<u>C.S.I.R.O.</u>

<u>COMPUTING RESEARCH SECTION</u>

<u>NEWSLETTER NO. 11   -   1.4.66</u>

I.   GENERAL

<u>The New Mailing System for C.R.S. Publications</u>

This section is repeated from Newsletter No. 10.

Where in the past only the Newsletter has been automatically mailed to members on the mailing list the new system is designed to include the mailing of the other section publications such as Manual Supplements, Technical Notes, etc. As this will involve major changes in our present system it is necessary for every person or group who wishes to continue receiving our publications to complete an application form giving details of name, address and particular requirements. The forms will be converted to punched cards, two per person, and the cards will form the basis of the mailing list. This list and the new system will be in operation for the distribution of the May newsletter and other relevant publications.

The form should be completed as indicated on the form with one letter or number in each block. Spaces i.e. blank blocks should be included as appropriate. The surname (or position such as Librarian, Officer-in-Charge) should begin in block 7.

The address on the envelope will appear in exactly the same form as it is written in the four lines on the right of the form.

The last section defines the type of number of publications required. The classification of section publications is as follows:

Group EP :-	Education Publications	
Group LM :-	Library Accession Lists and Miscellaneous Publications	
Group M6 :-	Manual Supplements for the 3600 computer system	
Group M2 :-	Manual Supplements for the 3200 computer system	
Group NL :-	Newsletters	
Group TM :-	Technical Notes and Memoranda.	

The group names appear on the form with a block-pair under each name. The number of publications required in any particular group is to be indicated in the blocks. The block pairs should be left blank when no publications of a particular type are required.

Example:

PUBLICATION

EP	LM	M6	M2	NL	TM
		1		2	1

Requirements 1 copy of each Manual Supplement referring to Control Data 3600 Manuals as printed.

2 copies of each monthly Newsletter.

1 copy of each Technical Note and Memoranda as printed.

NL

N.B. [2|] would be interpreted as a request for 20 copies of the Newsletter.

The last full list of the Section's Publications appeared in Newsletter No. 6, and from that time onwards, only new publications were listed.
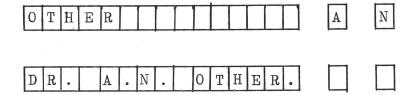
Note

Apart from the advantages of a more comprehensive system and an improvement in flexibility this new system is also being implemented to reduce the library work involved in those areas of distribution which are presently unsatisfactory. If follows that this change in the system should not be interpreted as the chance for very user to request one or more copies of every future publication. This is not the intention. You should only indicate on the form those categories of publication which are necessary. In most cases this will be the Newsletter and either or both of M6 and M2. All new publications will be listed in the Newsletter and if you are interested in a particular Technical Note or Educational Publication, etc., they will always be available from your local centre or dirctly from the library at Canberra.

Response to the new Mailing System

Last month some 510 reply forms were despatched together with Newsletter No. 10. So far 220 replies have been received of which approximately 10% were incorrectly completed. Most of the errors were obvious and could be altered by the library staff. In other cases the applicants were sent new reply forms.

Most errors occurred in the name and initials section or in the publications section. For the latter case see the example above.

In the case of the name section please note that the two following arrangements are acceptable.

| O | T | H | E | R | | | | | | | | | | A | | N |

| D | R | . | | A | . | N | . | | O | T | H | E | R | . | | | |

they would appear on the envelope as A.N. OTHER and DR. A.N. OTHER respectively.

Note that:-

| D | R | . | | O | T | H | E | R | | | | | | A | | N |

would appear as A.N. DR. OTHER which is therefore not acceptable.

Please remeber that from 1st May, section publications, and that includes the Newsletter, will only be sent to those Divisions, Sections and individuals for which there exists a card record in our file.

Visitors to Canberra Centre

Customers visiting the Section at Canberra are urged to leave their names and contact point whilst in Canberra with Miss C. Green at the Enquiry Counter. This will facilitate distribution of mail, telegrams and transfer of telephone calls and other messages.

Future Courses

The introduction of the DAD monitor will mean that certain changes will be necessary to the present control cards. These changes and other features of the DAD system will be explained to the user in a series of lectures to be arranged in the near future.

