parameters which are usually used by the end users. Thus, if a user commonly uses landscape mode he/she may create such a file and save the effort of typing in the landscape command every time.
2. In addition to the initialization file, a driver should be able to write the commands it receives from a user into a file which can be read by the driver and executed. Thus if a user is debugging a particular set of pages, he/she need not reenter the set of commands but may instead refer the driver to the file containing the needed set of commands.
3. Drivers should also be able to run from batch mode as well as interactive mode.

With respect to METAFONT, drivers should be able to do either of the following:

1. Have the ability to download fonts produced by METAFONT.
2. Come with a program able to convert standard METAFONT output into a form needed by the driver. This would enable users to create different sizes of the CMR fonts as well as logos, special symbols, etc.

Editor's note: Robert McGaffey has agreed to chair a committee to define standards for TEX output drivers, and will be holding an organizational meeting at the Seattle TUG meeting. Persons interested in participating in this effort should write to Robert, with a copy of the letter to Bart Childs, to assist in planning.

TEX Output Devices

Don Hosek

The device tables on the following pages list all the TEX device drivers currently known to TUG. Some of the drivers indicated in the tables are considered proprietary. Most are not on the standard distribution tapes; those drivers which are on the distribution tapes are indicated in the listing of sources below. To obtain information regarding an interface, if it is supposed to be included in a standard distribution, first try the appropriate site coordinator or distributor; otherwise request information directly from the sites listed.

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, only a phone number or network address is given. If the contact is not a current TUG member, the full address and its source are shown. When information on the drivers is available, it is included below.

Screen previewers for multi-user computers are listed in the section entitled "Screen Previewers". If a source has been listed previously under "Sources", then a reference is made to that section for names of contacts, etc.

Corrections, updates, and new information for the list are welcome; send them to Don Hosek, Bitnet DHOSEK@HMCVAX (postal address on page 99).

Sources

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

Adelaide Adelaide University, Australia

The programs listed under Adelaide have been submitted to the standard distributions for the appropriate computers. The PostScript driver permits inclusion of PostScript files in a TEX file. The driver is described in *TUGboat, Vol. 8, No. 1.*

AMS American Mathematical Society, Barbara Beeton, 401-272-9500 Arpanet: BNB@XX.LCS.MIT.Edu

Arbor ArborText, Inc., Bruce Baker, 313-996-3566, Arpanet: bwb%arbortext@umix.cc.umich.edu

ArborText's software is proprietary and ranges in price from $150 to $3000. The drivers for PostScript printers, the HP LaserJet Plus, the QMS Lasergrafix, and Imagen printers are part of their DVILASER series. The drivers all support graphics and include other special features such as use of resident fonts or landscape printing when supported by the individual printers.

Printing on the Autologic APS-5 and μ-5 phototypesetters with DVIAPS includes support of Autologic standard library fonts and Logo processing.

A-W Addison-Wesley, Brian Skidmore, 617-944-3700, ext. 2253

Addison-Wesley supports graphics on all Macintosh software, and on Imagen, PostScript, and QMS laser printers on the IBM PC.

Bochum Ruhr Universität Bochum, Norbert Schwarz, 49 234 700-4014

Caltech1 California Institute of Technology, Glen Gribble, 818-356-6988

Caltech2 California Institute of Technology, Chuck Lane, Bitnet: CEL@CITHEX

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

Carleton Carleton University, Neil Holtz, 613-231-7145

CMU Carnegie-Mellon University, Howard Gayle, 412-578-3042

Columb. Columbia University, Frank da Cruz, 212-280-5126

COS COS Information, Gilbert Gingras, 514-738-2191

DEC Digital Equipment Corporation, John Sauter, 603-881-2301

The LN03 driver is on the VAX/VMS distribution tape.

GA Tech GA Technologies

GMD Gesellschaft für Mathematik und Datenverarbeitung, Federal Republic of Germany, Dr. Wolfgang Appelt, uucp: `seismo!unido!gmdzi!zi.gmd.dbp.de!appelt`

HP Hewlett-Packard, Stuart Beatty, 303-226-3800

IAM Institut für Angewandte Math, Univ of Bonn, Federal Republic of Germany, Bernd Shulze, 0228-733427, Bitnet: `BESCHU@DBNUAMA1`

INFN INFN/CNAF, Bologna, Italy, Maria Luisa Luvisetto, 51-498286, BITnet: `MILTEX@IBOINFN`

The CNAF device drivers are on the VAX/VMS distribution tape.

