

U S E R S '
H A N D B O O K

compiled by the Operations Branch
of the
User Services Group

Atlas Computer Laboratory
Chilton
Didcot
Berkshire
OX11 0QY

January 1974

This is a revised edition of the Handbook, and serves as a preliminary guide to users of the facilities offered by the Atlas Computer Laboratory.

The Laboratory would be glad to have the reaction of users to this publication. If readers would like to inform the Laboratory of errors, omissions, or any other criticism, they should direct these to:

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ABBREVIATIONS

K	Kilo, ie 1000 : sometimes used to mean 1024, particularly in the case of core store	ns	nanosecond
		μ s	microsecond
Kb	Kbyte	ms	millisecond
Kbd	Kbaud		
Mb	Megabyte	mm	millimetre
		cm	centimetre
bpi	bits per inch		
ASR	Automatic Send/Receive	RJE	Remote Job Entry
BSI	British Standard Interface	STD	Subscriber Trunk Dialing
EDS	Exchangeable Disc Store	TSN	Tape Serial Number
JCL	Job Control Language		
KSR	Keyboard Send/Receive	Blks	Blocks
MOP	Multi-access On-line Processing	©	Copyright
NRZI	Non Return to Zero Indication	®	Registered
PM	Post Mortem		
ACL	Atlas Computer Laboratory		
AERE	Atomic Energy Research Establishment		
CERN	Organisation (originally Conseil) Européenne pour la Recherche Nucléaire (at Geneva)		
DEC	Digital Equipment Corporation		
IBM	International Business Machines		
ICL	International Computers Limited		
RL	Rutherford Laboratory		
SD	Stromberg-Datagraphix		
SRC	Science Research Council		

SECTION I

GENERAL

INFORMATION

SECTION I : GENERAL INFORMATION

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INTRODUCTION

(1)

The Atlas Computer Laboratory is one of the laboratories of the Science Research Council. Its main equipment consists of an ICL 1906A computer, with multi-access provided by an ICL 7903 communications processor. The 1906A is interfaced with a PDP15 computer for graphical use. The Laboratory has an IBM 1130 remote work station linked to the IBM 370/195 central computer at the neighbouring Rutherford Laboratory. All the services and ancillary equipment needed by a large computing facility are also provided.

SITUATION OF THE LABORATORY

(2)

The Laboratory is situated on the west side of that section of the A34 Winchester to Preston trunk road which runs between Newbury and Oxford, and lies about 14 miles from both.

Appendices
11a and 11b

The nearest station is Didcot (five miles); London Airport is 45 miles away (57 miles via the M4 motorway); the Oxford/Newbury 'bus (No 112) passes the site.

The correct postal address is:

Atlas Computer Laboratory
Chilton
Didcot
Berkshire
OX11 0QY

Telephone Number: Abingdon 1991
(six lines)

Telex Number: 83303

Telegraphic Address:
Telex Ruthlab Abingdon

(2) cont Useful extension numbers are given at paragraph (77) in Section V, Organisation of the Laboratory.

(3) THE LABORATORY BUILDINGS

Appendices
10a and 10b

Ground and first floor plans of the building are given in Section VI. Blocks A1 and A5 contain the computing machinery, and the two wings to the west and south of these contain the offices. The office wings A2, A3 and eventually A4 are for the permanent laboratory staff and contain a library and reading room, a conference room, a common room and some office accommodation for visiting users.

The west half of the computer block (A1) housed the Ferranti Atlas I computer from which the Laboratory inherited its name. At the time of writing, computer block A1 is awaiting decisions on future developments. The east side of the computer block (A5) contains, on the first floor, the PDP15 computer and the SD4020 microfilm recorder, the ICL 1906A peripherals and the data preparation/reception areas. The ground floor of A5 contains the 1906A central processor, drums, exchangeable disc stores and the ICL 7903 multi-access communications processor. The telephone equipment and modems for remote entry to the 1906A computer are also located here, together with the IBM 1130 remote work station computer which is linked to the IBM 370/195 in the Rutherford Laboratory. Normally, the operations area on the first floor and the whole of the ground floor is out of bounds to all personnel except Operations Branch staff and certain known members of the Basic Software Group staff. Accompanied access may be gained by contacting the Head of the Operations Branch.

A 'think room' has been set aside for users to study their work before or after a run on one of the machines. This is at the top of the stairs immediately before entering the west side of the computer block. Further details of this and a more permanent accommodation facility can be found at paragraph (67) in Section V, Organisation of the Laboratory.

SECTION II

ICL 1906A

COMPUTER

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CONFIGURATION

(4)

CENTRAL PROCESSOR with extended precision floating point feature

MAIN CORE STORE 256K words (24 bits/word), paged, 4-way interleaved, 650 ns cycle time

MAGNETIC DRUM 2 magnetic drums, each with a capacity of 2M characters (= 0.5M words), a transfer rate of 1.4M characters per second, and average latency of 6.3 ms

MAGNETIC DISC 1 multi-spindle exchangeable disc store with nine drives, each cartridge with a capacity of 30.8M characters, a transfer rate of around 400K characters per second, average latency of 12.5 ms, and average access time of 87.5 ms

1 multi-spindle exchangeable disc store with five drives, each cartridge with a capacity of 60M characters, a transfer rate of around 400K characters per second, average latency of 12.5 ms, and average access time of 47.5 ms

MAGNETIC TAPE 8 Magnetic Tape Drives on three controllers using 9-track phase-encoded recording at 1600 bpi and having a transfer rate of 160K characters per second

(4) cont

MAGNETIC TAPE
(cont)

4 Magnetic Tape Drives on two controllers using 7-track NRZI recording at a density of 200, 556 or 800 bpi and having transfer rates of 15K, 41.7K or 60K characters per second according to density

CONSOLE

Engineers' console with typewriter and paper tape reader

Operators' console with typewriter for messages and enquiries to and from GEORGE 4

3 visual display units are also provided for operators

INPUT

2 card readers (1600 cards per minute)

2 paper tape readers (1000 characters per second)

OUTPUT

2 lineprinters (120 print positions and 1350 lines per minute)

1 card punch (100 cards per minute)

1 paper tape punch (110 characters per second)

COMMUNICATIONS

Communications are via an ICL 7903 Communications Processor. The current configuration allows 32 asynchronous and 16 synchronous ports. The 7903 is capable of handling asynchronous bit rates up to 1200 baud and synchronous rates up to 9600 baud according to the configuration.

COMMUNICATIONS
(cont)

Asynchronous Ports

(4) cont

Seven of these ports are accessible at 110 baud via the public switched telephone network and use automatic answering Datel 2B modems on a polled group of exchange lines (telephone number Rowstock 611). An additional port is used in connection with a Datel Model 1 modem to give a dial-up facility at 600/1200 baud. However, use of this port is restricted until further notice. The remaining ports are used for in-house access to the 1906A.

Synchronous Ports

There are seven Post Office Tariff-T data communications circuits to various parts of the country used in conjunction with Racal-Milgo 4400/48 modems at 4800 baud. One port is given over to a Post Office Datel 7C 2400 dial-up facility, which can accommodate several remote job entry stations operating for short periods at different times during the day (telephone number Rowstock 534).

PUTTING A JOB ON THE MACHINE

(5)

Introduction

Paragraphs (6) - (12) deal with the code of practice used at the Atlas Computer Laboratory for getting a user's job on the 1906A. It will not attempt to explain the finer points of the machine since there are supporting facilities available for this purpose.

(6)

USERNAME

It is necessary for a user to obtain a USERNAME from the Resource Management Branch. USERNAMES consist of a colon, followed by four alphabetic and two numeric characters. A prospective user without a USERNAME must apply to the Resource Management Branch using form AL54.

(7)

JOB IDENTIFICATION - JOBNAME

For batch jobs, a user may use a JOBNAME of up to 12 alpha-numeric characters including minus (-), providing the string starts with a letter, has no spaces and does not coincide with a filename in the user's directory; eg, providing there are no similarly named jobs or files in the system at the time, MYJOB27-1 would be a valid JOBNAME.

If the user wishes to use a MOP terminal, either to use the MOP facilities or to initiate a background job, then he is requested to include the characters MOP in the JOBNAME to be used for logging-in, and also to use these characters in any job he initiates from the terminal; eg, providing there are no similarly named jobs in the system at the time, MYMOPJOB27-1 would be a valid JOBNAME. The conditions applying to the batch job JOBNAME also apply to MOP terminal JOBNAMEs.

