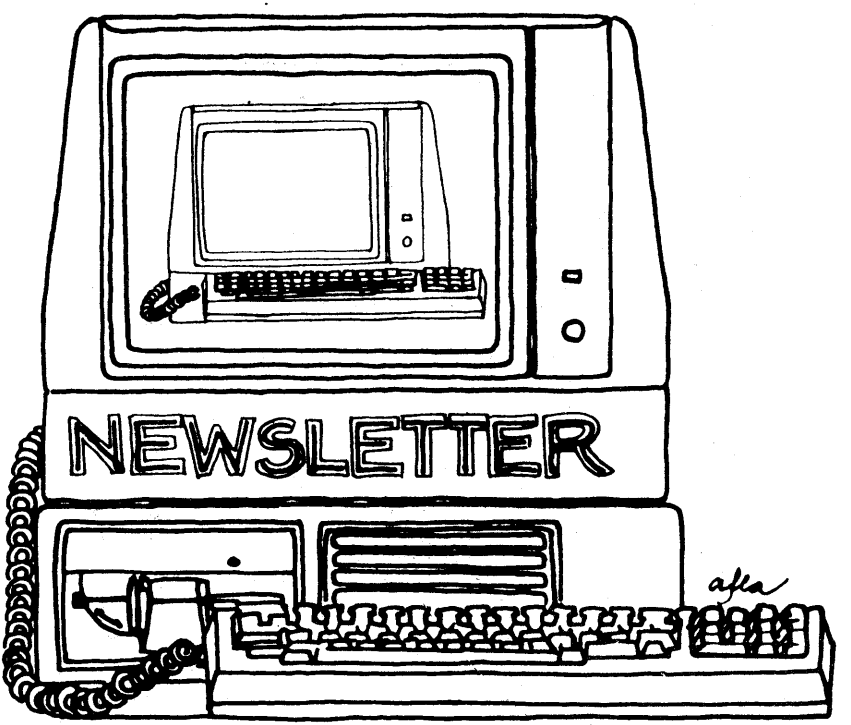
Nov. 10, 1986 Volume 4 Issue #10

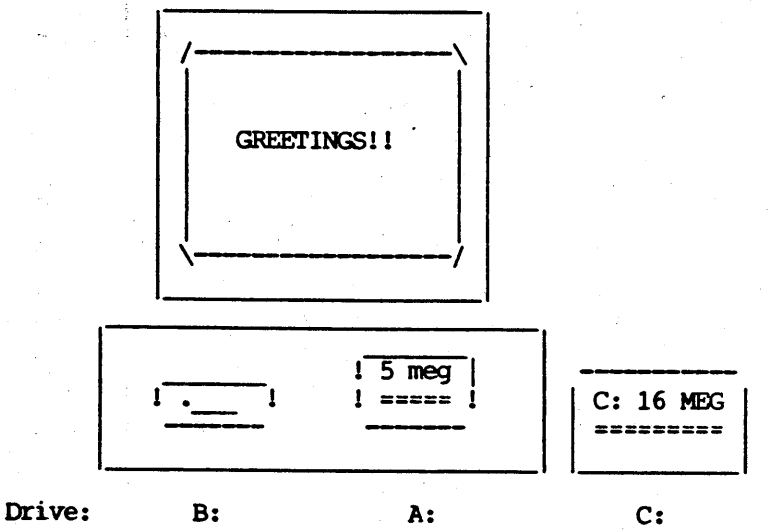
BAY AREA MICRO DECISION USERS ASSOCIATION

BAMDUA NEWSLETTER



A MUTUAL SUPPORT NETWORK FOR USERS OF MORROWS' MICRO DECISION COMPUTERS-

P.O. BOX 5152, BERKELEY, CA. 94705
415: 644-2805




```
>>> BAMDUA MBBS
>>> Micro Bulletin Board System (tm)
>>> (MLOGIN 1.2 09/18/85 - (c) 1983 Kim Levitt)
>>> Welcome to The MBBS Bulletin Board
>>> Micro Bulletin Board System (tm)

     Sysop: Steven Wartofsky
     Phone: (415)-654-3882
Baud rates: 300,1200
  Hardware: Morrow MD-5  running CPM+ (CP/M 3.0)
            1 Floppy Drive (B), 2 Hard Disks (A:5 meg,C:16 meg)
  Software: MBBS,BYE504,KMD14,SFILE26,LD,MAP
     Hours: 24 Hrs.
    Access: Registration. See Bulletin
 Interests: A System of the Bay Area Micro Decision
            Users' Association (BAMDUA)
```

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This Newsletter is printed by The Carbon Alternative, 165 41st St., Oakland, CA 94611. (415)654-0171.

