COMPUTER STATISTICS

IBM SYSTEMS 25/7/83 - 21/8/83

information on system usage. To this end the electric user and response graphs have been removed. The statistics in the next issue will be The statistics reorganised in in the new format. presented in this section are being order to present more relevant To this end the

A P J Lobley - Capacity Performance Section Computer Services Group

MVT THROUGHPUT

MVT - 97.0%, CMS -

99.6%,

ELECTRIC - 90.8%.

TERMINAL SYSTEM USERS

Active users	Registered users	
524	1214	CMS
199	1103	ELECTRIC

MVT BATCH SERVICE LEVELS

Percentage of prime shift short jobs not turned round inside guideline:

Setup Jobs	Size	P12	P10	P8
	0 - 210k	1	13.2	11.3
	212k - 560k	1	3.0	1.8
	562k - 1500k	1	5.8	2.4
Non-setup Jobs	Size	P12	P10	P8
	0 - 210k	2.2	6.3	0.4
	212k - 560k	10.8	0.2	0.1
	562k - 1500k	ì	4.9	0.3

USAGE

Cumulative totals are for current financial year, 20 weeks to date.

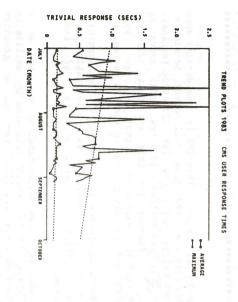
Board	MVT CPUhrs	ELECTRIC AUS	CMS
ASA	150	92	486
Engineering	404	83	413
Nuclear Physics	3113	289	2563
Science	330	109	703
Central Funding	17	30	2584
NERC	34	က	188
External	33	13	146
Overheads	26	39	2256
TOTAL	4107	- 663	9339

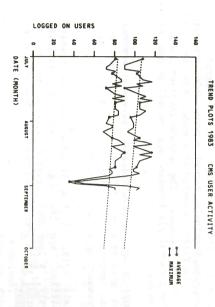
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ICF SYSTEMS

AU USAGE BY BOARD - Periods 8304-8308

Board	Prime	GEC	DEC-10	TOTAL
SR	91	41	31	164
ingineering	5294	2009	4393	11697
Central Funding	2720	678	799	4198
Nuclear Physics	64	23	0	88
Science	180	408	185	775
External	125	104	0	230
Systems Overheads	2842	192	893	3929
COTAL	11316	3455	6301	6301 21081





COMPUTER NEWSLETTER -ORUM

No 38

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THE USER-FRIENDLINESS OF CMS

September 1983

The Summer seems to have disappeared and here we are ready to face the 'storm after the lull'. As usual unpredictable seasonable variations have distorted the use of the facilities. In particular the IBM system has delivered anything from 160 to 350 CPU hours per week during the period. CPU hours per week during the period.

Machine performance has been generally good across all facilities with no really bad situations arising. situations

highlighted in this issue with an article summarising the views of User Support Group on how this should be achieved. I would like to make a personal plea to any of our readers who wish to contribute to send their comments and views to me. The need to change the highlighted in this is image of

can still apparently get something for nothing. The zero-cost upgrade of the IBM 3081D will probably be as baffling to you as it was to us. However it almost certainly will happen and we eagerly await the outcome. Unfortunately we are not aware of any such possibilities involving DEC, GEC or PRIME.

The move to Rev 19.1 of the PRIME Operating System has not been as smooth as we would have liked. The present situation is summarised in this issue, and to the best of our knowledge we have overcome the worst of the difficulties. Any users who are still in trouble should contact RAL.

Mike Jane - Head of User Support Group

DIARY

17 Oct Central Computing Committee meeting

19 - 20 Oct ELECTRIC/CMS Conversion Course

24 -27 Oct IBM New Users Course

OR HOW TO GET SOMETHING FOR NOTHING EXCHANGE OF

nothing, consider the following parable: understand you can get something for

Once upon a time, a company sold threshing machines to farmers all round the world. As it was a large company, it only updated its price of threshing machines at intervals. Consequently, if there were complexities of high finance sufficiently to advantage of such variations, particularly had no experience of selling threshing mac it in another making a modest profit. However average farmer was unable to understand to review the prices in time, but it was possible to buy a threshing machine in one country and sell countries, it was possible for the fluctuations of machines to vary significantly in countries. Normally the company managed machines exchange particularly as he threshing machines significantly rate However, the price between vice of of the original original original original original original original original original origin the