OPERATION REQUEST FOR BATCH WORK

Distinction between Short and Long Jobs

(8)

The jobs received at reception are classified under two headings. Development and short production jobs will be separated from the longer production jobs at this stage in order to use the machine to its fullest advantage at different times during the day. For details of the two job categories, see the notice displayed at the 1906A reception desk.

During the prime shift (08.00 hours to 17.00 hours) short production and development jobs will be given a higher priority than long production jobs. During the evening shift (17.00 hours to 23.30 hours) both classifications will receive the same priority and the mixing of these jobs will be at the discretion of the Shift Supervisor. MOP facilities will be available during both of these periods. The night shift (23.30 hours to 08.00 hours) is given over to the longer production jobs and the MOP facilities will not be available to users. The number of jobs in the machine at any time will be at the discretion of the Shift Supervisor and any queries or requests should be directed to him.

Jobs submitted remotely that exceed the current shift restrictions on JOBTIME, MAXSIZE, magnetic tape requirements, slow peripheral outputs etc, will be saved automatically by the High Level Scheduler until such time as these restrictions are relieved, or on initiation by an operator.

Use of the Operation Request Card

(9)

Any job handed in at External Reception for running on the machine must be accompanied by an orange 1906A Operation Request Card, AL7, which should be completed as follows:

Appendix 1

NAME	The user's real name
USERNAME	The identification name given by the Resource Management Branch
JOBNAME	Refer to paragraph (7)

(9) cont

MAXIMUM JOB TIME

This can be given in hours, minutes or seconds and it represents the principle accounting units on the 1906A. Its significance in terms of machine resources, eg, mill time, filestore, peripheral activity etc, can be obtained from the current set of 1906A User Notes. (See also paragraph (11).)

MAXSIZE

The maximum amount of store the job is likely to occupy

TELEPHONE

The number on which the user can be contacted in normal working hours; ie, Monday to Friday, 09.00 hours to 17.00 hours.

RERUN

The user should indicate here if it is possible to re-execute the job from the beginning, if a system error has caused the job to be terminated and lost during execution.

MEDIUM

The user should indicate here the physical characteristics of the entry made under the 'Document or Jobname' heading. The following abbreviations should be adhered to:

CR = Cards (for the card readers)

TR = Paper Tape (for the tape readers)

LP = Lineprinter output

CP = Cards (from card punch)

TP = Paper Tape (from the paper tape punch)

DOCUMENT OR JOBNAME

(9) cont

Insert in the column immediately below it all the Documents and/or Jobnames that are required by and produced by the run, by title. If work files are produced, these may be abbreviated to '!'. It must be remembered that work files are produced by the use of certain macros, and it will considerably assist the task of the operators if all the work files produced are catered for in this space. The following abbreviations can be used in the case of, for example, an output consisting of one monitor file and three work files:

LP	Monitor
LP	3x !

WORK TAPES

Please state the number of work tapes required by the run.

MAGNETIC TAPES

Delete 7- or 9-track as applies. State tape serial number (TSN) in each case and name(s) in spaces provided. If any tape is insecure (ie, if it is not known to the operating system as is the case with tapes originating outside the Laboratory), indicate the position number in the tape store as supplied to you by the Tape Librarian. The tape(s) will be returned to store unless instructions to the contrary are given on the back of the card.

(9) cont

DESTINATION

Please tick one or more of the appropriate boxes.

COMMENTS

Please use the reverse side of the card for any comments that will be useful to the Operations Branch staff in the performance of their duties.

(10)

Job Failure and Debugging

The information shown on the Operation Request Card should be correct and applicable to the job accompanying it. Incorrect information, eg, the omission of tape titles, can lead to waste of machine time and to the termination of the job.

Appendix 2

In the event of a job failure before execution, eg, incorrect Document titles, the operators will return the job with a pink card, AL19, explaining why the job failed.

If the user receives such a pink card and assistance is required to rectify the fault, he is advised to visit the support office staff who will be able to give a full account of the fault. If the support office is closed (outside the normal working hours), assistance may be obtained from the Shift Supervisors providing they have the time available.

If a user requires assistance in the debugging of a program, he is again advised to visit the support office, taking with him the appropriate monitor file print-out from the machine. Users are expected to be generally self-sufficient in the running and debugging of their programs, and as the support staff are generally very busy they should use this assistance sparingly.

Job Registration

(11)

This provides the user and management with a reference from which the location of an individual job may be found. It is, therefore, necessary for the user to complete a Job Registration Card, AL62, immediately prior to the handing-in of a job to reception. To assist the user, a time clock stamper is provided on the reception desk together with a supply of blank cards. The user must determine the classification under which the job will be placed in the queues (see also MAXIMUM JOBTIME at paragraph (9)) and select the correct coloured card from the supplies provided. A buff card represents a long production job and a pale blue card represents a short production or development job.

Appendix 3

The user must complete the appropriate card with his USERNAME in the space provided and stamp the card twice, once in the portion to be retained and once in the area marked 'Date and Time in'. The Receptionist will demonstrate the use of the clock if required. The portion to be retained by the user may then be removed along the perforations, and this provides proof of submission in the event of lost work. The remainder will be attached to the job together with the appropriately completed Operations Request Card.

This card also provides management with a monitor for throughput and turnaround times, so it will not accompany the job on its return to the user. Users are therefore requested to be as accurate as possible when completing this task.

Jobs received by post will have this done for them by a member of the staff.

Fault Reporting

(12)

All faults, or suspected faults, should be entered on the forms supplied for this purpose, ie the 1906A Fault Report, and sent to the 1906A support office.

Appendix 4

MAGNETIC TAPE AND DISC ALLOCATIONS

(13)

MAGNETIC TAPE ALLOCATIONS

Appendix 5a

A user requiring the use of more than six magnetic tapes must apply for the allocation through the Resource Management Branch. Users wishing to have fewer than this number assigned to them should complete a Magnetic Tape Request Card, AL10, for direct application to the Tape Librarian, extension 6640. The user must indicate clearly on this card the number of tracks required on the tape, ie 7-track or 9-track.

With the exception of X-Ray Crystallography and Graphics users, who must use 7-track tapes for compatibility reasons, users are free in their choice between the two types. However, because the packing of information on 9-track tape is approximately three times greater than that of 7-track, users are requested to use 9-track tape whenever possible.

Magnetic Tape Request Cards can be obtained from the Laboratory on request, and on completion they should be sent to:

The Magnetic Tape Librarian
Atlas Computer Laboratory
Chilton
Didcot
Berkshire
OX11 0QY

Appendix 5b

Providing all details are correct the Librarian will adjust the user's budget on receipt of such a request card, and the user will then be allowed to make use of any number of tapes up to the number requested. The Librarian will inform the applicant on a Magnetic Tape Allocation Card, AL11, of the number of tapes budgeted to him.

MAGNETIC DISC ALLOCATIONS

Filestore

(14)

Backing store space is available to all users by means of the GEORGE filestore; when on-line it will be located on exchangeable disc, and when set off-line by GEORGE it will be located on magnetic tape. The user may retrieve his files to disc at will. A limit to the amount of filestore space which his files may occupy is imposed on the user, and this is currently 500 blocks (ie, 2048 characters or 512 words). It should be noted that there are no formalities in creating up to 500 blocks; the user will refer to all files by name only, and need not be concerned whether they are on disc or tape. All files in this system are protected by an automatic dumping procedure.

Exofiles

(15)

Additional storage space over and above the filestore allocation described above may be acquired; it will always be on disc, and such files are referred to as Exofiles. It is the user's responsibility to secure his files by dumping them to magnetic tape after use, as no automatic dumping of Exofiles is carried out.

Users requiring the allocation of large areas of disc as Exofiles must apply to the Resource Management Branch, and the allocation of complete disc packs will only be made under exceptional circumstances. Users requiring small areas of disc may apply direct to the Magnetic Tape Librarian by completing a 1906A Exofile Space Request Card, AL53, obtainable from the Magnetic Tape Librarian, and sending it on completion to the address given at paragraph (13).

Appendix 6a

The Librarian will budget to the user the appropriate areas requested and advise the applicant on a 1906A Exofile Allocation Card, AL52.

