MEMORANDUM

TO: TX-0 Computer Users

SUBJECT: Subroutine Library for the TX-0 Computer

DATE: 1 October 1959

Subroutine Library for the TX-0 Computer

In order that all persons make effective use of both their own and machine time, it is advantageous that often-used subroutines be written only once, and filed at the TX-0 Computer for all users.

Submitting of Subroutines

Subroutines to be selected for filing should be submitted to 26-248, and written according to the subroutine format. The English tape should be submitted together with two copies of the Flexowriter printout of the tape.

Subroutine Format

All subroutines will be used in their English form compatible with Macro II or I. Macro II format is preferred, in that all addresses should be relative using no Floating Addresses (FLADS). If a number of floating addresses are used, then some series convention should be adopted, e.g. s01, s02, ..., s99; sxa, ..., sxz; etc., for the FLADS. In either case, any newly defined instructions, and a list of the FLADS used, should precede the subroutine printout.

The first page of the subroutine being submitted should contain a complete description of the routine's use, outlining the entering calling sequence, and any arithmetic limitations of the program.

Several calling sequences may be used, each of which are advantageous for specific applications.

As an example of the preferred format, the following subroutine prints the contents of AC (which are assumed to be in the range 0 to 7), and clears the AC. The subroutine is entered by writing prnctl.

```
            zz = .

define

            prnctl
            llr (tra .+2                | subroutine calling sequence
            tra zz
            terminate
```

```
|Begin Subroutine
        slr .+6
        add (add .+6
        sto .+2
        cla
        0
        pna
        0                       |end of subroutine flow
        char r0
        char r1
        ...
        char r7                 |end of subroutine
constants
        ...
```

All subroutines written in this manner should contain the symbol ZZ. In this manner no FLADS are used in the definition of subroutines. For longer subroutines, FLADS will be acceptable.

Subroutine Storage and Use

All subroutines accepted for use will be stored in 26-248 together with the printout and directions for use.

Signed Gordon Bell

Approved L Dennis

GB/dbh