price. Some people said this was because the company wanted to make sure that new farmers were aware of the possibilities opened up by the use of threshing machines, while others rather maliciously said it was to make sure that all young farmers in the future threshing machine and so would continue to buy them coming out colleges. company's benevolent situation was further It gave such establishments a discounted to make sure that all young farmers of college had only used that company's attitude complicated by

threshing machines cheaper than young tarmers could. To stop colleges selling the machines to farmers, the company insisted that a college paid back the discount if it resold it, taking into consideration the age of the threshing machine. Be that as it may, agricultural colleges could threshing machines cheaper than young far ould buy farmers

discount that you paid back) was the same as the discounted cost of a new threshing machine, the agricultural college could sell its old machine and buy a new one at no cost. Of course, if the threshing machine the amount for which you could sell machine to a farmer (less the

situation was nowhere near as simple as that!
Depending on the time of year, the number of threshing machines in stock and how philanthropic more or the company was feeling, the discount agricultural colleges varied. For exacould buy a machine one day at one price assume you have followed me so far. Now th ituation was nowhere near as simple as buy a machine one day at one price or less a year later. For example Now the real given

threshing machine it had sold and st profit for the wizard. As threshing mach not always easy to come by, the wizard second-hand threshing machines from agricultural colleges in one country and selling them to farmers in another it was possible for the wizard to give a college more money than it needed to replace the threshing machine it had sold and still make a relatively easy to do. who knew farmers in many countries. scene came a veritable financial wizard As threshing machines By buying

You may ask who was the loser in this parable. surprising answer is nobody. The wizard ma made The

> profit. The college got a new maccompany sold another threshing machine. pity that all life is not like this! The

In October, the curre replaced by a 32 Mbyte Mbyte 3081D 16 Mbyte 1D at no c no cost 3081D is being SERC.

Bob Hopgood - Head of Computing Division

System. It is one o which grew out of a AMOCO Labs in the USA. a six-month pilot project in office automation embracing a limited set of office workers on the RAL site. The system under evaluation in the pilot is IBM's PROFS package. within IBM and by mature development h major releases. PROFS being Computing and Administration Divisions are ing an acronym for It is one of IBM's of a joint venture between IBM and ne USA. It is widely used both by its constant. y its customer having been th for PRofessional IBM's strategic | through base, e, and is a about ten jointly

range of oterminals. terminals. In machine terms it requires terminals. In machine terms it requires configuration equivalent to an IBM 4331 or larger, a minimum of 1 MByte of main storage, and discs for a minimum of 1 MByte of main storage, and discs for the storage of the storage on 327x terminals. Its origins do, however, mean that PROFS can be used on line-mode devices, though it is less comfortable to work in this environment. which there is VM/SP support. Networking to terminals, printers etc. uses VNET. As originally conceived, PROFS had a command driven interface but this has been replaced by a menu driven system which makes extensive use of the PF keys available application programs PROFS consists of office activities designed to set via of support VM/CMS full

other well-known IBM products. Since it uses the standard CMS filestore for storage of information, many housekeeping functions and CMS utilities are available to the PROFS user. For text production, it uses IBM's Document Composition Facility (DCF) which grew out of SCRIPT. Among the features available are alignment PROFS overall design is sufficiently flexible to cater for a broad spectrum of potential users. At one extreme someone with little or no knowledge of computer systems can use it very effectively and be completely unaware of the substructure on which the system depends. However, an expert user is free to exploit his knowledge of CMS and DF; for available are alignment, pagination, multi-column layout, various styles of headings and lists, instance, the full power of the CMS available to him as well as any DCF cont layout, various styles of headings and lists, indexing, several macros and spelling verification. he may care to use for text preparation. control Editor

The office brought to activities bear during on the which PROFS will be RAL experiment include:

- specifically their creation, distribution, filing and retrieval document management in all
- calendars on the computer reservations, plus scheduling the eg. eg. conference room option of personal/group
- information services reference material brought into machine readable form using OCR equipment administrative accessible through and management PROFS, plus based on full-text databases existing

Approximately 30 are being installed together with matrix and letter-quality printers to give an overall terminal printer ratio of about 4:1. The IBM Personal Computer will be evaluated as a managerial workstation and some standard VDUs will be tried. As the pilot progesses, further The pilot project is nearly ready to start. The installation of wiring and terminals is now well advanced and the PROFS package has been running for some time on the 3081/Atlas 10 complex. About 70 users are participating in the experiment drawn Processors), the pilot will concentrate on using IBM 3178 Model C2 full screen terminals. Personnel Sections, plus selected Heads of Division, secretaries and typists. Although it is possible to use a range of terminals with PROFS from standard VDUs to Displaywriters (IBM Word decisions will be taken on its possible expansion mainly from General Administration, Finance and