Appendix 6b

(16)

Scratch Space

Common scratch space is always on-line, and is available to all users. Normally one whole disc is dedicated to this facility. Users should note that scratch space may not be used for communication of information from one program to another within a single job. No special permission is needed to use this space.

OPERATING SYSTEM, COMPILERS AND PROGRAM PACKAGES

(17)

Introduction

The Resource Management Branch offers a program advisory service in relation to the software on the ICL 1906A. This service includes technical advice on the use of the software under the GEORGE 4 Operating System. For some items of software, labelled 'unsupported', this is the limit of the service. For other items, labelled 'supported', the service is extended to include fuller advice on the use of the software and assistance on programming difficulties. Any user who experiences difficulty with an item of software and suspects a malfunction is invited to discuss the matter in the first instance with the Resource Management Branch and subsequently to fill in a Fault Report (see paragraph (12)).

(18)

THE GEORGE 4 OPERATING SYSTEM

The ICL 1906A computer is run under the GEORGE 4 Operating System produced by ICL to exploit the paging feature of the machine. It is a powerful system providing users with comprehensive facilities for job submission and control and also for the storage and editing of

information within a central filestore. Jobs may be submitted either from peripherals and terminals in the Laboratory or, where appropriate, from terminals and remote job entry stations outside the Laboratory. The GEORGE 4 Operating System has a set of commands which are used in jobs, and users must become fully conversant with at least a limited set of the commands. Amendments to the basic set of GEORGE commands are described in the series of 1906A User Notes published from time to time by the Laboratory.

(18) cont

A manual containing a complete description of the GEORGE 4 Operating System, setting out its facilities and commands, is published by ICL. Because of the cost, the Laboratory cannot distribute or loan copies of ICL manuals to users. However, a complete set is maintained in the Library at the Laboratory. Manuals in this set are available solely for reference and must therefore not be removed from the Library. Users wishing to buy copies of ICL manuals may apply to the Resource Management Branch for details of the latest editions and costs.

COMPILERS AND LIBRARIES AVAILABLE

Supported Compilers

(19)

- (a) 1900 FORTRAN. XFIH, XFEH (standard and optimised respectively), with the associated library SRF8 (FORTRAN extended precision)
- (b) ALGOL. XALH with its associated library SRA4
- (c) PLASYD. YAPQ which uses PLAN libraries S-RS, and SGEN
- (d) PLAN. XPLT with its associated library S-RS, with additional routines SGEN

(20)

Unsupported Compilers

- (a) ALGOL 68. Library is AL68SYSLIB.
- (b) BCPL : Basic Computer Programming Language. Library is BCPLIB.
- (c) COBOL : Common Business Oriented Language. Library is S-CM.
- (d) CSL : 1900 Control and Simulation Language processes into FORTRAN.

(21)

Supported Subroutine Libraries

- (a) ICL scientific subroutines, subgroup FSCE
- (b) NAG : Numerical Algorithms Group. Library for use with either FORTRAN (NAGLIBF) or ALGOL (NAGLIBA)
- (c) NMR : Nuclear Magnetic Resonance. Routines for NMR spectroscopy

(22)

Unsupported Subroutine Library

Harwell Subroutine Library. This is based upon the library used on Atlas. The FORTRAN routines have been compiled for the 1906A, but none of the recent improvements in the Harwell Subroutine Library are incorporated.

PROGRAM SUITES AND PACKAGES SUPPORTED BY ACL

(23)

Graphics Facilities

- (a) CAMP and CAMPER : Computer Aided Motion Pictures and Computer Aided Movie Perspectives. Simple packages for computer animation in two or three dimensions respectively
- (b) CPC Program Library : Computer Physics Communications

- (c) GROATS : a Graphical Output package for the ATlas using the SD4020. (23) cont
A library of routines to enable users of ALGOL to draw graphs, and to make stills and animated films on the SD4020 microfilm recorder
- (d) SD4020 FORTRAN. A library of routines to enable FORTRAN users to draw graphs and to make stills and ciné films on the SD4020 microfilm recorder. This package will be superseded by (e).
- (e) SPROGS : SD4020/PDP15 Rapid Output Graphics System. A library of routines to enable FORTRAN users to draw graphs and make animated films on the SD4020 microfilm recorder

Statistical and Survey Packages

(24)

- (a) ASCOP : A Statistical Computing Procedure. The system gives both data management facilities and standard statistical analysis programs.
- (b) Survey Analysis. A program providing tools for the analysis of sample survey data with grouping, counting, and tabulation features is shortly to be made available.
- (c) SPSS : Statistical Package for Social Sciences

Crystallography

(25)

X-RAY. The X-RAY 70 system is a comprehensive and unified collection of programs providing for the analysis and refinement of data obtained in X-Ray or neutron crystallographic experiments.

Quantum Chemistry

(26)

ATMOL : ATlas MOLEcular Orbital Calculations program. A general program for the ab initio computation of molecular wavefunctions using Gaussian or Slater basis functions.

(27)

Text Processing and Information Retrieval

- (a) COCOA : word Count and Concordance generation on Atlas. A program affording word counts, frequencies and concordances obtained from scans of text
- (b) Information Retrieval. A program for the retrieval of articles in a number of mathematical and computing journals
- (c) BOON : BOMM On the Nineteen Hundred. A system of programs replacing the Atlas BOMM system (originally written by Bullard, Oglebay, Munk and Miller) for the performing of arithmetic operations on time series. Allows the user to truncate, sort, join, merge, interpolate or plot series, take logarithms, cross correlations, convolutions or Fourier transforms

(28)

ICL PACKAGES

ICL have produced a large number of packages and programs for the ICL 1900 range. These can be obtained from ICL by the Laboratory but are not supported by Laboratory staff. Users wishing to make use of a particular package should apply to the Resource Management Branch. The following programs have been obtained from ICL:

XDLA : Linear Programming
XDS2, XDS3 : Statistical Analysis System
XSDE : Sorting
X711 : Nineteen Hundred Indexing and Cataloguing (NIC)

MANUALS

ICL Manuals

(29)

Because of the bulk of this literature and its cost the Laboratory has decided that it cannot supply or loan ICL 1900 series manuals to users outside the Laboratory. A complete list of ICL 1900 literature is held by the Laboratory's Literature Agent in each university and External User organisation, and these manuals are also available for reference in the Atlas Computer Laboratory Library. Users wishing to purchase manuals from ICL should apply to:

The Registry
Software Distribution Department
30-31 Friar Street
Reading
RG1 1JP

ACL Manuals

(30)

Manuals for the program suites and packages supported by the Atlas Computer Laboratory, described in paragraphs (23) to (27), are available through the Resource Management Branch of the User Services Group.

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IBM 370/195

COMPUTER

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INTRODUCTION

(31)

The Atlas Computer Laboratory has a 20% share of the IBM 370/195 installed during November 1971 in the neighbouring Rutherford Laboratory. The machine provides a full three shift computing service which includes weekends. To enable the Atlas Computer Laboratory to submit work and receive printed results, an IBM 1130 work station has been installed in the Laboratory and it is connected to the IBM 370/195 by means of a fast 40.8 Kbd link. Card output and magnetic tapes are returned to the Atlas Computer Laboratory by courier.

CONFIGURATION

(32)

CENTRAL PROCESSOR

A 54 ns cycle time Central Processing Unit equipped with 2 Mb of core memory 16-way interleaved, having a cycle time of 756 ns together with a 32 Kb high speed buffer store, having a cycle time of 54 ns

BACKING STORE

IBM 2305 Fixed Head Storage (disc) with a capacity of 11.2 Mb, average latency of 5 ms, and average access time of 5 ms

(32) cont

MAGNETIC DISC

IBM 3330 Disc Storage with 16 drives, each cartridge having a capacity of 100 Mb, average latency of 8.4 ms, and average access time of 30 ms

IBM 2314 Disc Storage with eight drives, each cartridge having a capacity of 29 Mb, and average access time of 60 ms

MAGNETIC TAPE

8 IBM 3420-7 Magnetic Tape Drives using 9-track phase-encoded recording at a density of 1600 bpi and having a transfer rate of 320 Kb per second

2 IBM 3420-7 Magnetic Tape Drives using 9-track phase-encoded recording at a density of 1600 bpi or NRZI recording at 800 bpi and having transfer rates of 320 Kb or 160 Kb per second according to density

2 IBM 3420-5 Magnetic Tape Decks using 7-track NRZI recording at densities of 556 or 800 bpi and having transfer rates of 69.5K or 100K characters per second according to density

INPUT

1 card reader (100 cards per minute)

1 card reader/punch (1000 cards per minute input, 300 cards per minute output)

OUTPUT

4 lineprinters (132 print positions and 1100 lines per minute)

Card output is via the card reader/punch mentioned above.

