C.S.I.R.O.

DIVISION OF COMPUTING RESEARCH

NEWSLETTER NO. 32 - 1st MARCH, 1968

1. GENERAL

Publications Issued this Month.

NL -Newsletter No.32.

LM -Library Accession List No. 21. February, 1968.

Seminars

The following seminars will be held at 2.00 p.m. in the Lecture Room of the Division of Computing Research, Clunies Ross Street, Black Mountain, A.C.T. Each is on a Thursday.

March, 7th - A User's Comparison of two Computing Establishments; Manchester University and C.S.I.R.O., Canberra.
(G. Shearing, D.C.R., Canberra).

March, 21st - Impressions of a Visit to Overseas Weather Computing Centres.
(C.E. Wallington, D.C.R., Canberra).

April, 4th - Computing Best Approximations with Applications to Basic Mathematical Functions.
(M.R. Osborne, Head of the Computer Centre, A.N.U.).

May, 2nd - Computer Systems and Operation Techniques in a Multiprocessing Environment.
(D.A. Harragan, Computer Service Centre, Bureau of Census & Statistics, Canberra).

Basic Fortran Courses

Brisbane - March 25th, 1968.
Adelaide - April 29th, 1968.

Courses are being planned for Sydney in May, Canberra in June and Melbourne in July. Those interested in these courses who have not already applied should obtain an Application Form from their nearest Branch.

Annual Report

The 1966-67 Annual Report of the Division of Computing Research is available from the Publications Assistant, D.C.R., Canberra.

Correction to Annual Report

Several of the lectures attributed to M.B. Clowes in the Division's 1966-67 Annual Report were actually delivered by D.J. Langridge.

The lectures in question are:

"A Transformational Approach to the Syntax of Programming Languages". Seminar in Computer Graphics. University of New South Wales. 9th, 10th February, 1967.

Also to Victorian Computer Society, Scientific Computation Study Group. March 1967.

"Transformational Grammars as General Models for Programming Languages". Seminar A.N.U. Computer Centre. 9th May, 1967.

Data Acquisition

Mr. C.D. Gilbert will be visiting Melbourne during the week commencing March 18th to meet users with interests or problems associated with the measurement and recording of data.

Users interested in meeting him should contact the Officer-in-Charge of the Melbourne Branch as soon as possible.

Magnetic Tape Label Changeover

DAD produces tapes labelled according to the SCOPE 6 format, but will accept tapes labelled in either SCOPE 5 or SCOPE 6 format.

Within a few months only tapes with SCOPE 6 labels will be accepted as labelled. Therefore, holders of tapes written by SCOPE 5, or by DAD prior to November 1st, 1966 should note that these tapes will be treated as unlabelled after the changeover.

Holders are urged to copy any such tapes which are likely to be frequently used. The date of the changeover will be announced in the Newsletter.

II. 3600

Display Program DISCDOCS

DISCDOCS has been added to the 3600 display program library as a general purpose means of allowing users to retain documents from day to day in the disc file system. At present the facility is only available to display users, however, software is being developed to extend the facility by means of control card options in main jobs. As the system is still under development, no guarantee is given at the present time that documents will remain on the disc, and currently they are not saved over the weekend.

The DISCDOCS program enables a user to copy a document from drum to disc or vice versa, and to delete or save the source document. Only one document of a given name (charge code, ident) may be held on the disc at a time, that is, edition numbers have no meaning on the disc. The program may also be used to determine if a document exists on the drum or the disc, and/or to delete it.

EXECUTE Statement

The following statement is now recognised by INTERJOB. It is intended to be used in conjunction with the new disc control statements, but will have other uses as well.

*EXECUTE, c,i,t

where c is an eight character charge code,
i is an ident of up to eight characters,
and t is a job time in minutes.