Newsletter

If you wish to submit material to the newsletter, please follow these guidelines:

- Submit material before the 23 of each month
- Submit hard copy along with a WordStar file on a SSDD or DSDD diskette; left margin, default; right margin, 68 and right justified. (NewWord files are acceptable).
- Include your name, address and telephone number Your disk will be returned to you.
- Send newsletter materials to: Newsletter Editor
  BAMDUA
  P.O Box 5152
  Berkeley, CA 94705

If you have questions about newsletter submissions, call me afternoons only on Wednesday or Friday (415-843-8167). If you have other questions about BAMDUA, call the BAMDUA Office, 415-644-2805. If you need technical help, use your DIRECTORY.

IMPORTANT: If you have something you especially want in the next Newsletter but are unsure you can get it in before the deadline, be sure to call me so that we can make special arrangements. If it doesn't matter to you when it is published, then you do not need to be concerned about the deadline; just send it in when you have it ready!

Please remember that the deadline is important in order to enable me to plan and produce the Newsletter.

If you have tried one (or more) of the utilities available on the library disks, write a review and send it in! If you know the answer (or think you do) to new or recurrent questions in the Notepad or Mailbox departments, write me so that I can make the information available to all.

We reserve the right to edit articles submitted for publication. In keeping with the spirit of "public domain" we grant permission for articles appearing in this Newsletter to be reprinted by other users' groups for the purpose of free dissemination of information as long as proper identification is made of author and source. We cannot guarantee the accuracy of information printed here, but we do assume that all authors take an interest in providing responsible information to the best of their ability.

Thanks. --Georgia Babladelis, Ed.

BAY AREA MICRO DECISION USERS ASSOCIATION
A Morrow computer users' group

Monthly newsletter, Vol. 4, Issue 10 November 1986

BAMDUA, P.O. Box 5152, Berkeley, Ca 94705
(415) 644- 2805

BAMDUA, the Bay Area Micro Decision Users Association, is open to all who are interested in Morrow's Micro Decision computers. Membership fee is currently $16 per year and includes a subscription to our monthly newsletter. For information, membership application forms, etc., please send a self-addressed stamped envelope to the BAMDUA P.O. Box.

The BAMDUA office is open 8:30-4:30 weekdays; the answering machine or a call-forwarding BAMDUA volunteer will take your messages from 12:30 on. When Greg is in the office, he will answer the phone in the morning.

The main BAMDUA meeting is held the last Tuesday of each month.

+++ Next main BAMDUA meeting: +++++++++++++++++++++++++++++++++++

+	WHEN:	Tuesday, November 25, 1986, 7:30 p.m. +
+	WHERE:	West Branch, Berkeley Library +
+		1125 University Avenue, Berkeley +
+	TOPIC:	Conversion Night!! MD2 -> MD3; MD3 -> MD4 +
+		Come get converted! See "From the President's Disk" +
+		(p.5) for info. +

++

****

PLANNING AHEAD: Information about future meetings.

The next meeting will be on December 30. Plans will be announced in the next Newsletter.

LOCAL MORROW USER'S MEETINGS:

MUG/MARIN (Marin Users' Group) meets on the fourth Thursday of each month at 7:30 p.m. The address is P.O. Box 925, Mill Valley, Ca. 94942. For information, contact Susan Miller (415)383-6276 or Jim Kelly (415)472-1499. The group describes itself as a small but stimulating group which tries to diversify information for both novices and pros alike.

Stanford Morrow Users' Group, (S.M.U.G.) meets onthe 2nd Wednesday of the month at 7:30 PM on the Stanford campus: Polya Hall (also known as Turing Auditorium), room 111. Info: Ed Gallaher (408) 749-9285 (H)

The CP/M Users of Santa Cruz County (formerly SCMDUG) will meet on the second Tuesday of the month at 7 p.m. at the Branciforte Branch of the Public Library, 230 Gault St., Santa Cruz. Our meeting place is wheelchair accessible and some of us are CPR knowledgeable. We can make arrangements for special problems, including transportaion. This group is open to all users of Morrow, Kaypro, Osbourne, Televideo and other CP/M computers. There will be an openforum for questions, a software demonstration, and public domain software for sale. Diskettes will also be sold. Members may bring their computers to the meeting. Written inquiries should be sent to 376 Lucinda St., Scotts Valley, CA 95066. For information call 408/438-0662 or 408/423-1462.

PETMUG (Petaluma Users' Group) meets on the 4th Thursday of each month at Advanced Information Management, 245 North McDowell Blvd. (in Petaluma Plaza), Petaluma, CA. For info. contact: Don Waite, 707/763-6891 or Dick Hoffman, 707/762-8286 or mailing address: P.O. Box 948, Petaluma, CA. 94953.

CLASSES:

Introduction to Turbo Pascal Programming for CP/M and MS/DOS users taught by Lee McKusick. Minimum students needed: 3. Fee:$10. To sign up, call Lee, 415/849-9053; or BAMDUA, 415/644-2805.