David Leech - Office Automation / Unix Group

CHANGES TO FORUM

It has been said in the past that FORUM is too:

- technical
- IBM-orientated.

criticisms. A project is now underway in User Support Group update FORUM and attempt to redress some of t up to

FORUM, and have a series of proposals which we intend to implement. We have already made some of the smaller changes; May's issue included the Table of Contents on the front page, and the first issue with an Editorial column was in June. Also, changes will 1984. in an attempt to cover a wider area of interest, we have tried to include more news items without a bias towards the mainframe computers. Major changes will be introduced in the first issue of 108µ We have spent some time analysing the problems with

OBJECTIVES

First, we tried to define the func As the RAL Computing Division's main function should be to provide service to all our computer users. function of FORUM. Newsletter,

its automatic aspects; sources over a wide range of topics. It should be interesting as well as informative, and should include articles from a variety of

PROPOSALS

Improve FORUM's appearance. This includes:

- a modified name a new front
- a new front page an improved layout.

annually to include the year. FORUM will be called FORUM 84. As from January 1984, FORUM's name will be modified annually to include the year. Hence next year,

only the Table of Contents. The inside f will include the Editorial, the names of the editorial board, dates for the defuture editions, and a preview of The front page will be redesigned, and will contain only the Table of Contents. The inside front cover forthcoming articles. the deadlines of

We will investigate how to make the headings more prominent and the possibility of using different size characters, and try to introduce more diagrams and photographs to illustrate the text.

However, in improving the layout, we are restricted by the facilities available; we want the process to be as automatic as possible, to keep to be as automatic as possible, to pasting-up" time to a minimum, for example.

Include more user contributions. This will be done in two ways; article on their experiences in the computing ORUM, R27, RAL, Chilton, Didcot, Oxon, OX11 OQX. have any specific suggestions for changes to FORUM, or feel strongly (one way or another) about any proposal in this article, please mail your comments to FORUM @ RAL. If you do not have access to SERCNET, o the Tell experiences in the computing environment be encouraged and we will also have a "Letters be Editor" section. To start this off, if you then RAL. If you do not have access to letters may be sent to The Editor of articles from users

elevant articles over the past year. lach December issue will include an index of all

during each year; these will be publicised, and articles relating to that theme will be requested. Suggestions for themes include Graphics, a specific computer range (eg GECs), HELP systems, and the Network. We will choose a "theme" for two 20 three FORUMS

We would also like to have a regular section, covering all the different machine ranges, where a small number of topical user queries and answers are printed.

Users may also find a list of "who to contact at RAL for what, and how to contact them" useful. Regular inclusion of this list is being considered.

If you have any comments on any ochanges to FORUM, please mail them Of the proposed

FORUM @ RAL

Jacky Hutchinson - User Support Group

communication between office professionals using

STATUS REPORT ON INSTALLATION OF REV 19 ON PRIMES

procedure were ironed out at Rutherford. that most Prime users welcome the new and security provided in Revision 19. Revision 19 of Primos and its utilities have now been installed on all but three SERC Primes (which are scheduled for September). In general, the University sites, as September). In general, the one well, particularly at the as problems with the conversion and out of path and new facilities I am sure

Please note that a problem still exists whereby batch jobs are not allowed to exceed a disk quota, and a solution to this is being sought. Apologies are due to owners of one or two UFDs mistakenly ACL'd, due to a bug in the conversion procedure which was resolved before subsequent conversion. RLPB was the first service machine to acquire Revision 19, but after several days of service a spate of machine halts was experienced, and with the help of a magnetic tape crash dump a bug was quickly identified and cured. A problem relating to the new Prime quota system was also fixed. Please note that a batch jobs are not Prime quota system

was performed the wrong way, overwriting the previous backup. Apart from this, all the conversions went smoothly, although the following problems were experienced. Prior to the conversion to Revision 19, a disaster occurred on RLPF as the backup of one of the disks

The Salford FTN77 compiler was found not to be able to compile some of the latest Prime supplied INSERT files, so specially converted ones had to be installed at all sites. Also a Prime F77 bug at revisions 18.4 and 19.1 of the compiler was discovered, although only one user on RLPH was affected. F77 18.3 is therefore still running on RLPF. On RLPE, what appears to be a bug in IRSTATUS (used by the Library database) was unearthed by a new version of LOGIN. A temporary solution to this has been implemented, and users are no longer affected.