Intergraph Intergraph, Mike Cunningham, 205-772-2000

JDJW JDJ Wordware, John D. Johnson, 415-965-3245, Arpanet: `M.JOHN@Sierra.Stanford.Edu`

K&S Kellerman and Smith, Barry Smith, 503-222-4234

The MacIntosh drivers and the VAX/VMS Imagen driver support graphics.

LLL Lawrence Livermore Laboratory

LSU Louisiana State University, Neal Stoltzfus, 504-388-1570

Milan1 Università Degli Studi Milan, Italy, Dario Lucarella, 02/23.62.441

Milan2 Università Degli Studi Milan, Italy, Giovanni Canzii, 02/23.52.93

MIT Massachusetts Institute of Technology, Chris Lindblad, MIT AI Laboratory, 617-253-8828

The drivers for Symbolics Lisp machines use the Symbolics Generic Hardcopy interface as a back end, so it should work on any printer that has a driver written for it. The printers listed in the table indicate drivers the program has been tested on.

The UNIX drivers for PostScript and QMS printers both support landscape printing and graphics inclusion via specials.

MPAE Max-Planck-Institut für Aeronomie, H. Kopka, (49) 556-41451, Bitnet: `MIO40L@D6O6WD01`

MR Math Reviews, Patrick Ion, 313-996-5273

NJIT New Jersey Institute of Technology, Bill Cheswick, 201-596-2900, Arpanet: `cheswick@jvnca.csc.org`

OCLC OCLC, Tom Hickey, 6565 Frantz Road, Dublin, OH 43017, 616-764-6075

OSU2 Ohio State University, John Gourlay, 614-422-1741, `gourlay.ohio-state@csnet-relay`

Pers Personal TEX, Inc., Lance Carnes, 415-388-8853

Graphic output is supported on Imagen, PostScript, and QMS printers.

PPC Princeton Plasma Physics Lab, Charles Karney, ARPAnet: `Karney%PPC.MFENET@NMFECC.ARPA`

Versatec output from TEXspool is produced via the NETPLOT program. TEXspool also produces output for the FR80 camera. Color and graphics primitives are supported through specials.

Procyon Procyon Informatics, Dublin, Ireland, John Roden, 353-1-791323

SARA Stichting Acad Rechenzentrum Amsterdam, Han Noot, Stichting Math Centrum, Tweede Boerhaavestraat 49, 1091 AL Amsterdam (see *TUGboat, Vol. 5, No. 1*)

Scan Scan Laser, England, John Escott, +1 638 0536

Sci Ap Science Applications, San Diego, CA, 619-458-2616

SLAC Stanford Linear Accelerator Center, 415-854-3300

The SLAC drivers are on the standard CMS distribution tape.

SRI SRI International

Stanford Stanford University

The Imagen driver from Stanford is present on most distributions as the file `DVIIMP.WEB`. It provides limited graphics ability.

Sun Sun, Inc.

Sydney University of Sydney, Alec Dunn, (02) 692 2014, ACSnet: `alecd@facet.ee.su.oz`

Talaris Talaris, Rick Brown, 619-587-0787

All of the Talaris drivers support graphics.

T A&M1 Texas A&M, Bart Childs, 409-845-5470, CSnet: `Childs@TAMU`

Graphics is supported on the Data General drivers for the Printronix, Toshiba, and Versatec on the Data General MV. On the TI PC, graphics is supported on the Printronix and Texas Instruments 855 printers. There is also a previewer available for both the Data General and the TI.

T A&M2 Texas A&M, Ken Marsh, 409-845-4940, Bitnet: `KMarsh@TAMNIL`

T A&M3 Texas A&M, Norman Naugle, 409-845-3104

The QMS driver supports inclusion of QUIC graphics commands via specials as well as landscape printing.

T A&M4 Texas A&M, Thomas Reid, 409-845-8459, Bitnet: X066TR@TAMVM1

The TEXrox package includes a DVI driver (TEXrox), a GF/PXL to Xerox font converter (PXLrox2), and a utility to build TFM files from licensed Xerox fonts (Xetrix). The programs are all written in C. Xetrix currently runs only under UNIX.

At present the TEXrox package is being distributed on a twelve-month trial basis; the trial is free for U.S. educational and government institutions, $100 for foreign or commercial institutions. Licensing agreements will be available when the trial offer expires.