Charge Codes

On no account should any present user specify a charge code for a colleague, nor should a new user create his own charge code. These codes are allotted by staff of C.R.S. only on production of a project sheet. When **DAD** comes into operation the charge code will be checked against a current list and if the code does not appear on the list, the job will be deleted.

The Use and Abuse of Magnetic Tapes

Recently there has been a shortage of available magnetic tapes in the network. One reason for this shortage is that the tapes are not being used efficiently. The following remarks may be of interest.

Each record on the tape is followed by a record gap of $\frac{3}{4}$". For a tape written in the Binary mode the maximum number of words which can be placed in one record is 256 (or 512 for the 3200). For a tape written in the B.C.D. mode the maximum number of words/ record is 17 (or 34 for the 3200). It follows that the B.C.D. mode is highly inefficient. The density of recording can be at 200, 556 or 800 frames/inch. There are 6 bits per frame. This means that at the highest density of 800 frames/inch (i.e. 100 word/inch) the use of a "binary write" on tape will produce 2.56 inches of data and 0.75 inches of record gap i.e. 256 words per 3.31 inches of tape Using this as a standard the efficiency of the other possibilities is shown in the table.

Table to show tape lengths and the relative efficiencies for a 256 word (48 bit) record.

DENSITY FRAMES/INCH		800*	556	200
B I N A R Y	TAPE LENGTH	3.31"	4.43"	10.99"
	RELATIVE EFFICIENCY	100%	75%	30%
B C D	TAPE LENGTH	16.06"	17.93"	23.74"
	RELATIVE EFFICIENCY	20%	18%	14%

* This density is only available at Canberra

Note that using the buffering technique continuous records of more than 256 words are possible which is of course even more efficient than the standard binary write considered above.

For further details see the Fortran Reference Manuals or Educational Publication EPA 3.

II. 3600

SYSTEM CHANGES AT CANBERRA

Hardware and Software

On Friday, 4th March the new peripheral equipment comprising magnetic drums, Vista display and the remote keyboard consoles arrived in Canberra. By Sunday afternoon the installation of the new equipment had proceeded to the stage where testing was taking place with the new drums and displays monitor system. This new monitor system (known as DAD) has been developed by members of the section staff and of Control Data, Australia. Presently the DAD system is being checked out with dummy job stacks.

The software for the remote consoles and the Vista display is
being developed and the system should be integrated and working
in a <u>restricted</u> <u>mode</u> by the time of the Computer Conference in
May. In fact, during the Conference the various devices mentioned
above will be on display at set times. Details in the May Newsletter.

COMPASS 5.1

A new version of COMPASS, the assembly system is now in operation.

New Publications

SUBROUTINE

C2 CSIR CUBIC

Finds the roots of a cubic equation.
C.H.J. Johnson, J.E. Paine. March, 1966.

PROGRAM

Card Image Editing Program for the Control Data 3600.
G.R. Knowles. February, 1966.

III. 3200

SYSTEM CHANGES

Several changes have been made to the 3200 monitor and Fortran
library, including the splitting up of the floating point package
into several parts, so that users requiring only normal precision
floating point will find that less than half their previous
storage area is now occupied by the necessary routines.

These and other changes and additions to the library will be
described in more detail in a Manual Supplement to be issued shortly
(author D.C. Knight).

3200 Print Limit

A print limit has now been added to the 3200 SCOPE RUN control
card $^7_9$ RUN,t,P,NM

where P denotes the maximum number of lines expected to be output
on the line printer (any logical unit numbers) during execution
only. If the field is blank or missing the limit is set at 200
lines.

If the program exceeds this limit, a message PRINT LIMIT appears on the printer, and the job terminates abnormally.

3200 24-bit Floating Point Variable

A type other Fortran variable which assumes floating point values and occupies one 3200 word is now available. TYPE REAL24(1) variables hold quantities in floating point format consisting of 17-bit fraction, 6-bit biased exponent and sign bit. This representation is equivalent to a five digit decimal fraction with a decimal exponent in the range -9 to +9.

TYPE REAL24 is intended for use as a means of conserving store in the 3200. REAL24 arithmetic is not recommended for lengthy scientific computation because round-off error is likely to produce intolerable inaccuracy. Quantities may be held in store in REAL24 format and converted to REAL prior to use in computation thereby maintaining normal accuracy.

The source deck is now available from Canberra. The subroutine write-up will be published shortly.