



# University of Kent at Canterbury Computing Laboratory

## EMAS 2900 Information Card

1st Edition

December 1979

N.B. The information in this card relates specifically to the implementation of EMAS 2900 on the UKC 2960. However, most of it also applies to other EMAS 2900 installations.

### DESCRIPTION OF STANDARD COMMANDS

#### NOTES

- underlined parameters are obligatory, others optional.
- parameters are separated by commas.
- the comma following an omitted parameter must be given if parameters are given thereafter.
- lists consist of one or more items separated by commas; e.g. *ownfilelist* is a list of files belonging to self.
- / is used to separate alternatives.
- commonly used parameters are described in the following table, others with the individual commands:

<i>file</i>	any file.
<i>ownfile</i>	<i>file</i> belonging to self.
<i>objectfile</i>	<i>file</i> of type object (compiled).
<i>outdev</i>	code for output device: .LP for the line printer, .OUT for current primary output. Default .OUT unless otherwise stated.
<i>out</i>	<i>outdev</i> or <i>ownfile</i> to be used for command output. Default .OUT.
<i>source</i>	input for compilers — can be one <i>file</i> , or more than one concatenated by +; for example SPECS+SRCE3+ROUTS_A
<i>clist</i>	listing produced by compiler — default is <i>ownfile</i> T#LIST. Alternatives <i>ownfile</i> , <i>outdev</i> or .NULL.
<i>chan</i>	I/O channel number, in the range 1-80.

## LIST OF COMMANDS

### ACCEPT (*file,newname*)

Accept *file* OFFERed by another user; optionally rename it to *newname*.

### ALERT (*out*)

List information on System faults, new facilities, etc.

### ALGOL (*source,object/.NULL,clist,outdev*)

Compile ALGOL 60 program from file *source* into file *object* (or *.NULL*), with listing in *clist*, and optionally produce an extra list of fault messages on *outdev*.

### ALIAS (*command,newname*)

Give *command* the alias *newname*. If *newname* is omitted, remove all existing aliases for *command*.

### ANALYSE (*file,option,out*)

Give information about *file* according to *option*, which can be null, \*, a letter or a combination of letters; letters inappropriate to type of *file* are ignored:

null      *file* type and length, and date last altered. This information is always given.

\*          all available information relevant to type of *file*.

A          (directory) aliases and aliased commands.

E          (object or directory) entry point names and, if directory file, associated inserted files.

F          (directory) files inserted.

H          (object) history of file, e.g. source file used and components of linked files.

P          (any type) access permissions.

R          (object) ext. entry pts and data areas referenced.

S          (object and directory) structure.

### ARCHIVE (*ownfilelist*)

Mark file(s) for archiving.

### BASIC

Enter BASIC — K.

### BCPL (*source,object/.NULL,clist,outdev*)

Compile BCPL program from file *source* into file *object* (or *.NULL*), with listing in *clist*, and optionally produce an extra list of fault messages on *outdev*.

### CHERISH (*ownfilelist*)

Mark file(s) for backing-up and automatic archiving after a period of non-use (3-4 weeks on UKC 2960).

### CLEAR (*chanlist*)

Clear channel definition(s) set up by DEFINE. All definitions are cleared if no parameter is given.

### CONCAT

Read from *.IN*, one to a line, the names of files to be concatenated; list terminates with *.END*. Followed on the next line by the name of the output file.

### CONVERT (*file,ownfile*)

Convert *file*, a data file, into *ownfile*, a character file.

### COPY (*file,ownfile*)

Copy *file* into *ownfile*. This is the standard method for adding a member to a pd file or copying a member out, i.e. *file* and/or *ownfile* may be a member of an existing pd file.

### CPULIMIT (*time/?*)

Set appropriate time limit for each subsequent command to *time* (mins,secs). At least one of mins and secs must be specified. The precise time allowed depends on the particular instructions executed. CPULIMIT (?) gives the current setting.