Tools Tools GmbH Bonn, Edgar Fuß, Kaiserstraße 48, 5300 Bonn, Federal Republic of Germany

The Tools implementation of TEX and the drivers listed are described in *TUGboat, Vol. 8, No. 1.*

TRC Finland Technical Research Centre of Finland, Tor Lillqvist, +358 0 4566132, Bitnet: tml@fingate

UBC University of British Columbia, Afton Cayford, 604-228-3045

UCB University of California, Berkeley, Michael Harrison, Arpanet: vortex@berkeley.arpa

UCIrv1 University of California, Irvine, David Benjamin

UCIrv2 University of California, Irvine, Tim Morgan, Arpanet: Morgan@UCI

U Del University of Delaware, Daniel Grim, 302-451-1990, Arpanet: grim@huey.udel.edu

The distribution includes a program to convert font files generated by METAFONT to Xerox font format.

U Köln Univ of Köln, Federal Republic of Germany, Jochen Roderburg, 0221-/478-5372, Bitnet: AO045@DKORRZK0

U Mass University of Massachusetts, Amherst, Gary Wallace, 413-545-4296

U MD University of Maryland, Chris Torek, 301-454-7690, Arpanet: chris@mimsy.umd.edu

The UNIX Imagen driver is on the UNIX distribution tape.

U Mich University of Michigan, Kari Gluski, 313-763-6069

UNI.C Aarhus University, Regional Computer Center

U Shef University of Sheffield, England, Ewart North, (0742)-78555, ext. 4307

Utah University of Utah, Nelson H. F. Beebe, 801-581-5254, Arpanet: Beebe@Utah-Science

The Beebe family of drivers was described in *TUGboat, Vol. 8, No. 1.* Graphics is supported only in the DVIALW (PostScript) driver.

U Wash1 University of Washington, Pierre MacKay, 206-543-6259, Arpanet: MacKay@June.CS.Washington.edu

The programs listed under U Wash1 are all on the standard UNIX distribution tape.

U Wash2 University of Washington, Jim Fox, 206-543-4320, Bitnet: fox7632@uwacdc

The QMS driver for the CDC Cyber was written under NOS 2.2 and supports graphics.

Vander Vanderbilt University, H. Denson Burnum, 615-322-2357

Wash St Washington State University, Dean Guenther, 509-335-0411, Bitnet: Guenther@WSUVM1

W'mann Weizmann Institute, Rehovot, Israel, Malka Cymbalista, 08-482443, Bitnet: Vumalki@Weizmann

Screen Previewers

▪ Data General MV

T A&M1 See above for contact name.

▪ IBM MVS

Milan1 See above for contact name.

Drives Tektronix 4014 terminal.

GMD See above for contact name.

▪ Siemens BS2000

GMD See above for contact name.

▪ UNIX

Adelaide Programs are on distribution tape.

The DVItoVDU program is capable of driving the following terminals: AED 512; ANSI-compatible; DEC ReGIS; DEC VT100; DEC VT220; Tektronix 4014; and Visual 500, 550.

Talaris See above for contact name.

The Talaris driver supports the Talaris 7800 terminal. Tektronix graphics are supported on-screen.

Utah See above for contact name.

The Beebe driver family includes a driver for the BBN Bitgraph display.

▪ VAX VMS

Adelaide Programs are on distribution tape.

The DVItoVDU program is capable of driving the following terminals: AED 512; ANSI-compatible; DEC ReGIS; DEC VT100; DEC VT220; Tektronix 4014; and Visual 500, 550.

INFN See above for contact name.

The INFN drivers include support for DEC VT125 and Tektronix 4014 terminals.

Talaris See above for contact name.

The Talaris driver supports the Talaris 7800 terminal. Tektronix graphics are supported on-screen.

Utah See above for contact name.

The Beebe driver family includes a driver for the BBN Bitgraph display.