The new Prime disk quota system is causing problems for some users, as it enforces disk controls more rigidly than the old SEKC system, which unfortunately was easily abused. Users who get into disk space difficulties should contact Resource Management at RAL.

caused several problems for users, who are again urged to read all the NEWS files concerning Revision 19 and to check their back copies of Prime Support News which document the new features of Revision 19. The main difficulty is that the default Access Control Lists set up often prevented users from accessing other users' programs and it has been necessary to adjust the ACLs to allow such The new file protection mechanism, ACLs, has also caused several problems for users, who are again

and users are requested to report such immediately to User Support. It is possible that difficulites may or utilities, difficulties

Phil Newton - Computer Services Group

7. THE GEC MUM USER LIBRARY

RAL, and much aloed by represent soon communications, a valuable community spirit soon appeared amongst the staff of the GEC sites. File transfer and remote login facilities meant that it and the idea of a the development communications. a waller The formative years of the Interactive Computing Facility were closely linked with the development duplication of effort. was easy to share software, and the idea of a Program Library was formed to reduce unnecessary

standards: Insceau,
sharable items, and the list would increase
likely level of support and documentation for each
item. The validity of this approach is shown by
the development of PREDICT, designed by a
spendthrift user to give warning if he was likely
to exhaust his allocation of AUs before the end of
communiting period. Its first form was a site, but the user interface is unchanged from original user's design. to provide meaningful figures. Today, PREDICT is an efficient single program written at another We decided at an early stage not to impose rules utility, whose output it then edited and processed

elegantly lettered overhead projector transparencies, all without demanding that the user understands the subroutine libraries used or compiles any code. One enterprising user, tired of producing test copies of plots destined for his thesis, wrote a substantial program to read the plotfiles and display on a screen exactly what the plot would look like. GVIEW is now a valued utility, providing extensive previewing and conversion facilities for many graphics devices. by the original author, and are still in use largely unchanged. In the field of graphics, for instance, there are utilities for the production of A4-size pages of histograms, block diagrams, and Other 'convenience' items represent greater by the original author, and are still

The design of GVIEW was according to similar utility on the local Computing Service machine. In other cases, complete packages have been moved to the GEC systems, where they can now reach a far larger user population than before. Wider use means more suggestions for enhancements and more rapid discovery of bugs! CLADP, originally the 'workbench' of a single Control Engineering research group, is now used by groups at several other Universities. Disciplines other than Engineering have installed compatible GEC machines: the library includes items inspired by High Energy Physics facilities at CERN, and items and organic Chemistry and outside their originating disciplines. Crystallography. Some such items have found

begins to coverage that was certain imported As ideas are re shared and developed, offer the kind of in-d previously computers. the I in-depth software province the library

> program development tools such as preprocessors and cross-referencers, microprocessor development aids, and a growing list of language compilers. computer-aided learning packages, desk-calculator programs that operate on vectors and matrices,

which payment is required. I inclusion in the lists (there only', and still others are licensed products Many listed items are freely available to be used or modified at will; others are 'for academic use policy') and wherever possible the availability is indicated. All are accepted for e is no 'editorial

Every GEC Site Manager has access to the lists, can list existing programs, and can make contributions or circulate requests for items not (yet) listed. contributions

Ken Warner - Site Manager of Cambridge GEC

HARWELL LIBRARY

installed new version on MVT and CMS. Harwell library has been

In MVT the new library is held in SYS1.HARLIB. old library has been renamed as SYS1.OHARLIB will be deleted in two months time if there are problems with the new library.

In CMS the library is held in HARLIB1 TXTLIB HARLIB2 TXTLIB R and can be accessed by the GLOBAL R and

GLOBAL TXTLIB FORTLIB HARLIB1 HARLIB2

The routines OBO1A, OBO2A, OB14A, ZAO4AS and ZA16AS new MVT library, but this : the library No other routines have been withdrawn should not affect any

The CMS library contains all the routines available in MVT except for ZAO2AS, ZAO6AS, ZA12AS, ZA16AS, ZA17AS, ZA18AS, ZRO2AS, ZRO3AS and ZVO1AD.

There is no routines in online HELP information for individual the Harwell library.