BAMDUA OFFICERS

President	Rick Charnes
Vice president	Peter Campbell
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Secretary	George Borys
Librarian	Gene Korte
Treasurer	Wesley Johnson
SBBS Sysop	Steven Wartofsky
Meeting programmer	Ilbert Butler
At Large	Sypko Andreae
At large	Frank Oechsli
At large	Lee McKusick
Staff	Greg Smith

From the President's Disk

by Rick Charnes

The ballots were passed in, we huddled, the smoke cleared, and the next thing I knew I was president. I am, as of a few dizzying days ago, charged with the honor of trying to fill the shoes of the BAMDUA giant, Sypko Andreae, who is stepping down after what he announced was his 40th meeting as chief. The energy, skill, and dedication with which Sypko created the club from scratch and has kept it strong these 3 1/2 years have been a shining example to all who have worked with him. I consider it an honor to have been asked to take over. We all owe Sypko a large debt of gratitude and I personally thank him for the part he has played in making our excellent organization what it is. He will stay on as board member so his organizational skills will still be available to us.

If someone had told me 3 years ago that I would eventually occupy a titled position in a computer users group, I would would have shortly been down on my knees looking for lost marbles, but life has a way of grabbing one by the throat and pulling you in unanticipated directions. When I bought my clunky old MD-2 in April 1984, I never suspected a few years later I'd be sitting at my desk with a 20 meg Mini Winnie hard disk trying to increase the named buffer entry size in the source code of something called ZCPR3 before writing my first From the President's Disk column. The world is full of surprises.

What are some of the things we have going in BAMDUA right now? Our special annual Thanksgiving meeting promises to be an exciting one — we'll be turning single sided MD-2's like those I started out with into full capacity double sided MD-3's right before your eyes. We provide the labor and know-how, you provide your machine and 2 Shugart 455 drives (a common brand) and bring it all to the meeting, and you leave feeling like a new person. It should be a lot of fun to watch these technical whizzes at work. Leave a message at the office at 644-2805 if you'd like to be included in this.

Our BAMDUA bulletin board continues to grow and remain a source of sometimes-frenzied activity. We've added on a special section for all you ZCPR3 users, on which we'll be carrying all the latest public domain utilities being written for this extraordinary CP/M-compatbile operating system. ZCPR3 is truly a wonder. Using it every day I am still learning its secrets.

One thing in closing I want to ask you, the membership, is for feedback on what kind of meetings you'd be interested in attending in the future. I particularly would like to entice all you writers, who don't care in the least for all this MS-DOS frenzy, who continue to churn out those excellent articles and books on their sturdy Morrows. I think a "Writers' Night" where folks can get together, meet one another in an informal atmosphere and share experiences might be a nice balance to the high-tech side of life. Call Greg at the office or leave a message and let us know what you'd like to see.

Library News

BAMDUA LIBRARY VOLUME 38

This disk contains NewWord patches for allowing use of alternate characters with your printer and allowing on-screen display of a terminal's alternate character set while editing a document. The example is for the MT70. This disk also contains the NewPrint program which is installed for the Gemini 10X printer. You must use the install program to install for your printer.

The program and patches were created by Phil Hess, who welcomes feedback and/or questions. Write him at 917 N. 10th St., Lafayette, Indiana 47904.

-BAMDUA.038

ALTCHARS.ART	An article describing word processing with alternate character sets and describing the NewWord patches.

PATCH 1

MT70GRDI.ASM	Source code of NewWord patch for MT70 and Diablo German Pica 10 wheel.
MT70GRDI.PRN	Asembled listing with hex codes ready to be entered with NWINSTAL.
DIABGERM.DOC	Test document 1.
DIABKAFK.DOC	Test document 2.

PATCH 2

MT70ALT.ASM	Source code of NewWord patch to display entire MT70 alternate character set on-screen.
MT70ALT.PRN	Assembled listing with hex codes ready to be entered with NWINSTAL.
ALTDEMO.DOC	Document for testing patch 2. Displays entire MT70 alternate character set.
ALTKAFKA.DOC	Test document 2.
MT70KBD.DOC	MT70 keyboard layout showing both normal and alternate character set.
ANSIALT.ASM	Source code of NewWord patch for ANSI terminals with ASCII 160-254 alternate character set.
ANSIALT.PRN	Assembled listing.

NEWPRINT

NP.COM	NewPrint program.
NPINSTAL.COM	NewPrint installation program.
NPINSTAL.DAT	Printer definitions.
NPDEMO.DOC	Test document.
READTHIS.NOW	NewPrint introduction.
CPMSTAT.COM	Utility program which displays system's TPA.

BAMDUA LIBRARY DISK 39

This disk contains 4 articles in a series about upgrading your Morrow Microdecision, written by Phil Hess, and appearing in past BAMDUA Newsletters. Also on this disk are the source codes and programs for using the MDT20 upgrade features, and two articles, one which discusses compilers and interpreters and the other which discusses graphics with your system.

-BAMDUA.039

COMP-INT.DOC Article discussing the differences between compilers and interpreters.
GRAPHICS.DOC Article discussing the pros and cons of investing in costly graphics adjuncts for your Morrow system.

