

# Output Devices

## Output Devices and Computers

Table I: Proof-Quality Devices

	Amdahl (MTS)	Apollo	CDC Cyber	DEC 10	DEC 20	DG MV 8000	Ether- net	HP 1000	HP 3000	HP 9000	IBM (MVS)	IBM (VM)	IBM PC	PERQ	Prime	Siemens (BS2000)	Sun	TI PC	VAX (Unix)	VAX (VMS)	
C Itoh																					LSU
Canon											GMD			GMD		GMD				Canon	
DEC LN01																				UWash	LSU
DEC Ltr Ptr 100					OSU <sup>d</sup>																
DEC VT125																					INFN
Diablo									Text						OSU <sup>P</sup>						
Epson								JDJW					A-W						TAMU		
Facit 4542																					INFN
Fla Data					MR													Textset			
GE 3000		COS																			
HP 2680							Stnfd		Text												
HP 2688A										HP; CaTch											
IBM 3800; 4250;Sherpa												SLAC									
Imagen	UBC	OCLC		Stnfd; Vndblt	SRI; Cimbia		Imagen					SLAC	OCLC <sup>†</sup>				Sun		UCIrv	K&S <sup>†</sup>	
NDK 7700												IAM									
Printronix																			TAMU		
QMS Lasgrfx	Textset	ScnLsr; Textset		Textset	Textset	TAMU					Textset	Textset		GMD	TAMU		Textset		Textset; UWash	TAMU	
Qume									Text												
screen prevue		Yale; Textset									GMD			GMD		GMD	Textset				AdId
Symbolics					UWash															UWash	Calma
Talaris				Talrs <sup>†</sup>	Talrs <sup>†</sup>						Talrs <sup>†</sup>									Talrs <sup>†</sup>	Talrs <sup>†</sup>
Tektronix 4014											UMilan										AdId; INFN
TI 855																		TAMU			
Varian					AMS																SciAp
Versatec			UKöln	GATch; Vndblt	UWash						UMilan	Wzmn			Lvmr					UWash	K&S <sup>†</sup>
Xerox Dover					CMU		Stnfd													Stnfd	
Xerox 2700			Bochum																		
Xerox 2700II					OSU <sup>d</sup>																
Xerox 9700	UMich; Textset	COS		UDeI								UDeI					Textset				ACC

**Notes:**

\* Still running T<sub>E</sub>X80

† Graphics supported

‡ Computer used only to support output device,  
not to run T<sub>E</sub>X at this installation.

	Amdahl (MTS)	Amdahl (MVS)	Apollo	CDC Cyber	DEC20	HP3000	HP9000	IBM (MVS)	IBM (VM)	Sun	Univac 1100	VAX (Unix)	VAX (VMS)
Agfa P400									IAM				
Alphatype CRS					AMS								
APS-5/Micro-5	Textset	WashStU	COS; Textset		Textset	Textset	HP	Textset	Textset	Textset		Textset	Intergraph <sup>†</sup> ; Textset
Compugraphic 8400						USheffield							K&S <sup>†</sup>
Compugraphic 8600		WashStU		RECAU*							UWis*		
CRTronic													Eire
Harris 7500												SARA	
Linotron 202					Adapt								

Most of the interfaces listed in these charts are not on the standard distribution tapes. Some are considered proprietary. Information regarding these interfaces should be obtained directly from the sites listed.

Output device data is being maintained by Rilla Thedford. Anyone desiring more information or relaying new information can send it to her at the address given on the reverse of the title page or via the Arpanet:

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The codes used in the charts are interpreted below, with a person's name given for a site when that information could be obtained and verified. If a contact's name appears in the current TUG membership list, no further information beyond a phone number is given. If the contact is not a current TUG member, the most recent address, and its source, are shown.

