durham; NUMAC student record system documentation, JML Berry;

Student record users guide, 1973, 125pp.

14 Appendices I - VI, input documents.

15 Student record maintenance and update suite, systems report, 1973.

16 Registration listing suite, systems report, 1973, 26pp.

17 University of Durham Registrar's Department, J Ware, 1977. Student records codes list.

18 Coding instructions for coders.

19 Unit course codes.

20 School code file; UCCA, 1979.

21 How to apply for admission to a university, October 1980 entry; UCCA 1979, 0 900 951 31 1.

22 Manual of operating procedure; USR Volume 1, the undergraduate record, 1978, 73pp.

23 Volume 2, the postgraduate record, 1978.

SECTION 4

PILOT STUDY

4.1 Purpose

A pilot study using library records was carrried out to gain a working familiarity with the NUMAC installation and its MTS operating system and thereby also to assess their potential in relation to the SPIRES data base whilst economising substantially on the time investment that would have been needed had the same investigation process been initially applied direct to the student record system. This was possible because the library records were simpler than the student records but required the same set of procedures for data capture and entry.

4.2 Difficulties in using documents not designed for computer input

The library record form (Figure 4.1) was at one time filled in by Durham University Library users to make recommendations with respect to the purchase of new books for the library. The form was typical of the style of document that was not designed to enable its easy transcription to computer readable format. Consequently, in performing this data transcription exercise it was important to record all the difficulties and problems that were involved.

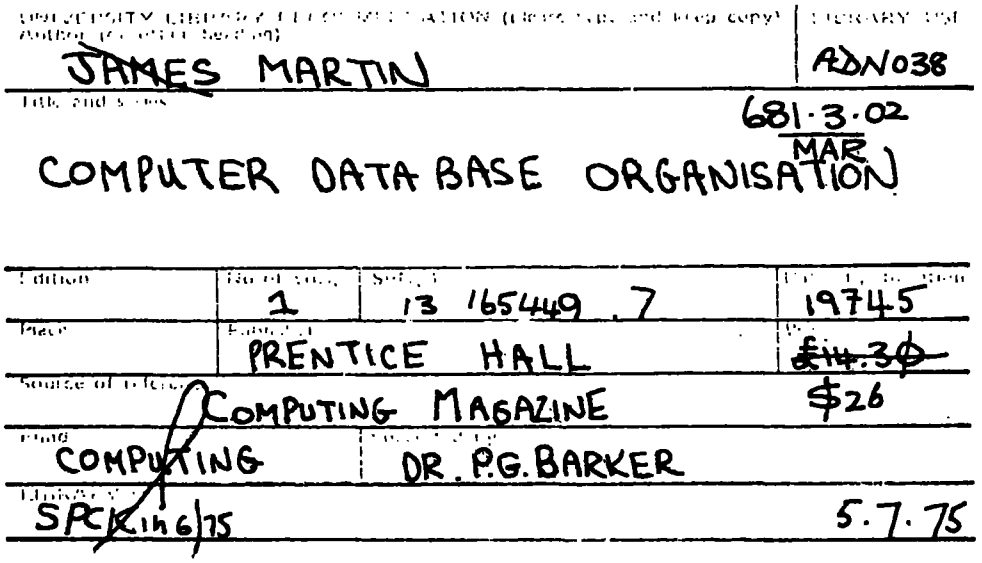


Figure 4.1 Library book requisition record sample

4.3 Difficulties in preparing the data deck

4.3.1 Analysis of the library record and design of a mapping strategy

The problems envisaged resulting from the first analysis of isolated library requisition slips were:

1 Handwriting legibility. Library instructions, viz. PLEASE TYPE had been ignored on every record in the sample set. Some records were legible, some part legible.

2 Not all boxes were designed for 1 datum entry only. The box TITLE AND SERIES was intended for 2 data entries, requiring 2 fields. However the SERIES data was
- sometimes included in the box but not clearly distinguished from the TITLE
- sometimes written elsewhere on the record
- sometimes missing.

3 Certain necessary data had not had a box designated for it. This data had consequently been entered into the box having the most unused space, e.g. in Figure 4.1
- accession number entered under TIME AND SERIES
- DISTRIBUTOR entered under PUBLISHER.

4 Data entered incorrectly, e.g. data which should have been entered into SUGGESTED BY had been written into FUND.

4.3.2 The role of oral discussion

Discussions were conducted with

1 library staff to ascertain
- exactly how the records were intended to be processed, i.e. the precise fields in fact required
- the degree of uniformity of data entry desired by the library
- the library's accepted code of:
  abbreviations
  punctuations
- the number of characters required for fixed fields.

The outcome was the establishment of the required information and preparation of design documents detailed in Appendix 5.

2 data processing staff

- to gain practical skills for data input by punched card and keying in at terminals
- to attain a level of clear written communication with the data processing staff.

The outcomes were

- Legibility. The card punch operators could not read most of the records.
- Interpretation. Of the legible records, the minority could be directly punched onto cards, but the majority were indecipherable to the card punch operators. These required editing by the writer before being passed to the card punch operators.
- Coding forms required. It thus proved necessary to prepare coding forms for most records. Under these circumstances the card punch staff preferred that forms be prepared for all of the library requisition slips. These coding forms are reproduced in Appendix 5, Figure A24.

4.3.3 Problems anticipated as a result of data inconsistencies and undetected errors, and their solution

The sample requisition slips contained numerous data inconsistencies, leading to the data processing staffs' request that all slips be transcribed onto coding forms before being passed to them. This time-consuming step can be overcome by designing book requisition forms leaving the recommender in no doubt as to the identity and location of data element to be entered. The newly designed forms should be trialled, and adjusted where necessary, before full implementation.

How the data is to be entered is indicated on the sample slips as 'please type'. In practice: 'PLEASE ENTER IN CAPITALS' could meet the legibility need and is more likely to be met than the typing requirement which was not maintained. Future purpose designed forms should be checked for conformity to the data entry instructions as well as for any other data inconsistencies. Requisition slips handed in at the library counter could be checked on the spot by library staff and the necessary corrections made then by the the recommender. Those received by the library by mail would be returned to the recommender for correction and/or completion of omissions.

Errors undetected by the counter check would in most cases be revealed in the course of book or research abstract ordering, for instance by publisher's catalogue or books in print catalogue check, journals check, response from retailer, etc.

4.4 Techniques for data validation and error correction

4.4.1 Validation checks

During the various stages of processing on the computer the following types of check were performed.

1. Check to ensure that data were of the correct type in accordance with the program and master file.
2. Check to ensure that data were for the correct period.
3. Check to ensure that records and transactions were in the correct sequence.
4. Check to ensure that fields contained the correct number and type of characters of the correct format - field check.
5. Check to ensure that data conformed to the minimum and maximum range of values. As the range of specific items of data was subject to fluctuation, then in the subsequent use of SPIRES, the range limits were incorporated as a parameter in the file definition.

4.4.2 Error correction routine

The printout was checked for errors, which in the subsequent work with SPIRES was signalled by an error diagnostic code or alternatively a separate error list was printed.

The control totals were compared with those generated by the computer, as it was possible that documents may have been overlooked during data preparation and not presented for processing, in which event it was therefore essential that the fugitive documents were identified, traced and presented for processing. After errors were identified, it was necessary to extract the appropriate input document from the batch for correction. Corrected errors were then re-assembled in a batch with a batch control slip attached for re-punching and processing. The new batch number was recorded on the print-out for cross-reference and control. The control of corrections was carried out in a similar manner to the control of original data.

4.5 Setting up SPIRES

When the task of becoming conversant with NUMAC and MTS was successfully completed, the necessary documentation for SPIRES was still unavailable to the researcher and so no satisfactory assessment of its suitability could be made. A decision was therefore taken to commence work on the student record system itself. By the time the required SPIRES documentation did arrive, testing it on the library records was redundant.

4.6 Conclusions

1 Much original data could require checking for accuracy and/or referral to specialist staff for its interpretation.

2 Data stored on documents not designed for computer input would require transcription onto data entry forms before being passed to data entry staff.

3 Analysis-oriented communication skills were developed and of subsequent value in the student record consultations.

4 Interaction with the data processing staff established an efficient working methodology which was quickly implemented in the main project.

5 The preliminary scrutiny of SPIRES indicated potential for its application to a student record system.

4.7 References

1 Computer processing of the bibliographic records of a small library, RN Oddy; DU MSc thesis 1971.

2 Computer processing of library files at Durham University, RN Oddy; DU Library publication No. 7, 1971.

3 MTS Users Guide, JM Harrison; NUMAC Documentation Group, 1978.

4 Data collection to computer; NUMAC Documentation Group.

5 $EDIT: the MTS file editor, University of Michigan staff; NUMAC Documentation Group, 1979.

6 Introduction to University of Michigan File Editor, University of Michigan staff; NUMAC Documentation Group, 1978.

SECTION 5

PHASE 1 SUMMARY

5.1 Overview

No single Durham University student record system exists. Currently (1979), distinct collections of student records are kept, each intended to meet the needs of different but overlapping user groups. The main collections are:

1 present student record system on ICL2903
2 Examinations Office archives
3 science site card system
4 departmental records.

Science student records serve to illustrate this overlap, being maintained separately on each of the above 4 systems. Thus a science student appears on at least 4 different, fairly detailed records, each recording mainly the same data, but with slight variations according to the purpose of its system - much repetition, much unnecessary labour; an onerous, unwieldy, time-consuming conglomerate.

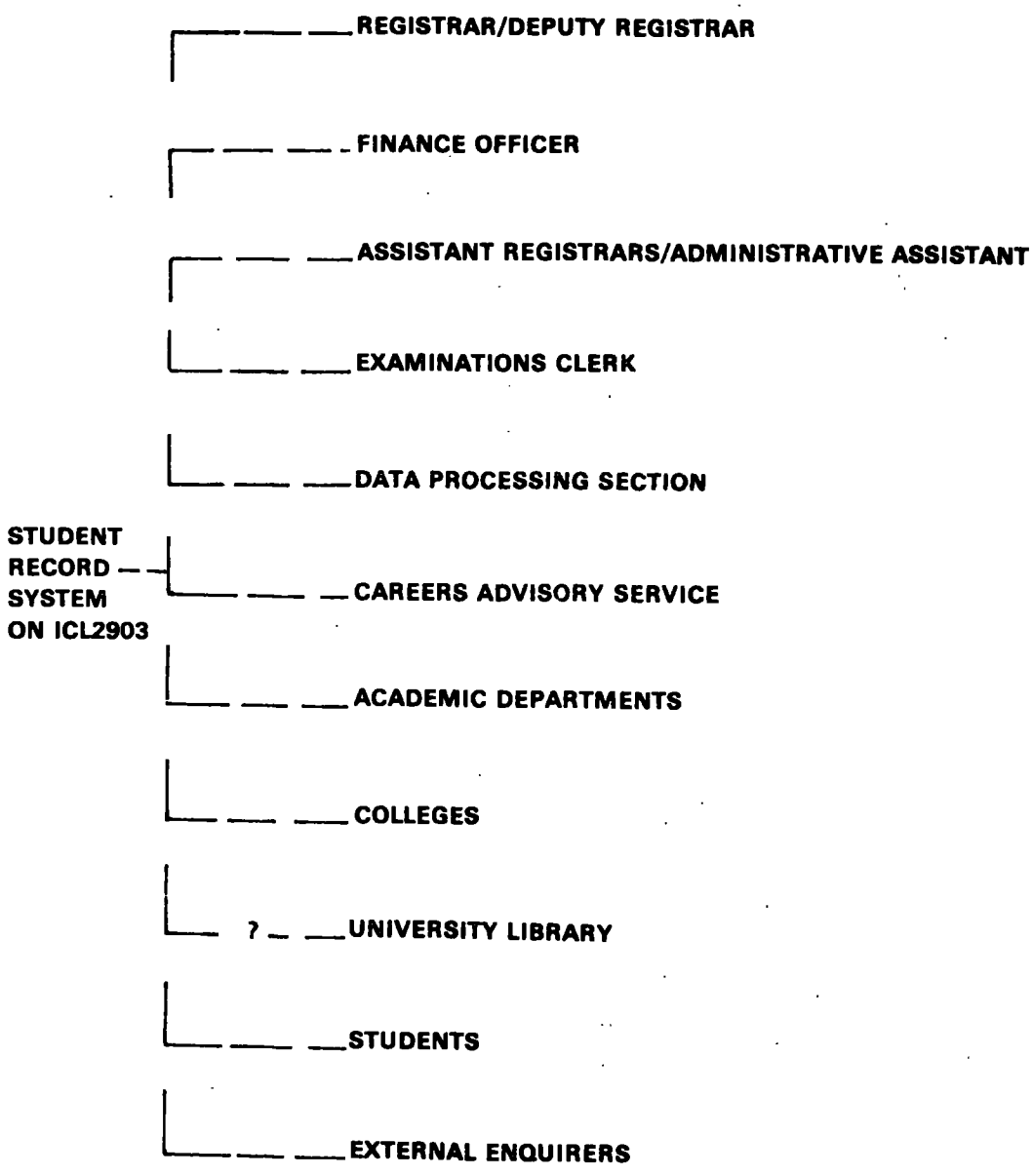
The present system provides printout which partially fulfils users' needs. Meanwhile each user operates some manual system/s, processing information which could be computer stored and retrieved (Figure 5.1).

The 8 year period, academic years 1960-68, from the last DU Graduate List 1960 to the start of the full NUMAC student record archive 1969, is a gap in the conveniently accessible data sources. Although an immediate short-term need is to bridge this gap, the desirable objective is to implement one student record system adequately serving all users.

How to achieve this? Recent records are used most, thus it was agreed to sample from the academic year 1968-69, i.e. the last year of the 1960-68 gap. Combining this sampling data with the users' stated and unstated needs, an information retrieval system was designed, set up and shown to work. If/when finance and/or time allow, the system can be extended:

1 backwards in time to bridge the gap: 1967 to 1960
2 forwards to incorporate the student record archives on NUMAC: 1969-79, and on ICL: 1979 onwards

Figure 5.1 Depicting incomplete nature of present student record system



KEY: **broken line (— — —) indicates present needs partially fulfilled.**

3 future archiving requirements/possibilities

4 backwards from 1960 to 1832.

5.2 Aim redefined

The shifting target centred to being:

1 to design, trial and establish an efficient information retrieval system, using the SPIRES database system if it proved advantageous, to bridge the gap. Since the gap contains many records, and there would be neither time nor thesis merit in processing all of these, the task would have to be completed, if ever, by others.

2 to compare the performance of the SPIRES database system with those of the other facilities available

3 in so doing, to furnish a system for gradual transfer of all DU student records from the present backwards to 1832, onto a computerised IRS (Figure 5.2).

5.3 Advantages in designing a total system

It is:

1 of more use to the Examinations Office and other users

2 of greater constructive interest and achievement in that targetting on the total system offers greater learning opportunities. For instance, it was of more interest to incorporate postgraduate records rather than the original brief of sampling only from undergraduate records.
Designing a total system requires breaking more new ground in preference to processing repetitious operations.

5.4 Characteristics of the total system

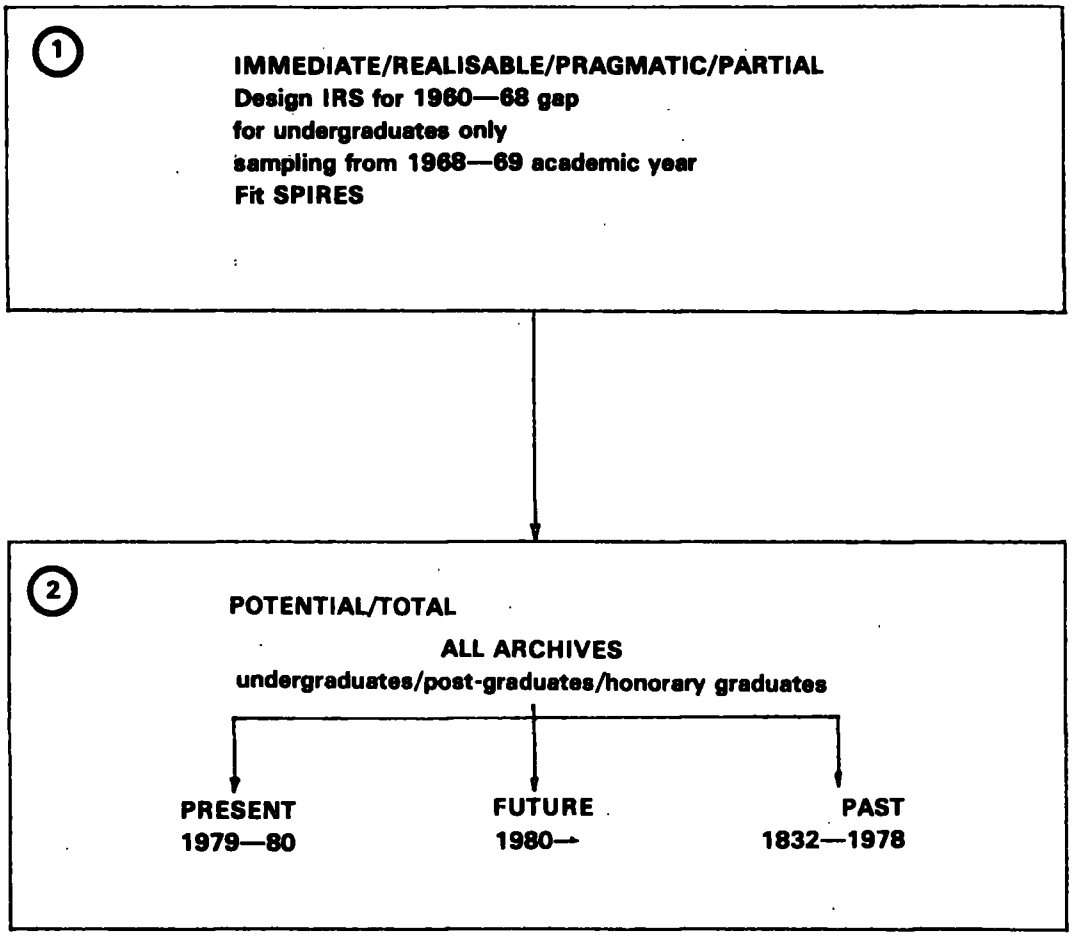
1 Efficient: capable of producing the intended result.
The users' NEEDS should reflect the INPUT to the system, and should be satisfied by the system's OUTPUT.

USERS' NEEDS ⟶ INPUT ⟶ IRS OUTPUT

Previous and present systems have not been designed to accomplish this.

2 Sole

Figure 5.2 Aim redefined



Note (1) is a subset of, maps onto (2)

3 Comprehensive

3.1 Encompassing 1832-present, but initially archiving from the last year of the most needed period.

3.2 Fulfilling as closely as possible, ALL requirements of ALL users.

4 Comprehensible

The Examinations Office staff prefer microfiche or printout in everyday English, not numbers nor code as in the 1969-79 system on NUMAC, which unfortunately effected a deterrent and barrier for examinations staff of that period.

5.5 Conclusion

The investigation of needs, establishment of facilities, pilot study, and exploratory data analysis confirmed the design of a total rather than partial computerised system as a viable target.

The transfer of all records from 1832-present onto one IRS is desirable, and the bridging of the 1960-68 gap is a useful interim aim.

SECTION 6

DATA CAPTURE, DATA ANALYSIS, SYSTEMS DESIGN

6.1 Preliminaries

The dominant sequence of the above operations was data capture followed by data analysis then systems design. But the 3 operations were also interwoven; for instance, data analysis led to further clarification of the University's requirements, which led to further sampling which on subsequent analysis led to adjustments in system design.

The sub-operations involved were

1 sampling
2 designing and creating masterfiles
3 transcribing
4 coding
5 data entry, storage and information output.

Figure 6.1 outlines the procedure.

6.2 Sampling

6.2.1 Method

A sample of 119 records was taken from the 1968-69 year, ensuring a spread of undergraduate, postgraduate and honorary graduate, college, year of study, award type, completion and incompletion of course. The courses relating to this sampling period, identified from the University Calendar 1968, and by discussion with the Examinations Clerk, are listed in Table A6. Students to be included in the sample were identified from the Students in Residence, Michaelmas Term 1968 booklet. The Congregation Lists for Michaelmas Term 1979 were also consulted. The selected record cards were then extracted from the Examinations Office files and photocopies taken from which to work.

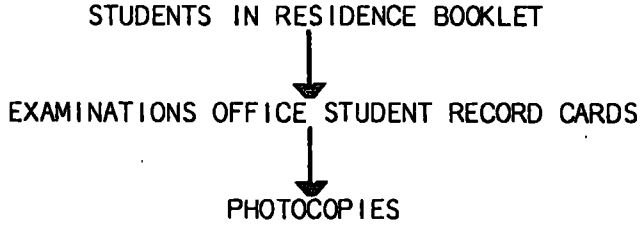
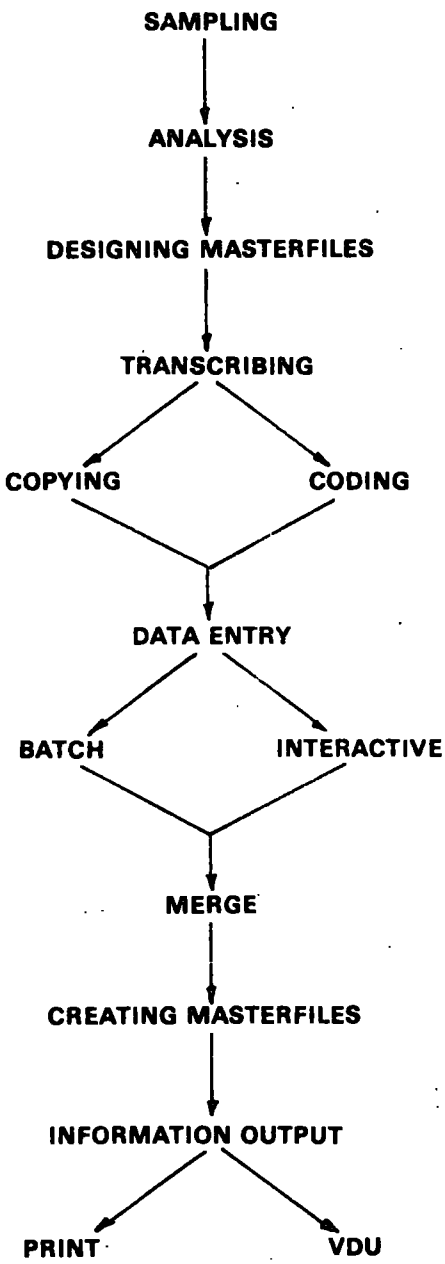


Figure 6.1 Data capture



6.2.2 Considerations

1 Limitations of Students in Residence booklet as identification instrument.

The booklet contains names for which no record card exists, examples being:

- a student at St John's College, recorded as Occasional Arts student. This case established that Occasional Arts Students are not carded by Examinations Office, but are recorded by the Assistant Registrar responsible for them.
- a student at Trevelyan College, reading for Diploma in Advanced Studies in Education DASE. The Examinations Office would pursue data through the Education Department.

2 Limitation of Congregation Lists as data source.

Conferment date may be later than award year, examples being

- case of degree conferred 1969 but student not in residence 1968-69
- case of degree conferred 1969, 13 years after qualifying for it.

3 Omission of data from record cards.

Some students listed in the Students in Residence booklet for 1968-69 show no data for that academic year on their cards, e.g. a student listed as in residence 1968-69 is recorded on his card as having registered in 1967-68 for MA Composition Music, but there are no data for 1968-69.

4 Clerical errors on record card.

4.1 Incorrect terminology, e.g. as earlier noted, the incorrect term Dip Theol was recorded in place of Dip Bib Stud. This class of errors was corrected by discussion with the Examinations Officer.

4.2 Transcription errors, e.g. student's name written as Atherstone, father's name written as Atheastone. For this class of error, the likelier interpretation was assumed.

5 Graduate Bachelor's degrees

e.g. BCL Bachelor of Civil Law
BMus Bachelor in Music

6 The BMus degree was a totally external award course for both UK and overseas students. Unlike the routine procedure for internal students of registering through their College, external students register through the Examinations Clerk.

7 Incomplete records
e.g. in the cases of degrees in Geography, Mathematics, and Psychology which can each be read in one or other of 2 faculties, i.e. as either BA or BSc, the faculty or award type must be determined by further search if both are absent from the record card.

6.3 Designing masterfiles

Data analysis, recognition of the users' requirements and knowledge of the available facilities led to design of the undergraduate masterfile detailed in Table A7.

Detailed work with the postgraduate and honorary graduate samples was discontinued at this stage since a good system, once demonstrated with undergraduate records, could readily be applied to them.

Table A8 relates the terms used in this masterfile to the synonyms found in the existing documentation.

Table A9 lists registration form fields considered not required on the masterfiles.

6.4 Transcribing

6.4.1 Accuracy

It was important that transcription was accurate and that interpretive error was avoided. Data once copied or interpreted from manual to computerised system is likely to remain unchanged on the computer records, as the meticulous and time-consuming work of checking the original records would not readily be repeated.

6.4.2 Method

Material to be transcribed was of 2 kinds:

1 data not to be coded, but to be reproduced in a form similar to its original e.g. student name

2 data to be coded e.g. college.

Table A10 lists data to be transcribed fully onto the archive. To date, these fields had not been incorporated onto the computer archives, thus manual records were being searched when it was required.

Table A11 shows the correlation where existent, between the present registration forms sections and the 13 amendment forms.

Table A12 summarises the mapping of data from record cards onto registration forms and amendment form fields.

The transcription procedure involved

1 transfer of the agreed data from the record card photocopies to the undergraduate or postgraduate registration form (Figures A19 and A20) and one or more of the 13 amendment forms. The fields to be retained and omitted are detailed in Tables A13 and A14 respectively.

2 regular conferences with
- the Examinations Clerk for his decision on anomalies encountered, as well as to ensure that the transcribed material was meeting his office's requirements in terms of content, terminology and interpretation
- the Data Processing Clerk to clear various queries arising so as to ensure accurate interpretation.

6.4.3 Considerations

Fields varied in their ease of transcription. The major factors either anticipated or encountered as transcription proceeded were

1 the importance of accuracy in copying and interpreting the original data so that the final computerised record reflects the original record without invalid assumption. To achieve this, explicit data e.g. student's name, was transcribed directly, implicit data and unclear entries were interpreted by the Examinations Clerk.

There were several categories of unclear entry.

- Errors

e.g. several inconsistencies in the record of student identified by student number 660 000 110U (see Section 6.2.4) led the Examinations Clerk to state that

a) some must be due to clerical error

b) it is likely that there is/was a second record card for this student.

- Data entered into the wrong field

e.g. for student 680 000 077P the award course title has been entered under faculty.

- Ambiguities

e.g. 'exam date' and 'qualified for award of' on record card are both interpreted as 'pass date' on registration form trailers, whereas 'date of award' on record card is interpreted as 'conferment date' on trailers.

2 record card fields incomplete e.g. in the examination field, subject names and examination marks entered, but no examination result recorded.

3 record cards incomplete e.g. cards ranged from bearing full data to little more than student's name.

4 fields present on record cards but absent from registration form e.g. postal address. There are numerous examples of loss of much detail in transcription. In each case, the record was carefully considered by the Examinations Clerk and his subsequent decision formed the precedent to be applied to similar instances.

5 fields present on registration form but absent from record cards e.g. UCCA number.

6 registration form fields ambiguous e.g. field 04.15-64 if left blank could indicate either that the student resided in college or that the address was not known. The researcher is prompted to suggest deletion of the non-sequitur '(if not College)'.

7 new amendment form fields were created where appropriate to capture all of the required fields e.g. results fields, see Table A7.

8 courses now extant, e.g. to establish whether the 'Dip Pub Admin' had been an undergraduate or postgraduate course, its entry requirements listed in the University Calendar 1968-69 were examined. The course had been undergraduate.

9 fields on the current registration forms and punching instruction forms for which no data existed on the source documents, were left blank, i.e. no implicit assumptions were drawn in the data transfer process, e.g. sex field 01.51, accommodation field 04.65-69. (Table A15 Additional codes, Section 9).

6.4.4 Coding

The coding procedure was as follows.
The UCCA student registration number was part existent in 1968 but none of the sampled records bore one. These records were therefore allocated a student number coded by the same calculation as the UCCA number (Universities Statistical Record, manual of operating procedure,[1,2] pp 54, 55).

Source document data for which UCCA or DU codes exist were coded according to these existing codes[1-4].

Source document data for which no codes existed were treated in one of 3 ways:

1 data no longer needed was not transcribed (Tables A9 and A14)

2 for data still needed, new codes were created if feasible (Table A15)

3 data not satisfactorily codeable was copied from source documents in its original form e.g. thesis title (Table A10).