COMMUNICATIONS

Communications via Post Office leased lines or dial-up facilities are handled by a Memorex 1270 Terminal Control Unit, which operates at speeds up to 1200 baud for asynchronous transmission and up to 9600 baud for synchronous transmission.

(32) cont

CONFIGURATION OF IBM 1130 WORK STATION

(33)

CENTRAL PROCESSOR

IBM 1131-2B Central Processing Unit with 8K words (16 bits/word) of core store, 3.6 μ s cycle time

INPUT

IBM 2501 card reader (1000 cards per minute)

OUTPUT

IBM 1403 lineprinter (132 print positions and 1100 lines per minute), using a 60 character set print train. A 120 character print train is available for special output.

COMMUNICATIONS

IBM 2701 Data Adapter Unit. A 40.8 Kb transmission line connects the work station terminal through this Unit to the 370/195 at the Rutherford Laboratory.

PUTTING A JOB ON THE MACHINE

(34)

INTRODUCTION

The following paragraphs will deal with the code of practice used at the Atlas Computer Laboratory for getting a user's job on to the 370/195. It will not attempt to explain the finer points of the machine since there are supporting facilities available for this purpose.

Most of the information required to run a job on the 195 system is set out in the CIGAR (Computer Introductory Guide And Reference) Manual published by the Rutherford Laboratory. This is available from the Atlas Computer Laboratory's 195 support office (extension 6111) which also holds a stock of the more common IBM manuals for reference purposes. CIGAR gives details of simple JCL, useful procedures and local parameters of the IBM OS/HASP operating system. Details of the ELECTRIC multi-access system are set out in the ELECTRIC manual, also available from the 195 support office.

The Laboratory produces from time to time User Notes giving additional information concerning the use of the IBM 370/195. These are distributed to all current users of the 195.

(35)

ACCOUNT NUMBERS AND IDENTIFIERS

It is necessary for a user to obtain an account number and project identifier (id) from the Resource Management Branch. The account number takes the form of four alpha-numeric characters, and the identifier is two alpha-numeric characters. Application to use the ELECTRIC system must be made to the Resource Management Branch. Prospective users

without the appropriate account number/id must apply to the Resource Management Branch using form AL54. Notes to Applicants, AL56, should be read first.

(35) cont

JOB IDENTIFICATION - JOBNAME

(36)

Users must abide by the conventions described in Atlas Laboratory 370/195 User Notes when constructing a suitable JOBNAME. This field appears on the Job Card (columns 3-10) of any job submitted to the 370/195 from a remote work station, centrally, or through the ELECTRIC system.

JOB SUBMISSIONS

(37)

(a) Remotely

Remote job submission may be through the ELECTRIC multi-access system, where users have access to a teletype and the necessary modems and are registered users of ELECTRIC. Alternatively, where permission has been sought and given both by the Atlas Computer Laboratory and the relevant RJE station management, a nearby remote job entry station linked to the 370/195 may be used.

(b) By Post

If neither of the above facilities is available jobs should be sent by post to External Reception at the Atlas Computer Laboratory where submission will be handled (generally through the 1130 work station) by a member of staff. The JOBNAME should conform to the appropriate convention (see paragraph (36)). Each job should be accompanied by a completed Operation Request Card, AL65.

Appendix 7

(c) On Site - Batch Submission

When on site at the Atlas Computer Laboratory, users may submit jobs to be run on the 370/195 via the 1130 work station by registering them at the 1906A reception desk (see paragraph (38)). The JOBNAME

(37) cont
Appendix 8

should conform to the conventions described in paragraph (36). They should be accompanied by a Job Registration Card, AL62, and the appropriate Operation Request Card.

(d) On Site - Multi-access Facilities

Facilities for using the ELECTRIC/MUGWUMP multi-access system are available to on-site users at the Atlas Computer Laboratory. The 195 support office of the Resource Management Branch will advise on their use. See also paragraphs (42) and (62).

(e) Routing of Output

Users submitting jobs remotely via a link, or via ELECTRIC, may wish to route their printout to the 1130 printer or have it printed at the Rutherford Laboratory. For the appropriate JCL see Atlas Laboratory 370/195 User Note No 3.

(38)

JOB REGISTRATION

Appendix 8

A yellow Job Registration Card, AL62, should be filled in at the time of submission. The JOBNAME should be entered, and also the time in the sections marked 'Date and Time in' by means of the time punch on the computer reception desk. The tear-off portion should be retained by the user as proof of submission, and the main portion attached at the back of the job. (See paragraph (37)c.)

(39) cont

SPECIAL INSTRUCTIONS

Mention should be made here if:

- (a) the amount of printout is expected to be greater than 5K lines, if card output is expected, if a special print train is required, or if graphical output is expected;
- (b) the address to which the completed job is to be returned is different from normal (see PROGRAMMER'S NAME above).

OPERATORS' COMMENTS
(back of card)

If something unusual has happened to your job, an explanation may have been given on this side of the card.

MAGNETIC TAPE AND DISC ALLOCATIONS

(40)

MAGNETIC TAPE ALLOCATIONS

(a) Permanent Allocation

A user requiring the use of more than ten magnetic tapes on the 370/195 must apply for the allocation through the Resource Management Branch at the Atlas Computer Laboratory. For use of fewer than this number of magnetic tapes the user may contact the Rutherford Laboratory Magnetic Tape Librarian, extension 333, who will allocate tapes on request. Normally, 9-track labelled tapes will be allocated to the user.

(b) Graphical Output Tapes

(40) cont

Magnetic tapes for the production of graphical output on the Atlas Computer Laboratory SD4020 must be 7-track recorded at 556 bpi. These are automatically supplied by the system and are not permanently owned by the user, but if long term retention of such tapes is required a permanent allocation must be requested as above.

MAGNETIC DISC ALLOCATIONS

(41)

All users requiring the use of private disc packs on the 370/195, or disc space on public packs, must apply to the Resource Management Branch for an allocation.

OPERATING SYSTEM, COMPILERS AND PROGRAM PACKAGES

Introduction

(42)

The Resource Management Branch in the Laboratory provides a 195 support office to which users may apply for technical advice on the use of the software available on the IBM 370/195 computer. In the case of software which is labelled 'supported', more detailed advice on programming difficulties and fault diagnosis may be sought.

(43)

OPERATING SYSTEM

The IBM 370/195 computer operates under the IBM operating system OS/MVT with control of unit record input and output managed by HASP. The current release implemented is OS 21.7.

(44)

MULTI-ACCESS SYSTEM

Multi-access facilities to the 370/195 are provided by the ELECTRIC system which permits creation of programs and data files, text editing and remote job submission from teletypes and visual display terminals both on-site and remotely over Post Office lines. Details of this system are dealt with in the ELECTRIC User Manual which is available from the Resource Management Branch.

A subsystem of ELECTRIC is the MUGWUMP graphics system which enables users with the appropriate equipment to create display files of graphical information (in either vector or point plotting modes). This system may also be used for retrieval of program output in text form from jobs submitted remotely via ELECTRIC.

COMPILERS

(45)

Supported Compilers

- (a) IBM FORTRAN, G and H Extended Plus level compilers, and associated libraries
- (b) IBM F level assembler (slightly modified)

Unsupported Compilers

(46)

- (a) PL/I. A multipurpose programming language for scientific, business, and real time applications
- (b) COBOL : Common Business Oriented Language
- (c) BCPL : Basic Computer Programming Language

LIBRARIES

Supported Libraries

(47)

- (a) IBM Scientific Subroutine Package Library
- (b) Harwell Subroutine Library, incorporating the recent modifications introduced by AERE Harwell
- (c) RHELIB : Rutherford (High Energy) Laboratory Library. General utility and scientific routines
- (d) CERN Program Library
- (e) CPC Program Library : Computer Physics Communications

PROGRAM SUITES AND PACKAGES AVAILABLE

Graphics Facilities

(48)

- (a) SD4020 FORTRAN. A subprogram library of FORTRAN-compatible routines to enable the generation of graphical output on the Atlas Computer Laboratory SD4020 microfilm recorder. This package is also capable of producing MUGWUMP-compatible graphical display files.