Charles Wood - User Support Group

VAX(VMS) USER GROUP

up of Department, Lancaster), the Deputy Chairman will Dr Richard Ansorge (Cavendish Laborator Cambridge) and chairman will be such a User Liaison Committee approved the setting such a group at its last meeting. The Mrs Will Dr Ros Gareth be Hallowell Hughes Laboratory, (Computing (Physics

Representives have been nominated from all provided VAX(VMS) systems and are as follows

SERC

The initial meeting is scheduled September 1983. Users wishing to at future meetings are invited the local managementive or any of the	Starlink	HEP	Daresbury Laboratory, SRS	SERC CERN	University of OXFORD	University of OXFORD Nuclear Physics Laboratory	University of OXFORD HEP	University of OXFORD Chemical Crystallography Lab	University NEWCASTLE UPON TYNE Dept of Electrical & Electronic Eng	University of MANCHESTER Dept of Mechanical Engineering	University of LONDON Queen Mary College	University of LONDON Queen Mary College Department of Chemistry	University of LONDON Queen Elizabeth College	University of LEEDS Dept of Mechanical Engineering	University of LANCASTER Department of Physics	IMPERIAL COLLEGE Atmospheric Physics Group	IMPERIAL COLLEGE Blackett Laboratory	University of CAMBRIDGE High Energy Physics
led for Monday 19 to raise any issues to contact their the recole mentioned	Dr D L Terrett	Mr M Waters	Miss Frances Rake	Dr C N P Gee	Dr J Cox	Dr D Sinclair	Dr J B Macallister	Dr K Prout	Mr G F Mole	Mr Vale	Mr Paul Kyberg	Dr Nigel Walker	Mr Nigel Arnot	Systems Manager (to be appointed)	Dr Gareth Hughes	Mrs Lesley Grove	Mr Paul Baker	Dr R E Ansorge

above. local representive or any of the people mentioned

in FORUM. A short report of these meetings will be published

Mike Jane - Head of User Support Group

I have been asked to write a paper for the User Requirements Committee, stating the requirements of HELP systems and documentation. The following is a resume of what I see as the users' requirements - have I got it right? Please mail me a message (J.J.C.Hutchinson @ RAL) if you disagree (or agree) with any point, or feel that I have ommitted anything important.

HELP SYSTEMS

THESE MUST BE UP-TO-DATE.

This is the most important feature of any HELP system. Manuals may get out of date, but HELP should always contain the current information.

HELP systems should be easy to use, and should be self-explanatory; no-one should need to LEARN how to use HELP.

mistakes; 'user-friendliness'. They should of this fuzzy-matching be that would also at essential driven, to introduce cater element with for a certain മ spelling called

There must be a large number of synonyms included; Delete, Discard, Destroy, Erase, Expunge, Purge and Remove (there may be more) are all possible keywords to delete files, mail messages, text in an editor, jobs in batch, files in spool queues or files awaiting transfer. The default system should assume the user is new to the system, and should give a menu choice to the user when there is any possibility of confusion (as when one of the keywords above is typed). However, a user who knows what he is looking for and knows the required keyword should be able to override this option easily. This should be possible when calling HELP and it should be easy to switch from 'novice' mode once in HELP.

There is a problem of what HELP systems should assume at certain points. For example, in a hierarchical HELP system, if a user has just been browsing in the MAIL sub-system of HELP, and then types REMOVE, should the system assume that the user wants information to remove a mail message, or should it give the user a menu choice? Menu systems get very tedious when they are used to excess (and when the user knows what he wants).

HELP should be a memory jogger, it should be easy to produce brief information on a wide variety of topics in manageable quantities. It should not contain screeds of information, although controlled access to manuals can be useful. (Well organised access to manuals on-line could reduce, but will never remove, the need for paper manuals; users will always want to refer to manuals when not at terminals.) It is also easier to read from paper than from a screen.

HELP should be easily accessed from sub-systems, and on leaving HELP should return to the sub-system.

DOCUMENTATION

Each document should be produced for a clearly defined audience, whether it is a User Guide for those familiar with computing but relatively new to a specific system, a Reference Manual for those familiar with the system, or a user note to inform of changes. It should also be made clear in each document if (and how) the document is to be updated, and if the document is not to be updated, and if the document is not to be where new versions are advertised and whether they are available on request.

Text should be easy to read, and descriptions should be clear. Jargon and long tedious descriptions should be avoided, users do not enjoy reading manuals, and information should be provided with as little (reading) effort as possible. All manuals should contain examples. Manuals should also be as professional as possible; a well produced manual instils confidence in the user and is worth the effort.