CUSTOM1.DOC Article discussing how to make some simple enhancements to your system.
CUSTOM2.DOC Article describing how to do the MDT20 upgrade.
CUSTOM3.DOC Article describing how to add DSDD drives.
CUSTOM4.DOC Article describing use of SmartKey with the MDT20.

Programs to accompany upgrade for MDT20 terminal:

DMP2AUX.ASM Assembly language program for COM file below.
DMP2AUX.COM Program to transmit contents of screen to auxiliary port.

DMPTOAUX.PAS Pascal language code for COM file below.
DMPTOAUX.COM Program transmits contents of screen to auxiliary port.

DMTOFIL.PAS Pascal language code for COM file below.
DMTOFIL.COM Program transmits contents of screen to file specified on command line.

DMTOPRN.PAS Pascal languae code for COM file below.
DMTOPRN.COM Program transmits contents of screen to printer port.

LST.PAS Pascal language code for COM file below.
LST.COM Program lists text and document files to printer port or screen or auxialiary port.

*****

COMING EVENTS

Next Bay Area Computer Swap is at the Cow Palace in San Francisco on Saturday, December 6, 1986 from 10 a.m. to 5 p.m. Admission is $5.00; children under 12 free. For exhibitor and show information, call or write MICROSHOWS, 1209 Donnelly Avenue, Suite 203, Burlingame, CA 94010; 415/340-9113.

(Reprinted from the Boston MUG Newsletter, V.2, #8, Sept. 1986, with permission of the author)

A Great Terminal for Morrow Users

By: Hal Remmes

When my Freedom 50 terminal (which came with my MD2) developed a bad case of "keybounce" (a letter reproducing several times when a key is struck once) which couldn't be corrected easily,I started shopping for a new one to replace it. For a short while I used a Televideo 925 which, while a good machine, required extensive changes in the Escape Codes of my MBASIC programs. The terminal I finally settled upon was a **WYSE-50.** (WYSE TECHNOLOGY San Jose, CA)

This terminal ran all my CP/M software programs without modification and, only a minor change was required to one or two screen codes to make everything work well. The display is clear, steady and about twice the size of the Freedom 50. The CRT swivels for easier viewing.

The terminal has a 14 inch (diagonal) 80 column by 24 line green on black display. In addition, there is a "0" line which lets you see when your CAPS LOCK is on and will display a short message in the upper right corner. A 25th. line displays the codes you assign to your function keys should you want a reminder of how they are programmed. A "Screen Saver" feature turns the screen display off should there be no keyboard input after 10 minutes. It returns immediately as soon as any key is depressed.

The keyboard has 16 function keys which may be programmed in either the lower or shift position so that you actually have 32 programmable keys ! This means that for simple WordStar or NewWord commands you won't require a separate keyboard enhancer. A numeric keyboard is placed to the right of the alpha keys while the cursor keys are placed at the lower right of the right hand RETURN key.

A "setup" key allows one to define baud rate, handshake, cursor attributes, define function keys, full or half duplex, parity, etc. without having to insert your Morrow Setup Program.

The only poor feature is the size of some of the keys we've come to expect to be double size. The SHIFT, CONTROL AND RETURN are not large enough.This can easily corrected by purchasing larger replacement key caps from HOOLEON CORP. P.O. Box 201, Comville, AZ 86325 - Tel. (602) 634-7517. These caps fit right over the existing caps and are attached with a gum-like substance inside the replacement. They may be easily removed without damage to the keyboard.

I prefer the **WYSE 50** to either the Freedom or Televideo monitors. If you're considering replacing a monitor it is one you should look at.

Software Review: NEWPRINT

by Georgia Babladelis

Program: NewPrint (version 0.24)
Creator: Phil Hess
System: CP/M 2.2 or 3.0; 48K RAM
Cost: Available from BAMDUA LIBRARY

The indefatigable and creative Phil Hess has done it again! He has created patches for NewWord which allow on-screen display of a terminal's alternate character set (see his article in this issue). Obviously, users interested in patching NewWord will love this chance to make their own patches as desired. Whether or not you are "into" patching, all users will appreciate the program he has created as a result of those efforts: **NewPrint.**

NewPrint allows you to do word processing with your printer's alternate character set. It is a "stand alone" printing program which can be used to print out any WordStar or NewWord document, allowing the creation of documents which include characters printed from a printer's alternate character set. There is an "install" program included so that you can install it for your printer. It has been tested on several printers and is reliable. Hess provides a test document to print out so you can check your installation. I installed for the Gemini 10X and everything worked beautifully. Also included are a couple of test docs in German so that you can check the patches. All in all, a thorough and well-planned collection of files are available to BAMDUA members (including the source codes and assembled listings for the patches for those interested) that will give you an enhanced range of printed character sets.