(48) cont

- (b) MUGWUMP. A subprogram library of FORTRAN-compatible routines to enable the generation of MUGWUMP graphical display files which may be displayed on a user-selected visual display unit
- (c) POLYGRAPHICS. A subprogram library of FORTRAN-compatible routines to enable the generation of graphical output on the Atlas Computer Laboratory SD4020 microfilm recorder. This package is also capable of producing MUGWUMP-compatible graphical display files. The package is also suitable for the production of ciné films and provides Roman and Greek character fonts in addition to mathematical symbols.
- (d) CONTOUR. A simple contouring program is generally available.

(49)

Crystallography

X-RAY. The X-RAY 74 crystallographic package is available on the 370/195.

(50)

Quantum Chemistry

- (a) ALCHEMY. A quantum chemistry program performing ab initio calculations on linear molecules using Slater basis functions
- (b) ATMOL : Atlas Molecular Orbital Calculations program. An extended version of the program described for the 1906A computer at paragraph (26)
- (c) GORDON. A molecular scattering program from QCPE : Quantum Chemistry Program Exchange

Text Processing and Indexing

(51)

- (a) COCOA : word Count and Concordance generation on Atlas. Program described for the 1906A computer at paragraph (27)
- (b) FAMULUS. An indexing program for bibliographic citations
- (c) TEXT-360. A text processing program for generating and updating manuals with card input and lineprinter output

Geological Data Bank

(52)

G-EXEC : Geologist EXEcutive. A system developed jointly between the Atlas Computer Laboratory and the Institute of Geological Sciences

Finite Element Methods

(53)

NEWPAC. The British Rail structural analysis program using finite element techniques

SECTION IV

ANCILLARY
EQUIPMENT

SECTION IV : ANCILLARY EQUIPMENT

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PDP15 COMPUTER

CONFIGURATION

(54)

CENTRAL PROCESSOR Extended Arithmetic Element, automatic priority interrupt system, memory protect, real-time clock

MAIN CORE STORE 64K words (18 bits/word), 800 ns cycle time

MAGNETIC DISC 1 DEC RF15 disc control with 4 RS09 random-access disc surfaces having a capacity of 1M words per surface

MAGNETIC TAPE 3 DEC tape units and 2 TU20 magnetic tape drives on one control using 7-track NRZI, recording at densities of 200, 556 or 800 bpi, and transfer rates of 9K, 25K or 36K characters per second according to density

SLOW PERIPHERALS 1 DEC high speed paper tape reader/punch

 1 KSR-35 teletype

 1 KSR-33 teletype

GRAPHIC PERIPHERALS 1 VT04 refreshed display with 17 inch tube producing approximately 3000 flicker-free characters or 5000 inches of flicker-free line

 1 VL04 lightpen

SECTION IV
ANCILLARY

(54) cont

GRAPHIC PERIPHERALS
(cont)

1 VWO1 BP spark pen writing tablet

1 LK35 keyboard with 68 characters

1 D-MAC pencil follower, type

PF 10000 Mark 1A

COMMUNICATIONS

1 BSI current-driven interface to the 1906A

(55)

USE OF THE MACHINE

The PDP15 graphics system at the Laboratory is still under development, and consequently only limited facilities are available to users. Permission to use the PDP15 computer must be obtained from the Operations Branch, who will ensure that users are aware of operating procedures, protocol etc. A user of this machine must book times in advance through the Shift Supervisor on extension 6388 or on Rowstock 388.

The following table shows the times normally available for booking:

Prime Shift	(08.00 - 18.00)	None
Evening Shift	(18.00 - 24.00)	One evening per week
Night Shift	(24.00 - 08.00)	Unlimited

An operator service is provided for users wishing to view graphical output from magnetic tape before processing on the SD4020. A user wishing to take advantage of this facility must consult the Shift Supervisor who will assign an operator to the PDP15 for the duration of the run.

SD4020 MICROFILM RECORDER

CONFIGURATION

(56)

RECORDING HEAD

This employs the Stromberg-Datagraphix Charactron[®] shaped beam, high precision, cathode ray tube. Lines and hardware characters can be drawn at any of the 1024 x 1024 addressable positions on the face of the tube. These elements, displayed at the rate of several hundred per second, are recorded by the cameras mentioned below.

BUFFER

1023 (6-bit) characters. This allows for machine operations requiring widely varying time intervals to be intermingled within the same magnetic tape block.

OUTPUT

16 mm or 35 mm sprocketed film with, additionally, photographic paper (or hardcopy) output approximately 19 cm square. The photographic paper may, by special request, be replaced by sheet film possessing improved grey-scale characteristics. All output is normally processed at the Atlas Computer Laboratory.

MAGNETIC TAPE INPUT

1 IBM 729IV Magnetic Tape Drive reading 7-track NRZI at densities of 200 and 556 bpi. Normal plotting employs the odd-parity mode with tape blocks less than, or equal to, 1020 (6-bit) characters. The even-parity mode is used for the lineprinter simulator

(56) cont

MAGNETIC TAPE INPUT
(cont)

function. Several lines may be contained within one tape block and automatic carriage control is a feature.

SOFTWARE

Packages are available on both the 1906A and 370/195 computers for use in conjunction with this recorder.

(57)

USE OF THE MACHINE

The SD4020 is fully staffed during the Prime Shift (08.00-16.00 hours), and under exceptional circumstances also during the Evening Shift (16.00-24.00 hours). However, film development is rarely done after 16.00 hours, although tape processing may continue beyond these times.

On both the 370/195 and the 1906A, small amounts of output from most of the graphical packages will normally be spooled on to magnetic tapes owned by the system. Some packages use separate pool tapes or privately-owned tapes for each job (this is the normal method for large amounts of output). For internal users, it is expected that a turnaround of approximately two hours is possible for spooled output. The turnaround is measured from the time the job is received at the SD4020 to the time when the completed prints are despatched. Owing to the variable workload on the SD4020, these times cannot be guaranteed. External users (off-site), having completed a run before lunch time, can normally expect their completed prints to be in the post before 16.00 hours.

It is possible for pool or privately-owned tapes to be viewed using the display on the PDP15. This can improve the user's turnaround outside the day shift and it does avoid waste of both film stock and SD4020 processing time. Users should contact the operations staff for specific instructions.

MICRODENSITOMETER

CONFIGURATION

(58)

SCANNER Optronics P1000 Photoscan; raster sizes of 25, 50 and 100 microns

PROCESSOR Computer Automation Alpha-16 mini-computer; 8K words (16 bits/word) core store; cycle time 1.6 μ s; fully interfaced with above scanner

INPUT/OUTPUT 1 high speed Remex paper tape reader

 1 ASR-33 teletype

MAGNETIC TAPE 1 Kennedy magnetic tape drive using 7-track NRZI, recording at densities of 200, 556 or 800 bpi; transport speed 25 inches per second

USE OF THE MACHINE

(59)

This machine has been bought by the Chemistry Committee of the Science Research Council, and is specifically intended to be used for the digitisation of X-Ray crystallographic films for British university users. The software for use in this context, and the operations, are provided by the Laboratory. If any time remains after fulfilling its prime purpose, then the machine may in certain circumstances be made available to other users, who will in general be expected to provide their own software.

Prospective users of both types are invited to contact the Microdensitometer Service, Applications Software Group, for further details.

1/74

SECTION V

ORGANISATION
OF THE
LABORATORY

SECTION V : ORGANISATION OF THE LABORATORY**INDEX**

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ORGANISATIONAL STRUCTURE

(60)

The total staff is about 150, resident under the following organisation:

DIRECTOR Responsible to the Science Research Council
for the Laboratory

USER SERVICES GROUP

OPERATIONS BRANCH

Responsible for the main computer service on the ICL 1906A and the IBM 370/195; data preparation; detailed scheduling; operating records and accounts; operation of ancillary equipment including the SD4020, the PDP15 and the microdensitometer; microfilm processing; also responsible for satellite and terminal services

The Laboratory Library is controlled under this Branch.

