

**FOCAL
PARTY
LINE**

DIGITAL EQUIPMENT CORPORATION

Why is FOCAL so great?

- 1) Easy to learn. If you can type--hunt & peck even-- you can get useful information out of a Family of Eight computer with FOCAL with less than two minutes of formal instruction.
- 2) Easy to use. FOCAL is forgiving. If you make a logic or Syntax error, FOCAL will tell you where your error is. If you cannot find your error, FOCAL will find it for you and then halt. ("GO?" feature).
- 3) Easy to correct. If you make a typing error, FOCAL does the typing for you. You only have to hit the character on the keyboard you want to correct. FOCAL echos the character to you and goes and looks for it. ("MODIFY" feature).
- 4) Powerful. FOCAL evaluates literally any mathematical expression by simply saying "TYPE" followed by the expression. FOCAL knows all the common math operators (square root, \log_{10} , \log_e , sin, cos, etc.). If the user needs a new function that FOCAL does not know he writes a machine language subroutine (or we will write it if it has a wide application) and calls the function FNEW (X) and FOCAL just learned the new function. FOCAL has six digits accuracy; the FOURWORD overlay gives 10 digits accuracy. FOCAL can handle super big numbers $+0.000000X10 \uparrow 616$ and super little numbers $-0.999999 X 10 \downarrow 616$.

FOCAL has A/D capability
FOCAL can drive a CRT
FOCAL can drive a CALCOMP plotter
FOCAL CAN DRIVE A LINE PRINTER

- 5) Flexible. If you want TTY output, FOCAL has it. If you want analog output FOCAL has it. If you want line printer output, FOCAL has it. If you want something FOCAL does not have, FOCAL learns easily.
- 6) Expandable
4K handles 1 user
8K (QUAD) handles up to 4 users
8K + DF32 (LIBRA) handles up to 7 users
- 7) Super FOCAL. 8K FOCAL allows one user to work in 8K and write very lengthy programs. LIBRA allows CALL statements to be imbedded in the main FOCAL programs and call program segments from the disk and write super long Super FOCAL programs. 8K FOCAL and LIBRA make an 8K PDP-8 and DF-32 look like a super computer. Remember--dynamite comes in small packages; super computer power comes on a PDP-8/L running FOCAL.

WHY IS FOCAL BETTER THAN FORTRAN?

- 1) Anyone can use FOCAL--PHD's, engineers, college kids, high school kids, grammar school kids and little old ladies. How many people (engineers) do not use the computing power of the computer because FORTRAN is too hard to learn?
- 2) FOCAL is easier to use than FORTRAN-- no output statements, no format statements, no integer

and floating point arithmetic, no stringent punctuation requirements, no recompilation after each error, no repunching of cards; FOCAL's TYPE statement handles output and formatting; FOCAL looks at the integer and floating point arithmetic for you, FOCAL has very few punctuation requirements, FOCAL is an interpreter-- no compilation required, and FOCAL's "MODIFY" command lets you edit your program on line.

WHY IS FOCAL BETTER THAN BASIC?

- 1) FOCAL runs on an \$8,500. PDP-8/L. BASIC requires a \$16,650. PDP-8/L--our nearest competitor requires \$21,800 worth of hardware to run BASIC-- and that is for one terminal. \$16,400 buys you two FOCAL terminals; \$20,400 buys you four FOCAL terminals.
- 2) FOCAL is more powerful than BASIC-- ever try writing a plotting routine in BASIC?
- 3) FOCAL is more flexible than BASIC-- ever try driving a CRT with BASIC? Ever try driving a CALCOMP plotter with BASIC? Ever try driving a line printer with BASIC?
- 4) FOCAL is re-entrant and recursive. NOTE TWO BIG BUZZ WORDS-- RE-ENTRANT and RECURSIVE

SUMMARY

Easy to learn
Easy to use
Easy to correct
Powerful
Flexible
Expandable
Makes a small computer look
like a big one

FOCAL is better than FORTRAN

because:

FOCAL is: Easier to learn
Easier to use
No formatting required
No recompilation required
No cards required

FOCAL is better than BASIC because:

FOCAL: runs on low cost hardware
is more powerful
is more flexible
is re-entrant and
recursive

Does FOCAL have any limitations?