### DEFINE (*chan,file/outdev/.IN/.TEMP/.NULL,size,format*)

or DEFINE (?)

Set up file definition: associate *chan* with *file* or an output device or *.IN* or *.TEMP* or *.NULL*; *file* need not currently exist if to be used for output.

*size*      (output files only) integer in range 1-1023 (Kbytes) giving maximum allowed size of *file* for duration of DEFINE.  
Default 255.

*format* (output files only) of the form C or rn:  
C character file to be written (FORTRAN only).  
r record format, F or V. Default V.  
n logical record length in bytes. With V, the maximum number of data bytes available per record; with F, the actual number.

A pd file member may be specified for input.

An output file can be specified as *file*-MOD if it currently exists; the output is appended to the existing contents.

DEFINE (?) gives current file definitions.

DELIVER (*nameandaddress*/?)

Set delivery information to *nameandaddress*, max. 31 chars; spaces are ignored.

DELIVER (?) prints current delivery information.

DESTROY (*ownfilelist*)

Destroy file(s) or member(s) of pd file(s).

DETACH (*jobfile*,*cpuseconds*)

Detach *jobfile* into the background job queue.

*jobfile* character file (or files concatenated with + operator) containing commands and data.

*cpuseconds* time limit in seconds for the whole job, default currently 120 seconds.

DISCARD (*controlfile*)

Delete files from the archive store. The names and archive dates of the files are read from *controlfile* or (by default) from .IN. If .IN is used, the list must be terminated with .END.

DISCONNECT (*filelist*/.ALL)

Disconnect file(s) from virtual memory and copy to disc store. .ALL disconnects all but essential process files.

EM (*file*)

Invoke the VME/K and Unix compatible Editor to edit *file*.

FILES (*mask*,*group*,*out*)

List the names of the ownfiles from the specified *group* which also fit the *mask*.

*mask* up to three fields, where a field is either a set of explicit characters or the symbol \* (representing any set of characters).

*group* A ARCHIVEd files

C CHERISHed disc store files

E causes extra information to be printed

H HAZARDed disc store files

I disc store files (the default)

P print information about file index

S specifies single spacing of file names

Any combination of these letter codes may be given

FORTE (*source*,*object*/.NULL,*clist*)

Compile FORTRAN IV program from file *source* into file *object* (or .NULL) with listing in *clist*.

HAZARD (*ownfilelist*)

Un-CHERISH: file(s) will not be backed up and may be destroyed if unused for some time (3-4 weeks on UKC 2960).

HELP (*keyword*,*out*)

Give information about Subsystem facilities. *keyword* can be: omitted for general information, name of command or subject, for information about that command or subject, e.g. HELP (RENAME); or .ALL for complete HELP information.

IMP (*source*,*object*/.NULL,*clist*,*outdev*)

Compile IMP program from file *source* into file *object* (or .NULL), with listing in *clist*, and optionally produce an extra list of fault messages on *outdev*.

INSERT (*objectfilelist*)

Put information about object file(s) into the active directory (see OPTION).

JOBBER (*file*,*option*)

Submit a job to be run in the Jobber

*file* file containing Jobber commands

*option*    S   short Jobber run (the default)  
             M   medium Jobber run  
             L   long Jobber run

See notice board opposite Reception for *option* details.

LINK

Read from .IN, one to a line, names of object files to be linked.

List terminated with .END. Followed by name of output file.

LIST (*file,outdev,copies,forms,option*)

List character file or data file on *outdev*.

*copies*    default 1, max 15.

*forms*    no. in range 0-255. Specifies special forms for output  
(details from Advisory Service).

*option*    FE to specify that file contains format effectors.

Files may be concatenated using the + operator,

e.g. A+HOLD\_V2+BC.

LK (*file*)

Invoke EM editor to examine but not alter *file*. Default for *file* is  
T#LIST.

MAN (*subject,out*)

Give information about local facilities. MAN with no parameters  
gives further details.