At present the disk including the patches and the **NewPrint** program is available from the BAMDUA LIBRARY (see announcement in LIBRARY NEWS). Eventually, Hess will release **NewPrint** commercially for both CP/M and MS-DOS after he has added additional features. Now he is making it available to interested BAMDUA members to "play around with." Persons who do additional or modified patches and who want to confer with Phil can reach him at 917 N. 10th St., Lafayette, Indiana 47904.

NewPrint (version 0.24) runs on both CP/M 2.2 and 3.0. It is designed to supplement WordStar and NewWord by supporting printers capable of printing alternate or downloaded characters. **NewPrint** can be used also to utilize more of a printer's capabilities (e.g., bold, italics, etc.). Examples of these features can be seen for the Gemini 10X printer at the end of this review.

NewPrint can be run either from the CP/M command line: A>NP, or from within WordStar or NewWord using the R (run a program) option in the opening menu. With NewWord, the user area where NP.COM resides can also be included (e.g., A0:NP). Be sure that the program is installed for your printer. Simply type: NP ? to get

help information as well as the name of the printer for which NP is currently installed. If necessary, run NWINSTAL to install NewPrint for your printer. Printer definitions are saved in file NPINSTL.DAT. Hess says that in general the printer dip switches should be left in the factory settings unless otherwise noted and that no terminal instalation is necessary for NewPrint or NPINSTAL.

NPINSTAL requires at least 48K of memory after the operating system and any memory-resident extensions such as keyboard definiton programs have been loaded. Hess provides a program CPMSTAT to check your system's TPA if in doubt. As mentioned above, a sample document (NPDEMO.DOC) is provided so you can check on your installation and see some of NewPrint's features.

In summary, this is a terrific program with a lot more information available from its creator than one typically finds. The printing features are great, as is the ability to use alternate character sets. Explanations and directions are clear and simple. Get your copy from the BAMDUA LIBRARY now!

NPDEMO.DOC, Gemini 10X

Bold

Double strike

Continuous underline

No underlining of spaces

Superscript: $E = MC^2$

Subscript: H_2O

Italics

Normal pitch

Alternate pitch

Compressed

Expanded

Varying line heights:

-----Eight lines per inch (.LH6)
-----Six lines per inch (.LH8)
-----Four lines per inch (.LH12)

-----Three lines per inch (.LH16, double spacing).

Here is an example of what you can now do with NewWord, a terminal with an alternate character set such as the Morrow MT-70, a simple printer like the Gemini 10X, and NewPrint.

Enter, display and **print** in international character sets:

Ein schönes Mädchen.

Pie à la mode.

¿Porque?

The price is £30 sterling.

The temperature was 30°C!

Use those special characters: ↑ ↓ → ←

Draw things: ◌ ▲ ■■

And, best of all, ***print them out...***

Using the redefined strikeout print control (^P^X):

Enter this char:	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
To see & print:	Æ	Ø	Å	æ	ø	à	£	à	°	ç	é	ù	è	¨	µ
	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
	Ä	ö	Ü	´	ä	ö	ü	ß	½	ò	ì	Ñ	¡	Ñ	¿	É
	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	ñ	á	ó	ú	í	^	ï	ë	œ	ä	î	ô	ú	™	®	®
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	p	q	r	s	t	u	v	w	x	y	z	{	¦	}	~	
	▇	▇	▇	▇	▇	●	◢	◣	↑	↓	→	←	◆	♥	♠	

Word Processing with Alternate Character Sets

by Phil Hess

(Copyright 1986 by Phil Hess)

Terminals and printers with alternate or extended character sets are invariably a big disappointment. Here are all these additional characters going to waste because there isn't any software that takes advantage of them.

The Morrow MT-70 terminal and dot-matrix printers such as the Gemini 10X are no exception. Try coaxing one of the MT-70's 90-odd special characters onto the screen with most existing software. Or try convincing your word processor to print one of the dozens of extra characters such as arrows, math symbols, and graphic shapes listed in the appendix of your printer manual.

Well, now there's a way (actually two) not only to enter and display your terminal's alternate characters, but to print many of them as well. All you need is NewWord, a terminal capable of displaying alternate characters, a printer that can print some of these characters, the terminal and printer manuals, a simple assembler such as CP/M's ASM.COM, and the two patches described in this article. Also, for the second patch, the NewPrint program discussed at the end of the article is necessary to provide printer support.

The approach discussed for the first patch should apply to WordStar as well. Furthermore, a similar patch could undoubtedly be developed for the MS-DOS versions of NewWord and WordStar as well. Unfortunately, the second patch is limited to NewWord. However, the NewPrint program applies both to NewWord and WordStar documents on both CP/M and MS-DOS. Also, the discussion of the MT-70 should apply to the Morrow MDT-60 terminal as well.

The NewWord patch area

The heart of this project is the NewWord user patch area. This is the part of the NW.COM file which is altered by the NWINSTAL program. Everything that's intended to be modified or customized by the user is in this part of the program and is admirably well-documented in the listing at the back of the NewWord manual and in the pamphlet supplied with version 2.