Fields for which data for the UCCA or DU code was insufficient were completed by asterisks e.g. A-level results, undergraduate fields 05.22-40. Data for examining board, sitting, year, grade were sometimes absent from source documents. In this event, the positions were filled by the appropriate number of asterisks. The reason for not pursuing the absent data was that the very small requirement for this data would not justify the large amount of time taken to capture it. (Table A15,

Section 9). Colleges without a DU code had separated from DU before UCCA coding was established. They have been coded thus.
Present DU colleges are all in the UK and have existing codes from 01 to 15 (University of Durham College Codes[4], section 3).
Separated UK colleges were newly coded from 20 to 29 in order to keep this group together e.g. Sunderland College of Education 20. Overseas colleges were newly coded from 30 e.g. Fourah Bay college, Sierra Leone 30. (Table A15, section 1).
Inadequacies of the present coding system emerged in the course of the work e.g. the undergraduate registration form allows for a differentiation between A-level grades, but not between S-level grades. (Further, Code List 13 does not clarify that 9 implies S.) Thus the system would show no differentiation between the grades of a student with results as follows:

	LEVEL	GRADE	CODE
SMP math	S	2	9
Nuffield math	S	1	9

6.5 Data entry, storage and information output

6.5.1 Entry

Data entry was effected by

1 batch processing
2 interactive processing.

1 Batch processing was used for batches of transactions which were conveniently processed together at pre-defined time periods, i.e. the registration forms and amendment forms. The method used was punching of data direct from form onto punched card, carried out initially by the researcher to check that the process was smooth running, then delegated to card punch machine operating staff.

2 Interactive processing was used when individual transactions needed to be processed as the data became available e.g. new, clarified or corrected data. Input method was by operator-activated keyboard which was an integral part of a visual display unit (VDU). By this means it was possible to update a record stored in the computer's backing storage

or retrieve information from backing storage. As with the punched card entry, the key-in entry was initially worked thus by the researcher before delegation to keyboard operation staff.

In order to capture all of the required data, a maximum of 64 cards per record was anticipated. Their purposes are shown in Table A16. Comparison of Tables A11 and A16 indicates that cards 01-05 bear the same data as the existing system's cards, whereas cards 06 to 64 are allocated as tabulated.

The 12 annual cycles of 4 cards per year, comprising

fees
registration
result
resit

was considered by the Examination's Clerk to meet all possible eventualities he had encountered in his several years' experience of the University's student records system. The 12 years was computed along theoretically possible but unlikely lines such as:

4 years for undergraduate degree
1 year for graduate diploma
2 years for MSc degree part time
5 years for PhD degree (3 years full time plus maximum of 2 years' allowance).

Other factors included

- repeating one or more years
- 6 year duration of medical and dental degree courses when King's College was part of Durham University.

6.5.2 Storage

Data storage was on magnetic tape in the MTS system.

6.5.3 Output

Information was recovered both interactively at a VDU, and as printout. Table A17 shows printout in MTS format.

6.6 References

1 Universities Statistical Record. Manual of operating procedure Vols 1 and 2, 1978 pp 54/55.

2 UCCA school code file.

3 University of Durham, coding instructions for coders.

4 University of Durham, college codes.

SECTION 7

SPIRES DATABASE

7.1 Preliminaries

Having created masterfiles in MTS, attention was turned to the SPIRES database. By reference to the SPIRES documentation and with help from the SPIRES consultant at Newcastle University computer unit, SPIRES files were created for the file definition, custom designed input and output format definitions, and decode tables.

A database used for this student record archiving project needs to have the following capabilities:

1 store all required data
   - masterfiles - undergraduate, postgraduate, honorary graduate
   - from 1832-present

2 maintain the confidentiality of sensitive data

3 process the data as required
   - store/merge all fields on masterfiles
   - retrieve one or more items of information from any one student record
   - provide interactive facilities
   - print single or multiple copies of one or more fields, subfiles and masterfiles
   - meet user's retrieval volume and speed requirements both interactively and as printout

4 cost effectiveness

5 suited to further design, extension and development

6 compare favourably with other systems, i.e. to have a balance of advantages over MTS and other systems.

SPIRES' capabilities are detailed in 'SPIRES/370 File Definition' by Jackson and Senda. An outline is to be found in 'Introduction to SPIRES file and format definition' both by Rossiter, which were published towards the end of this project's research period. SPIRES commands and procedures are detailed in the above references and are thus not repeated in this report, which is confined to detailing only the design and decision factors specific to this project.

7.2 File Definition

7.2.1 Design

All fields required by student record users were listed in terms of the permitted SPIRES characters. In SPIRES terminology, these were the SPIRES data elements and structures. See Table A18, SPIRES data elements and structures.

The SPIRES file definition was written and entered into MTS as MTS file FDEF (Table A19, MTS file FDEF). The coding features required for this student record system file definition were:

LINE	
1	file definition name, comprising the 4-character user identifier under which the data will be held (COL1) connected by a point (.) to the descriptor (STUREC)
2-4	these 3 entries are inserted automatically where the file definition is DEFined or MODified. They do not form part of the user-writer definition
5	defines the maximum length of an element or structure (in characters) that is anticipated
6-242	definitions of data elements and structures
243-265	user-defined procedures
266-338	index record definition
339-342	goal record linkage
343-387	index record linkage
388-398	subfile section

The listing for Table A19 was obtained by

```
$RUN * SPIRES
SELECT FILEDEF
SET LEN 132
TRANSFER COL1.STUREC CLEAR
$LIST -SAF *PRINT*
```

7.2.1.1 Coding and decoding

The coding/decoding procedure also required

1. file definition instructions
2. a data file containing the codes/decodes.

1 File definition

This required inserting into MTS file FDEF the instructions:

```
LINE
  327-338  index-record definition
399-endfile  subfile section
```

2 Data file

An MTS file CODE was created to store the code/decode data for 8 contrasting student records selected to trial the system. The SPIRES command sequence was:

```
ADD;C (coding data);D (decoding data); ;
```

where C represents code
D represents decode

e.g. the Durham University code for 'college or university owned accommodation' is 1. SPIRES requires one or more alphabetic characters to precede the digit 1, and so the character A was used to represent 'accommodation'. This command sequence line thus becomes:

```
ADD;C A1;D COLLEGE OR UNIVERSITY OWNED; ;
```

Table A20 shows printout of MTS file CODE.

7.2.1.2 Private subfiles

The student records contain sensitive data to which access for either search or updating must be restricted to designated users.
The main areas of confidential information are:

1 examination marks
2 finance source e.g. a student may be privately financed
3 concessions e.g. granted due to family circumstances
4 miscellaneous personal data.

The present computerised student record system does not yet cater for this need.

To demonstrate the implementation of privileged subfile facilities in the system, the examination marks fields were limited to specific users only. This was achieved by defining the security provisions in the accounts section of the subfile part of the file definition so that different signon ID's have their own allocated access privileges and

restrictions, and by creation at registration of the data files STUREC%A and STUREC%Q which control access to the specified users.

7.2.2 Registration

After the file definition has been written and stored in MTS, it must be registered in SPIRES. Registration comprises 2 steps:

1 adding the definition to the FILEDEF public subfile which contains the definitions of all the current SPIRES files

2 compiling the definition using the SPICOMP processor.

1 Adding

The following command sequence adds the MTS file FDEF to the SPIRES subfile FILEDEF.

? SELECT FILEDEF	calls the SPIRES system subfile FILEDEF
? USE FDEF	places the file definition FDEF into the active file
? ADD	adds FDEF into FILEDEF creating a SPIRES FILEDEF record COL1.STUREC
?	prompt character here means a successful ADD

2 Compiling

Definitions are compiled by the SPICOMP processor using the following command sequence.

? CALL SPICOMP	invokes the SPIRES compiler
? COMPILE COL1.STUREC	compiles the file definition

The process of compiling the file definition creates 2 new files which are structured to hold the user's data. These are:

1 STUREC%A, the main data file

2 STUREC%Q, the deferred update queue file.

The data files control access (unlimited/read-only/read-write) to the specified users.

Table A21: SPIRES FILEDEF record COL1.STUREC shows printout of SPIRES private subfile COL1.STUREC, i.e. the equivalent of MTS file FDEF. Features are:

1 no line numbers, making MTS file FDEF more convenient to edit

2 COL1.STUREC output is in SPIRES standard/default format.

The listing for Table A21 was obtained by

```
$RUN *SPIRES
SELECT FILEDEF
TRANSFER COL1.STUREC CLEAR
$LIST -SAF *PRINT*
```

Table A22: SPIRES file CODE shows printout of the code/decode tables, storing the same data as MTS file CODE.

7.3 Input format definition

To enter data into SPIRES, an input format must be defined and registered. SPIRES offers 2 types of format definition facilities:

1 standard/default format

2 custom designed format.

The standard input format was unsuitable for the student record data and system requirement, so a custom input format was written in MTS file FORMDEF (Table A23).

7.3.1 Design

The input format definition needs the information of lines 1 and 4 for registration with the SPIRES public subfile FORMATS. The remaining coding feature details are:

LINE

1 ID=COL1.IN
an identifier which is the key to the formats records in the FORMATS public subfile for use by the SPICOMP processor and various SPIRES commands.
COL1 is the user identifier.
IN indicates INPUT format subfile.

2 MODification date

3 DEFinition date

4 FILE=COL1.STUREC
name of file containing data being input

5	RECORD-NAME=REC01 record-name declaration, giving name of goal record in the file containing data being input
6-51	VGROUP section: declaration of user-variables
52-112	master/controlling frame
113-175	frame definition, defining frame calls or subroutine calls
176-751	frame definition, defining indirect frames
459-525	frame definition, example of defining indirect frames for structures
752-799	concluding section: frame definition, FORMAT-ID section declarations.

The listing for Table A23 was obtained by

```
$RUN *SPIRES
SELECT FORMATS
TRANSFER COL1.IN CLEAR
$LIST -SAF *PRINT*
```

7.3.2 Registration

The command sequence to add and compile the input format is:

SELECT FORMATS	calls the SPIRES system subfile FORMATS into active file
USE FORMDEF	makes MTS file FORMDEF the active file
ADD	adds FORMDEF to FORMATS creating a SPIRES FORMATS record COL1.IN
CALL SPICOMP	
FORMAT COL1.IN	compiles the input format definition

The last instruction, viz. FORMAT COL1.IN, compiles the input format definition now stored in SPIRES FORMATS record COL1.IN, by the SPIRES compiler SPICOMP. The overall effect has been to create an MTS file (FORMDEF), then place it under the control of SPIRES (as SPIRES FORMATS record COL1.IN) which on instruction, performs the functions specified in the input format definition.

Table A24: SPIRES FORMATS record COL1.IN shows SPIRES output of the same data as that stored in MTS file FORMDEF.

The listing for Table A24 was obtained by

```
$RUN *SPIRES
SELECT FORMATS
TRANSFER COL1.IN CLEAR
$LIST -SAF *PRINT*
```

7.4 Output format definition

The procedure defining output format resembles that of input formats, with the following main differences:

- DIRECTION=INPUT is replaced by DIRECTION=OUTPUT
- USAGE=FULL is replaced by USAGE=DISPLAY
- GETDATA is replaced by GETELEM as the instruction to fetch data
- PUTELEM is replaced by PUTDATA as the data placement instruction.

As with input formats, both default and custom output formats are available, and again a custom format was necessary to meet the student record data and system requirements.

7.4.1 Design

The output format definition was created in MTS file FORMAT1 (Table A25). Its coding details are:

LINE

1. identifier
2. name of file containing data being output
3. name of goal record in the file which contains the data being output
4. frame identifier
5. direction, indicating that it is only to be used for output from the SPIRES subfile
6. indicates size of table into which data is to be placed ; table will have 0 rows, 60 columns.
   Zero rows in formats is a convention for line-by-line writing of output data, in which data can be placed either on the current line or the next line, but never in lines already output.

7 indicates frame is to be used for display only

9-66 . the values for LABEL indicate the names of the elements whose values are to be placed in the frame
. the instruction GETELEM fetches the value for the element from the record in the file
. the instruction PUTDATA places this value in the frame at the position indicated by START
. the value for LABEL=IDENTITY-NO starts at row X, column 1, where X represents the row after the last row in which data was stored.

Lines 9-66 also contain the additional instructions needed by the student record system's complexity, viz. format instructions for elements
. with long values e.g. line 9
. with multiply-occurring values e.g. line 12 'LOOP'
. defined within structures e.g. lines 10-12

68 format identifier specifying the custom format

69-71 . name of each frame: FRAME=
. frame type into which the format places data: FRAME-TYPE=

7.4.2 Registration

The output format addition and compilation command sequence is:

```
SELECT FORMATS
USE FORMAT1
ADD                    adds FORMAT1 to FORMATS creating a SPIRES
                       FORMATS record COL1.OUT1
CALL SPICOMP
FORMAT COL1.OUT1
```

Table A26: SPIRES FORMATS record COL1.OUT1 shows SPIRES output equivalent to MTS file FORMAT1.

The listing for Tables A26 was obtained by

```
$RUN *SPIRES
SELECT FORMATS
TRANSFER COL1.OUT CLEAR
$LIST -SAF *PRINT*
```

7.5 SPIRES student record output

Table A27: SPIRES student record printout shows SPIRES presentation in terms of content and format of the student record samples in Table A17. It is superior to the MTS output in:

1 decoding

- those fields entered in the code/decode table have mostly been successfully decoded
- some fields were incompletely but not inaccurately decoded: these fields would be decoded with further work with the SPIRES consultant on the file definition.

2 format

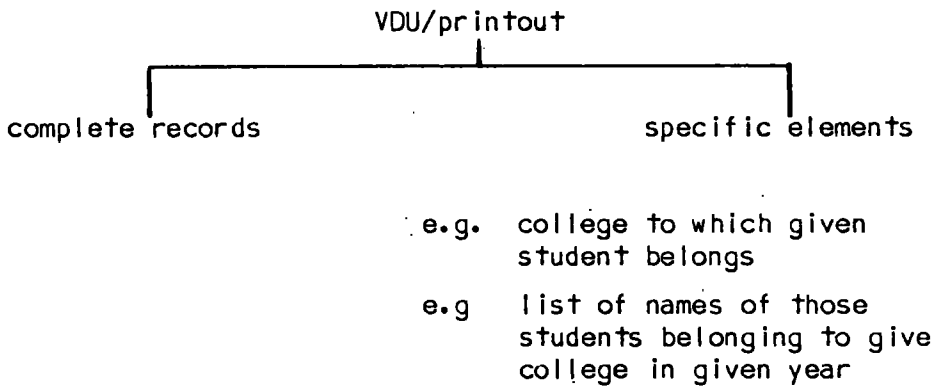
SPIRES output format is easier and faster to read and from which to extract information, than that of MTS.

SECTION 8

USING SPIRES STUDENT RECORD SYSTEM

8.1 Overview

SPIRES proved able to meet the student record users' requirements. It provided both VDU and printed output for both complete records and for separate elements. In terms of specific elements of given records, it provided either a required element of one record or a listing of a required element from all records. Its maintenance, update, ease of use and further facilities were all conducive to its consideration as a viable system.



8.2 System maintenance and update

System maintenance and update was well provided for. The student record masterfiles and SPIRES file and format definitions could all be readily amended by use of the SPIRES commands and instructions available.

The present student record system has an annual operation calendar encompassing all its intended activities, but it is only partly worked to. Its weekly update has in practice evolved into an occasional job. For instance, its records' update is carried out not weekly as listed but when the job volume is considered to merit it. From the user's viewpoint, this is undesireable since it means that data known to be inaccurate or obsolete can be retrieved whilst the desired data awaits input to the system. Record update should be at least weekly, irrespective of quantity to be amended.

System update, being of a more complex nature, would be carried out less often and needs the services of a good systems analyst. The discussions throughout this project with the users and the data processing staff indicated the need for termly meetings during the first year of implementation, reducing to 2 per year thereafter. The meetings, between systems analyst and users, should be either of an informal character between analyst and one user/user group as were those for this project, or a more formal meeting attended by all user groups, whichever is the more efficient. The latter arrangement is generally quicker but may not achieve the desired communication objective.

The group-style meeting would be best served by a lead time of 3-4 weeks being given by the convener to the users to alert them to preparation of the agenda items on which improvement is sought.

8.3 Ease of use for novice users

Intending users unfamiliar with terminal operation would require some initial instruction. In addition, adequate and current documentation (card or booklet) should be readily available by each terminal.

Student record users fall into 2 groups according to frequency of system usage:

1 frequent usage e.g. Examinations Office staff
2 rarer usage e.g. College administrative staff, University library.

Where indicated by degree of use, installation of a VDU terminal would be envisaged. Thus, the Examinations Office would require one or more VDUs together with access to printout facilities, the daily use of which would rapidly develop staff skills. By contrast, the larger colleges could have sufficient use for an onsite VDU terminal for their simple searches, whilst obtaining more complex information and printout from the Examinations Office or the Registrar's data processing section. The smaller colleges, and occasional users, may have adequate provision by requesting their information through these more experienced and better equipped users.

Of the 3 student record archiving systems here mentioned, viz. MTS, the present system and SPIRES, the SPIRES database would be the most complex system to learn. Nonetheless, the most needed search operations are direct and simple to follow, and their use would be repetitive. Additionally, the fact that SPIRES is increasingly well documented and a consultant is locally available makes its implementation an unformidable prospect.

8.4 Further SPIRES facilities

SPIRES offers a wide range of facilities in file and format definition, searching and updating, which were not examined in further detail during this project time, and which could be in itself a productive area of further study.

They are summarised in:

- 'Introduction to SPIRES'
- 'Introduction to SPIRES file and format definition'

and detailed in:

- 'SPIRES/370 file definition'
- 'SPIRES searching and updating'
- 'SPIRES/370 data base management'
- 'SPIRES/370 formats'
- 'SPIRES/370 protocols'.

SECTION 9

TESTING SPIRES

9.1 Trialling

To establish whether the SPIRES student record output was satisfactory to the users, 8 records were selected so that the quality, range and contrast of SPIRES capabilities could be examined.

The 8 records comprised 3 groups:

1 three contrasting students in residence for the academic year 1968-69: their records for the 68-69 academic year only, were considered

2 three contrasting students in residence for the academic year 1968-69: their complete student records were archived

3 two contrasting students recently in residence: complete records.

The test records were:

GROUP	STUDENT IDENTITY-NO
1	660 000 121U
1	640 000 182U
1	680 000 310U
2	660 000 143U
2	680 000 413U
2	630 000 050U
3	750 127 973U
3	750 190 756U

Student names are not listed above because the student record data is confidential.

The purpose of group 1 was to use data already on this project file to rapidly check that the system was working. This confined the exercise to the 1968-69 year. This modest ouput proved very satisfactory to the users, and led to group 2.

The purpose of group 2 was, having established that the system was working and needed only minor refinement, to produce output for the complete histories of a range of students. Thus 3 students whose 68-69 records were on file were selected on the basis of their total records

being in marked contrast to each other and so providing a rigorous test for the records currently archived. This required the remainder of these 3 records to be added to the MTS file (Table A17) then compiled in SPIRES (Table A27). The output again satisfied the users.

The third group arose as a result of the successful outcome of the 2 previous groups. 'If the system will do this, will it work with recent and harder records?' The researcher was asked to trial the system on 2 recent student records: one chosen for its typical character, the other for its atypicality - a case memorable over several years to administrative staff. It was considered by the users that if the sytem could handle record 750 127 970U, it met all present requirements. It did.

SPIRES printout of the 8 records may be seen in Table A27. Certain fields which had not decoded, viz. unit, resit-result, mark, last-school-type, board, sitting have already been noted. The main problem was the very large number of decoding tables required, which SPIRES had trouble in keeping track of. This was being solved by having a few tables with a special prefix character for each element which required a look-up.

At this stage, the SPIRES consultant was unavailable and also no further research time remained for the researcher. However, the researcher is confident that further time spent on the decoding would decode these fields.

Another significant factor in placing the student record archives on the SPIRES database was that this particular application of SPIRES was new to the consultant. The effect was to slow the workpace as increasing levels of new experience were encountered in moving forward with the research, and thereby placing unproven demands on SPIRES.

Copies of the documents from which the researcher worked on the 8 test records are shown in Appendix 8.

9.2 Comparison of the MTS based retrieval system with SPIRES

1 Advantages of MTS

1 Cheaper.

2 Greater user control: work with SPIRES needs a SPIRES specialist - either use of the consultant's services or the acquisition of SPIRES expertise by the systems analyst responsible for the student record system design.

3 More computer personnel are familiar with MTS.

4 Simpler to learn.

2 Advantages of SPIRES

1 More legible output. This, it may be recalled, is an important factor in user requirements. A fully decoded output is more readily available through SPIRES, though further work with MTS could produce a fully decoded custom format in MTS also.

2 Better output format.

3 The database, with its enquiry, search and many other facilities, already exists, whereas a similarly powerful suite of programs in MTS have to be individually written.

4 The wide range of search and other facilities available in SPIRES, though not at present required, are available for future use.

5 In using a database such as SPIRES, good facilities are obtained at relatively low cost, since the database development costs are spread over its many users.

SECTION 10

FINANCIAL AND ECONOMIC ASPECTS

10.1 Criteria for assessing the economic viability of a computerised student record system

1 Accuracy of information

Student record information needs to be not only timely but also reliable. This is facilitated by a computer because error detection routines, i.e. validation checks, are incorporated in computer programs. As has already been noted, a high frequency of clerical error in the manual student record system was encountered during sampling and analysis. Although clerical systems do incorporate checks and controls, the automatic checking facilities provided by computer programs should be superior.

2 Cost effectiveness

Important factors to consider are the benefits which the new system is capable of achieving compared with those of the current hybrid system. If the value of benefits exceeds the cost of obtaining them, then computerising the student record archives is a viable proposition.

An increase in annual operating costs may not necessarily be a matter of concern, especially if the cost of the present system is lower than it should be.

Initially, costs may increase due to running both the old and new systems concurrently; later, cost reductions may be achieved when the manual system has been dispensed with.

3 Speed and volume factors

Rapid information retrieval.

At times of the annual academic cycle when the volume of student record processing is greatly increased e.g. at registration and examination times, the computerised system will decrease the need for additional staff.

10.2 Costs of implementing a computerised system

The costs of converting the student record archives from manual to computer system are indicated by the cost schedule below. Actual cost figures are not quoted as these vary with time.

Initial costs

1 Hardware
- additional input/output devices

2 Staff training
- data preparation staff
- VDU and printer operating staff

3 Feasibility study
- conducting initial investigations by internal staff and consultants
- SPIRES database investigation costs

4 Parallel operation
- operating both manual and computerised student record systems concurrently during the proving period

5 File conversion
- converting the masterfiles of the manual system to those of the computer system

6 System design and testing
- although this is a continuing activity rather than a once only task, it is included for completeness

7 Master file recording media
- punched cards
- magnetic tape reels
- exchangeable disc packs.

Annual operating costs

1 Hardware
- annual depreciation charge of purchased terminals
- maintenance

2 Computer operations - general expenses
- punched cards, (papertape?), magnetic tape
- printer output stationery
- computer time cost
- training courses
- SPIRES database costs, if implemented

3 Computer operations - personnel
- unless existing staff are available to design, trial and direct the implementation of the system, a systems analyst should be employed for contract periods as necessary
- SPIRES consultancy costs

4 General administrative expenses.

10.3 Accounting treatment

Accounting treatment of initial costs would include the following considerations.

1 Computer hardware (VDUs and printers) represent unextinguished capital expenditure and may be written off over a specified number of years. For tax purposes however, this expenditure may be written off in the first year.

2 The expenditure of conducting a feasibility study, file conversion, staff training, system design, testing and parallel operation should be classed as revenue expenditure and written off in the first year.

3 Any expenditure incurred in obtaining premises for data preparation activities could be written off over a number of years, as value is unextinguished for some considerable time.

SECTION 11
EVALUATION

11.1 Results

The project results are:

1 The design of a computerised information retrieval system for Durham University's student records using the University's computer, NUMAC and its major operating system MTS.

2 Investigation, analysis, utilisation and comparison of a database, SPIRES, as a possible preferable information retrieval system.

3 Both systems satisfied the users' needs. Within the project time available, SPIRES demonstrated better decoding and format facilities.

The steps by which these results were achieved were:

1 A thorough analysis of Durham University's student record system from its inception in 1832 to the present.

2 A specific investigation of the student record system for the academic year 1968-69. This year was chosen for demonstration and sampling because it was the most recent year of a period constituting a gap in the manual archives.

3 In MTS
- design of a suitable computer system
- transfer of records from the designated sampling period, from the manual to the computer system
- trial of the system
- analysis of output with the student record system's major users.

4 Placing the MTS student record system onto the SPIRES database, by writing the file definition incorporating definitions for coding/decoding and private subfiles, decode tables, and custom designed input and output format definitions.

5 In SPIRES
- trial of the system
- analysis of output with users.

6 Comparison of the non-database and database systems.

11.2 Evaluation

Although the initial project developed into a larger and more faceted work than that originally put to the researcher, all of the aims were met or nearly met, and much was learned in the doing.

As a result of the helpful cooperation from and constructive discussion with the major users, the student record masterfile developed in this project was the most useful to date. It was the most comprehensive i.e. it incorporated all of the required fields. It was clearer and less ambiguous than its predecessors, gaining from being able to build on their experience. Maintenance and update of the computer masterfiles was a relatively simple task: deletion of obsolete fields, inclusion of newly required fields and clarification of fields needing improvement in definition could all be simply effected.

The remaining target requirements were also met. Accuracy, speed, volume and uniformity factors were all satisfied. In terms of accuracy, the computer system increased the accuracy of the masterfiles by the inbuilt validation checks, reduced the incidence of individual error and facilitated correction of systematic error. Regarding speed, information retrieval rate was also increased. Uniformity of record processing and archiving was achieved in that one central masterfile, appropriately accessible by user ID, would replace the concurrent and overlapping several manual and one computer record collection presently existing throughout the University.

11.3 Recommendations

The major recommendations arising from consultations with users were:

1 Communication

Closer and initially more frequent communciation between users, systems analyst and data processing staff is required during masterfile preparation, trialling and implementation. Specifically, input data and format, and output information and format need careful checking/proof-reading for content, completeness and lucidness. Periodic meetings are required during this time and subsequently, as outlined in Section 8.2.

2 Codes

Additional Durham University codes are required. The existing UCCA and DU codes are too limited for Examinations Office needs. Examples proliferate:

- various post A-level qualifications are currently not remaining differentiated but being coded as 'other' e.g. BEd qualifying examination, qualified teacher, music qualifications
- BA Hons Mus and BMus are undifferentiated.

3 Statistics

Check of current statistics is required e.g. the Examinations Clerk finds that the student numbers obtained from the current system are too few for the numbers he is required to allocate for examinations.

11.4 Further Work

On starting the project and increasingly throughout it, numerous avenues of further work were envisaged. They included:

1 completion of SPIRES decoding

2 completion of postgraduate and honorary graduate masterfiles

3 learning from the experience of other
- information retrieval systems
- computerised student record systems

This was considered at the start of the project, but not done.

4 transfer to SPIRES of records currently archived on
- NUMAC i.e. 1969-79 records
- present system i.e. 1979-present records

A program exists for record transfer from NUMAC to the present system, but contains only the major fields, thus is less comprehensive than the masterfile designed in this project.

5 Various statistical analyses. By increasing the sample to about 10% of the population, trends could be investigated. Of interest to staff were:
- seasonal variation in enquiries
- fulfillment of matriculation promise by correlating A-level result and degree class.

6 arrange completion of the archiving, by working backwards to 1832.

SECTION 12

REFERENCES

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1.2 Registration listing suite, systems report, 26pp

1.3 Users guide, 125pp

1.4 Users guide, appendices I-IV, input documents.

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4 IBM (1976) MTS Volume 5: System Services.

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11 NUMAC DOCUMENTATION GROUP (1978) Introduction to NUMAC.

12 ODDY RN (1971) Computer processing of library files at Durham University, DU Library publication No 7.

13 ODDY RN (1971) Computer processing of the bibliographic records of a small library, DU MSc thesis.

14 ROSSITER BN (1980) Introduction to SPIRES, NUMAC Computing Service, 71+pp.

15 ROSSITER BN (1980) Introduction to SPIRES File and Format Definition, NUMAC Computing Service, 72+pp.

16 SCHROEDER JR, Kiefer WC, Guertin RL, Berman WJ (1975), Stanford's generalized database system; Proc. international Conference on Very Large Data Bases, pp 120-143.

