Identification

PL/I Implementation Dependent Definitions
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Purpose

A number of items in the PL/I language are implementation
dependent. This section defines those items.

Implementation Dependent Items

The following items require implementation definitions.

1) The data character set will be the 128 character ASCII
   set, stored right adjusted in 9-bit bytes as defined in
   BC.2.01.
2) The internal representation of data in PL/I for the
   GE 645 is described in BP.2.01.
3) The defaults and maxima are:

Type	Defaults	Maximum
Float Binary	27 bits	63 bits
Float Decimal	8 digits	18 digits
Fixed Binary	17 bits	71 bits
Fixed Decimal	5 digits	21 digits
Bit String	___	$36*2**18$ bits
Character String	___	$4*2**18$ characters

4) The options-list of the ENVIRONMENT option is not yet
   specified.
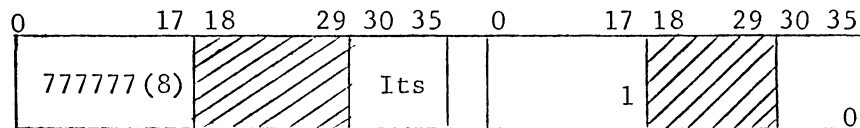5) The length of bit string assigned to v in UNSPEC (v) is:

Declared Type	Length
Fixed Binary (p)	$\begin{cases} 36 \text{ if } p \le 35 \\ 72 \text{ if } p > 35 \end{cases}$
Fixed Decimal (p)	TRUNC $(10*p/3)+ 1$
Float Binary (p)	$\begin{cases} 36 \text{ if } p \le 27 \\ 72 \text{ if } p > 27 \end{cases}$
Float Decimal (p)	$\begin{cases} 36 \text{ if } p \le 8 \\ 72 \text{ if } p > 8 \end{cases}$
Character (p)	$9*p$
Pointer	72
Bit (p)	p

6) The default LINESIZE is 136 characters and the default
   pagesize is 54 lines. This gives a one inch margin top
   and bottom assuming 11 inch forms and 6 lines per inch.
7) The maximum length of character string of ONLOC is 63
   characters.

8) The categories and code for ONCODE are:

  1-69 Math Library (See Bennett Goldberg (GE) for further information)
 70-120 I/O (See Dwight Pfenning (BTL) for further information)
150-170 Default ON CONDITIONS (see Dwight Pfenning (BTL) for further information)
200-201 Master Mode operation violation (see Dwight Pfenning (BTL) for further information)

9) The null pointer value is:

0 17	18 29	30 35	0 17	18 29	30 35
777777(8)	////	Its	1	////	0

The segment numbered 777777(8) is a dummy and if any attempt to access it is made a fault will occur which will be handled by the fault handler.

10) The permitted maximum exponent of a floating-point number (for OVERFLOW) is 127.

11) The permitted maximum fixed-point number for FIXED-OVERFLOW is $\pm (2^{**}71 - 1)$.

12) The permitted minimum exponent of a floating-point number (for UNDERFLOW) is -128.

13) The subscript range is limited only by the limits on fixed point arithmetic. However, an aggregate is restricted to a single segment.

14) The default size for area is 1024 words and the maximum is $2^{**}18$. Both figures include the allocation overhead.

15) The default area for allocations begins at <free_>|[free_].

16) The standard input file SYSIN and output file SYSPRINT are defined to be the standard Multics input streams "user_input" and output stream "user_output" respectively.

17) During the execution of an ON-unit, the ON-unit current upon entry to the statically encompassing block at the time the ON was executed is reestablished. No specification is given for this situation in the PL/I manual.

18) The quantity N (page 32 of the PL/I manual) defined to be the largest number in the implementation is 71 bits.

19) The quantity S (page 34 of the PL/I manual) defined to be the precision of the result of bit string to arithmetic conversion is 73 bits.