A documentation standard is being defined at RAL; when this is produced it is hoped that all manuals produced at RAL will reach the same high standard.

At present, we produce Primers or Introduction manuals for novice users, and a new user is told to read the first 'n' chapters before using the system. This does not happen; users get bored reading, log in, and then fumble round the system, learning by trial and error. All systems should provide a tutorial session to new users; they should be given a sheet of paper giving their username, how to log in, and how to access the tutorial. This should then take the user through basic information on local editing controls, the command syntax, the filestore and basic editing instructions. The user should then be in a position to use the User Guide.

Each system should have syntax cards; these have proved very popular and useful on systems where they are provided. They should serve a similar 'memory-jogger' service to HELP, with the advantage that they can be carried round and used when not at a terminal.

Jacky Hutchinson - User Support Group

The Finite Element Library was conceived by Dr. Ian Smith of the University of Manchester. It is designed as a development tool for those people wishing to experiment with the practicalities of solving differential equations. It enables them to solve both steady state and time dependent equations with up to 3 spatial dimensions. It addresses problems (such as those arising in fluid flow) not covered by the large standard packages and provide a valuable teaching tool for those interested in the mathematics of the finite element method.

Use of the library is by no means restricted to the solution of small problems. Problems involving many thousands of unknowns may be tackled despite the lack of out of core linear algebra routines and methods such as nested dissection.

London University NAG Panel has arranged for Dr. Ian Smith to conduct a half-day workshop on the use of the library for teaching and research purposes on 19 October 1983 from 2.00pm until 4.15pm at Imperial College, Lecture Theatre Room 220

Mechanical Engineering Building,
Exhibition Road, London SW6

If you wish to attend the workshop please contact
Mr S Budd
Imperial College Computer Centre
London SW7 2BX

telephone (01-)589-511 ext 1197

非常是有的,我们们的,我们们们的,我们们们是不是一个,我们们的一个,我们们的一个,我们们的一个,我们们的一个,我们们的一个,我们们的一个,我们们的一个,我们们们的一个,我们们们的一个,我们们们们们们

Readers may be aware that CMS is considerably more productive when used from full-screen terminals. Unfortunately, until now IBM 3270-type terminals have only been available to a few local users at RAL. The reasons for this are that 3270-type terminals are expensive, cannot be used over SERCNET and can only be used on the IBM system.

However, an upgrade to the standard Cifer terminal, which has been developed in collaboration with Cifer Systems Ltd, will solve all of these problems.

The upgrade allows the terminal to be used as a 3270-type terminal whilst retaining the ability to be used as a standard ASCII terminal or graphics terminal (if the graphics option is fitted). The upgrade is cheap (£290 for a model 2605, £125 for a model 2634, while a new 2634 with the 3270 modification costs £915, which is little more than the cost of a basic 2634). Most importantly, the terminal can be used in full-screen mode over SERCNET.

full-screen terminals, though a model 2605 terminal has to be first converted to a model 2634 (this is part of the upgrade). The upgrade involves changes to the internal electronics and modifications to the keyboard.

We make no pretensions that the upgraded terminal is as good as a real 3270, but it does support all of the important 3270 functions and is a vast improvement on a dumb terminal.

A field trial of the terminal is now nearing completion and the upgrade will be available shortly. A User Note giving details of the use of terminal is in preparation and will be available on request.

Charles Wood - User Support Group

 The removal of the CDC 1700 at Imperial College at the end of August resulted in the termination of the HASP connection to SERCNET from the Imperial College Computer Centre. Any user experiencing difficulties with access to SERCNET as a consequence of this should contact the PAO (ext 6111) or me (ext 5408).

Mike Jane - Head of User Support Group

 The degree to which CMS can be considered a user-friendly system has frequently been discussed by users. Discussions at the Central Computer Site Users Meeting culminated in a paper by JC Hart giving a user's point of view. A reply to this paper was prepared by D M Asbury. We would like to widen the discussion to involve all CMS users. Hard copies of the papers can be obtained by using the commands:

NEWS FRIENDLY LISTING (VPRINT NEWS REPLY LISTING (VPRINT

If, having read these documents, you want to contribute to the discussion, send your views to me either as a note or a file. My ID on CMS is RM.

Bob Maybury - User Support Group

We apologise for the error in Ken Robinson's progress report on Common Base in issue No 37.

The sentence should have read "(It is not now clear that the higher level transport Service Byte Stream Protocol will be implemented - any user likely to be inconvenienced by this should contact the author of this article.)"