This statement causes an entry to be placed in EL1 or EL2 requesting execution of the document c,i with job time t. No checks are made as to the existence or availability of the named document, or as to the agreement of the charge code c with that of the currently running job. If the time field is omitted or 0, it is taken as 1 minute. If the time given is greater than 4 minutes, the execution request is placed in EL2, and otherwise in EL1. If the time given is greater than 2236 minutes, the job is terminated with the diagnostic:

CONTROL STATEMENT ERROR

Document Length Limit

The last Newsletter explained the new diagnostic "DOC LENGTH LIMIT" which replaces "PRINT LIMIT". A fuller specification of this limit is given below.

At the first reference to a document a length limit is assigned:

(a) by an Equip statement, i.e. *EQUIP, u = hh n where hh is the hardware type (e.g. CP) and n is the limit number of sectors assigned to the document,

(b) by a Label call. If the hardware type is other than magnetic tape, then the "reel" number is the document length limit in sectors.

(c) by default, the limit is set at 256 sectors.

Note: Rules (a) and (b) apply even if n is a small integer. For example, *EQUIP, 33 = CP1 will give a limit of 1 sector, not, as formerly, 256.

The document length limit of logical unit 61 (OUT) is reset by the print limit specified on the Run Card. If P is the Run card print limit and S is the size of logical unit 61 (in sectors) when the Run card is read, the document length limit is reset to S + 5 + (P/16) sectors or 999 sectors, whichever is smaller.

Simscript

Simscript is now available under DAD. The following Simscript statements are not implemented, and attempted use of these statements will cause undefined externals during loading:

LØAD (Section 5.2.4, Simscript Manual)
RECØRD MEMØRY, RESTØRE STATUS (Section 5.2.5)

The options L, X, B are assumed, and the

$\begin{matrix}7\\9\end{matrix}$ SIMSCRIPT, L, X, B control card is replaced by

```
*EQUIP, 52 = (CBC*****, SIMSCRIP), RØ
*EQUIP, 47 = 52
*LØADMAIN, 47
*RUN, 10, 500
```

The complete JOB is terminated by *EØD. In the DAD implementation, Simscript has been converted to an overlay job, with each overlay performing a single phase within the compilation.

Compass Change

An attempt to skip over a SCOPE card with an IFZ or similar conditional pseudo operation no longer produces an R error.

Dating of Binary Decks

The first (IDC) card of each subroutine of a binary deck now contains the date of creation in columns 17-24. This is punched in Hollerith in the format:

dd / mm / yy

III. 3200

CSIDISC

A revised version of the monitor is expected to be in operation in the next few weeks. No current specifications will be changed but extra facilities which will be detailed in the next Newsletter will be added. It is hoped that most of the minor deficiencies present in the current system will be removed.

DPP

Careful enquiries have elicited that little or no use is being made of the Data Processing Package which has been part of the 3200 software system for some time; for efficiency reasons this package will be removed from the next system release. Anyone actually using this package is requested to obtain the relevant binary decks from his local Branch.

IV. PUZZLE CORNER

Correct answers to the puzzle for last month were submitted by A.R. Brown, D.H. Colless, P.J. Moglia and G. Petru.

In general, the solutions required that the customs launch move in a straight line in any direction until its distance from the island is the same as the distance that the smuggler had travelled, and then the course taken would be a spiral such that the component of velocity away from the island was the same as the speed of the smuggler. This path must meet the smuggler before the customs launch has travelled in a 360° arc.

One solution, however, was very different and is included here verbatim:

> "If I may assume that both parties have adequate supplies of fuel, food and grog and that their vehicles are amphibious (a not unreasonable assumption), the Customs Officer heads off in any direction for a point around the globe diametrically opposite the island and waits there patiently".

It may also be observed that a logical extension of this last idea is for the Customs Officer to wait on the island for the smuggler to circle the globe, thereby returning to his lair. This is truly launching into the realms of fantasy!

This month's problem is a programming exercise. The problem is to write a compatible 3200/3600 program to read a card into 80 contiguous locations using an optimum set of declarations and instructions that will test for a completely blank card without using the transliteration features of the jobstack communication program.