17 SENDA RE (ed) (1978) SPIRES/370 Data Base Management, University of Alberta, 47pp.

18 Steele JW (1978) Introduction to MTS, NUMAC Documentation Group.

19 UCCA (1979) How to apply for admission to a university, October 1980 entry, UCCA, ISBN 0 900 951 31 1.

20 UCCA (1979) School code file.

21 UNIVERSITIES STATISTICAL RECORD (1978) Manual of operating procedure

20.1 Volume 1, the undergraduate record, 73pp.

20.2 Volume 2, the postgraduate record.

22 UNIVERSITY OF ALBERTA (1976) SPIRES/370 Formats Language, 97pp.

23 UNIVERSITY OF CHICAGO PRESS (1969) A manual of style, University of Chicago Press.

24 UNIVERSITY OF DURHAM (1969) Calendar 1968-69, University of Durham Press, 596+pp.

25 UNIVERSITY OF DURHAM (1979) Calendar 1979-80, University of Durham Press, 1131+pp.

26 UNIVERSITY OF DURHAM (1969)

26.1 Gazette, Vol XVI (New Series) No.2, 31.7.69

26.2 Gazette supplement, Vol XVI (New Series) 30.9.69.

27 UNIVERSITY OF DURHAM (1948) Graduates of the University, Durham University Office.

28 UNIVERSITY OF DURHAM (1954) Graduates of the University, Durham University Office, 352pp.

29 UNIVERSITY OF DURHAM (1960) Supplement to the graduate list last published in 1954, Durham University Office, 172pp.

30 UNIVERSITY OF DURHAM REGISTRAR'S DEPT. (1977)

30.1 Coding instructions

30.2 College codes

30.3 Student records codes list

30.4 Unit course codes.

31 UNIVERSITY OF DURHAM REGISTRAR'S DEPT. (1977) Student record system

31.1 Guide to the student records system, 65pp

31.2 Registration and maintenance procedures, 30+pp

31.3 Student record archives 1977-date, magnetic discs.

32 UNIVERSITY OF DURHAM REGISTRAR'S DEPT. (1979)

32.1 NUMAC student record archive index, 17.5.79

32.2 NUMAC student record archives, magnetic tapes.

33 UNIVERSITY OF DURHAM REGISTRAR'S DEPT. (1832-1900s) Student marks books (about 48 volumes).

34 UNIVERSITY OF DURHAM REGISTRAR'S DEPT. (1968) Students in Residence, Michaelmas term 1968, 56pp.

35 YOUNG DA (1979) SPIRES/370 implementation of the historical information system, P-computing project report, University of Durham, 41+pp.

SECTION 13

APPENDICES

APPENDIX 1

ABBREVIATIONS

DU	Durham University
IRS	Information Retrieval System
IES	Institute of European Studies
IBM	International Business Machines Corporation
ICL	International Computers Limited
MTS	Michigan Terminal System
NUMAC	Northumbrian Universities Multiple Access Computer
OAS	Occasional Arts Students
OS	Operating System
PL/1	Programming Language 1
RPG2	Report Program Generator 2
SPIRES	Stanford Public Information REtrieval System
UCCA	Universities Central Council on Admissions
USR	Universities Statistical Record

APPENDIX 2

DATA PRIVACY PRECAUTIONS

The following precautions were envisaged to prevent unauthorised access to sensitive student record data.

Confidential data

- examination marks
- possibly certain private funding sources
- any other, as specified by the Registrar.

All other data is available to the public, via such sources as:

- Durham University Calendar
- Durham University Graduate Lists
- GCE examining boards
- other.

1 Existing measures

Current security levels will be maintained, viz. those exercised with the NUMAC PL/1 and the ICL RPG2 systems.

2 Paper output

During the project, all paper output containing sensitive data will be retained in the personal possession of the researcher, under lock and key if need be.

At the end of project, it's incineration or shredding will be arranged by

- either handing it to the Registrar for his disposal
- or by the arrangement of the researcher.

The major objective of this precaution is to preclude the possibility of leaving computer output around for the casual/desultory attentions of mischievous and inquisitive students.

3 Material in the computer during development period

3.1 No confidential data will be archived into the computer system.

3.2 Confidential data will be kept on the researcher's magnetic tapes to which NUMAC staff will have no direct access, and

which will be specified not to be loaded onto the computer other than as jobs submitted by the researcher.

3.3 If need be, results could be scrambled such that only the research supervisors and the researcher know which result refers to which individual.

4 End of Project

4.1 A record of all computer job receipt numbers will be kept, and it will be ensured that the output associated with these will be retrieved and subsequently destroyed.

4.2 Two copies, i.e. master and backup, of each magnetic tape will go to the Registrar; all other copies will be wiped clean.

5 Data transcription could be arranged for high security data by putting names on one file and the corresponding sensitive data on a different file. If the Registrar feels that it is necessary, different transcription bureaus would be used for the transcription of different parts of the data, i.e. so that no particular service could correlate names with sensitive information. These procedures would add significant cost to the data transcription and would only be instigated as a result of a specific authorisation from the Registrar.

6 The researcher will not identify students individually in any published work or in any way breach the confidentiality of the record. Neither the MSc thesis nor any internal reports will mention information relating to named individual students. For the purpose of descriptive work in the thesis, fictitious names will be used.

APPENDIX 3

DATA SOURCES: DETAIL

Source 1: marks books

1	DATE	1830's - 1900's
2	CATEGORY	sensitive
3	ACCESS	Registrar and permitted staff
4	LOCATION	examinations department
5	AVAILABLE	examinations department hours
6	STORAGE MEDIUM	books
7	CONTENTS	elements/page: name college award
8	DESCRIPTION	This data source comprises a sequence of about 48 leather bound ledgers of handwritten student records. Initially they were pass lists. During some periods, all students in residence are recorded in the same volume, during other periods a separate volume has been kept for each faculty. Some periods have 2 marks books, one in different handwriting from the other. It is unclear whether these have been kept contemporaneously by different people in the university or whether one has been copied from the other.
9	USE	to answer queries of that period e.g. date, type and class of award.
10	LIMITATION	slow retrieval instrument because student surnames are not alphabetically ordered.
11	REFERENCES	University of Durham, Student marks books; Registrar's Dept., 1832-1900's, about 48 volumes.
12	FIGURES	A1, A2.

Figure A1 Marks book 1836, BA pass list

List of Persons who expect to pass their Examination for the degree of B.A.

Easter Term 1836.

Bennett Wm
Cundill Wm
Errington Ralph
Garnett Thos
Gibson John
Harrison Charles Hawkins
Hick James Watson
Hills George
Pratt Robert Foster
Raymond Wm Wayne St Clare
Robinson Ralph.
Skinner James
Thompson Francis
Watson William Thomas.

Class Papers.

Classical and general literature

Class 1

—

Class 2.
Cundill
Garnett

Class 3
Pratt

Class 4
Hick
Hills

—

Mathematical & Physical Science.

Class 1.
Cundill

Class 2.
Gibson

Class 3.
Errington

Class 4

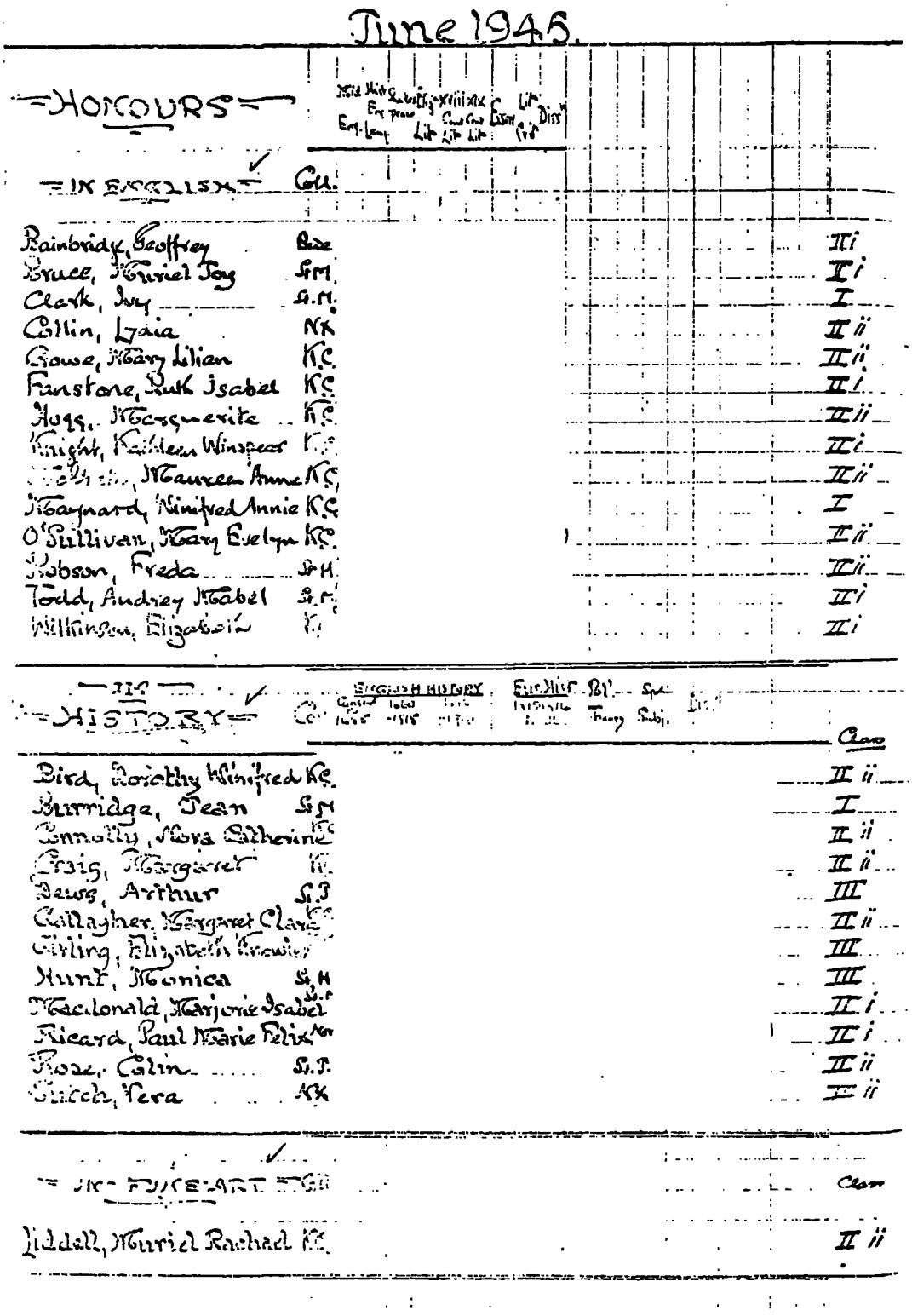
—

Class 5
Harrison
Raymond
Robinson
Skinner
F. Thompson
Watson.

Class 6
Bennett.

Temple Chevallier
Thomas W. Peile
G. H. S. Johnson
T. L. Claughton
} Examiners.

Figure A2 Marks book 1945 showing student name, degree class. Marks, as sensitive data, are deleted.



June 1945.

HONOURS

IN ENGLISH

	Col.	Class
Bainbridge, Geoffrey	Bde	II i
Bruce, Muriel Joy	SFM	II i
Clark, Ivy	S.M.	I
Collin, Lyaia	NK	II ii
Gowe, Mary Lilian	KC	II ii
Funstone, Ruth Isabel	KC	II i
Hogg, Marguerite	KC	II ii
Knight, Kathleen Winspear	KC	II i
[illegible], Maureen Anne	KC	II ii
Maynard, Winifred Annie	KC	I
O'Sullivan, Mary Evelyn	KC	II ii
Robson, Freda	SFH	II ii
Todd, Audrey Mabel	S.M.	II i
Willinson, Elizabeth	KC	II i

IN HISTORY

	Col.	Class
Bird, Dorothy Winifred	KC	II ii
Burridge, Jean	SFM	I
Connolly, Nora Catherine	KC	II ii
Craig, Margaret	KC	II ii
Dews, Arthur	S.J.	III
Gallagher, Margaret Clare	KC	II ii
Girling, Elizabeth Crowley	KC	III
Hunt, Monica	S.H.	III
Macdonald, Marjorie Isabel	S.F.	II i
Ricard, Paul Marie Felix	Mx	II i
Rose, Colin	S.J.	II ii
Starck, Vera	NK	II ii

IN FINE ART

	Col.	Class
Liddell, Muriel Rachael	KC	II ii

Source 2: graduate lists

1	DATE	1832-1948 1832-1954 1954-1960
2	CATEGORY	public
3	ACCESS	open
4	LOCATION	Durham University library
5	AVAILABLE	library hours
6	STORAGE MEDIUM	books
7	CONTENTS	elements: name college award date conferred
8	DESCRIPTION	3 publications graduates listed alphabetically in order of surname each publication contains the 2 supplements: 1 changes of name 2 death/obituary Assumed compiled primarily from Durham University calendars. 1 DU Graduate list 1948 Lists graduates 1832-31 March 1948 2 DU Graduate list 1954 Lists graduates 1832-31 March 1954 3 DU Graduate list Supplement 1960 Lists graduates June 1954-September 1959 December 1959 July & September 1960
9	USE	If provided with surname only, these constitute the most rapid means of identifying graduates from 1832-1960 inclusive.
10	LIMITATION	Omits 1 non-graduates 2 pass date, i.e. date on which the individual became eligible for the award.

11 REFERENCES

1 University of Durham, Graduates of the University; Durham University Office, 1948.

2 University of Durham, Graduates of the University; Durham University Office, 1954, 352 pp.

3 University of Durham, Supplement to graduate list last published in 1954; Durham University Office, 1960, 172pp.

12 FIGURES

A3 - A5

Figure A3 Graduate list: sample page

DEGREES. DIPLOMAS

awarded December, 1959 to September, 1960 inclusive.

AAR **ARC**

AARON, Ronald (K); L.D.S. 1959.
AASEN, Sigurd Christen Brovig (K); B.Sc. 1960.
ABOYADE, Bandale Akinola (K); M.B., B.S. 1959.
ABRAM, Stella Mary (M); B.Sc. 1960.
ADAMS, David (K); B.Sc. 1960.
ADAMS, John (K); B.Sc. 1960.
ADAMSON, Francis Ian (K); B.Sc. 1960.
ADDISON, David John (K); B.A. 1960.
ADEDEJI, Matthew Oladosu (F); B.A. 1960.
ADENIYI, Joseph Adedotun (F); B.A. 1960.
ADEPOJU, Sunday Agboola (F); B.A. 1960.
ADESHINA, John Ayebade (F); B.A. 1960.
ADESINA, Oluwole, (F); B.A. 1960.
ADEWAKUN, Joseph Akinrinmola (F); B.A. 1960.
ADEYINGBO, Theophilus Adetola Sunday (F); B.A. 1960.
AFONJA, Sunday Adeyemo (F); B.A. 1960.
AIKMAN, Peter William (S); B.A. 1960.
AITCHISON, Ruth (K); Dip. Ed. 1960.
AKEREDOLU, Jeremiah Oladele Kehinde (F); B.A. 1960.
AKINGBADE, James Kolawole (F); B.A. 1960.
AKINMUSURU, Victoria Olufunmilola (F); B.A. 1960.
AKROYD, Robert Connor (K); B.Sc. 1960.
AL-BARAZI, Nuri Khalil (S); Ph.D. 1960.
ALDERMAN, Margaret Sheila Nancy (M); B.Sc. 1960.
ALDERSON, Michael Gardner (K); B.Sc. 1960.
ALDRICH, John Norman (S); B.A. 1960.
ALDRIDGE, Jeffrey Paul (S); B.A. 1960.
ALEGE, Moses Iya (F); B.A. 1960.
ALLAN, John Douglas (K); B.Sc. 1960.
ALLAN, Leslie Thomas (K); B.Sc. 1960.
ALLEN, Geoffrey (J); B.A. 1960.
ALLEN, Harry John (H); B.Sc. 1960.
ALLIOTT, Ronald Anthony (K); B.Arch. 1960.
ALLISON, David Mark (K); Dip. Ed. 1960.
AL-MUTAWALLI, Saib (K); M.Sc. 1960.
AL-SHIDDIDI, Mohamed Rida Hasan (K); B.Sc. 1960.
ALSOP, Stewart (K); B.Sc. 1960.
AMBATIELOS, Eustace (ST); B.Sc. 1960.
AMBROSE, Maureen (K); Dip. Ed. 1960.
AMISSAH, Samuel Bentsi (K); Dip. Lsape Des. 1959.
AMOS, Denys (K); B.Sc. 1960.
ANA, James Robert (K); B.D.S. 1960.
ANDERS, Donald (J); B.A. 1960.
ANDERSON, David Anthony (K); B.A. 1960.
ANDERSON, Doris (K); B.A. 1960.
ANDERSON, George Henry (K); B.Arch. 1960.
ANDERSON, Henry Porteous (J); B.A. 1960.
ANDERSON, John Boyd (K); B.Sc. 1960.
ANDERSON, Michael (K); LL.B. 1960.
ANDERSON, Robert (K); B.Sc. 1960.
ANDERSON, Thomas Tindle; Hon. M.A. 1960.
ANTHONY, George Samuel Oluwole (F); B.A. 1960; Dip. Ed. 1960.
APPLEYARD, David John Erskine (S); B.A. 1960.
ARANYAKANON, Payome (K); Ph.D. 1960.
ARCHER, Margaret (M); B.A. 1960.
ARCHIBALD, David Richard Hartigan (K); B.Sc. 1960.

Figure A4 Graduate list: changes of name list

CHANGES OF NAME

The following changes of name have been notified :—

ANDERSON, (Mrs.) Patricia (*née* Kelly) (A); B.A. 1954; Dip. Ed. 1955.
ARMSTRONG, (Mrs.) Joan Moir (*née* Bidgood) (A); B.A. 1950; Dip. Ed. 1951.
ASTON, (Mrs.) Elaine (*née* Bowes) (X); B.A. 1939; D.Th.P.T. 1940.

BACON, (Mrs.) Heather (*née* Beveridge) (A); B.A. 1953.
BALLEN, (Mrs.) Edith (*née* Cummings) (AC); B.Sc. 1917; M.Sc. 1921.
BATES, (Mrs.) Gladys (*née* Allen) (SH); B.A. 1930; D.Th.P.T. 1931; M.A. 1933.
BATEY, (Mrs.) Ruth (*née* Garstang) (M); B.A. 1939; D.Th.P.T. 1940.
BOOTH, (Mrs.) Dorothy Hyslop (*née* Cooper) (K); M.B., B.S. 1952.
BOWERBANK, (Mrs.) Mary Winifred (*née* Kirtley) (AC); B.A. 1933.
BRAMWELL, (Mrs.) Ethel (*née* Bolton) (AC); B.Sc. 1933; D.Th.P.T. 1934; M.Sc. 1936.
BRAMWELL, (Mrs.) Joan Dunsmore Grant (*née* Simpson) (K); B.Sc. 1950.
BROWN, (Mrs.) Barbara (*née* Spence) (K); B.Sc. 1952; M.B., B.S. 1957.
BROWN, (Mrs.) Joan Margaret (*née* Bates) (K); M.B., B.S. 1948.
BUD, (Mrs.) Hanna (*née* Loebl) (K); B.Sc. 1947; Ph.D. 1951.
BYCHOWSKI, (Mrs.) Patricia (*née* Taylor) (A); B.A. 1950.

CADOGAN, (Mrs.) Joyce (*née* Stones) (K); B.A. 1949.
CALLER, (Mrs.) Frances Rhoda (*née* Josephs) (K); B.A. 1949.
CARMICHAEL, (Mrs.) Jean (*née* Armstrong) (K); M.B., B.S. 1950.
CHARLESWORTH, (Mrs.) Madeleine Sophie (*née* Durham) (K); LL.B. 1951; Dip. Ed. 1957.
CHILTON, Michael (formerly Cieleban, Mieczyslaw) (K); B.Sc. 1949.
CHRISTOPHER, (Mrs.) Joan (*née* Backhouse) (SH); B.A. 1947; Dip. Ed. 1948.
CLARKE, (Mrs.) Constance Mary (*née* Medd) (K); B.Sc. 1953; Ph.D. 1956.
CLAYTON, (Mrs.) Mary (*née* Hutchinson) (K); L.D.S. 1954; B.D.S. 1954.
COOPER, (Mrs.) Kathleen (*née* Clayburn) (AC); B.Sc. 1917.
CULCHETH, (Mrs.) Betty (*née* Thickett) (M); B.A. 1951; Dip. Ed. 1952; M.A. 1960.
COWAN, (Mrs.) Nora (*née* Appleby) (K); B.A. 1944; Dip. Ed. 1945.

DANSKIN, (Mrs.) Joan Mary (*née* Mossman) (K); M.B., B.S. 1953; D.P.H. 1960.
DARLEY, (Mrs.) Joan Daphne (*née* Watson) (A); B.A. 1952; Dip. Ed. 1953
DAVIES, (Mrs.) Monica (*née* McBean) (A); B.A. 1950; Dip. Ed. 1951.
DAWES, (Mrs.) Mary Catherine (*née* Winters) (K); M.B., B.S. 1944.
DEES, (Mrs.) Gwendoline (*née* Etherington) (AC); D.Th.P.T. 1925.
DOHERTY, (Mrs.) Rosina Mercy (*née* Myles) (A); B.A. 1955.
DOUGLAS, (Mrs.) Edith Elliott (*née* Buckham) (SH); B.A. 1927; D.Th.P.T. 1928.
DOUTHWAITE, (Mrs.) Vivienne Nona (*née* Philpott) (K); B.A. 1929; D.Th.P.T. 1930; M.A. 1935.

EAST, (Mrs.) Muriel (*née* Hall) (A); B.Sc. 1951; Dip. Ed. 1952.
EASTERBROOKE, (Mrs.) Rosamund Mollie (*née* Sharp) (K); B.Sc. 1952; Ph.D. 1956.
EHRENBERG, (Mrs.) Clemency Lewis (*née* Miles) (K); B.A. 1949.
ESPITOLIÉ, (Mme) Elisabeth (*née* Blake) (A); B.A. 1950.
EUSTACE, (Mrs.) Dorothy Anne (*née* Percy) (K); M.B., B.S. 1949.
EVANS, (Mrs.) Enid Muriel (*née* Parker) (A); B.Sc. 1951; Dip. Ed. 1952.

FAHY, (Mrs.) Mary Priscilla (*née* Tallents) (M); B.A. 1932; M.A. 1935.
FOOTITT, (Mrs.) Elizabeth Alice (*née* Shipley) (A); B.A. 1922; D.Th.P.T. 1923.
FOX, (Mrs.) Helen Rosemary (*née* Wilson) (K); B.Sc. 1932; M.B., B.S. 1939; D.P.H. 1948.

Figure A5 Graduate list: obituary list

OBITUARY

ADA **BLA**

The following names have been removed from the register on receipt of information of death :

ADAMS, (Right Rev.) Walter Robert (U); B.A. 1900; M.A. 1903; Hon. D.D. 1925.
ADDISON, (Rev.) James Salmon (U); B.A. 1880; L.Th. 1882; M.A. 1883.
ADENIYI JONES, Curtis Crispen (CM); M.B., B.S. 1901.
AGG, Richard Anthony (CT); L.Th. 1934.
ALDERSON, Frederick Herbert (CM); M.B. 1890.
ALDRIDGE, Arthur William (CM); M.B., B.S. 1897.
ALFORD, (Rev. Canon) Sydney Field (U); B.A. 1888; M.A. 1891.
ALINGTON, (Very Rev.) Cyril Argentine; Hon. D.C.L. 1937.
ALLAN, Kenneth Bruce (CM); M.B., B.S. 1909.
ALLEN, Thomas Enoch (U); B.A. 1910.
ALLON, (Mrs.) Henrietta Elizabeth (*née* Hilton) (AC); B.Litt. 1909.
ANDERSON, John (K); M.B., B.S. 1950.
ANDERSON, John (K); B.Sc. 1952.
ANDERSON, Percy Vernon (CM); M.B., B.S. 1917.
ANGUS, Arthur William (AC); B.Sc. 1920; M.Sc. 1924.
APPLEBEY, Malcolm Percival; Hon. D.Sc. 1938.
APPLETON, (Rev.) Charles Reginald (H); L.Th. 1910.
ARCHDALE, Mervyn Alexander (CM); M.B., B.S. 1897.
ARKLE, James Vere (CM); M.D. 1917.
ARNOTT, Orrock (CM); M.B., B.S. 1908.
ASHBRIDGE, John Hawell (C); B.A. 1947.
ASHWORTH, (Rev.) George Howell (H); L.Th. 1886; B.A. 1886; M.A. 1889.
ATHERTON, William Henry (AC); A.Sc. 1896; B.Sc. 1897; M.Sc. 1900.
ASQUITH, Ronald (H); B.Sc. 1948; Dip. Ed. 1949.
ATKINS, (Rev.) Alan Garway (U); B.A. 1890.
ATKINSON, John Alexander (CM); L.D.S. 1931.
ATKINSON, (Rev.) William (NC); B.A. 1904; M.A. 1907.
ATHOLL, Her Grace The Duchess of, Hon. D.C.L. 1929.
AUSTIN, (Rev.) Harold (U); B.A. 1911; M.A. 1914.
AUSTIN-BEVERIDGE, (Mrs.) Helen (CM); M.B., B.S. 1923.

BADCOCK, Vincent Edgar (CM); M.C., M.B., B.S. 1906; M.D. 1909.
BADENOCK, Ronald Grieg (CM); M.B., B.S. 1912.
BAKER, Lepronia Alice (AC); (see Mrs. McConnell).
BAKER, (Rev.) Robert Hippesley (H); L.Th. 1905.
BALFE, Joseph Hamilton (CM); M.D. 1897.
BALME, Harold (CM); O.B.E., M.D. 1928.
BAMLETT, (Rev.) Hector (NC); B.A. 1923.
BARNEY, (Rev.) John (J); L.Th. 1920; B.A. 1922; M.A. 1926.
BARTLETT, Albert William (AC); M.Sc. 1923.
BARTLETT, Thomas William (CM); M.D. 1909.
BASDEN, (Rev.) George Thomas (U); B.A. 1904; M.A. 1908; D.Litt. 1923.
BASKERVILLE-ATKINSON, (Rev.) William (AC); B.Sc. 1899.
BASSINGTON, Reginald Patrick (U); BA. 1958.
BATES, John Keith (K); B.Sc. 1953.
BAX, (Sir) Arnold Edward Trevor; Hon. D.Mus. 1935.
BELCHER, George Clement (CM); D.P.H. 1897.
BELL, Douglass George Patrick (CM); M.B., B.S. 1919; M.D. 1923.
BELL, Kathleen Mary Weldon (formerly Watts) (CM); M.B., B.S. 1920.
BENDLE, William George (CM); M.B., B.S. 1911.
BENNETT, James Alexander (CM); M.B., B.S. 1905.
BENSON, Ernest George Dryden (CM); D.P.H. 1907.
BEWICK, William Charles Dickerr (AC); B.Sc. 1926; M.B., B.S. 1931.
BINKS, (Rev.) Frank (E); L.Th. 1938.
BISHOP, Thomas Henry (CM); D.P.H. 1905.
BLACKBURN, Eugene Chika-Emeka Rudder (CC); B.A. 1940.

Source 3: departmental records

1	DATE	1832-date?
2	CATEGORY	sensitive
3	ACCESS	departmental staff
4	LOCATION	academic departments
5	AVAILABLE	departmental hours
6	STORAGE MEDIA	various
7	CONTENTS	some data not provided for on examinations department student record cards e.g. for postgraduates: name of research supervisor.
8	DESCRIPTION	non-uniform data collections.
9	USE	to determine data omitted from other data sources. Most handwritten and printed data sources vary in fields provided, and in completeness of data entry into the fields. To establish whether or not other data on a given student is available in the university, departmental records could be consulted e.g. missing or incomplete course or subject data, in particular, examination marks.
10	LIMITATION	time-consuming operation to establish such data, therefore unlikely to be pursued unless important.

Source 4: University calendars

1	DATE	1833-1938
2	CATEGORY	public
3	ACCESS	open
4	LOCATION	Durham University library
5	AVAILABLE	library hours
6	STORAGE MEDIUM	books
7	CONTENTS	at various periods, contained one or more of: 1 congregation list (1837-?) 2 annual graduate list (?-1938/39) 3 members of the university list 4 pass list
8	DESCRIPTION	Annual publication, 1 or 2 vols/year. 1865 not published.
9	USE	if furnished with pass year or conferment year, the calendars are a concise source of data elements such as: pass date conferment date full name award type award class
10	LIMITATION	Non-uniform data source. The calendars' contents vary over the years, incorporating at most all, at least some, of the following for the given academic year: graduate list pass list congregation list members of the university
11	REFERENCES	1 University of Durham, Calendars 1837-date, 1 or 2 vols/year. Specifically: 2 University of Durham, Calendar 1968-69; University of Durham, 1969, 596+pp.