**RESOURCE MANAGEMENT
BRANCH**

Overall control of machine usage and users; liaison with the Science Research Council; liaison with users.

Software verification, maintenance and documentation; supported software service; issue and control of job numbers

SECTION V
LAB ORG

(60) cont

APPLICATIONS SOFTWARE
GROUP

Production of problem-oriented programs and packages, eg space research data processing; quantum chemistry; X-Ray crystallography; microdensitometer programming; geological data banks; text processing (eg COCOA); statistics (eg ASCOP); survey analysis

BASIC SOFTWARE GROUP

Production of software for general purposes. Study of general problems, eg machine evaluation, operating systems, compilers, communications, graphics. Monitoring and measurement of the 1906A operating system

RESEARCH GROUP

Six independent research posts not directly concerned with computing services

ADMINISTRATION GROUP

Responsible for finance, administration, stores and supplies, transport, cleaning, fire precautions, security and safety, and electrical/mechanical/civil engineering service liaison

SERVICES PROVIDED

INTRODUCTION

(61)

The Laboratory has been set up to provide a powerful computing service to a wide variety of users and it will do all it can to help its users to get their work done quickly and efficiently. The services offered are described in the following paragraphs. Users wishing to work in the Laboratory must send in a Visit Request Form, AL16.

Appendix 9

ACCESS TO MAIN FRAME COMPUTERS VIA TERMINALS

(62)

Work will be put through the computers by the operator teams who will ensure the fastest possible turnaround. Additionally, users have access to their files on the 1906A computer via the MOP terminals, and access to the 370/195 computer via the ELECTRIC system terminals. Both types of ELECTRIC terminal (teletype and Tektronix display tube) are available in the ancillary machine room on the first floor of the west side of the computer block. Users are requested to use all terminals with due consideration for others.

EVENING PRIORITY RUNS FOR DEVELOPMENT

(63)

This service is intended to help users who are developing large programs. A maximum of four people may have priority treatment outside normal working hours, namely between 17.00 and 23.30 hours, and each may have up to four runs of not more than five minutes' duration each. Each run, however, will be at the discretion of the Shift Supervisor.

(63) cont

Priority must be booked in advance with the Receptionist (extension 6296) who is not permitted to accept bookings for more than four people in one period. Users will appreciate that unless priority treatment is very tightly controlled it becomes valueless.

(64)

ACCESS OUT OF OFFICE HOURS

Users may not remain in the building after normal working hours unless they are booked for priority treatment (see paragraph (60)), or unless they have informed the Receptionist by 16.00 hours on the day in question of their wish to stay.

All users who work in the Laboratory in the evening must be out of the building by 23.30 hours, and only in exceptional cases will permission be granted to stay after that time.

(65)

DATA PREPARATION SERVICES

The Laboratory will punch programs and data from manuscript: details of this service are given in paragraphs (72) - (76). Normally this service is undertaken free of charge, but the Laboratory reserves the right to raise a charge if the amount of punching is very great, or to request that the punching is done elsewhere. This would be discussed with the user in advance. Punching equipment is available at the Laboratory to users, but on a limited basis only.

LIBRARY AND READING ROOM

(66)

This is on the upper floor of the office block, above the main entrance. It is very much specialised in mathematics, computer science and computer applications, but contains also a comprehensive collection of general reference books. Users are welcome to read here, but are asked not to use it for working on programs, for which there is other accommodation in the Laboratory. The Librarian will be glad to help them. Users may borrow books from the Laboratory Library, but this must be done through the librarians of their own organisations.

ACCOMMODATION

(67)

The 'think room', immediately outside the machine room, is reserved for visiting users and is available to them without formality. Its furniture includes an Anita electronic desk calculator, to help in checking programs.

A number of small offices are provided for users who wish to spend a significant amount of time in the Laboratory; they must be booked in advance with the Receptionist.

HOTEL BOOKINGS

(68)

The Receptionist will make bookings for users. A telephone request must be confirmed in writing as quickly as possible.

TRANSPORT

(69)

The Laboratory will transport users to or from local hotels, Didcot railway station or London Airport. Bookings are made with the Receptionist.

(70)

TELEPHONE CALLS

The users' offices all have telephones, from which local calls may be made freely; but long-distance calls will be charged. There is a telephone (extension 312) for general use in the entrance hall.

As the telephones in the data preparation and machine rooms carry very heavy traffic, they are reserved for staff use only. Anyone with any special communications problem should seek the help or advice of the Receptionist.

(71)

MEALS

The Rutherford Laboratory restaurant is available and serves breakfast, lunch and an evening meal every day, including Sunday. Users are welcome to have tea and coffee from the Atlas Computer Laboratory's regular service and will be asked to pay for this. The kitchen staff have exclusive use of the kitchen during the day, except for the lunch break (12.00 - 14.00 hours) when the water heater may be used for hot drinks. Visiting users may use the kitchen during the evening only, and those who do so are asked to clean up thoroughly afterwards. Supplies of milk, coffee and sugar are available in the kitchen, but must be paid for. The Receptionist will explain all these arrangements.

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DATA PREPARATION SERVICES

CARD AND PAPER TAPE PREPARATION

(72)

The Laboratory offers a range of facilities for punching cards or paper tape from manuscript. Users may apply for punching to be done by the Laboratory's data preparation staff by submitting a Card and Paper Tape Preparation Request Form, AL13. The form should be sent to:

Appendix 12

Data Preparation Section
Atlas Computer Laboratory
Chilton
Didcot
Berkshire
OX11 0QY

Telephone enquiries should be made to:

Abingdon 1991 : extension 6284

The demand for this service is considerable but irregular, and no specified turnaround can be guaranteed. In general, punching of programs will take precedence over data. Users preparing large projects can help by sending the work in instalments. The Laboratory has arrangements with several punching bureaux and may offload work on to these at peak periods.

The Laboratory will not punch a program from a computer printout unless the applicant can give an assurance that he has tried and failed to get a machine-produced copy.

Users with any unusual requirements, such as the punching of cards from survey questionnaires, are strongly recommended to contact the Operations Branch before submitting work, preferably even before designing the questionnaires, as this will save a great deal of trouble at a later date and often drastically reduce the amount of punching effort required.

(73)

RULES AND CONVENTIONS IN CODING

- (a) Submit a clear and legible coding sheet, or a typed or printed sheet. Illegible or ambiguous work will be returned.
- (b) Distinguish carefully between certain pairs of characters which are easily confused, as follows:

1 (one) from l (letter)	convention is I (letter)
1 (one) from / (oblique, slash)	
2 (two) from Z (letter)	convention is Z (letter)
6 (six) from G (letter)	
0 (zero) from O (letter)	convention is \bar{O} (letter)
- (c) Provide a note of any departures from conventional coding practice.
- (d) Specify layout of data by means of an example, not a formal statement.
- (e) If blank cards are to be inserted or lengths of blank tape to be left, give precise instructions.

(74)

USERS' PUNCHING EQUIPMENT

A number of card punches and punched paper tape equipment in the data preparation area are set aside for users in the Laboratory. They are intended to enable users to do small amounts of punching, for example to make corrections to a program, and should not be monopolised by one user for a long period. It is accepted that a user does not occupy one of these machines for more than ten minutes if another user is waiting.

A machine belonging to the punch room service may, if vacant, be used, but only with the permission of the Data Preparation Supervisor.

A new visitor to the Laboratory must make himself known to the Data Preparation Supervisor before using any of this equipment; and all users are asked to report any faults they find in a machine so that the maintenance engineer can be informed.

(74) cont

Finally, a rule of great importance. Please leave the machine clear of cards, tape and paper, and throw away all used cards.

OTHER EQUIPMENT

(75)

The following machines are located in the data preparation area and/or the ancillary machine room and are available for general card handling:

- Card Reproducers
- Card Interpreters
- Card Sorter
- Card Verifier

The staff of the data preparation section will do work of this kind for users, but anyone with a large amount to be done is expected to do the work himself. A user wishing to do such work or to have it done for him must first ask the Data Preparation Supervisor.

HANDLING OF CARDS AND PAPER TAPE

(76)

Care is needed at all times. Anything sent through the post should be firmly packed and protected from being crushed. There are a number of commercial products available to ensure the safe transit of cards and paper tape, and the Laboratory will advise if requested.