MESSAGES (OFF/ON)

Inhibit or re-enable output of messages from operator, System  
processes or other users (see TELL).

METER

Print date, time and, for this session, cpu time used, connect time  
and page turns.

NEWDIRECTORY (*newownfile,num1,num2*)

Create a new, empty, directory file

*num1*    max no. of entry names and aliases to be held; default  
160.

*num2*    plist size: about 5x*num1*; default 856.

NEWPDFILE (*newownfile*)

Create a new, empty, partitioned file.

NEWSMFILE (*newownfile,size*)

Create *newownfile* of *size* bytes for use for direct mapping.

OBEY (*file,out*)

Obey *file* containing sequence of commands and data, optionally  
putting output in *out*.

OFFER (*ownfile,user*)

Offer *ownfile* to another user. If *user* is omitted then revoke  
outstanding offer on *ownfile*.

OPTION (*optionlist/?*)

Set option(s) for own process. Takes effect immediately and  
remains in effect until changed via OPTION.

*optionlist* consists of one or more of the following (settings for a  
new process on UKC 2960 are marked \*):

- ACTIVEDIR=*ownfile*    directory file to be modified by INSERT  
and REMOVE, and examined before  
the SEARCHDIR files (see below)  
when seeking an entry point not  
currently loaded. Default *ownfile*
- \*    SS#DIR.
- SEARCHDIR *file*    directory file to be inserted at the head  
of the list of directory files searched  
during the loading process.
- REMOVEDIR=*file*    directory file to be removed from the  
list of directory files searched during the  
loading process.
- \*    BRACKETS    command parameters to be enclosed in  
brackets.
- NOBRACKETS    command parameters to be separated  
from the command name by a space and  
terminated with newline.
- \*    BLANKLINES    blanklines intended for output on the  
interactive terminal are not suppressed.

NOBLANKLINES	blanklines intended for output on the interactive terminal are suppressed.
* NORECALL	do not store terminal I/O.
TEMPRECALL	store terminal I/O for use by RCL later in current session.
PERMRECALL	store terminal I/O for use by RCL.
ITWIDTH= <i>n</i>	set maximum width (in characters) of output from FILES and ANALYSE. Default 72.
* FSTARTFILE= <i>file</i>	<i>file</i> to be executed by OBEY on foreground process start-up.
* NOFSTARTFILE	no file is OBEYed on foreground process start-up.
BSTARTFILE= <i>file</i>	<i>file</i> to be executed by OBEY on background process start-up.
* NOBSTARTFILE	no file is OBEYed on background process start-up.
INITPARMS	record current setting of PARM and automatically select this value at start of every session.
ARRAYDIAG= <i>n</i>	the values of the first <i>n</i> elements of each array involved in diagnostics are printed. Default 10.
* ITINSIZE= <i>n</i>	set the buffer size (in Kbytes) for interactive terminal input.
ITOUTSIZE= <i>n</i>	set the buffer size (in Kbytes) for interactive terminal output.
USERSTACKSIZE= <i>n</i>	set the user stack size (in Kbytes).
AUXSTACKSIZE= <i>n</i>	set the aux stack size (in Kbytes).
INITWORKSIZE= <i>n</i>	set the initial size of any workfile used by the Subsystem (in Kbytes).
NOECHO	do not echo commands or data during OBEY.
* PARTECHO	echo commands but not data during OBEY.
FULLECHO	echo commands and data during OBEY.
CFAULTS= <i>file</i>	specify default for <i>outdev</i> parameter to ALGOL, BCPL and IMP commands. (i.e. compiler fault messages).

OPTION (?) gives list of options currently in effect.

PARM (*parmlist*?)

Set compile time parameter(s). Remains in effect until next call or log off. PARM with no parameter resets the default options. Consult the language manuals for details. PARM (?) gives a list of the current compile time options. Default options are R8, QUOTES.