3 University of Durham, Calendar 1979-80; University of Durham, 1979, ISSN:0305-3903, 1131+pp.

12 FIGURE A6

ALPHABETICAL LIST OF MEMBERS OF THE UNIVERSITY.

The names in the University Calendar are printed according to the Register of Matriculations, unless there is evidence of mistake or of bona fide change of name.

In the case of ordinary Graduates in the different Faculties, the date given in the following list is that of the Bachelor's degree, except for those who have obtained the degree of M.D. as Practitioners in Medicine. In this case and in reference to degrees by Diploma, Honorary degrees and other titles, the date is that of the degree or title specified. Where degrees or titles in more than one Faculty or subject are specified, the date refers to that which is mentioned first.

In the case of Unattached Students a date in brackets in the central column, thus: (1931) Th., (1931) Mus., gives the date of Matriculation in Theology or Music respectively. An abbreviated date in brackets after Arms. or Med., thus: Arms. (31), Med. (31), gives the last date of appearance on the list of students for the year (i.e., for year 1931-32). Arms. (M), Med. (M) mean that the Student has matriculated but has never appeared on the list of Students. Med. (P), Arms. (P) mean that the student is following a course of Post-Graduate Study. (St) indicates member of the University Staff.

In cases where no date is given the degrees are Ad Eundem *or by Vote of Convocation, unless marked Honorary. Ad Eundem degrees are shown by the mark* § *placed before the letters.*

After five calendar years the names of students who have not taken any degree or diploma are deleted.

* *Signifies Member of Convocation.* † *Signifies Parliamentary Voter.*

Asmundsen, T. R.	B SC	Arms.	1927
Abayomi-Cole, A. B.	BA	F. Bay & Med.	1934
†Abbot-Anderson, Sir W. M.	MB, BS	Med.	1885
Abbott, C. C. (*St.*)			
— C. S.		Arms.	
— R. F. S.	L.TH		1910
†— C. R.	B.ARCH	Arms.	1936
Abé, F. J.	BA	Hatf.	1886
Abell, T. W. D.		Arms. (34)	
— Sir W. S. (*St.*)			
Abigail, A. H.	MA	Univ.	1908
— W. J	MA	Non-Coll.	1899
†Ableson, E. L.	MA	Bede	1929
†Ablett, C. K.	BA	Bede	1934
— E. T.		Arms.	
Aboko-Cole, B. T. M.		F. Bay	
— W. L.		F. Bay	
Abraham, E. C.	MD, BS	Med.	1912
Abram, L.	M.SC	Arms.	1900
— N.	L.TH		1933
Abrahams, J	LDS	Med.	1927
Absalom, R. G.	M.SC, PH.D	Arms.	1931
Ackers, C. P	B SC	Arms.	1908
Acland, Rt. Hon. Sir F. D.	HON. D.HY		1934
Acomb, H. W. (*St.*)			
Adam, D. I.	M.SC	Arms.	1917
— D. T. (*St.*)			
Adams, A. E.	MA	Hatf.	1885
†— B. E.	MA	Arms.	1931
— D.	MA	Arms.	1924
— D. A.	L.TH		1933
†— E. W.	MA	Hatf.	1891
†Adams, G. T.	B.SC	Arms.	1926
— H. J.	B.SC	Arms.	1923
— H. R.	BA	Univ.	1902
•— J. O	MD	Med.	1852
†— John Wrigley	MA	St. Chad's	1931
†•— Josiah Warwick	MA	Univ.	1919
†— O. H. see Alcock.			
— R. G.		Arms.	
— S. H.	MA	Codr.	1918
— T. G. D.	MB, BS	Med.	1898
— T. S.	L.TH		1915
†— W. G.	BA	Arms.	1928
†•— Right Rev. W. R.	MA, HON. DD	Univ.	1900
†Adamson, C. L.	BA	St. John's	1928
— F.		Univ.	
— J.	M.LITT	Arms.	1905
— J. K.		Med.	
†— J. W. W.	MD	Med.	1920
— M.		Arms. (33)	
— R. G.		Arms.	
— R. S.	MA	Hatf.	1931
— W. H.	B.SC	Arms.	1936
†•— W. W.	M.LITT, MA	Univ. & Arms.	1900
Adcock, P. E.	HON. D.LITT	Univ.	1929
†Addison, A. S.	B.SC	Sund.	1934
†— C. C	B.SC, PH.D	Hatf.	1934
†— F. M see Hedley.			
†— H. S.	BA	Arms	1930
— J. S	MA	Univ	1930
Adelaja, B. A.		F. Bay	
Adenivi-Jones, C. C.	MB, BS	Med	1931
Adeyefa, S. A		F. Bay	
Adeyemi, M. C.	BA	F. Bay	1911

Adjaye, S. C. O.		F. Bay	
†Adkins, C. S. R.	MA	Hatf.	1927
— H. E.	B.MUS		1918
— J. E.	B.MUS		1895
— M. L.	L.TH		1912
Adlard, W. E.		Arms.	
†Adler, S.*a*	MB, BS	Med.	1929
Agar, G.	MA	Arms.	1921
†Agelasto, C. P.*b*	MA	St. Mary's	1925
Agg, R. A.	L.TH		1934
Ahmed, H.	B SC	Arms.	1915
Ahuja, N. C.	B.SC	Arms.	1923
†Ainger, C. G.	B.SC	Arms.	1928
— J. A.		St. Chad's	
†Ainsworth, E. W. P.	MA	St. John's	1926
— H. W. H.	L.TH		1913
†— O. H. W.*c*	BA	St. Mary's	1927
Aird, G. H.	L.TH	Non-Coll.	1910
— L.	BA	Arms.	1924
†— R. H.	B.SC	Sund.	1934
Airth, G. R.		Med.	
Aisbitt, J. T	B SC	Arms.	1914
†Aitchison, A.	B SC	Hatf.	1931
— G.	B.SC	Arms.	1922
†— J.	B.SC	Hatf.	1929
†Aitken, M.	B.SC	Arms.	1931
†Aitkenhead, D.	B.SC	Arms.	1929
Aiyedun, W. O.	BA	F Bay	1919
Akester, A. G.	M.SC	Arms.	1912
Akinrele, J. F.		F. Bay	
Akinyele, Rt. Rev. A. B.	MA HON. DD	F. Bay	1912
Alban, E. B.	MA	Non-Coll.	1911
Alcock, F. B.	BA	Non-Coll.	1899
— G. W. H.	L.TH	Non-Coll.	1925
†— O. H.*d*	MB, BS	Med.	1927
†— W.	B.HY	Med	1932
— Sir W. G.	D.MUS	Univ.	1896
†Alder, H.	B.SC	Arms.	1927
†— S.*e*	MB, BS	Med.	1929
Alderson, A. P.	D.MUS		1892
— B. R.		Med. (34)	
— B. S.		Med.	
— F. H.	MB	Med.	1890
— J. B.	MB, BS	Med.	1912
— J. E.	MA	Arms.	
†— R.	BA	Bede & Non-Coll.	1937
†— R. E.	MB, BS	Med.	1927
†•— W. E.	MD, MS, B.HY	Med.	1894
Aldis, N. W	B.SC	Arms.	1902
— W. S.	§MA		
Aldridge, A. W.	MB, BS	Med.	1897
†Alexander, P. H.	M.SC	Arms.	
†— F. J. W.	BA	Arms.	1933
— H. F.	MA	Arms.	1918
†— J. N.	MB, BS	Med.	1936
— J. W.	MD	Med.	1913
†— M.	MA	Arms.	1928
†— O. M.*f*	BA	St. Mary's	1925
— S.	HON. D.LITT		1923
†•Alford, S. F.	MA	Univ.	1888
†Ali, M.	B.SC	Arms.	1933
Ali, M. A.		Arms. (32)	
Alington, Very Rev. C. A.	HON. DCL		1937
Aliphantis, A.	B.SC	Arms.	1916
†Allaby, A. E.	MA	St. Chad's	1928
Allan, A.	B SC	Arms.	1916
— A. W.		Arms. (35)	
— C. F.		Arms. (33)	
— C. W.	B LITT	Bede	1916
— D. H.		Arms.	
— D. I.	MS	Arms.	1923
†— E. E.	BA	Arms.	1936
†— F. N.	LL B	Arms.	1931
†— H.	BA	Arms.	1935
— K. B.	MB, BS	Med.	1909
— M.	B.LITT	Arms.	1899
†— M. E.	MA	A-rms.	1932
†— R. S.	B SC	Arms.	1934
— S. B.	MB, BS	Med.	1924
†— W. A.	B.SC	Arms.	1925
†— W. B.	MB, BS	Med.	1926
— W. H.	BA	St. Hild's	1923
Allderidge, K. S.		Arms. (35)	
Allen, A. W.	L.TH		1922
— C. J.	BA	Arms.	1923
— E. (*St.*)			
— F. T.	M SC	Arms.	1900
†— George	BA	Bede	1932
†— Gladys	MA	St. Hild's	1930
— G. P.	D MUS		1897
— H. B.	L.TH	Non-Coll.	1905
— J.		Hatf.	
— R. B.	MB, BS	Med.	1924
†— S. A. L	BA	Non-Coll. & St. Chad's	1928
— T. E.	BA	Univ.	1910
†— W. G. H.	MD, BS	Med.	1933
— W. H.	L.TH		1911
Alleyne, H. M. de C.	L.TH	Codr.	1905
†— T. B.	M LITT	Home	1539
Allhusen, E. L.	B SC	Arms.	1897
†Allinson, W.	B.SC	Univ.	1936
Allison, C. A. B.		Arms. (34)	
†— G. D.	B SC	Arms.	1935
†— L.	BA	Bede	1929
†— L. M.*g*	MA	St. Mary's	1926
†— O.	BA	N. Cross	1937
†— P. W. R.	B.SC	Arms.	1925
Allmark, H.	L.TH		1915
†Allon, H. E.*h*	B.LITT	Arms.	1909
Allott, D.	MA	Non-Coll.	1906
†— D. N. G.	BA	Arms.	1936
†— K. C. B.	BA	Arms.	1934
Allt, F. H.	(1934) Mus		
Allton, D. T.	L.TH	Hatf.	1891
†Allum, P. D.	BA	Univ.	1926
Allwood, C. S.	BA	Univ.	1914
Almond, J.	B MUS		1903
— R. R.	MA	Bede	1899
†Alsop, J. R.	B.COM	Arms.	1929
Alström, H	MB, BS	Med.	1900
Alty, G.	B LITT	Arms.	1910

a Formerly Alder. *b* Formerly Watson. *c* Formerly Greeves. *d* Formerly Adams.
e Formerly Adler and took again this name in 1931. *f* Formerly Thompson.
g Formerly Beadle. *h* Formerly Hilton.

Figure A6 University Calendar 1938-39: alphabetic list of members of the University

Source 5: pass lists

1	DATE	?-date
2	CATEGORY	public
3	ACCESS	open
4	LOCATION	Durham University library &/or Registrar's Dept.
5	AVAILABLE	library/Registrar's Dept. hours
6	STORAGE MEDIA	university calendar, university gazettes, sheets.
7	CONTENTS	award type course degree class student's name - surname, first forename, remaining initials college pass date (day, month, year)
8	DESCRIPTION	initial degree pass lists published by examinations dept. higher degree pass lists published by faculties
9	USE	For a given year, it is a data source for its constituent elements
10	LIMITATION	limited data source
11	REFERENCE	University of Durham, Gazettes, 1876-date
12	FIGURE	A7

Figure A7 Pass list 1971: sample sheet

UNIVERSITY OF DURHAM

FINAL EXAMINATION FOR THE DEGREE OF B.Sc. WITH HONOURS

JUNE 1971

The following candidates have satisfied the Examiners:-

HONOURS IN MATHEMATICS

CLASS I

Bent, Richard M.	Hatfield
Kelly, Francis P.	Van Mildert
Pantling, Nigel A.	Hatfield
Robinson, Elizabeth J.	St.Aidan's
Smith, Jane E.	St.Aidan's
West, Patricia M.	Neville's Cross

CLASS II DIVISION I

Allison, Christopher J.	Grey
Ashe, Jonathan E.	University
Bazell, Caroline M.	St.Aidan's
Brice, David	Grey
Burgess, Graham	Grey
Leech, Nigel A.	Bede
Pullin, Jacqueline W.	Trevelyan
Simpson, Marilyn	St.Mary's
Streets, David F.	Grey

CLASS II DIVISION II

Banham, David W.	Van Mildert
Epton, Robert A.	Van Mildert
Keeling, Quentin P.J.	Hatfield
Marsden, Judith E.	Trevelyan
Thompson, Sheila	Trevelyan
Walker, Judith	St.Aidan's
Ward, David S.	University

CLASS III

Chamberlain, Clive R.	Van Mildert
Hale, Neil R.	Van Mildert

18 June 1971

Deputy Registrar

Source 6: congregation lists

1	DATE	1837-date?
2	CATEGORY	public
3	ACCESS	open
4	LOCATION	chief clerk's office, examinations dept.
5	AVAILABLE	office hours
6	STORAGE MEDIA	University calendars, University gazettes, examinations dept. - filed sheets
7	CONTENTS	arranged in sequence: award conferment year award conferment date award conferment session award type student name, listed alphabetically under surname
8	DESCRIPTION	Not a comprehensive data source. By definition, does not include: 1 non-final-year students in residence 2 students who have passed their final examinations but have not applied for their awards to be conferred. Some students never apply for conferment of their awards, others have their awards conferred years after they pass their final examinations.
9	USE	1 identifies graduates according to conferment date 2 includes honorary graduates
10	LIMITATION	omits pass date
11	REFERENCES	University calendars, University gazettes
12	FIGURE	A8

Figure A8 Congregation list 1969: sample page

M.Ed.

Ernest BOWCOTT, M.A.	St. Chad's
Anne Mary DAVIES	

M.Ed. (in absentia)

James Colin HUMPHREY	
Brian Henry SMYTHE, M.A.	St. Chad's
Achhar Singh THAKUR	

B.A. (in absentia)
(in the Faculty of Arts)

Alpha Mohamed DUMBUYA	Fourah Bay
Remi Florence Gladys JOHNSON	Fourah Bay
Ayse Gaye TUGAL	St. Aidan's

B.Sc. in Pure Science (in absentia)

Mary MASTERSON	St. Aidan's

Source 7: University gazettes

1	DATE	1876-date
2	CATEGORY	public
3	ACCESS	open
4	LOCATIONS	Durham University library, chief clerk's office
5	AVAILABLE	library hours
6	STORAGE MEDIA	bound volumes or loose issues
7	CONTENTS	pass list: 1 higher degrees faculty surname and initials college previous degrees thesis title 2 initial degrees pass date (month, year) faculty award type course degree class name (surname, first forename, remaining initials) college
8	DESCRIPTION	recorded as published 1876-1939, then 1953-date, 1 or more issues/year. The following may be located in different issues: 1 initial award pass list 2 higher degree pass list
9	USE	For a given year, a varying data source, depending on contents of that issue.
10	LIMITATION	limited data source on graduates only
11	REFERENCES	University of Durham, Gazettes, 1876-1939, 1953-date
12	FIGURES	A9, A10

Figure A9 University gazette 31.7.69: higher degrees list

Higher Degrees

The following candidates have satisfied the examiners:

DOCTOR OF PHILOSOPHY

	Title of thesis
Faculty of Divinity	
The Rev. C. M. K. Hewitt (St. John's), B.A. 1959, Cascade; B.D. 1964; S.T.M. 1965, Yale	'Life in the Spirit. A study in the History of the Interpretation of Romans 8: 12-17'.
S. G. Wilson (St. John's), B.A. 1965	'The Gentiles in the Gospel according to St. Luke, and in the Acts of the Apostles'.
Faculty of Arts	
M. A. Ibrahim (St. Cuthbert's), B.A. Hons. 1960, Cairo	'The Land and the Social Life of Ancient Egypt as described in the Classical Authors of Greece and Rome between 70 B.C. and A.D. 69'.
Faculty of Science	
C. G. Allison (Grey), B.Sc.	'Highly Fluorinated Diazines'.
T. Alper (Grad. Soc.), B.Sc. Ankara	'The propagation of Ultrasonic Waves in Mercury Telluride'.
M. I. Barker (University), B.Sc.	'On the Formation and Properties of Positronium and its Interactions with Gaseous Atoms'.
H. L. Collin (St. Cuthbert's), B.Sc.	'An Investigation of Atmospheric Electrical Phenomena within 22 m. of the ground during Disturbed Weather'.
J. T. Christopher (Van Mildert), B.Sc. McGill	'Hyperfine Fields in Rare-Earth Compounds'.
R. Craig (Grad. Soc.), Dip. Tech. Sunderland, G.R.I.P.	'The Interactions of Cosmic Ray Neutrinos'.
P. J. Dainty (University), B.Sc.	'Properties of Tetrasulphur Tetranitride in some reactive solvents'.
L. H. Dayaratna (Grad. Soc.), B.Sc. Ceylon	'Atmospheric Electric Conduction and Convection Currents near the Earth's surface'.
R. Dutton (Grey), B.Sc.	'Studies into the Ecological Energetics of the Wireworm *Melanotus Rufipes*. Hbst, Coleoptera: Elateridae'.
R. D. Eaton (University), B.Sc.	'Cytogenetical Studies in the Genus Primula'.

Figure A10 University gazette supplement 30.9.69: initial degrees list

Results of Final Examinations held in June 1969

Faculty of Divinity

FINAL EXAMINATION FOR THE DEGREE OF B.A. WITH HONOURS

In Theology

CLASS II, DIVISION I

Moore, David R. B.	St. John's

CLASS II, DIVISION II

Billam, Anthony M.	Grey
Goddard, John W.	St. Chad's
Gough, Colin R.	St. Chad's
Holmes, Lionel G.	St. John's
Jennings, Robert H.	St. John's
Liddle, Gladstone W.	St. Chad's
Melrose, Michael J.	St. Chad's
Orange, Ronald V.	St. Cuthbert's
Scantlebury, James S.	St. John's
Scott, David V.	St. Chad's
Selby, Vivienne M.	St. Hild's

CLASS III

Bell, James S.	St. Chad's
Griffith, David H.	St. John's
Simmonds, Janet C.	St. Mary's
Sowerby, Desmond P.	St. John's
Thurburn-Huelin, David R.	St. Chad's

AEGROTAT

Wren, John A.	St. Chad's

The following candidates were recommended for a Pass Degree:

MacDonald, Donald M.	St. John's
Paxon, Robin M. C.	St. John's

Diploma in Biblical Studies

Wheatcroft, Kenneth J.	St. Chad's

Diploma in Theology

Atherstone, Castell H.	St. Chad's
Bach, John E. G.	St. John's
Bayley, Raymond	St. Chad's
Bazen, David P.	St. Chad's
Bottomley, Philip	St. John's
Clements, Roy A.	St. Chad's
Everitt, William F. J.	St. John's
*Folks, Andrew J.	St. John's
*Foss, David B.	St. Chad's
Greenwood, Robin P.	St. Chad's
Gregory, Stephen P.	Grey
Griffiths, Alan C.	St. John's
Hawkins, Andrew R.	St. Chad's
Holt, David	St. John's
*Jacobs, Adrian J.	St. Chad's
Jones, Barry M.	St. Chad's
Jones, David R.	St. John's
Joyce, Philip R.	St. John's
McCann, David T.	St. Chad's
McIntosh, David H.	St. John's
Sansom, Michael C.	St. John's
Saxbee, John C.	St. John's
Tate, John R.	St. John's
Wadge, Alan	St. Chad's

*With Distinction

Faculty of Arts

FINAL EXAMINATION FOR THE DEGREE OF B.A. WITH HONOURS

In Classical and General Literature

CLASS II, DIVISION I

Dickinson, Kathleen M.	St. Aidan's
Dixon, Timothy P.	St. Cuthbert's
Elliott, Peter H.	University
Everatt, John D.	Hatfield
Hubbard, Susan F.	St. Mary's
Laycock, Susan M.	St. Aidan's
McGowan, Ronald	Grey
Mulhern, Gregory F.	University
Rorison, Joanne	St. Mary's
Rosalie, Clency W.	University
Storey, Timothy C.	University

CLASS II, DIVISION II

Ambler, Colin D.	Hatfield
Daniels, Spencer J.	Hatfield
Hemstock, Raymond	Van Mildert
Mallinson, Margaret E.	St. Aidan's
Preston, Diana H.	Trevelyan
Rogers, James G.	Hatfield
Trout, Richard S.	University
Wilkinson, Patricia M.	St. Mary's

CLASS III

MacLeod, Iain A. M.	Grey
Robinson, David J.	Van Mildert

In English

CLASS I

Richardson, Marilyn	St. Mary's
Robson, Bridget M.	St. Mary's
Whittaker, Elizabeth J.	St. Aidan's

Source 8: examinations department record cards

1	DATE	1900's-1950's 1950's-date
2	CATEGORY	sensitive
3	ACCESS	Registrar and permitted staff
4	LOCATION	examinations dept.
5	AVAILABLE	departmental hours
6	STORAGE MEDIUM	cards in filing cabinets
7	CONTENTS	see 1 Figure A11 2 Table A1
8	DESCRIPTION	Record cards replaced marks books in the 1900's. 2 sets in current use: 1 1900's-1950's: 5" x 4" cards containing more data than marks books 2 1950's-date: 8" x 5" cards containing more academic and personal data than 5" x 4" cards. The examinations dept. holds a third collection of record cards, thought to be from King's College, Newcastle, and to partly or completely duplicate the above sets.
9	USE	Single, most rapid, most detailed data source for any non-graduate or graduate student since 1900's
10	LIMITATION	No cards for: 1 occasional students 2 Institute of European Studies (IES) students
12	FIGURE	A11

Figure A11 Student record card

Session	Course	Subjects	Collection Marks

MATRICULATION QUALIFICATIONS

CERTIFICATE:

Subjects and Standard:

CONCESSIONS (Number and date of minute)

NAME

HOME ADDRESS

DISTANCE OF HOME FROM DURHAM IN MILES. (If within the United Kingdom)

DATE OF BIRTH NATIONALITY

NEXT OF KIN

PREVIOUS EDUCATION (SCHOOLS AND UNIVERSITIES)

COLLEGE

YEAR OF ENTRY

FACULTY

DEGREES CONFERRED (with dates)

POST GRADUATE RECORD

DATE OF APPROVAL OF CANDIDATURE:

TITLE OF THESIS:

DEGREE EXAMINATION RECORD

DATE: EXAMINATION:
SUBJECTS:

RESULT:

DATE: EXAMINATION:
SUBJECTS:

RESULT:

DATE: EXAMINATION:
SUBJECTS:

RESULT:

DATE: EXAMINATION:
SUBJECTS:

RESULT:

Table A1 Student record card fields

Record cards elements on current and past card types

1 name
2 home address
3 distance of home from Durham in miles (if within United Kingdom)
4 date of birth
5 nationality
6 next of kin
7 previous education (schools and universities)
8 college
9 year of entry
10 faculty
11 degrees conferred (with dates)
12
- 12.1 session
- 12.2 course
- 12.3 subject
- 12.4 collection marks

13 matriculation qualifications
- 13.1 certificate: subjects and standard
- 13.2 concessions (number and date of minute)

13 degree examination record
- 14.1 date
- 14.2 examination
- 14.3 subjects
- 14.4 result

15 post graduate record
- 15.1 date of approval of candidature
- 15.2 title of thesis

16 age of entry
17 occupation of parent

Source 9: science site record cards

1	DATE	1924-date
2	CATEGORY	sensitive
3	ACCESS	Registrar, Assistant Registrar - Science site, Dean of Faculty of Science, permitted staff
4	LOCATION	office of Dean of Science Faculty
5	AVAILABLE	office hours
6	STORAGE MEDIUM	cards
7	CONTENTS	as examinations department record cards See Figure A11 Table A1
8	DESCRIPTION	as source 8
9	USE	convenient detailed reference source for Science Site purposes
10	LIMITATION	manual system
12	FIGURE	A11

Source 10: marks sheets

1	DATE	1930's-date
2	CATEGORY	sensitive
3	ACCESS	Registrar, academic departments, permitted staff
4	LOCATION	examinations dept.
5	AVAILABLE	departmental hours
6	STORAGE MEDIUM	filed sheets
7	CONTENTS	elements/sheet: name college result subject level subject mark
9	USE	data source from which to establish whether or not an individual was in residence at Durham University
10	LIMITATION	limited data source
12	FIGURE	A12

University of Durham FIRST YEAR EXAMINATION FOR THE DEGREE OF B.Sc.

Sheet ____

Name and College	Result		Level of Subject	Anthro.	Applied Physics	Botany (M) – Biology (S)	Chemistry	Chemistry (MS)	Computing	Electronics	Engineering Science (MM)	Geography	Geography (MS)	Geology	Hist. & Phil. of Science	Mathematics	Mathematics (MM)	Physics	Psychology	Zoology
			M																	
			S																	
			M																	
			S																	
			M																	
			S																	
			M																	
			S																	
			M																	
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			S																	
			M																	
			S																	
			M																	
			S																	
			M																	
			S																	

ED 18 C Concession (3) Number of attempts † : Not in Residence

Figure A12 Marks sheet

Source 11: Students in Residence booklets

1	DATE	1950's-date
2	CATEGORY	public
3	ACCESS	open
4	LOCATION	chief clerk's office
5	AVAILABLE	office hours
6	STORAGE MEDIUM	booklet
7	CONTENTS	elements: college student name (surname, initials; alphabetically listed) year course total number of students in residence for the given year
8	DESCRIPTION	annual publication, Michaelmas term
9	USE	If provided with year of residence, these booklets are the most rapid means of identifying any student
10	LIMITATION	omits: external students Fourah Bay College students
11	REFERENCES	University of Durham, Students in Residence booklets, annual publications, 1950?-date. Specifically University of Durham, Students in Residence, Michaelmas term 1968; Registrar's Dept.,1968, 56pp
12	FIGURE	A13

*—Holder of University of Durham Scholarship or Exhibition. †—Holder of University of Durham Research Studentship.
‖—Holder of Research Council or D.E.S. Award. L—Lumley Castle.

UNIVERSITY COLLEGE

*Adams, R. M. ..... 3H Phy.
LAitken, J. F. ..... 2H Geog.(A)
Aldridge, D. N. ..... 3H Psy.(A)
Alexander, D. ..... Res. Sc.
Allen, K. L. ..... 2H Maths. & Zoo.
Allen, M. P. ..... 1H Sc.
Anthony, P. C. ..... 1H Fr. & Ger.
Armstrong, G. ..... 3H Eng. Sc.
Ashe, J. E. ..... 1H Sc.
Atkins, R. I. W. ..... 1H Sc.

Avenell, W. J. ..... 3H Geog.(A)
Axten, P. ..... 3H Ger.
Ayre, R. J. ..... 1H Eng.
LBakalarski, C. ..... 2H Cla.
Barlow, A. E. ..... 1H Eng.
Barnes, C. N. ..... 1H Mus.
Beale, D. A. ..... Res. Arts
Beauchamp, M. J. ..... 1H Mus.
Beharall, R. ..... 2H Hist.
Bell, D. O. ..... 3H Hist.

Beynon, C. P. ..... 1H Mus.
Blackburn, S. L. ..... 2H Chem.
Blandford, C. J. ..... 3H Geog.(A)
Boyle, P. R. ..... 2H Eng. Sc.
Bransden, D. F. ..... 3G Arts
Bridgewater, P. ..... Res. Sc.
Broadbent, J. T. ..... 3H Hist.
Brock, K. B. ..... 1H Eng.
Brown, R. P. ..... 1H Geog.

‖Brownsell, G. R. ..... Res. Arts

Brownson, G. W. ..... 3H Chem.
Bullock, R. J. ..... 2G Arts
Burnham, F. H. R. ..... P.G. C.Ed.
Buszard, P. M. ..... 2G Sc.
Butt, N. B. ..... 3H Geog.(A)
Butterfield, J. G. ..... 1H O.S.
Caldin, H. P. ..... 3H Span.
Carberry, R. J. ..... 2G Arts
Carr, G. J. ..... Res. Arts
Carter, M. A. ..... Res. Sc.

Cattermole, T. A. ..... P.G. C.Ed.
Cawood, J. A. ..... Res. Sc.
Chabrzyk, G. H. ..... 1H Sc.
Chesswas, R. J. D. ..... 1H Soc.
Chidley, J. T. W. ..... 2H Maths.(S)
Childs, A. ..... 1H Russ.
Clare, R. ..... 1H Eng.
Clark, M. J. ..... 3H Geog.(S)
Cleaver, M. J. ..... 1G Arts
Coles, G. ..... 2H Geog.(A)

Collier, J. H. G. ... 1H Geog. & Anth.
*Cooper, G. A. ..... 3H Maths.(S)
Cooper, W. D. ..... 3H Hist.
Corbishley, D. J. ..... Res. Sc.
Costello, V. F. ..... Res. S.S.
Cottle, W. W. ..... 3H E. & P.
Cowman, M. J. ..... 3H Geog.(A)

Cowmeadow, C. A. ..... 1H Sc.
Cox, I. D. G. ..... 3G Arts
Craik, J. C. A. ..... 3H Zoo.

