I.   GENERAL

Publications Issued this Month

NL - Newsletter No. 36

LM - Library Accession List No. 25 - June, 1968.

Other Publications Available

I4   CSIR READTYPE. Buffered paper tape (Typetronic code) input. 3200 only.
Author: R. J. Rowlands, Division of Protein Chemistry, C.S.I.R.O., Melbourne.

Basic Fortran Courses

Melbourne - July 8th, 1968.

Seminars

The following seminars will be held during July in the Lecture Room of the
Division of Computing Research, Clunies Ross Street, Black Mountain, A.C.T.

Dr. J. Reinfelds, Assistant Professor, Computer Center, University of
Georgia, U.S.A. will give a series of six seminars.

Title: "Interactive Computing".

Time: 3.30 p.m.

Dates:
Monday	July 8th	Monday	July 15th
Tuesday	July 9th	Tuesday	July 16th
Wednesday	July 10th	Wednesday	July 17th

The following topics will be discussed:

A brief history of the development and a survey of the scope of the field of
interactive computing.

Basic definitions and two approaches to the application of interactive systems
to the problem area of numerical analysis; polyalgorithms and experimental applied
mathematics.

A description of the AMTRAN language as a working application of an interactive
system for numerical analysis.

Software problems introduced in system implementation.

Interactive hardware requirements and a description of recent developments in
terminal design.

Future trends of interactive computing systems.

Mr. T. Pearcey of the Division of Computing Research will give a seminar.

Title: "Computing Systems for Large-scale Information Handling".

Time: 2.00 p.m.

Date: Thursday, July 11th.

Increased Charges for Computer Time

It is timely to remind users of the new charges operative from July 1st, 1968. The new rates are $140 per hour for the 3600 and $50 per hour for the 3200.

New Equipment

Two new additions to the Canberra equipment are a modified Gestefax Picture Scanner and a Kennedy DS 370 digital incremental magnetic tape recorder. The picture scanner is being connected to the PDP-8 computer with an interface built by Dr. C. S. Wallace, Basser Computing Department, University of Sydney, so that a picture may be digitised and the result written on to magnetic tape.

No software is at present available for interpretation of the magnetic tape produced.

Staff News

Dr. J. Reinfelds, Assistant Professor, Computer Center, University of Georgia, U.S.A. is visiting the Canberra Centre of the Division for a couple of months. During his stay, he will be looking at the possibility of writing an AMTRAN (Automatic Mathematical Translation) compiler in Fortran. He will also be giving a series of six seminars in July on "Interactive Computing".

II.   3600

DAD System

The ability to imply the user's own charge code by default has been added to EQUIP and EXECUTE statements. In the statements *EQUIP,u = (c,i,edition) for drum documents and *EXECUTE,c,i,t the charge code,c, may be omitted (retaining the commas) and the charge code of the running job is assumed.

III.   3200

There is no 3200 news this month.

IV.   PUZZLE CORNER.

The puzzle for last month was correctly answered by P. Rutter and a worthwhile attempt which did not quite meet the conditions was submitted by M. Anderson.

The simplest method is to use the fact that

$$X^{\frac{1}{3}} = X^{\frac{1}{4}} \times X^{\frac{1}{16}} \times X^{\frac{1}{64}} \times \ \ldots\ldots\ldots\ldots\ldots$$

and obtain the powers of X with the square root function.

e.g.

```
      PROGRAM CUBE ROOT
      READ (60,100)X
  100 FORMAT(F10.4)
      C = 1.0 $ Z=X
      DO 1 I=1,50
      Z = SQRT(SQRT(Z))
    1 C = C*Z
      WRITE(61,200)X,C
  200 FORMAT(* THE CUBE ROOT OF*,F11.4,*IS*,F12.7)
      END
```

This program can easily be generalised to include negative numbers by using the SIGN function.

This month's problem is to write a program that will insert ones and zeros into a 7 by 7 array in the following pattern,

```
0000000
0001000
0001000
0111110
0001000
0001000
0000000
```

No IF-statements may be used and the insertion is to be done by using a single arithmetic replacement statement within nested do-loops with the right side being an expression in I and J, the subscripts of the array.