(76) cont

The following is a general guide to good practice:

(a) Paper Tape

Keep all paper tape free from contact with dirty surfaces.

Ensure that tapes are punched on equipment which has been correctly set.

Use the paper tape specified for ICL and made by Waterlow.

(b) Punched Cards

Store cards away from heat and damp.

Ensure that the edges of a deck are not damaged.

Always work on a clean surface.

If possible, use ICL cards for the 1906A and IBM cards for the 1130. Other manufacturers' cards will be accepted, but it must be understood that ICL and IBM will set their machines for use with their cards and difficulties could arise with the use of different manufacturers' cards.

TELEPHONE EXTENSIONS(77)

INTRODUCTION

The Atlas Computer Laboratory's telephone number is Abingdon 1991.
Abingdon Exchange expects to go over to STD towards the end of 1974.

The Director's extension is 547.

TECHNICAL ENQUIRIES

All technical enquiries should be channelled through the User Services
Group, extension 6103.

GROUP AND BRANCH NUMBERS

	Extension
Head of User Services Group (Secretary)	6103
Head of Operations Branch (Secretary)	515
Head of Resource Management Branch (Secretary)	479
Head of Applications Software Group (Secretary)	6121
Head of Basic Software Group (Secretary)	372
1906A Support Office	6193
370/195 Support Office	6111
Librarian	6226

(77) cont

OPERATIONAL SERVICES

	Extension
Data Preparation Supervisor	6284
External Reception (also Rowstock 321)	429
Internal Reception : 1906A Central Operators	6384
Magnetic Tape Librarian	6640
Communications	6389

ADMINISTRATION

	Extension
Head of Administration Group (Secretary)	6106
Atlas Laboratory Reception Office	6296

RUTHERFORD LABORATORY EXTENSIONS

The Rutherford Laboratory's telephone number is Abingdon 1900.

Some extensions which may be useful are as follows:

	Extension
Computer Manager	529
General Enquiries and Reception	360
Magnetic Tape Librarian	333
Information Desk	352

SECTION VI

APPENDICES

SECTION VI : APPENDICES

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No 5b	AL11	Magnetic Tape Allocation Card (1906A)	13
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No 10b		Building Plan : ground floor	3
<p>These plans include the new A4 office block which will not be occupied before April 1974. The new office numbering system shown in these plans will not come into effect before that date.</p>			
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SCIENCE RESEARCH COUNCIL
ATLAS COMPUTER LABORATORY

Chilton
Didcot
Berkshire
OX11 0QY

Tel: Abingdon 1991

1 9 0 6 A O P E R A T I O N R E Q U E S T

USERNAME	:								
JOBNAME									

Maximum Job Time:

Maxsize (MZ):

Name:

Telephone:

RERUN

YES / NO

Medium

Document

Input

Output

No of Work Tapes

Magnetic Tapes			Position Number (if known)
Track	TSN	Name	
9 / 7			
9 / 7			
9 / 7			
9 / 7			
9 / 7			
9 / 7			
9 / 7			

Destination of Job:

Return to User

Retain at ACL

Support Office

Special instructions
in Reception Book

Please write
comments on
reverse side
of card.

User Comments:

Shift Supervisor:	Ext 6388
Support Office:	Ext 6193
Tape Librarian:	Ext 6640
Job Reception:	Ext 6384
External Reception:	Ext 429
Robophone Answering Service:	Ext 393

Science Research Council

ATLAS COMPUTER LABORATORY

Chilton

Didcot

Berkshire

OX11 0QY

Tel: Abingdon 1991

External Reception

Extension 429

We regret that your job did not run
because of:

Magnetic tape declarations	. . . . .
Computing requirements	. . . . .
Filenames not unique	. . . . .
Document titles	. . . . .
Magnetic tape titles disagreement	. . . . .
Documents missing	. . . . .
Incorrect terminators	. . . . .
Username not in dictionary	. . . . .
Lost in system break	. . . . .
Traps not set	. . . . .
Output lost in LP wreck	. . . . .
Jobname not unique	. . . . .
No rerun instructions	. . . . .
Files not dumped on system break	. . . . .
Card wreck	. . . . .
Off punched cards	. . . . .
Card deck shuffled	. . . . .
Cards need reproducing	. . . . .
Genuine parity on tape	. . . . .
Parity caused by splice	. . . . .

N^o 30002 AL50(9/73)	Username date & time out	date & time in	date & time in N^o 30002 [retain by user]
	[attach to job]	<u>Atlas Computer Laboratory</u> Job Registration Card	

SCIENCE RESEARCH COUNCIL
ATLAS COMPUTER LABORATORY

1906A FAULT REPORT

NAME

Leave Blank

USERNAME

Serial No

ADDRESS

Passed to

TELEPHONE NO

Reply sent on

DATE OF FAULT TIME

PRIORITY (*see overleaf)

DESCRIPTION OF FAULT:

DOCUMENTS ATTACHED: GEORGE PM
MOP OUTPUT
JOB OUTPUT
FILE LISTINGS

OPERATORS' OUTPUT
MONITOR FILE
CORE DUMP
OTHERS (please specify)

The fault is: REPRODUCIBLE
SPORADIC
OCCURRED ONLY ONCE

REPLY: (please leave blank)

P10

*The priority of faults is:

- 1 No work can be run
- 2 Some work held up
- 3 Fault can be avoided
- 4 Isolated incident
- 5 Other reasons (please specify)
- 6 Information request or suggestion

The fuller the description of the fault and the attachment of evidence, the easier the investigation will be. A reply will be sent to you as soon as possible. In any subsequent correspondence please quote the serial number which will be entered by the Atlas Computer Laboratory

This form should be sent to:

1906A Support Office
Atlas Computer Laboratory
Chilton
Didcot
Berkshire
OX11 0QY

AL53

Science Research Council
ATLAS COMPUTER LABORATORY
Tel: Abingdon 1991 Ex. 6640

1906A EXOFILE SPACE REQUEST CARD

DATE: _____ ADDRESS: _____
NAME: _____
JOB NUMBER: _____
Retention Period: _____
Size of File in Words: _____
Access: Serial/Random _____ Tel. No. _____
Blocks per Bucket 1, 2, 4 or 8 _____ EDS30/EDS60 _____

FILE NAME 12 Characters only.

*PLEASE DELETE WHERE APPLICABLE

AL 52

SCIENCE RESEARCH COUNCIL
ATLAS COMPUTER LABORATORY
Tel: Abingdon 1991 Ext. 6640

1906A EXOFILE ALLOCATION CARD

The following space has been allocated to you as requested:

NO. OF WORDS	BLKS/BUCKET 1-8	FILE NAME

*PLEASE NOTIFY LIBRARIAN WHEN EXOFILES MAY BE DELETED

OSL

**ATLAS COMPUTER LABORATORY
IBM 370/195**

OPERATION REQUEST CARD

Date

PROGRAMMER'S NAME

A/c No										
JOB NAME										

CLASS	<input type="text"/>	PRIORITY	<input type="text"/>
-------	----------------------	----------	----------------------

ESTIMATED JOB TIME

SPECIAL INSTRUCTIONS

OPERATOR'S COMMENTS : SEE OVER

AL 65(5/73)

WE REGRET THAT YOUR JOB

- WAS TERMINATED
- WAS NOT RUN BECAUSE OF:-
 - OUTPUT EXCEEDED
 - TIME EXCEEDED
 - INCORRECT MAGNETIC TAPE SPECIFICATION
 - INCORRECT TERMINATOR ON PAPER TAPE
 - CARD WRECK
 - OFF PUNCHED CARDS
 - CARDS NEED REPRODUCING

(Tick as appropriate)

OTHER COMMENTS

Signature

Date

<p>06381</p> <p>Job name</p> <p>date & time out</p> <p>AL.62</p> <p>[attach to job]</p>	<p>date & time in</p> <p><u>Atlas Computer Laboratory</u></p> <p>Job Registration Card</p>	<p>[retain by user]</p> <p>date & time in</p> <p>06381</p>
---	--	--

Science Research Council
ATLAS COMPUTER LABORATORY
Chilton, Didcot, Berkshire

Telephone Abingdon 1991
Extension 6296

VISIT REQUEST

Name: 1. _____
2. _____

University, College or Department _____

Address: _____

Telephone No: _____ Extension: _____

Brief Reasons for Visit:

Job Number: _____

Is any special Programming or Punching assistance desired (with brief details)?