Crawford, C. G. ..... 1G Arts
LCreasy, M. R. ..... 2H Zoo.
Crichton, J. A. C. ..... 2H E. & P.
†Crompton, P. M. ..... Res. Arts
Cuffe-Adams, R. E. ..... 2H E. & L.
Dafforn, F. C. ..... 3H Maths.(S)
Dagg, J. D. ..... 2H Geog.(S)
Dainty, P. J. ..... Res. Sc.
Dale, R. M. ..... 3H Econ.
Dale, T. L. W. ..... 3H Eng.

Dales, H. L. ..... 3H Geog.(A)
Davies, J. B. ..... Res. S.S.
LDavies, S. ..... 2H Phy.
Dell, J. A. ..... 3H App. Phy.
Dennis, R. L. H. ..... 1H Anth.
Dowlen, A. E. D. ..... 3H Mus.
Doyle, J. D. ..... 1H Sc.
Drake, J. D. ..... Res. Mus.
Dunne, K. A. ..... 2H Hist.
Dye, A. P. ..... 1H Geog. & Anth.

Earis, S. D. ..... 1H Law
Edmunds, J. I. ..... 1H Sc.
Edwards, C. ..... 2H Chem.
Edwards, T. I. ..... 2H Fr.
Elliott, P. H. ..... 3H Cla.

Figure A13 Students in residence booklet 1968: sample page

Source 12: NUMAC student record archives

1	DATE	1968-79
2	CATEGORY	sensitive
3	ACCESS	Registrar, permitted staff
4	LOCATION	NUMAC archives, Newcastle University computer centre
5	AVAILABLE	user hours
6	STORAGE MEDIA	1 Masterfiles and programs - 1 magnetic tape 2 documentation - Durham University Registrar's Dept.
7	CONTENTS	the most comprehensive of any single data source or combined data sources from 1832 to 1968. For fields listed, see Fig. A14: contents of NUMAC master files.
8	DESCRIPTION	computerised information system
9	USE	rapid data source for 1968-79
10	LIMITATION	incomplete data per student
11	REFERENCES	1 University of Durham, NUMAC student record system documentation; Registrar's Dept., revised 1973 2 University of Durham, NUMAC student record archives, Registrar's Dept., 1979, 1/2 magnetic tapes
12	FIGURES	A14, A15

Figure A14 NUMAC master files contents, undergraduate and postgraduate

8. CONTENTS OF THE MASTER FILES

8.1 The Undergraduate Master

Field	Max. Length/Value	Remarks
Personal Information		
Registration No.	9 digits	Digits 1-2 = year 3-8 = UCCA No. 9 = Check Digit
Surname	18 Characters	
Forename	20 Characters	
Sex Code	1 Character	
Title	4 Characters (left justified)	e.g. Mrs. Prof.
Maiden Name	18 Characters	Married Women Only
Martial Status Code	1 Character	
Date of Birth	6 Digits DDMMYY	e.g. 040660
Home Address	52 Characters	Each 'Line' separated by * e.g. 6 Road* Town
Country of Nationality	3 digits	
Country of Birth	3 digits	
Country/County of Domocile	3 digits	
H/O Flag	1 Character	
Next of Kin - Name	23 Characters	
Next of Kin - Address	46 Characters	Each 'Line' separated by *
College Code	2 digits	
Address in Term-Time	50 Characters	Each 'Line' separated by *
Accommodation Code	1 digit	
Residence Flag	1 digit	
UCCA Entry Flag	1 digit	
Durham Entry Flag	1 digit	
Movement Flag	1 digit	Indicates whether Term-time address

8.1 The Undergraduate Master (cont.)

Field	Max. Length/Value	Remarks
Entry Qualifications/ Information		
Previous School Code	4 digits	UCCA Code
Previous School Type	1 digit	
Dates Attended	4 digits	e.g. 6974
'A' Levels - Board	2 digits	
- Sitting	1 digit	These codes occur six times
- Year	2 digits	
- Subject	3 digits	
- Grade	1 digit	
Other Qualifications	2 digits	
Previous University	4 digits	
Previous Registration No.	9 digits	
Fees		
Fee Payer Code	5 digits	
UCCA Award Flag	1 digit	
Durham Award Flag	1 digit	
Fees Due - Tuition	6 digits (£9999.99)	
- Composition	5 digits (£999.99)	
- College	5 digits (£999.99)	
- Misc. (1)	5 digits (£999.99)	Misc. Fee
- Type (1)	1 digit	Indication type of fee
- Misc. (2)	5 digits (£999.99)	
- Type (2)	1 digit	
lowance Against Fees	7 digits (£99999.99)	
Type	1 digit	Indicates Type
Invoice Flag	1 digit	Shows whether student has been invoiced
Leavers Information		
Reason for Leaving flag	1 digit	
Date of Leaving	6 digits DDMMYY	e.g. 070779

8.1 The Undergraduate Master (cont.)

Field	Max. Length/Value	Remarks
Leavers Information		
University Transferred To	4 digits	
Qualifications Obtained - Type	2 digits	
- Class	2 digits	
Conferment Date	6 digits	e.g. 110979
First Destination -		
Job Classification	2 digits	
Category	3 digits	
Type of Work	3 digits	
Destination	3 digits	County/Country
Employer	5 digits	Not used at present
Current Course Information		
Trailer No.	1 digit	
Registration Date	6 digits DDMMYY	e.g. 011079
Course Year	1 digit	
Type	1 Character	
Qualification Aim	2 digits	
Degree Code	4 Characters	
Subject Codes	8 x 4 Characters	
Calender Year	2 Characters (YY)	e.g. 79
Academic Year	4 Characters (YYYY)	e.g. 7980
Miscellaneous		
Maintenance Flag	1 digit	
Date of First Registration	6 digits DDMMYY	e.g. 100278
Senior Man Flag	1 digit	

8.2 The Postgraduate Master

Field	Max Length/Value	Remarks
Personal Information		
Registration No.	9 digits	Digits 1-2 = year 3-8 = UCCA No. 9 = Check digit
Surname	18 Characters	
Forenames	20 Characters	
Sex Code	1 Character	
Title	4 Characters (left justified)	e.g. Miss, LT, Sir
Maiden Name	18 Characters	Married Women only
Marital Status Code	1 Character	
Date of Birth	6 digits DDMMYY	e.g. 040656
Home Address	52 Characters	Each 'Line' separated by *
Country of Nationality	3 digits	
Country/County of Domicile	3 digits	
H/O Flag	1 Character	
Next of Kin - Name	23 Characters	
- Address	46 Characters	Each 'Line' separated by *
College Code	2 digits	
Address in Term Time	50 Characters	Each 'Line' separated by *
Accommodation Code	1 digit	
Residence Flag	1 digit	
Durham Entry Flag	1 digit	
Movement Flag	1 digit	Indicates whether term time address is address before start of course
Entry Qualifications/Information		
Degree Subject *	4 Characters	
Degree Type *	2 digits	
Degree Class *	2 digits	
Year Obtained *	2 digits (YY)	e.g. 77

8.2 The Postgraduate Master (cont.)

Field	Max. Length/Value.	Remarks
University at which Qualification obtained *	4 digits	
Dates attended (from & to) *	4 digits (YYYY)	e,g, 7377
		*note these fields occur three times
University Seconded From	4 digits	
Postgraduate Entry Flag	1 digit	
Previous University	4 digits	
Previous Registration No.	9 digits	
Fees		
Fee Payer Code	5 digits	
Postgraduate Award Code	2 digits	
Durham Award Flag	1 digit	
Fees Due - Tuition	6 digits (£9999.99)	
- Compostition	5 digits (£999.99)	
- College	5 digits (£999.99)	
- Misc. (1)	5 digits (£999.99)	Misc. Fee
- Type (1)	1 digit	Indication type of fee
- Misc. (2)	5 digits (£999.99)	
- Type (2)	1 digit	
Allowance Against Fees	7 digits (£99999.99)	
Type	1 digit	Indicates Type
Invoice Flag	1 digit	Shows whether studen has been invoiced
Leavers Information		
Reason for leaving Flag	1 digit	
Date of leaving	6 digits DDMMYY	e.g. 070779
University Transferred To	4 digits	
Thesis Reference	4 digits	
Conferment Date	6 digits DDMMYY	
First Destination		
Job Classification	2 digits	
Category	3 digits	

8.2 The Postgraduate Master (cont.)

Field	Max. Length/Value	Remarks
Type of Work	3 digits	
Destination	3 digits	County/Country
Pass Date	6 digits DDMMYY	
Postgraduate Degree Awarded	3 digits	
Current Course Information		
Trailer No.	1 digit	
Registration Date	6 digits DDMMYY	
Course Year	1 digit	
No. of Terms - Full time	1 digit	
- Part time	1 digit	
Nature of Study	1 Character	
Supervisor Code	3 digits	
Faculty	2 digits	
Department	2 digits	
Subject Code	4 digits	
No. of Years completed	1 digit	
Date Course Ends	6 digits DDMMYY	
Qualification Aim	2 digits	
Course Length	3 Characters YNN, TNN	e.g. Y02 = 2 years T09 = 9 terms
Method of Study	1 Character	
Calender Year	2 digits (YY)	e.g. 79
Academic Year	4 digits YYYY	e.g. 7980
Miscellaneous		
Maintenance Flag	1 digit	
Date of First Registration	6 digits DDMMYY	e.g. 110178
Senior Man Flag	1 digit	
Staff Flag	1 digit	

STUDENT RECORD FILE INDEX

RECORD ID. PRESENT	PREVIOUS		NAME	MAIDEN NAME	COLLEGE	DEGREE COURSE	RECORD STATUS F	R	M	L	ENTRY DATE	LEAVING DATE
744151567		AARVOLD	PETER,BRIAN		16	01X9	5	4		2	24/09/74	23/06/75
732149623		ABBOUD	DHIYAA,YOUSIF		16	35X4	5	4		2	15/01/73	01/10/73
744155897		ABD EL-AAL	WASSIM A EL-HAMID		16	42X2	5	4		4	01/10/74	01/07/77
744155896	732659630	ABD-EL-NABY	MOKHTAR,AHMED		16	31X1	5	4		5	01/10/74	25/06/78
706133701		ABDELGHAFFAR	KAMAL,HASSAN		16	34X2	5	4		3	01/10/70	30/10/73
720436310		ABDELHADY	KASSIM		16	33X2	5	4		2	23/09/72	26/06/74
732141900		ABDULLAHY	REZA		16	55X1	5	4		5	01/10/73	05/09/77
732142001		ABEL	KENNETH		16	40X9	5	4		3	01/10/73	25/11/74
744151578	700564701	ACHESON	JEAN,ELIZABETH		16	01X9	5	4		2	24/09/74	23/06/75
770136225		ACHESON	SUSAN,JOSEPHINE		16	01X9	5	4		3	20/09/77	16/06/79
732119343		ACHESON-GRAY	SARAH,FELICITY		13	70X1	5	4		2	02/10/72	29/06/73
756139415	736337115	ADALJA	SHAILESH,KRISHNALAL		16	40X9	5	4		4	01/10/76	23/11/78
732142012		ADAM	STEPHEN,JAMES		16	44X2	5	4		3	01/10/73	06/11/74
706136656		ADAMOPOULOS	LEONIDAS		16	31X4	5	4		2	01/10/70	12/12/71
744152913		ADAMS	ALAN, EDWIN		17	33X6	5	4		4	24/09/74	04/05/77
706133737		ADAMS	CHRISTINE,KATHERINE		16	01X9	5	4		2	21/09/76	22/06/77
706133745		ADAMS	DAVID,BRIERLEY		07	34X2	5	4		5	01/10/70	01/01/75
706133737		ADAMS	GORDON,VYVE		16	40X9	5	4		3	01/10/73	21/11/77
756104777		ADAMS	JONATHAN,HENRY		08	01X9	5	4		2	23/09/75	01/07/76
732141892		ADAMS	JONATHAN,HENRY		08	72X2	5	4		2	01/10/73	26/06/74
756104210		ADAMSON	ANTHONY,SCOTT		08	72X7	5	4		3	01/10/75	14/06/77
713126513		ADCOCK	GWENDA,ALEATHEA		16	70X1	5	4		4	01/07/71	20/12/74
713167412		ADEOKUN	LAWRENCE,ADEFEMI		16	42A1	5	4		3	01/10/68	26/06/74
720114348		ADLER	JACK,BERNARD		16	48X1	5	4		4	03/10/72	30/06/76
720115011	816104051	ADRIAN	SUZANNE,MARY		14	01X2	5	4		2	19/09/72	29/06/73
706133527		AFZAL	MUHAMMAD		16	33X2	5	4		3	23/10/70	26/06/74
744153564		AGU ?	BRIAN,DAGNE,HINLS		16	01X8	5	4		3	01/10/74	17/06/75
732140922		AHAD	MONICA		10	01X2	5	4		2	25/09/73	25/06/74
732142034		AINEY	JOHN,COLLIN		16	01X1	5	4		2	01/10/73	25/06/74
706133675		AKINCI	OKAN,TUZCAN		16	33X1	5	4		4	01/10/69	30/07/73
756156075		AL-ABDULLA	MIZAHIM		16	33X1	5	4		5	07/01/75	03/11/77
720113311		AL-ADILI	ADNAN,SAYED,HASHIM		16	31X1	5	4		4	01/10/71	11/12/74
706114712		AL-ASKOOR	FATMA		14	42X2	5	4		5	01/10/68	17/06/76
706133642		AL-ATTAWY	IBRAHIM		16	42X2	5	4		6	03/10/70	12/11/76
713126523		AL-KUWARI	ALI,KHALIFAH		16	42X2	5	4		3	01/10/71	14/06/74
720119701		AL-MARZOOQ	SAPIYA,M		16	44X1	5	4		5	02/10/73	07/05/75
732142431		AL-NASIRI	KAMIAN		16	44X1	5	4		6	01/10/73	17/07/78
732143007		AL-UBAIDI	FAIP,SALMAN		16	26A1	5	4		2	30/09/73	01/10/73
706137547		AL-WASHIED	AMMED,SA AD		16	65X2	5	4		2	02/10/67	27/06/73
706133668		AL-RUMAIHI	DANEM,MOHAMED		16	44X1	5	4		2	01/10/70	24/06/73
706133594		AL-SHUAIBY	ABDULLAH,M		16	42X2	5	4		5	01/10/70	28/05/76
713127048		AL-SUMAIHI	SULAIMAN,MOHD		16	42X2	5	4		7	01/10/71	01/11/76
732143115		AL-TAMIEMI	ABDUL,MALEK,K		16	65X1	5	4		6	09/10/73	15/01/79
770136247		ALANACH	DENNIS,RAYMOND		16	01X9	5	4		2	20/09/77	16/06/78
744151594	698435052	ALBINSON	JANE,MARGARET		16	01X9	5	4		2	24/09/74	23/06/75
756164537		ALCOCK	STANLEY		07	31X1	5	4		2	01/10/75	17/06/76
732142090		ALCOCK	WILLIAM		16	40X9	5	4		3	01/10/73	25/11/74
744151590		ALDERSON	PETER ROBERT		16	01X9	5	4		2	24/09/74	23/06/75

Figure A15 NUMAC student record file index: printout sample

Source 13: current student record system

1	DATE	1977-date
2	CATEGORY	sensitive
3	ACCESS	Registrar, permitted staff
4	LOCATION	Registrar's Dept.
5	AVAILABLE	departmental hours
6	STORAGE MEDIUM	disc
7	CONTENTS	see Figure A17
8	DESCRIPTION	computerised information system. Stores undergraduate and postgraduate master files.
9	USE	rapid retrieval of student record data from 1977 to date
10	LIMITATIONS	1 incomplete data per student 2 data pre-1977 not stored
11	REFERENCES	1 University of Durham, ICL student system documents; Registrar's Dept., 1977-date 2 University of Durham, ICL student record archives, Registrar's Dept., 1977-date, magnetic discs
12	FIGURES	A16, A17

Figure A16 ICL master file contents, undergraduate and postgraduate

3. Information Held

Basically, the information held by the system consists of information on Undergraduate and Postgraduate students. This information is held in two separate files on disc as outlined in Part II section 3. Since it is necessary to hold much of this information in coded form, there are also two code files held on disc, containing a number of groups of codes, and their description. Details of undergraduate and postgraduate information can be found in 3.1. and 3.2.

3.1. Undergraduate Information

A comprehensive guide to the information held on undergraduate students is given below. Details of the type of information held in each field are given, and also the manner in which it is held i.e. either as a descriptive field, or as a code.

Field Title	Field Contents	Field Type
1. Reference No.	The nine digit Student Reference number with check digit issued by UCCA.	Nine digit No.
2. Title	The title by which a student is usually known i.e. Mr. Mrs. Miss	Four character description.
3. Surname	Student's Surname	Eighteen character description.
4. Maiden Name	Student's Previous or Maiden Name.	Eighteen character description.
5. Forenames	Student's Forenames	Twenty character description.
6. Sex	Student's sex	One digit code
7. Marital Status	Student's marital status.	One digit code
8. College	Student's college	Two digit code
9. Date of Birth	Student's date of birth	Six digit number
10. Date of Entry	The date on which the student first entered to take a course at Durham University.	Six digit number.
11. Home Address	Student's Out of Term or 'Home' Address.	Fifty character description.
12. Next of Kin (Name)	The name of student's next of kin, or person to be notified in case of emergency.	Twenty character description.
13. Address of Next of Kin.	Address of above.	Fifty character description.

3.1. Undergraduate Information (cont'd)

Field Title	Field Contents	Field Type
14. Nationality	Student's nationality	Three digit code.
15. Place of Birth	Country, for non-British national, or county for British Nationals born in Britain.	Three digit code.
16. Domicile	County or country, as above where student is regarded as permanently domiciled.	Three digit code.
17. Overseas Student Indicator	An indication of whether the student is regarded as an Overseas Student for the purpose of determining fees.	One digit code.
18. U.C.C.A. Entry flag.	An indicator set to determine the type of entry to 'Durham University' for the benefit of U.C.C.A. returns.	One digit code.
19. Student Status	An indication of whether the record is that of a 'new' 'graduating' or 'graduate' student.	One digit code.
20. Previous Ed.Inst.	The Educational institution at which the student obtained his entrance qualifications.	Thirteen digit code.
21. 'A' Level Results	The examinations passed, and standard attained in GCE 'A' Levels or SCE 'Higher' examinations.	Six, nine digit codes.
22. Other Qualifications	Qualifications accepted at entrance in addition to or as a substitute for 'A' levels.	Two digit code.
23. College Office Indicator	An indication of whether the student is senior man or woman of a college.	One digit code.
24. Address in Term.	Student's postal address during term.	Thirty six character description.
25. Type of accommodation	An indication of the sort of accommodation the student occupies during term time for the benefit of U.C.C.A. returns.	One digit code

3.1. Undergraduate Information (cont'd)

Field Title	Field Contents	Field Type
26. Residence Indicator	An indication as to whether the student is currently 'in residence' at Durham University. If not it gives a rough indication of the reason for absence.	One digit code.
27. Award Type	An indication of the type of award that forms the student's main source of finance. For the benefit of UCCA returns.	One digit code.
28. Fees	The authority by whom fees are payable.	Five digit code.
29. Durham Scholarships	An indication of whether the student is in receipt of an award issued by the University of Durham and the award.	One digit code.
30. Parent's Occupation	The occupation and status of the student's parent or guardian.	Four digit code.
31. Previous Reference Number.	The Previous Reference Number held by the student, where applicable.	Nine digit number.
32. Enrolment date.	The date on which the student enrolled for the current year.	Six digit number.
33. University transferred from.	The British University from which a student has been transferred, where applicable. For the benefit of UCCA returns.	Four digit code.
34. Concession Flag	An indication of whether the student has been granted a concession for the furtherance of his studies.	One digit code.
35. Degree Course	The overall course of study leading to the degree or diploma granted.	Four digit code.
36. Type of Course	An indication of the type of degree course, e.g. Part-time or full-time. For the benefit of UCCA returns.	One digit code.

5.1. Undergraduate Information (cont'd)

Field Title	Field Contents	Field Type
37. Method of Study	An indication of the way in which the student is studying e.g. Part-time or Full-time. For the benefit of UCCA returns.	One digit code.
38. Duration of Course	The recognized length of the degree course in years. For the benefit of UCCA returns.	One digit code.
39. Year of Course	The recognized year of study in which the student is currently working. For the benefit of UCCA returns.	One digit code.
40. Qualification Aim	The Qualification which the student expects to obtain at the end of his studies e.g. first degree, for the benefit of UCCA returns.	Two digit code.
41. Student Progress	An indication of whether the student is deemed to have made satisfactory progress during the previous academic year, and if not why not. For the benefit of UCCA returns.	One digit code.
42. Course Start Date	The date on which the degree course for which the student is currently engaged, started.	Six digit code.
43. Subject of Study	The individual unit courses, or examination entered for, which make up the current degree course, or examination record.	Eleven, four digit codes.
44. Reason for Leaving	An indication of the reason for which the student's undergraduate career at Durham University was completed. For the benefit of UCCA returns.	One digit code.

3.1. Undergraduate Information (cont'd)

Field Title	Field Contents	Field Type
45. Leaving Date	Date on which the student's undergraduate career at Durham University was completed.	Six digit number.
46. University transferred to	The University to which the student was transferred or seconded on leaving Durham University, where applicable. For the benefit of UCCA.	Four digit code.
47 Course on Leaving	The course on which the student was engaged or had graduated from, on leaving.	Four character code.
48. Degree or Diploma	The qualification gained prior to leaving.	Two digit code.
49. Degree Class	The class of degree obtained by the student.	Two digit code.
50. Conferment Date	The date on which the student's degree or diploma was conferred.	Six digit number.
51. First Employment	The details of the employment entered into by the student on leaving University, where applicable.	Eleven digit code.
52. Change Indicator	An indicator set to determine whether any amendments have been made to the student record.	One digit code.

3.2. Postgraduate Information

The information held on postgraduate students is given below. Details of information held, and manner in which it is held are given, together with the corresponding undergraduate field no. in brackets.

Field Title	Field Contents	Field Type
1. (1) Reference No.	The nine digit postgraduate student reference number, with check digit, as issued by UCCA.	Nine digit number.
2. (2) Title.	The title by which the student is usually known i.e. Mr., Mrs., Miss.	Four character description.
3. (3) Surname	Student's Surname.	Eighteen character description.
4. (4) Maiden Name	Student's previous or maiden name.	Eighteen character description.
5. (5) Forename	Student's forenames.	Twenty character description.
6. (6) Sex	Student's sex.	One digit code.
7. (7) Marital Status	Student's marital status.	One digit code.
8. (8) College	Student's college.	Two digit code.
9. (9) Date of Birth	Student's date of birth.	Six digit code.
10. Date of Entry	The date on which the student commenced his postgraduate studies.	Six digit number.
11. (11)Home Address	Student's out of term, or 'home', postal address.	Fifty character description.
12. (12)Next of Kin	The name of the student's next of kin, or person to be informed in case of emergency.	Twenty character description.
13. (13)Address of Next of Kin	Postal address of above.	Fifty character description.
14. (14)Nationality	Student's nationality.	Three digit code.

2. Postgraduate Information (cont'd)

Field Title	Field Contents	Field Type
15.(16) Domicile	Country, for non-British nationals, or county for British nationals living in Britain, where the student is permanently domiciled.	Three digit code.
16.(17) Overseas student indicator.	An indication of whether the student is regarded as an 'overseas student' for the purpose of determining fees.	One digit code.
17.(19) Student status.	An indication of whether the student is continuing, has been granted an extension, or has completed his postgraduate studies.	One digit code.
18. Date of specified course end.	The date on which it is deemed that the student should have completed his studies.	Six digit number.
19. Number of years to complete studies.	The number of years which the student has been granted to complete his studies beyond the specified end of course.	One digit number.
20. Previous degree Qualification.	The subject, and class of degrees, together with the institution, and period of study.	Eighteen digit code.
21. Staff indicator.	An indication as to whether the student is also a member of staff of the University.	One digit code.
22. Entry Qualification	The type of qualification required for entry to the course. This is a broad classification as specified by UCCA.	One digit code.
23.(23) College Office Indicator.	An indication of whether the student is senior man or woman of a college.	One digit code.
24.(24) Address in term.	Student's postal address during term.	Thirty six character description.
25.(25) Type of Accommodation	An indication of the sort of accommodation the student occupies during term time. For the benefit of UCCA returns.	One digit code.

3.2. Postgraduate Information (cont'd)

Field Title	Field Contents	Field Type
26.(26) Residence Indicator	An indication as to whether the student is currently 'in residence' at Durham University. If not it gives a rough indication of the reason for absence.	One digit code.
27.(28) Fees	The institution or body by whom fees are payable.	Five digit code.
28.(29) Durham Scholarships	An indication of whether the student is in receipt of an award issued by the University of Durham and the award.	One digit code.
29. Previous University	The U.K. University at which the student last studied before entrance to Durham University.	Four digit code.
30.(31) Previous Reference No.	The previous reference number held by the student before commencement of postgraduate study at Durham, where known.	Nine digit number.
31.(32) Enrolment Date.	The date on which the student enrolled for the current year.	Six digit number.
32.(33) University transferred from.	The University from which a student has been transferred or seconded, where applicable. For the benefit of UCCA returns.	Four digit code.
33. Subject of postgraduate study.	A general description of the field of study the student is engaged on. Will conform to the areas of study used by UCCA.	Four digit code.
34. Nature of Study	The type of course pursued by the student, either a taught or research course. For UCCA returns.	One digit code.

7.2. Postgraduate Information (cont'd)

Field Title		Field Contents	Field Type
35.	Method of Study	The manner in which the student is attending the course i.e. part-time or full-time. For the benefit of UCCA returns.	One digit code.
36.	Year of Study	The year of postgraduate study on which the student is currently engaged.	One digit code.
37.(40)	Qualification Aim	The qualification towards which the student is currently working.	Three digit code.
38.(42)	Course Start Date	The date on which the student commenced his current course of study.	Six digit number.
39.	Faculty	The faculty to which the postgraduate course is attached.	Two digit code.
40.	Department	The department in which the course of study is pursued.	Two digit code.
41.	Plan of Study	The manner in which the student intends to pursue his studies, i.e. whether part-time or full-time and over what period.	Four digit code.
42.(43)	Examination Papers	The examinations entered for in the current year.	Four digit code.
43.(38)	Duration of Course	The length of the course in Years, terms or months.	Three character code.
44.	Supervisor	The individual concerned with the supervision of the student's work.	Three digit code.
45.(44)	Reason for Leaving	An indication of the reason for terminating the postgraduate record. Corresponds with the coding used by UCCA.	One digit code.