If you're not familiar with NWINSTAL, make a copy of NW.COM and use NWINSTAL to customize NewWord. For example, try changing some of the default settings and then run NewWord to see how these installation changes affect the program's operation. Since NWINSTAL is completely menu-oriented, it's easy to use. And as long as you're installing a copy of NW.COM, there's little chance of hurting anything regardless of what choices you make.

At some point while running NWINSTAL, select menu H (special patches) and examine the list of options in the four additional menus (H-1 through H-4). If you page through the user patch area listing, you'll see how these special patches closely correspond to much of what you see there. In fact, menu H is an easy point of access for making changes to the user area code.

"Foreign" characters

The Morrow MT-70 terminal has two complete character sets. The default set is the normal 128-character ASCII set (with 96 displayable characters) which you enter at the keyboard and see displayed on the screen and printed by the printer. The second set contains an additional 96 displayable characters comprised of the special European characters, line-drawing symbols, and graphic shapes such as blocks and arrows.

The ASCII set has long been standardized. Entering a letter or number at the keyboard always displays and prints as the same character. Unfortunately, the same can't be said of alternate character sets. What goes into these sets varies widely from terminal to terminal and printer to printer. However, there are usually a few things which can be counted on here.

For example, many dot-matrix printers are capable of printing what their manuals often call international character sets, each set being specific to one of the European languages. What this means is that once an international set has been selected (usually by sending the proper escape sequence to the printer), the handful of characters unique to that set's language are substituted for some of the lesser-used ASCII characters. The same is true of daisy-wheel printers. On a foreign language wheel, where these lesser-used ASCII characters normally appear, there are instead the foreign characters.

Usually the same "expendable" ASCII characters are replaced, regardless of printer. These characters are as follows:

@ [\ ] ^ ` { | } ~

For example, on the Gemini 10X, once the German character set has been selected, you lose all use of these characters. Instead, when a left bracket ([) is sent to the printer, for example, an upper-case A with the two dots above it known in German as an umlaut is printed. The same is true of the Diablo German Pica 10A print wheel and many other printers.

This may seem like a clever way of handling foreign characters, but it's really not, more like an afterthought. There are several drawbacks. For one, you still have to enter and your word processor still displays the normal ASCII characters, even though now they'll be printing as foreign characters. This can be an on-screen proofreader's nightmare. Also, you no longer can print the replaced ASCII characters as long as the foreign character set or wheel is in

use. Plus, you can only use one language at a time. To print a character from one of the other foreign sets requires that the wheel be changed or new escape codes be sent to the printer while printing.

Furthermore, there are sometimes variations among printers. With the Diablo German wheel, the digraph-s replaces the "at" sign (@), but on the Gemini 10X, it replaces the tilde (~). This can be rough on the two-printer user who likes to run off quick draft copy and slower letter-quality copy.

And, as a final insult, the shifted characters {, | and } print as the lower-case a, o, and u with umlauts, while the unshifted [, \, and] print as the upper-case A, O and U with umlauts. Hence, while the rest of the keyboard ASCII characters can be entered as before, to enter a lower-case German character you have to use the SHIFT key, and vice versa with the upper-case characters. Whatever committee came up with this arrangement deserves a collective kick in the pants.

We're only dealing here with a handful of special characters and already we're in a mess. It gets worse as you begin contemplating the use of math and graphic characters.

On-screen display of foreign characters

Fortunately, we can use NewWord's nifty patching facility to alleviate some of the stress trying to use alternate character sets. The first patch example replaces the NewWord console output routine (UCONO) and allows us to see on the MT-70 screen the German characters on the Diablo German Pica 10A print wheel (see file MT70GRDI.ASM). Once assembled using ASM.COM (to file MT70GRDI.PRN), the resulting hexadecimal codes can be entered into the MORPAT section of the user patch area using NWINSTAL at menu entry H-2-C starting at location 42E.

Two other small patches at ULINI and ULUNI can be made with dot matrix printers to automatically select before printing (and de-select when done printing) the appropriate international character set by sending the proper escape codes to the printer each time a document is printed.

This patch can easily be modified for other terminals, printers, and languages, usually just by substituting the necessary escape and character codes and reassembling. For someone who does a lot of foreign language word processing, these kinds of patches could be made to a number of copies of NW.COM, each copy representing a different language. For example, in addition to the usual NW.COM file and the other NewWord overlay files, there might be NWGERMAN.COM, NWFRENCH.COM, and NWSPANSH.COM. To process words in one of these languages, simply run the appropriate patched copy.

Basically, this first patch intercepts the replaced ASCII character whenever it is sent to the screen by NewWord and substitutes two things: the escape code which switches on the terminal's alternate set for the next character, then the character which corresponds to the desired foreign character.

For German characters on the MT-70 terminal, this means that whenever the patch code receives a left bracket ([), it sends to the screen the code ESC ! ^P in order to display the upper-case A with an umlaut. The [is still stored in the document and sent to the printer as before, but now you have the benefit of seeing the character on the screen as it will look when printed. Searching (^QF) for words containing the special characters still works too. In fact, you'll even see these characters when entering the search string.