PASSWORD (*foreground,background*)

Set *foreground* and/or *background* passwords; each must be four printable characters other than comma. At least one must be given.

PERMIT (*ownfile,ALL,user,permission*)

Set access permission for *ownfile*. If *ALL* is used *permission* applies to all user's ownfiles.

*user* can be a six-character username, or null (meaning everybody else), or can include up to five ? characters to specify a group of users.

*permission* R Read and execute (default)

W Write

A All modes

N No access

C Cancel existing individual or group access

RCL

Call EM Editor to look at stored terminal I/O.

REMOVE (*objectfilelist*)

Remove information about file(s) from the active directory (see OPTION).

RENAME (*ownfile,newname*)

Change name of *ownfile* to *newname*.



RESTORE (*ownfile*,*date*)

Transfer *ownfile* from archive store to disc store. *date*, the archiving date of *ownfile*, has format dd/mm/yy; if it is omitted, most recently archived copy of *ownfile* is restored.

RUN (*objectfile*)

Run program which has been compiled into *objectfile*.

SEND (*ownfile*,*outdev*)

List and destroy *ownfile* (default T# LIST) on *outdev* (default .LP). *outdev* cannot be .OUT.

STOP

Call METER and log out.

SUGGESTION

Send a suggestion about EMAS 2900 to the System Manager. The user's name and address and text of suggestion are prompted for. Text is terminated with newline \* newline.

TELL (*user*)

Send message to *user*, immediately if he is logged on or at his next log-on. Message is input via .IN, and is terminated with newline \* newline.

TIDYDIR (*file*,*percentage*)

Remove redundant entries from the *file* directory file, and make it *percentage* percent full (Default is 70%).

USERS

Print number of active users.

## PARTITIONED FILES

Pdfiles may contain any number of individual members. A member is referenced as *pdfile member*, e.g. HOLD\_A, HOLD\_MEMB2, PROJECT\_TESTDATA. Members are added to the pdfile using COPY, LK, RCL or EM, renamed using RENAME and removed using DESTROY. They may be written to only by COPY, LK, RCL or EM but can be used as input files in the following commands: ALGOL, ANALYSE, CONCAT, COPY, DEFINE, DETACH, EM, FORTE, IMP, INSERT, LINK, LIST, LK, OBEY, REMOVE, RENAME, RUN.

## SCIENTIFIC JOBBER COMMANDS

//JOB (*user*, T=*time*, L=*lines*)

Start new job, for max. T secs and L lines.

//ENDJOB

Terminate a job.

//ALGOL (*source*)

Compile ALGOL program from following lines or *source*.

//FORTRAN (*source*)

Compile FORTRAN program from following lines or *source*.

//RUN

Run compiled program.

//DFF (*chan*,*file*)

Assign data file to channel; if *file* is \* then data follows // DFF statement. (input files only).

## NOTES

## DEVICE CODES CURRENTLY DEFINED

.IN current primary input — for foreground session normally the interactive terminal.  
.OUT current primary output — for foreground session normally the interactive terminal.  
.LP main line printer.  
.LPCL line printer, Computing Lab Console Room.  
.LPCLT line printer, Computing Lab Teaching Room.  
.LPSS line printer, Social Sciences.  
.LPEL line printer, Electronics.  
.GP main graph plotter.  
.PP main paper tape punch.  
.BPP main binary paper tape punch.  
.M66J3J6 J3 and J6 input to ULCC CDC 6000 computers and METRONET input.  
.M66J9J12 J9, J12 and J15 input to ULCC 6000 computers  
.M76J3J6 J3 and J6 input to ULCC CDC 7600  
.M76J9J12 J9, J12 and J15 input to ULCC 7600

## CONSOLE INTERRUPTS

INT:A abort current command.  
INT:C abort current command and ignore any input typed.  
INT:Q abort current command and give diagnostics.  
INT:T print no. of users, and time and page turns used by current command, without affecting command.