Is Office accommodation required in the Laboratory? YES / NO

Proposed dates of visit: Arrival - _____ Departure - _____

Will Transport be required from: Oxford Station _____
Didcot Station _____
London Airport _____
(Flight No. _____)
If Laboratory transport NOT required,
approximate time of arrival _____

Time of Arrival

Are Hotel bookings to be made on visitors behalf? YES / NO

AREA: (if any preference) _____

(Note: It may not be possible to arrange hotel accommodation unless the Laboratory has a clear week's notice)

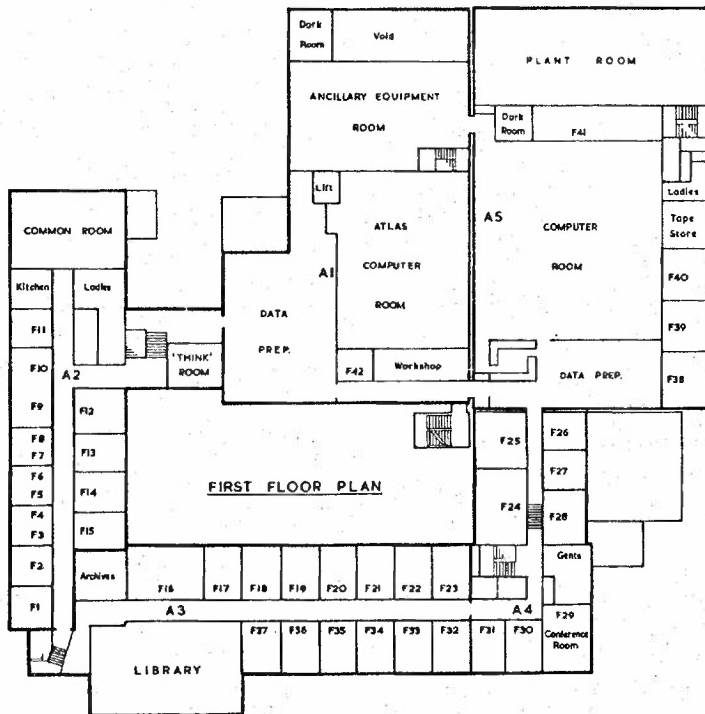
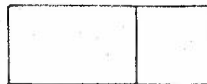
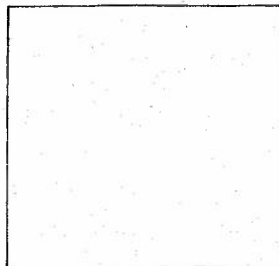
Signature: _____

Date: _____

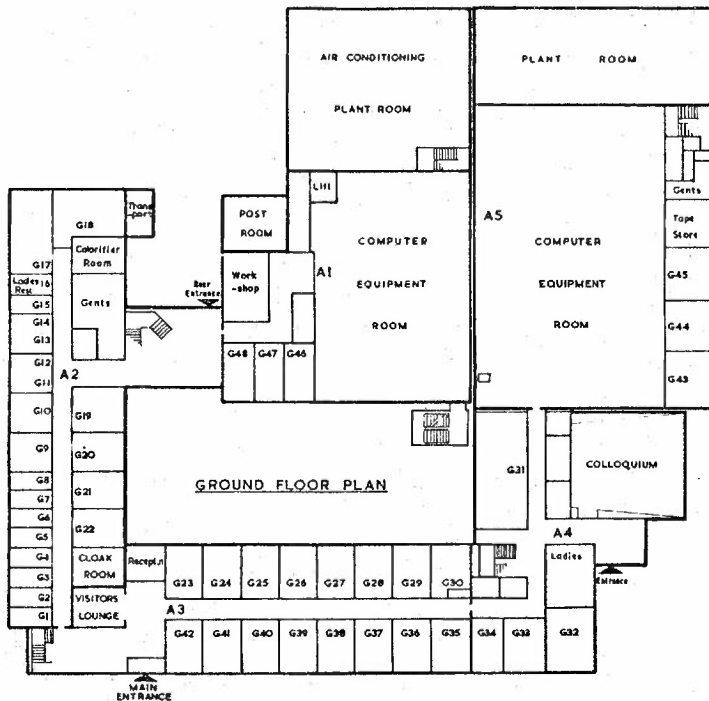
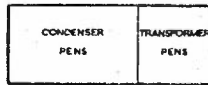
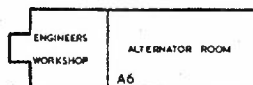
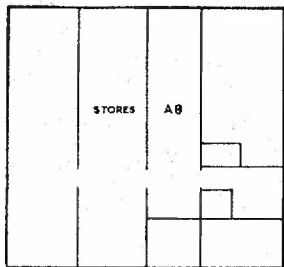
For Internal Use

Receptionist
Hotel
Transport
Room Number
Visitors from

Operations Group

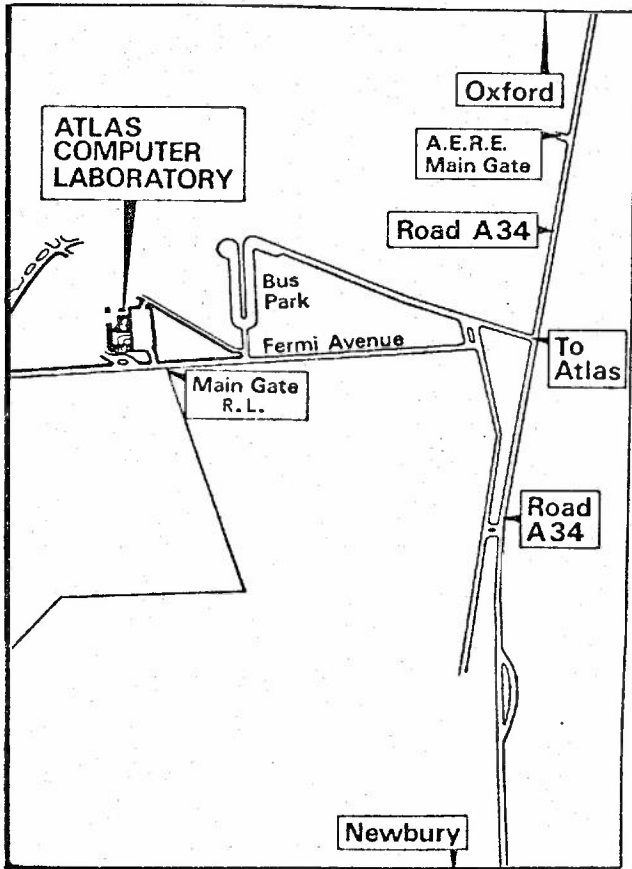


JUNE 1973



CAR PARK

JUNE 1973



Science Research Council

ATLAS COMPUTER LABORATORY
Chilton
Didcot
Berkshire
OX11 0QY

Telephone: Abingdon 1991
Extension 6284

CARD AND PAPER TAPE PREPARATION REQUEST

NAME DATE

ADDRESS

.

.

TELEPHONE NUMBER

TYPE OF CODING	
1900	<input type="checkbox"/>
EBCDIC	<input type="checkbox"/>
FORTRAN	<input type="checkbox"/>
ALGOL	<input type="checkbox"/>
ANY OTHER CODE (please specify layout required)	
	<input type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>

Please tick appropriate boxes
under both TYPE OF CODING and
TYPE OF WORK

TYPE OF WORK	
PAPER TAPE 8 CHANNEL	
Punch and List	<input type="checkbox"/>
Edit	<input type="checkbox"/>
Copy Tape	<input type="checkbox"/>
Print and Copy Tape	<input type="checkbox"/>
CARDS	
Punch	<input type="checkbox"/>
Verify	<input type="checkbox"/>
List	<input type="checkbox"/>
Reproduce	<input type="checkbox"/>
Interpret	<input type="checkbox"/>
Sort	<input type="checkbox"/>

Please indicate further action to
be taken by the Laboratory on
completion of the work by ticking
appropriate box

RETURN TO ME	<input type="checkbox"/>
RETAIN IN DATA PREPARATION SECTION	<input type="checkbox"/>
PASS TO SUPPORT OFFICE	<input type="checkbox"/>