On systems equipped with a program such as Morrow's KEY.COM program or a key-definition program like SmartKey, it may be useful to define and label the function keys or redefine which keys are used to enter the special characters in order to make them easier to remember. Batch files (.SUB) can be used to make sure the proper key definitions are loaded before and after running NewWord. For example, a file named GERMAN.SUB could be created containing the following:

```
KEY GERMAN
NWGERMAN
KEY USA
```

Running SUBMIT GERMAN would load the German key definitions, then run the patched NewWord. After exiting NewWord, the normal word processing definitions would again be restored.

A patch like this first one should work with any version of NewWord or WordStar that has a replaceable console output routine and should answer some of the complaints listed above. However, we're still limited to one language per patched copy of NW.COM and we still can't use both the replaced ASCII characters and the foreign characters in the same document. The next patch, slightly more complicated, answers these complaints as well as opens up the remaining alternate characters.

Bringing up the complete alternate character set

If you look in the NewWord user patch area listing, you'll see that there's a lengthy discussion of video attributes and how they're used by NewWord to indicate special print attributes on-screen. For example, when properly installed for the MT-70 terminal, NewWord underlines text surrounded by the ^S print control. In addition, NewWord displays marked blocks in inverse video, and highlights bold, double-strike, subscripted, superscripted, and struck-out text. The NewWord routine which sends the escape codes that turn these screen attributes on and off is called VIDAO. Of course, the example routine given in the NewWord

patch area listing isn't the one installed for the MT-70, but the comments should give you an idea of what's going on.

Whenever it needs to change the screen attributes before sending a string of characters to the screen, NewWord sends an attribute byte to VIDAO that describes which attributes should be on when the string is displayed. My first thought was to modify VIDAO so that whenever the little-used strikeout attribute was on, VIDAO would turn on the alternate character set instead of highlighting. Then, whenever you wanted to see alternate characters on the screen, you could simply use the ^X strikeout print control.

The problem with this approach is that with the MT-70 the alternate character set only stays on for one character, unlike the other attributes, such as underlining and highlighting, which stay on until an escape sequence is sent to cancel them.

As a result, I decided to leave the VIDAO routine alone and write instead another custom console output routine (see file MT70ALT.ASM) to replace the routine NewWord uses to send each character to the terminal. This works because each character passed to UCONO by NewWord is accompanied by its attribute byte (how thoughtful). Any characters with the strikeout attribute can then be detected as they're sent to the terminal and preceded with the escape code necessary to display the correct alternate characters.

One slight modification is also made to VIDAO to prevent highlighting from being turned on when struck-out text is encountered. Otherwise, the alternate characters would be displayed highlighted at all times. (Note: The address given in the patch listing is probably terminal and version specific.)

To use the patched copy of NewWord, simply toggle strikeout on with ^PX, press the key corresponding to the desired alternate character, then toggle back to ASCII with another ^PX. For example, to see the German A with its umlaut, enter:

```
^PX0^PX
```

To see the up-arrow, enter:

```
^PXx^PX
```

And so on. The order of the alternate characters as given in the MT-70 manual corresponds to the order of the normal ASCII characters that you enter to see the alternate characters. Having the manual handy is necessary at first to look up the key to press. Or you could draw a sketch of the keyboard, label the keys with the special characters, and keep this sketch nearby.

Like other screen attributes, such as bold and underlining, toggling the alternate set on will temporarily convert any characters on the screen below the cursor to their alternate equivalents until the alternate set is again toggled off. Also, if

you turn the print controls on (^OD), the ^X preceding the struck-out text will display as two of the line-drawing characters since the ^ and X also have the strikeout attribute. Don't let this confuse you. It's still stored as ^X in the document. Turning off the print control display (^OD) helps eliminate this confusion and makes for a cleaner screen.

The alternate set can be left on for multiple lines in order to draw rectangles and the like using the line-drawing and graphic characters.

Again, this patch can be modified for terminals with different codes and character sets. Because WordStar does not send the attribute information to the UCONO routine, this patch is limited to NewWord. However, the CP/M version of NewWord is available for only about $100 these days and includes The Word Plus spelling checker.

Printing the alternate character set — an unsuccessful attempt

We now have a way of entering and displaying more than 90 special characters on the MT-70 and it's no more difficult to use than the other print controls. However, unlike underlining, for example, we have absolutely no printer support for what we've done regardless of what make and model of printer we're using. We can put all sorts of fancy things on the screen, but that's about it. The alternate characters will still be printed as normal characters struck through with hyphens.

The correct place to provide printer support for the terminal's alternate character set is in NewWord itself, specifically by writing a custom list output routine (ULSTO). However, unlike the console output routine, the attribute byte is not supplied with the character to be sent to the printer. Only the character itself is supplied, so there's no simple way of determining how it should be printed.