3.2. Postgraduate Information (cont'd)

Field Title	Field Contents	Field Type
46.(45) Date of record termination.	The date on which the student's record can be regarded as terminated i.e. when no further information on the student will be required.	Six digit number.
47.(46) University transferred to.	The University to which the student was transferred or seconded on leaving Durham University, where applicable. For the benefit of UCCA.	Four digit code.
48. Subject on record termination	The subject of study pursued or completed by the student on termination of his record.	Four character code.
49. Degree or Diploma	Qualification gained on completion of the course of study.	Three digit code.
50.(50) Conferment Date	Date on which the qualification was conferred .	Six digit number.
51.(51) First Employment	The details of the employment entered into by the student on leaving University, where applicable.	Eleven digit code.
53. Pass Date	The date on which qualification awarded to the student was deemed to have been obtained.	Six digit number.
54. Thesis Reference	The reference to the title of the thesis produced by the student on completion of his studies.	Four digit code.
55.(27) Award Type	An indication of the type of award that forms the student's main source of finance. For the benefit of UCCA returns.	Two digit code.
56.(52) Change Indicator	An indicator set to determine whether any amendments have been made to the student's record.	One digit code

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STUDENT RECORD SYSTEM POSTGRADUATE FILE ARCHIVE REPORT

RECORD ID NUMBER PRESENT	PREVIOUS	SURNAME	FORENAMES	MAIDEN NAME	COLLEGE	DEGREE COURSE	RECORD STATUS E	P	M	L	ENTRY DATE	LEAVING DATE
7061337[illegible]		ADAMS	DAVID,HENLEY		07	34X2	5	4		5	01/10/70	01/01/75
7061364[illegible]		ROBINSON	DAVID,JOHN		02	42X2	5	4		7	08/10/69	14/12/77
7061347[illegible]		CAYTON	HELEN,MARGARET		12	70X1	5	4		7	01/10/70	23/12/77
7061372[illegible]		DOYLE	KEVIN		03	14X1	5	4		7	01/10/70	01/01/78
7061396[illegible]		WOOD	DAVID,CHARLES		16	27X1	5	4		7	01/10/70	31/01/78
7061386[illegible]		WELLS	KEVIN,JOHN,A		07	35X1	5	4		3	02/10/70	10/09/74
7134206[illegible]		BAIN	IAIN,ANDREW		16	42X1	5	4		7	04/10/71	01/01/78
7134273[illegible]		EL-DINSUKI	MALAA		16	33X1	5	4		7	01/10/71	01/01/78
7134294[illegible]	701483760	MCGILL	E.DAVID		16	31X3	5	4		7	01/10/71	01/01/78
7133285[illegible]		REICH	WILFRID,ANDREW		03	14X1	5	4		7	01/10/71	01/01/78
7133272[illegible]	810562540	SKINNER	JOHN,FREDERICK		07	26X1	5	4		7	01/10/71	04/03/78
7133233[illegible]	810249242	SMITH	GRAHAM,JAMES		02	31X1	5	4		7	01/10/71	01/01/78
7135626[illegible]		HALHOLT	ALAN,ROBERT		03	31X1	5	4		7	25/10/71	01/01/78
7201177[illegible]		ARIGHI	SUZANNA		16	25X1	5	4		7	22/09/72	01/01/78
7201170[illegible]		HAYES	KATHRYN,PATRICIA		07	31X1	5	4		7	03/10/72	01/01/78
7201173[illegible]	6985[illegible]	LAIDLER	KEITH		16	44X2	5	4		7	02/10/72	01/06/78
7201134[illegible]	6984[illegible]	LEVINGTON	DOUGLAS		09	33X5	5	4		7	02/10/72	01/01/78
7201150[illegible]	6983[illegible]	WELLINGTON	ROGER,ANDREW		09	33X5	5	4		7	01/10/72	01/01/78
7201151[illegible]	6984[illegible]	WILLIAM	JUDITH		14	26X1	5	4		7	01/10/72	31/01/78
7201153[illegible]	6981[illegible]	WALKER	CHRISTOPHER,D.T		16	35X1	5	4		6	02/10/72	10/10/77
7201154[illegible]	6986[illegible]	AXON	DAVID,JOHN		09	31X1	5	4		7	01/10/72	22/12/77
7201160[illegible]	6983[illegible]	NICHOLLS	PHILIP,SYDNEY		02	33X1	5	4		7	01/10/72	01/01/78
7201146[illegible]		STEPHENSON	WILLIAM		16	33X1	5	4		7	02/10/72	01/01/78
7201147[illegible]		RICHARDSON	MICHAEL,GEORGE		02	27X1	5	4		7	03/10/72	20/12/77
7201149[illegible]		RADA	WALID SHAKE		16	34X1	5	4		4	11/01/72	22/05/78
7201160[illegible]	698[illegible]755	BRIGG	GEOFFREY,ERNEST		01	75X1	5	4		7	03/10/72	03/02/78
7201149[illegible]		WEAVER	JEAN,MARY		16	42X1	5	4		4	02/09/72	14/05/74
7201199[illegible]		DIBSDALE	KEITH,CHARLES		09	42X7	5	4		5	03/10/72	15/12/73
7201232[illegible]	816058075	TUGHAN	JOHN,ANTHONY		01	60X1	5	4		7	03/10/72	05/10/77
7201204[illegible]		GRAHAM	ELSPETH,FORBES	MURRAY	16	42X2	5	4		7	01/10/72	07/09/74
7121412[illegible]		WELBY	DAVID,WILLIAM		09	33X1	5	4		5	01/10/73	13/01/78
7321431[illegible]		AL-TAMEMI	ABDUL,MALEK,K		16	65X1	5	4		6	09/10/73	15/01/78
7321424[illegible]		AL-NASIRI	KAMRAN		16	44X1	5	4		6	01/10/73	17/07/73
7321437[illegible]		SMITH	BRIAN,ROBERT		16	44X2	5	4		3	01/10/73	06/11/74
7321436[illegible]		DUNCAN	ALAN,PETER		16	34X1	5	4		6	01/10/73	20/06/78
7321431[illegible]		WINCHESTER	ANDREW,JAMES,OLIVIE		16	42X2	5	4		6	01/10/73	20/05/74
7321432[illegible]		FALLAHI	MOHAMMAD,TAGHI		16	34X1	5	4		6	01/10/73	13/06/78
7321432[illegible]		YEUNG	KING,YIU		16	31X1	5	4		6	08/10/73	01/01/74
7321431[illegible]		COPLAN	DARLEEN,S		16	25X1	5	4		6	01/10/73	20/12/77
7321431[illegible]		GEORGE	ALAN,ROY		16	42X2	5	4		7	01/10/73	22/02/78
7321416[illegible]		HAMDAN	YAHIA,ALI,HASAN		16	11X1	5	4		6	01/10/73	15/04/78
7321441[illegible]		WEDMOTH	PETER,WILLIAM		16	46X1	5	4		6	01/10/73	20/07/78
7321442[illegible]		STEVENSON	BRIAN		17	45X1	5	4		6	07/10/73	31/12/77
7[illegible]		MANAGHAN	PATRICIA		16	27X1	5	4		5	01/10/73	22/07/77
7[illegible]		GOOSS	MICHAEL,ANTHONY		16	31X1	5	4		6	01/10/73	04/12/77
7321436[illegible]		SALEHI-MANSHADI	MOHAMMAD,ALI		07	13X6	5	4		6	01/10/73	22/12/77
7321445[illegible]		KADE	JOHN,STEPHEN		02	66X1	5	4		6	01/10/73	06/06/78
7321445[illegible]		SMITH	TREVOR,JOHN		03	35X1	5	4		7	01/10/73	25/10/78
7321445[illegible]		SAGE	IAN,CHARLES		09	34X1	5	4		7	01/10/73	09/11/76
7321443862	690415955	MITCHELL	ROBERT,CHARLES		16	33X6	5	4		6	01/10/73	30/02/78

Figure A17 ICL printout sample

Source 14: other original documentation

1	DATE	1832-date
2	CATEGORY	sensitive
3	ACCESS	permitted university staff
4	LOCATION	Registrar's Dept, academic departments, colleges
5	AVAILABLE	office hours
6	STORAGE MEDIA	manual files
7	CONTENTS	information covering whole range of student record data
8	DESCRIPTION	original documents, e.g. matriculation forms, from which secondary documents e.g. registration cards, were filled out. Comprise all types of manual storage materials; loose sheet papers, cards, binders
9	USE	to check inconsistencies, inaccuracies and omissions. The student records contain clerical errors, together with varying, inconsistent clerical abbreviations.
10	LIMITATION	time consuming to pursue.

Source 15: recent-past and current staff and students

1	DATE	1930's-date
2	EFFECTIVENESS	Source of data inadequately provided by the other 14 sources, e.g. inconsistencies, inaccuracies, omissions in available data.

Source 16: other?

1	DATE	1832-date
2	DESCRIPTION	further data sources not yet encountered in this analysis.

APPENDIX 4

1968-DATE DOCUMENTATION AND SPECIMENS

Table A2 The 1968-79 student record system users' guide contents list, showing input document titles and programs available

C O N T E N T S

PART I

PART II

Section

6 - Programs Available
File Maintenance Programs
Undergraduate or Postgraduate Data Checking
Undergraduate or Postgraduate File Update
Undergraduate Final Update
Undergraduate File Dump
Postgraduate File Dump
Postgraduate and Undergraduate File Index
Postgraduate and Undergraduate File Archive
Postgraduate and Undergraduate File Archive Job Control
Undergraduate and Postgraduate File Protection
Undergraduate and Postgraduate file protection Job Control
Standard Code File Job Control
Standard Code File Updating using MTS Edit Commands
Code File Updating Using Maintenance Programs
Job Control for School Code File Update
School Code File Updating using MTS Edit Commands
School Code File Update using Program SCHUNT
Job Control for Program SRINTR
Job Control for program MASRET
Record Type 1 Job Control
Record Type 2 Job Control
Record Type 3 Job Control
Record Type 4 Job Control
Record Type 5 Job Control
Record Type 6 Job Control
Record Type 7 Job Control
Record Type 8 Job Control
Undergraduate Registration Programs
Job Control
Reference Number Generation Job Control
Job Control of establishing Input file
Job Control for running Reference Number Generation Program REFLST
Registration Update Job Control
June Registration Update Job Control
September Registration Update Job Control
File Update Run
Record Card Production Job Control
Production of Labels in Alphabetical order
Job Control for producing personal labels in alphabetical order
Job Control for producing 'A' Level Labels in alphabetical order
Production of Labels in course order
Job Control for producing personal labels in course order
Job Control for producing 'A' Level labels in course order
Production of labels in college order
Job Control for producing personal labels in college order
Job Control for producing 'A' Level labels in college order
Registration Form printing Job Control
Retrieval of Data and Production of Circulation List
Printing of Registration Forms
File Utilisation Programs
Registration Lists
Program MAKALF Job Control
Program RESFR1 Job Control
Program RESFR2 Job Control
Program COLLPR Job Control

Section

6 - Programs Available (cont'd)

Figure A18 Undergraduate matriculation form

University of Durham

UNDERGRADUATE MATRICULATION

UCCA No.	FOR OFFICE USE
Surname Forename(s)	U
College at which you intend to study	04 13
Name and location of last school/college attended Years of attendance 19 – 19	05 13

TYPE OF SCHOOL (Tick appropriate Box)

Comprehensive		Secondary		Direct Grant		Independent		6th Form Coll/Gram.		Private		Further Education		Other	

EXAMINATIONS PASSED AT GCE 'A' LEVEL OR EQUIVALENT

Examining Board	Date Month	Date Year	Subject	Level	Grade	
						22
						31
						40
						49
						58
						67

Details of any qualifications obtained after or in place of 'A' level e.g. HND, ONC — 76

EXAMINATIONS PASSED AT GCE 'O' LEVEL or EQUIVALENT

Examining Board	Date Month	Date Year	Subject	Level	Grade

Who is responsible for paying your TUITION fees?
Name (in full) Address (if not Local Education Authority or self) — 08 26 31 32

Subject of Intended Degree Course	Category (eg. BA/BSc)	11 23

Signature: ..... Date: ..... College Endorsement .....

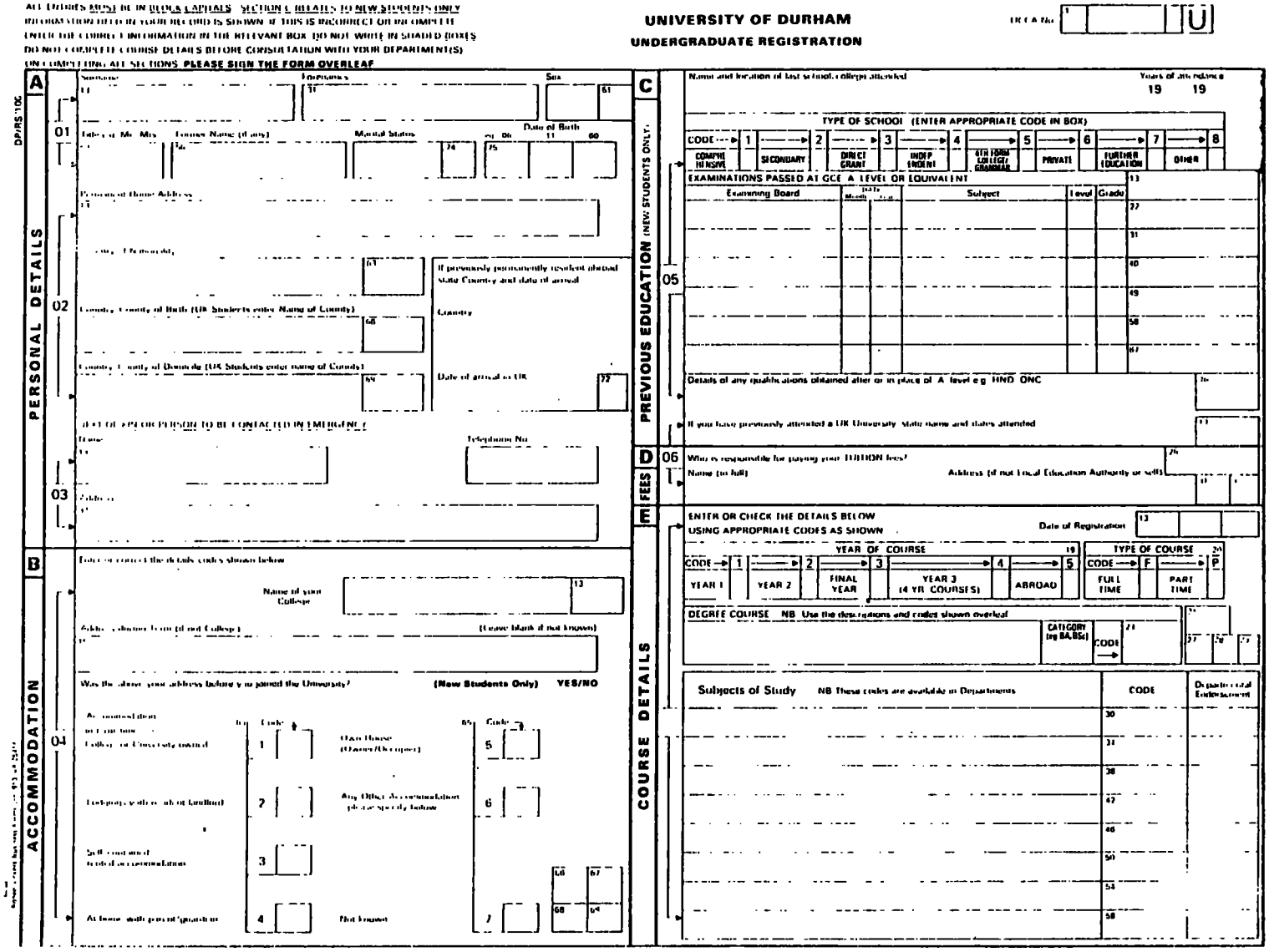


Figure A19 Undergraduate registration form

UNDERGRADUATE, OCCASIONAL, AND NON-GRADUATE DIPLOMA COURSE CODES

FACULTY OF ARTS

Code	Description
7600	Arts General
7010	Ancient History and Archaeology
68HQ	Archaeology and Latin
6600	Classics
6632	Classical Studies Greek Option
67CH	English & Latin
68CW	English & Philosophy
5520	English Language & Medieval Lit
5500	English Language & Literature
5700	French
5800	French & German
67DK	French & Russian
61DL	French & Spanish
5900	German
67EK	German & Russian
61EL	German & Spanish
6660	Latin
3180	Mathematics (B A)
6900	Modern History
7100	Philosophy
891W	Philosophy & Politics
89JW	Philosophy & Psychology
6700	Russian (3 year course)
6201	Russian (4 year course)
6000	Spanish (3 year course)
6001	Spanish (4 year course)
6400	Chinese
6544	Classical Arabic/Islamic
6680	Classical Hebrew/O T
6534	Egyptology
6520	Modern Arabic
6570	Modern Persian
6590	Modern Turkish

FACULTY OF SCIENCE

Code	Description
3800	Science General
3810	Pass Science
3350	Applied Physics
37EH	Applied Physics & Chemistry
2500	Biology
2600	Botany
38DE	Botany/Chemistry
85DU	Botany/Geography
38DF	Botany/Geology
3400	Chemistry
37EF	Chemistry/Geology
38EL	Chemistry/Zoology
3220	Computing and Electronics
1630	Engineering Science
82JW	Engineering Science and Management
4290	Geography (B Sc)
3500	Geology
3540	Geology/Geophysics
37FH	Geology/Physics
3100	Mathematics (B Sc)
3200	Mathematics/Physics
3300	Physics
4690	Psychology (B Sc)
85LY	Psychology/Zoology
2700	Zoology

FACULTY OF SOCIAL SCIENCES

Code	Description
4800	Anthropology
7020	Anthropology and Archaeology
498J	Anthropology & Psychology
498K	Anthropology & Sociology
7000	Archaeology
4180	Economic History
4190	Economic History & Economics
490K	Economic History & Sociology
4100	Economics
49CF	Economics & Law
49CH	Economics & Politics
49CK	Economics & Sociology
4200	Geography (B A)
498E	Geography & Anthropology
49FH	Law & Politics
49FK	Law & Sociology
85GS	Mathematics & Economics
4410	Politics
4900	Social and Public Administration
491K	Politics & Sociology
4600	Psychology (B A)
49JK	Psychology & Sociology
4700	Sociology
4720	Sociology & Social Admin
6500	Modern Middle Eastern Studies

FACULTY OF DIVINITY

Code	Description
7200	Theology

FACULTY OF LAW

Code	Description
4500	Law

FACULTY OF MUSIC

Code	Description
7500	Music

EXTRA-MURAL STUDIES

Code	Description
0204	Certificate in Community and Youth Work

OCCASIONAL COURSES

Code	Description
6111	Institute of European Studies
7601	Occasional Arts
3899	Occasional Science
7202	Occasional Theology
7690	Arts for Overseas Visitors
3880	Science for Overseas Visitors
7290	Theology for Overseas Visitors

PLEASE SIGN HERE

Signature of Undergraduate — Date

College Endorsement — Date

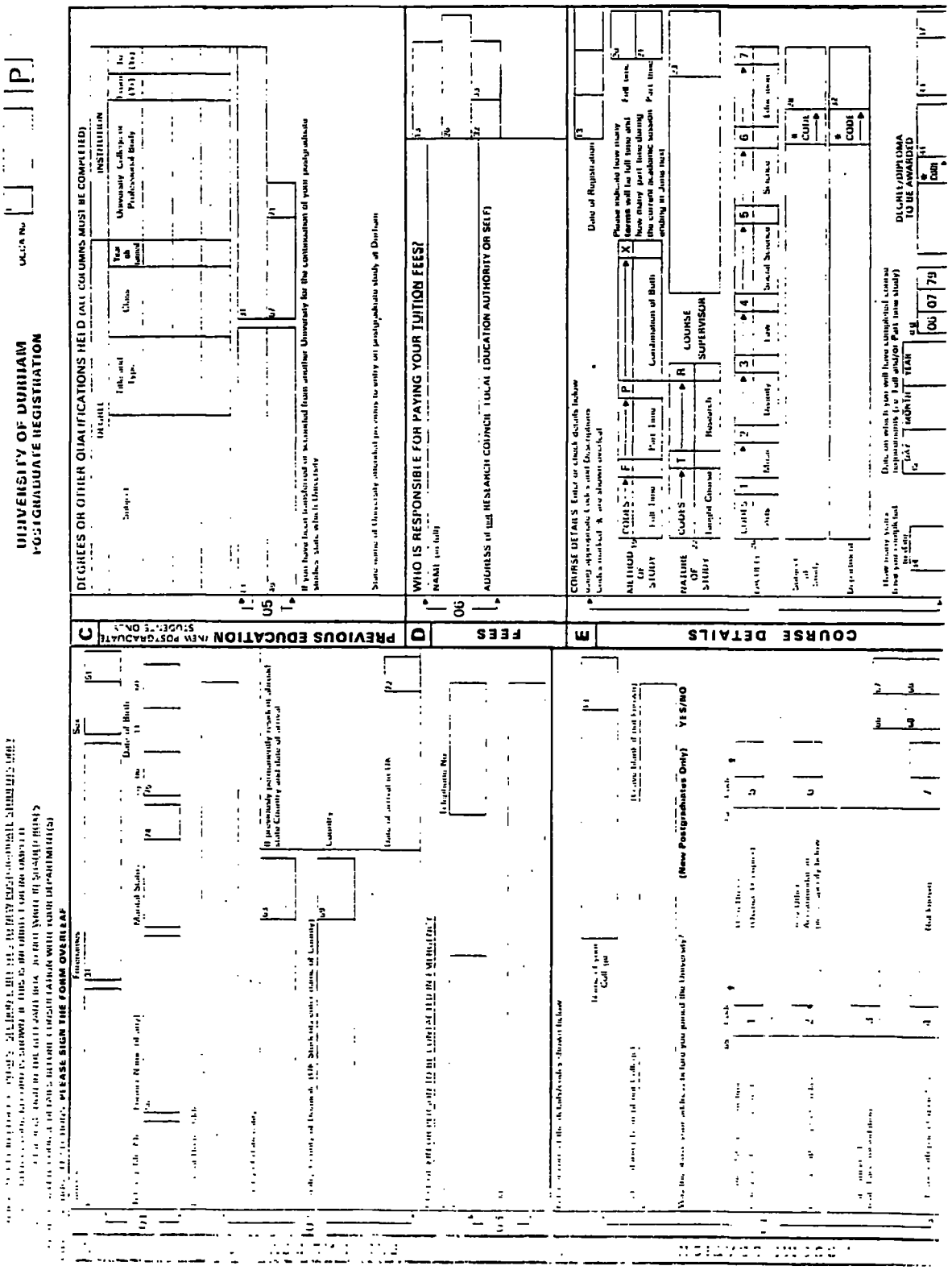


Figure A20 Postgraduate registration form

ACADEMIC DEPARTMENTS

Code	Department
78	Anthropology
45	Applied Physics and Electronics
77	Archaeology
51	Biology
53	Botany
87	Business Studies
55	Chemistry
05	Classics
57	Computing
81	Economics
79	Economic History
95	Education
47	Engineering Science
11	English
13	English Language
94	Extra Mural Studies
15	French
99	General Arts
97	General Science
71	Geography
59	Geology
17	German
98	Institute of Education
98	Institute of European Studies
91	Law
61	Mathematics
19	Modern History
41	Music
21	Oriental studies
33	Philosophy
63	Physics
83	Politics
65	Psychology
35	Russian
85	Sociology
37	Spanish
01	Theology
57	Zoology

POSTGRADUATE SUBJECTS OF STUDY CODES

FACULTY OF DIVINITY

Research

72X1 Theology

ADVANCED COURSES

72X6 Diploma in Theology (Short Course)
72X7 Diploma in Theology
72X8 Diploma in Biblical Studies
72X9 MA in Theology

FACULTY OF ARTS

Research

66X1 Classics
65X1 English Literature
65X2 English Language
57X1 French
69X1 German
89X1 History

65X1 Oriental Studies
71X1 Philosophy
62X1 Russian
60X1 Spanish

ADVANCED COURSES

65X9 M A English Language
66X9 M A. Greek

Oriental Studies

65X9 Diploma in Arabic

FACULTY OF LAW

Research

45X1 Law

FACULTY OF SCIENCE

Research

48X2 Anthropology (Science)
33X9 Applied Physics & Electronics
26X1 Botany
26X9 Botany-Glycoprotein research
34X1 Chemistry
31X5 Computing
10X1 Engineering Science
42X1 Geography (Science)
35X1 Geology
31X1 Mathematics
71X2 History and Philosophy of Science
33X1 Physics
46X1 Psychology (Science)
27X1 Zoology

ADVANCED COURSES

43X9 Biological Anthropology
25X9 Ecology Advanced Course
35X8 Engineering Geology
35X9 Geophysics
31X9 Pure Mathematics
42X5 Spatial Data Analysis in Geog
16X9 Tribology

FACULTY OF MUSIC

Research

75X1 Music, including M Mus by thesis

ADVANCED COURSES

75X9 Music (M A)
75X8 Music (M Mus by examination and exercise)

FACULTY OF EDUCATION

Research

01X1 Education

ADVANCED COURSE

01X9 P.G.C. Ed.
01X8 M A in Education (Standard Course)
01X7 M A in Education - Young Children
01X6 (inc. Diploma) - Primary Education
01X5 - Remedial Education
01X4 - Drama
01X3 - Sci & Maths in Education

FACULTY OF SOCIAL SCIENCES

Research

48X1 Anthropology (Social Sciences)
70X1 Archaeology
40X1 Business Studies
41X2 Economic History
41X1 Economics
42X2 Geography (Social Sciences)
44X1 Politics
46X3 Psychology (Social Sciences)
47X1 Sociology and Social Administration

ADVANCED COURSES

48X8 Diploma in Anthropology
73X8 Diploma in Archaeological Conservation
70X9 M A in Archaeology
40X9 M Sc. in Management Studies
42X3 M A in Geography & Development Studies
42X8 M A in Urban Geography & Planning
42X7 M A in the Geography of the Middle East and Mediterranean
65X6 Diploma in Middle Eastern Studies
44X9 M A in Politics

DEGREE/DIPLOMA TO BE AWARDED

000	No award
061	Masters Degrees - MA
062	M Litt
063	M.Sc.
064	M Mus
065	M Phil
068	M Ed.
	Graduate Bachelors Degree
071	B Mus
072	B C L
081	Ph D
	Other Awards of Higher Degree Level
101	Diplomas
	Professional Teaching Qualification
141	P.G.C Ed.

PLEASE SIGN HERE

Signature of Postgraduate _____

Date _____

Signature of Supervisor/Course Director _____

Date _____

1968-DATE DOCUMENTATION & SPECIMENS 147

STUDENT RECORD SYSTEM
UNDERGRADUATE COURSE CHANGES

80-81

This form must be used for any change of degree course or any change of subject within a degree course made **after registration.**

EACH CHANGE, WHETHER INTO OR OUT OF A COURSE, MUST BE ENDORSED BY THE HEAD OF THE DEPARTMENT CONCERNED OR THE APPROPRIATE MEMBER OF STAFF.

Degree course codes will be found on the back of this form.
Subject (Unit course) codes can be obtained from booklets available in departmental offices.

BLOCK CAPITALS PLEASE

Name of Student ..... Signature .....

College ..... Date .....

Current Degree Course	UCCA Code (See overleaf)	Year of Course	Intended Degree Course	UCCA Code (See overleaf)	Year of Course

Subjects (Unit Courses) being dropped	Code	Endorsement	New Subjects (Unit Courses)	Code	Endorsement

(Subjects (Unit Courses) which are unchanged need not be shown).

When this form is completed it should be taken to one of the following:

B.A. (Divinity) ..... Miss M. Pattison, Administrative Assistant, Old Shire Hall.
B.A. (Arts, Music, I.E.S. Occasional Arts Students) ..... Mr. G.R. Thrush, Assistant Registrar, Old Shire Hall.
B.A. (Social Sciences, Law) ..... Dr. M.E. Lavis, Assistant Registrar, Old Shire Hall.
B.Sc. Students ..... The Faculty of Science Office, Science Laboratories.

If the change is made after the last date for examination entries (the end of the fourth week of the Michaelmas Term) the permission of the Dean of the Faculty is required and a new examination entry must be made with the Examinations Department.

Certified ..... Date .....

FOR OFFICE USE

UCCA NO.											Form	Trailer	Year	Degree			Meth.	Length	Conc.	1				2				3				4				5				6				7				8			
1	2	3	4	5	6	7	8	9	10	11	12	19	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
									U	I																																								

CC03

Figure A21 Undergraduate course changes form

Figure A22 Form description sheet, form DP14

Form DP 14
System Name & Ref.
Analyst
Date
Form Name : FORM DESCRIPTION

University of Durham
FINANCE DEPARTMENT
DATA PROCESSING SECTION

FORM NAME:
FORM NUMBER:

Field No.	Field Name	Field Contents	Completed by (Dept. & Section)

Figure A23 Batch header

UNIVERSITY OF DURHAM

Registrars Department

FROM : ..... BATCH NO. .....

TO : Data Processing Section

DATE : .....

NO. OF DOCUMENTS ATTACHED .....

TOTAL NO. OF BATCHES .....

FOR USE IN DATA PROCESSING SECTION			
ENTERED	VERIFIED	BATCH NAME	FILE NAME

ERROR CORRECTION

DOCUMENT	LINE	CORRECTION

DP/RS/99

Table A3 1977-date student record system output reports

6. OUTPUT FROM THE SYSTEM

This section provides a brief outline of each report.