**ACC** (Advanced Computer Communications): Diane Cast, 720 Santa Barbara St., Santa Barbara, CA 93101, 805-963-9431 (DECUS, May '85)

**Adapt** (Adapt, Inc): Marc Berkowitz, 415-393-9500

**Adld** (Adelaide University, Australia): Andrew Trevorrow, (08) 228 5984

**AMS** (American Math Society): Ron Whitney, 401-272-9500

**A-W** (Addison-Wesley): 617-944-3700, ext. 2677

**Bochum** (Ruhr Universität Bochum): Norbert Schwarz, 49 234 700-4014

**Calma:**

**CaTch** (Cal Tech): Glen Gribble, 818-356-6988

**Canon** (Tokyo): Masaaki Nagashima, (03)758-2111

**Clmbia** (Columbia): Frank da Cruz, 212-280-5126

**CMU** (Carnegie-Mellon University): Howard Gayle, 412-578-3042

**COS** (COS Information, Montreal): Kevin Small, 514-738-2191

**Eire** (Bord Fáilte - Irish Tourist Board): James Cumiskey, Dublin 353-1-765871, ext. 1275

**GATech** (G A Technologies): Phil Andrews, 619-455-4583

**GMD** (Gesellschaft der Math und Datenfabrik, Bonn, Germany): Dr. Wolfgang Appelt

**HP** (Hewlett-Packard): Stuart Beatty, 303-226-3800, ext. 2067

**IAM** (Institut für Angewandte Math, Univ of Bonn, Germany): Bernd Schulze, 0228-733427

**Imagen**: Dan Curtis, 408-986-9400

**INFN** (INFN/CNAF, Bologna, Italy):

Maria Luisa Luvisetto, 051-307572

**Intgrph** (Intergraph): Mike Cunningham, 205-772-2000

**JDJW** (JDJ Wordware): John D. Johnson, 415-965-3245

**K&S** (Kellerman & Smith): Barry Smith, 503-222-4234

**LSU** (Louisiana State University): Neal Stoltzfus, 504-388-1570

**Lvmr** (Lawrence Livermore Lab):

**MR** (Math Reviews): Dan Latterner, 313-996-5266

**OCLC**: Tom Hickey, 616-764-6075

**OSU** (Ohio State University): *DEC 20*: John Gourlay, 614-422-6653; *Prime*: John Crawford, 614-422-1741

**RECAU** (Aarhus University, Regional Computer Center): Benedict Løfstedt, 06-128355

**SARA** (Stichting Acad Rechenzentrum Amsterdam):

Han Noot, Stichting Math Centrum, Tweede Boerhaavestraat 49, 1091 AL Amsterdam (TUGboat 5#1)

**ScnLsr** (Scan Laser, England): John Escott

**SciAp** (Science Applications): L. E. Fields, 619-458-2616

**SLAC**: Alan Spragens, 415-854-3300, ext. 2849

**SRI**:

**Stnfd** (Stanford):

**Sun** (Sun, Inc):

**TAMU** (Texas A&M): Bart Childs, 415-965-3245

**Text&I**: Lance Carnes, 415-388-8853

**Textset** (Ann Arbor, Mich.): Bruce Baker, 313-996-3566

**Talrs** (Talaris): Sonny Burkett, 619-587-0787

**UBC** (Univ of British Columbia): Afton Cayford, 604-228-3045

**UCIrv** (Univ of California, Irvine):

**UDel** (Univ of Delaware): Daniel Grim, 302-451-1990

**UKöln** (Univ of Köln, Germany): Jochen Roderburg, 0221-/478-5372

**UMich** (Univ of Michigan): Hal Varian, 313-764-2364

**UMilan** (Università Degli Studi Milan, Italy):

Tektronix: Dario Lucarella, 02/23.62.441 (329);

Versatec: Giovanni Canzii, 02/23.52.93

**USheffield** (Univ of Sheffield, England): Ewart North, (0742)-78555, ext. 4307

**UWash** (Univ of Washington): Richard Furuta, 206-543-7798

**UWis** (Univ of Wisconsin): William Kelly, 608-262-9501

**Vndblt** (Vanderbilt University): H. Denson Burnum,  
615-322-2357  
**WashStU** (Washington State University): Dean Guenther,  
509-335-0411  
**Wzmn** (Weizmann Institute, Rehovot, Israel):  
Malka Cymbalista, 08-482443  
**Yale**: Bill Gropp, 203-436-3761

### Index to Sample Output from Various Devices

Camera copy for the following items in this issue of TUGboat was prepared on the devices indicated, and can be taken as representative of the output produced by those devices. Some items (noted below) were received as copy larger than 100%; these were reduced photographically using the PMT process. The bulk of this issue, as usual, has been prepared (all with T<sub>E</sub>X82) on the DEC 2060 and Alphatype CRS at the American Mathematical Society.