## CONSOLE CONTROL

The following control characters have special effects when typed on interactive terminals:

CAN (Ctrl+X) cancel the current line  
DC2 (Ctrl+R) repeat the current input line, removing deleted characters  
DEL (Rubout) cancel previous character  
DLE (Ctrl+P) treat next character typed as binary  
EM (Ctrl+Y) terminate input  
ESC escape to INT: (see CONSOLE INTERRUPTS)  
HT (Ctrl+I) tab to next tab position; see T (below)  
SOH (Ctrl+A) enter SET mode — SET [ printed

The reply to SET [ is a command letter followed optionally by a space and one or more parameters, or CR to terminate the SET, or a space then another command letter (except after T). The command letters are:

C Replace the current CANCEL character with the parameter (default CAN).  
D Replace the current DELETE character with the parameter (default DEL).  
G Enter GRAPH mode. No parameter. See also U.  
H Set PAGE HEIGHT to the parameter x. After x lines of output, no further I/O is allowed until DC1 (Ctrl+Q) is typed. The default (or x=0) is no paging.  
I Replace the current INT character with the parameter (default ESC).  
L Enter LOWER mode. No parameter. UPPER mode (see U) is the default.  
P Set number of PADS required to the value of the parameter.  
R Replace the current RETURN character with the parameter (default CR).  
T Set TAB vector. Up to seven parameters may be given separated by spaces or commas. A \* instead of a number terminates the list and sets remaining tabs to the LINE WIDTH (see W).  
Default: 6, 9, 12, 15, 18, 40, 80.  
U Set UPPER mode, which is the default (see L). No parameter. Also terminates GRAPH mode.  
V Enter VIDEO mode. No parameter.  
W Set LINE WIDTH, min 15, max 160 (default 72).  
EOT (Ctrl+D) Send EOT — logs off terminal immediately.

# EMAS INTERNAL CHARACTER CODE

0	NUL	32	SPACE	64	@	96	`
1	SOH	33	!	65	A	97	a
2	STX	34	"	66	B	98	b
3	EXT	35	#(£)	67	C	99	c
4	EOT	36	\$	68	D	100	d
5	ENQ	37	%	69	E	101	e
6	ACK	38	&	70	F	102	f
7	BEL	39	'	71	G	103	g
8	BS	40	(	72	H	104	h
9	HT	41	)	73	I	105	i
10	LF(NL)	42	*	74	J	106	j
11	VT	43	+	75	K	107	k
12	FF	44	,	76	L	108	l
13	CR	45	-	77	M	109	m
14	SO	46	.	78	N	110	n
15	SI	47	/	79	O	111	o
16	DLE	48	0	80	P	112	p
17	DC1	49	1	81	Q	113	q
18	DC2	50	2	82	R	114	r
19	DC3	51	3	83	S	115	s
20	DC4	52	4	84	T	116	t
21	NAK	53	5	85	U	117	u
22	SYN	54	6	86	V	118	v
23	ETB	55	7	87	W	119	w
24	CAN	56	8	88	X	120	x
25	EM	57	9	89	Y	121	y
26	SUB	58	:	90	Z	122	z
27	ESC	59	;	91	[	123	{
28	FS	60	<	92	\	124	
29	GS	61	=	93	]	125	}
30	RS	62	>	94	^	126	~
31	US	63	?	95	_	127	DEL

## USEFUL TELEPHONE NUMBERS (STD CODE 0227)

Computer State	66822 ext. 626
Computer Room/	66822 ext. 626
Operations Supervisor/	0900 - 1700 hrs.
Job Reception	
Requests for job numbers	Computing Lab Reception (66822 ext. 626)
UKC documentation	66822 ext. 7591 or 626

## ADVISORY SERVICE

The duty programmer may be consulted on weekdays at the following times:

0915 - 1215 (except Monday)  
1345 - 1600 (except Wednesday)

## FURTHER INFORMATION

See EMAS 2900 Users Guide, available from Dillons Bookshop.