The reports produced are as follows :-

Reference	Function	Frequency
RS01	Error Report	Weekly
RS02	Error Report	Weekly
RS08	'Audit' Report (Undergraduate File)	Daily/on Request
RS09	'Audit' Report (Postgraduate file)	Daily/on Request
RS10	Undergraduate or Postgraduate Index	On Request
RS11	Summary of Enquiries	Daily
RS16	Summary of Registration Forms Printed	Annually
RS17	List of Decision Cards	Annually
RS18A	Summary of Provisional Offers	Annually
RS18B	Discrepancies on Provisional Offers	Annually
RS19	Discrepancies on Final Offers	Annually
RS20	Discrepancies on UCCA Records	Annually
RS22	Students for whom Registration Forms not printed	Annually
RS26A	UCCA School Code Changes	Annually
RS26B	UCCA School Code Deletions	Annually
RS27	Errors on update of School Codes	Annually
RS29	Students expected to arrive in Michaelmas term	On Request
RS32	Overseas Students	On Request
RS33	College List	On Request
RS34	Postgraduate Department - List	On Request
RS35	Higher Degrees List	On Request
RS36	Students in Alphabetical Order	On Request
RS38	Unit Course List	On Request
RS40	Summary of Unit Courses	On Request

RS41	Course List	On Request
RS42	Contents of Course List	On Request
RS43	Labels for Exam. Cards (Personal Inforamtion)	Annually
RS44	Misc. Labels	On Request
RS45	List of Labels Produced	On Request
RS47	Course Change List	On Request
RS48	Extract of Student Record	On Request
RS49	Labels for Exam. Cards ('A' Levels)	Annually
RS50	'A' Levels Analysis	Annually
RS51	Accommodation Statistics	Annually
RS52	New Undergraduate Statistics	Annually
RS53	New Postgraduate	Annually
RS54	Undergraduates by Degree Course Statistics	Annually
RS55	Degree/Unit Course Analysis	Annually
RS57	Analysis by Age	Annually
RS58	Student Population by region	Annually
RS59	College/Subject Disposition	Annually
RS60	Source of Finance	Annually
RS61	Notional Student Numbers	Annually
RS62	Postgraduate Department - Numbers	Annually
RS63	Unit Course Combinations	Annually
RS64	Degree/Unit Course Combinations	Annually
RS65	Projected Student Numbers	Annually
RS66	Analysis of Admissions by Dept.	Annually
RS67	Analysis of Admissions by Group	Annually
RS68	Analysis of Postgraduates by Faculty	Annually
RS69	Careers Advisors Lists	Annually
RS70	Leavers List	Annually
RS75	Errors encountered on Invoice production	On Request
RS76	Invoices	On Request
RS77	Invoice Summary	On Request

RS78	Students for whom no invoice printed	On Request
RS80	Autumn Master - Undergraduates	Annually
RS86	IDU/1	Annually
RS87	IDU/2	Annually
RS88	IDP/1	Annually

APPENDIX 5

PILOT STUDY: DESIGN DOCUMENTS

Table A4 Fields required on library requisition record

FIELD NO.	FIELD NAME	MAX. EXTENT	INFORMATION TYPE FIXED/VARIABLE
1	author	100	V
2	acquisition no.	10	F
3	title	100	V
4	series	100	V
5	shelf classification no.	20	F
6	edition	20	F
7	no. of vols	3	F
8	SBN(s)	13	F
9	publication date	4	F
10	place	20	F
11	publisher	50	F
12	price	10	F
13	reference source	24	F
14	fund	15	F
15	suggested by	100	V

Table A5 Library requisition record field details

CARD	CARD POSITIONS	FIELD CONTENTS	VALUE
1	1-65	author	
	66-75	acquisition no.	
	76	card type	1
	77	sequence no. within type	1-3
	78-8Ø	sequence no. within batch	Ø-999
2	1-75	title	
	76	card type	2
	77	sequence no. within type	1-3
	78-8Ø	sequence no. within batch	Ø-999
3	1-75	series	
	76	card type	3
	77	sequence no. within type	1-3
	78-8Ø	sequence no. within batch	Ø-999
4	1-2Ø	shelf classification no.	
	21-4Ø	edition	
	41-43	no. of vols.	
	44-56	SBN(s)	
	57-6Ø	publication date	
	61-8Ø		
	76	card type	4
	77	sequence no. within type	1
	78-8Ø	sequence no. within batch	Ø-999
5	1-2Ø	place	
	21-75	publisher	
	76	card type	4
	77	sequence no. within type	2
	78-8Ø	sequence no. within batch	Ø-999
6	1-1Ø	price	
	11-34	reference source	
	35-49	fund	
	76	card type	4
	77	sequence no. within type	3
	78-8Ø	sequence no. within batch	Ø-999
7	1-75	suggested by	
	76	card type	5
	77	sequence no. within type	1-3
	78-8Ø	sequence no. within batch	Ø-999

Field details

The card identification fields: card positions 76-80, carry the following similar data for each of the 7 cards. Card position 76 is allocated to 'card type', thus bearing a value from 1-7.

'Card type' means:

CARD TYPE NO.	DATA HELD ON:
1	author
2	title
3	series
4,5,6	library classification, publishing and sales data
7	recommender

Card position 77 is allocated to the 'sequence number within the card type', the first card of a type being 1, the second 2.

Card positions 78-80 are allocated to the 'sequence number of the card group within the batch'. This batch is expected to total less than 1000 therefore the value could range from 0 to a maximum of 999. If more than 1000 cards need to be processed they could be split into batches of 1000 or less and each batch could then be processed independently. The remaining card positions require individual detailing, as follows.

CARD

1 Card 1 carries 2 fields: 'author' and 'acquisition number'. Author is a variable length field, allocated to a maximum extent of 100 characters and thus could continue onto a second card. It is allocated positions 1-65.
Acquisition number is a fixed field, of maximum extent 10 characters, allocated card positions 66-75.

2 Card 2 carries the data for 'title', a variable length field of maximum extent 100 characters which thus could continue onto a second card. It is allocated card positions 1-75.
Here, card position 76 is filled by the digit 2, whilst card position 77 becomes 1 if no more than 75 characters are required, but 2 if more than 75 characters are required.

3 As for card 2, but field content is 'series', i.e. series replaces title, and card type increases to 3.

4 Card 4 has 5 fixed length fields:
- 'shelf classification number', maximum extent 20 characters, card positions 1-20
- 'number of volumes', maximum extent 3, card positions 41-43
- 'SBN(s)', maximum extent 13, card positions 44-56
- 'publication date' maximum extent 4, card positions 57-60.

Card position 76 increases to 4. Card position 77 is filled by 1, denoting that this is the first card of type 4.

5 Card 5 has 2 fixed length fields:
- 'place', maximum characters 50, card positions 1-20
- 'publisher', maximum characters 50, card positions 21-75.

Card position 76 remains as 4. Card position 77 increases to 2.

6 Card 6 bears the remaining 3 fixed fields:
- 'price', maximum characters 10, card positions 1-10
- 'reference source', maximum characters 24, card positions 11-34
- 'fund', maximum characters 24, card positions 35-49.

Card position 76 remains 4, whilst card position 77 increases to 3 to denote the third fixed field card.

7 As for card 2, but:
- 'suggested by' replaces 'title'
- card position 76 is filled by the digit 5.

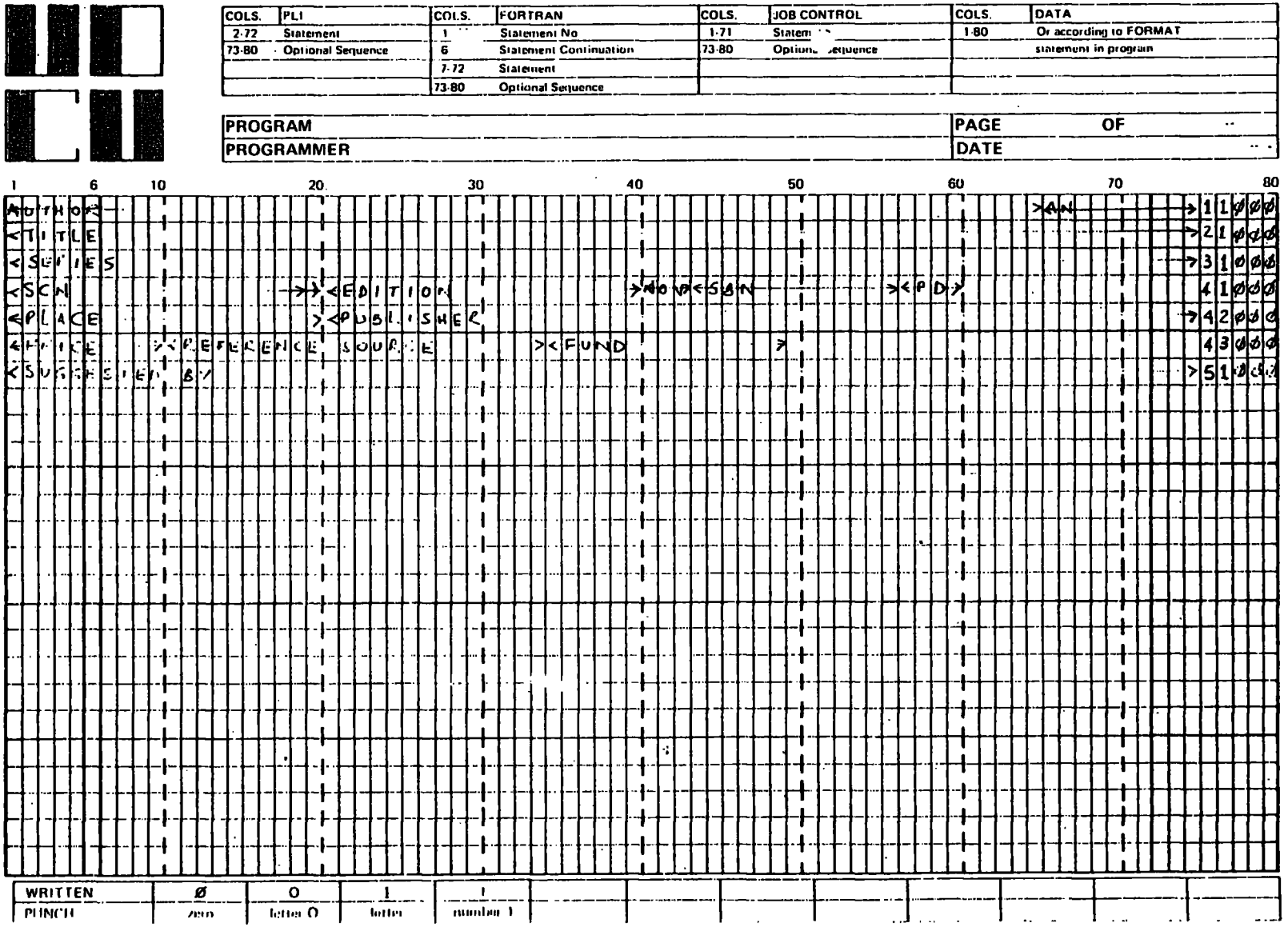
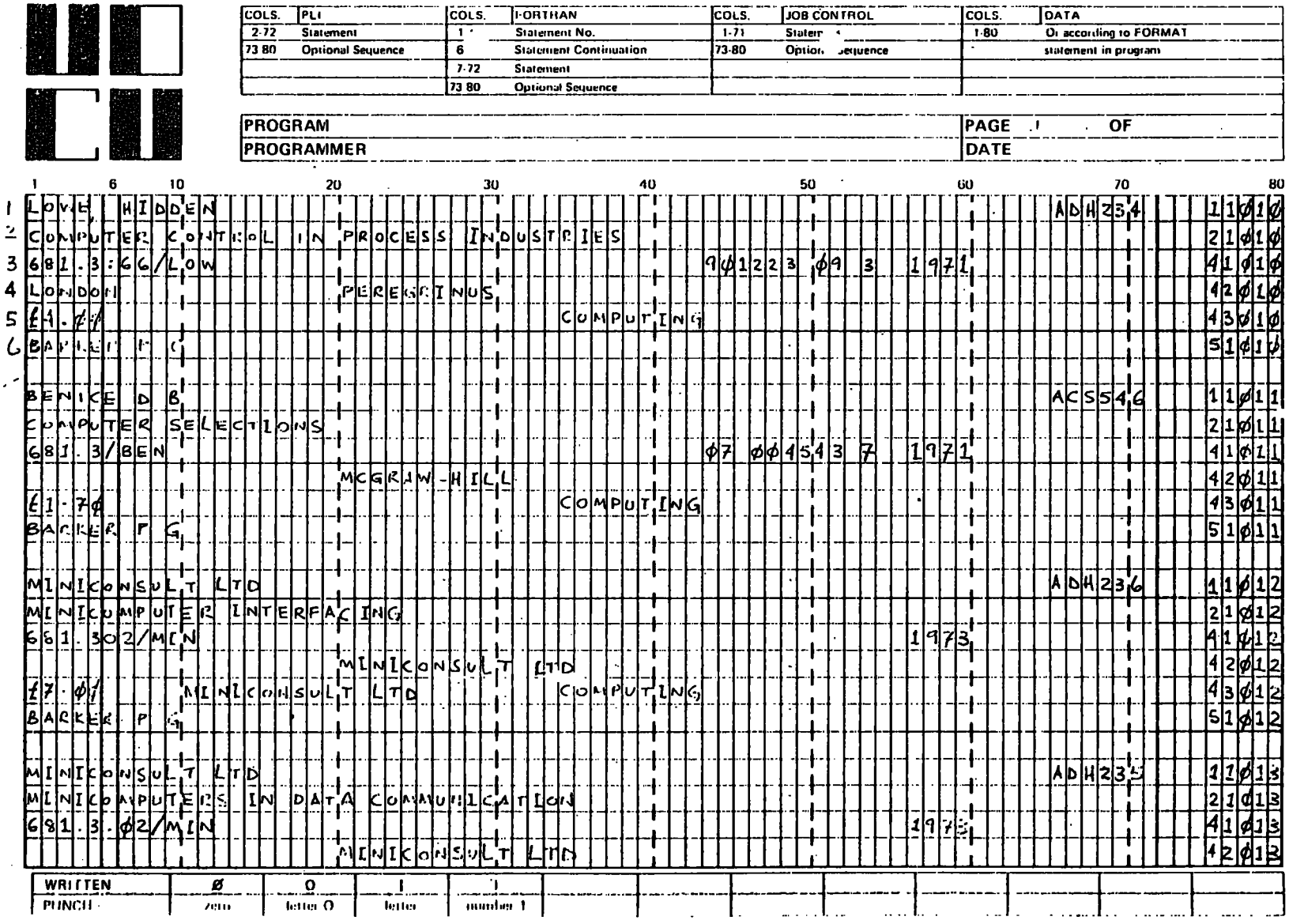


Figure A24 Set of 11 NUMAC coding forms for library requisition records pilot study



COLS.	PL/I	COLS.	FORTRAN	COLS.	JOB CONTROL	COLS.	DATA
2-72	Statement	1	Statement No.	1-71	Statement	1-80	Or according to FORMAT
73 80	Optional Sequence	6	Statement Continuation	73-80	Optional Sequence		statement in program
		7-72	Statement				
		73 80	Optional Sequence				

PROGRAM | PAGE 1 OF

PROGRAMMER | DATE

WRITTEN	Ø	O	I	1
PUNCH	zero	letter O	letter	number 1

COLS.	PLI	COLS.	FORTRAN	COLS.	JOB CONTROL	COLS	DATA
2-72	Statement	1-5	Statement No.	1-71	Statement	1-80	Or according to FORMAT statement in program
73-80	Optional Sequence	6	Statement Continuation	73-80	Optional Sequence		
		7-72	Statement				
		73-80	Optional Sequence				

PROGRAM

PROGRAMMER

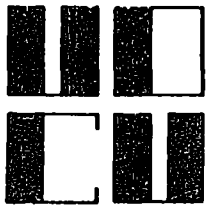
PAGE ? OF

DATE

```
£9.ØØ                              COMPUTING                                 43Ø13
BARKER P G                                                                   51Ø13

MINICONSULT LTD                                                              11Ø14
MINICOMPUTERS IN INSTRUMENTATION AND CONTROL                                 21Ø14
681.3:53:Ø8/MIN                                              1973            41Ø14
                    MINICONSULT LTD                                          42Ø14
£1.ØØ                              COMPUTING                                 43Ø14
BARKER P G                                                                   51Ø14
```

WRITTEN	Ø	O	I	1
PUNCH	zero	letter O	letter	number 1



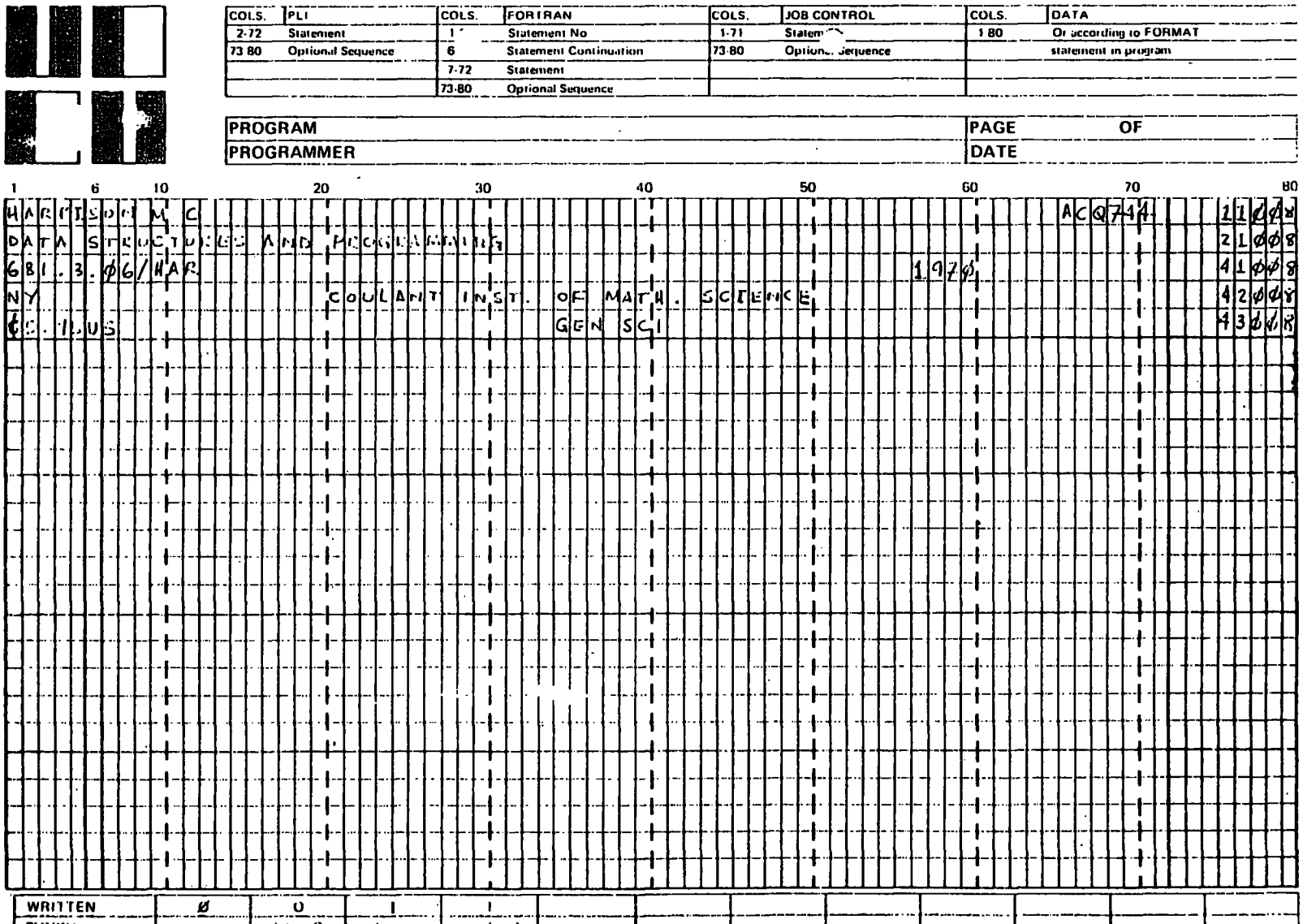
COLS.	PL/I	COLS.	FORTRAN	COLS.	JOB CONTROL	COLS.	DATA
2-72	Statement	1	Statement No.	1-71	Statement	1-80	Or according to FORMAT
73-80	Optional Sequence	6	Statement Continuation	73-80	Option... Sequence		statement in program
		7-72	Statement				
		73-80	Optional Sequence				

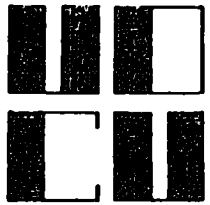
PROGRAM	PAGE OF
PROGRAMMER	DATE

CARD

```
1    6    10        20        30        40        50        60        70        80
1  GJERLOV P., HELMS H.J., NIELSEN J. (EDS.)                ACSESO      11003
2. A PROGRAMMING LANGUAGE, APL CONGRESS 73                              21003
3  PROC APL CONGRESS 73, COPENHAGEN, DENMARK, AUG 22-24, 1973           31003
4  681.3.06/APL                                                         41003
5                    NORTH-HOLLAND                                      42003
6  DFLYS.00   NORTH-HOLLAND CATALOG   COMPUTER                          43003
7  W.V.                                                                 51003
```

WRITTEN	Ø	O	I	I
PUNCH	zero	letter O	letter	number 1


COLS. PLI
2-72 Statement
73 80 Optional Sequence
COLS. FORTRAN
1 Statement No
6 Statement Continuation
7-72 Statement
73-80 Optional Sequence
COLS. JOB CONTROL
1-71 Statement
73-80 Optional Sequence
COLS. DATA
1 80 Or according to FORMAT
statement in program
PROGRAM
PROGRAMMER
PAGE OF
DATE
1 6 10 20 30 40 50 60 70 80
1. HARTSON M C
2 DATA STRUCTURES AND PROGRAMMING
3 681.3.Ø6/HAR
4 NY COULANT INST. OF MATH. SCIENCE
5 C.U.S GEN SCI
1970
ACQ 74
1 1 ØØ 8
2 1 ØØ 8
4 1 ØØ 8
4 2 ØØ 8
4 3 ØØ 8
WRITTEN Ø O I I
PUNCH zero letter O letter I number 1

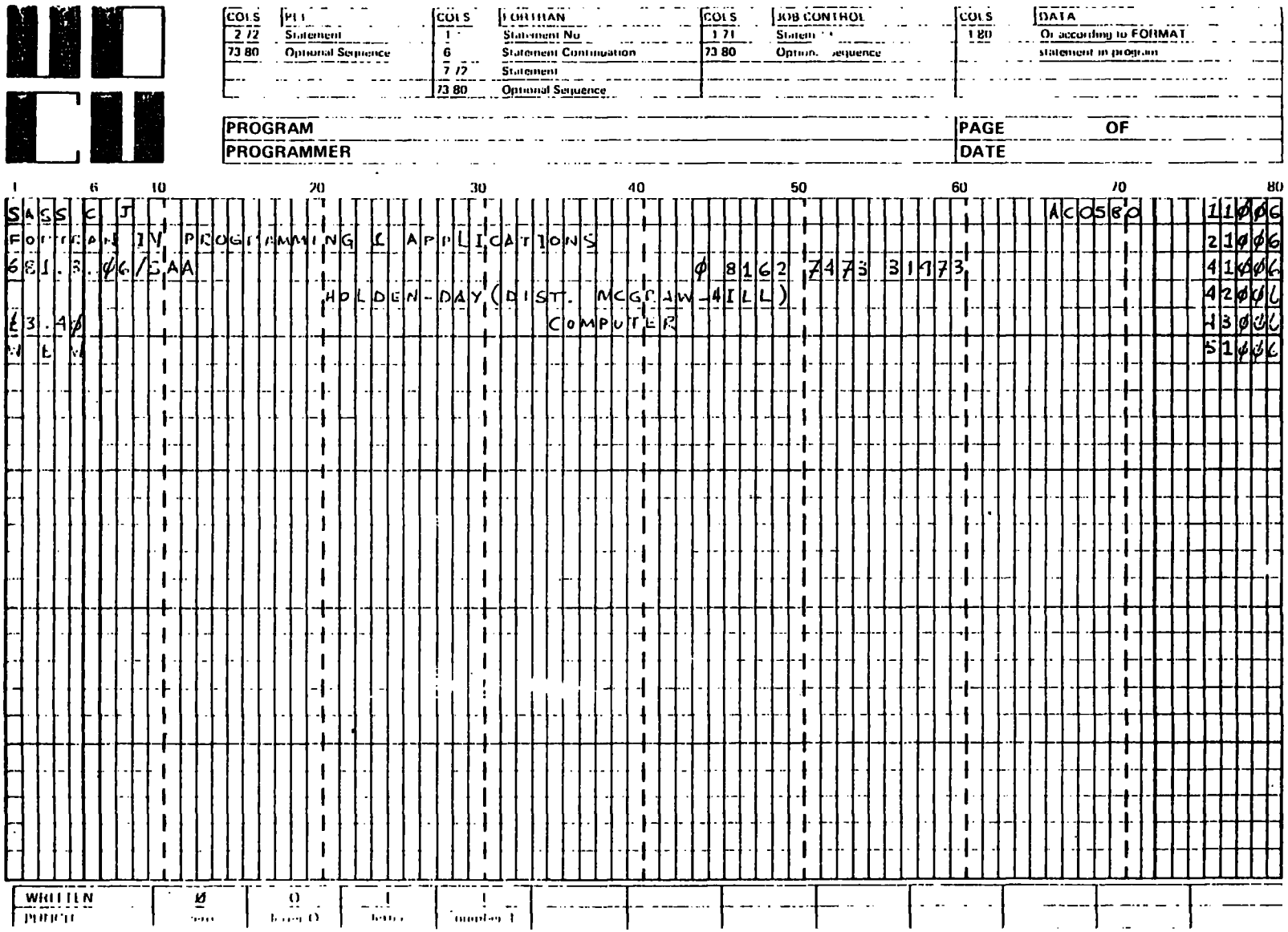


COLS	PL/I	COLS.	FORTRAN	COLS.	JOB CONTROL	COLS.	DATA
2-72	Statement	1	Statement No.	1-71	Statement	1-80	Or according to FORMAT
73-80	Optional Sequence	6	Statement Continuation	73-80	Optional Sequence		statement in program
		7-72	Statement				
		73-80	Optional Sequence				

PROGRAM	PAGE OF
PROGRAMMER	DATE

```
1    6   10        20        30        40        50        60        70        80
1  KATZAN                                                    ACSØ93          1 1ØØ9
2  OPERATING SYSTEMS: A PRAGMATIC APPROACH                                   2 1ØØ9
3  COMPUTER SCIENCE SERIES                                                   3 1ØØ9
4  6SI.3.Ø2/KAT                                  Ø 442 24253 Ø1973           4 1ØØ9
5                    VAN NOSTRAND REINHOLD                                   4 2ØØ9
6  $LH.SUS DATAMATION OCT1973 PIC COMPUTING                                  4 3ØØ9
7  BARKLEY                                                                   5 1ØØ9
```

WRITTEN	Ø	O	I	I
PUNCH	zero	letter O	letter	number 1

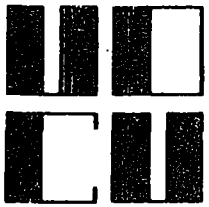

COLS PL/I Statement
2 72 Statement
73 80 Optional Sequence
COLS FORTRAN
1 Statement No
6 Statement Continuation
7 72 Statement
73 80 Optional Sequence
COLS JOB CONTROL
1 71 Statement
73 80 Optional Sequence
COLS DATA
1 80 Or according to FORMAT
statement in program
PROGRAM
PROGRAMMER
PAGE OF
DATE
1 6 10 20 30 40 50 60 70 80
1 $ A S S C J
2 F O R T R A N I V P R O G R A M M I N G L A P P L I C A T I O N S
3 6 8 1 3 . 0 6 / 5 A A
4 H O L D E N - D A Y (D I S T . M C G R A W - H I L L)
5 C O M P U T E R
6 A C 0 5 8 0
1 1 0 0 0 6
2 1 0 0 0 6
4 1 0 0 0 6
4 2 0 0 0 6
4 3 0 0 0 0
5 1 0 0 0 6
WRITTEN
PUNCH

COLS.	PLI	COLS.	FORTRAN	COLS.	JOB CONTROL	COLS.	DATA
2-72	Statement	1	Statement No	1-71	Statement	1-80	Or according to FORMAT
73-80	Optional Sequence	6	Statement Continuation	73-80	Optional Sequence		statement in program
		7-72	Statement				
		73-80	Optional Sequence				

PROGRAM	PAGE OF
PROGRAMMER	DATE

```
1    6   10        20        30        40        50        60        70        80
1 SHARRATT J R                                                    ACS74.2   110002
2 DATA CONTROL GUIDELINES, COMPUTERGUIDE IL                                 210002
3 621.3.02/SHA                          085012 0993  1954                   410002
4                    NCC                                                    420002
5 62.00                NCC                COMPUTER                         430002
6 W S W                                                                     510002
```

