SCIENCE AND ENGINEERING RESEARCH COUNCIL
RUTHERFORD APPLETON LABORATORY

COMPUTING DIVISION

DISTRIBUTED INTERACTIVE COMPUTING NOTE 717

<div style="text-align:right">issued by
I D Benest</div>

APOLLO
TECHNICAL NOTE 10

Version 4.0 Release   10 November 1982

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1. PREFACE

Version 4.0 of the Apollo system is now running and a copy of the associated
release document issued by Apollo Computer Inc is kept in a ring rile on top of
the machine. This technical note summarises some of the important information in
that release document.

2. AEGIS ENHANCEMENTS

* Aegis now supports the 19" display and the performance enhancement option
  (PEB) which provides cache memory and floating point.
* Common library code has been moved to global address space providing faster
  process creation.
* Maximum number of directories increased from 400 to 1200.
* A Mailbox Manager provides local and cross network interprocess communication.
* Diagnostics for the PEB and touch pad are now available.
* A stand alone utility FBS will find bad spots on the Winchester.

3. SHELL ENHANCEMENTS

* if-then-else and eqs conditionals implemented.
* new shell commands:
EDFONT	-	font editor
DEBUG	-	language level debugger
DCALC	-	desk calculator
EM3270	-	3270 emulator
CSR	-	set shell command search rules
SIGP	-	enables a process to be stopped
PST	-	list processes.

4. DISPLAY MANAGER ENHANCEMENTS

* new commands: BGC   -   background colour on/off
                         INV   -   invert screen
                         SQ   -   about search
                         WDF   -   define default windows.

* <F6> deletes the character string following the cursor
* <F1>, <F7> and <F8> have been modified to handle long lines
* display manager supports window panes and frames

5. SYSTEM CALL ENHANCEMENTS

* graphic primitives of line drawing, bit block transfers and text manipulation
* PAD_$CREATE and PAD_$EDIT_WAIT added to PAD routines
* SIO_$INQUIRE enables serial I/O attributes to be set
* SMD_$ALLOC_HDM and SMD_$FREE_HDM allocates and frees hidden display memory
* SMD_$INQ_DISP_TYPE determines if the node has a 19" or 15" screen
* SMD_$INVERT inverts hidden display memory.
* SMD_$COLOUR sets subsequent lines to black or white
* touch pad input is now polled in SMD_$COND_EVENT_WAIT_U
* TONE_$TIME produces a tone in the speaker
* PBU_$WRITE_CSR and PBU_$READ_CSR calling sequences changed
* SMD_$WINDOW_LIMITS_T now declared integer (instead of pinteger)
* Software which calls PBU_$MAP, PBU_$UNMAP and PBU_$DEVICE_INTERRUPTING should be rebound with /LIB/PBU_INT_LIB.

6. FORTRAN ENHANCEMENTS

* Hexadecimal (Z) format available
* Programs using alternate returns should be re-compiled
* Files with up to 32767 lines will be compiled
* Improved floating point code generated

7. PASCAL ENHANCEMENTS

* Define statement allowed in a program as well as a module
* SIZEOF returns size of argument in bytes
* Default names for the procedure and data sections may be overridden
* Variables may now be explicitly assigned to named data sections.

8. ERRORS CORRECTED

* A number of errors have been corrected
* PROC2_$GET_INFO returns the CPU time in 4 microsecond units
* FORTRAN now handles comment lines greater than 80 characters
* Hollerith constants and in-line comments containing (,), or = are now correctly compiled
* No E or D is needed for the exponent in reading floating point numbers in FORTRAN
* PASCAL returns an error message for out-of-range constant subscripts
* String constants greater than 120 characters now accepted by PASCAL
* PASCAL programs using sets containing more than 32 elements now execute correctly.

9. KNOWN ERRORS

* A number of errors are known to exist
* S/@n// produces inconsistent results
* FOR loop containing a structure component as a control variable is not flagged as an error by PASCAL.