Low-Resolution Printers on Multi-User Systems — Laser Xerographic, Electro-Erosion Printers

	Amdahl (MTS)	CDC Cyber	Data General MV	DEC-10	DEC-20	HP9000 500	IBM MVS	IBM VM/CMS	IBM VM/UTS	Prime	Siemens BS2000	Sym-bolics Lisp	UNIX	VAX VMS
Agfa P400								IAM						
Canon					Utah	Utah							Canon Utah	Utah
DEC LN01													U Wash1	NJIT
DEC LN03														K&S Procyon DEC
HP LaserJet Plus					Utah	Utah							Arbor Utah	Arbor Utah
IBM 38xx, 4250, Sherpa								SLAC Wash St						
Imagen	Arbor UBC		T A&M1	Stanford Vander	Columb. SRI Utah	Utah	Arbor	Arbor SLAC W'mann				MIT	Arbor U Md Utah	Arbor K&S Utah
PostScript printers					Utah	Adelaide Arbor Utah		Arbor				MIT	Arbor Carleton MIT Utah	Utah
QMS Lasergrafix	Arbor	U Wash2	T A&M1			T A&M2	GMD	Arbor		T A&M3	GMD	MIT	Arbor U Wash1	Arbor GA Tech T A&M3
Symbolics					U Wash1								U Wash1	U Mass
Talaris							Talaris	Wash St					Talaris	Talaris
Xerox Dover					CMU								Stanford	
Xerox 2700II		Bochum			OSU2								OSU2	
Xerox 9700	Arbor U Mich						Arbor T A&M4	Arbor T A&M4	T A&M4				U Del	ACC Arbor T A&M4

Low-Resolution Printers on Multi-User Systems — Impact and Electrostatic Printers

	CDC Cyber	Cray	Data General MV	DEC-10	DEC-20	HP9000 500	IBM MVS	IBM VM	Prime	VAX UNIX	VAX VMS
Apple ImageWriter					Utah	Utah				Utah	LSU Utah
DEC LP100					OSU2						
Facit 4542											INFN
Florida Data					MR						
MPI Sprinter					Utah	Utah				Utah	Utah
NDK 7700								IAM			
Okidata					Utah	Utah				Utah	Utah
Printronix			T A&M1		Utah	Utah				Utah	Utah
Toshiba			T A&M1		Utah	Utah				Utah	Procyon Utah
Varian											Sci Ap
Versatec	U Köln	PPC	T A&M1	GA Tech Vander	U Wash1		GMD U Milan2	Weizmann	LLL	U Wash1	Caltech2 K&S

Low-Resolution Printers on Microcomputers and Workstations — Laser Xerograp

	Apollo	Apple Mac-intosh	Atari ST	HP1000	HP3000	HP9000 200	IBM PC	ICL Perq	Integrat Solutio
Canon							Utah	GMD	Utah
Cordata LP300							Pers		
GE 3000	COS								
HP 2680				JDJW	Pers				
HP 2688A				JDJW		Caltech1 HP			
HP Laserjet Plus			Tools	TRC Fin!'d		MPAE	Arbor Utah		Utah
Imagen	Arbor OCLC						A-W Arbor Pers Utah		Utah
PostScript printers	Arbor	A-W K&S				Arbor	A-W Arbor Pers Utah		Utah
QMS Lasergrafix	Arbor Scan						A-W Arbor Pers		
Talaris							Talaris		
Xerox 9700	COS Scan								

Low-Resolution Printers on Microcomputers and Workstations — Impact, Electros

	Apollo	Apple Mac-intosh	Atari ST	Cadmus 9200	HP1000	HP3000	IBM PC	Integrated Solutions	SUN
Apple ImageWriter		A-W K&S					MR Utah	Utah	Utah
Diablo						Pers			
Epson			Tools		JDJW	U Shef	A-W Milan1 Pers U Shef		
Fujitsu				U Köln					
GE 3000	COS								
MPI Sprinter							Utah	Utah	Utah
Printronix							Utah	Utah	Utah
Texas Instruments 855									
Toshiba							A-W Pers Utah	Utah	Utah
Video display	Arbor	A-W K&S	U Köln	Tools			A-W Arbor Pers	UClrv1 Utah	Arbor UCB UClrv2

Typesetters

	Amdahl (MTS)	Apollo	CDC Cyber	DEC-20	HP3000	HP9000 200; 500	IBM MVS	IBM PC	IBM VM
Allied Linotype CRTronic									
Allied Linotype L100, L300P	Arbor	Arbor				Arbor		A-W Arbor Pers	
Allied Linotype L202								Pers	
Alphatype CRS				AMS					
Autologic APS-5, Micro-5	Arbor	Arbor COS Scan		Arbor	Arbor			Arbor Pers	Arbor
Compugraphic 8400					U Shef			Pers	
Compugraphic 8600			UNI.C				Wash St	Pers	Wash St
Harris 7500									
Hell Digiset							GMD		