WRITTEN	Ø	O	I	1								
PUNCH	zero	letter O	letter	number 1								



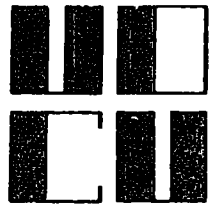
COLS.	PLI	COLS.	FORTRAN	COLS.	JOB CONTROL	COLS	DATA
2-72	Statement	1	Statement No.	1-71	Statement	1-80	Or according to FORMAT
73-80	Optional Sequence	6	Statement Continuation	73-80	Optional Sequence		statement in program
		7-72	Statement				
		73-80	Optional Sequence				

PROGRAM | PAGE OF

PROGRAMMER | DATE

```
1   6   10        20        30        40        50        60        70        80
1 SPENCER D D                                                  ACCS12        110007
2 GAME PLAYING WITH COMPUTERS                                                 210007
3 681.3:167/SPE                                  Ø 8767L 156 S1761            410007
4                    SPARTAN BOOKS, MACMILLAN & CO.                           420007
5 £6.50              RESERVE P G BARKER                                       430007
```

WRITTEN	Ø	O	I	l
PUNCH	zero	letter O	letter	number 1



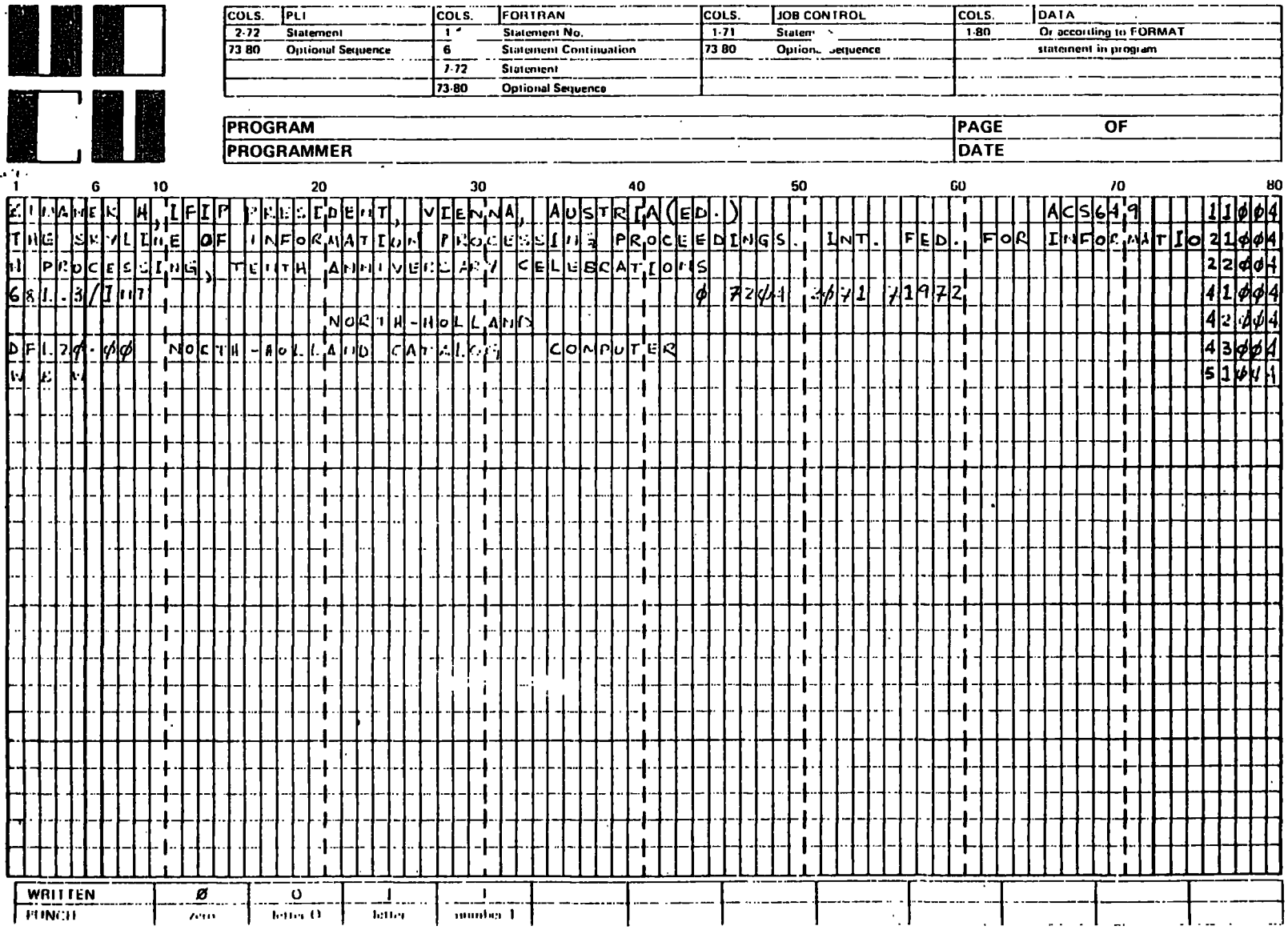
COLS.	PLI	COLS.	FORTRAN	COLS.	JOB CONTROL	COLS.	DATA
2-72	Statement	1	Statement No.	1-71	Statement	1-80	Or according to FORMAT
73-80	Optional Sequence	6	Statement Continuation	73 80	Optional Sequence		statement in program
		7 72	Statement				
		73-80	Optional Sequence				

PROGRAM | PAGE OF

PROGRAMMER | DATE

```
1   6  10        20        30        40        50        60        70        80
1 WILLIAMANN A. KLOS J(EDS.)                                ACQS46      11005
2 DICTIONARY OF DATA PROCESSING INCLUDING APPLICATIONS IN INDUSTRY, ADMINISTR21005
3 ATION AND BUSINESS                                                22005
4 681.3(03)/WIT          2 REV ENL      0 444 99875 61973           41005
5                        ELSEVIER                                   42005
6 DFL90.00                        COMPUTER                          43005
```

WRITTEN	Ø	O	I	I								
PUNCH	zero	letter O	letter	number 1								


COLS. PLI
2-72 Statement
73 80 Optional Sequence
COLS. FORTRAN
1 Statement No.
6 Statement Continuation
7-72 Statement
73-80 Optional Sequence
COLS. JOB CONTROL
1-71 Statement
73 80 Optional Sequence
COLS. DATA
1-80 Or according to FORMAT statement in program
PROGRAM
PROGRAMMER
PAGE OF
DATE
1 6 10 20 30 40 50 60 70 80
1 E.I.NAMEK, H., IFIP PRESIDENT, VIENNA, AUSTRIA (ED.) ACS649 1 1 0 0 4
2 THE SKYLINE OF INFORMATION PROCESSING PROCEEDINGS. INT. FED. FOR INFORMATIO 2 1 0 0 4
3 N PROCESSING, TENTH ANNIVERSARY CELEBRATIONS 2 2 0 0 4
4 681.3/I117 0 7204 4/71 1972 4 1 0 0 4
5 NORTH-HOLLAND 4 2 0 0 4
6 DF1.70-00 NORTH-HOLLAND CATALOG COMPUTER 4 3 0 0 4
7 5 1 0 0 4
WRITTEN Ø O I I
PUNCH zero letter O letter number 1

APPENDIX 6

DATA CAPTURE DOCUMENTS

Table A6 1968-69 population to be sampled, grouped according to courses prior to and at that date

Honorary degrees

1	DCL
2	DSc
3	DLitt
4	MA

Graduate awards

5	PhD in Divinity
6	Arts
7	Pure Science
8	Applied Science
9	Music
10	Social Sciences
11	MA in Divinity
12	Arts
13	Social Sciences
14	MSc in Pure Science
15	Applied Science
16	Social Science
17	MLitt in Arts
18	MEd
19	PGCEd
20	DASE
21	BMus
22	BCL

Undergraduate awards

23	BA in Divinity
24	Arts
25	Social Sciences
26	Economic Studies
27	Music
28	BSc in Pure Science
29	Applied Science
30	BEd
31	CEd
32	DPA

Non-award course students

33	Occasional students

Table A7 Undergraduate masterfile fields

References
Key: c = alphanumeric character/s
d = digit/s

PUNCHING INSTRUCTIONS
FORM OR PUNCHED CARD

NO.	NAME	COLUMN	FIELD NAME	MAX. LENGTH
01	personal details	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-30	surname	18c
		31-50	forename/s	20c
		51	sex	1c
		52-55	title	4c
		56-73	former name	18c
		74	marital status	1c
		75-80	date of birth	6d
02	"	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-62	home address	50c
		63-65	nationality	3d
		66-68	country of birth	3d
		69-71	country of domicile	3d
		72	home-overseas	1d
		73-80	(blank)	(8c)
03	"	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-31	next of kin-name	19c
		32-38	next of kin-address	49c
04	accommodation	1-10	identity no.	10c
		11,12	form/card no.	2d
		13,14	college	2d
		15-64	term address	50c
		65	accommodation	1d
		66	residence	1d
		67	UCCA entry	1d
		68	Durham entry	1d
		69	movement	1d
		70-75	entry date	6d
		76		1c
		77		1d
		78		1d
		79,80	(blank)	(2c)
05	previous education	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-16	last school name	4d
		17	" " type	1d
		18,19	year from	2d

PUNCHING INSTRUCTIONS
FORM OR PUNCHED CARD

NO.	NAME	COLUMN	FIELD NAME	MAX. LENGTH
		20,21	year to	2d
		22-30	A-levels	6x9d
		31-39		
		40-48		
		49-57		
		58-66		
		67-75		
		22,23	board	2d
		24	sitting	1d
		25,26	year	2d
		27-29	subject	3d
		30	grade	1d
		76,77	other qualifications	2d
		78-80	(blank)	(3c)
10	fees	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-16	last UK university	4d
		17-25	last UCCA no.	9d
		26-30	fee payer	5d
		31	UCCA award	1d
		32	Durham award	1d
		33,34	pg award	2
		35-62	fees due	28
		63-71	allowance	
		63-69	amount	7
		70	type	1
		71	inv	1
		72-78	session	7
		79,80	(blank)	(2c)
11	registration	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-18	registration date	6d
		19	course year	1d
		20	course type	1c
		21,22	qualification aim	2d
		23-26	degree	4c
		27	study method	1d
		28	length	1d
		29	concession	1c
		30-33	unit	8x4c
		34-37		
		38-41		
		42-45		
		46-49		
		50-53		
		54-57		
		58-61		
		62-80	(blank)	(19c)

PUNCHING INSTRUCTIONS
FORM OR PUNCHED CARD

NO.	NAME	COLUMN	FIELD NAME	MAX. LENGTH
12	results	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-18	examination date	6d
		19-25	units & marks	8X7c
		26-32		
		33-39		
		40-46		
		47-53		
		54-60		
		61-67		
		68-74		
		19-22	unit	4c
		23-25	mark	3d
		75,76	result	2
		77-80	(blank)	(4c)
13	resit	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-18	resit date	6d
		19-25	units & marks	8X7c
		26-32		
		33-39		
		40-46		
		47-53		
		54-60		
		61-67		
		68-74		
		19-22	unit	4c
		23-25	mark	3d
		75,76	result	2
		77	concession	1d
		78-80	(blank)	(3c)
60	leavers details	1-10	identity no.	10c
		11,12	form/card no.	2d
		13	reason	1d
		14-19	date left	6d
		20-23	University transferred to	4d
		24,25	ug degree obtained - type	2d
		26,27	" " " - class	2d
		28-33	conferment date	6d
		34,35	first employment-job class	2d
		36-38	-category	3d
		39-41	-work type	3d
		42-44	-destination	3d
		45-50	pass date	6d
		51-54	thesis reference	4d
		55-57	pg degree obtained	3d
		58-80	(blank)	(23c)
64	other data	1-10	identity no.	10c
		11,12	form/card no.	2d
		13-80	data	68c

Table A8 Undergraduate masterfile terminology

PRESENT FORM/ CARD	RECOMMENDED TERMINOLOGY	SYNONYMS IN USE		
		REGISTRATION FORMS	PUNCHING INSTRUCTION FORMS	REFERENCE MANUAL[1]
01	identity no.	UCCA No.	UCCA No.	Registration No.
	forename/s	Forenames	Forename(s)	Forename
	former name	Former Name	Maiden Name	Maiden Name
02	home address	Permanent Home Address	Home Address	Home Address
	nationality	Country of Nationality	Nationality	Country of Nationality
	home-overseas[2]	Country Date of arrival in UK	H/O	H/O Flag
04	College	Name of your College	College	College Code
	term address	Address during Term (if not College)	Address in Term	Address in Term-Time
	accommodation	Accommodation	Accom.	Accommodation Code
	residence		Res.	Residence Flag
	UCCA entry		UCCA Ent.	UCCA Entry Flag
	Durham entry		Dur. Ent.	Durham Entry Flag
	movement	Was the above your address before you joined the University? (New Students only) YES/NO	Move	Movement Flag
	entry date		date of entry	Date of First Registration
05	last school name	Name and location of last school/ college attended	Previous Education School	Previous School Code

1 University of Durham, Registrar's Department, Guide to the Student Records System pp 62-67.

2 These 2 data furnish information from which the university classifies each student as home or overseas. The university's classification may not be as rigorous as the present UK definition, but is sufficient to act as an effective alert to administrative staff.

PRESENT FORM/ CARD	RECOMMENDED TERMINOLOGY	SYNONYMS IN USE		
		REGISTRATION FORMS	PUNCHING INSTRUCTION FORMS	REFERENCE MANUAL
	last school type	TYPE OF SCHOOL	Type	Previous School Type
	year from) year to)	Years of attendance	(From) (To)	Dates Attended
	A-levels	EXAMINATIONS PASSED AT GCE 'A' LEVEL OR EQUIVALENT	'A' LEVELS	'A' Levels
	board	Examining Board	Board	Board
	sitting	DATE-Month	SIT	Sitting
	year	-Year	Yr	Year
	other qualifications	Details of any qualifications obtained after or in place of 'A' level	Other Quals.	Other Qualifications
06	last UK university	If you have previously attended a UK University, state name and dates attended	Previous Univ.	Previous University
	last UCCA no.		Previous UCCA No.	Previous Registration No.
	fee payer	Who is responsible for paying your TUITION fees? Name (in full)	Fee Paying Authority	Fee Payer Code
09	reason		Reason	Reason for Leaving Flag
	date left		Date Left	Date of Leaving
	ug degree obtained-type		U/G Deg.Type	Qualifications Obtained - Type
	ug degree obtained-class		U/G Deg.Class	- Class
	first employment - job class		First Employment - Job Class	First Destination - Job Classification

PRESENT FORM/ CARD	RECOMMENDED TERMINOLOGY	SYNONYMS IN USE		
		REGISTRATION FORMS	PUNCHING INSTRUCTION FORMS	REFERENCE MANUAL
	- category - work type		- Employer Cat. - Type of Work	- Category - Type of Work
	pass date		Pass Date	
10	registration date	Date of Registration	Enrol. Date	Registration Date
			Course Details	
	course year	YEAR OF COURSE	- Year	Course Year
	course type	TYPE OF COURSE	- Type	Type
	qualification aim	CATEGORY	- Qual Aim	Qualification Aim
	degree study method length concession	DEGREE COURSE	- Degree - Meth. - Length - Conc.	Degree Code
	unit	Subjects of Study	UNIT COURSE-CODES	Subject Codes

Table A9 Registration form data not transcribed onto masterfile

Undergraduate

PRESENT FORM NO.	COLUMN	DATA	PURPOSE
02	72	country date of arrival in UK	Alerts college to check for overseas students. The responses to these 2 queries enable data processing staff to classify each student as home or overseas. This classification is not as rigorous as the present complex definition of a UK student, but is sufficient to act as an alert guide to the colleges.
03		next of kin - telephone no.	Kept by college for emergency need.
05		examinations passed at GCE A-level: - level	Acts as check to data processing staff that student has in fact entered the required data i.e. A-level or equivalent information. The usual responses are A (Advanced level) or S (Special level).

PRESENT FORM NO.	COLUMN	DATA	PURPOSE
06	17-25	If you have previously attended a UK University state.... dates attended.	Alerts data processing staff to obtain from UCCA, the last UCCA no. of students who have studied at a UK university since 196 . The earlier UCCA no. is not continued as the current UCCA no. but is filed under form/card 06, columns 17-25. A code box for columns 17-25 has been omitted from the registration form.
	-	Who is responsible for paying your tuition fees? Address (If not local Education Authority or self).	

Table A10 Data to be archived in full

1 thesis title

2 anomalies e.g. Dip Archeology subject: Arch. & Early History of Northern England.

Table A11 Correlation between existing registration form sections and amendment forms

UG & PG REGISTRATION FORM SECTIONS			AMENDMENT FORMS	
	SECTION NAME	CODE	FORM NAME	CODE
1	personal details	A01	personal details (1)	01
2	personal details	A02	personal details (2)	02
3	personal details	A03	next of kin	03
4	accommodation	B04	accommodation	04
5	previous education	C05	undergraduate entry qualifications	05
6	previous education	C05	postgraduate entry qualifications	05
7	fees	D06	fees	06
8	course details	E	undergraduate course details	10
9	course details	E	postgraduate course details	10
10			leaver's details	
11			delete trailer	

UG & PG REGISTRATION FORM SECTIONS		AMENDMENT FORMS	
SECTION NAME	CODE	FORM NAME	CODE
12		delete complete record	
13		general amendment document	

Table A12 Mapping of record card data onto coding form fields

1 No entry in 'field name-coding form' column indicates data non-existent on record card.

2 Data in parentheses indicates information for which no field had been provided on record card, but which had been written in.

	CODING FORM		FIELD NAME	
UG/PG	NO.	COLUMN	CODING FORM	STUDENT RECORD CARD
ug,pg	01	1-10	UCCA no.	
		11,12	form/card type no.	
		13-30	surname	name
		31-50	forename	name
		51	sex	
		52-55	title	
		56-73	former name	(added to card)
		74	marital status	
		75-80	date of birth	date of birth
ug,pg	02	1-10	UCCA no.	
		11,12	form/card type no.	
		13-62	home address	home address
		63-65	country of nationality	nationality
		66-68	country/country of birth	
		69-71	country/country of domicile	
		72	home/overseas flag	
ug,pg	03	1-10	UCCA no.	
		11,12	form/card type no.	
		13-31	next of kin-name	name of parent or guardian
		32-80	next of kin-address	
ug,pg	04	1-10	UCCA no.	
		11,12	form/card type no.	
		13,14	college	college
		15-64	address during term	
		65	accommodation	
		66	residence	
		67	UCCA entry	
		67	Durham entry	
		69	movement	
		70-75	entry date	year of entry

UP/PG	CODING FORM NO.	COLUMN	FIELD NAME: CODING FORM	FIELD NAME: STUDENT RECORD CARD
ug	05	1-10	UCCA no.	
		11,12	form/card type no.	
		13-16	last school name	previous education
		17	last school type	previous education
		18-21	dates attended	
		22-30	A-levels -	matriculation qualifications -
		31-39		
		40-48		
		49-57		
		58-66		
		67-75		
		22,23	board	examining board
		24	sitting	
		25,26	year	
		27-29	subject	subject
		30	grade	standard
		76,77	other qualifications	matriculation qualifications
pg	05	1-10	UCCA no.	
		11,12	form/card type no.	
		13-30	degrees or other qualifications held	
		31-48		
		49-66		
		13-16	degree subject	previous education
		17,18	degree type	previous education
		19,20	degree class	previous education
		21,22	year obtained	previous education
		23-26	university at which qualification obtained	previous education
		27-30	dates attended	previous education
		67-70	university transferred from	previous education
		71	entry qualifications	previous education
ug,pg	06	1-10	UCCA no.	
		11,12	form/card type no.	
		13-16	previous university	previous education
		17-25	previous UCCA no.	
		26-30	fee payer	scholarships or awards by whom awarded
		31	UCCA award	by other authorities
		32	Durham award	by Durham university
pg		33,34	postgraduate award	by whom awarded
ug,pg	09	1-10	UCCA no.	
		11,12	form/card type no.	
		13	reason	
		14-19	date left	
		20-23	university transferred to	
		24,25	ug degree type	degrees conferred title

UP/PG	CODING FORM NO.	CODING FORM COLUMN	FIELD NAME CODING FORM	FIELD NAME STUDENT RECORD CARD
		26,27	ug degree class	class
		28-33	conferment date	conferment date
		34-44	first employment	
		45-50	pass date	[1]degree examination record - date
pg		51-54	thesis	thesis title
		55-57	pg degree obtained	degrees conferred - title
ug	10	1-10	UCCA no.	
		11,12	form/card type no.	
		13-18	registration date	session
		19	course year	course
		20	course type	
		21,22	qualification aim	
		23-26	degree code	course, subjects
		27	study method	
		28	course length	
		29	concessions	concessions
		30-33	subjects of study	degree examination record subjects
		34-37		
		38-41		
		42-45		
		46-49		
		50-53		
		54-57		
		58-61		
pg	10	1-10	UCCA no.	
		11,12	form/card type no.	
		13-18	registration date	
		19	study method	
		20,21	study plan	
		22	nature of study	
		23-25	supervisor	
		26-27	faculty	faculty
		28-31	subject	subjects
		32,33	dept	
		34	years completed	course
		35-40	date course ends	
		41-43	qualification aim	course
		44-46	course length	
		47	course year	course

[1]Pass date was not recorded on the student record cards. Examination date is to be entered in the pass date field for the archives prior to 1969 since the 2 dates were sufficiently close for archive needs.

Table A13 Student record card data to be retained on archive

ug and pg

name
home address
date of birth
nationality
name of parent or guardian
previous education (schools and universities)
college
year of entry
faculty
degrees conferred -
    title
    class
    conferment date
    session
    course
    subjects
    collection marks
scholarships or awards
    by Durham University
        session
        amount
    by other authorities
        session
        amount
    by whom awarded
        amount
concessions
    number
    date of minute
degree examination record
    date
    examination
    subjects
    result

ug

matriculation qualifications
    certificate
    subjects
    standard

pg

postgraduate record
    date of approval of candidature
    thesis title

Table A14 Record card data to be omitted from archive

1 distance of home from Durham
2 occupation of parent
3 GCE O-levels
4 age of entry

Table A15 Additional codes

1 Undergraduate and postgraduate field 04

DU colleges pre 1969/70

	COLLEGE	CODE
	UK Colleges	
1	King's College, Newcastle	20
2	Sunderland College of Education	21
3	Darlington College of Education	22
4	Middlesbrough College of Education	23
5	Middleton St George College of Education	24
6	Teesside College of Education	25
7	Sunderland Technical College	26
8	St Hild's College	27
9	St Bede's College	28
	Overseas Colleges	
1	Fourah Bay College, Sierra Leone	30

2 Undergraduate field 05.13

Name and location of last school/college attended

	SCHOOL	CODE
1	Carleton le Willows Grammar	***1
2	Wigton Nelson Thomlinson Grammar School	***2
3	Hertford Grammar	***3
4	March High School for Girls	***4
5	Wisbech High School	***5
6	Washington Grammar Technical School	***6
7	Wallington County Grammar School	***7
8	Durham Girls Grammar School	***8
9	St Albans Girls Grammar School	***9
10	Marist College Hull	**10
11	Scunthorpe Grammar School	**11
12	Henry Hartland GS, Worksop	**12
13	North London Collegiate School	**13
14	Ardinghy College, Sussex	**14
15	Redby Sec. Mod. Boys School, Sunderland	**15
16	Convent High School, Grays	**16

3 Postgraduate field 05.13

Degrees or other qualifications held

	DEGREE	CODE
1	BA(SS)	47A1

Note: 47 are the digits currently used to indicate social science
A represents archive

4 Undergraduate field 10-23; postgraduate fields 10.28, 10.41

Degree course

	AWARD	CODE
	Past awards	
1	Dip Pub Admin	01A1

	AWARD	CODE
2	Dip Ed	01A2
3	Soc Theory & Admin	01A3
Current awards		
1	B Mus	7510

5 Undergraduate field 10.30

Subjects of study: departmental codes

	SUBJECT	CODE
1	O.T. (c)	***1
2	NT. (b)	***2
3	N.T. (d)	***3
4	Eccl.Hist. (a)	***4
5	Eccl.Hist. (b)	***5
6	Syst. Theol. (b)	***6
7	Xhan Worship	***7
8	C758	***8
9	C759	***9
10	C760	**10
11	C761	**11
12	C763	**12
13	C764	**13
14	Final BSc Gen, Year 3, chemistry	**19
15	Final BSc Gen, Year 3, geology	**20
16	Criminology	**21
17	Dip in Bib Stud - A24	**22
18	Dip in Bib Stud - A25	**23
19	Dip in Bib Stud - A26	**24
20	Dip in Bib Stud - A27	**25
21	Dip in Bib Stud - A28	**26
22	Dip in Bib Stud - A29	**27
23	Dip in Bib Stud - A30	**28
24	Econ & Social Hist	**30
25	Final BEd - Biology	**32
26	Final Dip Public Admin - Statistics	**33
27	Soc Theory & Admin, Yr 1 - Intro to sociology	**35
28	H sociology, Year 2 - sociological theory	**39
29	H sociology, Year 2 - social research methods	**40
30	Hon math, Year 1 - T315	**41
31	Hon math, Year 1 - T316	**42
32	Hon math, Year 1 - T317	**43
33	Hon math, Year 1 - T318	**44
34	BA Gen, Year 3 - Latin	**45
35	BA Gen, Year 3 - International relations	**46
36	BA Gen, Year 3 - PE	**48
37	BA Gen, Year 3 - Social theory & insts B	**50
38	Econ Studies, final year, accounting III	**51
39	Econ Studies, final year, law II	**52
40	Music, Year 1, counterpoint	**53
41	Music, Year 1, oral & practical	**54
42	Dip Pub Admin, Year 1 - econ. hist.	**55
43	Dip Pub Admin, Year 1 - econ I	**56
44	Dip Pub Admin, Year 1 - pub. admin	**57
45	Dip Pub Admin, Year 2 - comp gov.	**59

6 Postgraduate field 10.28

Subject of study

	SUBJECT	CODE
1	Geography	42A1
2	Industrial mineralogy	**A2

Note: 42 is current code for geography
No current code exists for industrial minerology

7 Examination marks: interim codes

Categories encountered

1 Digits from 0 to 99
2 Digits from 0 to 99, followed by + or - sign e.g. 4+, 5-
3 Roman numerals e.g. II
4 Roman characters, uppercase e.g. K, J
5 Roman characters, uppercase, followed by + or - sign e.g. A-, B+
6 Greek characters, lower case e.g. α, β
7 Greek characters, lower case, followed by + or - sign e.g. α -, β +
8 Roman numeral followed by Roman character, uppercase e.g. IIA

	MARK	CODE
1	0-99	000-099
2	6-	100
3	6	101
4	5-	102
5	5	103
6	5+	104
7	4+	105
8	II	106
9	C	107
10	J	108
11	K	109
12	L	110
13	S-	111
14	F	112
15	7-	113
16	6+	114
17	7	115
18	III	116
19	S	117
20	S+	118
21	M	119
22	I	120
23	IIA	121
24	B	122
25	B-	123
26	B+	124
27	IIB	125
28	G	126
29	4	127

8 Results: interim codes

	RESULT	CODE
1	pass	01
2	fail	02
3	withdraw	03
4	concession	04
5	refer to concessions committee	05
6	allowed	06
7	pass with distinction	07
8	referred	08
9	not allowed	09

9 Miscellaneous codes introduced

	DATA	CODE
1	honorary graduate	H
2	partial data only, on record card field	*
3	no data on record card field	blank

Table A16 Punched card data allocation

CARD NUMBER	CONTENT
01	personal details
02	"
03	"
04	accommodation
05	previous education
06	unused
07	"
08	"
09	"
10	year 1 fees
11	year 1 registration
12	year 1 results
13	year 1 resit
14	year 2 fees
15	year 2 registration
16	year 2 results
17	year 2 resit
18	year 3 fees
19	year 3 registration
20	year 3 results
21	year 3 resit
22	year 4 fees
23	year 4 registration
24	year 4 results
25	year 4 resit
26	year 5 fees
27	year 5 registration
28	year 5 results
29	year 5 resit
30	year 6 fees
31	year 6 registration
32	year 6 results
33	year 6 resit
34	year 7 fees
35	year 7 registration
36	year 7 results

CARD NUMBER	CONTENT
37	year 7 resit
38	year 8 fees
39	year 8 registration
40	year 8 results
41	year 8 resit
42	year 9 fees
43	year 9 registration
44	year 9 results
45	year 9 resit
46	year 10 fees
47	year 10 registration
48	year 10 results
49	year 10 resit
50	year 11 fees
51	year 11 registration
52	year 11 results
53	year 11 resit
54	year 12 fees
55	year 12 registration
56	year 12 results
57	year 12 resit
58	unused
59	unused
60	leaver's details
61	thesis
62	"
63	"
64	other data