SUMMARY OF THE INTERACTIVE BASIC FACILITY

ICL is developing in conjunction with North Staffordshire Polytechnic
a multi-access system supporting the BASIC language on the 2903 Educational
System. The minimum system supports 16 BASIC users simultaneously, they
will work from terminals connected to the 2903 via an ICL 7502 Modular
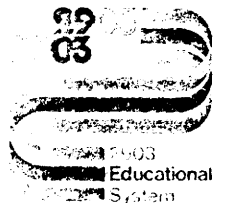Terminal Processor.

The BASIC system consists of:-

        input and output handler
        line by line syntax checker
        main and file store manager
        object code generator
        program execution manager
        set of execution time subroutines
        logging and accounting subsystem

all written in such a way that the code is shared by all the terminals.

The heart of the system is a compiler, not an interpreter, giving a great
advantage at execution time. There is a facility to save a BASIC program
in a partially compiled form, thus removing the need to completely recompile
for subsequent runs; this is becoming increasingly important as the use
of library programs is growing. It is possible to use the BASIC system in
batch mode.

BASIC System Facilities

The user of the interactive BASIC system will operate from a teletypewriter
or teletypewriter compatible terminal which is connected by a local (hard-
wired) or a remote (telegraph or telephone) line to the 7502. A mixture
of local and remote terminals is allowed. In addition the 7502 may be
local to or remote from the 2903.

When the user has established a connection he must identify himself to the system and supply his personal password before being allowed to continue. He can enter lines of BASIC by typing on the terminal or by feeding a previously punched paper tape into the tape reader attachment, or he can call up a previously saved BASIC program or part·program from file and add to it or edit it. He can list his program or parts of it, renumber it, append to it subroutines previously written and held on file, and edit it. When he is satisfied with it he can run it, to completion or until he wishes to suspend the run, and then edit it further, or save it on file.

The user's file store may hold a number of programs and data files. Access to these may be open to other users in various ways, or may be individually restricted at the owner's discretion. The system also includes one or more libraries of programs to which access may similarly be open or restricted.

Accounting and logging statistics are maintained by the system, and information such as the date a file was last used is recorded, to aid sensible management of the BASIC system.

BASIC Language

The version of the BASIC language for the system is that defined in the draft Standard for Minimal BASIC of the American National Standards Institute (ANSI), much extended in ways defined in the Specification for Standard BASIC of the National Computing Centre (NCC). Apart from the straightforward arithmetic facilities, the language includes powerful character string manipulation instructions, versatile data file handling operations, a set of matrix processing statements, and multi-line user defined functions.

The essentially simple form of the BASIC language has been maintained, to aid the beginner and the occasional programmer; the error messages and procedures have been designed to be simple and informative for the same reason. However, powerful and versatile features have been included to allow the more experienced programmer, and particularly the package writer, to produce concise and efficient programs with the minimum of difficulty.