Not that we are aware of!!
Everyone using FOCAL thinks
it is great. FOCAL is DEC's
most requested piece of software.

FOCAL CONFIGURATIONS FOR PDP-8/L

<u>USERS</u>	<u>LANGUAGES</u>	<u>EQUIPMENT</u>	<u>COST</u>	<u>MAINTENANCE</u>
1	BASIC FOCAL FORTRAN PAL III MACRO 8	PDP-8/LJ with ASR-33 teletype	\$8,500.	\$100.
1	FOCAL (8K) FORTRAN (8K) PAL III MACRO 8	BA08 Peripheral expansion unit MC8/LA Memory extension control & 4096 words of memory	1,500. 4,000.	5. 20.
2 or 1 1 1	FOCAL FORTRAN (8K) PAL III MACRO-8	DC02A multiple tele- type control (up to 4 lines) DC02D module set for each teletype ASR-33 Teletype	400. 500. 1,500.	4. 5. 30.
3 OR 1 1 1	FOCAL FORTRAN (8K) PAL III MACRO-8	DC02D Module Set ASR-33 Teletype	500. 1,500.	5. 30.
4 OR 1 1 1	FOCAL FORTRAN (8K) PAL III MACRO-8	DC02D Module Set ASR-33 Teletype	500. 1,500.	5. 30.

SUMMARY COST

<u>USERS</u>	<u>COST</u>	<u>MONTHLY MAINTENANCE</u>
1	\$8,500.	\$100.
2	16,400.	164.
3	18,400.	199.
4	20,400.	234.

PDP-8/I

<u>USERS</u>	<u>LANGUAGES</u>	<u>EQUIPMENT</u>	<u>COST</u>	<u>MAINTENANCE</u>
1	BASIC (CINET)	PDP-8/ID	\$13,450.	\$100.
	FOCAL	High Speed Paper		
	FORTRAN	Tape Reader (Optional 2,400.		10.
	PAL III			
	MACRO 8		<u>\$13,450.</u>	
1	FOCAL (8K)	MCS/I Memory	4,000.	20.
	FORTRAN (8K)	Extension (4096 word)		
	PAL III			
	MACRO-8			
2	FOCAL	(1) PT08B Teletype	800.	3.
OR		Control		
1	BASIC (CINET)	1 ASR-33 Teletype	1,500.	30.
1	FORTRAN (8K)			
1	PAL III			
1	MACRO-8		<u>\$19,750.</u>	
3	FOCAL	(1) PT08B	800.	3.
OR		(1) ASR-33	1,500.	30.
1	BASIC (CINET)			
1	FORTRAN (8K)			
1	PAL III			
1	MACRO-8		<u>\$22,050.</u>	
4	FOCAL	(1) PT08B	800.	3.
OR		(1) ASR-33	1,500.	30.
1	BASIC (CINET)			
1	FORTRAN (8K)			
1	PAL III			
1	MACRO-8		<u>\$24,350.</u>	
5	FOCAL	DF32	6,000.	20.
		(1) PT08B	800.	3.
		(1) ASR-33	1,500.	30.
OR				
1	BASIC (BROOKLYN POLYTECHNIC)			
1	FORTRAN (8K)			
1	PAL III			
1	MACRO-8		<u>\$32,650.</u>	
6	FOCAL	(1) PT08B	800.	3.
OR		(1) ASR-33	<u>1,500.</u>	30.
1	BASIC (BPT)		<u>\$34,950.</u>	
1	FORTRAN (8K)			
1	PAL III			
1	MACRO-8			

<u>USER</u>	<u>LANGUAGES</u>	<u>EQUIPMENT</u>	<u>COST</u>	<u>MAINTENANCE</u>
7	FOCAL	(1) PT08B	800.	3.
OR		(1) ASR-33	1,500.	30.
1	BASIC (BPT)			
1	FORTRAN (8K)			
1	PAL III			
1	MACRO-8			

			\$37,250.	

SUMMARY OF COSTS

<u>USERS</u>	<u>COST</u>	<u>MONTHLY MAINTENANCE</u>
1	\$13,450.	\$100.
2	19,750.	153.
3	22,050.	186.
4	24,350.	219.
5	32,650.	272.
6	34,950.	305.
7	37,250.	335.