One solution to this problem would be to install one of NewWord's custom print controls, such as ^Q or ^[, to send a special character to the printer. This character, for example ASCII 80 (hex), which would otherwise never be sent to the printer, could then be detected by our custom ULSTO routine and used as a toggle to turn the printing of alternate characters on and off. When ULSTO receives this character, rather than sending it on to the printer, it sets a flag instead. The next time it receives this character, it turns the flag off. In between, all characters received (with certain exceptions such as normal NewWord escape codes to control the printer) are then translated to the appropriate codes or character required to print the desired alternate character.

For example, if 0 (zero) displays on the screen as an A with an umlaut when the alternate set toggle is on, then when ULSTO receives this 0 it checks if the alternate set flag is on. If so, it sends what the printer needs to print the A umlaut. With the Gemini 10X, this would be the extended ASCII character with a code of 209.

There are a couple of serious drawbacks to this method. One of these, of course, is that two print controls must be used to turn on the alternate set (one to display it and one to print it) and two controls to turn it off, involving nine keystrokes just to enter one alternate character. A more serious problem though is that the custom print controls can't be used reliably as toggles with NewWord. NewWord doesn't send the defined codes to the printer the way you expect it to with some of the printer drivers. The version 2 manual supplement warns about this but the reason why this problem exists is not clear. This strategy works pretty well with the DRAFT printer driver, but not with any of the special custom drivers such as GEM10X.

Printing the alternate character set with NewPrint

A completely different approach to providing printer support for the terminal's alternate character set is to give up completely on NewWord and write a separate program to print documents containing special characters. The CP/M version of NewPrint, a program which does just that, has been provided (file NP.COM). NewPrint can be used instead of NewWord to print a document. Once installed using NPINSTAL.COM, NewPrint supports bold, underlining, and other print features, as well as support for alternate character sets.

Instead of using NewWord's opening menu function P to print a document, use R (run a program) to run NewPrint instead. For example, to print the document NPDEMO.DOC, respond as follows to the prompt:

What program do you want to run? NP NPDEMO.DOC

NewPrint reads in and prints NPDEMO.DOC, sending the appropriate escape codes each time a print control such as ^B or ^X is encountered.

One drawback to NewPrint is that the current version doesn't support the microspace justification which NewWord provides (albeit slowly) even with older dot-matrix printers. However, NPINSTAL allows you to custom install NewPrint for your printer's codes, including two alternate character sets. Several printer definitions are provided for automatic installation of the Gemini 10X, Panasonic P1091, HP ThinkJet, HP LaserJet, and several Epson printers. These definitions can be modified using NPINSTAL for your particular printer or a new printer definition can be added.

NewPrint can also be used with systems where the terminal can't display any alternate characters, but the printer can. It also works well with any WordStar or NewWord document, so even if you aren't up to making the patches, you can still use your printer's alternate character set. Simply use the ^X print control in your document to signal NewPrint to translate subsequent characters when printing. With NewWord, the alternate characters will be highlighted on the screen to alert you while editing to the fact that these aren't normal ASCII characters.

A note on document portability

For many users, the need to swap documents with other systems and printers is more important than the ability to see alternate characters on screen. In this case, use the other alternate character set (^[), which contains as many of the IBM extended characters as the printer will support. This should also be useful with newer printers, many of which support the full IBM set in one way or another.

NewPrint also supports downloaded user-defined characters to fill out an alternate character set. This was done with the Gemini 10X to complete the MT-70 and IBM sets. Since the Gemini can't print downloaded characters in the same line as normal characters, NewPrint prints all normal characters first, then enables the downloaded characters and overprints the line with the remaining characters.

Conclusion

While neither of these patches is perfect, each provides a way of taking advantage of the alternate character sets built into most terminals and printers. Study the patch listings and the NPINSTAL program menus. That's where the nitty-gritty of this project lies.

*****

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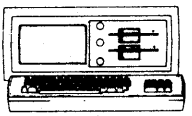

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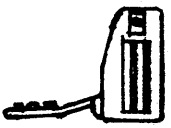

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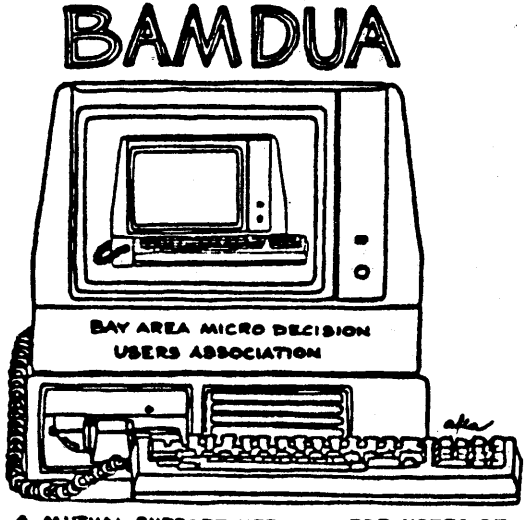

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