- Apple LaserWriter (300 dpi):  
Textset advertisement, p. 103.
- Canon CX (300 dpi):  
Metafoundry advertisement, p. 100.
- Epson LQ1500 (180 dpi):  
Norman Naugle, *An elementary sum*,  
p. 70; TI/PC running PC T<sub>E</sub>X.
- QMS Lasergrafix 800 (300 dpi):  
Norman Naugle and Tomas Rokicki,  
`\output= . . . \random`, p. 71;  
TI/PC with PC T<sub>E</sub>X.  
Gregory Marriott, *A T<sub>E</sub>X82 implementation  
on the HP9000 Series 500*, p. 80.  
MicroT<sub>E</sub>X advertisement (Addison-Wesley),  
p. 102; IBM PC using MicroT<sub>E</sub>X.
- QMS Lasergrafix 1200 (300 dpi):  
Michael J. Ferguson, *Multilingual T<sub>E</sub>X*,  
p. 57; VAX 11/780 (VMS).
- Toshiba P351 (180 dpi):  
PC T<sub>E</sub>X advertisement, p. 104;  
IBM PC/XT using PC T<sub>E</sub>X.
- Versatec (200 dpi): Hans Riesel, *Report  
on experience with T<sub>E</sub>X80*, p. 76; reduced  
from 130%; T<sub>E</sub>X80, DEC-20.
- Xerox Dover (384 dpi): Amy Hendrickson,  
*Some diagonal line hacks*, p. 83.

## GRAPHICS COMMANDS FOR T<sub>E</sub>X DISCUSSION IN T<sub>E</sub>XHAX CONFERENCE

Alan Spragens  
Stanford Linear Accelerator Center

*The T<sub>E</sub>Xhax network conference carried a number of comments concerning graphics and T<sub>E</sub>X during a period from about a year ago until about six months ago. Then the discussion petered out, presumably because no consensus was reached. My file of mail items comprising this discussion runs to 53 printed pages.*

*I wrote the following description of parts of that discussion as a memo to a committee at SLAC investigating how we might best create merged text and graphics on our computer systems. Although we have been creating such documents experimentally for some time in a variety of ways, it has required hacking. We're on the track of methods applicable to a variety of systems and devices, usable by our community of hundreds of physicists who do their own papers. I tried to give a flavor of the discussion and mention some ideas that seemed important to me rather than a summary, thinking that more interested parties should get hold of the actual material that came over the wire. Accordingly, I don't include here mention of important contributions from some of the main participants in the discussion, such as Todd Allen and William LeFebvre, and I hope they'll pardon the omission.*

The T<sub>E</sub>X Project's "party line" on why the T<sub>E</sub>X language and DVI (T<sub>E</sub>X "device-independent" output) format lack graphics commands was stated by David Fuchs a year ago: (1) there is no way to provide the capabilities in a device-independent manner, and (2) the world lacks a standard, comprehensive, accepted language for describing computer graphics. Dave mentioned that T<sub>E</sub>X's designers recognized the need for graphics capabilities in a language specifying the appearance of a printed page, so they included the `\special` command for extending the language for just such a purpose. He exhorted people to consider the long range view, beyond present technologies, rather than dash off a "standard" that would be unsatisfactory in a couple of years, *e.g.*, consider shading, halftones, splines, color, *etc.* Since this "party line" message came over the net a year ago, I called David last week to ask if anything had changed. He said nothing had changed, that they had hoped that "Adobe would take over the world by now," but it hadn't. He also mentioned that a number of sites, including Stanford, had implemented various graphics languages